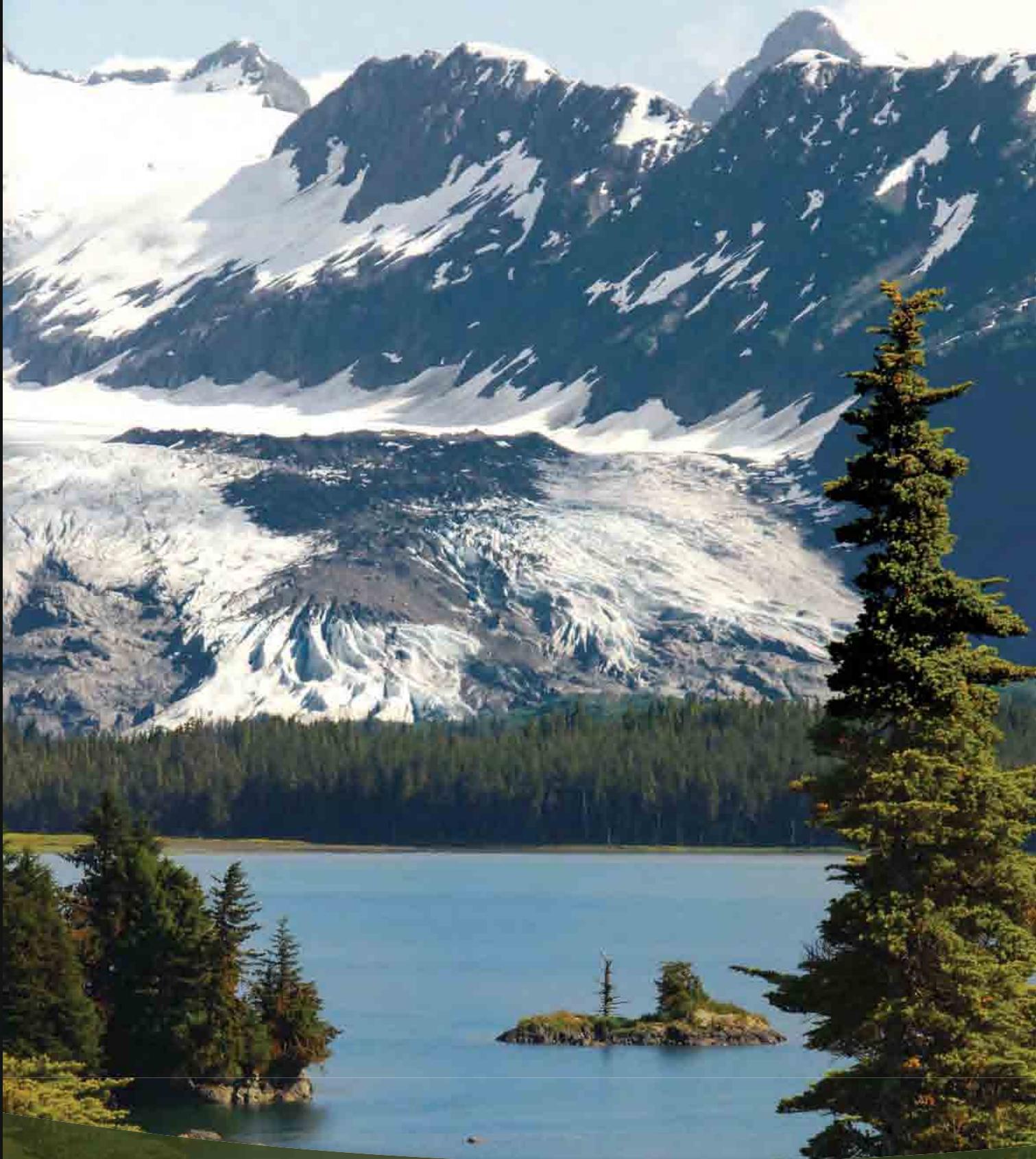


2011-2012 ANNUAL REPORT



Prince William Sound
REGIONAL CITIZENS' ADVISORY COUNCIL

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Note: This report covers the period from July 2011 through June 2012.



*Citizens Promoting
Environmentally Safe Operation
of the Alyeska Terminal
and Associated Tankers*

“Eventful as the year has been, we close it with much the same focus as when we began it: Because change is the only constant in what we do, we must regularly validate existing controls and risk management strategies to ensure they can successfully address new risks and the challenges of changing conditions.”

LETTER FROM THE EXECUTIVE DIRECTOR



Mark Swanson
Executive Director

It's been another eventful year at the citizens' council.

This year, we have focused on understanding risks and concerns at the Valdez Marine Terminal. During the 12 months covered by this report, we concluded an advisory audit of maintenance practices there. It focused on Alyeska's tools, procedures, and practices for tracking, scheduling, and managing maintenance tasks. Alyeska cooperated with the effort and responded positively to our observations, subsequently embarking on several enhancements to the maintenance-management process.

The council also devoted considerable effort to tracking the operational status, physical condition, and internal and external inspection schedules for the terminal's 18 crude-oil storage tanks. Of particular concern were those due or past-due for 10-year internal inspections. As this report went to press, four crude tanks were slated for inspection during the summer of 2012, while two other tanks originally due for inspection in 2012 received approval from regulators to postpone the inspections until 2013 or 2014.

Snow loading on the crude oil tanks was another focus of the council this past year. Record winter snows—over 420 inches in Valdez—required deployment of a veritable army of workers to clear the tank roofs. As this report went to press, four crude tanks were slated for inspection during the summer of 2012, while one other tank originally due for inspection in 2012 received approval from regulators to postpone the inspection until 2014.

Another area of focus for the council at the tanker terminal this past year was the ongoing effort to repair the aging system that drains rainwater from the diked secondary containment cells around the crude storage tanks.

With lower pipeline flow, several crude tanks have been taken out of service. In past years, severe winter weather caused tanker delays that periodically resulted in high inventories of stored oil at the terminal. The council has long been concerned with the potential for lower storage capacities to result in pressure to find creative ways to ship oil during severe weather. This year, a shortage of capacity and storage space at west coast refineries resulted in some tankers being unable to discharge all of their oil at their usual discharge ports. That, coupled with dock maintenance at the terminal, contributed to unusually high oil inventories in the storage tanks. As a result, this past year several tankers returned to Valdez with partial loads of North Slope crude still on board.



An overfull terminal necessitates reducing oil production at a time when industry and many Alaskans are publicly calling for measures to increase it. The council's primary concern is safe oil transportation. Through careful management and a few northbound trips with cargo still aboard, the tanker companies and Alyeska did manage the inventory concerns. Thankfully, tankers carrying oil are required to have two tug escorts in Prince William Sound, regardless of which way they are traveling, so the council did not see the inventory situation as creating a significant increase in oil spill risk.

It's never a simple matter of focusing on one or two issues for the council and this year was no exception. Oil spill cleanup plans for both the tankers and the Valdez terminal are undergoing their five-year updates. This gives the council an opportunity to provide comments and make suggestions on how these plans can better ensure we are ready to respond in the event of a spill. Industry, which prepares and complies with the response plans, and regulatory agencies, which review and approve them, are each able to receive and have an opportunity to incorporate the various council suggestions for improvement of the contingency plans that they find most useful.

This year we continued our efforts to have council leadership travel the Exxon Valdez oil spill region and meet with each of our 19 member entities at least once annually. That, in conjunction with our youth outreach and education efforts, has been helpful in ensuring we stay visible, relevant, and connected to the concerns of the communities and entities we represent.

Due largely to events outside Prince William Sound—such as the expansion of offshore Arctic oil exploration activities—this past year also saw the streamlining of the approval process for the use of chemical oil spill dispersants in Alaska and a rekindled effort to update the 1989 guidelines on dispersant use. The council has long advocated that these guidelines be updated in an open process that includes stakeholders. The framework for stakeholder participation now seems to be established and the dispersant usage guideline update process is under way.

This past year unfortunately saw the departure of three passionate and dedicated council board members: Stan Stephens, Sheri Buretta, and Rochelle van den Broek. While new representatives have been appointed to represent their member entities, each of the three contributed tremendous leadership and vision to the council and will be sorely missed.

Eventful as the year has been, we close it with much the same focus as when we began it: Because change is the only constant in what we do, we must regularly validate existing controls and risk management strategies to ensure they can successfully address new risks and the challenges of changing conditions.

The council is working to better understand these risks and to offer our concerns and advice to regulators and industry in pursuit of our common goal of promoting and sustaining the environmentally safe operation of the Alyeska terminal and the tankers that use it.



MISSION AND RESPONSIBILITIES

OUR MEMBERS

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.

HOW WE ARE STRUCTURED

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. Their 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 its 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

The Prince William Sound Regional Citizens' Advisory Council

is an independent
non-profit corporation guided by
its mission:

*Citizens Promoting
Environmentally Safe
Operation of the Alyeska
Terminal and Associated
Tankers*

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 the federal law.



WHAT WE DO

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.

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.

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 is renegotiated every three years; current Alyeska funding is approximately \$3.3 million a year.

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

TANKER SAFETY

Study of Tugboat Towing Gear

The oil industry in Prince William Sound depends on escort tugs to protect its tanker fleet. Escort tugs in turn depend on deck-mounted winches and high-strength towlines to stop and turn tankers, which can weigh up to 193,000 tons, in a matter of minutes. This important protection is in place to guard against oil spills caused by engine or equipment failures that could lead to tanker groundings.

Recognizing that the tugboats used to escort loaded oil tankers in Prince William Sound have been in service for many years, the council approved a study to investigate whether the tugs' winches, towlines, and tether systems represent the best available technology.

The council hired Robert Allan Ltd., the oldest privately held consulting naval architectural firm in Canada, to conduct this research. Based in Vancouver, British Columbia, the firm has earned an international reputation for innovative ship design. It is especially known for its work in the field of escort tugboat design and operation.

Technological improvements are made daily in this field and improvements in the safety of oil transportation depend on staying abreast of such advancements. As this report went to press, the research was still in progress, with results expected by fall of 2012.

Det Norske Veritas Classification Society Escort Tug Study

A tug in escort service requires a classification society notation that quantifies its ability to steer, brake, and otherwise control the assisted vessel. In 2011, the council contracted with the classification society Det Norske Veritas to provide a report using accepted classification society standards for escort service. The council can now assess this aspect of performance of the escort tugs operated by Crowley Maritime in Prince William Sound.

An escort notation from a classification society like Det Norske Veritas contains an escort rating number for the amount of towing force that can be applied by the tug at a given speed. Crowley Maritime's tugs are classified by the American Bureau of Shipping, which does not provide a comparable escort rating number. Technology has advanced since the current tanker escort tugs were introduced in Prince William Sound. Adoption of a formal escort notation with a rating number for these tugs would be one step toward employing best available technology.

Study Results: The council identified several recommendations for bringing the Prince William Sound escort fleet up to current standards. Among these suggestions is that winches be modified by installing a brake release at the winch, as well as a device that ensures the towline is wound evenly onto the winch drum as it is retrieved. The contractor also recommended full scale towing capacity tests be conducted at sea to ensure the tugs are capable of safe operation.



Marine Firefighting Symposium

A shipboard fire at the Valdez Marine Terminal or on a tanker in Prince William Sound could cause a major oil spill or loss of life. In light of requirements in the Oil Pollution Act for marine salvage and firefighting contractors, it is important to provide training opportunities that allow local, state, and federal entities to work with industry representatives on operations and command functions involved in responding to a fire on a tanker or other ship. As part of its effort to foster the safest possible transportation of crude oil through Prince William Sound, the council sponsored its sixth Marine Firefighting for Land-Based Firefighters Symposium in Valdez over three days in October 2011.

More than 75 firefighters and first responders from Prince William Sound and other Alaska coastal communities received classroom and field training opportunities tailored to the challenges faced in Alaska. Training topics included basics of shipboard operations, cruise ship awareness, vessel fire plans, ship crew coordination, and the politics of a marine incident.

Expert consultants hired by the council designed a training curriculum with stakeholders that would meet the needs of participants and include many hands-on activities. One focus of the symposium highlighted the Coast Guard's implementation of salvage and marine firefighting regulations. ConocoPhillips generously provided access to the tanker Polar Discovery for firefighter training.

The symposium showed how the maritime community can come together to meet a common goal. Organizations like the Coast Guard, Southwest Alaska Pilots Association, city of Valdez, Polar Tankers, Crowley Maritime, and many others made the event a success.

Work is already under way for the next symposium,

scheduled for fall of 2014, possibly at the Alaska Vocational and Technical Education Center's new marine firefighting training facility in Seward. This temporary change in venue would engage new partners and provide ready access to the training for firefighters on the Kenai Peninsula.

Ice Risk Assessment and Ice Detection Radar Upgrades

After the tanker Overseas Ohio struck an iceberg near Valdez in 1994, the council spearheaded a successful campaign to install a radar-based system on Reef Island to help detect icebergs drifting into the shipping channel from nearby Columbia Glacier. After an upgrade to the Coast Guard's Terma radar system in 2009, the ice detection radar signal was no longer compatible with the Coast Guard's system display in Valdez.

Working closely with stakeholders that included the Coast Guard, Alyeska, and council volunteers, the council staff began an effort to preserve and restore this important ice risk management tool. The Coast Guard recommended that conducting a Formal Safety Assessment might be the best way forward for determining the need and value of the system for protecting oil tankers in the Sound. A Formal Safety Assessment is a structured methodology that aims to improve marine safety through risk analysis and cost-benefit assessment.

Such a safety assessment of the ice detection radar system would ideally involve the original stakeholders that participated in the installation of the system at Reef Island. The assessment would need data derived from two council projects approved for 2012-2013: an upgrade to the ice radar system, and an iceberg prediction study of Columbia Glacier.



OIL SPILL PREPAREDNESS AND RESPONSE

The council devotes considerable resources to preventing oil spills, 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 AND RESPONSE PLANNING

State and federal laws require the operators of oil tankers, the Valdez Marine Terminal, and the trans-Alaska pipeline to prepare detailed plans showing how they will respond to oil spills should prevention measures fail. The council devotes significant resources to ensuring plans are in place to prevent and respond to spills both in Prince William Sound and at the Valdez Marine Terminal. Additional planning efforts of interest to us include the Alaska Regional Response Team and the Subarea Contingency Plans for Prince William Sound, Kodiak, and Cook Inlet.

The council promotes compliance, enforcement, and funding for state and federal regulations and oversight, and also supports restoration of the Alaska Coastal Management Program. Along with local communities, the council encourages incorporating local knowledge of sensitive areas into contingency planning.

Tanker Contingency Plans

The Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan is set to expire in November 2012. It was last renewed in November 2007 for a period of five years. As the renewal date is approaching, the council is actively involved in reviewing this plan and associated plans of Alaska Tanker Company, BP Oil Shipping Company, Polar Tankers, SeaRiver Maritime, Tesoro Alaska Company, and Alyeska's Ship Escort/Response Vessel System. The council is currently reviewing and providing feedback on this plan renewal.

In anticipation of the current plan renewal, Prince William Sound shippers have worked with the council and regulators to continuously improve the tanker contingency plan. The Nearshore Response Work Group analyzed and reviewed all aspects of nearshore response efforts by reviewing past drills, trainings, and lessons learned. The Oil Properties Work Group evaluated the physical and chemical properties of crude oil to determine the best skimming systems and necessary storage capacities to meet State of Alaska planning standards. Both work groups were composed of industry and shipper representatives, regulatory agencies, and the council. These entities continue to participate in various work groups focusing on the plan itself, oil properties, and nearshore tactics.



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Valdez Marine Terminal Contingency Plan

The Valdez terminal contingency plan was approved in May 2008, with a renewal date of May 2013. The council is involved in reviewing and monitoring this plan, and participates in a work group that provides advice on the plan. The work group also includes the state-federal Joint Pipeline Office, the U.S. Coast Guard, and Alyeska; it meets on a regular basis in an effort to continuously improve the contingency plan.

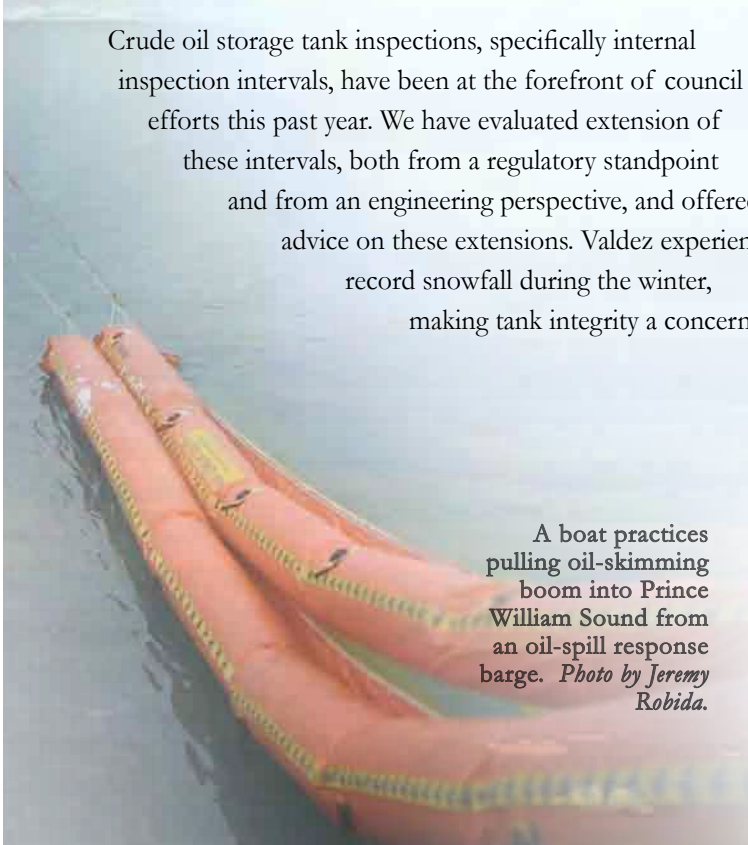
The Valdez Marine Terminal Work Group continues its efforts to rewrite the contingency plan in a format similar to the tanker plan, namely, a technical manual that contains response details and tactics, and a core plan that contains oil spill prevention and response activities. This work group is also addressing issues such as storage tank status and inspections, facility status, and drill and exercise design.

Crude oil storage tank inspections, specifically internal inspection intervals, have been at the forefront of council efforts this past year. We have evaluated extension of these intervals, both from a regulatory standpoint and from an engineering perspective, and offered advice on these extensions. Valdez experienced record snowfall during the winter, making tank integrity a concern.

Geographic Response Strategies

Geographic response strategies are oil spill response tactics specific to sensitive areas and resources, such as salmon streams and estuaries. These established defense plans can save critical time during the first hours of a response. The plans are customized to protect specific sensitive areas from impacts following a spill, and show responders where sensitive areas are located and where to place spill protection resources. Sites are identified through a cooperative work group effort and surveyed for inclusion in the subarea plans.

Currently, the council is focusing on the Seward Zone and is surveying sites for inclusion in the subarea plan. Efforts to identify sites in the Seward Zone began last fall and included stakeholders from a wide range of backgrounds—industry, commercial fishermen, Seward’s harbormaster and mayor, and representatives from agencies and organizations such as the Kenai Fjords National Park, the U.S. Department of Interior, the U.S. Fish and Wildlife Service, the Alaska Department of Environmental Conservation, the Alaska Maritime Training Center, and the Alaska Sea Life Center.



A boat practices pulling oil-skimming boom into Prince William Sound from an oil-spill response barge. *Photo by Jeremy Robida.*

An indoor oil-spill drill takes place at Alyeska’s Valdez Emergency Operations Center. *Photo by Tom Kuckertz*





A fishing vessel crew trains for oil-spill response during an exercise in Seward.
Photo by Jeremy Robida.

Weather and Sea Current Data Collection

Weather conditions and sea currents affect nearly every aspect of oil transportation safety. As part of the council's efforts under this project, two weather stations have been installed to fill geographic data coverage gaps. In the past year the council updated and installed more robust communications hardware to support near real-time data delivery.

OIL SPILL RESPONSE AND RESPONSE OPERATIONS

To respond effectively to an oil spill or to an emergency that could cause one, it takes more than volumes of carefully written and reviewed contingency plans. It also takes equipment, trained people, and a management system to implement the plan. And it takes practice, practice, practice. The council's Oil Spill Prevention and Response Operations program monitors the operational readiness of Alyeska's escort/response vessel system and the tanker companies, and makes sure the council itself is prepared to respond to oil spills and other emergencies.

Council staff members, volunteers, and contractors monitor and report on spill response drills, exercises, and training throughout the region to provide citizens, regulators, and responders with information about the state of readiness and to make recommendations for improvement. Most of the monitoring work is done by council staffers, who present annual reports summarizing each year's activities, lessons learned, recommendations, and outstanding issues.

Monitoring the Fishing Vessel Response Fleet

The council continues to monitor the fishing vessel response program. These vessels are on contract to Alyeska. In the event of a spill, they would be assigned such tasks as

running skimmers, positioning boom, and handling oiled wildlife. Fishing vessel captains and crew undergo annual training covering tactics, equipment, and personal safety and protection, among other topics. This three-day training allows for 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 the basics of the tanker contingency plan scenario, and showcased several pieces of response equipment that have not been part of training in some years. 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. There are approximately 400 vessels on contract. Reliance on these vessels and their training would be vital in an actual spill.

Drills and Exercises

The council observed and reported on 13 drills during the year covered by this report. The largest of these was a drill that British Petroleum and Alaska Tanker Co. conducted in September 2011 in Prince William Sound. BP brought in members of its incident management team from all over the nation to participate. The fictional scenario for this drill was a tanker spill of some 34 million gallons of crude oil, approximately three times as much as the Exxon Valdez spilled.

The Valdez Marine Terminal conducted three exercises during the year. They included a full tabletop exercise, an on-water equipment deployment exercise, and an exercise using equipment to move snow to divert and contain a simulated oil spill at the terminal.

Other drills observed during the year included a burning exercise that combined vessels and a helicopter to simulate containing oil in a fire boom and igniting it from a helicopter, tanker towing exercises, and open water and nearshore readiness exercises.



ENVIRONMENTAL PROTECTION AND MONITORING

OPERATIONS AT THE VALDEZ TERMINAL

Besides posing the risk of a major oil spill caused by earthquake or accident, Alyeska's Valdez tanker terminal produces ongoing air and water pollution from routine operations, as allowed by its permits from regulatory agencies. The council monitors terminal operations with the goals of minimizing the risk of spills and ensuring that permitted pollution is within or below regulatory limits and that those limits are set at the lowest feasible levels.



At Alyeska's Valdez terminal, crude oil from the North Slope is loaded onto tankers for transport to refineries. Photo by Tom Kuckertz.

Oil Flow in Barrels and Dollars

The council has monitored oil loadings at the terminal since January 2003, when an average of 968,000 barrels of North Slope crude moved through the terminal and onto tankers every day. Since then oil flow has decreased every year, reaching an average of about 531,000 barrels a day in 2011.

Because oil prices have risen as oil flow has declined, the value of oil arriving at Valdez has remained relatively high. In 2002, monthly oil flow was worth about \$700 million. In May 2012, about \$1.9 billion worth of oil passed through the terminal.

Oil Storage Tank Levels at Valdez

The council monitors inventory levels in the crude oil storage tanks at the Alyeska terminal because high inventories can create pressure to load oil onto tankers under adverse conditions.

When inventory levels become too high—that is, when the tanks are nearly full—Alyeska requires North Slope oil producers to reduce production or in extreme cases halt it altogether until some of the stored oil can be loaded onto tankers. Besides reducing income from oil sales, these slowdowns create the risk that some older wells may not be able to be restarted once the situation eases.

Occasionally, tanker loading is curtailed at the terminal because of high winds in Port Valdez, icebergs in the shipping lanes, or other reasons. If this happens when inventory is high and production cuts become a possibility, the council's concern is that pressure may result to load tankers under circumstances that might otherwise not be acceptable, such as when waves are breaking over the containment boom required to surround tankers during loading.

Air and Water Quality

For many years, the council has been concerned about emission of hazardous air pollutants from the Ballast Water Treatment Facility at the Valdez tanker terminal. The facility services the few remaining single-hull tankers (and double-hull tankers when adverse weather requires it) arriving in Valdez with oily water in their cargo tanks. On average, 2 million gallons of effluent—consisting not only of oily ballast water from tankers, but also of rainwater and snowmelt captured in the secondary containment cells around Alyeska’s crude oil storage tanks—are treated each day.

Emissions have been greatly reduced in recent years, and the council is satisfied with renovations at the Ballast Water Treatment Facility that make the surrounding air and water safer for everyone.



A council staff member gathers data to check for invasive species in Prince William Sound. *Photo by Jeremy Robida.*

SYSTEM INTEGRITY ISSUES AT THE VALDEZ MARINE TERMINAL

The council monitors operations systems at the Valdez terminal to ensure that we know of any issues and what the risks could be, as well as to make sure proper procedures are in place to resolve any known issues. This past year, several concerns warranted attention, including oil storage tank inspection scheduling, secondary containment dike problems, errant scraper pigs, snow accumulation atop the tanks, and corrosion.

Internal Inspections of Crude Oil Storage Tanks

Alyeska uses giant tanks at the terminal to store crude oil arriving via the trans-Alaska pipeline until it can be loaded onto tankers. Each tank can hold more than 20 million gallons of oil.

Because the risk of failure due to corrosion and wear increases as the tanks age, industry standards call for internal inspections—mainly of the walls and floors—every 10 years and external inspections of the walls and roofs every five years. The frequency of inspections is important to tank operators because of the cost, which can exceed \$1 million for

an internal inspection. With approval from regulatory agencies, inspection intervals can be extended based upon information about the maintenance history of a tank and other data.

The Alaska Department of Environmental Conservation had allowed Alyeska to postpone internal inspections of some tanks. The council opposed extensions on two of the tanks in comments to the department. One was shown to have a fault in its corrosion-prevention system; the department revoked the extension and required Alyeska to complete an internal inspection by the end of 2012. The other tank had already received one inspection postponement; the department granted another extension, but not as long as Alyeska had requested.

Maintenance Advisory Audit

In 2010, the council launched an advisory audit of maintenance practices at Alyeska's Valdez terminal after a number maintenance related issues came to the council's attention. The audit was intended to determine the extent to which Alyeska's maintenance activities were backlogged and the extent to which such activities complied with Alyeska's internal procedures and other requirements. The audit was completed in September of 2011, and was presented to Alyeska, to the agencies that regulate the Valdez terminal, and to Alaska's Congressional delegation.

Generally, the council's audit contractor concluded that no maintenance issues rose to the level of "imminent threat" but that Alyeska was struggling with overly complex processes and that poorly integrated information technology systems hindered its ability to conduct and monitor maintenance work.

Alyeska has informed the council that it is addressing the audit findings and the council is developing projects to assess the extent to which that has occurred.

Oil Containment Dikes

Every oil tank must be surrounded by a diked area to hold oil should the tank fail. Alyeska discovered and reported the existence of leaks in wastewater piping that allows removal of rainwater from the diked areas. Repairs to the piping were planned but were hindered by an equipment malfunction and winter weather. The council continues to monitor Alyeska's activities in addressing this issue.

Errant Scraper Pig

Alyeska uses scraper "pigs," mechanical devices sent through the trans-Alaska pipeline, to remove wax and other debris that may accumulate as the oil moves from the North Slope to Valdez. Because wax and debris have the potential to adversely affect the operation of valves and other equipment controlling flow of oil, Alyeska runs scraper pigs through the main line about once every eleven days. In May 2012, a pig approaching the Valdez Marine Terminal was forced into a section of buried piping rather stopping at its intended des-

tinuation, the terminal's "pig trap." The errant pig was found to have blocked one of four relief valves installed to keep oil pressure in the pipeline from becoming too high. Alyeska has, with the consent of regulators, resumed use of the scraper pigs and operation of the relief system on three valves while it decides on a permanent fix.

Rooftop Snow Loads

Snowfall in Valdez approached record levels very early in the winter of 2011-12. Alyeska increased its snow removal crew three-fold, to well over 100 people. Even with this increase in staffing, the snow occasionally reached worrisome depths. Alyeska reports that snow loads for functioning storage tanks never exceeded 100 pounds per square foot, which is consistent with applicable regulations and well below design assumptions. However, snow loads on out-of-service tanks approached 200 pounds per square foot and were of concern to Alyeska, regulators, and the council. Rough calculations by council staff indicated that, with corrosion allowances factored in, the loads approached design limits for the out-of-service tanks. Alyeska reports that cursory inspections of tank roofs once the snow had been cleared did not indicate



Corrosion

Because the terminal's tanks and other oil handling components were designed in the 1970s and have, at least in part, been subject to corrosion for the last 35 years, the council has trained some staff members in corrosion management. Two are also members of the National Association of Corrosion Engineers. Because Alyeska has proposed using the American Petroleum Institute's risk-based inspection methodology to extend the inspection interval for the oil storage tanks, the staff also received training in that methodology. The corrosion and risk-based inspection training has allowed us to effectively communicate concerns pertaining to tank inspection to regulators and Alyeska.

The council has started projects to analyze three integrity issues at the Valdez terminal: proper functioning of the fire protection systems; proper management of corrosion; and the ability of Alyeska to remotely control operations at the terminal from its control center in Anchorage. Three separate contractors have been vetted and selected to assist with this work, which the council expects to complete by June of 2013.

NATIONAL POLLUTION DISCHARGE ELIMINATION PROGRAM

For some tankers loading crude oil at the Valdez Marine Terminal, ballast water that has been carried north in the same cargo tanks used to carry oil south is treated at the terminal's Ballast Water Treatment Facility. From concentrations of many parts of oil per thousand parts of water, the level of residual oil is reduced to a few parts per million before it is discharged into Port Valdez in accordance with national requirements and permits.

Alyeska applied for renewal of its National Pollution Discharge Elimination System permit early in 2009 and regulators issued draft permits for public comment early this year. The council analyzed the draft permits and suggested improvements. One suggestion involved the monitoring of the treated ballast water coming out of the facility. Because current monitoring covers only 16 pollutants (so-called priority pollutants), the council is concerned that other chemicals might be present but escape detection and analysis. The council suggested the permits be changed to require additional monitoring so that the effluent can be better analyzed. Final permits had not been issued as this report went to press.



The success of the council depends on the hard work of its volunteers. Here, three volunteers and a staff member discuss the council's Environmental Monitoring Program at a meeting.

Photo by Serena Lopez.

ENVIRONMENTAL MONITORING

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.

Chemical Dispersants

Chemical dispersants are substances designed to disperse spilled oil into the water column, rather than leaving it floating on top in a slick. Due to our concerns about the efficacy and toxicity of dispersants, we promote research and testing to increase knowledge about chemical dispersants and the environmental consequences of their use in Alaska waters. In the past year, the council has initiated projects in several areas, including development of a comprehensive dispersants monitoring protocol, biodegradation of dispersed Alaska North Slope crude in Prince William Sound waters, the toxicity of dispersed oil on whale cells, and a synthesis on uptake and effects of dispersed oil droplets by zooplankton.

Also, council representatives continue to participate in the Alaska Regional Response Team's Science and Technology Committee as it works through updating the Alaska dispersant use guidelines.

Hydrocarbon Toxicity

The hydrocarbon toxicity project researches and addresses the gaps in knowledge regarding chronic toxic effects of oil, dispersed oil, and in-situ burn residue under study conditions closely approximating the marine waters in the council's region. There are significant data gaps in the subject area. This year, two contracts are nearing completion, one with the Department of Fisheries and Oceans Canada and the other with the National Marine Fisheries Service. Both are exposing important new information about this subject resulting in many peer-reviewed papers. New work on chronic toxic genetic effects from oil, dispersed oil, and in-situ burn residue is being done in the upcoming year.

Invasive Species

Invasive species, long a major concern for the citizens' council, refers to the problem of non-indigenous plants, animals, or microorganisms reaching Alaska and establishing themselves here. Such invasions can harm native species, including commercially valuable ones such as salmon.

For the council, the primary concern is non-indigenous organisms arriving via oil tankers—either attached to hulls



As part of its effort to check for non-indigenous species in Prince William Sound, the council regularly sets traps in the Valdez area to detect the presence of the invasive European green crab. *Photo by Anna Carey*

or riding in the ballast water that the tankers discharge into Prince William Sound before loading North Slope crude at the Alyeska terminal in Valdez.

A new sea-bottom study initiated last year conducted an intensive survey of sites in Prince William Sound to test whether there is a lag time between when an invasion starts and when it becomes large enough to detect to evaluate whether invasions are occurring now. This work was performed by the Smithsonian Environmental Research Center and builds on a survey conducted 10 years ago, creating an opportunity to test for shifts in the composition of communities of invasive species over time and for invasions that have gone undetected. The study identified two species known to be non-native to Alaska. One was a bryozoan—a moss-like bottom-dweller—and the other was a barnacle. The non-native bryozoan, *Schizoporella japonica*, had previously been documented in Alaskan waters but the non-indigenous barnacle—*A. improvisus*—had never before been found in Alaska.

Economic Impact of Invasive Species

The economic impact of invasive species in Alaska is unknown. Because of this, the council used U.S. Fish and Wildlife Service grant funds to support an economic impact study to be performed by the University of Alaska, Anchorage, and the Seward-based Alaska Sea Life Center, with co-funding from several other organizations.

This study estimated the costs of control, damage, decreases in the ecosystem's ability to deliver things like clean water and

decomposition of wastes, and loss of environmental quality. One significant finding was that an average of \$5.8 million a year—mostly in federal funds—was spent to manage invasive species in Alaska between 2007 and 2011. As a follow-up to this study, the University of Alaska's Institute of Social and Economic Research will develop a risk and decision analysis tool that will incorporate some of the economic trade-offs at hand for five invasive species in Alaska: glove leather tunicate, western water weed, reed canarygrass, knapweed, and clover. This tool will be aimed at helping resource managers allocate limited resources towards those invasive species where management actions offer the highest benefit cost ratios.

Survey Outreach Project

The council also used Fish and Wildlife grant funds to support Alaska Sea Life Center work on another project in this area. The objectives were 1, to connect with coastal public-use facilities and conduct a statewide survey about marine invasive species messaging resources; 2, to summarize the survey results and distribute them to survey participants; 3, to evaluate survey results and report on the current materials that coastal public facilities offer or display; 4, to report on gaps for outreach on marine invaders; 5, to enhance access to existing materials; 6, to develop, print and distribute a public message for a general audience on the biology of marine invaders, on major risks and impacts, and on possible solutions or action plans to prevent invasions, and 7, to make recommendations for additional materials that facilities would find useful for outreach on these invaders.



Sea Squirts

The council also continued to monitor for invasive tunicates in the Valdez area. Tunicates are soft-bodied filter feeding animals commonly known as “sea squirts.” Certain invasive species have been aggressively moving up the West Coast and because they multiply quickly, and tend to overwhelm other native plant and animals populations. Invasive tunicates have been found as close as Ketchikan in 2010 as part of citizen monitoring efforts. To date, these invasives have yet to be found in Prince William Sound.

Green Crab

This year we continued to provide support for citizen monitoring efforts, particularly for the European green crab. This crab, a known ballast water invader, is an efficient and voracious predator that has overrun the West Coast from San Francisco to Vancouver Island. It is feared that the green crab will find its way to Alaska waters.



A council staffer measures fish caught in one of the council's European green crab monitoring traps. *Photo by Jeremy Robida.*

This project is complete, and study results and tools developed as a result of the study are available from council project manager Joe Banta (see page 25 for contact information).

Regional Environmental Monitoring

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.

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.

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 10 sites.

The council's LTEMP reports, along with additional information on the program, are available online.

New Rules on Ship Emissions and Ballast Water Management

New ship fuel quality and ballast water management regulations have recently been issued and the council will be monitoring their implementation in the Prince William Sound tanker fleet and their impacts on the Sound itself.



OUTREACH

MEMBER RELATIONS

The council's full-time outreach coordinator maintains productive relationships with its 19 member communities and organizations. The coordinator visits communities in the council region, attends member group functions, gives presentations, coordinates special events involving the council and its member groups, and encourages citizen involvement in the council's work.

Over the past year, the council participated in outreach activities at local and national levels.

Local Events Included:

- » Annual Celebration of Life in Port Graham
- » Marine Science Symposium in Anchorage
- » Cook Inlet Regional Citizens' Advisory Council meetings
- » "Could It Happen Here?" oil spill class for students in Homer and Seldovia
- » Tatitlek Heritage Festival
- » Chenega Bay Memorial for victims of the 1964 Good Friday earthquake
- » Copper River Nouveau, a fundraiser for the Prince William Sound Science Center in Cordova
- » Presentation on the council and the Exxon Valdez oil spill to students visiting from Elmira College in New York and members of the public in Homer



Locations of the Council Information Booth:

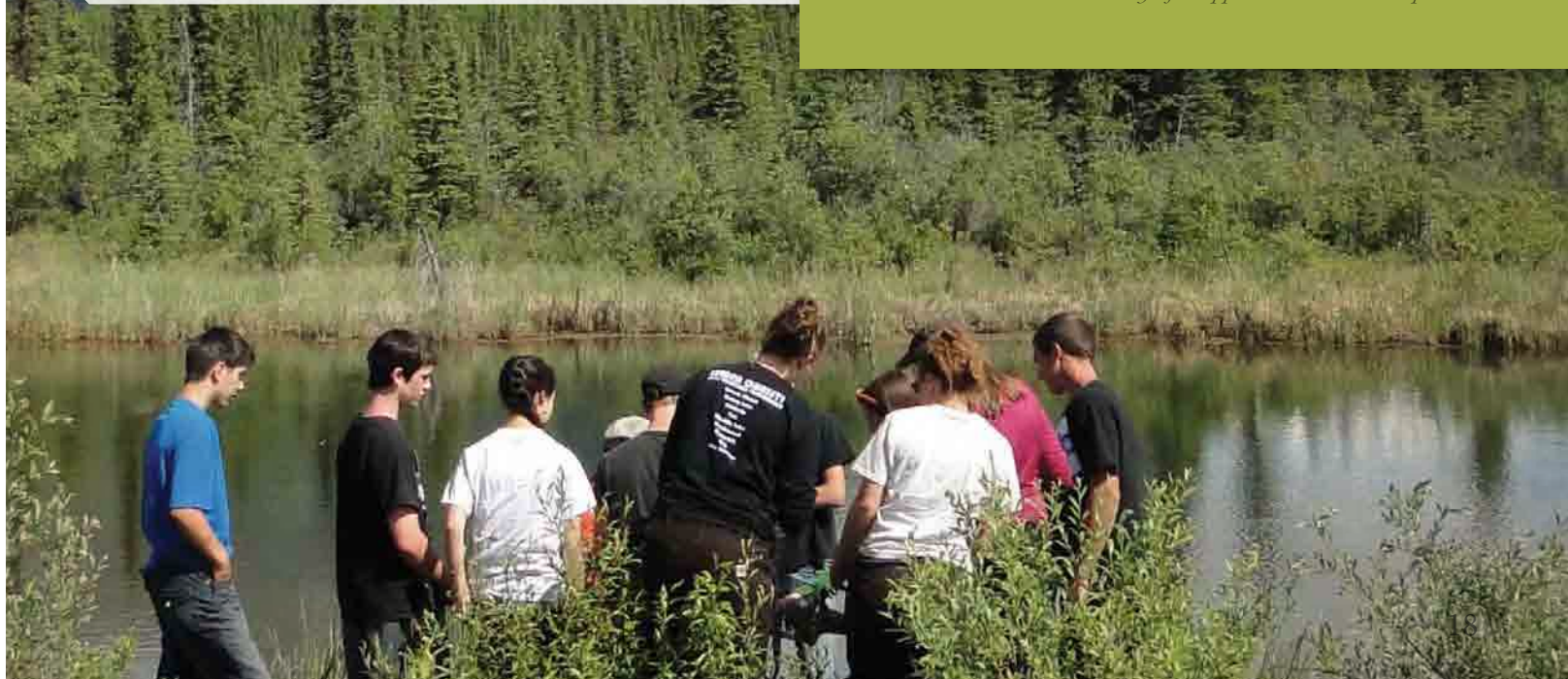
- » Kodiak ComFish (the largest state fisheries trade show)
- » Alaska Forum on the Environment (council staff was on the planning committee)
- » Alaska Wilderness, Recreation, and Tourism Conference in Girdwood
- » Alaska State Math Conference in Fairbanks
- » Alaska State Science Conference in Anchorage
- » Annual meeting of the Alaska Association of Harbormasters and Port Administrators

National Events in which the Council Participated Included:

- » Pacific Marine Expo in Seattle
- » Clean Pacific in Long Beach
- » National Marine Educators Conference in Anchorage (council staff presented)

Youth educational expeditions visited Valdez and attended staff presentations. Participating students were part of educational learning experiences funded by the council and others. Their expeditions included learning about the Exxon Valdez oil spill as well as science, invasive species, and the Chugach National Forest.

Photo courtesy of Copper River Stewardship Team.





INFORMATION AND EDUCATION COMMITTEE

The Information and Education Committee supports the council's mission by fostering public awareness, responsibility, and participation through information and education. The committee accepted several proposals in the past year to fund educational opportunities for students from the region affected by the Exxon Valdez oil spill. These proposals were funded under our Youth Involvement project, which assists educational groups in studying topics related to our mission.

The proposals accepted and funded by the council were as follows:

- » **King Career Center**, for a trip to Valdez to study oil transportation
- » **Valdez High School**, for a science class field trip to Peterson Bay in Kachemak Bay to study coastal ecology issues vital for future protection of these resources and to learn about monitoring for invasive species
- » **Valdez Elementary School**, to study chum salmon incubation and to learn the value of salmon as a resource, as well as learn about the council, the Alyeska tanker terminal, the Exxon Valdez oil spill and clean-up and the Prince William Sound tug escort system
- » **Alaska Geographic**, for the addition of a Valdez extension to its annual expedition to take youth from the Exxon Valdez oil spill region on a trip through the Sound to explore its natural and cultural resources, landscape, communities, subsistence activities, and to study matters related to the Exxon spill
- » **Kodiak Island Borough School District**, for a Marine Stewardship Club after-school program to teach middle and high school students about global climate change, oil spills, oil spill response, and marine debris
- » **Prince William Sound Science Center**, for Ocean Science events in Cordova and Valdez
- » **Kachemak Bay Research Reserve**, for delivery of "Could It Happen Here?" kits on oil spills for students in Kodiak, Nanwalek, Port Graham, and Seldovia
- » **Katie Gavenus of Homer**, for development of a "Children of the Spills" book and website

The committee continues to work on a "Train the Trainer" project to teach people how to train peer listeners in communities affected by oil spills. The committee is also working on project outreach and information dissemination.



These students visited the old Kennecott copper mine as part of an educational outreach program the council helped sponsor. *Photo courtesy of Copper River Stewardship Team.*



These beautiful kayaks were built in Chenega Bay over the winter of 2011-12, then blessed in summer 2012 at the community's annual remembrance for victims of the 1964 Good Friday earthquake. *Photo by Dorothy Moore.*

PUBLICATIONS AND MEDIA

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

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 covers 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, and 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.

The council also makes available a "then and now" report and DVD on improvements to the Prince William Sound safety system since the Exxon Valdez spill. They were created for the 20th anniversary of the spill, in 2009.

The council is upgrading its website to a new format with features such as email notifications when new information is added to the site, social sharing, and an improved search function.

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

GOVERNMENT RELATIONS

The council monitors state actions, legislation, and regulations that relate to terminal or tanker operations, or to oil spill prevention or response. To track developments in the state capital, the council retains a monitor under contract during the legislative session. This area of council activity is coordinated by a Legislative Affairs Committee made up of members of the council board.

The council also monitors federal government actions and issues through its Legislative Affairs Committee and a contract representative in Washington, D.C.

RECERTIFICATION

The Coast Guard certifies the council as the federally approved citizens' advisory group for Prince William Sound, pursuant to the Oil Pollution Act. The council has been the certified group since 1991.

Under the annual recertification process, the Coast Guard assesses whether 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.

As part of its recertification process, the Coast Guard considers comments from industry, interest groups, and citizens. The council fulfills the Act's requirement for an industry-funded citizens' advisory group, but it was established before the law was enacted.



WHO WE ARE BOARD OF DIRECTORS

EXECUTIVE COMMITTEE



President
Dorothy M.
Moore
City of Valdez



Vice President
Pat Duffy
Alaska State
Chamber of
Commerce



Secretary
Thane Miller
Prince William
Sound
Aquaculture



Treasurer
Marilynn
Heddell
City of Whittier



Member-at-large
Amanda Bauer
City of Valdez



Member-at-large
Stephen Lewis
City of Seldovia



Member-at-large
Diane Selanoff
Port Graham
Corp.

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.



Patience Andersen
Faulkner
Cordova District
Fishermen United



Al Burch
Kodiak Island
Borough



Jane Eisemann
City of Kodiak



Larry Evanoff
Chenega Corp.
& Chenega IRA
Council



John French
City of Seward



Cathy Hart
Alaska Wilderness
Recreation
& Tourism
Association



Blake Johnson
Kenai Peninsula
Borough



James Kacsh
City of Cordova



Iver Malutin
Kodiak Village
Mayors
Association



Walter Parker
Oil Spill Region
Environmental
Coalition



David Totemoff Sr.
Chugach Alaska
Corp.



Roy Totemoff
Tatitlek Corp. &
Tatitlek
Village IRA



John Velsko
City of Homer

OTHER DIRECTORS

EX-OFFICIO BOARD MEMBERS (NON-VOTING)

Ron Doyel, Alaska Department of Environmental Conservation

Bradley Dunker, Alaska Department of Fish and Game Division of Sport Fish

Allison Iversen, Alaska Department of Natural Resources

Denise Hall, Alaska Division of Homeland Security & Emergency Management

Joe Hughes, Bureau of Land Management

John Whitney, National Oceanic & Atmospheric Administration

W. Scott Pegau, Oil Spill Recovery Institute

Cmdr. Ben Hawkins, U.S. Coast Guard/Marine Safety Unit Valdez

Doug Mutter, U.S. Department of the Interior

Chris Field, U.S. Environmental Protection Agency

Sharon Randall, U.S. Forest Service



Volunteer Kate Morse of Cordova participates in a meeting of the council's Information and Education Committee. Photo by Serena Lopez.



Executive Director Mark Swanson addresses a group of students as part of the council's youth outreach efforts. Photo courtesy of Copper River Stewardship Team.

ADVISORY COMMITTEES

As of June 30, 2012

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.

INFORMATION AND EDUCATION COMMITTEE

Mission:

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

Members:

Patience Andersen Faulkner, chair (council board member)
Kate Alexander
Jane Eisemann (council board member)
Cathy Hart (council board member)
Mary Katzke
Ruth E. Knight
Savannah Lewis
Allen Marquette
Lanette Oliver
Diane Selanoff (council board member)
Mary Wasche

TERMINAL OPERATIONS AND ENVIRONMENTAL MONITORING COMMITTEE

Mission:

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

Members:

Bob Benda, chair
Ken Adams
Amanda Bauer (*council board member*)
Jo Ann Benda
Stephen Lewis (*council board member*)
George Skladal

OIL SPILL PREVENTION AND RESPONSE COMMITTEE

Mission:

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

Members:

John French, chair (*council board member*)
John LeClair, co-chair
Jerry Brookman
David Goldstein
Joe Jabas
Walter Parker (*council board member*)
Gordon Scott
John Velsko (*council board member*)

PORT OPERATIONS AND VESSEL TRAFFIC SYSTEMS COMMITTEE

Mission:

Monitor port and tanker operations in Prince William Sound

Members:

Robert Jaynes, chair
Kari Anderson
Duane Beland
Cliff Chambers
Bill Conley
Pat Duffy (*council board member*)
Jane Eisemann (*council board member*)
Pete Heddell
Orson Smith

SCIENTIFIC ADVISORY COMMITTEE

Mission:

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

Members:

John Kennish, chair
John French (*council board member*)
Roger Green
Paula J.S. Martin
Debasmita Misra
Dorothy Moore (*council board member*)
David Musgrave
Walter Parker (*council board member*)
Mark Udevitz



Downtown Anchorage



Valdez boat harbor

STAFF AND OFFICES

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Anchorage

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Gregory M. Dixon, Financial Manager

Amanda Johnson, Project Manager

Stan Jones, Director of Administration & External Affairs

Tom Kuckertz, Project Manager

Serena Lopez, Project Manager Assistant

Barbara Penrose, Administrative Assistant

Linda Robinson, Outreach Coordinator

Linda Swiss, Project Manager

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Jeremy Robida, Project Manager
Donna Schantz, Director of Programs
Alan Sorum, Project Manager

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Sign up for the email version
of The Observer newsletter:

www.bit.ly/TheObserverByEmail





PAPERS, PRESENTATIONS, REPORTS, AND MEDIA RELEASES

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Comments on Ice Detection and Avoidance for Prince William Sound (report). Citizens' council, 8/12/2011. 440.107.110812.CmmtCGsubIceRadar.pdf

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Review of EPA Draft Permit, Fact Sheet, and Other Documents for Proposed Reissuance of Valdez Marine Terminal NPDES Wastewater Discharge Permit (AK-002324-8) (report). Payne Environmental Consultants, Inc. & Landau Associates, 3/6/2012. 551.431.120306.PECInpdesRvw.pdf

Alaska Coastal Management Program 2012 Prince William Sound Regional Citizens' Advisory Council Briefing Paper (report). Citizens' council, 3/6/2012. 270.431.120306.ACMP2012.doc

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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.

CREDITS

Front and back cover photos by Bill Rome.



Regional Citizens' Advisory Council

Prince William Sound
REGIONAL CITIZENS' ADVISORY COUNCIL



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