

Accomplishments of the Alaska Region's Habitat Conservation Division in Fiscal Year 2016



Shoreline near Dutch Harbor, Alaska. Photo Credit: Samantha Simpson

Habitat conservation, protection, and restoration are the foundation for sustaining the nation's fisheries. The Habitat Conservation Division (HCD) of the Alaska Region carries out the National Marine Fisheries Service's (NMFS) statutory responsibilities for habitat conservation in Alaska under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Fish and Wildlife Coordination Act, the National Environmental Policy Act (NEPA), the Federal Power Act, and other laws. To prioritize our resources and activities, make decisions in an ecosystem context, and strengthen the science behind our decision-making, HCD works closely with the Alaska Fisheries Science Center (AFSC), other NOAA line offices, the North Pacific Fishery Management Council (Council), other federal and state agencies, non-governmental organizations, local governments, and a variety of industry and conservation groups. By leveraging these partnerships we work together to better execute our mission and support healthy ecosystems, sustainable living marine resources, and resilient coastal communities.

This report highlights HCD's activities from October 1, 2015 through September 30, 2016. Over the course of Fiscal Year 2016 (FY16), HCD's work was focused in three main areas:

- Identification and conservation of Essential Fish Habitat (EFH) through fishery management activities;
- Environmental reviews of non-fishing activities to avoid, minimize, or offset the adverse effects of human activities on EFH and living marine resources in Alaska; and
- Participation in partnerships to support the activities listed above.

Essential Fish Habitat and Fishery Management

2015 EFH Five Year Review

An internal review draft or summary report was prepared to meet requirements under the MSA and EFH Regulations. Since 2013, HCD staff has worked closely with the AFSC, the Council, the fishing industry, and contracted work with scientists at the Alaska Pacific University (APU) Fisheries, Aquatic Science, and Technology Lab. The review focused on three major EFH components within the fishery management plans: 1) develop a new methodology to identify EFH; 2) revise the fishing effects model; and 3) assess non-fishing (development) activities that may adversely affect EFH. The EFH workgroup sought Council advice as to what level of evaluation is further needed to update these components.

At the Council's April meeting, the Council's Scientific and Statistical Committee (SSC) reviewed a new model for evaluating fishing effects on EFH. The SSC supported the continued development of the fishing effects model and recommended development of new criteria by which stock assessment authors could evaluate the potential impacts of fishing on EFH. The Council approved the SSC recommendation and directed the SSC to form a subcommittee to develop criteria for determining if there are adverse effects of fishing on EFH, defined in the MSA as "more than minimal and not temporary."

HCD completed its internal review draft of the *Impacts to EFH from Non-fishing Activities in Alaska* document. This 2016 report introduces an ecosystem-based approach to water as a key habitat attribute and presents the current understanding of the existing ecosystem processes from wetlands through open water marine habitats, that all support EFH necessary for fish and invertebrate survival at different life stages. New sections also summarize our current understanding of climate change and ocean acidification in Alaska, presenting potential effects on EFH and offers recommendations for improving our understanding and methods for monitoring the influence of climate change to our fisheries. New sections of the report also include discussions on oil spills, potential oil toxicity and the recent improvements in both mechanical and chemical response technologies. There is also a new section introducing potential increases in vessel traffic in the Arctic as a result of receding seasonal sea ice levels. This internal draft will be presented to the Council and incorporated into the 2015 EFH five year review.

EFH Research Plan

Approximately \$350,000 is spent annually on EFH research projects. Research projects are selected through a competitive AFSC request for proposal process based on research priorities from the EFH Research Implementation Plan for Alaska. HCD staff coordinates EFH Research

Planning through the AFSC Habitat and Ecological Processes Research (HEPR) Core Team and the Council. In April, the Region and AFSC agreed to fund EFH Research Projects for FY16. The Region directed approximately \$250,000 and the Center added \$75,000 to our coordinated approach to address EFH research needs. The funds were administered over a wide range of projects from the EFH fishing effects model to seafloor mapping to assessment of juvenile flatfish habitat in the Bering Sea. With FY2016's allocation, EFH-directed funds toward research (since 2005) total approximately \$5 million dollars. Our EFH Research Plan and process is unique to the Alaska Region. HCD also prepared for the upcoming 5-year EFH Research Plan, which covers 2017-2022.

2016 EFH Summit

The Fisheries Forum organized a three -day summit to discuss successes and challenges of EFH, as EFH reaches its 20th year milestone. The Council Coordination Committee identified focused topics, such as how Councils interact with NMFS Regions and Science Centers, and how science is integrated into decision making. Staff from the Council, HCD, and AFSC presented perspectives on EFH coordination issues. Common issues to all regions include: 1) EFH Description methods are using recent and best available science; 2) lack of dedicated, systematic survey to address vast inshore unknowns (eventually leading to offshore productivity); 3) fishing effects on EFH are likely minimal to nearshore anthropogenic effects (overall); and, 4) cumulative effects analyses are needed to understand trends as conditions change. The Summit also included NMFS Headquarters staff, NMFS Sustainable Fisheries Division staff, fishing industry representatives, the American Fisheries Society, and others.



HCD and Science Center staff participating in Cold Water Survival training, Juneau, Alaska. Photo Credit: Samantha Simpson

Environmental Review to Minimize Habitat Loss

HCD regularly reviews statewide projects and provides guidance for assessing potential impacts to EFH. More formally, under the MSA, Federal agencies are required to consult with NMFS regarding any action they authorize, fund, or undertake that may adversely affect EFH, and NMFS must provide conservation recommendations to federal and state agencies regarding any action that would adversely affect EFH. A subset of the many environmental review activities that HCD provided in FY16 is summarized below.

Oil and Gas Activities

BOEM Coordination: HCD staff met with Bureau of Ocean Energy Management (BOEM) staff to discuss options for completing the EFH consultation on the upcoming Lease Sale 244 for Cook Inlet. BOEM issued a draft Environmental Impact Statement (EIS) on July 22nd analyzing the possible environmental impacts of a potential oil and gas lease sale in Cook Inlet. The EFH assessment will be provided in the near future, as a standalone document from the EIS. HCD staff familiarized BOEM staff with the information available on the Regional website and provided a point of contact to assist in the completion of the EFH assessment and consultation.



Drilling platform in Cook Inlet, Alaska. Photo Credit: Peninsula Clarion

Spill Response Planning: HCD enhanced our mission to conserve EFH by representing NMFS during oil spill responses, drills, and by updating and strengthening regional preparedness plans. HCD staff collaborated with NOAA offices outside of NMFS like the Emergency Response Division and National Ocean Service (NOS) and other State and Federal agencies, including: the Alaska Department of Environmental Conservation, U.S. Coast Guard, U.S. Environmental Protection Agency, U.S. Department of the Interior, and numerous other federal, State, local and industry participants. HCD accomplished this goal by raising awareness of EFH in the event of a major response effort to an oil spill or hazardous material release. HCD staff

routinely offered conservation recommendations to better the oil spill planning and response process. Moreover, HCD staff provided real-time analysis of the EFH resources-at-risk for several small spills, vessel groundings, and during oil spill drills. The information provided helped to ensure that decision makers (i.e. Unified Command) have the habitat information they need to make informed decisions when responding to oil spills in Alaska.

Alaska LNG Project: HCD staff has attended and participated in a number of meetings held by the Federal Energy Regulatory Commission (FERC) and/or project proponents proposing to develop LNG pipeline projects in Alaska. Currently, the two projects under discussion are in two different phases of development and review. The Alaska LNG Pipeline Project has received scoping reviews, comments, and early recommendations from HCD. This project is currently developing advanced phase 2 resource reports and is in the engineering and design phase. The Alaska Stand Alone Pipeline (ASAP) Project has completed its Draft Supplemental Environmental Impact and HCD has recently been provided comments regarding installation of appropriate fish passage measures for subsequent infrastructure.

Mining Activities

KSM Mine: HCD staff participated in an inter-agency meeting on the proposed Kerr-Sulphurets-Mitchell (KSM) mine. The KSM proponent, Seabridge Gold, gave a presentation on the best available technology (BAT) study for tailing management at the KSM project. The BAT study concluded that the tailings facility approved through the British Columbia Environmental Assessment process is the most appropriate location for a tailings facility for the KSM Project. HCD staff was able to get current information on the KSM Project and participate in a question/answer session.



HCD staff (Seanbob Kelly) conducts a site visit on Kodiak Island. Photo Credit: Matthew Eagleton

HCD staff has also remained engaged as needed in several other proposed mining projects such as the Pebble copper deposit, Donlin Gold deposit, Chuitna coal mine, and the Ambler road to resources project. Each of these projects is unique from one another, posing very different circumstances and challenges, and are in different stages of the development process and project review.

Dredge/Fill and Other Activities

Transportation: HCD staff met with staff from the Federal Highways Administration and the Alaska Department of Transportation (ADOT) to discuss the State's efforts to assume the responsibilities for all NEPA actions and collaborating on EFH Consultations. Under the program, ADOT would be deemed to be a "Federal Agency" on all projects for environmental matters and would therefore be responsible for all EFH consultations. HCD will be working with ADOT to update procedures and guidance for ADOT staff on EFH consultations and issues on their transportation projects

Gustavus Ferry Terminal: HCD reviewed the ADOT Gustavus Ferry Terminal Improvement Project's EFH Assessment. The proposed project involved expanding the dock, construction and extraction of steel piles, and installing a new harbor access float. EFH for all five species of Pacific salmon and Gulf of Alaska groundfish species or species complexes occur in the project area. HCD offered EFH Conservation Recommendations to avoid, minimize, mitigate, or otherwise offset adverse effects to EFH.

Zimovia Strait: HCD reviewed a U.S. Army Corps of Engineers (COE) public notice for a proposed causeway/breakwater, boat/seaplane ramp, and pad construction, to expedite the loading and unloading of commercial gear and provide moorage for the applicant's seaplane and vessels, as well as the vessels of the adjacent lodge in Zimovia Strait, Alaska. HCD staff described salmon EFH in the project area and also identified the following intertidal vegetation: dune grass, salt marsh vegetation, rockweed, green algae, and soft brown kelps. We offered EFH Conservation Recommendations and potential project alternatives to avoid, minimize, or offset adverse effects to EFH.

Port Lions: HCD staff assisted staff from the COE by conducting a site visit for the proposed harbor improvement at Port Lions, Alaska. Staff conducted surveys of the proposed breakwater areas with trawl, beach seine, and underwater cameras. A follow up survey will be conducted following construction of the new and modified breakwaters to identify any changes to the fish habitat.

Kodiak Coast Guard Facilities: HCD staff participated in an interagency site visit for the proposed installation of a new stormwater outfall immediately adjacent to the complex of runways and tarmac at the U.S. Coast Guard air station/civil airport. Agency participants included the COE, the Alaska Department of Fish and Game, the U.S. Coast Guard, U.S. Fish and Wildlife Service, the Kodiak Lab of the AFSC, and representatives from the Sun'aq Tribe of Kodiak. The current outfall is 60 years old, dilapidated and does not function properly. HCD will continue to coordinate with the Kodiak Lab and the COE to address potential impacts of the proposed project on the living marine resources including EFH.

Hydropower and Energy Projects

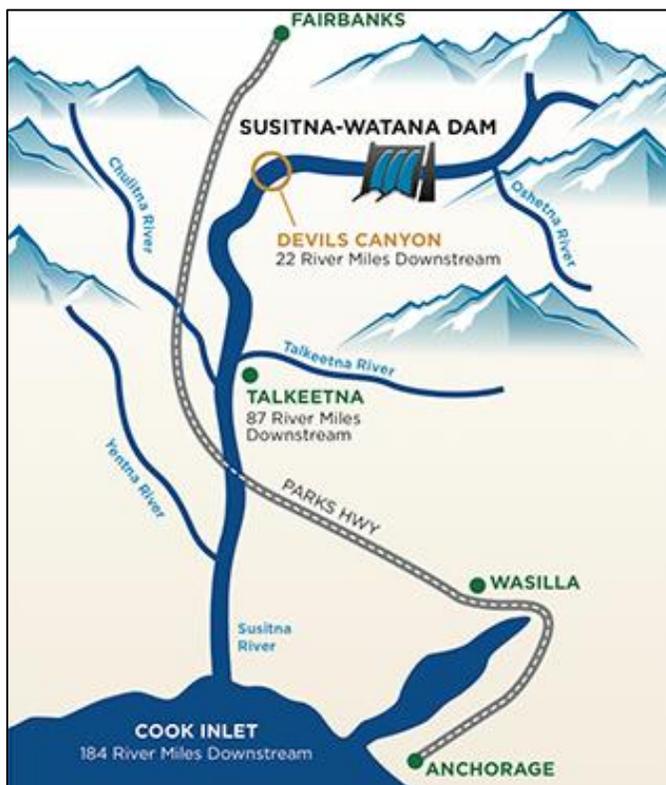
Susitna-Watana Dam: The Susitna-Watana dam was projected to add 650 megawatts to Alaska's electric grid. HCD staff wrote, edited, and collated NMFS's study modifications to the

Initial Study Review (ISR) for the Susitna Dam. This document was the work of a dozen contracted, independent scientists and reviewed the work to date by Alaska Energy Authority (AEA) contractors to describe the effects of the proposed 750 foot high dam on the Susitna River in 21 scientific fields. This culminated in 350 distinct study modification requests and a request for a new study: Model Integration and Decision Support Systems. HCD staff participated in a week of field work to determine how juvenile salmon utilize side channel habitat mid-winter and in the Integrated Licensing Process (ILP) Initial ISR meeting in Anchorage in March 2016. Due to state budget constraints, the proposed project was shut down in June 2016, but HCD continues to monitor its status.

Hiilangaay Hydro: The 5-megawatt Hiilangaay Hydroelectric Project was licensed in 2000, but has suffered delays related to funding. In 2016, the applicant filed a license amendment to alter the tailrace fish barrier design such that less hydraulic head would be lost. By working closely with the applicant's design team, we came to an acceptable solution that preserved head and will also exclude salmon from the tailrace. This has been formalized in the Phase III Design Drawings (January, 2017).

Upper Hidden Basin Creek: The Upper Hidden Basin Creek Diversion aimed to divert 100% of the water from two small creeks around a mountain and into the Terror Lake thereby increasing the energy available to the community of Kodiak. Both tributaries are fishless but they feed water to the intermittent Hidden Basin Creek which shares a very shallow aquifer with an adjacent perennial stream with a substantial Coho Salmon run. A compromise was reached such that a small amount of water would be left in the two creeks during the dry season to hopefully ensure that the adjacent perennial stream was not dewatered by a dropping water table, thereby compromising the Coho Salmon run. This was the first time an Alaskan utility agreed to instream flow requirements designed to protect groundwater resources and an adjacent stream's salmon run. HCD staff worked to ensure that the economic viability of the project was not significantly compromised by the instream flow requirement.

Power Creek: Cordova Electric Cooperative requested that the five cubic feet per second (cfs) instream flow requirement in the original license be removed as 20 years of warming has made Power Creek perennial without the mandated instream flow; this was demonstrated by a three-year data collection effort. HCD staff agreed that the stream is currently perennial in the salmon inhabited reach, but insisted on retaining a 1 cfs instream flow requirement to hedge against a return to cooler, drier winters.



Susitna-Watana Dam schematic. Credit: Alaska Energy Authority

Eklutna Dam: The 70-foot high Eklutna Dam was constructed in 1929, but had completely filled in by 1955 when it was made obsolete by the new upper Eklutna Lake Hydropower facility. The Conservation Fund is planning to remove the original dam in 2017, so HCD staff reviewed several documents related to sediment routing and the fate of the 230,000 cubic yards of sediment stored behind the dam. While removing a 70 foot dam of concrete may provide restoration, it is difficult to predict how the sediment backed up behind the dam will affect channel morphology and fish habitat. The bulk of the mitigation negotiations and monitoring

work for this project will occur in 2017.



HCD and ADF&G staff conducting fieldwork at Eklutna Dam. Photo Credit: Sean Eagan

National and Alaska Fish Habitat Partnerships

In partnership with the NOAA Restoration Center (RC), HCD has improved NOAA's presence and capacity in the Alaska fish habitat partnerships. Our participation in the fish habitat partnerships has increased efforts to develop action plans that target marine, estuarine, and freshwater resources of concern, including supporting ecosystem processes and habitat attributes from headwater tributaries through nearshore marine waters.

NOAA supports the Alaska fish habitat partnerships through participation on their boards and implementation of

projects through the partnership. Alaska has four fish habitat partnerships, and HCD participates as a member in each partnership. These partnerships include: the Southwest Salmon Habitat Partnership, the Matanuska-Susitna (Mat-Su) Basin Salmon Habitat Partnership, the Kenai Peninsula Fish Habitat Partnership, and the Southeast Alaska Fish Habitat Partnership. A few of the projects that the partnerships completed in FY16 are described below.

Mat-Su

Cataloging Anadromous and Resident Fish in Previously Unmapped Streams: This project sampled over 50 unmapped streams for the Anadromous Waters Catalog and the Alaska Freshwater Fish Inventory. We will use this information and the updated National Hydrography Dataset to estimate upstream habitat.

2016 Mat-Su Water Reservation Program Flow Data Acquisition: The Mat-Su region supports some of North America's most viable salmon fisheries. For this project, the Mat-Su Water Reservation Program will quantify and protect instream flows needed to sustain salmon habitat and production on two waterbodies of priority to the Alaska Department of Fish and Game (ADF&G); Little Willow Creek and Kashwitna River. This project funds Year 3 and 4, respectively, to achieve 5 full years of flow data.

Guidelines for Developing around Salmon Habitat in the Mat-Su: Development around waterbodies and the resulting loss of salmon habitat has been one of the greatest contributors to the decline of salmon populations in most of North America other than Alaska. In the Mat-Su, most salmon populations remain healthy and protection of their habitat is a priority of the Mat-Su Salmon Partnership for maintaining long-term salmon viability. This project will create guidelines for development around salmon habitat to inform land use decisions and protect riparian vegetation, water quality, instream flows and other priority habitat characteristics.

Southwest

The Partnership supported the Bristol Bay Fly Fishing academy which works with local children to provide them the ability to work at the fly fishing lodges in their area.

Kenai Peninsula

The partnership carried out work on Elodea and Northern Pike eradication in lakes with known salmon populations. Stream temperature monitoring was also conducted to better inform conservation easement prioritization. Studies were also conducted to identify the usefulness of environmental DNA investigations for management

Southeast

Funding from NOAA was provided in partnership with the Pacific States Marine Fisheries Commission to improve the nearshore assessment of the Southeast Alaska Fish Habitat Partnership. The goal of this funding was to organize already available information to aid in decision making on priorities for nearshore environment conservation, mitigation and restoration.

HCD staff participated in the Southeast Partnership meetings and began contributing to their 5-year strategic plan. The Partnership is now focusing on the protection and restoration of estuaries, intertidal land and shallow submerged areas.

NOAA Restoration Center's Contributions to HCD

The NOAA RC is dedicated to restoring the nation's coastal ecosystems and preserving diverse and abundant marine life. Together, the RC and HCD form the Habitat Enterprise in Alaska. HCD staff works closely with NOAA RC staff to restore degraded habitats, advance the science of coastal habitat restoration, share restoration techniques, and foster long-term stewardship of marine and coastal habitats. Although Alaska habitats are relatively pristine, we recognize areas where habitat resiliency to climate change depends on healthy populations and intact ecosystems. In Alaska, the NOAA RC is working on innovative approaches in areas such as oil spill preparedness and activities that employ measures to restore habitat functions. In other

areas we are working closely with our partners to implement conservation and preservation activities prior to species decline.

Oil Spill Planning and Preparedness

NOAA RC and NOS held a two day training National Resource Damage Assessment (NRDA) workshop for all Alaska agency NRDA trustees. In attendance were the Alaska Department of Environmental Conservation, the U.S. Fish and Wildlife Service (USFWS), ADF&G, and the Alaska Department of Law. The workshop covered ephemeral data collection procedures, and digital data collection following a spill.

Kenai Peninsula Aquatic Ecosystem Restoration Project

NOAA RC, USFWS and ADF&G were awarded \$7.5 million from the Exxon Valdez Oil Spill (EVOS) trustee Council to restore over 33 miles of fish passage on the Kenai Peninsula. In



Example of Buskin River culverts. Photo credit: Erika Ammann

2016, design work was conducted for the North Fork Anchor River & Nikolaevsk Road, 25% design completed for Two Moose Creek & Sterling Highway, and design and environmental review for Crooked Creek & Sterling Highway.

Kodiak Island Buskin River Restoration

NOAA RC, USFWS and ADF&G were awarded \$4.5 million from the EVOS trustee Council to restore over 20 culverts to improve fish passage and sediment transport in Kodiak's Buskin River system.

Arctic Trajectory Analysis Planner

The final report for the Arctic Trajectory Analysis Planner (TAP) is scheduled for completion in early 2017 with a presentation of the report at the May 2017 International Oil Spill Conference in Long Beach. The work was funded through a grant by NOAA RC from the National Fish and Wildlife Foundation.

Other Noteworthy Activities

Alaska Sea Grant Fellow

HCD welcomes Alaska Sea Grant Fellow - Jennifer Marsh, Ph.D. Fisheries (UAF). Jennifer (Jen) will start with the Region on October 3rd. Recently, Jen has been researching trophic Arctic ecology and distribution of Chukchi Sea fish communities, with an emphasis on Arctic cod. Prior to this, her history includes working at various labs and with salmon. Jen seeks to gain familiarity with fisheries policy and apply her highly recognized research talents towards ecosystem based fisheries management. With HCD, she will interface with the AFSC, the Council, academia, and our internal Arctic programs to assist in Arctic cod EFH delineations and their role in the Arctic ecosystem. Jen will also help summarize findings from our recent habitat prioritization of managed stocks (HAIP); a coordinated effort between NMFS Science and Technology, the AFSC, and HCD.

Interagency Review Teams

HCD continued to work with the COE and other agencies per the Memorandum of Understanding to review individual and programmatic compensatory mitigation in the State of Alaska on the Statewide Interagency Team (SIRT) and individual Interagency Review Teams (IRT). HCD staff have provided input to numerous IRT and SIRT issues over a wide area of the State. Our suggestions have been incorporated into plans and functional assessment methodologies and have sought to benefit anadromous and marine fishery habitats in this process.

Some of the actions related to this topic include defining service areas, improving guidance to sponsors by the development of check lists/templates, the role of preservation in Alaska, and how to define a credit. In all cases, HCD promotes the function and value of wetlands, streams, estuarine and marine habitats to fisheries and seeks to incorporate their consideration into functional assessments and areas used as compensatory mitigation.

New Habitat Staff

Sean Eagan joined HCD in August of 2015. Sean has a Master's degree in Hydrology and extensive experience working for the National Park Service and the U.S. Forest Service. He moved to Juneau from American Samoa where he was Chief of Natural Resources for the National Park of American Samoa. His experience includes monitoring and protecting coral reefs; watershed research on the effects of prescribed fire on streams; stream restoration projects; and monitoring chloride concentrations in Yellowstone's rivers. During his first year with HCD he focused primarily on hydropower projects. He took a lead role in pulling together the comprehensive review of the 21 studies to determine the effects of the Susitna Dam on anadromous fish and their habitat.

NOAA Corps Officer Recruits at Job Fair

NOAA Corps officer (LT Charlene Felkley) represented NOAA at the 2016 University of Alaska at Anchorage Career Fair. LT Felkley took this opportunity to not only talk to students about the NOAA Commissioned Corps, but also about civilian careers within NOAA and NMFS. Reaching out to students who desire to incorporate service, science, and adventure into their future careers will help ensure NOAA is well manned in the future.

Invasive Species

At the suggestion and encouragement of HCD staff, two students under the tutelage of Michelle Ridgeway of Oceanus deployed an invasive tunicate monitoring sampling device in Statter Harbor in July. The device uses plates from the Smithsonian Environmental Research Center's monitoring program and was deployed in a location chosen after multiple conductivity, temperature, depth instrument (CTD) casts to determine the best location for invasive tunicate growth based on salinity. Western Washington University students Emma Good of Juneau and University of Alaska Southeast student Jacob Eberhardt of Juneau will monitor and report on the results of the deployment over the next year, looking to characterize settling organisms on the plates.



Invasive tunicate monitoring in Statter Harbor. Photo credit: Linda Shaw

ShoreZone

ShoreZone is a coastal habitat mapping and classification system in which aerial imagery is collected specifically for the interpretation and integration of geological and biological features of the intertidal zone and nearshore environment. The imagery and mapping data are accessible via an interactive website to provide coastal habitat information to scientists, managers, and the public. The [website](#) allows users to virtually “fly” the coast from any computer with internet access, download high-resolution photos, and access an extensive database with mapped biological and geological features.

The first ShoreZone imaging survey in Alaska was in 2001. In October 2016, after 15 years of the partnership, there is imagery for approximately 92% of Alaska’s coastline and mapping data for approximately 84% of Alaska’s coastline. Over 50 ShoreZone partners have contributed to ShoreZone work in Alaska. There is ShoreZone imagery for about 89% of the coastline from the Alaska-Canada border to the California-Mexico border.

Early in the fiscal year, HCD staff (with other NMFS staff) provided Alaska Region leadership a briefing on what was new with ShoreZone. The briefing covered a ShoreZone overview and history, ShoreZone partners, 2016 plans, what is left to image and map, data management, and ShoreZone users. NMFS developed a state of the art website to serve the ShoreZone imagery and data. The need to manage this data set on a long term basis was discussed. NMFS staff were tasked with development of a five-year strategic plan for ShoreZone. The ShoreZone five-year strategic plan was completed in FY2016 and developed in consultation with and input from the ShoreZone Steering Committee, which included other federal agencies and non-governmental organizations. With FY 16 year-end funds HCD funded the development of an offline ShoreZone image interface; mapping of ShoreZone imagery in the eastern Aleutian Islands; mapping of ShoreZone imagery in Kuskokwim Bay; and revised ShoreZone mapping with upgrades in the Kachemak Bay Habitat Focus Area. The ShoreZone image interface will make it possible to access ShoreZone imagery from a tablet or laptop without the need for internet. The new ShoreZone mapping data will be added to the existing large geo-referenced dataset and will be available online.



ShoreZone habitat mapping coverage in Alaska. Credit: ShoreZone

Outreach, Conferences, and Presentations

Habitat conservation is the foundation for sustainable fisheries. HCD shares information about our efforts through a variety of venues. These include professional meetings, conference, and presentations to the public. A short list of outreach events HCD participated in during FY16 includes the following:

- The Alaska Marine Science Symposium
- Western Groundfish Conference
- American Fisheries Society annual conference
- NMFS Headquarters and AFSC coordination meetings
- North Pacific Fishery Management Council meetings
- Interagency Hydrologic Committee for Alaska meetings
- Arctic Marine Protected Areas conference
- Alaska Invasive Species Workshop
- Matanuska-Susitna Salmon, Science, and Conservation Symposium
- Salmon Ecology Meeting
- Climate Change Workshop
- National Mitigation Workshop
- Western Alaska Interdisciplinary Science Forum

Final Word

NMFS's long-term goal of Healthy Oceans - marine fisheries, habitats and biodiversity sustained with healthy and productive ecosystems - begins with healthy habitats. The work that the HCD engages in; to conserve, protect and restore living marine resources, through consultations and other activities, is critical in providing for resilient coastal communities and ecosystems. Healthy habitat is necessary for sustainable fisheries, protected resources, and in almost every other NOAA and NMFS program. Simply put the work that HCD does provides the foundation for the "house that NOAA built." In 1996 Congress strengthened that foundation by amending the Magnuson-Stevens Act to include EFH provisions. Congress stated in the Act, "One of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats."

All living marine resources are vulnerable to habitat degradation, which can threaten the biodiversity on which they depend. These habitats are at risk from human activities which degrade or destroy habitat quality and quantity. HCD's efforts to conserve habitat are as diverse as the resources NMFS manages. These efforts are both reactive and proactive in nature and staff involvement in these activities includes: identification and conservation of EFH through fishery management activities; environmental reviews of non-fishing activities to avoid, minimize, or offset the adverse effects of human activities on EFH and living marine resources in Alaska; and participation in partnerships and the NOAA Habitat Blueprint.

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