

PACIFIC NORTHWEST CRAB RESEARCH GROUP: PROGRAM COORDINATOR AND WASHINGTON SEA GRANT HERSHMAN FELLOW

Host Location: Washington Department of Fish and Wildlife Port Townsend office

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Fellowship Co-mentors:

- Julie S. Barber, Swinomish Indian Tribal Community
- Katelyn Bosley, Washington Department of Fish and Wildlife
- Elizabeth Tobin, Jamestown S’Klallam Tribe
- Neil Harrington, Jamestown S’Klallam Tribe

Overview

The Dungeness crab, *Metacarcinus magister*, is one of the most highly utilized marine species on the west coast of North America, filling relevant cultural, ecological, and economic roles throughout its range. The Washington State Dungeness crab fishery has become progressively more active over the past 30 years with an average ex-vessel value of \$12.5 million from 2017-2018 and supports countless livelihoods and communities throughout the state. Despite the clear importance of this species, Dungeness crab face many potential threats ranging from global issues, such as ocean acidification and warming sea-surface temperatures, to more localized issues like coastal development and ghost fishing. As these threats intensify, scientists and resource managers will need to develop and implement adaptive responses to sustain this species and the biological systems that depend on it.

The biology and ecology of *M. magister* is relatively well-understood compared to other marine invertebrates; however, fundamental gaps exist including a lack of knowledge in: effects of environmental parameters on larval recruitment; metapopulation structure and dynamics; spatial and temporal differences in larval supply and/or survival; and how to best predict adult crab biomass for fisheries management purposes. In the absence of basic biological information, the Dungeness crab fishery is co-managed by the state and treaty tribes without a stock assessment. Rather, the fishery is managed through a “3-S” (size, sex, season) system. While the 3-S system seemed robust enough to maintain sustainability and stability of the fishery for many years, recent concerns about this management regime have been raised in response to a sharp population decline in southern Puget Sound where a once productive Dungeness crab fishing area has been closed for several years.

In order to strategically address data gaps and collaborate on large scale projects, the Pacific Northwest Crab Research Group (PCRG) was formed in December 2018. The group stemmed from interest and concern regarding the resource and now involves over 79 members from tribal, state, and federal governments, academia, and nonprofits. The mission of the PCRG is to promote sustainable Dungeness crab populations in the Pacific Northwest by addressing the

following broad goals to collaborate to: (1) monitor and forecast crab populations to achieve sustainable fisheries in the waters of the Pacific Northwest; (2) better understand and sustain the ecological role of crab in the waters of the Pacific Northwest; and (3) produce information addressing multiple critical data gaps for Dungeness crab.

The 2020-2021 WSG Hershman Fellow will serve as the PCRG Program Coordinator and will have the opportunity to play an important role in improving management and standardization of Dungeness crab research in our state. Specifically, the fellow will be responsible for completing the following tasks:

- Serve as the lead coordinator for the PCRG by:
 - facilitating group communications
 - organizing group and subcommittee meetings
 - managing website and social media (PCRG website currently under development)
- Develop an organizational structure for data management and sharing policies
- Investigate the possibility of formalizing the PCRG as a nonprofit organization
- Assist with grant applications to further PCRG goals
- Join regional partners in the field to assist with data collection and ensure standardization of methods

Professional development and networking opportunities

The PCRG WSG Hershman Fellow will have incredible opportunities for networking because our group is composed of 41 different tribal, state, federal, nonprofit, and academic organizations. Examples of PCRG members include: NOAA, Northwest Indian Fisheries Commission, WA DNR, Oregon State University, the Pacific Shellfish Institute, the Puyallup Tribe of Indians, and the Nisqually Reach Nature Center. Throughout their year, the fellow will be encouraged to attend a scientific conference and regional meetings and will be provided with the opportunity to participate in related field work.