Prince William Sound Regional Citizens' Advisory Council

Board of Directors Meeting September 22-23, 2022
Seward Gateway Hotel, Alaska

Zoom link for virtual users meeting audio and presentations: https://pwsrcac.zoom.us/j/83252145159
Teleconference: 1-888-788-0099 Meeting ID: 832 5214 5159

Final Agenda

Thursday, September 22, 2022

8:30	A	Call to Order and Roll Call • Welcome – President Robert Archibald • Introductions/Director reports on activities since the last meeting
8:45	B	1-0 Approve Agenda
8:50	C	1-1 Approve Minutes of May 5-6, 2022, Regular Board Meeting 1-2 Approve Minutes of June 21, 2022, Special Board Meeting
8:55	D	Public Comment Period, limit five minutes per person
9:05	E	Internal Opening Comments ***(Please limit to general information not contained in Agenda)*** • Technical Committee Updates (TOEM, OSPR, SAC, POVTS & IEC) • PWSRCAC Board Sub Committee Updates (Legislative, Finance, & Governance)
9:45		BREAK
9:55	F	External Opening Comments ***(Please limit to general information not contained in Agenda)*** • PWSRCAC Ex-Officio Members • Trans Alaska Pipeline System Shippers, Owner Companies, and Pilots
11:00		BREAK
11:10	G	Alyeska / SERVS Activity Report
12:00		BREAK – *Lunch provided for those attending in-person.*
1:00	H	4-3 FY2022 Audit Acceptance – Ashlee Hamilton with Joy Merriner of BDO
1:20	I	Consent Agenda 3-1 Contract Approval: Miscommunication in Maritime Contexts 3-2 Contract Approval: ADF&G Subsistence Harvest Surveys 3-3 Approval of FY2023 Budget Modifications
1:25	J	4-1 Report Acceptance: Tank 8 Floor & Cathodic Protection System Design Review – Austin Love with Bill Mott of Taku Engineering
2:05		BREAK
2:15	K	4-2 Report Acceptance: Evaluation Report Peer Listener Program – Danielle Verna with Purpose Driven Consulting
2:50	L	4-4 Approval of Line Throwing Trial Summary Video – Alan Sorum
3:15		BREAK
3:25	M	Discussions with Sen. Gary Stevens and Rep. Louise Stutes – Donna Schantz
4:00	N	4-5 Update on Valdez Marine Terminal Tank Vent Damage Monitoring – Austin Love with Bill Mott of Taku Engineering and Klint VanWingerden of Alyeska
5:00		RECESS

Shaded Items Require Board Action

Friday, September 23, 2022

8:30	A	Call to Order & Roll Call
8:40	B	Discussions with Betsy Haines, Interim Alyeska President
9:00	C	4-6 Report Acceptance & Update to Council's Dispersants Use Position – Danielle Verna with Elise DeCola of Nuka Research & Planning Group, LLC.

Continued on next page

9:45	D	4-7 Report Acceptance: Out of Region Oil Spill Response Survey – Jeremy Robida with Elise DeCola of Nuka Research & Planning Group, LLC.
10:30		*BREAK*
10:45	E	4-8 Report Acceptance: Genetic Analysis of Zooplankton – Danielle Verna with Dr. Katrina Lohan of Smithsonian Environmental Research Center and Dr. Jon Geller of Moss Landing Marine Laboratory
11:20	F	4-9 Report Acceptance: Marine Winter Bird Surveys in PWS – Danielle Verna with Anne Schaefer and Dr. Mary Anne Bishop of PWS Science Center
12:00		*BREAK – Lunch provided for those at the meeting.*
1:00	G	4-10 PWSRCAC Long Range Planning – KJ Crawford
1:25	H	President's Report to the Board
1:35	I	Executive Director's Report to the Board
1:45	J	Financial Manager's Report to the Board
1:55	K	Consideration of Consent Agenda Items
2:05	L	4-11 Executive Session to discuss Executive Director Eval Review Committee Update & Way Forward – Robert Archibald
2:20	M	Report on Executive Session
2:25	N	Closing Comments
2:35		ADJOURN

Shaded Items Require Board Action

Additional items provided for information only:

- PWSRCAC Name Roster *(Board Members only)*
- PWSRCAC Expense Reimbursement Form
- 2-1 List of Commonly Used Acronyms
- 2-2 Budget Status Report
- 2-3 Director Attendance Record
- 2-4 Committee Member Attendance Record
- 2-5 List of Board Committee Members
- 2-6 PWSRCAC One-Page Strategic Plan
- 2-7 List of Board and Executive Committee Actions
- 2-8 PWSRCAC Organizational Chart
- 5-1 September 2022 Program/Project Status Report

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL
MINUTES
ANNUAL BOARD MEETING
May 5 and 6, 2022
Valdez, Alaska

Members Present

Robert Archibald	City of Homer
Amanda Bauer	City of Valdez
Robert Beedle	City of Cordova
Nick Crump *(5/5/22 only)*	Prince William Sound Aquaculture Corporation
Ben Cutrell	Chugach Alaska Corporation
Wayne Donaldson	City of Kodiak
Mako Haggerty	Kenai Peninsula Borough
Luke Hasenbank	Alaska State Chamber of Commerce
Curtis Herschleb	Cordova District Fishermen United
Elijah Jackson	Kodiak Village Mayors Association
Melvin Malchoff	Port Graham Corporation
Dorothy Moore	City of Valdez
Angela Totemoff	Tatitlek Corporation & Tatitlek Village IRA Council
Michael Vigil	Chenega Corporation & Chenega IRA Council
Aimee Williams	Kodiak Island Borough
Kirk Zinck	City of Seldovia

Members Absent

Mike Bender	City of Whittier
Patrick Domitrovich	City of Seward
Bob Shavelson	Oil Spill Regional Environmental Coalition

Committee Members Present

Jim Herbert	OSPR Committee
Savannah Lewis	IE Committee
Ruthie Knight	IE Committee
Cathy Hart	IE Committee
Steve Lewis	POVTS Committee
Max Mitchell	POVTS Committee
Tom Kuckertz	TOEM Committee
Harold Blehm	TOEM Committee
Davin Holen	SA Committee

Staff Members Present

Donna Schantz	Executive Director
Joe Lally	Director of Programs
KJ Crawford	Director of Administration
Brooke Taylor	Director of Communications
Ashlee Hamilton	Financial Manager
Gregory Dixon	Financial Manager Emeritus
Danielle Verna	Project Manager
Roy Robertson	Project Manager
Linda Swiss	Project manager
Austin Love	Project Manager
Jeremy Robida	Project Manager
Alan Sorum	Project Manager
Amanda Johnson	Project Manager
Betsi Oliver	Outreach Coordinator
Nelli Vanderburg	Project Manager Assistant
Hans Odegard	IT Coordinator
Jaina Willahan	Administrative Assistant

Ex Officio Members

Allison Natcher	Alaska Dept. of Environmental Conservation
Lee McKinley	Alaska Dept. of Fish & Game
Reid Olson	Bureau of Land Management
Scott Pegau	Oil Spill Recovery Institute
Torri Huelskoetter	US EPA
Tony Strupulis	Alaska Dept. of Natural Resources
CDR Patrick Drayer	USCG MSU Valdez

Others Present

Danika Yeager	Alyeska Pipeline Service Company
Andres Morales	Alyeska Pipeline Service Company
Michelle Egan	Alyeska Pipeline Service Company
Mike Day	Alyeska Pipeline Service Company
Kate Dugan	Alyeska Pipeline Service Company
Diana Bouchard	Alyeska Pipeline Service Company
Tiffany Larson	Alaska Dept. of Environmental Conservation
Melissa Woodgate	Alaska Dept. of Environmental Conservation
Mo Radotich	Alaska Dept. of Environmental Conservation
Graham Wood	Alaska Dept. of Environmental Conservation
Anna Carey	Alaska Dept. of Environmental Conservation
Heather Lescanec	Alaska Dept. of Natural Resources
Eileen Oliver	Bureau of Land Management
LT Hadley Owen	NOAA/USCG
Mary Goolie	US EPA

Bob Whittier	US EPA
Rob Kinnear	Hilcorp Alaska
Diana Dunham	Hilcorp Alaska
Lori Nelson	Hilcorp Alaska
Kurt Gibson	Hilcorp Alaska
Steve Ferrell	Hilcorp Alaska
Chris Merten	Alaska Tanker Company
Paul Manzi	Crowley Alaska Tankers
Angelina Fuschetto	Crowley Alaska Tankers
Monty Morgan	Polar Tankers
Andrea West	Polar Tankers
Ian Maury	Southwest Alaska Pilots Association (SWAPA)
Bill Mott	Taku Engineering
Robert Thomas	AVTEC
Joe Levesque	Levesque Law Group
Roy Jones	PWSRCAC legislative monitor (Federal)
Gene Therriault	PWSRCAC legislative monitor (State)
Steve White	Marine Exchange of Alaska
Byron Hayes	Marine Exchange of Alaska
Dr. Morgan Bender	Owl Ridge Consulting
Sierra Fletcher	Nuka Research & Planning Group, LLC
Zack Verfaillie	1 Call Alaska
Patience Andersen Faulkner	Public

Thursday, May 5, 2022

CALL TO ORDER, WELCOME, AND INTRODUCTIONS

The annual meeting of the Board of Directors of the Prince William Sound Regional Citizens' Advisory Council was held May 5 and 6, 2022, at the Valdez Civic Center, Valdez, Alaska. President Robert Archibald called the meeting to order at 8:15 a.m. on May 5, 2022.

A roll call was taken. The following 13 Directors were present at the time of the roll call, representing a quorum for the conduct of business: Archibald, Bauer, Beedle, Crump, Cutrell, Donaldson, Hasenbank, Jackson, Malchoff, Moore, Totemoff, Vigil, and Zinck.

Introductions and Directors' reports followed.

(Mako Haggerty joined the meeting during Directors' reports at approximately 8:22 a.m. *14 Directors present*.)

1-0 AGENDA

President Archibald presented the agenda (green-colored sheet) for approval. Executive Director Schantz clarified that Item 4-4 on the 5/6/22 agenda would be taken up directly after lunch as listed (at approximately 1:00 p.m.).

Robert Beedle **moved to approve the agenda** (green-colored sheet). Michael Vigil **seconded** and **the agenda was approved as presented**.

4-1 PWSRCAC ANNUAL DIRECTOR APPOINTMENTS

As outlined in the briefing sheet (Item 4-1) in the meeting notebook, the Board took up the annual seating of member representatives for those seats expiring at this meeting. President Archibald read the names of those Directors nominated for appointment to the Board.

Amanda Bauer **moved to confirm the appointment** of the selected representatives for each of the member entities listed for two-year terms expiring May 2024, as follows:

Alaska State Chamber of Commerce	Luke Hasenbank
Chenega IRA Council/Chenega Corporation	Michael Vigil
Chugach Alaska Corporation	Ben Cutrell
City of Cordova	Robert Beedle
City of Valdez	Dorothy Moore
City of Whittier	Mike Bender
Cordova District Fishermen United	Curtis Herschleb
Kodiak Island Borough	Aimee Williams
Oil Spill Region Environmental Coalition	Bob Shavelson
Port Graham Corporation	Melvin Malchoff

Mako Haggerty **seconded** and the **motion passed** without objection.

1-1 MINUTES

Amanda Bauer **moved to approve the minutes** of the Regular Meeting of the Board of Directors of January 27-28, 2022. Robert Beedle **seconded** and the **minutes were approved** as presented.

1-2 MINUTES

Michael Vigil **moved to approve the minutes** of the Special Meeting of the Board of Directors of March 8, 2022. Angela Totemoff and Dorothy Moore **seconded** and the **minutes were approved** as presented.

PUBLIC COMMENTS

(None at this time.)

INTERNAL OPENING COMMENTS – PWSRCAC TECHNICAL COMMITTEES

SCIENTIFIC ADVISORY COMMITTEE (SAC)

Committee Chair Davin Holen outlined the committee's role and reported on the committee's activities since the Board's last meeting in January. He thanked Outreach

Coordinator, Betsi Oliver, for her work with him and the committee updating the "Guidebook for Coping With Technological Disasters," a project that took years to complete. During that process, they recognized that updating the Peer Listener Training appendix would require extensive time and resources. Oliver worked with the Information and Education Committee (IEC) to create a separate project to update this component and was currently moving this forward. Holen thanked Oliver for all her work and wished her well as she leaves PWSRCAC shortly for a new career endeavor.

Holen went on to report on the committee's specific activities:

- Long-Term Environmental Monitoring Program (LTEMP): The 2022 LTEMP fieldwork has begun in Port Valdez. Passive sampling devices were deployed at two locations just offshore of the Valdez Marine Terminal, and a third site across the Port at Gold Creek. Marine sediments and blue mussels will be collected in early June.

  The Executive Committee accepted the full April 2020 oil spill report as a final report. This report provides background information for the next scientific report regarding transcriptome analysis on mussels from the April 2020 spill. Dr. Lizabeth Bowen of the U.S. Geological Survey (USGS) was in the process of conducting additional transcriptomics research on mussels collected from this spill. The goal of that research is to identify specific genes in mussels to monitor the impacts of spilled Alaska North Slope crude oil.

- Dispersant Use Position Update Project: Since January, the project team met to review a draft report, along with draft position statements produced by the Council's contractor, Nuka Research & Planning Group. SAC also reviewed these materials and provided feedback. The key dispersant-related topics that SAC and contractors are reviewing are effectiveness, ability to keep oil off the shoreline, environmental impacts, short and long-term toxicity, uncertainty of long-term effects, and biodegradation. A Board Workshop was held on March 10 to review these topics and discuss the draft position statements. Based on feedback from that workshop, staff scheduled three, shorter, follow-up workshops in late May and early June. Board members should have received invitations to these events. Agendas and meeting materials would be forthcoming. Staff members Betsi Oliver and Danielle Verna would give a status update on this project at this Board meeting.

- Winter Marine Bird Survey Project: The second year of winter marine bird surveys were conducted by staff of the Prince William Sound Science Center (PWSSC) in early March on board the research vessel New Wave. SAC will be reviewing a draft report comparing results of the 2021 and 2022 surveys at its next meeting in June. The final report is expected to be presented to the Board in September.

- Forage Fish Survey Project: The fourth and final year of aerial forage fish surveys is scheduled for June 2022. The Executive Committee approved a contract with the

PWSSC to conduct the surveys similar to previous years. SAC will be reviewing the results of this survey and a comparison of survey results from all four years at a meeting this fall.

- Oxygenated Hydrocarbons Project Update: The Council and Alyeska have reached an agreement on the scope of work and sampling design for this project. As of April 30, five of 12 total sample sets had been collected at the Ballast Water Treatment Facility (BWTF) by Alyeska staff. The samples have been shipped to the University of Alaska for storage until they are analyzed. Further samples are pending offload of unsegregated ballast water by tankers at the BWTF, which tends to decline during the spring and summer seasons. The Council's contractor from the University of New Orleans will be traveling to Valdez for a site visit and tour of the BWTF provided by Alyeska on June 9.

- Marine Invasive Species Project: Council contractors Dr. Katrina Lohan from the Smithsonian Environmental Research Center and Dr. Jon Geller from Moss Landing Marine Laboratories have been working to analyze the plankton samples that were collected last year at three locations in Port Valdez. SAC recently reviewed and commented on the draft report summarizing their results and recommendations. The final report will be presented to the Board in September. SAC will continue to discuss methods to detect invasive species that may be in low abundance, such as using metagenetics, environmental DNA, and fouling plates. SAC will have an opportunity to discuss these options before further sampling is conducted.

  The committee's three high school interns are wrapping up their internships monitoring for marine invasive species in Cordova and Valdez this month. The internships culminate in a presentation to their local high school science class on what they did and the results of their monitoring. No invasive European green crab or tunicates were detected this year. Staff are working to recruit new interns for 2022 and continue to stay engaged in a statewide partnership with a focus on standardized community surveys and the latest tracking of target invasive species in Alaska.

- New SAC Member: Dr. Ana Aguilar-Islas, Associate Professor at the University of Alaska Fairbanks, College of Fisheries and Ocean Sciences, has been recommended to join the committee with a unanimous vote by SAC members. Dr. Aguilar-Islas specializes in chemical oceanography and has extensive experience at sea, conducting research in the Gulf of Alaska and beyond. The committee feels fortunate to have her join its team.

INFORMATION AND EDUCATION COMMITTEE (IEC)

Committee Vice Chair, Savannah Lewis, reported that the IEC had had two regular meetings and one project team meeting since the Board last met in January. She updated the Board on the following committee activities:

- Community Outreach: Outreach Coordinator, Betsi Oliver, organized part of the Alaska Forum on the Environment oil spill prevention and response track, which took place online in February. For the second consecutive year the sessions organized by the Council for the Forum were among the highest attended. PWSRCAC submitted a prerecorded session to Chugach Regional Resources Commission's annual March 24 observation event and helped the Oil Spill Recovery Institute (OSRI) organize an input session on the topic of food safety after an oil spill. Project Manager, Danielle Verna, hosted the Council's booth at ComFish in Kodiak and was able to build partnerships for expanding the invasive species monitoring internship.

- Youth Involvement: Five new Youth Involvement projects were approved for Summer 2022. Outreach Coordinator, Betsi Oliver, has met with groups that host teacher trainings, to help better meet the needs of educators in the Prince William Sound region. Former Council intern, Mia Cresswell, will be presenting at the Natural History Symposium, which is adding a youth track this year. The symposium will take place both virtually and in person in Whittier on May 23.

- Website and Web Presence: Project Manager, Amanda Johnson, is working with a temporary vendor to implement technical and security updates to the website while working to find a permanent replacement contractor. The temporary vendor has experience with some of the previous contractor's websites, which has made the transition easier.

- Connecting With Our Communities: The media training deliverable was held on April 8 for those Board members and staff most likely to be interviewed on behalf of the Council. Feedback from participants was very positive and staff plans to hold similar trainings in future years. Staff will work with contractor Helvey Communications on finishing the remaining Connecting With Our Communities work ahead of the contract's closing on June 30.

- Internship: Intern Rosie Brennan made a presentation to the committee regarding her outreach efforts, extensive work on the lesson bank, and suggestions for next steps. The committee thanked Rosie for her successful and meaningful work.

- Fishing Vessel Training Community Outreach Tour: In April, after several years' hiatus due to the pandemic, the Council hosted a community cruise to observe the SERVS fishing vessel training in Seward. Federal mask mandates were observed and participation was limited to support social distancing. Forty people participated, including several staff who had not done the tour before. Mike Day represented Alyeska at the event. The next tour is tentatively scheduled for this fall in Cordova. The committee thanked Cathy Hart for volunteering her professional photography services.

- Peer Listener: Contractor Purpose Driven Consulting is in the process of producing several draft reports. They have been assessing nationwide programs similar to the Council's Peer Listener Training and have compiled a literature review related to peer listening topics. They are also interviewing Council stakeholders to learn more about the Council's existing program. The materials from this phase of the project will be used to inform a Peer Listener Training update, which is in the budget for FY2023.

- Other: IEC is looking for new volunteers to join the committee and welcomes recommendations.

OIL SPILL PREVENTION & RESPONSE COMMITTEE (OSPR)

Chair Jim Herbert reported on the committee's activities since the January Board meeting:

- OSPR has been updated on area and regional planning efforts for the Alaska Regional Plan, and the Prince William Sound, Arctic and Western Alaska, and Inland Alaska area committees. Project Manager, Linda Swiss, reported on a meeting between Council staff and representatives from various regulatory agencies to try and gain understanding on how area plans are updated and who the final decisionmakers are.

- OSPR has been kept updated on c-plan reviews and amendments.

- Staff started observing SERVS exercises again from tugs and barges now that many COVID-19 precautions have been lifted. OSPR has discussed and accepted a few exercise reports since the last Board meeting.

- OSPR reviewed a draft of the Copper River Delta & Flats whitepaper and provided feedback. The Board will hear a presentation on this topic at this Board meeting and will be asked to accept the final document.

- The committee heard and accepted a report on a SERVS fishing vessel observational dock walk, performed by staff member Jeremy Robida.

- OSPR has been updated on the Port Valdez Weather Buoy Data Analysis project. A contract is in place with Prince William Sound Science Center and Rob Campbell has begun his work. An initial draft report is expected soon and should be available for Board approval at the September meeting.

- Nuka Research and Planning, LLC, has begun work on the Out-of-Region Equipment Survey. A final report should be ready to go to the Board at the September meeting.

- Several members of OSPR participate in various work groups and are involved in the Fishing Vessel Fleet and participated in trainings which occurred this spring, including Wildlife Training that took place in Homer.

Herbert thanked all the staff for their support of the committee and particularly, Nelli Vanderburg, Linda Swiss, Roy Robertson, Jeremy Robida, and Alan Sorum.

TERMINAL OPERATIONS AND ENVIRONMENTAL MONITORING COMMITTEE (TOEM)

Committee Chair Amanda Bauer updated the Board on the committee's activities since the last Board meeting:

- The Council sent a letter to the EPA supporting Alyeska's appeal of the July 2020 NESHAP-OLD Air Quality Rule.

- The committee continued work on the Council's current Tank 7, 8, and 94 maintenance review projects. Prior Council recommendations for Tank 8 and the Valdez Marine Terminal's cathodic protection systems were sent to Alyeska in June 2021. Alyeska committed to providing a response by this past winter, but no formal response has been received.

- Six preliminary recommendations pertaining to improving the maintenance of Crude Oil Tank 7 were sent to Alyeska in December 2021. In February 2022, Alyeska, Council staff, and PWSRCAC's contractor Taku Engineering met to discuss the preliminary recommendations. Alyeska and Council staff agreed that formal responses to the Council's preliminary and final Tank 7 recommendations would be requested from Alyeska after the Council's Tank 7 report and recommendations were completed.

- The Executive Committee accepted a report and model analyzing how oil could leak through a damaged secondary containment liner at the Valdez Marine Terminal (VMT). The model simulated a catastrophic oil spill of about 550,000 barrels, or 23 million gallons, from the largest tank at the VMT, Tank 11. Assuming a liner damage percentage of 0.1% (a percentage based on actual liner damage found from 2014-2017), the model estimated that 38,000 barrels of oil would leak through the liner in 2.8 days, and after 30 days approximately 125,000 barrels would leak through. The plan is to share the report with Alyeska and ADEC and ask if they can provide information to resolve assumptions, update conclusions, and address recommendations listed in the report. If such information is provided, the liner-leakage model may be updated and a new report issued.

- TOEM monitored the damages caused to numerous crude oil tank vents at the VMT due to heavy snow and ice loads. The greatest current concern pertains to the levels of oxygen in the storage tanks while Alyeska worked to mitigate the damaged vents, because high levels of oxygen can increase the risk of fire or explosion. The Council

has requested information from Alyeska to confirm or refute this oxygen-level concern.

PORT OPERATIONS AND VESSEL TRAFFIC SYSTEMS COMMITTEE (POVTS)

Committee Chair Steve Lewis reported on the following specific efforts of the POVTS Committee since the last Board meeting:

- The committee continues to monitor the weather-based projects led by the OSPR Committee and matters pertaining to the Port Valdez weather buoys.

- The POVTS Committee has been updated on the Council's request for adjudicatory hearing, which has been denied until the SPAR Director reissues a decision on the VMT C-Plan in early May.

- The POVTS Committee received an update on the slope instability in Barry Arm, which previously had prompted interest in a project regarding tsunami hazards in Prince William Sound.

- Project 8012 - Line Throwing Device Trials: The committee has been kept updated on the progress of this project to create a video highlighting the results from this project using footage from the line throwing device trials. The first phase of the project was finished in March.

- Project 8014 - USCG Ship Handling Courses: The committee received a presentation on the USCG ship handling project in which AVTEC developed course materials to better prepare mariners for real-life situations, close an existing knowledge gap, and open career pathways to critical infrastructure positions within the maritime industry. A similar presentation will be made to the Board at this meeting. POVTS has recommended Board acceptance of the coursework as meeting the terms and conditions of the contract.

(This concluded the technical committee reports.)

INTERNAL OPENING COMMENTS -- PWSRCAC BOARD SUBCOMMITTEES

LEGISLATIVE AFFAIRS COMMITTEE (LAC)

Chair Dorothy Moore outlined the committee's role and reported that it had met seven times since the January Board meeting. It also received updates by mail and provided feedback to staff as needed.

Activities Since the Last Board Meeting:

- The committee is currently meeting twice a month during the Alaska legislative session.

- The Committee worked on refining its state legislative briefing sheets. The yearly trip to the state capital was considered but eventually cancelled due to a spike in COVID cases as well as COVID precautions in place around meeting with legislators.

- The committee has received bi-weekly updates from PWSRCAC's state and federal legislative monitors on proposed bills and topics of interest to the Council. Updates on the state side included long-term sustainability in funding for ADEC's Spill Prevention & Response (SPAR) Division, PFAS mitigation measures in Alaska, fuel tax legislation, management of invasive species, and legislation that could ultimately protect certain funds (including the SPAR Division budget) from future sweeps into the Constitutional Budget Reserve. Updates on the federal side included information on the proposed Oil Spill Liability Trust Fund bill, PWSRCAC's request to replace the Coast Guard radar systems in Prince William Sound, and alternative planning criteria legislation in the Congressman Don Young Coast Guard Authorization Act of 2022.

LAC Priorities Going Forward:

- LAC's top state legislative priority continues to be the long-term financial sustainability of the SPAR Division. The committee will continue to support legislation proposing a raise of the refined fuel surcharge to provide a stable funding base for the SPAR Division in the future.

- The committee will continue to monitor potential changes to ADEC regulations and possible statute changes associated with ADEC's regulatory reform effort.

- On the federal side, the committee will continue to work with Roy Jones to assist, as needed, to secure funding for new and updated radar systems in Prince William Sound and the proposed revisions to the Oil Spill Liability Trust Fund bill language.

FINANCE COMMITTEE

Treasurer Wayne Donaldson reported for the Finance Committee as follows:

- The committee reviewed the March 31 (1Q) interim financial statements. The committee also reviewed a draft of the FY2021 Form 990 required by the Internal Revenue Service. The committee recommends that the Board authorize submittal of this return to the IRS by the due date of May 15. Board members will have an opportunity on the second day's agenda under item 4-11 to ask questions about the filing, and to authorize the Executive Director to file it.

- The committee reviewed the Annual Alyeska Contract Compliance Report prepared by the Executive Director and Financial Manager. The committee recommends approval of this report, included under the Consent Agenda as Item 3-5. The report is supported by additional agreed-upon procedures that BDO completed for FY2021 which looked more in-depth at travel, lobbying, and non-Alyeska contract expenses.

- The Financial Manager briefed the committee on plans to transition the payroll process to ADP later this year, and on systems to replace the current on-premises accounting system. Microsoft is phasing out support for PWSRCAC's current Great Plains accounting system which necessitates PWSRCAC finding another accounting system which, mostly likely, will be a cloud-based system.

- The committee also discussed PWSRCAC's internal guidelines for making research contributions and asked PWSRCAC's auditor to review the recommendations. Research contributions are sometimes made rather than entering into formal contracts.

- The committee reviewed a draft of the FY2023 budget and recommended its adoption at this Board meeting.

- The committee has agreed with recommendations regarding check signers, thus eliminating non-Anchorage based, at-large Executive Committee members as signers. The Board will be asked to adopt a new resolution regarding check signers under Item 3-1 of the Consent Agenda.

- The Board will be asked to appoint members to the Finance Committee at this meeting. The Board Treasurer is the chair of the Finance Committee, and three additional Board members will be needed to serve on this committee for the next fiscal year. Donaldson emphasized the importance of the committee which deals with PWSRCAC's financial management, compliance, and overseeing of internal controls.

BOARD GOVERNANCE COMMITTEE (BGC)

Committee Chair Luke Hasenbank reported that the committee had met once since the January Board meeting and took up the following:

- Reviewed Sections 6 and 7 of the Bylaws, as well as outstanding edits to Section 4.

- Although the goal was to present any outstanding Bylaw edits to the Board at this meeting, there have been no substantial changes identified that need full Board review. Any outstanding and future edits will be brought to the Board during the September meeting.

- The committee discussed a work plan for the coming year, to include drafting job descriptions for Board seats, and reviewing the Board Mentoring Manual that was developed in 2015.

- The committee will be reviewing details of the existing mentoring program to see how it can be incorporated into the new Board member "onboarding" process. Hasenbank encouraged any current Board members who are interested in mentoring new or incoming Board members, or want to learn more about mentorship, to contact him or KJ Crawford of staff.

- The next BGC meeting is tentatively scheduled for early July. Board members were encouraged to contact the committee with any governance issues they would like the Committee to discuss and were encouraged to attend the BGC meetings.

(This concluded the Opening Comments of PWSRCAC's Board Subcommittees)

For the Good of the Order

Item 4-13 Resolution Recognizing Anil Mathur was moved up in the agenda to accommodate Mr. Mathur's schedule.

4-13 RESOLUTION RECOGNIZING ANIL MATHUR

Executive Director Donna Schantz introduced Resolution 22-02 for Board consideration. This resolution recognized and expressed the Council's appreciation for Anil Mathur's contributions to the safe transportation of oil in Prince William Sound and throughout the West Coast while he was President and CEO of Alaska Tanker Company (ATC). Schantz read the resolution into the record, as follows:

Resolution 22-02

Recognizing and Expressing Appreciation for Anil Mathur's Contributions to the Safe Transportation of Oil in Prince William Sound and Throughout the West Coast

WHEREAS, *Anil Mathur, President & CEO of Alaska Tanker Company (ATC), announced his retirement in 2020, after almost two decades of quality service and focus on safety; and,*
WHEREAS, *during Anil Mathur's tenure, ATC transported over 1,916 million barrels of oil without any spills to sea, logged 23 million human-hours with only one lost time injury (a fractured finger); and*
WHEREAS, *Anil Mathur prioritized a mindfulness culture at ATC based on safety and well-being, supported by neuroscience, to overcome complacency and distraction, and improve safety performance and accountability; and,*
WHEREAS, *in addition to other accolades, Anil Mathur received the United Seamen's Service 2019 Admiral of the Ocean Sea Award, the AFL-CIO 2013 Labor-Management*

Award, the American Society of Safety Engineers' 2010-2011 President's Award, and was named the "CEO who gets it" by the National Safety Council in 2005; and,
***WHEREAS,** Anil Mathur put extensive time and effort into establishing and improving relationships with stakeholders, such as the Council, striving to find common ground within the shared goals; and,*
***WHEREAS,** Anil Mathur proactively invited the Council to attend and participate in ATC's annual Quality/Safety Management Review meetings, and learn about the systems used to ensure no accidents, no harm to people, and no damage to the environment; and,*
***WHEREAS,** Anil Mathur never missed an opportunity to share safety culture in memorable ways, such as explaining the "swiss cheese model" of accident causation and his view that in order to have world-class performance you have to change the mindset, skillset, and toolset; and,*
***WHEREAS,** Anil Mathur, and ATC under his leadership, exemplified the working relationship and values we all strive for – keeping our economy going in the absolute safest way possible for the sake of the environment, our communities and local economies, and those working within the oil transportation industry; and,*
***WHEREAS,** the hard work, dedication, and teamwork of everyone at ATC during Anil Mathur's tenure showcased their commitment to each other and to the entire west coast of the United States and Canada.*

***NOW, THEREFORE BE IT RESOLVED,** that the Prince William Sound Regional Citizens' Advisory Council commends and expresses gratitude to Anil Mathur for his many years of dedication and commitment to the safe transportation of crude oil throughout the region of Prince William Sound and the Gulf of Alaska; and,*

***BE IT FURTHER RESOLVED** that the Prince William Sound Regional Citizens' Advisory Council's staff and volunteers wish Anil Mathur all the best in his retirement, with the hope that his curiosity and open-minded perspective will continue such that the friendships that have been built along the way will be strengthened, and new friendships realized.*

***PASSED AND APPROVED** by the Prince William Sound Regional Citizens' Advisory Council on this 5th day of May, 2022.*

Applause and a standing ovation followed.

Amanda Bauer **moved to adopt Resolution 22-02** recognizing and expressing appreciation for Anil Mathur's contributions to the safe transportation of oil in Prince William Sound and throughout the West Coast of the United States. Dorothy Moore **seconded** and the **motion passed** by unanimous consent.

Anil Mathur thanked the Council for this recognition. He spoke of his belief in the importance of working together with entities that have disparate and competing objectives

and the importance of striving to find common ground in managing conflict, building trust, and sometimes respectfully disagreeing.

Break: 9:30 a.m. – 9:45 a.m.

ALYESKA/SERVS ACTIVITY REPORT AND INTRODUCTION AND REMARKS FROM DANIKA YEAGER, ALYESKA INTERIM PRESIDENT

Danika Yeager, Interim President of Alyeska, introduced herself to the Council, giving a brief outline of her background, and committing to the safe production, loading, and transportation of oil through the TAPS operation and the VMT.

Jim Herbert expressed appreciation for Alyeska's SERVS program, the long-term interest in the safe transportation of oil, and emphasized the importance of the Fishing Vessel Fleet, their training, and the wildlife training that he has personally participated in. Herbert said he was impressed with the commitment of the fishermen to that program and the training. He commended Alyeska's Mike Day for his commitment to the SERVS program and the Fishing Vessel program, and his recent interview with local media. He expressed his hope that some deferred maintenance and improvements to the TAPS system would be made since the oil industry is now reaping profits with high gas prices.

Amanda Bauer emphasized to Yeager the importance of getting adequate and timely responses from Alyeska to the recommendations PWSRCAC makes and the information it asks for because PWSRCAC relies on those responses - some of which are outstanding for almost a year - to share information with the people, communities, and entities the Board members represent, as well as obtaining the information for the Council as a whole. Yeager responded that she had discussed this with Alyeska's Emergency Preparedness and Response Director, Andres Morales, the previous week, and they were prioritizing all the outstanding requests for information in consultation with Executive Director Schantz to make sure they get to the ones that PWSRCAC considers the most important. She acknowledged that the information requests relating to the recently damaged vents on the tanks in Valdez were the most important ones currently and Morales would address those during his upcoming activity report.

Archibald thanked Yeager for coming to this Board meeting and addressing the Council. He emphasized the importance of Alyeska continuing to communicate with the Council in moving forward. He thanked her for her commitments made at this meeting.

Andres Morales thanked the Council and Alaska Tanker Company/OSG for the reception the previous evening. He followed with the Alyeska/SERVS Activity Report for the first quarter 2022.

VMT Operations:

- Operations: *(As of 4/30/2022)*

	YTD 2022
Tankers Loaded	54
Tankers Escorted	62
Barrels Loaded	42,344,501

	Since start up
Tankers Loaded	23,130
Tankers Escorted	14,456
Barrels Loaded	17,664,095,821

- Safety: *(As of 4/30/2022)*

Days away from work cases	2*
TAPS Combined Recordable Rate %	1.04%

(*2 days away from work injuries, mostly attributed to snow and ice conditions,
slipping and falls)

- Environment: *(As of 4/30/2022)*

Spill Volume (Gallons)	2.75
Number of Spills	3*

(*3 spills, all at SERVS; one to water.)

COVID-19 Response & Prevention:

Processes and procedures for personnel and facilities:

- Masks are optional on TAPS.
- Site specific isolation and evacuation plans.
- Communication plan.

Urban workforce back to 100% capacity:

- All offices are open.
- Vaccinations and boosters continue to be provided to the TAPS workforce.
    - 59.8% of TAPS workforce vaccinated.
    - Company goal of 65% of TAPS workforce.

Fishing Vessel Availability by Port (end of 1Q 2022):

Port	Tier 1	Tier 2
Valdez	16	16

Cordova	20	(6 Rapid Resp.).	100
Whittier	6		16
Seward			20
Homer			44
Kodiak			34
Totals 42			**230**

2022 Contingency Plan Activities:

- VMT ODPCP minor Amendment 2021-3 was published in January 2022.
- Article 4 changes were reviewed, and comments submitted in January 2022.
- PWS Tanker ODPCP & SV-140 were renewed and published in February 2022.

1st Quarter 2022 - VMT/PWS Training & Exercises:

- Emergency Tow and Tethered Escort Exercise.
- Unannounced Rapid Response Vessel Call-out Exercise; Cordova.
- 2022 VMT Equipment Deployment #1.
- Alyeska IMT Training Exercise with Response Community, 3/2 & 3/3.
- Wildlife Training in Homer, 3/29 – 3/31.
- 2022 Spring Fishing Vessel Training, 3/31 – 5/5.

Upcoming 2022 VMT/PWS Training & Exercises:

Training/Exercise	**Date(s)**
• IRT Training	5/11 – 5/15 5/20 – 5/23 5/26 – 5/29 6/1 – 6/5
• Crowley PWS Tanker Exercise & Deployment	5/17 – 5/19
• 2022 Fall Fishing Vessel Training – Cordova	Late September
• VMT Tabletop with Equipment Deployment	10/12

2022 Valdez Projects:

- Replace sulfuric acid tank with HDPE tank.
- Tank 94 Internal API653 Inspection.
- Tank 54-TK-2 – Internal API653 Inspection.
  (Tank 2 was moved into the 2022 projects and Tank 93 was moved to 2023.)
- Tank 54-TK-13 – External Coating.
- West BTT – Repair and Coat.
- ECO Escort Tug Commander – Dry Dock.
- OSRB 5 (Mineral Creek) Construction.

Construction has started at the Gunderson shipyard and it is expected to be finished on schedule. The materials and the labor force are on hand at the shipyard.

VMT Tank Snow Removal:

This was a major issue on the terminal caused by snow load on the tank tops. Conditions were extreme with changing conditions of continuous snow and temperatures, freezing rain, and more snow. Snow and ice started glaciating and it was not moving quickly. The snow/ice was holding up on the vents and created side pressure. Alyeska had 85 people dedicated to snow removal, 55 of whom were on the tanks. Ten workers were dedicated per tank, to removing the snow/ice with hand tools, and Alyeska had to rotate those crews because of weather conditions and fatigue, etc. While they were clearing the tanks, the snow kept coming. It took this team of 10 two weeks to clear one tank top.

Vapor release was of great concern. Safety and real-time monitoring of vapor release and adjustment of vents to mitigate oxygen levels and possible ignition sources were the highest priority. In the end, 11 vents were found to be damaged, and the affected tanks were taken out of service until Alyeska engineers could review the status of each. Alyeska's technical engineers were able to modify pigs to close the vents. The issue currently is whether to repair or replace the damaged vents. Some might be repaired (taking parts from the West Tank Farm). Alyeska was also looking long term at replacing the vents. PWSRCAC's input from Taku Engineering is being considered. Morales also stated that he had received a letter from Billie Garde regarding Alyeska's open work environment for employee concerns, and she wants to meet with Alyeska. He outlined all the pathways available for employees to report concerns within the company.

VMT Storage Tank Pressure Sensors:

Pressure sensors were recently added to the East Tank Farm crude piping so that pressure can be monitored in sections of pipe between two valves. The snow load damaged four sensors and at one sensor oil leaked into the snow. The pipe is currently isolated and mitigation/repairs are under review. They have recovered about one and half gallons of crude. Morales said he believed other issues may be found as the snow is removed or recedes.

Following the status report, Morales took questions:

Mako Haggerty stated that the unexpected nature of the snow loads this winter might be something that Alyeska should anticipate in the future [given climate change].

Jim Herbert commented on some of the changes to the Fishing Vessel Training that were necessitated by the pandemic, noting that the change to online HAZWOPER training was efficient and popular with the participants. He said he hoped that in the future there would be hands-on training in one of the bays with equipment on the beach. He also suggested it would be wise to roll some of the equipment training into the wildlife training so that those who are in the wildlife groups would have practiced some of the techniques, emphasizing the importance of the paperwork which had improved over the years, and as more people use it the less mistakes will be made. He opined that the Fishing Vessel Fleet appeared to be shrinking and administrators should keep their eyes out for appropriate boats for the future, because the program would need the right boats to be there if there ever was a need for a cleanup. Morales reported that he was already talking about two on-water days versus on land, and SERVS was getting a lot of feedback and looking at incorporating some of the positives learned from the changes that were made to the training during the pandemic.

Amanda Bauer commented that people in Valdez have asked her about the vapors from the tanks and she asked if anybody, such as ADEC, was going to quantify what and how much of the vapors were released. Morales said he did not know, but Alyeska had received inquiries from the regulating agencies. He thought it would be difficult to quantify it, but Alyeska may have to report a best guess.

Nick Crump commented that the online Fishing Vessel Training was great as a work-around during COVID, but some missed the classroom setting. He suggested a hybrid training with some on-water and some in the classroom. Crump said personally he liked the two on-water days because they could do skimming one day and towing the other.

Michael Vigil questioned how many of the 14 tanks at the tank farm were compromised because of the snow load. Morales stated that Alyeska stopped using certain tanks until they could check them out, but none of the tanks were comprised. Each of the 14 tanks has 10 -11 vents on it. Out of all those vents, 11 were damaged. The tanks could still be used, but if Alyeska had any concern about the tank, they stopped using it until they could ascertain its status and put it back in service. No crews were on top of tanks while they were in service. Morales emphasized that an assessment of the damaged vents exists but he simply did not have that information with him at that time, but the detail was being reviewed.

Angela Totemoff reminded Alyeska of the importance of recognizing the effect its operations have on the communities around Prince William Sound and encouraged Alyeska to get out into the communities to observe this effect on every level. Secondly, she asked how Alyeska communicates with the Council's representatives so they can answer community questions. Morales said on this snow load/tank vapor issue he communicated with Executive Director Schantz on an almost daily basis, but he did not have all the details. PWSRCAC's safety concerns were received by Alyeska in a letter which was also sent to the regulators, and the issue was ultimately picked up by the press. In the end, Schantz was

invited to come to the VMT so Alyeska could address PWSRCAC's safety concerns and the efforts that Alyeska was making to mitigate the damage.

Break: 11:28 a.m. -11:38 a.m.

EXTERNAL OPENING COMMENTS - EX OFFICIOS

ALASKA DEPT. OF ENVIRONMENTAL CONSERVATION (ADEC)
Allison Natcher said it was good to be back to in-person meetings and ADEC personnel were getting back into the field to conduct field inspections. She stated that more specific information on SPAR activities and issues would be provided by SPAR Director, Tiffany Larson, during her remarks to the Council later in the agenda.

ALASKA DEPT. OF FISH AND GAME (ADF&G)
Lee McKinley, the ADF&G liaison to the Joint Pipeline Office, stated that his primary function is environmental permitting of TAPS and, as such, he would be the primary point of contact for ADF&G in the event of a spill. He was currently preparing to do field and compliance inspections along the pipeline in June.

ALASKA DEPT. OF NATURAL RESOURCES (ADNR)
Tony Strupulis, State Pipeline Coordinator for the Division of Oil & Gas, stated that ADNR was gearing up for field season. One crew was out already doing inspections, and as weather conditions improved, they would be out doing more.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
Tori Huelskoetter reported that the EPA is gearing up for a busy summer of inspections around the state. She reported there were a couple of hazardous substance cleanups ongoing around the state this summer. The agency was reviewing the Inland Area c-plans so an update to those c-plans could be forth coming, and there would be a public comment period. The Alaska Regional Response Team (ARRT) meeting will be in-person in Anchorage on September 22, along with a hybrid workshop component to that meeting.

UNITED STATES COAST GUARD (USCG)
CDR Drayer reported on the following since the January Board meeting:

- The recently repaired VTS radars were still running. As to the second radar in Valdez, the manufacturer should be coming out in the next couple of months to bring components to get that up and running. He had no more information on a replacement radar system.

- The closed-circuit TV cameras were in operation at Cape Hinchinbrook and in the next couple of months two new prototype cameras would be installed (locations yet to be determined). They will be a field tested for all VTS cameras around the country.

- A new civilian staff position in the VTS was created solely to manage all the electronics that they have in the Valdez unit.

- The Prince William Sound Area C-Plan was currently out for public comment and would close on May 11.

- USCG was waiting to see the final outcome of the proposed alternate planning criteria legislation. As currently written, it would not impact any TAPS trade vessels but probably would have an impact on every other vessel that sails in the Prince William Sound Captain of the Port Zone.

- The Valdez Coast Guard cutter Chandeleur was decommissioned and is being replaced by the Liberty.

- Normal annual active-duty personnel rotations this summer will result in a 55% turnover of MSU Valdez. Farewell events for those rotating out would preclude CDR Drayer from attending the remainder of this Board meeting after the lunch recess.

BUREAU OF LAND MANAGEMENT (BLM)

Reid Olson reported that BLM has completed an annual assessment and concurrence of the current VMT C-Plan this year. The office attended the VMT March 23 oil spill equipment deployment exercise on Drainage 51 and plans to attend future oil spill exercises at the VMT, as well as up-pipeline exercises. The office was also planning an oil spill equipment inspection at the VMT in conjunction with the October Incident Management Team (IMT) and tabletop drill and is continuing to track all exercises completed, attending the exercise planning meetings, the VMT Coordination Workgroup meetings, the exercise quarterly meetings, the Prince William Sound Area Committee meetings, and the Alaska Regional Response Team (ARRT) meetings.

In response to an inquiry from President Archibald about whether the Pipeline Monitoring position in Valdez was going to be replaced, Olson stated he did not have that information at that time but would get back to PWSRCAC with an answer.

Archibald followed up with a question about how often the JPO was currently meeting and who was participating. Olson stated that ADNR and its Department of Labor, BLM, ADEC, ADF&G, EPA, USDOT (US Department of Transportation), ADHSEM (Alaska Dept. of Homeland Security & Emergency Management), and PHMSA (Pipeline & Hazardous Materials Safety Administration) all participate. ADF&G's Lee McKinley added the State Fire Marshall also participates.

U.S. FOREST SERVICE (USFS)

(No report.)

ALASKA DEPT. OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT (ADHSEM)
(No report.)

OIL SPILL RECOVERY INSTITUTE (OSRI)
(No report.)

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA)
(No report.)

EXTERNAL OPENING COMMENTS: TAPS SHIPPERS & OWNER COMPANIES, & PILOTS

CROWLEY ALASKA TANKERS
Angelina Fuschetto and Paul Manzi reported for Crowley Alaska Tankers (Crowley).

Fuschetto reported that Crowley continued to have a busy year in the first quarter of 2022 and had moved more than 7,000,000 barrels of oil out of Valdez. The company was in the final stages of planning for the shippers' exercise (May 10-17) which would be a hybrid exercise with some exercises and/or personnel being in-person and some virtual. The hybrid nature would make the exercise more difficult as there was a simultaneous deployment planned as part of the drill, including a new decontamination exercise.

Fuschetto reported that Crowley was still working through the process of obtaining its c-plan to operate in Cook Inlet. Crowley had just submitted its responses to ADEC's Requests for Additional Information (RFAIs) and was hoping for approvals in the late July-early August timeframe.

There will be two out-of-service inspections this summer on the California and the Washington. These will be done at a shipyard on the West Coast and both will have their UWILD (under water in lieu of dry dock) inspections and CAIP (Critical Area Inspection Plan) surveys done, as well as general maintenance work and repairs. Crowley anticipates only a 15-day out-of-service turnaround in the shipyard for each vessel.

Paul Manzi expressed appreciation for the Council being back to in-person meetings. He noted that Crowley's tankers were approaching 7.5 years old and were going into their next intermediate surveys. He spoke briefly of the logistical challenges of re-vetting some aspects of the vessels' safety systems when certain components were required to go back to the manufacturer for inspection or replenishing, such as some components of the fire suppression system. This had required a new logistical process for the vessels to get those components inspected.

He noted that Crowley had evolved as a company over the past 125 years of its history and it was evolving again as it rose to meet a recent challenge laid down by company owner Tom Crowley to be the most sustainable, innovative logistics solution company in America by 2025. The maritime leadership teams have started to move on that challenge by

designing new technology for tugs. They are in the process of designing the first U.S. all-electric, zero emission tugboat, partnering with Shell to provide electricity through solar and hydrogen power to charge and run the tug. It will be deployed in San Diego. Crowley is also currently in the design phase of two other models of that tug. One is an 82-foot vessel, with a 90-ton bollard-pull, and the other is a slightly larger 110-foot vessel, both of which will be escort capable.

Manzi reported that as part of the challenge and to reflect the company's evolution, Crowley will be going through a branding change. The new company stack will be blue, the sides black, and the hulls and the decks will be grey. The branding will roll out slowly over time. With the change in branding came a new philosophy and a change in the purpose of the company -- *To bravely change what is possible to elevate people and the planet.* The hybrid drill is their first foray into how they imagine events are going to be managed in the future. Manzi commented that Crowley's company values have also changed, and they have embedded the safety value into everything they do. They are focused on the sustainability aspect and that includes safety and protecting the environment, not only for present day but for the long-term.

POVTS Chair, Steve Lewis, encouraged Fuschetto and Manzi to keep up the communication with the Council, especially with respect to the technological advances and focus on sustainability. He commended Crowley for being a leader in recognizing the need for a change in operations to protect the planet. He commented that the frequency of major weather events seems to be increasing and asked how much Crowley uses real-time, off-site weather routing services for its voyages. He said this would be of interest to POVTS for one of their meetings. Manzi noted that the master on ship is always the last call, but Crowley does provide its vessels with weather routing services and they are part of the master's voyage-planning strategy. Crowley provides the best tools available so that a voyage is safe and successful.

POLAR TANKERS/CONOCOPHILLIPS

Monty Morgan thanked the Council and ATC for the reception the previous evening. He introduced his replacement, Andrea West, who will assume Morgan's position after his retirement later in the summer. He expressed appreciation to CDR Drayer for his good working relationship with everyone.

Morgan noted the big changes in c-planning in the last four or five years and many changes in the shippers in the TAPS trade during that time, but that PWSRCAC had been the one constant through it all. Every group associated with the Council has the same goal (i.e., the safe transportation of oil) and he hoped he had helped things along in his time in Alaska.

Andrea West gave a brief overview of her background and followed up with an overview of Polar Tanker's operations for the first quarter of 2022:

- As of April, Polar successfully completed 29 loads, with 23.2 million barrels loaded without incident.
- There will be several ballast water treatment systems (BWTS) commissioned in 2022. One was recently commissioned on the Enterprise, and the Resolution would commission theirs on their next voyage.
- The Endeavour will head to shipyard in Singapore at the end of May where it will have its BWTS installed, and it will be commissioned when they are back on the West Coast. Singapore has lifted some of its COVID-19 shipyard restrictions which has eased the burden on crews not being able to do crew leave there, and they can now go back to normal length tours. The Adventure will head to shipyard in September.
- Polar's bridge resource management class was completed this spring in Seward. PWSRCAC President Robert Archibald was able to join the class. There will be two more classes in the fall.

Executive Director Schantz recognized Morgan's 16 years in Valdez with Polar Tankers, and she thanked him for his direct involvement incorporating the Crucial skimmers and the new barges into the system, which have been huge improvements. She wished him all the best in his retirement and said he will be missed from the Valdez community. She asked the Council to sign a gift print of Columbia Glacier which will be given to Morgan as a token of the Council's appreciation for his work with the organization.

OSPR Chair Jim Herbert asked if Polar has seen attrition in its workforce and/or whether it was able to fill positions in a timely manner with qualified people. West responded that Polar works with all the schools and hires cadets and has been successful at recruiting. Morgan said there was some attrition due to retirements and at the entry level, but as far as hiring qualified sailors they have no issues.

Robert Archibald expressed his appreciation to Polar for the invitation to attend the bridge resource management class. He would show a few photographs of his experience at the facility during his President's Report the following day.

ALASKA TANKER COMPANY (ATC)

Chris Merten echoed others' appreciation for the previous evening's reception.

He gave a fleet update as of April 30, 2022:

- 20 loads with 21.5 million barrels loaded.
- No injuries and no spills to water.
- The Alaska Explorer is headed for her intermediate dry dock in Korea which is scheduled for July 20 and is estimated to be a 25-30 day out-of-service period.
- Like Crowley and Polar Tankers, ATC offers weather-routing services and other meteorological data to its vessels.

He reported on an incident earlier in the year of a small deck fracture that was seen on the Legend and immediately reported to authorities on March 14, 2022. The vessel was enroute to Valdez in ballast when inert gas bubbles were seen coming from the deck. It was inspected and found to be an 11-inch fracture that had gone through the deck plating of the ship. In response, ATC reviewed and inspected all 36 stanchions on the vessel. In all, they found 11 more small indications of fractures starting. Merten went on to describe the response and the temporary repairs that were made. Going forward, ATC will add an inspection and non-destructive testing of these areas to each of its vessel's CAIP (Critical Area Inspection Plans) surveys.

He reported that all three ATC tankers have had their ballast water treatment systems (BWTS) installed and they were running well.

HILCORP

Rob Kinnear commented that this was his first in-person meeting with the Council since Hilcorp's takeover of BP's TAPS operations in mid-2020. Kinnear noted that there had been other Hilcorp personnel in attendance at the beginning of this meeting but they had to leave to catch flights. Those personnel were: Steve Farrell, Senior Vice President of Marketing from Houston; Kirk Gibson, Alaska Marketing Vice President; Diane Dunham, Emergency Response Program Manager; and Lori Nelson, External Affairs Manager for Alaska.

Kinnear reported that early in the first quarter of 2022 Hilcorp had chartered one foreign flagged loading of just under a million barrels on the Sabine. Total loads for Hilcorp (with those of ATC) were 21 tankers, with 22.5 million barrels, and no incidents or spills. Hilcorp has tried to improve the level of communication with its foreign flagged charters and it did an inspection on the Sabine with ADEC, and everything went smoothly.

He reported that the use of foreign flagged vessels had slowed since pandemic restrictions had eased. To date in 2022, Hilcorp has only had one foreign flagged loading and the outlook was that the slowdown would continue for the remainder of the year. He noted that the Explorer would head to dry dock in July which could cause one more spot charter later in the year, but that was the only one anticipated.

MARATHON (formerly Tesoro/Andeavor)

(No report.)

SOUTHWEST ALASKA PILOTS ASSOCIATION (SWAPA)

Capt. Ian Maury reported that SWAPA currently had 19 members, with seven in training which would bring in two or three more pilots next year. He pointed out that the lack of cruise ships in 2021 had caused a delay in completed trainings.

Lunch Recess: 12:46 p.m. – 1:15 p.m.

PWSRCAC VOLUNTEER RECOGNITION

President Archibald recognized the following volunteers who had reached a milestone in their service to PWSRCAC and the award they would receive in recognition of that service:

5-Year Verbal Recognition:	Wei Cheng (SAC)
10-Year Clock:	Amanda Bauer (Board), Harold Blehm (TOEM), Orson Smith (POVTS)
15-Year Print:	Dorothy Moore (Board)
20-Year Blanket:	Jane Eisemann (IEC)
30-Year Plaque:	Gordon Scott (OSPR)

4-2 RESOLUTION 22-01 PATIENCE ANDERSEN FAULKNER

President Archibald introduced Resolution 22-01 recognizing Patience Andersen Faulkner's 24 years of service to the Council. Executive Director Schantz read the resolution into the record:

Resolution 22-01

Commending and Expressing Gratitude for Patience Andersen Faulkner's Dedication and Service to the Prince William Sound Regional Citizens' Advisory Council and in Alaska

WHEREAS, *during the Exxon Valdez oil spill, Patience Andersen Faulkner served as a paralegal assisting fishermen in Cordova, Alaska, to successfully process claims for damages, as well as supporting community members as they grappled with the aftermath of the spill; and,*

WHEREAS, *on December 3, 1998, Faulkner was seated on the Prince William Sound Regional Citizens' Advisory Council Board of Directors, representing the Cordova District Fishermen United, making her the Council's longest-serving Director, with a stellar attendance record, having made 114 Board meetings; and,*

WHEREAS, *Faulkner's pioneering work with Dr. Steve Picou documenting the profound human health and societal impacts of oil spills has been recognized and accepted by federal regulators and the President's Oil Spill Commission, and is now recommended for the list of damages that responsible parties must legally acknowledge and attempt to address in the wake of a large oil spill; and,*

WHEREAS, *Faulkner was instrumental in one of the Council's earliest and most successful projects, "Coping with Technological Disasters – A User Friendly Guidebook," which stemmed from her work with Picou, and she has continued to contribute to the Guidebook, most recently in a complete revision in 2020; and,*

WHEREAS, *Faulkner and Picou led work to develop the Council's Peer Listening Program to train local residents to provide peer support in disaster-impacted communities; and,*

WHEREAS, *after the BP Deepwater Horizon oil spill, Faulkner was sought out, made trips to the Gulf of Mexico to visit affected people - speaking to packed community halls, and in Alaska hosted groups from the Gulf seeking information and guidance; and*

WHEREAS, *Faulkner was instrumental in promoting federal legislation, signed into law in 2010, that ensures two escort tugs accompany each loaded oil tanker through Prince William Sound, establishing one of the most significant programs in place to prevent oil spills; and,*

WHEREAS, *during her tenure with the Council, Faulkner served as president of the Board from 2007-2009, as well as other elected officer positions on the Executive Committee at various times, and has served on a number of Board and technical committees; and,*

WHEREAS, *as a traditional instructor of Alaska Native crafts, community leader, and tribal elder, Faulkner has taken on many roles and contributed her knowledge at regional, national, and even international events, including presenting at Rutgers University and speaking for the 25th anniversary of the Amoco Cadiz oil spill in France; and,*

WHEREAS, *Faulkner has been an advocate for youth engagement in environmental stewardship, including supporting the initiation of and continuing work for the Council's Youth Involvement project, now in its 15th successful year, and her efforts have contributed to new generations of youth who are connected to the importance of citizen oversight; and,*

WHEREAS, *Faulkner works tirelessly to learn from, teach, and support others, using her lifelong study of the art of conversation, "social butterfly" skills, thoughtful commentary, and humor to connect with people of all ages and walks-of-life; and*

WHEREAS, *Faulkner is a strong leader, recognized throughout Alaska and across the nation including as a 2012 recipient of the Ecotrust Indigenous Leadership Award, who has been a tireless proponent of environmental and cultural stewardship; and,*

WHEREAS, *most who have worked with Faulkner will attest that their lives have been enhanced through her leadership, teachings, and friendship; and,*

WHEREAS, *Faulkner has announced her retirement from the Board of Directors.*

NOW, THEREFORE BE IT RESOLVED, *that the Prince William Sound Regional Citizens' Advisory Council commends and expresses gratitude to Patience Andersen Faulkner for her many years of dedication to teaching, community support, and the safe transportation of crude oil throughout our region, and for her 24 years of service as a member of its Board of Directors; and,*

BE IT FURTHER RESOLVED *that the Prince William Sound Regional Citizens' Advisory Council's staff and volunteers will greatly miss Patience Andersen Faulkner's guidance, teachings, friendship, and knowledge, and wish her the very best.*

PASSED AND APPROVED *by the Prince William Sound Regional Citizens' Advisory Council on this 5th day of May, 2022.*

Dorothy Moore **moved to adopt Resolution 22-01**. Angela Totemoff and Michael Vigil **seconded** and the **motion passed by unanimous consent** followed by a round of applause and a standing ovation**.**

APPROVAL OF FY2023 BUDGET

Finance Manager Ashlee Hamilton presented the fiscal year 2023 budget for adoption. The Board was previously given an opportunity to work on this budget at a workshop on April 27, 2022.

Michael Vigil **moved to adopt the FY2023 budget** as presented during the budget workshop on April 27, 2022, and as described in the Proposed FY2023 Budget Book dated April 18, 2022 (total income $3,898,340, total expenses $4,509,296, contingency $100,000, capital budget $125,000, and net assets used $834,956). Dorothy Moore **seconded** and the **motion passed** without objection.

CONSENT AGENDA

The consent agenda consisted of five items (3-1, 3-2, 3-3, 3-4, and 3-5).
Item 3-4 Approval of FY2023 Storage Tank Maintenance Review Contract Authorization was **pulled** from the consent agenda for discussion and placed under Item N Consideration of Consent Agenda Items for the following day.

Dorothy Moore **moved to approve the consent agenda, with the exception of Item 3-4** as follows:

- **3-1 RESOLUTION DESIGNATING PWSRCAC CHECK SIGNERS**
  Adoption of resolutions provided by First National Bank Alaska to update the list of authorized individuals to sign checks and conduct financial transactions on PWSRCAC's account.

- **3-2 FY2023 C-PLAN CONTRACTOR POOL & CONTRACT AUTHORIZATION**
  Authorization of individual contracts with attorney Breck Tostevin; Nuka Research and Planning Group, LLC; and Polaris Applied Sciences, Inc., for professional services, with the aggregate total not to exceed the amount approved for 651 Contingency Plan Review in the final FY2023 budget, and delegation of authority to the Executive Director to enter into individual contracts with the selected consultants.

- **3-3 FY2023 LTEMP CONTRACT AUTHORIZATION**
  A. Authorization of individual contracts with NewFields Environmental Forensics Practice and Oregon State University, with the aggregate total not to exceed the amount approved in the final FY2023 LTEMP budget (Project #9510) for contract expenses, and delegation of authority to the Executive Director to enter into individual contracts with the aforementioned consultants.

B. Authorization for contract work to commence prior to the start of FY2023, as approximately $10,000 of these funds will need to be expended in May and June 2022.

- **3-5 PWSRCAC/ALYESKA CONTRACT COMPLIANCE VERIFICATION REPORT APPROVAL**
  Acceptance of the PWSRCAC/Alyeska Annual Contract Compliance Verification Report.

Robert Beedle **seconded** and the **motion passed** without objection.

4-3 GEOGRAPHIC RESPONSE PLANNING FOR THE COPPER RIVER DELTA & FLATS
Project Manager Jeremy Robida introduced a draft white paper commissioned by the Council, titled "Geographic Response Planning for the Copper River Delta and Flats," drafted by Sierra Fletcher of Nuka Research Group. The report captures the current state and history of developing sensitive area protection strategies for the Copper River Delta and Flats region, and Nuka provided recommendations concerning how to capture planning information in Area plans.

A briefing sheet and the draft white paper were included in the meeting notebook under Item 4-3. Sierra Fletcher of Nuka Research presented an overview of the white paper which the Board was asked to accept.

Amanda Bauer **moved to accept** the white paper titled, "Geographic Response Planning for the Copper River Delta and Flats," by Nuka Research and Planning Group as meeting the terms and conditions of contract 6540.22.01, and for distribution to the public. Robert Beedle **seconded** and the **motion passed** without objection.

UPDATE ON ADEC SPAR TOPICS OF INTEREST
Tiffany Larson, Director of ADEC's Spill Prevention & Response (SPAR) Division, updated the Council on activities of the division. She pointed out that while a lot of general information is available online, there are also a lot of spill prevention and response activities that SPAR staff have undertaken that are not as visible to the public. Those accomplishments in 2021 and leading up to the end of this first quarter 2022 include:

Prevention, Preparedness, & Response Program (PPR/PPRP):

- Went through a workload realignment, going from three regions to four. A letter was sent to PWSRCAC regarding this realignment in April.
- They have established an inspection planning schedule that SPAR will inspect a c-plan at least once during its 5-year approval period.
- They have developed a work plan that will be updated every year with their inspection schedule, their initiatives for that year and the upcoming year.

- The Article 4 regulatory reform effort – the public notice and comment period ended at the end of January.
- The Contaminated Sites Program (CSP) – they secured long-term drinking water alternatives for seven communities to address contaminated ground water.
- They successfully completed a home heating oil tank pilot project to address home heating oil tank spills and vapor intrusion.
- They participated in the Alaska Native Land Claims Act contaminated lands initiative.

Response Fund's accomplishments over the past year included:

- Cost saving initiatives.
- Developed a spills reporting tool.

General accomplishments of SPAR Division of the past year included:

- Focused heavily on recruitment and retention. All retention is now up. March retention was at 96%.
- Worked on the funding gap in the division which resulted in the shortfall in the Response Fund being backfilled with general funds.
- Dedicated funding for training, travel, and program meetings. Both the PPRP and the CSP had program meetings in recent weeks and both held substantial trainings that the programs in the division had been needing for some time.
- Digitized 169 file cabinets. This will enable faster responses to public information document requests.

For the remainder of 2022:

- SPAR will continue to focus on finding funding sources, including House Bill 104.
- Currently in the capital budget there is a line item for $1.3 million for a SPAR database. There is also another $1 million for the contaminated sites capital improvements budget. Both line items are to be funded through general funds.
- The new database will require the division to do a massive data cleanup of its existing system.
- The CSP will go through a workload evaluation, like the PPRP did in 2021.
- Work on "marrying" the enforcement policies between CSP and PPRP into a single enforcement policy.
- Looking at renewing or rescinding some of the long-standing memorandums of understanding with federal and local agencies and looking at SPAR's existing guidance for relevance or redundancy in an effort to reduce where they can and bolster where they need to.

Larson went on to address in more detail the workload realignment of the PPRP into four regions across the state that the letter to PWSRCAC (and others) in April addressed. The purpose of the realignment had four main goals:

- Absorb turnover of staff better.
- Be able to maintain consistency in that knowledge base.
- Be able to balance the workload over the PPRP.
- Make sure there is workload familiarity across the PPRP.

The realignment had resulted in there being 10 managers instead of seven and four full-time staff positions in the PPRP.

On general matters, Larson reported that House Bill 104 had passed the Alaska House of Representatives the previous day and was now on to the Senate Transportation Committee, then on to the Finance Committee. As to the Article 4 regulatory reform initiative, the public comment period ended at the end of January. There were 51 unique commentors and a total of 878 comments that were whittled down into topics. Larson stated that SPAR was on track to have the review finalized by the fall. She noted that a large group of comments were on the Exercise Guidance not the Exercise Manual. Only the comments on the Exercise Manual were being reviewed. Comments on the Exercise Guidance will be put aside and will be considered after this review of Article 4 regulatory changes is finalized.

Larson invited questions from the Board.

Robert Beedle expressed his concern about the issues going on at the Tank Farm: Alyeska's ability to respond and specifically the integrity of the containment liners; how that may affect Alyeska's prevention credits; and whether SPAR had even considered changing those credits. Larson stated that the initial approval for the VMT went out in 2019, after which there was an informal review process that was still ongoing and a decision had not yet been issued. It could be issued the following week. As it relates to the issues/concerns that PWSRCAC has raised, those issues are part of the informal review process that is ongoing. She could not speak to the issues that Beedle raised specifically but assured that in order to receive the 60% prevention credit, Alyeska has to have a containment liner that is sufficiently impermeable. She emphasized that ADEC does look at, assess, ask questions, inspect, and review all the documents and the site as it relates to liners and prevention credits. She added that the purpose of ADEC holding drills/exercises is specifically to determine if Alyeska is sufficiently capable of responding to a spill.

Nick Crump asked about the filling of positions and moving some from Valdez to Anchorage. Larson responded that ADEC had generally adopted a statewide recruitment policy, pulling from the three major cities of the state, but filling in from other areas, such as Kenai/Soldotna, etc., if the right candidate is found. She had asked each region to identify their "critical mass" which is the minimum number of personnel at which they are able to operate until ADEC is able to send more help for whatever type of release they need to respond to. Every recruitment above that number should be statewide and if it is below that critical mass number then it should be location specific. For Valdez, the number is

three. Three positions will always be in Valdez. It is not limited to three, but it cannot be below that number.

Archibald asked about the reverse sweep and trying to regain some of the monies that were swept. Larson stated that the sweep into the Constitutional Budget Reserve (CBR) happened in 2021 and there was no voting on a reverse of those sweeps last session or this session to date. She emphasized that SPAR is fully funded with no reduction in staff for 2022.

Break: 2:50 p.m. - 3:00 p.m.

NOMINATIONS FOR OFFICERS AND EXECUTIVE COMMITTEE MEMBERS-AT-LARGE

President Archibald opened the floor for nominations for the 2022-2023 Officers and three Member-at-Large seats on the Executive Committee:

For the Office of President:	Michael Vigil nominated **Robert Archibald.**
For the Office of Vice President:	Michael Vigil nominated **Amanda Bauer.**
For the Office of Secretary:	Dorothy Moore nominated **Bob Shavelson.**
For the Office of Treasurer:	Michael Vigil nominated **Wayne Donaldson.**
For the Members-at-Large:	Amanda Bauer nominated **Angela Totemoff.**
	Angela Totemoff nominated **Ben Cutrell.**
	Wayne Donaldson nominated **Robert Beedle**.

There being no more nominations, Michael Vigil **moved to close nominations**. Hearing no objection, President Archibald declared **nominations closed.**

Dorothy Moore **moved to seat the nominees** since there were no contested seats. Amanda Bauer **seconded** and the **motion passed** by unanimous consent.

4-14 ANNUAL BOARD-REQUIRED DOCUMENT COMPLETION

Financial Manager Ashlee Hamilton introduced the completion of the Board's annual documentation which is required by PWSRCAC's policies or bylaws. Directors were asked to complete and sign the forms acknowledging PWSRCAC's Code of Conduct, a Statement of Residency, and a Conflict of Interest and Transactions with Interested Parties form. Executive Assistant Jennifer Fleming collected the completed forms from those present at the table. Those not present in person would receive the forms by mail/email for completion after the meeting.

EXECUTIVE SESSION

Angela Totemoff **moved for the Board to go into executive session**, along with all committee chairs, legal counsel Joe Levesque, contractor Breck Tostevin, contractor Bill Mott, staff members Donna Schantz, Joe Lally, Jennifer Fleming, Austin Love, Linda Swiss, Roy Robertson, Brooke Taylor, KJ Crawford, Ashlee Hamilton, Jeremy Robida, and Alan Sorum, to discuss the following items/issues:

- 4-5 Annual Technical Committee member appointments.
- Update on the Council's work to monitor tank vent damage at the VMT.
- Update on the Council's Request for Adjudicatory Hearing on ADEC's Decision on the Secondary Containment Liner Testing Requirements for the VMT.

Amanda Bauer **seconded** and the **motion passed by unanimous consent**.
(The executive session commenced at approximately 3:20 p.m. and ended at 5:20 p.m. Michael Vigil excused himself from the executive session.)

Recess:
The open session of the meeting recessed at approximately 3:20 p.m. to reconvene the following day.

Friday, May 6, 2022

CALL BACK TO ORDER
President Archibald called the meeting back to order at 8:15 a.m. on May 6, 2022. A roll call was taken. There were 15 Directors present at the time of the call back to order (Archibald, Bauer, Beedle, Cutrell, Donaldson, Haggerty, Hasenbank, Herschleb, Jackson, Malchoff, Moore, Totemoff, Vigil, Williams, and Zinck).

REPORT ON EXECUTIVE SESSION
President Archibald reported that the Board had met in executive session and had discussed Item 4-5 Annual Technical Committee member appointments and was ready to take action.

- **4-5 ANNUAL TECHNICAL COMMITTEE APPOINTMENTS**
  Amanda Bauer **moved to seat** the following committee members to two-year terms:

  Scientific Advisory Committee (SAC)

Davin Holen	Renewal
Sarah Allan	Renewal
Debu Misra	Renewal
Ana Aguilar-Islas	New

  With Directors Dorothy Moore and Wayne Donaldson

  Terminal Operations and Environmental Monitoring Committee (TOEM)

Matt Cullin	Renewal
George Skladal	Renewal

  With Director Amanda Bauer

  Oil Spill Prevention and Response Committee (OSPR)

Jerry Brookman	Renewal

Dave Goldstein Renewal
With Directors Robert Beedle, Mike Bender, and Curtis Herschleb

Port Operations and Vessel Traffic Systems (POVTS)
Gordon Terpening Renewal
Max Mitchell Renewal
With Directors Amanda Bauer, Robert Archibald, and Luke Hasenbank

Information and Education Committee (IEC)
Ruthie Knight Renewal
Kate Morse Renewal
With Director Aimee Williams

Dorothy Moore **seconded** and the **motion passed** without objection.

- Archibald reported that the Board had received an update on the Council's work to monitor tank vent damage at the VMT from Bill Mott of Taku Engineering. The Board would take no action on that issue at this time.

- Archibald reported that the Board received an update on the Council's Request for Adjudicatory Hearing on ADEC's Decision on the Secondary Containment Liner Testing Requirements for the VMT from PWSRCAC's legal advisers Breck Tostevin and Joe Levesque, and Project Manager Austin Love. The Board would take no action on that issue at this time.

(This concluded the report on the executive session.)

4-6 PRESENTATION: LTEMP 2021 SAMPLING RESULTS & INTERPRETATIONS

Project Manager Austin Love introduced Dr. Morgan Bender of Owl Ridge Natural Resource Consultants, Inc., who presented a summary of the results of the 2021 LTEMP sampling conducted in Port Valdez.

In 2021, samples were gathered and analyzed as part of the Council's annual environmental monitoring of oil contamination associated with the operation of the VMT and associated tankers.

Dr. Bender had completed a draft written summary report. However, based on when the Council was able to establish a contract with Owl Ridge that draft report could not be finished prior to this Board meeting. Additionally, Dr. Bender would not be available to present her results later in the year. A briefing sheet was included in the meeting notebook as Item 4-6.

Following the presentation Dr. Bender and Dr. Jim Payne (Payne Environmental) answered specific scientific questions on the methods of sampling, tracing, etc.

No action was requested of the Board at this meeting. However, it was planned that the finalized written summary report would be provided for acceptance by the Executive Committee at its next scheduled meeting.

4-7 DISPERSANTS USE POSITION UPDATE

Outreach Coordinator Betsi Oliver and Project Manager Danielle Verna presented an update on the ongoing project to review and consider updating the Council's position on the use of chemical dispersants in the event of an oil spill in the Prince William Sound region. A briefing sheet was included in the meeting notebook under Item 4-7.

No action was requested of the Board at this time. Additional work sessions to discuss the dispersants position update would be held prior to the September Board meeting for Board members, SAC members, and the project team. Board members were encouraged to attend. The dates and topics for these work sessions and the additional steps to complete the project were scheduled as follows:

May-June 2022 – Workshop series to explore issues of interest to the Board
#1 May 25, 2022 1:00 p.m. – 3:00 p.m. – The Room Where It Happens.
#2 June 2, 10:00 a.m. – 12:00 p.m. - Evaluating Trade-offs.
#3 June 10, 1:00 p.m.- 3:00 p.m.– Demystifying Dispersant Science.

Summer 2022 – Follow-up meetings with the project team and SAC.

Summer 2022 - Draft position statement for review and discussion.

Fall 2022 – Draft position statement and supporting documents refined by the project team and SAC.

January 2023 – Dispersant Use Position and supporting materials for approval.

4-8 ANNUAL BOARD COMMITTEE APPOINTMENTS

The annual appointment to Board subcommittees was led by Executive Director Schantz and President Archibald. In addition to the four standing subcommittees (Finance, Long Range Planning Committee (LRP), Board Governance Committee (BGC) and the Legislative Affairs Committee (LAC)), the Board was asked to create and seat members to a one-time Executive Director Evaluation Committee that was previously approved by the Executive Committee on March 8, 2022. A briefing sheet was included in the meeting notebook as Item 4-8 which outlined each of the committee's functions.

The following Directors volunteered to serve on each Board committee and were **confirmed by a motion made** by Dorothy Moore, **seconded** by Michael Vigil, and **passed** without objection. (It was agreed that Directors who wanted to serve on a subcommittee but were not present at this meeting could be added later.)

- EXECUTIVE DIRECTOR EVALUATION REVIEW COMMITTEE (*Ad Hoc)*
  Ben Cutrell, Robert Beedle, Amanda Bauer, Aimee Williams, Angela Totemoff, Robert Archibald, Bob Shavelson. (Executive Director Schantz will attend but is not seated as a member.)

- FINANCE:
  Treasurer Wayne Donaldson (chair), Robert Archibald, Mako Haggerty, and Angela Totemoff.

- LONG RANGE PLANNING COMMITTEE:
  Robert Archibald, Amanda Bauer, Elijah Jackson, Angela Totemoff, the chairs of all the technical committees, Cathy Hart from the IE Committee.

- BOARD GOVERNANCE COMMITTEE:
  Luke Hasenbank, Dorothy Moore, Robert Beedle, Mike Bender.

- LEGISLATIVE AFFAIRS COMMITTEE:
  Dorothy Moore, Robert Archibald, Mako Haggerty, Robert Beedle, Kirk Zinck, Elijah Jackson (Aimee Williams to be copied with meeting materials but not seated as a member).

Break: 9:50 a.m. – 10:20 a.m.

4-9 FEDERAL AND STATE GOVERNMENT AFFAIRS UPDATE

Director of Programs, Joe Lally, introduced the Council's legislative monitors, Roy Jones (federal) and Gene Therriault (state). He thanked the LAC for their work on legislative matters of interest to the Council. The committee met bi-weekly while the Alaska Legislature was in session.

State Update**:**
Therriault reported on the following legislative actions:

- SPAR Budget: It appeared the SPAR Division would get *status quo* funding, the same as 2021. It was in both the House and Senate versions of the budget, so its passage was all but assured. The shortfall in the SPAR Response Account was made up from the general fund. There is a concern whether that will continue long term.

- House Bill 104: (Refined fuels surcharge) PWSRCAC is monitoring House Bill 104 which proposes to adjust the refined fuels surcharge up to 1.5 cents which will go to the SPAR Prevention account. It was estimated to produce an additional $3 million for SPAR. House Bill 104 had passed out of the House and had moved on to the Senate. It appeared poised for passage.

- Senate Bill 121: (Banning of PFAS in the state of Alaska) It does not ban PFAS outright at this time, but it does empower the State Fire Marshall to certify that there are alternative formulas available that are not as damaging to the environment. When he does that, it will set in motion steps to ban the use of PFAS in the state of Alaska. As of this date, the legislation was pending in the Senate Finance Committee and had had several hearings but was stalled by the budget discussions which took up much of the Finance Committee's time. It was currently poised to come up under Bills Previously Heard. There was not much action on the House version of the legislation, but when the Senate version came over to the House, Therriault thought the House would take quick action.

- House Bill 54: (Invasive Species) This legislation dealing with invasive species in Alaska was currently pending in the Senate Finance Committee. It has been supported by PWSRCAC for several years. It had good momentum with key members of the Senate and has a good chance of passing. There is federal funding that will come to the state for dealing with some of the invasive species and this had seemed to incentivize legislators to move forward with Alaska's legislation to prepare to receive and expend federal funds on invasive species.

- Senate Bill 177: (Small micronuclear reactors) PWSRCAC is tracking this legislation because a potential vendor is proposing to partner with Copper Valley Electric Association to build a small micronuclear reactor site in the Valdez area, potentially on the Dayville Road, which is the one road that leads to and from the Valdez Marine Terminal. The legislation passed the Senate the previous week. The chairman of the House Resources Committee had held the House version while awaiting arrival of the Senate version. It was now scheduled for two hearings in the House the week following this Board meeting and there was every indication that there would be quick action on the House floor and ultimate passage.

- SPAR Funding Sweep: Therriault explained the sweep of funds into the CBR at the end of 2021 from SPAR's Prevention account and how it impacted the Prevention account. He was working with legislators to protect the funds going forward from any future sweep into the CBR, but there still remained an issue of the sweep on some of last year's SPAR-related funds. Ultimately, he hoped there would be a reverse of that sweep from 2021 so SPAR would recapture all the Prevention account funds that were deposited to the CBR. There was a lot of support among legislators but the discussion had centered on which appropriations bill to put that protection into so it would have the votes for passage.

  He went on to explain the sweep process in more specific detail and the timing of appropriations to the CBR. To protect the Prevention account funds going forward, deposit of funds into the SPAR Prevention account at the end of FY2022 will be made before the appropriation of funds to the CBR. However, he emphasized that

the deposit to the Prevention account would have to be carefully timed every year so that it occurred before the sweep of funds to the CBR. It would not be automatic.

President Archibald asked how PWSRCAC could best help to ensure that the deposit to SPAR is made timely each year. Therriault stated that once the timed appropriations were in the final appropriations bill, it would protect the funds. He suggested, however, that after final passage, PWSRCAC could send a letter to the Governor to reiterate PWSRCAC's understanding of how the timed appropriations and deposit to the SPAR budget will be handled.

Federal Update:
Roy Jones reported that the letter from Senators Murkowski and Sullivan on radar systems repairs/replacement and the two USCG personnel with institutional knowledge had helped with this issue. There is a concern that USCG has a larger plan for the whole country (but the whole country had not had a massive oil spill in a large body of water like the EVOS). Jones emphasized that as the USCG is working its way through this replacement/repairs of the radar system, Prince William Sound should be a top priority. PWSRCAC should discuss this with the USCG. If it is not prioritized, it could take several years, and in that time there could be another spill.

A special PWSRCAC-designed condolence card was on its way to Rep. Don Young's family. Hard copies will go to his widow, Anne, and two daughters, as well as an electronic version to his widow. It speaks highly of Rep. Young and how much he is appreciated, and as time goes by others will find out what he did for the State of Alaska. (An electronic version of the card was shown to the Board.)

Jones reported that the Coast Guard Authorization Act was renamed the Don Young Coast Guard Authorization Act. This Act contains alternative planning criteria language for Alaska and had passed the House and was sitting in the Senate at this time. It has an exception provision for TAPS tankers in Prince William Sound and additional modifications of this language were being discussed. Congressional staff have told him it was unlikely to get resolved until sometime late summer. The Senate bill has a similar provision but takes a different approach by setting up a civilian position within the USCG for overseeing alternative planning criteria approvals. One of the problems Jones pointed out was that the USCG was not involved in developing this provision as it should have been. Jones opined that both sides needed to work on it to make sure it is vetted with USCG so that PWSRCAC has assurance it is something the USCG can administer and also to make sure that the resources of not only Prince William Sound and Cook Inlet are protected, but also Western Alaska.

On the Oil Spill Liability Trust Fund (OSLTF) and Sen. Sullivan's draft bill, PWSRCAC provided some tweaks to the language and asked Sen. Sullivan's office to refine the language and make whatever edits they needed and return it to PWSRCAC in draft. PWSRCAC could then work with potential partners in Oregon, Washington, and

> California to make sure those coastal states have the information they need to support the legislation. Jones stated that PWSRCAC could help with that effort so that when Sen. Sullivan introduces the bill, he ought to be able to get some co-sponsors from the Democratic side of the aisle to make sure the bill has a good chance of passage. Jones pointed out that PWSRCAC is protected until 2025 when the financing rate expires, but there are some other provisions in the bill that would be of benefit to various states as well as Alaska.

Jim Herbert asked how the loss of Congressman Don Young and his political experience and acumen would affect the ability of PWSRCAC and, by extension, the state of Alaska to get things done now with an inexperienced replacement coming into his seat. Jones commented that Don Young was looked at in a very special way and he will be missed and Alaska will be affected, but the strength of PWSRCAC in keeping Alaska's marine resources protected, the diversity in its membership, and the weight of PWSCAC's standing, whoever came in would have that going for them as they take Young's seat. It will be hard without Don Young, but the fact that PWSRCAC has the OPA 90 statute behind it and it has an established history of making things better in terms of oil spills, and a record with Don Young, Jones opined that the legislators would be there with PWSRCAC. On other issues before Congress, Jones stated, whoever came in would have to establish themselves, just like Don Young did, but they would have Don Young's record to help them.

Executive Director Schantz reported that the letter co-signed by Senators Murkowski and Sullivan regarding the radars in Prince William Sound that Jones referred to at the beginning of his report was dated April 25, 2022 but was only received by PWSRCAC the previous day. She sent it out via email to the Board that evening. Schantz explained that the senators' letter was in response to a letter PWSRCAC had sent to them in December about the radars. She read a portion of the letter for those who had not seen the email prior to this morning's session:

> *We have worked to secure substantial U.S. Coast Guard investments in Alaska, ranging from increased assets, upgrades to communication equipment, and most recently $227.5 million to fund Coast Guard infrastructure throughout the state.*

Schantz stated the letter goes on to say additional Coast Guard funds were going to be needed in the future for the VTS and radars, but they will be closely tracking the project to ensure its successful fruition. They thanked PWSRCAC for making them aware of the problems and conditions of the radar.

(This was an information-only item. No action was requested of the Board.)

4-10 PRESENTATION & OVERVIEW OF MARINE EXCHANGE OF ALASKA

Alan Sorum introduced Capt. Steve White, the Executive Director of the Marine Exchange of Alaska (MXAK).

Capt. White briefed the Board about the MXAK, their marine safety mission, and areas where MXAK has common interests with the Council. White stated that MXAK is a nonprofit organization founded in 2001, dedicated to saving lives, property, and protecting the environment by preventing maritime disasters, through cutting-edge technology, extensive experience, and strong partnerships. MXAK is also responsible for installing and maintaining more than 60 weather stations in Alaska, as well as developing Alaska's most comprehensive vessel tracking system, with over 150 AIS receivers positioned across the state. Many of their marine safety interests and goals overlap with those of the Council. He stated that there could be the potential to collaborate with MXAK on future weather-related projects. The Council has previously shared expenses with them to conduct maintenance work at the Cape St. Elias weather station.

A briefing sheet was included in the meeting notebook as Item 4-10.

(This was an information-only item. No action was requested of the Board.)

4-11 APPROVAL OF IRS FORM 990

Financial Manager Emeritus, Gregory Dixon, presented an overview of the Council's FY2021 Form 990 for the year that ended June 30, 2021. An electronic copy of the return was sent out to all Board members ahead of this meeting. Dixon pointed out that once the return is filed it becomes public information. It was previously reviewed by the Finance Committee and they recommended that it be approved by the Board. Dixon pointed out one change he asked BDO to make after the Finance Committee reviewed the return, which was a change in the wording to the supplemental information on Schedule I, Part IV, that has to deal with the organization's monitoring of research contributions.

Dorothy Moore **moved** to authorize the Executive Director to sign the FY2021 Form 990 on behalf of PWSRCAC and submit it the IRS by May 15, 2022, with the change outlined by Dixon to Schedule I, Part IV. Mako Haggerty **seconded** and the **motion passed** without objection.

Lunch Break: 11:54 a.m. – 1:00 p.m.

For the Good of the Order

Mako Haggerty left the meeting for the day at the lunch break. *(14 Directors present.)*

4-4 ACCEPTANCE OF AVTEC SHIP HANDLING COURSEWORK

PWSRCAC's Maritime Operations/Project Manager, Alan Sorum, introduced this agenda item that sought Board acceptance of coursework developed by the AVTEC Maritime Training Center as meeting the standards and terms and conditions of the Council contract. The coursework was developed with AVTEC through Project 8014 – USCG Approved Basic and Advanced Emergency Ship Handling Courses -- to better prepare mariners for real life situations, close an existing knowledge gap, and open career pathways to critical infrastructure positions within the maritime industry.

A briefing sheet and an executive summary of the project completion was included in the meeting notebook as Item 4-4. Sorum pointed out that there had been a problem in the wording of the contract that had required a slight change in the coursework. The executive summary set out changes to the language that were necessary after the project was originally approved by the Council.

POVTS Chair Steve Lewis thanked committee member Gorden Terpening for his input and sharing his knowledge with the project. He encouraged everyone to look at the simulator at AVTEC next time they were in Seward or when the Council meets there for its meeting in September.

At the request of OSPR Chair Herbert, Robert Thomas of AVTEC explained how this training ties in with those mariners wishing to advance their licenses as well as those wanting basic training. He also spoke of the number of courses currently being limited to the number of instructors that are available.

Amanda Bauer **moved to accept** the coursework developed by the AVTEC Maritime Training Center as meeting the terms and conditions of contract 8014.22.01 with the Council. Michael Vigil **seconded** and the **motion passed** without objection.

4-12 FY2022 COMMUNITY OUTREACH UPDATE

Outreach Coordinator Betsi Oliver updated the Board on the Council's community outreach, both virtual and in-person over the last year. Those activities included:

- Youth Involvement projects.
- Fishing Vessel Training Community Outreach Tour.
- Alaska Forum on the Environment.
- Prince William Sound Natural History Symposium (sponsored by Prince William Sound Stewardship Foundation).
- Coordinating and disseminating information to member entities on ADEC's proposed regulatory changes that were open for public comment.
- Salmonfest.
- Alaska Association of Harbormasters & Port Administrators and the Alaska Municipal League.
- ComFish Alaska in Kodiak.
- Science Communication Conference.
- Chugach Regional Resources Commission, Alutiiq Pride, and KBBI Radio Station.
- Food safety after an oil spill listening session coordination with Nuka Research.
- Virtual presentation at a Peruvian conference following the Repsol Callao oil spill in January.

Oliver announced that she was leaving PWSRCAC to pursue other career paths and this was her last Board meeting. She thanked everyone for their support during the 3.5 years she had been with PWSRCAC. President Archibald wished Oliver well in her future endeavors.

(This was an information-only item. No action was requested of the Board.)

PRESIDENT'S REPORT

President Archibald thanked the Board for the opportunity and honor of serving the organization as president for another year and expressed appreciation at being able to meet in person again. He gave much credit and kudos to the staff who developed the virtual platform that kept everyone engaged so the organization could maintain PWSRCAC's core mission.

He reiterated the many issues that the Council had been concerned with during the past year: the VMT secondary containment liner, crude tank vents, funding uncertainties with regulators, and workforce issues. As the organization moves through the issues in 2022, the Council needed to acknowledge the issues and work together to deal with an aging TAPS infrastructure that would be 45 years old at the end of the month. He said that PWSRCAC needed to recognize and plan for unpredictable climate change challenges that could have a profound effect on TAPS and all of Alaska.

He expressed appreciation to Monty Morgan of Polar Tankers for giving him the opportunity to observe Polar's bridge resource management course and his pleasure at meeting Polar's captains Ross and Garner. He commended Polar Tankers for developing the bridge resource management course and for using AVTEC to do it. Archibald made a short presentation of the bridge resource management facility which would be available for the Board to view in Seward when it meets there in September.

EXECUTIVE DIRECTOR'S REPORT TO THE BOARD

Executive Director Schantz welcomed being able to have in-person meetings again which help build relationships and find that common ground that ATC's Anil Mathur spoke of the previous day, not only among the Council members but also with industry and regulator representatives. She thanked the sponsors of the reception and thanked Executive Assistant Jennifer Fleming for all her work on the reception and this hybrid meeting format.

A written report was provided before the meeting and most subjects in that report were covered or expanded during the meeting. Schantz went on to highlight a few updates.

- PWSRCAC has hired Dr. Craig Benson, a geotechnical expert, for the containment liner integrity issue. She pointed out the EPA and BLM also have requirements for the liner to be impervious and leakage-free. While PWSRCAC has been working on the issue through the VMT C-Plan and ADEC, it was trying to pull in EPA and BLM because of their requirements to oversee the integrity of that liner. PWSRCAC will have more information when SPAR Director Tiffany Larson issues her revised decision.

- On the snow damage to the pressure vents on the VMT storage tanks, PWSRCAC has provided initial recommendations and requests to Alyeska and is waiting for a response. PWSRCAC was also working to validate some of its additional safety concerns and develop recommendations on how they might be remedied. This may require a special Board meeting in the next few months.

- Alternative Planning Criteria: Schantz pointed out that alternative planning criteria (APCs) are highly complex exemptions/waivers that are granted by the USCG for when oil spill recovery and removal resources do not exist and where it has been determined to be too costly to have resources in place to meet the oil spill Response Planning Standard requirements. The waivers are only intended to be used in very remote areas where there is limited port and maritime infrastructure. CDR Drayer mentioned that the proposed legislation did not currently impact TAPS tankers operating in Prince William Sound, but it did impact other vessels such as cruise ships and fuel barges. She reported that she spoke with CDR Drayer after his comments the day before and she discussed that this proposed legislation creates a second standard of lower response requirements, which could set a dangerous precedent for weakening over time the national requirements for TAPS tankers that are currently in place. Schantz reported that CDR Drayer seemed to agree with her observation. Schantz emphasized that this was something PWSRCAC should be paying close attention to, but additionally, everyone and all member entities should also pay attention because it impacts everyone in terms of being able to deal with a response. She noted that one of the key lessons learned from the EVOS was that the timing of getting resources to the scene of a spill is so important if you are going to have an effective response. If a new standard is created for APCs, it really should include timing requirements and the incentive to build out capacity over time. At the present time, the proposed legislation did not appear to have those two items. She noted that some of PWSRCAC's "friends" are for the legislation and some are not and she did not know if PWSRCAC could pull a consensus together, but she urged everyone to advocate for the environment.

- She thanked Gregory Dixon for staying on to assist with building the budget and moving to a new accounting system, and she wished Betsi Oliver well as she leaves the organization. She encouraged everyone to look at Section 5-1 of the meeting notebook to see all the work that staff was working on.

FINANCIAL MANAGER'S REPORT TO THE BOARD

Financial Manager Ashlee Hamilton reported that during this first quarter of 2022 her primary focus had been on building and finalizing a balanced budget. She also researched options for the new accounting software upgrade and hoped to have a decision before the end of the fiscal year (6/30/22) but implementation would not occur until FY2023 or even FY2024. The payroll will be moved from in-house to ADP by the end of this calendar year, as reported by Treasurer Wayne Donaldson in the Finance Committee report. She thanked everyone for their support in developing a balanced budget during the budget workshop.

She gave kudos to staff members Nelli Vanderburg and Jaina Willahan for their administrative help during the budget process. Going forward, she will be focusing on PWSRCAC's annual audit and end of the fiscal year items. She will be doing a seven-week online course working towards being a certified nonprofit accounting professional. She thanked everyone who worked on the Finance Committee and for Gregory Dixon's assistance with the budget. She also thanked Jennifer Fleming for her efforts with a successful hybrid meeting.

CONSIDERATION OF CONSENT AGENDA ITEMS

3-4 APPROVAL OF STORAGE TANK MAINTENANCE REVIEW CONTRACT AUTHORIZATION

Item 3-4 Approval of Storage Tank Maintenance Review Contract Authorization was pulled from the consent agenda to revise the action requested of the Board, necessitated by Alyeska's change in planned project work for 2022 from Ballast Water Tank 93 to Crude Oil Tank 2. No change in the scope of work for PWSRCAC's contractor (Taku Engineering) was needed under this contract authorization.

Amanda Bauer **moved** to authorize a sole source contract negotiation and execution with Taku Engineering LLC for work to complete the Council's Storage Tank Maintenance Review project 5081 focused on the inspection and repair of Crude Oil Tank 2 at an amount not to exceed the amount included in the Board-approved FY2023 budget. Dorothy Moore **seconded** and the **motion passed** without objection.

CLOSING COMMENTS

Directors were given the opportunity to make closing comments.

Many expressed appreciation for being able to meet in person once again and thanked staff for all the work needed for the hybrid meeting. New Board members were welcomed and farewells were extended to Outreach Coordinator Betsi Oliver, and Polar Tankers' Monty Morgan.

Dorothy Moore asked that either the December or January Board meeting be held virtually instead of both meetings being in person in Anchorage during the winter and less than a month apart. She suggested the cost savings could be put towards projects instead.

ADJOURNMENT

There being no further business to come before the Board, the meeting was adjourned at 2:40 p.m., on a **motion made**, **seconded,** and **passed** by unanimous consent.

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Secretary

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Prince William Sound Regional Citizens' Advisory Council
Special Board of Directors Meeting Minutes
June 21, 2022

Members Present: Robert Archibald, Amanda Bauer, Robert Beedle, Mike Bender, Ben Cutrell, Patrick Domitrovich (2:34pm), Wayne Donaldson, Mako Haggerty, Luke Hasenbank, Curtis Herschleb, Dorothy Moore, Bob Shavelson, Michael Vigil, and Kirk Zinck

Members Absent: Nick Crump, Elijah Jackson, Melvin Malchoff, and Angela Totemoff

Staff Present: Jennifer Fleming, Gregory Dixon, Donna Schantz, Joe Lally, Austin Love, Jaina Willahan, Jeremy Robida, Brooke Taylor, Danielle Verna, Ashlee Hamilton, and KJ Crawford

Others Present: Joe Levesque (PWSRCAC Legal Counsel), Mike Day (Alyeska/SERVS), Kate Dugan (Alyeska), Michelle Egan (Alyeska), Roy Jones (PWSRCAC Legislative Monitor), and Davin Holen (SAC Committee)

1. Call to Order and Roll Call: President Archibald called the meeting to order at 2:00pm. A roll call was taken, and the following 13 directors were present representing a quorum for the conduct of business: Archibald, Bauer, Beedle, Bender, Cutrell, Donaldson, Haggerty, Hasenbank, Herschleb, Moore, Shavelson, Vigil, and Zinck.

2. Approve Agenda: Beedle moved to approve the agenda as presented. Bauer seconded. Archibald asked for amendments or objections; hearing none the agenda was approved.

3. Public & Opening Comments: Archibald asked for opening comments from the Board, and public comments from other attendees. There were none.

4. Approval of Consent Agenda: Moore moved to approve the consent agenda. Haggerty seconded. Archibald asked for objection; hearing none, the consent agenda approved as presented.

- FY2023 LTEMP Contract Change Order
  a) Approve an FY2023 budget modification, adding $6,478 to project #9510 – Long-Term Environmental Monitoring Program, for contract expenses.
  b) Approve negotiation of a contract change order, for contract #951.22.06, with Owl Ridge Natural Resource Consultants, adding $6,478 for compensation to archive the 1993-2021 Long-Term Environmental Monitoring Program data in the Alaska Ocean Observing System.

- ArcticCare Sole Source Contract with Arctic IT
  A three-year sole source contract (1300.21.01) with Arctic Information Technology for monitoring and supporting PWSRCAC's computer network in an estimated amount of $72,000.

- Change to the September 2022 Board Meeting Dates
  A deviation from Resolution 05-03 amending the dates of the September Board of Directors meeting, with the meeting set to take place September 22-23, 2022 in Seward.

5. Approval of New Accounting System Implementation: Hamilton explained that staff is seeking approval from the Board to purchase a new financial accounting system, and enter into a contract for support of that system. The new cloud-based system will replace the existing on premises Great Plains software that has been used by the Council for more than 20 years. Unfortunately, Microsoft is ending its support of their Great Plains product so a new system is warranted. Hamilton noted that the Finance Committee has been kept abreast on the status of this project and supports the requested action.

Bauer moved to authorize a three-year sole source contract with Sockeye Consulting for help setting up and configuring the new accounting system as well as providing ongoing support and training at a total cost of an estimated $36,908 over the three years. Haggerty seconded. Archibald asked for objection; hearing none, the action was approved.

Bauer moved to approve a FY2023 budget modification in the amount of $22,500 from the capital budget to project 1300 Information Technology for the first year of the Sage Intacct subscription ($10,500) and Sockeye Consulting contract ($12,000). Haggerty seconded. Archibald asked for objection; hearing none the action was approved.

Bauer moved to approve a FY2023 budget modification of $37,500 from the capital budget to the contingency fund. Vigil seconded. Archibald asked for objection; hearing none, the action was approved.

6. Discussion on moving the December 2022 or January 2023 PWSRCAC meetings to virtual: Schantz explained this agenda item was brought to the Board by request of Director Dorothy Moore, as first proposed in her closing comments during the May 2022 Board meeting. At that meeting. Moore suggested either holding the December 2022 events, including Science Night, the Volunteer Workshop, and the annual holiday party, or the January 2023 Board meeting virtually. Schantz explained that if the Board desired to move one of these meetings virtually, it was the recommendation of staff that the January Board meeting be moved to virtual. She added that this is only a discussion item to gauge the Board's interest in this topic. Should the Board feel strongly about moving one of the meetings to virtual, a formal action will need to be brought to the Board at the September 2022 meeting. Schantz invited Moore to speak further on this topic.

Moore gave a synopsis of her thoughts on moving one of these meetings to virtual. She explained that when she first got on the Board, attending virtually wasn't an option. Now that technology has developed enough for more meaningful participation to happen online, she thought it would be more responsible to allow the January meeting to be virtual and not have to have the staff put together two meetings back-to-back, thus overall saving

money for the Council. Many directors spoke to the pros and cons of meeting in person versus virtually, and relayed their personal preference for future events. Due to the varying responses to meeting in person or virtually, as well as some suggestions made to augment the meeting schedule altogether, staff committed to sending a survey to the Board to gauge interest on the makeup of future PWSRCAC Board meetings. If the survey shows consensus to make changes to the current meeting schedule, staff will bring that action to the Board in September.

7. Executive Session to discuss Contract increase for project 5053 System Integrity and Safety Culture Issues to include concerns along the 800-mile pipeline using grant funds from the Alaska Conservation Foundation: Vigil moved to go into Executive Session. Beedle seconded. The Board entered into Executive Session at approximately 2:35pm. The following were invited to join the Board in executive session: Joe Levesque, Roy Jones, Donna Schantz, Joe Lally, Brooke Taylor, KJ Crawford, Ashlee Hamilton, Austin Love, Jennifer Fleming, and any Committee Chairs that were in attendance.

8. Report on Executive Session: Archibald reported that the Board discussed the grant from the Alaska Conservation Foundation to review the system integrity and safety culture issues along the 800-mile pipeline.

Bauer moved to rescind the May 24, 2022 Executive Committee action to accept the $10,000 award issued by the Alaska Conservation Foundation for the Rapid Response Grant to expand the scope of services for Billie Garde (Project #5053) to include system integrity and safety culture concerns pertaining to the Trans Alaska Pipeline. Beedle seconded. Archibald asked for objection; hearing none, the action was approved.

9. Consideration of Consent Agenda Items: None.

10. Closing Comments: Directors were given the opportunity to make closing comments. Archibald stated that this year is the 45th anniversary of TAPS.

11. Adjourn: Beedle moved to adjourn. The meeting adjourned at 3:40pm.

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Secretary

PWSRCAC
Acronym List
Updated July 10, 2019

AAC	Alaska Administrative Code
ABS	American Bureau of Shipping
ACMP	Alaska Coastal Management Program
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AIMS	Alaska Incident Management System
AMOP	Arctic & Marine Oil Spill Program (Technical Seminar)
ANC	Anchorage
ANS	Alaska North Slope or Aquatic Nuisance Species
ANSTF	Aquatic Nuisance Species Task Force
ANWR	Arctic National Wildlife Reserve
AOOS	Alaska Ocean Observing System
APSC	Alyeska Pipeline Service Company
ARRT	Alaska Regional Response Team
AS	Alaska Statute
ATC	Alaska Tanker Company
ATOM	Alyeska Tactical Oil Spill Model
AVTEC	Alaska Institute of Technology (formerly Alaska Vocational Technical Center)
BAT	Best Available Technology
BBL	Barrel (42 Gallons = 1 bbl)
BGC	Board Governance Committee (PWSRCAC Committee)
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BLM	Bureau of Land Management
BOO	Barge of Opportunity
BMPP	Best Management Practices Plan
BP	British Petroleum or bollard pull
BTT	Biological Treatment Tanks
BWT(F)	Ballast Water Treatment (Facility)
C-Plan	Contingency Plan
CAA	Clean Air Act

CAOS	Coastal Alaska Observing System
CDFU	Cordova District Fishermen United
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CIP	Community Impacts Planning
CIRCAC	Cook Inlet Regional Citizens Advisory Council
CISPRI	Cook Inlet Spill Prevention and Response, Incorporated
CMT	Crisis Management Team
COA	Condition of Approval
COSRS	Community Oil Spill Response System
COTP	Captain of the Port (USCG)
CWA	Clean Water Act
DAF	Dissolved Air Flotation
DEIS	Draft Environmental Impact Statement
DES	Division of Emergency Services
DMR	Discharge Monitoring Report
DNV	Det Norske Veritas – Norwegian Quality Assurance consultant
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
DPS	Dynamic Positioning System
DR&R	Dismantling, Removal and Restoration
DTTS	Disabled Tanker Towing Study
DWT	Deadweight ton
ECO	Edison Chouest Offshore
EIA	Environment Impact Assessment
EIS	Environmental Impact Statement
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPPR	Emergency Prevention Preparedness and Response
ERB	Emergency Response Building
ERP	Emergency Response Plan
ERV	Emergency Response Vessel
ETT	Enhanced Tractor Tug
EVOS	Exxon Valdez Oil Spill

EVOSTC	Exxon Valdez Oil Spill Trustees Council
FBU	Fairbanks Business Unit, Alyeska
FLIR	Forward-looking infrared
FOIA	Freedom of Information Act
FOSC	Federal On-Scene Coordinator
FV	Fishing Vessel
FWPca	Federal Water Pollution Prevention and Control Act
GAO	U.S. Government Accountability Office
GIS	Geographic Information System
GOA	Gulf of Alaska
GPS	Global Positioning System
GRS	Geographical Response Strategies
HAPs	Hazardous Air Pollutants
HAZWOPER	Hazardous Waste Operation and Emergency Response
HERO	Hinchinbrook Entrance Response Options
IAP	Incident Action Plan
IAP2	International Association of Public Participation
ICCOPR	Interagency Coordinating Committee on Oil Pollution Research
IC	Incident Command
ICS	Incident Command System
IEC	Information & Education Committee (PWSRCAC Committee)
IMO	International Maritime Organization
IMT	Incident Management Team
IOSC	International Oil Spill Conference
IRIC	Initial Response Incident Commander
ISAC	Invasive Species Advisory Committee
IWWS	Industrial Waste Water System
JIC	Joint Information Center
JPO	Joint Pipeline Office
LEPC	Local Emergency Planning Committee
LAC	Legislative Affairs Committee (PWSRCAC Committee)
LIO	Legislative Information Office
LOSC	Local On-Scene Coordinator
LRP	Long Range Plan
LTEMP	Long Term Environmental Monitoring ~~Program~~ Project

MAC	Multi-stakeholder Agency Committee
MARPOL	International Convention for Prevention of Pollution from Ships
MEPC	Marine Environmental Protection Committee (IMO)
MIS	Marine Invasive Species
MMS	Minerals Management Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSO	Marine Safety Office
MSDS	Material Safety Data Sheets
MSU	Marine Safety Unit
NDBC	National Data Buoy Center
NEPA	National Environmental Policy Act
NESHAP-OLD	National Emission Standard for Hazardous Air Pollutants – Organic Liquid Distribution
NIIMS	National Interagency Incident Management System
NIS	Non-Indigenous Species
NISA	National Invasive Species Act
NOAA	National Oceanographic & Atmospheric Administration
NOBOB	No Ballast on Board
NPDES	National Pollutant Discharge Elimination System
NPREP	National Preparedness & Response Exercise Program
NRDA	Natural Resource Damage Assessment
NSF	National Science Foundation
OCC	Operations Control Center
OHMSETT	Oil and Hazardous Materials Simulate Environmental Test Tank
OMS	Oil Movements and Storage
OPA 90	Oil Pollution Act of 1990
OSC	On-Scene Coordinator
OSLTF	Oil Spill Liability Trust Fund
OSRB	Oil Spill Response Barge
OSPR	Oil Spill Prevention and Response Committee (PWSRCAC Committee)
OSREC	Oil Spill Region Environmental Coalition
OSRI	Oil Spill Recovery Institute
OSRL	Oil Spill Response Limited
OSRO	Oil Spill Response Organization

OSRV	Oil Spill Response Vessel
PAH	Polycyclic Aromatic Hydrocarbon
POD	Physical Oceanography Data
POVTS	Port Operations and Vessel Traffic System (PWSRCAC Committee)
PPE	Personal Protective Equipment
PRAC	Primary Response Action Contractor
PRT	Prevention and Response Tug
PS	Pump Station
PV	Power Vapor
PWS	Prince William Sound
PWSAC	Prince William Sound Aquaculture Corporation
PWSC	Prince William Sound College
PWSEDD	Prince William Sound Economic Development District
PWSRAS	Prince William Sound Risk Assessment Study
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
PWSSC	Prince William Sound Science Center
PWSTA	Prince William Sound Tanker Association
RC	Response Center or Response Coordinator (SERVS)
RCAC	Regional Citizens' Advisory Council
RCM	Reliability Centered Maintenance
RFAI	Request for Additional Information
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
RMROL	Realistic Maximum Response Operating Limitations
RPG	Response Planning Group
RP	Responsible Party
RPOSC	Responsible Party's On-Scene Coordinator
RPS	Response Planning Standard
RRT	Regional Response Team
RSC	Regional Stakeholders Committee
SAC	Scientific Advisory Committee (PWSRCAC Committee)
SCAT	Shoreline Cleanup Assessment Team
SERC	State Emergency Response Commission (or) Smithsonian Environmental Research Center

SERVS	Ship Escort/Response Vessel System
SETAC	Society of Environmental Toxicology and Chemistry
SOS	Seldovia Oil Spill Response
SOSC	State On-Scene Coordinator
SPAR	Spill Prevention and Response (A division within ADEC)
SPO	State Pipeline Coordinator's Office
SRP	Scientific Response Plan
ST	Strike Team
SWAPA	Southwest Alaska Pilots Association
TAG	Technical Advisory Group
TAPS	Trans Alaska Pipeline System
TF	Task Force
TOEM	Terminal Operations & Environmental Monitoring (PWSRCAC Committee)
TOO	Tanker of Opportunity
TROG	Total Recoverable Oil and Grease
TVCS	Tanker Vapor Control System
UC	Unified Command
UP	Unified Plan
USCG	United States Coast Guard
USF&WS	United States Fish & Wildlife Service
VBU	Valdez Business Unit, Alyeska
VDZ	Valdez
VERP	Prince William Sound Vessel Escort & Response Plan
VEOC	Valdez Emergency Operations Center
VIDA	Vessel Incidental Discharge Act
VMT	Valdez Marine Terminal
VOCs	Volatile Organic Compounds
VOO	Vessel of Opportunity
VTC	Vessel Traffic Center
VTS	Vessel Traffic System
XCOM	PWSRCAC Executive Committee

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Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2023

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
INCOME								
Alyeska Contract	$3,898,340.00		$3,898,340.00	$1,949,169.79		$1,949,169.79	$1,949,170.21	50.0%
Interest Income	$1,000.00		$1,000.00			$0.00	$1,000.00	100.0%
Grants								
In-Kind Donations								
Book Royalties and Sales								
Miscellaneous								
Total Income	***$3,899,340.00***	***$0.00***	***$3,899,340.00***	***$1,949,169.79***	***$0.00***	***$1,949,169.79***	***$1,950,170.21***	***50.0%***
EXPENSES								
Programs and Projects								
3100--Public Information	$6,485.00		$6,485.00		$0.00	$0.00	$6,485.00	100.0%
3200--Observer Newsletter	$7,500.00		$7,500.00		$0.00	$0.00	$7,500.00	100.0%
3300--Annual Report	$7,400.00		$7,400.00		$4,200.00	$4,200.00	$3,200.00	43.2%
3410--Fishing Vessel Outreach Pilot	$16,000.00		$16,000.00		$0.00	$0.00	$16,000.00	100.0%
3500--Community Outreach	$50,175.00		$50,175.00		$0.00	$0.00	$50,175.00	100.0%
3530--Youth Involvement	$50,750.00		$50,750.00		$24,813.00	$24,813.00	$25,937.00	51.1%
3600--Public Communications Program	$8,039.00		$8,039.00		$0.00	$0.00	$8,039.00	100.0%
3610--Website Presence BAT	$10,800.00		$10,800.00		$0.00	$0.00	$10,800.00	100.0%
3903--Youth Internship	$4,000.00		$4,000.00		$0.00	$0.00	$4,000.00	100.0%
4000--Program and Project Support	$1,679,047.00		$1,679,047.00	$138,403.11	$0.00	$138,403.11	$1,540,643.89	91.8%
4010--Digital Collections Program	$5,000.00		$5,000.00		$0.00	$0.00	$5,000.00	100.0%
4400--Federal Government Affairs	$64,100.00		$64,100.00		$0.00	$0.00	$64,100.00	100.0%
4410--State Government Affairs	$33,100.00		$33,100.00	$6,000.00	$19,700.00	$25,700.00	$7,400.00	22.4%
5000--Terminal Operations Program	$10,000.00		$10,000.00		$7,052.00	$7,052.00	$2,948.00	29.5%
5040--VMT Spill Prevention Plan Review	$40,000.00		$40,000.00		$0.00	$0.00	$40,000.00	100.0%
5053--VMT System Integrity			$0.00	$22,050.00	$0.00	$22,050.00	($22,050.00)	0.0%
5056--Tank 8 Internal Inspection Review	$7,908.00		$7,908.00		$11,976.00	$11,976.00	($4,068.00)	(51.4%)
5081--Crude Oil Tank 7 + BWT Tank 94	$93,355.00		$93,355.00		$53,565.00	$53,565.00	$39,790.00	42.6%
5640--ANS Crude Oil Properties	$5,000.00		$5,000.00		$0.00	$0.00	$5,000.00	100.0%
5640--ANS Crude Oil Propeties Donated Services			$0.00		$0.00	$0.00	$0.00	0.0%
6000--Spill Response Program	$9,200.00		$9,200.00		$0.00	$0.00	$9,200.00	100.0%
6510--State Contingency Plan Reviews	$115,000.00		$115,000.00	$4,959.75	$0.00	$4,959.75	$110,040.25	95.7%
6512--Adjudicatory Hearing	$115,000.00		$115,000.00		$35,669.00	$35,669.00	$79,331.00	69.0%

8/1/2022 2:06 PM

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Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2023

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
6530--Weather Data/Sea Currents	$16,400.00		$16,400.00		$400.00	$400.00	$16,000.00	97.6%
6531--Port Valdez Weather Buoys	$41,200.00		$41,200.00	$1,449.57	$33,500.00	$34,949.57	$6,250.43	15.2%
6531--Port Valdez Weather Buoys City of Valdez Grant Funds			$0.00		$0.00	$0.00	$0.00	0.0%
6531--Port Valdez Weather Buoys Donation			$0.00	$1,666.67	$0.00	$1,666.67	($1,666.67)	0.0%
6536--Analysis of Weather Buoy Data	$22,696.00		$22,696.00		$5,696.00	$5,696.00	$17,000.00	74.9%
6537--Copper River Delta Weather Station	$5,600.00		$5,600.00		$0.00	$0.00	$5,600.00	100.0%
6560--Peer Listener Training	$25,000.00		$25,000.00		$4,500.00	$4,500.00	$20,500.00	82.0%
7000--Oil Spill Response Operations Program	$4,450.00		$4,450.00		$0.00	$0.00	$4,450.00	100.0%
7050--Out of Region Equipment Survey	$5,145.00		$5,145.00		$5,145.00	$5,145.00	$0.00	0.0%
7520--Preparedness Monitoring	$30,400.00		$30,400.00		$0.00	$0.00	$30,400.00	100.0%
8000--Maritime Operations Program	$12,000.00		$12,000.00	$1,000.00	$0.00	$1,000.00	$11,000.00	91.7%
8010--Escort Tug BAT Assessment	$65,000.00		$65,000.00		$0.00	$0.00	$65,000.00	100.0%
8300--Sustainable Shipping Phase I	$35,000.00		$35,000.00		$0.00	$0.00	$35,000.00	100.0%
8520--Miscommunication in Maritime Context	$55,000.00		$55,000.00		$0.00	$0.00	$55,000.00	100.0%
9000--Environmental Monitoring Program	$15,500.00		$15,500.00		$0.00	$0.00	$15,500.00	100.0%
9110--PWS Marine Bird Survey	$50,900.00		$50,900.00		$6,100.00	$6,100.00	$44,800.00	88.0%
9510--Long Term Environmental Monitoring Program	$104,878.00	$6,478.00	$111,356.00		$57,836.00	$57,836.00	$53,520.00	48.1%
9511--Herring/Forage Fish Survey	$4,000.00		$4,000.00		$4,000.00	$4,000.00	$0.00	0.0%
9512--Oxygenated Hydrocarbons	$52,400.00		$52,400.00		$63,400.00	$63,400.00	($11,000.00)	(21.0%)
9520--Marine Invasive Species	$64,754.00		$64,754.00		$11,645.00	$11,645.00	$53,109.00	82.0%
9550--Dispersants	$30,880.00		$30,880.00		$0.00	$0.00	$30,880.00	100.0%
9643--Subsistence Harvests and Uses	$49,750.00		$49,750.00		$24,955.00	$24,955.00	$24,795.00	49.8%
Subtotals	**$3,028,812.00**	**$6,478.00**	**$3,035,290.00**	**$175,529.10**	**$374,152.00**	**$549,681.10**	**$2,485,608.90**	**81.9%**

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Budget Status Report -- FY 2023

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
Board of Directors								
1350--Information Technology	$500.00		$500.00		$0.00	$0.00	$500.00	100.0%
2100--Board Administration	$126,630.00		$126,630.00	$9,913.30	$0.00	$9,913.30	$116,716.70	92.2%
2150--Board Meetings	$145,000.00		$145,000.00		$0.00	$0.00	$145,000.00	100.0%
2200--Executive Committee			$0.00		$0.00	$0.00	$0.00	0.0%
2220--Governance Committee			$0.00		$0.00	$0.00	$0.00	0.0%
2222--Finance Committee			$0.00	$25.00	$0.00	$25.00	($25.00)	0.0%
2700--Legislative Affairs Committee	$18,175.00		$18,175.00		$0.00	$0.00	$18,175.00	100.0%
Subtotals	**$290,305.00**	**$0.00**	**$290,305.00**	**$9,938.30**	**$0.00**	**$9,938.30**	**$280,366.70**	**96.6%**
Committees and Committee Support								
2250--Committee Support	$193,784.00		$193,784.00	$11,472.64	$0.00	$11,472.64	$182,311.36	94.1%
2300--Oil Spill Prevention & Response	$6,600.00		$6,600.00		$0.00	$0.00	$6,600.00	100.0%
2400--Port Operations & Vessel Traffic System	$6,600.00		$6,600.00		$0.00	$0.00	$6,600.00	100.0%
2500--Scientific Advisory Committee	$10,800.00		$10,800.00		$0.00	$0.00	$10,800.00	100.0%
2600--Terminal Operations & Environmental Monitoring	$6,600.00		$6,600.00		$0.00	$0.00	$6,600.00	100.0%
2800--Information and Education Committee	$7,400.00		$7,400.00	$90.00	$0.00	$90.00	$7,310.00	98.8%
Subtotals	**$231,784.00**	**$0.00**	**$231,784.00**	**$11,562.64**	**$0.00**	**$11,562.64**	**$220,221.36**	**95.0%**

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As of July 31, 2022

Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2023

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
General and Administrative								
1000--General and Administrative	$538,738.00		$538,738.00	$38,420.36	$0.00	$38,420.36	$500,317.64	92.9%
1050--General and Administrative--Anchorage	$153,486.00		$153,486.00	$11,402.05	$0.00	$11,402.05	$142,083.95	92.6%
1100--General and Administrative--Valdez	$158,044.00		$158,044.00	$12,361.42	$0.00	$12,361.42	$145,682.58	92.2%
1300--Information Technology	$108,128.00	$22,500.00	$130,628.00	$5,932.70	$11,000.00	$16,932.70	$113,695.30	87.0%
Subtotals	**$958,396.00**	**$22,500.00**	**$980,896.00**	**$68,116.53**	**$11,000.00**	**$79,116.53**	**$901,779.47**	**91.9%**
Subtotals	**$4,509,297.00**	**$28,978.00**	**$4,538,275.00**	**$265,146.57**	**$385,152.00**	**$650,298.57**	**$3,887,976.43**	**85.7%**
Contingency (Current Year Budget)	**$100,000.00**	**$31,022.00**	**$131,022.00**			**$0.00**	**$131,022.00**	**100.0%**
Total Expenses	***$4,609,297.00***	***$60,000.00***	***$4,669,297.00***	***$265,146.57***	***$385,152.00***	***$650,298.57***	***$4,018,998.43***	***86.1%***
Increase (Decrease) in Net Assets	***($709,957.00)***	***($60,000.00)***	***($769,957.00)***	***$1,684,023.22***	***($385,152.00)***	***$1,298,871.22***	***($2,068,828.22)***	***268.7%***

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PWSRCAC Director Attendance Record

September 2022

(Attendance recorded through June 21, 2022 Special Board Meeting)

Board Member *(date appointed)*	***Overall Attendance*** *# attended / # missed*	***Last 3 Mtgs.**** *# attended / # missed*	***Term Expires***
Archibald, Robert *(May 2015)*	39/1	3/0	5/23
Bauer, Amanda *(May 2012)*	54/1	3/0	5/23
Beedle, Robert *(May 2013)*	46/4	2/1	5/24
Bender, Mike *(Sept. 2015)*	34/5	2/1	5/24
Crump, Nick *(May. 2021)*	5/3	1/2	5/23
Cutrell, Ben *(Jan. 2020)*	15/0	3/0	5/24
Domitrovich, Patrick *(May 2021)*	4/4	2/1	5/23
Donaldson, Wayne *(Jan. 2015)*	39/2	3/0	5/23
Haggarty, Mako *(May 2015)*	31/7	3/0	5/23
Hasenbank, Luke *(May 2016)*	29/7	2/1	5/24
Herschleb, Curtis *(May 2022)*	2/2	2/2	5/24
Jackson, Elijah *(May 2021)*	5/3	1/2	5/23
Malchoff, Melvin *(Sept. 2016)*	20/12	2/1	5/24
Moore, Dorothy *(Jan. 2007)*	80/1	3/0	5/24
Shavelson, Bob *(Sept. 2014)*	47/6	2/1	5/24
Totemoff, Angela *(May 2021)*	6/2	2/1	5/23
Vigil, Michael *(Sept. 2015)*	30/9	3/0	5/24
Williams, Aimie *(May 2022)*	2/2	2/2	5/24
Kirk Zinck *(May 2019)*	19/1	3/0	5/23

* PWSRCAC policy states that member groups will be notified in writing if their appointed Board member misses three consecutive Board meetings.

Note: Overall attendance includes all voting meetings (quarterlies and special Board teleconferences), but does not include non-voting meetings (e.g. LRP, budget workshops or Board retreats).

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

PWSRCAC Committee Member Attendance Record

Port Operations and Vessel Traffic Systems (POVTS)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Robert Archibald (Director)	22/0	3/0	5/23
Amanda Bauer (Director) (Vice Chair)	34/6	3/0	5/23
Steve Lewis (Chair)	18/0	3/0	5/23
Max Mitchell	2/0	2/0	5/23
Gordon Terpening	12/1	3/0	5/23

Oil Spill Prevention and Response (OSPR)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Robert Beedle (Director)	34/14	2/1	5/23
Mike Bender (Director)	26/11	3/0	5/24
Jerry Brookman	118/8	0/3	5/24
Dave Goldstein	72/21	3/0	5/24
Jim Herbert (Chair)	50/0	3/0	5/23
John LeClair (Vice Chair)	76/28	2/1	5/23
Gordon Scott	68/73	1/2	5/23
Skye Steritz	5/4	1/2	5/23

Terminal Operations & Environmental Monitoring (TOEM)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Amanda Bauer (Director) (Chair)	55/8	3/0	5/24
Harold Blehm	51/9	3/0	5/23
Matt Cullin	17/9	3/0	5/24
Mikkel Foltmar (Vice Chair)	31/14	1/2	5/23
Steve Goudreau	30/14	3/0	5/23
Tom Kuckertz	36/9	2/1	5/23
George Skladal	133/11	3/0	5/24
Patrick Tomco (on leave)	6/8	1/2	5/23

Ratios are # meetings present/ # of absences

Attendance Record is from 2003 to present.

Scientific Advisory Committee (SAC)			
Committee Member	***Overall***	***Last 3 mtgs***	***Term Expires***
Sarah Allan	78/7	3/0	5/24
Wei Cheng	46/6	3/1	5/23
Wayne Donaldson (Director)	65/5	3/0	5/23
Roger Green	143/20	2/1	5/23
Davin Holen (Chair)	56/5	3/0	5/24
John Kennish	135/13	2/1	5/23
Dorothy Moore (Director)	122/10	2/1	5/23
Debasmita Misra	59/50	3/0	5/24
Ana Aguilar-Islas	0/3	0/3	5/24

Information & Education Committee (IEC)			
Committee Member	***Overall***	***Last 3 mtgs***	***Term Expires***
Trent Dodson (Chair)	26/24	2/1	5/23
Jane Eisemann (Vice Chair)	75/10	3/0	5/23
Cathy Hart	66/21	3/0	5/23
Andrea Korbe	28/20	1/2	5/23
Ruth E. Knight	70/8	3/0	5/24
Savannah Lewis *since recommittal date	37/0*	3/0	5/23
Kate Morse	50/27	3/0	5/24
Aimee Williams	0/1	0/1	5/24

Ratios are # meetings present/ # of absences

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Current List of Board Committee Members

As of May 2022

Executive Committee

- Robert Archibald, President
- Amanda Bauer, Vice President
- Wayne Donaldson, Treasurer
- Bob Shavelson, Secretary
- Robert Beedle, Member-at-Large
- Ben Cutrell, Member-at-Large
- Angela Totemoff, Member-at-Large

Board Governance Committee

- Luke Hasenbank (Chair)
- Dorothy Moore
- Mike Bender
- Robert Beedle

Finance Committee

- Wayne Donaldson (Treasurer)
- Robert Archibald
- Mako Haggerty
- Angela Totemoff

Long Range Planning Committee

- Robert Archibald
- Amanda Bauer
- Elijah Jackson
- Angela Totemoff
- Davin Holen (SAC Chair)
- Amanda Bauer (TOEM Chair)
- Jim Herbert (OSPR Chair)
- Steve Lewis (POVTS Chair)
- Cathy Hart (IEC Chair)

Legislative Affairs Committee

- Dorothy Moore
- Robert Archibald
- Mako Haggerty
- Robert Beedle
- Elijah Jackson
- Kirk Zinck

Executive Director Evaluation Review

- Ben Cutrell
- Robert Beedle
- Amanda Bauer
- Aimee Williams
- Angela Totemoff
- Robert Archibald
- Bob Shavelson.

Prince William Sound Regional Citizens' Advisory Council
One-Page Strategic Plan

Mission Statement: Citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers

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Core Purpose: Citizen oversight to prevent oil spills, minimize environmental impacts and promote response readiness

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Core Values

- Represent the interests of our stakeholders by providing an effective voice for citizens
- The foundation of PWSRCAC is volunteerism
- Promote vigilance and combat complacency
- Organizational transparency and integrity through truth and objectivity
- Foster environmental stewardship

Overarching Goals and Objectives (see pages 14-16 for a more complete list of objectives)

- **Compliance with OPA90 and Alyeska contractual requirements.**
  - ❖ Annual re-certification and funding
  - ❖ Maintain regional balance
  - ❖ Link projects and programs to OPA90 and Alyeska contract

- **Continue to improve environmental safety of oil transportation in our region.**
  - ❖ Monitor and review development of, and compliance with, laws and regulations
  - ❖ Pursue risk-reduction measures and promote best available technologies and best practices
  - ❖ Monitor operations and promote a safe and clean marine terminal
  - ❖ Monitor and review the condition of the tanker fleet/maritime operations
  - ❖ Monitor and promote the safe operation of all Alyeska/SERVS-related on-water assets
  - ❖ Monitor and review environmental indicators
  - ❖ Promote and facilitate effective research for scientific, operational and technical excellence

- **Develop and maintain excellent external and internal communication.**
  - ❖ Advocate for government and industry measures to improve the environmental safety of oil transportation
  - ❖ Maintain and improve relationships with government, industry and communities
  - ❖ Be the model for citizen oversight and provide support for other citizens' advisory groups
  - ❖ Ensure availability of PWSRCAC information
  - ❖ Work to improve availability of information to PWSRCAC from industry sources

- **Achieve organizational excellence.**
  - ❖ Effective short and long term planning, with clear and measurable goals for projects
  - ❖ Fiscally responsible, efficient, and easily understood financial procedures and reporting
  - ❖ Committed to continuous improvement
  - ❖ Recognize people as the most important asset of the organization
  - ❖ Recruit and develop knowledgeable and committed Board members, volunteers and staff
  - ❖ Strong volunteer structure and support for volunteers

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PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	6/21/2022	**FY2023 LTEMP Contract Change Order:** The Board approved an FY2023 budget modification, adding $6,478 to project #9510 – Long-Term Environmental Monitoring Program, for contract expenses; and, approved a negotiation of a contract change order, for contract #951.22.06, with Owl Ridge Natural Resource Consultants, adding $6,478 for compensation to archive the 1993-2021 Long-Term Environmental Monitoring Program data in the Alaska Ocean Observing System. Are these steps in place?		Love	Done
Board	6/21/2022	**ArcticCare Sole Source Contract with Arctic IT:** The Board approved a three-year sole source contract (1300.21.01) with Arctic Information Technology for monitoring and supporting PWSRCAC's computer network in an estimated amount of $72,000. Is this contract in place?		Odegard	Done
Board	6/21/2022	**Change to the September 2022 Board Meeting Dates:** The Board approved a deviation from Resolution 05-03 amending the dates of the September Board of Directors meeting, with the meeting set to take place September 22-23, 2022 in Seward. Has notification been made of this change?		Fleming	Done
Board	6/21/2022	**Approval of New Accounting System Implementation:** The Board authorized a three-year sole source contract with Sockeye Consulting for help setting up and configuring the new accounting system as well as providing ongoing support and training at a total cost of an estimated $36,908 over the three years; approved a FY2023 budget modification in the amount of $22,500 from the capital budget to project 1300 Information Technology for the first year of the Sage Intacct subscription ($10,500) and Sockeye Consulting contract ($12,000); and approved a FY2023 budget modification of $37,500 from the capital budget to the contingency fund. Are these steps in place?		Hamilson /	Done
Board	6/21/2022	**ADF Rapid Reponse Grant:** The Board directed staff to rescind the May 24, 2022 Executive Committee action to accept the full $10,000 award issued by the Alaska Conservation Foundation for the Rapid Response Grant to expand the scope of services for Billie Garde (Project #5053) to include system integrity and safety culture concerns pertaining to the Trans Alaska Pipeline. Has this action taken plance?		Schantz	Done
XCOM	5/24/2022	**Acceptance of ACF Rapid Response Grant:** The Executive Committee authorized PWSRCAC to accept the full $10,000 award issued by the Alaska Conservation Foundation for the Rapid Response Grant, to be used to expand the scope of services for Billie Garde (Project #5053) to include system integrity and safety culture concerns pertaining to the Trans Alaska Pipeline. Has the grant been accepted?		Schantz	Withdrawn (see

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PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/5/2022	**Director Appointment:** The Board approved the appointment and seating on the Board of the following selected representatives for two-year terms for each of the member entities: L. Hasenbank (AK State Chamber of Commerce), M. Vigil (Chenega IRA Council/Chenega Bay Corporation), B. Cutrell (Chugach Alaska Corporation), R. Beedle (Cordova), D. Moore (Valdez), M. Bender (Whittier), C. Herschleb (CDFU), A. Williams (Kodiak Island Borough), B. Shavelson (OSREC), and M. Malchoff (Port Graham Corporation). Are these appointments in place?		Fleming	Done
Board	5/5/2022	**Approval of Resolution 22-02 Recognizing Anil Mathur**: The Board adopted Resolution 22-01 recognizing and expressing appreciation for Anil Mathur's contributions to the safe transportation of oil in Prince William Sound and throughout the West Coast of the United States. Is this resolution in place?	210.106.220505.MatherRes	Fleming	Done
Board	5/5/2022	**Approval of Resolution 22-01 Recognizing Patience Andersen Faulkner:** The Board adopted Resolution 22-02 recognizing Patience Andersen Faulkner for her 24 years of service to the Council. Is this resolution in place?	210.106.220505.FaulknerRes.	Fleming	Done
Board	5/5/2022	**FY2023 BUDGET APPROVAL:** The Board adopted the FY2023 budget as presented during the budget workshop on April 27,2022, and as described in the Proposed FY2023 Budget Book dated April 18, 2022 (total income is $3,898,340, total expenses are $4,509,296, contingency is $100,000, capital budget of $125,000 and net assets used are $834,956). Is the budget in place?		Hamilton	Done
Board	5/5/2022	**RESOLUTION DESIGNATING PWSRCAC CHECK SIGNERS:** The Board adopted the resolutions provided by First National Bank Alaska to update the list of authorized individuals to sign checks and conduct financial transactions on PWSRCAC's account. Are the resolutions in place?		Hamilton	Done
Board	5/5/2022	**FY2023 C-PLAN CONTRACTOR POOL & CONTRACT AUTHORIZATION:** The Board authorized individual contracts with attorney Breck Tostevin; Nuka Research and Planning Group, LLC; and Polaris Applied Sciences, Inc., for professional services, with the aggregate total not to exceed the amount approved for 651 Contingency Plan Review in the final FY2023 budget, and delegation of authority to the Executive Director to enter into individual contracts with the selected consultants. Are these contracts in place?		Swiss	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/5/2022	**FY2023 LTEMP CONTRACT AUTHORIZATION:** The Board (A) authorized individual contracts with NewFields Environmental Forensics Practice and Oregon State University, with the aggregate total not to exceed the amount approved in the final FY2023 LTEMP budget (Project #9510) for contract expenses, and delegation of authority to the Executive Director to enter into individual contracts with the aforementioned consultants and, (B) authorized contract work to commence prior to the start of FY2023, as approximately $10,000 of these funds will need to be expended in May and June 2022. Are these contracts in place?		Love	Done
Board	5/5/2022	**PWSRCAC/ALYESKA CONTRACT COMPLIANCE VERIFICATION REPORT APPROVAL:** The Board accepted the PWSRCAC/Alyeska Annual Contract Compliance Verification Report. Is the report in place?	100.109.220217.ContrComplRp	Hamilton	Done
Board	5/5/2022	**GEOGRAPHIC RESPONSE PLANNING FOR THE COPPER RIVER DELTA & FLATS:** The Board accepted the white paper titled, "Geographic Response Planning for the Copper River Delta and Flats," by Nuka Research as meeting the terms and conditions of contract 6540.22.01, and for distribution to the public. Is this report in place?	654.431.220301.NukaCRDFhistory	Robida	Done
Board	5/5/2022	**ELECTION OF OFFICERS AND MEMBERS-AT-LARGE TO EXECUTIVE COMMITTEE:** The Board Elected the following: President - Robert Archibald; Vice President - Amanda Bauer; Treasurer - Wayne Donaldson: Secretary - Bob Shavelson; and, Members-at-Large - Ben Cutrell, Angela Totemoff, Robert Beedle. Are these appointments in place?		Fleming	Done
Board	5/5/2022	**Annual Board Committee Appointments:** The Board appointed: Cutrell, Beedle, Bauer, Williams, Totemoff, Archibald and Shavelson to the Ad Hoc Executive Director Evaluation Reivew Committtee; Donaldson, Totemoff, Archibald, and Haggerty to the Finance Committee; Archibald, Jackson and Bauer and the chairs of the five technical committees, and C. Hart to the LRP committee; Hasenbank, Moore, Beelde and Bender to the BGC; and, Moore, Archibald, Haggerty, Beedle, Zinck and Jackson to the LAC. Are these appointments in place?		Fleming	Done
Board	5/5/2022	**Approval of Technical Committee Appointments:** The Board made the following two-year technical committee appointments D.Holen, S. Allan, D. Misra and A. Aguilar-Islas to SAC; M. Cullin and G. Skladal to TOEM; J. Brookman and D. Goldstein to OSPR; G. Terpening and Max Mitchell to POVTS, and, R. Knight and K. Morse to IEC. Are these appointments in place?		Vanderburg &	Done
Board	5/5/2022	**APPROVAL OF IRS FORM 990:** The Board authorized the Executive Director to sign the FY2021 Form 990 on behalf of PWSRCAC and submit it the IRS by May 15, 2022, with the change outlined by Dixon to Schedule I, Part IV. Has the form 990 been submitted?		Hamilton	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/5/2022	**ACCEPTANCE OF AVTEC SHIP HANDLING COURSEWORK:** The Board accepted the coursework developed by the AVTEC Maritime Training Center as meeting the terms and conditions of contract 8014.22.01 with the Council. Is the coursework in place?		Sorum	Done
Board	5/5/2022	**APPROVAL OF STORAGE TANK MAINTENANCE REVIEW CONTRACT AUTHORIZATION:** The Board authorized a sole source contract negotiation and execution with Taku Engineering LLC for work to complete the Council's Storage Tank Maintenance Review project 5081 focused on the inspection and repair of Crude Oil Tank 2 at an amount not to exceed the amount included in the Board-approved FY2023 budget. Is this contract in place?		Love	Done
XCOM	4/28/2022	**Approval of full-length, April 2020 oil spill environmental monitoring report:** The Executive Committee accepted the report titled "Mussel Chemistry and Transcriptomic Response after a Minor Alaskan Oil Spill" dated September 22, 2021 as final and for public distribution. Is the report in place?	951.431.210922.MusslChemTrans	Love	Done
XCOM	4/28/2022	**Contract Approval – Forage Fish Surveys:** The Executive Committee approved a sole source contract with the Prince William Sound Science Center to conduct Project 9511 – Prince William Sound Forage Fish Surveys at an amount not to exceed $46,300. Is this contract in place?		Verna	Done
XCOM	4/28/2022	**Approval of Secondary Containment Liner-Leakage Model Report:** The Executive Committee accepted the report titled "Utilizing Numerical Simulation to Estimate the Volume of Oil Leaked Through a Damaged Secondary Containment Liner" dated February 7, 2022 as final and for public distribution. Is this report in place?	500.431.220207.LinerLeakModel	Love	Done
XCOM	4/28/2022	**Approval of contract with Dr. Craig Benson for Secondary Containment Liner work (Project #6512):** The Executive Committee authorized the Executive Director to negotiate a contract with Dr. Craig H. Benson for project 6512 - Secondary Containment Liner Work in an amount not-to-exceed $50,000. Is this contract in place?		Love	Done
XCOM	4/28/2022	**Approval of In-State Travel:** The Executive Committee retroactively approved in-state travel for Robert Archibald retroactively to attend the ConocoPhillips/Polar Tankers Bridge Resources Training in Seward, April 18 -20, 2022 in an amount not to exceed $1,200. Has the travel taken place?		Fleming	Done

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PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
XCOM	4/28/2022	**Agenda for Upcoming PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the PWSRCAC Board meeting scheduled for May 5-6, 2022. Has the agenda been distributed?	210.001.220505.MayAgenda	Fleming	Done
XCOM	4/5/2022	**VMT System Integrity Issues:** The Executive Committee authorized a transfer of $50,000 from the contingency fund to a new project #5053 titled VMT System Integrity and Safety Culture Issues, and authorized the Executive Director to enter into a sole source contract with Ms. Billie Garde to assist with work under project 5053 VMT System Integrity and Safety Culture Issues. Is this contract in place?		Schantz	Done
Board	3/8/2022	**Approval of FY2022 Budget Modifications:** The Board approved the proposed FY2022 budget modifications as listed on the provided sheets totaling $100,551, bringing the contingency fund to $211,881. Are these modifications in place?		Hamilson	Done
Board	3/8/2022	**Rescind Temporary Travel Restrictions:** The Board approved rescinding the temporary COVID-19 travel restrictions in their entirety. Have the temporary restrictions been rescinded?		Crawford	Done
Board	3/8/2022	**Council May 5-6, 2022 Board meeting and associated events:** The Board approved holding the May 2022 Board meeting in-person with the following COVID-19 safety mitigations in place: Mask wearing required except when eating/drinking or speaking into a microphone; social distancing of a minimum of three feet encouraged; hand sanitization stations placed at convenient locations; commonly touched surfaces disinfected daily; lunch served via boxed lunch and drinks individually packaged; and clearly state on meeting agenda and announcements that anyone experiencing symptoms of COVID-19 should not attend the meeting. Are members made aware of this action?		Fleming	Done
Board	3/8/2022	**Secondary Containment Adjudicatory Hearing Project:** The Board approved an FY 2022 budget modification of $75,000 from the Contingency Fund to Project 6512 Secondary Containment Adjudicatory Hearing, for costs associated with legal counsel and technical expert consultation; and, authorize expenditures for attorney and expert fees related to the Secondary Containment Adjudicatory Hearing, delegating authority to XCOM to approve individual contracts for experts. The Board expectation is that staff will provide updates to the Board in an attempt to manage expenses. Are these steps in place?		Lally	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	3/8/2022	**Executive Director Annual Evaluation:** The Board approved a 5.5% pay increase effective immediately and approved extending the Executive Director's contract for one year. Are these steps in place?		Hamilton	Done
Board	1/27/2022	**Resolution Designating PWSRCAC Check Signers:** The Board approved the adoption of resolutions provided by First National Bank Alaska to update the list of authorized individuals to sign checks and conduct financial transactions on PWSRCAC's account. Is this process in place?		Hamilson	Done
Board	1/27/2022	**Budget Modification and Delegation of Authority for New Accounting System:** The Board approved FY2022 budget modification in the amount of $60,000 to hire an outside consultant to assist with the design, implementation, and training of a new accounting system; and delegation of authority to the Executive Committee to enter into a contract with the selected contractor to develop and implement the Council's new accounting system, at an amount not to exceed $60,000. Are these steps in place?		Hamilson	Pending
Board	1/27/2022	**Report Acceptance: Impacts from the April 2020 VMT Spill:** The Board accepted the report titled "Mussel Oiling and Genetic Response to the April 2020 Valdez Marine Terminal Spill: Executive Summary" by Lizabeth Bowen, William B. Driskell, James R. Payne, Austin Love, Eric Litman, and Brenda Ballachey, dated August 20, 2021, as meeting the terms and conditions of Contract 951.21.05 and research contribution 951.21.07, and for distribution to the public. Is this report in place?	951.431.210820.2020VMTspill	Love	Done
Board	1/27/2022	**Comments on Proposed Changes to ADEC Prevention Requirements:** The Board approved PWSRCAC's "Comments on Proposed Changes to Oil Prevention Requirements in the Regulations of the Alaska Department of Environmental Conservation" to be submitted to the Alaska Department of Environmental Conservation by the date due of January 31, 2022. Have these comments been submitted?	600.105.220128.ADECRegRefrmCmts	Swiss	Done
Board	1/27/2022	**Report Acceptance: EPA NESHAP-OLD Air Quality Rule:** The Board accepted the report "2020 Updates to 40 CFR 63, Subpart EEEE – National Emissions Standards for Hazardous Air Pollutants for Organic Liquids Distribution (Non-Gasoline): A Review of the Appeal by Alyeska Pipeline Service Company" by John Beath Environmental as meeting the terms and conditions of Contract 5057.21.01, and for distribution to the public. Has the report been distributed?	557.431.220113.JBEneshapVMT	Love	Done
Board	1/27/2022	**Comments to EPA on NESHAP OLD:** The Board directed staff to prepare and send a letter to the EPA supporting Alyeska's appeal of the 2020 NESHAP-OLD Air Quality Rule. Has the letter been sent?	557.105.220307.EPAnespapAPSC	Love	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	1/27/2022	**Report Acceptance: 2021 Annual Drill Monitoring Report:** The Board accepted the 2021 Annual Drill Monitoring Report. Is this report in place?	752.431.220127.DrillMon2021	Robertson	Done
Board	1/27/2022	**Report Acceptance: Forage Fish Survey:** The Board accepted the report titled "2021 Prince William Sound Forage Fish Observations" by Dr. Scott Pegau of the Prince William Sound Science Center, dated September 21, 2021, as meeting the terms and conditions of Council Contract 9511.21.01, and for distribution to the public. Is this report in place?	900.431.220921.PegauForageRpt	Verna	Done
Board	1/27/2022	**Adjudicatory Hearing on ADEC's Decision on the Secondary Containment Liner Testing Requirements for the Valdez Marine Terminal:** The Board approved an expression of support for the January 18, 2022 Executive Committee decision to authorize the Executive Director to file the request for an adjudicatory hearing on the VMT C-Plan in response to ADEC's decision related to the secondary containment liner, and the authorization of $50,000 for this effort recognizing that additional funds may need to be allocated in future budgets. Is this action in place?		Schantz	Done
Board	1/27/2022	**Adjudicatory Hearing on ADEC's Decision on the Secondary Containment Liner Testing Requirements for the Valdez Marine Terminal:** The Board delegated authority to Executive Director Donna Schantz, President Robert Archibald, and Vice President Amanda Bauer to act on behalf of the full Board during discussions related to the Council's adjudicatory hearing request, with the understanding that any substantive decisions will be brought to the Board for approval.		Schantz	Done
Board	1/27/2022	**Approval of LTEMP Research Contribution:** The Board approved that PWSRCAC provide the United States Geological Survey with a research contribution of $75,555 to genetically analyze blue mussel samples obtained to monitor the environmental impacts of the April 12, 2020 oil spill at the Valdez Marine Terminal. Is this contribution in place?		Love	Done
Board	1/27/2022	**LTEMP FY2022 Contract Approval:** The Board authorized a budget modification, adding $53,880 to Project 9510-Long-Term Environmental Monitoring Program; and authorized a contract negotiation with Owl Ridge Natural Resource Consultants, to complete the LTEMP scope of work in RFP 951.21.06, and with Payne Environmental Consultants, to support Owl Ridge's work, at a total aggregate cost not to exceed $77,000. Are these steps in place?		Love	Done

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PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	1/27/2022	**Approval of PWSRCAC's Annual Long Range Plan:** The Board approved PWSRCAC's Five-Year Long Range Plan for Fiscal Years 2023-2027 as developed and finalized for consideration by the Board at the January 26, 2022 Long Range Plan work session. Is the plan in place?	210.101.220128.FiveYearLRP	Lally	Done
XCOM	1/18/2022	**Acceptance of Emergency Towing Arrangements on Tank Vessels Project Memorandum:** The Board accepted the project memorandum titled "Emergency Towing Arrangements on Tank Vessels" dated January 10, 2022 by Glosten. Is this report in place?	800.431.220110.GlostenMemo	Sorum	Done
XCOM	1/18/2022	**Approval of In-State Travel:** The Executive Committee approved in-state travel for Jim Herbert and Cathy Hart to attend the February 4-6, 2022, Alaska Tsunami Oceans Sciences Bowl in Seward at an estimated cost of $900 per traveler. Has the travel taken place?		Fleming	Withdrawn (trip
XCOM	1/18/2022	**ADEC Decision Regarding Liner Testing Requirements:** The Executive Committee authorized the Executive Director to file a request for an adjudicatory hearing on the VMT C-Plan in response to ADEC's December 22, 2021 decision related to the secondary containment liner; and authorized an initial fund transfer in FY2022 of $50,000 from the contingency fund to a new project for this effort, recognizing that additional funds will need to be allocated in future budgets. Is this in place?		Schantz	Done
XCOM	1/18/2022	**Agenda for Upcoming PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the PWSRCAC Board meeting, January 27-28, 2022, as amended. Has the agenda been distributed?		Fleming	Done
XCOM	12/16/2021	**Approval of Contract Change Order with John Beath Environmental:** The Executive Committee approved a budget modification from the contingency fund to project 5057 EPA 2020 NESHAP-OLD Air Quality Rule in an amount of $5,850; and approved a contract change order for contract # 5057.21.01 with John Beath Environmental in the amount of $5,850, bringing the total amount of the contract to an amount not to exceed $45,050 for work to develop comments on the NESHAP-OLD Air Quality Rule. Is this budget modification and contract change order in place?		Love	Done
XCOM	12/16/2021	**POVTS Member Appointment:** The Executive Committee appointed Max Mitchell to the POVTS Committee with a term set to expire at the May 2022 annual Board meeting. Is this appointment in place?		Vanderburt	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
XCOM	12/16/2021	**Planning and Process for Executive Director Evaluation:** The Executive Committee approved a recommendation to the full Board in January 2022 to stand up a committee to re-evaluate the Executive Director evaluation process. Has the Board been made aware of this recommendation?		Schantz	Done
Board	10/15/2021	**Correction to FY2022 Budget Modifications:** The Board amended the September 17, 2021 Board action by approving the FY2022 budget modifications as listed in the provided sheet, with the corrected revised contingency in the amount of $286,946. Is this amendment in place?		Dixon	Done
Board	10/15/2021	**Contract Increase for State Legislative Monitor Contract:** The Board amended the September 16, 2021 Board action by increasing the amount of the state legislative monitor contract by $1,700 per year, and authorizing the Executive Director to enter into a contract for state legislative monitor services with Gene Therriault, dba GT Services, for a term of two years and compensation not to exceed $25,700 per year. Is this contract in place?		Wrede	Done
Board	10/15/2021	**Updated June 30, 2021 Audited Financial Statements:** The Board amended the September 16, 2021 Board action by accepting the updated June 30, 2021 audited financial statements as presented.		Dixon	Done
Board	9/16/2021	**Contract Approval:** Crude Oil Tank 7 and BWT Tank 94 Maintenance Review: The Board authorized a contract with Taku Engineering, LLC for work on Project 5081 Crude oil Tank 7 and Ballast Water Tank 94 Maintenance Review in an amount not to exceed $75,088. Is this contract in place?		Love	Done
Board	9/16/2021	**CONTRACT APPROVAL: STATE LEGISLATIVE MONITOR:** The Board authorized the Executive Director to enter into a contract for state legislative monitor services with Gene Therriault, dba GT Services, for a term of two years and compensation not to exceed $24,000 per year. Is this contract in place? (See 10/15/2021 Special Board Meeting for more information.)		Wrede	Done
Board	9/16/2021	**REPORT ACCEPTANCE: FIELD TRIALS OF MESSENGER LINE-THROWING DEVICES:** The Board accepted the report titled "PWSRCAC Emergency Towline Deployment Practical Trials: Practical Trial Summary Report" by Glosten, dated August 6, 2021, as meeting the terms and conditions of the contract and for distribution to the public. Is this report in place?	801.431.210806.GlosTowlineTrial.pdf	Sorum	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	9/16/2021	**FY2021 AUDIT ACCEPTANCE:** The Board accepted the June 30, 2021, audited financial statements and audit report as presented. Are these documents in place?		Dixon	Done
Board	9/16/2021	**REPORT ACCEPTANCE: MARINE WINTER BIRD SURVEY:** The Board accepted the report titled "Marine Winter Bird Surveys in Prince William Sound: by Prince William Sound Science Center," dated July 19, 2021, as meeting the terms and conditions of Council Contract 9110.21.01 and for distribution to the public. Is this report in place?	900.431.210810.WinterBirdSurvy.pdf	Verna	Done
Board	9/16/2021	**CONTRACT APPROVAL: DETERMINING CONCENTRATION AND COMPOSITION OF OXYGENATED HYDROCARBONS FROM THE VALDEZ MARINE TERMINAL:** The Board authorized a contract with the University of New Orleans for Project 9512, Determining Concentration and Composition of Oxygenated Hydrocarbons from the VMT, in an amount not to exceed $70,400. Is this contract in place?		Verna	Done
Board	9/16/2021	**REPORT ACCEPTANCE: A SUMMARY OF DISPERSANTS RESEARCH:** The Board accepted the report titled "A Summary of Dispersants Research: 2017-2021" by Dr. Merv Fingas, dated May 2021, as meeting the terms and conditions of Contract 955.21.01 and for distribution to the public. Is this report in place?	955.431.210501.ResearchSum17-21.pdf	Oliver/Verna	Done
Board	9/16/2021	**REPORT ACCEPTANCE: PORT VALDEZ WEATHER BUOY DATA ANALYSIS:** The report accepted the report titled "Port Valdez Weather Buoy Data Analysis" by Robert W. Campbell, Ph.D., dated August 2, 2021, as meeting the terms and conditions of Contract 6536.21.01, and for distribution to the public. Is this report in place?	653.431.210802.PtVdzWxBuoyData	Sorum	Done
Board	9/16/2021	**REPORT ACCEPTANCE: HISTORY OF CONTINGENCY PLANNING:** The Board accepted the following documents written by Nuka Research and Planning Group: "Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Summary (1995-2020)" (August 10, 2021); "Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Compendium of Event Summaries (1995-2020)" (August 10, 2021); and "Prince William Sound Tanker Plan History Timetable." Are these documents in place?	651.431.210810.TankerPlanHistory	Swiss	Done
Board	9/16/2021	**PROPOSED AMENDMENT TO PWSRCAC BYLAWS:** The approved an amendment to Section 2.2.2 of the Bylaws entitled "Class II Membership" by combining the Division of Homeland Security and Emergency Management and the Alaska Department of Military and Veterans Affairs into one Class II member and designating the new member name as "Division of Homeland Security and Emergency Management, Alaska Department of Military and Veterans Affairs." Are these amendments in place?		Fleming	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	9/16/2021	**PWSRCAC LONG RANGE PLANNING:** The Board approved the protected project list for the upcoming Long Range Planning process as presented in Attachment A to Item 4-8 briefing sheet. Is this document in place?		Lally	Done
Board	9/16/2021	**APPROVAL OF FY2022 BUDGET MODIFICATIONS:** The Board approved the FY2022 budget modifications as listed on the provided sheet under Item 4-10, with a total revised contingency in the amount of $292,867. Are these modifications in place?		Dixon	Done
Board	9/16/2021	**COUNCIL JANUARY 2022 EVENTS:** The Board authorized a deviation from the Board-approved regular meeting schedule by holding the January 26-28, 2022, PWSRCAC events virtually.		Fleming	Done
XCOM	9/9/2021	**Council January 2022 Event:** The Executive Committee approved sending a recommendation to the Board that the January 2022 Board of Directors meeting be held virtually. Has the Board been made aware of this recommendation?		Fleming	Done
XCOM	9/9/2021	**Agenda for Upcoming PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the virtual PWSRCAC Board meeting, September 16-17, 2021, with amendments outlined by staff.		Fleming	Done

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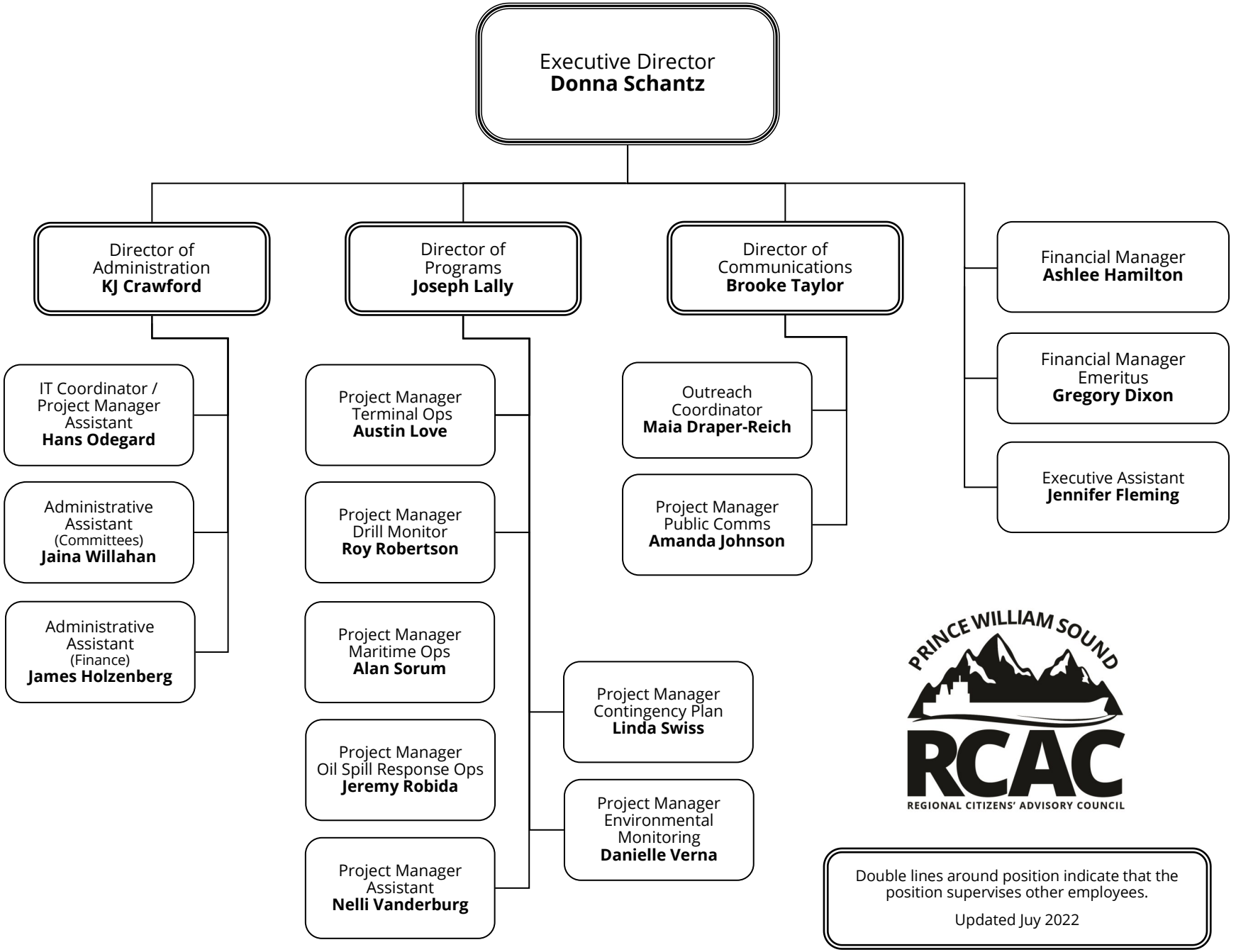

Consent Agenda Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Alan Sorum and the Port Operations and Vessel Traffic System Committee

Project number and name or topic: 8520 – Miscommunication in Maritime Contexts

1. **Description of agenda item:** The Board is being asked to approve a contract with Nicole Ziegler, Ph.D. through Sky Island Language Learning Research in an amount of $50,000 for Project 8520 – Miscommunication in Maritime Contexts.

2. **Why is this item important to PWSRCAC:** Seeking to identify and address various causes of miscommunication, this project will provide a comprehensive perspective by collecting information on the linguistic, cultural, and pragmatic needs and practices of native and non-native English-speaking mariners in Prince William Sound.

Both linguistic and pragmatic failures have frequently led to miscommunication during highly stressful, technical maneuvers, in which there is often very little time or space to correct initial misunderstandings, such as in the Cosco Busan allision with the San Francisco Bay Bridge. In these situations, confusion or misinterpretation of instructions or warnings is likely to intensify problems and difficulties, thus contributing to the occurrence of an accident. In recognition of the need for improved communication, a simplified and highly technical version of English was developed to serve as the "lingua franca" for mariners of varying linguistic backgrounds and proficiencies; however, communication problems persist.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	1/27/22	Approval of project to begin in FY2023.

4. **Summary of policy, issues, support, or opposition:** None known.

5. **Committee Recommendation:** POVTS supports Board approval, as the sole source contract with Dr. Ziegler (executed through Sky Island Language Learning Research) was the number one POVTS prioritized project for FY2023.

6. **Relationship to LRP and Budget:** Project 8520 - Miscommunication in Maritime Context is in the approved FY2023 budget and annual workplan.

8520--Miscommunication in Maritime Context
As of July 31, 2022

FY-2023 Budget	
Original	$55,000.00
Modifications	
Revised Budget	$55,000.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	
Actual + Commitments	0
Amount Remaining	$55,000.00

7. **Action Requested of the Board of Directors:** Authorize a sole source contract with Dr. Ziegler through Sky Island Language Learning Research in an amount not to exceed of $55,000 for Project 8520 – Miscommunication in Maritime Contexts.

8. **Alternatives:** None.

9. **Attachments:** None.

Consent Agenda Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Danielle Verna and the Scientific Advisory Committee

Project number and name or topic: 9643 - Comprehensive Update of Subsistence Harvests and Uses in Prince William Sound

1. **Description of agenda item:** The Board is being asked to approve a sole source contract with the Alaska Department of Fish and Game in an amount not to exceed $49,750 for the project "Comprehensive Update of Subsistence Harvests and Uses in Prince William Sound." This project will support planning and updating subsistence harvest surveys for the Prince William Sound community of Tatitlek. Comprehensive household surveys will be conducted by staff from the ADF&G Division of Subsistence. Data collected will be used to update the Community Subsistence Information System, a long-term dataset on community subsistence harvest. Analysis of the data, and subsistence harvest surveys in the community of Chenega are proposed to occur in FY2024, pending future consideration during the Long Range Planning process and approval of funding by the Board.

2. **Why is this item important to PWSRCAC:** The PWSRCAC recently supported the Subsistence Way of Life project where four decades of subsistence harvest data from regional communities were analyzed by the Alaska Department of Fish and Game. This analysis revealed a shift in the composition of harvesters and a decline in the diversity of harvests. This project will implement a recommendation offered in the prior study to determine whether these trends have continued through time and warrant attention. This project will collect socio-economic data from communities impacted by and still recovering from the Exxon Valdez oil spill, and who may be impacted by future spills. The results of the project can inform environmental monitoring of subsistence harvest species and habitat. Results can improve spill response strategies to reduce environmental impacts that result from terminal or tanker operations.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	1/28/2021	Report Acceptance - Recovery of A Subsistence Way of Life: Acceptance of the report and report summary titled "Recovery of a Subsistence Way of Life: Assessments of Resource Harvests in Cordova, Chenega, Tatitlek, Port Graham, and Nanwalek, Alaska since the Exxon Valdez Oil Spill" by the Alaska Department of Fish and Game, Division of Subsistence, dated December 2020, as meeting the terms of Council Contract 966.21.01 and for distribution to the public.
Board	5/5/2022	Board adopted the Fiscal Year 2023 budget, to include this project.

4. **Summary of policy, issues, support, or opposition:** None known.

5. **Committee Recommendation:** SAC supports Board approval, as this sole source contract with the Alaska Department of Fish and Game was the number two SAC prioritized project for FY2023

6. **Relationship to LRP and Budget:** Project 9643 - Subsistence Harvests and Uses is in the approved FY2022 budget and annual workplan.

9643--Subsistence Harvests & Uses
As of July 31, 2022

FY-2023 Budget	
Original	$49,750.00
Modifications	
Revised Budget	$49,750.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$24,955.00
Actual + Commitments	$24,955.00
Amount Remaining	$24,795.00

7. **Action Requested of the Board of Directors:** Authorize a sole source contract with the Alaska Department of Fish and Game for the project Comprehensive Update of Subsistence Harvest and Uses in Prince William Sound, in an amount not to exceed $49,750.

8. **Alternatives:** None.

9. **Attachments:** None.

Consent Agenda Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Ashlee Hamilton
Project number and name or topic: FY2023 Budget Modifications

1. **Description of agenda item:** The Board is asked to approve modifications to the FY2023 budget as outlined on the attached list. Generally, after completion of the annual financial statement audit, several budget changes are necessary to account for timing differences between actual start and completion of projects or because new information is available that was not known at the time the original budget was approved.

The attached list of proposed budget modifications includes an explanation for each modification. The Finance Committee met on August 11, 2022 to review the proposed changes and recommends Board approval.

The proposed modifications include changes, if any, to the capital budget as well as the operating budget.

2. **Why is this item important to PWSRCAC**: PWSRCAC's annual budget provides the organizations' spending plan and authorities. While some of the listed modifications are within the authorities of the Executive Director and the Executive Committee, others are not. The entire list is therefore presented to the Board to simplify the approval process.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/5/2022	Approved the FY2023 budget.

4. **Committee Recommendation:** The Finance Committee met on August 11, 2022 to review the proposed changes and recommends Board approval.

5. **Action Requested of the Board of Directors:** Approve the FY2023 budget modifications as listed on the provided sheet, with a total revised contingency in the amount of $96,469.

6. **Alternatives:** None recommended.

7. **Attachments:** The list of proposed budget modifications.

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Prince William Sound Regional Citizens' Advisory Council
FY2023 Budget Modifications

Description	Task #	Income	Expenses	Contingency	Capital Budget	Net Assets Used
Beginning balance		$3,899,340	$4,509,296	$100,000	$125,000	($834,956)
Capital budget to 1300 for Accounting System update	1300		$22,500		($22,500)	
Terminal Ops/Taku - carryover not budgeted in FY2023	5000		$7,000	($7,000)		
VMT System Integrity/Garde - carryover not budgeted in FY2023	5053		$50,000	($50,000)		
Tank 8 Floor/Taku - carryover not budgeted in FY2023	5056		$5,648	($5,648)		
Adjudicatory Hearing/Benson - budget reduced due to insufficient funds	6512		($10,000)	$10,000		
Adjudicatory Hearing - travel not needed	6512		($15,000)	$15,000		
Port Valdez Wether Buoy/JOA - FY2023 contract funds insufficient	6531		$1,000	($1,000)		
Peer Listener training/Purpose Driven - carryover not budgeted in FY2023	6560		$4,500	($4,500)		
BAT Tug - project cancelled due to lack of RFP responses and other considerations	8010		($65,000)	$65,000		
LTEMP/Owl Ridge - carryover not budgeted in FY2023	9510		$6,478	($6,478)		
LTEMP/USGS - Research contribution expensed in FY2022	9510		($30,227)	$30,227		
Oxygenated Hydrocarbons/UNO - carryover not budgeted in FY2023	9512		$10,000	($10,000)		
Capital budget to contingency - reduced due to Accounting System changes				$37,500	($37,500)	
Storage Tank Maintenance Review - reduce FY2023 budget as proposal for tank work came in lower than anticipated	5081		($30,000)	$30,000		
VMT Spill Prevention Review - project cancelled due to insufficient funds and because it requires significant support from APSC	5040		($40,000)	$40,000		
LTEMP/NewFields - reduce FY2023 budget as work will be expensed in FY2024	9510		($10,000)	$10,000		
Finance Committee in-person meeting not originally budgeted	2222		$2,000	($2,000)		
Danielle Verna travel to Cordova to meet with intern not originally budgeted	9520		$2,000	($2,000)		
Imig microphones coming in over budget	2150			($1,542)	$1,542	
Total Changes		$0	($89,101)	$147,559	($58,458)	$0
Ending Balances		$3,899,340	$4,420,195	$247,559	$66,542	($834,956)
Final Contingency Amount				**$96,469**		

	From Above	Actual Available	Difference
Net assets needed for operating	($768,414)	($618,866)	($149,548)
Net assets needed for capital	($66,542)	($65,000)	($1,542)
Total net assets needed	($834,956)	($683,866)	($151,090)

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Report Acceptance: Tank 8 Floor & Cathodic Protection System Design Review 4-1

Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor:	Austin Love and Terminal Operations and Environmental Monitoring Committee
Project number and name or topic:	5056 - Tank 8 Floor and Cathodic Protection System Replacement Design Review

1. **Description of agenda item:** The Board is being asked to accept the report titled "Crude Oil Storage Tank 8 Floor and Cathodic Protection System Design Review" by William Mott of Taku Engineering dated June 2022. Mr. Mott will provide the Board with a summary presentation of the findings and recommendations of the report.

2. **Why is this item important to PWSRCAC:** In 2019 and continuing into 2020, Tank 8 underwent a comprehensive internal inspection. The results of that inspection indicated that the tank's floor and cathodic protection system needed to be replaced. However, due to the need for additional storage capacity at the terminal because of the COVID-19 pandemic and the associated impacts it had on oil storage worldwide, Alyeska made repairs to Tank 8 allowing it to be safely operated until at least 2023. In a letter to the Alaska Department of Environmental Conservation (ADEC), Alyeska committed to replacing Tank 8's floor and cathodic protection system in 2023. This project is necessary to ensure that the design of Tank 8's new floor and cathodic protection system are aligned with industry best practices, such as those detailed in applicable American Petroleum Institute standards. Additionally, the project will help to ensure the cathodic protection system is designed to protect the tank bottom for the life of the structure.

3. **Previous actions taken by the Board on this item:** None.

4. **Summary of policy, issues, support, or opposition:** In 2021, the Board accepted a report titled "Crude Oil Storage Tank 8 Maintenance Review" by William Mott of Taku Engineering dated April 2021. That report is related to this new report by Taku Engineering because it documents the maintenance work which resulted in Alyeska's decision to replace Tank 8's floor and cathodic protection system in 2023. Not only did the Board accept the April 2021 report by Taku Engineering, but the Board also instructed staff to share that report's findings and recommendations with Alyeska with a request for appropriate action. A Council letter was sent to Alyeska on June 14, 2021, listing the report's recommendations and asking for a response. Alyeska had committed to providing a response to the recommendations by the winter of 2021/2022, but one was not received and Council staff continue to work with Alyeska staff to obtain a response to the recommendations from Taku Engineering's April 2021 Tank 8 report.

Report Acceptance: Tank 8 Floor & Cathodic Protection System Design Review 4-1

5. **Committee Recommendation:** The Terminal Operations and Environmental Monitoring Committee reviewed the development of the June 2022 Tank 8 report by Taku Engineering. During their July 28, 2022 meeting the Committee passed the following action "Recommend that the Board accept the [June 2022] Tank 8 report as final, request Alyeska to consider and implement its recommendations, and for distribution to the public."

6. **Relationship to LRP and Budget:** Project 5056 Tank 8 Internal Inspection Review is in the approved FY2023 budget and annual workplan.

5056--Tank 8 Internal Inspection Review
As of July 31, 2022

FY-2023 Budget	
Original	$7,908.00
Modifications	
Revised Budget	$7,908.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$11,976.00
Actual + Commitments	$11,976.00
Amount Remaining	($4,068.00)

7. **Action Requested of the Board of Directors:** Accept the report titled "Crude Oil Storage Tank 8 Floor and Cathodic Protection System Design Review" by William Mott of Taku Engineering dated June 2022, as meeting the terms and conditions of Contract 5056.22.01, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing findings and recommendations with requests for appropriate action and a complete response.

8. **Alternatives:** None suggested.

9. **Attachments:** Report titled "Crude Oil Storage Tank 8 Floor and Cathodic Protection System Design Review" by William Mott of Taku Engineering dated June 2022.

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FINAL REPORT

Crude Oil Storage Tank 8 Floor and Cathodic Protection System Design Review



Report Prepared for:

PRINCE WILLIAM SOUND RCAC
REGIONAL CITIZENS' ADVISORY COUNCIL

PWSRCAC Contract # 5056.22.01

PREPARED BY:

William Mott P.E.

taku engineering

907.562.1247

June 2022

STATE OF ALASKA 49TH
William R. Mott
MM-13997
REGISTERED PROFESSIONAL ENGINEER

The opinions expressed in this PWSRCAC commissioned report are not necessarily those of PWSRCAC.

taku engineering

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ACRONYMS & ABBREVIATIONS

API – American Petroleum Institute

APSC – Alyeska Pipeline Service Company

CP – Cathodic Protection

ETF – East Tank Farm

MMO - Mixed Metal Oxide

NACE – National Association of Corrosion Engineers

PWSRCAC - Prince William Sound Regional Citizens' Advisory Council

VMT – Valdez Marine Terminal

WTF – West Tank Farm

1.0 EXECUTIVE SUMMARY

1.1 GENERAL

In October of 2021, Prince William Sound Regional Citizen's Advisory Council (PWSRCAC) tasked Taku Engineering (Taku) with reviewing documents associated with the replacement of the Tank 8 cathodic protection system and floor at the Alyeska Pipeline Service Company (APSC) Valdez Marine Terminal (VMT). The intent was to identify opportunities for reducing the risks of a leak associated with the VMT tanks.

Constructed in 1976, Tank 8 is a 250-foot diameter, 500,000-barrel, welded steel, crude oil storage tank located in the VMT's East Tank Farm (ETF). In 1995, the tank was removed from service and a new floor with a sub-floor cathodic protection (CP) system was installed. The tank was again removed from service for internal inspections in 2007 and 2019. After the 2019 out-of-service inspection, minor repairs were completed, and the tank was prepared to be coated and returned to service. An individual within APSC noted concerns with the inspection and initiated a follow-up inspection that identified more significant soil-side corrosion damage than had been discovered during the first inspection. At that point, APSC made the decision to replace the tank floor and CP system.

Problems associated with the COVID-19 pandemic prompted the decision to complete minor floor repairs in 2020, and return the tank to service until 2023, at which time Tank 8 will be removed from service and the floor and CP system will be replaced.

This study reviewed preliminary design documents for the floor and CP system replacement as well as historical operating data for the VMT tank CP systems. It has resulted in the development of a number of findings and recommendations. Detailed discussions are provided in Section 3 of this document. General findings and recommendations are discussed below:

1.2 FINDINGS

Based on our review of the Tank 8 CP system preliminary design documents provided by APSC, we have derived to following conclusions:

- The conclusions, assumptions, calculations, and designs for the bulk area of the tank floorplates are reasonable and aligned with standard industry practices.
- The new CP system design includes the use of monitoring tubes that are slotted in the region beneath the annular plate. That will allow APSC to monitor the level of cathodic protection afforded the annular plate. This is an improvement over the existing CP system.
- The CP system design intended to protect the annular plate will not effectively provide CP current to most of the annular plate. That plate will remain unprotected.
- The lack of an annular plate to ringwall seal will exacerbate the inadequacy of cathodic protection afforded the annular plate.

- The CP design calculations for the annular plate CP system do not address anode crowding. As configured, the rectifier proposed in the design does not have sufficient voltage range to overcome the increase in circuit resistance that will result from anode crowding.
- The bottom side of the sump will not be protected from soil-side corrosion with cathodic protection.
- The plate immediately beneath the columns may not receive adequate cathodic protection. Based on the design, the level of CP beneath the columns cannot be monitored.

1.3 RECOMMENDATIONS

Based on the study findings, we offer the following recommendations:

- The CP system designed for the annular plate should be modified as recommended in section 3.5 of this report, including but not limited to relocating the two outermost Anodeflex loops so that they are beneath the annular plate. This will alleviate distribution issues as well as issues caused by anode crowding.
- The annular plate to ringwall seal should be replaced and maintained.
- Anodes should be designed and installed to be mounted on the internal surfaces of the sump floor.
- The new sump should be fabricated outside of the tank and the soil-side surfaces of the assembly should be coated prior to installation.
- The designer should consider the impacts of anode crowding at the sump. Based on those calculations, they may want to modify the design proposed for the CP system around the sump to alleviate anode crowding issues.
- APSC should consider an additional corrosion allowance for the sump by fabricating the sump from thicker steel than the remainder of the floor.
- The Anodeflex rings should be run directly beneath the roof columns to ensure CP current distribution to the plate beneath the columns.
- APSC should ensure that the floorplates beneath the columns and the column pads are both fully seal welded so that the column base pads are true “doubler” plates (that may already be the case, but it is not obvious in the design drawings).

2.0 INTRODUCTION

Tank 8 at the VMT is one of the 14 crude oil storage tanks that make up the VMT's ETF. Four additional tanks are located in the West Tank Farm (WTF). However, the WTF was removed from service in the early 2000s. The general VMT layout is shown below in Figure 1.

Figure 1 - VMT Aerial Photo (photo courtesy of NOAA)

All 14 ETF tanks are 250 feet in diameter, 62 feet high, welded steel, crude storage tanks built to American Petroleum Institute (API) Standard 650. They were designed and erected by Chicago Bridge and Iron in 1976. The ETF tanks were constructed on concrete ringwalls with subsurface secondary containment liners and oiled sand bedding. The sketch in Figure 2 shows the general layout and typical components of a VMT crude storage tank.

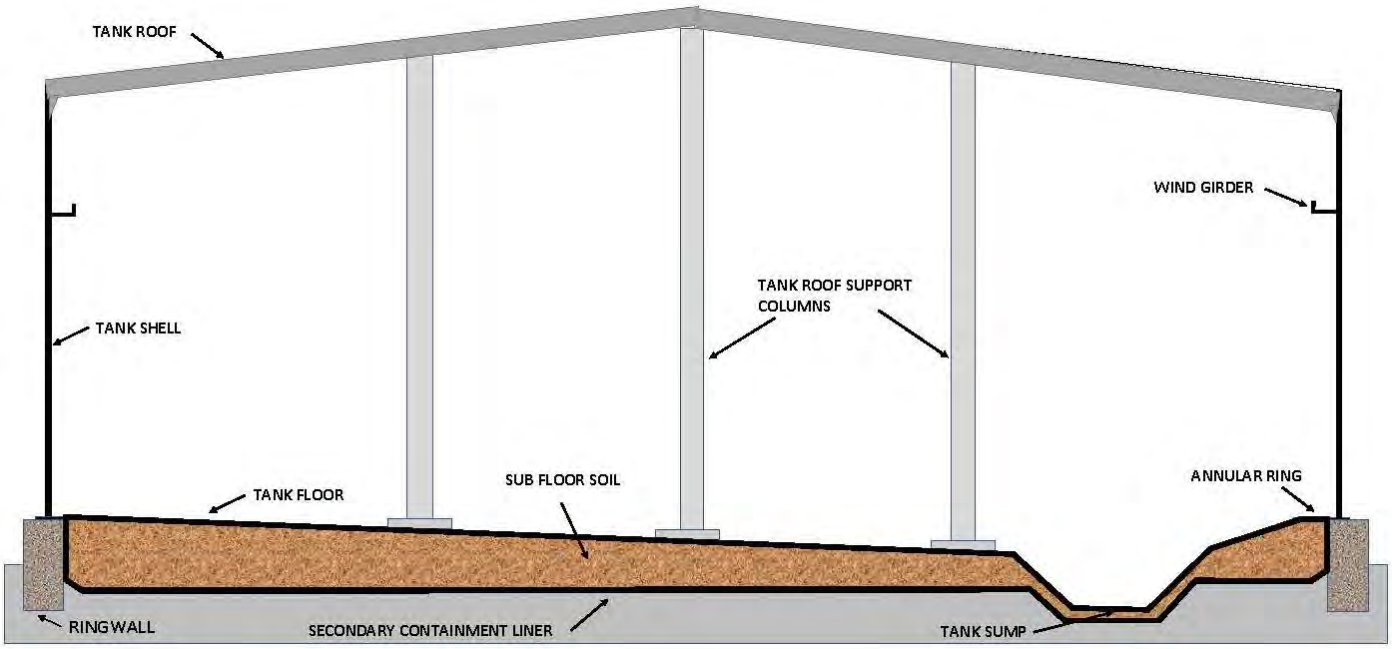

Figure 2 - Typical VMT Tank Configuration

The 1991 discovery of soil-side corrosion in the tank floors prompted APSC to systematically replace the tank floors and install sub-floor CP systems on all ETF tanks between the years 1991 and 1998. The initial CP system installed on Tank 5 in 1991 consisted of mixed metal oxide rod anodes. After the Tank 5 floor replacement, all other tanks were fitted with mixed metal oxide (MMO) grid cathodic protection systems which included monitoring tubes and/or permanent reference cells for collection of tank-to-soil potential measurements. The Tank 5 CP system was later replaced with a grid CP system in 2002.

The floorplates on Tank 8 were removed and replaced in 1995. The original oiled sand bedding was excavated and clean bedding, an MMO grid CP system, and new floorplates were installed in the tank. The existing annular (perimeter) plates remained in place.

Tank 8 was removed from service for internal inspection in 2007 and 2019. After the 2019 out-of-service inspection, minor repairs were completed on the tank floor and the tank was prepared to be coated and returned to service (Figure 3). A follow-up inspection, prompted by one of APSC's engineers, resulted in the discovery of more than 160 additional locations of corrosion that had been missed during the first inspection. At that point, the decision was made to replace the tank floor and CP system. Due to issues arising from the COVID-19 pandemic in 2020, the decision was made to complete minor repairs on Tank 8 and return it to short-term service until 2023. At that time, APSC plans to remove the tank from service and replace the tank floor and CP system.

Figure 3 - Tank 8 During 2019 Out-of-Service Inspection (photo courtesy of Austin Love/PWSRCAC)

3.0 FINDINGS, DISCUSSION, AND RECOMMENDATIONS

3.1 GENERAL

This assessment was based upon a review of the new Tank 8 CP system and floor design drawings and calculations provided by APSC. The new floor and CP system are scheduled to be installed in 2023. The design drawings were marked as "Draft." However, the drawings were engineer stamped and signed. It is not normal for drawings that are other than issued-for-construction or final design (such as conceptual, preliminary, or draft) to be sealed and signed. Other than the "Draft" watermark, the drawings provided appear to be final design (issued-for-construction) documents.

3.2 ANNULAR PLATE CP ANODE PLACEMENT

The ground bed design for the new Tank 8 floor CP system, consists of Anodeflex rings distributed throughout the area beneath the tank floorplate. The CP design includes two separate anode flex loops intended to protect the tank's annular plates. However, in that design, the annular ring Anodeflex loops are located beneath the floorplate, not beneath the annular plate. They are located roughly 1-foot from the inside diameter of the annular plate (see Figure 4, excerpted from drawing D-54-Z768-CP101).

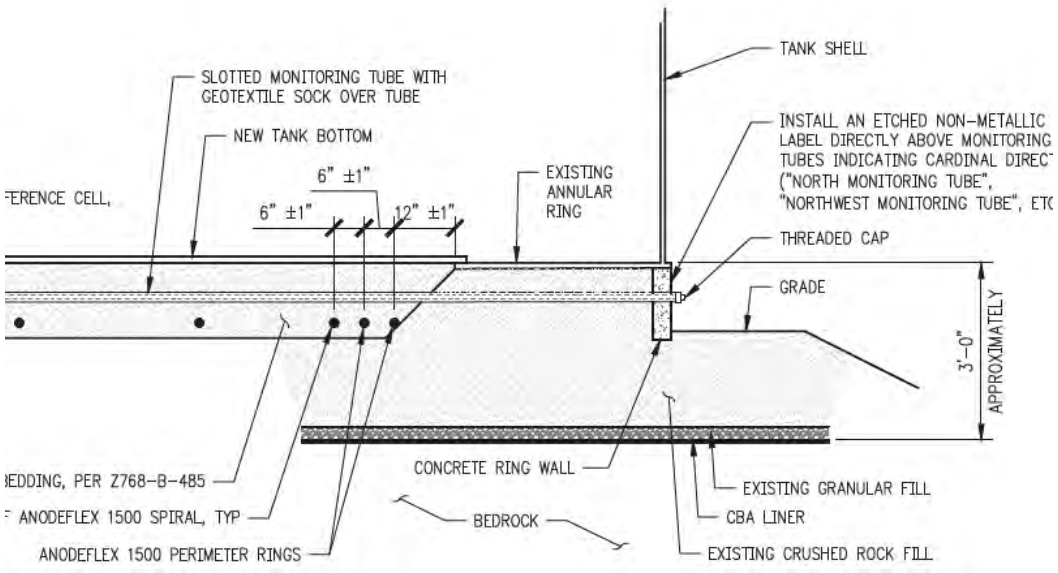

Figure 4 – Annular Ring CP Groundbed

This configuration is unlikely to protect the annular plates for the following reasons:

First, the annular plate and floorplate are welded together and therefore electrically continuous. The Anodeflex loops intended to protect the annular plates will distribute current primarily via the lowest resistance pathways. In this case, assuming similar backfill resistivity, the current will go to the closest steel, which is the regular floorplate steel, not the annular plate.

A general rule of thumb, used for designing uniform distribution of CP current for close coupled anodes, is to assume that the anode will distribute current to the steel surface in a (roughly) 120-degree arc of influence.[1] This is depicted below in Figure 5. As shown in the figure, the Anodeflex loops intended to protect the annular plate, will only impact a small section of the annular plate that is located closest to the Anodeflex (also depicted in Figure 5).

Based on this geometry, over 85% of the soil-side surface area of the annular plate is likely to remain unprotected from corrosion with the proposed cathodic protection design.

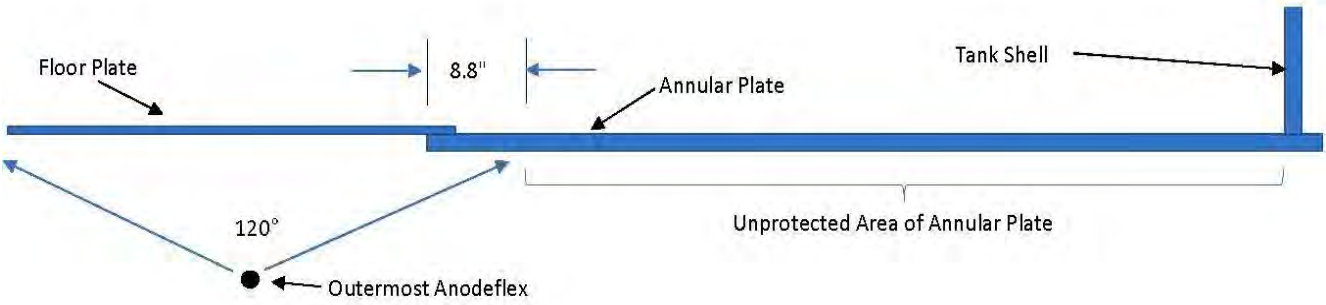

Figure 5 – Annular Plate CP Groundbed Current Distribution in Proposed Design

The two Anodeflex loops that are dedicated for the annular plate are tied to a separate circuit that can be adjusted independently of the floorplate system. It appears that APSC will attempt to protect the annular plate by using a higher driving voltage on the dedicated Anodeflex loops. This approach is very unlikely to be effective. As discussed above, the Anodeflex loops dedicated to protecting the annular plate are much closer to the floorplate than they are to the annular plate. Even with the ability to independently power the annular plate Anodeflex loops, the resulting CP current will go predominantly to the perimeter floorplate and will not measurably increase the annular plate area impacted by cathodic protection.

The CP designer appears to recognize this shortcoming in the design. Within the document "Cathodic Protection Calculations Annular Ring Circuit," Section 3.0, "Assumptions," the designer included the following statement: "Anodeflex will not be installed directly under the annular ring due to construction restraints; therefore, reduced CP current density is expected near the shell."

The lack of a ringwall to annular plate seal on Tank 8 will exacerbate the situation by allowing rainwater flowing off the tank to seep beneath the annular plate. The constant influx of oxygenated water will increase the cathodic protection current necessary to protect the annular plate, further enforcing the need to add cathodic protection to that region of the tank bottom.

[1] NACE Cathodic Protection Technologist Manual, Section 4.1.1.4, "Effects of Anode-to-Structure Spacing on Current Distribution," January 2010

3.3 ANNULAR PLATE CP CALCULATIONS AND ANODE SPACING

We conducted a review of the calculations for the preliminary design of the annular plate cathodic protection system. The area, current requirement, and assumptions seem to be reasonable and in order.

However, the preliminary annular plate CP system design includes placing the outermost three anode loops very closely spaced together (6 inches apart) as shown in Figure 6 (excerpted from drawing D-54-Z768-CP101). The two outermost rings are dedicated to protecting the annular plate. The innermost of the three rings is intended to protect the floorplate.

The CP system designer appears to have correctly calculated the annular plate anode resistance for a single isolated Anodeflex ring. However, at that point the designer divided the resistance by the number of anodes (Figure 7). The calculation note in Figure 7 suggests that that calculation negates the effect of close-coupling or crowding the anodes. That is not the case. The calculation in Figure 7 is intended for anodes that are widely spaced and not subjected to the impacts of crowding.[2] It does not account for the increase in circuit resistance that will accompany installing those anodes as closely as designed.

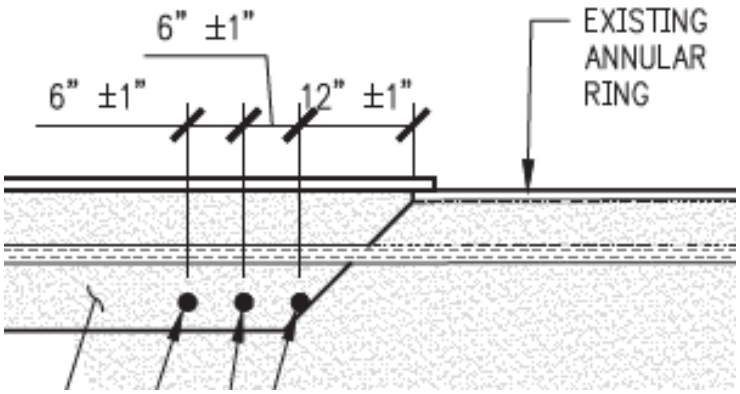

Figure 6 – Annular Ring CP Groundbed Spacing

$$R_A := \left(\frac{R_{aflx}}{N_{aflx}}\right) = 2.57$$ Total anode-to-soil resistance using parallel circuit formula, negating crowding and close-coupled effects (ohms)

Figure 7 – Annular Plate Cathodic Protection Calculations

The designer should have utilized a modified Sunde Equation to calculate the added resistance that will occur due to mutual interference between closely spaced anodes.
We have run these calculations using soil resistivities that are typical of what would be expected for clean graded fill. Based on the results of those calculations, the rectifier included in the design will not have sufficient voltage to overcome the resistance caused by the anode crowding.

[2] NACE CP Technologist Manual, "CP Design Fundamentals" (July 2007 Revision), Section 4.4.2 p. 4-25.

3.4 REQUIREMENTS FOR CATHODIC PROTECTION ON THE ANNULAR PLATE

In prior meetings, APSC personnel have suggested that since no annular plate repairs were necessary during the inspection of Tank 8, then additional CP on the annular plate is not necessary. However, the corrosion rates reported on the annular plates were similar in magnitude to the corrosion rates on the general floorplates. CP is intended to be a proactive effort to ameliorate corrosion before significant damage occurs, not a reactive action based on damage that has already occurred. The annular plates are significantly thicker than the floorplates, which negated the need for immediate repairs. However, that does not negate the need for CP in that area. Without correcting the deficiency in CP for the annular plate, repairs in that area will eventually be necessary.

In some cases, code allows for a facility operator to forgo the application of CP to an aboveground storage tank if the owner can demonstrate that the environment beneath the floor is non-corrosive. However, in the case of Tank 8, APSC's inspections have already determined that the sub-annular plate environment is corrosive. Based on these findings, the effective application of cathodic protection to the annular plates is required in order to halt active corrosion on the structure.

3.5 RECOMMENDED ANNULAR PLATE CP SYSTEM DESIGN CHANGES

To ensure protection of the annular plate using an anode depth of 12-inches, it would be necessary to modify the design to relocate the two outermost Anodeflex loops so that they are beneath the annular plate. The outermost loop would need to be located within about 20 inches of the concrete ringwall and the second loop would need to be located within roughly 60 inches of the ringwall. See Figure 8.

This configuration would provide sufficient current and current distribution to the annular plate. It would also correct for the deficiencies associated with anode crowding. As with the proposed design, these anode rings should be designed such that the voltage and current driving them can be adjusted independently of the remainder of the soil-side CP system.

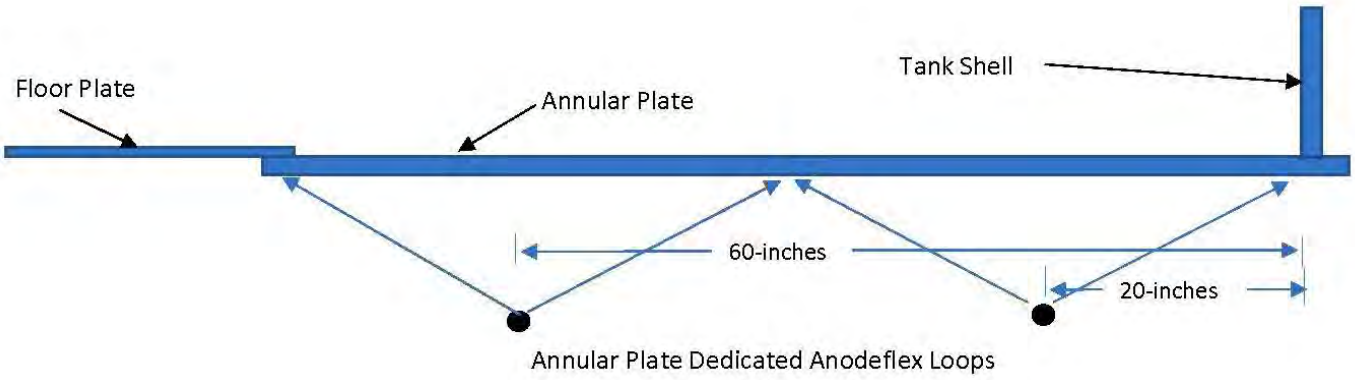

Figure 8 – Recommended Annular Plate Cathodic Protection Distribution

The challenge with this approach is that it will require that APSC excavate beneath the annular plate to install the anodes. Backfilling that area is challenging as it is not possible to compact the backfilled

soils. APSC typically uses a lean slurry to backfill these types of areas to gain complete backfill of the area without having to compact the soils.

3.6 ANNULAR PLATE CP MONITORING

The existing CP system design utilized CP monitoring tubes that are slotted to allow the collection of CP readings beneath the floor. However, for some reason, the old monitoring tube design did not extend the slots to beneath the annular plate. That basically left APSC blind to the level of CP being afforded the annular plates on their crude tanks.

The new CP system design appears to correct this shortcoming. Figure 9 is an excerpt of preliminary design drawing D-54-768-CP101, showing the proposed monitoring tube. It appears that APSC intends to install slotted tubes beneath the annular plate as well as the floorplate. That will enable APSC to monitor the levels of cathodic protection on the annular plate as well as the floorplate. This represents a design improvement over the existing systems.

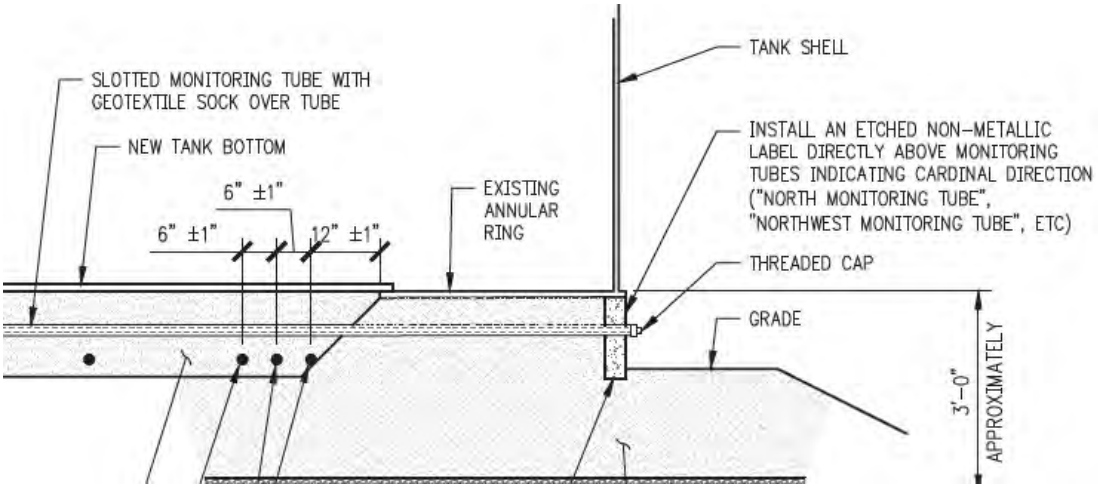

Figure 9 – CP Monitoring Tube Detail

3.7 SUMP – CP DESIGN ISSUES

Both the existing and new CP systems are not configured to protect the steel associated with the bottom of the tank sump. The sump rests within a few inches of the secondary containment liner. That close proximity precludes the installation of anodes beneath the sump. Figure 10 is an excerpt from APSC design drawing D-54-C285 Sheet 20, showing the sump location relative to the secondary containment liner (shown as "XR5 Liner" on the drawing excerpt).

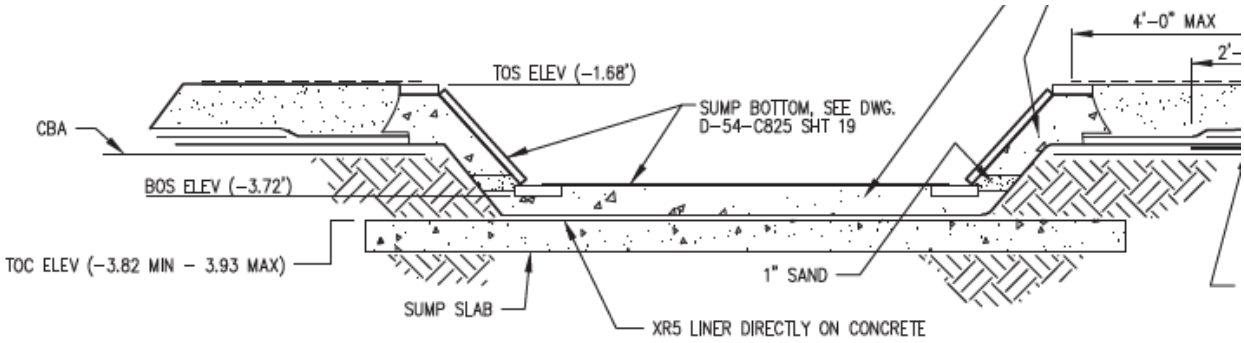

Figure 10 – Sump/Secondary Containment Liner Details

The design details provided by Alyeska and depicted in Figure 10, confirm that there is not sufficient clearance to accommodate anodes between the sump bottom and secondary containment liner. Figure 11 (an excerpt from design drawing D-54-Z768-CP102 Sheet 1) shows the routing of anode material around the sump to accommodate the lack of clearance. No anodes will be installed directly beneath the sump. Based on this configuration, the soil-side surfaces of the sump bottom will not see any benefit from the new cathodic protection system.

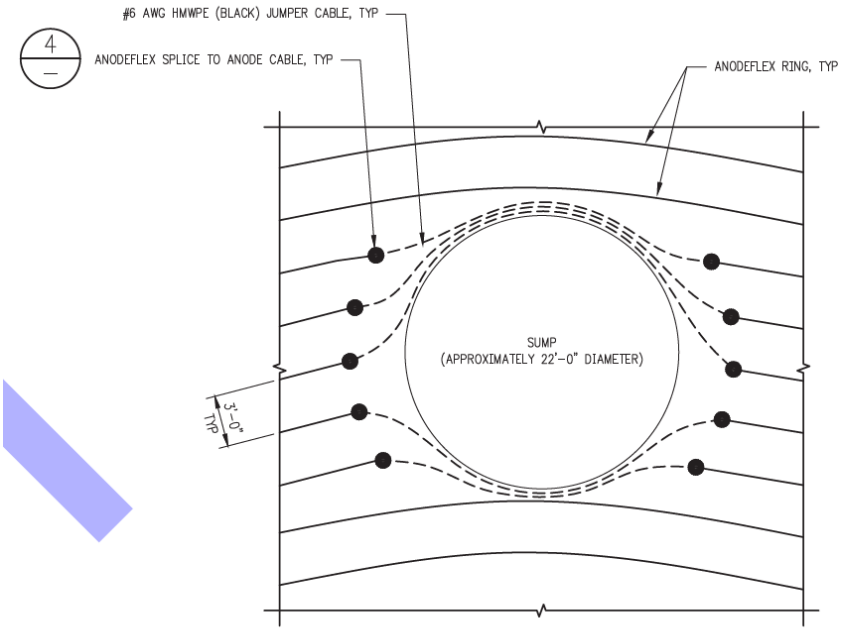

Figure 11 – Anode Distribution Around the Tank 8 Sump

Further, the secondary containment liner elevation follows the contour of the slope forming a low point beneath the sump. This means that the sump bottom will spend more time in contact with water than any other soil-side surface.

The output of the anode placed as shown in Figure 11 will also be impacted by the crowding effect of placing three or four Anodeflex rings in such close proximity (similar to the situation discussed in Section 3.3 of this report). The result will be that significantly less current will be distributed to this area.

The CP designer appears to recognize this shortcoming in the design. Within the document "Cathodic Protection Calculations Tank Bottom Circuit," Section 3.0, "Assumptions," the designer included the following statement: "Anodeflex will not be installed under the columns, sump or annular ring due to construction restraints; therefore, reduced CP current density is expected at these locations."

The sump design includes 3/8-inch plate for the sump bottom. This is the same thickness as the rest of the tank floor surfaces.

3.8 SUMP DESIGN RECOMMENDATIONS

The sump will be the component of the tank floor that sees the highest time of contact with water on both the internal and external surfaces. Internally, any water accumulation within the tank will naturally settle into the sump. It has been conveyed that APSC no longer executes water draws on the crude tanks. So, water settling out in the tanks that is not entrained in the crude stream outflow during tanker loading will remain in the sump until the tank is removed from service for the next inspection.

The soil-side surfaces of the sump are likewise located in the lowest point of the secondary containment. The sump bottom is roughly 1.2 feet below the sub-floor drainpipe. Assuming that the secondary containment is intact, soils beneath the drainpipe, including the area of the sump, will be saturated with water 100% of the time.

Based on these findings, we recommend that APSC's design be modified in the following manner:

- Anodes should be designed and installed to be mounted on the internal surfaces of the sump floor.
- The new sump should be fabricated outside of the tank and the soil-side surfaces of the assembly should be coated prior to installation.
- The designer should consider the impacts of anode crowding at the sump. Based on those calculations, they may want to modify the design proposed in Figure 11 to alleviate anode crowding issues.
- Alyeska should consider an additional corrosion allowance for the sump by fabricating the sump from thicker steel than the remainder of the floor.

3.9 COLUMNS – CP DESIGN ISSUES

Neither the existing nor new CP system designs are configured to afford full protection of the steel beneath the tank columns. The new CP system design includes routing the Anodeflex material around the soil pads beneath the columns (see Figure 12).

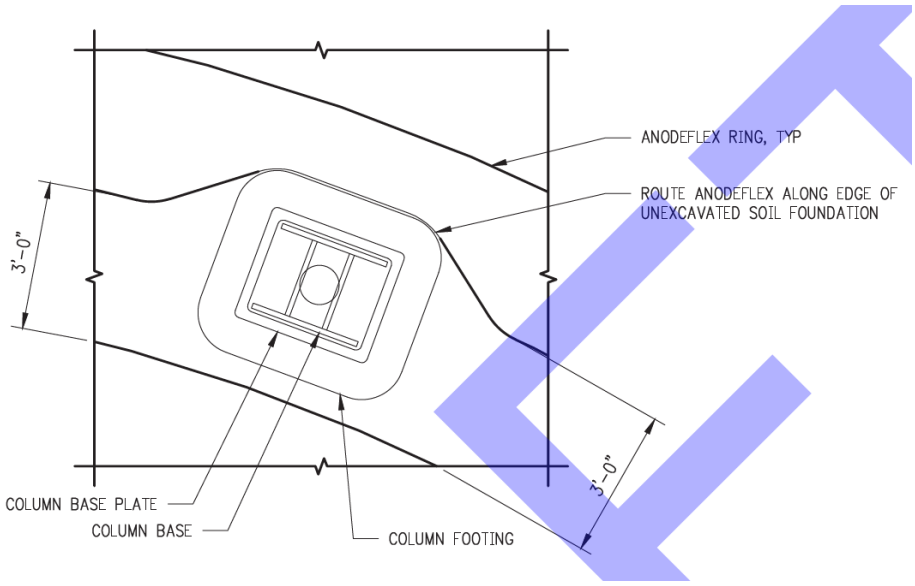

Figure 12 - Column Base Anode Routing

Figure 12, excerpted from drawing D-54-Z768-CP104, presents the best-case scenario for how far the Anodeflex rings will need to deviate to avoid column base pads. In Figure 12, the column base is aligned in parallel to the Anodeflex rings. However, as shown in Figure 13, the column bases are not all oriented the same. In some cases, the column bases may be oriented perpendicular or diagonal to the Anodeflex rings as depicted in Figure 14.

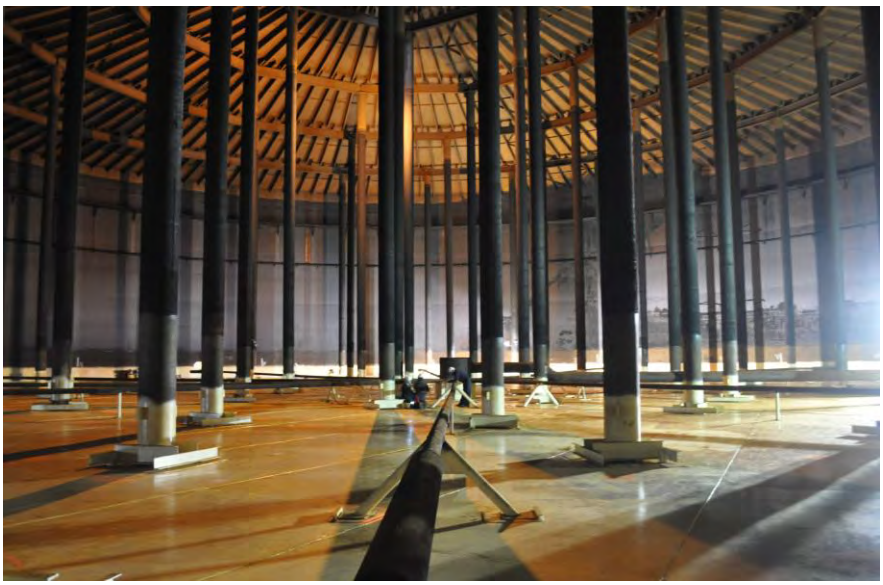

Figure 13 – Actual Column Orientation

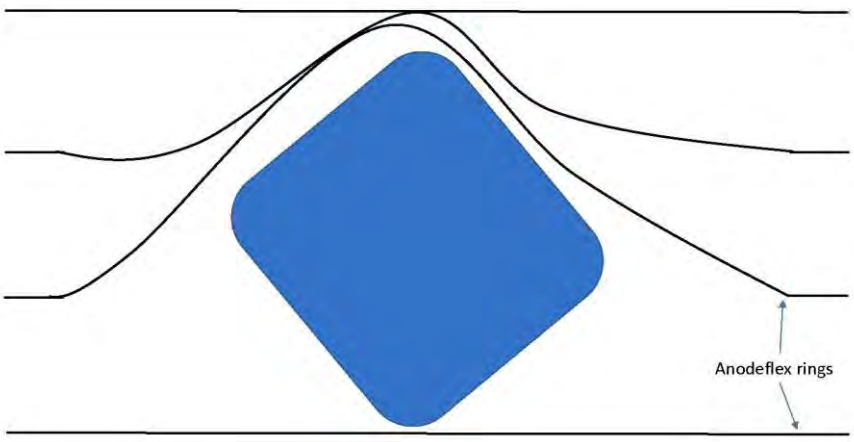

Figure 14 – Diagonal Column Base

The soil pad beneath the column base will slope down and the Anodeflex will be placed at the toe of that slope as shown in Figure 15.

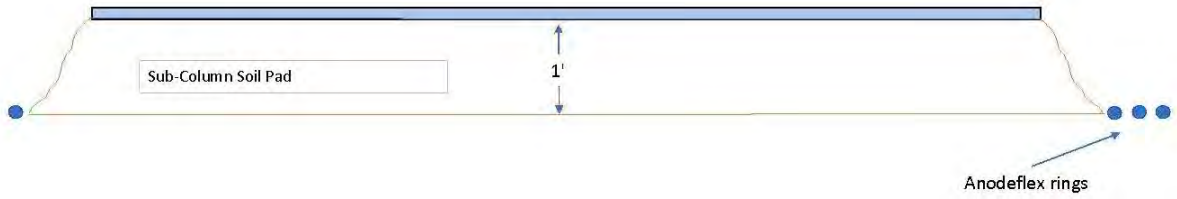

Figure 15 – Cutaway View of Column Pad

The design doesn't include dimensions of the existing column pad remnants that will be left in place or the dimensions of the column feet. Without those dimensions, we can't define the exact impact to anode spacing. However, the presence of a column base that is diagonal to the Anodeflex rings could shift the location of two or more anode rings.

This design detail could impact the CP system in two ways:

- Current from the Anodeflex rings located at the toe of the column pads will go to the area immediately above the anodes and not reach the floorplate directly beneath the columns (similar to the situation described in Section 3.2 of this report).
- Placing two or more anode rings in close proximity at the toe of the pad will create a "crowding" issue. The sections of Anodeflex rings that are too closely co-located will not provide current to that area (similar to the situation described in Section 3.3 of this report).

The CP designer appears to recognize this shortcoming in the design. Within the document "Cathodic Protection Calculations Tank Bottom Circuit," Section 3.0, "Assumptions," the designer included the following statement: "Anodeflex will not be installed under the columns, sump or

annular ring due to construction restraints; therefore, reduced CP current density is expected at these locations". This crowding effect will create localized high resistance areas of the groundbed that will further reduce the CP current afforded to the soil-side surfaces of the floorplate beneath the columns.

The design also calls for the CP monitoring tubes to be routed around the columns. APSC operators will not be able to monitor the levels of CP afforded the floorplate beneath the columns.

3.10 COLUMN/CP SYSTEM DESIGN RECOMMENDATIONS

Due to tight clearance between the column bases and the floorplate, it may be difficult to complete competent welds on the floorplate seams directly beneath the columns. That area is also difficult to uniformly coat and difficult to inspect. It is important that CP currents be well distributed to that area and that effective doubler-plates (column pads) be installed.

- The design should be modified to allow installation of the Anodeflex rings beneath the columns. That would alleviate issues with anode crowding and ensure uniform current distribution.
- The design should ensure that the floorplates beneath the columns are fully seal welded prior to setting the column pads to ensure that the pads are truly doubler-plates. That may already be the intent of the design, but it was not entirely obvious in the design documents.

4.0 REFERENCES

The following documents were reviewed in the course of this study:

- APSC. 2019-2021. TK-8 CP Survey Data.
- APSC. 2019. Valdez Marine Terminal VMT TK-8 Cathodic Protection Contingency Plan Z768 Drawing Index.
- Coffman Engineers. 2019. Corrosion Calculations for Z768 VMT TK-8 CP Contingency Design: Cathodic Protection Calculations Tank Bottom Circuit.
- Coffman Engineers. 2019. Corrosion Calculations for Z768 VMT TK-8 CP Contingency Design: Cathodic Protection Calculations Annual Ring Circuit.

Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Danielle Verna and the Information and Education Committee

Project number and name or topic: 6560 Peer Listener Training Phase 1

1. **Description of agenda item:** The Board is being asked to accept the report titled "Evaluation Report Peer Listener Program" by Purpose Driven Consulting dated August 2, 2022. The purpose of this project was to review and assess the PWSRCAC's Peer Listener Training Program and similar programs nationwide that promote peer-to-peer community support. The review included interviews with select PWSRCAC stakeholders that have previously been involved in the program. The contractors from Purpose Driven Consulting will provide a brief presentation summarizing their findings from the review and their recommendations for updating the program to reflect best practices given PWSRCAC's capacity and mission.

2. **Why is this item important to PWSRCAC:** PWSRCAC supported development of a Peer Listener Program after the Exxon Valdez oil spill to build community resilience in the wake of a technological disaster. See a summary of the PWSRCAC's initiation of this program and continued support through time in item 4 below. This current project is a first step in comprehensively updating the program to reflect the time that has passed since the Exxon Valdez oil spill, developments in the fields of mental health and community wellness, and the desire for community members to be prepared to provide peer support and active listening to promote social well-being during a technological disaster.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	1/28/2021	Approval of Proposed FY2022 Projects to begin in FY2021: Approval of the following list of projects to commence in FY2021 along with corresponding budget modifications, and delegation of authority to the Executive Committee to authorize contracts as indicated: e) Approve Project 6560 – Peer Listener Training Literature Review in the amount of $10,000 to commence in FY2021. This project will encompass the first part of the Peer Listener Training project slated for FY2022, and that has a total budget modification from the contingency fund in the amount of $10,000.

4. **Summary of policy, issues, support, or opposition:** The Peer Listener Training Program started as part of a project called Community Impacts Planning (CIP). In November 1990, the newly formed Council adopted a socioeconomic baseline as a research priority, and in 1991, set aside $300,000 for CIP. Social scientist Dr. J. Steven Picou and his team had been in Cordova since August 1989 to study social impacts of the Exxon Valdez oil spill. Dr. Picou was a leading researcher in the field of disasters and mental health who later studied the effects of Hurricane Katrina and the BP Deepwater Horizon oil spill. Initial work in the PWS region included evaluation of impacts in Cordova as compared to the control community of Petersburg. The Board approved an additional $174,750 in

1995 to continue work with Dr. Picou developing a training program, which included the (eventually-titled) "Coping with Technological Disasters – A User Friendly Guidebook" and a peer listening program.

The first Peer Listener Training debuted in Cordova in 1996. In 1999, the first edition of the Coping with Technological Disasters Guidebook was completed, which included a Peer Listener Training Manual within the appendices. By 2001, a video training for peer listener was available, which underwent a series of upgrades and releases in 2003, 2005, 2009, and 2010. In 2010, it was also made available on the Council's Facebook page as a set of nine videos (11-18 minutes each). Records are unclear how many times the training was provided to an in-person audience, but trainings were given in 1996 in Cordova, 2001 in Anchorage, 2008 in Cordova. In 2016, the first-ever Train-the-Trainer program was held as a two-day, in-person event in Anchorage. Of note, the content for Train-the-Trainer program was largely the same, however the participants were professionals with training in mental health, including counselors, social workers, clergy, and professional educators. Dr. Keith Nicholls led this workshop, as Dr. Picou had retired.

In 2021, the Coping with Technological Disasters Guidebook was re-released after significant review and update. The Peer Listener Training Manual was identified as timely for additional in-depth revision, considering the extent of advancements in the field of mental health and community wellness since its original authorship. Until the Peer Listener project is completed, the Guidebook now includes a placeholder for the manual, which provides an introduction and background information on the original program as well as resource links for those looking for additional information.

5. **Committee Recommendation:** The Information and Education Committee has reviewed this work and made a recommendation for the Board of Directors to accept this report via email vote finalized on August 8, 2022.

6. **Relationship to LRP and Budget:** Project 6560 Peer Listener Training is in the approved FY2023 budget and annual workplan.

6560--Peer Listener Training
As of July 31, 2022

FY-2023 Budget	
Original	$25,000.00
Modifications	
Revised Budget	$25,000.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$4,500.00
Actual + Commitments	$4,500.00
Amount Remaining	$20,500.00

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7. **Action Requested of the Board of Directors:** Accept the report titled "Evaluation Report Peer Listener Program" by Purpose Driven Consulting dated August 2, 2022 as meeting the terms and conditions of contract number 6560.22.01, and for distribution to the public.

8. **Alternatives:** None recommended.

9. **Attachments:** The report titled "Evaluation Report Peer Listener Program" by Purpose Driven Consulting.

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Evaluation Report
Peer Listener Program

for

Prince William Sound Regional Citizens' Advisory Council

Completed by

Purpose Driven Consulting

Bianca Vazquez

Meghan Sobocienski

Maureen Okasinski

August 2, 2022

Contract number: 6560.22.01

The opinions expressed in this PWSRCAC-commissioned report are not necessarily those of PWSRCAC.

Abstract

With developments in the field of disaster response and peer listening, and the extended time since the Exxon Valdez oil spill, the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) committed to updating their Peer Listener Program to fit current realities. This evaluation provides a comprehensive analysis of PWSRCAC's Peer Listener Program to improve program operation and generate new knowledge focused on its next iteration, building on its existing strengths and incorporating best practices from both academic research and active peer listening programs nationwide.

Using a participatory evaluation approach with PWSRCAC staff and volunteers, the team completed 1) a literature review, 2) semi-structured interviews with program staff from eight programs across the country and a review of program materials and training curricula from ten programs, and 3) semi-structured interviews with eight PWSRCAC program stakeholders. Pulling from the fields of substance abuse, mental health, and wellness peer listening programs, community-based psychological first aid, and local and national disaster response programs, the program scan produced three approaches for peer listening: 1) short-term, immediate disaster response, 2) longer-term, community-anchored programs to impact social cohesion and general well-being, and 3) a hybrid model of immediate and long-term disaster response to impact community resiliency.

It is in the self-interest of communities to invest in community and peer led disaster preparedness and response networks. A first step for PWSRCAC's revision is to select an approach and match their resources allocated with the goal and objectives of the program.

While the complete recommendations resulting from this project can be found in the corresponding section (starting on page 47), the high-level, key points are as follows.

Recommendation 1: Select an approach and design based on your desired impact and resources.
The PWSRCAC's Peer Listener Training Manual describes a program consistent with the ongoing, long-term disaster response approach that results in community resiliency. The program's stated goal was to train enough leaders so that the cohort of trained listeners can respond as a crisis team to disasters, continuously train community members as peer listeners, support a therapeutic community, and be available for subsequent disasters. This is consistent with both the stakeholders' vision and with best practices in disaster response.

However, the challenge in the successful implementation of this approach is relationships and resources. To date, resource allocation has not matched with the program approach and scope as described in the manual and defined as priorities by key stakeholders.

Recommendation 2: Build relationships and create partnerships to accomplish program goals and execute selected program approach.

Part of the creative solution to the challenge is to build relationships for collaboration and partnership toward a coalition embodying shared values and objectives. Best practice peer listening models throughout our research indicated a clear lead organization and clear partnerships with well identified roles which may be well met by the establishment of a formal coalition to support peer listening programs. Consider that partnerships could provide opportunities for funding that these organizations could get for doing this work. PWSRCAC will need embedded leaders/community leaders as they revise program design and training materials. PWSRCAC will likely need to establish new relationships within its own communities and outside of them to do this.

Recommendation 3: Program Design–Peer Listeners

Once the approach and scope are confirmed and aligned, PWSRCAC can develop these aspects of the program:

a. Eligibility and recruitment of peer listeners
b. A plan for vetting and recruiting of listeners
c. A plan for maintaining relationships between listeners, as well as ongoing peer listener support.
d. Build a structured outreach plan to involve communities named as priorities.
e. Decide how peer listeners get connected to care receivers.

Regardless of the approach and scope selected, more support to peer listeners is required.

Recommendation 4: Program Design–Training Curriculum

There is a rich array of curriculum available to learn from and adapt to update PWSRCAC training curriculum. Within those resources, integration of the below considerations will increase the effectiveness and impact of the training:

a. Revise program design to formalize a peer listener support structure and ensure all aspects of the program are trauma-informed.
b. Rewrite the curriculum pedagogy to be at least 60/40 didactic versus role play in presentation and teaching. Increasing the active learning aspect of the training program will strengthen the retention of skills.
c. Separate any peer listener training program from the train-the-trainer program.

d. To fulfill the PWSRCAC's Peer Listener Program purpose, training must be more frequent as well as match program approach.
e. Make clear to peer listeners and in materials that peer listening is a skill to use in everyday life, and can be activated in a crisis or disaster. This everyday use addresses community resiliency and makes it possible for these skills to be more effectively used in a disaster.

Recommendation 5: Cultural competency and relevancy integrated at each stage of planning, design, implementation, and evaluation.

In order to expand the program's ability to reach more people affected by disasters we recommend and encourage broader community engagement with Alaska Natives and other members of the diverse communities in the next stage of program planning. We suggest investing in a community-integrated planning and implementation process to ensure that program design responds to geographic, cultural, and community diversity. This response would address another need identified by stakeholders, the literature review, and organizational interviews – that the program is reflective of and responsive to the 19 Alaska Native communities and the diversity found in the culture, professions, sizes, and distances between communities.

Recommendation 6: Develop program monitoring and evaluation

One of the biggest gaps we uncovered in the field of peer listening and disaster crisis response was around evaluation. Nearly every program we interviewed desired more evaluation work and a greater understanding of the effectiveness of their programs and work. With PWSRCAC 's initial leadership in this field, we recommend the following as it continues to lead:

a. Develop a program quality assessment matrix consistent with PWSRCAC's self selected approach, design, and best practices.
b. Adopt a set of program monitoring (delivered activities and outputs) and outcome measurement tools.
c. Healthy partnership and cross community coordination assessment can aid in the ongoing retention of partners and resource development.

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Acknowledgements

The evaluation team expresses their gratitude for the contribution of time, knowledge, and experience from staff, volunteers, and Board members of the PWSRCAC, as well as to the staff of the organizations around the country working in peer listening and peer counseling. Their attention and generosity made this report possible.

Mississippi Alabama Sea Grant Consortium
Nova-CRT
Red Hook Initiative
Stephen Ministries
University of Michigan Counseling and Psychological Services Peer Counseling Program
University of Michigan Peer-to-Peer Program
Vibrant CETC

We'd like to note - It was particularly touching to interview the Mississippi-Alabama Sea Grant Consortium (MSGC) staff. The MSGC staff highlighted that the initial conversations with PWSRCAC alerted them to the reality that a technical disaster would bring significant community mental health challenges and allowed them to respond more effectively.

Evaluation Background

Program Overview

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC or the Council) is an independent nonprofit corporation whose mission is to promote environmentally safe operation of the Valdez Marine Terminal and associated tankers. Their work is guided by the Oil Pollution Act of 1990 and their contract with Alyeska Pipeline Service Company. PWSRCAC's 18 member organizations are communities in the region affected by the Exxon oil spill, as well as Alaska Native, commercial fishing, aquaculture, recreation, tourism, and environmental groups. All member entities were affected in some way by the 1989 spill, and all have a significant stake in the prevention of oil pollution and protection of marine resources in the area.

The Peer Listener Training Program started as part of a project called Community Impacts Planning (CIP). In November 1990, the newly formed Council adopted a socioeconomic baseline as a research priority, and in 1991 set aside $300,000 for CIP. Social scientist Dr. J. Steven Picou and his team had been in Cordova since August 1989 to study social impacts of the Exxon Valdez oil spill. Dr. Picou was a leading researcher in the field of disasters and mental health who studied both the Exxon Valdez and BP Deepwater Horizon oil spills. Initial work in the Prince William Sound region included evaluation of impacts in Cordova as compared to the control community of Petersburg. The Council Board approved an additional $174,750 in 1995 to continue work with Dr. Picou to develop a training program, which included the (eventually titled) "Coping with Technological Disasters – A User-Friendly Guidebook" and a peer listening program.

The first Peer Listener Training debuted in Cordova in 1996. In 1999, the first edition of the Coping with Technological Disasters Guidebook was completed, which included a Peer Listener Training Program Manual within the appendices. By 2001, a video training for the Peer Listener Training was available, which underwent a series of upgrades and releases in 2003, 2005, 2009, and 2010. In 2010, it was also made available on the Council's Facebook page as a 2-hour set of nine videos (11-18 minutes each). Records are unclear how many times the training was provided to an in-person audience, but at least in 1996 in Cordova, 2001 in Anchorage, 2008 in Cordova. In 2016, the first-ever Train-the-Trainer program was held as a two-day, in-person event in Anchorage. Of note, the content for Train-the-Trainer was largely the same, however the participants were professionals with training in mental health already, including counselors, social workers, clergy, and professional educators. Dr. Keith Nicholls led this workshop, as Dr. Picou had retired.

In 2021, the Coping with Technological Disasters Guidebook was re-released after significant review and update. During the revision process, PWSRCAC identified that it was time for the Peer

Listener Training manual to undergo in-depth review as a separate project, considering the extent of advancements in the field of mental health and community wellness since its original authorship. Until the Peer Listener project is completed, the Guidebook now includes a placeholder for the manual which provides an introduction and background information on the original program, as well as resource links for those looking for additional information.

Evaluation Purpose

To provide a comprehensive analysis of the Council's Peer Listener Program to improve program operation and generate new knowledge focused on its next iteration that builds on its existing strengths and incorporates best practices from both academic research and active peer listening programs nationwide. The evaluation will engage with current and former staff, volunteers, and Board members of PWSRCAC, individuals who attended prior Peer Listening training, and staff at other organizations who have used peer listening or a similar model to respond to community disasters, mental health, and well-being needs.

Evaluation Questions

1) What are the strengths and areas for improvement in PWSRCAC's current Peer Listener Program?
2) How can the PWSRCAC build forward from the existing programs strengths and areas for improvement using currently acknowledged best practices in a Peer Listener Program model and program models that meet similar needs through alternate designs?
3) How can the PWSRCAC incorporate relevant ethical and legal considerations effectively into its program design?
4) What potential partners can the program engage with to meet the region's unique needs, and what potential partners regionally or nationally could form a long-term network that keeps the program updated and relevant?

Evaluation Team

Purpose Driven Consulting is a collective of evaluators and community organizers with over 50 years combined experience in the creation of community listening teams, community development, education, and faith-based contexts, and both qualitative and quantitative participatory program evaluation.

Mauren Okasinski, *MSW - University of Michigan Lecturer*

Maureen Okasinski, MSW integrates academic rigor with practical, community-led practices in her consulting work. Her approach is grounded in participatory practices that center each organization's, and their associated community's, values and culture with high quality-evaluation methods. She has 20 years experience in leadership, program development, research, design and

evaluation, grant writing and management, budget management, and direct practice. This includes nine years of social work teaching, 14 years of social work practice, and six years in consulting. She earned an MSW from the University of Michigan with a major in policy and evaluation. She has taught at the University of Michigan since 2012.

Bianca Vazquez - ***Founder & Director, Beloved Community Incubator (BCI)***

Bianca Vazquez is the Program Director at Beloved Community Incubator in Washington, D.C. Neighborhood listening sessions led to her engagement with small micro-business projects with local residents, which led to the founding of BCI. She believes in the power of worker-ownership to substantially transform communities and the economy. Bianca is trained in community organizing by the Industrial Areas Foundation, Faith in Action Network, and Gamaliel Network. She has lived and worked in Washington, D.C. for 10 years. She has strategically listened to thousands of people over the past decade.

Meghan Sobocienski - ***Founder & Director, Grace in Action Collectives***

Meghan Sobocienski is a Founder and Director of Grace in Action Collectives in Southwest Detroit. Meghan spent five years as a Community Organizer with the PICO (Faith in Action Network), and five years working as a Co-Organizer for the Organizing for Mission Cohort (Network) through the Evangelical Lutheran Church in America (ELCA). Through this work Meghan conducted over 1,000 one to one listening conversations to develop communities of support and change strategies. Meghan has led the growth and evolution of Grace in Action Collectives through the past eight years, growing the organization from beginnings to the mid-sized organization it is today. Meghan has an MDiv. from the Lutheran Theological Seminary in Berkeley, CA, and a BSW from Capital University in Columbus, OH. She is an ordained Deacon in the Lutheran church (ELCA).

Evaluation Design

The team applied a utilization-focused approach examining processes and outcomes of the existing program gathering qualitative and quantitative data. Participatory evaluation practices manifest at each stage of the evaluation, integrating relevant organizational staff, volunteers, and Board members from planning through analysis. The evaluation methodology for assessment of the existing program relied heavily on qualitative data gathered through individual interviews and small group discussion with key interested and affected parties of the PWSRCAC's Peer Listener Program. The evaluation gathered and analyzed existing program qualitative data from training manuals, curriculum, and recordings. The evaluation employed a literature review of existing scholarly research around peer listening and similar programs, gathered qualitative data through interviews with staff at other peer listening programs nationwide, and conducted interviews with key stakeholders associated with PWSRCAC. Data collection and analysis progress was done in three stages.

Stage 1: Discovery and Planning Phase

Early engagement with project staff: This engagement provided necessary insights into organizational and community culture and values to ensure that the evaluation process was culturally relevant and responsive, to further refine the evaluation plan to meet the needs and expectations of the PWSRCAC's Board and staff, and to identify key interested and affected parties for interviews in the next two stages. During this stage, the team set communications and meeting plans with the Council's project coordinator to provide evaluation updates, problem solve as needed, and assure that the evaluation remained consistent with the organization's goals.

Literature Review: Utilizing the extensive articles database through the University of Michigan library system, the team scanned academic research published in scholarly journals focused on peer listening or similar programs that address disaster response, mental health, and community resiliency.

Scan of Existing Programs: The team identified 15 active peer listening programs from which seven were selected for an in-depth look.

Existing Program Data: Council staff provided existing program materials (the Guidebook, manual, and video link). There was no other program data available.

The results of staff engagement, literature review, and existing program data review formed the foundation for interview questions with current staff and Board members, as well as with staff from other programs.

Stage 2: Description and Comparison of Similar or Cross-Applicable Programs

Following the scan of existing peer listening programs, the team and Council staff and volunteers identified seven programs to engage in one-to-one interviews. The interview protocol and questions focused on a set of topics determined in conjunction with Council staff and volunteers that provided a comparison to the existing program and insight into revisions and development for its next iteration. The team approached interviews and relationship building with each program with an eye to sharing resources such as training manuals and to building ongoing partnership between programs so as to remain relevant and effective in their work. The team added three additional online/book length curricula to this group. The resources (e.g., training outlines and intake forms) the organizations shared and found through the literature review are in the appendices.

The literature review and scan of existing programs identified evidence-based and best practices to inform PWSRCAC's revisions and to meet the program's purpose and needs within the essential components of the PWSRCAC Peer Listening Program: building community resilience, promoting peer-to-peer support, disaster recovery, and/or empathetic listening.

Stage 3: Assessment of PWSRCAC Peer Listening Program

To assess the strengths and areas for improvement of the current Peer Listening Program, the team conducted one-to-one interviews with eight individuals and analyzed existing program materials in comparison to the literature and program reviews.

Interview protocols and questions were developed based on gained cultural knowledge, priorities set by the Council staff and volunteers, the type and quantity of existing program data, and the results of the literature review. All of the stakeholders interviewed completed consent forms.

Participatory Analysis and Reporting

Participatory analysis involved three rounds of sharing results. First, a selected set of Council staff and volunteers reviewed the annotated bibliography and active program scan. Second, the staff and volunteers reviewed the results of the program scan. Third, using a presentation slidedeck and draft report, the evaluation team shared results and recommendations with a larger body of Council volunteers and staff. Their input has been integrated in the final report.

Literature Review

Component Methodology

The literature review yielded 23 journal articles and books in the University of Michigan Library articles database relevant to the PWSRCAC Peer Listening Program evaluation. Keywords used were peer listening, peer support, peer-to-peer, community based psychological first aid, psychological first aid, and disaster mental health. Articles from 2000 and later, and specific to disaster, were given priority in selection as were those that provided information about program structure regardless of whether the peer-to-peer program was focused on responding to disaster. Articles were selected for content focused on program design and structure, virtual and in-person delivery, training provided, training manuals, legal/ethical domains of peer support programs and supervision provided, essential information on trauma, best practices, and outcomes of the programs. The annotated bibliography can be found in Appendix A.

Results

The literature review used a set of evidence-based books, manuals, and planning programs designed for disaster response by both lay people and professionals. The topics of scope, design, training, supervision, support, and evaluation of the program discussed in the literature review prove relevant to the re-design of the PWSRCAC Peer Listening Program and new avenues for a vision of what can be provided to support the community in both immediate response and longer-term recovery.

Program Design

In reviewing the program design approaches, central themes included: versatility within geography and cultural contexts, applicability to PWSRCAC's mission, and the ability to contribute to community resiliency.

> *"The impacts of a disaster like the Deepwater Horizons Oil Spill can be expected to unfold over many years, providers in affected areas should be trained not only in immediate response, but also in the provision of long-term, multisystem, culturally appropriate, and accessible services."*
> *- Family Resilience Following the Deepwater Horizon Oil Spill: Theory and Evidence (2021), page 44.*[21]

Approaches

The literature provided information about two particular direct support, disaster response models: Community Based Psychological First Aid (CBPFA) and Psychological First Aid (PFA). While they sound and are similar, they are designed for two different types of peer listeners.

The Community Based Psychological First Aid model is designed for members of a community without prior training, as compared to the Psychological First Aid model which is designed to teach mental health, first responders, and medical professionals skills in responding to mental health needs in a disaster. CBPFA, developed over 30 years of work in responding to natural and technological disasters in 20 different countries, is delivered in the context of peoples' social networks in the location of their choosing rather than in formal settings. Members of the community are trained to provide basic psychological support to their family, friends, neighbors, and co-workers while managing their own stress. It is used most often in the context of traumatic stress and is customized to a community's needs and culture.[2, 16]

The Psychological First Aid model operates within the framework of an authorized disaster response system and is designed for delivery by mental health and other disaster response workers who may be embedded in a variety of response units such as school crisis response teams, faith-based organizations, first responders, and primary and emergency health care. It is used in the immediate aftermath of disasters and terrorism. It is expected that mental health and other disaster response workers will deliver it in community settings such as shelters, field hospitals, crisis hotlines, and feeding locations.[3] Note that sometimes the term Psychological First Aid is meant more generally for a variety of strategies for basic psychological support including those provided by community members and mental health professionals.[16]

A third approach, Disaster Mental Health (DMH), which refers specifically to psychological support provided by mental health professionals in preparation for, response to, and recovery from disasters, was not included as this is outside of PWSRCAC's intent. The American Psychological Association established the Disaster Resource Network in 1992, each state with its own coordinating body, providing training in Disaster Mental Health.

Because of the number of Alaska Natives within the Prince William Sound region, the literature review sought peer support models designed by Indigenous community members. The Southern Plains Tribe Peer Specialist Program was designed to serve members of tribal communities through tribal organizations and communities who respond to mental illness and addiction. The peer specialists, all members of the tribal community, blend their lived experiences with formal training. While not professional counselors, they are paid staff members of said organizations. The program integrates Indigenous cultural and spiritual practices with western helping frameworks and skills. Native Americans were among the first people to employ peer support in recovery. The

peer specialists work in conjunction with professional program staff and engage in both group and individual contact with the organization's clients or attendees.[4]

Outside of these fully developed models, a group of 92 clinicians from 17 countries took part in a 3-round web-based Delphi process rating the importance of statements made about peer support programs in organizations whose employees are at high risk of exposure to potentially traumatic incidents. Among the highlights were that peer supporters are members of the community and have trust/respect of their peers, peer supporters should undergo a screening process, and that their primary role is in active listening and providing referrals for additional help when needed.[13]

Exploring the Effectiveness of In-Person and Digital Delivery Methods

While programs see success in face-to-face peer listening,[2, 3, 4, 17] evaluation of digital delivery through social media and teleconferencing with diverse identities and age groups showed virtual delivery methods had a positive impact for both those seeking peer support and those providing it.[8, 9, 11,12, 22] A preliminary review of a mental health crisis support program for veterans active in online gaming groups that was delivered through Discord (an online virtual platform) showed broad support for this method; a more extensive program evaluation is in process.[12]

Curriculum

Formal training and certification programs in mental health disaster response are provided through multiple institutions including: The Disaster Mental Health Institute at the University of South Dakota, the Institute for Disaster Mental Health (IDMH) at the State University of New York New Paltz, Denver University Graduate School of Professional Psychology (master's degree in international disaster psychology), the Red Cross, various state psychological associations, the American Counseling Association, Substance Abuse and Mental Health Services Administration (SAMHSA) Crisis Counseling Assistance and Training Program, and Veterans Affairs.[16]

> *"CBPFA provides individuals with skills they can use in coping with the stress in their own lives, as well as stress in the lives of their family, friends, neighbors, classmates, or coworkers. At the core, these skills include a knowledge of stress and extreme or overwhelming (traumatic) stress, effective active listening skills, and knowledge about how to help someone get other forms of psychological support if CBPFA proves inadequate. The CBPFA model of PFA builds on the strengths of the community in which the individual lives and provides a more systematic understanding of how to cope with difficult moments and periods in life."*
>
> *- Community-Based Psychological First Aid: A practical guide to helping individuals and communities during difficult times (2016), page 3.*[2]

The Community Based Psychological First Aid curriculum stems from the author's extensive work in natural and technological disasters and is designed to be applicable in both these types of disasters and in personal crises.

The curriculum topics are extensive, beginning with self assessment of the fit between the role and the person who is interested in providing Psychological First Aid, understanding the individual responses to stressors, the types of reactions to traumatic stress, the stress of disasters, active listening, applying problem solving skills, ways of coping with stress, providing instrumental assistance, cultural differences, understanding loss and grieving, when and how to refer people to professional services, privacy and ethical considerations, how to take care of yourself while supporting other people, and providing Community Based Psychological First Aid to children, older adults, and in rural and marginalized communities. The model presented in the text is an individual training model with an appendix describing how to develop a community-based program with a team of stakeholders who can customize the curriculum to the particulars of a community.[2]

> *"Psychological First Aid is an evidence-informed modular approach to help children, adolescents, adults and families in the immediate aftermath of disaster and terrorism. PFA is designed to reduce the initial distress caused by traumatic events and to foster short- and long-term adaptive functioning and coping."*
>
> *- Psychological First Aid, Field Operations Guide (2006), page 11.*[3]

The curriculum for Psychological First Aid includes professional behavior, guidelines for interaction, including behavior to avoid, tips on working with children, older adults, people with disabilities, preparing to enter the setting where emergency services are being provided, and noticing signs of acute stress. Core actions of Psychological First Aid are detailed: contact and engagement with the person, enhancing the person's feeling of safety and comfort, stabilization of people who are emotionally overwhelmed, information gathering about current needs and concerns, providing practical assistance, connecting people to their primary social supports, stress reactions and coping skills, and referrals for additional services when needed.[3] Developed by a 25-person group of mental health disaster specialists, the curriculum met the criteria for evidence-informed design and content.[6]

The curriculum for the peer specialists of the Southern Plains Tribe program is developed by each organization and designed unique to the state and tribal group. The core curriculum includes defining the role, work skills, active listening, and other interpersonal skills, assessing and dealing with risk, setting healthy boundaries, cultural competency, trauma and coping strategies, healing and self care, motivational interviewing, goal setting, group facilitation, health education, and addiction and recovery. Peer specialist may complete extensive formal certification (for example in Oklahoma there is a 40-hour initial certification and required continuing education).[4]

External program design and curriculum are not the only options for mental health disaster response. Disaster response designed and carried out by the affected communities of natural disasters in Asia showed immediate and long-term impacts.[7] A program to provide support to caregivers completed through co-design by the affected communities members proved successful and resulted in a self-facilitated support group by caregivers that continued for 2.5 years.[8] The success of increasing the use of positive coping in a school-based, 8-session group led by professional facilitators following an EF5 tornado in Moore, Oklahoma, demonstrated an alternative approach for responding to community mental health needs following disaster.[20] Interventions in school settings are effective for fostering resilience in youth following an adverse event.[21]

Training, Supervision, and Support for Peer Listeners

Both the Community Based Psychological First Aid and Psychological First Aid models do not describe structures or processes for providing additional training, supervision, or support to peer listeners once they have completed the initial training.[2, 3, 4] However, other research identified its need and value to both professional and lay mental health disaster responsers.[8, 9, 17]

Training for disaster mental health workers that used simulation-based education has been used for disaster preparedness training for current and future healthcare professionals. The effect of simulation-based disaster psychological support education improved the learner's positive

learning attitude, crisis management, problem-solving skills, knowledge of psychosocial support, and confidence.[11] In Korea, a team developed a Psychological First Aid mobile app named Psychological Life Support to provide disaster workers with information on disaster situations, apply Psychological First Aid techniques, and assistance in the recovery of their traumatic stress after a disaster. Used in a technological and natural disaster response simulation training, the 19 participants found this tool worked well within the simulation with participants experiencing realistic disaster situation, strong satisfaction with educational methods using a mobile application, confidence in providing disaster relief by integrating experience and knowledge of the Psychological First Aid app, and self reflection as disaster health care workers.[11]

Support to peer listeners while they are providing support to others can be done through self directed online groups[8] and by mental health professionals to active peer listeners. Professionals from the U.S., Canada, and Australia successfully used a popular social media app to provide support to frontline health care workers during the COVID pandemic in China.[9] A disaster support team that provided Psychological First Aid during Hurricane Katrina relief reported that a peer support model of debriefing with the team had a significant impact on the quality of their work and their coping skills.[17]

The international clinicians group recommended that peer supporters should not provide peer support until they have demonstrated that they can meet the standards of the training, be supervised by a mental health professional in an ongoing way, and that attention to the peer supporters' own well-being is maintained.[13]

Program Evaluation

Among the eight recommendations developed through the Delphi Technique with a group of 92 clinicians was that “peer support programs should establish clear goals that are linked to specific outcomes prior to commencement. They should be evaluated by an external, independent evaluator on a regular basis and the evaluation should include qualitative and quantitative feedback from users. Objective indicators such as absenteeism, turnover, work performance, and staff morale, while not primary goals of peer support programs, may be collected as adjunctive data as part of the evaluation.”[13]

Methods to determine the success of the program or aspects of the program used with the peer listeners were: 1) Semi-structured individual interviews for a caregiver online support group whose results showed participants found the experience of being part of a co-design group by telehealth positively enabled participants from dispersed geographical areas to take part in the co-design process, and they established group cohesion despite their differences and geographic distance from each other.[8] 2) Focus group interviews with 19 disaster health care workers from community

mental health service centers on their training to use technology app for psychological first aid training confirmed the effectiveness of the app at addressing some prior research cited limitations of simulation training.[11] 3) Surveys with participants done at the completion of the BP Deepwater Horizons Oil Spill Peer Listening training reported that the training was well organized with useful and application information.[19] 4) Evaluator used surveys with program participants the online program, Overstack, that delivered mental health crisis support through Discord.[12] Discord is an online platform in which users can create their own communities and complete multiple digital activities such as chats, video conferencing, and sharing links and resources.

Larger Questions

Community Plan for Disaster Mental Health Needs

Disaster mental health community planning assists communities to act on long-term resilience and recovery beginning with preparation, development, and implementation of a trauma-informed collaborative process that prioritizes lasting emotional wellbeing along with survivors' short-term needs.

> *"Following the 9/11 terrorist attack, FEMA asked states to completed disaster response plans, however, according to the US Department of Health and Human Services, 64% of state emergency plans did not adequately plan for emotional needs."*
>
> *- Disaster Mental Health Community Planning A Manual for Trauma-Informed Collaboration (2020), page 39.*[5]

Smaller communities can and should develop disaster mental health response plans ahead of a disaster with a collaboration of community stakeholders inclusive of community members and staff of formal institutions such as schools, businesses, and health care.[5]

Cultural Considerations

For peer listening in the Prince William Sound region, the integration of Alaska Native cultural and spiritual traditions and practices into planning and curriculum development in those communities is important.[4, 5]

Community Capacity Building Versus Individual Skills Building

The immediate success and long-term impact of community-led responses to natural disasters in Asia illuminated the potential of response and action designed within and carried out by the community and shift the role of organizations in disaster response.[7]

> *"The most important role that relief and development agencies can play in a post-disaster situation is to understand the importance of creating a space where the affected people can come together to instigate change. They need a platform where they can link up with other similarly affected groups, in order to rebuild their lives and their communities as*

> *soon as possible, with secure livelihoods, and where they can re-establish their rights and form new relationships within the local system."*[7]
>
> *- Seeing a disaster as an opportunity – harnessing the energy of disaster survivors for change (2011), page 2.*[7]

Adjacent to this approach, the U.S. government has provided support for youth leaders to develop disaster preparedness campaigns and programs within their own communities.[18]

National Peer Listening Program Scan

Component Methodology

The objective for the review of peer listening programs from across the country was to document program design, best practices, and models to adopt, as well as understand legal and ethical concerns and locate additional resources for training. Qualitative analysis of semi-structured interviews with program staff was chosen to gain these insights.

Purpose Driven Consulting researched and subsequently presented PWSRCAC with a list of 15 peer listening programs from across the country; organizations who currently operate peer listening, disaster response, and/or mental health first aid programs. The programs spanned disaster response and mental health first aid, community listening, and one on one peer listening focused on grief and life transitions, substance abuse, and school based peer to peer programs. A limitation of the initial program list is that none of the programs specifically engaged Indigenous communities. The initial list provided key program information (year founded, number of trained listeners), program delivery methods, and resources available (best practices, disaster related materials, etc.). From that list, PWSRCAC staff and volunteers selected their priority programs for interviews, and PDC pursued programs for interviews.

Topics covered in the interview questions included program recommended best practices, program design, curriculum, peer listener recruitment and supervision, program evaluation practices, and future directions for the program. Questions can be found in Appendix B. PWSRCAC program staff and volunteers reviewed the questions and made suggestions for further revisions. Interviewers used the question guide to make sure all desired topics were addressed, most interviews progressed according to the order of the question guide. Detailed interview notes were taken and then rewritten for clarity. All three evaluators conducted the interviews.

Listed below are the organizations who completed the interview. The first five were on the priority program list established by PDC and PWSRCAC. Two of those original priority programs did not respond to requests for interviews (Gillings on the Ground and the International Fire Fighters Association Peer Support Program).

1) Stephen Ministries
2) Ann Arbor MS/HS Peer to Peer program
3) Red Hook Initiative, Local Leaders Program
4) Mississippi Alabama Sea Grant Consortium
5) Vibrant Crisis Emergency Care Team
6) Nova Crisis Response Team

Purpose Driven Consulting conducted hour-long interviews with program staff, and often additional board members, from 3/2/2022 to 4/07/2022 with eight hours of total interview time. The interviewer took notes during the interview. These interviews expounded upon the different configurations that are possible for a community listening program, including a range of supervision models, community engagement practices, curriculum configurations, listening models, and training programs.

Three additional curriculums encountered through the literature review are included in these results. No interviews were conducted with staff associated with these programs and therefore, some results reported are for less than 10 programs/curriculum reviews. This is specified within each data category.

1) Community-Based Psychological First Aid by Gerard Jacobs–a full length book.
2) Psychological First Aid developed by SAMHSA and the National Child Traumatic Stress Network–field operations guide, webinar and handouts.
3) The Peer Support Toolkit from the Southern Plains Tribal Health Board.

Note: VIBRANT Crisis Response and SAMHSA's Psychological First Aid are designed specifically for trained mental health professionals and other trained disaster responders. While these are not consistent with the PWSRCAC program design, they are included because they are disaster response programs and hold relevance to the questions PWSRCAC sought to have answered.

One evaluator coded the interviews, compared responses, wrote summaries, and discussed the results. All three evaluators repeatedly read the interviews to identify overarching best practice, program approaches, clarify details of each program, and develop the analysis of approaches. The iterative process of discussing interviews and comparing programs aided the team in refining the results and developing the approach framework. A summary of the program interviews can be found in Appendix C.

Results

The results section summarizes commonalities and trends in program design, delivery, and evaluation. Grouping like programs, the evaluation team synthesized these into three approaches for peer listening programs.

Programs Surveyed

The programs reviewed span the United States. Three programs are implemented across the country through sponsoring churches and national organizations, two are based in Michigan and

sponsored by the University of Michigan. Two are located in New York, one in Mississippi-Alabama, and one in Oklahoma. These four are sponsored by nonprofits.

Program Scope

The population served fell into three categories 1) a geographic boundary, 2) a specific population (e.g., college students, residents of a specific neighborhood) within an institutional boundary, or 3) anyone affected by the disaster. The focus of their program was defined by their mission.

Table 1: Age Demographics

Age of Population Served	#
All ages	5
Students (college students, middle, high school)	2
Adults	3
n=10	

The field spanned crisis and disaster response and mental health/general well-being. Most programs selected for review were disaster response. Of the four that had another primary focus, these were selected because of mental health and wellness focus that is fundamental in a disaster peer listening program. Programs varied in the focus of why they provided service.

> *Crisis and Disaster Response* - For communities and individuals who are experiencing trauma in the aftermath of disasters or traumatic events. This includes instances of mass violence, natural disasters, and technical disasters. The goal here is to identify people who need more mental health intervention, explain typical responses to traumatic events, and work directly with community members. Some programs train listeners to engage on the longer-term impact of disasters.
>
> *Mental Health and Well-Being* - Peer listeners are trained to listen and understand challenges present in someone's life. Peer listeners are trained to support in a variety of areas: loneliness, addiction, adjustment/transition, managing stress, grief, divorce, amongst others. The primary role of listeners is to listen, support, provide guidance with resources and mental health referrals.

Table 2: Conditions Program Addresses

Program Focus	#
Immediate disaster response	3
Ongoing disaster response	3
Mental health and well-being	4
n=10	

Program Design

Who are the Peer Listeners?

Each program referred to the person listening and the person being listened to with different terminology. For the purposes of consistency in the report, we utilized the terms peer listener and care receiver.

The demographics of who is eligible to be peer listeners varied based on the sponsoring organization, the conditions being responded to, and the mission of the organization. All of the programs had connections with or access to mental health workers who were available to provide support and take referrals from peer listeners. Additional distinctions existed between the structure of supervision, credential of trainers, and additional training opportunities.

Table 3: Eligibility to be a Peer Listener

Peer Listener Eligibility	#
Community leaders	3
General population	2
Students	2
Mental Health/disaster response professionals	2
Church members	1
n=10	

Who Do They listen To?

All disaster response programs made anyone affected by a disaster an eligible participant.

Table 4: Population of Care Receivers

Care Receiver	#
General population	7
Students	2
Mental health/addiction service recipients	1
n=10	

How are Peer Listeners Supervised and/or Supported?

The supervisors/trainers in six programs held a mental health or social work degree, two programs did not specify the credentials of the trainer. The exception was Stephen Ministries, which provided a distinct 40-hour training for supervisors. None of the programs we interviewed had train-the-trainer tracks that were available as a first step in participating in the peer listener program. Four programs had ongoing training available. The two programs with the most ongoing support were Stephen Ministries and UMICH CAPS Program who required regular ongoing training and supervision.

Table 5: Credentials, Supervision, Support

Trainer/Supervisor	#
Counseling/mental health-related degree for supervisor or trainer	6
Specified training to supervise (degree not required)	2
Additional training beyond initial	4
Supervision or self directed ongoing support	4
n=8	

Many of the disaster/crisis response related programs, by nature of the program and design, had short-term interactions between peer listeners and care receivers. With programs focused on mental health and general well-being, the one on one relationship was often extended (up to one

year). The corollary is that programs that had extended relationships between listeners and care receivers had the most formal supervision structures.

A best practice across both types of programs was to engage listeners as a team or cohort and to cultivate relationships between listeners.

Differences in Program Design Based on Program Approach

What emerged in analysis were distinctions in program approach as seen in the scope of the program (who the program serves and the issue being addressed), its design (how peer listeners are trained, supervised, and supported) and some differences in their recommended best practices and training curricula. There are three main types of disaster response programs: community rooted peer listening programs, immediate crisis response/initial disaster response programs, and a hybrid model of sustainable, resilient communities that are prepared to respond to disaster through immediate response and ongoing, trained community listeners. Some of the organizations reviewed engage in only one of these three types of disaster response, some engage in two, and some engage in the hybrid of both.

Community-Anchored Ongoing Peer Listening/Group A is about whether listening is intended to be ongoing, community anchored, and impact social cohesion and well-being.

Short-term, Initial Disaster Response/Group B listening is intended as a short-term, initial disaster response that provides immediate opportunities for processing the impacts of the disaster and crisis mental health referrals.

Hybrid Model of Resilient Communities/Group C utilizes ongoing trained community listeners for resilient communities, where listeners are prepared for and able to be mobilized in a disaster, understand the ongoing long-term effects of disasters, and utilize the skills regularly.

Within each group there are variations based on the individual organization's mission. Further analysis of these emerging typologies are outside the scope of this evaluation report. The overview of these provides a frame for PWSRCAC to aid in considering the scope and design of their program based on their mission and their stakeholders' shared values and vision for the program.

Table 6: Emerging Typology for Peer Listening Program Approach

Group A/Ongoing	Group B/Short-Term, Initial Response	Group C/Community Resiliency
Scope: ongoing support for mental health and well-being	Scope: immediate disaster response	Scope: immediate and long-term support disaster response
Peer listeners are community members within the community being served	Peer listeners are community members or leaders, mental health professionals, or disaster first responders	Peer listeners are community members or local leaders
Peer listening occurs within mental health/counseling programs (2 of 3) or within social network (1 of 3)	Peer listening occurs in disaster responses center immediately following a disaster (4 of 5) and within the social networks of the peer listener (1 of 5)	Peer listening occurs within the social networks of the peer listener
Initial training Ongoing training and support	Initial training No ongoing supervision or support (excepting NOVA with advanced training)	Initial training
Example programs: ♦ Stephen Ministries ♦ Peer listening Program in Counseling and Psychological Services at the University of Michigan ♦ Plains Tribes Peer Support program	Example programs: ♦ Mississippi-Alabama Sea Grant Consortium Peer Listening Program ♦ NOVA Crisis Response Team Training™ Program ♦ Crisis Emotional Care Team ♦ Disaster First Aid (SAMHSA)	Example programs: ♦ Red Hook Initiative, Local Leaders Program ♦ Community Based Disaster First Aid, Gerard Jacobs

Best practices: ⧫ Highly structured training ⧫ Structured ongoing supervision ⧫ Usually have a contained geographic region or serves a specific group (college, university) ⧫ Usually a structured way to request a listener ⧫ The relationship is time bound, ongoing training opportunities ⧫ Group supervision with a trained professional regularly	Best practices: ⧫ Higher average training times ⧫ Supervisors are mental health professionals ⧫ Part of the training is about impact of disasters and common responses to disaster ⧫ On average 58% role play in trainings vs didactic training ⧫ Cultivate a network of listeners ⧫ Good training and pathways for mental health referrals	Best practices: ⧫ Training on accompanying people in crisis and long-term impacts of disaster on a community ⧫ Trauma informed ⧫ Supervision by mental health professional or social worker ⧫ Representative diversity of peer listeners ⧫ Some other touch point to the community as opposed to just disaster training ⧫ See peer listening as a key component to creating healthy and resilient communities

Hours of Initial Training

The average across all groups was 17 hours-excluding one outlier. Group B has the widest range of initial training hours. The smallest number of initial training time was Mississippi-Alabama Sea Grant which required four hours of training and the longest was NOVA Crisis Response that offered 24 hours of initial training and 24 hours of advanced training. Groups B and C were most similar in the scope of their program-responding to disasters.

Commonalities between the most structured programs included a significant amount of initial training for listeners; the average across all programs was 15 hours. The average for programs that equip leaders for disaster response is 19. Where advanced training components or train-the-trainer programs existed, they were distinct training tracks, with additional training hours required.

Table 7: Initial Training Time

Topic	Average hours
Group A/Ongoing	14.5
Group B/Short-Term, Initial Response	14
Group C/Community Resiliency	20
n=8	

Method of Delivery for Training

Previous to the COVID-19 pandemic, 100% of programs completed training in person. Currently, 100% of the programs interviewed shifted their program delivery to virtual due to the pandemic. Five of six programs were exploring continuing their program through virtual or hybrid instruction. Their main reasons for doing so were expanding access to the training and cost reduction. One program only provided online training and two did not specify how training was provided.

Curriculum Topics

Asked about what topics their curriculum addressed, those with the largest frequency were active listening, identifying mental health concerns, maintaining boundaries, making mental health referrals, and common responses to trauma. The curriculums prescribed how to interact with care receivers and how to close out a receiver relationship (whether it was one session or a year-long interaction). Other topics for training identified with less frequency were: depression, confidentiality, anxiety, grief, bystander intervention, individual and community disaster plans, and multicultural considerations.

The data for this section came from both interview responses and from the agendas and curriculum that the interviewed organizations shared. Those resources were Red Hook-3 years of curricula, MS Sea Grant-training video and manual, UM CAPS Peer Counseling training outline for pilot year, NOVA CRT-basic and advanced curriculum agenda, training themes and objectives, brochure and FAQ, Stephen Ministries-curriculum agenda and FAQs, UM Peer-to-Peer Mentor Manual, Psychological First Aid Field Operations Manual, Peer Counseling Handbook for the Southern Plains Tribes, and Community Based Psychological First Aid. Vibrant did not have a curriculum or topic agenda to share and is not included in the frequency table. Training topics represent both initial and ongoing or advanced training, if the program had the latter two. The Psychological First Aid Field Operations Manual and the Community Based Psychological First Aid

book are both designed specifically for disaster response and well aligned with the PWSRCAC Peer Listener Training Program's scope and design. The Peer Support Toolkit from the South Plains Tribes was the only peer listening program found in the discovery phase that specifically addressed Native or Indigenous peoples.

Of the programs with more extensive training curriculums (10+ hours), common training modules were multicultural considerations, accompanying people in crisis, trauma, and depression, as well as recognizing mental health crises and an action plan for making mental health referrals.

Table 8: Highest Frequency Curriculum Topics

Topic	#
Maintaining healthy boundaries	7
Recognizing mental health crisis	7
Active listening	7
Providing peer listening to people in crisis	6
Common responses to trauma	6
Alcohol/addiction	6
Multi-cultural considerations	5
Grief	5
Confidentiality	5
Suicide	5
Depression	5
n=10	

Balance of Training/Role Play

Most programs had a split between training and role play that averaged 40% role play and 60% presentations. More than 50% of programs named that a growing curriculum edge was to add more opportunities for role play (n=7).

Program Evaluation

Evaluation practices varied widely, with the consistent theme being a need across programs to engage in more data collection and evaluation. Programs tracked the number of people trained, when and where training occurred and training topics. Few had outcome data.

Program Identified Best Practices

In the interviews, each program staff was asked to identify their best practices. Their recommendations came from their years of experience, their identification of their success and areas in which they have identified growth and change are required in the program to further their mission. The three curriculum only/no interview programs that include some information consistent with the verbally identified best practices are included in this summary. This in-depth review illuminates the strengths and best practices of peer listening programs across the country. In Appendix C, we provide a summary of each program's highlights, program scope, curriculum, training program, and best practices. In the appendices, we included resources shared by each program, such as agendas, news articles, or impact reports, as well as a short analysis with considerations for adopting and adapting each program. Combined, these can serve as a resource and a guide around key choice points as PWSRCAC revamps its program.

The baseline starting point for many of these programs is that peer listening is a necessity. The combination and compounding of increasing natural and technical disasters, mental health service providers being at or near capacity, and isolation is decreasing the ability of communities to bounce back or come back to a new normal after new instances. Peer listening can increase social connections, decrease feelings of isolation, and respond to feelings of mistrust and uncertainty because it builds from established social networks.

The following best practices were identified in 4 or more programs.

- *Formalized Process and Structure:* Goals and target audience of the peer listening program were decided. The goals formulated for the program informed peer listener selection, training, supervision, and follow up.
- *Active and Cooperative Learning:* People zoned out when listening to didactic content. For training to be effective, people need to be active, need to connect to things with which they are familiar. Small group interactions and role plays give greater comfort, more space for questions and deeper reflection. Multiple programs named the goal of 40-50% of interactive content.
- *Create and Cultivate a Cohort Based Model:* A cohort model indicates that peer listeners are networked with one another in some way (regular group supervision, online community, regular ongoing training) and are encouraged to build relationships with one another. A cohort model enables more successful delivery of the support network and supervision that peer listeners require. Peer listeners will have their own mental health needs to be

attended to along with their interest in supporting others. A cohort model was shared to increase the peer listener's own sense of social connectedness and increase longevity in the program.

- *Knowing When to Refer and Having a Referral Plan:* Peer listeners across a variety of programs received training on how to identify mental health crises and received clear instructions of how to escalate a need to a mental health professional.
- *Trauma Informed:* Curriculums were revised in recent years to include trauma, common responses to trauma, awareness of adverse childhood experiences, and the role of community listening with precautions not to retraumatize people.

The following best practices were identified in 3 or more programs.

- *Supervision of Listeners:* Supervision must exist and be regular and consistent. This enables healthy boundaries. Supervision is done with a small group of peer listeners who meet for peer group accountability. Oftentimes this happens in a group setting with peers.
- *Formal Request to be Connected with a Listener:* The program is structured so that a potential care receiver has to put in a formal request (either online or with a supervisor) to begin their peer listener relationship.

The following best practices appeared in two programs and match PWSRCAC goals.

- *Representative Diversity of Peer Listeners:* Having diversity of peer listeners including gender, identity, and language spoken may increase the number of people being listened to from these communities and increase mental health referrals for people that come from marginalized identities.
- *Listeners Must Utilize the Tools Before Becoming a Trainer:* Trainers are selected from participants who have completed basic training, have utilized the skills, and demonstrate an interest or ability in facilitation and training.

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Stakeholders' Program Assessment

Component Methodology

The objective for stakeholder interviews was to describe the successes, challenges, and satisfaction with the prior Peer Listening Program, unique needs of the Prince William Sound region, content and focus of the future program, and resources or support available to the program.

Qualitative analysis of semi-structured interviews with key individuals associated with PWSRCAC was chosen because this method facilitates insight that can be used to understand complex and contextual elements. It is important to note that these were open ended questions and thus the discussion of topics, concerns, and ideas about the future program is exploratory rather than a sound ranking of what is most important (that will require a different methodology). Purposeful sampling was used to identify key individuals for interviews. Interviews were conducted between April and May 2022. Council staff selected the key individuals who were chosen for their connection to the PWSRCAC, especially those considered to have relevant insights.

The semi-structured interview questions were developed to respond to the learning sought as identified by the PWSRCAC. Council staff and volunteers reviewed the questions and made suggestions for further revisions in keeping with those priorities for these interviews. Interviewers used the question guide to make sure all desired issues were explored but did not always use exact wording or the predetermined order of the questions. Respondents were encouraged to elaborate and share stories of their experience for which direct quotes were written down when possible. Detailed interview notes on key issues identified by participants were taken and then rewritten for clarity. Two evaluators conducted the interviews. All three evaluators repeatedly read the interviews to discuss and identify themes. Two evaluators coded the interviews, compared responses, wrote summaries, and discussed the results. This iterative process of coding, writing, discussion, and rewriting summaries of the themes helped evaluators to interpret and refine the results.

Results

Eight interviews were conducted; seven via Zoom and one on the phone (8.10 hours). Most were Board/former Board members or staff. One identified as an Alaska Native. The majority of interviews were PWSRCAC affiliated and thus provided an institutional scan of the issues, concerns, and insight into essential program components. Most interviewees attended prior Peer Listener training and half had used the skills. Demographics for participants are shown in tables 9 and 10. Regardless of experience with the Peer Listener Program, the interviewee's knowledge of the

effects of technological disaster and their care for the community are evidenced in their words, which are amplified in this section of the report.

Table 9: Stakeholder Demographics-Relationship to PWSRCAC

Role	#
PWSRCAC Board member/former PWSRCAC	4
PWSRCAC staff	2
Other professionals	2
n=8	

Table 10: Stakeholder Demographics-Experience with PWSRCAC Peer Listening Program

Connection to the Peer Listening Program	#
Attended a Peer Listener training	5
Reported use of skills from training	4
Other mental health training/educational background	3
n=8	

Unique Needs of the Prince William Sound/Exxon Valdez Oil Spill Region

> *"This region is really unique – all of the communities are far apart in distance and general location. There just are not roads between a lot of these locations. The distance is not just miles. There are also huge differences in cultures and use of the lands."*
>
> *–Stakeholder Interview 1*

Frequently cited by the interviewees as factors in understanding the unique needs of the region were the physical spaces, the distance between communities, and the size of each community. This was paired with their acknowledgment of the cultural and occupational diversity within and between communities that includes 19 different Alaska Native communities, fishing and tourism industry differences. The needs are complex and interviewees often described the nuances of these, from fears that the Native communities would feel abandoned in another technological

disaster to the kinds of conflict that occurred because of the significant financial gains of some residents, the compensation for losses based in details of industry, and of seeking approval from elders for who one could talk to about their concerns. One person summed up the complexity with the straightforward need to address "how not to hate your neighbor." Of particular relevance to considerations for revisions to the Peer Listener Program, two people talked about the transience of mental health professionals within the community, a fact that makes it hard to build trust for help seeking and to embed disaster mental health response within the professional helping community.

> *"The main limitation of the program for us is the attrition of mental health workers in small towns. Our main problem in executing this program, and really any program, is staff attrition. It's cyclical, and staff leaves. They cycle in and cycle out of small towns."*
>
> *–Stakeholder Interview 8*

Concerns To Address in the Revised PWSRCAC Program

> *"There is a large stigma around counseling. If you can train people in the community that can recognize the signs of someone in distress and find them the support they need, it can break down the sigma and be very effective and helpful."*
>
> *–Stakeholder Interview 4*

Interviewees cited that people are not aware that they or someone else would benefit from mental health services, as well as the discomfort or stigma associated with seeking them. One person described that they were told by their legal advisors "not to talk" about what was going on. While interviews described generally the need for culturally relevant responses, only two had a specific example of this.

Five of the eight interviewees expressed concern over the lack of resources allotted for mental health services. There was a sense that while there was and is a great, ongoing need for mental health support, the people and monetary resources available did not match the mental health needs that existed. Ideas for how this might be addressed were posited by stakeholder discussed in the next section.

> *"Mental health is super important and overall is under-resourced. PWSRCAC could have a LARGE role in this in our community, especially thinking about preparing for another disaster."*
>
> *–Stakeholder Interview 1*

Table 11: Stakeholder Identified Areas of Concern

Stakeholder Concerns	#
Specified technological disaster unique effect	6
Uniqueness of each community/disparities between communities (income, access, size)	5
Need for adequate resources to respond to mental health and wellness	5
Culturally responsive and relevant	4
Help seeking stigma	4
Lack of mental health resources/retention of staff	2

Support for the Program

> *"One of the biggest things I learned was how to be a listener."*
>
> *–Stakeholder Interview 6*

Prior experience with the Peer Listener Training Program

Five of the eight people reported attending a Peer Listener training. The difference between technological and natural disasters, stigmas around seeking mental health support, and the value of being a listener were the topics covered in the training that were most often identified. Three members described with details specific positive memories of their training attendance.

> *"I got to know people who I had seen in meetings but never got to see in person. The people who facilitated the training were engaging and didn't just make people listen to a powerpoint but did engaging work."*
>
> *–Stakeholder Interview 3*

Four said they had used skills from the training in their social network. They described being in the role of a listener and using empathy when talking to distraught family or friends.

> *"Why I like this program in a town like ours: it gives increased knowledge of mental health, it reminds people that it's not a personal problem. When community tragedies happen that rock the foundation of a community, people get unwell and don't reach out to mental health workers. They're more likely to reach out to their peers, their friends, and families."*

–Stakeholder Interview 8

While there was familiarity with the PWSRCAC's Peer Listener Program and support for this type of program, a subset of stakeholders shared information that indicated they were not well-versed in the program, how it would respond to community needs, or had not seen a positive impact from the program. For example, one interviewee, who was well-informed about the significant harm community members experienced and the associated complex needs, stated they had been affiliated with the PWSRCAC for several years and had heard reports about the program, yet remained uncertain as to what the program did. Another said they had seen no positive effect from the Peer Listening Program.

Valuation of the Program

> *"It matters because we don't want people to forget the mistakes of our generation. Complacency can come in again if you forget everything that's happened. We need the young people to care. "*
>
> *–Stakeholder Interview 5*

All interviewed stakeholders expressed strong personal support for the program as a valuable asset to meeting community needs. There was more variation in the perspective on community support for the program. Two interviewees cited concerns about the amount of time since the Exxon Valdez disaster and how this might decrease the feeling of importance that older members of the community attached to monitoring practices and preparedness for disaster response. In this case, community education about the harm to the community from the Exxon spill responds in part to the concerns about the need to keep the community aware of risks and harm. Interviewees see this program as the first of its kind and that its existence and dissemination matter in the larger global context of technical disasters.

> *"We developed and spearheaded our own program post-Valdez and then the group in the Gulf of Mexico have used our program. I would hope that we [PWSRCAC] have a larger role in reaching out to the community and building this program up again. And we can build on that trust if there was another event."*
>
> *–Stakeholder Interview 1*

Essential for Next Program Iteration

Interviewees had much to say about what the next iteration of the program needed to be successful in regard to scope, design, and training content.

> *"My dream is [that] we do this training in fire departments, sociology programs, legal programs, and with mental health professionals. The people I dealt with when I was listening – they were bartenders, net menders, store owners, grocery clerks – your neighbors in the street… Each student should go through this program - each will grow*

> *up to a profession and we do need to help them develop these skills. I think it's important to train people before they're adults. We also need to train religious leaders. It's broad and the curriculum we have can be applicable to everyone, it's simple."*
>
> *–Stakeholder Interview 7*

Scope

Unlike support for and awareness of the need for a peer listening program, there was no one consistent answer regarding the scope of program. Immediate disaster response, ongoing disaster response, and supporting community resiliency, as well as historic trauma were all identified as significant by various stakeholders. Interviewee responses converged around the needs for the program to respond to the complexity of trauma and the diversity within the different communities, as described earlier. Some were specific in identifying preparedness and resiliency as valuable to the scope of the program.

> *"I've thought a lot about how these disasters like the one we had in Valdez have the ability to divide a community. I think trainings like these reweave communities together and get people to work together instead of against each other."*
>
> *–Stakeholder Interview 4*

Consensus around preparedness echoed in several respondents. If the program was consistently active in building a network of effective peer listeners, when a community crisis or disaster strikes, the Prince William Sound communities will become more resilient.

> *"We can't prevent trauma from happening – especially when we talk about man-made or natural disasters. Inevitably trauma is going to happen. What we can control is how we respond to it in order to minimize the impacts over a long time. Once you're in that cycle of trauma you have to move through that and help people move through that. The more support they have the more likely they are to move through a more normalized place."*
>
> *–Stakeholder Interview 2*

Design

> *"We need people anchored to the community to be the ones getting trained, they have to show they're going to be here. Suicide and other deaths of despair are very common in Alaska."*
>
> *–Stakeholder Interview 8*

While there was no one single response about who should attend training, the interviewees had a clear desire for a large group of community members to attend training so that their skills could be activated in a crisis as well as used in ongoing community care. Two interviewees described a goal of training all the PWSRCAC Board and staff, and others stated that they could link with each community through Board members, first responders, faith, and nonprofit institutions.

> *"We have been promoting counseling centers to take the training on, but without resources to do so. We could go beyond that - we could embed the training into some of the churches and congregations, the Native tribes, or the whole city or community spaces. The churches and community could work together to promote and put on these training and programs."*
>
> *–Stakeholder Interview 4*

Some people raised the question of who holds the training, whether it is PWSRCAC solely or whether it might be better addressed in collaboration and partnership. Differences of opinion existed between stakeholders about resources available within any single organization (PWSRCAC or others). One interviewee wanted to see a counseling center hold or be a key partner in delivering training. Another said that they knew the counseling centers did not have capacity to add programming with their current resources. Two other interviewees listed a larger group of local entities including churches, schools, and Alaska Native communities that could be a part of ongoing collaborative efforts–a shift that would address multiple needs for the program.

Of note in regards to scope, two interviewees seemed to have the view that the training was to be used in professional application rather than in a social context. They both stated that they had used the skills within their social network but, in other parts of the interview, seemed dissatisfied with this application of the skills. This dissatisfaction may speak to a lack of clarity in program purpose. This clarity could be addressed by revisions to the program approach and design and/or frequency of training offering that can reinforce the application of peer listening in social networks.

Frequency of Training

The stakeholder group wants a large, well-trained, connected network, increased frequency of training (at least yearly), and ongoing follow up with attendees to practice skills and learn new information. Two interviewees' response to the question about their experience with attending the training articulated well two reasons for increasing frequency and follow up.

> *"It's been so long I can't recall the specifics of the training at all."*
>
> *–Stakeholder Interview 2*
>
> *"I didn't really remember all of the things that I learned in the training because we learned them so fast...I don't really remember but I want to remember."*
>
> *–Stakeholder Interview 3*

Another person asked for a community-led design process. This choice would contribute effectively to expanding the number and diversity of the network of listeners, and to distinguishing the role of the peer listener from the role of the helping professional.

> *"I would ask the community how to set it up in its own community… and what content is taught and how it's culturally competent to that community to design the training locally and then have local sign ups…I would see a team of trained professionals working alongside community listeners in communities and from communities. Particularly this is important in Native communities. It needs to be introduced by a Native elder. Who messages it and designs it matters."*
>
> *–Stakeholder Interview 6*

Table 12: Program Design

How to respond to needs	#
Be a consistent presence with regular training and follow up	6
Be well-networked	5
Large group of trained peer listeners	5

The interviews included specific content and style for the training curriculum. In recalling their participation at the training, one person described how relationships are built through participation in the program. Others described the needs for practicing skills as experienced through cooperative and active learning.

> *"The successes: The training was so much fun. We took a big group picture on the steps afterwards. There were a lot of people there who I hadn't spent a lot of time with so I got to know people who I had seen in meetings but never got to see in person. "*
>
> *–Stakeholder Interview 3*

A community and culturally responsive program must account for the diversity of who is affected and how they are affected within the training curriculum as well as in the program design.

> *"Figuring out how to work with many different cultures because we have so many different kinds of people dispersed among so many different places. Fishing, tourism, Native cultures."*
>
> *–Stakeholder Interview 6*

The lessons learned from first responders and disaster here and elsewhere that a program needs to acknowledge and respond to the needs of the caregivers.

> *"All of us who were living here were impacted. Every single person from every single walk of life. Even the mental health workers were impacted, and we couldn't import people fast enough."*

–Stakeholder Interview 7

Table 13: Training Content

How to Respond to Needs	#
Culturally relevant and competent	3
Supporting others while experiencing your own trauma	3
Trauma informed (awareness of immediate, ongoing, historic)	3
Listening skills	3
Understanding mental health/referring to professionals	3

Strengths and Areas for Improvement in PWSRCAC's Peer Listener Program

This section begins with a review of the PWSRCAC's program, similar to what the evaluation team completed with the other programs that participated in interviews and program materials sharing. Following this summary, the PWSRCAC program's design and curriculum is assessed in comparison to literature review results and the other peer listening program.

PWSRCAC's Peer Listening Program

The Peer Listener Training Program was designed to train local residents to provide peer support within disaster-impacted communities and established 10 years after the Exxon Valdez oil spill. The lay listener acts as an advisor, friend, and referral agent for individuals within a community who may not desire to seek professional services or may not know that help is available. The original Peer Listener Training Manual (created 1999, updated 2004, 2021) was developed in consultation with Dr. J. Steven Picou, a leading researcher in the field of disasters and mental health who studied both the Exxon Valdez and BP Deepwater Horizon oil spills.

Highlights

Year Founded	# of Listeners Trained	Hours of Training	# of People Served in Year
1999	24 in 2016 Unknown for 2008, 2001, 1996	14 hours: as defined in the manual 2.3 hours: video on Facebook in 9 parts Ongoing: N/A	Data not tracked

Best Practices as Recommended by the Organization

PWSRCAC's best practices are pulled from its own manual. Without program data, it is unclear to what extent these were aspirational or actual in implementation.

- *Qualified trainers* – Peer Listener Training should be conducted by qualified, local mental health professionals

- *Uplift local leaders* – Peer listeners should be individuals within a community who are highly trusted, dependable, and discreet resident volunteers. They should be representative of all cultural, ethnic, and age groups within the impacted community.
- *Formal & structured program* – During an event, the community may want to consider designating a coordinator to create a structured approach, develop a network, and ensure training takes place.
- *Supervision* – Community leaders should continually follow up with peer listeners to receive feedback and provide additional training and referral organizations when needed. Original training even provided a feedback form to be filled out after every peer listener touch point to discuss in supervision and use for program evaluation.

Program Scope

The goal of a Peer Listener Training Program is to teach active listening to create important links for the healing process after a disaster. While intended to support recovery from the long-term effects of a disaster, this network can remain in the community as an ongoing resource, as long as the community sees a need for it and is committed to supporting it. This could allow the network to be in place and available should future disasters impact the community.

Program Design

In the years since the disaster, it has been difficult to retain the energy around the Peer Listener Training Program. According to Council staff, the training was delivered at least four times since 1996. The training manual was revised at least twice, and the training video updated five times. In 2016, PWSRCAC moved from training listeners directly to a train-the-trainer model. Their expectation was that those trainers would continue to conduct peer listener training in local communities across the Prince William Sound region.

The Peer Listeners

PWSRCAC's program trains community members which can include community leaders, first responders, and mental health professionals. PWSRCAC has worked with community institutions to offer training to their leaders. One collaboration was training workers at the local counseling center in Valdez and teachers at local schools.

The current set up requires that PWSRCAC trained trainers create, implement, and maintain their own Peer Listener Training Program. As reported by Council staff, there is not a centralized process led by PWSRCAC and no supervision of trainers or listeners. As a result, PWSRCAC does not have data on who or how many people those trainers may have trained.

The original program named a best practice and expectation of supervision and coordination of listeners. It is unclear from program data how the planned program differed from the actual in this regard.

Curriculum

The 2016 update resulted in a curriculum that is upwards of 90% didactic learning. It covers the topics of effects of technical disasters, active listening, depression, coping with anger, substance abuse, signs of abuse, suicide, recognizing mental health crisis, and how to engage referrals.

Program Data

In 2016, 24 people attended a train-the-trainer session in Anchorage. An evaluator completed pre and post test knowledge and a post session. The program did not have data on who and how many people were training from prior training. The program does not have data on participants' application of listening skills following training or the number of people with whom they talked.

Assessment of PWSRCAC's Program

Of all of the programs that focused on disaster-oriented community listening, PWSRCAC's distinguishing strength is the curriculum's focus on the particular long-term impacts of technical disasters. Dr. J. Steven Picou offered an important frame of the impact of technical disasters in comparison to natural disasters, and how the aftermath can create therapeutic or corrosive communities. This clarity is a significant contribution to the field of disaster related listening. What PWSRCAC has learned about the impacts of technical disasters and recommendations on how to respond is unique and important to share. When interviewing the Mississippi-Alabama Sea Grant Consortium, knowing these distinctions allowed them to more effectively understand what was happening in their communities as well as shape their response.

PWSRCAC's Peer Listener Program, as described in the training manual, fits most closely with the Group C/Community Resiliency, providing long-term disaster response.

In comparing PWSRCAC's program scope, design, and execution to other programs, notable departures in the pedagogy and best practices were evident.

Program Scope and Design

In regard to scope, all of the disaster response programs responded to both technological and natural disasters. PWSRCAC stood out as only responding to technological disasters. The program directly developed from PWSRCAC's own program, Mississippi-Alabama Sea Grant, provides their

training in natural disaster areas. Two programs and several literature review articles were peer listening programs that occurred in other areas of mental health, high-risk for trauma, or other well-being scenarios. An important distinction is whether listening is intended to be short-term and disaster response related or longer-term, community anchored, and meant to impact social cohesion and general well-being.

For all programs, the initial training was for peer listeners, not a train-the-trainer model as in the most recent design for PWSRCAC. The initial training for peer listening programs, with the exception of one program, averaged 17.4 hours, whereas the PWSRCAC training was 14 hours. Note that the training video posted on Facebook is approximately two hours and some viewers may interpret this posting as PWSRCAC's training program because the language on Facebook does not state otherwise. Three programs provide additional training either labeled advanced peer listening or as trainer/supervisor's training.

The stand-alone train-the-trainer model, especially without significant oversight, is a departure from best practices. People expressed in stakeholder interviews that they found the training helpful, but they did not know how to utilize the tools, how to listen in a structured way, and felt as though the expectation was that they created their own individual peer listener program.

Results of the literature review emphasize the importance of ongoing support and supervision for peer listeners which can be provided through self-directed communities or more formal means led by trained or mental health professionals. This was particularly highlighted in the literature as important because peer listeners are of the community and themselves experience trauma and needs for support in addition to the support that is needed to cope with listening to the struggles of others. PWSRCAC had not implemented this.

All of the other peer listener programs are annual programs in which listeners are trained and the expectation post training is to participate as a peer listener. PWSRCAC stands alone in offering only a train-the-trainer program.

Supervisors and trainers most often have mental health or counseling credentials or, as in the case of Mississippi-Alabama Sea Grant, the organization partners with local mental health providers for the relevant sections of the training.

Program Scope and Design: Compared to Mississippi-Alabama Sea Grant Consortium

Because the genesis of the Mississippi-Alabama Sea Grant Consortium came directly from the original PWSRCAC curriculum, we wanted to focus on the similarities and departures from the original program. Similar to PWSRCAC, the need for a peer listener program came in the aftermath of a community suicide of an effected worker in an industry decimated by the technical disaster.

Both programs were imagined with the intention to relieve overwhelmed mental health workers in the direct aftermath of a disaster.

In contrast to PWSRCAC, the Mississippi-Alabama Sea Grant Consortium program fits the most closely with initial short-term, initial response, or Group B. In these programs, listening is intended as a short-term, initial disaster response that provides immediate opportunities for processing the impacts of the disaster and crisis mental health referrals.

Mississippi-Alabama Sea Grant Consortium made program designed choices and organized resources in alignment with this. They do not intend to maintain the program between disasters. The training was staffed by mental health professionals, recruited participants through mental health professional networks, and was meant to equip participants to listen to people in their social networks and scan for mental health crises. This program also had the shortest number of training hours, commensurate with their stated goals. Additionally, there is no expectation of being in relationship with or follow up from Mississippi-Alabama Sea Grant Consortium after the training. There is no ongoing evaluation of peer listeners and their skills.

When asked about the growing edge for the program, MS-AL Sea Grant staff shared the desire for more resources and investment in these community-based disaster response networks, as well as the need to supervise peer listeners and cultivate a cohort amongst them.

> *"This [Peer listening] is an important topic that doesn't get the attention that it does need. [With] All the issues across our country, whether it's a technical disaster, natural disaster, uncertainty and mistrust, we need to build networks of listeners and it's going to become more and more essential."*
>
> *–MS-AL Sea Grant Staff 1*
>
> *"[We need to have] that basis of a small group or cohort that are committed to helping to work on this kind of a topic. As one person, I can't do this by myself. One person could go to a training but it's really a group endeavor, you need a cohort. You need to have someone else you can share with - the peer listeners need that support network and supervision. Especially if they're going to be serious about it. We can't expect to send them out into the world if they're going to take this seriously. They need support."*
>
> *–MS-AL Sea Grant Staff 2*

Program Curriculum

Below is summarized the training topics most frequently occurring in other programs that PWSRCAC includes and does not include. Topics emphasized by stakeholders are bolded. Training

topics that appeared three or more times in the active program reviews and in the literature are listed. Those that are bolded were noted as important by three or more PWSRCAC stakeholders.

Table 14: Training Topic Comparison

Training topics that 3 or more other programs have that PWSRCAC did NOT have	Training topics that PWSRCAC had that 3 or more programs also have
Maintaining healthy boundaries	Depression
Trauma & common responses to trauma	Alcohol & substance abuse
Trauma informed (awareness of immediate, ongoing, historic)	**Recognizing mental health crisis & referrals**
Multicultural considerations	Referring mental health crisis
Spiritual perspectives that impact listening	**Impact of disaster on communities**
Grief & loss	Confidentiality
	Active listening
	Suicide
	Peer listening with people in crisis

Best Practices

Below are the best practices as described in the PWSRCAC's Peer Listener Program Manual that most frequently occur in other programs and described in the literature review that PWSRCAC includes and does not include. Topics emphasized by stakeholders are bolded.

Table 15: Best Practices Comparison

Best practices that 3 or more other programs/literature review have that PWSRCAC did NOT have	Best practices that PWSRCAC had that 3 or more programs also have
Trauma informed	Representative diversity of peer listeners
Regular & consistent supervision	Knowing how and when to do mental health referrals

Supervision with a trained mental health or other credentialed professional	**Cultivating a network / cohort of listeners**
Group supervision with peers	
Formalized structure and process (recruiting and vetting peer listeners, training, supervision)	
Formal request to be connected with a listener	
Active & cooperative learning	
Ongoing training opportunities	

Ethical and Legal Considerations

Ethical and legal concerns were a key area of interest for PWSRCAC and one that permeates training, supervision, and program design. While this was a key area of interest for PWSRCAC as stated in the Request For Proposals, each program interviewed did not express ongoing concerns because:

a. The peer listener model was very prescriptive, listening was done in a group setting in a disaster center– *NOVA Crisis Response Team*
b. There was a formalized process for applying to be connected with a peer listener, limit the length of the contact between listener and receiver, and had regular supervision by a credentialed professional - *UM CAPS and Stephen Ministries.* These were also recognized as best practices within the literature review curriculums, *Community Based Psychological First Aid and Southern Plains Tribal Health Board Peer Specialist Program.*

Programs emphasized the role of peer listeners as listeners and peer supporters not counselors, and received training and the signs of and how to refer people to additional mental health services. Programs emphasized program design elements as a way of mitigating ethical and legal concerns:

a. Selection of peer listeners
b. Initial training
c. On-going training, supervision, and review
d. Supervision by mental health professional or credentialed professional

One organization said the legal concern that it had was in tracking the names of the care receivers. They chose not to do this because the researcher associated with the peer listening program had been subpoenaed in a civil case(s) regarding who received help.

Recommendations to Build Forward

Recommendation 1: Select an approach and design based on your desired impact and resources.

The PWSRCAC's Peer Listener Training Manual describes a program consistent with the ongoing, long-term disaster response approach that results in community resiliency. The program's stated goal was to train enough leaders so that the cohort of trained listeners can respond as a crisis team to disasters, continuously train community members as peer listeners, support a therapeutic community, and be available for subsequent disasters. This is consistent with both the stakeholders' vision and with best practices in disaster response.

However, the challenge in the successful implementation of this approach is relationships and resources. Best practices for programs that do long-term, ongoing community listening and the long-term disaster approach require ongoing peer listening supervision and training. PWSRCAC staff and stakeholders repeatedly identified resource limitations and a boundary limitation within PWSRCAC's mission and domain for this program and the resource limitations generally for mental health in the region.

PWSRCAC has sought to overcome the limitation of their program budget resources by making a 2-hour set of videos widely available through posting on Facebook in 2010 and, in 2016, by changing the program model to a train-the-trainer model. The use of a train-the-trainer model was intended to use PWSRCAC's resources to train community leaders and professionals, so that they could offer the training in their respective communities.

However, stakeholder interviews revealed that without additional support and resources, trained participants felt ill equipped to execute the training and develop a team of trained listeners. Only one pair of participants was able to execute a community training. Without additional infrastructure, follow up, or resources, the train-the-trainer model did not accomplish the goal of many, diverse, trained peer listeners required for the region to be served, or to know to what extent the training meets the community care that the approach seeks to deliver.

To date, resource allocation has not matched with the program approach and scope as described in the manual and defined as priorities by key stakeholders.

With the Current Resources and Little Other Change What Can Be Done?

The goal and scope of the PWSRCAC Peer Listener program would be redefined and narrowed. There are multiple options that can be explored in this case. One option might be that PWSRCAC

could contract with another organization, such as National Organization for Victim Assistance (NOVA), to provide training. NOVA's Crisis Response Team is a Group B approach, or short-term, initial disaster response. NOVA would deliver training using their own curriculum to people within the Prince William Sound region. Once trained, those residents could be deployed for disasters in other parts of the region or the country or when a technological disaster occurs. This listening would happen in the context of a disaster center in the immediate aftermath of a disaster. In the case of a technological disaster in the Prince William Sound region, NOVA trained listeners from other communities could be brought to the region to support the local listeners and mental health professionals. In the case of NOVA, some states do already have their own locally trained teams. Florida is the best example, with 1,600 trained individuals in their state. The state teams have regionalized and they respond to disasters in the state, from the Surfside building collapse to hurricanes.

Additional Scope Questions for Consideration by PWSRCAC

Both the literature review and the program scan included programs in which professionals (health care, mental health, schools, first responders, etc.) were training in psychological first aid as part of their disaster response or other high-risk for trauma scenarios.

- When is a direct aid model with professionally trained healthcare workers helpful? The Disaster First Aid Field Operations Manual was designed specifically for this and serves as a starting point to approach, if desired.
- When is a robust community listening program most helpful? PWSRCAC's manual lays out a community peer listening training model with a strong theory base that provides this.
- Where, if at all, is there space for a hybrid model that includes both direct aid by helping professionals and a community listening model?

Recommendation 2: Build relationships and create partnerships to accomplish program goals and execute selected program approach.

Part of the creative solution to the challenge is to **build relationships for collaboration and partnership toward a coalition** embodying shared values and objectives. Mississippi-Alabama Sea Grant Consortium, who adopted the PWSRCAC model for short-term, initial disaster response (Group B), attributed its success in training peer listeners widely throughout the region to the relationships the staff built when carrying out other aspects of its mission such as community education about disasters and disaster preparedness. Mississippi-Alabama Sea Grant and Stephen Ministries both train large groups of people from many communities and may offer their expertise in this area.

Best practice peer listening models throughout our research indicated **a clear lead organization and clear partnerships with well identified roles which may be well met by the establishment of a formal coalition** to support peer listening programs. Consider that

partnerships could provide opportunities for funding that these organizations could get for doing this work. PWSRCAC will need embedded leaders/community leaders as they revise program design and training materials. PWSRCAC will likely need to establish new relationships within its own communities and outside of them to do this. Below are potential region and statewide partners, many identified in the stakeholder interviews, to provide necessary resources and effective crisis mobilization response:

1. Local
   a. Local counseling services, for example Valdez Counseling Center
   b. Each geographic and Alaska Native community
   c. First responders and emergency personal
   d. Schools and churches/faith institutions
2. Regional/Statewide
   a. Alaska disaster preparedness center-statewide or regional disaster response teams. The State of Alaska Department of Public Health is one entity that provides resources for this.
   b. Alaska Psychological Association Disaster Response Network: The Disaster Response Network (DRN), created by the American Psychological Association (APA), encourages licensed psychologists and mental health providers to join in partnership with the American Red Cross and other state and local agencies to provide pro bono mental health services to victims and responders of a disaster.
3. Larger training opportunities and resources listed or included in the Resources materials provided through this project.

"It would've been better if we had this in place during the pandemic."

–Stakeholder Interview 6

An added benefit to creative resource sharing and coalition formation can be that peer listeners activate their skills in response to other community crises and general wellness needs of their social networks.

Recommendation 3: Program Design–Peer Listeners

"Training and Accreditation: Peer supporters should: (a) be trained in basic skills to fulfill their role (such as listening skills, psychological first aid, information about referral options); (b) meet specific standards in that training before commencing their role; and (c) participate in on-going training, supervision, review, and accreditation."

– Guidelines for Peer Support in High-Risk Organizations: An International Consensus Study (2012), page 7.[13]

Once the approach and scope are confirmed and aligned, PWSRCAC can develop these aspects of the program:

a. Eligibility and recruitment of peer listeners
b. A plan for vetting and recruiting of listeners
    i. The UM CAPS program shared their Peer Counselor Agreement Form.
c. A plan for maintaining relationships between listeners, as well as ongoing peer listener support.
    i. Create a cohort of listeners and get clarity about which organization is responsible for maintaining ongoing training and relationship building as well as how to best use virtual and in-person methods for this.
d. Build a structured outreach plan to involve communities named as priorities.
e. Decide how peer listeners get connected to care receivers. Examples from our program scan:
    i. NOVA - provides short-term crisis response listening at disaster centers.
    ii. Stephen Ministries - Care receivers apply and are screened before being connected to a listener.
    iii. The UM CAPS Program - Care receivers fill out Peer Counseling Interest Form.
    iv. The original PWSRCAC curriculum shared peer listeners would be placed in specific places at specific times so their availability could be communicated to community members.

Regardless of the approach and scope selected, **more support to peer listeners is required.** Forty percent of stakeholder interviewed indicated that it was difficult to respond to other's trauma while also experiencing their own trauma. They also expressed uncertainty about when/how/with whom to use the skills or even how to let people know they had the skills. We encourage the PWSRCAC to review some of the best practices found in Groups B and C around immediate crisis and initial disaster response found in the Nova, Vibrant, Red Hook, and Community Based Psychological First Aid programs as a way to potentially relieve immediate trauma in the aftermath of a disaster. The immediate disaster response strategy in some of these models could allow time for community peer listeners to be gathered, hold training sessions, and become organized while immediate response teams begin to provide care. The literature review showed that in-person and virtual options, and supervised and self-directed communities are all viable options for effective support during crisis response and for ongoing work as peer listeners.

Recommendation 4: Program Design–Training Curriculum

There is a rich array of curriculum available to learn from and adapt to update PWSRCAC training curriculum. This includes "Community Based Disaster First Aid," a book which is a comprehensive tool to develop training material and covers required topics and designed specifically for disaster response, other curriculum shared in the appendices: the Psychological First Aid materials, NOVA,

Red Hook, Stephen Ministries and UM CAPS, and the Peer Listening Program Guideline developed by a team of 82 professionals in the field of peer support. While not an exact match in scope and design, it is a succinct list of key recommendations by a larger group of trained professionals (Appendix E).

Within those resources and in hand, integration of the below considerations will increase the effectiveness and impact of the training:

a. Revise program design to formalize a **peer listener support structure** and ensure all aspects of the program are **trauma-informed.**
b. Rewrite the curriculum pedagogy to be at least 60/40 didactic versus role play in presentation and teaching. Increasing the **active learning** aspect of the training program will strengthen the retention of skills.
c. Separate any peer listener training program from the train-the-trainer program.
d. To fulfill the PWSRCAC's Peer Listener Program purpose, **training must be more frequent** as well as match program approach.
e. Make clear to peer listeners and in materials that peer listening is a skill to use in everyday life, and can be activated in a crisis or disaster. This everyday use addresses community resiliency and makes it possible for these skills to be more effectively used in a disaster.

Fifty percent of all stakeholders interviewed indicated that they would participate in more training in peer listening. Nearly all stakeholders identified the need for the Peer Listener Program to be a consistent presence in the communities which speaks to frequency of training, ongoing support to and connections among trained peer listeners. One stakeholder stated that so much happened in a short period of time that it was hard to remember what was learned, a comment that connects to structure of the initial training and training pedagogy.

Recommendation 5: Cultural competency and relevancy integrated at each stage of planning, design, implementation, and evaluation.

Through stakeholder interviews, 60% of interviews discussed the uniqueness of the Prince William Sound region and the disparity between communities, as well as the physical distance between communities. This was named as one of the main considerations when building a quality peer listening model. Fifty percent talked about the importance of having culturally competent listeners who live in the Prince William Sound region.

Stakeholders repeated that they saw the need to connect with each community and institutions within each community such as churches, counseling organizations, and Alaska Native groups in order to spread the skill of peer listening widely.

In order to expand the program's ability to reach more people affected by disasters we recommend and encourage broader community engagement with Alaska Natives and other members of the diverse communities in the next stage of program planning. Stakeholders consistently noted the diverse culture and community needs of the area.

We suggest investing in a community-integrated planning and implementation process to ensure that program design responds to geographic, cultural, and community diversity. This response would address another need identified by stakeholders, the literature review, and organizational interviews – that the program is reflective of and responsive to the 19 Alaska Native communities and the diversity found in the culture, professions, sizes, and distances between communities. Community Based Psychological First Aid and the Psychological First Aid Field Op guide both identify local context as essential to peer listening programs. Cultural context additions based on a new process with key community and cultural, tribal leaders should significantly shape the next interaction of the program.

The Southern Plains Tribal Health Board Peer Specialist Program provides a cultural competency assessment for the beginning of program design. This includes:

1. People who run the program receive cultural competency training related to the population served.
2. The racial/ethnic/gender composition of the team has been assessed.
3. The program regularly assesses whether its activities are valued by different tribal affiliations.

Recommendation 6: Develop program monitoring and evaluation

> *"Program evaluation: Peer support programs should establish clear goals that are linked to specific outcomes prior to commencement. They should be evaluated by an external, independent evaluator on a regular basis and the evaluation."*
>
> *– Guidelines for Peer Support in High-Risk Organizations: An International Consensus Study (2012), page 7.*[13]

One of the biggest gaps we uncovered in the field of peer listening and disaster crisis response was around evaluation. Nearly every program we interviewed desired more evaluation work and a greater understanding of the effectiveness of their programs and work. With PWSRCAC 's initial leadership in this field, we recommend the following as it continues to lead:

a. Develop a program quality assessment matrix consistent with PWSRCAC's self selected approach, design, and best practices. This answers a critical question (i.e., did we do what we set out to do?) and provide opportunities to celebrate success and reflect on planned versus actual implementation of the program.

   i. *An example of a few items for this matrix would be:* assessment of the diversity of trained peer listeners against the diversity of the communities to be served by PWSRCAC, whether the training delivered covered all the topics selected and with what depth, trainee self-assessment of their preparedness to be peer listeners as a result of the training.

b. Adopt a set of program monitoring (delivered activities and outputs) and outcome measurement tools. While some external evaluations can be cost prohibitive, these tools can be designed to be practically applied within the resources of the PWSRCAC. At the 2016 train-the-trainer workshop, the evaluation used a pre/post knowledge and satisfaction with the experience assessment that provided affirmation of strengths and areas to improve.
   i. *An example of a few data points for this would be:* the number of people trained, the length of the training, the length of time on each topic of the training, the number of people the peer listeners talk to, whether peer listeners referred people to additional mental health services.

c. Healthy partnership and cross community coordination assessment can aid in the ongoing retention of partners and resource development. This returns to the question of who holds the program and the mechanisms for cross community coordination that can lead to a large and diverse body of trained peer listeners and for discussion on resources needed for this and ways in which organizations with stretched resources can support the work even when they can share little staff time or organizational resources.
   i. *An example of a few items that could be included in this are:* each partner organization rates their satisfaction with the partnership on key indicators of healthy partnership that the partners can set together such as frequency of meetings, shared decision making, clarity of roles and responsibilities within the partnership.

Additional resources shared by the organizations interviewed and found in Appendix A: Annotated Literature Review and the Resources materials provided from this project.

Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Ashlee Hamilton and Wayne Donaldson for the Finance Committee

Project number and name or topic: FY2022 Financial Statement Audit

1. **Description of agenda item:** Joy Merriner, audit partner with PWSRCAC's independent auditor, BDO, LLP, will present the June 30, 2022 audited financial statements and report and be available to answer Board members' questions. Joy is expected to meet with the Finance Committee prior to the Board meeting to review in detail the results of the audit for this year. The Board is asked to accept the June 30, 2022 audited financial statements and audit report.

2. **Why is this item important to PWSRCAC:** Board members are responsible for overseeing the financial condition of PWSRCAC and verifying that funds are used appropriately for the Council's work. Each year an independent certified public accounting firm is engaged to audit the financial statements so that the Board will have independent assurance that the statements provide an accurate representation of PWSRCAC's financial condition and financial results over the last year.

3. **Committee Recommendation:** The Finance Committee will review with audit staff the statements and reports following the completion of audit field work and at its August 11 meeting. The Committee will provide a recommendation for acceptance of the audited statements and audit report by the full Board of Directors.

4. **Action Requested of the Board of Directors:** Accept the June 30, 2022 audited financial statements and audit report.

5. **Attachments:** The audited June 30, 2022 financial statements and audit report will be distributed during the Board meeting.

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Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Alan Sorum and the Port Operations and Vessel Traffic Systems Committee

Project number and name or topic: 8012 - Line Throwing Trial Study Summary Video

1. **Description of agenda item:** The Board is being asked to accept the line throwing trial summary video produced by OnPoint Outreach as meeting the terms and conditions of contract number 8012.22.03 and allow the video to be distributed to the public. The final version of the video will be shown at the Board meeting during this agenda item.

2. **Why is this item important to PWSRCAC:** Previously the Council sponsored a study by Glosten exploring the best available technology used to pass messenger lines to disabled vessels. The project outcomes were well received and a follow-on project was completed that evaluated the effectiveness of the line throwing devices identified in the original study.

One goal of the project was to share the final report and findings with industry. The line throwing trials were successfully conducted in Puget Sound, Washington, in exceptional weather conditions and generated a significant body of video documentation during the exercise. The material in this form is not easily shared with others. This descriptive video of the field trials allows the project results to be shared and further PWSRCAC's goal of sharing research information with a wider audience.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	1/28/21	Approval of Proposed FY2022 Projects to Begin in FY2021
XCOM	3/1/21	Field Trials of Messenger Line Throwing Devices Contract Approval
Board	9/16/21	Report Acceptance: Field Trials of Messenger Line-Throwing Devices

4. **Summary of policy, issues, support, or opposition:** None.

5. **Committee Recommendation:** The POVTS Committee has reviewed this video and via online poll recommends the Board accept it and allow its release to the public.

6. **Relationship to LRP and Budget:** This project was developed after the completion of the line throwing trials as there was significant photo and video documentation of this work. The $15,000 contract for creating this video was within the Executive Director's authority and was tasked to project 8012 in the FY2022 budget.

7. **Action Requested of the Board of Directors:** Accept the line throwing trial summary video produced by OnPoint Outreach as meeting the terms and conditions of contract number 8012.22.03 and allow the video to be distributed to the public.

8. **Alternatives:** None.

9. **Attachments:** Any Board members wishing to view the video in advance of the Board meeting should contact Alan Sorum of staff.

Update on Valdez Marine Terminal Tank Vent Damage Monitoring 4-5

Briefing for PWSRCAC Board of Directors – September 2022

INFORMATION ITEM

Sponsor:	Austin Love and the Terminal Operations and Environmental Monitoring Committee
Project number and name or topic:	5000 - Valdez Marine Terminal Tank Vent Damage Monitoring

1. **Description of agenda item:** This agenda item will provide information regarding the Council's efforts to monitor the substantial tank vent damage that occurred at the Valdez Marine Terminal in February and March of 2022, and the subsequent work by Alyeska, state and federal regulators to investigate this incident, repair the vents, and prevent a reoccurrence of such an event. Additionally, PWSRCAC retained Bill Mott of Taku Engineering to assist the Council in reviewing information regarding this incident, and assisting in the development of any recommendations. Project Manager Austin Love and PWSRCAC contractor Bill Mott of Taku Engineering will provide a presentation on the aforementioned topics.

2. **Why is this item important to PWSRCAC:** The snow damage sustained to the crude oil storage tank pressure/vacuum vents resulted in the release of hydrocarbon vapors to the environment and PWSRCAC believes this also posed substantial safety risks for Valdez Marine Terminal personnel and infrastructure. As Alyeska identified damaged vents and worked to plug them in various ways, an unknown but likely significant amount of hydrocarbon vapors was released to the atmosphere. Such vapors can be harmful to the environment but also pose a threat to human health and welfare. Alyeska recognized this and worked to mitigate health related harm to those working to remove snow from the tank tops. Depending on the circumstances, hydrocarbon vapors also increase the risks of a fire or explosion. Alyeska also recognized the fire and explosive risks and took steps to minimize those threats. While no substantial injuries were associated with this event, and no fire or explosion occurred, PWSRCAC believes this event was a "near-miss" and could have resulted in devastating consequences. The subsequent actions taken by Alyeska and state and federal regulators will be critical to ensure that such snow damage does not occur to the tank vents, or other critical infrastructure at the Valdez Marine Terminal, in the future.

3. **Previous actions taken by the Board on this item:** None.

4. **Summary of policy, issues, support, or opposition:** As Alyeska identified and worked to mitigate the impacts from the damaged vents in February and March 2022, the Council was informed of significant safety and environmental risks posed by this incident. In order to ensure those risks were being addressed, the Council sent Alyeska a letter subject "Notice of Imminent Risk of Life, Safety and Environmental Violations at the Valdez Marine Terminal" on March 28, 2022, listing concerns that "…pose an imminent threat to

life, safety, and the environment….” On March 29, Alyeska responded by addressing the list of the Council’s tank vent damage related concerns to “correct a number of errors and mischaracterizations.” On March 31, the Council replied to Alyeska’s letter reiterating and clarifying the intent of its March 28 letter. The Council continues monitoring the resolution of the tank vent damage related concerns.

5. **Committee Recommendation:** Not applicable.

6. **Relationship to LRP and Budget:** None.

7. **Action Requested of the Board of Directors:** None.

8. **Attachments:** None, item is for information only.

Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Danielle Verna and the Scientific Advisory Committee

Project number and name or topic: 9550 - Dispersants Use Position Update

1. **Description of agenda item:** The Board is being asked to accept the report titled "Summary of Board of Directors Workshops and Draft Evidence-Based, Updated Position" by Elise DeCola of Nuka Research, dated July 26, 2022. The Board is also being asked to consider adopting the Draft Dispersants Use Position as written in the report on pages 10-11.

A facilitated workshop for Board members was held on March 10, 2022, to discuss the regulatory framework and science of dispersants. At that workshop, Board members discussed the PWSRCAC's current position statement and options for updating it. Based on the outcomes of that workshop, a three-part series of follow-up workshops was held in May and June 2022, for Board members to learn about and discuss the decision-making framework of dispersants application, tradeoffs associated with dispersants use, and the science of dispersants. In this report, the contractor summarized the content and outcomes of the Board workshops and presents an updated draft position statement based on input from Board members and the Scientific Advisory Committee. Elise DeCola will present the report and position statement. Board members are asked to be prepared to provide feedback.

An initial report from April 2022 titled "Summary of Board of Directors 2006 Position, Background Materials, and Rationale" and an additional summary document of the March 2022 Board Workshop, both drafted by Nuka Research and Planning Group, LLC, are available upon request.

2. **Why is this item important to PWSRCAC:** Under the Oil Pollution Act of 1990 (OPA 90), PWSRCAC is authorized to participate in the development of plans and policy guidelines used in oil spill response. Chemical dispersant use has been a longstanding controversial topic for a variety of reasons. For instance, dispersants may compete with mechanical response for time and resources, and dispersants may impact the well-being of marine resources and human health. PWSRCAC has invested significant effort to sponsor dispersants research, review and keep records of peer-reviewed dispersants literature, and track relevant regulations and policies governing dispersants use in the Prince William Sound region.

The PWSRCAC's current dispersants use position was adopted in 2006 and does not support the use of dispersants in the Exxon Valdez oil spill region. Since then, much more dispersants scientific research has been conducted, and many lessons learned from using

dispersants during major spills such as the 2010 BP Deepwater Horizon. This project to review and potentially update the Council's 2006 Dispersants Use Position and supporting documentation is timely due to how much more is known about dispersants today. There appears to be strong support to update the Board's position based on new information and science, given the high ranking this project received by the Board in the Long Range Planning process (rank 5 out of 17), feedback at the March 2022 Board workshop, and continued engagement by Board members throughout the project.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Note: Please request from staff a list of actions prior to 2001, including the previous Council positions from 1998 and 1993.		
Board	2/22/01	Approved the report on dispersant effectiveness tests by Adam Moles of Auke Bay Labs.
XCOM	6/22/01	Approved report "The Effectiveness of Corexit 9527 and 9500 in Dispersing Fresh, Weathered, and Emulsion of Alaska North Slope Crude Oil Under Subarctic Conditions."
XCOM	5/3/02	Approved the report titled, "A Review of Literature Related to Oil Spill Dispersants Especially Relevant to Alaska" by Dr. Merv Fingas.
XCOM	5/30/02	Approved the paper "Dispersants: Many Questions, Few Answers" for distribution at the 2002 AMOP.
XCOM	7/25/02	Approved "A White Paper on Oil Spill Dispersant Field Testing" by Dr. Merv Fingas.
XCOM	10/9/03	Approved the report titled "Review of Monitoring Protocols for Dispersant Effectiveness" by Dr. Merv Fingas.
XCOM	10/28/03	Approved the October 6, 2003 SAC position on Dispersant use.
XCOM	12/15/05	Approved the report titled "Dispersants, Salinity and Prince William Sound."
XCOM	2/7/06	Approved the report titled "A Review of Emulsification Tendencies and Long-term Petroleum Trends of Alaska North Slope (ANS) Oils and the White Paper on Emulsification of ANS Crude Oil Spilled in Valdez."
Board	5/2/06	Approved PWSRCAC Dispersant Use Statement.
XCOM	6/13/06	Approved the reported "Observers' Report: MMS Cold Water Dispersants Test conducted at the Ohmsett testing facility, February 28-March 3, 2006."
XCOM	12/11/06	Approved the report "Field Notes and Critical Observations from the OHMSETT Heavy Oil Dispersant Trials, October 13-16, 2003."
Board	1/22/09	Approved the dispersants literature surveys "A Review of Literature Related to oil Spill Dispersants 1997-2008", "A Review of Literature Related to oil Spill Dispersants Especially Related to Alaska 2002-2003," and the Solidifers Literature Review titled "A Review of Literature Related to oil Spill Solidifers 1990-2009."
Board	9/16/10	Approved issue paper on the use of dispersants in the BP Deepwater Horizon spill.
Board	9/15/11	Approve contracting with University of Southern Maine not to exceed $70,000 for work on the toxicology of chemical dispersants in Alaska whales.
Board	9/15/11	Approve contracting with the Skidaway Institute of Oceanography at a cost of $14,520 for work on the uptake and effects of dispersed oil droplets by zooplankton.
Board	5/3/12	Approved contracting with Spill Science for a comprehensive monitoring program for a cost of $48,000.
Board	7/23/12	Approve contracting with NJIT for $183,100 for dispersed oil biodegradation.
Board	5/2-3/13	Accept DFO final report on dispersed oil effects on salmon, cod, and herring.
Board	5/2-3/13	Accept final report on hydrocarbon uptake by spot shrimp from Dick Lee of the Skidaway Institute of Oceanography.
Board	1/23/14	Accept "Analysis of Oil Biodegradation Products" by Merv Fingas.
XCOM	4/16/15	Approve comments to EPA on Subpart J, Dispersants.
Board	5/17/16	Approved the report titled "Toxicology of Chemical Dispersants in Alaskan Whales"
Board	5/2016	Accept Dispersants SMART Monitoring Protocol document.

Board	3/7/17	Authorized a contract with Merv Fingas for the development of a comprehensive synthesis of dispersants research in an amount not to exceed $65,000
Board	5/3/18	Accepted the report titled "A Review of Literature Related to Oil Spill Dispersants, June 2017" by Merv Fingas of Spill Science, and the general version of the report titled "A Review of Literature Related to Oil Dispersants, September 2017" by Elise DeCola of Nuka Research & Planning Group, LLC
XCOM	6/14/18	Approved report titled "A Review of Literature Related to Human Health and Oil Spill Dispersants."
Board	9/16/21	Accepted report titled "A Summary of Dispersants Research: 2017-2021" by Merv Fingas of Spill Science.

4. **Summary of policy, issues, support, or opposition:** In June 2020, a U.S. District Court Judge ruled that the Clean Water Act imposes on the EPA a mandatory duty to maintain an up-to-date oil spill response plan that reflects current science and technology. In August 2021, the court ruled that the EPA violated that duty since the relevant regulations have not been updated in more than 25 years. The EPA must now update and finalize its regulations, which includes the use of dispersants, by May 31, 2023. In July 2021, the EPA released a final rule on monitoring requirements for use of dispersants in Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan, effective January 2022.

PWSRCAC provided extensive comments during the Alaska Regional Response Team planning effort to establish new policy for use of dispersants in state waters, which was adopted in January 2016 and presented to the Board by Linda Swiss in May 2016.

5. **Committee Recommendation:** The Scientific Advisory Committee has been engaged in this project to update the PWSRCAC's Dispersants Use Position since its inception in Fall 2020. SAC members reviewed and provided input on the draft position statement at meetings on July 13 and July 25, 2022. SAC members made a recommendation to endorse the draft dispersants use position to the Board of Directors via email vote finalized on July 29, 2022.

6. **Relationship to LRP and Budget:** Project 955 - Dispersants is in the approved FY2023 budget and annual workplan.

9550--Dispersants
As of July 31, 2022

FY-2023 Budget	
Original	$30,880.00
Modifications	
Revised Budget	$30,880.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	
Actual + Commitments	
Amount Remaining	$30,880.00

7. **Action Requested of the Board of Directors:**

   A. Accept the report titled "Summary of Board of Directors Workshops and Draft Evidence-Based, Updated Position" by Elise DeCola of Nuka Research, dated July 26, 2022, as meeting the terms and conditions of contract number 9550.22.01, and for distribution to the public.

   B. Adopt the Dispersant Use Position dated July 26, 2022 as presented.

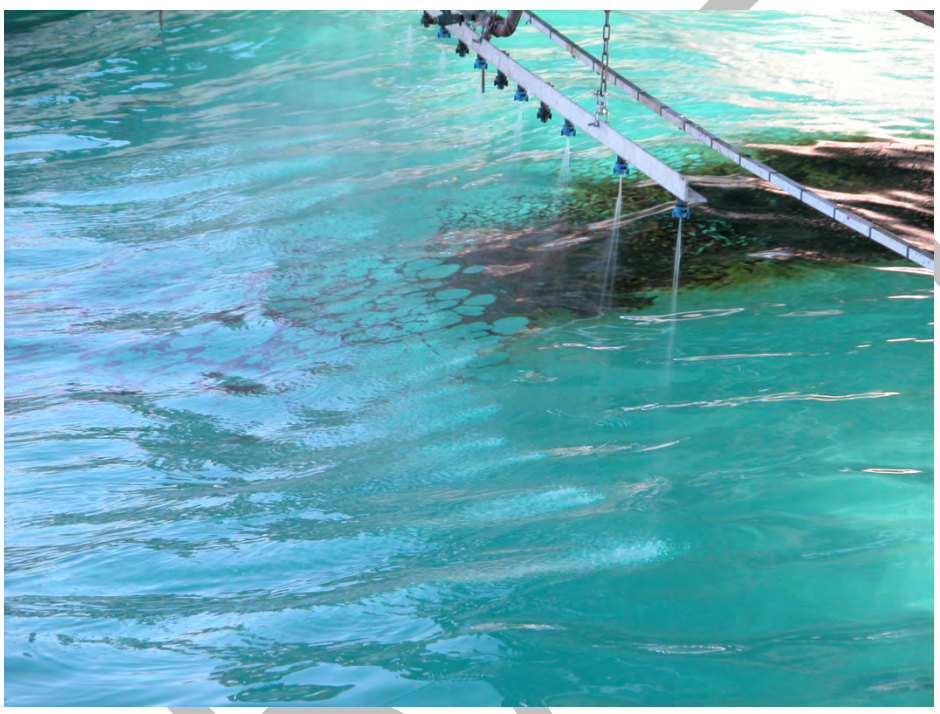
8. **Alternatives:** None.

9. **Attachments:** Report titled "Summary of Board of Directors Workshops and Draft Evidence-Based, Updated Position" by Elise DeCola of Nuka Research.

Back to Agenda

Prince William Sound Regional Citizens' Advisory Council Dispersant Use Position Update

Summary of Board of Directors Workshops and Draft Evidence-Based, Updated Position



Cold-water dispersant trials at Ohmsett test tank (Nuka Research, 2006)

Report to
Prince William Sound Regional Citizens' Advisory Council
July 26, 2022

NUKA RESEARCH

Contents

1. Introduction

This report is an interim deliverable to the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) under contract 9550.22.01 to support the Council's intention to update their position on the use of dispersants in Prince William Sound and the Gulf of Alaska.

This report updates information included in the April 2022 Background Report (which was distributed in draft form to the PWSRCAC Board of Directors as a discussion document preceding a March 10, 2022 workshop) and summarizes the proceedings of the March workshop and three subsequent workshops that were conducted to inform and refine PWSRCAC's dispersant use position.

This report also includes a draft position statement for review and consideration by PWSRCAC staff, Scientific Advisory Committee (SAC) members, and Board.

2. Board of Director Workshop Series

2.1. MARCH 2022 BOARD OF DIRECTORS WORKSHOP

The Dispersant Use Position update options listed in the Background Report were the focus of a March 10, 2022 workshop with the PWSRCAC Board of Directors. The purpose of the workshop was not to make any decisions, but to initiate a conversation among Board members and provide them with the opportunity for a structured discussion with technical experts Merv Fingas and Gary Shigenaka. The workshop summary report is available in the PWSRCAC document management system.

2.1.1. Preferred Options

Five position options were discussed:

1. Retain Existing Position with Expanded Documentation on Scientific Rationale for Opposing Dispersant Use
2. Retain Existing Position with Expanded Rationale on Why Mechanical Recovery is Preferred Response Method
3. Retain Existing Position with Focus on Dispersant Effectiveness in the Exxon Valdez Oil Spill (EVOS) Region
4. Expand on the Existing Position to Establish Effectiveness Thresholds for Dispersant Use in EVOS Region
5. No Longer Advocate for or Against Dispersant Use

The Board expressed mixed preferences across the first four position update options. There was no support for the fifth option to no longer hold a position. There was general consensus that effectiveness remains central to the issue of dispersant use in the PWSRCAC region. Board members expressed particular interest in understanding the trade-offs between mechanical recovery and dispersants, and on evaluating the trade-offs between dispersant application or no response at all. There was also Board interest in understanding the interplay between dispersants and mechanical recovery, and specifically

the potential for dispersant application to reduce the effectiveness of mechanical response.

Dispersant toxicity to biota and human health impacts were a consideration for some but not all Board members. Some Board members described toxicity concerns as secondary to effectiveness. If dispersants are ruled out due to lack of effectiveness, then the potential toxicity is not an issue. Dispersant toxicity may be more relevant to the trade-off discussion in evaluating scenarios where the only two options are dispersants or nothing.

2.1.2. Refining Board Position

A series of three virtual follow-up workshops was conducted during May and June of 2022 to target the issues that emerged from the March 10 Board workshop as most critical to updating the Council's position.

2.2. FOLLOW-UP WORKSHOP SERIES

2.2.1. Workshop #1: The Room Where it Happens

The first workshop was held on May 25, focusing on the Unified Command and Alaska Regional Response Team (ARRT) decision-making processes when dispersants are being considered as a spill response option. The workshop purpose was to orient PWSRCAC Board members to the decision-making context that state and federal spill response agencies bring to the issue of dispersant use. A background document was created to provide additional context for workshop participants.

This workshop was facilitated panel discussion with invited participants from state and federal agencies with a role in dispersant use decisions specifically: the Alaska Department of Environmental Conservation (ADEC), the United States Coast Guard (USCG), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Commerce (DOC), the U.S. Department of the Interior (DOI), and the National Oceanic and Atmospheric Administration (NOAA). Invited panelists[1] from state and federal agencies participated in pre-workshop preparatory sessions to keep the conversation focused. Agency participants provided informal overviews of their organizational role within the ARRT and during spill response, and identified the tools, guidelines, and procedures that they follow when considering dispersant use.

Agency Roundtable and Moderated Discussion

The agency participants reinforced information about the state and federal context for dispersant use, which is also summarized in Section 3 of the Background Report (Appendix A). They pointed to several key documents and checklists, including Subpart J of the National Contingency Plan (the NCP Product Schedule), which identifies all dispersants that may be used in U.S. waters. EPA representatives explained that the NCP Product Schedule

[1] Agency participants in the workshop were Allison Natcher (ADEC), Mark Everett (USCG), Doug Helton (DOC/NOAA), Catherine Berg (NOAA), Mary Goolie (EPA), Beth Sheldrake (EPA), Tiffany Larsen (ADEC), and Anna Carey (ADEC).

is currently being updated, based on a recent court case. These changes may include the testing requirements for dispersant toxicity and effectiveness and could lead to changes in the types of dispersants that may be used in U.S. waters. The revised Product Schedule should be released sometime in 2023.

The USCG explained the procedures outlined in the Alaska Dispersant Use Guidelines as they relate to dispersant decisions. He emphasized the importance of the checklists, and also explained how USCG as the lead federal agency for marine oil spills seeks concurrence from other agency partners. The USCG participant also provided a handout that further explains the pre-authorization process from the USCG and ARRT perspective emphasizing that the procedures underwent major changes in 2016 (Figure 2-1).

Figure 2-1. Summary of Key Elements of Dispersant Use Plan for Alaska

Dispersant Use Plan for Alaska

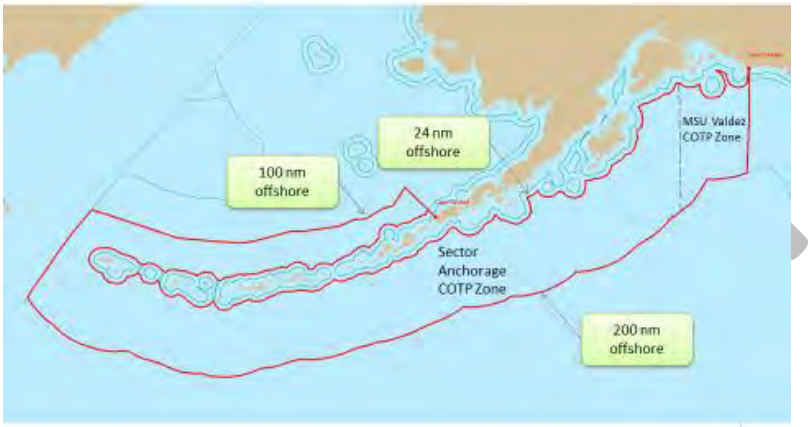
Shipment of persistent oils through Alaska waters poses a risk of spills and special response challenges, especially when involving crude-laden oil tankers transiting near shore.

33 CFR 155.1050(k) requires vessels carrying heavy fuel/persistent oils as primary cargo to have dispersant capability available *but only in areas where there is a dispersant use pre-authorization in place* (key to USCG enforceability). See graphic. Number of such transits through the Pre-Auth Area varies year to year. (e.g., Port Valdez avg. 239/yr.)

After four years of policy development, outreach, & consultation the *Dispersant Use Plan for Alaska* was signed into partial effect in 2016 by the five National Contingency Plan (NCP)-mandated agencies: USCG, EPA, State of Alaska, DOI, DOC/NOAA. After a required two-year implementation period, it went into full effect January 2018.

Alaska Dispersant Preauthorization Area

(Applies only to tankers carrying crude oil bound to/from a US port through this area)



Among numerous other mandates, CFR requires dispersant application on the slick to begin within 7 hours of FOSC decision. Specific application quantity/time/mode mandates drive the need for *aerial* dispersant capability (vice vessel).

Because the Plan requires having dispersant capability on hand for tankers – ensuring availability in the AOR – it also has a protocol for dispersant use *outside* the Pre-Auth Area (Undesignated Areas). This protocol for UA is more stringent. There are also temporal & spatial carve-outs *inside* the Pre-Auth Area that revert to the UA protocol. These carve-outs are described in the Area Contingency Plans.

The Plan has many other widely-accepted, highly-protective features & provisions that promote comprehensive analysis, methodical decision-making, and conservative use of this controversial response tactic.

Representatives from DOC and DOI explained the consultation process through which they may provide input into a dispersant use position. ADEC participants described their role within Unified Command when dispersant use decisions are presented.

NOAA provided context for dispersant use in the U.S. generally, and Alaska specifically, emphasizing that dispersant application is rare across the country, with only 27 applications in the last 40 years. Dispersant use has been approved only twice in the State of Alaska, once during the Exxon Valdez oil spill and once during a Cook Inlet oil platform spill. In the Cook Inlet case, dispersants were not applied because field testing showed that they were not effective. Figure 2-2 shows a summary of historical dispersant application.

Figure 2-2. Historical Dispersant Use in US Waters 1968-2020 (NOAA)

Historical Dispersant Use in U.S. Waters 1968-2020

Doug Helton NOAA OR&R 7600 Sand Point Way NE, Seattle, WA, 98115

- Large volumes of dispersants were used during the Deepwater Horizon (DWH) spill in 2010.
- There hasn't been a use of dispersants in U.S. waters since 2010.
- The controversy over their use at DWH may lead the public and policymakers to conclude that they are commonly used.
- But over the past 40 years and approximately 400,000-reported spill incidents, we found only 27 incidents in the United States where dispersants have been utilized.
- Most were in the Gulf of Mexico. Many were small scale or tests and not operationally significant.
- Dispersants are rarely used but can be an important tool in certain situations.

Office of Response and Restoration

The Environmental Response Management Application (ERMA®) is NOAA's online mapping tool that integrates both static and real-time data, enabling users to quickly and securely analyze and display spatial data. https://erma.noaa.gov/gulfofmexico/erma.html

The workshop discussion highlighted several key opportunities for PWSRCAC to provide input into dispersant use decision-making. The dispersant use checklist in the Alaska Guidelines includes local and stakeholder consultation. The DOI and DOC consultations may also provide an opportunity for PWSRCAC to raise local concerns to these two Trustee agencies.

2.3. WORKSHOP #2: TRADE-OFFS

The second workshop explored the topic of trade-offs by considering various decision-making factors through a series of hypothetical scenarios and "what if" questions. Workshop participation was limited to PWSRCAC Board, staff members, and contractors. The group reviewed components of the dispersant use checklists to understand the parameters that regulators consider in making dispersant use decisions.

Dispersant Use Checklists

For dispersant use in pre-authorization areas (24-200 nautical miles offshore), Unified Command (USCG and ADEC) must seek input from the two key Trustee agencies – Department of Commerce and Department of Interior. Eleven additional stipulations apply:

- Field tests must be conducted on a representative portion of slick.
- Dispersant application must follow an approved application plan.
- Water depth must be greater than 60 feet.
- Application area must be at least 1,640 feet distance from fish, birds, and mammals.

- Aerial application must follow Federal Aviation Administration (FAA) flight restrictions.
- Dispersant application may be conducted during daylight only.
- An observer from a Trustee agency (DOC or DOI) must be on board.
- Dispersant application monitoring protocols must be in place.
- The Unified Command must provide information to public within 48 hours of dispersant application.

For dispersant use outside of pre-authorization areas, the case-by-case checklist applies, which includes the criteria above and also includes notification of "appropriate stakeholders" (e.g., local governments, Native corporations, RCACs), and consultations with the National Marine Fisheries Service under the Endangered Species Act and for Essential Fish Habitat. The checklist requires a consideration of whether mechanical response or in situ burning are effective. The checklist also specifies wind and sea state parameters related to both dispersant application operations and dispersant effectiveness, including:

- Winds less than 25 knots
- Ceiling greater than 1,000 feet for aerial application
- Boat operations safe for vessel application
- Water salinity greater than 15 parts per thousand (PPT)
- "Sufficient" mixing energy

Case-by-case decisions require broader Natural Resource Trustee agency input from EPA, ADEC, DOC, and DOI. They also require input from Tribes and local stakeholders.

The decision-making criteria for both pre-authorization and case-by-case areas are a mix of objective, measurable standards and subjective criteria that are based in the judgment of the individual filling out the form.

Dispersant Use Scenarios

Materials that were distributed during a 2015 Prince William Sound tanker exercise were distributed to illustrate a scenario where the Responsible Party advocated for dispersant use. The Northern Dancer exercise included a Dispersant Ecological Tradeoff Analysis that was prepared by BP ahead of the exercise and injected, leading the Unified Command to consider dispersant use during the hypothetical response. The Tradeoff Assessment included BP's rationale for supporting dispersant application, providing insight into the types of arguments that might be offered if dispersants were being considered during a response. Their key points included:

- Volume of oil treated by dispersants
- Reduction of oil volume washing ashore
- Short-term toxicity would dissipate quickly
- "Lower number" of sensitive species during September-October

- Increased biodegradation
- Benefit to species that live, feed, or breathe at the water surface

Workshop participants then considered how the spill scenario presented in the 2015 exercise would fare if the dispersant use checklists from 2016 were applied. The spill location, just off Montague Island, would require the case-by-case consideration. Based on what PWSRCAC Board members heard from the agency representatives at the previous workshop, there was speculation that dispersant use would be unlikely to attain Unified Command approval based on the spill location. Several participants observed that they would like to learn more about how the agencies would look at information and which factors might weigh more heavily into their decisions. This discussion also led several participants to observe that it is challenging to foresee the range of possible circumstances against which a dispersant use decision might be made. It is challenging to try to create a position with so many variables in play.

Workshop participants agreed that in the Northern Dancer scenario, they would strongly oppose a dispersant application because the spill was so close to shore. They also agreed that many of the points in the Tradeoff Analysis were inaccurate.

Participants were then faced with a few different "what if" scenarios to consider whether they might think differently about dispersant use. Participants were asked to consider whether PWSRCAC's stance might change if weather was too rough for mechanical response and dispersants were the only operationally feasible response option and trajectory maps show untreated slicks moving towards Prince William Sound.

Participants were asked several follow-up questions to explore whether there might be circumstances where the Council would favor dispersant use. These included:

- How would seasonality influence your position?
- Would the size of the oil slick change your position?
- What other information would help you to make an informed decision?
- If the choice is between "do nothing" and "apply dispersants," do you have any regrets if oil washes ashore?

None of the participants could pinpoint a specific set of conditions where they would favor dispersant use. There was a strong sentiment that the potential for dispersants to be ineffective in Prince William Sound conditions would make it difficult to support dispersants under any conditions. Key take-aways from the trade-off discussion included:

- Trade-offs involve many variables and it is hard to anticipate all of the factors.
- PWSRCAC should proactively communicate with decision-makers to make sure that they are aware of the Council's position and the evidence that underlies it.
- The current checklist in the Dispersant Use Plan may preclude dispersants more often than in past drills.
- There are many unknowns and uncertainties that make it challenging to have a definitive, one-size-fits-all position.

- Potential effectiveness is critical to the discussion of trade-offs, because if dispersants are misapplied or not effective, then the arguments in favor of dispersant use are irrelevant.

2.4. WORKSHOP #3: DEMYSTIFYING DISPERSANT SCIENCE

The final Board of Directors workshop was also limited to PWSRCAC staff, Board members, and contractors. The purpose of this discussion was to focus PWSRCAC's position on areas where they can make the strongest evidence-based arguments.

The workshop began with a brief presentation about the basics of how dispersants work. Gary Shigenaka[2] gave a presentation that focused on the variables and uncertainties that impact dispersant effectiveness. He presented a series of hand drawings that characterized the level of uncertainty associated with various aspects of dispersant application (Figure 2-3). He then overlaid the uncertainty range with the key aspects of PWSRCAC's 2013 position statement (Figure 2-4).

Shigenaka emphasized that even with all of the research during and after the BP Deepwater Horizon oil spill dispersant application, there are many unknown or unsettled areas in the scientific literature. He highlighted two quotes from a 2021 synthesis of dispersant science by the Gulf of Mexico Research Institute.[3]

> *It will…take time and research to determine whether the dispersants themselves, used in such high volumes…are in fact effective at what they*
> *are intended to do and whether they have any longer-term detrimental effects on marine life and/or public health.*
>
> *There remains a paucity of information on the long-term consequences of dispersants in the marine environment, as little is known about the fate of household cleaners and products such as shampoos and dishwashing liquids. Thus, the use of these dispersants enters the realm of the interfaces of science-economics-policy management.*

[2] Dr. Merv Fingas was unable to attend due to illness.

[3] Quigg, A., J.W. Farrington, S. Gilbert. S.A. Murawski, and V.T. John. (2021). *A Decade of GOMRI Dispersant Science: Lessons Learned and Recommendations for the Future.* Oceanography. 24:1. Pgs. 98-111. https://tos.org/oceanography/article/a-decade-of-gomri-dispersant-science-lessons-learned-and-recommendations-for-the-future

Figure 2-3. Elements of Uncertainty in Dispersant Application

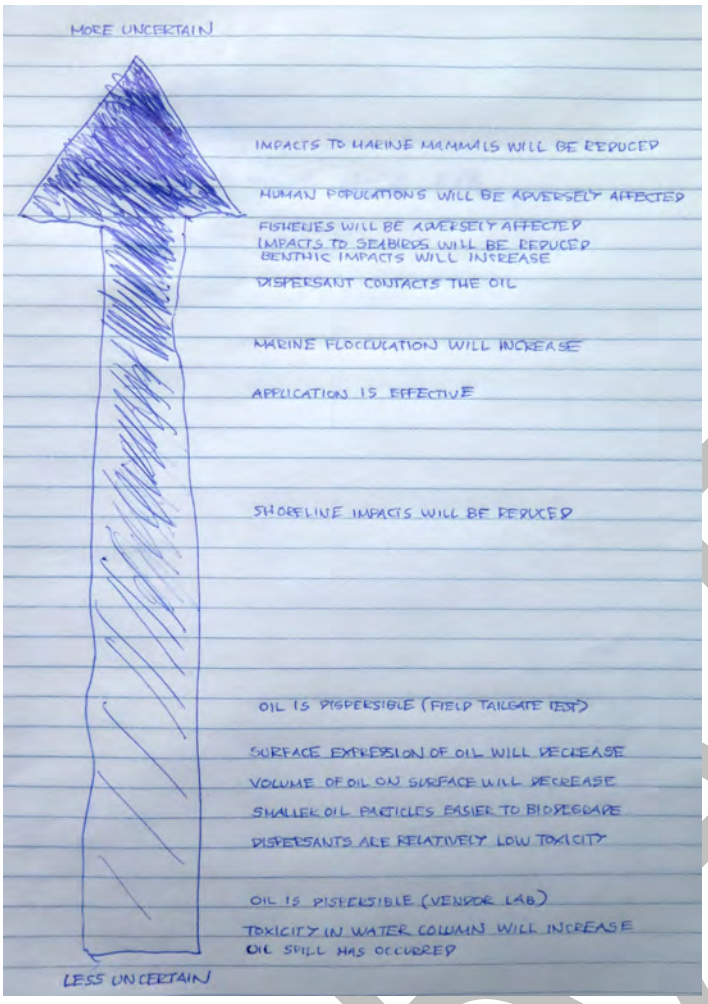
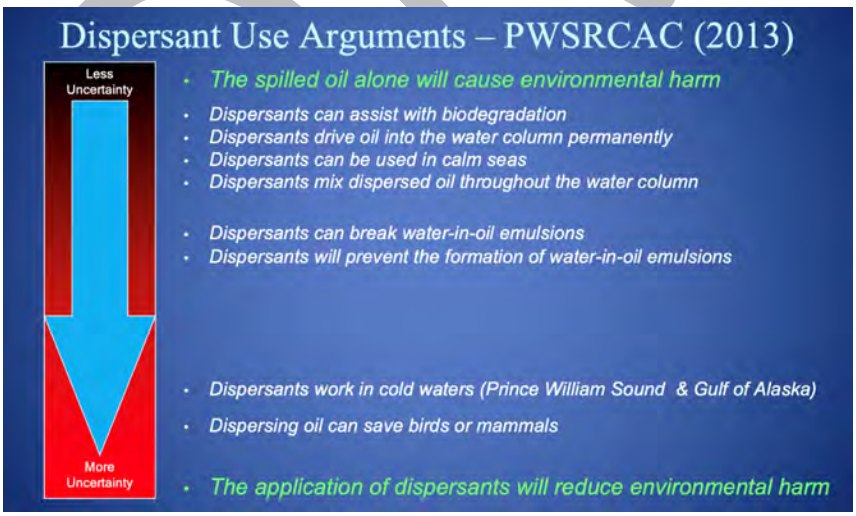


Figure 2-4. Uncertainty Comparison for Aspects of PWSRCAC's Current Dispersant Position



3. Draft Position Statement

The discussion during the three workshops in May-June 2022 helped to clarify the shared understanding among Board members of how dispersant use decisions are made. These discussions informed the following draft, updated position statement for consideration by PWSRCAC staff and committee members, and ultimately the Board of Directors. Once the wording of the position is finalized, a companion report will be developed to link each point in the position to evidence in the scientific and technical literature.

DRAFT UPDATED POSITION STATEMENT

It is the position of the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) that chemical dispersants should not be used on Alaska North Slope crude oil spills in the waters of the Exxon Valdez oil spill (EVOS) region for the following reasons:

1) *Mechanical recovery is the preferred response method in Alaska and PWSRCAC supports mechanical recovery in the EVOS region for several reasons:*
    a. *Mechanical recovery is the only response option that removes oil from the marine environment. Chemical dispersants alter the fate and transport of spilled oil, but the oil remains in the environment.*
    b. *A Response Gap Analysis for Prince William Sound found that operating conditions would limit the feasibility of dispersant application much more frequently than mechanical response, meaning that there is a higher probability of mounting a response using mechanical systems than dispersants.*
    c. *Chemical dispersants reduce the opportunity for mechanical recovery to remove oil from the environment.*
        i. *Slicks that are treated with dispersants may still impact shoreline areas.*
        ii. *Physical and chemical changes to chemically dispersed oil may reduce the effectiveness of skimmers.*
    d. *Mechanical recovery capabilities in the EVOS region are significantly advanced compared to other areas in the U.S.*
2) *Dispersants have not been demonstrated, in field or laboratory conditions, to be effective in treating oil slicks in marine environments with similar temperature and salinity profiles found in the EVOS region.*
    a. *There has never been a successful application of chemical dispersants to an ANS crude oil spill in cold water regions.*
    b. *Dispersant application was unsuccessful during the Exxon Valdez oil spill.*
    c. *Tank trials to evaluate chemical dispersants on ANS crude oil have not demonstrated effectiveness in conditions found in the EVOS region.*

3) *The potential benefits of chemically dispersing spilled oil do not outweigh the known harms and potential risks. In the absence of definitive proof of safety and holistic benefits to the environment and people, dispersants should not be applied in the EVOS region.*

   a. *Dispersant application introduces additional chemicals into the environment and may increase exposure of marine organisms to toxic components of oil.*

   b. *Dispersant application may cause adverse human health impacts.*

   c. *Dispersant application does not necessarily increase biodegradation of oil.*

   d. *Dispersant application increases the amount of oil that settles on the seafloor through sedimentation and marine snow formation.*

   e. *Long-term effects of dispersant application on ecosystems and organisms are not well understood, making it difficult to accurately weigh potential adverse impacts.*

4) *The dispersant use approval process outlined in the Federal On-scene Coordinator (FOSC) Dispersant Authorization Checklist (Alaska Dispersant Use Plan) will preclude dispersant application in Prince William Sound (PWS) and the EVOS region.*[4]

   a. *Water salinity is below 15 ppt in areas of PWS during certain seasons.*

   b. *Mixing energy is not sufficient for dispersant application in areas of PWS during certain seasons and times.*

   c. *There is no marine area in PWS that is 1,640 feet or more away from swimming fish, rafting seabirds, swimming marine mammals, or marine mammal haul outs (#19d).*

   d. *There may not be adequate time or access to key stakeholders to incorporate their informed consent into dispersant use decision-making (#20 & #21).*

      i. *Tribes, Alaska Native, and rural communities in the EVOS region rely on a healthy marine ecosystem for subsistence foods and bear disproportionate risk of toxic exposure if dispersants are applied in the vicinity of harvest areas.*

      ii. *Fish and wildlife in the water and on the seafloor are an important food source. Dispersant application can injure those resources and impact food safety and security.*

      iii. *"Appropriate" stakeholders incorporate broader interests than identified in the checklist.*

Oil spill prevention remains PWSRCAC's top priority because once oil is spilled there will be adverse impacts to people and the environment. In the event of an oil spill in our region, mechanical recovery and containment of crude oil spilled at sea should remain the primary response method. PWSRCAC recommends that oil spill response research and development should focus on enhancing and improving mechanical recovery technologies and methods.

[4] Parenthetical cross-references to specific checklist items.

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Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Jeremy Robida and the Oil Spill Prevention and Response Committee

Project number and name or topic: 7050 - Out of Region Oil Spill Response Equipment Survey

1. **Description of agenda item:** The Board is being asked to accept the whitepaper entitled "Out of Region Oil Spill Equipment Survey," dated June 2022, compiled by contractor Nuka Research and Planning Group, LLC with support from Nielson, Koch and Grannis. Nuka will present on this finished effort at this meeting and highlight key findings and recommendations.

2. **Why is this item important to PWSRCAC:** While there is a large stockpile of equipment already in the SERVS inventory and within the PWS region, a significant amount of response equipment will be required to outfit additional nearshore task forces called for in the worst-case oil spill discharge scenario of the PWS shipper's contingency plan. This whitepaper sought to analyze if this equipment was readily available and identify the sources of these resources.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	9/16/2022	Approved several FY2022 budget modifications including the addition of the Out of Region Equipment Survey project in the amount of $30,000.

4. **Summary of policy, issues, support, or opposition:** PWSRCAC is tasked with monitoring response readiness under OPA 90 and our contract with Alyeska. This project relates directly to contingency planning and response readiness.

5. **Committee Recommendation:** The OSPR Committee commented on a draft version of the whitepaper and received project updates as the project progressed toward completion. The whitepaper was reviewed by the OSPR Committee on July 26, 2022, and they recommended it move forward for Board acceptance.

6. **Relationship to LRP and Budget:** Project 7050 Out of Region Equipment Survey is in the approved FY2023 budget and annual workplan.

7050--Out of Region Equipment Survey
As of July 31, 2022

FY-2023 Budget	
Original	$5,145.00
Modifications	
Revised Budget	$5,145.00

Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$5,145.00
Actual + Commitments	$5,145.00
Amount Remaining	0

7. **Action Requested of the Board of Directors:** Accept the Out of Region Oil Spill Equipment Survey whitepaper, dated June 2022, compiled by contractor Nuka Research and Planning Group, LLC and Nielson, Koch and Grannis as meeting the terms and conditions of contract number 7050.2022.01, and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Whitepaper titled "Out of Region Oil Spill Equipment Survey," by Nuka Research and Planning Group, LLC and Nielson, Koch and Grannis dated June 2022.

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DRAFT
PRINCE WILLIAM SOUND OUT-OF-REGION OIL SPILL RESPONSE EQUIPMENT SURVEY

Report to Prince William Sound
Regional Citizens' Advisory Council
September 2022

Tim Robertson, Elise DeCola, Haley Griffin, and Breck Tostevin

Executive Summary

This report is a final deliverable to Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) under Contract #7050.2022.01. It presents a survey of oil spill response equipment available from outside the Prince William Sound (PWS)/Gulf of Alaska region to supplement the response to an oil spill from a tanker covered under the PWS Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker Plan).

The report examines the sources of out-of-region oil spill response equipment listed in the PWS shippers' contingency plans and associated agreements listed in those plans. It examines State of Alaska requirements for contractual access to out-of-region response equipment and compares those requirements to some of the agreements listed by the plan holders.

The report also includes an inventory of equipment available from out-of-region, focusing on the feasibility of outfitting 14 Nearshore Task Forces (NSTFs). PWS tanker plan holders access spill response equipment, vessels, and personnel through direct agreements with response organizations, direct or indirect access to global equipment networks; and *ad hoc* access to government-controlled spill response stockpiles. Equipment inventories were compiled from the Worldwide Response Resource List (WRRL) and Oil Spill Removal Organization (OSRO) inventories for the following organizations: Alaska Chadux Network (ACN), Cook Inlet Spill Prevention and Response, Inc. (CISPRI); Marine Spill Response Corporation (MSRC); Alaska Clean Seas (ACS); Southeast Alaska Petroleum Response Organization (SEAPRO); Western Canada Marine Response Corporation (WCMRC); National Response Corporation (NRC), Oil Spill Response Limited (OSRL), and the U.S. Navy.

This report evaluates the out-of-region equipment availability to outfit 14 NSTFs with boom, skimmers, and primary storage devices. Based on interviews with OSROs and regulators, this analysis assumes that a given response resource provider will likely only be able to release between 25% and 50% of their total stockpile, due to regulatory limits to releasing equipment that other operators rely upon for compliance. Based on this assumption, primary storage for recovered fluids is the limiting component to outfitting NSTFs. There are adequate skimming systems if OSROs release 50% of their inventory, but if only 25% of the inventory is released, PWS Tanker Plan holders would require supplemental units from non-contracted sources. The shortfall in primary storage to support NSTFs ranges from 15 to 92 storage units, corresponding to the assumption that 50% or 25% of equipment is released.

This analysis does not factor in the availability of personnel or vessels to support 14 NSTFs but estimates that 378 vessels and over 1,000 personnel would be required to fully deploy the task forces. The process of assembling the equipment, vessels, personnel, and ancillary equipment required to operate these task forces may be time-consuming and complex.

Contents

List of Figures and Tables

Acronyms

ABS	American Bureau of Shipping
ACN	Alaska Chadux Network
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
APICOM	Association of Petroleum Industry Co-op Managers
APSC	Alyeska Pipeline Service Company
BBL	Barrels
BPD	Barrels of Oil Per Day
CGA	Clean Gulf Associates
CISPRI	Cook Inlet Spill Prevention and Response, Inc.
EDRC	Effective Daily Recovery Capacity
EPA	Environmental Protection Agency (U.S)
GRN	Global Response Network
MOU	Memorandum of Understanding
MSRC	Marine Spill Response Corporation
NAVSUPSALV	Navy Supervisor of Salvage
NRC	National Response Corporation

NSTF	Nearshore Task Force
OSRL	Oil Spill Response Limited
OSRO	Oil Spill Removal Organization
OSRV	Oil Spill Response Vessel
PRAC	Primary Response Action Contractor
PS	Portable Skimmer
PS/BCOSTF	Pacific States/British Columbia Oil Spill Task Force
PWS	Prince William Sound
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
SEAPRO	Southeast Alaska Petroleum Response Organization
SERVS	Ship Escort Response Vessel System
SONS	Spill of National Significance
STAR	Spill Tactics for Alaska Responders
TAPS	Trans Alaska Pipeline System
WCMRC	Western Canada Marine Response Corporation
WRRL	Worldwide Response Resource List

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PRINCE WILLIAM SOUND OUT-OF-REGION OIL SPILL RESPONSE EQUIPMENT SURVEY

Final Project Report

May 2022

1 Introduction

1.1 Purpose and Scope

This report is a final deliverable to Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) under Contract #7050.2022.01. It presents a survey of oil spill response equipment available from outside the Prince William Sound (PWS)/Gulf of Alaska region to supplement the response to an oil spill from a tanker covered under the PWS Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker Plan).

The report includes background on the legislative and regulatory requirements that establish standards for oil spill equipment availability and identifies the contracts in place to assure access to sufficient equipment to meet State of Alaska planning standards. The report also considers whether there are additional measures needed to formally release equipment from out-of-region to support a PWS spill response.

The report includes an inventory of equipment available from out-of-region, focusing on the feasibility of outfitting 14 Nearshore Task Forces with boom, skimmers, and primary storage devices.

1.2 Background

PWS Tanker Operators

Five shipping companies operate tankers in Prince William Sound, transporting Alaska North Slope crude oil from the Valdez Marine Terminal. Current operators are: Alaska Tanker Company, LLC; Andeavor, LLC (a wholly owned subsidiary of Marathon Petroleum Corporation); Crowley Alaska Tankers, LLC; Hilcorp North Slope, LLC; and ConocoPhillips/Polar Tankers, Inc. State of Alaska regulations require that tanker operators have in place oil discharge prevention and contingency plans to demonstrate their ability to

contain, control, and clean up an oil spill as quickly as possible.[1] The tanker operators are also subject to federal oil spill response planning requirements.[2]

To comply with state and federal oil spill contingency planning regulations, Prince William Sound tanker operators file plans with the Alaska Department of Environmental Conservation (ADEC) and the U.S. Coast Guard. The State of Alaska Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker Plan) is comprised of a core plan and spill response technical manual (Alaska Tanker Company, 2022a and 2022b), supplemented by individual plans filed by the tanker operators (Andeavor, LLC., 2022; Alaska Tanker Company, LLC., 2021; Polar Tankers, Inc., 2022a and b; Hilcorp North Slope 2022; Crowley Alaska Tankers, LLC, 2022). The core plan and technical manual contain common information across the five tanker operators and list the equipment inventory and contractual relationships in place to supply equipment and personnel to respond to oil spills in Prince William Sound. Individual tanker plans include additional information about equipment inventories and contractual arrangements.

In-Region and Out-of-Region Equipment Requirements

Alaska statute and regulations[3] require tankers operating in the Trans Alaska Pipeline System (TAPS) trade to have available within their region of operation sufficient equipment available to clean up a 300,000 barrel oil spill in 72 hours.[4] To comply with state regulations, oil spill contingency plans must identify Primary Response Action Contractors (PRAC)[5] and provide contact information along with information about the equipment and services they provide.[6] In addition to in-region equipment, Alaska statutes and regulations[7] require that tankers have access to additional resources to respond to a realistic maximum discharge[8] from a PWS tanker in the shortest time possible. Based on the 2022 approved PWS Tanker Plan, the realistic maximum oil discharge volume from the largest trade tanker (less prevention credits) is 546,147 barrels (Alaska Tanker Company, 2022a).

If out-of-region equipment is listed in a State approved contingency plan and obtained from another region in Alaska (e.g., another Alaska-based PRAC) ADEC must approve the request to transfer resources according to criteria listed in regulation.[9] There may be other requirements imposed within contracts and mutual aid agreements that require

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[1] 18 AAC 75 Article 4.
[2] 33 CFR 155.
[3] AS 46.040(k)(3)(B) and 18 AAC 75.438(a).
[4] AS 46.040(k)(3)(B) and 18 AAC 75.438(a).
[5] PRAC is a State of Alaska certification for oil spill cleanup contractors similar to the federal Oil Spill Removal Organization (OSRO) certification.
[6] 18 AAC 75.445(i).
[7] Defined in AS 46.04.030(k)(3)(C) and 18 AAC 75.438(c) as 60% of the total cargo volume of the tank vessel.
[8] Defined in AS 46.04.030(k)(3)(C) and 18 AAC 75.438(c) as 60% of the total cargo volume of the tank vessel.
[9] 18 AAC 75.470.

equipment release from out-of-state inventories (BC States Task Force, 2011; Alaska Tanker Company, 2022b).

Acquisition Surveys

Out-of-region equipment access has been an ongoing issue since the first approval of the PWS Tanker Plan. During the 1995 PWS Tanker Plan approval process, ADEC required that the plan holders complete an Acquisition Survey to demonstrate their ability to meet the out-of-region equipment requirement. They did not require these surveys to include contracts to demonstrate access to this equipment (ADEC, 1995). To comply with this directive, former PWS Tanker Plan holders SeaRiver Maritime, Inc. and ARCO Marine Inc. submitted out-of-region equipment surveys to ADEC (Hartec, 1995 a,b). Follow-up studies were conducted by plan holders in 2002, 2006, 2011, and 2018 (Ploen and Maunder, 2002; Ploen; 2006; Ploen, 2011; and Ploen, 2018).

In addition to out-of-region equipment surveys conducted by PWS plan holders, PWSRCAC conducted periodic, independent out-of-region equipment studies in 1997, 2001, 2002, and 2007 (Gilpatrick and Jones, 1997; Gundlach and Reiter, 2001; Gundlach, 2002 and Gundlach, 2007). This report updates PWSRCAC's previous work on this topic using a slightly different approach focused on task force assembly, as explained in Section 3.2.

Nearshore Task Forces

The PWS Tanker Plan identifies 19 total Nearshore Task Forces (NSTFs) to meet the response planning standard. The plan indicates that NSTFs 1-5 will be resourced with in-region equipment, while NSTFs 6-19 will be resourced with out-of-region equipment. Therefore, this analysis focuses on these 14 NSTFs and the availability of key equipment from outside of PWS to outfit them.

2 Access to Out-of-Region Response Equipment

2.1 State Requirements

The State of Alaska out-of-region equipment requirement specifies that plan holders "shall plan to have deployed and operating within 72 hours, from within or outside its region of operation, sufficient oil discharge containment, storage, transfer, and cleanup equipment, personnel, and other resources to contain and control…" at least 60% of the total cargo volume.[10] Plan holders describe their planning in their contingency plans and many of them identify supplementary response contractors whose equipment would be cascaded in from Alaska and beyond to meet this standard.

[10] 18 AAC 75.438(c).

Alaska regulations at 18 AAC 75.445(i) require that plan holders who rely on PRACs[11] to meet state response planning standards provide:

> "a statement signed by the plan holder and the primary response action contractor attesting to the department that the contract clearly specify that the contractor is obligated to: (A) provide the response services and equipment listed for that contractor in the contingency plan; (B) respond if a discharge occurs; (C) notify the plan holder immediately if the contractor cannot carry out the response actions specified in the contract or the contingency plan; (D) give written notice at least 30 days before terminating its contract with the plan holder; (E) respond to a department-conducted discharge exercise required of the plan holder; and (F) continuously maintain in a state of readiness, in accordance with industry standards, the equipment and other spill response resources to be provided by the contractor under the contingency plan."

2.2 Equipment Access Arrangements

There are several mechanisms for PWS Tanker Plan holders to access spill response equipment, vessels, and personnel. These include:

- direct agreements between a tanker operator and a spill response organization;
- direct or indirect agreements to access to global equipment networks; and
- *ad hoc* access to private or government-controlled spill response stockpiles.

Direct Agreements

The ADEC certifies oil spill PRACs to meet state regulations. Alyeska Pipeline Service Company's Ship Escort Response Vessel System (APSC/SERVS) is the primary PRAC for PWS tanker owners, operators, and charterers who are signatories to the Agreement for Oil Spill Response Services with APSC/SERVS. APSC/SERVS has a memorandum of understanding (MOU) with Cook Inlet Spill Prevention and Response, Inc. (CISPRI) and is a member of Alaska Clean Seas (ACS) giving all PWS Shippers access to CISPRI and ACS inventories. PWS Shippers have direct access to response equipment through primary contracts with oil spill removal organizations (OSROs), dedicated spill response companies that maintain an inventory of spill response equipment, vessels, and personnel. Alaska also certifies oil spill PRACs to meet state regulations.

In addition to their contracts with APSC/SERVS, PWS Shippers have various direct agreements in place with other Alaska-based PRACs, with OSROs in the Lower 48, and with global response contractors. APSC/SERVS also has arrangements in place with U.S. and international response organizations to access their equipment and these extend to the

[11] PRAC is defined in AS 46.04.035. (h)(2) as "a person who enters into a response action contract with respect to a release or threatened release of oil and who is carrying out the contract, including a cooperative organization formed to maintain and supply response equipment and materials that enters into a response action contract relating to a release or threatened release of oil."

tanker operators with APSC/SERVS contracts. Table 2-1 PWS Tanker Plan Holder Contractual Agreements summarizes these agreements.

Equipment-Sharing Networks

Another mechanism for accessing spill response equipment is through network organizations, which are consortia made up of individual oil spill removal organizations that enter into mutual aid agreements potentially providing access to share resources across spill response organizations. The networks to which some or all the PWS Shippers have a nexus are: the Association of Petroleum Industry Co-op Managers (APICOM); the Alaska OSRO MOU; and the Global Response Network (GRN).

Association of Petroleum Industry Co-op Managers (APICOM) MOU

There is a MOU among the APICOM members to coordinate and share oil spill response resources (APICOM, 2014). The following OSROs[12] are signatories to this MOU:

- Alaska Chadux Network (ACN)
- Alaska Clean Seas (ACS)
- Clean Channel Association[13]
- Clean Gulf Associates (CGA)[14]
- Clean Harbors Cooperative[15]
- Clean Island Council[16]
- Clean Rivers Cooperative[17]
- Clean Seas[18]
- Cook Inlet Spill Prevention & Response, Inc. (CISPRI)
- Corpus Christi Area Oil Spill Control Association[19]
- Delaware Bay and River Cooperative[20]
- Oil Spill Response, Limited USA (OSRL-USA)[21]

[12] Primary location of OSROs outside of Alaska are identified in footnotes.
[13] Texas
[14] Louisiana
[15] New Jersey
[16] Hawaii
[17] Oregon
[18] California
[19] Texas
[20] Pennsylvania
[21] Florida

PWS Tanker Plan holders that have contractual arrangements with one or more of the cooperatives listed above may be able to access equipment through the APICOM network.

The MOU states that upon request, a party to the MOU will provide information about available response resources and a rate schedule. It does not obligate any party to provide equipment. Therefore, it does not meet the State standard at 18 AAC 75.445(i) of clearly specifying that the contractor is obligated to provide the response services and equipment and respond if a discharge occurs.

Alaska OSRO MOU

An equipment-sharing MOU (Alaska OSRO, 2013) is also in place among five Alaska OSROs:

- ACN,
- ACS,
- APSC/SERVS,
- CISPRI, and
- Southeast Alaska Petroleum Response Organization (SEAPRO).

PWS Tanker Plan holders that have contractual arrangements with one or more of the Alaska OSROs listed above may be able to access equipment through the Alaska OSRO MOU. The ADEC must approve any equipment release requests.

Like the APICOM MOU, this agreement provides a mechanism for OSROs to request access to one another's inventories but does not guarantee the availability of equipment. Thus does not meet the 18 AAC 75.445(i) standard of obligation.

Global Response Network (GRN)

The GRN describes itself as a "collaborative group of companies from around the world that specialize in oil spill response." The network exists to "share information, improve spill response performance and provide centers of expertise in spill preparedness, response, and recovery techniques." Members must be industry-funded response organizations. Its current membership includes:

- ACS,
- the Australian Marine Oil Spill Centre,
- CGA,
- Eastern Canada Response Corporation,
- Marine Spill Response Corporation (MSRC),
- Norwegian Clean Sea Association for Operating Companies,
- Oil Spill Response Limited (OSRL), and
- Western Canada Marine Response Corporation (WCMRC).

The GRN website does not provide details about equipment or resource-sharing among members but implies that this may take place. As with other MOUs, this agreement does not meet the 18 AAC 75.445(i) standard for obligation.

Commercial Ventures

The Polar Tankers contingency plan identifies several contractors that are characterized as "commercial ventures" through which spill response resources may be procured without a contract. These include:

- Marine Pollution Control,
- National Response Corporation (NRC),
- Qualitech Environmental,
- SWS Environmental Services, and
- Unitech of Alaska.

While commercial response equipment may supplement a response, identifying such organizations in a contingency plan does not comply with state regulations.[22]

Government Equipment Stockpiles

State and federal agencies also maintain stockpiles of oil spill response equipment and, in some cases, this may be accessed to supplement a response. Unlike contracted resources, there are no mechanisms for plan holders to pre-arrange access to government equipment stockpiles. For federal government stockpiles maintained by the U.S. Coast Guard and Navy Supervisor of Salvage (NAVSUPSALV), equipment access is determined by the Federal On-Scene Coordinator, the lead federal agency (U.S. Coast Guard for marine spills and Environmental Protection Agency (EPA) for inland spills) represented in Unified Command.

The State of Alaska also maintains spill response equipment and is party to the Pacific States/British Columbia Oil Spill Task Force (PS/BCOSTF) Mutual Aid Agreement (PS/BCOSTF, 2011) that includes the U.S. states of Alaska, Hawaii, Washington, Oregon, and California as well as the Province of British Columbia, Canada. The agreement creates a structure for west coast states/provinces to request response resources from one another during an oil spill. The request must come through the Unified Command on behalf of the State On-Scene Coordinator. Several states have identified limitations to how much equipment they may release, in order to maintain sufficient in-region capacity.

While government response equipment may supplement a response, identifying such organizations in a contingency plan does not comply with state regulations.[23]

[22] 18 AAC 75.445(i).
[23] 18 AAC 75.445(i).

Equipment Access Matrix

Table 2-1 is a matrix summarizing the existence and nature of equipment access in place based on the 2022 approved PWS Tanker Plan (Alaska Tanker Company, 2022a and 2022b) and individual vessel plans (Andeavor, LLC., 2022; Alaska Tanker Company, LLC., 2021; ConocoPhillips/Polar Tankers, Inc., 2022a and b; Hilcorp North Slope, 2022; Crowley Alaska Tankers, LLC, 2022).

Boxes shaded in green indicate that a direct contract is in place, because the relevant contingency plan either includes a copy of the contract or agreement or a statement of contractual terms. Boxes shaded yellow indicate a possible contract, because the resource organization is mentioned in the contingency plan, but there is no direct evidence that a contract is in place to meet the regulatory standard in 18 AAC 445(i). Boxes shaded blue are commercial or government equipment that a plan holder may be able to access, but for which no contractual arrangement exists.

Table 2-1. PWS Tanker Plan Holder Contractual Agreements

Key:		= **Direct Contractual Access, likely meets 18 AAC 75.445(i) standard.**
		= **Possible Access, listed in plan but no evidence of contractual obligation.**
		= **Commercial or Government, no contractual obligation.**
APICOM APICOM MOU	**AK** Alaska OSRO MOU	**GRN** Global Response Network

DIRECT AGREEMENTS						
Agreement Between:	**Polar Tanker**	**Andeavor**	**Crowley**	**Alaska Tanker**	**Hilcorp**	**APSC/ SERVS**
APSC/SERVS **AK**						N/A
ABS Rapid Response						
Alaska Clean Seas **APICOM, AK, GRN**						
Alaska Ventures						
Ardent America						
ASRC Energy Services						
Alaska Chadux Network **APICOM, AK**						
Cook Inlet Spill Prevention & Response, Inc. **APICOM, AK**						
Clean Channel Association **APICOM**						
Clean Gulf Associates **APICOM, GRN**						
Clean Harbors Co-op **APICOM**						
Clean Island Council **APICOM**						
Clean Rivers Co-op **APICOM**						
Clean Seas **APICOM**						
Cordova District Fishermen United						
Crowley Maritime Corporation						
CTEH						
Delaware Bay Co-op **APICOM**						
Donjon-SMIT						

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Key:		= **Direct Contractual Access, likely meets 18 AAC 75.445(i) standard.**
		= **Possible Access, listed in plan but no evidence of contractual obligation.**
		= **Commercial or Government, no contractual obligation.**
APICOM APICOM MOU	AK Alaska OSRO MOU	GRN Global Response Network

DIRECT AGREEMENTS						
Agreement Between:	**Polar Tanker**	**Andeavor**	**Crowley**	**Alaska Tanker**	**Hilcorp**	**APSC/ SERVS**
Edison Chouest Offshore						
Gallagher Marine Systems						
Global Diving						
International Bird Rescue						
International Wildlife Research						
J&S Maritime						
Lounik, Inc.						
Marine Pollution Control						
Marine Spill Response Corporation GRN						
North Star Terminal and Stevedore Co.						
Northern Land Use Research Alaska, LLC						
National Response Corporation						
O'Briens Response Management						
Oil Spill Response USA/Oil Spill Response Limited APICOM, GRN						
Polar Tanker Spill Response Company						
Polaris Applied Sciences						
Qualitech Environmental						
SEAPRO AK						
Stericycle						
SWS Environmental Services						
T&T Salvage						
TCC, LLC						
The Response Group						
U.S. NAVSUPSALV						
Unitech of Alaska						
Univar						
U.S. Coast Guard (various)						
Valdez Fisheries Development Association						
Western Canada Marine Response Corporation GRN						

2.3 Considerations for Out-of-Region Equipment Access

Access through Direct Contract with OSROs

Table 2-1 shows that all the PWS Shippers describe contractual relationships with APSC/SERVS and MSRC. It also shows that APSC/SERVS has several additional arrangements in place with other response resource providers, including ACS and CISPRI. The core equipment contracted by all five shippers is the APSC/SERVS in-region inventory, Alaska OSRO in- and out- of region inventory (ACS and CISPRI), and MSRC out-of-region inventory. Polar Tankers, Andeavor, and Alaska Tanker Company also have contractual access to OSRL's equipment inventory (out-of-region). Alaska Tanker Company describes a contract with WCMRC in British Columbia, but the prospect of mobilizing response resources over international boundaries can create additional challenges. Plan holders describe additional contracts with smaller providers or with contractors that provide specific services such as wildlife response or scientific support.

It is important to note that plan holder access to out-of-region equipment does not mean that the full inventory of any one organization is available. OSROs are limited in the extent to which they can release equipment to a single incident as this equipment is the basis for multiple operators to meet their federal and state oil spill preparedness requirements. In Alaska, ADEC must approve the release of response equipment from one response contractor to another. State and federal regulators may also be required to approve the release of contractor equipment to another state. Access to WCMRC and OSRL international inventories may be further complicated by customs requirements for moving equipment across an international border.

Past equipment surveys by PWS plan holders and PWSRCAC have taken into consideration the full inventory of response equipment maintained by out-of-region response organizations. However, based on interviews with OSRO managers, response personnel, and regulators, it is not realistic to expect that any organization, regardless of contractual arrangement with the PWS plan holders, would be permitted by state and federal authorities to release their full equipment inventory. Therefore, this analysis assumes that PWS plan holders would likely have access to between 25-50% of the total equipment inventory of any given out-of-region response organization. We recognize that there may be exceptions to this range but feel that it is more realistic for planning purposes.

Access through MOUs and Equipment Networks

Table 2-1 includes oil spill response organizations that participate in one or more of the three equipment networks: APICOM; Alaska OSRO MOU; and GRN. The APICOM and Alaska MOUs are nearly identical in their wording and both contain the following clause:

> ***"Third Party Reliance:*** *This MOU and the Response Resource sharing contemplated hereunder may be communicated to third parties. However, this MOU shall not be construed to be for the benefit of any third party, nor shall a non-Party have any right to enforce any of its provisions. Moreover, execution of this MOU may not be construed to*

mean that any of the Response Resources identified are necessarily available for purposes of meeting a particular state or federal response-planning standard."

Neither APICOM, nor the Alaska OSRO MOU is a binding agreement and neither one guarantees access to equipment. Therefore, PWS Tanker Plan holders cannot necessarily access the out-of-region equipment inventories available through APICOM or the Alaska OSRO agreement, unless they also have direct agreements in place.

The GRN includes ACS and MSRC. All PWS Tanker Plan holders have access to ACS through APSC/SERVS and have contracts in place with MSRC. Beyond these arrangements, there is no evidence that PWS Tanker Plan holders have contractual access to the other GRN member entities.

Commercial Ventures and Government Equipment

The commercial ventures and government stockpiles listed in Table 2-1 are not necessarily available to support a PWS tanker spill response and the plan holders have no control over whether federal or state authorities might release equipment to support a response.

3 Out-of-Region Equipment Analysis

3.1 Summary of Resources

Inventories of out-of-region response equipment were compiled and analyzed to better understand the capabilities and limitations of out-of-region resources to support a PWS tanker spill response, and specifically to build 14 NSTFs.

The Worldwide Response Resource List (WRRL) was the primary source for out-of-region equipment inventories. The WRRL is an oil spill response equipment database that is available online to download or query.[24] It includes several of the OSROs and PRACs that are listed in contingency plans as providing out-of-region equipment to PWS Shippers. The following equipment lists were compiled from the WRRL for analysis: CISPRI; MSRC (California, Northwest, Gulf, Hawaii, Atlantic); SEAPRO; WCMRC; NRC (California, Hawaii, Northwest); and NAVSUPSALV. Response organizations are responsible to update their equipment lists through the WRRL and this study presumes that these inventories are up-to-date and accurate.

The WRRL does not include ACS, ACN, or ORSL's equipment inventories; these were compiled separately and combined with the WRRL data. Information from the WRRL and other equipment inventories was taken at face value with no further validation. A logical next step would be to verify the accuracy of these equipment inventories.

Equipment Type and Kind

The WRRL applies a standard "type and kind" categorization to response resources that range from air monitoring to wildlife. For this analysis, we focused on three types of

[24] https://wrrl.world/fmi/webd/WRRL.

response resources: boom, skimmers, and storage. The WRRL type and kind specifications for these three resources are shown in Table 3-1. Shaded rows indicate the type/kind of resources that were analyzed for the out-of-region task forces; other type/kinds of boom, skimmers, and storage options which are not appropriate for nearshore operations are not shaded.

Table 3-1. WRRL Kind/Type Resources for Boom, Skimmers, and Storage

Resource	Kind	Kind/Type	Type Parameters	Description	Example
Shading indicates type/kind included in NSTF analysis.					
Boom	Boom (B)	Boom-B-1	height > = 42" or > = 104 centimeters (cm)	Non-specific boom that is capable of operating in large waves, foam crests, and some spray.	Non-specific
Boom	Boom (B)	Boom-B-2	height > =18 < 42" or > = 46 cm < 104 cm	Non-specific boom that is capable of operating in moderate waves and frequent whitecaps.	Non-specific
Boom	Boom (B)	Boom-B-3	height < 18" or < 46 cm	Non-specific boom that is capable of operating in small non-breaking waves.	Non-specific
Boom	Fire (Bfire)	Boom-Bfire-0	fire boom of any height	Boom that includes both fence and curtain type designed to withstand the heat and stress of in situ burning.	PyroBoom 30”
Boom	Tidal Seal Boom (TS)	Boom-TS-0	Booms that use air or foam for buoyancy and water for ballast.	Not otherwise specified.	Tidal seal boom
Skimmer, Portable	Boom (BO)	Skimmer-BO-0		Includes any device that has the skimmer incorporated in the face of the containment boom, regardless of the skimmer type.	Boom skimmer
Skimmer, Portable	Portable Skimmer (PS)	Skimmer-PS-1	> 9,600 barrels of oil per day (bpd)	Portable Skimmer, > 417 barrel per hour (bbl/hr) or 66 cubic meters (m3)/hr pump capacity	Douglas Skim-Pak-93, DIP-2900
Skimmer, Portable	Portable Skimmer (PS)	Skimmer-PS-2	> = 2,880, < 9,600 bpd	Portable Skimmer, > 120 bbl/hr or 19 m3/hr, < 417 bbl/hr or 66 m3/hr pump capacity	Kepner SeaVac-660, RoDisc 15
Skimmer, Portable	Portable Skimmer (PS)	Skimmer-PS-3	> = 480, < 2,880 bpd	Portable Skimmer, > 20 bbl/hr or 3 m3/hr, < 120 bbl/hr or 19 m3/hr pump capacity	Walosep WM, Slickbar SLURP, Lori

Resource	Kind	Kind/Type	Type Parameters	Description	Example
Skimmer, Portable	Portable Skimmer (PS)	Skimmer-PS-4	< 480 bpd	Portable Skimmer, < 20 bbl/hr or 3 m3/hr pump capacity	VAB Foxtail Rope Skimmer, Aquaguard
Storage	Portable Storage (PS)	Storage-PS-1	> 2,000 bbl or 231 m3	Portable (tank) storage	Storage Bladder
Storage	Portable Storage (PS)	Storage-PS-2	> 500 bbl or 58 m3 < 2,000 bbl or 231 m3	Portable (tank) storage	Storage Bladder
Storage	Portable Storage (PS)	Storage-PS-3	> 200 bbl or 23 m3 < 500 bbl or 58 m3	Portable (tank) storage	Baker Tank
Storage	Portable Storage (PS)	Storage-PS-4	< 200 bbl or 23 m3	Portable (tank) storage	8.5 bbl Poly Tank

3.2 Nearshore Task Force Analysis

Task Force Composition

Scenario 546 on page 69 of the PWS Tanker Plan, Revision 0. 2022 (Alaska Tanker Company LLC. 2022a) sets out the need for 14 NSTFs. The APSC/SERVS Technical Manual specifies that each out-of-region NSTF would be comprised of six skimmers, 7,500 feet of boom, and 12 suitable storage devices of 100 barrels (bbl) each, with the specifications shown in Figure 3-1 (Alaska Tanker Company, 2022b).

Figure 3-1. Nearshore Task Force Equipment Specifications from SERVS Technical Manual

Table 12.3-8. Out of Region Nearshore Task Forces

Nearshore Task Force	Equipment Per Task Force
TF 6, 7, and 8	6 ea. GT185/DESMI 250 skimmers or equivalent 7,500 ft boom appropriate for assigned tasks 12 ea. suitable storage devices or equivalent (100 bbl per device)

Equipment availability through contractual, commercial, and government response resource inventories was analyzed based on the access described in Table 2-1. Resources such as personnel, vessels, pumps, hoses, and ancillary equipment were not factored into the analysis, but are important to task force assembly.

Approach

The modified WRRL database analyzed for this report contains:

- 1.2 million feet of type B-2 boom,
- 564 type PS-3 skimmers, and
- 550 marine compatible type PS-2, PS-3, and PS-4 primary storage devices.

It cannot be assumed that the PWS Shippers have complete access to all of the equipment in this worldwide inventory. To assess the availability of out-of-region equipment for 14 NSTFs, a spreadsheet model was used to calculate equipment availability from the PRACs and OSROs identified in Table 2-1 as having contractual relationships with the PWS Shippers. Three levels of access were prioritized based on contractual relationships: (1) through directly contracted organizations; (2) through listed organizations; and (3) through government and commercial vendor stockpiles. We focused on the first level of access and only progressed through the second and third if the out-of-region equipment requirement could not be met.

For each of the three categories of equipment type/kinds (boom, skimmer, and storage), two different assumptions were applied to reflect that no single response organization would release 100% of their inventory. The availability of out-of-region equipment is estimated based on 25% and 50% of total inventory for each out-of-region supplier.

Availability of Out-of-Region Boom

The estimate of boom availability for out-of-region NSTFs began with Boom B-2, which ranges from 18 to 42 inches. To outfit 14 task forces with 7,500 feet apiece, a total of 105,000 feet of boom is required.

Table 3-2 shows the availability of out-of-region boom. Assuming that response organizations are permitted to release 50% of their inventory, there is sufficient boom available through CISPRI, MSRC in California and the Northwest, and ACS to provide 119,953 feet of B-2 boom, or 114% of the requirement for 14 NSTFs. If the assumption is reduced to 25% of total inventory, B-2 boom available through the previous four OSROs plus MSRC in the Gulf, Atlantic, and Hawaii regions and ACN can supply 108,562 feet of boom, or 103% of the required boom for 14 NSTFs.

All of the PWS Tanker Plan holders describe contractual access to CISPRI and MSRC out-of-region equipment. APSC/SERVS has direct contractual access to CISPRI and ACS equipment, and ACN equipment is not contractually obligated.

Table 3-2. Availability of Boom (B-2, 18"-42") to outfit 14 Nearshore Task Forces

Source	Feet of B-2 Boom *(Max Withdrawal 50%)*	% of total		Feet of B-2 Boom *(Max Withdrawal 25%)*	% of total
CISPRI	9,294	9%		4,647	4%
MSRC-CA	53,200	51%		26,600	25%
MSRC-NW	37,330	36%		18,665	18%
ACS	20,129	19%		10,065	10%
MSRC-GULF				4,075	4%
MSRC-ATL				7,498	7%
MSRC-HI				5,835	6%
ACN				31,178	30%
Total Boom Needed (feet)	105,000			105,000	
Total Boom Acquired (feet)	119,953	114%		108,562	103%

Accessible through contracted organizations
Accessible through listed organizations
Accessible through governmental or commercial organizations

Availability of Out-of-Region Skimmers

To estimate the availability of skimmers for out-of-region NSTFs, the analysis included skimmers PS-3, which range in Effective Daily Recovery Capacity (EDRC) from 480 to 2,800 bdp. To outfit 14 task forces with six skimmers each, a total of 84 skimmers are required.

Table 3-3 shows the availability of out-of-region skimmers. Assuming that response organizations are permitted to release 50% of their inventory, there are enough PS-3 skimmers with excess skimming capacity available through CISPRI, MSRC in California the Northwest, and the Gulf, and ACS. These four OSROs can provide 89 PS-3 skimming units to meet 105% of the skimming requirement for 14 NSTFs.

If the assumption is reduced to 25% of total inventory, PS-3 skimmers available through the previous five OSROs plus MSRC in the Atlantic and Hawaii regions, ACN, NRC in the Northwest and California, and OSRL-USA regions can supply 84 PS-3 skimmer units to meet 100% of the skimming requirement for 14 NSTFs.

All of the PWS Tanker Plan holders describe contractual access to CISPRI and MSRC out-of-region equipment. APSC/SERVS has direct contractual access to CISPRI and ACS equipment. ACN, NRC, and OSRL are not contractually obligated to provide equipment to every plan holder.

Table 3-3. Availability of Skimmers (PS-3) to outfit 14 Nearshore Task Forces

Source	Units *(Max Withdrawal 50%)*	% of total		Units *(Max Withdrawal 25%)*	% of total
CISPRI	12	14%		6	7%
MSRC-CA	17	20%		9	10%
MSRC-NW	5	5%		2	3%
ACS	18	21%		9	11%
MSRC-GULF	9	11%		14	17%
MSRC-ATL	14	17%		7	8%
MSRC-HI	15	17%		7	9%
ACN	28	33%		14	17%
OSRL-USA				9	10%
NRC-NW				3	4%
NRC-CA				5	6%
NRC-HI				1	1%
Total Needed	84 units			84 units	
Total Acquired	89 units	105%		84 units	100%

Accessible through contracted organizations
Accessible through listed organizations
Accessible through governmental or commercial organizations

Availability of Out-of-Region Storage

This analysis considers the availability of primary storage devices to support NSTF on-water recovery activities. It does not consider secondary storage, which is a critical component to on-water recovery operations; once primary storage devices are filled, they must be offloaded to secondary storage so that on-water recovery may continue unhindered. While this is an important component of NSTF operations, it is out of scope for this study.

To estimate the availability of primary storage devices to hold recovered oil and water for out-of-region NSTFs, marine-compatible[25] storage PS-2, PS-3, and PS-4 units were counted. These storage units range in storage volume categorically, from less than 200 barrels at the smallest (PS-2) to less than 2,000 barrels at the largest (PS-4). To outfit 14 task forces with 12 storage devices each, a total of 168 storage devices are required, with a minimum storage volume of 16,800 barrels.

Table 3-4 shows the availability of out-of-region storage devices. Assuming that response organizations are permitted to release 50% of their inventory, there are sufficient storage devices available through direct contract, MOU, commercial ventures, and government sources. Tallying 50% of the marine-compatible storage devices from CISPRI, MSRC (Atlantic, California, Gulf, Hawaii, and Northwest), ACS, ACN, SEAPRO, NRC (California, Hawaii, Northwest), WCMRC, and OSRL stockpiles adds up to 178 total storage devices. This is 106% of the 168 devices required for 14 NSTFs and 204% of the required storage volume.

If the assumption is reduced to 25% of total inventory, marine-compatible PS-2, PS-3, and PS-4 storage units available through all sources listed above plus NAVSUPSALV and Navy Washington stockpiles tally up to 94 units, which is 56% of the devices required for 14 NSTFs. The total volume of storage is 20,060 barrels, which is 119% of the required total storage volume.

In addition to the contractual arrangements discussed in the boom and skimmer analysis, out-of-region equipment from OSRL, SEAPRO, NRC Hawaii, NAVSUPSALV, and Navy Washington are required for storage devices. Navy equipment is included in Table 3-4; Polar Tankers and Alaska Tanker Company both mention this equipment, however, access would require support from the Federal On-scene Coordinator.

[25] The WRRL does not distinguish storage device type/kind based on their compatibility for marine response. For this analysis, an extra step was taken to distinguish fast tanks and other open-topped storage devices that would not be appropriate for use as primary storage onboard vessels or barges in a NSTF. Only towable devices or devices completely contained were considered.

Table 3-4. Availability of Storage (PS-2, PS-3, and PS-4) to outfit 14 Nearshore Task Forces

Source	Units *(Max Withdrawal 50%)*	% of total	Barrels (bbl)		Units *(Max Withdrawal 25%)*	% of total	Barrels (bbl)
CISPRI	14	8%	2,851		7	4%	1,426
MSRC-CA	12	7%	4,752		6	3%	2,376
MSRC-NW	8	4%	3,551		4	2%	1,776
ACS	11	7%	5,500		6	3%	2,750
MSRC-GULF	10	6%	1,991		5	3%	996
MSRC-ATL	16	10%	1,111		8	5%	555
MSRC-HI	9	5%	2,043		5	3%	1,021
ACN	13	8%	3,612		7	4%	1,806
SEAPRO	2	1%	115		1	1%	57
NRC-CA	15	9%	1,458		7	4%	729
NRC-HI	1	1%	100		1	1%	50
NRC-NW	20	12%	1,605		10	6%	803
WCMRC	15	9%	425		7	4%	212
OSRL-USA	13	8%	314		7	4%	157
OSRL-UK	8	4%	2,408		4	2%	1,204
OSRL-Singapore	14	8%	2,401		7	4%	1,201
OSRL-Baharan					1	1%	314
Navy-SUPSALV					1	1%	619
Navy-WA					4	2%	2,019
Total Needed	168 units		16,800 bbl		168 units		16,800 bbl
Total Acquired	178 units	106%	34,216 bbl		94 units	56%	20,060 bbl

Accessible through contracted organizations
Accessible through listed organizations
Accessible through governmental or commercial organizations

Secondary Storage

Each skimming system recovers oil and water into a primary storage device. Once that storage device is full it must be transported to a secondary storage barge, offloaded, and then returned to service at the skimming system. There are six skimming systems and 12 primary storage devices in each NSTF, which allows for the skimmers to be utilizing one storage device while another is being transported and offloaded. The secondary barges

include offloading pumps and associated equipment to offload the primary storage devices. Secondary storage barges may be barges of opportunity but they must be outfitted with offload stations. The requirements for a secondary storage barge offload station are set out in Table 12.3.9 of the SERVS Technical Manual as shown below. Up to six offload stations are need on each secondary storage barge.

Table 12.3-9. Equipment Options for One-Off Loading Station for Out of Region Nearshore Storage Barge

	Alaska and West Coast Location	Other U.S. Locations	International Locations
Lightering/Offloading Equipment Option 1	DOP 250 pump 6" x 50' transfer hose 1" x 50' hydraulic hose 3/8" x 50' hydraulic hose Power pack	DOP 250 pump 6" x 50' transfer hose 1" x 50' hydraulic hose 3/8" x 50' hydraulic hose Power pack	DOP 250 pump 6" x 50' transfer hose 1" x 50' hydraulic hose 3/8" x 50' hydraulic hose Power pack
Lightering/Offloading Equipment Option 2	CCN 150 pump with transfer hoses and power pack	Other brand pump systems that come as set with hoses and powerpacks.	Other brand pump systems that come as set with hoses and powerpacks.
Associated Equipment (May not be needed depending upon barge equipment)	Nylon line Hose sling Tripod Winch	Nylon line Hose sling Tripod Winch	Nylon line Hose sling Tripod Winch

Scenario 546 in the PWS Tanker Plan calls for five out-of-region secondary storage barges to support NSTFs with the first arriving by hour 72. If each barge requires the maximum of six offload systems, 30 would be required. Once the barge arrives it must be outfitted with the offload pumps and associated gear before it can be placed in service.

The DOP 250 pump is classified as a Pump-P-4 in the WRRL Type Kind List. This is a common pump which is easily transported by vehicle or air. ACS, CISPRI, and MSRC have more than 100 of these pumps, so acquiring them is not an issue.

However, offload stations must be compatible with the primary storage devices. For instance, many of the mini-barges used by the in-region NSTFs have an offload pump already internalized within the barge, or could open a hatch to allow a submersible pump to be lowered into the compartment. However, many out-of-region primary storage devices are bladder tanks which do not have a means for inserting a submersible pump. We were not able to determine the compatibility of offload systems with primary storage devices.

Availability of Large Open-Water Assets

Large Open-Water Assets such as oil spill response vessels (OSRV), offshore supply vessels, tugs, and barges are more difficult to mobilize from out of the PWS region. There are OSRVs in Cook Inlet operated by CISPRI, Kodiak operated by ACN, and Unalaska operated by Resolve Marine. There are OSRVs on the west coast of the U.S. operated by MSRC, WMRC, and NRC. These vessels have dedicated/trained crews and could be mobilized to PWS in the timeframe of a week or less. Other large open-water assets could be assembled

by chartering vessels and mobilizing spill response equipment to outfit the vessel. OSRL has fly-away equipment sets for this purpose.

4 Discussion

4.1 Equipment Availability

Section 3.2 shows that out-of-region equipment stockpiles have adequate quantities of boom to outfit 14 NSTFs with equipment if they release 50% of their total inventories. However, if the assumption is reduced to 25%, then additional boom is required from ACN and access to ACN equipment is not guaranteed through a formal agreement. To outfit 14 task forces with adequate skimming systems, PWS Tanker Plan holders rely on access to ACN equipment, even if it is assumed that out-of-region OSROs will release 50% of their inventory. If only 25% of the inventory is released, plan holders will need skimmers from several additional OSROs with whom they do have not demonstrated contractual arrangements that meet State standards.

The number of primary storage devices is the limiting factor for outfitting out-of-region NSTFs. Based on the equipment inventories in the WRRL, PWS Tanker Plan holders may not be able access enough primary storage to support 14 NSTFs.

This equipment analysis focused only on boom, skimmers, and primary storage. However, 14 NSTFs would also require vessel support and a complement of ancillary equipment like anchors, lines, floats, hoses, and connections. Power packs must be compatible to the skimmers' operating specifications (hydraulic connections, running pressures) and operators must have expertise to assemble these components to make a functioning response system.

Adequate secondary storage must be available to offload the primary storage devices once they are full of recovered liquids, offload systems at the secondary storage barges must be compatible with primary storage devices, and a logistics plan must be in place so that this can be done without interrupting on-water recovery. The NSTF tactic in the SERVS Technical Manual specifies 27 fishing or support vessels per task force, which would create the need for 378 additional vessels to support the out-of-region task forces. It is possible but not guaranteed that the boom, skimmers, and storage devices would include all the ancillary equipment required for their deployment.

The availability of trained responders may also constrain NSTF deployment. The SERVS Technical Manual does not specify the full complement of responders needed per task force, as the number varies depending upon the assigned tactic, but identifies 40 basic responders, 4 tankermen, 23 Group Supervisors, and 34 vessel operators (101 persons) as part of the minimum for a 24-hour operational period. These responders should be trained on the specific type of equipment that they will be required to operate.

4.2 Contractual Access and Equipment Release

Accessing out-of-region equipment involves a level of uncertainty regarding equipment release policies on behalf of various equipment owners. During a Spill of National Significance (SONS) like the BP Deepwater Horizon well blowout, an "all hands on deck" approach may facilitate equipment release. However, for a less catastrophic or unfolding incident, it is less clear how much equipment would be released from out-of-region to support a PWS response.

Direct contractual access is important not only to demonstrating compliance with regulatory standards, but also on a practical level. The window-of-opportunity for assembling and deploying on-water spill response forces diminishes over time as oil spreads and becomes more difficult to encounter and recover. A response optimization analysis conducted for PWS affirmed that time is of the essence in maximizing response efficiency (Nuka Research, 2017).

Beyond the in-region response equipment available through APSC/SERVS' direct inventory, the PWS Tanker Plan holders have contractual access to the equipment inventories of ACS and CISPRI. Their access to ACN and SEAPRO equipment is not guaranteed under the Alaska MOU. Release of this Alaska-based out-of-region equipment also requires ADEC approval and additional approvals may also be required by the board of directors or managers of each Alaska PRAC.

Access to equipment in the Lower 48 and Hawaii relies on two major U.S. OSROs: MSRC and NRC. All five PWS Tanker Plan holders indicate that they have agreements with MSRC. APSC/SERVS mentions an agreement with NRC, though the terms of that arrangement are not provided. This analysis presumes that these agreements are sufficient for PWS Tanker Plan holders to access MSRC and NRC equipment from outside of Alaska and assumes that the relevant state and federal authorities will authorize the release of between 25-50% of their total inventories for a PWS response.[26] The analysis also assume that the percentage of total equipment will apply equally across all equipment types, which may not be the case.

Beyond the Alaska PRACs, MSRC, and NRC, a major international response equipment cache is maintained by OSRL in locations across the globe. APSC/SERVS is not an OSRL member, but Polar Tankers holds a statement of contractual agreement with OSRL and Andeavor, and Alaska Tanker Company mentions that an agreement is in place. OSRL requires an organization to become a member before accessing their equipment stockpiles, but membership can be obtained after a spill event.

[26] For example, in Washington, WAC 173-182-820 requires a registered OSRO to notify the Department of Ecology if it transfers equipment out of state and then Ecology evaluates whether the OSRO can still meet its registration standards without this equipment.

4.3 Logistical and Practical Considerations

Access to enough equipment is the first step in building 14 out-of-region NSTFs. However, beyond the inventory of boom, skimmers, and temporary storage, there are several important considerations related to building a functional task force.

The Spill Tactics for Alaska Responders (STAR) Manual depicts a typical Nearshore Free-Oil Recovery Strike Team (see Figure 4-1) to show how vessels, boom, skimming systems, and storage containers must be configured such that they can perform their assigned functions (Nuka Research, 2014). The illustration is only one of several possible configurations for a NSTF, which will dictate the equipment specifications and influence ancillary equipment, vessels, and personnel.

Building a set of equipment into a task force is more than a simple tallying exercise. All components must be inter-operable and must be able to function together to implement their assigned tactics. The SERVS Technical Manual describes the process of mobilizing out-of-region contractors and equipment to support a response. The process is described at a high level in Sections 12.3.4 and 12.3.5 as beginning with the establishment of contractual access and then involving a collaborative effort between Operations, Logistics, and Planning Sections to order the required personnel and equipment. However, it is a great deal more complicated than simply ordering equipment.

The reality of outfitting 14 NSTFs with 105,000 feet of boom, 84 skimmers, 168 storage units, over 375 vessels, and over 1,000 trained responders from more than a dozen different sources across Alaska, the U.S, and foreign countries is daunting. Resources will be mobilized and delivered on different time schedules depending upon their location and the permissions or approvals required to access them. Task force components must be assembled at a staging area and the deployment cannot take place until the full complement of equipment, vessels, personnel, and ancillary equipment are on-scene and fully functioning. The level of effort and amount of time and expertise required to accomplish this work is substantial and will be occurring simultaneously with the logistical demands of the rest of the response.

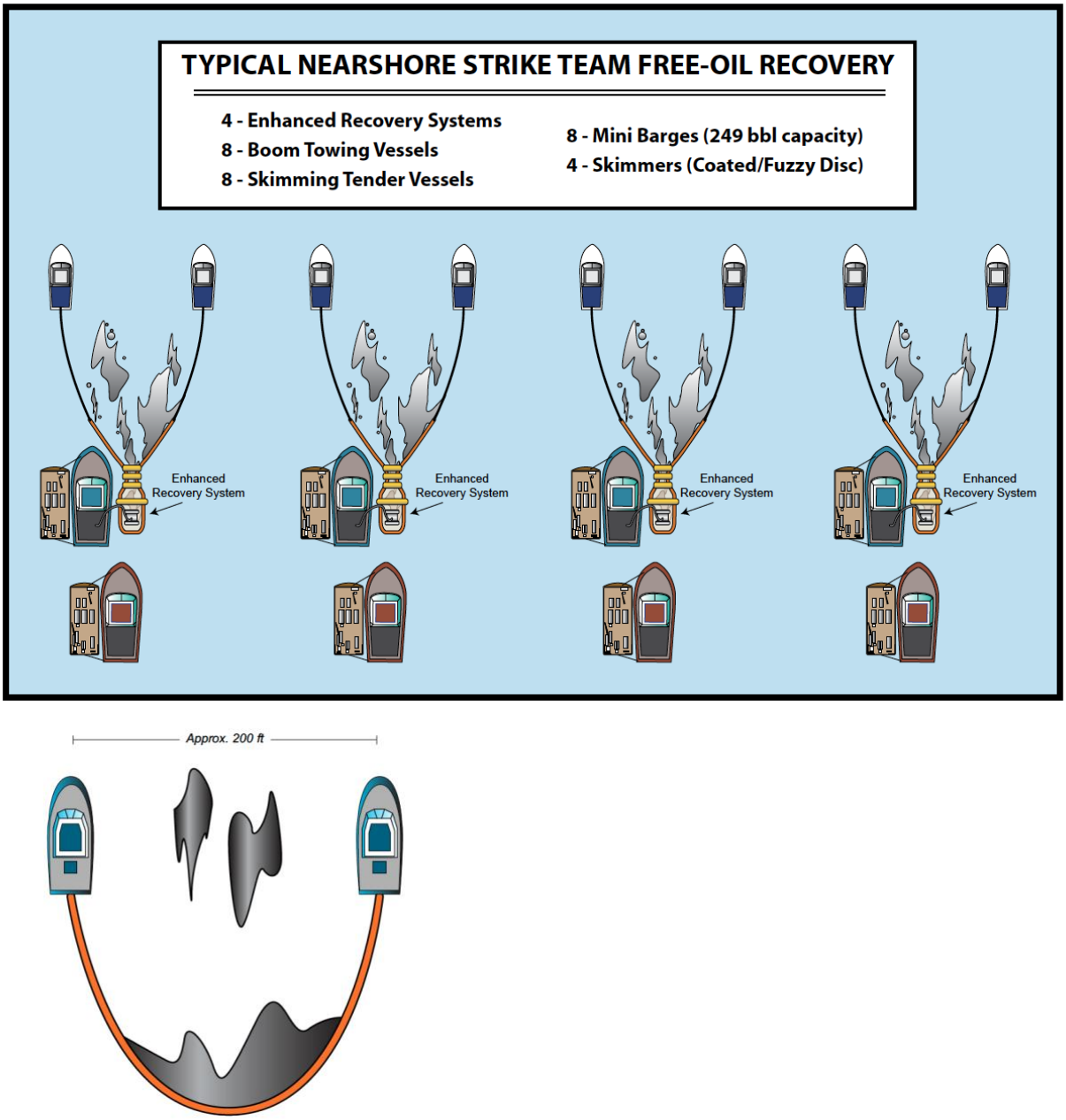

Figure 4-1. STAR Manual Nearshore Free-oil Recovery Strike Team Configuration

5 Conclusions

This study affirms previous work by the PWS Tanker Plan holders and PWSRCAC that found there is a considerable inventory of out-of-region spill response equipment available to support a PWS tanker spill through various contracting mechanisms.

Beyond directly contracted in-region response equipment, the degree of access to response resources in Alaska, the U.S., and internationally varies by plan holder, and is

subject to approvals or limitations to equipment release by regulators and, potentially, equipment owners. Based on this analysis and assumption that 25-50% of a response organization's inventory would be released for a given incident, this analysis found that PWS Tanker Plan holders have contractual access to an adequate inventory of boom to build 14 out-of-region task forces and to an adequate inventory of skimmers if 50% of inventories are released, but not if only 25% are. Primary storage will be the limiting factor, as the inventory of out-of-region equipment is not adequate to provide the number of units required to support the 14 task forces. Even with the higher assumption (50% of equipment being released for an incident), there are barely enough storage devices. If only 25% of inventory is released, the shortage is 74 storage devices.

In addition to the shortage of primary storage, the assemblage of 14 NSTFs with out-of-region equipment will require hundreds of vessels and thousands of responders. The process of building a functional task force requires that all equipment, personnel, vessels, and accessories are on-scene and functional before operations can commence.

Based on this analysis, the authors recommend several follow-up actions for PWSRCAC to consider:

- Conduct additional research to better understand the relationship between contractual arrangements and equipment access (e.g., constraints to equipment release, differentiating direct access from participation in networks).
- Inquire about the force of the APICOM and Alaska OSRO MOUs during future contingency plan reviews.
- Request that ADEC and PWS Shippers conduct a tabletop exercise to demonstrate the process and estimate the timelines involved in resourcing 14 out-of-region task forces. This exercise should require that specific equipment be identified, sourced, authorized for release, and transportation arranged for each task force. The exercise should also arrange for logistical support for the 14 NSTFs including fueling and resupply.
- Conduct additional analysis to examine the personnel, vessel, and logistics support required to assemble 14 out-of-region NSTFs to identify any potential gaps or shortfalls.

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Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Danielle Verna and the Scientific Advisory Committee

Project number and name or topic: 9520 - Genetic Analysis of Zooplankton

1. **Description of agenda item:** The Board is being asked to accept the report titled "Variation in Zooplankton Community Composition in Prince William Sound across Space and Time" by Dr. Katrina Lohan of the Smithsonian Environmental Research Center and Dr. Jon Geller of Moss Landing Marine Laboratory, dated July 5, 2022. From April through September 2021, staff conducted extensive plankton sampling at three locations throughout Port Valdez. The goal of the sampling was to understand how zooplankton communities varied across location and through time to improve monitoring for invasive species. The authors of this report used genetic tools (metagenetics) to analyze the samples and identify potential marine invasive species. Dr. Lohan and Dr. Geller will present the results and recommendations of the study and will be available to answer questions.

2. **Why is this item important to PWSRCAC:** PWSRCAC is tasked with monitoring actual and potential environmental impacts of terminal and tanker operations. Tankers may introduce invasive species through discharge of ballast water or as fouling on underwater surfaces such as hulls, rudders, niche areas, etc. PWSRCAC has a long history of supporting monitoring for invasive species in Prince William Sound and engaging in the regulatory process for ballast water management by crude oil tankers. This project builds on previous work to improve sampling strategies for invasive species by assessing the influence of various factors on zooplankton composition. Invasive species can be released in their larval stage as plankton, thus collecting bulk samples via plankton tows and analyzing with genetic tools can be comprehensive while also reducing time, labor, and expense compared to other methods. The results and recommendations of this project will inform analyses for monitoring planned in fiscal year 2023 and beyond, contributing to a long-term (20+ year) assessment of invasive species transport, introduction, and establishment in Prince William Sound.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/6/2021	The Board authorized a contract with Smithsonian Environmental Research Center (SERC) for work to be performed under the 9520 Marine Invasive Species Project FY2021 budget, at an amount not to exceed $46,450.
Board	5/21/2021	Board adopted the FY2022 budget as presented, to include this project.

4. **Summary of policy, issues, support, or opposition:** Not applicable.

5. **Committee Recommendation:** The Scientific Advisory Committee recommended that the Board of Directors accept this report at its meeting on June 7, 2022.

6. **Relationship to LRP and Budget:** Project 9520 - Marine Invasive Species is in the approved FY2023 budget and annual workplan.

9520--Marine Invasive Species
As of July 31, 2022

FY-2023 Budget	
Original	$64,754.00
Modifications	
Revised Budget	$64,754.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$11,645.00
Actual + Commitments	$11,645.00
Amount Remaining	$53,109.00

7. **Action Requested of the Board of Directors:** Accept the report titled "Variation in Zooplankton Community Composition in Prince William Sound across Space and Time" by Dr. Katrina Lohan and Dr. Jon Geller dated July 5, 2022, as meeting the terms and conditions of contract number 9520.22.01, and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Report titled "Variation in Zooplankton Community Composition in Prince William Sound across Space and Time" by Dr. Katrina Lohan from the Smithsonian Environmental Research Center and Dr. Jon Geller from Moss Land Marine Laboratory.

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Variation in Zooplankton Community Composition in Prince William Sound across Space and Time

Final Report to Prince William Sound Regional Citizens' Advisory Council (PWSRCAC)

Coastal Disease Ecology Laboratory
Smithsonian Environmental Research Center

Dr. Katrina M Pagenkopp Lohan
Ruth DiMaria

&

Molecular Ecology Laboratory
Moss Landing Marine Laboratory

Dr. Jonathan Geller

Report Revised: July 5, 2022
Report Submitted: May 16, 2022

EXECUTIVE SUMMARY

Creating comprehensive species lists for benthic marine habitats typically require costly and laborious large-scale collections of samples, exhaustive sorting of specimens, and expert taxonomic identification. When time, labor, expertise, or funds are limiting, an alternative approach can be collection and genetic analysis of planktonic larvae of bottom-dwelling species (referred to as meroplankton) in the water column. This approach may also be well-suited to detect nonindigenous species (NIS), as many of these become established after transport in ballast water as larval stages. Metabarcoding is the simultaneous genetic analysis of the same gene from individual organisms from multiple species in an environmental sample of biomass, in this case from plankton samples. In metabarcoding, individual DNA sequences are grouped by similarity into clusters called Operational Taxonomic Units (OTU) that represent biological species, which can be assigned taxonomic names through comparisons to sequences in established databases. In previous studies, we employed this approach to describe zooplankton communities in Port Valdez, but we lacked information on the variability of zooplankton communities that is necessary to optimize a sampling program. In the current study, we used DNA metabarcoding to examine the potential sources of variation (namely season, tide, daylight, and sampling location) for zooplankton community richness (defined as the number of species in a community) and composition (defined as the proportion of each species in the community) in the Port Valdez. In doing so, we hoped to inform improved sampling strategies and better understand prior results. In this study, our results showed high OTU diversity, with sequences from a few species dominating the samples. A spring to summer shift in the zooplankton

community was observed, consistent with known zooplankton dynamics in Port Valdez. Variation in community composition was primarily attributed to date of sampling and not to location, day/night cycles or tidal stage. Finally, some taxa expected from fouling communities (defined as the biotic growth on hard surfaces), which are often rich with NIS, were underrepresented in these results. Additionally, some species found by morphological identification of specimens (using physical characteristics such as shape, size and color) in fouling communities in an earlier study did not appear in our results. Conversely, many of the taxa found in this survey were not reported in the morphological survey. In retrospect, fouling communities are a small fraction of the total benthic habitat in Port Valdez, and their larvae may similarly be a small component of the total zooplankton community. Based on these results, we make the following recommendations for future surveys: 1) consider increased sequencing depth or molecular strategies to suppress dominant species to enhance detection of fouling species, 2) increase replication of summer sampling to increase potential detection of meroplankton, and 3) utilize a hybrid strategy to directly sample fouling communities, such as conducting complementary, simultaneous morphological and metabarcode surveys.

INTRODUCTION

Sampling of plankton communities is a novel approach to monitoring benthic (defined as bottom-dwelling) marine communities when planktonic larvae of benthic species (referred to as meroplankton) are present in the water column. Diversity in plankton samples is also easier to measure compared to sampling the benthic communities. Metabarcoding is defined as the exhaustive sequencing of species-diagnostic genomic fragments from DNA extractions of bulk community samples. Metabarcoding of plankton is well-suited to detect nonindigenous species (NIS) that became established after transport in ballast water because these are biased toward species with planktonic larvae (Carlton & Geller 1993). From 2016 to 2019, we applied a metabarcoding approach to plankton communities in Port Valdez, Alaska, with the primary goal of detecting NIS; however, few NIS were seen in those datasets. While detection of planktonic larvae depends on prior adult reproduction, which is driven by adult environmental physiology, other factors such as local circulation, tidal patterns, and larval behaviors can also impact planktonic larvae richness and spatiotemporal variation. Thus, we were concerned that our prior studies under-sampled plankton in Port Valdez, as the limited sampling from a single date in a few locations may have failed to collect many species actually present in the benthic communities.

The current study was undertaken to examine potential sources of variation (specifically season, tide, daylight, and location) for the estimation of zooplankton community richness and composition in the Port Valdez. In doing so, we hoped to inform improved sampling strategies and to better understand results from our prior studies. We proposed a sampling design that would spread effort among days, weeks, and months to assess variation at these time scales. We included samples from three nearshore areas in Port Valdez to assess spatial variation. We also included daytime and nighttime sampling on some days in one site because plankton are known to exhibit phototaxis (i.e., bodily movement in response to light, either toward or away from the source). Finally, we sampled at different times in the tidal cycle in one site that was near the drainage of an extensive mudflat to explore potential habitat related differentiation in plankton composition. Several sampling schemes were considered, and the implemented plan reflected limitations of staffing, accessibility, and cost (Table 1).

METHODS

Sample collection

Zooplankton samples were collected from Prince William Sound, Alaska, from April through September in 2021 from three locations: Valdez Harbor (VDZ), the Container Terminal (CON), and the Valdez Marine Terminal (VMT) (Table 1). Tow samples were collected using a weighted plankton net (80 µm mesh, 0.5 m diameter) deployed to 5 m depth (except where the depth was less than 5 m in which case the net was lowered but not allowed to stir the bottom) and pulled vertically up through the water column. Three replicates were collected at each location per sampling event, assigned a unique ID, preserved, and shipped to the Coastal Disease Ecology Laboratory in Edgewater, Maryland, for metabarcoding and analyses.

DNA extraction, PCR amplification, and sequencing

Genomic DNA was extracted from a subset of the zooplankton collected from each replicate. Negative extraction controls were included to identify potential contaminants in the library preparation. A portion of the mitochondrial COI gene was amplified using primers fbLCOF1 (J.

Geller, unpublished) and jgHCO2198 (Geller *et al.* 2013). This COI gene fragment is a genetic marker, or "DNA barcode," commonly used to identify animals and so is well represented in public databases to aid taxonomic assignment of DNA sequences. All Polymerase Chain Reaction (PCR) reactions were generated in triplicate to mitigate potential variation across replicates in PCR. Specific DNA tags were added to the beginning and end of the PCR products as indices to later identify the source sample for each DNA sequence. The sequences were then purified to remove small and spurious fragments. The concentration of DNA per sample was then quantified. Based on those calculations, DNA from each sample was then pooled based on equimolar concentrations into three libraries for sequencing, with the intent of having the same concentration of DNA lead to a similar number of sequences per sample. The final pooled libraries were sequenced using a MiSeq v3 600 Reagent Kit (Illumina) on an Illumina MiSeq platform at the Laboratories of Analytical Biology at the Smithsonian National Museum of Natural History.

Bioinformatics

Sequences from all three runs were combined for bioinformatic analyses. Primer sequences were removed. Sequences were quality trimmed, merged, and chimeras (an artifact where partial PCR products from different species can be joined) were removed using the DADA2 package (Callahan *et al.* 2016) in R (Team 2020). Summary statistics were generated using the phyloseq (McMurdie & Holmes 2013) and vegan (Okasanen *et al.* 2014) packages in R. Individual sequences (also referred to as reads) were clustered at a 95% similarity threshold to form Operational Taxonomic Units (OTU), which were the unit used for community analysis. OTUs are treated as a proxy for biological species. To specifically look at temporal changes at each location, compare across locations, compare day vs. night, and compare across the tidal cycle, samples were parsed into different datasets to ensure an even sample size for all comparisons (Table 2). To assign taxonomic names to OTUs, a representative sequence from each OTU was compared first to a private MLML COI Database and then to the publicly available GenBank nucleotide (nr) database using BLAST (Altschul 1990). We annotated those OTUs that had an e-value of $\leq 1x10^{-30}$, $\geq$95% pairwise identify, and $\geq$90% pairwise coverage (or overlap) to a database record. If discrepancies existed, then the identification from the MLML database was given priority. The worms package (Chamberlain 2018) in R was used to add uniform upstream taxonomy for those taxa with matches in the World Register of Marine Species (WoRMs) database. Graphs were created to show species richness, taxonomic composition, and community similarity across different factors. Additionally, PERMANOVAs were conducted to see which factors were statistically significant in differentiating zooplankton communities.

The global geographic distributions of all OTUs that could be assigned a binomial name (genus and species) were mapped using records in the OBIS database (OBIS 2002). OBIS is a database of species distributions based on physical collections associated with museums and universities. As such, it does not include records based solely on appearance in the literature. Too, not all physical collections have sent data to OBIS. As in any species database, taxonomic accuracy in OBIS is likely imperfect, which could distort the reported distribution of some species. Therefore, OBIS should not be considered definitive of species distributions. Bearing in mind these caveats, maps were examined by eye to suggest potential NIS, which were those species with disjunct distributions that do not conform to provincial concepts of biogeography. Species tagged as potential NIS in Alaska should be referred to taxonomic experts for further evaluation.

RESULTS

In total, 47,540,396 raw reads were generated, which was reduced to 31,208,592 reads after initial filtering, merging, and chimera removal. With the removal of negative control samples, 31,206,244 reads remained for comparative analyses with 1,257 OTUs (approximations for species-level comparisons across sequence data) (Table 2). When all OTUs that could not be identified to the Kingdom Animalia by BLAST were removed from the dataset, 78% of the reads (n = 24,447,209) were assigned to animals, resulting in 195 OTUs (Total_Animal dataset; Table 2). After parsing the different datasets for statistical comparisons, all datasets contained over 1 million sequences, with the VMT dataset having the least number of samples, the least number of sequences, and the least number of OTUs, as expected (Table 2).

I. Comparisons across sampling locations

Alpha diversity (species richness)

For examining species richness (defined as the number of different species present in a particular sample), when we were not statistically comparing across a factor, all samples collected at all sites were included. When statistical comparisons were being made to tease out factors driving zooplankton richness or community composition, then the All3 dataset (Table 2), containing equal numbers of samples collected from the same months from all three sites, was used.

For this analysis, OTUs were generated to approximate species. Alpha diversity metrics using OTU richness were assessed using the Chao1 diversity metric, which is a nonparametric method that incorporates abundance into richness estimates as rare OTUs are presumed the most important in assessing how many additional taxa are missing. Our results indicated that alpha diversity varied across locations and months sampled (Figure 1). When examining all the data from all samples (parsing the Total_Animals dataset by location; Figure 1), alpha diversity was highest at the Container Dock and the Valdez Harbor in May, but highest at the Valdez Marine Terminal in April. When comparing the alpha diversity metrics for the All3 dataset (Figure 2), at the Container Dock, OTU richness was highest in July, then similar across other months. In contrast, at Valdez Harbor and the Valdez Marine Terminal, OTU richness was highest in April and lowest in May and August at the Valdez Harbor, but lowest in May and June at the Valdez Marine Terminal.

OTU accumulation curves were created to examine if the sampling effort both overall and across sites appeared sufficient for capturing all species likely present at those sites. For these analyses, all the animal OTUs across months were combined, for a broad view at the number of species at each site across the sampling time frame (Total_Animals dataset). If the sampling effort was sufficient to capture all the OTU richness at a site, then these curves would eventually flatten out to straight lines (in other words, they would reach an asymptote), indicating that adding more samples would not result in the addition of new taxa to the dataset. Across the four datasets examined, the accumulation curves do not appear to reach an asymptote at any of the three sites sampled (Figure 3 B-D), nor do all the samples combined appear to asymptote (Figure 3A). This indicates that OTU richness across these sites is high and additional sampling would be required to capture the total animal richness at these sites from April to September.

Beta diversity

To examine the similarity in community composition (defined as the contribution of each species to the total community) temporally within a site and across the sites, we created multidimensional scaling plots, either a non-metric multidimensional scaling (NMDS) plot or a Principal Coordinates Analysis (PCoA) plot. Both types of plots take a distance matrix as input, then condense the multiple factors present into a 2-dimensional space. In a PCoA, multiple eigenvalues and eigenvectors are calculated, ranked from greatest to highest, and the top two are used to plot the data into 2-dimensional space. In a NMDS, the method is non-metric, as it converts the dissimilarity values into ranks, which are then used for the iterative calculation performed. In both types of plots, the closer two points are to each other, the more similar they are. Thus, points that are closer together in these graphs indicate that the community composition in those samples is similar. The two axes plotted for the PCoA (Figure 4) account for 33.7% of the variation across the Total_Animals dataset. The PCoA plots generated by parsing the Total_Animals dataset by location indicate that the community composition in samples collected from all three sites in April and May are both different from each other and different from the communities collected during other months (Figure 4). At all three sites, samples collected from June through September cluster closely together and the ellipses overlap, indicating that the composition of these samples is highly similar.

To further explore how the timing of sampling impacts the community composition, we created the All3 dataset, containing the same number of samples across months across sites. The NMDS plot with this dataset (Figure 5) shows that samples collected in April across all sites are more similar in composition to each other and distinct from the community composition in samples collected from all three sites during the subsequent months. Additionally, there appears to be little differentiation in community composition at any of the three sites from May to September, indicating that these communities are similar across this time frame, regardless of from where the samples were taken.

We then conducted a PERMANOVA to compare the community composition in the All3 dataset to see if month or location were statistically significant factors. The PERMANOVA compares groups of objects (in this case groups of metazoan zooplankton) to test the null hypothesis that the centroid location and dispersion of those groups are equivalent for all groups. A rejection of the null hypothesis indicates that either the location of the centroid and/or the spread of the objects (also referred to as the dispersion) is different between the groups. We then conducted a post hoc test, the Tukey test, to determine if the spread of the objects is significantly different. When this test is significant it indicates that there is a dispersion event, and there may or may not also be actual differences in the centroids between groups. In this case, the PERMANOVA results for the All3 dataset indicated that location did not have a significant impact on community composition ($p = 0.122$, All3 – Location; Table 3), but month did ($p = 0.001$, All3-Month; Table 3). The Tukey test for the All3-Month, indicated that there is a dispersion event ($p = <0.0001$; All3-Month; Table 4), which is evident given the spread of samples in the NMDS plots. Combining the output from the NMDS plot and these results, it appears that communities shifted across months with different degrees of dispersion.

Taxa
The taxa identified included animals from eight phyla (Figure 6, Appendix A). By far the most abundant, based on the number of sequences, were the arthropods. Upon further inspection, copepods were the most abundant animals in the dataset. Among groups expected to have meroplankton, molluscs were the most species-rich, followed by annelids. Ascidians, bryozoans, and hydrozoans, which are typically dominant in fouling communities, were absent or scarce.

Some species tagged as possible NIS include:

Species	**Taxon**	**Biogeographic pattern**
Anchoa mitchilli	Actinopterygii (Bay Anchovy)	Northwest Atlantic, Gulf of Mexico
Paralichthys dentatus	Actinopterygii (Summer Flounder)	Northwest Atlantic
Micromonas pusilla	Chlorophyta (Geen algae)	Europe
Americamysis bigelowi	Crustacea (Mysid)	Northwest Atlantic, Gulf of Mexico
Melosira nummuloides	Diatom	North Atlantic, Gulf of Mexico
Navicula ramosissima	Diatom	Europe, New Zealand
Podosira stelligera	Diatom	Mostly Northeast Atlantic
Thoracosphaera heimii	Dinoflagellate	South Atlantic, Mediterranean, Indian Ocean
Tectura testudinalis	Gastropod (limpet, synonym = *Testudinalia testudinalis*)	North Atlantic, Baltic Sea
Flabellina verrucosa	Gastropod (Nudibranch, synonym = *Coryphella verrucosa*)	North Atlantic
Aeolidea papillosa	Gastropod (Nudibranch)	North and West Atlantic, Baltic Sea, a few records in Puget Sound or Alaska
Onchidoris bilamellata	Gastropod (Nudibranch)	North Atlantic, NE Pacific
Alderia modesta	Gastropod (Saccoglosssa)	North Atlantic
Attheya longicornis	Ochrophyta (Brown algae)	North Atlantic, Baltic Sea
Hincksia granulosa	Ochrophyta (Brown algae)	West Atlantic, Baltic Sea
Laminaricolax aecidioloides	Ochrophyta (Brown algae)	West Atlantic, Mediterranean
Alitta succinea	Polychaete (Nereidae)	North Atlantic

Species with no data in OBIS were not evaluated (Appendix B).

II. Comparisons across day and night

Alpha diversity
To examine differences in zooplankton communities across day and night, a subset of 24 samples, with 77 OTUs, and 3,054,953 reads was created (i.e., DVN dataset; Table 2). Using the Chao1 diversity metric, alpha diversity appeared highest in May at the Valdez Marine Terminal

(no samples were collected in May at the Container Terminal; Figure 7). There did not appear to be any differences in alpha diversity across day and night.

Beta diversity
The NMDS plots generated with the DVN dataset indicated that the community composition in the samples collected at day and night in both May and June did not appear different, as the ellipses of samples collected during the day and night clearly overlapped (Figure 8). The PERMANOVA indicated that community composition in day versus night samples were not significantly different ($p = 0.303$, DVN; Table 3).

III. Comparisons across tidal cycle

Alpha diversity
To examine differences in zooplankton communities across the tidal cycle, a subset of 45 samples, with 130 OTUs, and 4,168,976 reads was created (i.e., TIDE dataset; Table 2). Using the Chao1 diversity metric, alpha diversity appeared to be relatively similar across tides within a month, but oscillated across months (Figure 9).

Beta diversity
The NMDS plots generated with the TIDE dataset indicated that the community composition in the samples collected across the tidal cycle within a month were not different, as the ellipses of samples collected during the different phases of the tide overlapped (Figure 10). The PERMANOVA results indicated that while tidal cycle did not significantly impact community composition ($p = 0.771$, TIDE-Tide; Table 3), month sampled did ($p = 0.001$, TIDE-Month; Table 3). The Tukey test for the TIDE-Month dataset indicated that there was a dispersion event ($p < 0.0001$; TIDE-Month; Table 4), which was evident given the spread of samples in the NMDS plots. Combining the output from the NMDS plot and these results, it appeared that both month and dispersion have significant effects.

DISCUSSION

Expanded sampling, compared to our previous studies in Port Valdez, allowed evaluation of sources of variation in plankton communities. However, we note that species accumulation curves (Figure 3) indicated that the number of samples and sequencing depth achieved did not fully capture the species diversity present in Port Valdez. Greater and deeper sampling will recover more rare species, though these may not be taxonomically assignable (if they lack representation in sequence databases) and may not be animals. Thus, our discussion is limited to species that could be identified.

Taxa
The majority of sequences in the zooplankton samples were assigned to copepods (Figure 6). Although sequence abundance is not a straightforward proxy of organismal abundance, this is expected as copepods are typically the most abundant animal taxon in marine plankton. Unfortunately, the preponderance of copepod sequences dilutes those belonging to more rare species, potentially reducing our ability to reconstruct benthic community composition. Many

molluscs were observed (Appendix A), while other taxa expected in nearshore Alaska were few or absent, such as anemones, flatworms, nemerteans, sponges, sipunculids, crabs, and shrimp. It is possible their absence is due to washout or dilution of their sequences by the sequences of the more abundant taxa. Another factor may be a greater number of brooding species in high latitude marine communities, compared to more equatorial sites, a pattern known as Thorsen's rule. In other words, fewer meroplankton might exist in Port Valdez compared to coastal waters in the contiguous Pacific states of the USA if those benthic taxa use other modes of reproduction.

As in previous years, important taxa that are usually abundant in fouling communities were not seen, including ascidians, bryozoan, and hydrozoans. Additionally, Ruiz et al. (2017) also found few ascidians and hydrozoans in a morphological assessment of fouling communities in Port Valdez (Table 5). Bryozoans were more represented in the morphological survey than in our plankton samples. These taxa often have short-lived larvae and may not disperse far from adult populations. Too, fouling communities likely occupy a small fraction of the total benthic habitat in Port Valdez. Thus, their relative scarcity in zooplankton samples and lack of abundance in morphological samples may reflect the relative size of adult populations compared to those in soft sediments and rocky shores. While we endeavored to sample physically closer to the fouling communities (through dockside sampling) more likely to contain NIS than in previous years, plankton sampling still missed many species found in the 2017 morphological survey. On the other hand, the total number of species detected and identified was much greater using the plankton metabarcoding approach as compared to the morphological only surveys. Some hybrid approach might be optimal for future detection of NIS.

Nonindigenous species (NIS)

We examined maps of global species distributions for all identified species with records in OBIS. Native species can fall into one of four patterns: 1) endemic to the temperate Northeastern Pacific (e.g., California to Alaska); 2) endemic to the North Pacific; 3) global at high northern latitudes (circumboreal); or 4) truly cosmopolitan (which may be more likely in holoplankton species). However, many recent genetic studies have shown that very widespread species (i.e., those in groups 3 and 4) are often species complexes. For those "species", in-depth phylogenetic studies are needed to distinguish between invasion and species complexes. Further, incomplete geographic sampling might misleadingly suggest sudden occurrence in Alaska, whereas Alaska records may simply be sparse in OBIS. Conversely, misidentified specimens in the OBIS database can confuse the actual geographic distribution of a species. Given these caveats, 17 species stood out for further investigation as potential NIS or new members of a cryptic species in Port Valdez (for an example see Figure 12). Absent from Port Valdez were common invasive species that would be expected from sources in California, Oregon, or Washington, such as *Mytilus galloprovincialis*, *Botrylloides violaceus*, and *Watersipora subatra*.

Scales of variation

The primary aim of this study was to determine significant sources of variation in plankton community composition and, in particular, meroplankton communities. The primary source of variation was the transition from spring to summer conditions (Tables 3 and 4, Figures 5 and 10), presumably reflecting temporal patterns as populations respond to seasonal increases in primary production. Interestingly, the significant effect of tidal conditions across months (Figure 9) may

suggest that on some dates, the efflux from the mudflat upshore from the Container Terminal contains a significantly different plankton community than the bay water rising at flood tide.

We saw no evidence of variation due to day or night (Table 3 and 4, Figures 7 and 8). In retrospect, vertical tows will sample across depths, so our design could not detect vertical phototaxis (the original design included depth stratified sampling).

We compared species lists from five years of metabarcoding surveys and found 155 of 258 identified species to occur in one year only and only nine found in all five years (Figure 11). Sampling effort varied from year to year, so a statistical comparison of yearly differences is difficult. Yet it appears that variation in species detection across years is as strong or stronger as within-year seasonal variation.

Summary and recommendations

1) Present data suggest that sequencing depth has been insufficient to fully capture animal OTU diversity in Port Valdez. A few species dominate the samples. Given this, a seasonal shift was nonetheless observed. For species detection, focusing on increased sequencing depth or molecular strategies to suppress dominant species might be considered.
2) Variation in community composition was primarily attributed to date of sampling and not day/night or tidal stage. A spring to summer shift was noticed, consistent with known plankton dynamics in Port Valdez. Increased replication of summer sampling might be considered to increase potential detection of meroplankton.
3) Taxa that are hallmarks of fouling communities were underrepresented and some species found by morphological surveys did not appear in our results. But the reverse is also true: metabarcoding found and identified many more species in Port Valdez than traditional visual surveys by a large margin. A hybrid strategy in which fouling communities are directly sampled and analyzed by metabarcoding might be considered. Additionally, waterborne eDNA, instead of plankton, might be collected from within the fouling community.

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Table 1. Sampling scheme used to assess the factors most likely influencing zooplankton communities including 1) time, 2) location, 3) daylight, and 4) tidal cycle. Due to access issues at the Valdez Marine Terminal, the fewest samples were collected from this location. Tidal cycle sampling was conducted at the Container Dock only. Day and night sampling was conducted at the Container Dock and the Small Boat Harbor (as referred to as Valdez Harbor).

	Onset of spawning				Peak Spawing and Settlement								Diminishing settlement									
	April				May				June				July				August				September	
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	TOTAL
Site 1: Valdez Marine Terminal																						
Days of sampling	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	6
Replicates at 5 meters Day	3	3	3	0	3	3	3	0	3	3	3	0	3	3	3	0	3	3	3	0	3	48
Replicates at 5 meters Night	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site 2: Container Dock																						
Days of sampling	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	29
Replicates at 5 meters Day	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	63
Replicates at 5 meters Night	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site 3: Small Boat Harbor																						
Days of sampling	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	29
Replicates at 5 meters Day	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	63
Days of sampling nights					1		1		1		1											4
Replicates at 5 meters Night	0	0	0	0	3	0	3	0	3	0	3	0	0	0	0	0	0	0	0	0	0	12
Site 2: Container Dock																						
Days of sampling					0	1	0	1	0	1	0	1										4
Tidal cycle - Slack					0	3	0	3	0	3	0	3										12
Tidal cycle - Ebb					0	3	0	3	0	3	0	3										12
Weekly sample size	**6**	**9**	**6**	**6**	**15**	**21**	**15**	**18**	**15**	**21**	**15**	**18**	**6**	**9**	**6**	**6**	**6**	**9**	**6**	**6**	**9**	**228**

Table 2. The number of samples, OTUs, and reads across each of the datasets analyzed in this report. The datasets were parsed so that statistical analyses could be conducted on an equal number of samples per factor. These included 1) Total (all samples with all OTUs), 2) Total_Animals (all samples with all OTUs identified as animals), 3) CON (all samples from the Container Dock), 4) VDZ (all samples from the Valdez Harbor), 5) VMT (all samples from the Valdez Marine Terminal), 6) DVN (selected samples for the day versus night comparison), 7) All3 (selected samples for comparison across locations), 8) TIDE (selected samples for comparison across tides). All the parsed datasets were parsed from the Total_Animals dataset, so only animals are included in analyses.

Dataset	Sample #	OTU#	Read #
Total	222	1,257	31,206,244
Total_Animals	222	195	24,447,209
CON	114	157	12,220,171
VDZ	99	138	10,301,018
VMT	18	74	1,926,020
DVN	24	77	3,054,953
All3	54	94	5,581,255
Tide	45	130	4,168,976

Table 3. The results of the PERMANOVA tests conducted in the vegan package in R for each of the three datasets. For the All3 datasets, the significance of both location and month were tested and the results of both are shown. Statistical significance was based on a p-value ≤ 0.05.

	DVN	All3-Location	All3-Month	Tide-Tide	Tide-Month
Degrees of freedom	1	2	5	2	2
Sums of Squares	0.2225	0.6565	5.8942	0.4118	3.7471
Mean Squares	0.22249	0.32824	1.17885	0.20589	1.87356
F. Model	1.1207	1.3432	7.8316	0.76563	9.8864
R2	0.04847	0.05004	0.44928	0.03518	0.32009
Pr(>F)	0.303	0.122	**0.001*** **	0.771	**0.001*** **

Table 4. As a follow-up to the result of the PERMANOVA tests, we also conducted Tukey tests in the vegan package in R. For the All3 dataset, the significance of both location and month were tested and both results are shown. For the TIDE dataset, the significance of both tide and month were tested and both results are shown. Statistical significance was based on a p-value ≤ 0.05.

	DVN	All3-Location	All3-Month	Tide-Tide	Tide-Month
Degrees of freedom	1	2	5	2	2
Sums of Squares	0	0.009	1.4005	0.22865	1.98
Mean Squares	0	0.0045	0.280097	0.114325	0.9878
F value	0	0.0481	10.334	1.5446	69.651
Pr(>F)	0.9997	0.9531	**<0.0001*** **	0.2253	**<0.0001*** **

Table 5. Results of 2016 morphological survey conducted by the Marine Invasions Research Laboratory at the Smithsonian Environmental Research Center (see Table 2 from Ruiz et al., 2017). Taxonomic overlap between zooplankton samples from this study and benthic samples from their study are shown in bold.

Anthozoa	Anemone sp (1 or 2 spp)
Bryozoa	*Alcyonidium* sp *Bugula pacifica* *Callopora* sp *Celleporella hyalina* Crissidae sp *Dendrobeania* sp *Fenestrulina delicia* ***Membranipora villosa*** *Primaverans* sp *Rhynchozoon* sp *Tubulipora cf pacifica*
Crustacea	***Balanus* sp**
Echinodermata	*Pisaster* sp
Hydrozoa	cf *Obelia* sp **cf *Clytia* sp**
Molluscs	***Dendronotus* sp** **Dorid Nudibranch** *Hermissenda crassicornis* cf *Pododesmus* sp *Hiatella arctica* ***Mytilus cf trossulus*** **scallop** **slipper limpet**
Polychaeta	*Crucigera zygophora* **Dorvillaidae** **Nereidae** *Pseudochitinopoma occidentalis* *Serpula* sp Spirorbidae sp 1 Spirorbidae sp 2
Porifera	Unidentified sponge cf *Halichondria* sp Fiberglass sponge
Tunicata	*Corella inflata* cf *Halocynthia* sp

Figure 1. Alpha diversity metrics using the Chao1 diversity metric of animal OTU richness across the three sampled sites using the CON, VDZ, and VMT datasets across months (Total_Animal dataset). Note that all samples within the month are pooled for this analysis.

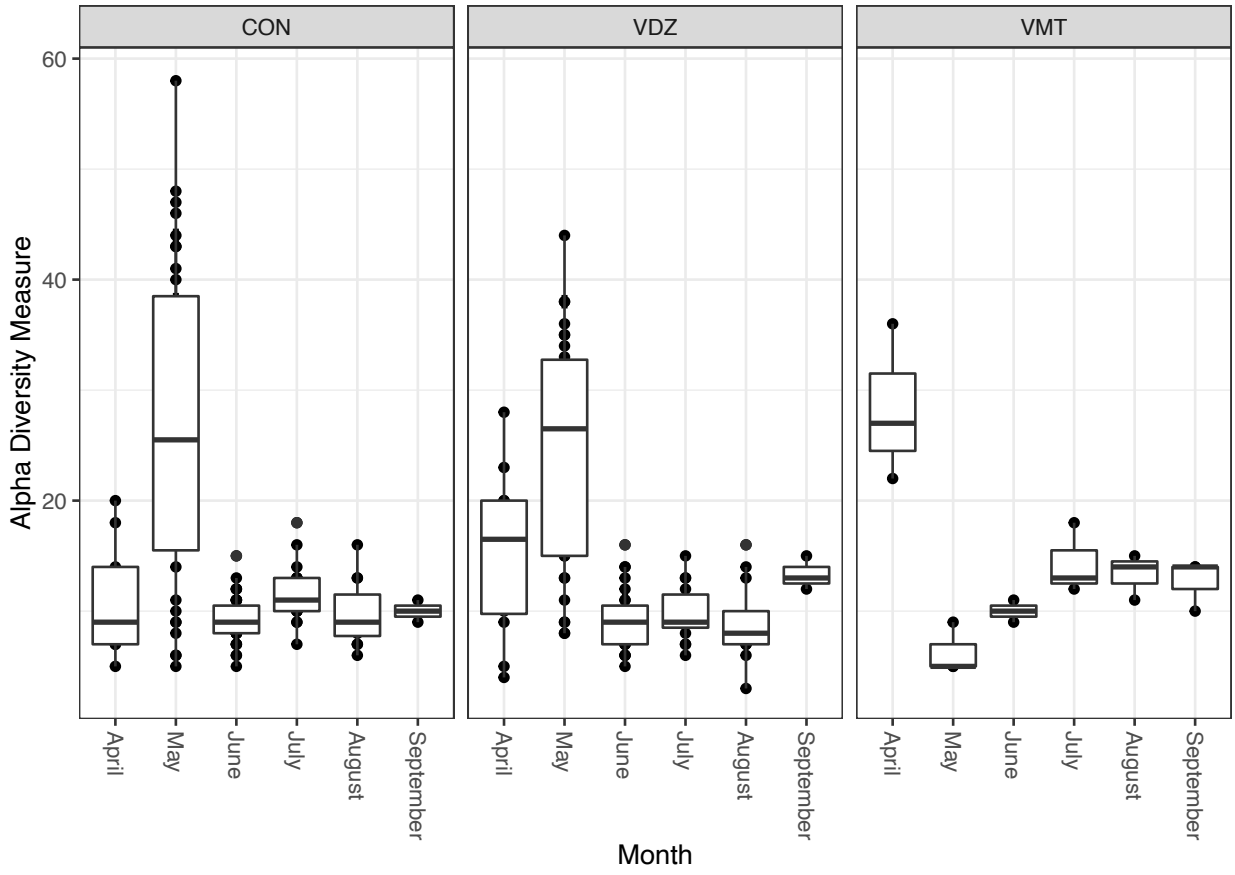


Figure 2. Alpha diversity metrics using the Chao1 diversity metric of animal OTU richness across the three sampled sites using the CON, VDZ, and VMT datasets across months (All3 dataset). Note that all samples within the month are pooled for this analysis.

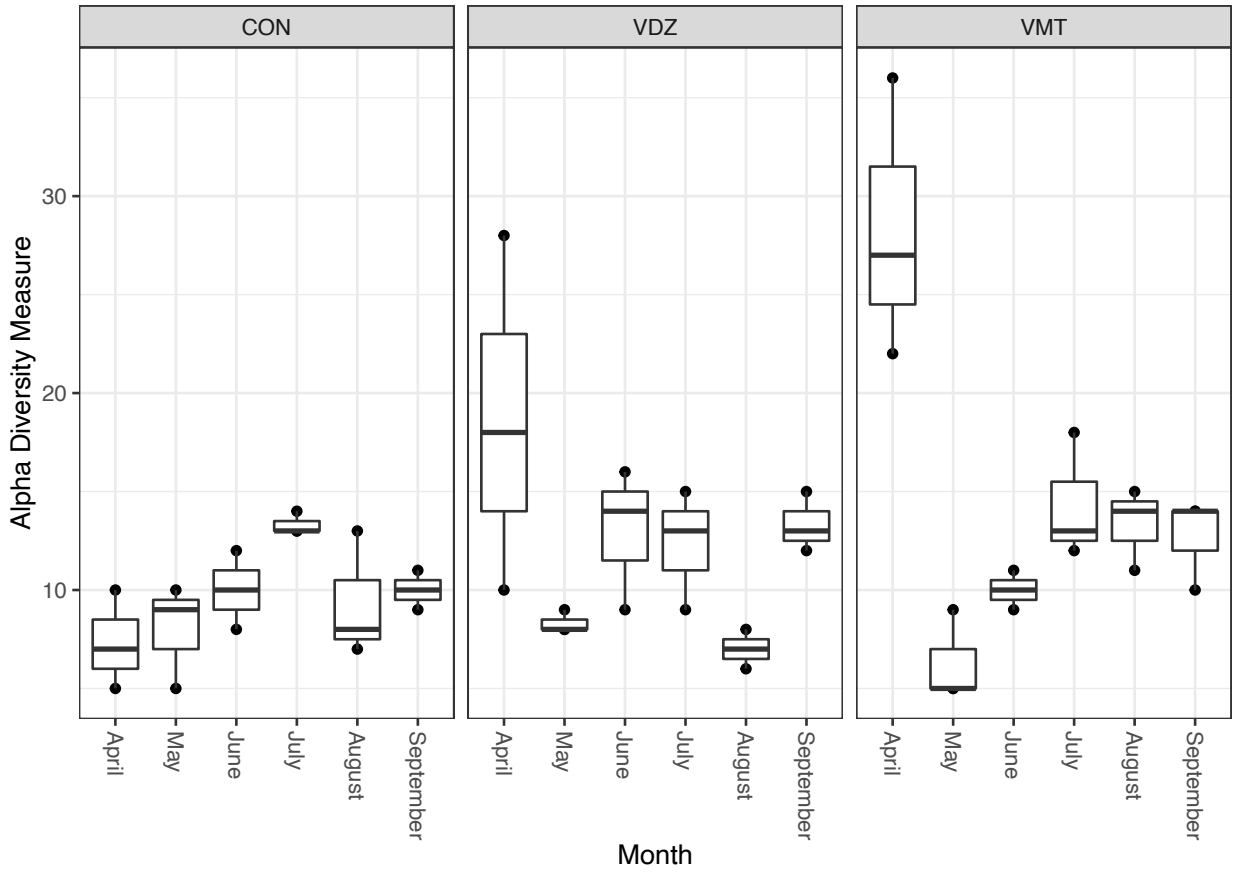


Figure 3. Animal OTU accumulation curves created in the vegan package in R for all the sequence data combined (Total_Animals: A), then parsed by location, the CON (B), the VDZ (C), and the VMT (D) datasets. Note the difference in the values of the x and y axes of (A) compared to the other graphs.

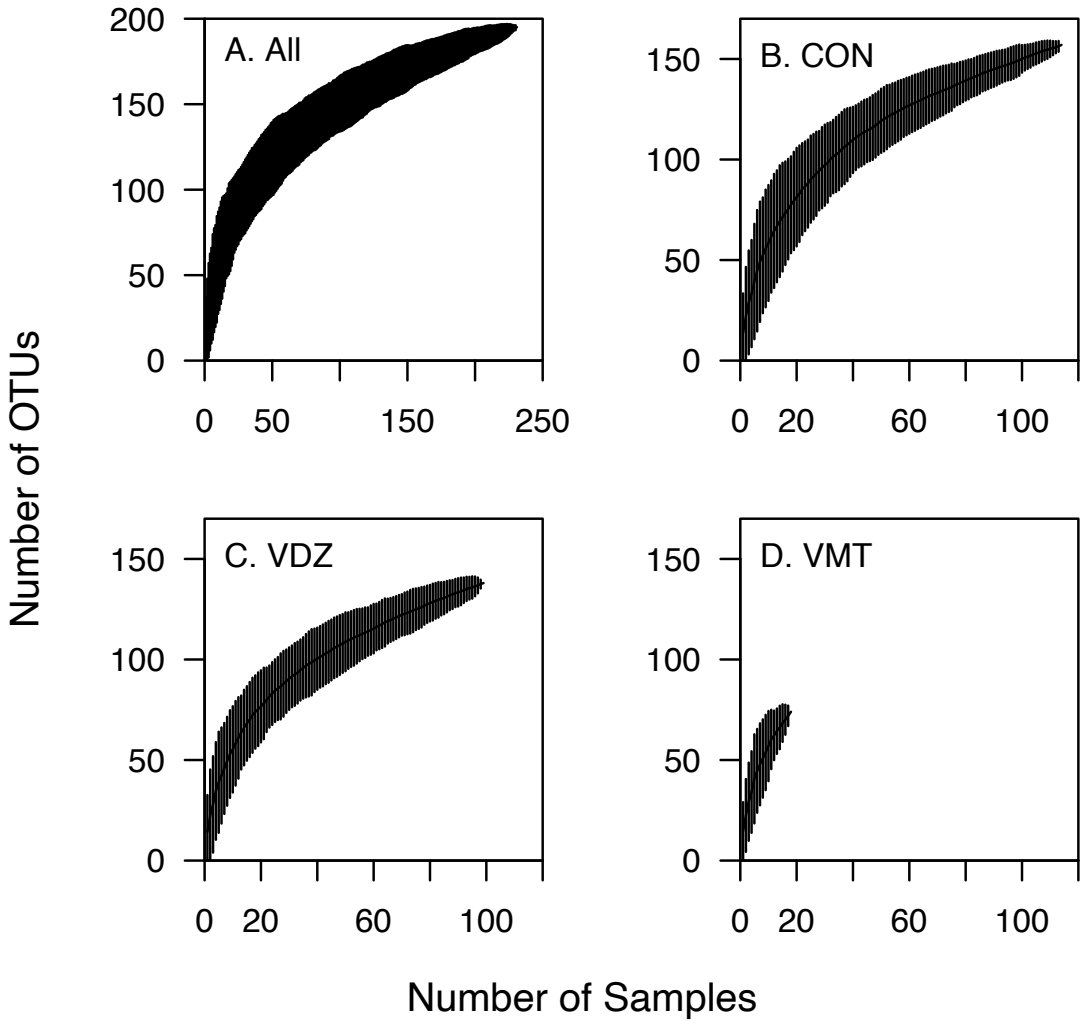


Figure 4. Principal Coordinates Analysis (PCoA) plots for CON (A), VDZ (B), and VMT (C) using all samples collected from each location. Coloring corresponds to the month in which samples were collected. Ellipses could not be calculated for the VMT dataset due to the small number of samples collected.

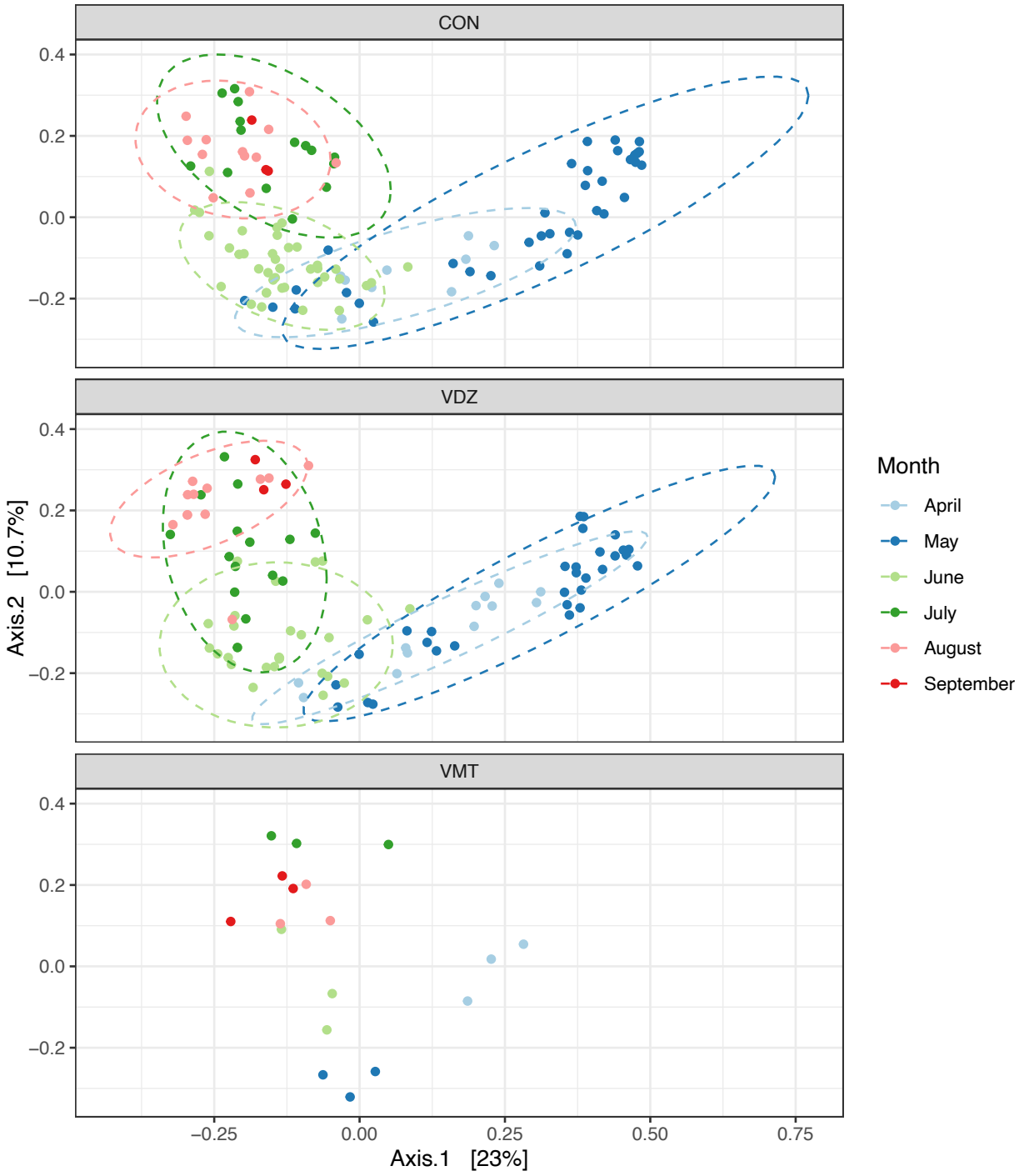


Figure 5. Non-metric multidimensional scaling (NMDS) plot for the All3 dataset to assess the impact of month on the community composition of the samples. Coloring corresponds to the month in which samples were collected.

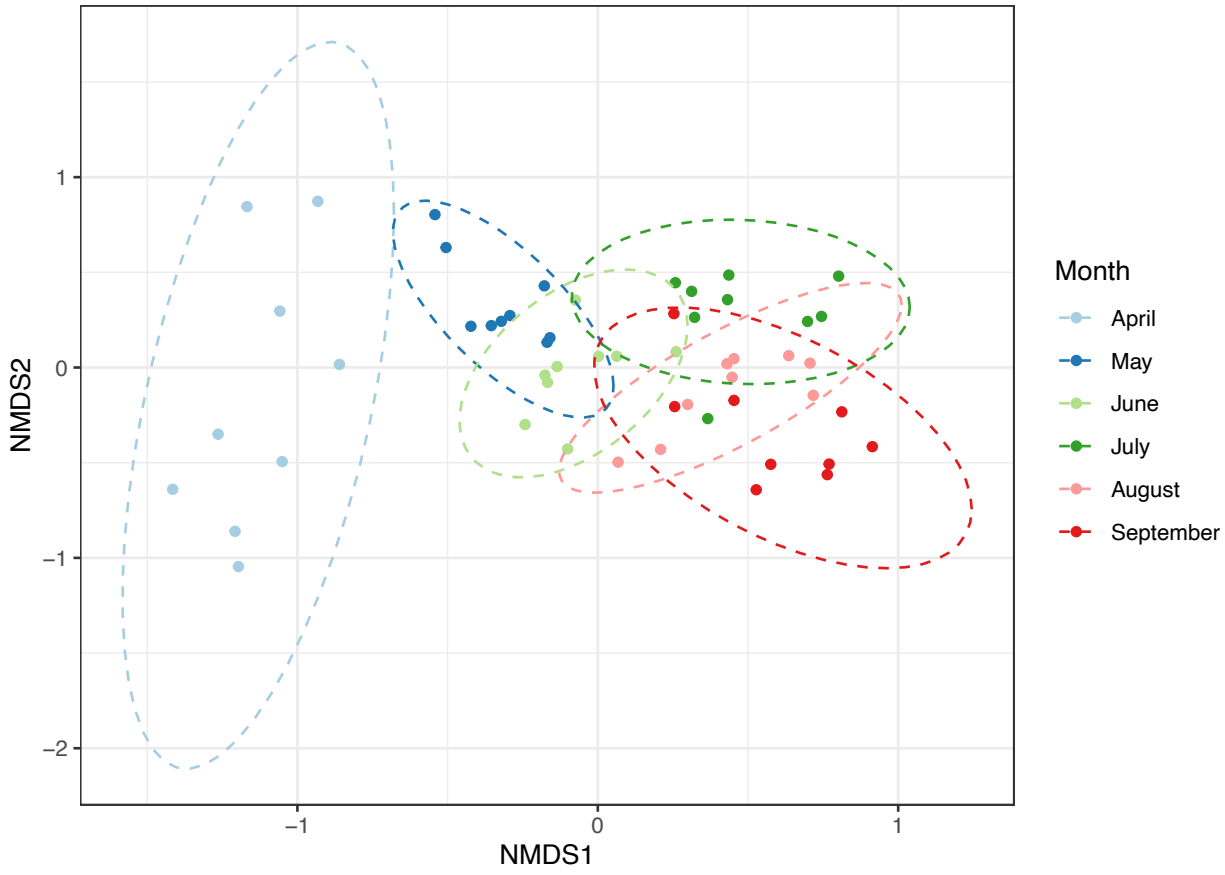


Figure 6. The sequence abundance of each phylum collected at each sampling location across all the months where samples were obtained. This graph was generated using all available samples (i.e., the Total_Animals dataset).

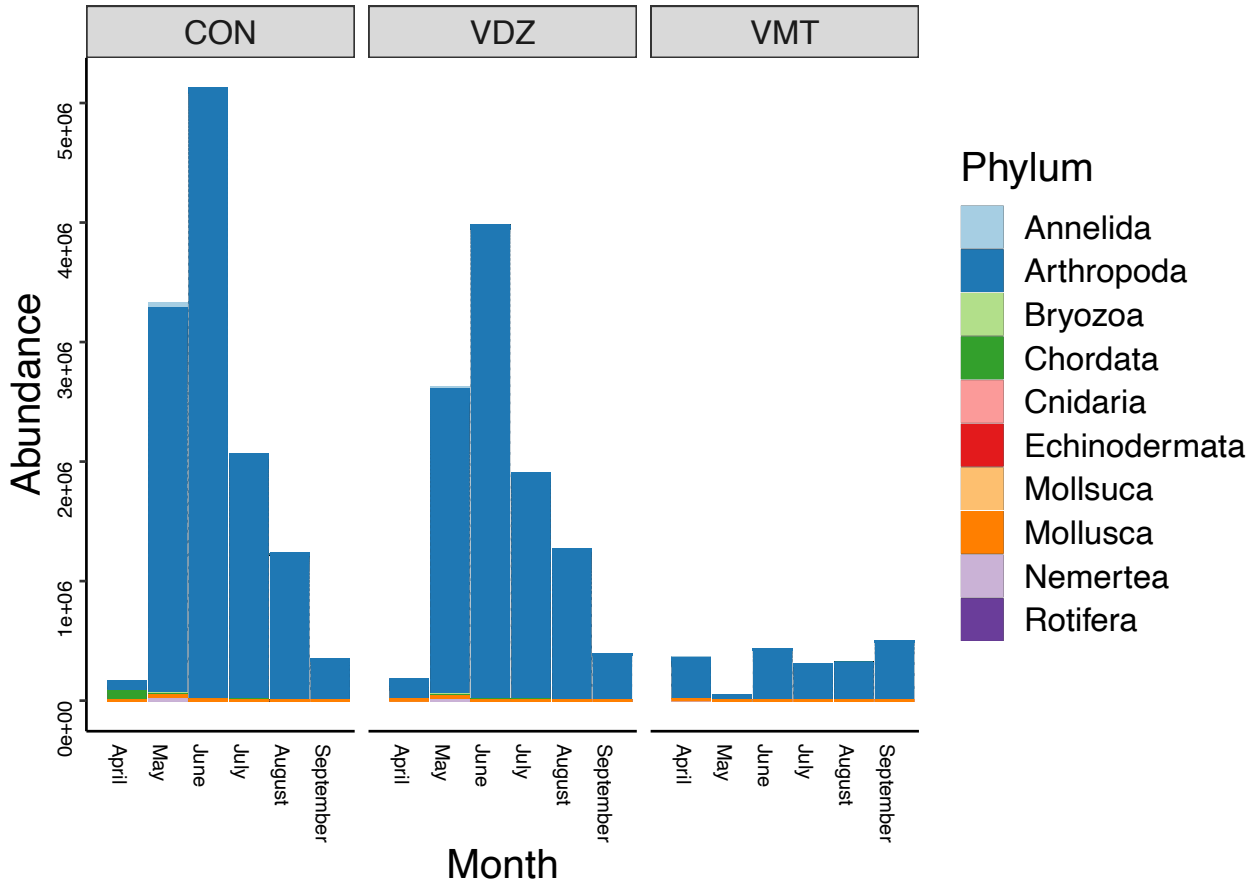


Figure 7. Alpha diversity metrics using the Chao1 diversity metric of animal OTU richness during the day and night at both CON and VDZ (DVN dataset). Colors shown indicate the months in which the samples were collected, either May or June.

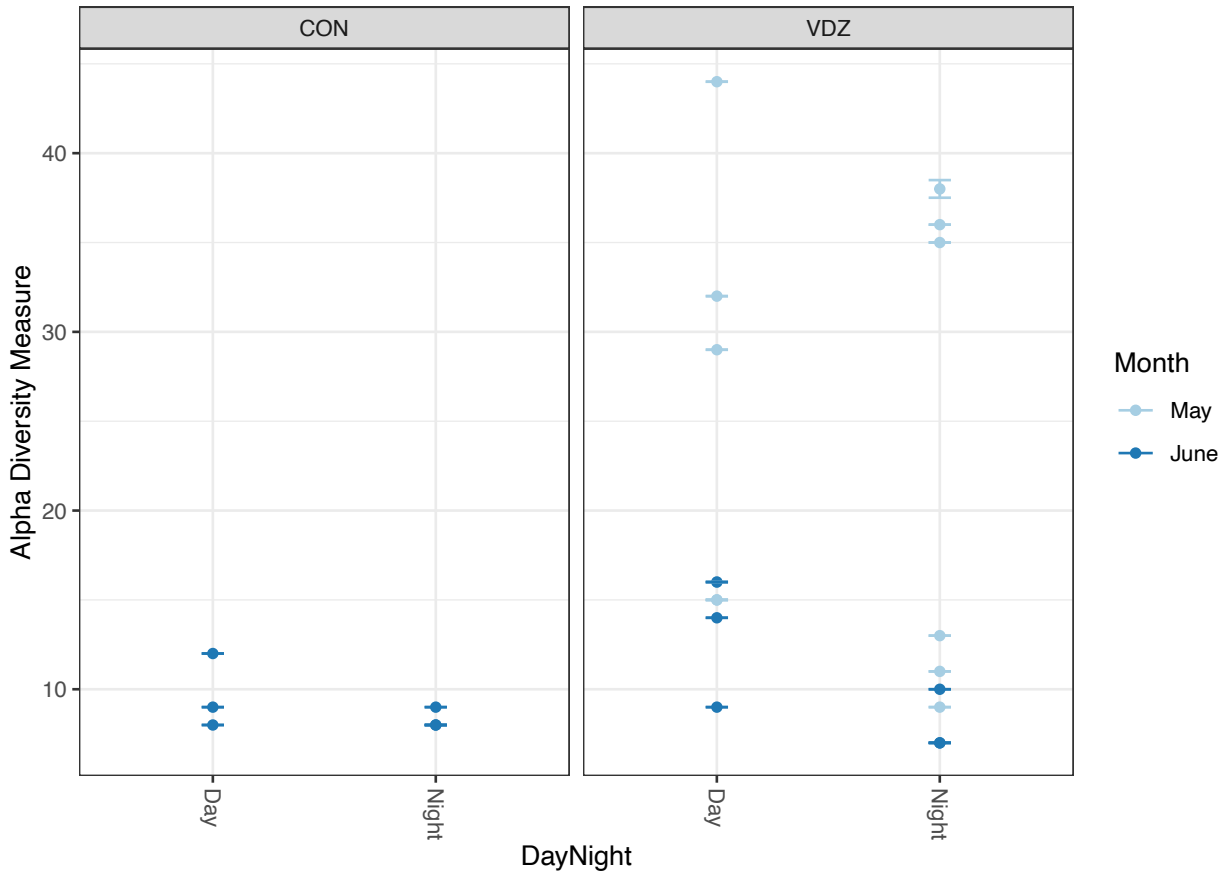


Figure 8. Non-metric multidimensional scaling (NMDS) plots for the DVN dataset to assess the impact of sampling at day versus night across the two months on the community composition of the samples. Coloring corresponds to the timing of the sampling.

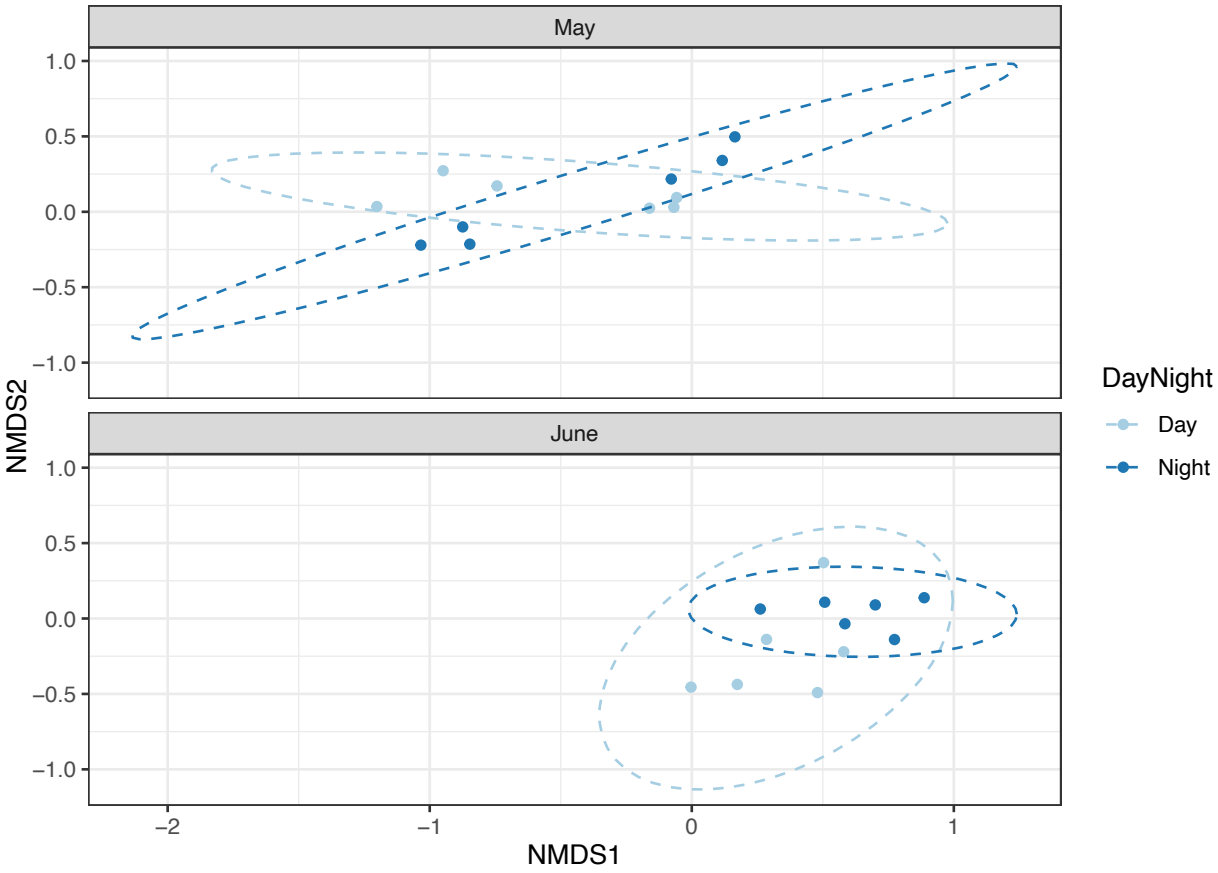


Figure 9. Alpha diversity metrics using the Chao1 diversity metric of animal OTU richness across the tidal cycle by month where samples were obtained (TIDE dataset).

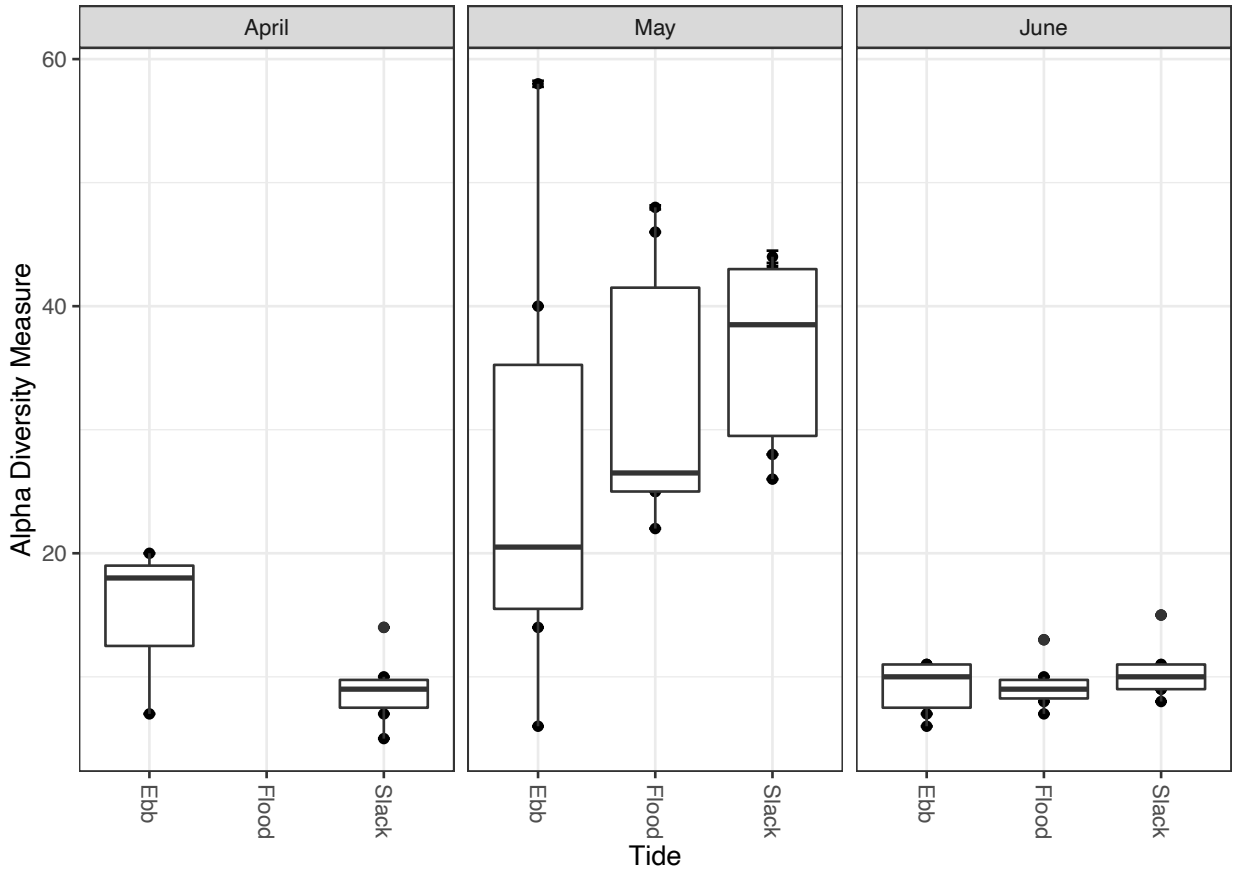


Figure 10. Non-metric multidimensional scaling (NMDS) plots for the TIDE dataset to assess the impact of the tidal cycle across months on the community composition of the samples. Coloring corresponds to the tidal cycle.

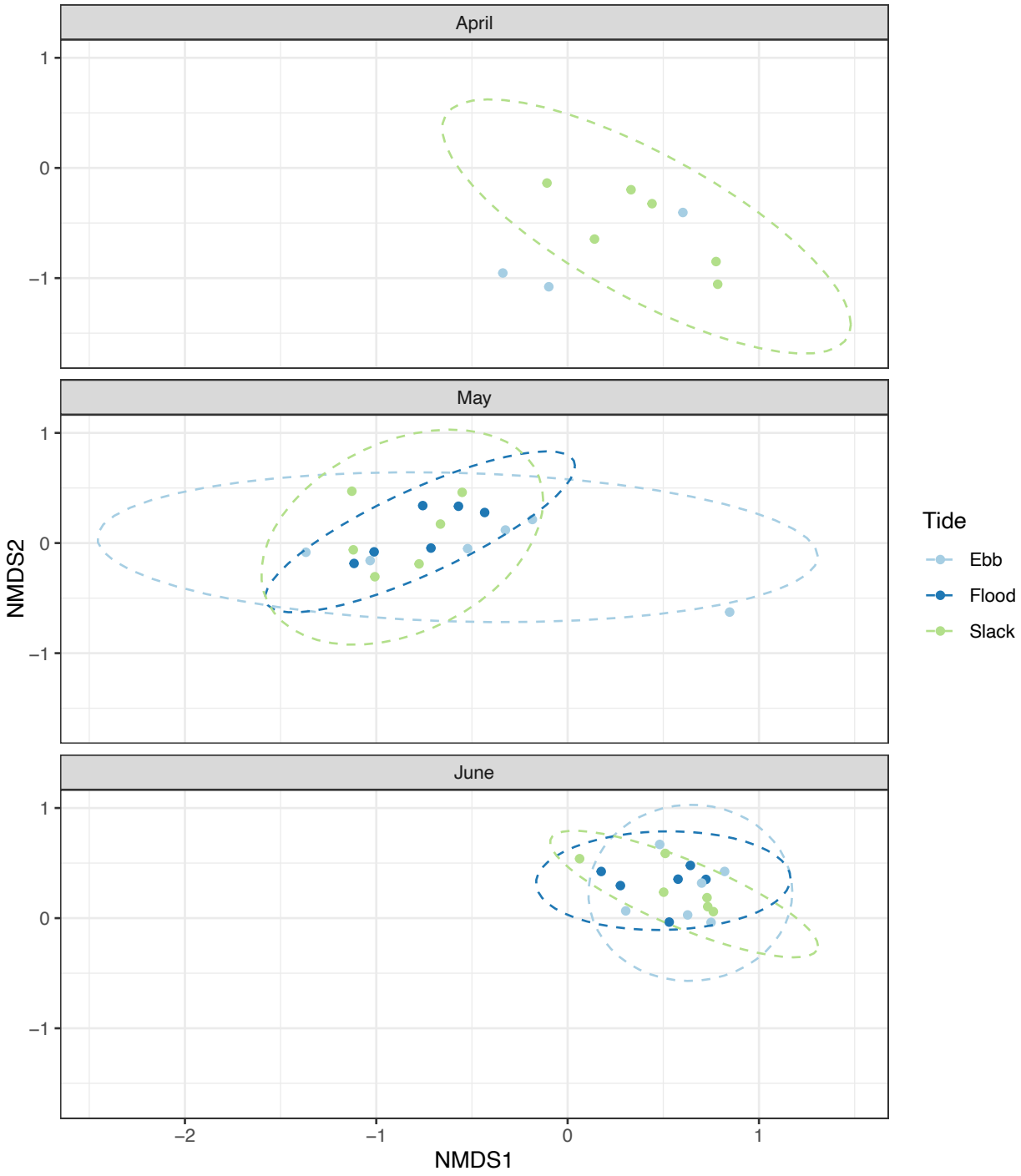


Figure 11. Frequency of occurrence of identified species (excluding additional taxa from September 2021 samples) in plankton samples from Port Valdez, 2016-2021. Note that stations and sample sizes varied by year.

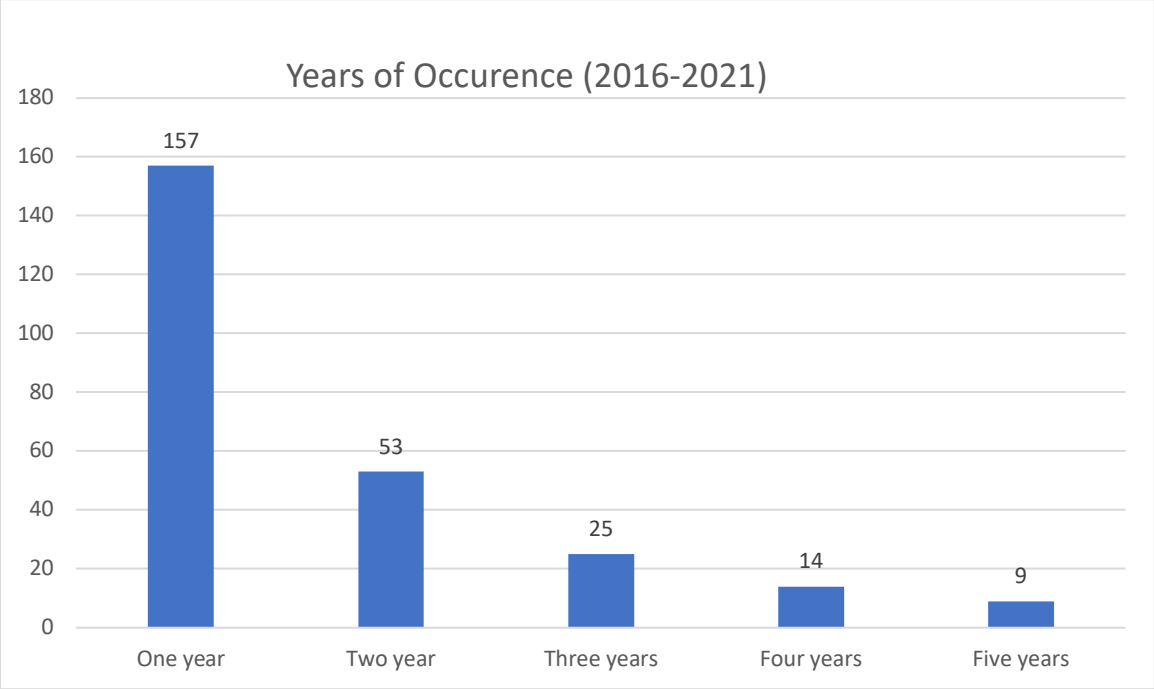
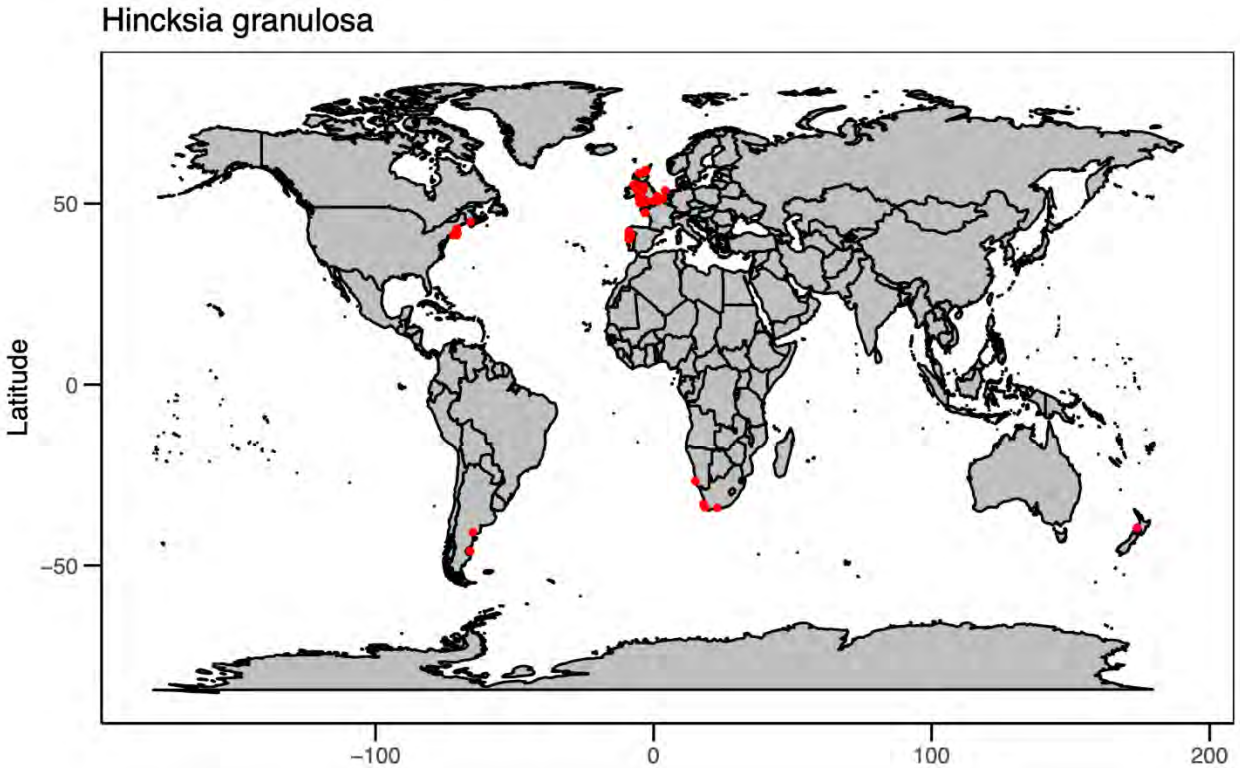


Figure 12. Global distribution of *Hincksia granulosa* from OBIS records suggesting the novel appearance in Port Valdez, Alaska. This brown alga was described in 1811 in Great Britain (https://www.algaebase.org/search/species/detail/?species_id=13016).



Appendix A. Animal species identified in Valdez plankton samples determined through BLAST against the MLML COI dataset and Genbank. Sequences with e-value of $1x10^{-30}$, 95% pairwise identify, and 90% coverage with database records were annotated to the lowest possible taxonomic level.

Kingdom	Phylum	Order	ScientificName
Animalia	Arthropoda	Calanoida	*Acartia hudsonica*
Animalia	Arthropoda	Calanoida	*Acartia longiremis*
Animalia	Mollusca	Nudibranchia	*Aeolidia libitinaria*
Animalia	Mollusca	Nudibranchia	*Aeolidia papillosa*
Animalia	Bryozoa	Ctenostomatida	*Alcyonidium polyoum*
Animalia	Mollusca	NA	*Alderia modesta*
Animalia	Annelida	Phyllodocida	*Alitta succinea*
Animalia	Arthropoda	Mysida	*Americamysis bigelowi*
Animalia	Chordata	Clupeiformes	*Anchoa mitchilli*
Animalia	Mollusca	Nudibranchia	*Apata pricei*
Animalia	Mollusca	Sacoglossa	*Aplysiopsis enteromorphae*
Animalia	Mollusca	NA	*Aplysiopsis enteromorphae*
Animalia	Annelida	Echiuroidea	*Arhynchite pugettensis*
Animalia	Arthropoda	Balanomorpha	*Balanus*
Animalia	Arthropoda	Balanomorpha	*Balanus crenatus*
Animalia	Arthropoda	Balanomorpha	*Balanus glandula*
Animalia	Arthropoda	Balanomorpha	*Balanus rostratus*
Animalia	Annelida	Phyllodocida	*Bipalponephtys neotena*
Animalia	Cnidaria	Anthoathecata	*Bougainvillia superciliaris*
Animalia	Arthropoda	Calanoida	Calanoida
Animalia	Arthropoda	Calanoida	*Calanus marshallae*
Animalia	Arthropoda	Calanoida	*Calanus pacificus*
Animalia	Nemertea	Monostilifera	*Carcinonemertes epialti*
Animalia	Arthropoda	Calanoida	*Centropages abdominalis*
Animalia	Nemertea	Heteronemertea	*Cerebratulus*
Animalia	Annelida	Sabellida	*Chone*
Animalia	Cnidaria	Semaeostomeae	*Chrysaora melanaster*
Animalia	Chordata	Pleuronectiformes	*Citharichthys stigmaeus*
Animalia	Chordata	Perciformes	*Clinocottus acuticeps*
Animalia	Mollusca	Pteropoda	*Clione*
Animalia	Chordata	Clupeiformes	*Clupea pallasii*
Animalia	Cnidaria	Leptothecata	*Clytia gregaria*
Animalia	Mollusca	Nudibranchia	*Corambe steinbergae*
Animalia	Mollusca	Littorinimorpha	*Crepipatella lingulata*
Animalia	Arthropoda	Cyclopoida	*Cyclops columbianus*

Animalia	Mollusca	Nudibranchia	*Dendronotus albopunctatus*
Animalia	Mollusca	Nudibranchia	*Dendronotus albus*
Animalia	Mollusca	Nudibranchia	*Dendronotus subramosus*
Animalia	Mollusca	Nudibranchia	*Dendronotus venustus*
Animalia	Mollusca	Nudibranchia	*Doris montereyensis*
Animalia	Annelida	Eunicida	Dorvilleidae
Animalia	Annelida	Phyllodocida	*Eteone*
Animalia	Annelida	Phyllodocida	*Eteone longa*
Animalia	Arthropoda	Calanoida	*Eucalanus bungii*
Animalia	Annelida	Phyllodocida	*Eulalia quadrioculata*
Animalia	Annelida	Phyllodocida	*Eulalia viridis*
Animalia	Annelida	Phyllodocida	*Eunoe*
Animalia	Arthropoda	Euphausiacea	*Euphausia pacifica*
Animalia	Arthropoda	Cyclopoida	*Euryte*
Animalia	Arthropoda	Onychopoda	*Evadne nordmanni*
Animalia	Echinodermata	Forcipulatida	*Evasterias troschelii*
Animalia	Mollusca	Nudibranchia	*Flabellina trilineata*
Animalia	Mollusca	Nudibranchia	*Flabellina verrucosa*
Animalia	Annelida	NA	*Galathowenia oculata*
Animalia	Annelida	Phyllodocida	*Gattyana cirrhosa*
Animalia	Annelida	Phyllodocida	*Glycera nana*
Animalia	Cnidaria	Anthoathecata	*Halitholus*
Animalia	Annelida	Phyllodocida	*Harmothoe*
Animalia	Annelida	Phyllodocida	*Harmothoe extenuata*
Animalia	Arthropoda	Harpacticoida	Harpacticoida
Animalia	Arthropoda	Harpacticoida	*Harpacticus uniremis*
Animalia	Mollusca	Adapedonta	*Hiatella*
Animalia	Mollusca	Nudibranchia	*Himatina trophina*
Animalia	Arthropoda	Decapoda	Hippolytidae
Animalia	Mollusca	Nudibranchia	*Janolus fuscus*
Animalia	Mollusca	Galeommatida	*Kellia suborbicularis*
Animalia	Mollusca	Nudibranchia	*Knoutsodonta jannae*
Animalia	Mollusca	Littorinimorpha	*Lacuna vincta*
Animalia	Annelida	Spionida	*Laonice*
Animalia	Annelida	Spionida	*Laonice cirrata*
Animalia	Mollusca	Venerida	*Leukoma staminea*
Animalia	Chordata	Pleuronectiformes	*Limanda aspera*
Animalia	Mollusca	Cardiida	*Limecola balthica*
Animalia	Nemertea	Heteronemertea	*Lineus*

Animalia	Nemertea	Heteronemertea	*Lineus flavescens*
Animalia	Mollusca	Cardiida	*Macoma calcarea*
Animalia	Nemertea	Heteronemertea	*Maculaura aquilonia*
Animalia	Nemertea	Heteronemertea	*Maculaura cerebrosa*
Animalia	Annelida	NA	*Magelona*
Animalia	Mollusca	Trochida	*Margarites pupillus*
Animalia	Mollusca	Cephalaspidea	*Melanochlamys diomedea*
Animalia	Cnidaria	Leptothecata	*Melicertum octocostatum*
Animalia	Bryozoa	Cheilostomatida	*Membranipora villosa*
Animalia	Arthropoda	Harpacticoida	*Mesochra*
Animalia	Arthropoda	Decapoda	*Metacarcinus gracilis*
Animalia	Arthropoda	Calanoida	*Metridia pacifica*
Animalia	Arthropoda	Calanoida	*Microcalanus*
Animalia	Annelida	Phyllodocida	*Micronereis nanaimoensis*
Animalia	Mollusca	Mytilida	*Mytilus trossulus*
Animalia	Mollusca	Neogastropoda	*Nassarius mendicus*
Animalia	Arthropoda	Calanoida	*Neocalanus flemingeri*
Animalia	Arthropoda	Calanoida	*Neocalanus plumchrus*
Animalia	Mollsuca	NA	*Odostomia*
Animalia	Arthropoda	Cyclopoida	*Oithona similis*
Animalia	Mollusca	Sacoglossa	*Olea hansineensis*
Animalia	Mollusca	Nudibranchia	*Onchidoris bilamellata*
Animalia	Annelida	NA	*Ophelia*
Animalia	Echinodermata	Ophiurida	*Ophiura sarsii*
Animalia	Arthropoda	Diptera	Orthocladiinae
Animalia	Annelida	Eunicida	*Palpiphitime lipovskyae*
Animalia	Arthropoda	Calanoida	*Paracalanus*
Animalia	Arthropoda	Calanoida	*Paraeuchaeta elongata*
Animalia	Chordata	Pleuronectiformes	*Paralichthys dentatus*
Animalia	Nemertea	Monostilifera	*Paranemertes californica*
Animalia	Arthropoda	Calanoida	*Pareucalanus attenuatus*
Animalia	Annelida	Terebellida	*Pectinaria granulata*
Animalia	Arthropoda	Harpacticoida	Peltidiidae
Animalia	Annelida	unknown	*Pharyngocirrus uchidai*
Animalia	Annelida	Phyllodocida	*Pholoe*
Animalia	Annelida	Phyllodocida	*Pholoides asperus*
Animalia	Annelida	Phyllodocida	*Phyllodocidae*
Animalia	Arthropoda	Decapoda	Pinnotheridae
Animalia	Annelida	Terebellida	*Pista wui*
Animalia	Arthropoda	Onychopoda	*Pleopis polyphemoides*

Animalia	Annelida	Phyllodocida	*Podarkeopsis perkinsi*
Animalia	Arthropoda	Onychopoda	*Podon leuckartii*
Animalia	Arthropoda	Copepoda	*Poecilostomatoida*
Animalia	Annelida	NA	*Polygordius*
Animalia	Annelida	Phyllodocida	Polynoidae
Animalia	Nemertea	Monostilifera	*Poseidonemertes collaris*
Animalia	Annelida	Spionida	*Prionospio steenstrupi*
Animalia	Arthropoda	Diptera	*Psectrocladius limbatellus*
Animalia	Arthropoda	Calanoida	*Pseudocalanus*
Animalia	Arthropoda	Calanoida	*Pseudocalanus mimus*
Animalia	Arthropoda	Calanoida	*Pseudocalanus minutus*
Animalia	Arthropoda	Calanoida	*Pseudocalanus moultoni*
Animalia	Mollusca	Littorinimorpha	Ranellidae
Animalia	Annelida	Spionida	*Rhynchospio glutaea*
Animalia	Annelida	NA	Sabellariidae
Animalia	Annelida	unknown	*Saccocirrus*
Animalia	Mollusca	Venerida	*Saxidomus gigantea*
Animalia	Annelida	NA	*Scoloplos armiger*
Animalia	Arthropoda	Balanomorpha	*Semibalanus balanoides*
Animalia	Arthropoda	Balanomorpha	*Semibalanus cariosus*
Animalia	Arthropoda	Diptera	*Sphaerophoria philanthus*
Animalia	Annelida	Spionida	Spionidae
Animalia	Mollusca	NA	*Stiliger fuscovittatus*
Animalia	Cnidaria	Anthoathecata	*Stomotoca atra*
Animalia	Echinodermata	Camarodonta	*Strongylocentrotus droebachiensis*
Animalia	Rotifera	Ploima	*Synchaetidae*
Animalia	Annelida	Terebellida	*Terebellides stroemii*
Animalia	Mollusca	NA	*Testudinalia (Tectura) testudinalis*
Animalia	Arthropoda	Euphausiacea	*Thysanoessa inermis*
Animalia	Arthropoda	Euphausiacea	*Thysanoessa raschii*
Animalia	Arthropoda	Euphausiacea	*Thysanoessa spinifera*
Animalia	Arthropoda	Harpacticoida	*Tisbe*
Animalia	Mollusca	Littorinimorpha	*Trichotropis cancellata*

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Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: Danielle Verna and the Scientific Advisory Committee

Project number and name or topic: 9110 - Marine Winter Bird Surveys in Prince William Sound

1. **Description of agenda item:** The Board is being asked to accept the final report titled "Marine Winter Bird Surveys in Prince William Sound" dated August 5, 2022, by Anne Schaefer and Dr. Mary Anne Bishop of the Prince William Sound Science Center. In March 2022, staff from the Prince William Sound Science Center conducted surveys of marine birds in Prince William Sound, including the Valdez Arm, the Valdez Narrows, and other locations. This report describes the methods and findings of that survey and recommendations for continued monitoring. This survey was the second of three planned years for this project that began in FY2021; funding for FY2023 has been approved by the Board. Contractors will present a brief presentation to the Board summarizing the survey results and recommendations and will be available to answer questions.

2. **Why is this item important to PWSRCAC:** Surveys of marine birds in Prince William Sound enable PWSRCAC to fulfill two responsibilities pursuant to the Oil Pollution Act of 1990 (OPA 90). OPA 90 tasks the Council with monitoring "the environmental impacts of the operation of the terminal facilities and crude oil tankers" as well as "identifying highly sensitive areas which may require specific protective measures in the event of a spill in Prince William Sound." The timing and location of these surveys is valuable because they add depth to our understanding of bird populations, risks posed to birds from an oil spill, and where special monitoring or protection is needed. Additionally, these surveys provide baseline monitoring information that can be used to understand the environmental impacts of terminal and tanker operations on marine bird species. The surveys were conducted in winter months, which is an important time for marine bird survival given the typically harsh conditions. Although other marine bird surveys have been conducted in Prince William Sound as part of the Gulf Watch Alaska program, the location of the surveys sponsored by PWSRCAC cover new geographic areas and are conducted at a unique time. The results of the surveys will be made publicly available through the Alaska Ocean Observing System and, combined with other survey data, can inform models of bird distribution in Prince William Sound that will be useful for future monitoring and response in the event of an oil spill.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/21/2021	Board adopted the FY2022 budget as presented, to include this project.
XCOM	8/12/2021	The Executive Committee authorized a sole source contract with the Prince William Sound Science Center to conduct Project 9110 - Prince William Sound Marine Winter Bird Survey at an amount not to exceed $40,400.

4. **Summary of policy, issues, support, or opposition:** Not applicable.

5. **Committee Recommendation:** The Scientific Advisory Committee recommended that the Board of Directors accept this report at its meeting on July 13, 2022.

6. **Relationship to LRP and Budget:** Project 9110 - Spatial Variability of Marine Birds is in the approved FY2023 budget and annual work plan.

9110--Spatial Variability of Marine Birds
As of July 31, 2022

FY-2023 Budget	
Original	$50,900.00
Modifications	0
Revised Budget	$50,900.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$6,100.00
Actual + Commitments	$6,100.00
Amount Remaining	$44,800.00

7. **Action Requested of the Board of Directors:** Accept the report titled “Marine Winter Bird Surveys in Prince William Sound” by the Prince William Sound Science Center dated August 5, 2022, as meeting the terms and conditions of contract number 9110.22.01, and for distribution to the public.

8. **Alternatives:** None recommended.

9. **Attachments:** Report titled "Marine Winter Bird Surveys in Prince William Sound" by Anne Schaefer and Dr. Mary Anne Bishop of the Prince William Sound Science Center.

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Marine Bird Winter Surveys in Prince William Sound

August 5, 2022

A. Schaefer and M.A. Bishop

Prince William Sound Science Center, PO Box 705, Cordova, AK

Contract 9110.22.01

Executive Summary

This project provided a second year of funding for at-sea marine bird and marine mammal surveys in under-surveyed areas in and around the tanker escort zone in Prince William Sound (PWS), Alaska. This survey was designed to complement the Exxon Valdez Oil Spill Trustee Council (EVOSTC)-funded Gulf Watch Alaska surveys previously conducted by the PWS Science Center. Marine bird and mammal distribution and density around much of the tanker lane, Valdez Arm, and Port Valdez is largely unknown as Gulf Watch Alaska EVOSTC-funded surveys did not cover these regions and many of these areas had not been surveyed in over a decade.

At-sea surveys were conducted 6-11 March 2022, during daylight hours from the PWS Science Center's research vessel, the New Wave. All marine birds and marine mammals observed within a 300-meter (m) survey strip on a series of transects varying in length from 7.4 kilometers (km) (Rocky Bay) to 29.5 km (Port Valdez) for a total of 185.5 km, were recorded. Across all transects, 767 birds representing 23 species were counted. Black-legged kittiwake (*Rissa tridactyla*) were the most recorded species (12.3% of observations), followed by marbled murrelet (*Brachyramphus marmoratus,* 11.0%) and common murre (*Uria aalge,* 9.9%). Additionally, 233 marine mammals of seven species were recorded, including observations of individuals beyond the 300-m survey strip. Marine mammal observations were dominated by sea otter (*Enhydra lutris*).

Similar to 2021, the results of this survey emphasize the importance of protected nearshore habitat for marine birds and mammals during the winter. We found areas of repeated high marine bird density that may warrant prioritized protection in the event of anthropogenic disturbance, such as an oil spill. The primary areas for protection include Hinchinbrook Entrance (Port Etches, Zaikof Bay, Rocky Bay) and the head of Port Valdez between the Valdez Container Terminal and the outflow of Lowe River. Additional areas meriting heightened protection include Port Gravina, Tatitlek Narrows, and nearshore areas in southeastern Port Fidalgo. These surveys do not include all areas that potentially

may be impacted by an oil spill, nor do they capture all marine bird winter habitat or temporal variation in marine bird community structure throughout winter. With that said, continued monitoring in and around the tanker escort lane, as well as throughout Prince William Sound, is important for understanding marine bird and marine mammal vulnerability to environmental change and anthropogenic disturbance and could be used to update oil spill response planning tools and refine response efforts during the nonbreeding season.

Introduction

In Alaska, and specifically Prince William Sound (PWS), most studies on marine birds are conducted during the breeding season when marine birds congregate at or near colonies to nest and forage. However, breeding season dynamics are not representative of the community composition or spatial distribution during the winter. The non-breeding season is a critical period of survival for marine birds overwintering at higher latitudes as food tends to be relatively scarce or inaccessible, the climate more extreme, light levels and day-length reduced, and water temperatures cooler.

From 2007-2021 as part of the Exxon Valdez Oil Spill Trustee Council (EVOSTC)-funded Gulf Watch Alaska (GWA) program, under the direction of Dr. Mary Anne Bishop, personnel from the PWS Science Center conducted marine bird surveys in PWS during fall and winter (September – March). Results from the first nine winters (2007-2016) demonstrated seasonal differences for seven of the nine focal avian species groups, indicating movements into and out of PWS over the course of the nonbreeding season (Stocking et al. 2018). For the most abundant marine bird species, including common murre (*Uria aalge*), marbled murrelet (*Brachyramphus marmoratus*), black-legged kittiwake (*Rissa tridactyla*), and large gulls (*Larus* spp), consistent temporal and spatial patterns were documented (Schaefer et al. 2020, Stocking et al. 2018, Dawson et al. 2015, Zuur et al. 2012). However, many regions of PWS remain under-surveyed during winter, including the areas in and around the Alyeska Pipeline Service Company's Valdez Marine Terminal and the associated

tanker escort zone. Marine bird distribution and density around much of the tanker lane, Valdez Arm, and Port Valdez is largely unknown as the GWA surveys did not cover these regions and many of these areas have not been surveyed since 2010.

This report describes the density, distribution, and community composition of marine birds and marine mammals in and around the tanker escort zone in PWS as observed during March 2022 at-sea surveys. The report also compares the 2022 survey observations with those from 2021 and provides recommendations for prioritizing oil spill response efforts in and around the tanker escort lane.

Methods

At-sea marine bird and mammal surveys were conducted during daylight hours along fixed transects in and around the tanker escort zone in PWS and followed established U.S. Fish and Wildlife Service (USFWS) protocols (USFWS 2007). One observer using 10x binoculars recorded the number, species, and behavior of all marine birds and mammals occurring within a 300-meter (m) fixed-width strip (150-m both sides and ahead of boat) from a clear observation platform ~3 m above the water line while the vessel traveled at a constant speed between 5 and 10 knots. Noteworthy observations (e.g., marine mammals, forage flocks) were recorded out to 1 kilometer (km). For this study, a forage flock was defined as an aggregation of greater than 10 marine birds of one or more species actively foraging or flying but showing a clear interest in the water surface by either circling or hovering (Anderwald et al. 2011). Observations were recorded into a laptop computer integrated with a global positioning system (GPS) using the program SeaLog (ABR, Inc). Location data (latitude, longitude) were automatically recorded at 15-second (s) intervals and for every entered observation. Additionally, sea and weather conditions were tracked on-site by the observer.

Following the standard methods used for seabird survey data processing across the region, we divided each transect into 3-km segments and aggregated marine bird observations within each segment for summary. We grouped taxonomically similar species into 14

groups (Table 1) and calculated relative density (birds/km^2) for each 3-km segment. Data processing was performed using QA/QSea (ABR, Inc) and program R v. 4.1.3 (R Core Team 2022). Mapping was performed using ArcMap 10.8.1 (ESRI 2020). Marine mammals were not aggregated by 3-km segment, but are presented as recorded along the transect and in some instances beyond the survey strip out to 1-km.

Table 1. Taxonomically similar species combined for density analysis and mapping, Prince William Sound, Alaska.

Species group	Common Name(s)
Loons	Common, Pacific
Grebes	Horned, Red-necked
Cormorants	Double-crested, Pelagic
Harlequin Ducks	Harlequin
Long-tailed Ducks	Long-tailed
Scoters	Surf, White-winged, Black
Inshore Ducks	Barrow's Goldeneye, Common Goldeneye, Bufflehead
Mergansers	Common, Red-breasted
Large Gulls	Glaucous-winged, Herring
Small Gulls	Short-billed[1]
Kittiwakes	Black-legged
Murres	Common
Murrelets	Marbled
Guillemots	Pigeon

[1]The 2021 AOS Checklist supplement split what was previously known as the Mew Gull (*Larus canus*) into two species – Short-billed Gull (*L. brachyrhynchus*) and Common Gull (*L. canus*). Common along the Pacific coast, the North American population is now known as Short-billed Gull.

Results & Discussion

At-sea marine bird and mammal surveys were conducted in and around the PWS tanker escort zone during 6-11 March 2022 from the PWS Science Center's research vessel, the New Wave (Figure 1). Data from this survey have been uploaded to the Alaska Ocean

Observing System (AOOS) data portal and are available at https://gulf-of-alaska.portal.aoos.org/#metadata/771492cd-94b6-47ab-952a-02b152a535cf/project/files. Overall, we surveyed along 185.5 km of transects (Table 2). Sea conditions during surveys were calm, ranging from smooth and mirror-like (sea state (SS) 0) up to half-foot wavelets (SS 2) (Table 2). The weather was variable and dynamic during the survey and included clear skies (weather state (WS) 0), overcast skies (WS 1), light rain (WS 4), and snow (WS 7) (Table 2).

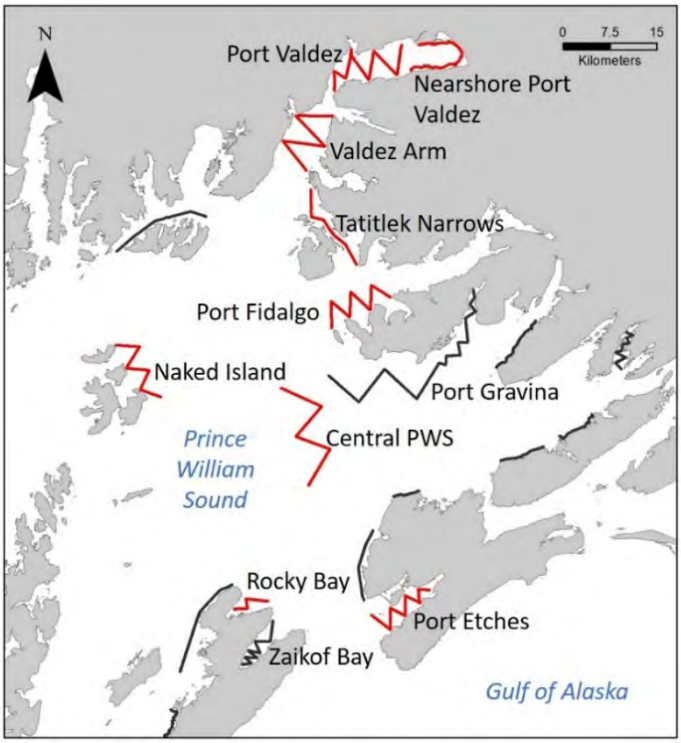

Figure 1. Map of marine bird and marine mammal transects in and around the tanker lanes surveyed in Prince William Sound, March 2021 & 2022. The red lines show the transects completed for the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) during March 2021 and 2022. The black lines indicate transects around the tanker lanes previously surveyed during November and March as part of EVOSTC GWA-funded surveys.

Table 2. PWS transects surveyed for PWSRCAC during March 2022. Sea conditions were calm, ranging from smooth and mirror-like (sea state (SS) 0) up to half-foot wavelets (SS 2). The weather was variable, ranging from clear skies (weather state (WS) 0), to overcast skies (WS 1), mist/light rain (WS 4), and snow (WS 7). The mode for SS and WS on each transect is reported.

Transect Name	Length (km)	Area Sampled (km^2)	SS	WS	Mean bird density ($birds/km^2$)	# Mammals (within 1 km)
Central PWS	26.1	7.8	2	0	2.0	0
Port Etches	19.8	5.9	1	0	17.7	96
Port Fidalgo	24.0	7.2	1	4	9.1	14
Naked Island	18.5	5.6	2	1	2.7	4
Nearshore Port Valdez	19.1	5.7	0	7	45.0	70
Port Valdez	29.5	8.8	0	7	12.9	13
Rocky Bay	7.4	2.2	1	1	28	4
Tatitlek Narrows	15.5	4.6	1	4	13.6	28
Valdez Arm	25.7	7.7	1	4	6.9	4

Marine Birds

Total marine bird density was similar between 2021 and 2022, although densities and distributions of individual species groups did vary (Figure 2). We recorded 767 birds representing 23 species within the 300-m survey strip on PWSRCAC transects (Table 3). Unlike March 2021 when the avian community was dominated by one species (*Brachyramphus* murrelets, 31.1% of observations), the community observed in March 2022 was more mixed (Figure 2). Black-legged kittiwakes were the most-recorded species (12.3% of observations), followed by marbled murrelets (11.0%), common murre (9.9%), glaucous-winged gulls (*Larus glaucescens*, 7.3%), and bufflehead (*Bucephala albeoloa*, 5.6%). The

marine bird community recorded during this year's complementary EVOSTC GWA transects was also mixed. Barrow's goldeneye were the most recorded species (*Bucephala clangula*; 13.5%) followed by marbled murrelets (12.1%), surf scoter (*Melanitta perspicillata*; 9.3%), short-billed gull (*L. brachyrhynchus*; 8.6%), harlequin duck (*Histrionicus histrionicus*; 8.5%), pelagic cormorant (*Phalacrocorax pelagicus*; 8.3%), and common murre (7.4%).

Prior to 2013, murres were typically the dominant species group during March surveys (Stocking et al. 2018, Dawson et al. 2015). However, since experiencing a die-off event beginning during the winter of 2014/15 and ending in the spring of 2016 (Piatt et al. 2020), murre densities have remained below the long-term average (Bishop, unpublished data). During this survey, we observed the highest densities of murres in Zaikof Bay, Rocky Bay, and along the northern end of Montague Island.

Marbled murrelets, a species initially injured by the 1989 Exxon Valdez oil spill (EVOS) that has yet to recover (EVOS 2014), occurred on PWSRCAC transects in much lower densities during 2022 compared to 2021 (Figure 2, Table 3) and their distribution throughout PWS was more restricted. Areas of high murrelet density included the head of Port Etches, Port Gravina/St. Matthews Bay, and Port Valdez.

Areas of high marine bird densities on the PWSRCAC transects included the nearshore transect at the head of Port Valdez, the head of Port Etches, and the head of Rocky Bay (Table 2). Other areas in and around the tanker escort zone with high marine bird densities that were also surveyed in March 2022 were Zaikof Bay and the areas around Port Gravina, including near Red Head, St. Matthews Bay, and the eastern shoreline. Refer to Appendix I for distribution maps of each species group.

Areas with relatively low marine bird concentrations included central PWS, Naked Island, and Valdez Arm. Although densities in Valdez Arm were low in 2022, they were higher than during the 2021 survey when we did not observe a single bird.

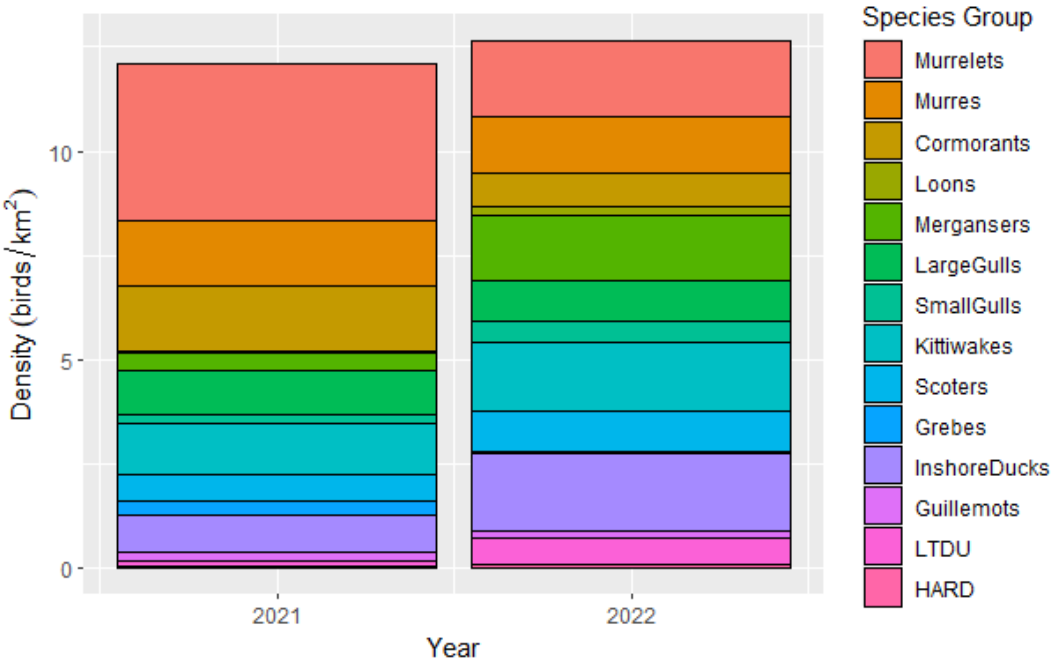

Figure 2. Mean density of each species group observed on March 2021 and March 2022 PWSRCAC transects. See table 1 for species groupings. “LTDU” refers to long-tailed duck and “HARD” refers to Harlequin Duck.

During nearshore transects, we typically try to maintain the vessel ~150-200 m from the shoreline. However, on the nearshore Port Valdez transect our vessel remained 500-800 m from the shoreline due to the shallow and extensive mudflats emanating from the Lowe and Valdez Glacier rivers. While on this transect, we recorded large aggregations of ducks beyond the survey strip (Figure 3). We recorded 124 unidentified ducks in the head of Port Valdez in 2022 compared to 190 ducks (mallard [*Anas platyrhynchos*] + unidentified ducks) observed in 2021. In 2022, ducks were primarily distributed along the far eastern shoreline between the outflows of the Lowe and Valdez Glacier rivers. In 2021, ducks were located along the northeast shoreline between the Valdez Container Terminal and the outflow of Valdez Glacier Stream.

We did not observe any forage flocks on or off transect during the PWSRCAC surveys. On the EVOS transects, only one flock was observed in Simpson Bay, and consisted of 15 short-billed gulls that formed around a Steller sea lion consuming a large salmon.

Figure 3. Ducks (mallard, unidentified) observed beyond the survey strip on the nearshore Port Valdez transect during March 2021 and 2022.

Table 3. Total number of birds observed by species on PWSRCAC transects within and beyond the 300-m survey strip, March 2021 and 2022, Prince William Sound, Alaska.

Common name	**Scientific name**	**2022 Count within 300-m strip (count beyond strip)**	**2021 Count within 300-m strip (count beyond strip)**
Bald Eagle	*Haliaeetus leucocephalus*	6 (2)	3 (1)
Barrow's Goldeneye	*Bucephala islandica*	25 (6)	5 (6)
Black-legged Kittiwake	*Rissa tridactyla*	94 (0)	71 (2)
Brachyramphus Murrelet		19 (3)	67 (11)
Bufflehead	*Bucephala albeola*	43 (3)	5 (39)
Common Goldeneye	*Bucephala clangula*	24 (1)	6 (1)
Common Merganser	*Mergus merganser*	28 (3)	12 (0)
Common Murre	*Uria aalge*	76 (65)	88 (21)

Common Raven	*Corvus corax*		2 (0)
Double-crested Cormorant	*Phalacrocorax auritus*	2 (0)	2 (0)
Glaucous-winged Gull	*Larus glaucescens*	56 (18)	60 (1)
Harlequin Duck	*Histrionicus*	4 (0)	2 (0)
Herring Gull	*Larus smithsonianus*	1 (0)	
Horned Grebe	*Podiceps auritus*	2 (0)	16 (0)
Long-tailed Duck	*Clangula hyemalis*	37 (0)	6 (4)
Mallard	*Anas platyrhynchos*		0 (85)
Marbled Murrelet	*Brachyramphus marmoratus*	84 (3)	153 (3)
Northwestern Crow	*Corvus caurinus*	41 (0)	
Pacific Loon	*Gavia pacifica*	11 (0)	1 (0)
Pelagic Cormorant	*Phalacrocorax pelagicus*	45 (14)	84 (20)
Pigeon Guillemot	*Cepphus columba*	9 (1)	13 (1)
Red-breasted Merganser	*Mergus serrator*	29 (4)	3 (0)
Red-necked Grebe	*Podiceps grisegena*	1 (0)	
Short-billed Gull	*Larus brachyrhynchus*	27 (3)	13 (0)
Surf Scoter	*Melanitta perspicillata*	24 (0)	36 (0)
Trumpeter Swan	*Cygnus buccinator*		0 (3)
Unidentified Cormorant		0 (1)	5 (43)
Unidentified Duck		0 (124)	0 (105)
Unidentified Goldeneye		13 (25)	36 (6)
Unidentified Grebe			4 (0)
Unidentified Loon		1 (20)	1 (6)
Unidentified Merganser		32 (9)	10 (0)
Unidentified Murre			2 (0)
Unidentified Scoter		4 (1)	1 (13)
Unidentified Small Gull			0 (1)

White-winged Scoter	*Melanitta fusca*	29 (5)	0 (3)
Grand Total		**767 (+331)**	**707 (+375)**

Marine Mammals

In addition to marine birds, we also recorded marine mammals within the 300-m strip during the surveys. When possible, we recorded mammal observations out to 1 km, but this is not uniform across all species as whales are much easier to observe at longer distances compared to sea otter (*Enhydra lutris*), harbor seal (*Phoca vitulina*), Steller sea lion (*Eumetopias jubatus*), or porpoises (*Phocoenoides dalli* or *Phocoena phocoena*). Observations recorded beyond the 300-m strip should be considered minimum counts for these species in these areas.

Sea otter was the most abundant marine mammal observed during the survey. Sea otters were recorded in small group sizes, ranging from one to five individuals, and occurred in most nearshore areas (Table 4). During PWSRCAC transects, we observed harbor seals in the head of Port Valdez and on the Port Valdez zigzag transect only, unlike in 2021 when small numbers of seals were also observed in Port Etches and Port Fidalgo. Additional seals were recorded along Hawkins Island and in Zaikof Bay. We only observed seven porpoises total on the PWSRCAC transects, compared to 17 recorded in 2021 (Table 4). Porpoises were recorded in Valdez Arm and Port Etches only. In 2021, porpoises were more broadly distributed during surveys and were recorded in Port Valdez, Valdez Arm, Port Etches, Zaikof Bay, and off the western shoreline of Knight Island. Several groups of Steller sea lions were recorded in the water in Port Etches, including a large aggregation consisting of ~50 individuals. Other seas lions were observed in Simpson Bay (one individual consuming a large salmon) and on the nearshore Port Valdez transect.

We observed two killer whales (*Orcinus orca)* while surveying PWSRCAC transects, but an additional 15 were recorded during the rest of the survey (Table 4). These included two separate groups near Knowles Head consisting of five and six individuals, as well as a pair

along the Hawkins shoreline and a pair in Lower Herring Bay. Humpback whales (*Megaptera novaengliae;* four total) were observed in Port Etches and along the northern shoreline of Montague Island.

Please refer to Appendix II for distribution maps of each species.

Table 4. Total number of marine mammals observed by species on PWSRCAC transects within and beyond the 300-m survey strip, March 2021 & 2022, Prince William Sound, Alaska.

Common name	**Scientific name**	**2022 Count within 300-m strip (count beyond strip)**	**2021 Count within 300-m strip (count beyond strip)**
Dall's Porpoise	*Phocoenoides dalli*	2 (0)	15 (0)
Harbor Porpoise	*Phocoena*	2 (0)	
Harbor Seal	*Phoca vitulina*	12 (19)	3 (53)
Humpback Whale	*Megaptera novaengliae*	2 (0)	0 (1)
Killer Whale	*Orcinus orca*	0 (2)	0 (2)
Sea Otter	*Enhydra lutris*	86 (30)	54 (18)
Steller Sea Lion	*Eumetopias jubatus*	7 (68)	3 (17)
Unidentified Porpoise		3 (0)	2 (0)
Grand Total		**114 (+119)**	**77 (+91)**

Conclusions

Because marine bird density and distribution can vary widely across years, multiple years of surveys are necessary to understand natural variation. However, the patterns observed during this survey are consistent with patterns reported previously for PWS during the non-breeding season. Marine birds tend to prefer shallow and protected habitats that are closer to shore compared to deep offshore habitats (Schaefer et al. 2020, Stocking et al. 2018, Dawson et al. 2015). During the March 2021 and 2022 surveys, we identified multiple

areas of consistently high and low marine bird densities and other areas that may warrant continued evaluation.

During March 2021 and 2022 surveys, the highest densities of birds were indeed observed in bays and nearshore areas (e.g., head of Port Valdez, Port Etches), while the lowest densities were recorded in more exposed habitats that were farther from shore (e.g., central PWS, Naked Island).

Similar to 2021, the 2022 survey results provide further support for protection of the region around Hinchinbrook Entrance. Port Etches, Zaikof Bay, and Rocky Bay were high density areas for multiple marine bird and marine mammal species, including kittiwakes, large gulls, loons, murres, and sea lions. Additionally, the high numbers marbled murrelets and presence of pigeon guillemots, two species that were injured by EVOS and whose populations have not yet recovered (EVOS 2014), observed in Port Etches, Zaikof Bay, and Rocky Bay further emphasize the importance of these protected (i.e., not exposed) waters to sensitive marine bird species during the nonbreeding season. This area is particularly vulnerable to anthropogenic disturbance because of its close proximity to where tankers enter and exit PWS and the importance of Porpoise Rocks for marine wildlife. Located at the mouth of Port Etches, Porpoise Rocks supports an important seabird colony for black-legged kittiwakes, common murres, and tufted puffins (see North Pacific Seabird Data Portal https://axiom.seabirds.net) and serves as a roost-site for cormorants and as a haul-out site for Steller sea lions.

Consistent with 2021, these survey results also justify support for the protection of the head of Port Valdez, due to the high marine bird density and the proximity to human infrastructure, including the Valdez Marine Terminal, harbor, and fuel dock. Other areas with relatively high marine bird density, including that of sensitive species, include the nearshore waters of Port Fidalgo and Tatitlek Narrows.

Port Gravina may also warrant increased priority for protection. We observed higher densities of marine birds and mammals in this area in 2022 compared to 2021, primarily

driven by increased densities of murrelets. Moreover, the use of this area by pigeon guillemots and killer whales, both species heavily impacted by the Exxon Valdez spill that have not recovered, and the importance of this area as spawning grounds for Pacific herring (*Clupea pallasii*), also an EVOS-injured species, further underscore the importance of this habitat to marine communities in PWS.

These surveys do not include all areas that potentially may be impacted by an oil spill, nor do they capture all marine bird winter habitat or variation in marine bird community structure throughout the nonbreeding season. With that said, continued monitoring of marine birds in and around the tanker escort lane during late winter will help determine marine bird and mammal vulnerability to environmental change and future perturbations, including oil spills. In addition, these surveys could be used to update oil spill response planning tools and refine response efforts in and around the tanker escort lane during the nonbreeding season. For example, these data could be used to update National Oceanic and Atmospheric Administration (NOAA) Environmental Sensitivity Index (ESI) maps, which are used by responders, managers, and planners to identify coastal resources at risk in the case of oil or chemical spills or added to the NOAA Environmental Response Management Application (ERMA), which is an online tool to aid resource managers to make informed decisions for environmental response, damage assessment, and recovery/restoration. Unfortunately, the ESI maps for Prince William Sound are over 20 years old and contain very limited winter bird and mammal information for many of the areas identified here for prioritized protection (e.g., Zaikof Bay, Rocky Bay, Port Etches, Port Gravina, Fidalgo, Tatitlek, Port Valdez). Similarly, the additional data integrated within ERMA is also lacking for marine bird distribution within PWS during the non-breeding season.

Recommendations

We recommend the areas around Hinchinbrook Entrance and the head of Port Valdez for special protection in the event of a perturbation, such as an oil spill, due to the consistently high numbers of marine birds and marine mammals, including species that have yet to

recover from the 1989 spill. Other areas with high densities of marine birds that could warrant priority protection include Port Gravina, Tatitlek Narrows, and Port Fidalgo. Fortunately, there is an oil spill response barge staged in Port Etches and oil response equipment located in Valdez and Tatitlek, which should facilitate rapid and efficient response in the event of a spill in these areas.

With the cessation of the complementary EVOS GWA marine bird surveys beginning in March 2023, we recommend expansion of the PWSRCAC surveys. Specifically, we suggest that the transects in Zaikof Bay, in and around Port Gravina, and along northwest Hinchinbrook, all previously part of the GWA surveys, be incorporated into the PWSRCAC surveys to ensure priority areas in and around the tanker lane are surveyed sufficiently.

The loss of the GWA surveys, which occurred annually in September, November, and March, has also resulted in a loss of temporal survey coverage of the PWS marine bird community. These time periods represent three distinct marine bird communities (Figure 4) and stages in the annual cycle, thus the impacts caused by natural or anthropogenic perturbations in the marine environment would also vary by time of the year. We recommend further expanding the PWSRCAC marine bird and mammal surveys to one early winter survey (November) to more fully evaluate marine bird and mammal sensitivity to environmental change or anthropogenic disturbance and to more effectively guide oil spill planning and response efforts.

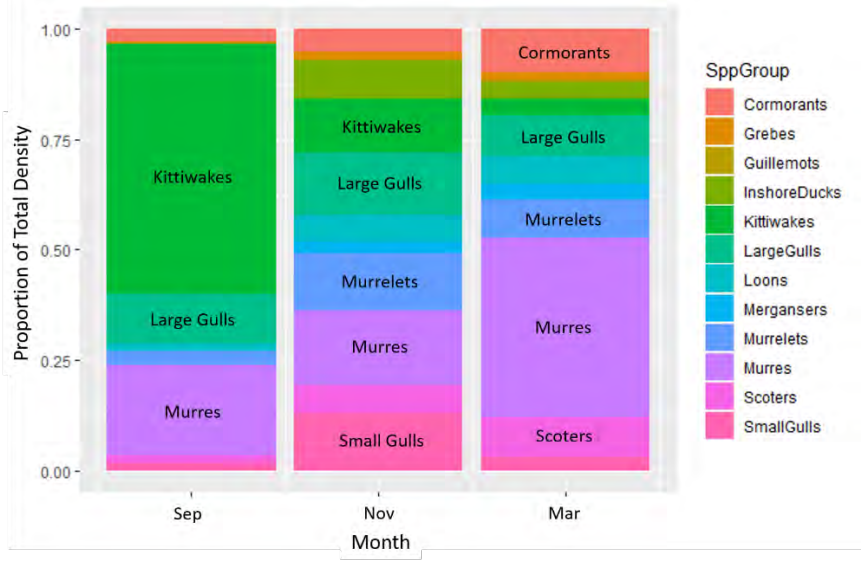

Figure 4: Marine bird community composition in Prince William Sound, during EVOSTC-funded surveys, September, November, and March 2007 – 2020. Species comprising the largest proportions within each month are labeled.

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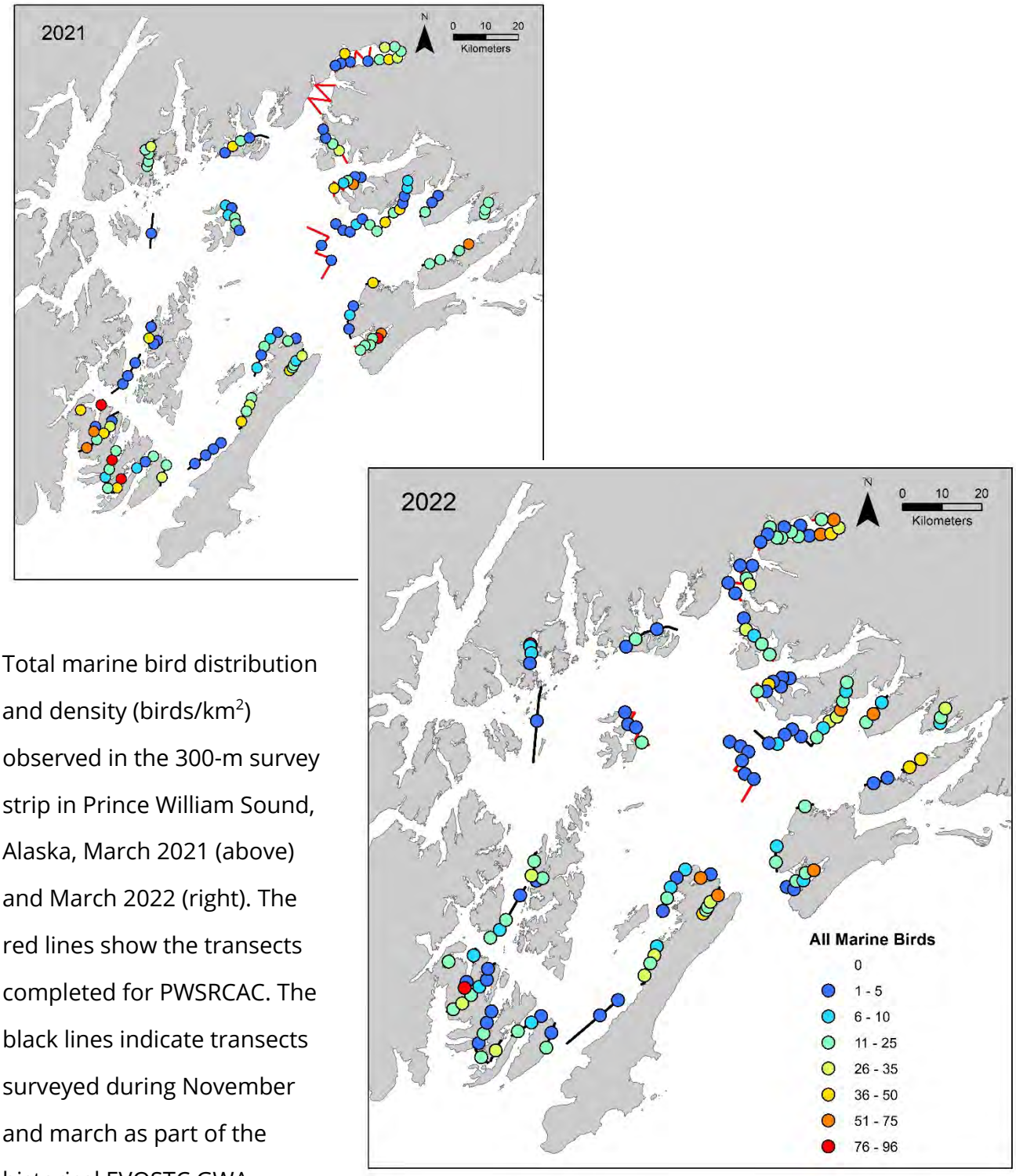
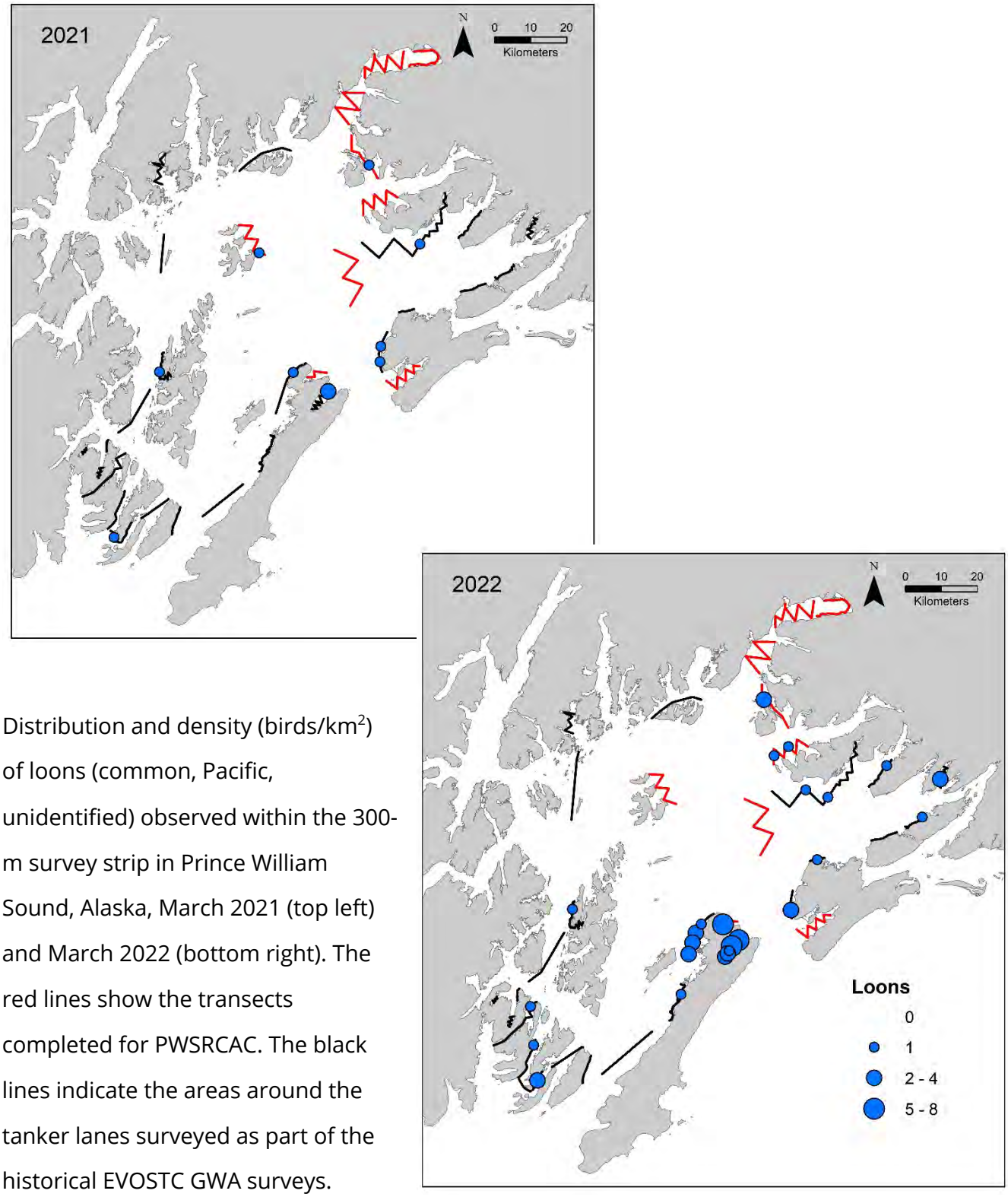
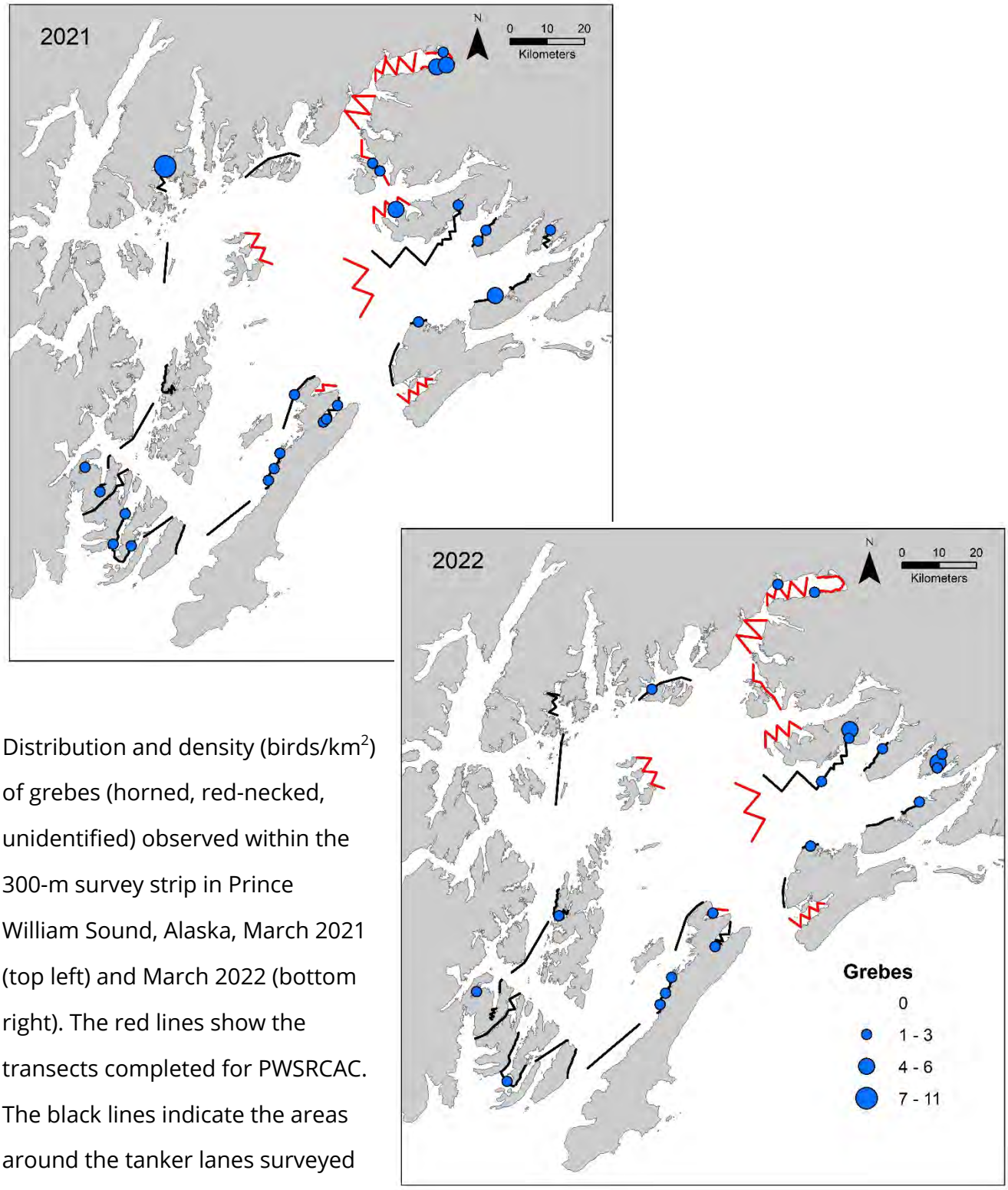
<u>Appendix I:</u> Marine bird density and distribution in Prince William Sound, Alaska, March 2021 and 2022.



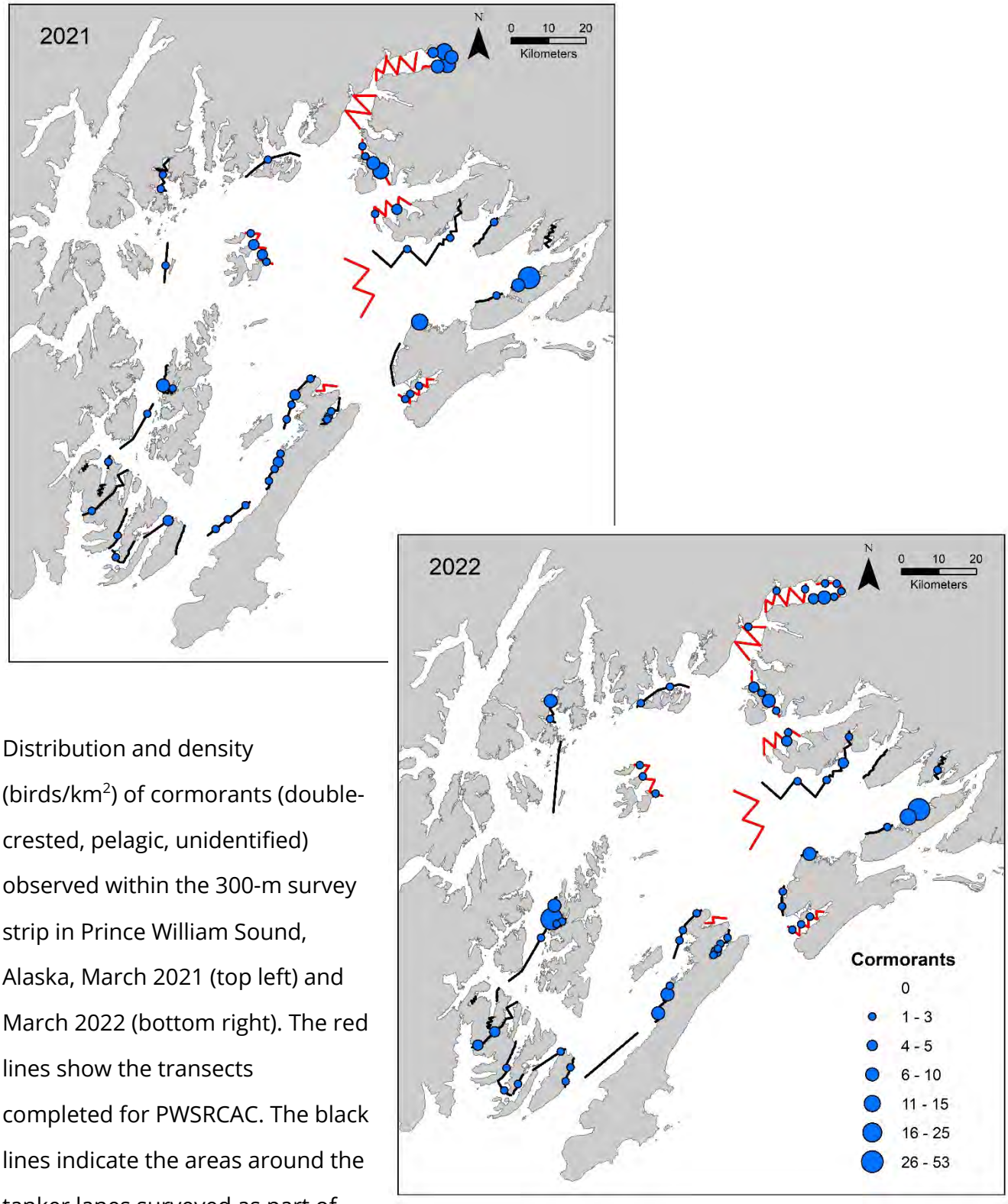
Total marine bird distribution and density (birds/km^2) observed in the 300-m survey strip in Prince William Sound, Alaska, March 2021 (above) and March 2022 (right). The red lines show the transects completed for PWSRCAC. The black lines indicate transects surveyed during November and march as part of the historical EVOSTC GWA surveys.



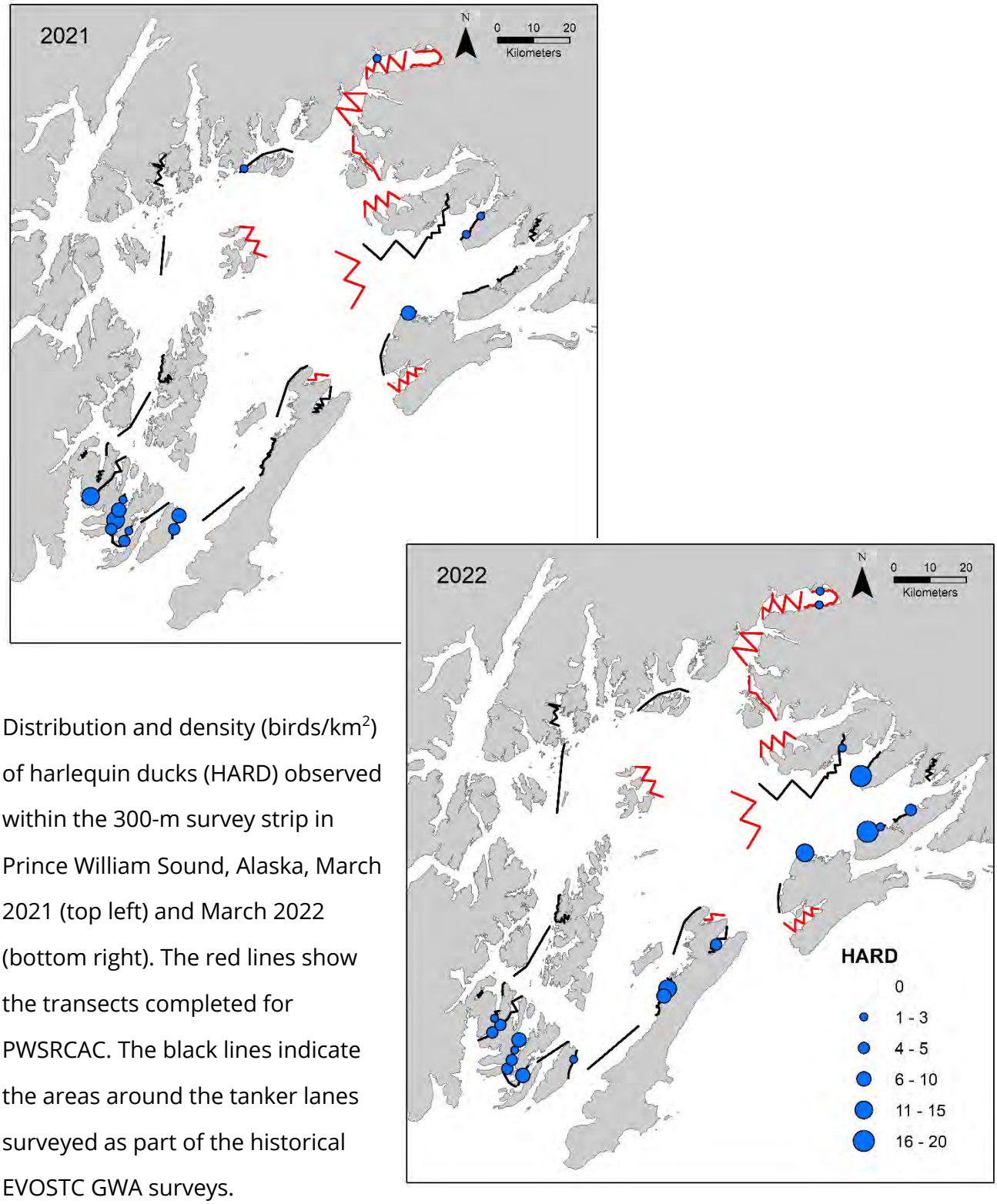
Distribution and density (birds/km^2) of loons (common, Pacific, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



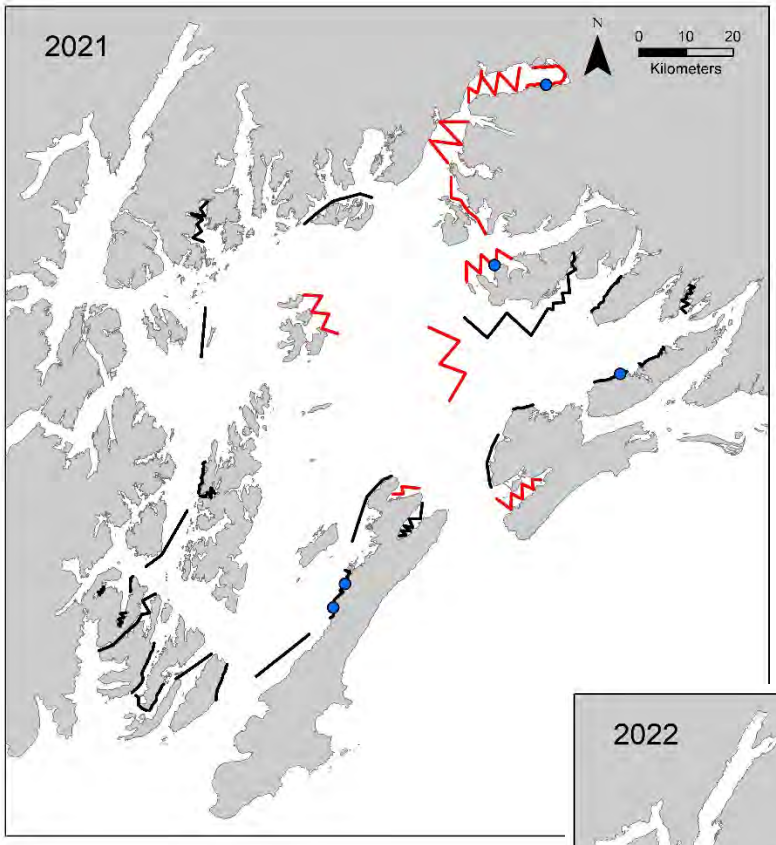
Distribution and density (birds/km^2) of grebes (horned, red-necked, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

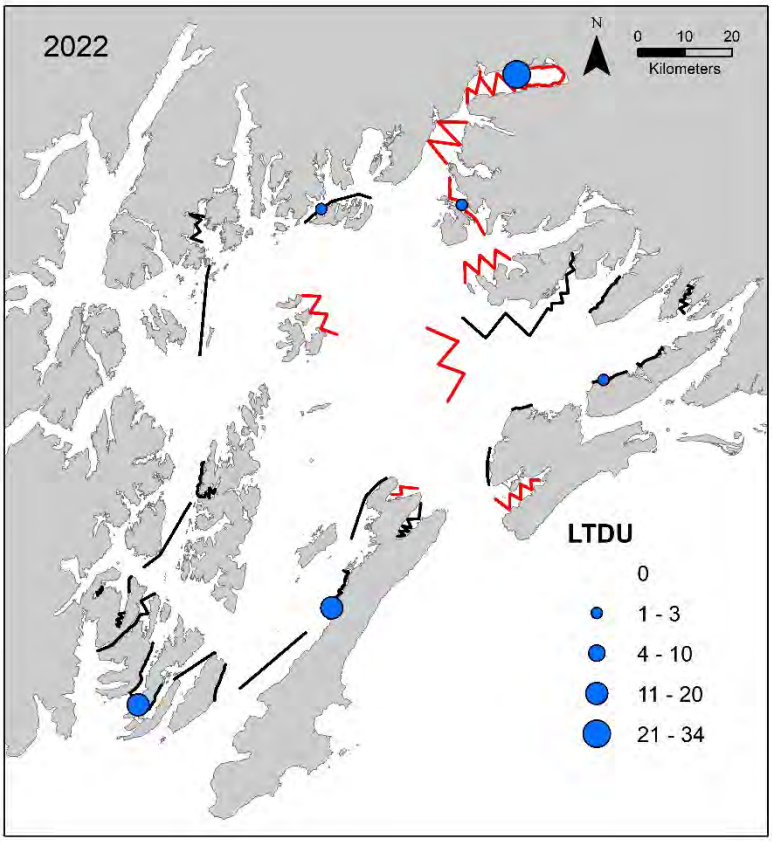


Distribution and density (birds/km^2) of cormorants (double-crested, pelagic, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

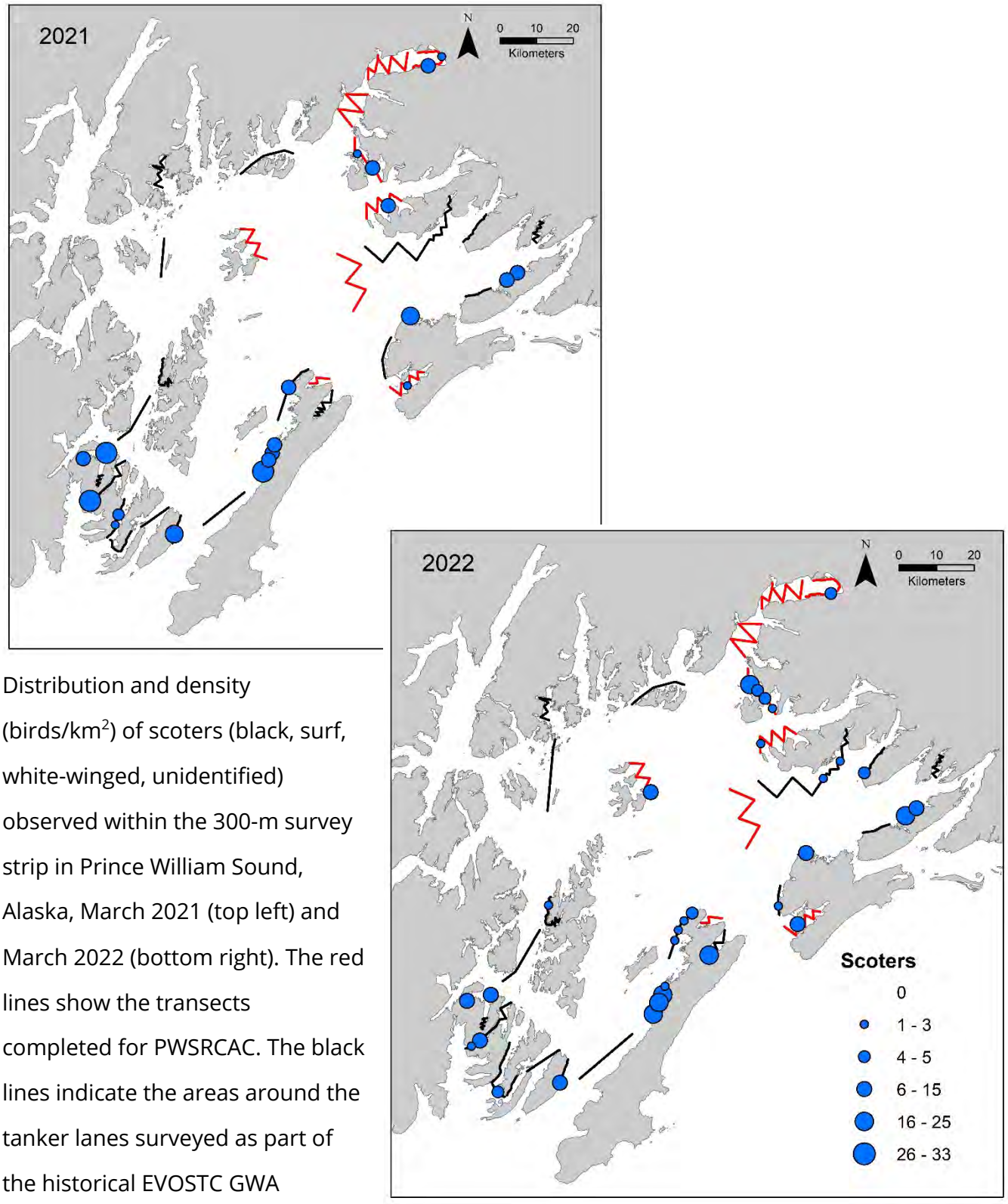


Distribution and density (birds/km^2) of harlequin ducks (HARD) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

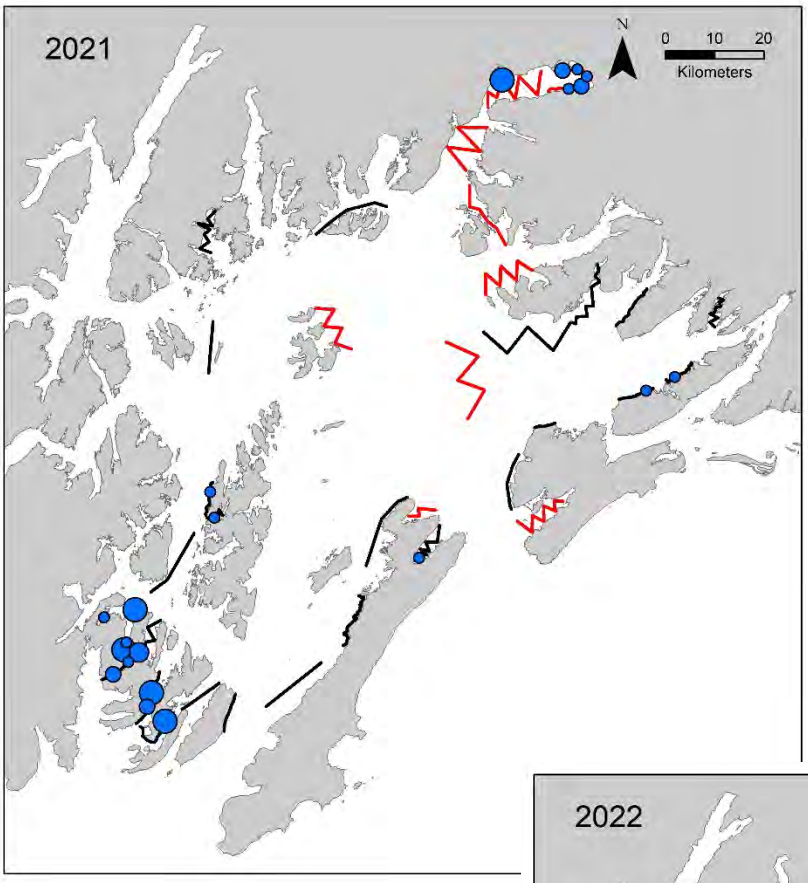


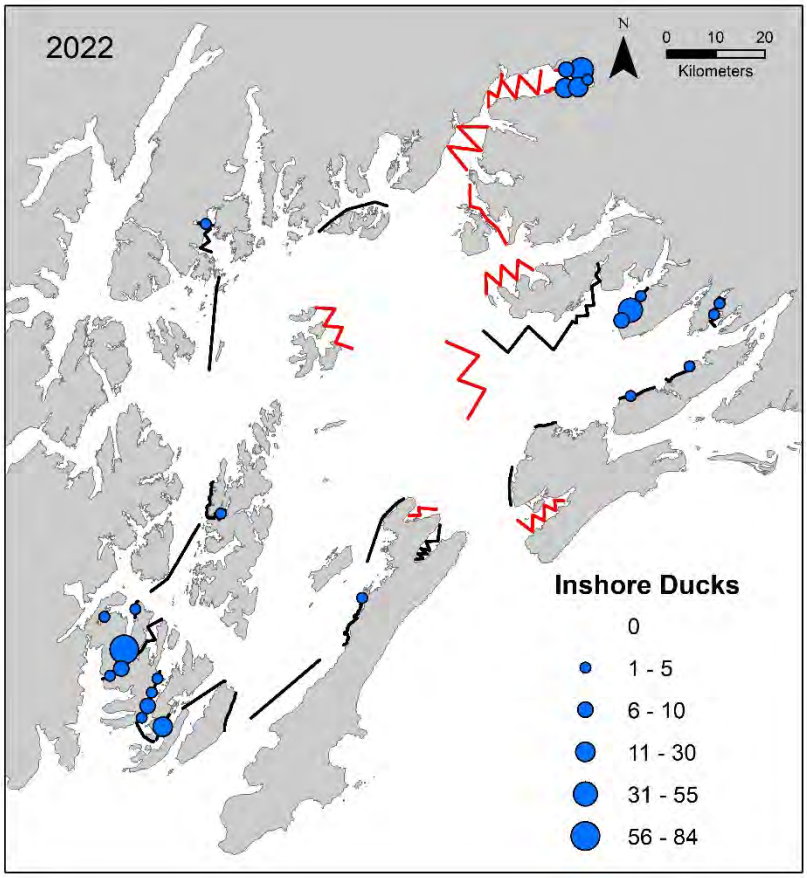


Distribution and density (birds/km^2) of long-tailed ducks (LTDU) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

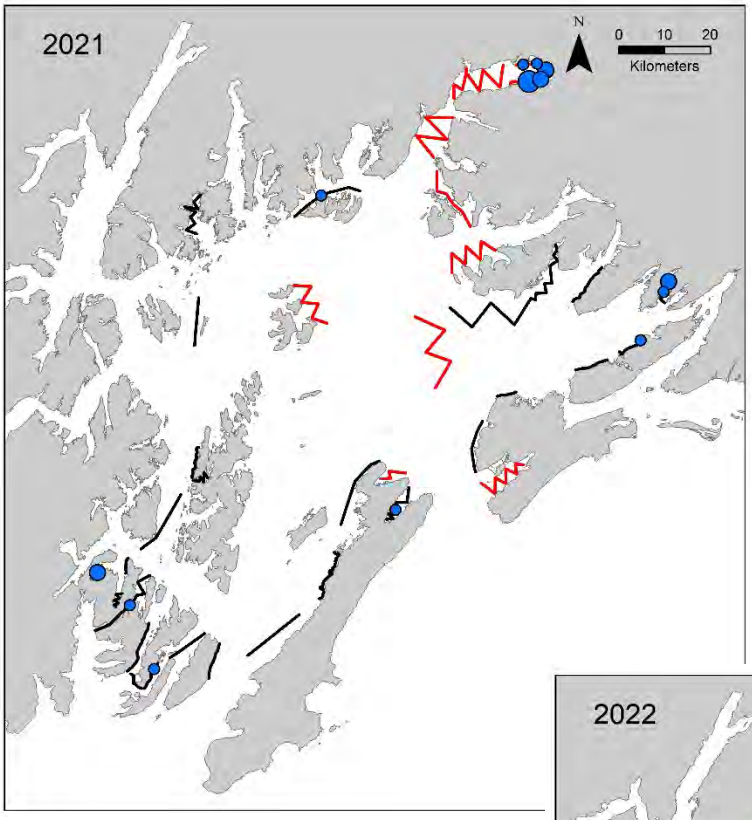


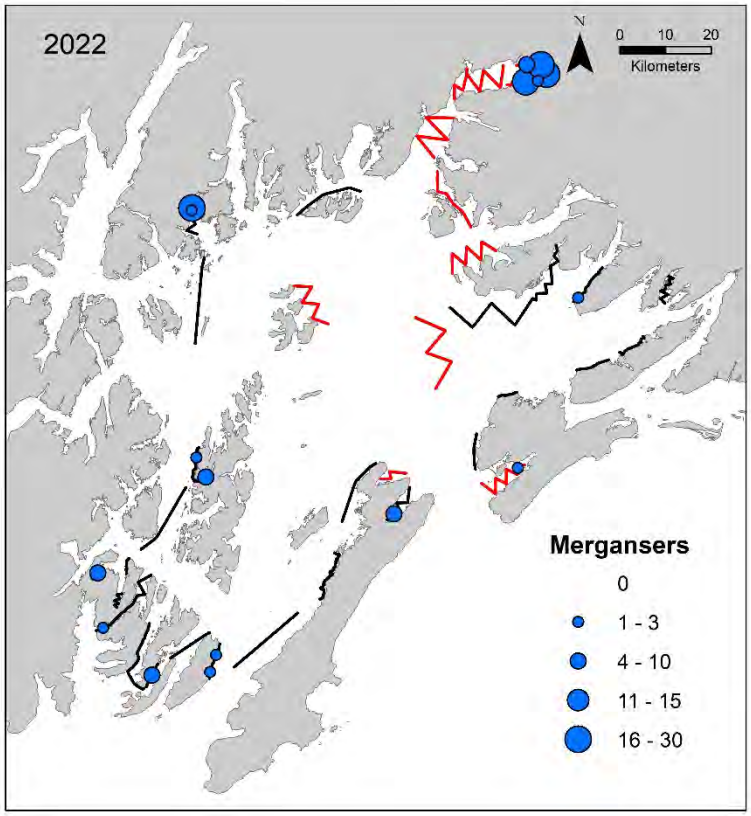
Distribution and density (birds/km^2) of scoters (black, surf, white-winged, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



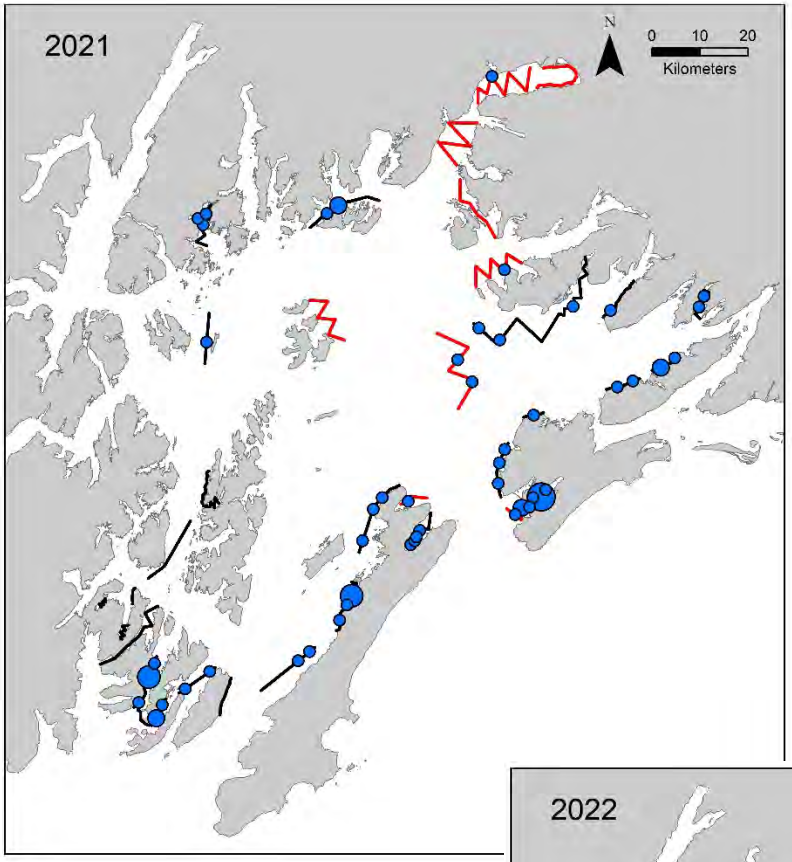


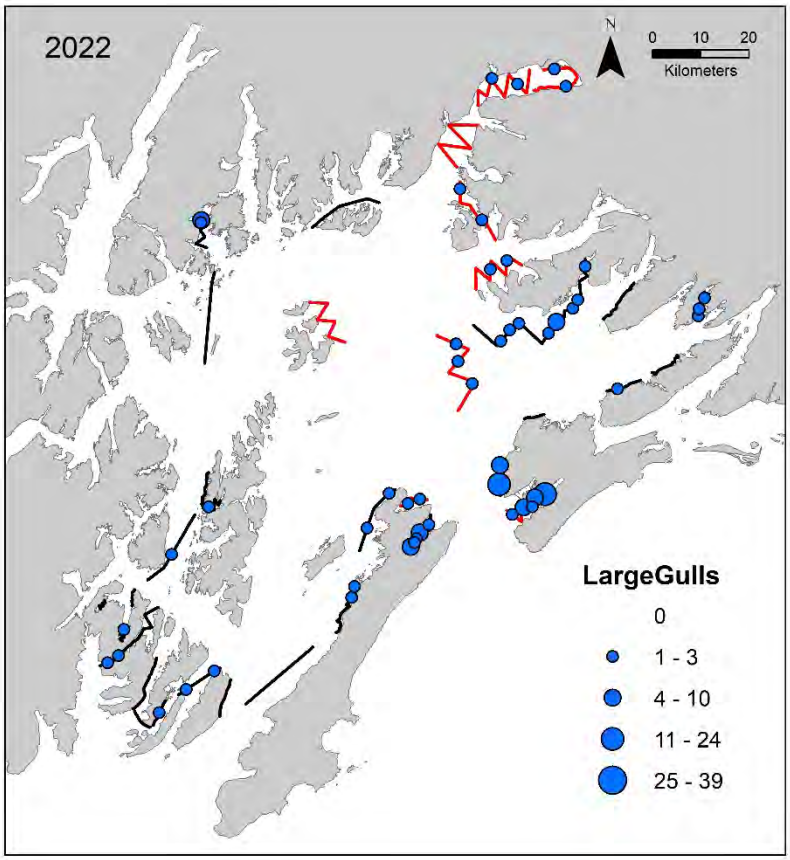
Distribution and density (birds/km^2) of inshore ducks (Barrow's goldeneyes, common goldeneyes, unidentified goldeneyes, buffleheads) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



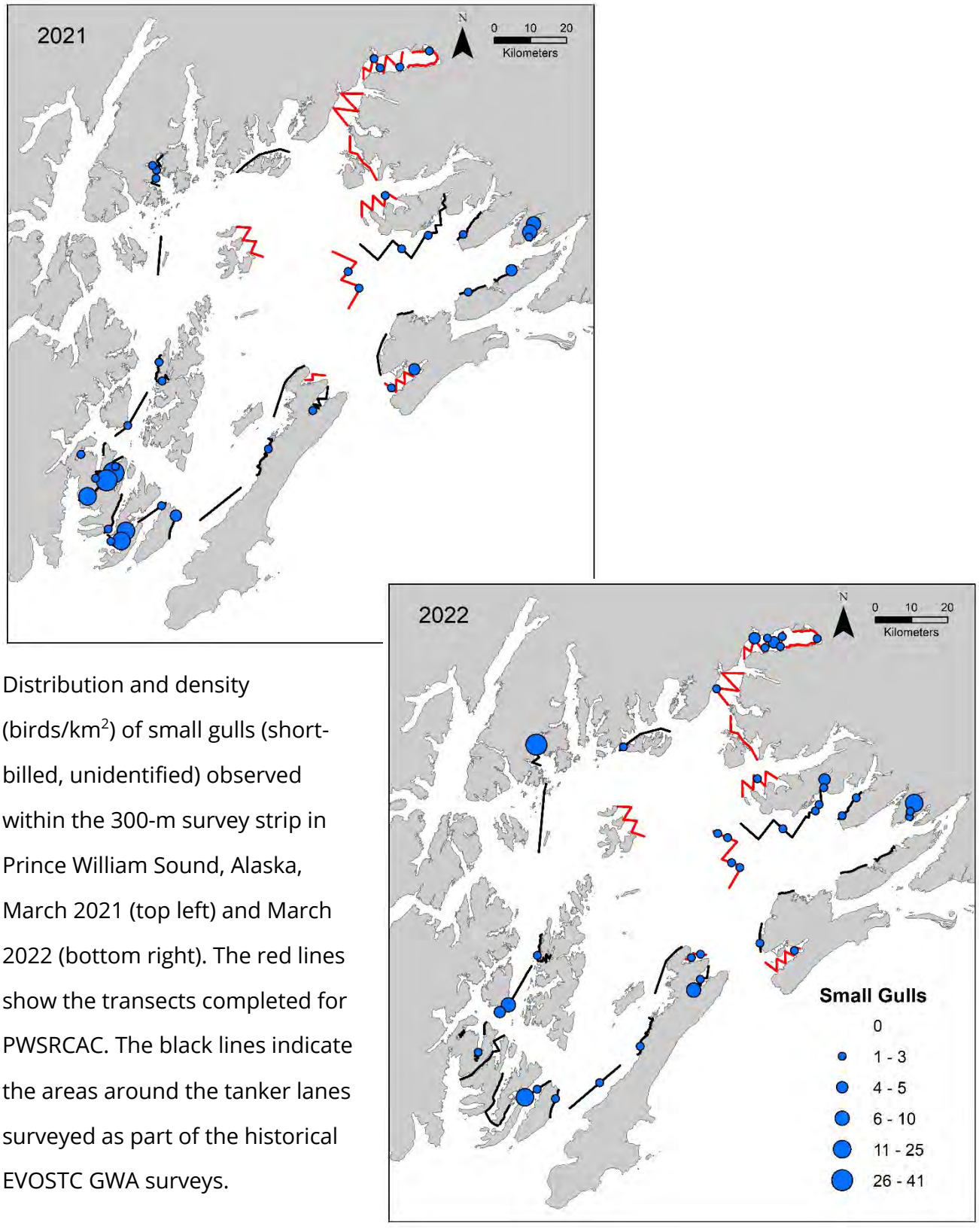


Distribution and density (birds/km^2) of mergansers (common, red-breasted, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

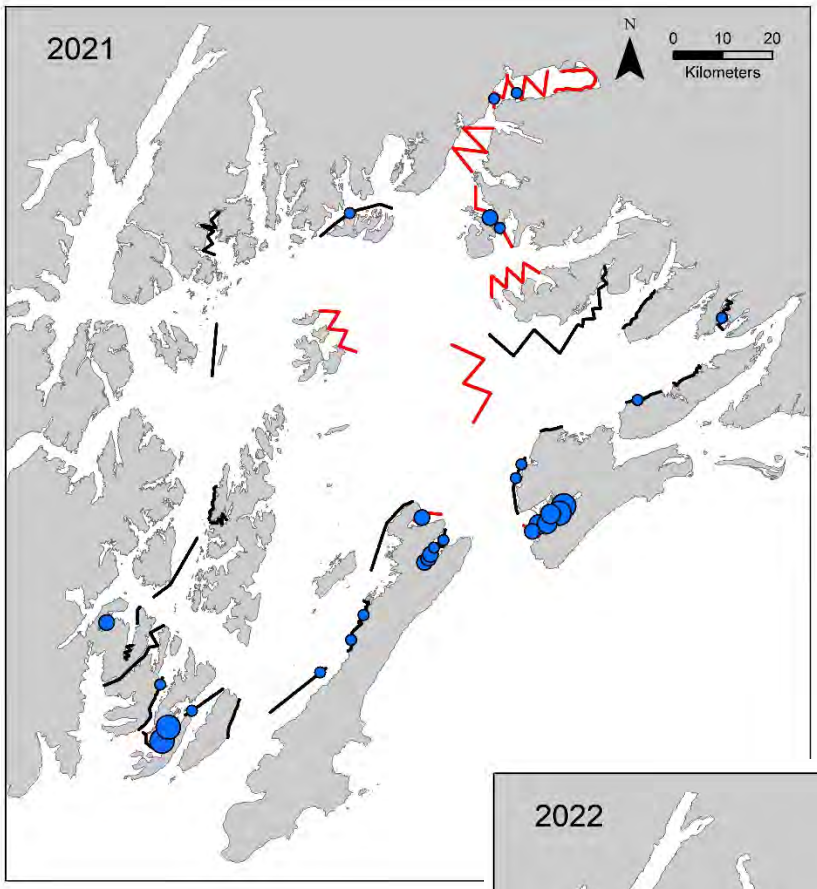


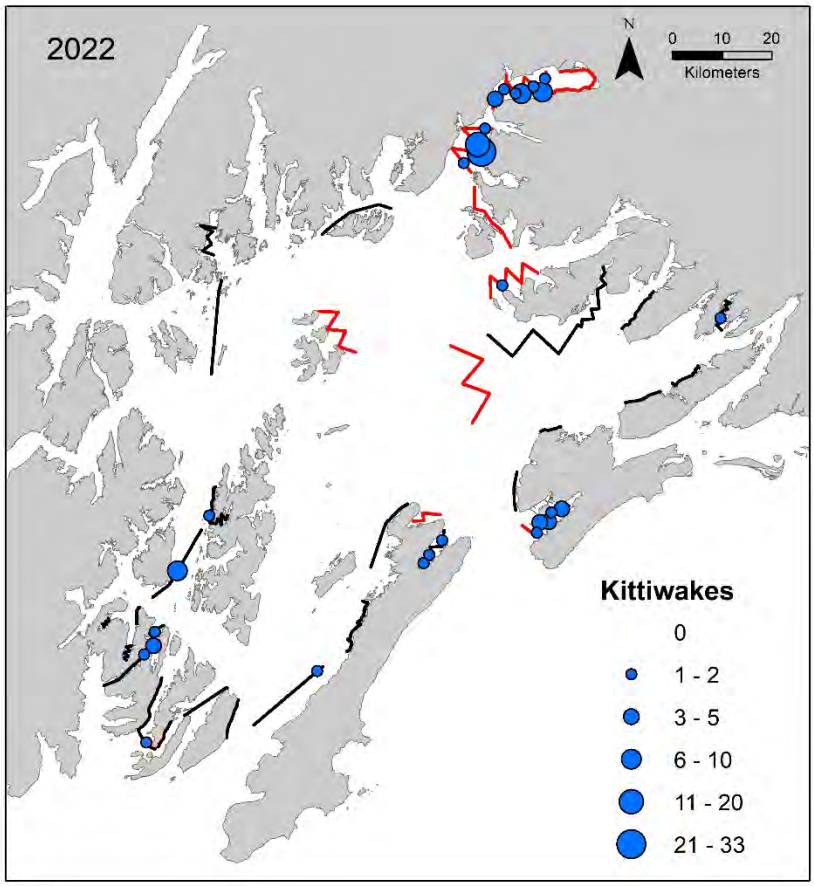


Distribution and density (birds/km^2) of large gulls (glaucous-winged, herring, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of historical EVOSTC GWA surveys.

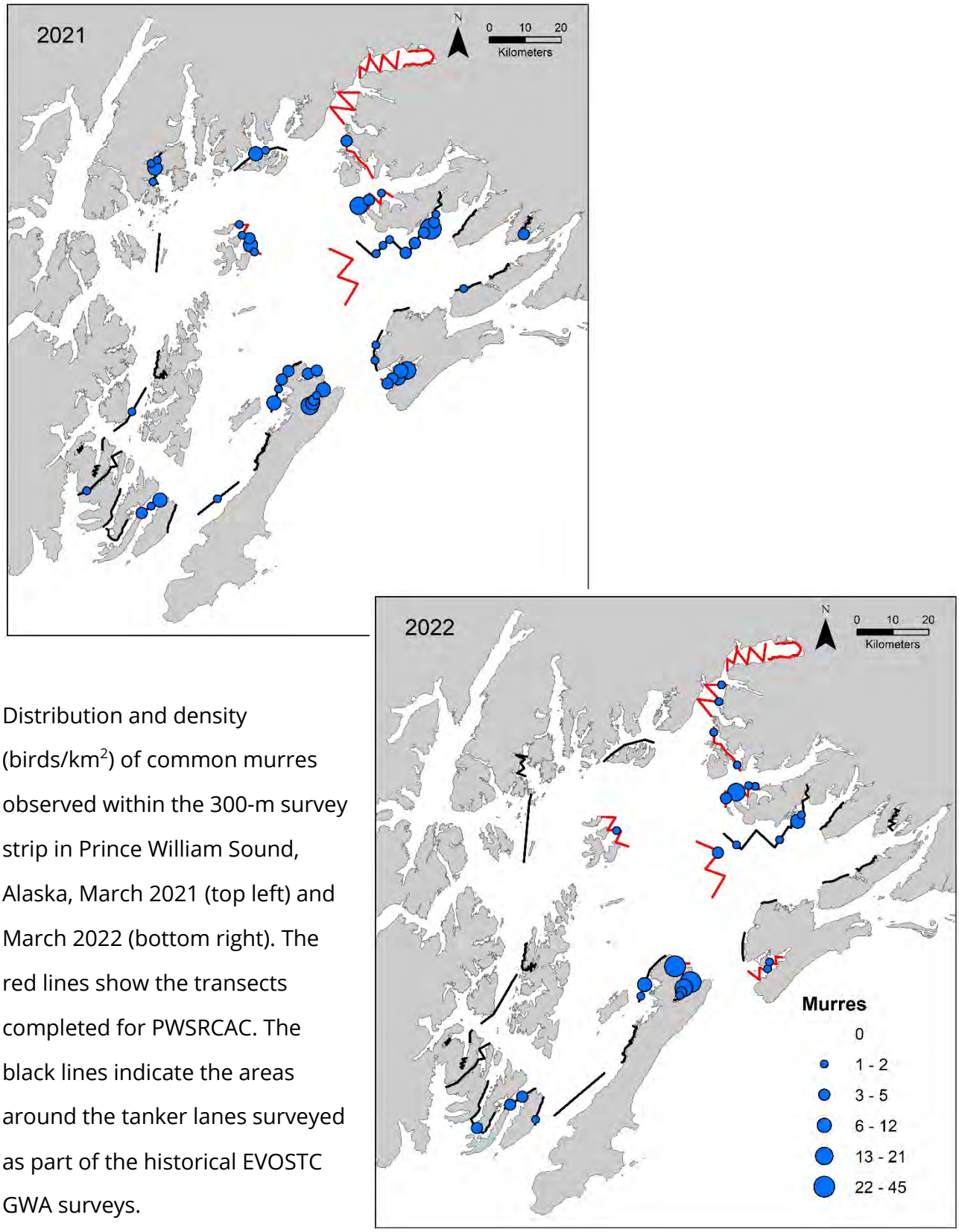


Distribution and density (birds/km^2) of small gulls (short-billed, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

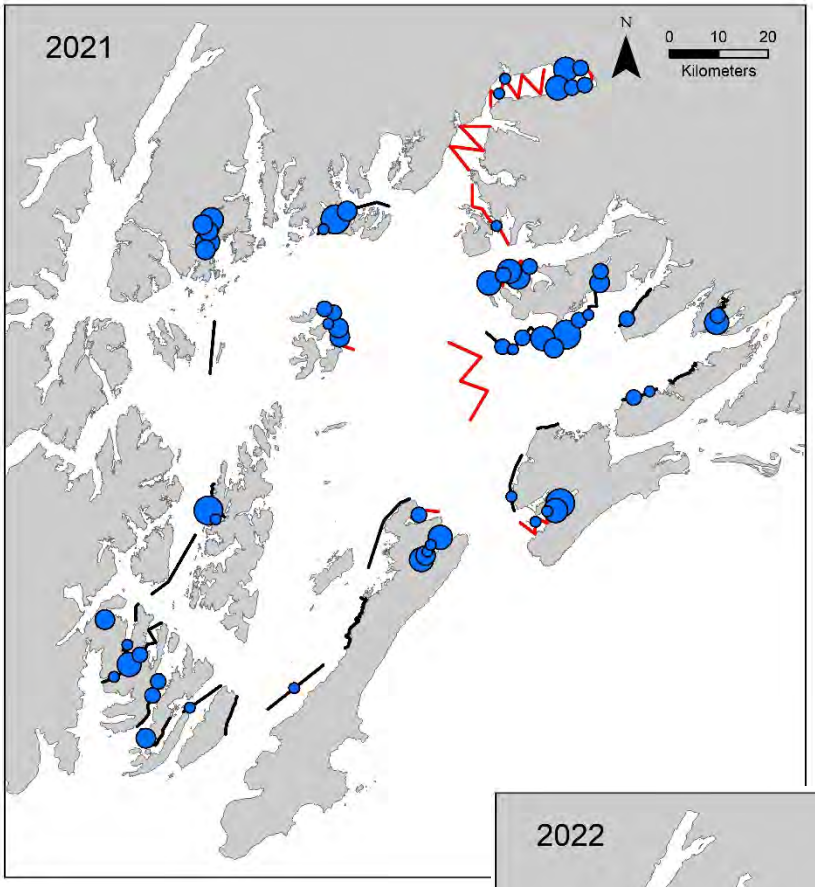


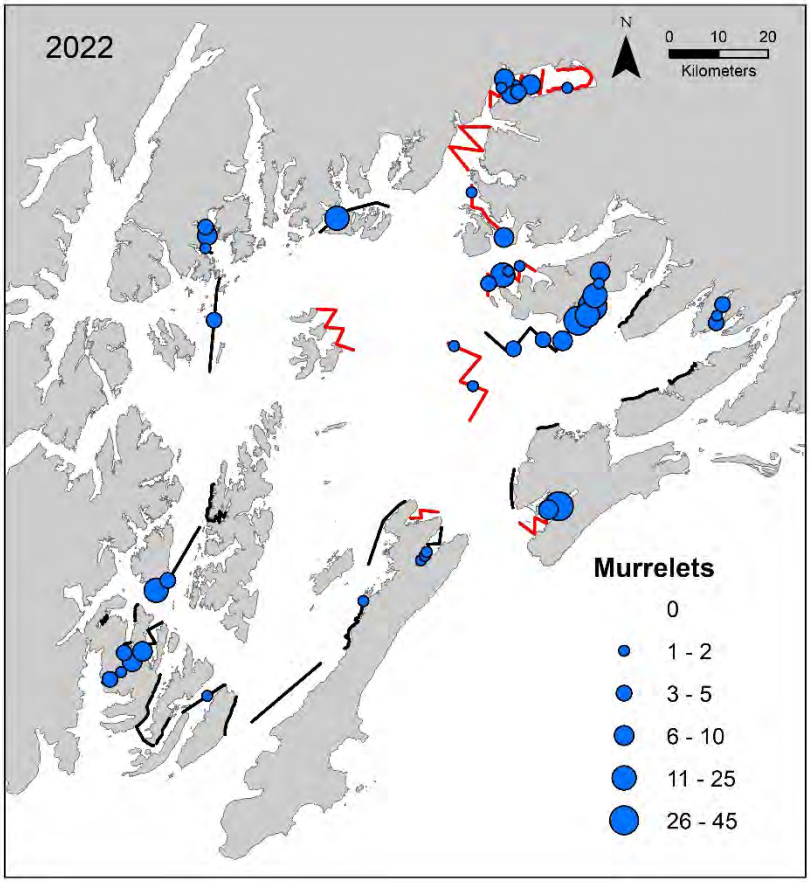


Distribution and density (birds/km^2) of black-legged kittiwakes observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of historical EVOSTC GWA surveys.

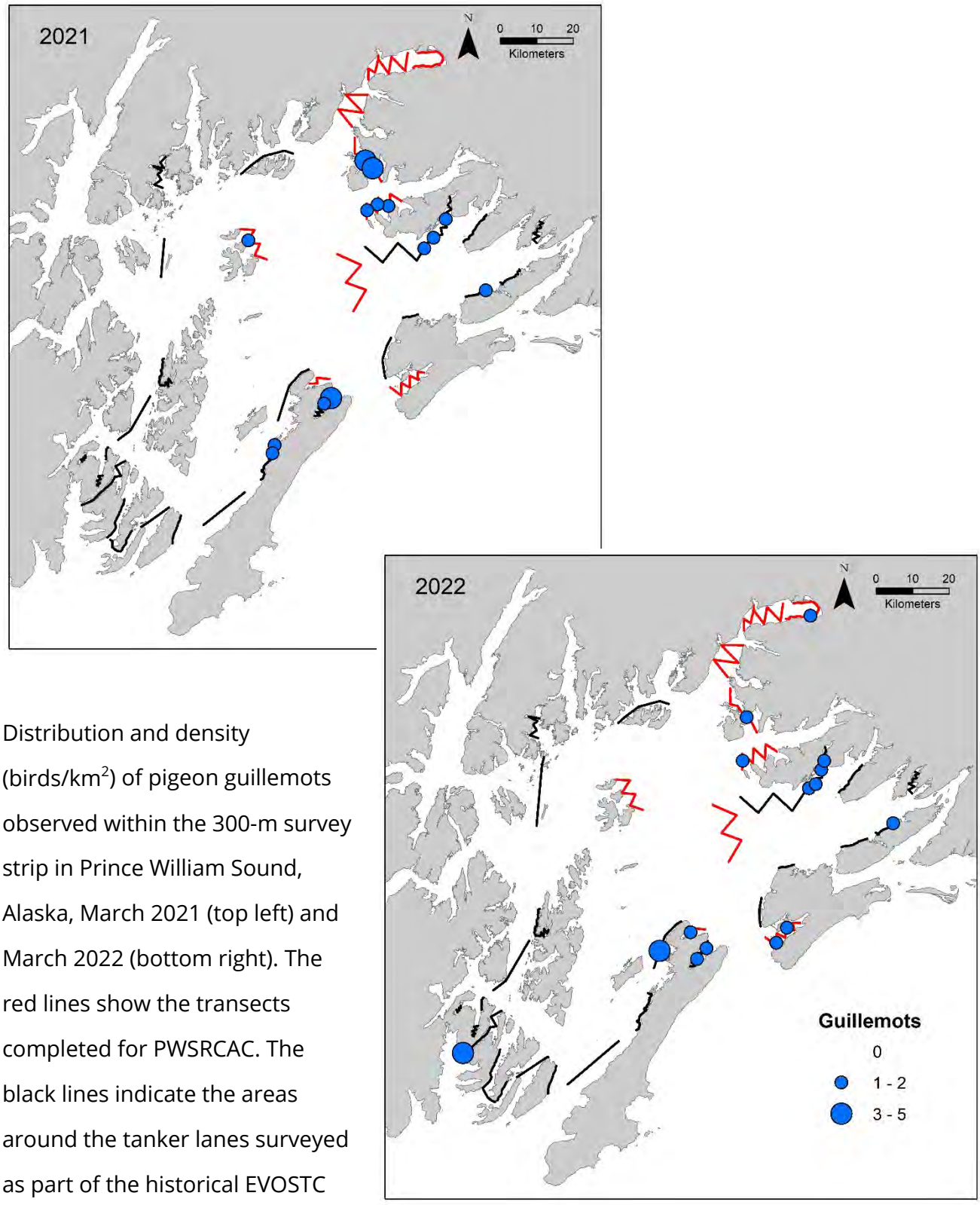


Distribution and density (birds/km^2) of common murres observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



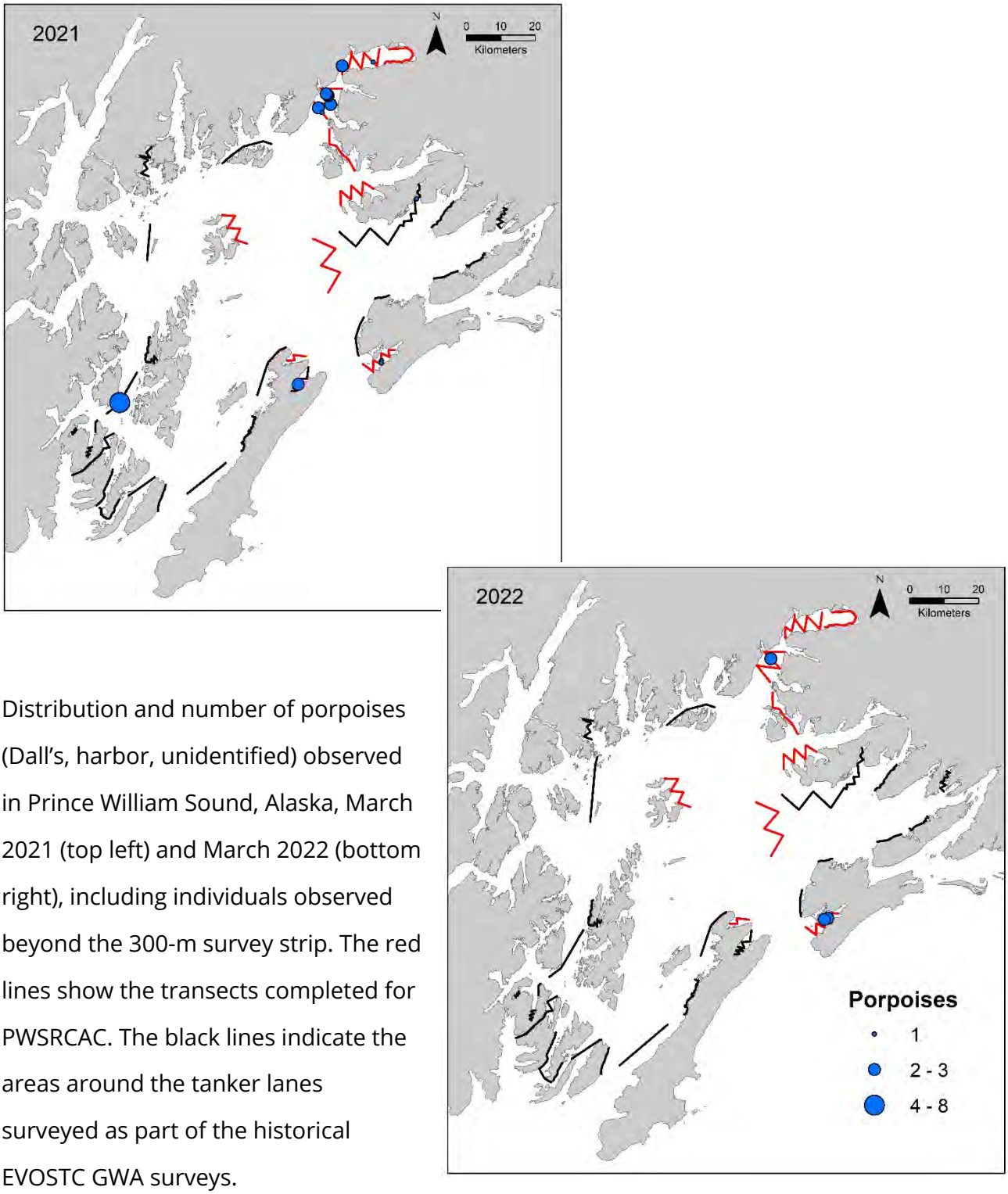


Distribution and density (birds/km^2) of murrelets (marbled, unidentified) observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

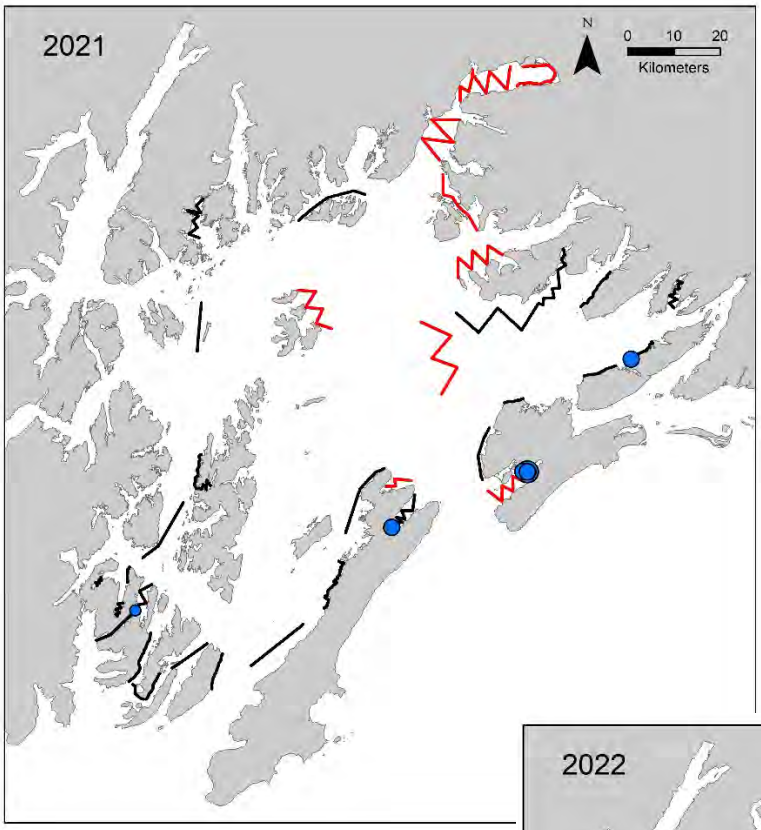


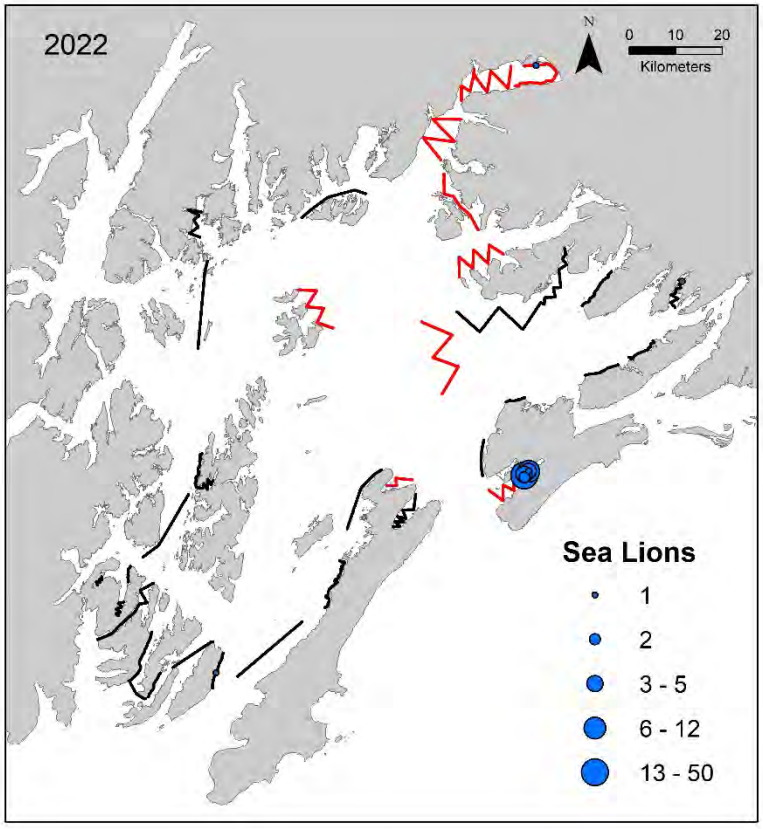
Distribution and density (birds/km^2) of pigeon guillemots observed within the 300-m survey strip in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right). The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

<u>Appendix II:</u> Marine mammal counts and distribution in Prince William Sound, Alaska, March 2021 and 2022.

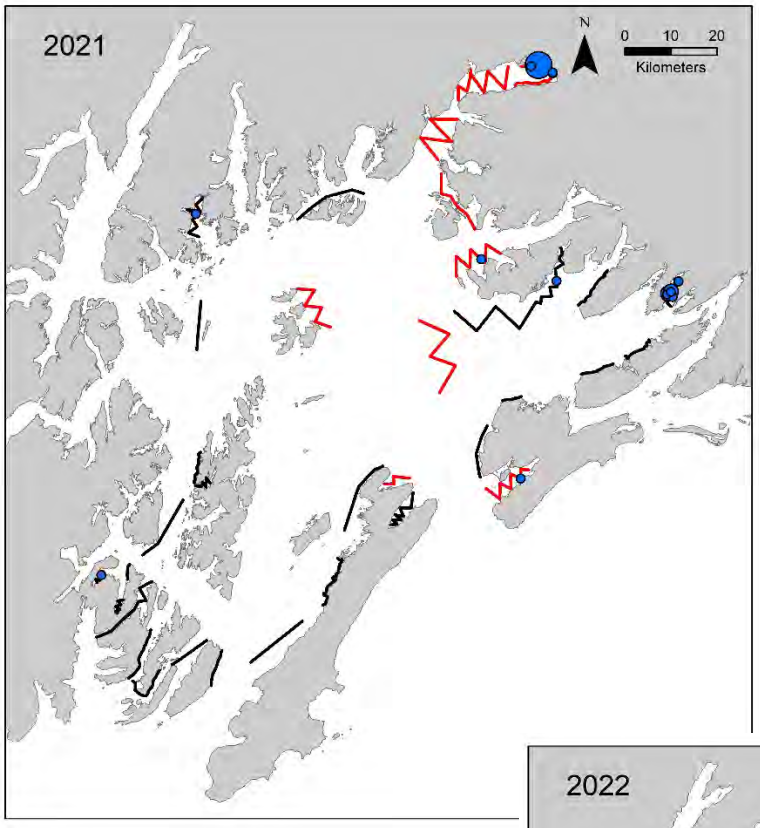


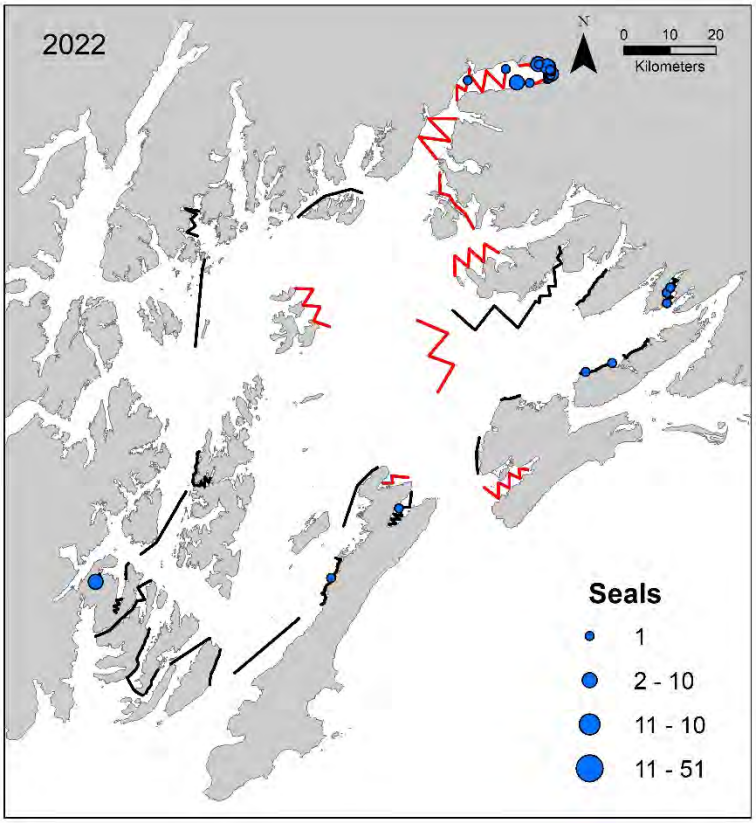
Distribution and number of porpoises (Dall's, harbor, unidentified) observed in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right), including individuals observed beyond the 300-m survey strip. The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



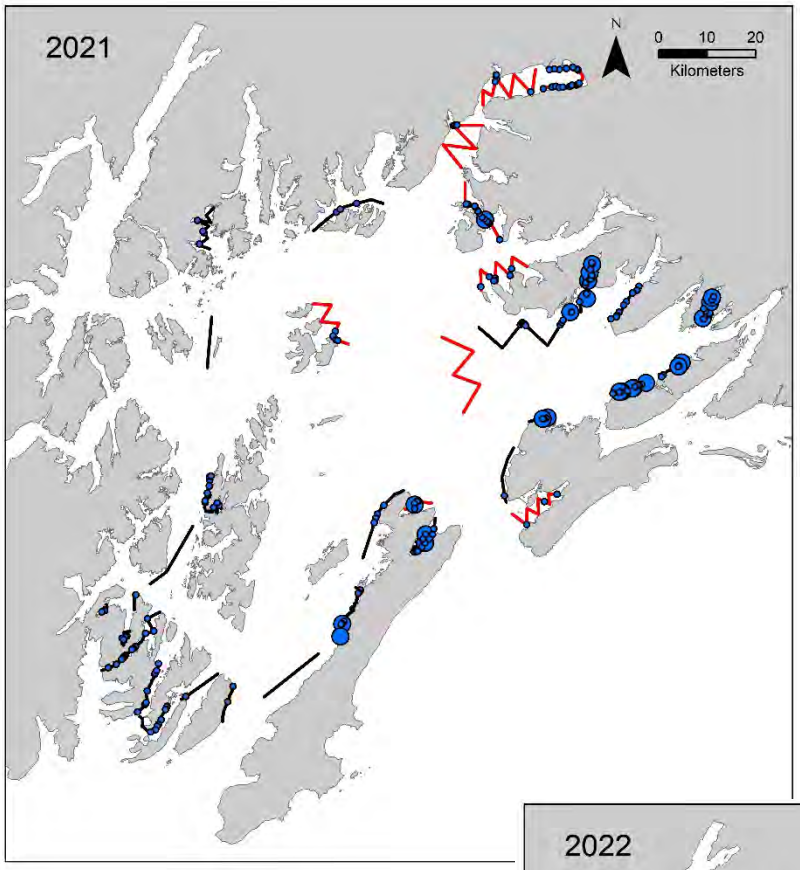


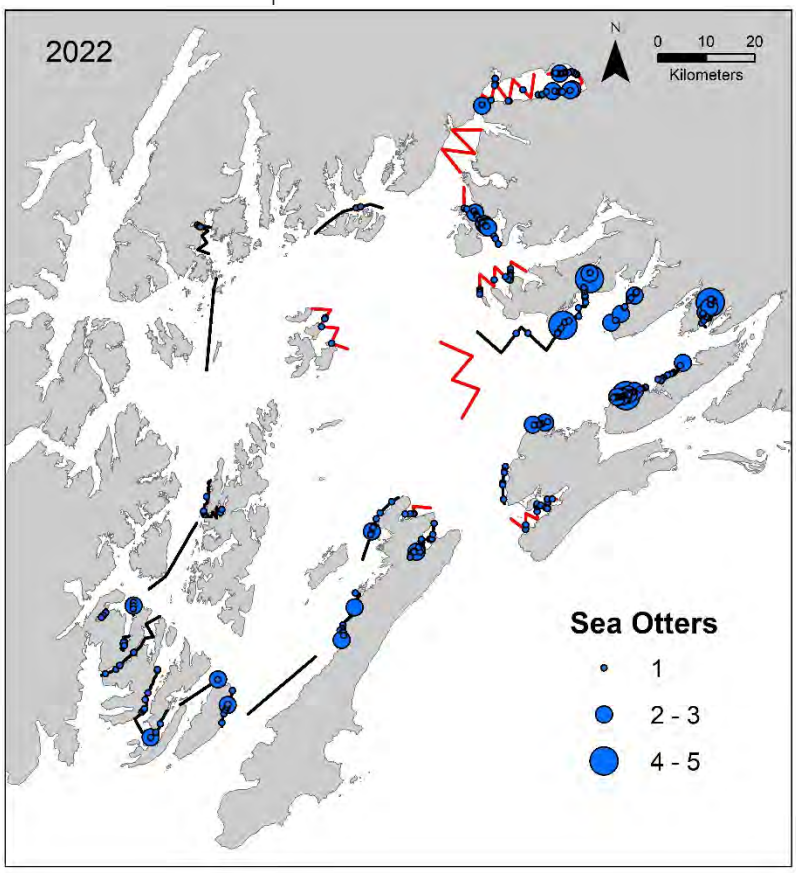
Distribution and number of Steller sea lions observed in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right), including individuals observed beyond the 300-m survey strip. The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.



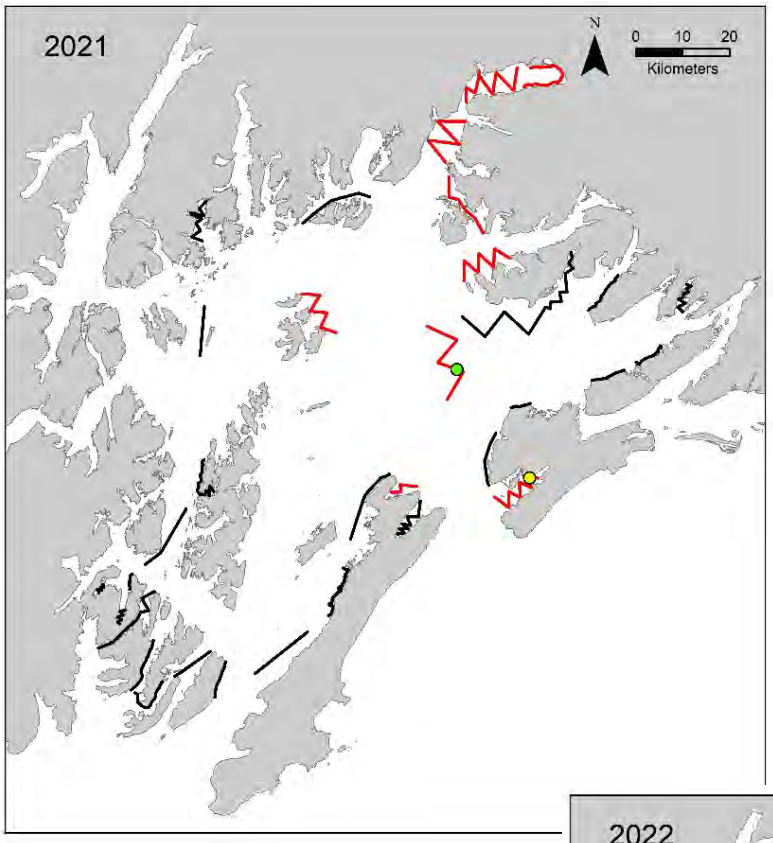


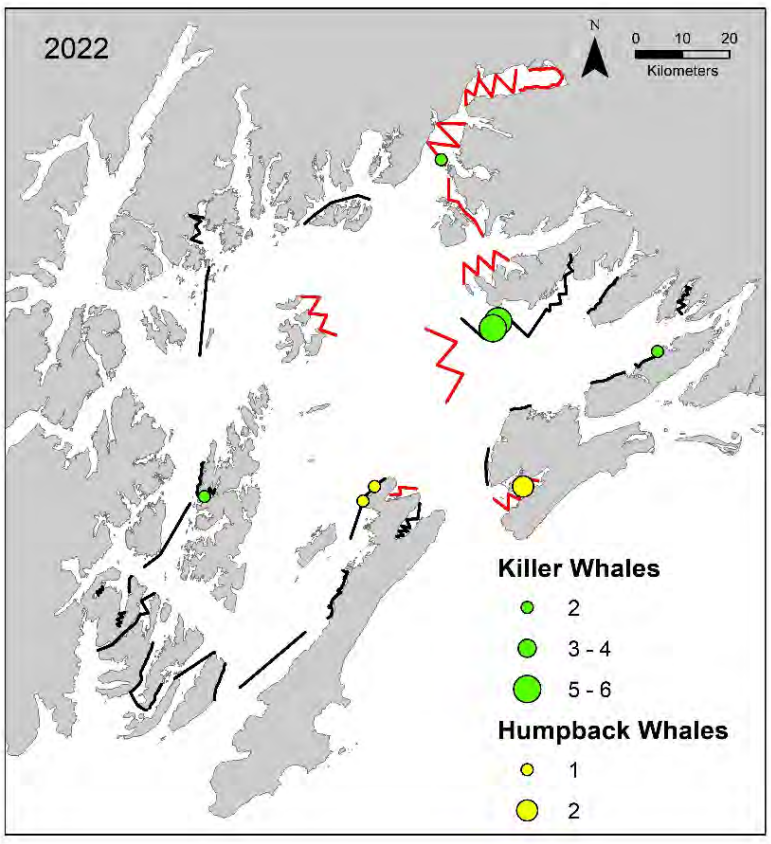
Distribution and number of harbor seals observed in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right), including individuals observed beyond the 300-m survey strip. The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.





Distribution and number of sea otters observed in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right), including individuals observed beyond the 300-m survey strip. The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.





Locations of humpback and killer whales observed in Prince William Sound, Alaska, March 2021 (top left) and March 2022 (bottom right), including individuals observed beyond the 300-m survey strip. In 2021, one humpback and two killer whales were recorded and in 2022, 4 humpback and 17 killer whales were observed. The red lines show the transects completed for PWSRCAC. The black lines indicate the areas around the tanker lanes surveyed as part of the historical EVOSTC GWA surveys.

Briefing for PWSRCAC Board of Directors – September 2022

ACTION ITEM

Sponsor: KJ Crawford and the Long Range Planning Committee

Project number and name or topic: 210 - Long Range Planning

1. **Description of agenda item:** Staff and the Long Range Planning Committee are requesting the Board review and approve a list of proposed protected projects for the upcoming Long Range Planning cycle. The proposed protected project list for this year is included as Attachment A to this briefing sheet.

The definition of a protected project is found on page 21 of the currently approved Long Range Plan and reads:

> *However, some projects—such as the Observer and the annual report—do not have clear starting and ending dates but instead are presumed to be permanent, ongoing parts of the Council's operations. Any such projects determined to be permanent and ongoing or mandatory obligations based on OPA 90 or our contract with Alyeska are to be classified as protected projects. The Board will annually review and approve any recommendations for protected projects. Protected projects are not subject to the project scoring and ranking as outlined later in the Plan.*

Protected projects have been a part of the Long Range Planning process since 2012. For many years, protected projects have been reviewed by the full Board in January, after the December project scoring process has already taken place. Since 2018, the Board has been asked to review and approve the proposed list of protected projects at the September meeting to allow any projects the Board would like removed from protected status to be scored and ranked. Changing the Board's review of protected projects from January to September aligns better with the overall project scoring process.

Through this agenda item, the full Board is also asked to participate in the current Long Range Planning effort. To help generate Board enthusiasm and participation, the Long Range Plan Guidance Memo and associated documents are included as Attachment B. Also included is the Project Briefing Sheet as Attachment C.

2. **Why is this item important to PWSRCAC?** The Board adopted the current PWSRCAC Five-Year Long Range Plan and has committed to the use of the plan and the Long Range Planning process to develop annual work plans and budgets, as well as continually revising and improving the Long Range Plan itself. The Board has directed its members and staff to work together to follow the Long Range Planning process that is now focused on preparing a draft FY2024-FY2028 work plan for consideration and adoption by the Board.

3. **Previous actions taken by the Board on this item:** A Long Range Plan for the upcoming five fiscal years has been annually approved by the Board since approximately 2001. Please contact staff for a complete and extensive list of all Long Range Planning actions.

4. **Committee Recommendation:** A recommendation from the Long Range Planning Committee will be delivered to the Board at the meeting.

Current Long Range Planning Committee members are Board members Robert Archibald, Amanda Bauer (also TOEM Chair), Angela Totemoff, and Elijah Jackson; the PWSRCAC technical committee chairs consisting of Steve Lewis (POVTS Chair), Jim Herbert (OSPR Chair), Davin Holen (SAC Chair), and Trent Dodson (IEC Chair); and IEC member Cathy Hart.

5. **Action Requested of the Board of Directors:** Approve the protected project list for the upcoming Long Range Planning process as presented in Attachment A to this briefing sheet.

Each Director is also asked to take individual action over the next several months by participating in the Long Range Planning process.

6. **Attachments:**

A: Proposed List of Protected Projects

B: Guidance Memo

- Projects ranked for FY2023
- Projects proposed for FY2023 that were not funded
- Projects proposed for out-years FY2024-FY2027
- Proposed FY2024 budget template
- One-page strategic plan
- OPA 90 & Alyeska contract requirements

C. New Project Briefing Sheet.

Attachment A

Proposed Protected Projects
For Long Range Planning

Following is a list of proposed protected projects. Definitions of these projects are presented on the following pages, along with the current Board approved funding amounts. The Board is asked to review and approve these protected projects.

OPA90 Mandated Projects

Project #	Project Name	Justification	Committee
6510	State Contingency Plan Reviews	OPA90 Mandate	OSPR
9510	LTEMP	OPA90 Mandate	SAC

Permanent/Ongoing Projects

Project #	Project Name	Justification	Committee
3200	Observer Newsletter	Permanent/ongoing	IEC
3300	Annual Report	Permanent/ongoing	IEC
3610	Web Presence BAT	Permanent/ongoing	IEC
6530	Weather Data & Sea Currents	Permanent/ongoing	OSPR/POVTS
6531	Port Valdez Weather Buoys	Permanent/ongoing	OSPR/POVTS

What is a Protected Project?

The definition of a protected project can be found the Board-approved Long Range Plan, and states:

> *However, some projects—such as the Observer and the annual report—do not have clear starting and ending dates but instead are presumed to be permanent, ongoing parts of the Council's operations. Any such projects determined to be permanent and ongoing or mandatory obligations based on OPA90 or our contract with Alyeska are to be classified as protected projects. The Board will annually review and approve any recommendations for protected projects. Protected projects are not subject to the project scoring as outlined later in this plan.*

Proposed Protected Projects:

6510 State Contingency Plan Reviews (FY2023 budget $115,000):
The purpose of this project is to monitor, review, and comment on state and federal oil discharge prevention and contingency plans (c-plans) for the Valdez Marine Terminal (VMT), the Trans-Alaska Pipeline System (TAPS) tankers that transit Prince William Sound, the Alaska Federal/State Preparedness Plan and associated Subarea Plans. As these c-plans outline prevention and response activities that would be undertaken to clean up spilled oil in the Prince William Sound region, review of these plans is a major task for PWSRCAC as outlined in both the PWSRCAC/Alyeska contract and OPA 90. Providing input and comments on prevention and response in Prince William Sound directly supports PWSRCAC's mission.

9510 Long Term Environmental Monitoring Program (FY2023 budget $104,878):
PWSRCAC initiated the Long Term Environmental Monitoring Project (LTEMP) in 1993 to satisfy the OPA 90 mandate "to devise and manage a comprehensive program of monitoring the environmental impact of the operations of terminal facilities and crude oil tankers while operating in Prince William Sound." LTEMP's normal scope of work involves collecting and analyzing blue mussel tissue, marine sediments, and passive sampling devices for hydrocarbon pollution. That monitoring takes place annually in Port Valdez at three sampling locations. Every five years more extensive mussel and passive sampling device monitoring is conducted at a total of 11 sites in Prince William Sound and the Gulf of Alaska, including the three Port Valdez sites. This project supports the PWSRCAC mission by monitoring the environment and providing the organization with the best scientific knowledge to help make informed decisions and comments pertaining to the operation and maintenance of the terminal and tankers.

3200 Observer Newsletter (FY2023 budget $7,500):
The goal of this project is to publish three Observer newsletters per year on PWSRCAC's work and issues. Both e-mail and print versions of the newsletter are produced. This project supports the Council's mission by informing the general public as well as our members and our industry and agency associates, on our issues, concerns, activities, programs, and projects.

3300 Annual Report (FY2023 budget $7,400):
The goal of this project is to prepare and publish PWSRCAC's Annual Report each year. This project supports the Council's mission by informing the general public, our member entities and our industry and agency associates of our issues, concerns and activities, programs and projects.

3610 Web Presence BAT (FY2023 budget $10,800):
This project funds Best Available Technology for the Council's public websites, committee extranet, and online presence through regular maintenance, upgrades, and new features. Every three years, a major review and technology upgrade will be conducted. The Council's web presence serves as a public communications tool and educational resource to increase public awareness of the Council, the history of the Council and citizen oversight of the oil industry, and the environmental impacts of the transportation of oil through Prince William Sound. The website is intended to foster dialog and engagement between the Council, our constituents, and the online community.

6530 Weather Data and Sea Currents (FY2023 budget $16,400):**
This project studies wind, water current and other environmental factors near the Valdez Marine Terminal, in Prince William Sound and the Gulf of Alaska that may aid navigation or affect the ability to prevent, respond to, contain, and clean up an oil spill. Much of this information is collected via the PWS Weather Station Network developed and maintained by the PWS Science Center. PWSRCAC has been a co-funding supporter of the network for over ten years.

6531 Port Valdez Weather Buoys (FY2023 budget $41,200):**
This project is to assemble, deploy and maintain two buoys capable of measuring ocean currents and common weather parameters. The first buoy is installed near Jackson Point in Port Valdez [61.0910°N 146.3811°W]. The second buoy is installed at the Valdez Duck Flats [61.1201°N | 146.2914°W]. The Prince William Sound Science Center (PWSSC) will be partnering with the Council to facilitate this project. A website showing the buoy data can be found at http://www.pwswx.pwssc.org/MOB1.html.

**** Note for weather-related projects**: One of the responsibilities the Council is charged with under the Oil Pollution Act of 1990 is to "Study wind and water currents and other environmental factors in the vicinity of the terminal facilities which may affect the ability to prevent, respond to, contain, and clean up an oil spill."

Long Range Planning Guidance Memo & Supporting Documents

This packet is intended to provide the Committees with useful information and guidance to help identify projects for fiscal years 2024-2028. The approved schedule for this year's LRP effort is as follows:

- **September 9, 2022**: External project idea deadline
- **October 2022**: Technical committees meet to develop project ideas for FY24-FY28
- **October 21, 2022**: FY24 project budget sheets due
- **November 4, 2022**: Internal management review of FY24 budget sheets due
- **November 18, 2022**: Committee prioritization of FY24 projects due
- **December 2, 2022**: Volunteer workshop to review proposed projects
- **December 5, 2022**: Board and staff ranking of projects due (Monday after workshop)
- **Early January 2023**: LRP Committee approves draft LRP for Board approval
- **January 25, 2023**: Board LRP workshop
- **January 26-27, 2023**: Board meeting to approve LRP
- **March 10, 2023**: Edits to budget briefing sheets due
- **Week of March 13, 2023**: Manager review of briefing sheets
- **Week of March 20, 2023**: "Rat killing" meeting
- **Week of April 3, 2023**: Finance Committee meeting to review proposed budget
- **April 17, 2023**: Mail budget books to Board members
- **May 3, 2023**: Budget workshop in Valdez

The information contained in this packet includes:

1) Projects ranked for FY2023
2) Projects proposed for FY2023 that were not funded
3) Projects proposed for out-years FY2024-FY2027
4) FY24 project budget template. Please note that some of the projects that were not included in this year's budget may need additional planning before they are brought back again for future years.
5) Board-approved One-Page Strategic Plan
6) List of OPA 90 and Alyeska Contractual Requirements to help in identifying what OPA 90 or Alyeska Contract requirements each project addresses.

Committees are asked to look at projects proposed for this year but not included in the budget to determine if they are still relevant. If they are still relevant, please review the goals and objectives and submit an updated budget before proposing the project again for the next fiscal year or beyond.

In addition to reviewing deferred FY23 projects, committees are also asked to develop any new projects for fiscal years 2024-2028. Committees are asked to identify priority goals and objectives, and how proposed projects fulfill these goals. When considering potential

projects, some questions that should be answered include:

- How does the project support PWSRCAC's mission?
- What OPA 90 or Alyeska Contract requirements does this project address? (See attached list)
- Which projects most directly support the high-priority goals of PWSRCAC?
- What is the rationale for continuing current projects? What will be solved or accomplished by continuing an existing project into the coming fiscal year?
- Do the projects have definitive enough goals that you will know when they're complete/finished? Are any of your committee's projects likely to continue for multiple years? Please provide a clearly defined end point for each project or indicate how long the project is expected to take to complete.
- Are there projects that would benefit by having multi-committee involvement (i.e., done in partnership with one or more other committees)?
- How will information and/or results from the program/project be used to promote PWSRCAC's mission? Objectives should be clear, specific, and measurable.

Please also think about the following:

- Would your committee like assistance from the IEC in promoting and/or educating the public on your project? IEC stands ready to help if any projects are identified and brought to them.
- If your project has a scientific component, would it benefit from SAC's review and input? SAC stands ready to help if any projects are identified and brought to them.
- Is this project likely to be supported or opposed by regulators and/or industry?
- Will this project complement work by regulators and/or industry?

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Project Scoring Matrix - Proposed FY2023 Projects

Sorted by equal weight	Sorted by total points	Staff	Lead Comm	Lead Comm Rank		FY2023 Projects	Projected FY2023 Budget	Assigned by Staff Points	Assigned by Board Points	Assigned By All Points
1	1	AS	POVTS	1	8XXX	Miscommunication in Maritime Contexts	$55,000	76	58	134
2	2	AL	TOEM	1	5591	Crude Oil Piping Inspection Review	$51,744	78	51	129
3	4	BO	IEC	3	3410	Fishing Vessel Outreach	$19,000	73	49	122
4	3	RR	OSPR	3	6536	Analysis of Port Valdez Weather Buoy Data	$17,000	75	47	122
5	5	DV	SAC	1	9550	Dispersants	$10,000	65	53	118
6	6	AL	TOEM	2	5XXX	VMT Spill Prevention Plan Review	$40,000	68	48	116
7	8	DV	SAC	2	9XXX	Update of Subsistence Harvests & Uses in PWS	$49,750	65	49	114
8	7	LS	OSPR	5	6511	History of VMT C-Planning	$50,000	69	45	114
9	9	AS	OSPR	1	65XX	Copper River Delta Weather Station	$50,000	66	46	112
10	10	AL	TOEM	3	5081	Tank 93 Maintenance Review	$60,000	64	47	111
11	11	BO	IEC	1	3530	Youth Involvement	$50,750	66	42	108
12	12	AS	POVTS	3	8012	Escort Tugboat BAT Assessment	$65,000	45	52	97
13	13	DV	SAC	5	9110	PWS Marine Bird Winter Survey	$41,700	60	34	94
14	14	AS	OSPR	6	80XX	Stricken Tanker Simulator Drift Study	$55,000	36	48	84
15	15	DV	SAC	3	9XXX	Toxicity of Treated BW Effluent to Calanoid Copepods	$86,712	38	45	83
16	16	DV	SAC	4	952X	Marine Invasive Species - Internships	$4,500	48	35	83
17	17	AS	POVTS	2	8XXX	Sustainable Shipping Phase 1	$35,000	38	43	81
18	18	DV	SAC	7	9520	Marine Invasive Species	$60,254	49	29	78
19	19	AJ	IEC	5	3562	Update Then & Now	$4,400	43	32	75
20	22	BO	IEC	2	3903	Internship	$4,000	30	40	70
21	20	JR	OSPR	4	6540	Copper River Delta & Flats Whitepaper Workshop	$22,500	38	33	71
22	21	AS	OSPR	2	6532	Mesoscale Weather Modeling	$50,000	41	29	70
23	23	DV	SAC	6	9513	Hydrocarbon Sensor Monitoring of VMT Impacts in Port Valdez	$7,500	31	32	63
24	24	AJ	IEC	4	3XXX	Connecting with Young Maritime Adults	$7,000	30	32	62
25	25	BO	IEC	6	3XXX	Cultivating Robust Engagement	$10,000	26	23	49
26	26	AS	POVTS	4	8XXX	MASS Technology Review	$35,000	15	29	44
27	27	JR	OSPR	7	6XXX	UAV Use During Spills Whitepaper	$15,000	10	28	38
28	28	DV	SAC	8	9XXX	Assessing Changes in Native Marine Invertebrates Over Time	$32,486	7	26	33

*This column was added to reflect an average ranking to negate the fact that more staff than Board members participated, and to give equal weight to Board and staff rankings.

Protected Projects - Not Ranked

Staff	Lead Cte	Lead Cte Rank		FY23 Projects	Projected FY2023 Budget
AJ	IEC	Protected	3200	Observer Newsletter	$7,500
BT	IEC	Protected	3300	Annual Report	$10,000
AJ	IEC	Protected	3610	Web BAT	$8,800
LS	OSPR	Protected	6510	State Contingency Plan Reviews	$119,000
AS	OSPR	Protected	6530	Weather Data & Sea Currents	$16,400
AS	OSPR	Protected	6531	Port Valdez Weather Buoys	$41,500
AL	SAC	Protected	9510	LTEMP	$153,850

Prince William Sound Regional Citizens' Advisory Council
FY2023 Projects Not Included in Budget

Programs & Projects

3531	Connecting with Young Maritime Adults	Johnson, Amanda	IEC	$	7,000
	Project deferred due to lack of funds and low rank in the Long Range Plan (IEC rank 4 of 6, LRP rank 24 of 28). Maybe brought back mid-year if funding allows.				
3562	Update Then & Now	Johnson, Amanda	IEC	$	5,600
	Project deferred due to lack of funds and low rank in Long Range Plan (IEC rank 5 of 6, LRP rank 19 of 28). May be brought back mid-year if funding allows.				
3621	Cultivating Robust Engagement	Oliver, Betsi	IEC	$	10,000
	Project deferred due to lack of funds and low rank in the Long Range Plan (IEC rank 6 of 6, LRP rank 25 of 28). May be brought back mid-year if funding allows.				
5591	Crude Oil Piping Inspections Review	Love, Austin	TOEM	$	51,744
	Project deferred primarily due to lack of funds. Also, compared to other planned FY2023 Terminal Operations related projects, the results of this project would not be as time sensitive as other projects. This project would also depend very heavily on Alyeska support and information, which is unknown at this time. May be brought back mid-year if funding allows and Alyeska support is secured.				
6511	History of VMT C-Planning	Swiss, Linda	OSPR	$	50,000
	Project deferred due to lack of funds and as it will require extensive preparation and organization to compile documentation, including inputting materials into the Council's Document Management system. May be brought back mid-year if work on documentation has been completed and if funding allows.				
6532	Mesoscale Weather Modeling	Sorum, Alan	OSPR	$	50,000
	Project deferred due to lack of funds and as it still requires research and identification of potential contractors capable of completing the scope of work. May be brought back mid-year if research and contractor identification has been completed, and if funding allows.				
6538	Documenting UAV Use During Spill Prevention & Response	Robida, Jeremy	OSPR	$	15,000
	Project deferred due to lack of funds and potential redundancy with a project being conducted by the Oil Spill Recovery Institute (OSRI). OSRI has commissioned a similar white paper on this topic and the finalized paper is expected in the Fall of 2022. May be brought back if staff and OSPR determine the OSRI paper does not cover the intended goals of this project and if funding allows.				
6540	Copper River Delta & Flats Geographic Response Strategy Workshop (CRDF GRS Workshop)	Robida, Jeremy	OSPR	$	22,500
	Project deferred due to lack of funding. The PWS Area contingency plan leadership also provided feedback suggesting the timing to address and work on GRS for the Copper River Delta and Flats vicinity had not arrived yet. Work affecting the greater statewide GRS program is being led by Arctic and Western Alaska Area planners and it seems the intent is to complete this work before specific areas like the Copper River Delta and Flats are addressed.				
8015	Stricken Tanker Simulator Drift Study	Sorum, Alan	OSPR	$	55,000
	Project deferred due to lack of funds and may be brought back mid-year if funding allows.				
8310	MASS Technology Review	Sorum, Alan	POVTS	$	35,000
	Project deferred due to lack of funds and low rank in Long Range Plan (POVTS rank 4 of 4, LRP rank 26 of 28). May be brought back mid-year if funding allows.				

Prince William Sound Regional Citizens' Advisory Council
FY2023 Projects Not Included in Budget

9513	Hydrocarbon Sensor Monitoring of VMT Impacts in Port Valdez Project deferred as the Council does not presently have Alyeska permission to mount a hydrocarbon sensor on the VMT weather buoy. Until such time as the Council obtains the sensor and has adequate information on the specific data that it will collect and how the data will be managed, we are not in a position to request permission or move forward with this project. May be brought back mid-year if sensor is obtained, Alyeska permission secured, and if funding allows.	Verna, Danielle	SAC	$	7,500
9641	Toxicity of Treated Ballast Water Effluent to Calanoid Copepods: Implications for Food Webs in PWS Project deferred due to lack of funds and pending support from Alyeska to move forward. To complete this project within the timeline outlined in the proposal, it would need to begin at the end of fiscal year 2022 and would require Alyeska cooperation to obtain effluent samples from the Ballast Water Treatment Facility. Alyeska may be more likely to accommodate a request for additional sample collection at the BWTF after completion and reviewing results of the ongoing oxygenated hydrocarbons project that is currently requiring extensive sampling at the BWTF. May be brought back mid-year if Alyeska support is secured and funding allows.	Verna, Danielle	SAC	$	86,712
9642	Assessing Changes in Native Marine Invertebrate Species Within the Valdez Arm Through Time Project deferred due to low rank in Long Range Plan (POVTS rank 8 of 8, LRP rank 28 of 28) based on concerns expressed by the Scientific Advisory Committee that this project did not lie within the scope and mission of the Council and that the work may be duplicative of other studies that have been completed within Port Valdez.	Verna, Danielle	SAC	$	32,486
Section Total				$	428,542
Total				$	428,542

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Programs and Projects	Current Approved FY2023	Proposed FY2024	Proposed FY2025	Proposed FY2026	Proposed FY2027
INFORMATION & EDUCATION					
3200--Observer Newsletter	$7,500	$8,000	$8,500	$9,000	$9,500
3300--Annual Report	$7,400	$10,400	$10,800	$11,200	$11,600
3410--Fishing Vessel Program Community Outreach	$16,000	$19,000	$19,000	$19,000	$19,000
3530--Youth Involvement	$50,750	$50,750	$50,750	$50,750	$50,750
3562--Update Then & Now		$4,400	$5,600		
3610--Website Presence BAT	$10,800	$7,434	$7,805	$8,195	$8,605
3903--Internship	$4,000	$4,000	$4,000	$4,000	$4,000
3XXX--Cultivating Robust Engagement		$10,000			
3531--Connecting w/ Young Maritime Adults		$7,000	$3,000		
Subtotal	$96,450	$120,984	$109,455	$102,145	$103,455
TERMINAL OPERATIONS & ENVIRONMENTAL MONITORING					
5081--Storage Tank Maintenance Review	$93,355	$60,000		$60,000	
5591--Crude Oil Piping Inspections Review		$51,744			
5XXX--VMT Oil Spill Prevention Plan Review	$40,000				
5XXX--Review of VMT Mechanical Integrity Program		$40,000			
5XXX--Ballast Water Effluent Toxicity Testing Review		$40,000			
5XXX--Regulatory Compliance Assessment		$20,000			
5XXX--Shore Power for Tankers at VMT			$40,000		
5XXX--Review of Most Recent Tank Inspection Reports			$50,000		
5XXX--Review of Air Emissions from the VMT 2000-2021			$40,000		
Subtotal	$133,355	$211,744	$130,000	$60,000	$0
OIL SPILL PREVENTION & RESPONSE					
6510--State Contingency Plan Reviews	$115,000	$127,500	$136,800	$140,904	$145,131

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6511--History of Contingency Planning		$50,000			
6530--Weather Data/Sea Currents	$16,400	$16,400	$16,400	$16,400	$16,400
6531--Port Valdez Weather Buoys	$41,200	$41,500	$41,500	$41,500	$41,500
6536--Analysis of Weather Buoy Data	$22,696	$23,377	$24,078		
6540--Copper River Delta/Flats GRS History		$22,500	$10,000		
6532--Mesoscale Weather Modeling in PWS		$50,000	$10,000	$10,000	$10,000
6XXX--Documenting UAV Use in Spill Prevention/Response		$15,000			
65XX--Lower Copper River Delta Weather Station	$5,600	$3,600	$3,600	$3,600	$3,600
7XXX--ESI Mapping Update Via ShoreZone Imagery		$75,000			
8XXX--Drifting Tanker Simulator Study		$55,000			
Subtotal	$200,896	$479,877	$242,378	$212,404	$216,631
PORT OPERATIONS & VESSEL TRAFFIC SYSTEMS					
8010--Escort Tug BAT Assessment	$65,000				
80XX--MASS Technology Review		$35,000			
8520--Miscommunication in Maritime Contexts	$55,000	$50,000	$50,000		
8300--Sustainable Shipping, Phase 1	$35,000	$35,000	$35,000		
Subtotal	$155,000	$120,000	$85,000	$0	$0
SCIENTIFIC ADVISORY					
9110--Spatial Variability of Marine Birds	$50,900				
9510--Long Term Environmental Monitoring Program	$104,878	$108,024	$111,265	$114,603	$118,041
9511--Herring/Forage Fish Survey	$4,000				
9512--Oxygenated Hydrocarbons	$52,400				
9513--Hydrocarbon Sensor			$7,500	$7,500	$7,500
9520--Marine Invasive	$64,754	$190,846			
9550--Dispersants	$30,880	$10,000	$10,000		

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9643--Comprehensive Update of Subsistence Harvests & Uses in PWS	$49,750	$99,350	$81,050		
9641--Toxicity of Treated Ballast Water Effluent to Calanoid Copepods			$86,712	$80,034	
Subtotal	$357,562	$408,220	$296,527	$202,137	$125,541
Committee Subtotals	$943,263	$1,340,825	$863,360	$576,686	$445,627
PROGRAMS					
3100--Public Information	$6,485	$6,680	$6,880	$7,086	$7,299
3500--Community Outreach	$50,175	$51,680	$53,231	$54,828	$56,472
3600--Public Communications Program	$8,039	$4,300	$5,000	$5,150	$5,305
4000--Program and Project Support	$1,679,047	$1,729,418	$1,781,301	$1,834,740	$1,889,782
4010--Digital Collections Program	$5,000	$5,150	$5,305	$5,464	$5,628
5000--Terminal Operations Program	$10,000	$10,300	$10,609	$10,927	$11,255
6000--Spill Response Program	$9,200	$16,000	$16,000	$16,000	$16,000
7000--Oil Spill Response Operations Program	$4,450	$7,235	$7,420	$7,605	$7,790
7520--Preparedness Monitoring	$30,400	$44,400	$50,400	$51,912	$53,469
8000--Maritime Operations Program	$12,000	$13,000	$13,000	$13,000	$13,000
9000--Environmental Monitoring Program	$15,500	$12,100	$12,100	$12,100	$12,100
Subtotal	$1,830,296	$1,900,263	$1,961,245	$2,018,812	$2,078,100
LEGISLATIVE AFFAIRS					
4400--Federal Government Affairs	$64,100	$66,023	$68,004	$70,044	$72,145
4410--State Government Affairs	$33,100	$34,093	$35,116	$36,169	$37,254
Subtotal	$97,200	$100,116	$103,119	$106,213	$109,399
BOARD OF DIRECTORS					
1350--Information Technology	$500	$515	$530	$546	$563
2100--Board Administration	$126,630	$130,429	$134,342	$138,372	$142,523
2150--Board Meetings	$145,000	$149,350	$153,831	$158,445	$163,199
2200--Executive Committee					
2220--Governance					
2222--Finance Committee					

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2700--Legislative Affairs Committee	$18,175	$18,720	$19,282	$19,860	$20,456
Subtotal	$290,305	$299,014	$307,985	$317,224	$326,741
COMMITTEES & COMMITTEE SUPPORT					
2250--Committee Support	$193,784	$199,598	$205,585	$211,753	$218,106
2300--Oil Spill Prevention & Response	$6,600	$6,798	$7,002	$7,212	$7,428
2400--Port Operations & Vessel Traffic System	$6,600	$6,798	$7,002	$7,212	$7,428
2500--Scientific Advisory Committee	$10,800	$11,124	$11,458	$11,801	$12,155
2600--Terminal Operations & Environmental Monitoring	$6,600	$6,798	$7,002	$7,212	$7,428
2800--Information and Education Committee	$7,400	$7,622	$7,851	$8,086	$8,329
Subtotal	$231,784	$238,738	$245,900	$253,277	$260,875
GENERAL & ADMINISTRATIVE					
1000--General and Administrative	$538,738	$554,900	$571,547	$588,694	$606,354
1050--General and Administrative--Anchorage	$153,486	$158,091	$162,833	$167,718	$172,750
1100--General and Administrative--Valdez	$158,044	$162,785	$167,669	$172,699	$177,880
1300--Information Technology	$108,128	$111,372	$114,713	$118,154	$121,699
Subtotal	$958,396	$987,148	$1,016,762	$1,047,265	$1,078,683
Subtotals	$4,351,244	$4,866,104	$4,498,371	$4,319,477	$4,299,426
Contingency (Current Year Budget)	$50,000	$50,000	$50,000	$50,000	$50,000
Total Expenses	$4,401,244	$4,916,104	$4,548,371	$4,369,477	$4,349,426

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Prince William Sound Regional Citizens' Advisory Council
One-Page Strategic Plan

Mission Statement: Citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers

Link to full FY2023-FY2027 Long Range Plan

Core Purpose: Citizen oversight to prevent oil spills, minimize environmental impacts, and promote response readiness

Core Values

- Represent the interests of our stakeholders by providing an effective voice for citizens
- The foundation of PWSRCAC is volunteerism
- Promote vigilance and combat complacency
- Organizational transparency and integrity through truth and objectivity
- Foster environmental stewardship

Overarching Goals and Objectives (see pages 14-16 for a more complete list of objectives)

- Compliance with OPA90 and Alyeska contractual requirements.
  ☐ (1) Annual re-certification and funding
  ☐ (2) Maintain regional balance
  ☐ (3) Link projects and programs to OPA90 and Alyeska contract

- Continue to improve environmental safety of oil transportation in our region.
  ☐ (4) Monitor and review development of, and compliance with, laws and regulations
  ☐ (5) Pursue risk-reduction measures and promote best available technologies and best practices
  ☐ (6) Monitor operations and promote a safe and clean marine terminal
  ☐ (7) Monitor and review the condition of the tanker fleet/maritime operations
  ☐ (8) Monitor and promote the safe operation of all Alyeska/SERVS-related on-water assets
  ☐ (9) Monitor and review environmental indicators
  ☐ (10) Promote and facilitate effective research for scientific, operational and technical excellence

- Develop and maintain excellent external and internal communication.
  ☐ (11) Advocate for government and industry measures to improve the environmental safety of oil transportation
  ☐ (12) Maintain and improve relationships with government, industry and communities
  ☐ (13) Be the model for citizen oversight and provide support for other citizens' advisory groups
  ☐ (14) Ensure availability of PWSRCAC information
  ☐ (15) Work to improve availability of information to PWSRCAC from industry sources

- Achieve organizational excellence.
  ☐ (16) Effective short and long term planning, with clear and measurable goals for projects
  ☐ (17) Fiscally responsible, efficient, and easily understood financial procedures and reporting
  ☐ (18) Committed to continuous improvement
  ☐ (19) Recognize people as the most important asset of the organization
  ☐ (20) Recruit and develop knowledgeable and committed Board members, volunteers, and staff
  ☐ (21) Strong volunteer structure and support for volunteers

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OPA 90 and Alyeska Contractual Requirements

PWSRCAC's structure and responsibilities stem from the Oil Pollution Act of 1990 (OPA 90) and our contract with Alyeska Pipeline Service Company (Alyeska). These documents guide our organization and it is important to review the following requirements, and if possible the source documents, when developing proposed projects for Board consideration and approval. Following are abbreviated summaries of some of the major requirements from both documents. Please check the box next to each requirement that the proposed project addresses.

Link to full text of OPA 90 Sec 5002: Terminal and Tanker Oversight and Monitoring, August 18, 1990
Link to full text of contract between PWSRCAC and Alyeska, February, 1990

OPA 90 Contractual Requirements

☐ (1) Regional Balance, broadly representative of communities and interests in the region.
☐ (2) Provide advice to regulators on the federal and state levels.
☐ (3) Provide advice and recommendations on policies, permits, and site-specific regulations relating to the operation and maintenance of terminal facilities and crude oil tankers.
☐ (4) Monitor the environment impacts of the operation of terminal facilities and crude oil tankers, as well as operations and maintenance that affect or may affect the environment in the vicinity of the terminal facilities.
☐ (5) Review the adequacy of oil spill prevention and contingency plans for the terminal facilities and crude oil tankers operating in Prince William Sound and review the plans in light of new technological developments and changed circumstances.
☐ (6) Provide advice and recommendations on port operations, policies, and practices.
☐ (7) Conduct scientific research and review scientific work undertaken by or on behalf of the terminal or oil tanker operators or government entities.
☐ (8) Devise and manage a comprehensive program of monitoring the environmental impacts of the operations of the terminal facility and crude oil tankers.
☐ (9) Monitor periodic drills and testing of oil spill contingency plans.
☐ (10) Study wind and water currents and other environmental factors in the vicinity of the terminal that may affect the ability to prevent, respond to, contain, and clean up an oil spill.
☐ (11) Identify highly sensitive areas that may require specific protective measures.
☐ (12) Monitor developments in oil spill prevention, containment, response, and cleanup technology.
☐ (13) Periodically review port organizations, operations, incidents, and the adequacy and maintenance of vessel traffic service systems designed to ensure safe transit of crude oil tankers pertinent to terminal operations.
☐ (14) Periodically review the standards for tankers bound for, loading at, exiting from, or otherwise using the terminal facilities.
☐ (15) Foster partnerships among industry, government, and local citizens.

Alyeska Contractual Requirements

☐ (1) Provide local and regional input, review and monitoring of Alyeska's oil spill response and prevention plans and capabilities, environmental protections capabilities, and the actual and potential environmental impacts of the terminal and tanker operations.
☐ (2) Increase public awareness of subjects listed above.
☐ (3) Provide input into monitoring and assessing the environmental, social, and economic consequences of oil related accidents and actual or potential impacts in or near Prince William Sound.
☐ (4) Provide local and regional input into the design of appropriated mitigation measures for potential consequences likely to occur as a result of oil or environmental related accidents or impacts of terminal and tanker operations.
☐ (5) Provide recommendations and participate in the continuing development of the spill prevention and response plan, annual plan review, and periodic review of operations under the plan including training and exercises.
☐ (6) Other concerns: comment on and participate in selection of research and development projects.
☐ (7) Review other important issues related to marine oil spill prevention and response concerns that were not obvious with the contract was signed.
☐ (8) Review other concerns agreed upon by the Council regarding actual or potential impacts of terminal or tanker operations.

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Attachment C

Prince William Sound Regional Citizens' Advisory Council
Budget Briefing Sheets FY-2024

Type:
☐ Capital project (Note: separate Capital Projects checklist required)
☐ Program ☐ Protected
☐ Project ☐ Protected
☐ Program/Project Support

Project Number:
Project Title:
Lead Staff:
Project Team Members:
Cross Committee Interest (If yes, which committees):

1. Description
    a. Provide a short description of the program/project.
    b. Why is this program/project necessary? What need or information gap is being addressed?
    c. How will information or results be used?
    d. How will program/project success be measured?
2. Program/project goals and objectives [Should be clear, specific, and measurable with starting and ending dates.]
3. Strategic plan and mission
    a. Which strategic goal(s) or objective(s) does this program/project advance? [Check all that apply on attached strategic plan page.]
    b. How/why does the proposed program/project advance PWSRCAC's mission?
    c. Which OPA 90 and Alyeska contract requirements does it address? [Check all that apply on attached OPA 90/Alyeska contract page.]
4. Project Implementation
    a. How will the program/project be accomplished? (e.g., with in-house staff and/or outside contractors, etc.? Please estimate project manager time in hours.)
    b. Does the program/project require Alyeska or shipper cooperation?
    c. Is this an ongoing program/project? If not, when will it start and when will it be finished?
    d. Does the program/project involve partnership or cost sharing with other organizations?
5. Budget (3 year, if applicable). Provide detail for each cost item and summarize on attached budget sheet by account category
    a. What is the total cost of the program/project over its life?
    b. How much was previously spent on this program/project? (This information may be obtained from the financial manager.)

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Budget

Acct #	Account Title	Notes	FY-2024	FY-2025	FY-2026
50000	Salaries and Wages				
50100	Employer Payroll Taxes				
50400	Group Health Insurance				
50500	Rents				
50600	Utilities—Telephone & Data				
50700	Supplies (consumable)				
50800	Equipment Leases				
50850	Software & Software Subscriptions	Included only in 1300 budget.			
50900	Internet & E Mail Access	Included only in 1300 budget.			
51000	Equipment Purchases (Non-capitalized < $5,000)	Generally, anything $5,000 and more is depreciated over the asset's useful life.			
51100	Dues and Subscriptions	Magazine and other subscriptions.			
51200	Accounting	Included only in 1000 budget.			
51300	Legal Fees				
51450	Professional Fees -- Other				
51600	Advertising				
51700	Education	Tuition and other training expenses, excluding travel.			
51800	Printing & Reproduction				
51900	Postage, Delivery & Shipping				
52300	Conference & Conventions	Conference registration fees and other conference costs, excluding travel.			
52400	Equipment Maintenance				
53000	Insurance	Excluding group health insurance.			
54000	Library & Reference Materials				
55100	Recruiting Expenses				
57000	Research Contributions				
58000	Depreciation & Amortization				
59000	Miscellaneous				
59500	Contracts				
60000	Travel	Describe who is traveling, where they are going, and for what purpose.			
61000	Business Meals				
62000	Meeting Expenses	Meeting room rental and catering expenses.			
	Total				

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Executive Director Eval Review Committee Update & Way Forward 4-11

Briefing for PWSRCAC Board of Directors – September 2022

INFORMATION ITEM

Sponsor: Robert Archibald
Project number and name or topic: Executive Director Evaluation Review Committee Update

1. Description of agenda item: At its March 8, 2022 special meeting, the Board approved establishing an ad hoc committee to review the annual Executive Director evaluation process. Then in May, an ad hoc committee was appointed including the following members: Ben Cutrell Robert Beedle, Amanda Bauer, Aimee Williams, Angela Totemoff, Robert Archibald, and Bob Shavelson.

The committee has met twice over the summer and has developed a recommendation for Executive Director annual evaluations going forward. The purpose of this agenda item is to update the Board of the committee's recommendation to gain consensus from the group going forward, and to review the proposed questions to be used for a 360 Evaluation.

2. **Why is this item important to PWSRCAC:** Regular evaluation of the Executive Director along with clear communications of the expectations and goals of the Board for the Executive Director position is critical to the success of the organization.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/5/2022	Appointed the following Board members to the ad hoc Executive Director Evaluation Review Committee: Ben Cutrell, Robert Beedle, Amanda Bauer, Aimee Williams, Angela Totemoff, Robert Archibald, Bob Shavelson.

4. **Summary of policy, issues, support, or opposition:** The process and schedule for evaluating the Executive Director is outlined in policy 621.

5. **Committee Recommendation:** The prosed questions to be used for a 360 Evaluation will be delivered to the Board in Executive Session.

6. **Action Requested of the Board of Directors:** None, although action will need to be taken to enter into Executive Session to review the proposed questions noted in item five above.

7. **Attachments:** Any supporting materials will be provided to the Board under separate cover.

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PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

September 2022
Status Report
As of August 8, 2022

3100 – Public Information Program

Objectives: Inform general public, member entities, and agency and industry partners of PWSRCAC projects. Support legal requirements for ongoing updates to the public.

Accomplishments since last report: Staff continues to inform the general public and others about PWSRCAC's projects and mission through publications and online presence.

3300 – Annual Report

Objectives: Prepare and publish PWSRCAC's Annual Report each year to inform the general public, member entities, and agency and industry partners of PWSRCAC projects and activities; and support legal requirements for ongoing updates to the public.

Accomplishments since last report: Staff are working to develop the content for the 2021-2022 report. Work with the graphic design contract has also begun.

3410 – Fishing Vessel Program Community Outreach

Objectives: For bringing the realities of oil spill response tactics, equipment, and planning to life for citizens within the Exxon Valdez oil spill region communities, the fishing vessel community outreach program is a perfect venue. Each fall and spring SERVS holds its fishing vessel program training in the following communities: Cordova, Valdez, Whittier, Seward, Homer, and Kodiak. The on-water portion of the training, in partnership with Alyeska/SERVS, shows real-time capabilities of oil spill prevention and response equipment and tactics. This project contracts a local tour boat that will allow interested students, members of the public, and media to observe and learn about oil spill prevention and response.

Accomplishments since last report: The event in Seward took place on April 14, 2022. The Council partnered with Alyeska and Major Marine Tours to provide a 2- hour cruise, free for the public, to observe the on-water exercises of the fishing fleet SERVS training. Information on the event was provided during the Council outreach update presentation at the May 2022 Board meeting. The next event is likely to take place in Spring of 2023 either in Valdez or Cordova.

3500 – Community Outreach Program

Objectives: Increase awareness of PWSRCAC and increase communications with member organizations and communities in the Exxon Valdez oil spill region.

Accomplishments since last report: Recent outreach events include:

- **May 17-19** Shipper drill – PWSRCAC staff participate as observers and evaluators
- **May 23** *PWS Natural History Symposium*

  - Hybrid, onsite in Whittier (~50 attended) and online (~190 registered). They used Frostline Media to run onsite cameras and Crowdcast conference platform.
  - Hosted by PWS Stewardship Foundation. PWSRCAC are sponsors and presenters.
  - Betsi Oliver presented an intro to EVOS history, Coping with Technological Disasters Guidebook, and Regional Stakeholder Committee resources developed by the Council.
  - Mia Siebenmorgen Creswell presented on her work with invasive species.
- **May 24** RCAC 101 Valdez Guides' Orientation (29 attended)
- **June 4** PWS Science Center *Copper River Nouveau* and ribbon cutting on new facility
- **June 13-14** Presentation to teachers' course with NPS in Seward

The Council hired a new Outreach Coordinator, Maia Draper-Reich, to replace the out-going coordinator Betsi Oliver, who left to pursue a graduate degree. Maia's first day was August 8, and has since been working to learn her new responsibilities and duties.

3530 – Youth Involvement

Objectives: Select proposals for youth activities, in collaboration with partner agencies and organizations throughout the Exxon Valdez oil spill region. Coordinate activities to facilitate hands-on learning about topics related to the Council's mission. Where appropriate and feasible, participate in mission-relevant youth activities.

Accomplishments since last report: The Information and Education committee reviewed two project proposals and moved to accept both for FY2023 funding: Chugach Mountain Institute for $5000 and Environmental Undergraduate Research Experience: PWS College for $4896.
Three projects completed their final reporting requirements:

- Natural History Symposium Youth Involvement through the PWS Stewardship Foundation engaged 25 youth from the region in the live Symposium virtually and/or in person in Whitter for the first ever Youth Track.
- Inspiring Girls to Reach for the (Sea)Stars through the Center for Alaskan Coastal Studies conducted an afterschool science club for youth in Homer with a theme this year of water.
- Remotely Operated Vehicle (ROV) Challenge at Alaska's Tsunami Bowl through the PWS Science Center (PWSSC) was held, along with PWSSC finishing and distributing an ROV guide to educators who want to run their own ROV education programs.

3600 – Public Communications Program

Objectives: This program disseminates information and increases awareness through the Observer newsletter and the Council's online presence. This program helps publicize information generated from the Council's technical committee projects. Project results and information will be disseminated in a format that is easily understood by the general public.

Accomplishments since last report: The Public Communications Project Manager attended the Nonprofit Technology Conference in March. Agenda: https://www.nten.org/ntc/ This event was held online due to the pandemic. Please contact Amanda Johnson for more information about this conference.

The Observer: The Council's newsletter, *The Observer*, is produced three times per year in both print and email format.

3610 – Web Best Available Technology

Objectives: This project helps ensure the Council's websites and web presence uses the best and most up-to-date technology available by funding new features, repairs, and upgrades to the Council's websites. This includes regular maintenance and technical upgrades as well as upgrades to such aspects as user experience and branding.

Current projects: Staff is implementing security upgrades and preparing for a technical upgrade.

Website data: Website usage for www.pwsrcac.org is tracked through Google Analytics for information such as numbers of visitors, location of visitors, how visitors found the site, which pages are visited most often, how much time is spent on particular pages, whether visitors were engaged enough to visit more than one page and much more.

Hot topics from 5/28/2022 to 7/28/2022 (other than home page).

1. Updated Coping with Technological Disasters content
2. Regional Stakeholder Committee resources
3. Alaska Oil Spill Lesson Bank
4. Columbia Glacier
5. Requests for Proposals
6. Staff/Volunteers
7. Exxon Valdez oil spill and Personal Stories from EVOS (The Spill and Project Jukebox interviews)
8. Drills and exercises (response operations)
9. Contingency plans
10. Ballast Water Treatment Facility

Please contact Project Manager Amanda Johnson if you would like more details.

3620 – Connecting with Our Communities

Objectives: Contract with a public relations firm to work with the Council to develop a long-term communications and public image strategy. Develop Council image, messaging, and voice, as well as contemporary ways to communicate who we are to the public within the EVOS region and beyond. Implement the strategy and evaluate its effectiveness in the short run. Make changes as necessary and implement for the long term.

Accomplishments since last report: The last major deliverable for the contracted portion of this project, media training, was held April. All remaining work with the contractor, Helvey Communications, was completed by June 30. Internal work by staff will continue around the project's objectives going forward into the foreseeable future (not as a budgeted item).

3903 – Youth Internship

Objectives: Coordinate with regional secondary and/or higher education institutions to recruit students for internships, coordinate with other committees to help support students' education goals while meeting appropriate PWSRCAC project needs.

Accomplishments since last report: A new intern will be recruited this fall for a spring semester term.

5000 – Terminal Operations Program

Objectives: The goal of the Terminal Operations and Environmental Monitoring Program is to prevent hazardous liquid spills and minimize the actual and potential environmental impacts associated with the operation and maintenance of the Valdez Marine Terminal.

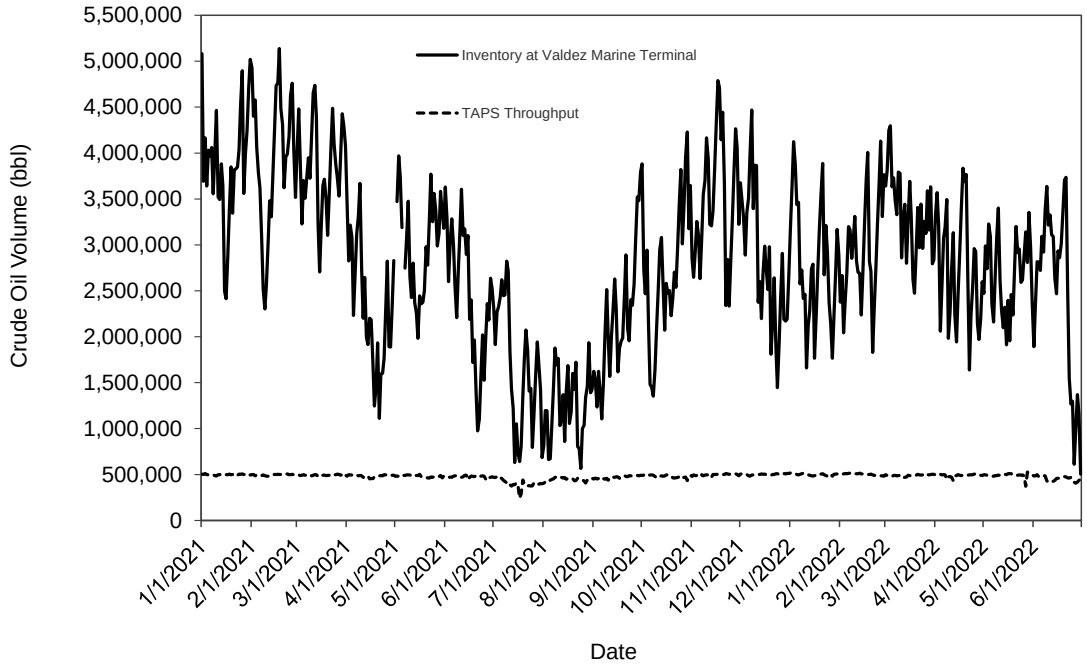
Accomplishments since last report:

- The Council is still waiting for a complete written response from Alyeska to the Tank 8 Maintenance Review Project and Cathodic Protection Systems Review Project recommendations sent to Alyeska on 6/14/2021. Council staff and contractor, Taku Engineering, met with Pipeline Hazardous Materials Safety Administration (PHMSA) representatives on 6/29/2022 to summarize these recommendations and discuss their potential implications.
- Bill Mott (Taku Engineering) wrote a technical memo (dated 4/18/2022) describing concerns related to the potential buildup of oxygen in the crude tanks while Alyeska was working to address the crude tank vent damages caused by snow and ice buildup on the tank tops this winter. The memo also included some initial recommendations related to the tank vent damages and requests for information from Alyeska (information to confirm/deny the oxygen concentration concerns). The technical memo was provided to Alyeska (on 4/19/2022) and the Council requested the information listed in the memo, but to date that information has not been provided by Alyeska.
- Council staff and the TOEM Committee continue to monitor multiple investigations and inquiries being conducted by ADEC, PHMSA, EPA, and Alaska Occupational Safety and Health (AKOSH) regarding the February/March 2022 tank vent damages. Council staff have received, organized, and shared information with these agencies to assist with their investigations.
- Council staff and the TOEM Committee continue communications with Alyeska regarding their work to permanently repair and prevent future damage to the tank vents.
- The secondary containment liner leak model and report were finalized and shared with Alyeska, ADEC, BLM, and the EPA. Council staff have been working with Alyeska and ADEC staff to design the August 11, 2022 secondary containment “tabletop” spill exercise. The results of that exercise should be helpful to update the liner leak model and report.

Attachments: Graphs depicting a variety of data related to the operation and environmental impacts of the Valdez Marine Terminal.

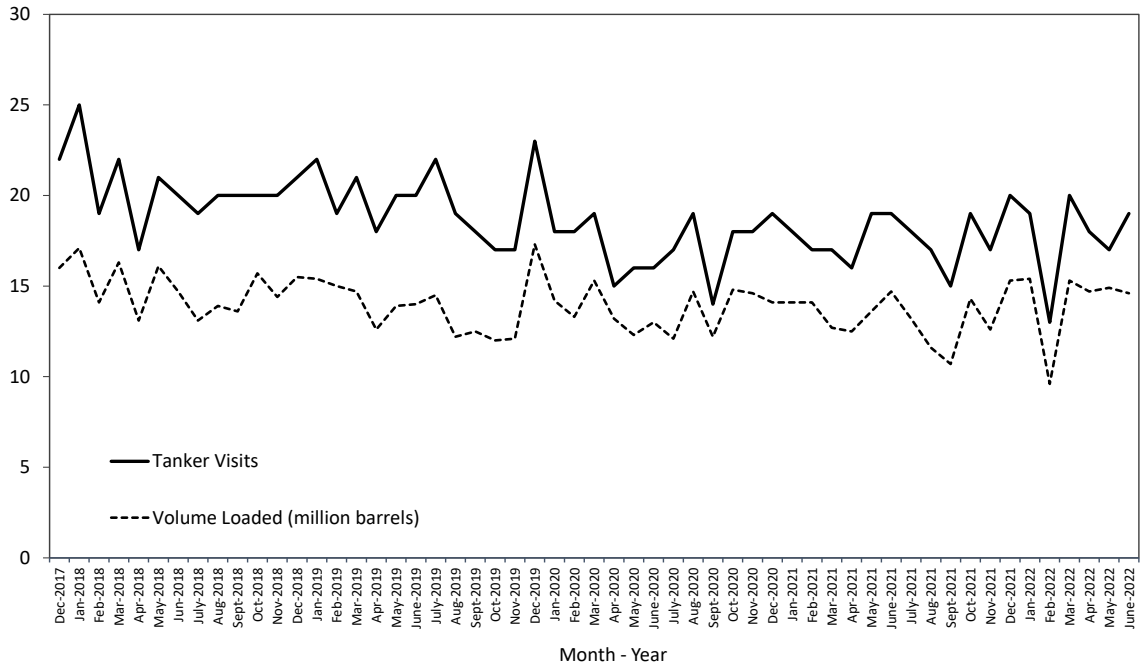
Daily Oil Inventory at the Valdez Marine Terminal and Trans-Alaska Pipeline Throughput

(Source: Alaska Department of Revenue - Tax Division, http://tax.alaska.gov/programs/oil/production.aspx)



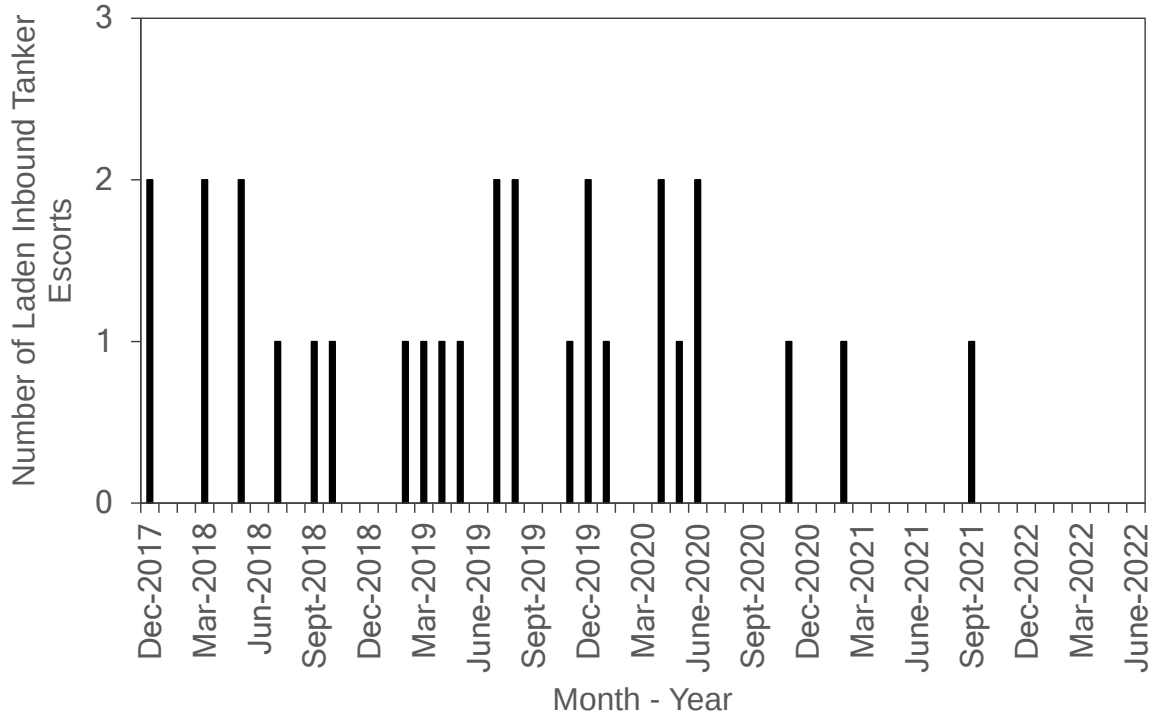
Number of tanker visits and crude oil volume loaded onto ships from VMT.

(Source: Alyeska Pipeline Service Company. Partitioned by VMT vessel arrival date).



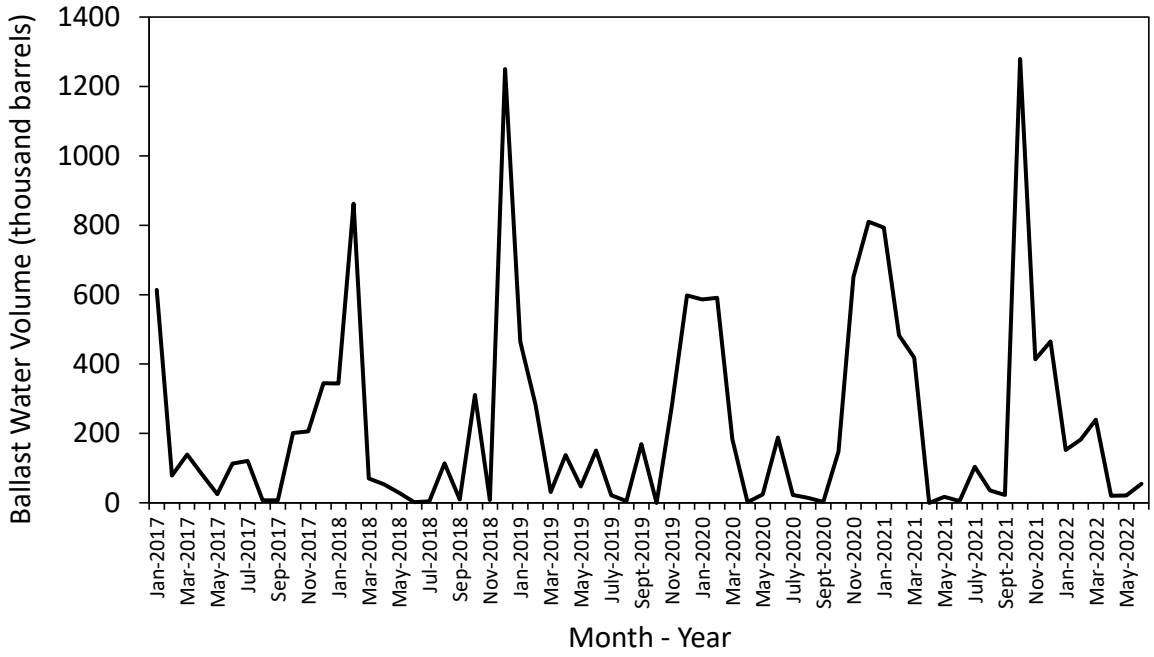
Inbound, laden tanker escorts to VMT.

(Source: Alyeska Pipeline Service Company. Partitioned by VMT vessel arrival date)

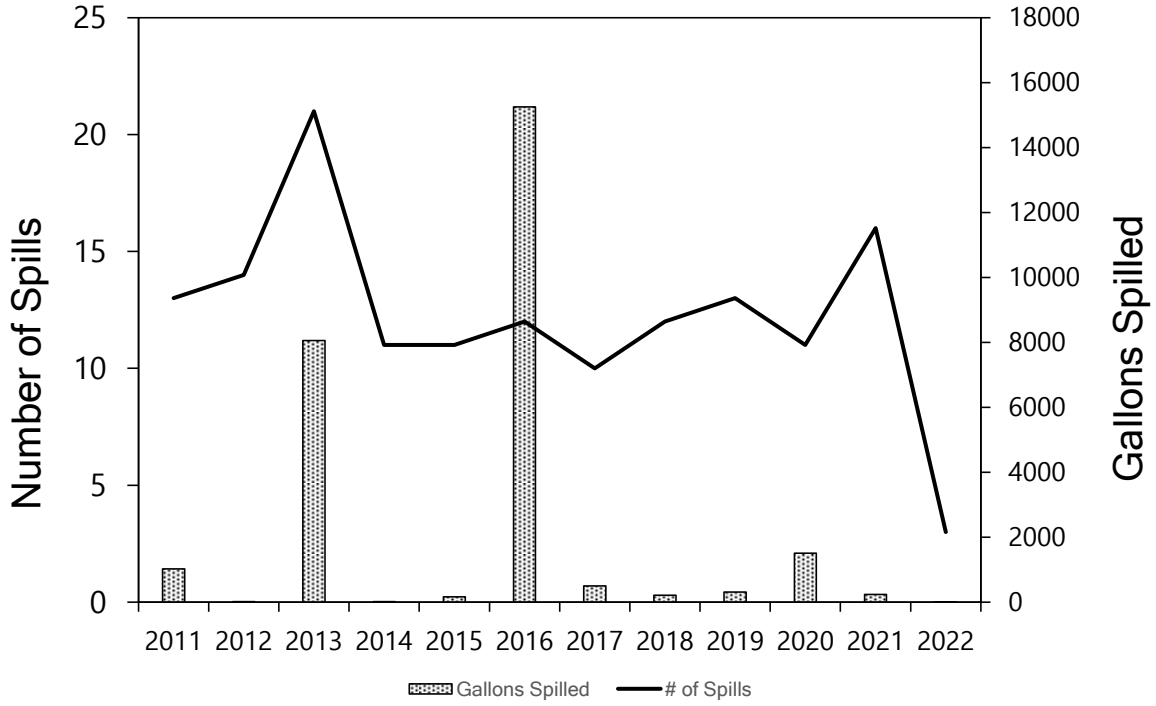


Monthly ballast water deliveries to Ballast Water Treatment Facility from tanker ships

(Source: Alyeska Pipeline Service Company. Partitioned by VMT vessel arrival date.)



Annual spills associated with the operation and maintenance of the VMT. This chart shows all spills, of all types (e.g., hydraulic fluid, crude oil, lube oil, ballast water, PFAS-fire foam), to containment or to the environment (i.e., land or water)
(Source: Alyeska Pipeline Service Company)



The goal of this project is to minimize the risk of hydrocarbon spills from the Valdez Marine Terminal through review of Alyeska's Oil Spill Prevention Plan documentation and implementation.

Accomplishments since last report: Council staff are drafting a request for proposals to solicit bids from contractors to perform the scope of work.

5053 – System Integrity Review

Objectives: This project was developed to review and assess information provided to PWSRCAC by concerned Alyeska employees related to system integrity and safety culture issues at the Valdez Marine Terminal. Objectives of this effort include: validating any system integrity or safety issues in a manner that leads to the correction of such issues; helping to protect Alaska, its oil production capability, and livelihoods, while protecting the individuals involved; and providing advice and recommendations to Alyeska with which Alyeska can remediate any identified issues.

Accomplishments since last report: Billie Garde of Clifford & Garde has been retained to review and assess information provided to PWSRCAC by concerned Alyeska employees. Ms. Garde has also been contacted by several concerned Alyeska employees as part of this effort. This work is being conducted with the utmost discretion and confidentiality for the employees that have provided concerns. While Ms. Garde is an attorney, she is not providing legal services to PWSRCAC. It is anticipated that Ms. Garde's draft report will be available sometime in October, and a special Board meeting will be scheduled to review the report and determine next steps.

5056 – Tank 8 Internal Inspection Review

Objectives: The FY2021 goal of this project was to review the records and procedures used to maintain the integrity of Tank 8, in order to ensure the risk of a spill from this large oil storage tank are minimized. The FY2022 goal of this project is to ensure that the design of Tank 8's new floor and cathodic protection system (scheduled for installment in 2023) are aligned with industry best practices and designed to protect the tank bottom for the life of the structure.

Accomplishments since last report: Taku Engineering (the Council's contractor for this project) created a final report for this project based on their review of documentation provided by Alyeska.

The Terminal Operations and Environmental Monitoring Committee reviewed the development of the report by Taku Engineering. During their July 28, 2022 meeting the Committee passed the following action "Recommend that the Board accept the [June 2022] Tank 8 report as final, request Alyeska to consider and implement its recommendations, and for distribution to the public."

5081 – Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review

Objectives: This project would entail performing a technical review of the maintenance of crude oil storage Tank 7 and ballast water storage Tank 94 at the Valdez Marine Terminal. Both Tank 7 and Tank 94 are scheduled to undergo comprehensive internal inspections in 2021. The last time Tank 7 underwent a similar internal inspection was in 2008, and Tank 94's last internal inspection occurred in 2012. The 2021 internal inspections of both tanks will result in a large amount of new information pertaining to the past, current, and future maintenance of each storage tank. Additionally, since their last internal inspections were done back in 2008 and 2012, Alyeska has gathered and maintained other information, such as cathodic protection system testing records and external inspection results pertinent to the maintenance of Tanks 7 and 94. The new information generated from the 2021 internal inspections and the other, older information must all be considered to continue to safely maintain each of these tanks. This project is necessary to ensure that Alyeska is using industry best practices and considering all the pertinent information in the decisions they make to safely maintain both tanks, now and in the future.

Accomplishments since last report: Progress on the Tank 7 and 94 aspects of this project have stalled because of delays in receiving information from Alyeska. Alyeska staff are working to provide outstanding requested information pertaining to Tank 7 and informed the TOEM Committee it should be provided in August 2022. Council staff have requested that the Tank 7 information be prioritized since that tank was put back into service in January 2022, while Tank 94 is still out of service. Some of the Tank 94 information will not be available until after its maintenance is completed in the fall of 2022.

5640 – ANS Crude Oil Properties

Objectives: This project entails analyzing the physical and chemical properties of Alaska North Slope crude oil and interpreting how those properties would impact the effectiveness of oil spill response measures including mechanical recovery, in-situ burning, and dispersants.

Accomplishments since last report: Environment and Climate Change Canada's oil lab expects "to be finishing up on the analysis by the end of July. The report is being drafted, and the complete set of data available in August, targeting mid-month."

6000 – Oil Spill Response Program

Objectives: Through this program, PWSRCAC develops positions and recommendations on oil spill response technologies; reviews state and federal contingency plans (c-plans) and plan-related issues; promotes compliance, enforcement, and funding of existing environmental regulations; and promotes the incorporation of local knowledge of sensitive areas into contingency planning.

Accomplishments since the last report:

Regional and Area Planning:

Alaska Regional Response Team (ARRT): General information on the ARRT can be found HERE, and meeting summaries and presentations can be found HERE.

The next ARRT meeting is scheduled for September 22, 2022 in Anchorage.

Alaska Regional Contingency Plan: Version 2 of the Regional Contingency Plan is available HERE.

Prince William Sound Area Contingency Plan (PWS ACP): Public review comments were submitted on the PWS ACP on May 11, 2022. Highlights of comments include:

- Identification of areas for improvement.
- Highlighted areas with missing information or inconsistencies between plans and/or guidance/policy.
- Recommend Geographic Response Strategy (GRS) information is current, updates are adopted, and a process is established for future updates.
- Continue coordinating with the Arctic and Western Alaska Area Committee on converting GRS to GIS (geographic information system mapping).
- Update and approve GRS for Copper River Delta and Flats.
- Update Potential Places of Refuge (PPOR) information based on 2017-2019 Safeguard Marine reports.
- Suggest the PWS Area Committee request NOAA put PPORs be identified on nautical charts with a certain symbol. That would help to quickly identify the closest PPOR for distressed vessels.
- Use of anchorage at Knowles Head by vessels leaking oil should not be allowed from March through June as this area has the last remaining population of Pacific herring.
- Include dispersant use avoidance areas in the PWS ACP.

Arctic and Western Alaska Area Contingency Plan (AWA ACP): The Admin Subcommittee has meet regularly over the last several months to update the AWA ACP. PWSRCAC's informal comments were provided in June. A 30-day public review is expected to begin in August.

Outstanding Questions or Issues:

Alaska Department of Environmental Conservation (ADEC) Public Review of updates to 18 AAC Chapter 75: Public comments were submitted on updates to oil spill regulations at 18 AAC Chapter 75 on January 28, 2022. Regulatory changes are expected fall 2022.

BP-Hilcorp Transaction: On December 14, 2020, the Regulatory Commission of Alaska (RCA) issued an Order Granting Applications Subject to Conditions regarding the transfer of TAPS assets (including the Valdez Marine Terminal) from BP Pipelines to Harvest Alaska. At a time yet to be determined, PWSRCAC plans to submit an amicus curiae brief in support of the City of Valdez appeal to the RCA's March and December 2020 orders allowing Hilcorp/Harvest Alaska to keep financial information confidential and granting the transfer of BP's assets to Hilcorp. This matter is currently tied up in the Alaska Supreme Court.

6510 – Contingency Planning Project

Objectives: The purpose of this project is to monitor, review, and comment on state and federal c-plans for the Valdez Marine Terminal and the Trans Alaska Pipeline System tankers that transit Prince William Sound. Reviewing c-plans is a major task for PWSRCAC as outlined in both the PWSRCAC/Alyeska contract and OPA 90.

The Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker C-Plan) and associated vessel response plans for Alaska Tanker Company, Andeavor, Crowley Alaska Tankers, Hilcorp North Slope, and Polar Tankers (last renewed on February 1, 2017) will expire in 2022. Alyeska Pipeline Service Company (Alyeska) Valdez Marine Terminal Oil Discharge Prevention and Contingency Plan (VMT C-Plan) was last renewed on November 15, 2019, and will expire in 2024.

Accomplishments since last report:

Prince William Sound Tanker C-Plan (PWS Tanker C-Plan): The 5-year renewal of the PWS Tanker C-Plan was issued on January 31, 2022. There are no new updates on this plan.

Valdez Marine Terminal C-Plan (VMT C-Plan):
VMT Coordination Workgroup: The VMT Coordination Group met in June and is scheduled to meet on August 25, 2022. Updates were provided on projects, maintenance, SERVS activities, and drills/exercises. The workgroup charter is under review and we hope to make these quarterly meetings more productive at making improvements to the plan.

6512 – Secondary Containment Adjudicatory hearing

Objectives: The goal of this project is to ensure that the secondary containment liner at the Valdez Marine Terminal will adequately protect the environment in the event of an oil spill.

Accomplishments since last report: Contracted with Dr. Craig Benson to complete study and report identifying and recommending non-destructive methods to assess the condition/integrity of the secondary containment liner and how much liner to evaluate in order for the results to be considered representative of the overall condition of the liner.

6530 – Weather Data / Sea Currents Project

Objectives: This project studies wind, water current, and other environmental factors near the Valdez Marine Terminal, in Prince William Sound, and in the Gulf of Alaska. Weather conditions affect the safe navigation of vessels and aids the ability to prevent, respond to, contain, and clean up an oil spill. Accurate weather data for the region supports research and decision making in areas like oil spill response, traffic management, vessel performance specification, and contingency planning.

Accomplishments since last report:

- The weather station at Cape St Elias had a guy wire fail and it had fallen on its side. Rob Campbell flew out to the site and was able to repair the station. Rob noted the wind meter and instrument enclosure are in bad shape and should be replaced. Richard Brown has been asked to develop a quote for the replacement.
- The CTD sensor has been delivered and we are waiting on a cable. We are working with NOAA to set it up for use with the Valdez tide station.

6531 – Port Valdez Weather Buoys

Objectives: This project originally assembled and deployed, and continues to maintain two buoys which measure ocean currents and common weather parameters in Port Valdez. The first buoy is installed near Jackson Point [61.0910°N 146.3811°W] in the vicinity of the Valdez Marine Terminal (VMT). The second buoy is installed at the Valdez Duck Flats [61.1201°N | 146.2914°W]. The Prince William Sound Science Center (PWSSC) partners with the Council to facilitate this project.

The Oil Pollution Act of 1990 requires the Council to study wind and water currents and other environmental factors in the vicinity of the terminal facilities which may affect the ability to prevent, respond to, contain, and clean up an oil spill.

The Council's Board of Directors has long advocated that robust weather monitoring systems be in installed in the vicinity of the VMT. This includes proposals to install ultrasonic anemometers at the loading berths and a weather station at the VMT. The Council's Board passed a resolution expressly requesting a weather station be employed at the terminal on January 22, 2016.

Weather is a significant factor in the management of safe crude oil transportation through Prince William Sound. Some of these concerns include marine safety, tanker escort operations, oil spill contingency planning, containment boom design, and safe loading of oil tankers.

Accomplishments since last report:

- The power system on both buoys were found to be significantly corroded over over the winter. The VMT buoy has been repaired and is fully operational, and the power system on the Duck Flats Buoy will be updated during the fall service visit.
- FY23 contracts for the Prince William Sound Science Center and JOA Surveys have been completed for the new fiscal year.
- Sensors are being shipped out for annual service and calibration.

6536 – Port Valdez Weather Buoy Data Analysis

Objectives: In 2019, PWSRCAC was able to install two weather buoys in Port Valdez, one in the vicinity of the Valdez Marine Terminal and the other near the Valdez Duck Flats. The buoys are expected to collect weather data for at least five years. This series of projects will take the data collected in each of the five years and perform an analysis to determine any weather trends throughout the year and seasonally. The analysis includes current and wind direction and speed information, wave direction and heights, and other pertinent information that can be obtained from the weather data.

Accomplishments since last report: Dr. Rob Campbell developed his draft report in May, which was reviewed by the project team members. A meeting was held with Dr. Campbell and the project team to provide feedback on the report on June 17, 2022. The report was revised and sent back out to the project team for final input. After final editing, the report is now ready to present to OSPR and with their concurrence on to the Board of Directors at the January 2023 meeting.

6537 – Copper River Weather Station Project

Objectives: Deploy a weather station on the Copper River Delta to better capture outflow wind events.

Accomplishments since last report:

- A land use application was made to the USDA-Forest Service Cordova Ranger District for installation of the weather station.
- Rob Campbell was able to stop by the proposed weather station site. The exact location was recorded, and photos taken for the Forest Service.
- The Forest Service made a site visit to the proposed location and has completed the State Historic Preservation Office (SHPO) and archaeological clearances needed for the proposed site.
- The Forest Service is now writing a record of decision for the project.

6560 – Peer Listener Training

Objectives: Review and assess the Peer Listener Training and similar programs nationwide to ascertain current best practices. The resulting report will inform the Council's decisions about how to revise the Peer Listener Training program, the associated manual (an appendix of "Coping with Technological Disasters: A User-Friendly Guidebook"), and the train the trainer program going forward.

Accomplishments since last report: Contractor Purpose Driven Consulting (PDC) completed the research phase of this project. Their work includes a literature review, a review of similar programs nationwide for best practices, and an in-depth review of the Council's existing program, including stakeholder interviews.

The Peer Listener project team and the Information and Education committee have reviewed the final report, with the IEC providing a recommendation that it be accepted by the Board. A presentation on PDC's finding will be provided at the September Board meeting, when the Board will be asked to accept the final report.

This review will inform Phase II of the project to update the Council's 30-year-old Peer Listener program. Phase II is budgeted for this fiscal year with work planned to begin after Board acceptance of the final report.

7000 – Oil Spill Response Operations Program

Objective: This program encompasses monitoring and reporting on the activities related to the operational readiness of the oil spill response personnel, equipment, and organization of the TAPS shipping industry. The program also encompasses monitoring actual oil spill incidents within our region and evaluation of overall response readiness. Additionally, the program includes the planning and implementation of PWSRCAC's Incident Response Plan.

Accomplishments since last report:

- Regional Stakeholder Committee updates:
    - PWSRCAC participated in a Marathon Petroleum Company RSC workshop that was held as part of a series of workshops and training events that replaced their annual tanker exercise that was cancelled due to COVID-19
    - PWSRCAC attended the first meeting of the ARRT RSC Task Force that took place in August 2022
- Attended various Area plan meetings
- Attended and evaluated various deployments and trainings observed

This spring Marathon Petroleum Company conducted some mock **Regional Stakeholder Committee drill play** as part of series of workshops they ran in lieu of actual exercise play due to COVID precaution

which forced this workshop alternative. This event occurred April 11th. Robida and Robertson contributed to planning for this RSC event, provided potential names and organizations that might be involved, and Marathon created the scenario, and facilitated the workshop. Marathon also reviewed and used some of PWSRCAC's RSC resources online and pointed workshop participants to this material as well; https://www.pwsrcac.org/rsc/ Some recommendations that came out of the workshop that could be applied to the PWSRCAC RSC online resources include:

- Putting more emphasis on the need for the Liaison Officer to better prepare participants in terms of providing maps of the spill site, anticipated trajectories, and more situation awareness. This would have helped participants understand the incident particulars and be better prepared for their RSC roles.
- Familiarizing the Liaison Officer with the content and location of the checklist intended to prepare participants and help them know what to expect in terms of the RSC process. This would also help the Liaison Officer manage the expectations of the RSC members.

- Highlighting the need for a position to document the concerns and information that the RSC wants to provide to the Unified Command. While the RSC can manage this in whatever fashion they deem best as a group, there's a lot of information being passed which should be captured.

The ARRT is also standing up an **RSC Task Force** with the stated goal of developing a draft Regional Stakeholder Committee (RSC) Job Aid. The first meeting took place on August 2nd. Donna Schantz, Joe Lally, and Jeremy Robida attended.. PWSRCAC's RSC materials were shared with leadership for the task force and this concept and task of creating a better job aid for the greater state and creating more consistency across Area plans is something PWSRCAC supports. The document describing this Task Force has been attached.

Various **Area planning meetings** were attended by staff. This included the AWA Admin sub-committee meetings held on May 10, June 14, and July 10. The AWA GRS sub-committee met on May 24 and June 28. And the AWA exercise and training sub-committee met on May 13. Two topics being monitoring closely are 1) ongoing GRS to a GIS database migration and 2) risk assessment work, both being led by the AWA. It's anticipated that the Coast Guard will provide a presentation to the OSPR Committee on these topics in the future.

One project which was slated to start in fiscal year 2023, was ***UAV Use During Spills White Paper***, at an estimated cost of $15K. This project ranked 27 out of 28 projects in the LRP ranking, and staff determined that a similar paper was commissioned by the Oil Spill Recovery Institute (OSRI) with the University of Alaska Fairbanks . This project was cancelled based on the reasons above. Staff has been monitoring the progress of this OSRI effort which is expected to be completed circa Fall 2022. Staff will share this OSRI paper with OSPR once it is completed.

Various exercises and training events were attended by staff since the last Board meeting. These include the following:

- 5/9 Mineral Creek Barge Lightering Deployment
- 5/14 Valdez Star Deployment
- 5/16-18 Annual large scale tanker exercise, table-top, Exxon/Crowley Alaska Tankers led
- 6/18 Solomon Gulch Hatchery Deployment
- 7/29 Emergency Towing Exercise with tanker *Polar Enterprise*

7050 – Out of Region Equipment Survey

Objective: The project will identify "out-of-region" spill response equipment that's available to cascade into PWS and/or the Gulf of Alaska vicinity during a major oil spill. This is equipment that is called for via planning assumptions to support a large spill response effort and outfit nearshore recovery task forces beyond what is already available from the SERVS inventory. This project will document who owns this equipment, discuss the formal equipment sharing/purchase relationships that are already in place between the various PWS shippers and the greater worldwide Oil Spill Removal Organization (OSRO) community, as well as any governmental equipment sources such as the USCG or Navy Supervisor of Salvage (NAVSUPSALV). The project will also address timing and logistical information related to movement of such equipment.

Accomplishments since last report: Final report is on the September 2022 Board meeting agenda for Board acceptance.

7520 – Preparedness Monitoring

Objectives: PWSRCAC's Drill Monitoring program falls under a broader program called Oil Spill Response Operations. Objectives for the Drill Monitoring program are to promote oil spill response operational readiness within the EVOS region by observing, monitoring, and reporting on oil spill prevention and response drills, exercises, and training; to provide citizens, regulatory agencies, and responders (Alyeska and the shippers) with independent observations and recommendations to improve preparedness; and provide citizen oversight. Tasks to be completed include:

- Monitor and report on regular oil spill drills and training exercises at the VMT and throughout the Exxon Valdez oil spill region to citizens, the Board, industry, and regulatory agencies.
- Provide quarterly recommendations to the PWSRCAC Board of Directors.
- Keep PWSRCAC's standing committees (OSPR, TOEM, POVTS, IEC, and SAC) informed.
- Produce an annual report on effectiveness and progress of the regularly monitored drills and exercises.
- Continue developing and implementing staff training for drill monitoring.

Recent Exercises

Valdez Duck Flats Sensitive Area Protection Training – June 29-30, 2022: SERVS conducted a sensitive area protection exercise for the Valdez Duck Flats in Port Valdez to provide training for the TCC response crews. This was a two-day training that included classroom, field visits, and deployment of the boom on the west side of the Valdez Container Terminal.

Solomon Gulch Hatchery Protection Training Exercise – June 18, 2022: Alyeska conducted a sensitive area protection exercise at the Solomon Gulch Hatchery in Port Valdez to provide training for the TCC response crews.

Exxon/Crowley Alaska Tankers (CAT) Exercise – May 17-19, 2022: This year's annual PWS Shipper's exercise was conducted by Exxon/CAT in Valdez. The exercise was held physically at SERVS' Valdez Emergency Operations Center (VEOC) and virtually using the Teams platform. The scenario was a loss of 140,000 bbls of crude oil in the traffic lanes close to abeam Smith Island and the oil trajectory was going to Orca Bay.

Valdez Star Deployment Exercise – May14, 2022: The Valdez Star conducted and open water oil recovery exercise in Port Valdez on May 14. This exercise allowed the new captain of the Valdez Star to practice operating the vessel in oil recovery mode.

Barge Mineral Creek Lightering Exercise – May 9, 2022: Edison Chouest Offshore and SERVS conducted a lightering training exercise at the Valdez Container Terminal (VCT) in Port Valdez. Lightering equipment was offloaded from the barge onto the VCT dock to simulate a tanker deck and setup as a demonstration.

Cordova Nearshore Response Readiness Exercise – April 29, 2022: SERVS conducted nearshore response readiness exercise in Cordova with some of the Cordova Tier I fishing vessels. This exercise was held in conjunction to the annual fishing vessel training for the Cordova vessels.

Whittier Nearshore Response Readiness Exercise – April 18, 2022: SERVS conducted nearshore response readiness exercise in Shotgun Cove with some of the Whittier Tier I fishing vessels. Six boats were involved with the exercise that was conducted the day before the annual Whittier fishing vessel training.

OSRB-1 Open Water Barge Deployment Exercise – April 7, 2022: SERVS conducted an open water oil recovery exercise in Port Valdez on April 7. This allowed some of the Valdez Tier I fishing vessels to train with the barge crews.

Polar Endeavour Emergency Towing Exercise – March 31, 2022: Polar Tankers and SERVS conducted a mid-sound emergency towing exercise on the last day of March. This was the first towing exercise that PWSRCAC has been able to observe on the tug since the COVID-19 precautions were established for the recent pandemic.

Upcoming Drills and Exercises

VMT Secondary Containment Exercise – August 11, 2022
VMT Scenario 4 Exercise – October 12, 2022

8000 – Maritime Operations Program

Objectives: This program reviews port organization, operations, incidents, and the adequacy and maintenance of the Coast Guard Vessel Traffic System, and coordinates with the Port Operations and Vessel Traffic Systems (POVTS) Committee. Major program components include participation with the Valdez Marine Safety Committee (VMSC), monitoring changes to the tanker escort system, reviewing Best Available Technology documents for the tanker escort system and the Vessel Emergency Response Plan (VERP), participating in monthly SERVS/PWSRCAC and ADEC/PWSRCAC communication meetings, and supporting maintenance for the NOAA weather stations.

Accomplishments since last report

- Rick Steiner has asked the Council to consider a project to reduce whale strikes in Prince William Sound. Kathleen Leonard, a marine mammal specialist in the NOAA Fisheries Protected Resources Division in Anchorage, will be the point of contact for NOAA with this effort. PWSRCAC will continue to monitor this effort.
- The Maritime Operations Project Manager continues to participate in the interagency Barry Arm project team for the Council.
- Project Manager Sorum is participating VMT Secondary Containment Project Team.
- The Washington 2019 Legislature passed *The Reducing Threats to Southern Resident Killer Whales by Improving the Safety of Oil Transportation Act* (ESHB 1578). This Act is a portfolio of projects aimed at preventing a catastrophic oil spill in Puget Sound by closing safety gaps related to vessels carrying oil in bulk. The Act requires the Washington Department of Ecology to assess whether an emergency response towing vessel serving Haro Strait, Boundary Pass, Rosario

Strait, and connected navigable waterways will reduce oil spill risk. Staff will be following this effort and will pass on anything of interest.

8010 – Escort Tugboat Best Available Technology Assessment

Objectives: This project proposes to assess current best practices and use of technology in the design of highly capable escort tugboats. Using the standards described in this process, a comparison will be made to vessels currently being used for this purpose in Prince William Sound.

Accomplishments since last report A Request for Proposals has been prepared and advertised with proposals due July 30, 2022. No bids were received. Staff recommends that this project be withdrawn.

8012 – Field Trials of Messenger Line Throwing Devices and Video

Objectives: This project will evaluate the effectiveness of line throwing devices identified as being best available technology in the 2020 report, "Tanker Towline Deployment BAT Review." Field trials of this equipment will underscore best techniques in their use and will improve user experiences with the equipment. Results will be used to develop a set of recommended practices that will be shared with industry. A final report on the project findings will be presented to the Council.

Oil tankers operating in Prince William Sound are required to carry emergency towing equipment. The availability of this equipment can allow a stricken tanker to be towed safely to a place of refuge, where further action can be taken to stabilize the vessel. A key action that must occur in the use of one of these towing systems is to successfully make the final connection between the tow package messenger line and the vessel to be towed. Passing messenger lines to stricken vessels can be done by hand, heaved or thrown aboard, projected by mechanical means, or picked out of the water. Weather is often a factor in vessel casualties and retrieving a line can be difficult and dangerous in poor weather.

This last year, the Council contracted the maritime research firm Glosten to evaluate the technologies available to pass or deploy messenger lines to vessels in distress to determine what constitutes best available technology (BAT), and then using a similar approach, compare currently used line handling technologies with alternatives identified by the consultant. The final report, "Tanker Towline Deployment BAT Review," has been well received and should prove useful in the future.

Accomplishments since last report:

- On Point Outreach has competed a video presentation that details the projects outcomes. There was significant photo and video documentation of the trials.
- The Board is being asked to accept the video at their September 2022 meeting.

8300 - Sustainable Shipping; Phase I: Regulatory Mandate Review

Objectives: This project, Phase I: Regulatory Mandate Review, will review and report on the evolution of regulatory requirements affecting the transition of ocean shipping, and tankers in particular, to a sustainable model. Providing technical advice to the Board on the development of more sustainable shipping will require that POVTS become aware of the developing regulatory climate, follow the development of best technologies, and track the implementation efforts of the TAPS shippers and marine support contractors.

Accomplishments since last report: A Request for Proposals (RFP) has been prepared, advertised and closed on July 30, 2022. One proposal was received. An RFP review team will meet to review the proposal in late August.

8520 – Miscommunication in Maritime Contexts

Objectives: Seeking to identify and address various causes of miscommunication, the proposed project will provide a comprehensive perspective by collecting information on the linguistic, cultural, and pragmatic needs and practices of native and non-native English-speaking mariners in Prince William Sound. The proposed project would entail the first two of four phases. The overarching goals of this multiphase project are to reduce miscommunication and contribute to best practices in ship to ship, ship to shore, and on board vessel interactions by providing stakeholders with a thorough review of the issues impacting maritime communication. This includes the role of linguistic, social, and cultural components and their influence on miscommunication, as well as a comprehensive evidence-based understanding of the linguistic and pragmatic needs and practices for maritime interactions and communication in PWS.

Accomplishments since last report: A draft contract has been prepared. The Board is being asked to authorize a contract with Sky Island Language Learning Research at their September 2022 meeting.

9000 – Environmental Monitoring Program

Objectives: Coordinate projects developed and overseen by the Scientific Advisory Committee and obtain scientific knowledge and technical information with regard to issues related to the actual and potential environmental impacts of the Valdez Marine Terminal and associated crude oil tankers. The notable tasks to be accomplished under this program are as follows:

- Project manager to attend at least one technical scientific conference
- Plan and complete budgeted environmental monitoring and scientific research projects
- Conduct PWSRCAC Science Night

Accomplishments since last report: Projects managed under this program continue to be planned and executed successfully. Staff are actively planning for the December 2022 Science Night event.

9110 – Monitoring Spatial Variability of Marine Birds During Winter in PWS Tanker Escort Zone

Objectives: Provide up-to-date information on winter marine bird density and distribution throughout the Prince William Sound tanker transit zone, including under-surveyed areas such as the open waters and adjacent bays in and around Port Valdez, Valdez Arm, Tatitlek Narrows, Port Fidalgo, and Port Etches. Here are the notable tasks to be accomplished under this project:

- Perform winter bird surveys in Prince William Sound for three consecutive years
- Analyze data obtained during winter bird surveys
- Report the results of the analysis
- Make winter bird survey maps readily available for use by spill response managers

Accomplishments since last report: Contractors from the Prince William Sound Science Center analyzed the data collected during March 2022 surveys and presented a draft report and recommendations to the Scientific Advisory Committee. A revised draft of the report and recommendations will be presented at the September Board meeting.

9510 – Long-Term Environmental Monitoring Project

Objectives: Comprehensively monitor the actual and potential environmental impacts related to the Valdez Marine Terminal and associated crude oil tankers and provide the Council with information about the presence and effects of hydrocarbons generated by the terminal facility and associated tankers. Here are the notable tasks to be accomplished under this project:

- Obtain environmental samples in Port Valdez: marine sediments, mussels, and passive sampling devices
- Analyze environmental samples
- Interpret and report results of sample analysis
- Present analytical findings to the PWSRCAC Board of Directors
- Maintain Environmental Monitoring Project plan

Accomplishments since last report: Dr. Morgan Bender, from Owl Ridge Natural Resource Consultants, presented results of the 2021 Port Valdez environmental monitoring work to the Board during the May 2022 meeting. Dr. Morgan Bender completed the 2021 LTEMP report, and during their June 7, 2022 meeting SAC recommended the Board accept Dr. Bender's report as final and for public distribution. All 2022 Port Valdez environmental samples were collected from June 1-4 by Council staff and sent to various labs for analysis.

Novogene, a lab based in Sacramento, California, completed the genetic analyses on mussel samples associated with the April 2020 oil spill from the Valdez Marine Terminal. Dr. Liz Bowen and collaborators have begun reviewing the data produced by Novogene.

9511 – Herring and Forage Fish Surveys

Objectives: Monitor schools of herring and other forage fish species to identify areas in the Sound where they tend to concentrate. Here are the notable tasks to be accomplished under this project:

- Conduct aerial surveys of forage fish in Prince William Sound
- Analyze aerial survey data and report on the results
- Make aerial survey maps readily available for use by spill response managers

Accomplishments since last report: A contract for the fourth year of forage fish surveys was executed with the Prince William Sound Science Center in May 2022. Aerial forage fish surveys were conducted during June 2022 and a brief overview of the results was provided by the contractor to the project manager. A full report is expected this fall.

9512 – Determining Concentration and Composition of Oxygenated Hydrocarbons from the VMT

Objectives: The goal of this project is to determine the types and amount of oxygenated hydrocarbons that are released from the Ballast Water Treatment Facility (BWTF) at the Valdez Marine Terminal. The notable tasks to be accomplished under this project are as follows:

- Collect monthly water samples from the BWTF following discharge of oily ballast water by tankers
- Analyze the samples to determine the chemical composition and concentration of oxygenated hydrocarbons
- Interpret and report findings of the analysis and prepare the report for publication in a peer-reviewed journal
- Produce recommendations on future research to understand the fate, transport, and toxicity of oxygenated hydrocarbons in the marine environment

Accomplishments since last report: Council staff and contractor were provided a tour of the BWTF by Alyeska staff in support of this project. As of July 30, 2022, five sample sets have been collected by Alyeska staff and delivered to the contractor for analysis. Sample collection is ongoing and it is expected to take several months to complete twelve sampling events. At Council and contractor request, Alyeska has agreed to collect an additional sample from the 90s tank at the BWTF (prior to ballast water offload from tankers) for a total of four samples in each set.

9520 – Marine Invasive Species

Objectives: Understand and minimize the environmental impacts of invasive species potentially arriving in the PWSRCAC region from tanker ballast water and hull fouling. Here are the notable tasks to be accomplished under this project:

- Obtain plankton samples in Port Valdez at three sites: the small boat harbor, Valdez Container Terminal, and Valdez Marine Terminal
- Perform metagenetic analysis on plankton samples to identify variability in the plankton community between locations and through time, and identify any nonindigenous species
- Interpret and report results of plankton metagenetic analysis
- Conduct monitoring of invasive crab and tunicate species in Valdez and Cordova

Accomplishments since last report:

- Contractors at the Smithsonian Environmental Research Center and Moss Landing Marine Laboratory presented a report summarizing the results of the 2021 plankton sampling to the Scientific Advisory Committee. A revised draft of the report and recommendations will be presented at the September Board meeting.
- Interns for the 2022 field season began in Cordova and Valdez in June by checking settlement plates in their respective harbors for invasive tunicates and setting traps to monitor for European green crab. An internship was initiated with a high school student in Kodiak and monitoring began in July.
- Planning has not yet commenced for the 2023 broadscale survey.

9550 - Dispersants

Objectives: This project entails reviewing and potentially updating the Council's current position regarding the use of dispersants in the event of an oil spill in our region. The current position states that the Council does not support the use of dispersants for spill response in Prince William Sound. This project would also involve updating Council documents that are used to technically support and educate the public about the Council's official dispersant use position.

Accomplishments since last report:

- Following the initial workshop on March 10, 2022, for Board members, a three part follow up workshop series was held in May and June 2022 to discuss various components of dispersants application, tradeoffs, and science.
- The Council's contractor drafted a report summarizing the content and outcomes of the Board workshops on dispersants as well as an updated draft dispersants use position statement. The report and position statement will be presented at the September Board meeting.

9643 – Subsistence Harvest Surveys

Objectives: Update subsistence harvest information for Prince William Sound communities by conducting household surveys, key respondent interviews, and mapping to inform a long-term dataset on community subsistence harvest practices and access.

Accomplishments since last report: Approval to enter into a contract with the Alaska Department of Fish and Game for this project is requested at the September Board meeting.

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