NOAA FISHERIES

Northwest Fisheries Science Center

SNAPSHOT

Monitoring ESA-listed Species in West Coast Groundfish Fisheries

Fisheries Observation Science Program

JUNE 2021

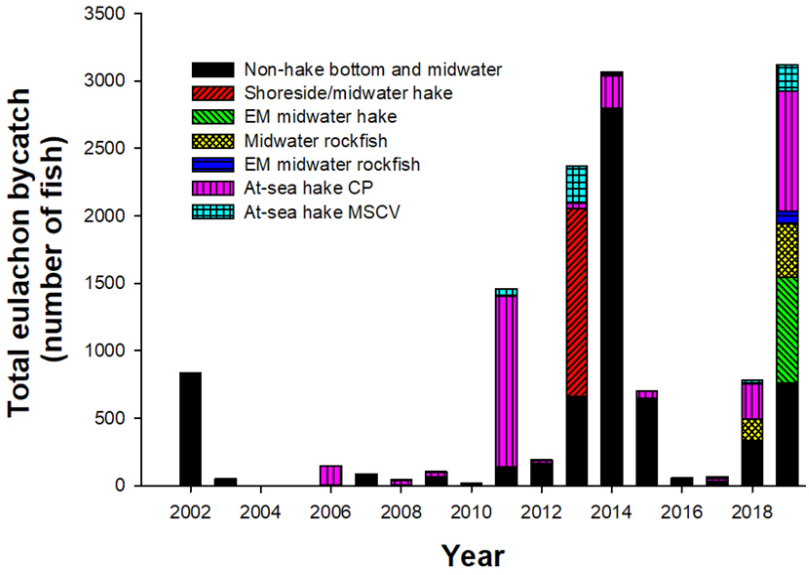
U.S. Department of Commerce | National Oceanic and Atmospheric Administration | National Marine Fisheries Service

Introduction

Some marine species are protected by the Endangered Species Act (ESA). On-board fisheries observers with the West Coast Groundfish Observer Program and the At-Sea Hake Observer Program collect data on protected species to estimate bycatch (takes) of these species. The Northwest Fisheries Science Center (NWFSC) produces a number of reports documenting fishing effort and bycatch of non-salmonid protected species in accordance with the Biological Opinion on Continuing Operation of the Pacific Coast Groundfish Fishery (BiOp). For fisheries with only partial observer coverage, estimates of total fleet-wide takes accounting for unobserved effort are included. Bycatch estimates are provided in units of individuals, rather than weight, for the purposes of protected species management and assessment. This snapshot describes key findings of each of the reports on protected species bycatch.

Eulachon

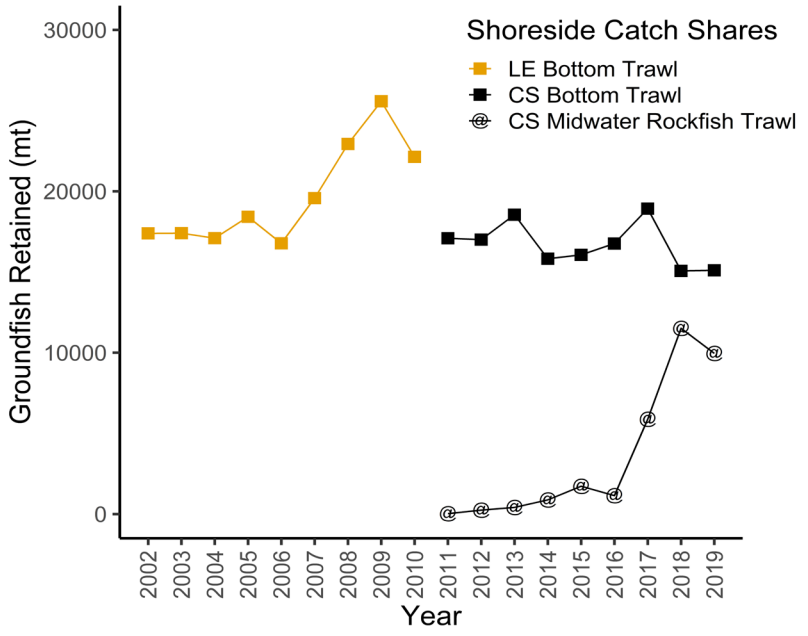
- Total fleetwide estimated bycatch in U.S. West Coast groundfish fisheries increased from 68 eulachon *(Thaleichthys pacificus)* in 2017 to 782 eulachon in 2018 and 3,121 eulachon in 2019. The increase in bycatch parallels recent increases in adult abundance estimates for the ESA-listed southern DPS of eulachon.
- The 2018 Reinitiation of consultation for eulachon under the Groundfish BiOp established two new incidental take thresholds based on the minimum yearly abundance estimate for adult eulachon in the Columbia River – a precautionary threshold (0.01 percent of the five-year geometric mean of minimum abundance) and a reinitiation threshold (0.02 percent of the five-year geometric mean of minimum abundance).
- Under the revised eulachon incidental take criteria, a yearly bycatch estimate is derived from the geometric mean of the most recent year's and the four preceding year's bycatch count estimates for comparison to the precautionary and reinitiation thresholds. The five-year geometric mean of bycatch in the West Coast groundfish fisheries was 455 eulachon in 2018 and 364 eulachon in 2019.
- In 2018, the five-year geometric mean of eulachon bycatch in U.S. West Coast groundfish fisheries was 28% and 14% of the precautionary (1,602) and reinitiation (3,204) thresholds, respectively. In 2019, bycatch was about 30% of the precautionary (1,205) and 15% of the reinitiation (2,411) threshold. The incidental take thresholds for eulachon were not exceeded.



Total expanded eulachon bycatch (numbers) in federally-managed West Coast groundfish fisheries 2002-2019. EM, electronically monitored; CP, catcher processors; MSCV, mothership-catcher vessels.

Fishing effort

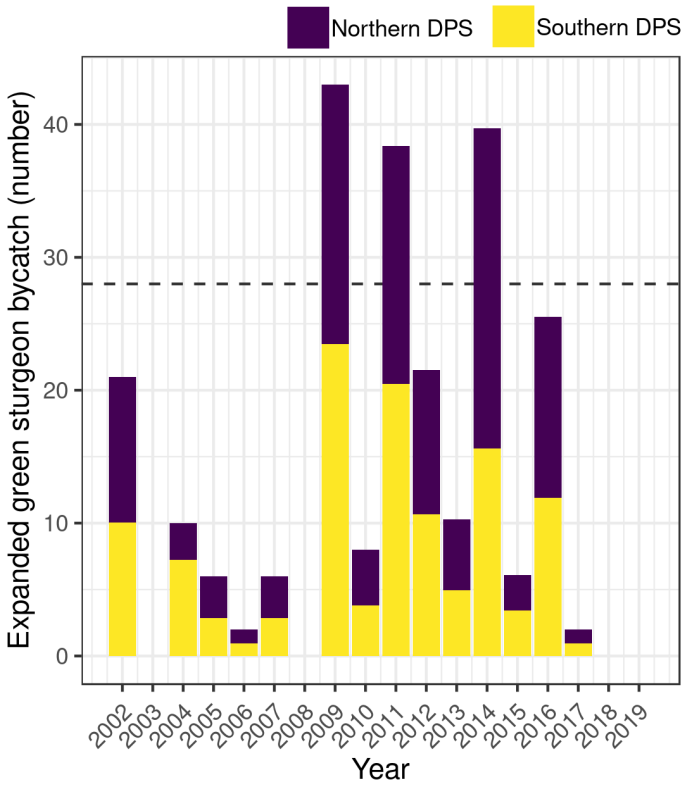
- The bottom trawl sector's landings in both 2018 and 2019 were the lowest since 2002.
- The midwater rockfish trawl sector's landings doubled between 2017 and 2018.
- Together, ~25,000 mt were landed annually by the non-hake trawl sector 2017, 2018, and 2019 -- matching or exceeding annual catch by the non-hake trawl fleet from 2002 to 2010.



Total landings of FMP groundfish, excluding Pacific hake, for shoreside catch shares groundfish trawl sectors targeting species other than Pacific hake.

Green sturgeon

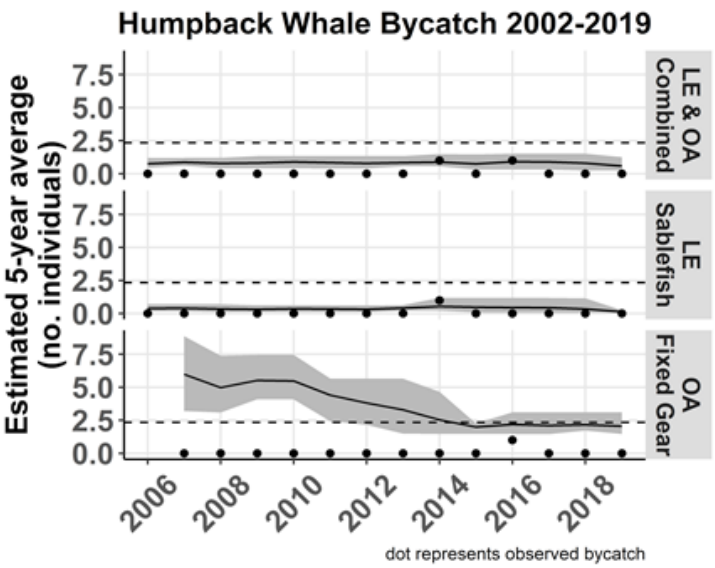
- The observed bycatch of combined Northern and Southern distinct population segment (DPS) green sturgeon *(Acipenser medirostris)* in all federally-managed groundfish sectors over the most recent five years analyzed (2015-2019) ranged from 0-26 per year. These bycatch numbers are from fisheries with nearly 100% observer coverage.
- The estimated number of threatened Southern DPS green sturgeon encountered in the federally-managed sectors for 2015-2019 ranged from 0-12 per year, based on individual genetic stock identification (GSI) assignments and area-wide GSI proportions. This is below the threshold of 28 individuals established by the BiOp.



Green sturgeon bycatch estimates in federally-managed groundfish fisheries by distinct population segment (DPS). The horizontal dashed line shows the annual threshold of 28 Southern DPS individuals established by the BiOp.

Humpback whale

- There have been two documented humpback whale *(Megaptera novaeangliae)* takes reported in the groundfish fishery from 2002-2019--one in the Limited Entry sablefish pot fishery sector in 2014 and one in the Open Access Fixed Gear pot fishery sector in 2016.
- Bayesian estimates of humpback whale entanglements/takes for the LE Sablefish pot sector, the Open Access Fixed Gear pot sector, and the sectors combined did not exceed the 2020 BiOp-established thresholds of five individuals observed or estimated in any one year or a 5-year running average of 2.34 individuals per year.



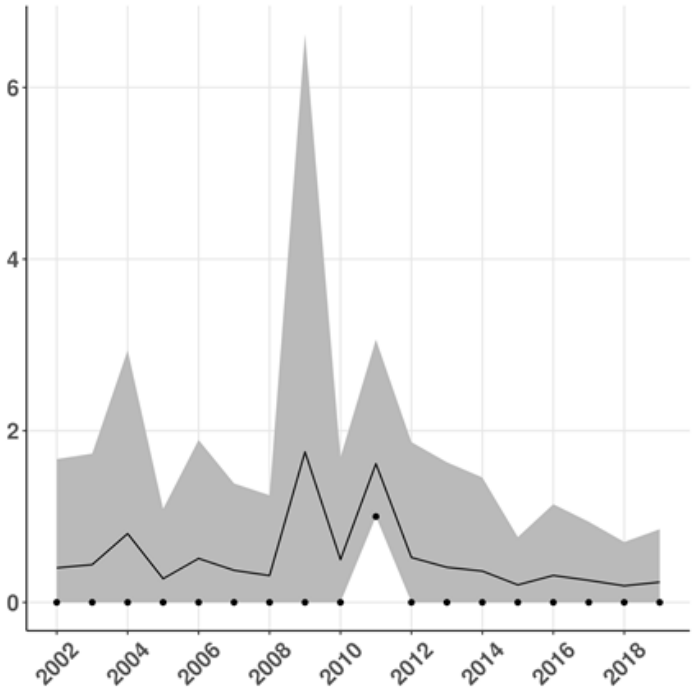
Estimated 5-year means for the Limited Entry Sablefish (LE) and Open Access (OA) Fixed Gear pot sectors combined (top), the LE Sablefish pot sector (middle), and the OA Fixed Gear pot sector (bottom). Dots represent observed bycatch. Black lines represent the estimated 5-year running mean of fleet-wide bycatch of humpback whales. Gray areas represent 95% confidence limits. Dotted lines represent the 5-year incidental take limit.

Leatherback sea turtle

- No leatherback sea turtles turtles *(Dermochelys coriacea)* were observed as bycatch in the most recent 5-year period (2015-2019).
- The single take observed in 2008 in the open-access (OA) pot fishery remains the only observed take of leatherback sea turtles in fisheries observed by the NWFSC.
- Leatherback turtle entanglements in the groundfish fishery appear to be rare events, as is often the case for endangered species. Rare bycatch events are known to lead to high uncertainty when estimating total bycatch, especially if observer coverage levels are low, as is the case in the OA pot fishery.

Short-tailed albatross

- Only one short-tailed albatross *(Phoebastria albatrus)* has been observed as bycatch in the groundfish fishery from 2002-2019. This mortality occurred in the limited-entry sablefish longline fishery in 2011.
- Bayesian estimates of short-tailed albatross bycatch over 2002-2019 have ranged from 0.2 to 1.8 individuals/year. The confidence limits of annual estimates have ranged from 0.0 to 6.6 individual/year.
- The threshold established by the Biological Opinion is five estimated or one observed albatross over a two-year period, neither of which have been exceeded.



Total fleet-wide bycatch of short-tailed albatross estimated for 2002-19. Black line is the predicted mean, grey area represents the predicted 95% confidence interval, dots represent observed bycatch. The best model used the number of sets as effort, a Poisson distribution for bycatch, and a constant bycatch rate. See Methods for details.

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