2010 Annual Report

cook inlet rcac

contents

we're 20!

In October of 1990, Cook Inlet RCAC held its first official Board Meeting. Later that year, on December 6, Cook Inlet RCAC became incorporated. Twenty years later, Cook Inlet RCAC is still representing the citizens of Cook Inlet in promoting environmentally safe marine transportation and oil facility operations in Cook Inlet.

To promote our twenty years of service, we held a "20th Anniversary" logo design competition. The winning design, at right, came from Roxanne Christensen of Homer. Ms. Christensen was awarded $250.00 for her design at the Council's 20th anniversary reception held in Kenai on December 2, 2010. Learn more about our "Twenty Year Challenge" on page 8.

"The mission of the Council is to represent the Citizens of Cook Inlet in promoting environmentally safe marine transportation and oil facility operations in Cook Inlet."

"Feather-duster" crown of a filter feeding polychaete worm. Donna McCoy

executive letter

As the Cook Inlet Regional Citizens Advisory Council (Cook Inlet RCAC) entered its twentieth year, a major milestone was reached - a milestone that the Council had pursued for nearly half of its lifetime - funding for a Cook Inlet Risk Assessment (CIRA). This year, our persistent efforts finally paid off when the Kenai Peninsula Borough Assembly (KPB) approved an ordinance that allowed the acceptance and appropriation of a $250,000 grant from the Alaska Department of Environmental Conservation (ADEC) to the Cook Inlet RCAC for conducting the CIRA.

Moreover, the risk assessment was mandated by the United States Congress in the passage of the most recent United States Coast Guard (USCG) Authorization Act. Although funding was not provided for this mandate, the KPB appropriation allowed us to partner with the ADEC and the USCG to begin the first steps for the long-anticipated CIRA. With limited funding, Cook Inlet RCAC will continue to build partnerships and work cooperatively with industry, regulators, and stakeholders to minimize navigational hazards and risks in Cook Inlet.

Midway through the year, our organization was honored for our cooperative efforts when the Council received the USCG's Meritorious Public Service Award. The Award cites the Cook Inlet RCAC for its actions during the Mount Redoubt eruption and the Drift River Terminal Coordination in March with the University of Alaska Fairbanks to deploy a series of high frequency radars to map surface ocean currents in the vicinity of Drift River and nearby areas of Cook Inlet, in order to better understand the potential transport of surface oil.

The Meritorious Public Service Award is one of the highest public recognition awards presented by the Coast Guard, and we are extremely pleased and humbled to be bestowed such an honor. This award truly demonstrates that a citizen oversight group can make a difference and work cooperatively to find solutions during incidents.

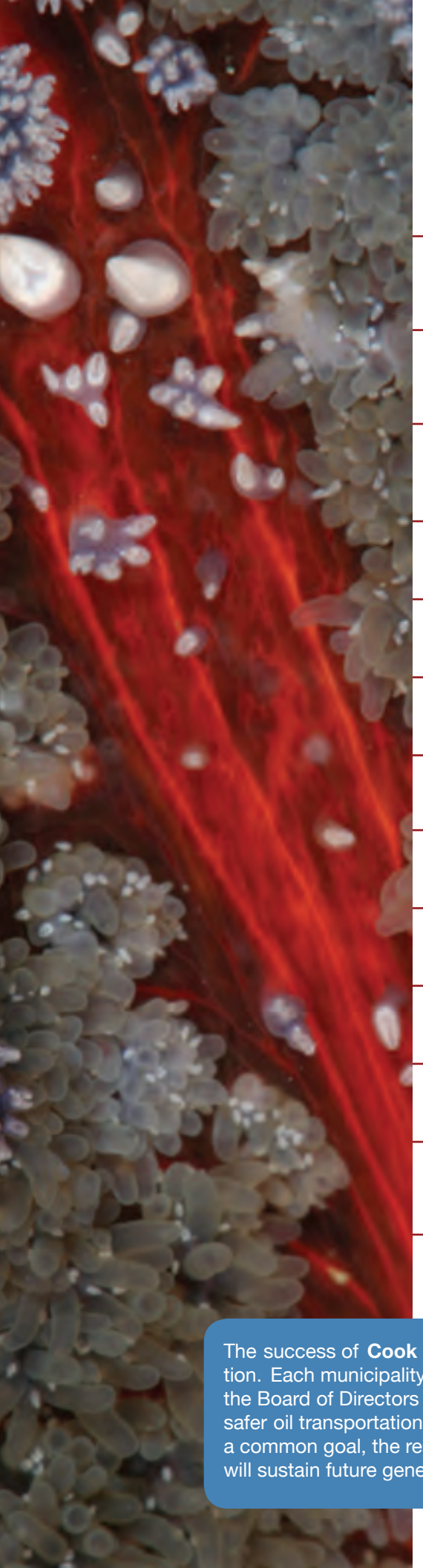
The Oil Pollution Act of 1990 (OPA 90) includes a provision calling for an annual review of Cook Inlet RCAC's activities by the USCG to certify that the RCAC is meeting its OPA 90 mandates, both fiscally and operationally. I am delighted to report that in 2010 Cook Inlet RCAC received a letter from Admiral Christopher C. Colvin, USCG Commander in Alaska, formally approving the recertification of Cook Inlet RCAC. In its twenty years, the Council has been certified every year without exception - a true testament that Cook Inlet RCAC is representing the interests of the communities and stakeholders within our area of responsibility.

In this Special Anniversary Annual Report, we have taken time to highlight many accomplishments, milestones and challenges encountered since 1990. We hope you enjoy the look back, and we thank those who have contributed so much time, effort, knowledge and talent over the years toward helping us fulfill our mission so successfully.

This year we looked backward to celebrate Cook Inlet RCAC's twenty successful years. We are also looking forward to furthering that success for the next twenty years and beyond.

Michael Munger, Executive Director

Cook Inlet oil platform. Photo by Cook Inlet RCAC



board of directors

Kenai Peninsula Borough
Grace Merkes
President

Aquaculture Associations
Gary Fandrei
Vice President

City of Kenai
John Williams
Secretary/Treasurer

Kodiak Island Borough
Elizabeth Chilton

State Chamber of Commerce
Robert Peterkin, II

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Jay Stinson

Alaska Natives
Tommy Johnson, Jr.

Municipality of Anchorage
Molly McCammon

Recreational Interests
Robert Flint

City of Seldovia
Allison Miller

Environmental Interests
Robert Shavelson

City of Homer
Carla Stanley

City of Kodiak
Robert Lindsey

The success of **Cook Inlet RCAC** can be traced to citizen participation. Each municipality, borough, and interest group represented on the Board of Directors is actively involved in the decisions that lead to safer oil transportation and production. When everyone works toward a common goal, the result is an environmentally sound Cook Inlet that will sustain future generations of Alaskans for years to come.

COOK INLET RCAC

Following the 1989 Exxon Valdez oil spill, Congress enacted the Oil Pollution Act of 1990 (OPA 90), in part to ensure the safe transport of crude oil on Alaska's waterways. The Act established, among other things, demonstration programs to involve local citizens in overseeing the environmental impact of oil facilities and tanker operations in two locations, Cook Inlet and Prince William Sound.

Cook Inlet Regional Citizens Advisory Council (RCAC), a non-profit organization, was incorporated in 1990 to meet the mandates of OPA 90. OPA 90 describes the membership, appointment process and structure of the Council.

The thirteen-member Council, all dedicated to our Mission, represents seven cities and boroughs within the region, along with commercial fishing groups, aquaculture associations, Alaska Native interests, recreation groups, the State Chamber of Commerce and environmental groups. In addition to the Council members, there are nine ex-officio members who represent the U.S. Coast Guard, Alaska Department of Environmental Conservation, and other state and federal agencies (see inside back cover).

Cook Inlet RCAC depends on the efforts of volunteers. Much of Cook Inlet RCAC's work is done through three committees: the Environmental Monitoring Committee (EMC) and the Prevention, Response, Operations, and Safety (PROPS) Committee, and the Protocol Committee. These committees design and implement work plans and formulate advice and recommendations for consideration by the Board of Directors. Each committee is assisted by Cook Inlet RCAC staff.

OPA 90 directs that funding for the Council comes from crude oil shippers and producers in Cook Inlet. The Council negotiates its funding with the oil industry every three years (see inside back cover).

COOK INLET RCAC

Progress & Participation: A Twenty Year Challenge

Since Cook Inlet RCAC's inception, there have been 65 different local citizens who have represented the various communities and interest groups on the Cook Inlet RCAC Board of Directors. Another 70 more have donated their time as public members on the two main working committees – the Environmental Monitoring Committee (EMC) and the Prevention, Response, Operations, and Safety Committee (PROPS). These Board and committee members have each brought unique experience and expertise, ensuring that decisions incorporate multiple perspectives - as intended by the founding legislation under the Oil Pollution Act of 1990 (OPA 90).

The list of tasks outlined for Cook Inlet RCAC in OPA 90 is long and complex and has presented many challenges. Through years of hard work that included both mistakes and successes, our efforts are now focused via a strategic plan centered on long-term programs and their associated projects. Cook Inlet RCAC worked extremely hard to develop a reputation for top-notch research and monitoring that has led to securing significant additional funding towards fulfilling the strategic plan.

During the first 10 years, over 90% of Cook Inlet RCAC's scientific activities were funded through our OPA 90-required industry funding contract. As we built up our program and our reputation for conducting peer-reviewed, high-quality research, we have obtained funding through many competitive proposals and by soliciting funds from other organizations and agencies. In the past ten years, over 80% of our scientific research and monitoring was funded through outside grants. Since 2000, Cook Inlet RCAC has received close to $4 Million in additional funds, and by leveraging these funds we've been able to accomplish several million more dollars worth of projects in Cook Inlet.

The following pages describe some of Cook Inlet RCAC's major accomplishments in its first twenty years.

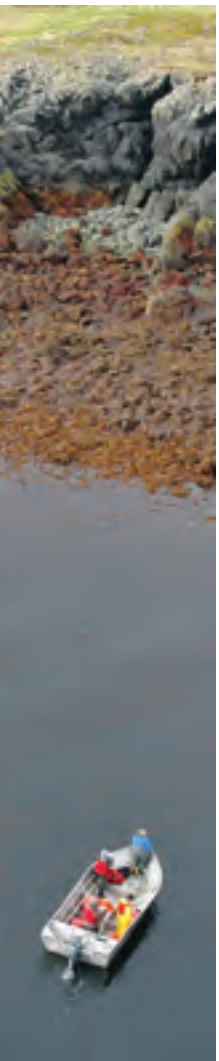
"I want to see Cook Inlet RCAC established as a professional organization and that the Board establish a positive rapport within the communities we work with. In the end, the Council will be recognized as a professional, quality organization."

- Vern McCorkle
circa 1991

A small sandy peninsula on Kodiak Island. Photo by Cook Inlet ShoreZone

Cook Inlet RCAC developed Alaska's first surveys for the National Coastal Assessment through the Environmental Monitoring and Assessment Program (EMAP). This program assessed bottom sediment toxicity and contaminant levels and evaluated benthic fish and invertebrate diversity throughout coastal Gulf of Alaska.

COOK INLET RCAC 20 years



Biological and Chemical Monitoring

Significant efforts were made during the earliest years of Cook Inlet RCAC to develop an environmental monitoring program that could begin to achieve the goals set out in OPA 90. One of the most difficult tasks was determining how to conduct a comprehensive monitoring program on a limited annual budget. The organization held workshops, solicited input from recognized experts in chemistry, toxicology, and Cook Inlet's biology and oceanography, and obtained independent scientific reviews of study plans.

Over the years, the studies have incorporated multiple components including: intertidal and subtidal environments; sediment, water, and tissue contaminants; dissolved and particulate contaminants; water column and benthic environments; invertebrate toxicology; potential contaminant sources and sinks; targeted and background sampling in both nearfield and farfield areas; and sampling inside of produced water discharge mixing zones. The Environmental Monitoring Committee insists on using laboratories proven to meet the highest analytical standards, and requests expert, independent reviews of their studies.

Highlights of Cook Inlet RCAC's environmental monitoring program so far include:

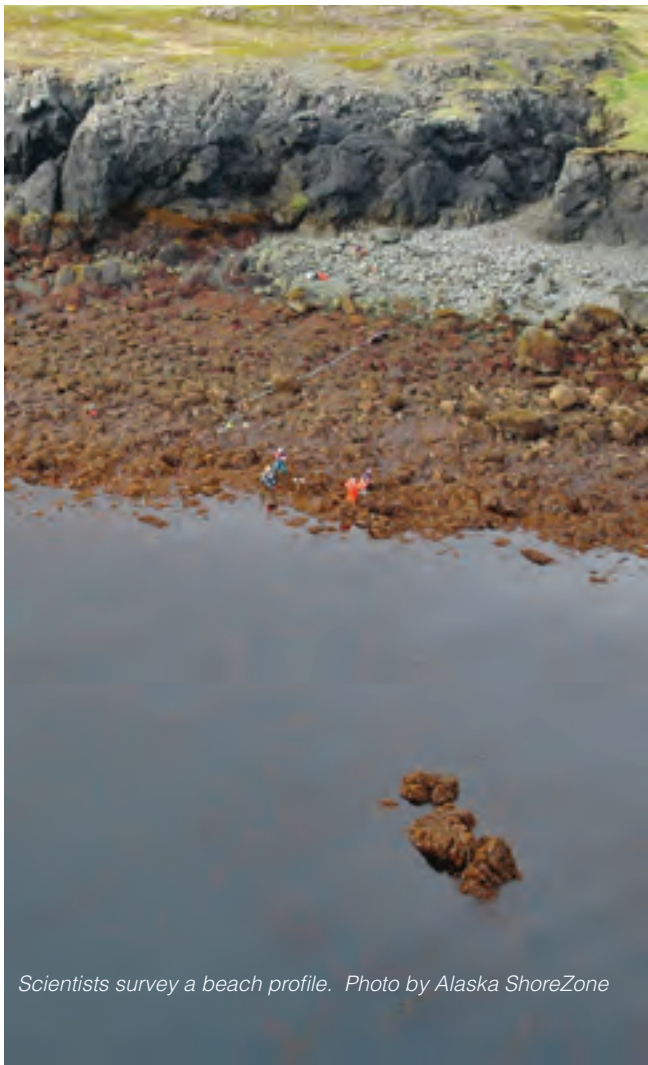
- Sampled hundreds of bottom sampling stations throughout Cook Inlet with a focus on a modified-sediment quality triad approach.
- Sampled over a hundred intertidal stations to assess resident algae and invertebrates, sediment contaminants and populations of potential sentinel species.
- Developed Alaska's first surveys for the National Coastal Assessment through the Environmental Monitoring and Assessment Program (EMAP). This program assessed bottom sediment toxicity and contaminant levels and evaluated benthic fish and invertebrate diversity throughout coastal Gulf of Alaska.
- Developed the Integrated Cook Inlet Environmental Monitoring and Assessment Program (ICIEMAP) by

Researchers measure blue mussels. Photo by Cook Inlet RCAC

coordinating four separate studies planned for Cook Inlet by Cook Inlet RCAC, federal agencies and industry. Together, the integrated study provided data on hydrocarbon and metal concentrations in the water column and benthic sediments as well as hydrocarbon fingerprints for mixing zones, industry areas, background Cook Inlet, and major river sources of freshwater and sediments to Cook Inlet.

- Developing a contaminants data layer for the Alaska Ocean Observing System (AOOS) website with planned availability in 2011.

- Catalogued sources and discharge locations of ballast water, and implemented ballast water sampling program on the two vessels that accounted for over 90% of untreated ballast water entering Cook Inlet.



Scientists survey a beach profile. Photo by Alaska ShoreZone

Cook Inlet RCAC conducted biophysical habitat imaging and mapping for every inch of shoreline within its area of concern and there are now over 40 partnering organizations in an Alaska ShoreZone program.

Biobands are visible on this rocky island. Photo by Cook Inlet ShoreZone

Coastal Habitats

OPA 90 directs Cook Inlet RCAC to identify areas that are particularly sensitive to oil spills and to study environmental factors that affect the ability to prevent, respond to, or clean-up spilled oil. Knowing that shorelines are often the habitats exposed for the longest periods after an oil spill, Cook Inlet RCAC developed a coastal habitat mapping program with goals to inventory and characterize coastal habitats; identify and characterize unique or particularly sensitive habitats; and make information easily accessible to users. Highlights of this Cook Inlet RCAC program so far include:

- Conducted biophysical habitat imaging and mapping for every inch of shoreline within our areas of concern, including the outer Kenai Peninsula, all of Cook Inlet, the Katmai Coast, and the Kodiak Island archipelago. Since our first surveys in 2001, there are now over 40 partnering organizations in an Alaska ShoreZone program, with over 50% of the entire state's shoreline completed. Data and imagery are now administered and served by NOAA.

- Provided detailed species assemblage maps of major salt marsh habitats in Cook Inlet through a partnership with the Kachemak Bay Research Reserve, including Chickaloon, Trading, Iliamna, Inisikin, Chinitna, and Tuxedni Bays and the Fox River Flats.

- Established on-the-beach surveys to document species-level information and detailed physical measurements for habitats observed during aerial surveys. To date, over a hundred sites in our area have been surveyed and a web-accessible database was developed with a link provided on the ShoreZone website.

- Developed a flash video imagery tool for oil spill planning and response.

- Discovered several unique habitats in our areas of concern, including seaweed habitats in Kamishak Bay that may not exist elsewhere in the world.

- Surveyed previously un-described *Macrocystis* kelp beds in the Kodiak Island Archipelago.

- Described a potential Arctic Relict Assemblage on the west side of Cook Inlet through a partnership with the University of Alaska.

- Sponsored development and hosting of Seaweeds of Alaska website as a research and public outreach tool focused on intertidal and nearshore seaweeds.

Physical Oceanography

Cook Inlet RCAC's goals include collecting observational data to improve our understanding of Cook Inlet's oceanography and to more accurately predict the potential movement of spilled oil under various weather conditions. To date, we have:

- Developed oil spill trajectory model software that predicts behavior of a hypothetical oil spill . The model takes into account the complex shape, bathymetry, tidal currents, and weather of Cook Inlet and allows the user to enter various spill sizes and weather conditions.

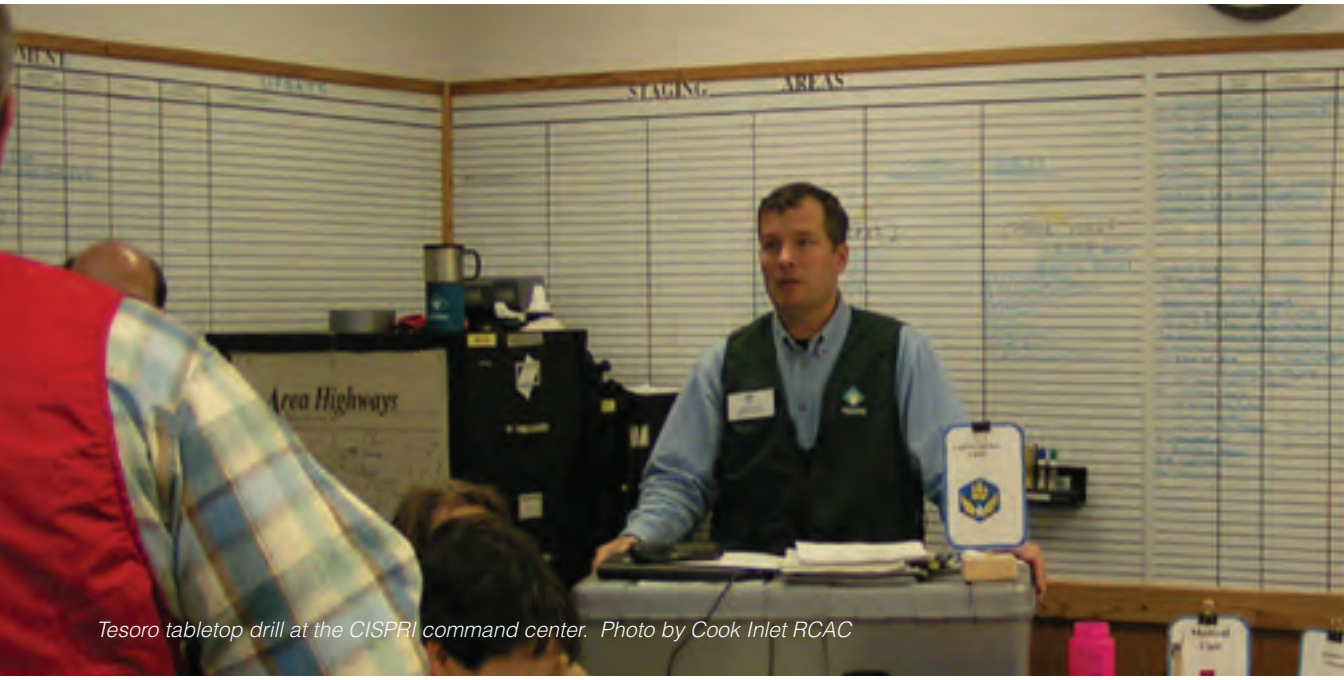
- Conducted detailed seasonal surveys of hydrography at the major entrances or boundaries of Cook Inlet to better understand the seasonal influences on Cook Inlet of the Alaska Coastal Current and upper Inlet freshwater influx.

- Conducted Acoustic Doppler Current Profile surveys, released and tracked satellite drifter buoys, released drift cards, and deployed high frequency (HF) surface current radars to better understand surface and sub-surface currents in Cook Inlet.

- Sponsored two physical oceanographic workshops, in 1999 and 2005, to ensure that researchers and modelers were coordinating their studies and incorporating best data into oil spill and plume transport models.

- Developed the first Cook Inlet Ocean Observing System proposal as a component of the larger Alaska Ocean Observing System (AOOS).

- Demonstrated for the first time in Alaska that HF Radar can be deployed in emergency situations and that the near real-time data could be incorporated into NOAA's oil spill trajectory model for oil spill response.



Tesoro tabletop drill at the CISPRI command center. Photo by Cook Inlet RCAC

COOK INLET RCAC **20 years**


Spill responders working to protect a creek during a spill drill. Photo by Cook Inlet RCAC

Oil Spills and Drills

Cook Inlet RCAC plays a major role at oil spill drills and at actual spills. We monitor activities and act as liaison between spill management, government representatives, and concerned local citizens by communicating information through our community and interest-group representatives on our Board. We play a major role in keeping the public informed about the progress of the actual spill or spill scenario, and on planned actions. Cook Inlet RCAC has:

- Participated in over one hundred table-top drills, on-water deployments, worst-case scenarios, tanker arrest and towing, and special equipment testing demonstrations. Staff observes and advises at most levels of the Incident Command System.

- Hosted public meetings where concerned citizens could hear directly from Incident Commanders and receive summaries of decisions and activities - after heavy ice caused a crack in the hull of the *T/V Chesapeake Trader*; when the *T/V Seabulk Pride* was ripped from its Nikiski dock in heavy ice conditions; and when the storage tanks at Drift River were threatened by Mt. Redoubt Volcano lahars.

Cook Inlet RCAC has participated in over one hundred table-top, on-water, worst-case scenario, tanker arrest and towing, and special equipment testing drills. Staff observes and advises at most levels of the Incident Command System.

- Reviewed an analysis of prevention and response system in Cook Inlet that included confidential interviews of government, industry, and oil spill recovery organization (OSRO) personnel and independent consultants. The results showed a near unanimous agreement that Cook Inlet RCAC played a positive role in contingency plan reviews and at spills and drills.

Permits and Regulation Reviews

OPA 90 tasks Cook Inlet RCAC with providing advice and recommendations on policies, permits, and site-specific regulations relating to the operation and maintenance of oil terminal facilities and crude oil tankers. Through the years Cook Inlet RCAC has reviewed hundreds of documents and provided subsequent recommendations on a wide range of issues including US Coast Guard rulemakings, state and federal permits and regulations, environmental impact statements and assessments, lease sales, best interest findings, scientific sampling plans, and many other policies and practices. Several major accomplishments include:

- Reviewed National Pollutant Discharge Elimination System (NPDES) permits and was instrumental in seeing the requirements for a produced water discharge fate and effects study included for the most recent general oil and gas permit for Cook Inlet.
- Developed on-line database for entry of Discharge Monitoring Report data to provide summaries of pollutant loads entering Cook Inlet via various discharge streams.
- Provided detailed reviews of the Unified Plan – which is the Alaska Federal and State Preparedness Plan for Response to Oil and Hazardous Substance Discharges and Releases, including comments on appropriate Sub-area Contingency Plans.
- Actively participated on committees of the Alaska Regional Response Team to review and revise Dispersant and In Situ Burn Guidelines for Cook Inlet.

Cook Inlet Oil Spill Risks and Prevention

Evaluating oil spill risks to Cook Inlet is a complex task. Cook Inlet RCAC has approached this by assessing vessel traffic; facility operations; oceanographic, environmental, and pipeline conditions; by evaluating response equipment, personnel and training for oil spill response; and by assisting state and federal efforts to conduct and administer navigational and infrastructure risk assessments that address Cook Inlet's unique conditions. Highlights to date include:

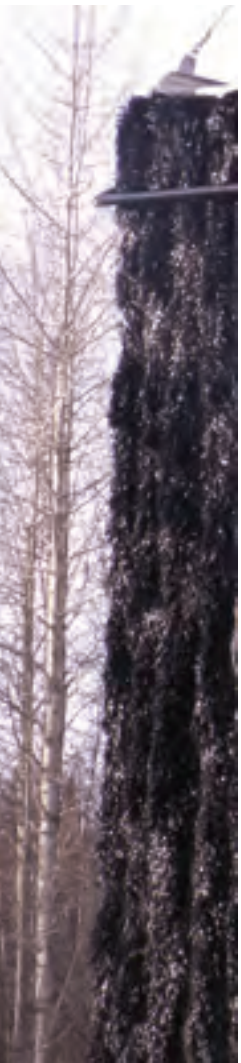
- Participated in a Cook Inlet Platform Structural Integrity Study that assessed risk potential for personnel injury and damage to the environment.
- Conducted a Platform Facility Evaluation that documented basic well and safety systems of Cook Inlet platforms.
- Participated in the Navigational Safety Committee.
- Compiled a Cook Inlet Oil Facilities Inventory that detailed operations connected with exploration, production, processing, transport, and storage of crude and non-crude petroleum in Cook Inlet.
- Participated on Cook Inlet Tug Escort Work Group to evaluate whether OPA 90 requirements for escort tugs for single-hulled tankers could, or should, be applied to Cook Inlet. Cook Inlet RCAC was commended by several organizations for its role in convincing industry to voluntarily place an assist tug at Kenai Pipeline dock.
- Participated as a panelist on The Ports and Waterways Safety Assessment Workshop aimed at identifying potential improvements to Cook Inlet Traffic Management System.
- Hosted Safety of Navigation Forums in 1999 and 2007 that resulted in a call for a comprehensive Cook Inlet navigational risk assessment.
- Sponsored a Cook Inlet forum to discuss conditions of pipelines in Cook Inlet that led to a request for a state funded Cook Inlet Pipeline Risk Assessment.
- Coordinated a working group of experts to conduct a needs assessment on human factors in safe navigation. The group identified 68 issues related to manning, qualifications, licensing, automation and work design, safety methods and data, communications, and organizational practices. This was instrumental in promulgating the first training requirements for Marine Pilots in Alaska.
- Produced an ice condition report for Cook Inlet that recognized the need to incorporate winter conditions in contingency plans and to set operational limits for severe ice conditions.
- Sponsored an ice symposium to identify navigational problems and potential technological solutions and advocated for amendments to winter rules to include specific operating conditions and restrictions in severe ice conditions.
- Designed and deployed an ice camera network that allows the National Weather Service ice forecaster to observe real-time ice conditions at several important locations in upper Cook Inlet.
- Produced a white paper on Dismantlement, Removal, and Restoration (DR&R) that summarized the state of statutes, regulations, leases, traffic, and liability issues inherent to DR&R.
- Staff and Board members participate as committees members of ASTM International, a globally recognized leader in the development of international voluntary consensus standards.

The T/V Seabulk Arctic is assisted by the Tug Protector at the KPL dock. Photo by Cook Inlet RCAC

Cook Inlet RCAC successfully advocated for amendments to winter rules to include specific operating conditions and restrictions in severe ice conditions.

Cook Inlet RCAC initiated and sponsored Geographic Response Strategies (GRS)…The GRS process includes identifying and prioritizing site-specific environmentally or culturally sensitive areas and developing targeted response plans. GRS enhances effectiveness of response efforts by developing the plans prior to emergency situations through a rigorous public process and through consensus.

COOK INLET RCAC **20 years**



Oil Spill Response

Many of Cook Inlet RCAC's activities are aimed at increasing oil spill prevention measures and, in the event of spilled oil, improving response capabilities to minimize potential environmental effects. Numerous achievements already described above relate to oil spill prevention and response. Here we highlight several major achievements that improve oil spill response efforts in Cook Inlet:

- Coordinated aspects of the Potential Places of Refuge working group to identify and prioritize potential safe moorage sites for stricken vessels.
- Initiated and sponsored Geographic Response Strategies (GRS) for Cook Inlet, Kenai Peninsula, Alaska Peninsula, and Kodiak areas, as well as harbor-specific plans. The GRS process includes identifying and prioritizing site-specific environmentally or culturally sensitive areas and developing targeted response plans. GRS enhances effectiveness of response efforts by developing the plans prior to emergency situations through a rigorous public process and through consensus.
- Developed a Geographic Response Information Network (GRIN), which is a web-based database that compiles logistical information relevant to oil spill response in coastal Alaska. GRIN provides geographic data that can be queried and displayed by region or individual communities.
- Created Alaska Oil Spill Response Permits, Forms, and Applications project that improves response time during spills by clarifying the permitting processes, allowing more efficient and accurate tracking of permits during emergency situations.
- Developed marine fire fighting manual for Cook Inlet area and Kodiak that identified capabilities, means, and methods for activating fire fighting resources for vessel and dock facility fires.

A response crew deploys a 13-disc Crucial skimmer within a NOFI Current Buster. Photo by CISPRI

Oil Spill Contingency Plans

Since its inception, Cook Inlet RCAC has taken the lead for citizen review of oil spill contingency plans, and considers these reviews and recommendations to be some of its most fundamental responsibilities. Highlights of this review program include:

- Compiled *Contingency Planning in Cook Inlet: A Review of Process and Efficacy* that led to development of internal review protocols.
- Reviewed over 100 separate oil spill contingency plans for vessels and facilities.
- Appointed to task force that recommended contingency plan regulations for non-tank vessels and obtained additional funds to incorporate these plans into review process.

An eight-rope fox-tail skimmer. Photo by Cook Inlet RCAC

EMC programs 2010

ENVIRONMENTAL MONITORING COMMITTEE:

COUNCIL MEMBERS
Chair: Liz Chilton
Carla Stanley
Jay Stinson
Molly McCammon
Bob Flint
Robert Shavelson

PUBLIC MEMBERS
Vice-Chair: Craig Valentine
Kashif Ahmed Naser
Merritt Mitchell
Richard Prentki
Steve Hunt
Paul Blanche
Deric Marcorelle

Photo by Cook Inlet ShoreZone

The primary mission of the Environmental Monitoring Committee is to insure that the environmental impacts associated with oil industry operations in Cook Inlet are minimized. The EMC is charged by OPA 90 to monitor the impacts of the oil industry on the health of the Cook Inlet ecosystem.

Coastal Habitat Monitoring

ShoreZone Image Access Tool

A video application was developed by Coastal and Ocean Resources, Inc. and Clover Point Cartographics at the request of the EMC to provide an interactive, self contained interface that relates high resolution ShoreZone video and photographs to an interactive map interface. This pilot project used 2009 Cook Inlet high definition video and photographs and similar imagery collected since 2003 along the Katmai, Kodiak, and outer Kenai coasts using slightly lower resolution video imagery and digitized slides collected between 2002 and 2005. All videos were rendered into digital flash files and linked to a customized display program that shows satellite base maps, oblique aerial photography and flight tracks. The goal was to provide immediate access to video of every inch of shoreline in our areas of concern, including over 13,000 high resolution photographs of Cook Inlet alone.

The imagery and software fit on travel data drives so that the tool can be easily accessed during emergency response situations and would not require web access. The final product will be provided to the USCG, oil spill response organizations, federal and state agencies, and other organizations with interests in coastal areas. Staff had the opportunity to demonstrate this oil spill response tool at the 2010 Arctic Marine Oil Spill Conference in Nova Scotia.

ShoreZone Shore Station Database

In 2010, Cook Inlet RCAC revealed a demonstration project that enables online access to intertidal ShoreZone shore station survey data that includes observed species and their assemblages; geomorphic features such as sediment substrates and forms, beach length, slope, and specific elevation profiles; and station photo

Photo by Cook Inlet ShoreZone

Kelp collected during Kachemak Bay nearshore surveys. Photo by Cook Inlet RCAC

Macrocystis kelp bed. Photo by Cook Inlet RCAC

documentation. This ShoreZone Shore Station website is the culmination of a partnership with NOAA and Archipelago Marine Research, Ltd. Data collected during Cook Inlet RCAC shore station surveys in the Kodiak Island Archipelago were used as the focus of the demonstration project. More than 300 additional shore stations have been surveyed throughout the Gulf of Alaska and will be incorporated into the online database as funding allows. Other highlights include:

- Built web access to mapped ground station locations, displayed as an integrated layer on the ShoreZone website.
- Developed interactive queryable data, with searchable display of species occurrence by station and groups of stations.
- Displayed photos from those ground stations.

The ShoreZone ground station ArcGIS site is accessible from the introductory page at the ShoreZone website: www.alaskafisheries.noaa.gov/habitat/shorezone/szintro.htm. Efforts continue to upload hundreds of additional shore station site data from around the coastal Gulf of Alaska.

Seaweeds of Alaska

The EMC previously supported the development of the www.seaweedsofalaska.com website which provides imagery and detailed information about

MONITORING COMMITTEE.–Each Council shall establish a standing Terminal and Oil Tanker Operations and Environmental Monitoring Committee to devise and manage a comprehensive program of monitoring the environmental impacts of the operations of terminal facilities and of crude oil tankers while operating in Prince William Sound and Cook Inlet. The membership of the Monitoring Committee shall be made up of members of the Council, citizens, and recognized scientific experts selected by the Council.

- OIL POLLUTION ACT OF 1990

Alaskan seaweeds that have been collected primarily during our ShoreZone surveys. The site was designed by Mandy Lindeberg of NOAA, who compiled species data and photographed seaweeds in their natural environment.

In 2010, in conjunction with Alaska Sea Grant and NOAA, Cook Inlet RCAC co-funded the publishing of the Field Guide to Seaweeds of Alaska, based on the web site information and authored by Ms. Lindeberg and Dr. Sandra Lindstrom. Also in 2010, Cook Inlet RCAC sponsored a book tour and lecture series to introduce the authors and this important intertidal and nearshore educational tool to local coastal communities and the research community. Presentations were made to the public in Kodiak, Homer, Cordova, and Seward and to researchers at the Alaska Marine Science Symposium, the Kodiak Area Marine Science Symposium, Sitka Whale Fest, the Northwest Algal Symposium, and the Phycological (Algae) Society of America.

Macrocystis Kelp

In 2010 we analyzed data from Macrocystis kelp bed surveys conducted in the fall of 2009 in the Kodiak Island Archipelago. GIS maps were prepared to show the location and size of each bed, and lists of associated fish, invertebrate, and seaweed species were compiled. Abstracts summarizing these data have been accepted for presentation at several symposia in 2011. These kelp surveys are helping to identify the geographic extent of Macrocystis in the western Gulf of Alaska and will allow us to document its potential geographic spread in the area. This kelp can create very dense nearshore beds that provide habitat for many resident species and protection for early life stages of numerous commercially important fish species. It can create challenges for oil spill response and can trap oil in the event of an oil spill that reaches shore, potentially exposing sensitive animals like sea otters who feed in the beds.

Katmai National Park Surveys

Cook Inlet RCAC continued its in-kind support of the National Park Service's 2010 Southwest Area Network (SWAN) Nearshore Vital Signs monitoring program along the Katmai National Park coast, a region within Cook Inlet RCAC's area of concern. Six vital signs were monitored - kelp and seagrass, marine intertidal invertebrates, marine birds, black oystercatcher, sea otter, and marine water chemistry and

F/V Columbia contracted for intertidal surveys in Tuxedni Bay. Photo by Susan Saupe

quality. The NPS also conducts components of these surveys along Lake Clark National Park marine shorelines, in the Kenai Fjords National Park, and in Prince William Sound. Plans are to expand the program into the Kodiak area as well.

Technical Review

Ballast Water Catalog

In 2010, Cook Inlet RCAC completed reports for two ballast water-related projects ongoing since 2007. The Ballast Water Catalog was compiled by contractors at Nuka Research and includes information about volumes, treatment methods, and source and discharge location obtained from ballast water reports for ships discharging ballast to Cook Inlet. This project will expand into 2011 with a web-based data summary application and a report is being developed that will allow more timely updates to graphic data as new data are obtained. The second report summarized ballast water sampling activities conducted for the Cook Inlet RCAC by the Smithsonian Environmental Research Center from 2006 to 2009. This report documented species collected from ballast water on LNG tankers that transit the North Pacific between ballast water source ports in Japan and Cook Inlet.

Discharge Monitoring Reports

In 2010, a draft Cook Inlet RCAC-sponsored online database of Discharge Monitoring Report (DMR) data was developed by Nuka Research. Testing of the pilot project continued through 2010. This project also includes an annual summary provided online, and will be continually updated as an ongoing effort of this Committee.

Biological and Chemical Monitoring

Integrated Cook Inlet Environmental Monitoring and Assessment Program (ICIEMAP)

The Environmental Monitoring Committee (EMC) has been collecting contaminant and other water and sediment quality data from Cook Inlet since 1993. In 2010, EMC efforts focused on creating better access to this extensive data set in a way that allows queries by geography or by specific parameters. Each of the numerous studies had very specific goals or hypotheses that drove the sampling and analytical methods. It is vitally important that data users also have access to information that defines each study, allowing compilation and interpretation of the overall data set in a manner that recognizes the strengths and statistical limitations. To that end, the EMC entered into a partnership with the Alaska Ocean Observing System (AOOS) to develop an interface that will allow visualizations, summaries, and downloads of Cook Inlet RCAC's extensive data.

For the pilot project, priority was given to the most recent data from the intensive study conducted in 2008 and 2009 - the Integrated Cook Inlet Environmental Monitoring and Assessment Program (ICIEMAP) - that combined multiple study plans into one coherent sampling and analysis program, including:

- A Cook Inlet-specific Environmental Monitoring and Assessment Program (EMAP) statistically designed to allow comparisons to data collected by Cook Inlet RCAC and the Alaska Department of Environmental Conservation (DEC) in the coastal Gulf of Alaska that was completed as a component of the National EMAP Coastal Assessment program. This study included a nested probabilistic design that included background and crude oil industry areas to measure dissolved and particulate contaminant levels in the water column, and benthic contaminant levels and infaunal invertebrate assemblages living in those sediments.

- A contaminants and sediment toxicity study specific to Kachemak Bay conducted as a component of the NOAA's National Status and Trends Bioeffects Assessment Program.

- A "Background Source" study that assessed metal concentrations and hydrocarbon concentrations and fingerprints of major river sources discharging to Cook Inlet.

- A produced water fate and transport study required of XTO Energy and Chevron in their National Pollutant Discharge Elimination System (NPDES) permit. This study extensively sampled the water column and benthic sediments within the mixing zone for the discharge that accounts for over 96% of all produced water discharged into Cook Inlet.

A draft demonstration of these data on the AOOS website is anticipated for late 2011 or early 2012.

Cook Inlet RCAC has been collecting contaminant and other water and sediment quality data from Cook Inlet since 1993, including a recent study to assess the fate and transport of oil industry produced water discharged to the Inlet.

Beluga Whales

In 2009 and 2010, EMC sponsored a study with NOAA's National Marine Fisheries Service and Motes Marine Laboratory to analyze beluga whale blubber and liver tissues that have been archived since 1999, and to assess known beluga whale forage species and nearby sediments for hydrocarbons, metals, and persistent organic pollutants. Sampling took place in known beluga whale summer feeding areas, concentrated in the upper reaches of Cook Inlet and the mouth of the Beluga River.

Marine mammals have an endocrine system that metabolizes polynuclear aromatic hydrocarbon (PAH) compounds, so tissue concentrations were not previously considered to be the best indicator of exposure, and more detailed bioassays were preferred. It is difficult to obtain the beluga whale bioassay samples, and Canadian scientists had recently shown that analytical procedures now provide the PAH detection limits for analyses of these compounds in whale tissues. The EMC thought it important to fund the beluga research as it was an opportunity to obtain the first ever data for PAH in tissues of Cook Inlet beluga whales.

Data were reported at the October 2010 Cook Inlet Beluga Whale Science Conference and showed that the belugas do accumulate PAHs from the environment, as they were detected at some level in all samples. PAHs are commonplace at some level in the environment, from both natural and human sources, and are of special concern in areas where PAHs have the potential to be introduced at significantly high concentrations from urban run-off, oil spills, municipal discharges, and from oil and gas exploration, development, or production activities. Although the data do not allow fingerprinting to a specific source, the study results will allow comparisons to prey and sediment samples collected during a winter feeding area study further south in Cook Inlet.

In late 2010, Cook Inlet RCAC compiled a proposal to lead the collections of benthic sediments and resident fish, with participation by Motes Marine Laboratory and ADF&G. The planned study will provide some of the only information available on winter habitat and prey.

Cook Inlet oil platform. Photo by Cook Inlet RCAC

Physical Oceanography

The physical oceanography program is devoted to obtaining data to better understand Cook Inlet's complex oceanography towards developing more accurate transport models. Observational data collections are expensive; these goals can only be met by partnering with other agencies. In 2010, Cook Inlet RCAC co-sponsored a Cook Inlet Modeling Workshop in Anchorage with the AOOS, the Oil Spill Recovery Institute, NOAA, and the Kachemak Bay Research Reserve. The workshop's goal was to develop a conceptual framework for a circulation model system that builds on existing efforts such as the Prince William Sound Observing System. Cook Inlet RCAC staff gave presentations on oil spill monitoring and response modeling needs, and on effluent fate and transport of produced water discharges to Cook Inlet.

In March 2010, NOAA and Washington Sea Grant hosted an Environmental Effects of Tidal Energy workshop to evaluate three coastal areas that have concentrated tidal resources and have one or more active proposals for tidal energy development - coastal Alaska, Puget Sound, and coastal Maine. The workshop brought together international tidal energy experts, experts from each of the three focus areas, and agency personnel who would be responsible for reviewing permits and environmental assessments.
The workshop sponsors flew staff to the workshop to acquaint the participants with Cook Inlet's geomorphology and physical oceanography; identify why and where there are tidal resources within the area; discuss the ecological setting and natural resources; and discuss any living resources or sensitive habitats that might be adversely affected by some aspect of tidal energy development.

The information will be used to help evaluate stressors and receptors, and to develop mitigation measures that might be needed as tidal energy projects progress. There is considerable interest in Cook Inlet over the past several years including at least one project that explored the possibility of Inlet platforms as infrastructure for wind turbines.

TECHNICAL OIL SPILL COMMITTEE.—Each Council shall establish a standing technical committee to review and assess measures designed to prevent oil spills and the planning and preparedness for responding to, containing, cleaning up, and mitigating impacts of oil spills. The membership of the Oil Spill Committee shall be made up of members of the Council, citizens, and recognized technical experts selected by the Council.

- OIL POLLUTION ACT OF 1990

PROPS programs 2010

The primary mission of the Prevention, Response, Operations, and Safety Committee is a commitment to the prevention of oil spills. The PROPS Committee's primary work has involved the development of work plans, projects and studies designed to provide recommendations to minimize the risk of oil spills in Cook Inlet.

Risk Assessment

navigational risk assessment

Cook Inlet RCAC, ADEC, and the Coast Guard serve as managers of the assessment. With limited funding, the risk assessment management team is doing what it can to help understand and minimize navigational hazards and risks in Cook Inlet. However, to provide regulatory agencies and mariners with an entire understanding of the risks involved in navigating Cook Inlet, it is imperative to complete a comprehensive navigation risk assessment.

Prevention & Response

spill drills

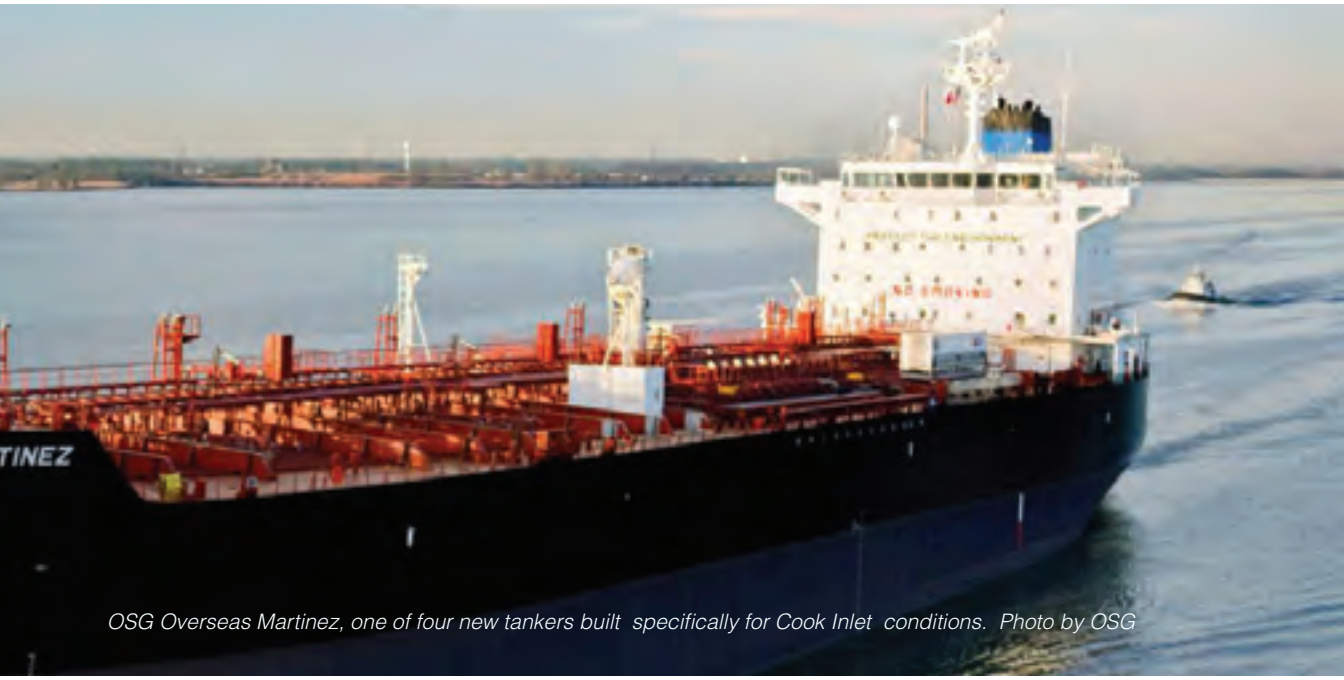
The Oil Pollution Act of 1990 mandates that Cook Inlet RCAC monitor and evaluate drills and training exercises to gauge the oil industry's ability to respond in a safe and efficient manner to actual events. As such, Cook Inlet RCAC takes our observation of and participation in these exercises very seriously. In 2010, Cook Inlet RCAC staff observed, reviewed, or participated in the following drills:

- seariver

  This scenario centered on a collision between a small vessel and a SeaRiver tanker in Prince William Sound. Two tanks were breached and approximately 170,000 bbls were released. The Unified Command employed mechanical response and surgical dispersant use. Both the Cook Inlet and Prince William Sound RCACs, the City of Valdez, and two native villages acted as the Regional Stakeholders Committee. Each day, the Unified Command met with the Regional Stakeholders Committee to discuss actions and plans and to field questions and concerns.

- marathon

  Staff attended a drill at the Marathon Beaver Creek facility which started with an equipment deployment. Staff observed CISPRI spill responders arrive on scene and work through the process of spill site characterization, site safety,



OSG Overseas Martinez, one of four new tankers built specifically for Cook Inlet conditions. Photo by OSG

equipment deployment, and oil spill recovery. Along with spill response, the drill incorporated emergency response by the Nikiski Fire Department. The spill scenario involved a catastrophic tank failure and secondary containment breach, followed by a fire with injuries. The latter included the activation and actual response of fire fighting apparatus and the mobilization of the Life Flight helicopter to the Beaver Creek location. This drill scenario provided the spill responders and emergency responders the opportunity to become familiar with the facility and the challenges they may face in an actual response. ICS activities were conducted on-site by Marathon personnel.

- xto energy

  The XTO drill scenario centered on a storage tank breach, caused by a loader accident. The drill incorporated an equipment deployment and full ICS deployment at the CISPRI command post. This was the first time the O'Brien's Response Management has worked with XTO as part of the Incident Management Team (IMT). Cook Inlet RCAC staff filled two roles at this drill, one as the Liaison Officer in the Incident Management Team (IMT) in the command center and the other as a field operations observer.

- chevron

  The Chevron drill took place at the CISPRI command post and the Chevron, Swanson River

PREVENTION, RESPONSE, OPERATIONS, & SAFETY COMMITTEE

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Robert Peterkin, II
Carla Stanley

PUBLIC MEMBERS
Vice-Chair: Barry Eldridge
Bill Osborn
Ted Moore
Deric Marcorelle
Jerry Brookman
Lois Epstein
Scott Hamann
Robert Favretto

"I think we're going to have one of the best ice programs in the world when this is all said and done."

- Kathleen Cole
NOAA Ice Forecaster

ice forecasting network

Progress was made in 2010 on the Ice Forecasting Network as business exchange circuits (BXB) were installed at key facilities to carry video feed to the NOAA Ice Forecaster located in Anchorage. Camera installation was completed at the ASRC facility and the OSK facility in Nikiski and the Port of Anchorage (POA). One of the cameras transmits its images, over the air, to a transceiver that is hard wired to the BXB that carries the images to the NOAA facility in Anchorage.

The NOAA Ice Forecaster is using the cameras and has written a white paper on ice forecasting which included the camera network. The video ice forecasting network will create a safer, more efficient marine transportation route to Alaska's largest port and vastly improve winter navigation and marine operations in Cook Inlet.

facility. The Chevron IMT was made up of local personnel, key personnel from Chevron facilities in the lower 48, and contractors from The Response Group (TRG). This spill scenario incorporated a pipeline leak, involving an over-the-ground transport of oil that threatened to enter the Swanson River. Chevron and TRG personnel tested the electronic forms and permits software that Cook Inlet RCAC had previously developed to increase accuracy of permit information. Staff observed response efforts in the field which included spill control, spilled oil recovery from soil and resource protection from potential spill contact.

- cook inlet energy

The actual spill portion of the drill was straight forward: there was a breach caused by an earthquake resulting in a spill on land. The response portion of the drill addressed the discharge properly and aggressively, preventing oil from entering the waters of Cook Inlet. For several reasons this drill was worthwhile. First, Cook Inlet Energy is a new company working as a new team. Secondly, Cook Inlet Energy was working with O'Brien's Response Management as a facilitator and response team member (as listed in their Contingency plan).

The Incident Command Center was located in Anchorage and the Response Command Center was located at the CISPRI facility in Nikiski, adding another layer of complexity. Finally, this drill incorporated many different considerations due to the nature of the cause. Overall this drill was very ambitious for a small company to address as their first drill. The Incident Management Team (IMT) performed their duties well, addressing the myriad of difficulties associated with even a small spill scenario during a widespread catastrophic event such as an earthquake of this magnitude.

- tesoro alaska

The CISPRI Oil Spill Response Vessel (OSRV) *Perseverance* practiced towing the *T/V Overseas Boston* during a vessel in distress simulation that demonstrated the ability of both vessel crews to safely connect the vessels and to arrest the tanker's movement. Once the vessels were connected the *Perseverance* successfully towed and repositioned the tanker to demonstrate its ability to maneuver the tanker to safety.

mount redoubt

Major volcanic activity at Mount Redoubt started on January 25, 2009, leading to several major explosive events - the largest on April 4, 2009. Each explosion caused pyroclastic flows and lahars to flow down the Drift River Valley. Though no one was injured and no oil was spilled, Cook Inlet RCAC recognized that in each incident response there can be improvement - including within our own organization. To that end, the Council commissioned an independent third party to review the response efforts, including the Council's involvement in the process, and to provide recommendations for improvement. The evaluation report, developed by Pearson Consulting LLC, was presented to the Council on June 18, 2010.

The Council accepted the report and elected to review the six recommendations through a workgroup process. The workgroup's decisions were presented to the full Council on December 3, 2010 at the quarterly Board Meeting in Kenai. During the meeting the Council elected to solicit public comment on the recommendations of the workgroup. After considering the public comments, the Council will make its final decisions on the recommendations.

alaska spill response capabilities

To gain a better understanding of the response capabilities in the State of Alaska and the Cook Inlet region, Cook Inlet RCAC compiled spill response capability data for Oil Spill Removal Organizations (OSROs) around the state. The catalog lists each organization along with a summary of their OSRO classification and an equipment inventory. In addition to OSROs, the catalog contains agency equipment inventories pertinent to Cook Inlet.

oil spill detection

Cook Inlet RCAC observed a demonstration hosted by the Bureau of Ocean Energy Management, Regulation and Enforcement of newly developed oil spill detection and mapping technologies. Remote sensing aircraft flew over a spill site carrying a camera array, developed by Ocean Imaging Corporation, which uses a combination of infrared and multi-spectral imaging to detect and quantify oil thickness on water coupled with GPS-BOEMRE technology to locate the spill site. The data is then applied through a mapping system to provide a detailed chart showing spill locations and thickness at those locations.

A Cook Inlet oil platform breaks a trail in the ice. Photo by Cook Inlet RCAC

PROTOCOL program 2010

The Protocol Control Committee is a technical committee comprised of five members of the Board of Directors. The committee deals with time-sensitive issues relating to Oil Discharge Prevention and Contingency Plans (C-Plans) and proposed state and federal policy or regulations. One of Cook Inlet RCAC's primary mandates in the Oil Pollution Act of 1990 (OPA 90) is to review contingency plans for the regulated crude oil industry in Cook Inlet.

Oil Discharge Prevention and Contingency Plans are required by state regulation to address prevention and response measures, provide supplemental information, along with a comparison of the best available technologies of spill response and a calculation of response planning standards based on prescribed regulations.

State of Alaska statute designates Cook Inlet RCAC as a named reviewer for crude oil exploration, production, and marine transportation contingency plans in the Cook Inlet Region.

Cook Inlet RCAC provides comments and recommendations during the plan review process to ensure the contingency plan meets the intent of regulation and that the public's interest and concerns are represented.

Contingency Planning

contingency plan comments

Thorough reviews of contingency plans are even more essential to a healthy Cook Inlet since the State of Alaska lengthened the review cycle for contingency planning from three years to five years.

In 2010, Cook Inlet RCAC reviewed and commented on the following local area contingency plans:

tesoro alaska company

- Cook Inlet Vessel Oil Discharge Prevention and Contingency Plan
- Oil Discharge Prevention and Contingency Plan
- Facility Response Plan Revision (Major Amendment)

kenai pipe line company

- Oil Discharge Prevention and Contingency Plan

aurora gas, llc

- Oil Discharge Prevention and Contingency Plan

armstrong cook inlet, llc

- Oil Discharge Prevention and Contingency Plan

buccaneer alaska operating, llc

- Oil Discharge Prevention and Contingency Plan for Cook Inlet Area Operations

cosmo alaska

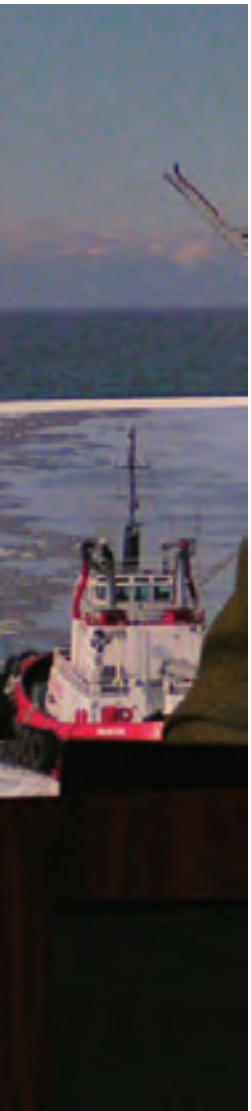
- Petroleum Sales Project: Vessel erations, Oil Discharge Prevention and Contingency Plan

PROTOCOL COMMITTEE

COUNCIL MEMBERS
Chair: Robert Peterkin, II
Bob Flint
Molly McCammon
Rob Lindsey

A response crew deploys a 54-disc Crucial skimmer from the CISPRI barge Responder. Photo by Cook Inlet RCAC

PUBLIC INVOLVEMENT program 2010



The goal of the Cook Inlet RCAC Public Involvement Program is to encourage citizen participation in Council activities and establish the level of trust that is spelled out in OPA 90. The program strives to make the public aware that there is a proactive effort underway between citizens, government, and industry to establish environmental safeguards for the Inlet. A number of different tools are used to accomplish the Public Involvement goals.

Newsletter

One important outreach tool is the quarterly newsletter, *Council Briefs*. The newsletter is provided to citizens, local governments, mayors, industry representatives, agency officials, and all major media outlets in the state. Often, information included in the Briefs will end up in the newspaper or on the radio. The newsletter is distributed electronically through e-mail and is available on Cook Inlet RCAC's web site. The newsletter is used to highlight the Council's various activities. During 2010, the newsletter covered several Cook Inlet RCAC committee projects and reported on significant industry activities.

Website - *www.circac.org*

The Cook Inlet RCAC website is a comprehensive source of information about the Council. You'll find the history of the RCAC and its membership, and the make-up of the Board of Directors, including pictures and short bios of the council members, committee members, and staff. The page also has specific information about the EMC, PROPS, Public Involvement programs and projects, a calendar of upcoming meetings and events, and a list of Charter Funding Companies.

The website, like the newsletter, is a tool to educate people about Cook Inlet RCAC and generate enthusiasm for the organization's goals and activities.

Community Visits

Cook Inlet RCAC travels on a regular basis to visit communities in the Cook Inlet region. The visits are an opportunity to meet with local leaders and provide them with information about Cook Inlet RCAC. A typical visit will usually include a presentation to the city council and one-on-one meetings with village and local government leaders.

Seldovia. photo by Cook Inlet ShoreZone

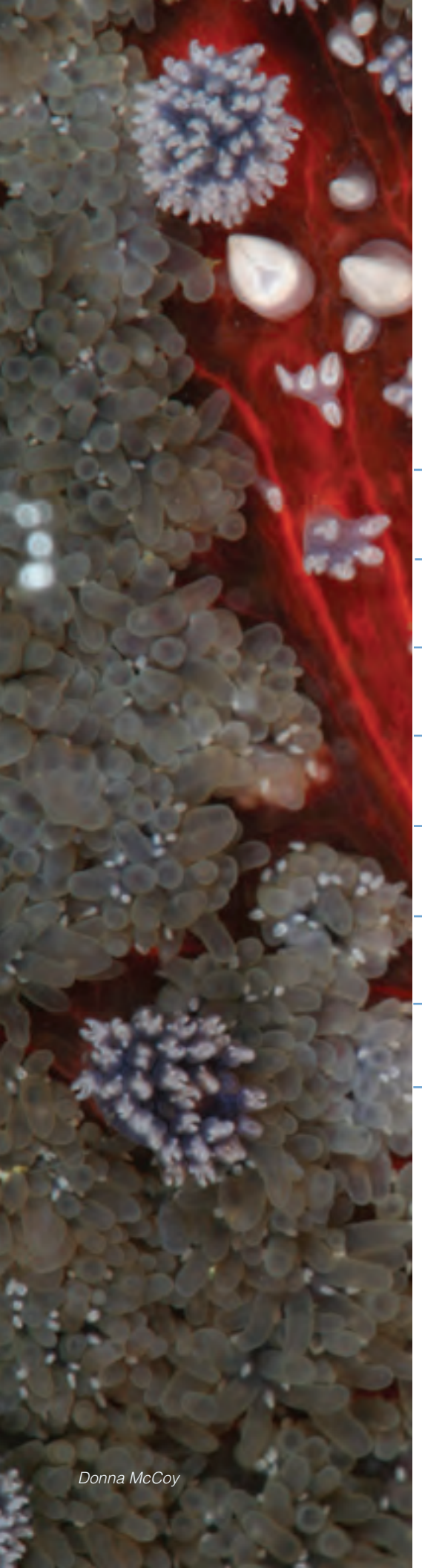
...only when local citizens are involved in the process will the trust develop that is necessary to change the present system from confrontation to consensus.

- OIL POLLUTION ACT OF 1990

During 2010, outreach trips were made to Homer, Seldovia, Kenai, Kodiak, and Anchorage. The community visits also provide a forum where RCAC staff can hear the concerns and issues that are most important to the people that live in the Cook Inlet area. Through successful public outreach efforts, Cook Inlet RCAC is able to tap into local knowledge and ensure that everyone is working towards a common goal.

Spills and Drills

Public Outreach plays an important role in the event of an oil spill. Timely, verifiable, accurate information is critical to a successful response. Cook Inlet RCAC works closely with industry and government during drills to make certain that everyone is prepared should an actual spill occur. Should there be a spill, Cook Inlet RCAC can serve as the intermediary between the responsible party and affected communities at a time when tensions and emotions are running high. Cook Inlet RCAC, through its Director of Public Outreach, can help set up community meetings, post notices in the newspaper, verify reports from the field, and be the liaison between incident command, local government and the citizens.



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