

ESA status reviews of marine species

Problem Statement

Declines in some Puget Sound marine fish populations resulted in a petition to list 18 species as endangered. The National Marine Fisheries Service (NMFS) is considering the evidence for listing seven species under the Endangered Species Act (ESA) and has placed eleven others on a candidate list for future consideration.

Critical Factors

- Under the ESA, the NMFS must decide which marine species should be listed.
- Northwest Fisheries Science Center (NWFSC) scientists prepare status reviews that discuss which populations qualify as “species” and the level of extinction risk associated with each.
- After receiving petitions for listing 18 marine species in Puget Sound, the NMFS has decided to conduct a status review of seven: Pacific hake, Pacific cod, walleye pollock, Pacific herring, brown rockfish, copper rockfish, and quillback rockfish.
- Scientists determine a population’s risk of extinction by assessing a number of factors, including trends in population abundance, threats to genetic integrity, and the impacts of ocean conditions and climate change.
- The ESA allows listing of “distinct population segments,” as well as named species and subspecies.
- For marine fish species, the NMFS defines a population as “distinct” if it is “discrete” and “significant” in relation to the remainder of its species.
- A population is “discrete” if it is markedly separated from other populations by physical, physiological, ecological or behavioral factors.
- A population is “significant” if it has persisted in an unusual ecological setting, if it differs markedly in genetic characteristics from the rest of the species, or if its loss would create a critical gap in the taxon’s range.

Status of Research

The NWFSC’s effort to review the status of the above-mentioned species is one of the first attempts that has been made to assess the status of a marine fish population in the context of the Endangered Species Act. NWFSC scientists must develop methods for determining the extinction risk faced by each of the seven Puget Sound marine species. Scientists will start by reviewing biological information for populations throughout each species’ range. They will then synthesize information from a variety of disciplines, including ecology, genetics, life history and population biology. Life-history patterns will then be incorporated into genetic and population dynamics models. These models describe the ecology of each species or population, and quantify the risk factors that may lead to extinction.



Future Considerations

The NMFS Northwest Regional Office will use status reviews provided by scientists at the NWFSC to make listing decisions that are timely, accurate and comprehensive. These decisions will affect the entire Northwestern fishing community, as well as state, federal and tribal fisheries managers. Because the range of most fish species extends from the West Coast north through Canada and into Alaska, similar user groups in Alaska could be affected by these decisions and transboundary issues will arise.

Key Players

Fishery Resource Analysis and Monitoring (FRAM) Division, NWFSC
Conservation Biology (CB) Division, NWFSC
Northwest Regional Office, NMFS
Alaska Fisheries Science Center, NMFS

Washington Department of Fish and Wildlife
Northwest Indian Fish Commission
Canada Department of Fisheries and Oceans
Pacific Fishery Management Council

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