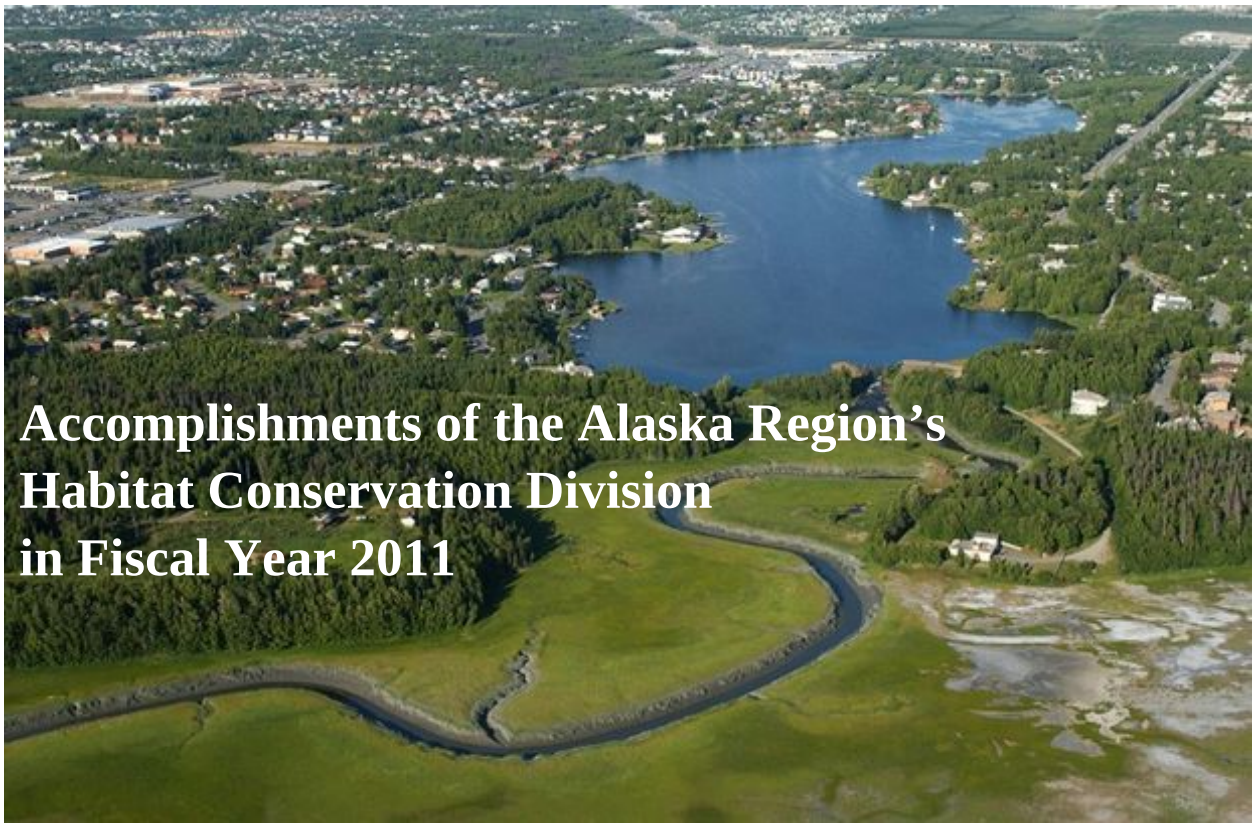
NOAA Fisheries
National Marine Fisheries Service



Accomplishments of the Alaska Region's Habitat Conservation Division in Fiscal Year 2011

Campbell Creek Estuary; Photo by Mark Lester

This report provides highlights of Habitat Conservation Division (HCD) activities from October 1, 2010 through September 30, 2011. HCD works with industries, stakeholder groups, government agencies, and private citizens to avoid, minimize, or offset the adverse effects of human activities on Essential Fish Habitat (EFH) and living marine resources in Alaska. HCD carries out NOAA Fisheries' statutory responsibilities for habitat conservation in Alaska under the Magnuson-Stevens Fishery Conservation and Management Act, Fish and Wildlife Coordination Act, National Environmental Policy Act, Federal Power Act, and other laws. HCD has two principal programs: identification and conservation of EFH through fishery management, and environmental review of non-fishing activities to minimize impacts to EFH or other habitats for living marine resources. HCD also supports habitat restoration projects in conjunction with the NOAA Restoration Center.

HCD coordinates extensively with other groups to facilitate habitat conservation. HCD works in close partnerships with numerous NOAA offices as well as other agencies and organizations such as the North Pacific Fishery Management Council, Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, Bureau of Ocean Energy Management, U.S. Forest Service, Bureau of Land Management, Federal Energy Regulatory Commission, Federal Aviation Administration, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Alaska Department of Transportation and Public Facilities, local governments, and a variety of industry and conservation groups.

Essential Fish Habitat and Fishery Management

Omnibus EFH Amendment to Fishery Management Plans

HCD staff worked closely with the North Pacific Fishery Management Council to revise the EFH components of fishery management plans for Gulf of Alaska and Bering Sea / Aleutian Islands groundfish, weathervane scallops, and Bering Sea / Aleutian Islands crab. The Council adopted the omnibus amendment in April 2011. With these changes the fishery management plans will incorporate the most recent scientific information including revised descriptions of EFH for several species, thereby reflecting more accurately the habitats that are necessary to support managed species. The amendment also updated the information regarding the effects of non-fishing activities on EFH, revised the process for identifying Habitat Areas of Particular Concern, and highlighted the need for a more specific analysis of the potential effects of fishing on EFH for Bristol Bay red king crab, which is now underway. The omnibus amendment stemmed from a once-every-five-years review of the EFH components of fishery management plans, which HCD and the Alaska Fisheries Science Center completed in 2010.

Habitat Areas of Particular Concern for Skates

In 2010 HCD staff worked with Alaska Fisheries Science Center experts to develop a proposal to identify six skate nurseries (egg case concentration sites) in the Bering Sea as Habitat Areas of Particular Concern. Skates lay their eggs in cases they deposit on the sea floor, and development of embryos within the cases can span over three years, making the nursery areas vulnerable to disturbance by bottom-tending fishing gear. In February 2011 the North Pacific Fishery Management Council voted to proceed with an analysis of the proposal and associated management measures to protect these sites, which are used by several species of skates. HCD worked with Science Center experts and Council staff to develop the concept further and begin the analysis, which will be presented to the Council for action in 2012.

A skate nursery area in the Bering Sea

Environmental Review to Minimize Habitat Loss

Bristol Bay Watershed Assessment

HCD provided major support to help the Environmental Protection Agency conduct a comprehensive assessment of how future large-scale mining development may affect the Bristol Bay watershed, including water quality, salmon fisheries, and indigenous peoples. HCD contributed a synthesis of relevant literature regarding the ecological processes that support spawning and rearing habitat for salmon in these watersheds, and drafted a section discussing the contributions of salmon from the watershed to fish and marine mammal populations in Bristol Bay. HCD also supported EPA's development of a predictive risk assessment. EPA expects to release its watershed assessment in 2012 and to use the information in its regulatory decisions regarding the proposed Pebble Mine.

Knik Arm Bridge

HCD completed an EFH consultation for the proposed bridge over Knik Arm near Anchorage. The proposed crossing would include almost a mile of solid fill causeways from the eastern and western shores leading to an 8,200 foot long pile supported bridge spanning over the deepest part of Knik Arm and would result in the loss of 90 acres of intertidal and subtidal habitat. Concerns include likely adverse effects to migrating salmon, which will lose their shallow water migratory corridor and may experience increased mortality in deeper, faster moving water under the narrower opening that remains once the project is built. HCD coordinated its review with the Protected Resources Division, which completed consultation under the Endangered Species Act for impacts to beluga whales. The Army Corps of Engineers is proceeding with its evaluation of the project and will likely issue a permit in the near future.

Nome Airport Runway Extension

HCD staff recommended improving habitat in the Snake River in Nome, which the Alaska Department of Transportation and Public Facilities and the Federal Aviation Administration are proposing to realign as part of the Nome Airport Runway Safety Area Expansion Project. This reach of the Snake River was heavily impacted by historic mining. The morphology of this reach will require decades to develop and to re-establish complexity, which will primarily be accomplished from slump blocks sliding into the channel. Realignment of the river has the potential to increase the habitat value for this reach. HCD suggested including features in the design of the Snake River realignment that would increase holding and rearing areas in a reach that currently provides very little habitat diversity, and converting the current channel to an engineered slough to provide refuge for juvenile salmon.

Snake River near Nome Airport

Siting Log Storage Areas to Minimize Impacts

As a result of HCD's concerns and recommendations, a proposed log storage facility that would have been built in intertidal habitat in Klawock Inlet was instead located in a nearby upland site. The original proposal involved filling 4.5 acres of intertidal area with wood waste from a lumber mill. Filling the area would have eliminated the habitat and caused water quality problems in the vicinity due to leachate from the wood waste. A considerable body of research has shown that leachate from decomposing wood fiber can contain high concentrations of contaminants that can be acutely toxic to marine life. HCD's review led the applicant to reexamine an upland location for the log storage yard, allowing the project to proceed with no impacts to marine habitat.

In a second project involving log storage, HCD reviewed a proposal to operate log storage areas in productive shallow water habitat in Nutkwa Inlet at Prince of Wales Island. The proposal involved storing 20 million board feet of timber annually in an uncommon shallow salt-chuck lagoon that provides rearing habitat for salmon and forage species. The applicant has two log transfer facilities in Nutkwa Inlet that include upland log storage yards as well as log rafting and storage areas in deep waters, so HCD recommended that the applicant pursue log storage

either in the existing upland sites or in deeper portions of the inlet where effects to fish habitat are less of a concern. The Corps of Engineers agreed to pursue these less damaging alternatives with the applicant.

Mitigation Banks and In-Lieu Fee Arrangements

HCD staff assisted private sector partners with the development of four new agreements for mitigation banks or in-lieu fee arrangements to compensate for unavoidable impacts to fish habitat. Mitigation banks provide a mechanism for habitats to be restored or protected and then set aside in perpetuity, with the credits to be used in the future to offset losses of similar habitat from development activities. Similarly, in-lieu fee arrangements allow a sponsor to pool fees from Clean Water Act permit applicants to purchase valuable habitats that are then preserved in perpetuity. The arrangements are called "in-lieu fee" because the applicants pay fees in lieu of providing compensatory mitigation (like restoring wetlands) to offset impacts caused by a development project. HCD staff worked with the sponsors as well as the Corps of Engineers, Environmental Protection Agency, and U.S. Fish & Wildlife Service to develop the operating procedures for these new mitigation banks and in-lieu fee arrangements. NOAA Fisheries signed the four agreements as a member of the interagency review team: the Pioneer Reserve Umbrella Mitigation Bank Instrument, the Su-Knik Umbrella Mitigation Bank Instrument, the In-Lieu Fee Instrument for the Great Land Trust, and the In-Lieu Fee Instrument for the Southeast Alaska Land Trust. As an example of the benefits, the Pioneer Reserve includes 135 acres of wetlands, streams, and ponds with abundant salmon use throughout the system, and its preservation will provide direct compensation for fish habitat function lost due to development in the same area.

Haines Boat Harbor Expansion

As part of the planning process for proposed expansion of a federal navigation project in Haines, HCD staff participated in field surveys to assess baseline environmental conditions at the project site and potential mitigation sites. Mitigation options include remediating a former log transfer facility and using dredged material from the harbor expansion to create new kelp bed habitat. HCD assisted with determining the extent of degradation at the closed log transfer facility and evaluating the feasibility of the mitigation concepts. HCD also helped to define objectives for the field work, assist divers, and develop preliminary recommendations that will provide a foundation for identifying environmentally preferred alternatives. HCD will continue to assist the Corps of Engineers as this civil works project progresses.

Hydropower Development

HCD staff continued to provide guidance to hydropower developers to minimize adverse impacts to salmon and their habitats. Several proposed projects entered the study plan phase in 2011, and HCD advised the applicants on methods to assess impacts on hydrology and stream and estuarine habitats. HCD staff also participated in the Federal Energy Regulatory Commission's licensing process for proposed traditional dam projects and hydrokinetic energy projects. Licensees for several existing projects submitted or are

Crest of Bradley Lake Dam

developing amendment applications. HCD recommended ways to reduce the effects these hydroelectric projects would have on anadromous and marine habitats, including instream environmental flow requirements, passage requirements, and alteration of project structure and operation to limit effects on anadromous fish.

Susitna-Watana Hydroelectric Project

HCD participated in a variety of pre-license application meetings and events with the Alaska Energy Authority on the proposed Susitna-Watana hydroelectric project, which would involve constructing a new 700 foot high two mile long dam on the Susitna River. The early coordination allowed HCD to promote concerns and build collegial relationships. Staff attended a site visit with the Alaska Energy Authority and other agencies, including a project overview and discussion of the licensing process. Staff also participated in meetings regarding a gap analysis to identify data needs, and expect to see a Preliminary Application Document submitted to the Federal Energy Regulatory Commission before the end of 2011.

Susitna River at the proposed Watana Dam site

HCD Hydropower Website

In 2011 HCD launched a new webpage to provide valuable resource information to the general public, developers, and regulatory agencies on hydropower development in Alaska and NOAA Fisheries' role in hydropower project review. The webpage provides examples, references, and maps to describe NOAA Fisheries' role in reviewing projects throughout the Federal Energy Regulatory Commission's licensing phases and how HCD develops recommended license terms and conditions necessary to protect, mitigate damage to, and enhance fish and wildlife habitat affected by hydropower project construction and operation. Please visit the site at www.alaskafisheries.noaa.gov/habitat/hydro/.

Habitat Protection and Restoration

National Fish Habitat Action Plan

HCD continued to support the National Fish Habitat Plan in Alaska. Staff participated in planning for a new Pacific Marine and Estuarine Fish Habitat Partnership which initially was described to include the Pacific coast from Baja through Southeast Alaska. The proposal eventually was scaled back to focus on California, Oregon, and Washington, so HCD worked with partners in Southeast Alaska to pursue regionally relevant strategies for habitat conservation, leading to a proposal for a Southeast Alaska Fish Habitat Partnership. That proposal was recognized by the National Fish Habitat Board as a Candidate Partnership in August 2011. One of the key goals is to develop a strategic plan that identifies conservation and restoration priorities. In addition, HCD continued to support other fish habitat partnerships in Alaska: the Matanuska-Susitna Basin Salmon Habitat Partnership, Kenai Peninsula Fish Habitat Partnership, and Southwest Alaska Salmon Habitat Partnership. HCD assists the partnerships in many ways, such as helping to write portions of strategic plans, looking for funding opportunities to promote habitat protection and restoration, and recognizing noteworthy outcomes by nominating partners for national awards. HCD is also working with the U.S. Fish & Wildlife Service to create a statewide umbrella group to assist in coordinating the administrative and data needs of all the Alaska fish habitat partnerships.

Invasive Species

HCD staff continued to work with the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, Smithsonian Environmental Research Center, University of Alaska, and other partners to address the infestation of an invasive colonial tunicate, *Didemnum vexillum*, discovered in Whiting Harbor near the Sitka airport in 2010. As part of the combined effort, HCD teamed up with the Alaska Fisheries Science Center to conduct a remotely operated vehicle survey to determine if the infestation had spread. Fortunately the infestation remains fairly localized. HCD also provided recommendations and guidance for additional *D. vexillum* surveys in Sitka's other harbors (none has been found), and helped to evaluate potential treatment methods and management actions to contain or eradicate the infestation. This work is integrated with continuing HCD staff coordination of the Alaska Invasive Species Working Group's marine subcommittee, which addressed other invasive species issues this year such as green crab monitoring. Finally, HCD staff now represent NOAA Fisheries on the Western Regional Panel of the Aquatic Nuisance Species Task Force and joined its coastal and marine subcommittee to seek ways to coordinate and promote Alaska invasive species issues.

Remotely Operated Vehicle surveying for invasive tunicates in Sitka

Klawock Causeway Bypass

HCD assisted the NOAA Restoration Center, The Nature Conservancy, and the Alaska Department of Transportation and Public Facilities in implementing a major restoration project on the Klawock River in southeast Alaska using funds from the American Recovery and Reinvestment Act. The project involved breaching a large causeway on an outlet of Klawock Lagoon to provide fish passage, improve tidal flushing, and enhance eelgrass beds. At high tide,

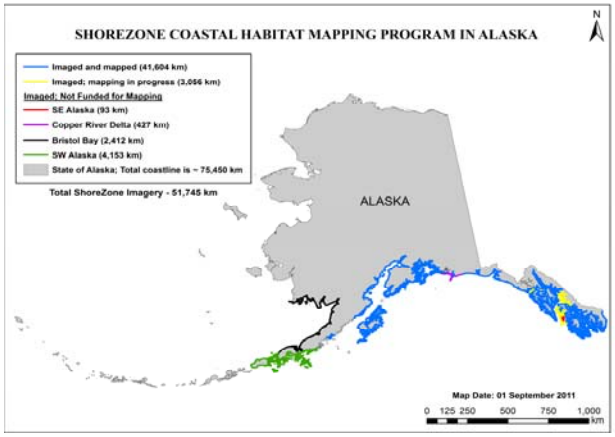
water and fish are now crossing the causeway for the first time in 50 years via a new three-sided cast concrete culvert. A remote motion-sensing camera operated by the Forest Service is being used to monitor salmon passage through the culvert. Members of the Klawock Tribe will continue the monitoring program developed by NOAA and The Nature Conservancy, and the NOAA Coastal Services Center is helping to produce baseline maps from aerial photography. The completion of this part of the project concludes an 11 year commitment by about 14 different organizations. Monitoring will continue for several years.


Klawock lagoon causeway before and after the breach restored tidal flushing and fish access; Photos by TNC

Other Noteworthy Activities

ShoreZone Mapping

ShoreZone is a coastal habitat mapping and classification system in which spatially referenced aerial imagery is combined with geological and biological interpretation to characterize coastal features and allow users to virtually "fly" the coast from any computer with internet access. To date 51,745 km or approximately 69% of Alaska's shoreline has been imaged, which is an increase of 6% from last fiscal year. Fifty-five percent of the coastline is mapped with geomorphic and biologic features identified and entered into the ShoreZone database. Mapping is in progress for an additional 4,840 km. Imagery and mapping data are accessible via an interactive website to provide coastal habitat information to decision makers and the public (www.alaskafisheries.noaa.gov/shorezone). HCD continues to work with other agencies and organizations to promote use of ShoreZone data and fund additional data collection. During FY11 HCD staff coordinated ShoreZone briefings for several agencies; gave presentations at statewide and national conferences to attract additional partners and users; secured $85,000 from the U.S. Fish and Wildlife Service's National Wildlife Refuge System for ShoreZone work; assisted the Forest Service and Bureau of Ocean Energy Management with their contracting for ShoreZone work; and contracted for mapping a section of the Bristol Bay coastline in 2012.



HCD Diving and Small Boat Operations

HCD's divers and small boat operators performed several successful operations during FY2011. HCD assisted the Kachemak Bay National Estuarine Research Reserve with an assessment of invasive species near Homer. Divers investigated a 20+ year old oyster farm structure (pictured at right) and the surrounding embayment for non-indigenous species, and fortunately found none. HCD divers also assessed several sites in southeastern Prince William Sound for marine debris. The sites were selected due to their proximity to known shoreline marine debris accumulation areas. The team catalogued marine debris by location, type, and estimated weight. HCD also participated in an agency-wide small boat managers meeting to share lessons learned and focus on ways to maintain and improve safe small boat operations in diverse operational areas from the Arctic to the Florida Keys.

Grant Creek Habitat Study

HCD participated in a 2-dimensional hydraulic study with the US Geological Survey, Fish and Wildlife Service, and Alaska Department of Fish and Game. The study collected stream topographic, hydraulic, and geomorphic information in a heavily utilized reach of Grant Creek. The results will help to develop measures to protect flows and habitat in the steep stream, which could be affected by hydropower development in nearby Grant Lake.

Topographic survey of Grant Creek for 2-D habitat model; Sockeye salmon in Grant Creek

Outreach and Education

HCD staff participated as judges in several school science fairs and made presentations in classrooms on fish habitat issues, helping to teach the next generation of stewards for healthy aquatic habitats.

Scenic Park Elementary School outreach event with first graders to talk about hydrology and fish habitat after judging a school-wide science fair

Please visit our website: www.alaskafisheries.noaa.gov/habitat