COLLEGE OF THE ENVIRONMENT
UNIVERSITY of WASHINGTON

Fisheries

Fishing provides significant nutritional and employment opportunities to many communities associated with the world's water bodies. Sustaining the benefits afforded by fishing requires a full understanding of how populations of different species change, the way ecosystems function, and the economies of associated communities. The College of the Environment leads regionally, nationally, and globally in fisheries research and management.

Giving students access to hands-on experiences in the field helps create the next generation of fisheries leaders. (*Photo: Morgan Bond*)

Typical marketplace offering wild-harvested seafood. (*Photo: Jay Galvin*)

Banner photo: Hemera Technologies/photos.com

Understanding Fisheries

Marine and aquatic species—such as fish, mollusks, and crustaceans—account for nearly 20% of the animal protein consumed by humans each year. Roughly two-thirds is wild-caught, while the remainder is derived from aquaculture. Pressures on fishery production come in many forms such as habitat loss, overfishing, climate change, land-use change and nutrient inputs. Understanding how these pressures affect the ability of ecosystems to function requires sound science, and thoughtful management strategies are needed to ensure the continued flow of sustainable fishery products into the global marketplace.

Addressing Fisheries Issues at the College of the Environment

Grappling with our oceans and freshwater systems requires new scientific tools and strong leadership. Decision makers and scientists need to understand changing systems, evaluate the consequences of their actions and make smart decisions. College of the Environment researchers have the tools to advance scientific understanding and engage and educate future leaders.

Advancing Science and Education

Educational Opportunities Throughout the College

The College of the Environment offers many pathways for undergraduate and graduate students to learn, immersing them in real-world fisheries issues. Courses on the science and management of marine and freshwater systems are offered through the schools of Aquatic and Fishery Sciences, Marine and Environmental Affairs, and Oceanography. Students get hands-on learning experiences in the field, extending their classroom and laboratory experiences. Course offerings span the

physical, biological and socio-economic drivers that fuel productive fisheries to the management and policy decisions that achieve sustainable resource use and advance stewardship responsibilities.

Fisheries-Related Research

Safeguarding marine and freshwater ecosystems and promoting sustainable development of fishery resources requires sound science. College researchers use multiple approaches and techniques to study aquatic environments in the U.S. and worldwide, including the exploration of both social and natural sciences. Research topics at the College include:

- Evaluating management options and outcomes given conflicting goals
- Using economics to develop effective fisheries management policy
- Applying statistical methods to population modeling, sampling design, and environmental problems
- Applying genetic and genomic methods
- Analyzing food-web interactions
- Developing management responses to invasive species
- Studying fish ecology and population dynamics of commercially and culturally important species
- Evaluating the role of marine protected areas
- Determining how to implement ecosystem-based fisheries management
- Developing conservation technologies
- Understanding the human dimensions of marine resource management

Accessing Aquatic Environments

Understanding how our oceans work requires field experience. The College of the Environment has numerous ways for scientists to access aquatic environments, allowing them to explore the fundamentals of ecosystem processes and fishery dynamics.

- Alaska Salmon Program: Originally a partnership between the Alaskan salmon industry and the UW, the program now supports research, teaching, and service related to salmon at three major field stations in Alaska
- Friday Harbor Laboratories: Standing at the apex of Puget Sound on the San Juan Islands, the labs offer a research environment where investigators can understand ecosystem processes as they relate to and support fisheries that are typical of west coast ecosystems
- Research Vessels: Our ships and boats are able to access all types of marine environments, from the shorelines and shallow inlets of Puget Sound to the deep and open waters of the global ocean, to better understand the systems that ultimately drive fishery resources

Working with our Partners

There are many interested parties when it comes to fisheries issues. College of the Environment researchers collaborate with numerous external partners, including tribal governments, Washington Department of Fish and Wildlife, the fishing industry, environmental non-governmental organizations, and the NOAA Northwest and Alaska Fishery Sciences Centers.

Providing Leadership

How we manage our fisheries is not only important for maintaining healthy fish stocks and the ecosystems that support them, but also for fostering healthy economies. Our researchers serve in regional, national, and international capacities that help govern the use of fishery resources, ranging from local work with Washington Sea Grant that connects to coastal communities, to regional work advising Fishery Management Councils and finally, to the world stage by serving on international fisheries management organizations.

For more information, contact the College of the Environment at: coenv@uw.edu, or 206.685.5410

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