



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
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March 14, 2025

Agenda B2: NOAA Fisheries Annual Essential Fish Habitat Report

As part of the North Pacific Fishery Management Council's Essential Fish Habitat (EFH) consultation policy, the Council requested regular reports from the National Marine Fisheries Service (NOAA Fisheries) on EFH consultations that may be of interest to the fishing industry, and/or that may affect habitats of direct concern to the Council. This report developed by our Habitat Conservation Division (HCD) focuses on major consultations, with a brief summary of routine activities with minor effects on EFH. We also provide advance notice for those activities that could have major effects on EFH and where the Council may consider a consultation action.

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1. Council's Role in EFH Consultations

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) provides a role for Fishery Management Councils in commenting on federal or state agency actions that may affect fish habitat. The Council identified the following criteria to guide NOAA Fisheries in determining whether an activity is likely to be of particular interest to the Council:

- The extent to which the activity would adversely affect EFH;
- The extent to which the activity would adversely affect Habitat Areas of Particular Concern or other areas established by the Council to protect sensitive habitat features;
- The extent to which the activity would be inconsistent with measures taken by the Council to minimize potential adverse effects of fishing on EFH; and
- The extent to which the activity would conflict with Council-managed fishing operations.

Every year, the NOAA Fisheries' Habitat Conservation Division (HCD) in Alaska receives approximately 115-130 non-fishing actions proposed by Federal and State agencies that have the potential to affect EFH and living marine resources. Common actions include aquaculture development, coastal construction, forestry, harbor improvement, hydropower development, mining, navigation dredging, oil and gas exploration, offshore disposal of materials, pollutant discharges, Naval training exercises, and transportation infrastructure projects. We focus our staff time to reviewing those activities that may adversely affect EFH and where early coordination could improve the proposed action.

HCD's staff provides technical assistance to project proponents and action agencies during pre-consultation coordination for proactively avoiding, minimizing, or mitigating impacts to EFH that support Alaska's valuable fishery resources. During EFH consultations with Federal action agencies, we provide reasonable and scientifically based conservation recommendations for mitigating potential project related adverse effects on EFH. Our EFH conservation recommendations are non-binding, as specified by the MSA. However, if the Federal agency does not follow NOAA Fisheries conservation recommendations, the MSA requires that Federal agencies must provide scientific justification for any disagreement and describe the measures they propose to avoid, minimize, mitigate, or offset adverse effects on EFH.

We provide written comments at various stages of project permitting including: scoping, environmental impact statement comment periods, and other times as requested. The formal EFH consultation occurs when the Federal action agency provides NOAA Fisheries with an EFH Assessment prepared under 50 CFR 600.920(e). NOAA Fisheries then has 30 to 60 days to complete its review of the EFH Assessment and supporting material and provide comments and conservation recommendations, as appropriate. Where a number of actions are similar with similar anticipated impacts on EFH, we look for efficiencies by completing programmatic consultations.

2. EFH Consultations - April 2024 to April 2025

Since our April 2024 report to the Council, we have engaged in 132 early coordination and EFH consultations. Our coordination and consultation processes help support sustainable development

while conserving and protecting habitat that supports federally managed fish and their prey. Below are categories of projects we reviewed since April 2024.

- **Aquaculture:** Reviewed 32 permit applications, lease amendment requests, and Army Corps of Engineer nationwide permit notices (nwp) and, where appropriate, provided early coordination with Alaska Department of Natural Resources (ADNR) for proposed kelp, oyster, or multi-trophic aquaculture operations throughout the state.
- **Coastal Development:** Projects we typically consult on include construction or rehabilitation of docks for water access, walkways and pedestrian access for recreational use of coastal resources, sand/mineral extraction, and waterfront development. This past year included several land conveyance actions by the Bureau of Land Management. We coordinated or consulted on 36 coastal development projects.
- **DOT Projects:** Coordinated or consulted on nine projects proposed by the Alaska Department of Transportation (DOT) & Public Facilities. These actions included airport upgrades, improvements to highways with stream crossings, ferry terminals, airports, and pedestrian access ways affecting EFH for many federally managed species, including freshwater habitat for Pacific salmon. HCD is involved at different levels supporting the Federal Highway Administration's aquatic organism passage program, improving habitat accessibility for anadromous fish, including Pacific salmon. Our coordination with the Federal Highway Administration (FWHA) and Alaska DOT supports environmentally sustainable infrastructure development.
- **Dredging and Harbor Improvement:** Consulted on 20 harbor development projects, including harbor improvements in Whittier, Dutch Harbor, Auke Bay, Atka, Angoon, and continued coordination for the Port of Alaska Modernization.
- **Hydropower:** Our participation in the processes affecting hydropower projects continues to support renewable energy while protecting Pacific salmon EFH. The primary projects we focused on this past year include.
 - Eklutna mitigation plan development
 - Nuyakuk licensing
 - Igiugig Hydrokinetic monitoring
 - Bradley Lake, Battle Creek Amendment
 - Pelican Hydro - habitat mitigation
- **Military:** After many years of coordination, we completed an EFH consultation with the U.S. Army at joint base Elmendorf and Richardson (JBER) for their Proposed Mortar and Artillery Training plan (PMART). Our consultation led to changes in their artillery training plan for the protection of Pacific salmon in Eagle River Flats, including ongoing monitoring of salmon in the estuary. This was a significant win for aquatic resources while supporting military preparedness.
- **Mines:** Mining activities affect a broad range of designated EFH from nearshore habitat supporting many life stages of federally managed fish to inland freshwater habitat supporting Pacific salmon. We coordinated or consulted on 12 mining actions within Alaska, including Nome recreational mining district, Greens Creek exploration scoping, and requesting a consultation for the Kensington Mine spill event. We also serve as technical advisors to British Columbia's Environmental Assessment Office for two

transboundary mining proposals: the Eskay Creek Revitalization Project (Unuk River Watershed) and New Polaris Gold Mine (Taku River Watershed).

- **Restoration:** Coordinated or consulted on 10 restoration actions that included several marine debris funding actions, a programmatic environmental assessment for BLM, and fish passage actions in the Tongass National Forest. See below for details regarding NOAA Fisheries Restoration Center in Alaska

Programmatic consultations evaluate a whole program of activities up front and apply EFH conservation recommendations to those activities. This approach is suitable for an entire program, parts of a program, or a number of similar individual actions occurring within a given geographic area and other instances where sufficient information is available to address all reasonably foreseeable adverse effects on EFH.

- HCD and **NOAA Fisheries Restoration Center** completed the EFH programmatic consultation for projects undertaken by the Restoration Center in Alaska, including the Community-based Restoration Program (CRP), the Damage Assessment, Remediation and Restoration Program (DARRP) and other similar restoration activities. The programmatic consultation went into effect on April 23, 2024 and will expire in April 2029. This programmatic consultation provides NOAA Fisheries and the Restoration Center a means to consult regarding a large range of individual actions or planning efforts that may adversely affect EFH.
- HCD is currently developing a programmatic consultation with the United States Department of Agriculture (**USDA's**) **Natural Resources Conservation Service** for their funding actions that may affect Pacific salmon habitat. That programmatic consultation could be completed in early May.
- HCD is evaluating a programmatic consultation with **NOAA's Marine Debris Program**. We envision a programmatic consultation with the Marine Debris Program to mirror that of NOAA's Restoration Center.

3. 2028 EFH 5-Year Review Kick-off

The objective of an EFH 5-year Review is to review the ten EFH components of Fishery Management Plans (FMPs) and revise or amend EFH components as warranted based on available information ([50 CFR 600.815\(a\)\(10\)](#)). The EFH regulations outline 10 components for the EFH contents of FMPs:

1. EFH descriptions and identification
2. Fishing activities that may adversely affect EFH
3. Non-MSA fishing activities that may adversely affect EFH
4. Non-fishing activities that may adversely affect EFH
5. Cumulative impacts analysis
6. EFH conservation and enhancement recommendations
7. Prey species list and locations
8. Habitat Areas of Particular Concern (HAPC) identification
9. Research and information needs
10. Review EFH every 5 years.

We completed the most recent EFH 5-year Review in 2024, with the EFH Omnibus Amendments package published to the Federal Register on July 19, 2024 ([89 FR 58632](#)). You can find the Final Environmental Assessment and all amendment documents [here](#).

We are now planning to launch the next 5-year Review at the June 2025 Council meeting and are preparing the roadmap to identify which EFH components will be prioritized for updates in the six FMPs.

4. Alaska EFH Research Plan Update

EFH research recommendations were informed during the 2023 EFH 5-year Review by contributing researchers, stock assessment scientists, and Council advisory bodies. These recommendations were summarized as three objectives for the revised 2024 Alaska EFH Research Plan—

- Objective 1: Improve EFH information for targeted species and life stages;
- Objective 2: Improve fishing effects assessment; and
- Objective 3: Improve understanding of nearshore habitat and forage species.

The timely objectives of the 2024 Alaska EFH Research Plan ([Pirtle et al. 2024](#)) provide guidance for recommended habitat science advancements leading up to the next and future EFH 5-year Reviews and supporting ecosystem-based fisheries management. The Alaska EFH Research Plans have also included five long term research goals that remain consistent with minor, meaningful updates since 2005.

Each year, the NOAA Fisheries Alaska Region and the Alaska Fisheries Science Center provide funding for the advancement of habitat science under the Alaska EFH Research Plan request for proposals (RFP). NOAA Fisheries Office of Habitat Conservation (OHC) supports habitat science research through the annual EFH Innovation and Advancement (I&A) RFP. NOAA Fisheries Alaska Region also supports habitat science advancements. **For fiscal year 2025, while there is fiscal uncertainty, NOAA Fisheries prioritizes following projects:**

- Developing a network of nearshore sentinel sites to enhance our understanding of environmental change effects on essential fish habitat (EFH) for federally managed species and their prey in partnership with tribes and coastal communities. (OHC EFH I&A; year 1 of a 1 year proposal).
- Habitat utilization of juvenile snow crab in a warming Bering Sea: The interactive effects of ontogeny and temperature on juvenile snow crab energetic condition, metabolic scope, and survival. (Alaska EFH RFP; year 2 of a 3 year proposal).
- Identifying essential habitat for walleye pollock early life stages: the influence of environmental conditions and food availability on density and early growth of larval and juveniles in the Gulf of Alaska. (Alaska EFH RFP; year 1 of a 3 year proposal).
- Leveraging a unique winter survey opportunity to improve the understanding of essential habitat for red king crab in Bristol Bay. (Alaska EFH RFP; year 1 of a 3 year proposal).

EFH research projects recently funded and in-progress—

- Defining essential habitats for juvenile FMP crab species (*Chionoecetes* spp.): the

importance of bottom temperature and diatom flux in defining juvenile crab abundance and condition across a warming Bering Sea (AFSC FY21-23)

- Predictive distribution models to support flexible management of Bering Sea crab fisheries: a combined modeling, field, and laboratory approach (AFSC FY22-24)
- Accounting for trophic relationships in Essential Fish Habitat designation (AFSC FY23)
- Pacific salmon ocean life history stages next generation spatiotemporal and climate-informed EFH descriptions and maps (UAF/AFSC/AKRO FY23)
- Predators as samplers: using food habits data to inform climate- and community-driven shifts in habitat quality for EFH species (OSU/AFSC/AKRO FY23-24)
- Habitat utilization of juvenile snow crab in a warming Bering Sea: The interactive effects of ontogeny and temperature on juvenile snow crab energetic condition, metabolic scope, and survival. (AFSC FY24)

Publications from recently completed EFH research projects—

- Hart, L., C. Cunningham, E. Yasumiishi, F. Mueter, J.T. Thorson, J.L. Pirtle, A. Dimond. *In press*. Species distribution models estimate time-varying juvenile salmon distributions in the north- and southeastern Bering Sea. *Canadian Journal of Fisheries and Aquatic Sciences*.
- Harris, J., J. L. Pirtle, E. A. Laman, M. C. Siple, and J. T. Thorson. 2024. An ensemble approach to species distribution modeling reconciles systematic differences in estimates of habitat utilization and range area. *Journal of Applied Ecology*, 61:351–364.
<https://doi.org/10.1111/1365-2664.14559>
- Ryznar, E., Litzow, M. 2024. Predicting the distribution of red king crab bycatch in Bering Sea flatfish trawl fisheries. *Fisheries Research*. 279:107158.
<https://doi.org/10.1016/j.fishres.2024.107158>

5. NOAA's Restoration Center in Alaska

For over 30 years, NOAA has provided funding and technical assistance to develop high-quality habitat restoration projects that support our nation's fisheries. In the second round of funding, approximately \$30 million was made available to ten tribal organizations. These projects support fish passage that will restore access to healthy fish habitat, increase capacity for rural coastal communities, and identify restoration priorities.

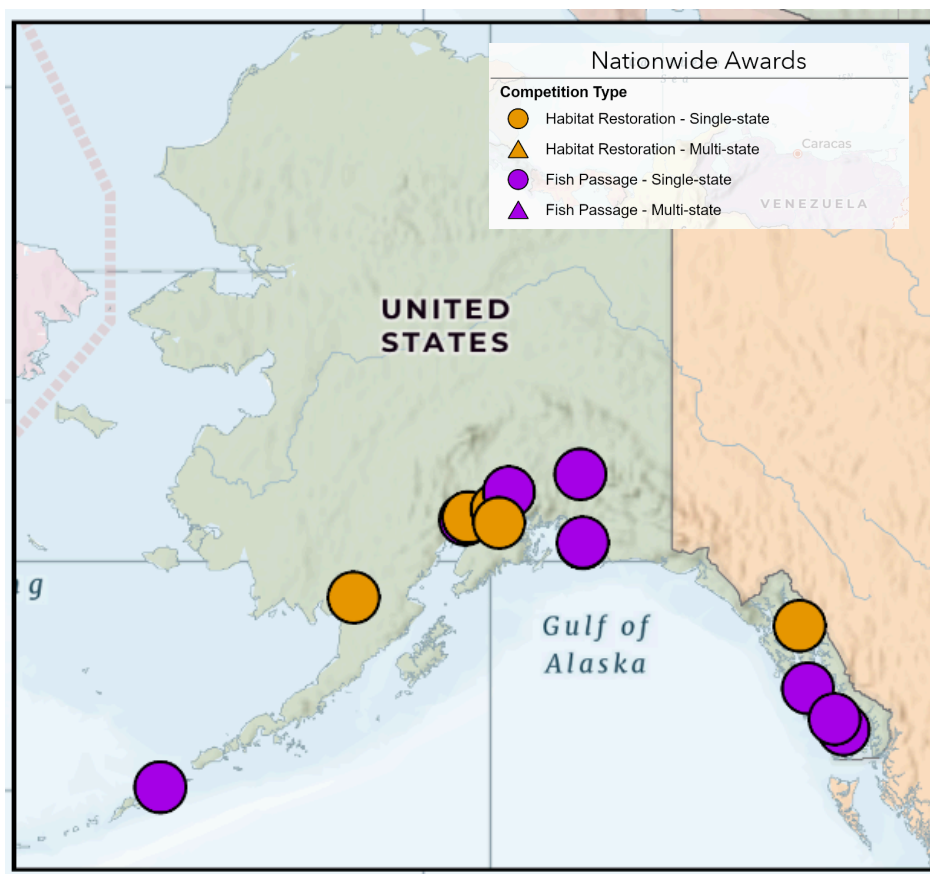


Figure 1. 2024 Funded Community Based Restoration Projects in Alaska

NOAA posts all funding opportunities at: <https://www.fisheries.noaa.gov/funding-opportunities>.

Approximately \$30 million dollars in projects were funded to improve fish passage, coastal resilience and capacity building for communities. Projects funded include (* denotes multi-year award):

- Trout Unlimited will support 15 fish passage barrier removal projects in various phases of survey, design, and construction throughout the Tongass National Forest, in Southeast Alaska (\$4.2 million)
- Ahtna Intertribal Resource Commission will increase their capacity to assess and mitigate flood, implement stream restoration initiatives, and ensure the sustainability of salmon populations through hiring a stream restoration biologist (\$497,000)
- Chickaloon Native Village will continue facilitating the Alaska Tribal Fish Passage Working Group and remove three fish passage barriers and complete survey and designs for an additional barrier in the Matanuska Susistna region of Alaska (\$6.2 million)
- Organized Village of Kasaan will design and remove/replace eight fish passage barriers (culverts) on Prince of Wales Island, Alaska (\$5 million)
- Qawalangin Tribe of Unalaska will remove a fish passage barrier in Unalaska, Alaska consisting of three culverts (\$2.7 million*)

- Tyonek Tribal Conservation District will support seven fish passage barrier removal projects in various phases of survey, design, and construction near Tyonek, Alaska (\$3.8 million) and will & conduct actionable science to support salmon on the Chuitna River, Alaska (\$1.1 million)
- Southeast Alaska Watershed Coalition will work with the community and local collaborators to design nature based restoration projects on the Mendenhall River which experiences recurring high water releases from glacial lake outburst floods in Juneau, Alaska (\$1.5 million*)
- Central Council of the Tlingit and Haida Indian Tribes of Alaska will build capacity to implement coastal restoration work and strategies to support fisheries, food security, youth stewardship, and communications (\$3 million)
- Chugach Regional Resources Commission will create a network of catalysts to increase capacity to identify and implement restoration projects across the South Coast of Alaska (\$2.9 million)



Figure 2. Rewatering a side channel of Resurrection Creek following restoration of the previous mine site. (NOAA)

6. Alaska Aquaculture Opportunity Area Coordination

HCD staff participate in the Alaska Aquaculture Team and have been engaged in the Aquaculture Opportunity Area (AOA) identification process in Alaska. HCD staff collaborated and coordinated with NOAA National Centers for Coastal Ocean Science staff and the Alaska Regional Office (AKR) Regional Aquaculture Coordinator (RAC) to identify priority habitat data for the Habitat Combined Data layer that is included in the draft spatial analysis for the identification of AOAs in Alaska. Staff provides regular reviews, comments, and recommendations on report drafts during the AOA option identification process. HCD has also put forth suggested research priorities that would aid in the National Environmental Policy Act analysis of the AOA process as requested by the AKR RAC. HCD's engagement in this process will improve aquaculture-related EFH consultations, frontload conservation recommendations and best management practices incorporated into project proposals, create new habitat science products, and build relationships. HCD's goal through this engagement is to identify appropriate areas for aquaculture development in Alaska state waters while minimizing impacts to sensitive habitats.

7. Council Coordination Committee Habitat Work Group Summary of Achievements

HCD's Management Team participates on the Council Coordination Committee's (CCC) Habitat Work Group (HWG). This fiscal year the group continues to emphasize coordinating on federal habitat initiatives, implementing habitat requirements, and sharing knowledge to address fish habitat issues across regions. Members have highlighted work on the Fishing Gear Effects on Marine Habitat [database](#), collaboration with the Area-Based Management Work Group (e.g., [Bachman et al. 2025](#)), and featured regional presentations. A February presentation by NPFMC's Katie Latinich and Anita Kroska and HCD's Cathy Coon and Jodi Pirtle shared highlights of NPFMC's Climate Resilience Planning, including habitat conservation conversations at the Council's June 2024 Climate Workshop, uptake and application of science products for climate-ready fisheries management, crafting climate-ready habitat goals for fishery management plans, and upcoming habitat-focused work such as the next EFH 5-year Review.

8. HCD Accomplishments Report FY24

HCD's Accomplishments Report for FY24 (attached) is the 22nd annual summary report highlighting the Division's work to conserve healthy habitats in support of sustainable commercial, recreational, and subsistence fisheries. Changes to the content and format of the report over the years track the changes in how we work to accomplish our mission, the changing nature of projects that may adversely affect EFH, the heightening awareness of climate change, and the growing body of habitat science in support of EFH consultations. Feature stories include: completion of the 2023 EFH 5-year Review, use of eDNA, our support for federal funding to enhance fish passage restoration, highlighting Tribal coordination and cultural resource interests in our consultation work, and FWCA collaboration with the U.S. Army Corps of Engineers to support the planning process for potential Atka Harbor improvements.

Accomplishments Report

Alaska Region's Habitat Conservation Division

Fiscal Year 2024

Our Mission: *The Alaska Region's mission is science-based stewardship of living marine resources and their habitat in the waters of the North Pacific and Arctic Oceans off Alaska. Responsibilities include supporting sustainable fisheries, restoring and conserving protected species, and promoting healthy ecosystems and resilient coastal communities. The Habitat Conservation Division (HCD) in NOAA Fisheries' Alaska Region (AKR) supports the mission and carries out the agency's statutory responsibilities for habitat conservation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Fish and Wildlife Coordination Act, the National Environmental Policy Act, the Federal Power Act, and other laws. Habitat conservation, protection, and restoration are the foundation for sustaining the nation's fisheries. To prioritize our 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, Tribes, nongovernmental organizations, local governments, and a variety of industry and conservation groups.*

The HCD Team...

... embodies scientific curiosity regarding underwater habitats and exemplifies the expertise within this division.

Cathy Coon, M.S......Assistant Regional Administrator
Sean McDermott, M.S......Anchorage Supervisor
Charlene Felkley, M.S......EFH Consultations & Coordination
Doug Limpinsel, M.S......Oil & Gas, Mining, Aquatic Ecosystems
Seanbob Kelly, M.S......ECO Coordinator, Dredging, Oil Spills
Luke Byker, M.S......Marine Habitat Resource Specialist
Julianne Rosset, M.S......Hydropower Coordinator
Jodi Pirtle, Ph.D......Juneau Supervisor, Deputy ARA
Meggie Stogner, B.A......Administrative Assistant
Skylar Bayer, Ph.D......Nearshore Habitat, Scallop Plan Team
Linda Shaw, M.S......Invasive Species Coordinator, Mitigation
Mason Smith, Ph.D......Marine Habitat Resource Specialist
Mallarie Yeager, Ph.D......Marine Habitat Resource Specialist
Molly Zaleski, M.S......Fishing Effects, Aquaculture, Mining
Erika Ammann, M.S......NMFS Restoration Center
Emily Mailmen, B.S......Marine Habitat Resource Specialist
Alyssa Sanchez, M.S......Sea Grant Fellow

A Message from Cathy Coon, ARA HCD

U.S. fisheries are a mainstay of income into the U.S. economy. Alaska alone accounts for over half of the fish caught in U.S. waters. Sustainable economic growth ties closely with healthy fisheries and it is paramount that we effectively manage our ecosystems such that they produce healthy fish stocks. Healthy habitats form the foundation for these vital fisheries which support a broad range of marine life along our coasts. From the sands and sediments on the ocean floor to the kelp forests and seagrasses in the nearshore coastal areas, these habitats provide everything marine species need to survive and thrive.

As we deepen our understanding of the complexities of these coastal and marine ecosystems, it is clear that a healthy economy is linked to a greater comprehension of natural environmental changes and the impacts of human activities on marine species. This growing understanding calls for an increased focus on habitat science, which plays a crucial role in improving stock assessments and promoting an ecosystem-based management approach.

Our habitat science initiatives—ranging from species distribution modeling, assessing climate change, coordinating research and management activities, and conducting Essential Fish Habitat (EFH) consultations—are integral to the health of fish populations. These efforts have significant economic implications, supporting the commercial and recreational fishing industries while positively impacting sectors such as tourism, seafood processing, and the communities that depend on fishing-related activities. Ultimately, the long-term benefits of maintaining healthy habitats translate into sustained economic activity, job security, and culturally important resources.

Our team, with its rich expertise, is dedicated to advancing the agency's mission and achieving our goals. This accomplishments report showcases the breadth of activities and the collaborations that support our objectives. However, these highlights only represent a portion of the broader efforts, commitment, and teamwork that drive our success. We hope you enjoy reading about our work and that it inspires you to learn more about how we are evolving and contributing to a sustainable future.



Essential Fish Habitat 5-year Review

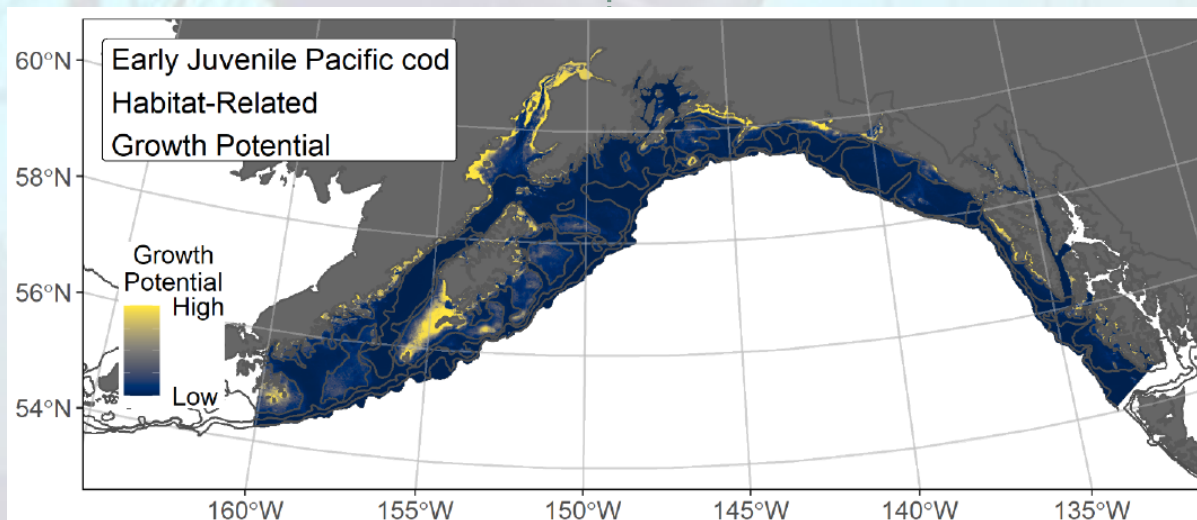
The Habitat Conservation Division has formally completed the 2023 EFH 5-year Review. The EFH 5-year Review is a mechanism to ensure the best available science is incorporated into Fishery Management Plans (FMPs) for EFH. By regulation, the Council and NOAA Fisheries conduct the reviews at least once every 5 years and revise or amend the EFH provisions as warranted based on available information.

The 2023 review builds on the work from the previous review cycles to incorporate new species and environmental data reflecting the current state of the ecosystems, uses a new ensemble species distribution modeling approach to map EFH and evaluate fishery impacts on EFH, updates the assessment of non-fishing impacts on EFH using current literature, and assesses information gaps and research needs. The Council approved the review at its February 2023 meeting, and the amendments were announced in the Federal Register on July 19, 2024 ([89 FR 58632](#)).

The final amendments updated numerous EFH descriptions and maps, including 41 species or complexes in the BSAI Groundfish FMP, 46 species or complexes in the GOA Groundfish FMP, all five species in the Crab FMP, all three species in the Arctic FMP, and all five species in the Salmon FMP. The amendments additionally updated information for fishing effects (FE) to reflect updates to the FE model,

analysis, and evaluations; revised the EFH appendices where conservation recommendations for non-fishing activities are described; revised prey species descriptions for two species of BSAI sharks, BSAI pollock, GOA Pacific cod, and BSAI red king crab; and revised EFH appendices with updated research and information needs. The maps and text provide a baseline of information we use to conduct our EFH consultations. All updated FMPs can be found on the [North Pacific Fishery Management Council](#) website.

The 2023 EFH 5-year Review made several impactful advancements toward identifying and mapping EFH in Alaska. By developing a new ensemble species distribution model (a combination of several performance-selected models), the team was able to produce higher accuracy representation of EFH by area. This work was published in the Journal of Applied Ecology ([Harris et al. 2023](#)) and in three regional NOAA Technical Memoranda (Harris et al. 2022, Laman et al. 2022, Pirtle et al. 2023). The team used the ensemble model to improve numerous species life stage maps from none to Level 1 (presence), or from none or Level 1 to Level 2 (abundance) EFH. The team was also able to apply habitat-vital rates to the ensemble model to produce EFH Level 3 information for the first time for eight species. This review was also the first to include climate-informed EFH conservation recommendations and climate-informed EFH mapping for Arctic species.



Level 3 EFH area of early juvenile Pacific cod as habitat-related growth potential.

NMFS approaches EFH with a 4-Level system to describe and identify EFH. Based on habitat relationships at the time of capture, SDMs typically predict distributions of presence (Level 1) or density or abundance (Level 2) of a species by projecting a model onto overlapping maps of habitat data. For a subset of species, the 2023 5-year Review produced maps of vital rates (Level 3) for the first time by combining the Level 1 or 2 distributions with temperature-dependent growth and lipid accumulation (condition) rates. For example, in the map above, clear patterns of higher growth potential in early juvenile Pacific cod can be seen along the Gulf of Alaska coastline. This advancement to Level 3 information provides additional context when interpreting EFH Level 1 or Level 2 maps developed from the same SDMs.

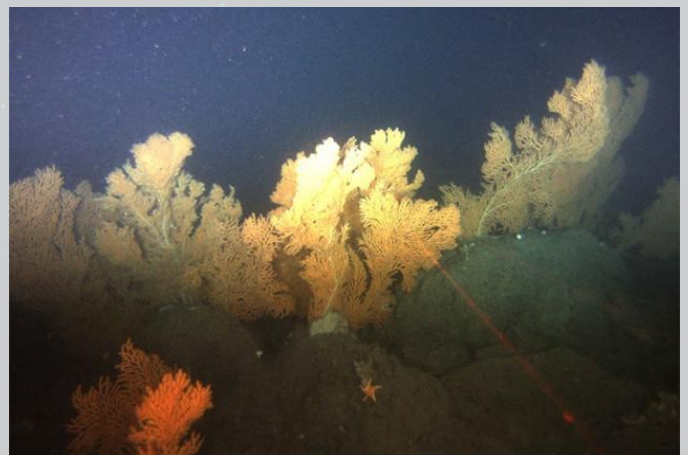
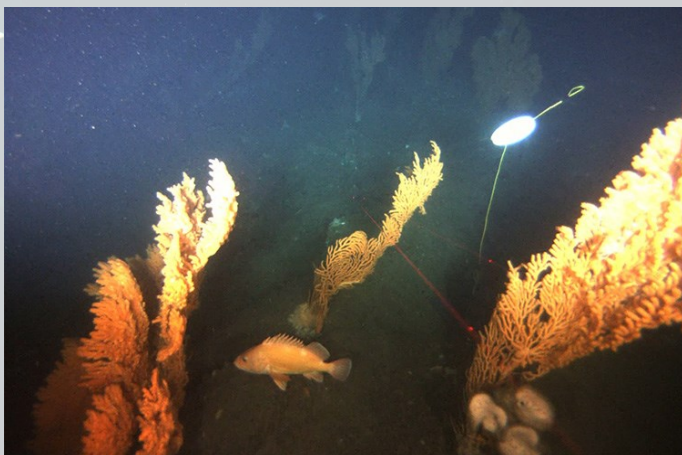
AK Deep Sea Coral and Sponge Research Initiative

NOAA Fisheries Office of Habitat Conservation administers the Deep Sea Coral Research and Technology Program (DSCRTP) that was established in 2007 under the MSA ([Section 408](#)) and is the nation's only federal research program dedicated to increasing scientific understanding of deep-sea coral and sponge ecosystems. The latest Alaska DSCRTP Research Initiative took place between 2023 and 2024 as a collaborative effort, including AKR HCD (staff member Seanbob Kelly), NMFS AFSC, Alaska Department of Fish and Game (ADF&G), Department of Fisheries and Ocean Sciences (DFO) Canada, and the University of Gothenburg.

During two expeditions in Alaska's Aleutian Islands and Gulf of Alaska, the team collected data using advanced sampling technologies, including a stereo camera system, autonomous reef monitoring structures, remotely operated vehicles, and eDNA. In one study, data collected will be analyzed to compare coral and sponge communities within and outside of protected areas, and to learn about recovery in areas that have been disturbed. The results will be combined with commercial fishing data and literature studies to obtain the first estimate of sustainable bycatch rates for corals in the Aleutian Islands.

In August 2024, a Coral collection and Autonomous Reef Monitoring Structures (ARMS) expedition explored Homer to Cordova. Researchers deployed 3 ARMS and were able to collect live *Primnoa* sp. (Red Tree Coral) samples. Researchers were unable to collect larvae but the exploration resulted in the first videos of swimming sperm for this species. In summer 2024, the International Seamounts expedition on the CCGV Franklin was completed! This research, in collaboration with the DFO Canada, included a stereo drop camera and eDNA collections at 54 sites on Cobb and Brown Bear seamounts at depths up to 800 m. Researchers conducted six bottom grabs on Cobb looking for evidence of Scleractinian (Stony Coral) reefs.

The results of this research will be presented to the Council in 2025 and new data will provide updates to models that will be included in the next EFH 5-year Review. Although some data collected during the many research cruises have been analyzed, much of the video, eDNA, and physical sample data have not been completely processed and analyzed. A final report is scheduled for publication in 2025. This information will be added to a new data portal for access to the DSCRTP's [National Database for Deep-sea Corals and Sponges](#). For more information, see the following NOAA Fisheries [web story](#) and [story map](#) to learn more.



Deep Sea Coral images: (Left) A rockfish among deep-sea red tree corals at a study site in the Gulf of Alaska. Credit: Alaska Department of Fish and Game ROV Team. (Right) Red tree corals on the Gulf of Alaska seafloor. Credit: NOAA Fisheries.

Identifying Salmon Habitat

We use the Anadromous Waters Catalog (AWC) to inform the presence of EFH for Pacific salmon and this year staff collected important data that will be incorporated into the AWC. For example, information was collected within the footprint of the proposed Seward-Alyeska Highway Intersection Improvements project this year, which would involve placing fill into surface waters that may support juvenile salmon and forage species. During the survey, anadromous fish passage was found to be blocked by an abandoned runway, which fell out of use after the 1964 earthquake. Removing the artificial fish passage barrier would restore connectivity to 7 acres of pond habitat and 0.3 miles of stream habitat. In support of the AWC, our staff nominated 2 ponds and over 4 miles of riverine habitat previously not included in the AWC. These updates to the AWC will support improved EFH consultations.



Juvenile coho and threespine stickleback were two commonly captured species in the stream survey effort.

Invasive European Green Crab Initiative

Invasive green crab (EGC) populations have expanded in Southeast Alaska; carapaces were found in Botswick Inlet on Gravinia Island this year. HCD has continued to engage with the Metlakatla Indian Community (MIC) regarding this matter since 2022. HCD has also continued to collaborate with a number of partners who provide input on responses to the green crabs occurrence in the state. Additionally, HCD collaboratively developed and is now implementing the 2023-2028 *Early Detection and Rapid Response Plan for Invasive Green Crab with the USFWS, ADF&G, MIC, Kachemak Bay National Estuarine Research Reserve, and the Pacific States Marine Fisheries Commission*. The plan includes information about the biology of EGC, history of invasion, discovery in the State, threat to state resources, involved jurisdictional agencies, partners and organizations, and use of the incident command system. The plan also identifies the distribution and population characteristics of EGC and includes intensive trapping efforts known as functional eradication to mitigate their impact.



Violet scent training on a European green crab. (Photos: L. Shaw, NOAA)

HCD also sponsored a SeaGrant Fellow this year, focusing on invasive EGC outreach that includes development of a story map, engagement with the Ocean Guardian K-12 education outreach programs, and the Sea Grant Ocean Bowl in Ketchikan. Funding was also provided for a first of its kind pilot program to assess the feasibility of using canine detection dogs for EGC. A field trial was held in Willapa Bay, Washington in September, with lessons learned and planning for a second trial in 2025.

Habitat Restoration and Coastal Resilience

In other fish passage and restoration news, HCD and NOAA Restoration Center staff hosted a tour of a fish passage project on Crooked Creek, a tributary to the Kasilof River. NMFS Assistant Regional Administrators from across the country were in attendance. The Crooked Creek culvert was replaced in 2019 using a stream simulation model to pass all life stages of salmon on opening up 33 miles of stream. The Project cost \$4,600,000 which NOAA Restoration Center and partners secured from



the EVOS Trustee Council. The site tour included a walk-through of the culvert and bioengineered bank stabilization above and below the crossing and fish trapping which yielded Dolly Varden. Participants learned about streambank revegetation as an alternative to rip rap and how this could be implemented on future NMFS funded projects. This site visit was part of a larger tour around the Kenai Peninsula to learn about the projects taking place in our region that support Alaska's important and unique fisheries.

In 2024, NOAA Restoration Center was able to fund multiple restoration and capacity building projects in Alaska with Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) funding. Funding coming to Alaska was over \$30 million to improve fish passage, coastal resilience and support Tribes and underserved communities. The projects included:

Alaska Coastal Habitat Restoration and Resilience Grants for Tribes and Underserved Communities Selected for Funding:

Funding to the Central [Council of the Tlingit and Haida Indian Tribes of Alaska](#) (\$3 million), the [Chugach Regional Resources Commission](#) (\$2.9 million), and the [Tyonek Tribal Conservation District](#) (\$1.1 million). This funding will support building capacity to implement coastal restoration work and strategies for climate resilience, strengthening tribal collaborators, and support actionable science on the Chitna River.

Alaska Transformational Habitat Restoration and Coastal Resilience Projects selected for funding:

Funding to the [Southeast Alaska Watershed Coalition](#) (\$750,000 in first year; up to \$1.5 million total over 3 years) to work with the community and local collaborators to design nature based restoration projects on the Mendenhall River (Juneau, Alaska) which experiences recurring high water releases from glacial lake outburst floods.

Alaska Tribal Priority Fish Passage Projects Selected for Funding:

Funding to the [Ahtna Intertribal Resource Commission](#) (\$497,000), the [Chickaloon Native Village](#) (\$6.2 million), the [Tyonek Tribal Conservation District](#) (\$3.8 million), the [Qawalangin Tribe of Unalaska](#) (\$342,000 in first year; up to \$2.7 million total over three years), and the [Organized Village of Kasaan](#) (\$5 million). These projects will support increased tribal capacity through hiring new positions, support continuation of the Alaska Tribal Fish Passage Working Group, and support various stages of surveying, designing, and implementation for 20 fish passage barriers/culverts throughout Alaska.

Alaska Fish Passage Projects Selected for Funding:

Funding to [Trout Unlimited](#) (\$4.2 million) will support 15 fish passage barriers in various phases of survey, design, and construction throughout the Tongass National Forest, in Southeast Alaska.

NOAA Damage Assessment and Restoration Program:

NOAA Restoration Center received a \$1.3 million dollar settlement for the Powhatan Tug oil Spill in Sitka, Alaska. This settlement will fund Sitka Tribe support of shellfish harvesting in the region and a marine debris cleanup in 2025 and 2026. The NOAA Restoration Center also released a draft damage assessment for the affected marine resources for the [Selendang Ayu oil spill](#).

NOAA anticipates one final round of BIL and IRA funding opportunities in FY 2025. Reach out to NOAA Restoration staff (erika.ammann@noaa.gov or emily.mailman@noaa.gov) to learn more about these competitions and programs.



Programmatic Consultations

In support of a more efficient EFH consultation process, HCD has implemented three programmatic consultations that address routine, non-controversial actions in the Region this year. These consultations evaluate a whole program of activities up front and apply EFH conservation recommendations proactively. In turn, this reduces the number of individual consultations saving staff time while minimizing adverse effects on EFH.

National Telecommunication and Information Administration (NTIA) completed a programmatic consultation to allow for a more efficient process for fiber optic cable projects that NTIA routinely funds in Alaska. Alaska has already begun to receive funds from the \$1 Billion in federal monies that support expansion of fiber optic cables into rural and remote communities.

NOAA's Restoration Center updated the EFH programmatic consultation for their projects in Alaska for a 5-year period. Examples of project types include fish passage, marine debris removal, invasive species control, and erosion control. This programmatic consultation includes best management practices to mitigate those potential adverse effects and will be incorporated into their proposed actions.

The Alaska Region and West Coast Region collaborated with the [Office of Habitat Conservation](#) in a programmatic consultation with the Bureau of Land Management (BLM) regarding the use of aerial applied chemical herbicides to treat invasive vegetation on BLM-administered lands supporting salmon bearing watersheds. Our staff provided technical support to inform the programmatic consultation process and the development of conservation recommendations for the protection of aquatic resources and habitat.

Mining

In an effort to reduce the impacts of mining on EFH, HCD provides guidance and recommendations to action agencies involved in mining projects. We attend interagency meetings and collaborate with different groups to review the details of mining projects, including engaging in early coordination to convey concerns about future mine development. We advocate for best scientific practices, such as requesting improved sampling and monitoring, to ensure HCD has the information needed to fully understand the projects. HCD requests emergency EFH assessments when needed, such as in the event of oil or tailings spills. HCD coordinates with our AKR's Protected Resources Division when needed to address potential overlapping effects from mining activities on ESA listed species. We work hard to foster relationships with action agencies and Tribes as we all endeavor to protect our natural resources, while still allowing for human progress and development. Here are some examples of this work:

Completed an EFH consultation for a proposed access road and runway extension to support mineral exploration at the headwaters of the Johnson River. HCD engaged in successful early coordination with the USACE Regulatory Division, conveying concerns about future mine development. HCD met with the Knik Tribe and representatives from USACE to address some of the Tribe's concerns over the proposed Johnson River Mine access road. The topics ranged from fish passage, concerns over lamprey and eulachon, and concerns over impacts from the possible development of a gold mine in the future.

Requested emergency EFH assessments regarding a January 2024 tailings spill at Kensington Mine. The spill released over 105,000 gallons of tailings slurry (a mix of mine tailings and water) along a transport road and Johnson Creek, a salmon spawning and rearing stream. Johnson Creek drains into Berners Bay, an important subsistence and commercial fishery area that is EFH to several groundfish and salmon species as well as habitat to important prey species like herring, eulachon, capelin, and Tanner and Dungeness crabs.

Participated in an EPA-hosted interagency meeting with the Central Council of Tlingit and Haida Indian Tribes of Alaska and Salmon Beyond Borders to discuss transboundary mining concerns. The meeting included representatives from Alaska's congressional delegations, the Council on Environmental Quality, State Department, USGS, USDA, and NOAA, and had presentations from the Center for Science in Public Participation and the University of Washington. Topics discussed were the high rate of mining exploration in transboundary watersheds, the permitting process and access points for engagement with British Columbia, the risks of tailings dam failure to transboundary rivers, and continued pollution from previous mining operations.

Two meetings were hosted by the British Columbia government regarding the Eskay Creek Mine Revitalization Project in British Columbia on the Unuk River Watershed to discuss water quality and fish habitat. In these meetings, Molly Zaleski provided comments on potential impacts to salmon EFH, specifically tailings dam failure, and downstream effects of heavy metal contamination. Molly also participated in regular advisory review for these projects with B.C. Canada, which is currently ongoing.



Aquaculture

HCD staff provided service in a four month detail with the AKR Aquaculture Coordinator and helped develop the second Aquaculture Opportunity Area (AOA) Spatial Planning Workshop in Juneau. Workshop attendees represented Tribes, fishing communities, nonprofits, and industry members predominantly from Southeast Alaska. It was a great opportunity to hear about concerns and perspectives relevant to both AOA spatial planning and habitat and conservation priorities. Skylar Bayer also led an update to common conservation recommendations that HCD staff offer during EFH consultations on proposed farmsites; in addition to meeting NMFS regulatory requirements, we also offer this input as a resource to applicants and action agencies through the [Aquaculture Permitting in Alaska](#) website. HCD reviewed 32 aquaculture permit applications throughout the year.

Military Preparedness and Habitat Protection

HCD participated as a cooperating agency completing an EFH consultation on Joint Base Elmendorf-Richardson (JBER) training plan activities. We worked closely with the Protected Resources Division to ensure our collective resource interests were addressed in the early coordination process. To maintain operational readiness, JBER proposed removing existing seasonal firing restrictions allowing all-season indirect, live-fire mortar and artillery training in the Eagle River estuary. All five species of Pacific salmon and several species of groundfish inhabit the estuary and near-shore marine waters of Eagle Bay and Knik Arm. HCD and JBER agreed to several mitigation measures and conservation recommendations to reduce impacts, including an expanded firing range directing fire away from the estuary, tributaries and EFH, expanded buffer zones around priority water bodies, continued monitoring of juvenile salmon and continued enumeration studies of adult salmon returns using DIDSON sonar to monitor stability of future populations.

HCD also completed an EFH consultation regarding Sixmile Lake and watershed which drains through JBER to Knik Arm. JBER biologists recognized Elodea, an invasive aquatic plant species that can rapidly change lake dynamics and downstream habitat. Unchecked, Elodea will inevitably smother the lake and associated streams and rivers impacting fresh water phase salmon in the region. To fully eradicate Elodea, Fluridone treatments of the entire lake were proposed for three growing seasons. Complete eradication is necessary to direct the lake and watershed back toward its natural state, allow native aquatic plants to re-establish, and reduce the threat of further expansion. Fluridone tested at proposed concentrations do not impact or increase mortality in salmon at any life stage.

Hydropower

Our new Hydropower Program Coordinator started in February! Some important, ongoing work Julianne Rosset is engaged in the licensing of the Nuyakuk Project, the 'relicensing' of the Eklutna project (based on a 1991 Agreement), and the potential installation of the East Forelands turbines into Cook Inlet (among others).

***Nuyakuk:** The proposed Nuyakuk hydropower project is planned to support the fish processing and packaging industry in a remote village by reducing their reliance on diesel-powered generation. With remote communities paying as much as \$8 per gallon for diesel, the Nuyakuk project has the potential to offset more than \$1 million dollars annually, supporting the viability of the local economy, reducing the cost of energy for multiple villages, and reducing greenhouse gas emissions. Our participation in the licensing of this project will help remote communities while also ensuring the sockeye, Chinook, coho, pinks, chum, and whitefish that navigate this section of the river are protected, as is the habitat upon which they rely.

***Eklutna:** The 1991 Agreement for the Eklutna Hydropower Project called for the development of a fish and wildlife program to mitigate project impacts on aquatic resources. After two years of studies, a six month alternatives analysis process carried out by a working group, as well as government to government consultation, we provide recommended mitigation measures to project owners. The owners then developed a draft fish and wildlife program. We successfully negotiated mitigation measures, along with the US Fish and Wildlife Service (USFWS), ADF&G, and Native Village of Eklutna. Key to our interests are increased seasonal flows to support salmon, a new water control gate at the dam, climate change considerations for future flows, monitoring, and the potential for fish passage. A modified draft program was reviewed by the public and the Governor and a final program, with three modifications, was issued in early October. Those modifications are: the Governor's office will have a seat at the table with the working group; our recommendation for retaining the value of the new gate for other mitigation if the gate is not feasible; and the Governor adopted the request to further evaluate pump-storage as an alternative. The work is not over and, in fact, has already picked up again as implementing the final plan will be a long-term commitment.

***American Tidal Energy:** The Department of Energy's Water Power Technologies Office awarded the owners of this pending project with funding to advance its development and the Federal licensing/associated permitting for a tidal energy project located in Cook Inlet off East Foreland. HCD will work cross programmatically with our Region's Protect Resources Division to ensure EFH, belugas, sea stars, and other aquatic resources are not impacted by the implementation of this project.

Public Outreach

HCD makes it a priority to provide outreach to the general public to educate them about, and include them in, conservation efforts. Our participation in a variety of public and professional forums allows us to network with agencies near and far to share our knowledge of habitat conservation in Alaska. Here are some examples:

- ◆ Linda Shaw attended the International Conference on Aquatic Invasive Species in Halifax, Nova Scotia where she presented a poster on invasive European green crab, learned much about a wide array of topics, and networked with old colleagues and new, including getting a kiss from a sea lamprey (what happens in Halifax stays in Halifax!).
- ◆ Mallarie Yeager gave the departmental seminar at the University of Alaska Fairbanks, College of Fisheries and Ocean Sciences about how her previous research interests/ experience prepared her for her position at HCD, tying in the role of connectivity to Essential Fish Habitat. This seminar led to fun and productive discussions and future collaborations with faculty and students at CFOS as well as folks from Auke Bay Lab, AFSC.
- ◆ Mallarie Yeager and Mason Smith attended the 2024 Lowell Wakefield Symposium on shifting distributions and phenologies in Sitka. Mallarie presented her work on the stability of multitrophic communities and Mason presented on a spatio-temporal species distribution model with Bristol Bay red king crab. It was a big success connecting with colleagues working on habitat and species distribution projects throughout the region.
- ◆ Skylar Bayer traveled to the Isle of Man for the only international meeting on scallops. Seventy attendees from around the world gathered in Douglas, Isle of Man's capital. Sessions covered fishery dynamics of scallop stocks from Argentina, US, New Zealand, Mexico and Europe. An industry day featured fishermen and managers from the Isle of Man and UK presenting their co-management strategies and plans going forward, especially since Brexit. Skylar presented on the small weathervane scallop fishery here in Alaska, encouraging collaboration and future research projects with international scallop experts. Skylar aims to use connections and research ideas from the meeting to further habitat and life history research on weathervane scallops here in Alaska.
- ◆ HCD's outreach included visits to local schools. Lucas Byker and Jenna Malek (PRD) participated in Clark Middle School's STEM night. This event was created to help share STEM career information with students and their families. NMFS joined more than half a dozen other organizations in the library where students ages 11 to 14 and their families could explore interactive activities such as making clouds in a bottle, or guess the species based on furs or skeletal parts at the NMFS table. Additionally, Seanbob Kelly assisted PRD staff with outreach at Dimond High School in Anchorage where they held an assembly to announce their status as a NOAA Ocean Guardian school.

2024: By the Numbers

Completed
EFH
Consultations
42

Staff
publications
7

% EFH
Consultations
Modified with
HCD
Recommendation
71%

Funding
Awarded to
Support Habitat
Restoration in AK
\$30,903,862

Early
Coordination
Consultations
Conducted
47

Outreach
Actions
33

Funded **3**
Alaska EFH
Research
Projects
\$309,265

Publications

- Bayer, S.R., Cubillo, A.M., Rose, J.M. et al. 2024. Refining the Farm Aquaculture Resource Management Model for Shellfish Nitrogen Removal at the Local Scale. *Estuaries and Coasts* 47, 1184–1198. <https://doi.org/10.1007/s12237-024-01354-7>
- Barr, J.M., Munroe, D., Rose, J.M. et al. 2024. Seasonal Feeding Behavior of Aquaculture Eastern Oysters (*Crassostrea virginica*) in the Mid-Atlantic. *Estuaries and Coasts* 47, 789–804. <https://doi.org/10.1007/s12237-023-01293-9>
- Domke, L.K., Bayer, S.R. and Pirtle, J.L. 2024. Nearshore Standardized Sampling Protocol: Protocols for sampling nearshore fish communities and habitat. NOAA Technical Memorandum NMFSF/AKR34. [doi:10.25923/yekp-2982](https://doi.org/10.25923/yekp-2982)
- Harris, J., Pirtle, J. L., Laman, E. A., Siple, M. C., and Thorson, J. T. 2024. An ensemble approach to species distribution modeling reconciles systematic differences in estimates of habitat utilization and range area. *Journal of Applied Ecology*, 61, 351–364. <https://doi.org/10.1111/1365-2664.14559>
- Pirtle, J. L., Thorson, J.T., Bayer, S.R., Hurst, T.P., Matta, M.E., and Siple, M.C. 2024. Alaska Essential Fish Habitat Research Plan: A Research Plan for the National Marine Fisheries Service's Alaska Fisheries Science Center and Alaska Regional Office. NOAA Technical Memorandum NMFS-F/AKR-33, 17 p. <https://doi.org/10.25923/sf79-ym32>
- Ward, N. K., Lynch, A. J., Beever, E. A., Booker, J., Bouska, K. L., Embke, H., Houser, J. N., Kocik, J. F., Kocik, J., Lawrence, D. J., Lemon, M. G., Limpinsel, D., Magee, M. R., Maitland, B. M., McKenna, O., Meier, A., Morton, J. M., Muehlbauer, J. D., Newman, R., Oliver, D. C., Rantala, H., Sass, G., Scholtz, A., Thompson, L. M., and Wilkening, J. L. 2023. Reimagining large river management using the Resist–Accept–Direct (RAD) framework in the upper Mississippi River. *Ecological Processes*, 12, Article 48. <https://doi.org/10.1186/s13717-023-00460-x>
- Zaleski, M., T. S. Smeltz, S. Gardiner, J. L. Pirtle, and G. A. Harrington. 2024. 2022 Evaluation of Fishing Effects on Essential Fish Habitat. NOAA Technical Memorandum NMFS-F/AKR-29, 212 p. <https://repository.library.noaa.gov/view/noaa/66042>

Posters & Presentations

- Bayer, S. Knowledge gaps and research opportunities in the Alaskan weathervane scallop (*Patinopecten caurinus*) fishery. *Poster Presentation. 2024 AMSS & 2024 International Pectinid Workshop (IPW) meeting, Isle of Man.*
- Limpinsel, D. Managing fisheries and natural resources under ecosystem transformation: The Resist, Accept or Direct Framework. 2024 AMSS poster presentation.
- Shaw, L., Eckert, G., Davis, T., Stumpf, T., Fletcher, C., Lanphier, K., Rice, S., Winter, G., Grason, E., and Winter, D. Southeast Alaska Invasive European Green Crab Workshop
- Thatcher, J. and McDermott, S. NOAA Fisheries Guidance for Incorporating Climate Change into EFH Consultations. 2024 AMSS poster presentation.
- Yeagar, M. (2023, September 24–26). Assessing the role of larval connectivity across the California Marine Protected Area Network. The 69th Eastern Pacific Ocean Conference (EPOC). South Lake Tahoe, CA.
- Yeagar, M. (2024, April 16–18). Functional trait analysis reveals the hidden stability of multitrophic communities. Lowell Wakefield Fisheries Symposium. Sitka, AK.
- Smith, M. (2024, April 16–18). Dynamic habitat use of Bristol Bay red king crab by sex and maturity stage. Lowell Wakefield Fisheries Symposium. Sitka, AK.
- Domke, L. (2023, November 8–12). [Seascape complexity influences Alaskan eelgrass fish communities](#). The 104th Western Society of Naturalists. Monterey Bay, CA.
- Domke, L. (2023, November 1). Nearshore fish assemblages throughout the Southeast of Alaska. Seminar at UMass Dartmouth. North Dartmouth, MA.
- Domke, L. (2023, November, 21). The Role of Apex Predators, Habitat, and Seascape Complexity on Nearshore Fish Assemblages in Southeast Alaska. [NOAA Central Library Seminar](#).
- Bayer, S. (2024, April 18–25). An analysis of reproduction and recruitment spatio-temporal dynamics of Iceland scallops in Breiðafjörður Bay after a fishery collapse. IPW meeting, Isle of Man.
- Byker, L. (2024, January). Emerging policy on the mitigation of 6PPD, the pollutant's effect on salmonids, and techniques being developed to help mitigate the effects of the chemical. Alaska Association of Environmental Professionals Seminar. Anchorage, AK.



Looking Ahead to 2025: Strengthening Partnerships and Advancing Our Work

As we move into 2025, we are building on key themes of collaboration and innovation. One of our central goals for the upcoming year is to strengthen both internal and external partnerships. Within NOAA, we are prioritizing organizational agility, fostering cross-division collaboration to better support regional efforts. Already, we are working closely with divisions such as the Protected Resources Division, Sustainable Fisheries, and the Operations and Management Division on projects like tidal energy development in Cook Inlet, bycatch reduction strategies for chum salmon, and evaluating new fishing gear technologies. We are also working on NOAA's Climate Ecosystems and Fisheries Initiative with AFSC and Partners to develop climate-informed science tools for sustainable fisheries management and improved implementation of EBFM. Following a series of workshops and conferences focused on relationship-building, respectful research, and integrating Indigenous knowledge into federal decision-making, HCD is committed to deepening our connections with local and Alaska Native communities on projects of local interest that will inform and enhance our work.

To improve our internal relationships, leadership has established cross-divisional monthly all-staff meetings in Anchorage, aimed at fostering greater understanding among teams and enhancing collaboration across divisions. These meetings will help us strengthen connections, share knowledge, and provide mutual support in areas of overlap. Additionally, we are broadening our outreach efforts through interagency training and evaluating a new interactive database to support consultations. We are committed to improving relationships with our Federal partners, particularly in enhancing regulatory efficiencies. As part of this, we will offer a series *EFH 101*, as an introduction, by way of focused sessions for our action agencies to better equip their staff with the knowledge of regulatory processes related to habitat work. This training will include key topics such as EFH components, consultation processes, non-fishing effects, and conservation recommendations. A key resource in this effort is the newly developed EFH Handbook, which provides essential guidance for EFH consultation biologists and will help ensure more consistent, high-quality consultations across regions. The Handbook will continue to be updated and may eventually serve as the foundation for national level EFH training.

We are also excited to expand our collaborations in habitat science. In 2025, HCD, Kachemak Bay National Estuarine Research Reserve, and the NOAA Kasitsna Bay Laboratory will launch a Nearshore Sentinel Sites Program in Kachemak Bay to update Alaska's Nearshore Fish Atlas. This initiative will help improve our EFH definitions and consultation processes by enhancing our understanding of nearshore fish habitats. We look forward to expanding this work to other areas of Alaska in collaboration with new partners.

Looking forward, we are preparing for the next EFH 5-year Review, set to launch at the June 2025 Council meeting. This review will address important recommendations and innovative approaches from the Council and SSC, including expanding life-stage and maturity models for crab species, enhancing salmon ocean life-stage models, and developing dynamic models for species affected by shifting distribution patterns. Additionally, we will focus on expanding survey data for deepwater species and incorporating prey base considerations into our modeling efforts.

These efforts, along with our ongoing collaborations, will help us incorporate innovative approaches, regional priorities, and our broad expertise into a more open and transparent organizational culture. We are eager to build on these collaborations in 2025, enhancing our ability to manage and protect vital fish habitats while supporting a more agile and unified approach to the challenges ahead.