



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center
8901 La Jolla Shores Drive
La Jolla, CA 92037-1508

Host Agency: NOAA/NMFS Southwest Fishery Science Center

Location: (there are three possible locations for the Fellowship)

8901 La Jolla Shores Drive, La Jolla, CA 92037

110 McAllister Way, Santa Cruz, CA 95060

99 Pacific Street, Monterey, CA 93940

Fellow Supervisors: Lead Scientist of project and Division Director

Point of Contact: Toby Garfield, SWFSC Acting Deputy Director

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Agency Background:

The NOAA Southwest Fisheries Science Center (SWFSC; <https://swfsc.noaa.gov>) is one of six federal regional science centers that comprise the science expertise for the National Marine Fisheries Service (<http://www.nmfs.noaa.gov/>). The SWFSC provides national and international leadership and innovation in several key areas of Pacific Ocean fisheries and marine mammal science and management in the California Current, throughout the Pacific Ocean and in the Southern Ocean off Antarctica. The SWFSC has three facilities: the headquarters laboratory is in La Jolla, and satellite laboratories in Santa Cruz and Monterey. SWFSC scientists conduct fisheries, marine biological, economic and oceanographic research, observations and monitoring of living marine resources and their environment. Center scientists also conduct research on the impacts of environmental variability and climate change on marine ecosystems and on fishery and conservation socio-economics. The ultimate goals of these efforts are to ensure that the region's marine and anadromous fish, marine mammal, marine turtle, seabird, and invertebrate populations remain at sustainable and healthy levels, as functioning parts of their ecosystem, economic resiliency for fishing communities and enhancing the quality of life for the public.

Position Description:

One Fellow will be selected and assigned to work at one of the laboratories based on the project opportunity (below) negotiated between the Fellow and host. The Sea Grant Fellow will work at the interface between fishery science and regulatory actions. In this time of extreme weather events and changing climate, the SWFSC must interpret new science findings into management scenarios that will ensure resilient coastal communities. There are a number of areas where the Sea Grant Fellow could contribute that include management plans for highly migratory species, developing management strategies to implement Ecosystem-Based Fishery Management (EBFM) within the California Current large marine ecosystem or for the Antarctic fisheries, and critical issues regarding Central Valley salmon. The Fellow will work under the direction of the lead scientist to assist with strategies on informing adaptive management options. Initially, the Fellow will meet with the Division Director and the lead scientist to develop a mentoring plan. The plan will be based on the specific needs of the project and the Fellow's interests. The three will meet regularly during the year-long fellowship. The Fellow will be encouraged to participate in conferences, interagency meetings and collaborative projects and is expected to be a significant contributor to the work.



Southwest Fisheries Science Center 2019 Potential Assignments:

• **Development of NE Pacific Ecosystem Based Fishery Management (ERD)** – (EBFM) scenarios using results from the California Current Integrated Ecosystem Assessment ([CCIEA](#)). A Fellow working on this project would be based at La Jolla and also work with staff in Monterey. The Environmental Research Division (ERD) is the lead division working with the Pacific Fishery Management Council (PFMC) on developing a Fishery Ecosystem Plan to manage all species, including protected species, through a comprehensive ecosystem plan. The CCIEA has developed a robust set of environmental, ecological and human dimension indicators that will form the basis of EBFM recommendations. NMFS employees are working with the various PFMC subcommittees on recommendations for developing and implementing this plan.

• **Water resources management (FED)** –The Fellow will participate in research on economic and social aspects of water use policy in California. In-stream flow and water quality are primary factors affecting habitat quality for protected species of anadromous fish, including endangered Chinook salmon and steelhead in the Central Valley and endangered coho salmon, Chinook salmon, and steelhead trout in California coastal watersheds. The Fellow will be located in Santa Cruz and collaborate with researchers at the SWFSC's Fisheries Ecology Division ([FED](#)) on projects such as quantifying the economic impacts of reallocating water between fish habitat and human uses, designing cost-effective policies for anadromous fish habitat restoration, assessing the benefits and costs of water quality and habitat improvement projects, and developing risk management strategies for allocating water to competing uses over multiple time periods.

• **Communicating water issues (FED & Director's Office)** – Fresh water usage is one of the defining issues that brings together politics, agriculture, municipal planning, coastal modification, commercial and recreational fishing, and aesthetics. The Fellow would work with FED (Santa Cruz) and the Director's Office (La Jolla) on developing communication tools to promote SWFSC's scientific input to this vital discussion.

Dynamic Ocean Management (ERD & partners) – Dynamic Ocean Management to reduce bycatch in federal fisheries. Protecting highly migratory species from fishing gear bycatch relies on a suite of tools from seasonal closures, gear restrictions, and fisher communication. We are developing a real-time tool to reduce bycatch in pelagic fisheries yet current regulations do not have a provision for such an approach. The Fellow would work with Monterey scientists and NGO partners (e.g. Center for Ocean Solutions) to develop a policy framework for implementation of Dynamic Ocean Management in state and federally managed fisheries.

• **Dungeness crab fishery and multiple stressors (ERD)** – Dungeness crab fisheries are being hit with multiple regulatory concerns, e.g. record whale entanglements due to inshore distribution of humpbacks the past two years, and increased domoic acid from harmful algal blooms resulting in the shutdown of the fishery. The fellow would work with scientists at SWFSC and partners to develop policy approaches that would account for multiple stressors yet maximize the ability of the fishery to remain open. The position would be in Monterey.

SWFSC – Southwest Fisheries Science Center – Kristen Koch, Director (kristen.c.koch@noaa.gov)

AERD – Antarctic Ecosystem Research Division – George Watters (george.watters@noaa.gov)

ERD – Environmental Research Division – Toby Garfield (toby.garfield@noaa.gov)

FED – Fisheries Ecology Division – Steve Lindley (steve.lindley@noaa.gov)

FRD – Fisheries Resources Division – Gerard DiNardo (gerard.dinardo@noaa.gov)

MMTD – Marine Mammal & Turtle Division – Lisa Ballance (lisa.ballance@noaa.gov)