COOK INLET REGIONAL CITIZENS ADVISORY COUNCIL

BOARD of DIRECTORS MEETING

****AGENDA****

Friday, September 10th, 2021

VIDEOCONFERENCE

9:00 am **Call to Order/Roll Call** **Page**

Approval of Agenda *(Action Item)*

Approval of Minutes – April 9, 2021 Board of Directors Meeting; April 9, 2021 Annual Meeting
(Action Item)

Welcome & Introductions

Agency Ex Officio Directors Remarks

CIRCAC Member or Public Comment
(3 minute limit per speaker)

9:25 am **Presentations on Related Activities**

- Cook Inlet Operations Update –

Introduction: Luke Saugier, SVP Hilcorp Alaska;
Monopod Pipeline Replacement Review: Tasha Bacher;
Spartan 151 Review: Paul Mazzolini; and
Middle Ground Shoal Pipeline Replacement: Dan Polito

- CISPRI Update – Todd Paxton, General Manager

10:30 am **Executive Committee Report** *(Information Items)*

- Special Board Recognition Resolution **1**
- 2021 Statement of Financial Position & Operating Budgets – through 6/30/21

10:50 am **Executive Director's Report** *(Information Items)*

11:15 am **Staff Reports - Status of Programs & Projects**
(Information Items)

- Administration **2**
- Environmental Monitoring **3**
- Prevention, Response, Operations and Safety **15**
- Protocol Control **18**
- Public Outreach **19**

11:50 am **Calendars & Miscellaneous** *(Information Item)*

- EMC – Oct. 1 at 9:00, virtual

Closing Comments

12:15 pm (est.) **Adjourn**

Cook Inlet Regional Citizens Advisory Council
Resolution 2021-01

Recognizing Susan Saupe, Director of Science and Research, for Being Named a 2021 Legacy Award Recipient by the Pacific States/British Columbia Oil Spill Task Force and Commitment to the Mission of the Cook Inlet Regional Citizens Advisory Council

WHEREAS, the Cook Inlet Regional Citizens Advisory Council (CIRCAC) is a federally-mandated citizens' group whose mission is to represent the citizens of Cook Inlet in promoting environmentally safe marine transportation and oil facility operations in Cook Inlet; and

WHEREAS, the Council Board consists of thirteen appointed or elected Cook Inlet stakeholders and Ex-Officio Members representing federal and state entities; and

WHEREAS, the Pacific States/British Columbia Oil Spill Task Force is an organization comprised of representatives from state and provincial environmental agencies in the Pacific coastal area working together to improve the Pacific Coast's prevention, preparedness, response and recovery from oil spills; and

WHEREAS, the Pacific States/British Columbia Oil Spill Task Force solicits nominations for candidates including individuals, teams, and entities that have carried out exemplary work in the field of oil spill prevention, preparedness and response every two years; and

WHEREAS, this award serves as the Task Force's recognition for outstanding work and accomplishments to foster best practices, to support and protect communities, and to protect the environment; and

WHEREAS, Susan was nominated by no fewer than seven cooperating organizations or their representatives from state and federal agencies, environmental research organizations and the oil industry citing her extensive research and work developing and promoting oil spill response tools such as ShoreZone; and

WHEREAS, Susan has been exceptional in providing direction, insight and leadership to the Council's Board of Directors.

NOW THEREFORE BE IT RESOLVED BY THE COOK INLET REGIONAL CITIZENS ADVISORY COUNCIL:

We congratulate Susan for her well-deserved award based on the recognition of her peers across the region who each lauded Susan's dedication, expertise, commitment and cooperation in establishing comprehensive programs and projects that improve and enhance prevention, preparedness, and response to oil spills in Cook Inlet. Through Susan's tireless research efforts we have gained a greater understanding of the complex ecosystem of Cook Inlet and recognize her exemplary dedication and commitment to promoting the mission of the Council.

ADOPTED BY THE COOK INLET REGIONAL CITIZENS ADVISORY COUNCIL ON THIS 10th DAY OF SEPTEMBER, 2021.

ATTEST:

_____ _____

Gary Fandrei, President Deric Marcorelle, Secretary

Administration Staff Report
Cook Inlet RCAC Board of Directors Meeting – September 10, 2021

Below you will find a brief update on the primary administrative tasks performed – or assistance provided – by your Administrative staff since the April 2021 Board of Directors meeting:

CIRCAC Office – Corporate office is closed to the general public at this time; staff continues to operate remotely and at the office as necessary; Executive Officers have coordinated office access for essential administrative tasks. Staff continues to search for a provider with improved internet services.

Board Elections and Appointments – CIRCAC's Board of Directors acted to seat newly appointed/elected Directors and committee Public Members at its 2021 Annual Meeting. The 2022 election/appointment process is set to begin late November.

Recertification – The letter approving our recertification was signed and delivered by the U.S. Coast Guard August 27. This becomes effective Sept. 1, 2021, and ends August 31, 2022.

Financial Audit – An independent, forensic audit conducted by Caribou Run Bookkeeping and Tax is nearly complete. Our Executive Director may elaborate during his report. Lambe Tuter & Associates is set to conduct our annual audit. Preparations are underway; staff has begun to compile requested financial documents and reports. Auditor fieldwork is scheduled for early October.

Accounts Payable – Staff continues to implement the largely online process for payables. We have maintained a review and written approval procedure of all accounts - by the Executive Director, staff, and Officers.

Budgets – Reconciliations of credit card and bank accounts, as well as updating authorized administrators for banking and vendors, are ongoing. Development of the 2022 operating and program budgets will begin this fall.

Grants – CIRCAC renewed its Bureau of the Fiscal Service's user provisioning system (ISIM) registration, the parent account for the ASAP grant payment system. Staff is assisting to pursue Bureau of Ocean Energy Management (BOEM) grant funding.

Corporate Funding – Funding is on schedule for 2021 to date; additional invoices were distributed in May and all payments have been received.

Insurance and Employee Benefits – Several of CIRCAC's corporate insurance policies have renewed. In addition, staff facilitated the open enrollment period for employees with Aflac coverage.

Organizational Support – Administrative staff participates with the Cook Inlet Harbor Safety Committee.

Staff and Training – We welcome Cassandra Johnson as CIRCAC's Accounting and Grants Manager. Cassandra is enrolled in a comprehensive QuickBooks training course designed for nonprofits. Interviews for a new Administrative Assistant are underway.

Support – Administrative staff supports directors, public members, staff and guests in logistics for virtual committee meetings and conferences. Such events include Executive, PROPS, Protocol, and Scholarship committee meetings; Staff continues to make virtual meetings by teleconference, videoconference, and webinar both effective and comfortable for participants, utilizing various online platforms.

EMC activities – Since April 2021 Board Meeting
Staff Report: Susan Saupe

Chemical and Biological Monitoring Program

1. On-line Data Access

Background: A robust CIRCAC on-line data-access tool is a high priority and we have been working with various contractors and partners to compile disparate datasets into an integrated database for query on-line. This is a complex problem given that data collected over decades have (1) different method detection and reporting limits, (2) different site selection criteria that limit the ability to aggregate data, and (3) different studies collected data on different parameters, matrices, and analytes. Several years ago, we submitted a study plan idea to BOEM for compilation and on-line access to Cook Inlet contaminant data and, in in their *Annual Studies Plan for Environmental Studies Program: Alaska Annual Plan 2021* BOEM identified as a study titled *Synthesis of Contaminants Data for Cook Inlet: Evaluation of Existing Data as "Baseline Conditions" and Recommendations for Further Monitoring* as a priority project for the Alaska Environmental Studies Program. **March 2021 Update:** We are waiting to find out BOEM's decisions on moving forward with their Cook Inlet hydrocarbon contaminants database project to see how we move forward with them. Our work compiling our data will dovetail with their efforts.

September 2021 Update: On April 5th, we were notified that a sole source Notice of Funding Opportunity (NOFO) for Cook Inlet Regional Citizens Advisory Council was published on Grants.gov from the Bureau of Ocean Energy Management (Opportunity number M21AS00345). The notice required a full proposal and three-year budget that would be reviewed on its technical merit, costs, and CIRCAC's "financial risk." We developed at team of contaminant experts and database/ on-line data portal developers and submitted a full proposal by the May 5th deadline. The objectives of the requested and proposed plan are:

a. Conduct a meta-analysis of existing contaminant data sets to evaluate the comparability of prior statistical designs and analytic methods and, when combined, as representative of baseline conditions in the Cook Inlet area
b. Identify and compile appropriate organic and inorganic contaminant data (e.g., hydrocarbons, metals, U.S. EPA priority pollutants, and technologically enhance naturally occurring radioactive material [TENORM]), as well as a comprehensive list of any known or potential contaminant sources for the Cook Inlet area.
c. Compare contaminant data against Federal and State regulatory or other scientific threshold levels.
d. Recommend a study approach, including a sampling plan, that would enhance assessing baseline contaminant conditions in Cook Inlet and monitor contaminants in areas potentially impacted by Federal OCS oil and gas related activities.

Our study team is comprised of personnel from CIRCAC, Kinnetic Laboratories, Inc. (KLI), Axiom Data Science, Inc., Payne Environmental Associates, Inc., and William Driskell. We were notified this summer that the technical review was positive and that BOEM was conducting

a financial and risk review with the intent to award a three-year contract (total of $325,000 from BOEM to CIRCAC with additional match from CIRCAC).

2. Exploring radium isotopes as tracers of groundwater inputs, flushing rates, and produced water in Cook Inlet:

Background: This project will expand work by Dr. William Burt of UAF to conduct baseline surveys of Radium isotopes across Cook Inlet to assess the potential utility of Radium as a freshwater tracer and to estimate residence time for waters in the Inlet. Through a grant from the Coastal marine Institute (CMI) to Dr. Burt, CIRCAC will collaborate on a project along with Principal Investigators at the University of Hawaii, Kachemak Bay Research Reserve, and the Ocean Acidification Research Center at UAF. The initial project will take place in Kachemak Bay to test methods and look at radium isotope signatures along a glacially influenced gradient. In Year 2 or 3, an exploratory radium survey will take place in Cook Inlet, refined by information gained from the pilot study.

Overall, the project aims to highlight the significant value of radium isotope monitoring in the Cook Inlet region by using these isotopes to address multiple key questions and issues for both BOEM and the oceanographic community. CIRCAC's match towards the project will support: (1) sampling within and at the mouths of major rivers to characterize river and groundwater end members, (2) collecting sediment grabs and suspended particle samples to approximate sediment and particle fluxes, (3) sampling along a transect out of the Inlet to assess surface water concentrations of radium isotopes inside/outside the Inlet as well as the offshore transport, and (4) sampling along surface transects in close proximity to a produced water discharge source to examine a produced water signal. **March 2021 Update**: Though Dr. Burt's project team faced significant challenges for sampling in 2020 due to COVID restrictions, they were able to sample in Kachemak Bay in September. Dr. Burt presented their Kachemak Bay Research, conducted through the EPSCoR project, at the virtual Kachemak Bay Science Conference that took place in March 2021. Most of the pre-recorded presentations for that conference are still available. Here is a link to his presentation (https://drive.google.com/file/d/1oYhIgj4Igt6whpC21GBqtR_QLOXqAfIY/view). Our future Cook Inlet project will build on the work that he has done in Kachemak Bay (also see attached email).

September 2021 Update: So far, Dr. Burt's UAF field team successfully completed three sampling campaigns in Kachemak Bay: A preliminary 5-day fall survey in September of 2020 and more comprehensive 2-week surveys in May and July of 2021. Additional funding for radon detectors are now allowing the team to employ a dual-tracer approach, as both radium and radon each have specific advantages as tracers of land-ocean interaction. The Kachemak Bay portion of the overall study will now focus on quantifying groundwater nutrient fluxes (using radon primarily) along with flushing rates (using radium) in Jakolof Bay, a predominantly mud-flat dominated sub-bay within Kachemak Bay, including seasonal and tidal cycle variability. Combined with prior radium-based studies in rocky beach environments near Kasitsna Bay and literature data, the results will be extrapolated across Kachemak Bay and the Gulf of Alaska. Next, broader sampling of radium sampling across Kachemak Bay will explore how radium isotope inputs vary with watershed characteristics, local geology, and circulation patterns. The

focus of the study so far has been Kachemak Bay, but sampling in the more logistically challenging areas of Cook Inlet will begin in 2022.

3. **Oxidized Petroleum Contaminants in Cook Inlet**

Background: We will be coordinating with Dr. Pat Tomco of UAA to assist his research to more accurately assess the extent of potential petroleum-derived contaminants in Cook Inlet by including oxyPAHs in a pilot sampling program in Cook Inlet. Oxidized petroleum detection has been identified as a priority class of chemicals that should be monitored following an oil spill, but in cold regions such as Alaska, the classification of these chemical compounds are poorly understood. This work is quite expensive, the applications are still being developed, and there are limited opportunities for contractual laboratory analyses, but this opportunity to collaborate will allow us to delve deeper into our analyses of potential hydrocarbon contaminants in Cook Inlet. In the FY2021 EMC budget, funds for this project will extend the sampling area, substrates, and organisms. **March 2021 Update:** Dr. Tomco received an additional award from the ConocoPhillips Arctic Science and Engineering Fund for "Oxidized petroleum detection in Alaska: Water, sediment, and biological tissues." His project will advance tools and techniques for tracking oxidized petroleum residues that result from spilled oil in the Alaskan marine environment and will characterize baseline levels of oxidized petroleum residues in water, sediment, and biological tissues in Cook Inlet.

September 2021 Update: Dr. Tomco is ready to execute his BOEM-funded study *Hydrocarbon Oxidation Products in Cook Inlet: Formation and Bioaccumulation in Mussels* by beginning laboratory experiments on the bioaccumulation of photo-oxidized Cook Inlet crude oil in Cook Inlet mussels. Due to one of the Principal Investigators leaving the Alaska Sea Life Center where the original experiments were to take place, the negotiations/agreements for covering the nonfederal match pushed back the timeline so sampling could not be coordinated with other partners this summer. Since CIRCAC had previously committed to match this project for the collection of Cook Inlet samples, we will be covering logistical costs for collecting, storing, and transporting seawater, sediments, and mussels from Kachemak Bay this fall. Additional collections are planned for the west side of Cook Inlet in 2022. Characterizing baselines of petroleum, petroleum byproducts, and oxy-hydrocarbons is a natural collaboration for us towards our long-term monitoring efforts to understand the fate and transport of petrogenic compounds in the Gulf of Alaska is a goal of our program.

Coastal Habitat Mapping Program

Alaska ShoreZone

1. ShoreZone Imaging, Mapping, and Website

Background: CIRCAC has sponsored ShoreZone aerial surveys and mapping since 2001 when we initiated the Alaska program in Cook Inlet and demonstrated a pilot version of an on-line data and imagery portal. Unfortunately, it means that our earlier surveys are also the oldest surveys done in Alaska, using the oldest technology. Though we were able to fund resurveys of all of Cook Inlet in 2009, some of the shorelines in our areas of concern have low resolution imagery

mapped onto low resolution digital shorelines. The Alaska ShoreZone Program is currently administered and hosted by NOAA (https://www.fisheries.noaa.gov/alaska/habitat-conservation/alaska-shorezone) and recently transitioned from flash to javascript for accessing the on-line data and imagery (https://alaskafisheries.noaa.gov/mapping/sz_js/).
The Alaska Ocean Observing System (AOOS) also serves ShoreZone habitat data and shoreline imagery through their on-line data portals in a way that allows integration with dozens of other data layers. This AOOS functionality is what allowed us to develop the Cook Inlet Response Tool with AOOS to access ShoreZone imagery and data along with other information used for oil spill planning and response (https://portal.aoos.org/cirt.php). CIRCAC has funded redesign of the Shore Station Database and added all of the newest shore stations from the Alaska Peninsula surveys (described below). **March 2021 Update:** EMC has set aside funding to resurvey the outer Kenai Peninsula coastline and will be conducting that survey in summer 2022. We are able to leverage additional funding from the National Park Service (NPS) to extend the survey further east and ensure that we capture the shorelines of the Kenai Fjords National Park.

September 2021 Update: Originally planned for surveying in 2020, we again had to cancel the surveys in 2021 when our Canadian contractors made the call in April to postpone due to the fact that they were behind the U.S. in vaccine availability. We are now planning to prioritize the outer Kenai Peninsula shoreline survey for May 2022.

In April, Mike and I submitted project proposal requests to Senator Murkowski and Representative Young for ShoreZone projects to support oil spill planning and response. We were able to schedule webinar presentations of our study requests with Sen. Murkowski and her staff and Rep. Young and his staff on April 23 and May 13, respectively. We received positive feedback and encouragement and are waiting to see if there will be funding appropriated towards our projects.

2. Shore Station Surveys and Database

Background: Along with the ShoreZone aerial surveys and habitat mapping, we have conducted on-the-ground surveys at hundreds of sites throughout our areas of concern. These shore station surveys provide detailed species-level information and verification of geomorphology for sites of differing substrates and wave exposures in areas where we conduct the aerial surveys. These sites have been compiled since 2001 and now includes hundreds of sites throughout the Gulf of Alaska, and over half of them were either sponsored by CIRCAC or we were a key participant on opportunistic surveys. With our contractors at Archipelago Marine Research Inc. (ARCHI) and Coastal and Ocean Sciences, Inc. (CORI), CIRCAC worked with NOAA to develop the Shore Station database that is linked on-line on the NOAA ShoreZone website. In 2020, we developed our contract with ARCHI to redesign the data access to the shore station data and coordinated with NOAA to bring in new shore station data and update taxonomic codes and other ShoreZone descriptors to match changes made to the ShoreZone habitat mapping protocols. The existing database, with its update taxonomic tables, has also been moved to the javascript site described above. **March 2021 Update:** Our contractors at ARCHI have been working with NOAA to complete our contract tasks and so far have (1) added a new region and appended the Alaska Peninsula 2016 data to previous tables; (2) Added new Bioband codes into the look-up tables and new fields to the species code tables that will allow

users to search at various taxonomic levels, morphological codes, and feeding strategies. All posted bioband names are now translated to the full species name (or to lowest taxonomic level identified); (3) Compiled a new data dictionary, and (4) began compiling higher taxonomic levels in the master species database table for all taxa listed for all (several hundred) shore stations (note that this has been completed for the Alaska Peninsula sites).

September 2021 Update: Our original contract with ARCHI for updatiang the Alaska ShoreZone Shore Station Database was to complete tasks a-d below:

a. Web-post the AK Peninsula sites to the new online NOAA Javascript ShoreZone site
b. Update master species list in ACCESS database
c. Assemble and check station photos
d. Conduct a pilot project to integrate ShoreZone shore station data into Alaska Ocean Observing System data portal using Alaska Peninsula data.
e. Expand database to include historical Gulf of Alaska shore station survey data and photographs and prepare data for serving on Alaska Ocean Observing System data portal.

I have paid the invoices for completion of tasks a-c and we had adjusted the budget along the way to incorporate additional sub-tasks so that full funding for task d was no longer available in the EMC budget. We will work with ARCHI to identify goals, timelines, and budgets for tasks d and e (which was originally on hold until completion of tasks a-d), pending approval by EMC.

3. Environmental Sensitivity Maps:

Background: For a subject related to ShoreZone, I participated in a series of review meetings for NOAA's Environmental Sensitivity Index (ESI) program in the fall of 2020. ESI data and maps provide shoreline habitat and use data to aid in oil spill planning and response. The data collected for ESI goes hand-in-hand with the imagery and data reported by ShoreZone methods and we have worked hard to integrate the two programs. With budget shifts within NOAA, they are looking to better coordinate ESI with related datasets and how best to focus future data updates and methods of serving the data to the oil spill planning and response community. The original in-person meetings planned for March 2020 were postponed until fall 2020. **March 2021 Update:** The original in-person workshop was rescheduled to four separate virtual meetings, the first of which was on October 28th where we reviewed NOAA's ESI mapping protocols and where several states demonstrated their state-sponsored databases that fulfill their ESI needs for oils spill planning and response. Subsequent meetings took place on November 10th, November 18th, and December 2nd, 2020. Based on discussions during the first two of those national meetings, we had an Alaska-focused meeting on November 13th with CIRCAC, PWSRCAC, the Oil Spill Recovery Institute (OSRI), AOOS, and several agencies to discuss potential ways to integrate ShoreZone and ESI data into AOOS data portals. We will be following-up on some of the ideas brought forward and CIRCAC may lead a Cook Inlet demonstration project.

September 2021 Update: I participated in a virtual meeting on June 11th with multiple agencies and organizations to discuss priorities for updating ESI information in Alaska, particularly in the Cook Inlet region. It is unlikely that NOAA will get the funding to update maps in the

traditional method, but in moving forward we need to ensure that we follow ESI guidelines in a way that makes the data recognizable and integratable with prior ESI mapping efforts; while taking advantage of higher resolution imagery, updated digital shorelines, and new on-line tools. Leading up to the July 2021 OSRI Workplan Committee meeting, the OSRI Science Director and I identified priorities and potential projects for an OSRI-led project. The OSRI Committee (of which I am a member) did list ESI map updates for the Cook Inlet region as a priority project for their FY22 budget and, if approved by the full Board, will integrate with ShoreZone imagery and data and be served by NOAA's Environmental Response Management Application (ERMA), as well as integrated with

Macrocystis Kelp

Background: Since our last survey of the Kodiak, Afognak, and Shuyak Island *Macrocystis* beds, additional reports of *Macrocystis* kelp in the western Gulf of Alaska have been reported, including the east side of Afognak Island and near Sand Point in the Shumagin Islands, which is a western range extension. This kelp grows in thick beds very near shore and has implications for oil spill risk and oil retention, and is likely to respond to changes in sea surface temperature and circulation related to climate change. **March 2021 Update:** Kelp frond samples that we collected in 2009 and preserved are going to be analyzed by a group of researchers through a project of the University of British Columbia, University of Victoria, and the Hakai Institute. They have the samples in-hand and will be analyzing them along with samples I collected opportunistically from southeast Alaska. CIRCAC's *Macrocystis* kelp mapping surveys are currently on-hold and may take place in summer 2021 or spring 2022.

September 2021 Update: Surveys did not take place in summer 2021 and are being planned for 2022. A full survey to track the expansion of *Macrocystis* in the western Gulf of Alaska was proposed to our Congressional Delegation this spring, along with the expanded ShoreZone surveys.

Cook Inlet Response Tool (CIRT)

Background: Since our Cook Inlet Response Tool (CIRT) was migrated along with hundreds of other data sources to AOOS's Next Generation User Interface, we will continue to use the on-line tool for oil spill planning and response and provide training to potential users. **March 2021 Update**: As mentioned above, we have been discussing the potential to integrate ESI data into the CIRT tool and had our first teleconference in November 2020. We will be working with OSRI to identify potential funding to move forward with a demonstration project. We currently have numerous data sets that we would like to integrate into the CIRT tool, including potentially ESI data, but also the ShoreZone shore station data and our hydrocarbon and water quality data. We plan to integrate with the new project by BOEM to compile Cook Inlet hydrocarbon data in a new partnership to include historical and recent Cook Inlet data.

September 2021 Update: We had a teleconference with AOOS in June and the proposed OSRI ESI project will look to integrate and serve ShoreZone and other ESI data layers in CIRT and other AOOS data portals.

Physical Oceanography Program

Cook Inlet Ocean Observing

Background: AOOS requested input into their 2022-2027 five-year plan for Alaska ocean observing. Since 1999, EMC has supported or conducted physical oceanographic research to help better understand Cook Inlet's circulation towards improving future oil spill trajectory model forecasts. We've supported satellite drifter buoys, Acoustic Doppler Current Profiler (ADCP) deployments, High Frequency ocean surface current radars, current meter deployments, and hydrographic surveys. Our goal was to partner with agencies and CIRCAC's PROPS committee to develop a high resolution three-dimensional on-line accessible circulation model that can be further developed into a particle trajectory/oil spill trajectory model. In 2019, NOAA's Cook Inlet Operational Forecast System (CIOFS) circulation and hydrographic model transitioned from developmental mode to operational mode after a decades-long effort by NOAA that started with deployments of current meters and Acoustic Doppler Current Profilers (ADCPs) throughout the Inlet. The model is currently running in operational model and every six hours provides forecasts for sea surface height and three-dimensional currents, temperature, and salinity based on inputs of meteorological and hydrological conditions. Its scope includes Cook Inlet and Shelikof Strait. This model can be used operationally by NOAA's Office of Restoration and Response for oil spill modeling in the event of a significant spill. At this time, CIOFS is not available for web-access or public use. As well, verification of the model needs to be conducted and in the paucity of recent oceanographic observations or real-time measurements, a hind-cast analysis against historical data sets will help identify model strengths and weaknesses. **March 2021 Update:** CIRCAC's subaward proposal to AOOS was titled "*Cook Inlet Ocean Observing and Hydrographic Modeling to Support Oil Spill Prevention and Response*" and was submitted to AOOS in December 2020 for subsequent submission to the national IOOS program. Our overall goal of the proposed 5-year plan is, thorough a multi-agency coordinated effort, to test and improve ocean circulation modeling in support of a sustained, accessible oil spill trajectory model for Cook Inlet maintained and served on an AOOS on-line portal. Specific goals included:

1. Establish a collaborative effort to evaluate the effectiveness of Cook Inlet circulation forecast models (with a focus on NOAA's Cook Inlet Operational Forecast System (CIOFS) and BOEM's Regional Ocean (ROMS) Model), assess critical observing gaps, fill data gaps, and conduct model hindcasts for model validation and improvements.
2. Coordinate with AOOS, UAF, and BOEM to deploy High Frequency (HF) Radar systems in Cook Inlet to provide near real-time measurements of surface flow fields to ensure that both the CIOFS and the ROMS models accurately model Cook Inlet's complex oceanography, especially in the lower and middle Inlet and its boundaries.
3. Collect synoptic CTD data along two cross-Inlet transects, between the Forelands and east of Kalgin Island, with vessel-mounted ADCP, to ensure that models more accurately represent stratification, vertical currents, convergence zones, and north-south salinity gradient.

4. Assemble and deploy a mooring with CTD instruments (bottom and near surface) and upward-looking ADCPs to collect oceanographic data for time scales that capture variability over tidal cycles, seasonally, and inter-annually.

Following that submission, another opportunity arose with AOOS and other partners to develop a proposal to the IOOS Coastal and Ocean Modeling Testbed (COMT) project, to basically address task number 1 above, but in a much more thorough and detailed manner. We developed a project team that included the new AOOS Executive Director, Sheyna Wisdom, Molly and other AOOS staff, programmers from Axiom Data Science who are the developers of all of the AOOS data portals, several branches of NOAA, including Dr. Kris Holderied of the Kasitsna Bay Laboratory, and CIRCAC.

We submitted our proposal in early March titled "*Coastal and Ocean Modeling Testbed Project: Cook Inlet Ocean Forecast Model (CIOFS): Validation, Enhancement, and Development of Applications (C-VEDA)*." The overall goal is to improve use and accelerate development of the existing National Oceanic and Atmospheric Administration (NOAA) CIOFS model to meet stakeholder needs. More specifically, our proposed C-VEDA project will C-VEDA will: 1) generate a 20-year three dimensional (3D) hindcast data product from CIOFS and make available an existing hindcast from a second Cook Inlet model; 2) assess model accuracy with detailed model-to-data and model-to-model comparisons; 3) provide recommendations to NOAA for CIOFS improvements based on validation results and stakeholder engagement; 4) develop and test the implementation of CIOFS-based tools and applications to meet stakeholder needs; and 5) implement those applications operationally on the AOOS data system.

September 2021 Update: The 5-year AOOS budget for CIRCAC to conduct a Cook Inlet ocean observing program was not funded by IOOS. However, AOOS does have funds dedicated towards an HF Radar deployment in Cook Inlet and we've met with UAF researchers to discuss options for deployments. Additional funds would be required and AOOS and UAF are looking to EMC and BOEM for partnership opportunities to deploy these near real-time surface current sensors. Also, unfortunately, our proposed partnership project "*Coastal and Ocean Modeling Testbed Project: Cook Inlet Ocean Forecast Model (CIOFS): Validation, Enhancement, and Development of Applications (C-VEDA)"* that was submitted by AOOS to the IOOS Coastal and Ocean Modeling Testbed (COMT) in March 2021 was not selected for funding. We received the detailed reviewer comments and all of us on the proposal team thought many of the review comments were misleading or inaccurate and we submitted a rebuttal and asked for the opportunity to discuss it with the IOOS team. The IOOS team was very responsive and said they appreciated the effort we made to clarify details of our proposal in response to the merit review comments and notice of funding opportunity. Since IOOS was not part of the review panels, they thought it would be good to set up a meeting to discuss the proposal and rebuttal. We are scheduled to meet with them virtually on October 13th. Members of the proposal team are in continued discussions to see which components of the project we can move forward with through a partnership that will address our individual organizational needs. Ultimately, we hope to combine resources to conduct a 20-year hindcast to validate the CIOFS circulation model,

identify model weaknesses and data gaps, work with NOAA to improve the model, develop a particle trajectory model as the basis of an on-line, user-accessible oil spill trajectory model for Cook Inlet.

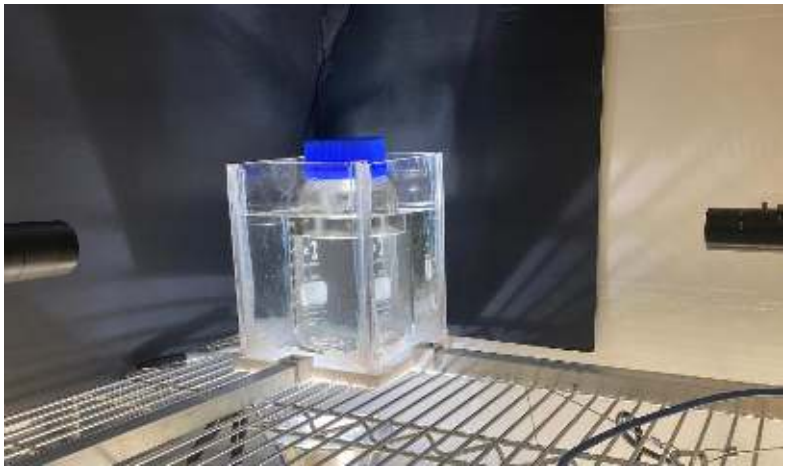
Oil Fate and Effects Programs

Marine Oil Snow in Cook Inlet

Background: We supported research on natural marine snow sedimentation in Kachemak Bay in 2018 and 2019. The research also included studies on the formation of marine snow aggregates and laboratory created marine oil snow. At the Gulf of Mexico Oil Spill Ecosystem Science (GOMOSES) conference in February 2020, I met with Dr. Nancy Kinner of CRRC and other scientists conducting research on Marine Oil Snow to discuss potential thesis tasks for a new graduate student for the summer of 2020 and to plan proposals and manuscripts. In early 2020, we submitted a Study Plan idea to BOEM through NOAA's Office of Response and Restoration. Unfortunately, it was not selected for funding.

For summer 2020 fieldwork, we outlined some tasks for a new graduate student that could be done with the graduate student staying at University of New Hampshire (UNH) and not traveling to Alaska due to COVID. These included: (1) compiling data on areas in Alaska's marine environment where the environmental drivers for the formation of oil-related marine snow potentially exist (e.g. oil spill risk, high primary production, and link to benthic habitat) and (2) having me send carboys of seawater throughout the spring and summer (beginning in April) via Fedex for oil, sediment, and dispersant roller-bottle experiments at UNH. These plans were modified when UNH closed down their university to research through the summer. **March 2021 Update:** With support from CIRCAC, graduate student Quinn Wilkens spent the fall and early winter constructing a large-scale roller table to culture phytoplankton and developing plans with CIRCAC and researchers from CRRC, UNH, and Bigelow Laboratories for experiments where he can vary levels of oil and sediment to observe aggregate sinking velocities in different environmental conditions. To maintain applicability to coastal Alaska, Quinn will use a cold water phytoplankton species seasonally abundant in Alaska, sediment sourced from Cook Inlet, and Alaska North Slope (ANS) crude oil. Settling velocities will be measured using specialized cameras, with the ability to track individual aggregates over time. These experiments will then be paired with resuspension measurements in UNH's oil flume to determine current velocities required to re-suspend aggregates from the ocean floor after initial settling. Ultimately, this research explores potential pathways in which oil may impact the benthic environment, and aid in informed decision-making during an event.

September 2021 Update: Quinn has been working on the marine snow settling experiments using a flume tank. I supplied him with Cook Inlet silt samples from the bottom of Kachemak Bay that were archived (frozen) from our earlier Integrated Cook Inlet Environmental Monitoring and Assessment Program (ICIEMAP). His treatments include seawater only, seawater + oil, seawater + sediment, and seawater + oil + sediment. He will look at settling rates and resuspension in currents with marine snow that includes a phytoplankton species common in coastal Alaska bloom conditions.



Setting up cameras for settling velocity measurements Quinn Wilkins).

Roller table with bottles filled with cultured phytoplankton and oil/sediment treatments (Quinn Wilkins).

Technical Review Program

APDES Permits

1. Background (Cook Inlet General Permit):

We are still awaiting ADEC's final decision regarding the Cook Inlet general oil and gas discharge permit and I will update you when the final permit is announced. As you know, in 2019, ADEC opened the draft Alaska Pollutant Discharge Elimination System (APDES) **General Permit** to Discharge to Waters of the United States - Oil and Gas Exploration, Development and Production in State Waters in Cook Inlet. We reviewed the permit and associated fact sheet, mixing zone model results, and other associated documents. The Permit would replace the expired 2007 general permit AKG315000 for discharges to state waters. The draft Permit also included mixing zones for discharges from a previously zero-discharge platform. **March 2021 Update**: ADEC has not yet released the final permit.

September 2021 Update: ADEC has not yet released the final permit.

2. Background (Osprey Platform Individual Permit):

We are also awaiting a decision by ADEC regarding an Individual Permit that we reviewed in 2019. As a reminder: On April 24th, ADEC announced that they had prepared an Alaska

Pollutant Discharge Elimination System (APDES) Draft Permit AK0053309 available for a 30-day public review. This was a proposed **Individual Permit (IP)** for Cook Inlet Energy, LLC, Osprey Platform. This platform was originally developed as a zero-discharge platform for produced water and has been operating as such since its inception. The General Permit (GP) above also included produced water discharges from the Osprey Platform in the proposed permit, so Cook Inlet Energy likely applied for an IP in case the GP was challenged in court. Comments were originally due on May 27th, just 5 days after the comments on the GP were due. They extended that deadline after receiving numerous requests from CIRCAC and others, though by only 5 days. The review period ended May 31st and CIRCAC comments were presented to the Protocol Committee for review, revision, and approval. **March 2021 Update:** ADEC has not yet released the final permit.

September 2021 Update: ADEC has not yet released the final permit.

3. Background (KLU Julius R. Platform Individual Permit):

On March 4, 2019, ADEC received an application from Furie Operating Alaska LLC for the reissuance of APDES Individual Permit AK0053686 – KLU Julius R. Platform. Furie subsequently submitted an amendment to the application in November 2019 to include an additional, new discharge of produced water. **March 2021 Update:** ADEC released a draft permit for review in February. CIRCAC submitted a comment letter. ADEC announced that they had approved the final draft permit but it has not yet been posted.

September 2021 Update: The final permit has been posted and available at

Additional Activities

1. I participated as a board member of the Alaska Research Consortium (ARC) in two board meetings – on April 16th, May 27th, and August 23rd – and prepared a presentation summarizing the ARC Seafood Futures survey project for the Board President to present to a contingent from UAF that visited Kodiak to discuss the Kodiak Seafood and Marine Science Center.
2. Attended two-day virtual Arctic Domaine Awareness Center (ADAC) Annual Meeting in June.
3. Attended several virtual sessions of the Arctic Marine Oil Pollution conference.
4. Attending virtual ExxonMobil Oil Spill Response Knowledge Transfer Webinars now scheduled for the first Tuesdays of every month.
5. Dozens of teleconferences and/or virtual team meetings to develop new projects and proposals and to keep our various projects moving forward in spite of the lack of field work for many of the projects in our EMC workplan.
6. Participated on the Oil Spill Recovery Institute (OSRI) Workplan Committee in July. Will participate as a Board Member at the virtual OSRI Advisory Board meeting on September 14th.

7. Throughout the summer, I had the opportunity to meet with researchers from various projects as they mobilized or demobilized out of Homer, including from the Southwest Area Network nearshore program, a BOEM-funded forage fish study, a subtidal habitat study, the Established Program to Stimulate Competitive Research (EPSCoR) Fire and Ice Program, and an NPS oceanographic study on the west side of Cook Inlet.
8. Provided an overview of the CIRCAC organization, OPA 90 tasks, and highlights of our projects to the USCG Commander for the 17th District, Rear Adm. Nathan Moore, on August 17th.
9. On September 8th, I will give a tutorial on the use of NOAA and AOOS Alaska ShoreZone data portals and a presentation on their potential use in classrooms. This is for the Chugiak School District and was originally scheduled to be in-person at the Center for Alaska Coastal Studies in Peterson Bay, but it has been revised to a virtual meeting.
10. An EMC Meeting is scheduled for October 1st to prepare our draft FY2022 budget and discuss several projects we hope to move forward.

PROPS Staff Report

Ice Monitoring Cameras

Staff has continued to add and delete cameras within the Ice Monitoring Camera Network to improve the system's performance and economy. As part of the system improvement process, staff identified and secured a better camera location for the ASRC camera. The ASRC camera had provided fair images of the Inlet near the KPL dock, however that camera was one of the first camera styles purchased for this project and did not produce the best field of view. Efforts were coordinated to install a new (style) camera at the Marathon LNG facility dock (a new location) and deactivate the camera at the ASRC facility. Another part of the new camera installation included an upgrade of the ACS circuitry used to transmit the data signal. That changed from a dedicated BXB circuit to a FiWi (Fiber/Wireless) circuit that provides faster upload and download speeds and saves on monthly fees. Along with the monthly savings, the new camera location provides a better field of view that includes the Marathon KPL dock face. We are evaluating all of the demobilized equipment to determine if it can be refurbished and reused. Staff is working with ACS to determine if any of the remaining BXB circuits can be upgraded to faster, less expensive circuits for future upgrades.

Additionally, staff has been working with Hilcorp to have the lenses cleaned on the cameras located on their offshore platforms, to provide clear images as we approach the ice season. Staff is also working toward possible camera replacements and circuit changes for the Port of Alaska and Port MacKenzie to upgrade those sites before this ice season.

We are also continuing to monitor camera use by NOAA, the U.S. Coast Guard, Southwest Alaska Pilots, and the U.S. Airforce to ensure they are getting the best service the Camera Network can provide.

Geographic Resource Inventory Database (GRID)

Staff, along with our primary contractor has been working with the programming contractor and the Alaska Ocean Observing System (AOOS) to ensure GRID and its host program, the Cook Inlet Response Tool (CIRT), are up-to-date in both function and data. Recently, staff worked closely with Hilcorp and Axiom Data Science, the main programmer for the AOOS platform, CIRT, and GRID to ensure issues encountered during drill exercise workshops were resolved. Repeatable and reliable functionality for end users is paramount to ensure acceptance and use of these tools.

Recently, staff began preliminary discussions and provided basic operating instruction to Kenai Peninsula Office of Emergency Management (KPB OEM) personnel to evaluate the GRID for use during Kenai Peninsula emergencies. That trial use revealed some inconsistencies within the program, which our contractors have now addressed and repaired. Since the initial exposure to GRID, the KPB OEM has expressed great interest in using it. Staff will work with the KPB OEM for a more formal introduction and training opportunity for KPB personnel to become familiar with and use GRID in their day-to-day operations.

Artic and Western Alaska Area (AWA) Committee Meeting

Staff attended the June AWA committee virtual meeting and heard status reports from the various sub-committees like the Administration Sub-Committee and the GRS Sub-Committee (which CIRCAC staff is an at-large member for each), Steering Committee report, and Response & Enforcement Case Study reports. The most significant subcommittee report came from the GRS Sub-Committee, which revealed the recent update to the GRS catalog system. This update has converted the existing GRS information into a Geographic Information System (GIS) format.

Including a GIS format was also part CIRCAC's Stream Crossing GRS project. This new update of existing GRS data should make the Stream Crossing GRS data and format more likely to be accepted and approved for addition to the GRS catalog.

Other Pollution Response topics presented were Risk Assessment Tools provided by the USCG/NOOA Scientific Support Coordinator (SSC), Katherine Berg, and the Marine Safety Task Force headed up by the U.S.C.G., an additional report on a future GRS validation exercise, and Area contingency plan updates reported on by the U.S.C.G.

In response to these presentations, the Mayor of Brevig Mission (located approximately 70 miles north of Nome on Port Clarence Bay) reported frequent sightings of drones dropping items into the local waters. The Mayor had asked if these were related to the risk assessment tools or the work of the Marine Safety Task Force or the GRS Validation exercise reported earlier. Likewise, there was another report by an individual from another Bering Strait area community, of a biogenic oil release that was linked to a bird kill. The oil had washed up on the beach followed by a number of dead birds. Samples were sent out for analysis and came back as being biogenic oil, related to fish processing, not petroleum. The birds' death was determined to be caused by the oil. The individual reported that following that incident a large amount of marine debris containing hazardous material washed ashore at the same location. The nature and markings on some of the marine debris indicated possible Russian, Korean, and Japanese sources. The community had hind cast modeling performed and determined the debris and biogenic oil originated from the same approximate location. This area of the Bering Strait is a transboundary area meaning it shares territorial sea boundaries between Russia and the United States. The Coast Guard is following up with the affected communities to help determine the origin of the drones, biogenic oil, and marine debris as they may relate to transboundary issues and marine environmental pollution.

Since the Area Committee meeting, staff has attended and participated in the AWA Communication; Administration; and GRS Sub-Committee meetings.

Geographic Response Strategy (GRS)

Staff met with the Area Contingency Plan GRS workgroup, to discuss the state of the GRS program. U.S. Coast Guard and the Alaska Department of Environmental Conservation personnel have worked to convert the GRS data into a GIS format to allow easier integration of new information to update each GRS as well as easier identification and access. Staff also presented the Highway/ Stream crossing GRSs that was developed last summer for discussion and approval by the workgroup.

Alaska Oil Spill Technology Symposium (AOSTS)

As reported previously, staff is a member of the AOSTS organizing committee and has met throughout the past year to discuss ways to try to hold the symposium. However, due to COVID-19 we were forced to postpone those plans.

Recently, staff met again to evaluate a future in-person symposium; when it may take place and what the agenda should highlight. The organizing committee discussed the value of in-person, face-to-face interactions and the field demonstration components as key features of the AOSTS. The committee has identified a tentative date of April 2022 for the next AOSTS to be held in Fairbanks, Alaska**.** We discussed the increase in COVID-19 vaccines and our hopes that travel and concern for attending large meetings in-person will ease.

It is important for CIRCAC to remain a sponsor of this very important event, to ensure the Alaska response community can highlight the work being done in-state and to bring national and international attention to new technology and research; for responders to meet, collaborate, and share experiences and new technologies.

Pacific States/British Columbia Oil Spill Task Force

Staff attended a Pacific States/British Columbia Oil Spill Task Force hosted webinar on lessons learned from virtual drills and conducting virtual inspections during the COVID-19 pandemic.

The Task Force, Federal partners and Industry shared their experiences and reported the successes and challenges faced while navigating virtual drills and facility inspections. On day one of the meeting, we heard the industry and agency perspective on virtual drills during the pandemic, followed by a panel discussion. The group discussed how the future may look, the state of virtual drills beyond COVID, and how or will virtual drills be incorporated into normal activities. Day two contained discussions of industry and agency perspectives on regulatory requirements, the innovations and technology used to reach compliance in the virtual inspection setting.

Drill Planning

Hilcorp

Staff participated in the Hilcorp annual joint field exercise planning and workgroup meetings. The workgroup meetings had been conducted in virtual workshop segments and culminated in a live Incident Management Team (IMT) exercise followed by a live field deployment. The IMT portion of the drill was scheduled for June 29th at CISPRI, and June 30th for a CISPRI deployment at the Swanson River Field (SRF). CIRCAC staff followed our COVID-19 protocol and did not participate in the live events.

The exercise centered on the Swanson River Field operations; a sinkhole impact to the Swanson River Oil Pipeline (SROP) and a flowline (that is regulated by the Alaska Department of Environmental Conservation). Oil back flowed into the rupture area and most of the line fill was released into the environment resulting in a sinkhole. Personnel safety, wildlife safety, and public information and liaison activities were the focus for the tabletop portion (IMT exercise) of the exercise.

Protocol Control Committee

Staff Report

Since the April 2021 Board of Directors meeting, the Protocol Control Committee has reviewed and provided comments regarding one Contingency Plan, Comments regarding the Alaska Regional Contingency Plan. Additionally, the Protocol Committee held committee elections for Chair and Vice Chair naming Robert Peterkin and Bob Flint as Chair and Vice chair respectively.

Those instances were:

- Hilcorp Alaska LLC Cook Inlet Exploration Oil Discharge Prevention and Contingency Plan
    - This plan amendment consisted of the addition of the K-pad location on the west side of Cook Inlet within the Beluga River Unit. Our comments identified areas for improvement and recommendations for clarification in the plan sections modified as part of the amendment. Our comments requested clarification /correction of the Homer and Kenai wind rose references and adjustments to the scenario to account for predominant winds. Based on the Beluga Unit/K-pad location relative to Kenai and Homer, Kenai winds should be used instead of Homer, and that Homer winds would be appropriate for southern Kenai Peninsula locations but not sites located in this area on the western side of Cook Inlet. Our comments went on to request consideration for updating the scenario to include more detailed information relative to berm construction at K-Pad. Finally, our comments requested more substantial wording to describe security measures at K-Pad; referencing language used to describe security measures for other Hilcorp Alaska production facilities on the west side of Cook Inlet, to provide continuity between plans.

- Comments Regarding Alaska Regional Contingency Plan; Version 2
    - Our input was based on our extensive experience with Alaska oil spill response planning and policy. We provided our suggestions with the intent to enhance the clarity of the document for response planners and response decision-makers. Additionally, our comments sought to facilitate consistency in the way documents are organized within Alaska and nationally. In particular we pointed out the effectiveness of the Regional Stakeholder's Committee (RSC) approach to stakeholder interaction with spill response management and the Unified Command versus the Multi Agency Coordination Committee (MAC). Our comments went on to point out that public review periods for the Regional Contingency Plan should not be conducted during the summer or early fall due to extensive public, and agency activity in those periods. We went on to recommend that when a review must be conducted during those periods an extended review period should be designated.

Public Outreach Report –Sept. 2021

Advertising

Paid advertising continues to be the main avenue for public outreach, with event plans for 2021 largely cancelled. A scaled-down version of our radio campaign that was started in 2020 will be reevaluated for possible continuation through the winter as in-person outreach opportunities remain limited due to COVID-19-related restrictions. We've also continued some print advertising projects, with ads in special editions of the Peninsula Clarion and Alaska Business Magazine in addition to annual appearances in local Chamber of Commerce travel guides.

Incident Response

Gathered and disseminated information regarding a tanker truck accident on the Sterling Highway in June that resulted in a small spill; gathered and disseminated information regarding the legacy spill associated with the F/V St. Patrick in Womens Bay on Kodiak in August.

Training/Meetings

Public Outreach staff has completed online section training for Incident Command Systems, to be used in future drills and spill response activities. Additional training above Level 200 will continue as in-person instruction opportunities are available, potentially later this fall as administered through Kenai Peninsula Borough Office of Emergency Management. Staff have also joined the Cook Inlet Harbor Safety Committee as the alternate representative for CIRCAC. Additionally, along with Vinnie, attended a two-day webinar in June organized by the Pacific States British Columbia Oil Spill Task Force focused on remote operations during the pandemic.

Newsletters

April - Report from April Board of Directors meeting; Cook Inlet Harbor Safety Committee meeting and update; USCG annual address

May - Scholarship winners announced; HB 104 update; Hilcorp begins pipeline work

Sept. – Council update; Recognizing Sue's Legacy award; Recertification notification; annual report notice

Scholarships

All funds have now been distributed to 2020 scholarship winners following COVID-related delays.