THE OBSERVER

Researchers cautiously optimistic about increase in young herring

A new study hints that the herring population in Prince William Sound could be on the rise.

In the early 1990s, the numbers of herring declined drastically, destroying a healthy fishery. The reason for that crash has never been confirmed, though the Exxon Valdez oil spill is considered a contributing factor.

Since then, the herring population has never recovered to the point that fisheries could permanently reopen. Then in 2015, the population crashed again, possibly due to a disease outbreak.

Researchers at the Prince William Sound Science Center have been studying herring for several decades to find out why the population is struggling to recover. The author of the report, Dr. Scott Pegau, coordinates the center's herring research and monitoring programs. Part of his work includes surveying the coastline of Prince William Sound from a small plane to count the size, numbers, and age of schools of juvenile herring.

The Council sponsored the last four years of these surveys. Forage fish species, such as herring, are often found in shallow coastal waters, so they are particularly susceptible to the effects of an oil spill. The data on where schools of herring and other "forage fish" tend to congregate could be used to help protect those areas in case of a spill.

Second year of increased numbers of herring

The populations of forage fish can fluctuate, so it's important to be able to compare the numbers and sizes of schools to past years. Similar surveys have been conducted as far back as the 1990s.

The number of schools of 1-year-old herring is used to estimate future population growth. Surveys

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Forage fish are small or juvenile fish that larger species, such as salmon, depend on for food.

IN THIS EDITION OF THE OBSERVER:

PRINCE WILLIAM SOUND RCAC REGIONAL CITIZENS' ADVISORY COUNCIL

Vol. 33, No. 1

Electric current can find damage in underground liners

A new Council report shows how electricity can be used to "see" damage in the asphalt liners that are intended to contain oil in case of a spill at the Valdez Marine Terminal.

The terminal's vast crude oil storage tanks are surrounded by a secondary containment system. This system consists of huge containment cells (two tanks per cell) that would act like a bathtub, holding the oil until it can be cleaned up.

To keep oil from leaking into the surrounding environment, these cells are lined with a special type of asphalt. About 5 feet of gravel fill sits on top of this liner.

These asphalt liners can become brittle with age and are susceptible to physical and chemical damage. Over the years, the gravel fill has been removed in a few places to visually inspect the liner. About 20% of the time, holes or cracks were found.

Removing all the fill to visually inspect and repair the liner would be an expensive and time-consuming project, and the excavation equipment could cause further damage to the liner. Alyeska is looking for ways to evaluate the liner without having to excavate.

To help identify the best liner testing methods, the Council has been working with Dr. Craig H. Benson, who has been teaching and practicing environmental and civil engineering for over 40 years, and has extensive experience in containment systems. A new report by Dr. Benson has several recommendations to help the Council provide advice to Alyeska regarding the secondary containment systems at the terminal in Valdez.

Dr. Benson evaluated several liner inspection techniques and determined that electrical leak location would likely be the best. This type of survey is done by applying electric currents to the ground outside the liner and measuring electric currents on the surface of the fill inside the liner. A solid liner would block the currents. Holes or cracks would allow the current to flow through. Currents that flow through the liner can be detected from the surface, allowing technicians to create a map of damaged areas.

Dr. Benson also analyzed how much of the liner would need to be tested to have confidence that the liner will reliably hold spilled oil. He determined that testing at least 20% of the liner would be enough to estimate how many holes may exist in the liner, with acceptable accuracy. However, 100% of the liner would need to be tested to find all the actual damage.

The importance of an undamaged liner

The Alaska Department of Environmental Conservation, or ADEC, gives Alyeska a 60% "prevention credit" because this secondary containment system is in place. This means that instead of having to provide response equipment to clean up a spill equal to the contents of the largest tank at the terminal (over 23 million gallons), Alyeska only has to provide response equipment and personnel to clean up a little over 8.5 million gallons.*

This is a substantial reduction in the amount of response personnel and equipment.

In May 2022, ADEC notified Alyeska that they needed to identify preliminary methods to evaluate the integrity of the liners by October 2023. Alyeska must identify final methods to evaluate these liners by March 2025.

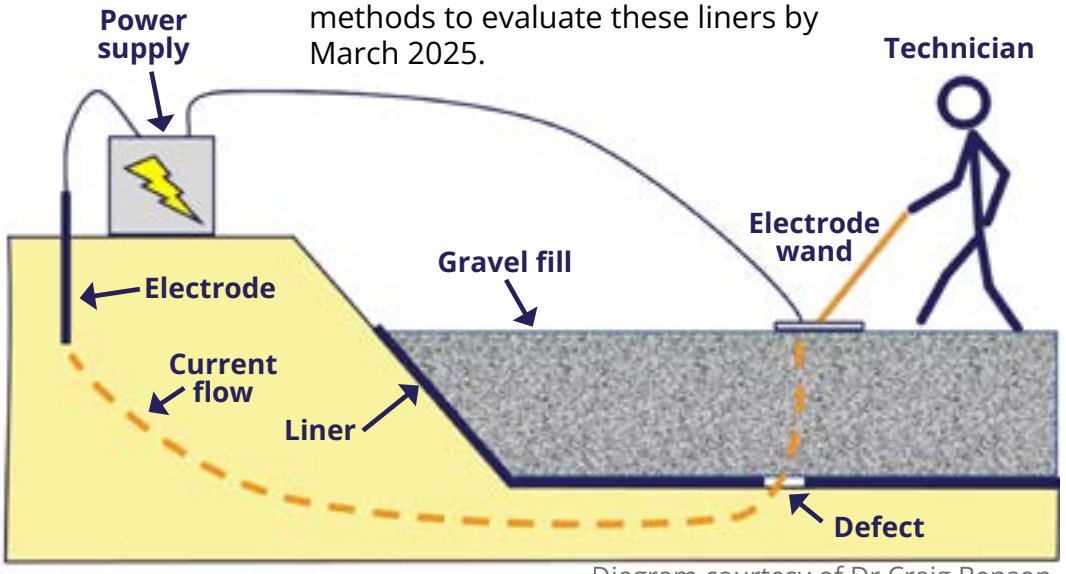

Diagram courtesy of Dr Craig Benson.

*8.5 million gallons, or 204,180 barrels, is the volume of the largest tank, less a 5% prevention credit for drug/alcohol testing, 2% prevention credit for on-line leak detection, and 60% prevention credit for the secondary containment system.

Volunteer Spotlight: Wei Cheng

Fishing for answers: Geneticist using DNA to decode Alaska salmon's family ties

Wei Cheng says she is happy and fortunate to be able to use her expertise in genetics to help protect Alaska's salmon.

At her job with the Alaska Department of Fish and Game, or ADF&G, she analyzes genetic changes in fish to map the relationships among populations of salmon and other species of fish. The information she gains helps fisheries managers make decisions protect the integrity of wild populations of fish species.

Cheng is surprised at how much she enjoys the work. "To be honest, I was not interested in fisheries at all at the beginning," she laughs.

Before coming to the United States from China, she graduated from medical school. Her area of interest was in human genetics and diseases, so she moved to Pittsburgh for graduate work in molecular biology at Duquesne University.

After graduation, her husband's work brought them to Juneau.

"In Alaska we don't have medical schools, pharmaceutical companies, or medical research labs," Cheng says about her search for a job.

But she got lucky. The National Oceanic and Atmospheric Administration's Auke Bay Laboratories reeled her in to help with studies using genetic analysis.

"That's where I started working in fisheries."

Cheng and her family eventually ended up in Anchorage, where she now works at ADF&G's Gene Conservation Laboratory.

She has studied the population structure of pink salmon in Prince William Sound This study is the initial step to examine the interactions of wild and hatchery pink salmon in the area.

Salmon tend to spawn in the streams and rivers where they were born. But Cheng says sometimes they stray.

"Hatchery-origin fish may stray into natural streams. They may interact with wild fish and influence wild fish populations through ecological or genetic effects." Cheng adds.

To protect the populations of wild fish, hatchery programs are required to collect their eggs from local fish. Using fish with local genetic profiles means that strays are less likely to harm local populations if they interbreed.

"I never did field work before I started working for Fish and Game," she says. "Alaska is a very beautiful state, especially during summertime. Although the work is really hard, Prince William Sound is so beautiful. I really

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Photo courtesy of Wei Cheng.

Wei Cheng is a member of the Council's Scientific Advisory Committee. The committee is made up of scientists and citizens working to promote the environmentally safe operations of the terminal and tankers through independent scientific research, environmental monitoring, and review of scientific work.

From the executive director:

Keeping the Exxon Valdez disaster in the rearview mirror

Donna Schantz
Executive Director

In February, the Council was certified by the U.S. Coast Guard as the Alternative Voluntary Citizens Advisory Group for Prince William Sound under the Oil Pollution Act of 1990 (OPA 90 or the Act). This process is done annually, with every third year including a public comment period. I wish to thank the individuals, entities, industry representatives, elected officials, and others who sent letters to the Coast Guard this year in support of our work. It takes all of us working together to help ensure that strong oil spill prevention and response measures remain in place.

The Council strives to meet OPA 90 mandates as closely as possible. The Act was drafted in the midst of the chaos and urgency that followed the Exxon Valdez oil spill, or EVOS. While some areas of the Act are perhaps not well defined, the intent seems extremely clear: the Council is to represent communities and interests in the entire EVOS-affected region, from Valdez down to Kodiak.

The Act's mandate for the Council to develop long-term partnerships with government and industry, while also directing us to help shatter the previous complacency of those groups, is an example of one of the less clear sections. This is a challenging mission to achieve. It is difficult to maintain partnerships with those to whom you must also provide advice, and sometimes critical feedback, especially during times of serious reductions in staffing, resources, and budgets for those entities. It is not clear if those who wrote the Act ever meant for the two functions to be compatible. They left that up to us to sort out, which we are still doing 34 years after the spill.

Backsliding and diminishment of regulatory oversight has been a concern of the Council for years. The Council believes the revisions to regulations implemented by the Alaska Department of Environmental Conservation in February 2023 have reduced protections for our region and the state (see page 8). For example, requirements for drills and exercises used to allow for two per year and now the maximum is only one every five years (with an option of one additional per year). This problem can be distilled down to the department lacking the level of resources and leadership support needed to allow for the maximum number of drills and exercises.

The Government Accountability Office, or GAO, did a review in 1991 that stated federal and state monitoring agencies had not effectively overseen the Valdez Marine Terminal. Bureau of Land Management officials told them at the time that the Joint Pipeline Office was not a regulator, with agencies instead relying on Alyeska to police itself. They concluded that the recent establishment of the Joint Pipeline Office was a positive step, but that its success was hindered unless leadership, firm commitments, and secure funding from all regulatory agencies are in place. That was over 20 years ago.

If there is a major spill tomorrow, we can pretty much write the report as to what happened. Cuts to budgets, staffing, and resources within industry and regulatory agencies; reduced regulatory oversight; loss of institutional knowledge and technical specialists… all of these things increase risk. These are the factors that keep our staff and volunteers awake at night.

Alyeska, as well as the regulatory agencies charged with overseeing them, have dedicated staff working diligently to ensure the safe operation of the Valdez Marine Terminal and associated tankers. However, as budgets get

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From Alyeska:

The Prince William Sound Traveling Health Fair sails again

After cancelling the 2020 Prince William Sound Traveling Health Fair one week before departure, this long-standing Alyeska community tradition restarted for its first in-person event since 2019. The Ross Chouest, a Ship Escort Response Vessel System, or SERVS, tug usually stationed at Port Etches, carried a crew of enthusiastic health and wellness professionals from Valdez to Tatitlek to Chenega and back from Oct. 3-9, 2022.

For more than 20 years, Alyeska has sponsored the health fair. On a SERVS marine vessel, the group of healthcare providers travels to remote coastal villages in the Sound to provide classroom instruction on health and mental health topics, host wellness events and community meals. It is a joyful and meaningful event.

Alyeska staff from corporate communications and the Alaska Native Program helped plan, coordinate, and carry out this special event, with support from key staff at SERVS, and Edison Chouest Offshore, or ECO. Over the years, providers from statewide healthcare organizations have participated, frequently sponsored by their employer for the week-long voyage. This year, participants included providers from Providence Valdez Medical Center, Chugachmiut, the State of Alaska Division of Public Health, and the University of Alaska/Idaho State University Pharmacy Program.

Providers lead classroom sessions on mental health, nutrition, physical activity, and first aid; kids seemed to especially enjoy a scavenger hunt to find first aid kits and automated external defibrillators, or AEDs, in the school. The schools were the site other events including delicious community meals prepared by ECO, and a booth-style health fair where community members could get their blood pressure, glucose and cholesterol checked and find information about health and wellness resources. For the first time, providers also hosted a paint night for women and men's BBQs in each community.

Heightened awareness and concerns about COVID in the villages of Tatitlek and Chenega meant careful planning, thoughtful mitigations, and in-the-moment action to protect providers and - most importantly - these isolated and welcoming villages. A detailed COVID Mitigation Plan was developed by participating nurses, with support from Alyeska's Occupational Health Unit. Among other mitigation strategies, providers were tested before departure and again at the midpoint of the trip and wore masks indoor with community members. Thanks to everyone's diligence, the event was held without a case of COVID among providers, crew, or community members.

"This year's Prince William Sound Traveling Health Fair was a monument of persistence and planning," said Kate Dugan, Valdez Public and Community Relations Manager. "It was so meaningful to once again set sail and visit with friends in Tatitlek and Chenega. I'm grateful for their hospitality and the trained professionals who volunteered their time to bring health and wellness resources into these unique communities."

Photos courtesy of Alyeska Corporate Communications.

Board of Directors confirm new representatives

At the January meeting of the Board of Directors, the Council confirmed the appointment of directors for two Cordova member entities. Robert Beedle, who has represented the City of Cordova since 2013, was appointed by the Cordova District Fishermen United to represent their interests. This left the City of Cordova's seat vacant. The city named David Janka to replace Beedle.


Robert Beedle

Born and raised in Cordova, Alaska, where he still lives, Beedle started commercial fishing in summer of 1975 and currently gillnets and long-lines halibut in the Gulf of Alaska and Prince William Sound. He also owns and operates a small business called Columbia Refrigeration. Beedle serves on the Prince William Sound Aquaculture Corporation board and was previously president of the Cordova's Telephone Co-op's board.


David Janka

David Janka was appointed to represent the City of Cordova. Janka has been a resident of Prince William Sound for 46 years, the last 30 in Cordova. Before his retirement as owner/operator of Auklet Charters, Janka worked as a contractor for the Council. He brings previous experience with research projects and environmental issues, including work with federal, state, university, and non-governmental organizations.

Both directors were approved for two-year terms to represent their member entities.

Temporary recreation seat added to Board; permanent entity to be considered

The Board approved the creation of a temporary recreation seat and confirmed the appointment of Jim Herbert of Homer as the representative.

The temporary seat was created to provide a dedicated representative for recreation interests until the Council can conduct a request for qualifications process to determine if there is an appropriate entity in the region willing represent recreation interests on the Board. Recreation interests have been represented in the past by the Alaska Wilderness Recreation & Tourism Association (1992-2015), Board members that bring recreation representation interests in addition to their designated member entity, and through our city council and borough member entities.


Jim Herbert

Herbert, currently living in Homer, has been a resident of the Kenai Peninsula since 1971. He is involved in several recreation groups and activities, including serving on the Steering Committee for the Kachemak Bay Shorebird Festival and is a member of both the Kachemak Bay Birder Club and Friends of Alaska National Wildlife Refuges. Herbert spends time in his small boat on Resurrection Bay and Kachemak Bay fishing, sightseeing, and birdwatching.

Herbert first joined the Board in 2013 as the representative of the City of Seward, where he lived at that time, serving in that role until 2015.

The Council will advertise the request for qualifications for the permanent seat later this year.

Community Corner:

Invasive species intern recognized for stewardship of Alaska's coastal waters

By Maia Draper-Reich, Outreach Coordinator; Danielle Verna, Environmental Monitoring Project Manager; and Kate Morse, member of Information and Education Committee

In January, the Alaska SeaLife Center announced that the Council's former intern Mia Siebenmorgen Cresswell would receive one of its 2023 Alaska Ocean Leadership awards. These awards are given to Alaskans who have made "significant contributions to the awareness and sustainability of the state's marine resources."

The Council was proud to support her nomination for the Ocean Youth Award category, which recognizes an individual or team of youth up to 19 years old who has displayed a dedication to promoting the understanding and stewardship of Alaska's oceans. This honor includes a $500 cash prize.

Mia excelled as an intern with the Council's marine invasive species monitoring program. In 2020 and 2021, Mia monitored the nearshore coastal ecosystem in her hometown of Cordova. Monthly from May through September, Mia set traps to monitor for European green crab (Carcinus maenas) at three intertidal sites. Quarterly, Mia monitored settlement plates in the local harbor for invasive species such as tunicates as part of the Smithsonian Environmental Research Center's Plate Watch program. Throughout the internship, Mia demonstrated her ability to work independently and methodically while setting and retrieving field gear, collecting data and photos, and caring for equipment.

Mia also engaged in outreach to fellow students, her community, and the broader scientific audience. Mia presented on her monitoring work to a virtual audience at the Wrangell Institute for Science and Environment's Science Lecture Series in 2021. In 2022, Mia presented at the Prince William Sound Natural History Symposium organized

Mia Siebenmorgen Cresswell

by the Prince William Sound Stewardship Foundation. Links to the lecture series presentation and the symposium talk titled "Alien Invaders!? Monitoring and Extracting Invasive Species in Prince William Sound" are available on our website at: www.tinyurl.com/MiaSealifeAward

Over the course of the 2021-2022 school year, Mia committed two periods of her school day to interning at two Cordova-based nonprofits, the Prince William Sound Science Center and Copper River Watershed Project. During her internship, she shared her creative talents with these organizations for various multi-media and art projects, while also expanding her skill set by taking on small grant proposals and serving as a youth leader for their summer stewardship program for high-school aged

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ADEC releases final ruling for Alaska's oil spill prevention and response plans

In January 2023, the Alaska Department of Environmental Conservation updated the regulations governing the state's oil spill prevention and response contingency plans. The new plans went into effect on February 5, 2023.

Some improvements cleared up confusing and repetitive language. For example, two similar sections, contingency plan content requirements and approval criteria, were combined into a new section.

Other changes concerned the Council, including:

- Removal of a requirement that the regional citizens' advisory councils be notified when plans and amendments are available for review.
- Removal of a conference to review new technologies in oil spill prevention and response.
- Changes to the schedule and number of operations-based exercises. The new regulations require "at least one" every five years and limit additional exercises to no more than one per year. Previously, the regulations noted "not more than two exercises per year."
- Removal of a requirement for tankers to carry a specific arrangement of towing equipment designed for adverse weather conditions like those often found in Prince William Sound.

Links to the new regulations, as well as the Council's comments from the last round of public comment, is available on our website: www.pwsrcac.org/regulatoryreform

Upcoming Council meetings

The next meetings of the Council's Board of Directors will be held:

- May 4-5, 2023 in Valdez
- September 21-22, 2023 in Homer
- January 25-26, 2024 in Anchorage

Board meetings are open to the public and an opportunity for public comments is provided at the beginning of each meeting.

Council meetings available online

Meetings of the Council's Board of Directors are streamed online and available to the public.

Visit our website in April for information on our in-person and online options: www.pwsrcac.org

Schantz: Keeping Exxon Valdez oil spill in rear view mirror

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squeezed, and reductions in staffing and resources ensue, the result is inevitable; there are not enough dedicated staff and resources to effectively do their jobs.

So many have worked since EVOS to prevent another disaster. Unfortunately, it often takes an accident to get attention on the problems plaguing prevention and response systems. Whether heeded or not, the Council will continue to provide advice in the spirit of promoting change to maintain and improve upon the prevention and response systems designed to protect our region. We hope that the long-term partnerships that we have worked diligently to establish will help prevent further backsliding, identify and mitigate risks, and facilitate improvements designed to prevent another accident.

U.S. Coast Guard recertifies Council

The Council is recertified for another year as the official citizens' advisory group for Prince William Sound.

In a February letter to the Council, Rear Admiral N.A. Moore, Commander of the Coast Guard's District 17 in Juneau, notified the Council of the decision.

The Oil Pollution Act of 1990 requires the Council to be recertified annually to ensure that its responsibilities have been met. Every three years, the recertification is opened for public comment.

The Council received 76 letters of support from organizations, agencies, businesses, Native corporations, and members of the public during the recertification process.

"Of the 76 comments received during the public comment period, 76 were supportive of recertification and noted the positive efforts demonstrated by PWSRCAC as it carries out its mission and responsibilities as intended by the Act," the Admiral noted in the letter.

The new recertification expires February 29, 2024. At that time, the Council is scheduled to undergo the streamlined version of recertification.

The next public comment period will be held in three years.

Researchers cautiously optimistic about increase in young herring

Continued from page 1

conducted in 2022 found an increase in these young herring for the second year in a row. The researchers are hopeful that this means an increase in the number of herring that will return to spawn in the next two years.

"If this is true, we can expect that the herring population will have robust growth in the near future," Dr. Pegau notes in the report.

Dr. Pegau also advises caution. He notes that these surveys were conducted during a period of unusually warm and sunny weather, and that this could have inflated the count. Future surveys will confirm whether this increase will be permanent.

Read more about the Prince William Sound Science Center's herring research on their website: www.pwssc.org/herring

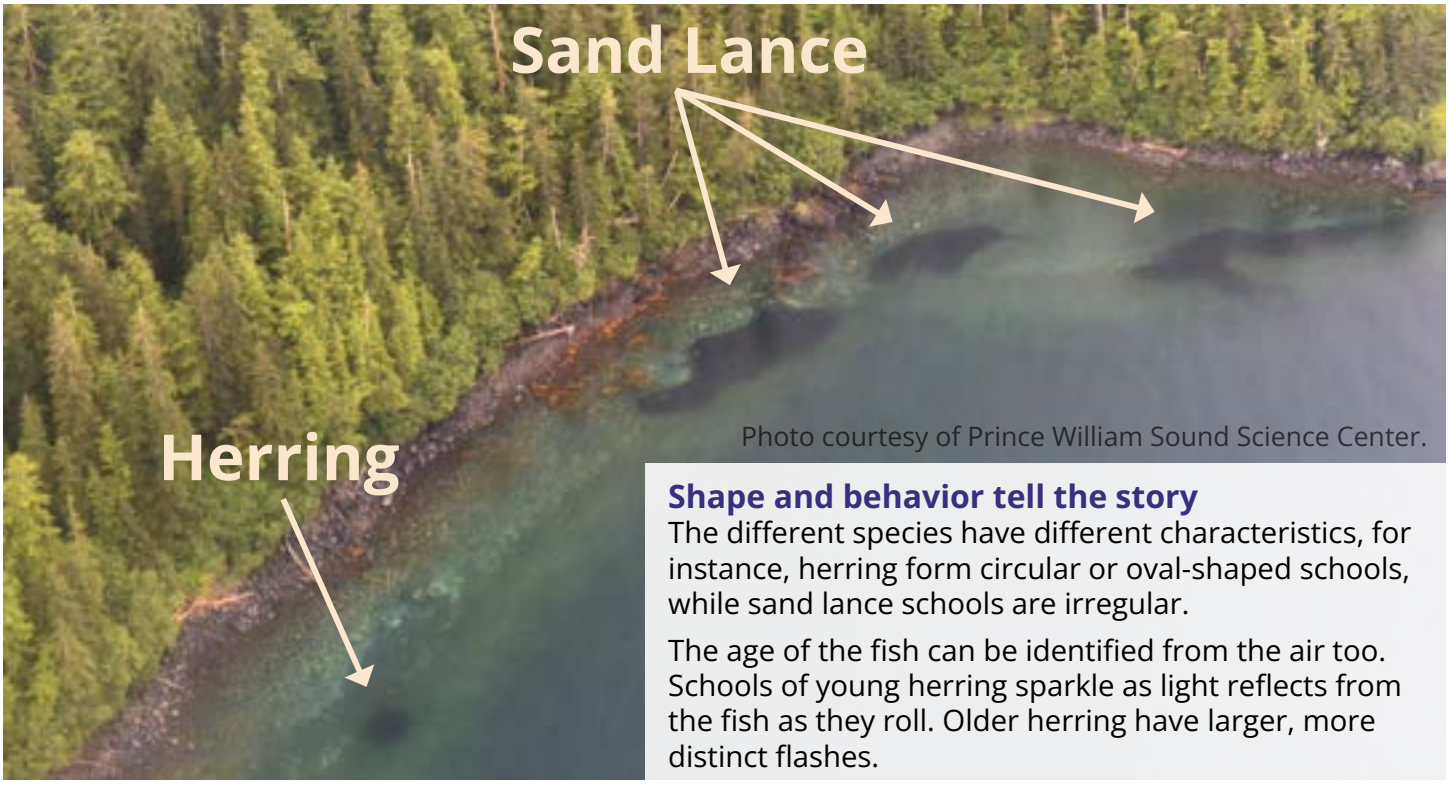

Photo courtesy of Prince William Sound Science Center.

Shape and behavior tell the story

The different species have different characteristics, for instance, herring form circular or oval-shaped schools, while sand lance schools are irregular.

The age of the fish can be identified from the air too. Schools of young herring sparkle as light reflects from the fish as they roll. Older herring have larger, more distinct flashes.

Volunteer Spotlight: Fishing for answers with Wei Cheng

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appreciate seeing the project from the field to the final results."

Joining the Scientific Advisory Committee

A few years ago, the committee started developing projects that involved genetic analysis, such as a recent study of mussel DNA to learn more about how genes respond to stressors such as crude oil, among several others. So the committee sought out an expert on the topic. Cheng says it's been a great fit.

"For me, it is nice to use my expertise to help the community."

Cheng says there are other ways genetic tools could help further the Council's mission. One possibility she finds interesting is analyzing the waters of Prince William Sound for environmental DNA, referred to as "eDNA," to monitor for invasive species.

This could be useful for the early detection of invasive species such as European green crab. Current monitoring methods are labor-intensive, requiring placement of traps in waters where invasive crab are likely to take hold. Early in an invasion, there may only be a few individuals.

All living beings shed cells into their environment.

"We can collect water and the water sample can contain eDNA if those animals exist in that environment."

Cheng has helped the Scientific Advisory Committee develop several projects using genetic analysis tools. You can read about several of these on our website:
www.tinyurl.com/GeneticsMonitoring

Invasive species intern recognized

Continued from page 10

students from communities throughout the Copper River watershed. As a student leader, she was a positive role model for her peers and she helped lead various activities including nature journaling and coordinating field outings with the Council's current marine invasive species intern. The outcome was teens teaching teens, which made the message more exciting for the recipients and helped the leaders (Mia and the other interns) develop their leadership, interpretation, and mentoring skills.

Mia has brought greater awareness to the issue of marine invasive species in Alaska. By regularly monitoring, Mia was poised for early detection of some of the most concerning species that pose a threat to Alaska's intertidal zones. Meanwhile, she was also collecting data on native species in those habitats.

In sharing this work with her peers, her community, and other audiences, Mia stewards the importance of marine science in Southcentral Alaska and beyond. She exemplifies the positive impacts that young people can have on their communities through scientific work and science communication. Mia is currently taking a gap year before attending Dartmouth College in the fall.

Congratulations Mia!

Photo credits:

Cover: Scene from 2022 aerial fish surveys. By Danielle Verna.
Page 1: Tanker and escort tug during 2022 exercise. By Jeremy Robida.
Page 11: Responders practicing tactics in February 2023. By Jeremy Robida.

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PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

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

Who we are

The Council is an independent, nonprofit corporation formed after the 1989 Exxon Valdez oil spill to minimize the environmental impacts of the Trans Alaska Pipeline System's terminal and tanker fleet.

The Council is a voice for the people, communities, and interest groups in the region oiled by the Exxon Valdez spill.

Those with the most to lose from oil pollution must have a voice in the decisions that can put their livelihoods and communities at risk.

The Council's role

We combat the complacency that led to the 1989 spill by fostering partnerships among the oil industry, government, and local communities in addressing environmental concerns.

Board of Directors

The Council's 18 member entities are communities and interest groups affected by the Exxon Valdez oil spill:

Alaska State Chamber of Commerce
Community of Chenega
Chugach Alaska Corporation • City of Cordova
City of Homer • City of Kodiak • City of Seldovia
City of Seward • City of Valdez • City of Whittier
Cordova District Fishermen United
Kenai Peninsula Borough • Kodiak Island Borough
Kodiak Village Mayors Association
Oil Spill Region Environmental Coalition
Port Graham Corp.
Prince William Sound Aquaculture Corp.
Community of Tatitlek

Advisory Committees

Much of the Council's work is done through permanent volunteer committees made up of Board members, technical experts, and local citizens with an interest in making oil transportation safer in Alaska.

Our committees provide an avenue for public participation in the Council's work.

Terminal Operations and Environmental Monitoring (TOEM): TOEM identifies actual and potential sources of episodic and chronic pollution at the Valdez Marine Terminal.

Port Operations and Vessel Traffic Systems (POVTS):
POVTS monitors port and tanker operations in Prince William Sound. The committee identifies and recommends improvements in the vessel traffic navigation systems and monitors the vessel escort system.

Scientific Advisory Committee (SAC):
SAC sponsors independent scientific research and provides scientific assistance and advice to the other council committees on technical reports, scientific methodology, data interpretation, and position papers.

Oil Spill Prevention and Response (OSPR):
OSPR reviews oil spill response plans (contingency plans); monitors state and federal laws and regulations; monitors and participates in oil spill drills; and investigates developments in prevention, containment, response, and cleanup technology.

Information and Education Committee (IEC):
IEC supports the Council's mission by fostering public awareness, responsibility, and participation in the Council's activities through information and education.

THE OBSERVER

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