

How learning to listen can help communities heal from disasters

In 1989, when a young Patience Andersen Faulkner was working as a legal aide in the picturesque town of Cordova, disaster struck when crude oil spilled into Prince William Sound from the tanker Exxon Valdez.

Part of her job was to listen to the folks who came into the law office talk about their experiences with the spill.

"They would tell me how things devastated them emotionally," she says. Even though the spill affected her too, she just listened.

The town didn't have much in the way of mental health services, so Andersen Faulkner pushed the lawyers she worked for to get the community some help. They introduced her to Dr. Steve Picou, a sociology professor at the University of South Alabama.

Dr. Picou had been studying the impacts that technological disasters had on communities. While the effects of natural disasters were well-

understood, technological disasters were a relatively new field, with little documentation. After the spill, he came to Alaska to study how the disaster affected the community of Cordova. This work developed into the Council's guidebook called "Coping With Technological Disasters," designed to help communities cope better with similar disasters in the future.

How different types of disasters create different social environments

Not only are the effects of a technological disaster long-lasting, they differ from other types of disasters. After natural disasters, such as earthquakes or typhoons, there are systems in place for support, such as government agencies. Communities often bond during efforts to rebuild. Following a technological

A **technological disaster** is human-caused. These accidents are caused by the failure of systems that are in the control of people.

Examples include an oil spill, train derailment, plant explosion, or other accident, which have different effects on communities than a natural disaster.



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Surveys emphasize importance of protecting nearshore habitat for wintering birds

Three years of data from surveys of marine bird species is now available online. The data is intended to help identify areas where marine birds tend to congregate in the winter, so that protective measures can be taken in the event of a spill in Prince William Sound.

Previously, most surveys of birds and mammals were conducted in Prince William Sound during spring, summer, or fall. This data from winter adds depth to our understanding of bird populations and the risks posed to birds from an oil spill.

Additionally, these surveys provide baseline monitoring information that can be used to understand the environmental impacts of terminal and tanker operations on marine bird species. The surveys were conducted in winter, which is an important time for marine bird survival given the typically harsh conditions.

Researchers identified 23 distinct bird species. Murrelets were the most common marine bird at 38% of sightings. Pelagic cormorants and common murres were the next most common.

Data available online

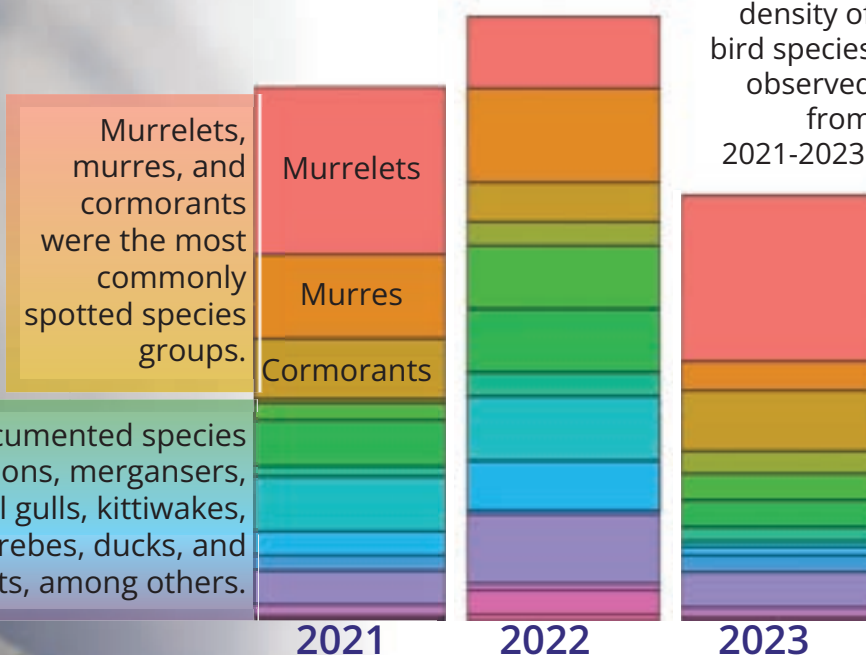
The results of the surveys are publicly available online. A map of the data is through the Alaska Ocean Observing System and NOAA's Environmental Response Management Application (ERMA).

These surveys continue the work done by the Exxon Valdez Oil Spill Trustee Council's Gulf Watch Alaska, which started monitoring in 2007. Datasets from 2007-2023 are available on the Alaska Ocean Observing System's website (aoots.org).

The final report and links to maps and data is on our website: www.tinyurl.com/PWSwinterbirds2023

Winter in Alaska is typically the hardest time for survival. An oil spill during that time of year could have a significant effect on species that live in Prince William Sound year-round.

Chart shows density of bird species observed from 2021-2023.



Murrelets, murres, and cormorants were the most commonly spotted species groups.

Other documented species include loons, mergansers, large and small gulls, kittiwakes, scoters, grebes, ducks, and guillemots, among others.



Under-studied component of hydrocarbons documented in discharge from terminal

A new report examined hydrocarbons that enter Prince William Sound from the Valdez Marine Terminal that until recently have received little attention.

Researchers Maxwell Harsha and David Podgorski from the University of New Orleans investigated the current process of removing crude oil residue from tanker ballast water. They were specifically looking for a type of compound called oxygenated hydrocarbons, as well as heavy metals.

What are oxygenated hydrocarbons?

Hydrocarbons are made of hydrogen and carbon molecules. There are a variety of types, depending on how these molecules are arranged. Crude oil is a mixture of types of hydrocarbons.

Hydrocarbons can become “oxygenated” when atoms of oxygen become attached to hydrocarbon molecules. This family of compounds is currently not monitored or regulated because they cannot be detected with the same process as other components of crude oil. Concerns about these compounds are emerging due to potential risks to human health and the environment.

Residue left in ballast water

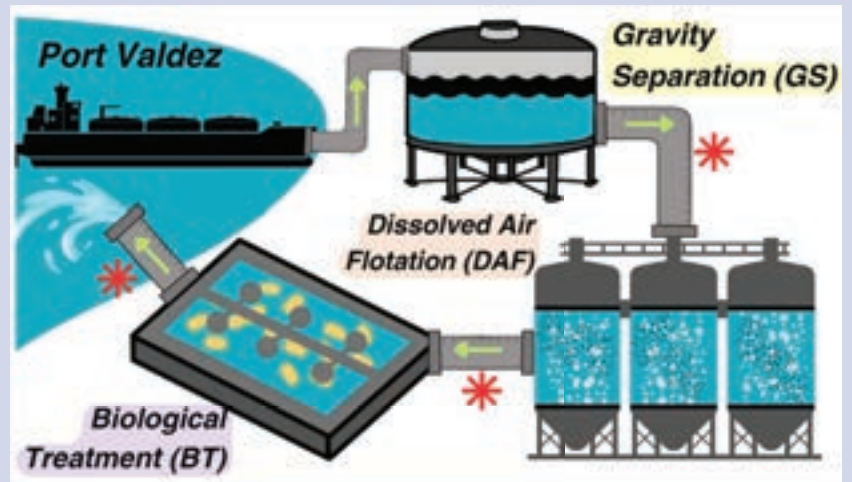
Three treatment processes are employed to remove hydrocarbons from oily ballast water: gravity separation, pressurized air treatment called dissolved air flotation, and biological treatment.

Harsha and Podgorski compared samples of water taken at different points during the process of cleaning ballast water at the terminal.

The study's results demonstrate that the treatment process effectively removes most hydrocarbon compounds, such as benzene, toluene, ethylbenzene, and xylene (BTEX). These are considered the most harmful to humans and other organisms, known to cause cancer and neurological impacts. The concentration of hydrocarbons in the water after treatment is at

How are hydrocarbons cleaned from ballast water?

Oily ballast water is pumped into the treatment facility where it is processed to remove contaminants. It is first allowed to settle, which separates most of the oil by gravity. That oil is skimmed off, and then the water is treated with an air bubble process that removes additional compounds. The final stage is a biological treatment where oil-eating bacteria digest more of the hydrocarbon residue. In this image, the red asterisks note the points where researchers took samples.



historically low levels. The researchers also found that one of the steps in the treatment, which uses dissolved air to remove small particles of hydrocarbons from the water, may lead to the formation of oxygenated hydrocarbons that are then released into Port Valdez.

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What is ballast water?

Tankers sometimes pump seawater into empty crude oil storage tanks to help balance the vessel during rough seas. When a vessel carrying oily ballast water arrives at the Valdez Marine Terminal, the water is treated to remove hydrocarbons before discharged into the sea at Port Valdez.

From the President and Executive Director:

Building trust takes time and transparency

President Robert Archibald, City of Homer
Executive Director Donna Schantz

We are now six months from the 35th anniversary of the Exxon Valdez oil spill (March 24, 1989). These anniversaries are always a time to reflect on lessons learned and acknowledge the progress made in oil spill prevention in response. We also must bring a sharp focus to concerning trends we are seeing in budget and staffing cuts in industry and the associated regulatory agencies. These trends highlight why we must recommit to our mission of promoting the environmentally safe operation of the Valdez Marine Terminal and associated oil tankers.

As we prepare for the annual commemoration of the spill, the Council recently rereleased the publication "Stories from a citizens council," a collection of interviews/oral histories from key participants in the formation of the Council. Many of these interviews highlighted the value of relationships founded on trust. Trust is built on transparency, listening, and engaging stakeholders.

This emphasis on relationships and trust is timely. The prevention and response system for the Valdez Marine Terminal and associated tankers is widely regarded as one of the best in the world. However, in recent years, the Council has seen a steady erosion in some of the safety systems put in place as a direct result of the lessons learned from that disaster.

After the Exxon Valdez spill, the Alaska Oil Spill Commission found that starting in 1981 there had been a dramatic decline in regulatory oversight that had contributed to the spill. Congress determined that only when local citizens are involved in oil transport will the trust develop that is necessary to change the system from confrontation to consensus, and so called for creation of citizen councils.

The Council is a unique partner for industry and regulators, providing a platform to cultivate the long-term relationships that are necessary to establish public trust.



Donna Schantz

Executive Director



Robert Archibald

President

While the Council has had disagreements with industry and regulators over the years, there have been numerous examples of us working cooperatively and collaboratively to find solutions. The success of those collaborations was founded on the transparent sharing and use of technical and scientific information; stakeholders felt informed, heard, and included in the process, resulting in trust.

As those who experienced firsthand the devastation of the 1989 spill are retiring or are no longer with us, the Council has increasingly become a knowledge-bearer. Our historical

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Stories from a Citizens' Council

"A lesson learned is that it's better to have the stakeholders involved before a disaster happens so that you at least have a bit of a trust level established."

- Marilyn Leland

Read more from Leland and others involved in the Council's early days in the rereleased Stories from a Citizens' Council:
www.tinyurl.com/PWSstories

From Alyeska:

Alyeska Pipeline Service Company releases inaugural ESG Report

Alyeska Pipeline Service Company has published its first Environmental, Social, and Governance report, highlighting its dedication to environmental stewardship, sustainable practices, and safe operations of the Trans Alaska Pipeline System, or TAPS. The report, showcasing activity and results from 2022, is now available for download from Alyeska's website.

"Our inaugural ESG report is a testament to our enduring promise to the environment and the communities we serve," said John Kurz, Alyeska President and CEO. "Since our inception, we have upheld a steadfast commitment to sustainability and safe operations. This report highlights our ongoing dedication to transparency and accountability as we navigate the complex challenges and opportunities of the modern energy landscape."

With a company legacy dating back to 1970, Alyeska has proudly operated TAPS since its startup in 1977. This landmark achievement underscores the company's deep-rooted

commitment to the responsible transportation of Alaska's vital energy resources. With approximately 740 full-time employees and collaborating closely with numerous contract and industry partners, Alyeska continues to exemplify a culture of excellence in the energy sector.

The ESG report provides a comprehensive overview of Alyeska's 2022 initiatives, strategies, and performance in key areas such as environmental impact, social responsibility, and governance practices. From innovative environmental protection measures to proactive engagement with local communities to spotlights on employees, the report highlights Alyeska's multifaceted approach to fostering a sustainable future.

To access the full ESG report and learn more about Alyeska Pipeline Service Company's commitment to responsible energy transport, please visit www.alyeska-pipe.com/alyeska-pipeline-service-company/esg-report/.

- Submitted by Alyeska Corporate Communications

Upcoming Council meetings

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

- January 25-26, 2024, in Anchorage
- May 2-3, 2024, in Valdez
- September 21-22, 2024, in Kodiak

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.

Details on our website: www.pwsrcac.org



Decades-old monitoring program still innovating

Thirty years ago, a new Council program was just getting underway. The assignment for the new Long-Term Environmental Monitoring Program was to identify adverse impacts of the oil industry on the ecosystems in Prince William Sound and the Gulf of Alaska.

Just a few years prior, as a result of the devastating Exxon Valdez oil spill, the U.S. Congress had passed a law requiring such a monitoring program.

The Council worked with researchers to develop the program's plan that, with some modifications to incorporate new technologies, is still in existence today.

What are hydrocarbons?

A hydrocarbon is a compound made up of hydrogen and carbon. These two elements can form a variety of molecular structures, forming gases, liquids, or even some solids.

Hydrocarbons vary in weight and molecular structure. Crude oil contains a mixture of different types of hydrocarbons. The mixture varies between each deposit of oil in the Earth's crust, depending on the type of organisms it is made of and the pressure and heat it endured in that particular location. Scientists can identify the source of a sample of oil by identifying the unique mixture.

Copying the approach taken by NOAA to monitor other areas, the program developers included two main tasks. Those were to combine chemical and biological assessment tools to determine whether hydrocarbons from the nearby oil industry:

1. Accumulated in nearby sediments
2. Affected nearby aquatic organisms

Starting in 1993, researchers began collecting samples of the sediments and blue mussels. Ten locations were chosen throughout Prince William Sound and the Gulf of Alaska, largely following the path of the Exxon Valdez oil spill.

The monitoring in Port Valdez is mostly focused on assessing the environmental impacts of the Valdez Marine Terminal while the monitoring elsewhere is focused on assessing the impacts of oil tankers, including possible lingering oil from the Exxon Valdez spill. In addition to sites that were heavily oiled in 1989, the monitoring is also done at clean, unoiled sites for comparison.

Mussels were chosen because they filter large amounts of water and they remain in one location. They have been shown to accumulate hydrocarbons when they are nearby, and to eliminate the hydrocarbons during cleaner conditions. This means mussels reflect what is happening in their environment better than other organisms.



1993

Council begins its long-term environmental monitoring program

2001

First double-hull built to comply with enters service.*

1993

Thirty y

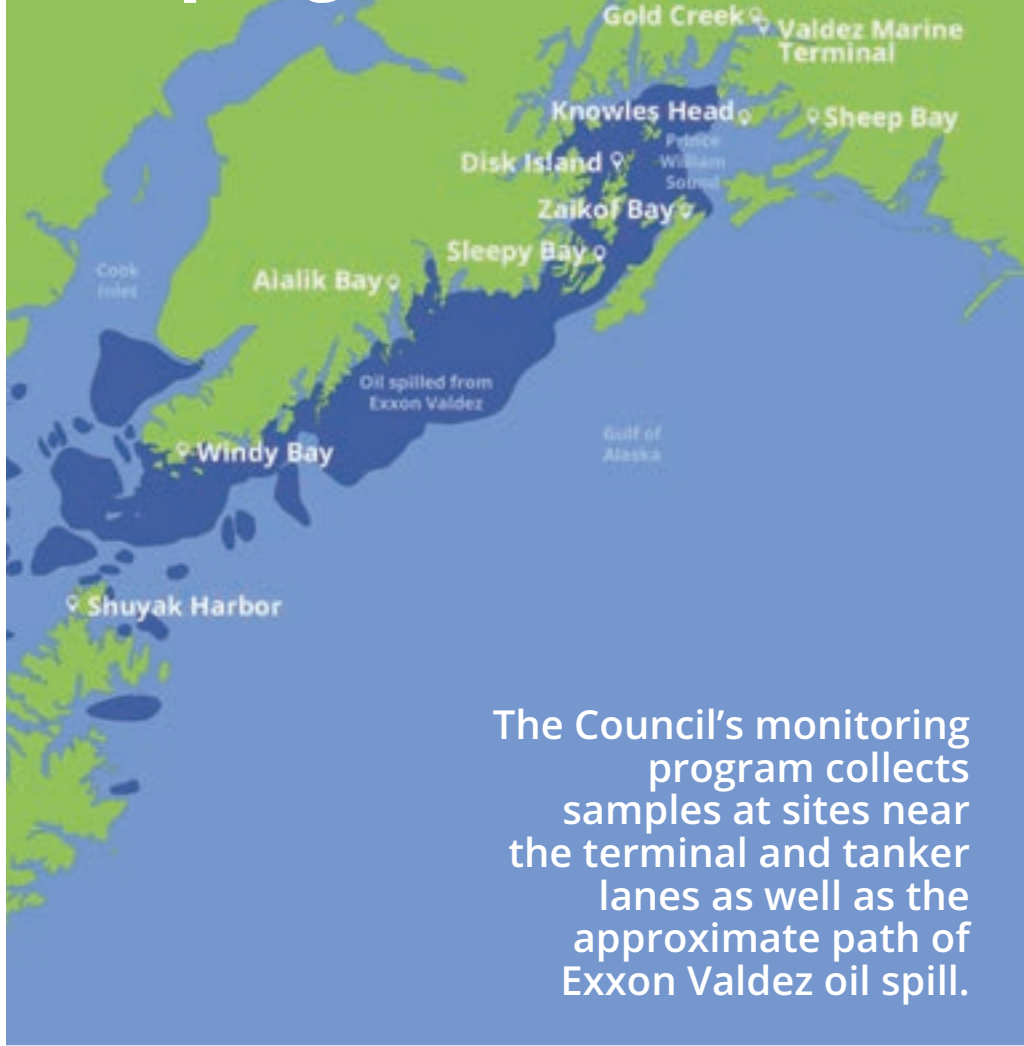
Exxon Valdez oil spill
1989

First report on results:
www.tinyurl.com/FirstLTEMPreport
1996

*Between 2001 and 2015, all tankers transition to double hulls, v

Left: Last May, staff members Austin Love, Jeremy R. Environmental Monitoring Program . The team visited and Disk Island. The devices stayed in the water for

Sampling sites



The Council's monitoring program collects samples at sites near the terminal and tanker lanes as well as the approximate path of Exxon Valdez oil spill.

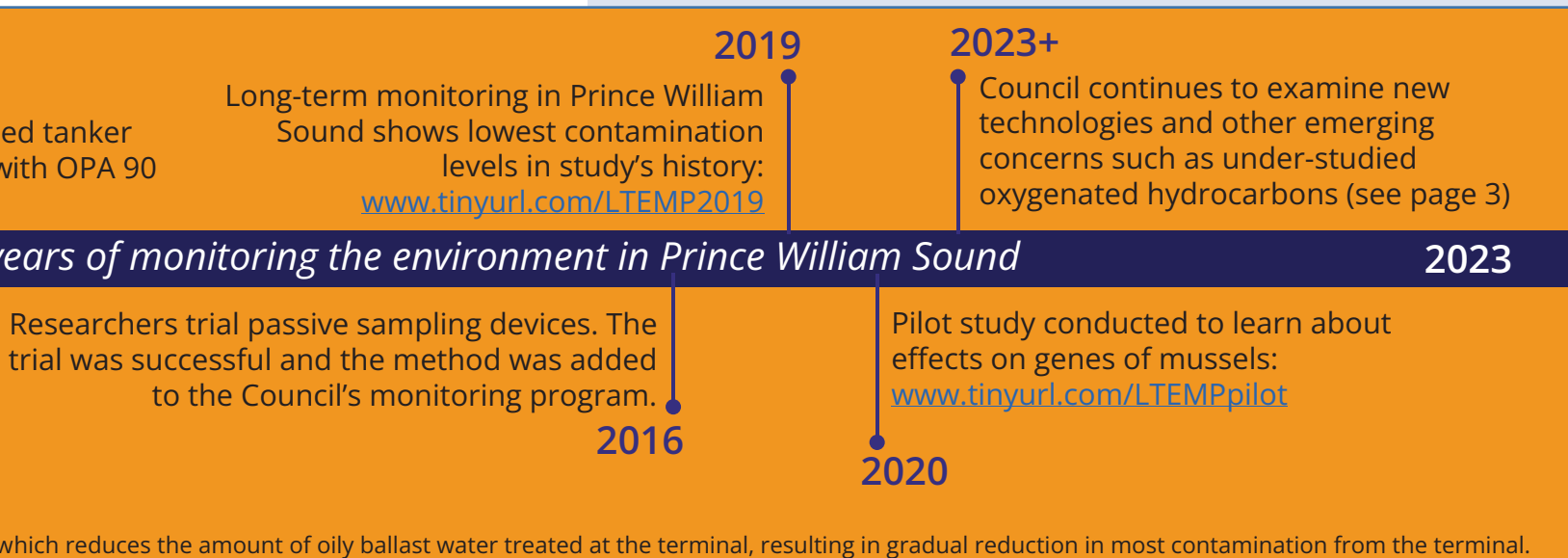
Read more about this work on our website:
www.tinyurl.com/LTEMPreports

The program today

Three types of samples are analyzed today. Mussels and sediments are collected as in years past, and in 2016, researchers added a new tool called a passive sampling device. These are special plastic strips deployed underwater to which oil particles adhere. They can detect lower levels of hydrocarbons than the mussel and sediment sampling. All three sample types are sent out to laboratories for chemical analysis. The labs measure and report the various types of oil contamination. Then scientists interpret the data.

Effects on genes: In 2019, the Council began looking into new methods to measure the impacts of oil on organisms in the environment. Researchers conducted a pilot study, analyzing genes of mussels using a technique known as "transcriptomics."

Transcriptomics involves measuring how particular genes are expressed in an organism. This expression can be affected by conditions in the environment, such as exposure to hydrocarbons.



which reduces the amount of oily ballast water treated at the terminal, resulting in gradual reduction in most contamination from the terminal.

obida, and Danielle Verna deployed passive sampling devices as part of the Council's Long-Term and five sites – Jackson Point, Saw Island, and Gold Creek in Port Valdez, as well as Knowles Head one month, measuring hydrocarbon concentrations. Photo by Austin Love.

Community Corner:

Music, Salmon, and Oil Spill Prevention



**By Maia Draper-Reich,
Outreach Coordinator**

In early August, the Council hosted a booth at Salmonfest in Ninilchik, Alaska. The annual music and arts festival welcomes nonprofits to host information booths

and share with attendees about their work in the 'Salmon Causeway'. Salmonfest is a festival rooted in advocacy, working with organizations on the front lines to protect Bristol Bay and its wild salmon fishery. They also support other causes throughout the year. The variety of booths at the 2023 Causeway included salmon-focused and environmental groups, as well as advocacy and education of other issues like Alaska Native interests, women's health, and more.

Board President Robert Archibald, Port Operations and Vessel traffic System Committee member Max Mitchell, and I staffed the Council's booth across the three-day festival. The Council's booth tied into the festival's theme of healthy salmon through sharing about citizen engagement in marine oil spill prevention and response, and marine invasive species.

We spoke to individuals from the Exxon Valdez oil spill region and beyond about the spill, its aftermath, and the ongoing work the Council does to promote the safe transport of crude oil through Prince William Sound. We handed out Council publications and logoed giveaway items. Ear plugs were popular as they are highly useful at a music festival event and exemplary of how prevention is key. Because of the festival's environmental advocacy origin, the approximately 350 attendees who stopped by the booth were engaged and receptive with many eager to stay connected and learn more through our newsletter and receiving a copy of The Spill book.

Sharing about invasive species took the form of a carnival game-style activity. Booths were encouraged to have an activity that attendees

could complete or engage with to get a stamp on their Causeway bingo card. The Council's carnival game was the Green Crab Attack explainer activity where the participants get to step into the shoes of a marine scientist monitoring for invasive crab species such as European Green Crab. Youth and adults of all ages tried out removing foam sea creatures from the crab trap and sorting them into categories keeping an eye out for any green crabs.

Salmonfest was a great opportunity to connect with community members from lower Cook Inlet and the Kenai Peninsula, as well as those from elsewhere in Alaska and visitors, on citizen engagement in oil spill prevention and response in Prince William Sound and the downstream communities. On Sunday, people carrying large salmon puppets paraded by the nonprofit Causeway as a local act played on the nearby Inlet Stage, illustrating how the festival allows art, local environmental issues, and people to converge.



Volunteers Archibald (right) and Mitchell (left) help out at the Council's information booth. Photo by Maia Draper-Reich.

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Monitoring weather for safe transportation of oil

New station at Copper River Delta to monitor for high winds

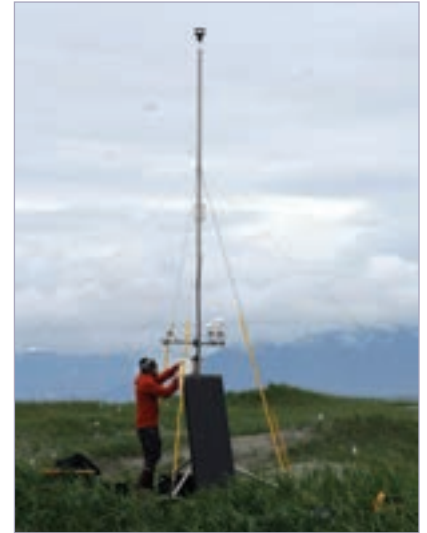
The Council recently sponsored a new addition to the weather station network. The new station was placed near the mouth of the Copper River Delta on a small island known as Kokinhenik Bar.

The Copper River Valley can funnel high winds when there is a high-pressure system over interior Alaska and a low-pressure system over the Gulf of Alaska. Oil-laden tankers travel shipping lanes a little over 23 miles away, so this information will aid in the safe transportation of oil, and an important asset in the event of a spill.

A link to the data from this weather station, along with other weather tracking resources is available on our website:

www.tinyurl.com/2023weatherstation

Right: New weather station on Kokinhenik Bar. Photo by Alan Sorum.



Analysis of weather conditions

A new report summarizes weather data collected in Port Valdez. Two buoys, one near the Valdez Marine Terminal and another near an environmentally sensitive area called the Valdez Duck Flats have been collecting information since 2019.

Dr. Rob Campbell, researcher at the Prince William Sound Science Center, has been analyzing the data and just published a report on his analysis of the first three years of information. He is looking at ocean currents, wind direction and speed, wave direction and heights, and other information for possible trends between years and seasons.

This report and previous year's analyses are available on our website:

www.tinyurl.com/2023WeatherData

Oxygenated hydrocarbons documented in discharge from terminal

Continued from page 3

Traditional monitoring techniques used at the Valdez Marine Terminal identify other hydrocarbons, but don't catch oxygenated hydrocarbons.

The report "Examining the Effectiveness of Ballast Water Treatment Processes: Insights into Hydrocarbon Oxidation Product Formation and Environmental Implications" is available on our website: www.tinyurl.com/OHCinPWS

Archibald and Schantz: Building trust takes time and transparency

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knowledge about how and why systems were implemented is important to uphold an effective system of protections.

The Council was created, in part, in anticipation of the time when the memory of the Exxon Valdez oil spill has faded and some begin to believe that protections look stale, overbearing, and burdensome.

It is critical that industry, government, and citizen leaders remain cognizant of the history that underlies the present system of preparedness. The Council continues to raise awareness and provide reasonable and justified resistance to changes that could weaken existing protections. We will continue doing what we can to resist sliding back into complacency.

Photo credits:

Cover: View of Kachemak Bay from Homer Spit. Photo by Amanda Johnson.

Page 1: A tug and tanker practice emergency towing maneuvers in Prince William Sound. Photo by Jeremy Robida.
Page 11: Bishop's Beach in Homer. Photo by Amanda Johnson.

How learning to listen can help communities heal from disasters

Continued from page 1

disaster, there are questions about responsibility, victim-blaming occurs, and complex lawsuits are common. All of these can cause lingering psychological damage.

In 2006, Dr. Picou surveyed Cordovans to examine the long-term effects of the Exxon Valdez oil spill. His work showed that 17 years after the spill, recovery was progressing, but psychological stress from the spill was still present.

Some natural disasters can have elements in common with technological disasters. Problems with preparation and response, such as occurred after Hurricane Katrina in 2005, can cause similar community effects.

Lessons on listening

Andersen Faulkner noticed that when the clients talked through their problems, they often left feeling better.

“They weren’t cured of anything, they didn’t have any money, but they at least knew they had a tool within themselves on which to draw,” she says about the experience at the time.

The Council’s 1996 guidebook by Dr. Picou included a section on training community members to become peer listeners. This work was based on the experiences of Andersen Faulkner and other Cordovans. In 1998, Andersen Faulkner joined the Council’s Board of Directors, where she served as a representative of the Cordova District Fishermen United until 2022. She helped guide the development of updates to the guide and manual.

Over the years, this program was used and adapted for recovery following disasters such as Hurricane Katrina, the BP Deepwater Horizon oil spill in the Gulf of Mexico, and the COVID-19 pandemic.

In 2021, the Council updated the “Coping With Technological Disasters” Guidebook. This year, the Council sponsored a major overhaul of the peer listener program. A newly revised Peer Listener manual incorporates many advances in the fields of peer-to-peer support and community resilience.

How the new manual can help

The revised manual is designed to assist communities that have been through a disaster. Here are a few ways the manual can be beneficial.

For individuals:

- Skills to be a better listener
- Examples of supportive and reassuring responses
- Warning signs that additional help is needed beyond peer support
- How to recognize when you are getting overwhelmed and need to take care of yourself
- Links to resources for additional help, including many specifically for Alaskans

For communities:

- Promotes a network of support that increases resiliency
- Fosters empathy among community members
- Identifies vulnerable populations

Find the new manual on our website:

www.tinyurl.com/PeersListen

Phases of disaster - collective reactions

The new manual helps readers understand the trauma caused by a technological disaster such as an oil spill.



PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Citizens promoting the 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 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
Community of Tatitlek
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.
Temporary Recreation Seat

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 works to minimize the risk and impacts associated with oil transportation through research, advice, and recommendations for strong and effective spill prevention and response measures, contingency planning, and regulations.

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.

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