

# North Pacific Armorhead Species Summary

*NPFC Bottom Fisheries Small Working Group*

*2021-07-07*

## North Pacific Armorhead (*Pentaceros wheeleri*)

**Common names:** (English): Pelagic armourhead, Slender armorhead; (Chinese); (Japanese); (Korean); (Russian)

### Biological Information

Distribution includes North Pacific – Gulf of Alaska to North Pacific Ocean off central California and south of Japan, with center of abundance at the seamounts of the southern Emperor-northern Hawaiian Ridge within the Convention area. North Pacific Armorhead (NPA) have a unique life history with extended pelagic phase (2+ years), followed by morphometric changes concurrent with recruitment to a demersal stage on seamounts.

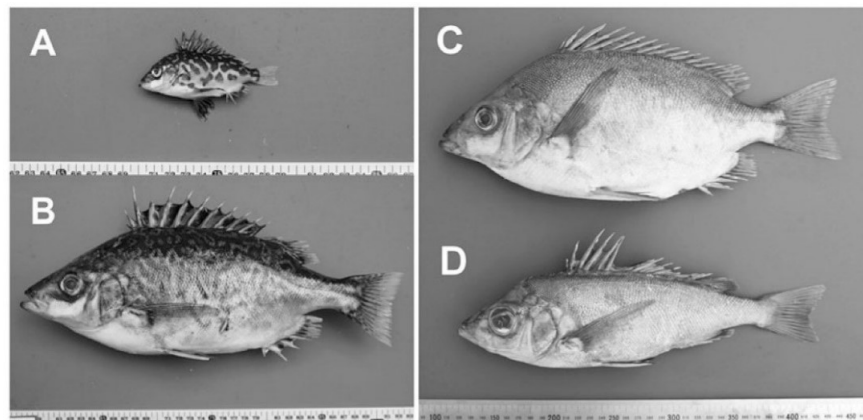


Figure 1: \*\*Figure 1: Photographs of *Pentaceros wheeleri*. A) Pelagic juvenile, B) pelagic subadult, C) demersal adult (fat type), D) demersal adult (lean type) (from Kiyota et al. 2016)

### Fishery

Historical catches (Russia and Japan) from the combined Emperor Seamounts were high and reached 1 million mt in 1975, followed by a crash (Kiyota et al. 2016). Currently NPA is caught by Japan and Korea on the Emperor Seamounts using bottom trawls and gillnets. This fishery is a potential source of SAI for vulnerable marine ecosystems due to bottom contact gear. Observers are required for NPFC bottomfishing (per CMM 2019-05).

Fishing typically begins in January and extends until [need date].

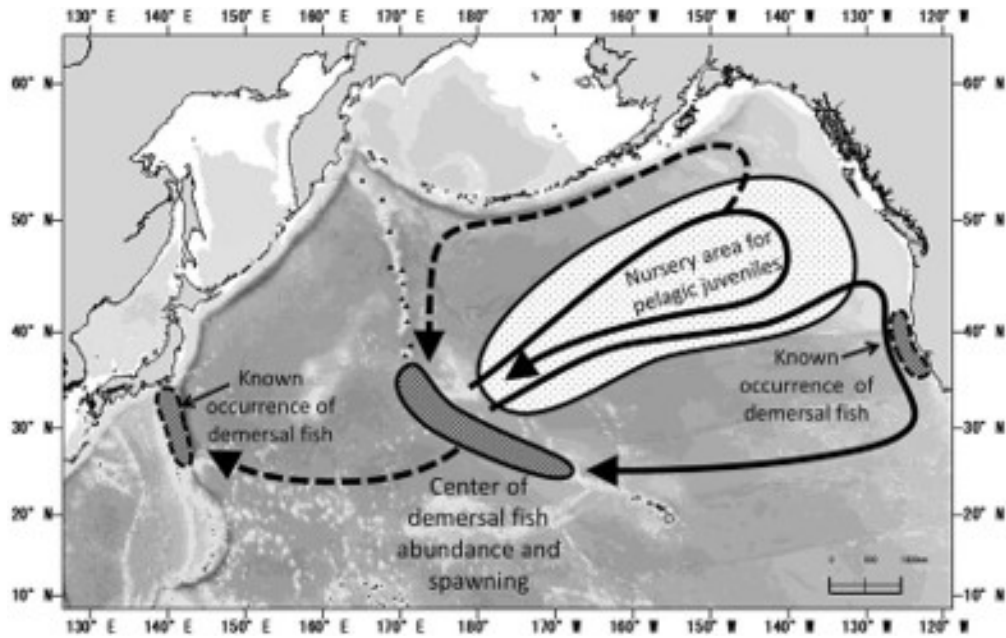


Figure 2: \*\*Figure 2: Known demersal habitats and hypothesized pelagic migration routes of *Pentaceros wheeleri* (Kiyota et al. 2016 Figure 4, modified from Boehlert and Sasaki 1988).

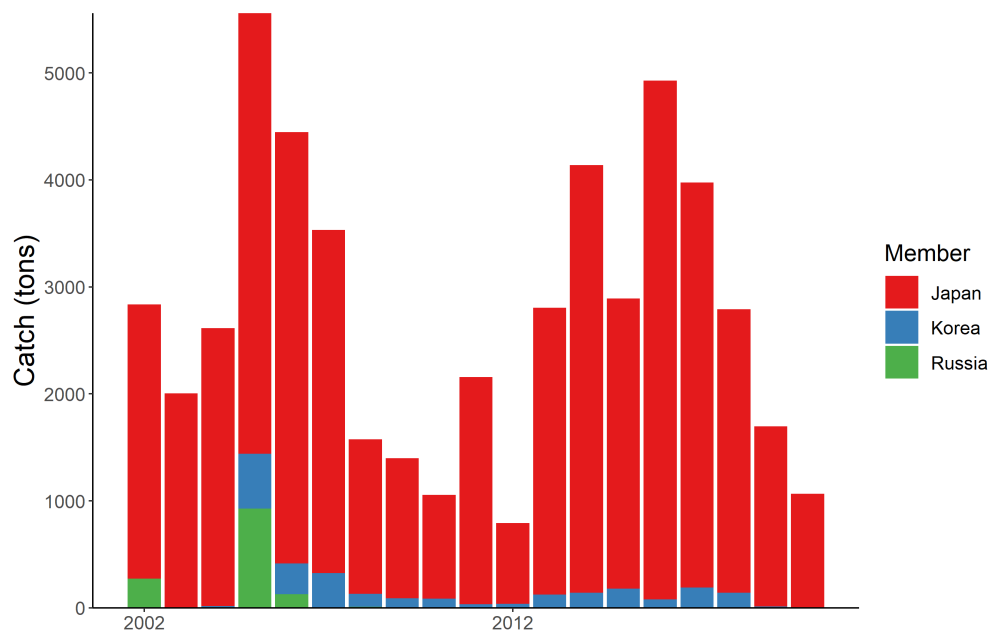


Figure 3: \*\*Figure 3: Catch trends of North Pacific Armorhead over the past two decades.\*\* The annual amounts of catch for alfonsoino by each Member are shown by the bar plot.

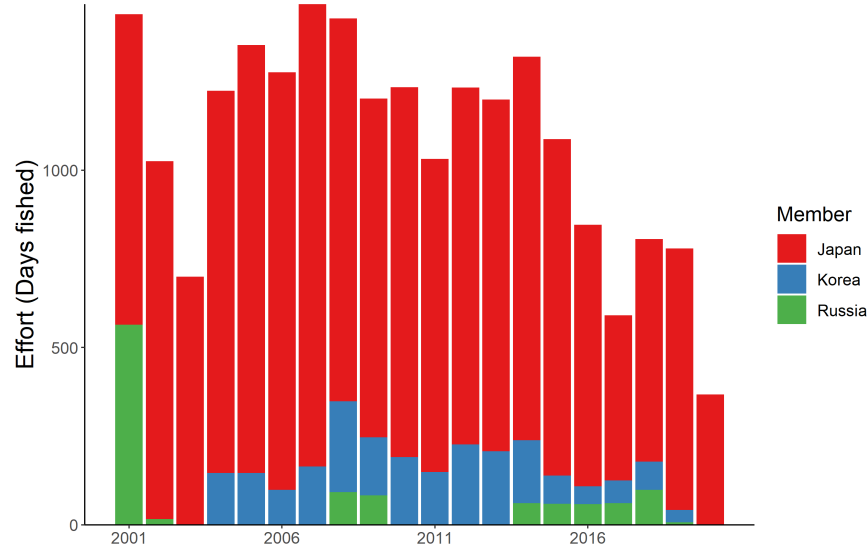


Figure 4: **Figure 4. Historical fishing effort for North Pacific Armorhead.**

## Assessment

There is no current or accepted assessment for this species.

There are no biomass estimates available for NPA in NPFC waters. An age- or length-structured stock assessment is unlikely to be feasible given the life history of NPA (citation for more information). Data limited approaches may be examined in the future.

## Management

### Active Management Measures

The following NPFMC conservation and management measures pertain to this species:

- CMM 2019-05 For Bottom Fisheries and Protection of VMEs in the NW Pacific Ocean
- CMM 2019-06 For Bottom Fisheries and Protection of VMEs in the NE Pacific Ocean

Available from <https://www.npfc.int/active-conservation-and-management-measures>

In 2019 an adaptive management plan was implemented for NPA (NPFC-2019-SSC BF02-WP05, CMM 2019-05). This plan specifies data collection via an annual monitoring survey to be conducted in March-June each year on Koko and Kammu Seamounts. If the survey finds evidence of strong recruitment (see CMM 2019-05 and NPFC-2019-SSC BF02-IP01 for details) some area in the Emperor Seamounts are closed and a 12,000 ton catch limit is encouraged. In low recruitment years, a 700 ton catch limit is encouraged.

## Data Summary

## References

Boehlert, G. W., and T. Sasaki. 1988. Pelagic biogeography of the armorhead, *Pseudopentaceros wheeleri*, and recruitment to isolated seamounts in the North Pacific Ocean. *Fish. Bull.* 86:453–465.

Kiyota M., Nishida K., Murakami C. and Yonezaki S. 2016. History, biology, and conservation of Pacific endemics 2. The North Pacific armorhead, *Pentaceros wheeleri* (Hardy, 1983) (Perciformes, Pentacerotidae). *Pacific Science* 70(1): 1-20.