U.S. Department of Commerce
Northwest Regional Office
NOAA Fisheries National Marine Fisheries Service

Questions & Answers on NOAA Fisheries Service Review of Cherry Point Herring & Updated Review of Georgia Basin Pacific Herring
June 2005

Q. Has NOAA Fisheries Service reviewed the status of Pacific herring before?
A. Yes. We completed a status review of Pacific Herring in 2001. This earlier review was initiated in response to a petition received in February 1999 to list 18 species of marine fishes in Puget Sound, including Pacific herring. We concluded that the Pacific herring stocks in Puget Sound do not qualify as a "species" under the Endangered Species Act (ESA). We determined that these Puget Sound herring stocks, including Cherry Point, belonged to a larger group of Pacific herring consisting of more than 40 inshore stocks from Puget Sound and the Strait of Georgia in the U.S. and Canada. We concluded that Georgia Basin Pacific herring do not warrant listing under the ESA. However, we did note concern about two herring stocks within the Georgia Basin (the Cherry Point and Discovery Bay stocks) that have shown marked declines in range and abundance. Although we recognized that these two declining stocks may be vulnerable to extirpation, we concluded that they represent a relatively small portion of the more than 40 stocks and assessment areas comprising the DPS, and do not confer significant risk to Pacific herring in the Georgia Basin.

Q. Why did NOAA Fisheries initiate this review?
A. On Jan. 22, 2004, we received a petition from the Northwest Ecosystem Alliance and six co-petitioners to find that the Cherry Point herring qualifies as a species under the ESA and warrants listing. On May 14, 2004, the same petitioners submitted additional information, including new genetic information on the stock structure of Pacific herring in Puget Sound and the Strait of Georgia in Washington that had become available since the initial petition in January. We considered the petitioners' supplemental submission as a distinct petition. On Aug. 10, 2004, we issued our finding that the petition received on Jan. 22 failed to present substantial scientific and commercial information indicating that the petitioned action may be warranted, but that the petition received on May 14 did meet that criteria. As part of this finding we announced that we'd conduct a thorough review of the species' status, and solicited information pertinent to that review.

Q. What qualifies as a "species" for listing under the Endangered Species Act?
A. Under the ESA, a listing determination may address a species, subspecies, or a distinct population segment (DPS) of any vertebrate species that interbreeds when mature (section 3(16)). On Feb. 7, 1996, the U.S. Fish and Wildlife Service and NOAA Fisheries Service adopted a policy to clarify the agencies' interpretation of the DPS provision for the purposes of listing, delisting, and reclassifying a species under the ESA. The joint

DPS policy identified two elements that must be considered when making DPS determinations:
(1) discreteness of the population segment in relation to the remainder of the species (or subspecies) to which it belongs, and
(2) significance of the population segment to the remainder of the species (or subspecies) to which it belongs.

Q. In the current review, why did NOAA Fisheries Service conclude that Cherry Point herring does not qualify as a "species" under the ESA?
A. We concluded that the Cherry Point stock is "discrete" under the DPS policy, but that it does not satisfy the applicable DPS criteria for "significance." Cherry Point herring are not "significant," and so do not qualify as a DPS for ESA listing because:

- Cherry Point does not represent a unique or unusual ecological setting for Pacific herring
- loss of Cherry Point herring would not result in a significant gap in the extensive range of Pacific herring
- the Cherry Point stock does not exhibit *marked* genetic differentiation relative to other Pacific herring populations.

Q. What group of Pacific herring stocks did NOAA Fisheries determine constitutes a "species" under the ESA?
A. We considered several alternative DPS configurations for Pacific herring that incorporated the Cherry Point stock. They ranged from the previously identified Georgia Basin DPS to a DPS encompassing Pacific herring from San Diego to Sitka. We concluded that the available information is insufficient to warrant modification of the previous DPS delineation. Evidence supports the finding that Georgia Basin Pacific herring satisfy the criteria for discreteness and significance under the joint DPS policy, including:

- similarity in age composition of herring in the Strait of Georgia and Puget Sound supporting discreteness of Georgia Basin Pacific herring
- ecological uniqueness of the inshore waters of Puget Sound and the Strait of Georgia supporting significance of Georgia Basin herring to the taxon as a whole.

The Georgia Basin DPS is defined as encompassing spawning stocks of Pacific herring in the marine waters of Puget Sound, the Strait of Georgia, and eastern Strait of Juan de Fuca in the U.S. and Canada.

Q. Why did NOAA Fisheries conclude that Georgia Basin Pacific herring do not warrant listing under the ESA?
A. We concluded that the Georgia Basin DPS of Pacific herring is not threatened or endangered, and does not warrant ESA listing at this time. The overall abundance of the DPS is at historically high levels, and the extent of coastline used for spawning has been increasing. The available information suggests that spawning stocks in the Georgia Basin DPS operate as a "metapopulation" in which all subpopulations are connected by migration, but some are relatively discrete with weaker linkages to other subpopulations in the DPS. It's expected in a viable metapopulation that some local subpopulations will be in decline, other subpopulations will be increasing, and some suitable habitat patches

may be unoccupied. The observation that some local stocks are declining (principally the Cherry Point stock, and the non-migratory inlet stocks in the eastern Strait of Georgia) is not by itself cause for concern about the long-term viability of the DPS. The few declining stocks represent a small proportion of the more than 40 stocks and assessment areas that comprise the Georgia Basin DPS. Evidence of significant migration among stocks, high levels of gene flow, and disappearance and subsequent recolonization events for Georgia Basin Pacific herring suggest that local extirpations or stock declines provide little risk to the overall DPS. Although the stocks in decline appear to exhibit greater demographic independence on shorter time scales relative to other stocks within the DPS, these stocks do not pose risks to the DPS as a whole, or to any significant portion of the DPS.