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Alaska Fisheries Science Center
Marine Mammal Laboratory

Human-Caused Mortality and Injury of NMFS-Managed Alaska Marine Mammal Stocks, 2017-2021

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Human-Caused Mortality and Injury of NMFS-Managed Alaska Marine Mammal Stocks, 2017-2021

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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 2017-2021. Summaries of interactions 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, we are transitioning to publishing the report online as an AFSC Processed Report with an associated data file[*] (CSV) to increase efficiency in making the data available to users.

For this report, there were only minor changes in methodology from Freed et al. (2022). Stock names for North Pacific humpback whales (*Megaptera novaeangliae*) and Southeast Alaska harbor porpoise (*Phocoena phocoena*) were updated to reflect new stock designations from the 2022 Alaska SARs (Young et al. 2023). In addition, information was added to the determination details column for Steller sea lion (*Eumetopias jubatus*) interactions in portions of Southeast Alaska where the Eastern U.S. and Western U.S. stocks overlap, to specify the overlap region as identified by Hastings et al. (2020). This reflects the Steller sea lion mortality and serious injury (M/SI) apportionment scheme implemented in the 2023 Alaska SARs (Young et al. in prep.).

Details of each case are presented in the supporting file AK-MM-Injury-and-Mortality-2017-2021.csv.

One of the sources of injury and mortality data is the Marine Mammal Authorization Program (MMAP). From 2017 to 2021, NMFS received 248 MMAP fishermen self-reports documenting mortality and injury of 258 marine mammals in Alaska waters. In addition, NMFS received 13 MMAP fishermen self-reports documenting mortality and injury of 14 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 U.S. 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 previously dead; for example, had signs of decomposition, and its death could not be attributed to human causes; (d) the animal was reported to have been taken in a currently observed fishery and that species/stock is already accounted for in the observer data[†]; or (e) the interaction was also reported to the NMFS Alaska

[*] In the NOAA Institutional Repository, these data are under Supporting Files. https://doi.org/10.25923/rpkz-pb10.
[†]MMAP reports from currently observed fisheries were included in the data file if there were no observed mortalities or injuries of that species and 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 that fishery in that year).

Regional Office stranding network, usually with more details and, thus, is already accounted for in the data file.

Of the 819 human-marine mammal interactions provided in the supporting data file, 710 interactions were determined to have caused a mortality, serious injury (SI), removal from the population, or were prorated to reflect the likelihood of serious injury of the marine mammal involved in the interaction. The remaining 109 interactions were found to have resulted in a non-serious injury (NSI) of the marine mammal.

Human-caused injuries and mortalities were documented for 41 stocks across 22 species or species groups (such as unidentified pinnipeds). The most commonly reported species overall was Steller sea lion (n = 476 interactions, resulting in 429 M/SI), followed by northern fur seal (n = 120 interactions, resulting in 82 M/SI) and humpback whale (n = 71 interactions, resulting in 40.01 M/SI).

Across all 819 interactions, entanglement/entrapment was the most common mechanism of injury (n = 595), followed by hooking by fishing gear (n = 93) and removal from the population (n = 44).

Among entanglement/entrapment-related interactions, the majority occurred with fishing gear and marine debris. Other causes of entanglement/entrapment included vessel ground tackle, anchored line used for mooring docks, and unknown line with a buoy.

Acknowledgments

We thank the stranding networks at the NMFS Alaska and NMFS West Coast Regional Offices, the AFSC Fisheries Monitoring and Analysis Division's North Pacific Observer Program, the Northwest Fisheries Science Center's Fishery Resource Analysis and Monitoring Division Fisheries Observation Science Program (which encompasses both the West Coast Groundfish Observer Program and the At-Sea Hake Observer Program), and the Alaska Department of Fish and Game staff and volunteers, as well as the stranding responders, fishermen, fisheries observers, vessel and aircraft operators, and other individuals who report and respond to injured marine mammals in the Alaska and West Coast regions. We also thank Jim Carretta, Allison Henry, Suzie Teerlink, and members of the Alaska Scientific Review Group for reviewing AFSC-MML's injury determinations. Jim Carretta provided helpful comments and edits to this report.

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Acronyms and Abbreviations for Supporting Data File

Areas (also used in some Fishery Names):
AK: Alaska
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
AKRO: National Marine Fisheries Service, Alaska Regional Office
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

Initial Assessment and Final Determinations:
NSI: Non-Serious Injury
SI: Serious Injury

Other:
AMMOP: Alaska Marine Mammal Observer Program
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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