



# *Prince William Sound*

REGIONAL CITIZENS' ADVISORY COUNCIL

**25** years  
*Progress in Oil Spill  
Prevention and Response*  
*2013-2014 Annual Report*





Mark Swanson  
Executive Director

## Letter from the Executive Director

"The council has steadfastly advocated for appropriately robust funding and support for the agencies that contribute to the safe transportation of oil in our region. We continue to highlight the need for legislative support to remedy disturbing funding shortfalls for weather buoy maintenance and our state spill prevention and response program."



As you will note in reading through this year's annual report, this past year has been another busy, exciting, and productive one for the Prince William Sound Regional Citizens' Advisory Council. Our technical committees, board, and staff have been working together with our regulatory and industry colleagues to shape and update public response policy, upgrade environmental protections, and help improve response plans. We have increased and shared our expanded knowledge about the effects of oil and dispersants on our ecosystem, advocated for the adoption of best practices and best available technology and educated regional youth, our member communities, and other stakeholders on environmental stewardship issues. This is the everyday work of the council.

This year, as we commemorated the 25th anniversary of the Exxon Valdez oil spill and all of the cooperative and collaborative progress preventing and responding to oil spills that has been accomplished in our region, we also marked the loss of historical visionaries like Walt Parker, Stan Stephens, and John Devens. Parker, Stephens, and Devens charted the way for the



Walter Parker, Oil  
Spill Region  
Environmental  
Coalition

council in its early and formative years. They continued to shape the council's efforts and many successes through decades of service to the ideal of citizen oversight of safe oil transportation. With their passing and with our reflection on their many deeds and inspirational service, we come to the realization that we travel in the footsteps of giants. The need for informed citizen oversight and engagement is undiminished. The specific risks that we will face in the future are still unknown. These visionary giants have shown us the value and efficacy of passion and



commitment and a well-informed citizenry.

This past year, we continued our focus on monitoring the significant maintenance and inspection activities and the longer term planning efforts ongoing at the Valdez Marine Terminal. In particular, the council has been pleased to note the continuation of the positive inspection results on the overwater girth welds of the crude oil piping at the loading berths. There has also been significant progress made in planning for terminal piping modifications needed to allow the majority of the previously inaccessible and un-inspectable piping to be rendered inspectable using proven off-the-shelf technologies. These sorts of forward thinking modifications will provide operators a more comprehensive up-to-date picture of the condition of the terminal oil piping and facilitate judicious scheduling of maintenance and replacement activities. This will greatly reduce the potential for any unanticipated maintenance related piping failures or oil spills. The council monitored Alyeska's complete closure of the west tank farm at the terminal and their significant work to commence relining the original rainwater and containment berm drainage piping on the terminal with modern corrosion-impervious high density polyethylene liners.

We have been pleased with the dedication and effort applied to the oil spill exercises that the council participated in this year. We continue to observe challenges and provide feedback to regulators and industry regarding the difficulty of mounting an effective response in higher sea states or poor visibility conditions which are common for our waters, and the continued propensity to wait until the second day of a response (exercise) or later to begin deliberate and comprehensive engagement with regional stakeholders. This year the council also dedicated significant educational and outreach efforts and provided extensive comments

and input on proposed updates to the state-wide dispersant usage guidelines and revisions to the plans designed to engage regional stakeholders.

The council continues to monitor the introduction and application of new environmental protections. Starting in 2014, oil tankers in the Trans-Alaska Pipeline System trade came under new requirements for coastal shipping. They must now use better quality and lower emissions fuels and begin over the next five years to install equipment onboard to filter and treat ballast water to safeguard against the unintended transportation of nonindigenous invasive species. The council has continued to advocate for various state and federal regulators to adopt readily available better technology standards and best practices for terminal fire protection, terminal pipe inspection, ship escort tug equipment, and validation of spill recovery capabilities. We have also advocated for using realistic weather limitations for specific spill clean-up equipment and strategies.

In our state and federal capitals, the council has steadfastly advocated for appropriately robust funding and support for the agencies that contribute to the safe transportation of oil in our region. We continue to highlight the need for legislative support to remedy disturbing funding shortfalls for weather buoy maintenance and our state spill prevention and response program.

With these and the other activities highlighted throughout this annual report, the Prince William Sound Regional Citizens' Advisory Council has remained focused, working in partnership and cooperation with industry and regulators to resist complacency and to promote the environmentally safe operation of the Alyeska oil terminal and associated tankers. We are ever mindful that we walk in the footsteps of giants and we wonder who will step in their footsteps to become giants themselves.

Commemoration of the

25th

Anniversary of the

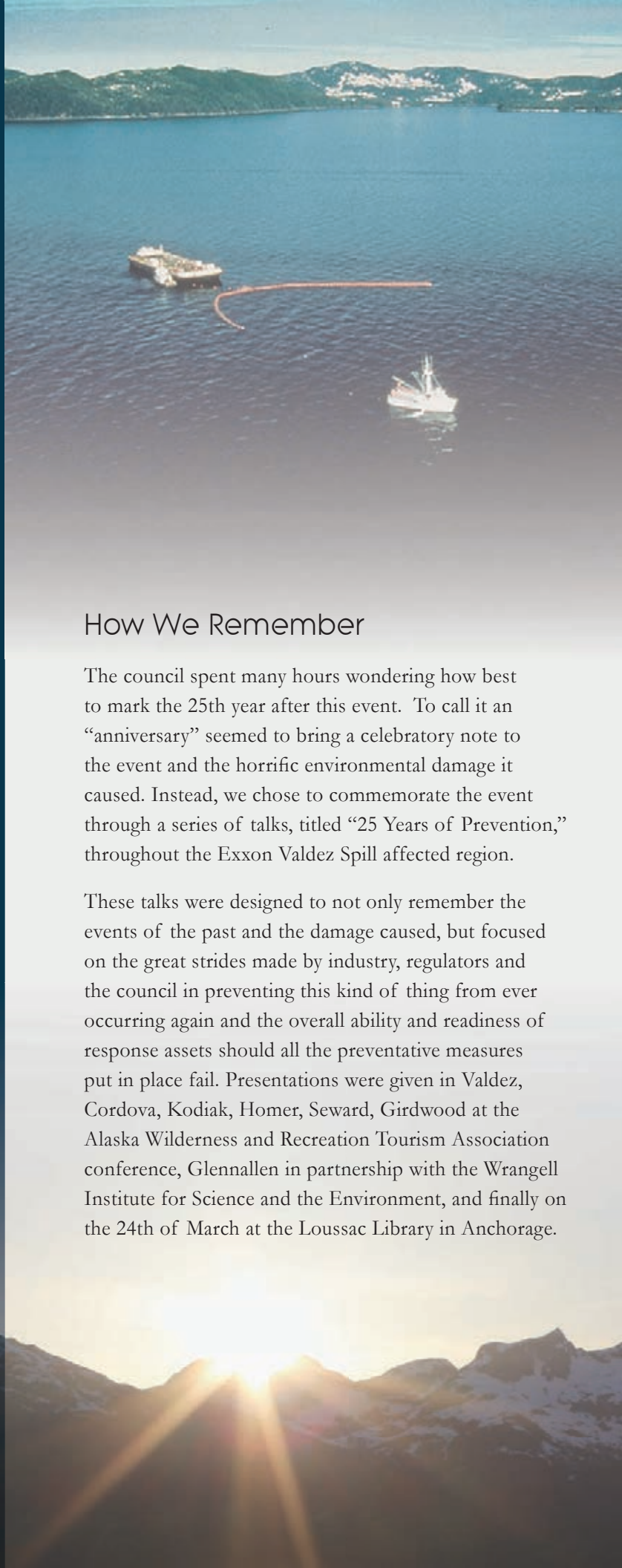
Exxon Valdez  
Oil Spill

*Just after midnight on the 24th of March, 1989, the unthinkable happened...on a clear night, with a large amount of ice littering the vessel traffic lanes south of the Port of Valdez, a large, fully-laden crude oil tanker grounded on a rocky reef. The grounding ripped a hole in the side of the single hull vessel and Alaska North Slope crude oil began spilling into the pristine waters of Prince William Sound.*

## How We Remember

The council spent many hours wondering how best to mark the 25th year after this event. To call it an “anniversary” seemed to bring a celebratory note to the event and the horrific environmental damage it caused. Instead, we chose to commemorate the event through a series of talks, titled “25 Years of Prevention,” throughout the Exxon Valdez Spill affected region.

These talks were designed to not only remember the events of the past and the damage caused, but focused on the great strides made by industry, regulators and the council in preventing this kind of thing from ever occurring again and the overall ability and readiness of response assets should all the preventative measures put in place fail. Presentations were given in Valdez, Cordova, Kodiak, Homer, Seward, Girdwood at the Alaska Wilderness and Recreation Tourism Association conference, Glennallen in partnership with the Wrangell Institute for Science and the Environment, and finally on the 24th of March at the Loussac Library in Anchorage.







## Inception of the Council

In conjunction with the passing of the 25th year since the spill, the council received countless calls from media outlets throughout Alaska, the country and the world. Staff members conducted numerous interviews, were quoted often and had the opportunity to be on live radio and TV news segments. During each, prevention was emphasized, as it has been since the inception of the council. Along with the intense media interest, the council advertised in local newspapers in the region to make sure the public remains aware of the significance of the spill as time passes. The ad, which is very similar to the back cover of this report, highlighted improvements in oil transportation in the region in comparison to where we began 25 years ago.

The importance of the Exxon Valdez spill and its effects on the Prince William Sound region cannot be understated. However, as we look back it becomes increasingly more important to learn from the mistakes of the past and stay ever vigilant as citizens so those mistakes are not repeated.





# Mission and Responsibilities

The Prince William Sound Regional Citizens' Advisory Council is an independent non-profit corporation guided by its mission: promoting environmentally safe operation of the Alyeska terminal in Valdez and the oil tankers that use it.



New Executive Committee after the May 2014 Board Meeting.



Amanda Bauer  
City of Valdez

## HOW WE ARE STRUCTURED

The council's 19 member organizations are communities in the region affected by the 1989 Exxon Valdez oil spill, as well as Alaska Native, aquaculture, commercial fishing, environmental, recreation, and tourism groups.

Consistent with its mission, the council's structure and responsibilities stem from two documents. The first is a contract with Alyeska Pipeline Service Co., which operates the trans-Alaska pipeline as well as the Valdez terminal. Most of the council's operating funds come from this contract.

The second guiding document, passed after the council was created, is the Oil Pollution Act of 1990, which required citizen oversight councils for Prince William Sound and Cook Inlet. The council's purpose is to promote partnership and cooperation among local citizens, industry, and government; to build trust; and to provide citizen oversight of environmental compliance by oil terminals and tankers.

The Act allows pre-existing organizations to fulfill the requirement for citizen oversight and our council has done so for Prince William Sound since 1990. Each year, the U.S. Coast Guard certifies that the council fosters the general goals and purposes of the Act and is broadly representative of the communities and interests as envisioned in the Act.

The council's contract with Alyeska pre-dates the Oil Pollution Act, but the similarities in the powers and duties given the council in the two documents are not coincidental. Many people involved in the establishment of the council also promoted citizen involvement requirements in federal law.



## FUNCTIONS WE PERFORM

*As part of these undertakings, the council regularly retains experts in various fields to conduct independent research and technical analysis on issues related to oil transportation safety.*

Dorothy Moore  
City of Valdez



In accordance with the provisions of the two documents, the council performs a variety of functions aimed at reducing pollution from crude oil transportation through Prince William Sound and the Gulf of Alaska:

- We monitor, review, and comment on oil spill response and prevention plans prepared by Alyeska and by operators of oil tankers.
- We monitor, review, and comment on the environmental protection capabilities of Alyeska and the tanker operators, as well as on the environmental, social, and economic impacts of their activities.
- We review and make recommendations on government policies, permits, and regulations relating to the oil terminal and tankers.
- The Alyeska contract also calls for the council to increase public awareness of the company's oil spill response, spill prevention, and environmental protection capabilities, as well as the actual and potential environmental impacts of terminal and tanker operations.
- The contract states that the council may work on other related issues not specifically identified when the contract was written.

## OUR FUNDING

The council was initially funded at \$2 million a year. The funding agreement is renewed every three years. Current Alyeska funding is approximately \$3.7 million a year, and is adjusted for consideration of inflation.

Although the council works closely with and is funded chiefly by Alyeska, the council is an independent advisory group. The contract is explicit: "Alyeska shall have no right...to have any degree of control over the formation or operation of the corporation."

# Oil Spill Prevention



## 2013-2014 Activities

### TANKER ESCORT TUGS

Loaded oil tankers transiting the waters of Prince William Sound in Alaska are required by federal law and their oil spill contingency plans to be accompanied by two escort tugboats. The goal of the escort tug system is to prevent an oil tanker that suffers a steering or propulsion casualty from running aground.

The council has long been concerned with tugs used for tanker escorts. Beginning in 2012, the council hired Robert Allan Limited of Vancouver, BC to compare performance of a worldwide fleet of similar escort-rated tugboats, over 35 meters in length, to the escort tugs used in Prince William Sound. The goal of this study was to determine if the tugs are using the best technology currently available in escort tug design today.

The study found a number of significant gaps in what is considered best available technology for escort tugs today and tugs currently used in the Sound. In the decade since these vessels were built, technology in hull design and towing equipment has improved dramatically.

This latest effort by the council is one in a series of studies completed to identify and suggest improvements to the tanker escort system in use, and help prevent crude oil from being spilled. While improvements to escort tugs are expensive, the risks reductions are real, and true costs are minuscule when compared to the economic and environmental benefits of preventing another oil spill in the Sound.



Robert Beedle  
City of Cordova

*To ensure a maximum level of safety, the council reviews all aspects of the oil transportation system in Prince William Sound. These include operations of oil tankers and the Valdez Marine Terminal, oil spills and other incidents, and the adequacy and maintenance of the U.S. Coast Guard's Vessel Traffic Service.*





## Columbia Glacier Iceberg Monitoring Project Revisited

The council has been interested in the icebergs calving from Columbia Glacier and the risk they pose to tankers as they drift into the vessel traffic lanes of Prince William Sound. Two years ago, a project was started to better understand the significant retreat of Columbia Glacier and predict its iceberg production over the next ten years.

During this fiscal year, a substantial amount of work was directed at understanding how icebergs behave as they approach the shallow water comprising the Heather Bay Moraine Shoal. Icebergs must cross this shoal before they can enter Prince William Sound. Monitoring of the icebergs crossing the moraine shoal was started in May of 2013 using a time-lapse camera installed on Heather Island, satellite imagery and a time-lapse camera installed upstream of the glacier's terminus.

One interesting development was the discovery of an 800 meter thick layer of ice in the east branch of the Columbia Glacier. Further work is underway for the summer of 2014 to better understand the dynamics of this ice layer. Based on the elevation of the rock bed beneath the ice, this ice will either calve off into the Sound or melt back as the glacier continues its retreat.

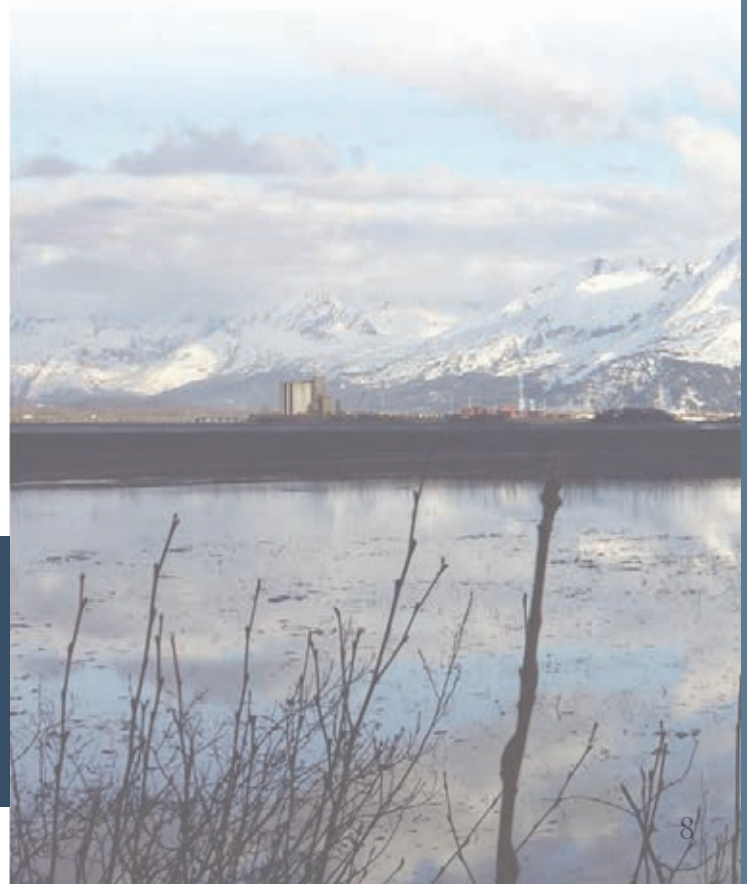
The final report for this project is expected to be delivered in the summer of 2015.

### *Project Goals*

Goals for the project are to determine the best estimate of glacial retreat and volume loss, evaluate iceberg transport into the Sound and describe the passage constraints of icebergs over the Columbia Glacier moraine shoal. The first report, approved by the board this past year, describes the available data for Columbia Glacier and the second report will discuss recovery of historic research materials, water depth measurements of Columbia Bay, glacial retreat projections, an iceberg transport model and the Heather Island camera. All this information will feed into a realistic ice-risk projection for oil tanker transits going forward.



Blake Johnson  
Kenai Peninsula Borough



# Oil Spill Preparedness and Response



Steve Lewis  
City of Seldovia

*The council's foremost interest is in preventing oil spills and we devote considerable time and effort to ensure appropriate prevention measures are in place, but the risk cannot be eliminated entirely. So we must be prepared to respond quickly and effectively if prevention measures fail. Two council programs address emergency preparedness and response: Oil Spill Prevention and Response Planning, and Oil Spill Prevention and Response Operations.*

## OIL SPILL PREVENTION

State and federal laws require the operators of oil tankers and the Valdez Marine Terminal (as well as the trans-Alaska pipeline) to prepare detailed plans showing how they will respond to oil spills should prevention measures fail. The council devotes much time and attention to oversight of these all-important plans for the tankers and the terminal in Valdez.

On some of these plans, the council participates with government and industry in work groups that develop and improve contingency plans. The council also conducts independent reviews and submits comments and recommendations arising from these reviews.

The council promotes effective regulatory compliance and enforcement. The council consistently advocates for adequate funding for state and federal regulatory agencies. The council encourages the input of local communities and the incorporating local knowledge of sensitive areas into contingency planning.

## Tanker Contingency Plans

The Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan was renewed in November 2012 for a period of five years. The council dedicated significant resources into tracking issues related to prevention and response, as mandated by the Oil Pollution Act of 1990. Shippers whose plans are associated with the tanker contingency plan include Alaska Tanker Company, BP Oil Shipping Company, Polar Tankers, SeaRiver Maritime, Tesoro Alaska Company, and Alyeska Pipeline Service Company/Ship Escort/Response Vessel System.

During this five-year plan life-span, the council participates in planning drills and exercises designed to validate the prevention and response system in the plan. Spill planning and subsequent response exercises are critical activities and require training and testing to ensure the system works properly. Lessons are learned from each exercise, which help to improve prevention and response planning in Prince William Sound. The Alaska Department of Environmental Conservation, the state agency tasked with approval of these plans, plays a crucial role in exercise planning, and engages the council's expertise from 25 years



monitoring contingency planning.

The Prince William Sound Subarea plan, which supplements the state/federal Unified Plan, is in the process of being updated. The Unified Plan contains information on spill response planning and preparedness throughout the state, and the Prince William Sound Subarea plan is one of 10 in Alaska. These plans represent a coordinated federal, state, and local response to a pollution event. The council has participated on various subcommittees tasked with updating the subarea plan as part of our mandated duties

## Valdez Marine Terminal Contingency Plan

The contingency plan covering the Valdez terminal was originally slated to expire in May 2013. However, given the complete rewrite of the plan, the deadline for the existing plan was extended to November 2014. The proposed terminal plan has undergone significant changes, and state and federal regulatory agencies have required additional information on the plan be provided. It is anticipated that this 18-month period will give regulators ample time to thoroughly review and consider comments from the council and other stakeholders.

The Valdez Marine Terminal Coordination Work Group, formed as part of the 2003 plan renewal, focuses on improvements to the terminal contingency plan. Members of the work group, which meets on a quarterly basis, include the Alaska Department of Environmental Conservation, the Bureau of Land Management, the U.S. Environmental Protection Agency, the U.S. Coast Guard, Alyeska Pipeline Service Co, and the council. Direct communication in this open forum provides the council with a valuable venue to exchange information pertaining to prevention and response planning at the terminal.

The Valdez terminal is an aging facility. Consistent inspections and maintenance are key to continuing safe operations. Areas of particular interest to the council include internal inspections on crude oil storage tanks, repairs to the industrial wastewater system, corrosion of buried piping, and integrity of the secondary containment liner underneath the crude oil storage tanks. The council has participated in oil spill drill design and subsequent evaluations at the terminal.

## Geographic Response Strategies

Project work associated with geographic response strategies has been ongoing since 2002. Geographic response strategies are map-based tactics designed to protect sensitive areas and resources, such as salmon streams and clamming beaches, during an oil spill response. These pre-established, customized plans save critical time during the first hours of a response. These strategies show responders where sensitive areas are located and where to place resources such as oil spill boom. Sites are identified through a cooperative workgroup effort and surveyed for inclusion in the oil spill contingency plans.

The council is completing work to add 20 sites to the Seward zone which will be integrated into the Cook Inlet Subarea Plan. The council is working in collaboration with the Alaska Department of Environmental Conservation on a workshop to look at overall geographic response strategy planning in the state. The council's interests will be directed towards the region impacted by the 1989 oil spill, specifically Prince William Sound, Kodiak Island, and Cook Inlet.

As part of the Prince William Sound tanker plan, Alyeska/SERVS tests strategies at five sites per year in the Sound. Council staff has been given the opportunity to accompany Alyeska/SERVS to observe these tests.



# OIL SPILL PREVENTION AND RESPONSE PLANNING

*The Council Staff attended nine drills and exercises during the year covered by this report. These drills included a large Prince William Sound Shipper's drill conducted by Polar Tankers and ConocoPhillips. Four exercises were conducted at the Valdez Marine Terminal. Alyeska's SERVVS also conducted several open water and nearshore exercises throughout Prince William Sound.*



Andrea Korbe  
City of Whittier

## Drills and Exercises

### *Polar Tankers Drill*

The Polar Tankers drill was an ambitious and intense exercise that included around the clock operations that for 48-hours, changing command posts from Valdez to Anchorage, field oil spill response operations and incorporating actual weather conditions. This drill had many challenges. Inclement fall weather hindered field activities to the extent that no oil spill equipment could be deployed except for the larger boats and barges carrying the equipment. The weather also kept planes from flying both simulated dispersant flights and actual passenger flights that were scheduled to transport people from one command post to the other. This drill substantiated a council concern that weather, even below the plan's identified response limits, could potentially bring a spill response to a stand still.

### *Nearshore Drill*

Another big nearshore drill, sponsored by Alaska Tanker Company and BP, was conducted in February in Gravina Bay. This design of this three-day exercise included operations during darkness, sensitive area protection, and nearshore spill recovery operations from three nearshore task forces. Unfortunately, during the initial mobilization, one of the support vessels for the vessel decontamination station sank while transiting to the response area (luckily, there were no injuries). This affected the rest of the exercise additional safety protocols, including the suspension of all night operations that were incorporated into the exercise to test those elements of the response plan.

### *Valdez Marine Terminal Exercises*

The Valdez Marine Terminal exercises for the past year have focused on sensitive area protection in the Port of Valdez. Protocols for protecting the Duck Flats and the area known as Drainage 58 from the terminal were deployed twice with varying success. Other exercises conducted in the past years included an aerial dispersant application (using water instead of dispersant chemicals), a nearshore exercise in Nelson Bay near Cordova and an open water exercise in Port Valdez.





## Monitoring the Fishing Vessel Response Fleet

The council continues to monitor the fishing vessel response program. During an incident, these vessels would be instrumental since response tactics described in both the Tanker and Valdez Marine Terminal contingency plans rely upon the use of these pre-contracted and pre-trained vessels along with their trained crew. There are approximately 400 vessels, predominantly commercial fishing vessels, enrolled in this program and on contract with SERVS. Fishing vessel captains and their crews undergo annual training covering various oil spill response tactics, equipment, and personal safety and protection, among other topics. This three-day training allows for a one-day of hands-on time with equipment, a day of classroom materials, and a day of actual practice on water with response gear and boom. The past year's annual training emphasized sensitive area protection tactics, incorporated a basic explanation of the tanker contingency plan scenario, and showcased several pieces of new response equipment. Overall, participants reported the training went well and that the scenario overview helped them to understand what a full-fledged response would look like. Over 300 vessels and their associated crews participated in the spring session of annual training; a fall session is also planned.

## Spill Response Training Improvements

The council continues its work to find and permit an oil spill simulant. A simulant would mimic key characteristics of oil and provide responders with a practice target on the water and help make drills, exercises and training events more realistic. The initial workgroup effort that the council helped to spearhead in 2012 has elevated itself to the federal level, and the council continues to monitor and participate in this process. This current work is funded by the Bureau of Safety and Environmental Enforcement, a federal agency with jurisdiction over the offshore oil reserves on the North Slope. Their focus tends to be on spill response in the Arctic, but it is expected these efforts will pave the way for our local waters and better define a permitting process with the State of Alaska.

## Incident Command System for Regional Stakeholders

The council presented community workshops this past fall to educate stakeholders about the Prince William Sound oil spill contingency plans, basics of the incident command system, and most importantly, how communities can interact with the decision makers during a large incident to stay informed and share concerns. These "Incident Management for Regional Stakeholders" workshops took place in Whittier and Seward. Workshop participants included city officials such as mayors, harbor masters, and city managers, local emergency responders, and representatives from local agencies and non-profits who would be affected by a spill or large incident.



Thane Miller  
Prince William  
Sound Aquaculture  
Corp.



## Marine Firefighting Symposium

The 2013 edition of the Marine Firefighting Symposium, which is planned and sponsored by the council every 2 years to help improve shoreside firefighting response to oil tanker and other vessel fires, was held October 8-10 in Seward, Alaska. Through partnerships made with the Seward Fire Department and the Alaska Vocational Technical Center's (AVTEC) Alaska's Institute of Technology, the symposium was able to provide live fire training for the first time.

During field exercises, participants rotated through training stations at AVTEC's Marine Fire Training Facility. Training at the stations included mounting a ladder

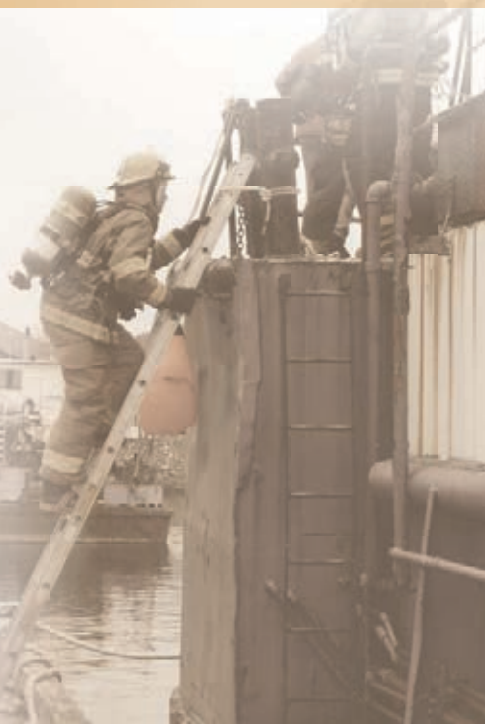
to a ship's deck, conducting shipboard search and rescue, transporting a patient off a vessel and advancing a charged fire hose from shore onto a boat. Students later rotated between live fire training stations, which included the AVTEC ship fire simulator, fire extinguisher training with a propane-fired burn pit, a diesel-fueled fire and a burning timber pile.

On the last day of the event, training was conducted at Seward's small boat harbor. Training stations were made up of two Kenai Fjords cruise ships, the Cook Inlet Tug Junior, the vessel Bering and a large Resolve Marine pump. The Seward Fire Department provided two fire engines and their fireboat to support the exercises.

### *Training and Funding Support*

Firefighters came from across Alaska. The 39 participants and eight facilitators represented a mix of communities and industry. Participants learned basics of marine firefighting and vessel terminology. The State of Alaska has been developing a "Marine Firefighting for Land-Based Firefighters" certification standard. At this year's symposium, attendees could seek the Awareness Level Certification for this new program for the first time.

In addition to Seward's Fire Department and AVTEC, other organizations and businesses lent support to the program: Seward Chamber of Commerce, Scott and Eagle Safety, Kenai Fjords Tours, Foss, Crowley Maritime, Cook Inlet Tug & Barge, Resolve Marine and the International Fire Service Training Association. The Alaska Department of Homeland Security helped fund travel for eleven firefighters from across the state.





# Environmental Protection and Monitoring



## OPERATIONS AT THE VALDEZ TERMINAL

*The Oil Pollution Act directs our council to review, monitor, and comment on Alyeska's environmental protection capabilities, as well as the actual and potential environmental impacts of terminal and tanker operations. The Act also calls on us to develop recommendations on environmental policies and permits. The council carries out this work through two major programs: under the leadership of the Scientific Advisory Committee and the Terminal Operations and Environmental Monitoring Committee. Through these programs we commission scientific studies to determine actual or potential risks, document levels of pollution and biological effects, and better understand new technologies and the environmental costs or benefits associated with their use.*

### Terminal Operations Program

The council has monitored oil loadings at the Valdez terminal since January 2003. At that time, an average of 968,000 barrels per day of North Slope Crude moved through the terminal and onto tankers every day. Since then, oil flow decreased steadily every year reaching a low in 2013 of about 504,000 barrels per day. During the first four months of 2014, throughput appears to be similar to that observed during 2013, approximately 501,000 barrels per day. The declining trend that started in the early 1990s when throughput peaked at about two million barrels per day may have flattened.



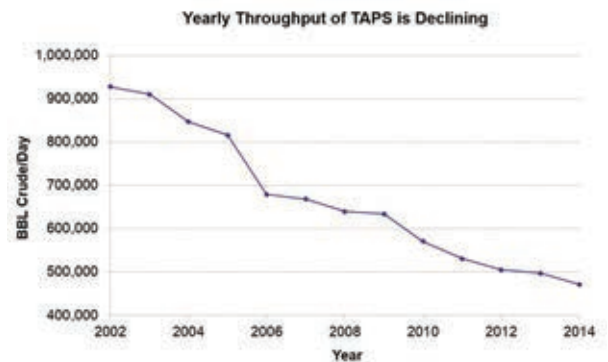
Pat Duffy  
Alaska State  
Chamber of  
Commerce



Cathy Hart  
Alaska Wilderness  
Recreation &  
Tourism Association

## *Oil Flow in Barrels and Dollars*

In 2002, the oil moving through Valdez was valued at \$700 million per month. While the volume of oil in the pipeline has been decreasing, and that trend appears to be slowing, the value of that oil fluctuates significantly, from a peak of \$2.7 billion per month in June 2008 to a low of \$675 million per month in December 2008. The value of product remains high at approximately the same level as last year with crude oil valued at approximately \$1.5 billion loaded in Valdez in April 2014. Many of the safety and preparedness improvements the council advocates have a large price tag. The value of the oil is important to justify these enhancements.



## *Air and Water Quality*

For many years, the council has been concerned about the emission of hazardous air pollutants from the Ballast Water Treatment Facility. This facility services the few single hull tankers (and double hull tankers when required by adverse weather) arriving in Valdez with oily water in their cargo tanks. On average, two million gallons of fresh water runoff and oily ballast which could result in air and water pollution are successfully treated each day. Council staff reviews monthly discharge monitoring reports filed by Alyeska with the Alaska Department of Environmental Conservation to verify it is all working properly.



## *Oil Storage Tank Levels At Valdez*

Council staff continues to monitor oil storage at the Valdez Marine Terminal. Inventory of oil in recent months was mostly in the range of 20% to 50% of capacity. Inventory levels above 80% are seen as problematic and levels above 90% can pose serious operation problems for Alyeska. Inventory levels have not risen to levels that were of concern to PWSRCAC since May 2013.



Jim Herbert  
City of Seward



Nick Garay  
City of Homer

## *System Integrity Issues at the Valdez Terminal*

We monitor operations at the terminal to ensure that: (a) specific system issues become known to the council; (b) identified integrity issues do not pose an increased risk for oil spills; and (c) proper procedures are in place to resolve issues.

Council representatives visit the terminal monthly to observe selected system integrity issues. Typically, we request briefings on the following:

- Crude oil storage tanks
- Spill containment around crude oil storage tanks
- Power generation
- Management of hazardous vapors
- Corrosion of piping and tanks
- Metering facilities and management pressures associated with incoming oil
- Control systems
- Berth and loading equipment
- Ballast water treatment facilities.

This year, the council finished a project associated with the ability of Alyeska to remotely control oil handling assets at the terminal from Anchorage and developed another project pertaining to inspectability of buried piping and piping covered with insulation that in many instances have not been inspected since original construction. Experts with national and international credentials were hired to assist staff in completing these projects.

## *Remote Control of Valdez Marine Terminal Assets from Anchorage*

During FY2007 and FY2008 Alyeska moved its Operational and Control Center (OCC) from Valdez to Anchorage, with backup in Palmer. There has been at least one instance where Alyeska's operators in the OCC lost the ability to see the system they were controlling due to design and/or operations procedural flaws. The council became concerned that the assets located at the VMT, but under the control of operators in Anchorage, could be vulnerable to the same, or manifestly similar, design or procedural flaws that were contributing factors to the previously known incident elsewhere in the system.

The primary findings of the project were: (a) that causes identified in the known incident are relevant to control of the VMT; (b) Alyeska was unable to demonstrate that it had specific procedures for managing each alarm that could possibly be generated from operations at the VMT; (c) and Alyeska was unable to demonstrate that it had appropriately integrated maintenance of the control system into its normal maintenance activities; and (d) Alyeska was not using any set of key performance indicators that would allow its high-level and mid-level managers to have sufficient operational knowledge to effect proper management of the control system.

The Council has reviewed these findings with Alyeska and both state and federal regulators.

## Environmental Monitoring and Science

*The council monitors the environment of Prince William Sound and adjoining waters for impacts from oil-industry operations. Scientific research into such impacts, as well as research into the effects of some oil-spill response tactics, makes up a large part of the work done under this program. Recommendations from the reports mentioned have been sent to industry and agency stakeholders. The final reports are posted on the council website.*

### *Chemical Dispersants*

For many years, the council has been pursuing answers to questions surrounding dispersant effectiveness and toxicity in the cold waters of our region. This pursuit has led to a number of studies on subjects including swirling flask laboratory testing, photo-enhanced toxicity, test tanks, resurfacing of dispersed oil, dispersants policy and other related subjects.

The council maintains a comprehensive database of dispersants research reports that is updated annually. The database is complemented by a literature survey and synthesis that summarizes the state of science of dispersants—“A Review of Literature Related to Oil Spill Dispersants 1997-2008.”

This year the council accepted three short reports on alternate response technologies updating and synthesizing the most recent state of research on oil herders, solidifiers and beach cleaners. Recommendations from the reports have been sent to industry and agency stakeholders. The final reports are posted on the council website.

Council representatives continue to participate in the Alaska Regional Response Team’s Science and Technology Committee as it works to update the Alaska dispersant use guidelines. This year the council informed people and communities in our region about changes to the guidelines and facilitated public comments on the changes.

*Council representatives continue to participate in the Alaska Regional Response Team as it works to update the Alaska dispersant use guidelines.*





## *Hydrocarbon Toxicity*

Through this project, the council researches and addresses the gaps in knowledge regarding chronic toxic effects of oil. This includes dispersed oil and in-situ burn (burning spilled oil) residue under study conditions similar to the cold marine waters in our region.

The council accepted a report summarizing research that shows pink salmon and Pacific herring embryos exposed to trace levels of dispersed Alaskan crude oil develop cardiac abnormalities that lead to permanent changes in the heart. This peer reviewed paper has been submitted for publication in the Proceedings of the Royal Society.

## *Invasive species*

The council continued to support citizen-based monitoring efforts, particularly for the European green crab and invasive tunicates. The green crab, a known ballast-water-borne invader, is an efficient and voracious predator that has invaded the West Coast of North America from San Francisco to Vancouver Island. It is feared that the green crab will find its way to Alaska waters.

The monitoring program has evolved into a self-sustaining grassroots system since initiated by the council in 2000. Communities now run their own operations through local science centers in Homer and Seward. The council continues to support some of the smaller communities to encourage participation for those areas. This past year, Cordova and Whittier were added to the list of monitoring sites. No green crabs have yet been captured in the council region by these trapping efforts to date.

This year the council accepted a research report on plankton genomics by the Smithsonian Environmental Research Center and the Moss Landing Marine Laboratory, California State University. The U.S. Fish and Wildlife Service funded this project through a grant to the council. The work in this report is some of the first ever broad-scale identification of plankton using genetic methods. Eight potential non-native species were detected and identified in Prince William Sound across the various survey sites. All were bottom dwelling organisms.

Information on the council's work  
on dispersants is available on our  
website:  
[www.bit.ly/OilSpillDispersants](http://www.bit.ly/OilSpillDispersants).



## *Regional Environmental Monitoring*

### **LTEMP Program**

In 1993, the council established a Long-Term Environmental Monitoring Program, called LTEMP. The program assesses the status of hydrocarbon levels in the Sound, as well as long-term trends and any new developments that could have an effect on those levels. Recent results confirm and continue a long trend of reduced hydrocarbons in Prince William Sound. This is a positive indicator of environmental progress and the efficiency of improved pollution prevention controls.

### **Sampling Locations**

Samples are collected at 10 intertidal sites in Prince William Sound and the Gulf of Alaska. Mussel tissues and sediments from the sites are analyzed in a laboratory to determine whether hydrocarbons are accumulating and, if so, their source. The result is the largest chronological data set ever compiled for hydrocarbons in Prince William Sound.

### **Sampling Frequency**

LTEMP sampling is conducted once per year at the two Port Valdez sites and at one site in eastern Prince William Sound. Every fifth year, all 10 sites will be sampled. Before the current schedule was adopted in 2009, the sampling frequency was as high as three times annually at all sites. 2013 was the fifth year of the sampling cycle and samples were collected in early July of 2013. A final summary five-year report is to be submitted this fall.



Roy Totemoff  
Community of  
Tatitlek Council

The council's LTEMP reports, along with additional information on the program, are available at [www.bit.ly/LTEMPproject](http://www.bit.ly/LTEMPproject)



# Outreach



## Member Relations, Youth Involvement, and Youth Internships

*The council's full time outreach coordinator and Information and Education Committee (IEC) work together to support the council's mission by fostering public awareness of our work and to build participation of this and the next generation in the council's responsibilities. The council continues to maintain productive relationships with its member communities and aquaculture, commercial fishing, environmental, Native and recreation and tourism groups from within the region affected by the 1989 Exxon Valdez oil spill.*

### Outreach Coordination

The coordinator works with staff and volunteers to visit communities in the council region, attend group member functions, give presentations, coordinate special events involving the council and its member groups, and encourage citizen involvement in the council's work. The Information and Education Committee (IEC) accepts proposals for Youth Involvement projects that assist educational groups in learning about and participating in the council's mission. Beginning this year, the IEC also recruits Youth Internship volunteers to complete council-identified projects that incorporate career development opportunities for older students within the region.



Diane Selanoff  
Port Graham  
Corporation



Patience Andersen-  
Faulkner  
Cordova District  
Fishermen United

## Outreach Events







Emil Christiansen  
Kodiak Village  
Mayors Association



Jane Eisemann  
City of Kodiak



Al Burch  
Kodiak Island

*Ouzinkie*

*Kodiak*

ComFish Alaska, *Booth*  
Salmon Camp, *Youth Involvement Project*

*Chiniak*

"Scientists to Rural Schools"  
*Youth Involvement Project*

Council staff and  
board members  
tour the Valdez  
Marine Terminal



Homer students  
build award  
winning skimmer  
model at Tsunami  
Bowl



## *Anchorage*

- Ongoing Outreach, Presentations, *School Programs, Partner Meetings*
- U.S. Coast Guard Foundation Dinner, *Support and Attendance*
- Alaska Math and Science Teachers Conference, *Booth*
- Alaska Marine Science Symposium, *Booth*
- Board Meeting, *Television Interviews*
- Alaska Forum on the Environment, *Panel Presentation and Booth*
- Alaska Library Association Conference, *Presentation and Booth*
- Alaska SeaLife Center Marine Gala, *Support and Attendance*
- Alaska Science and Engineering Fair, *IEC Support*
- K-12 Oil Spill Curriculum Revision, *Youth Involvement Project*

## *Whittier*

Incident Command for Stakeholders  
*Public Workshop*

## *Kenai*

Cook Inlet Regional Citizens' Advisory Council Meeting  
*Attendance*

## *Homer*

- New Dispersants Guidelines, *Public Presentation and Radio Show*
- Ballast Water Treatment Regulations, *Public Presentation*
- "Oil Spill Science" Discovery Lab, *Youth Involvement Project*
- "Monitoring Oceans for a Better Tomorrow", *Youth Involvement Project*

## *Port Graham*

Annual Shareholders Meeting, *Participation*

## *Seward*

- Board Meeting and Public Reception
- Chamber of Commerce Luncheon, *Presentation*
- Incident Command for Stakeholders, *Public Workshop*
- Alaska Tsunami Bowl Judging Team, *IEC Support*
- "Remotely Operated Vehicle" Oil Spill Response Activity, *Youth Involvement Project*

## *Seldovia*

- Public Reception and City Council, *Presentation*



### Tatitlek

- “Peksulineq” Tatitlek Village Cultural Heritage Week, *Attendance*
- Oil Spill Curriculum School Programs, *IEC Support*
- Public Reception

### Valdez

- Ongoing Outreach, *Presentations, School Programs, Partner Meetings*
- Crooked Creek Chum Salmon Incubation, *Youth Involvement Project*
- Prince William Sound Community College Fundraiser, *Support and Attendance*
- “Analysis of Fishing Vessel Types and Numbers versus Response Tactics” *Youth Internship*
- New Dispersants Guidelines, *Radio Show*
- Board Meeting and Public Reception
- SPACE Elementary Marine Science Summer Camp, *Youth Involvement Project*

### Cordova

- Green Crab and Tunicate Monitoring and Education, *Youth Internship*
- 20th Annual Sobriety Celebration & Memorial Potlatch, *Attendance*
- New Dispersants Guidelines, *Public Presentations*
- Copper River Nouveau, *Support and Attendance*

### Chenega Bay

Chenega Memorial Day Service and Celebration, *Support and Attendance*

## Prince William Sound

- Eleanor Island Visit, *Television Interviews*
- Wilderness Explorers Cruise to Harriman Fjord, *Presentation with Partners*
- Prince William Sound Habitat Restoration Expedition, *Youth Involvement Project*
- Copper River Stewardship Program, *Youth Involvement Project*
- Prince William Sound Marine Stewardship Expedition, *Youth Involvement Project*
- Prince William Sound Teachers Expedition, *Youth Involvement Project*



## National and International Oil Spill Community

- Pacific Marine Expo, (Seattle, WA), *Booth*
- International Oil Spill Conference, (Savannah, GA), *Booth and Attendance*
- Arctic and Marine Oilspill Program Technical Seminar, (Canmore, AB Canada), *Attendance*



### *On the Web*

The council's online presence, including our website and social media, 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 use of such technologies help us foster dialog and engagement between the council, our constituents, and the online community.

### *Institutional Repository*

Over the years, the council has accumulated a vast collection of historical documents and information related to the oil spill prevention and response system in Prince William Sound. The council's analytical work on oil transportation safety is greatly assisted by reliable access to information that exists within its repository system. Access to valuable historical information improves the functioning of the council, increasing access to institutional knowledge. Having a modernized and fully functional archive and document repository system is a key tool in the council's effort to preserve knowledge, resist complacency, and promote the environmentally safe operations of the Alyeska Pipeline marine terminal and associated oil tankers.



John Johnson  
Chugach Alaska  
Corp



Ian Angaiak  
Chenega Corp. &  
Chenega IRA Council

Project Jukebox recordings are available online through the University of Alaska Fairbanks Oral History Program's Project Jukebox:

[www.ProjectJukebox.uaf.edu](http://www.ProjectJukebox.uaf.edu)



## *Publications*

The council increases public awareness on a wide range of issues pertaining to crude oil transportation through printed and electronic publications.

The Observer is a free quarterly newsletter with nearly 5,000 printed copies distributed throughout Prince William Sound, the northern Gulf of Alaska, lower Cook Inlet, and the Kodiak archipelago, as well as by request to interested citizens around the world, including regulators and industry. It reports on council activities, developments in the oil transportation industry, and news about policy and operational issues related to marine oil transportation. Major oil spill drills are covered. Alyeska and the U.S. Coast Guard are invited to submit a column for each issue. In the course of preparing articles for The Observer, the council frequently invites feedback from industry and regulatory personnel. The Observer is posted on the council website and is also available as an email newsletter.

## **A Noble Experiment**

The council makes available a 14-minute video about its origins, mission and activities. This video, titled “A Noble Experiment: The Story of the Prince William Sound Regional Citizens’ Advisory Council,” is distributed free to member entities for use in informing their constituents about the council. The video can also be viewed on the council’s Youtube Channel, [www.youtube.com/user/pwsrcaac](http://www.youtube.com/user/pwsrcaac).


## **Other Reports**

The council also makes available a “then and now” report on improvements to the Prince William Sound safety system since the Exxon Valdez spill. An updated version for the 25th anniversary of the spill will be available later this year.

Each year, the council summarizes its work in an annual report such as this one.

## *Project Jukebox*

In 2013, the council was awarded a grant from Alaska’s Institute of Museum and Library Services to help fund a project commemorating the 25th anniversary of the of the Exxon Valdez oil spill. The voices of 21 people impacted by the oil spill were digitally recorded in audio and video. Alongside new recordings, the project included audio interviews from *The Spill: Personal Stories from the Exxon Valdez Disaster*. The recordings were cataloged with the Alaska Polar Regions Collection and Archives at the University of Alaska Fairbanks. The project is designed to help expand research opportunities on the long-term socio-economic consequences of technological disasters.



Last year, the council upgraded its repository system to incorporate state-of-the-art library technology and standards that position the council to achieve its goal of providing remote access of all digital documents, as well as every metadata record.

# Who We Are

*As of June 30, 2014*

*The council is an organization of organizations.* Our 19 member entities include state-chartered cities and boroughs, tiny Alaska Native villages with tribal governments, Native corporations, commercial fishing organizations, an environmental consortium, and groups representing the tourism industry.

*Each member entity chooses one representative to our board.* The lone exception is Valdez. It has two representatives, giving our board a total of 20 members. The board meets three times a year. The January meeting is in Anchorage, the May meeting is in Valdez, and the September meeting rotates among other member communities in the oil spill region.

*Who serves on the board?* The names and faces change, but current and recent board members have included commercial fishermen, a schoolteacher, the chief executive of a regional Native corporation, tour-boat operators, an oilfield engineer, and a village mayor.

## Executive Committee



*President*  
Amanda Bauer  
City of Valdez



*Vice President*  
Thane Miller  
Prince William Sound  
Aquaculture Corp



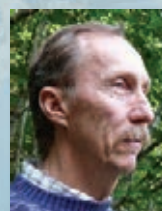
*Secretary*  
Cathy Hart  
Alaska Wilderness  
Recreation  
& Tourism Assoc.



*Treasurer*  
Jim Herbert  
City of Seward



*Member-at-large*  
Pat Duffy  
Alaska State  
Chamber of  
Commerce



*Member-at-large*  
Stephen Lewis  
City of Seldovia



*Member-at-large*  
Andrea Korbe  
City of Whittier

## Ex-Officio Board Members (Non-Voting)

Ron Doyel, Alaska Dept. of Environmental Conservation

Lee McKinley, Alaska Department of Fish and Game, Division of Sport Fish

Sharon Randall, U.S. Forest Service

Allison Iversen, Alaska Dept. of Natural Resources



## Other Directors



*Patience Andersen  
Faulkner*  
Cordova District  
Fishermen United



*Ian Angaiak*  
Chenega Corp.  
& Chenega IRA  
Council



*Robert Beedle*  
City of Cordova



*Al Burch*  
Kodiak Island  
Borough



*Emil Christiansen*  
Kodiak Village  
Mayors Assoc.



*Jane Eisemann*  
City of Kodiak



*Nick Garay*  
City of Homer



*Blake Johnson*  
Kenai Peninsula  
Borough



*John Johnson*  
Chugach Alaska  
Corporation



*Dorothy Moore*  
City of Valdez



*Walter Parker*  
Oil Spill Region  
Environmental  
Coalition



*Diane Selanoff*  
Port Graham  
Corporation



*Roy Totemoff*  
Community of  
Tatitlek Council

Joe Hughes, U.S. Bureau of Land Management

James Benzschawel, Alaska Div. of Homeland Security & Emergency Management

Chris Field, U.S. Environmental Protection Agency

Pamela Bergmann, U.S. Department of the Interior

Commander Joe Lally, U.S. Coast Guard, Marine Safety Unit, Valdez

W. Scott Pegau, Oil Spill Recovery Institute, Cordova

Catherine Berg, U.S. National Oceanic and Atmospheric Administration

# Advisory Committees

*As of June 30, 2014*

## Advisory Committee Missions

### *Oil Spill Prevention and Response Committee:*

Minimize the risks and impacts associated with oil transportation through strong spill prevention and response measures, adequate contingency planning, and effective regulations

### *Port Operations and Vessel Traffic Systems:*

Monitor port and tanker operations in Prince William Sound

### *Scientific Advisory Committee:*

Promote the environmentally safe operation of the terminal and tankers through independent scientific research, environmental monitoring, and review of scientific work

### *Terminal Operations and Environmental Monitoring:*

Identify actual and potential sources of episodic and chronic pollution at the Valdez Marine Terminal

### *Information and Education Committee:*

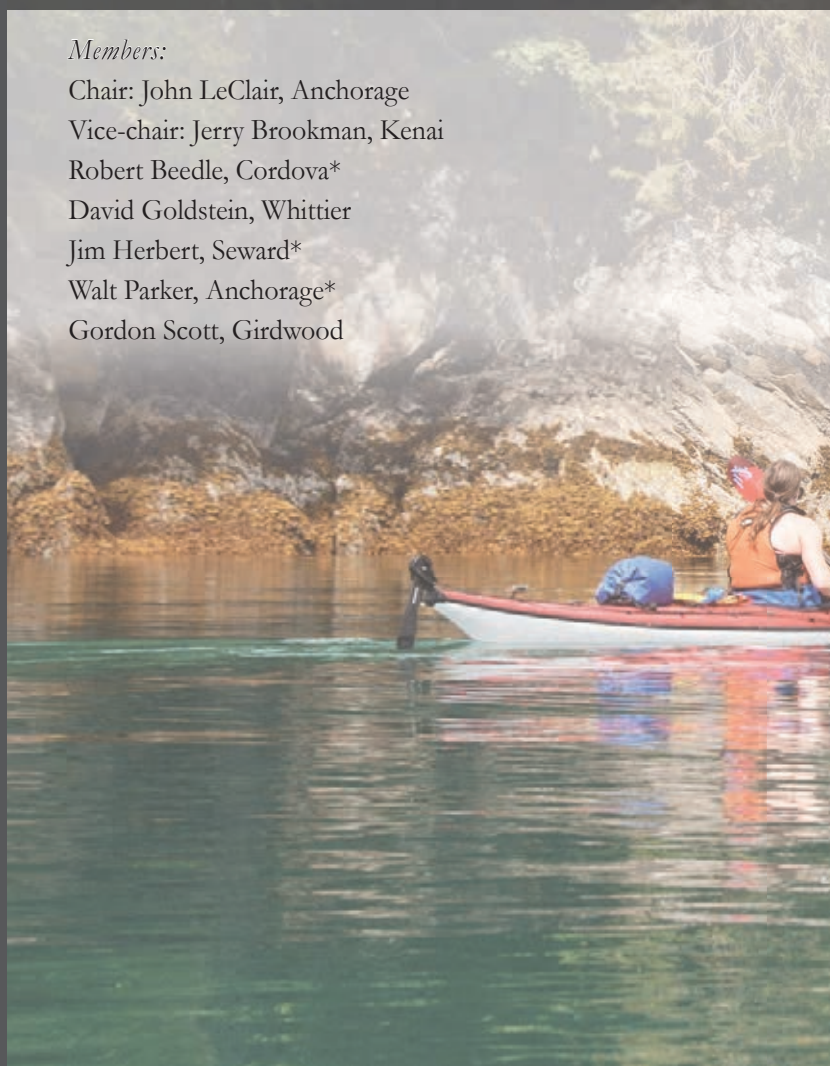
Foster public awareness, responsibility, and participation through information and education

*Five standing committees advise the Board of Directors and the council staff on projects and activities. Committee volunteers also assist the staff on individual projects. The advisory committees are made up of interested citizens, technical experts, and members of the council board. Committee volunteers are selected through an annual application process. They are appointed to two-year terms and may serve consecutive terms.*

## Oil Spill Prevention and Response Committee

### *Members:*

Chair: John LeClair, Anchorage  
Vice-chair: Jerry Brookman, Kenai  
Robert Beedle, Cordova\*  
David Goldstein, Whittier  
Jim Herbert, Seward\*  
Walt Parker, Anchorage\*  
Gordon Scott, Girdwood





## Scientific Advisory Committee

### *Members:*

Chair: John Kennish, Anchorage  
Vice-chair: Paula Martin, Soldotna  
Sarah Allan, Anchorage  
Roger Green, Hope  
Dorothy M. Moore, Valdez\*  
Debasmita Misra, Fairbanks  
Walt Parker, Anchorage\*  
Mark Udevitz, Anchorage

## Port Operations and Vessel Traffic Systems Committee

### *Members:*

Chair: Bob Jaynes, Valdez  
Vice-chair: Bill Conley, Valdez  
Amanda Bauer, Valdez\*  
Cliff Chambers, Seward  
Pat Duffy, Valdez\*  
Jane Eisemann, Kodiak\*  
Pete Heddell, Whittier  
Orson Smith, Seward

## Terminal Operations and Environmental Monitoring Committee

### *Members:*

Chair: Harold Blehm, Valdez  
Amanda Bauer, City of Valdez\*  
Stephen Lewis, Seldovia\*  
George Skladal, Anchorage

## Information and Education Committee

### *Members:*

Chair: Patience Andersen  
Faulkner, Cordova\*  
Vice-chair: Savannah Lewis,  
Seldovia  
Jane Eisemann, Kodiak\*  
Cathy Hart, Anchorage\*  
Ruth E. Knight, Valdez  
Kate Morse, Cordova  
Linda Robinson, Kenai  
Diane Selanoff, Port Graham\*

\*council director



# Staff and Offices

Executive Director: Mark Swanson





## Valdez

Jean Cobb, Administrative Assistant  
Jennifer Fleming, Executive Assistant  
Roy Robertson, Project Manager  
Jeremy Robida, Project Manager  
Donna Schantz, Director of Programs  
Alan Sorum, Project Manager  
Nelli Vanderburg, Project Manager Assistant

Prince William Sound Regional Citizens' Advisory Council  
PO Box 3089  
130 South Meals, Suite 202  
Valdez, AK 99686  
USA

907-834-5000  
Fax: 907-835-5926  
Toll-free: 877-478-7221

## Anchorage

Joe Banta, Project Manager  
Gregory Dixon, Financial Manager  
Amanda Johnson, Project Manager  
Tom Kuckertz, Project Manager  
Serena Lopez, Project Manager Assistant  
Lisa Matlock, Outreach Coordinator  
Natalie Novik, Administrative Assistant  
Steve Rothchild, Administrative Deputy Director  
Linda Swiss, Project Manager  
Alicia Zorzetto, Digital Collections Librarian

Prince William Sound Regional Citizens' Advisory Council  
3709 Spenard Road, Suite 100  
Anchorage, AK 99503  
USA

907-277-7222  
Fax: 907-277-4523  
Toll-free: 800-478-7221

\* For current staff listings please visit our website.

## Internet

Worldwide Web: [www.pwsrcac.org](http://www.pwsrcac.org)  
Email: [anch@pwsrcac.org](mailto:anch@pwsrcac.org)  
Facebook: [www.facebook.com/PWSRCAC](http://www.facebook.com/PWSRCAC)  
Twitter: [twitter.com/PWSRCAC](http://twitter.com/PWSRCAC)

Sign up for the email version of  
The Observer newsletter:  
[www.bit.ly/TheObserverByEmail](http://www.bit.ly/TheObserverByEmail)



# Papers, Presentations, Reports, and Media Releases

*These are just a few of  
the many reports, papers,  
presentations, and media  
releases produced or compiled  
by the council in the past year.*

*For further information, or  
to obtain copies, visit the  
council website or contact our  
Anchorage office.*



**25 Years: Progress in Oil Spill Prevention Response** (news release). Citizen's council, March 2014. Document number: 707.108.140324.EVOSosprProg

**2013 Marine Firefighting Symposium Final Report** (report). Missal, LLC., November 2013. Document number: 805.431.131104.JM2013MFFSrpt

**Alaska Regional Response Team (ARRT) Proposed Draft Amendment to the Alaska Unified Plan to Eliminate the Regional Stakeholder Committee (RSC)** (comments). Citizen's council, November 2013. Document number: 600.105.131105.ADECrscChange

**Analysis of Oil Biodegradation Products** (report). Spill Science, January 2014. Document number: 932.431.140101.SSBioDgrdtn

**Blackened Waters: An Oral History Exhibit of the Exxon Valdez Disaster** (presentation). Citizens' council, March 2014. Document number: 310.107.140324. BlckndWtrs

**Comments on Change 3 to Prince William Sound Subarea Contingency Plan** (comments). Citizen's council, June 2014. Document number: 651.105.140604. ADECsubareaPlan





**Drill Monitoring Annual Report 2012** (report).  
Citizen's council, September 2013. Document number:  
752.431.130919.DrillMon2012

**Marine Invasive Species Technical Support –  
Quantitative Survey of Nonindigenous Species  
(NIS) in Prince William Sound: Plankton  
(report).** Smithsonian Environmental Research,  
November 2013. Document number: 952.431.131101.  
SERCMrnInvSp

**Preserving the State's Ability to Prevent and Respond  
to Oil Spills** (Op-Ed Submission). Citizen's council,  
March 2014. Document number: 310.108.140331.  
Akspllrspns

**PWSRCAC Evaluation of the 2013 Polar Tankers,  
Inc. Prince William Sound Exercise October 7-9,  
2013** (report). Harvey Consulting, LLC., January 2014.  
Document name: 752.431.140115.Eval2013PTTex

**Remote Control of VMT** (report). Hisey and Associates,  
LLC., February 2014. Document number: 500.431.140204.  
HAremConVMTa

**A Review of Best Available Technology in Tanker  
Escort Tugs** (report). Robert Allan Ltd. Naval Architects,

November 2013. Document number: 801.431.131106.  
AllanBATRvw

**Review of EPA Draft Permit Modifications and Fact Sheet  
For Valdez Marine Terminal NPDES Wastewater  
Discharge Permit** (report). Pegasus Environmental  
Solutions – Alaska, August 2013. Document number:  
551.431.130809.PegasusEPArpt

**Review of Oil Spill Herders** (report). Spill Science,  
January 2014. Document number: 600.431.140123.  
OilSpillHrdrs

**Review of Solidifiers: An Update 2013** (report).  
Spill Science, January 2014. Document number:  
600.431.140123.SldfrsRvw

**Revision to 1989 Oil Dispersants Guidelines**  
(comments). Citizens' council, February 2014. Document  
number: 955.105.140204.DispComts

**Surface Washing Agents: An Update 2013** (report)  
Spill Science, January 2014. Document number:  
600.431.140123.SrfwshAgtsUp

# Photo Credits

Key: t: top, b: bottom, c: center, r: right, l: left

Front cover: Kayaker enters a secluded cove in Prince William Sound, Cathy Hart

Contents: Icebergs near Heather Island, Cathy Hart

P1-2: Gulls relaxing on ice, Cathy Hart

P3: b: Sunset over Prince William Sound, Amanda Johnson

P3-4: t: Fishing vessels responding to Exxon Valdez oil spill, Alaska Resources Library and Information Services' (ARLIS) Exxon Valdez oil spill photo collection

P4: c: Oiled seal in rehabilitation center, ARLIS' Exxon Valdez oil spill photo collection

P4: c: Surveying oiled beach, ARLIS' Exxon Valdez oil spill photo collection

P4: b: Oiled beach, ARLIS' Exxon Valdez oil spill photo collection

P5: 2014-2015 Executive Committee, Amanda Johnson

P5-6: Prince William Sound, Amanda Johnson

P7: l: Fishing vessel response training in Homer, Lisa Matlock

P7: t/r: Exxon Valdez, ARLIS' Exxon Valdez oil spill photo collection

P8: t: Columbia Glacier, Tad Pfeffer

P8: b: View of Valdez, Lisa Matlock

P9: Rainbow over response barge in Gravina Bay, Alan Sorum

P10: Sea lions, Lisa Matlock

P11-12: Responders work during a nearshore drill, Jeremy Robida

P12: Fishing vessels participate in nearshore drill, Jeremy Robida

P13: t: Loading oil onto a tanker at terminal, Alan Sorum

P13: b/l: Marine Firefighting Symposium, Alan Sorum

P13: b/r: Marine Firefighting Symposium, Alan Sorum

P14: Waterfall in Prince William Sound, Cathy Hart

P15: Sea star, Nelli Vanderburg

P16: Valdez harbor, Amanda Johnson

P17-18: Prince William Sound, Cathy Hart

P19: Prince William Sound, Tom Kuckertz

P20: Student appreciated our outreach efforts, courtesy of Friends of Alaska National Wildlife Refuges

P21: Kayakers in Prince William Sound, Cathy Hart

P22: t: Staff and volunteers during tour of Valdez Marine Terminal, courtesy of Lisa Matlock

P22: c: Homer students building an award-winning skimmer model, Ryan Johnson

P22: b: Alaska Geographic students during a tour of the Sound, Lisa Matlock

P23-24: Valdez, Amanda Johnson

P24: b: Youth holding glacier ice during outreach event, Jeremy Robida

P25: t: Trailhead sign near Seldovia, Lisa Matlock

P25: b: Old Harbor, Marybeth Phyllis

P26: Anchor Point, Amanda Johnson

P27: b/l: Turnagain Arm in Cook Inlet, Amanda Johnson

P27-28: Resurrection Bay, Amanda Johnson

P29-30: Kayaker in Prince William Sound, Cathy Hart

P31: l: Coast Guard dock in Valdez, Lisa Matlock

P31: r: Waterfall in Prince William Sound, Cathy Hart

P33-34: Hillside near Cordova, Lisa Matlock

Back cover: previously released advertisement by the council.



