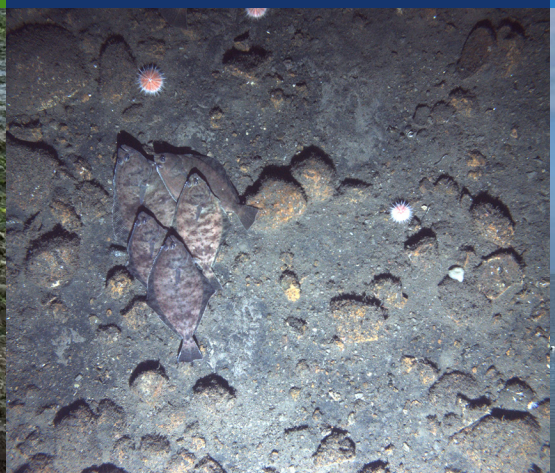
National Marine Fisheries Service
Northwest Fisheries Science Center

Agenda Item C.2.a
Supplemental NMFS Report 1
November 2023

Annual Guidance Memorandum

Fiscal Year 2024

NOAA FISHERIES



OUR VISION

The Northwest Fisheries Science Center conducts leading-edge research and analyses that provide the foundation for management decisions to protect, recover, restore, and sustain ecosystems and living marine resources in the Pacific Northwest.

OUR MISSION

To conduct the science necessary to conserve marine and anadromous species and their habitats off the Washington, Oregon, and northern California coasts and in freshwater rivers of Washington, Oregon, and Idaho.

OUR VALUES

Stewardship

We make a positive difference in the world by being responsible stewards of the natural environment and the public's resources entrusted to us.

Service

We are dedicated to serving the public by providing accurate, innovative, high-quality, timely, and responsive science.

Integrity

We work and act in the most conscientious, ethical, honest, professional, and transparent manner possible.

Collaboration

We bring a cooperative spirit to our science, research, and work. We engage with our fellow employees, partners, and stakeholders with a sense of teamwork, sharing, and open flow of information.

Community

We value and treat each other with respect for our whole, authentic selves. We commit to a fair, equitable, and inclusive community that recognizes the contributions of all and is supportive of diverse perspectives and people.

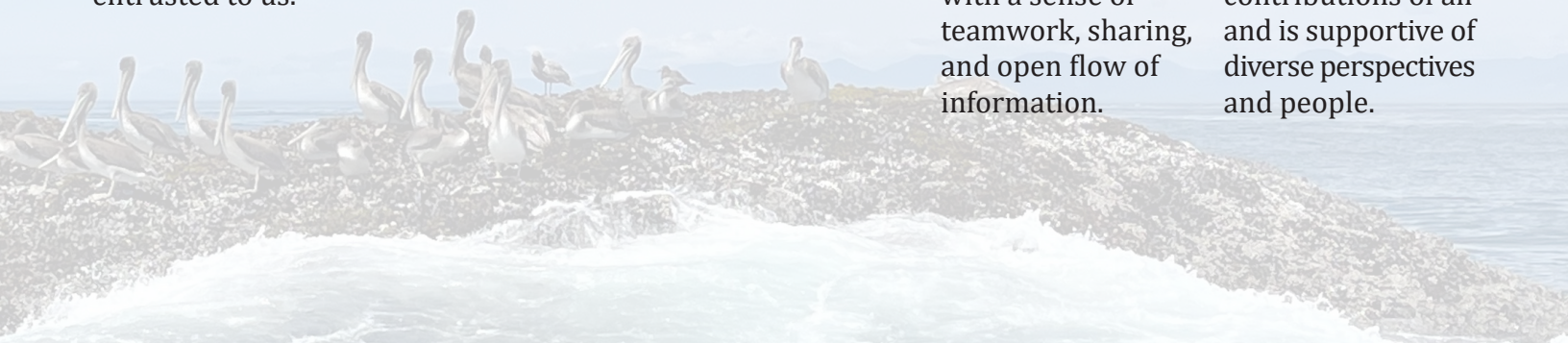


Photo Credits

Cover (center): Live eulachon from the mainstem Columbia River, Washington, before being returned to the river. Credit: S. Hinton, NMFS/NWFSC. Cover (bottom, left to right): 1) A tagged harbor seal being released back to Puget Sound, Washington. Credit: M. Moore, NMFS/NWFSC. 2) AUV image of petrale sole clustered together at a potential spawning site off California. Credit: NMFS/NWFSC. 3) NWFSC scientists K. Frick and A. Kagley seining for fish in Hood Canal, Washington. Credit: NOAA Fisheries.

Inside front cover: NWFSC scientist G. Axel sampling environmental DNA in Chamberlain Creek, Idaho. Credit: M. Nesbitt, NMFS/NWFSC.

Page 3: Pelicans on an outcropping in the Olympic Coast National Marine Sanctuary, Washington. Credit: E. Bishop, NMFS/NWFSC.

Page 4: The F/V *Miss Julie* sailing out of Yaquina Bay, Oregon. Credit: NOAA Fisheries.

Page 5: Aquaculture oysters and kelp from the NWFSC's Manchester campus, Washington. Credit: NOAA Fisheries.

Page 6: Sablefish net pens at the NWFSC's Manchester campus, Washington. Credit: J. Hackett, NMFS/NWFSC.

Page 7: Spawning sockeye salmon in Adams Creek, British Columbia, Canada. Credit: L. Crozier, NMFS/NWFSC.

Page 8: Great blue heron with Chinook salmon, Budd Inlet, Puget Sound, Washington. Credit: V. Elliott, NOAA Fisheries.

Page 9: Bird's-eye view of the NWFSC's Montlake campus, Seattle, Washington. Credit: NOAA Fisheries.

Page 10: Scientists on Leg 1 of the 2023 Joint U.S.–Canada Integrated Ecosystem and Pacific Hake Acoustic Trawl Survey. Credit: NOAA Fisheries.

Back cover: Sea lions hauled out on rocks near Tatoosh Island, Olympic Coast National Marine Sanctuary, Washington. Credit: NOAA Fisheries.

Cross-Cutting Themes

Four cross-cutting themes appear across our strategic goals and actions. These themes are indicated in this document with acronyms:

CC – Climate Change

Priorities addressing the impact of climate change on our fisheries and protected resources.

TT – Tribal Trust

Priorities supporting our commitment to uphold our tribal trust responsibilities.

EEJ – Equity & Environmental Justice

Priorities that advance equity and accessibility of services and benefits to underserved communities.

AT – Advanced Technologies

Advanced technologies, modern data systems, and infrastructure that expands and modernizes stock assessments to account for climate change.

Introduction

This year holds significant importance for NOAA and the Northwest Fisheries Science Center (Center). In June 2023, NOAA revealed its plans for the unprecedented investment of funding under the Inflation Reduction Act (IRA), which Congress signed into law in 2022. The historic infusion of these funds allows the Center to prioritize and invest in several critical areas, including: facilities; data acquisition, technology, and management; conservation efforts around Pacific salmon; and NMFS's Climate, Ecosystems, and Fisheries Initiative. These investments will have transformative impacts for years to come.

This year's Annual Guidance Memorandum (AGM) will focus primarily on our priorities in light of the IRA opportunity, recognizing that the Center will continue to do its core work of conducting research and analyses to inform management decisions to protect, recover, restore, and sustain ecosystems and living marine resources in the Pacific Northwest. As we produce science that helps us *mitigate* risk and plan for the future, we must also *take* risks to help us better understand and adapt to changes in our environment. We rely on our tenacious, creative, and resilient Center staff to face these opportunities and challenges head-on and together. We will also continue to advance and foster our diversity, equity, inclusion, and accessibility (DEIA) efforts to ensure our workforce thrives in a supportive and open culture at the Center.

Our AGM is aligned with our shared commitment to the Center's Vivid Description of the Future, and highlights our priorities following the long-standing strategic goals of NOAA Fisheries, which include:

1. Sustainable Fisheries
2. Protected Resources
3. Organizational Excellence

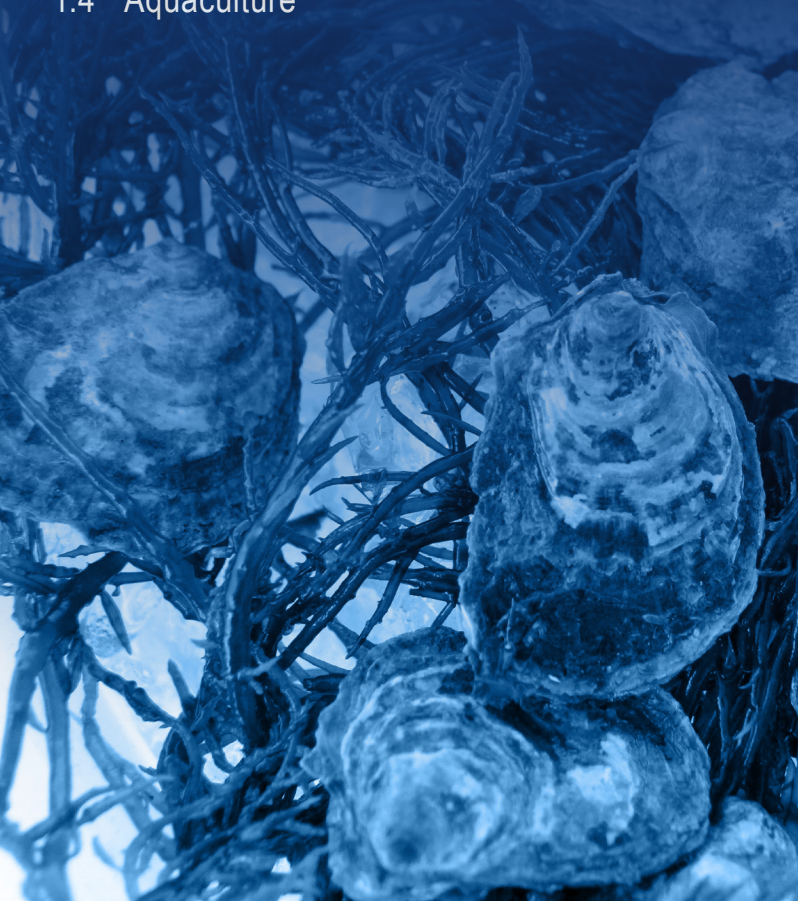
The focused priorities described in these pages are only part of the countless actions and critical work we do every day at the Center, and in partnership across the Pacific Northwest to support the stewardship of our marine environment.

Kevin Werner
Science and Research Director
Northwest Fisheries Science Center

GOAL 1

Adaptively manage fisheries for sustainability and economic competitiveness.

The Center provides the best available science in support of NOAA's sustainable fisheries management goal. We continue to conduct surveys, stock assessments, and economic analyses annually. This year, we will also invest in activities to keep up with technology and environmental changes.



Activity 1: Advance Fisheries Data Acquisition

The Center will invest in technology, data systems, and infrastructure to improve stock assessments, account for climate change, and move toward ecosystem-based fisheries management. We will use the IRA Data Acquisition funding to support these activities.

- Develop the Integrated West Coast Pelagics Survey by finalizing survey design, developing and testing new sampling methods, building automated cloud-supported data classification, management, and reporting, and beginning to outfit with the necessary equipment. — **[AT]**
- Evaluate and integrate capabilities from NMFS Strategic Initiatives to enhance data collection and improve survey efficiency and resilience to support climate-informed stock assessments and ecosystem-based fisheries management. — **[AT]**

Activity 1 *supports NMFS annual priority #7 (Modify survey and assessment methodologies or effort to account for changing species distribution) and #10 (Establish a National Survey Program and expand our use of advanced sampling technologies—e.g., 'Omics, UxS, acoustics, remote sensing, optical systems, and social science).*

Activity 2: Climate, Ecosystems, and Fisheries Initiative (CEFI)

The Center will integrate climate change considerations into its science by forging new collaborations across all four science divisions. Ecosystem models and integrated surveys will be key components of these efforts, looking at the non-stationarity of ocean conditions along the West Coast.

- In collaboration with the Southwest Fisheries Science Center, stand up a West Coast joint CEFI Team. — **[CC]**
- Develop more climate-informed decision support tools by incorporating life history and ecosystem data into stock assessment and management strategy evaluations. — **[CC]**

- Quantify connections between climate and the spatial, population, and community dynamics of marine species, fisheries, and people. — **[CC]**

Activity 2 *supports NMFS annual priorities #1 (Engage with the U.S. Regional Fishery Management Councils to prevent overfishing, rebuild fish stocks, and ensure equitable allocation decisions) and #2 (Integrate climate adaptation and resilience into fisheries management, including efforts to implement EBFM).*

Activity 3: Science Planning To Support Changing Ocean Use

The Center will evaluate the impacts of offshore wind energy (OSWE) projects and develop plans to mitigate them.

- Finalize the Joint NWFSC and SWFSC OSWE science plan.
- Support West Coast Regional Office regulatory requirements by developing science-based information and model output useful for decision-making.
- Develop analytical frameworks that account for climate change for planning and mitigating the impacts of OSWE across the social–ecological system. — **[CC, EEJ]**

Activity 3 *supports NMFS annual priority #11 (Mitigate anticipated impacts of offshore wind energy development on NOAA Fisheries' scientific surveys and stock assessments).*

Activity 4: Aquaculture

The Center will develop science-based solutions to optimize aquaculture technology and support its commercial use. We are working in partnership with tribes and industry to develop new technology, mitigate risk, enhance resilience to climate change, and reduce uncertainty for management. The Center's Strategic Plan for Aquaculture Science guides our annual priorities.

- Develop and transfer technology for sustainable marine aquaculture practices. — **[EEJ]**
- Develop biosecurity guidelines for aquaculture and methods for disease prevention.
- Understand impacts of multiple environmental stressors due to climate change on commercially and ecologically important species. — **[CC]**
- Develop strategies to build resilience to ocean acidification, particularly for the shellfish industry. — **[CC]**
- Connect information on the ecological role of shellfish aquaculture to management and permitting tools.

Activity 4 *supports NMFS annual priority #3 (Commence implementation of the National Seafood Strategy to support a thriving domestic U.S. seafood economy and enhance the resilience of the seafood sector).*

GOAL 2

Safeguard protected species and propel their recovery.

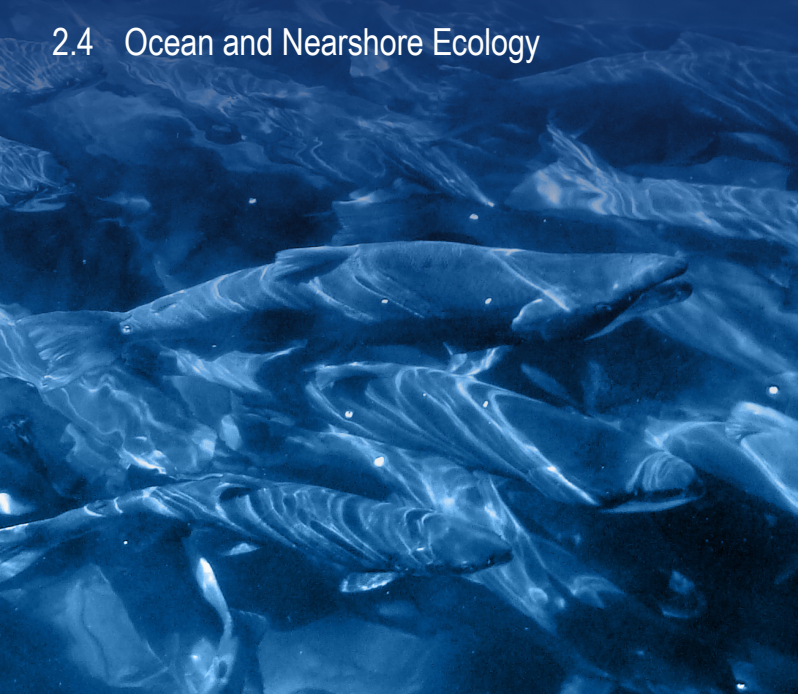
The Center supports NOAA's mission to recover ESA- and MMPA-protected species by providing science for salmon management, Southern Resident killer whale recovery, and ESA permitting, among other activities. This year, we will focus on the most pressing science needs that lay the groundwork for a new era in salmon management. We will use the Center's IRA funding and near-term priorities identified in the 2023 Salmon Recovery Science Strategy to develop accessible science products that target the most pressing salmon needs. This year's goals focus on Pacific salmon recovery.

2.1 Integrated Model Development and Application

2.2 Restoration, Recovery, and Reintroduction Techniques

2.3 Toxics in Freshwater and Estuarine Environments

2.4 Ocean and Nearshore Ecology



Activity 1: Integrated Model Development and Application

We will create and refine salmon life-cycle modeling tools to guide West Coast salmon management decisions. With these simulation tools, resource managers can assess the impact of various management scenarios on salmon populations. We plan to establish a framework using these tools to model salmon populations throughout the West Coast.

- Develop a generalized salmonid life-cycle modeling tool that evaluates benefits and tradeoffs to directly inform the West Coast Regional Office's natural resource management decisions, including support of Section 7 ESA consultations, listing decisions, restoration actions, and evaluation of status and trends. — **[CC, TT]**
- Develop modeling tools that are transferable to multiple salmonid species across West Coast Salmon Country. — **[CC, TT]**
- Produce robust recovery strategy evaluations that identify suites of actions that would likely achieve desired recovery levels most efficiently, accounting for trends in climate, habitat, and social factors. — **[CC, TT]**

Activity 1 *supports NMFS annual priority #18 (Incorporate observed and predicted effects of climate change into protected species science and management) and #20 (Assess protected species vulnerability to climate change and incorporate results into conservation and recovery efforts).*

Activity 2: Restoration, Recovery, and Reintroduction Techniques

We will refine and expand a set of indicators to measure the progress of salmon recovery efforts, considering factors like habitat quality, salmon population, and the impacts of climate change. We will conduct studies to determine if existing wild and hatchery stocks have the genetic capacity to respond to recovery efforts and adapt to changing environments to inform reintroduction strategies.

- Develop science-based indicators to improve habitat conservation and management decisions to identify the most meaningful restoration needed to recover salmon. — **[CC, TT]**

- Produce a web-based dashboard that will be accessible to our partner organizations to archive all indicators used. — **[CC, TT]**
- Engage our co-managers to guide and support the implementation of the indicators to ensure that restoration actions support salmonid recovery. — **[CC, TT]**
- Reduce genetic barriers to recovery by promoting adaptive traits in hatchery and natural populations. — **[CC, TT]**
- Enhance the success of reintroductions through hatchery strategies to support high productivity of stocks used for recovery. — **[CC, TT]**

Activity 2 *supports NMFS annual priority #18 (Incorporate observed and predicted effects of climate change into protected species science and management), #20 (Assess protected species vulnerability to climate change and incorporate results into conservation and recovery efforts), and #22 (Implement advanced sampling technologies to improve data collection for protected species—e.g., 'Omics, UxS, acoustics, ASTER3).*

Activity 3: Toxics in Freshwater and Estuarine Environments

We will study the effects of urban water quality on salmon populations and develop strategies for better utilizing toxicity data in salmon management decisions, such as ESA consultations. The work will focus on the threats posed by stormwater runoff and how climate change intensifies these threats.

- Improve the use of chemical water-quality data in regional salmon management decisions.
- Establish thresholds for stormwater toxicity across salmonid life stages and species.

Activity 3 *supports NMFS annual priority #20 (Assess protected species vulnerability to climate change and incorporate results into conservation and recovery efforts).*

Activity 4: Ocean and Nearshore Ecology

We will develop new and refine existing models to predict the effects of changing ocean conditions on salmon populations along the West Coast; investigate the threats posed by marine predation to salmon populations; use the project findings to strengthen life-cycle models, develop strategies to mitigate predation on salmon populations, and improve survival; and study indicators of marine food web health to improve fisheries management and ecosystem assessment. Utilizing cutting-edge technologies, we will measure the abundance and diversity of phytoplankton and investigate how climate change affects the nutritional value of lower trophic levels.

- Develop indicators of ocean productivity from the California Current to the Bering Sea that improve predictions of salmon survival, growth, size, and age at return. — **[CC]**
- Quantify pinniped predation rates on out-migrating steelhead in the Salish Sea to inform management actions. — **[AT]**
- Study how predator behavior, timing, location, and size selectivity impact salmon abundance. — **[AT]**
- Develop new indicators of primary production and lower trophic-level energetics for improved fisheries management and ecosystem assessment. — **[CC, AT]**

Activity 4 *supports NMFS annual priority #18 (Incorporate observed and predicted effects of climate change into protected species science and management) and #21 (Inform species protection efforts with NOAA Climate, Ecosystems, and Fisheries Initiative [CEFI] products and work with our regulatory offices to co-develop them).*

GOAL 3

Diversify our workforce, promote equity, and improve our mission performance through organizational excellence.

The Center focuses on organizational excellence, facilities, partnerships, and communications to improve efficiency and support its science mission. The priorities discussed in this year's AGM focus on areas that require urgent attention and will result in the highest-efficiency improvements.

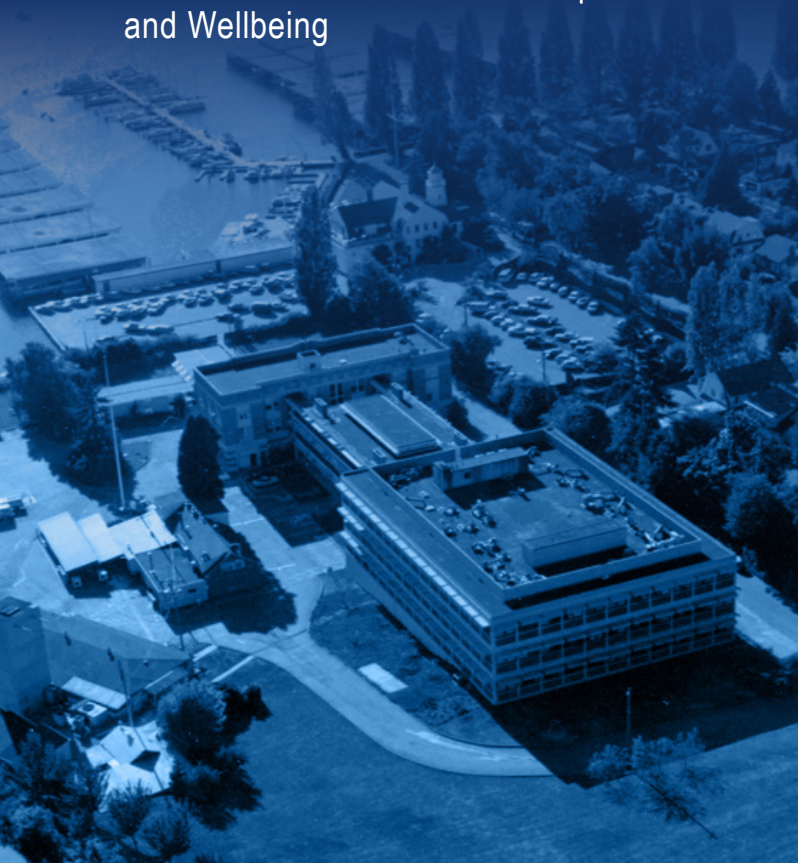
3.1 Facilities

3.2 Workforce Planning

3.3 Business Processes

3.4 Implement West Coast EEJ Strategy To Eliminate Systemic Barriers

3.5 Invest in Our Workforce Development and Wellbeing



Activity 1: Facilities

The Center will continue to move forward on multiple facilities priorities in FY24.

- **New Seattle Headquarters:** We will get closer to moving the Montlake campus to a new leased facility thanks to a significant investment from the IRA. We will dedicate time and effort to planning for our operations within a leased space, covering areas such as IT infrastructure in a hybrid workplace, space utilization, and cost models.
- **Manchester:** We will complete constructing the new seawater treatment, distribution, and depuration system. Also, we will design campus expansions to facilitate ecotoxicology and ocean acidification research while accommodating programs relocating from Montlake.
- **Western Regional Center:** We will complete the design phase for a small vessel support and storage building by the end of FY24.

***Activity 1** supports NMFS annual priority #34 (Implement a workplace design/layout and policy to support a hybrid workforce) and #37 (Use activity-based planning to determine workplace needs and space requirements for major leases).*

Activity 2: Workforce Planning

The Center will prioritize a multi-year workforce plan that includes diversity and succession considerations to achieve the IRA's transformative science and institutional health goals.

- Develop a workforce plan that outlines a path to optimize opportunities resulting from generational turnover and meet present and future science and societal needs.
- Hire early-career scientists to support the priorities described in Goals 1 and 2. — **[EEJ]**
- Staff the Genetics and Evolution Program as a Fisheries' Center of Excellence, including critical support for bioinformatics. — **[AT]**
- Hire new staff and reassign existing staff to support the Decision Support Team required under CEFI. — **[CC]**
- Bolster division leadership and administrative services by providing division directors with support and standardizing administrative services across divisions.

- Merge the Conservation Biology Division's Human Dimensions team with the Fishery Resource Analysis and Monitoring Division's Economic and Social Science Research Program to meet current and future social science research needs.

Activity 2 *supports NMFS annual priority #30 (Increase recruitment efforts to underrepresented groups for entry, mid-level, and senior leadership positions).*

Activity 3: Business Processes

The Center will support and empower the execution of research and science advice.

- Implement the Business Applications Solution (BAS) program, a fundamentally new infrastructure for financial systems.
- Develop division budgets cohesively and transparently.
- Train staff working on property, grants, and budget on BAS and the Financial Data Management System.
- Improve accuracy and standardization of cost estimates, especially for surveys.

Activity 4: Implement West Coast EEJ Strategy To Eliminate Systemic Barriers

The Center will work with other NOAA Fisheries West Coast offices to advance the goals of NOAA's Equity and Environmental Justice Strategy (EEJ). We will gather information and resources to identify, connect with, and engage underserved communities across the West Coast.

- Implement the West Coast EEJ Community Engagement Plan. — **[TT, EEJ]**
- Finalize the West Coast EEJ Implementation Plan in collaboration with other NMFS West Coast offices. — **[TT, EEJ]**

Activity 4 *supports NMFS annual priority #44 (Implement NOAA Fisheries' Equity and Environmental Justice Strategy to eliminate systemic barriers and help serve all communities more equitably and effectively) and #45 (Engage with communities to develop Equity and Environmental Justice Regional Implementation Plans).*

Activity 5: Invest in Our Workforce Development and Wellbeing

The Center will continue to be intentional in fostering a community that thrives and produces results.

- Support our Team for Inclusion, Diversity, and Equity (TIDE) and the Workplace Engagement and Collaboration Team (WECT) to champion DEIA efforts at the Center. — **[EEJ]**
- Invest in staff professional development with both Center-wide training opportunities and individual development plans.
- Enhance hiring officials' understanding of hiring authorities and processes.
- Enhance transparency on promotion processes.

Activity 5 *supports NMFS annual priority #32 (Strengthen agency commitment to DEIA through education, accountability, data collection, and analysis), #33 (Provide continuous training and competency development for employees to enhance key leadership skill sets), and #35 (Provide a culture of leadership, trust, and prioritization at every level of the organization).*

U.S. Secretary of Commerce
Gina M. Raimondo

Under Secretary of Commerce for
Oceans and Atmosphere
Dr. Richard W. Spinrad

Assistant Administrator for Fisheries
Janet Coit

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