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HUMAN-CAUSED MORTALITY AND INJURY OF NMFS-MANAGED ALASKA MARINE MAMMAL STOCKS, 2020-2024

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Introduction

This report summarizes records of human-caused mortalities and injuries and provides an assessment of injury severity of pinnipeds and cetaceans belonging to stocks that appear in the Alaska Marine Mammal Stock Assessment Reports (SARs) for the period 2020-2024. Summaries of these cases and their outcomes for previous years have been published as NOAA Technical Memorandums (e.g., Freed et al. 2022). Because the methods generally remain the same from year to year, in 2023 we transitioned to publishing the reports online as Alaska Fisheries Science Center (AFSC) Processed Reports with associated data files¹ (CSV) to increase efficiency in making the data available to users (e.g., Freed et al. 2023). For convenience, links to all previously published Alaska mortality and injury reports have been compiled on the following webpage: <https://www.fisheries.noaa.gov/resource/publication-database/human-caused-mortality-and-injury-nmfs-managed-alaska-marine-mammal>

2020-2024 Dataset

Details of each case are presented in the supporting file ‘AK-MM-Mortality-and-Injury-2020-2024.csv’. The main update in this report is the addition of a new year of data (2024).

One of the sources of mortality and injury data is the Marine Mammal Authorization program (MMAP). From 2020 to 2024, NMFS received 193 MMAP fishermen self-reports documenting mortality and injury of 200 marine mammals in Alaska waters. In addition, NMFS received 10 MMAP fishermen self-reports documenting mortality and injury of 11 marine mammals in waters off the U.S. West Coast from stocks that are assessed in the Alaska SARs (i.e., Eastern Pacific northern fur seal stock in December-May and Eastern Steller sea lion stock). Approximately 95% of the self-reports were excluded from the supporting data file for one or more of the following reasons: a) the reported species is under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS), so data were sent to the USFWS; b) the reported species is included in the Pacific SARs, not the Alaska SARs, so data were sent to the NMFS Southwest Fisheries Science Center; c) the animal was determined to have been “previously dead” and its death was not attributed to human causes; d) the animal was reported to have been killed or injured in a currently observed fishery and that species/stock is already accounted for in the observer data²; or e) the case was also reported to the NMFS Alaska Regional Office stranding network, usually with more details and, thus, is already accounted for in the data file.

In some cases, MMAP reports included in the data file may not be reported in the SARs. For example, some SARs rely on older bycatch estimates from the Alaska Marine Mammal Observer

¹ In the NOAA Institutional Repository, these data are under Supporting Files.

² MMAP reports from currently observed fisheries were included in the data file if there were no observed mortalities or injuries of that stock in the fishery that year (i.e., the MMAP report represented the only source of information on mortalities or injuries of that species and stock in the fishery that year).

Program (AMMOP), rather than using recent MMAP reports, since the bycatch estimates are considered to be more comprehensive.

Cases of non-serious injuries (NSI) and serious injuries (SI) averted (i.e., human intervention or self-release lessened the severity of the initial SI, leaving the animal with only NSI) are included in this report. These cases are also discussed in the text of the SARs. However, because the final determinations were NSI, these cases are not included in the SARs' total estimates of annual human-caused mortality and serious injury (M/SI) that are compared to potential biological removal levels (PBRs), but they are used to develop the List of Fisheries (LOF) under Section 118 of the Marine Mammal Protection Act and inform management (e.g., take reduction planning and negligible impact determinations).

In 2023, the Aleut Community of St. Paul Island, a member of the Alaska Region Marine Mammal Stranding Network, began providing additional documentation of post-disentanglement wounds. This allowed us to better consider case-specific assessments under criterion P7b, which resulted in a higher proportion of SI determinations for the 2023 and 2024 cases compared to previous years. When documentation was not available, we assumed the animals were more likely than not to survive their wounds once disentangled (i.e., they were left with NSI), as we have reported previously (e.g., Steller sea lions).

Beginning with the 2026 SAR cycle, all human-caused mortality and injury of humpback whales of unknown stock identity off the U.S. West Coast will be apportioned to stock by latitude, based on methods in Curtis et al. (2025). Previously, these records were assigned only to the California-Oregon-Washington stock (through 2021) or the Central America/Southern Mexico or Mainland Mexico- California-Oregon-Washington stocks (2022 onward). A portion of each of these West Coast humpback mortalities and injuries will now also be assigned to two humpback whale stocks that are assessed in the Alaska SAR (Mexico-North Pacific and the Hawai'i stocks). To reduce duplication between regional mortality and injury reports, these West Coast records will only be reported in the NMFS Southwest Fisheries Science Center's (SWFSC) mortality/injury report. When the Alaska humpback whale SARs are revised, they will cite to SWFSC's mortality/injury report.

Human-caused mortality and injury of northern fur seals off the U.S. West Coast from December through May are assigned to both the California stock (which appears in the Pacific SAR) and the Eastern Pacific stock (which appears in the Alaska SAR). For consistency with humpback whale reporting, we are no longer including these northern fur seal records in the Alaska mortality/injury report. No new 2024 West Coast northern fur seal records are being added and previously published 2020-2023 records are removed from this report. Starting this year, West Coast northern fur seal records will only be reported in SWFSC's mortality/injury report, which will be cited in any future Eastern Pacific northern fur seal SAR updates.

Changes to Previously Published Records

This report also incorporates changes to a number of the previously published 2020-2023 records. All updated records that had a change in any field between this report and the previous report (Brower et al. 2025), except for those with only minor editorial changes such as the order in which stock names are shown, are presented in the supporting file ‘AK-MM-Mortality-and-Injury-Changes-from-2025-Report.xlsx’. The file provides a brief description of the changes made to each record. Notable changes include the following:

- Ten previously published records of northern fur seal mortalities that were documented off the U.S. West Coast between December and May in 2020-2023 are removed from this report and will only appear in SWFSC’s mortality/injury report.
- The fishery name in the Determination Details is corrected to AK BSAI sablefish longline for one humpback record (8/18/2022).
- The fishery method is changed from NA to gillnet for one humpback whale record (7/19/2022).
- The stock name was changed from “Eastern” to “Eastern; Western” for five Steller sea lion records (4/3/2023, 6/16/2023, 6/28/2023, 6/28/2023, 7/5/2023) to correctly identify these animals as occurring in the area of overlap between the Eastern and Western Steller sea lion stocks.
- Fishery information (name, type, method, value for LOF) was changed for one unidentified otariid record (2/12/2021).

Summary of 2020-2024 Records

Of the 833 human-caused mortalities and injuries provided in the supporting data file, 678 cases were determined to have caused a mortality (including lethal removal) or SI, or were prorated to reflect the likelihood of SI to the marine mammal. The remaining 155 cases were found to have resulted in a NSI of the marine mammal.

Human-caused injuries and mortalities were documented for 41 stocks (or potential stocks, in the cases where stocks overlap and stock identification cannot be confirmed) across 19 species. These totals do not include unknown/unidentified species groups, such as unidentified pinnipeds or unidentified large whales. The most commonly reported species overall was Steller sea lion (*Eumetopias jubatus*, $n = 418$ cases, resulting in 404 M/SI), followed by northern fur seal (*Callorhinus ursinus*, $n = 209$ cases, resulting in 104 M/SI) and humpback whale (*Megaptera novaeangliae kuzira*, $n = 80$ cases, resulting in 36.2 M/SI).

Across all 833 cases, entanglement/entrapment was the most common mechanism of injury (n = 567), followed by removal from the population (n = 101) and hooking by fishing gear (n = 67).

Among entanglement/entrapment-related cases, most occurred in fishing gear (n = 280) and marine debris (n = 277). Other causes of entanglement/entrapment included vessel ground tackle, mooring lines, unknown line, and unidentified material.

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Acronyms and Abbreviations for Supporting Data File

Areas (also used in some Fishery Names):

AI: Aleutian Islands
AK: Alaska
BC: British Columbia
BS: Bering Sea
CA: California
GOA: Gulf of Alaska
OR: Oregon
PWS: Prince William Sound
SCAK: Southcentral Alaska
SEAK: Southeast Alaska
WA: Washington
WAK: Western Alaska
WC: U.S. West Coast

Sources of Records:

ADFG: Alaska Department of Fish and Game
AFSC: National Marine Fisheries Service, Alaska Fisheries Science Center
AKRO: National Marine Fisheries Service, Alaska Regional Office
AMMOP: Alaska Marine Mammal Observer Program
A-SHOP: National Marine Fisheries Service, At-Sea Hake Observer Program
MMAP: Marine Mammal Authorization Program
NMFS OPR/HQ: National Marine Fisheries Service, Office of Protected Resources/Headquarters
NPGOP: National Marine Fisheries Service, North Pacific Groundfish Observer Program
NWFSC: National Marine Fisheries Service, Northwest Fisheries Science Center
NWIFC: Northwest Indian Fisheries Commission
ODFW: Oregon Department of Fish and Wildlife
SWFSC: National Marine Fisheries Service, Southwest Fisheries Science Center
WCGOP: National Marine Fisheries Service, West Coast Groundfish Observer Program
WCRO: National Marine Fisheries Service, West Coast Regional Office WDFW: Washington Department of Fish and Wildlife

Initial Assessment and Final Determinations:

NSI: Non-Serious Injury
SI: Serious Injury

Other:

ASLC: Alaska SeaLife Center

BSAI: Bering Sea-Aleutian Islands
COD: Cause of Death
EM: Electronic Monitoring
ID: Species Identity
IPHC: International Pacific Halibut Commission
LOF: List of Fisheries
MMPA: Marine Mammal Protection Act
OA: Open Access
OLE: NOAA's Office of Law Enforcement
USCG: United States Coast Guard



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