US Navy Report on Northern Edge 2021 & Marine Species Monitoring Program



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Exercise Northern Edge (NE)

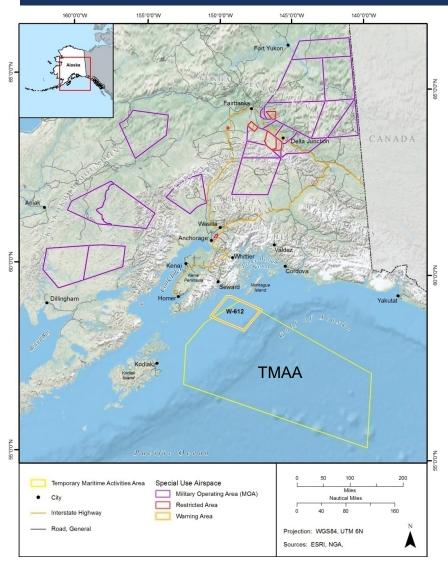
- NORTHERN EDGE is a U.S. Indo-Pacific Command sponsored joint forces training exercise involving Air Force, Navy, Marine Corps, Army, and Coast Guard
- Replicates scenarios in Indo-Pacific theater for practicing and refining joint service interoperability tactics, techniques, and procedures
- Exercise is biennial, occurring on odd years, with last NE conducted in May 2019
- Next exercise is scheduled to occur May 3 14 2021







NE Training Areas



- Joint Pacific Alaska Range Complex (JPARC): Airspace, military training lands & sea space in the Gulf of Alaska (GOA)
- Training range capabilities are unique in DoD
- At-sea Navy events occur in the Temporary Maritime Activities Area (TMAA):
 - TMAA only used and established during the exercise
 - No restrictions on civilian navigation (fishing vessels, commercial shipping, aircraft...)
 - TMAA beyond 12 nautical miles from coast and most activities occur far offshore and avoid other vessel traffic

Scope & Participation For NE 2021

- Pacific Air Forces is the lead for NE 2021 and is finalizing planning for the exercise to occur in the air, land and maritime areas of the JPARC
- NE 2021 is expected to be similar in size to NE 2019, with approximately 10,000 military personnel and 200 aircraft from all services, as well as approximately 7 Navy vessels:
 - Navy participation expected to included an aircraft carrier, and several destroyers or cruisers, and amphibious ready group ships





Protective Measures

- Extensive mitigations developed in coordination with National Marine Fisheries Service (NMFS)
- Implement mitigation zones for sonar and weapons activities with trained marine species Lookouts
- Minimize use of live explosives during weapons training
- Portlock Bank mitigation area: No use of explosives during training activities
- Coordinate with regulatory agencies for adaptive management
- Conduct population surveys and other Marine Species Monitoring projects





Minimal Impacts to Marine Species



Fish:

- TMAA positioned with minimal overlap of fisheries management areas; no overlap with salmon management areas
- Mid-frequency active sonar not heard by shellfish and most fish species, including key commercial species (e.g. salmon, groundfish); no fish mortality occurs from sonar
- Minimal use of explosives during training, occurring far offshore and away from fisheries management areas; Navy vessels avoid fishing activities

Marine Mammals:

- Minimal exposure of marine mammals with limited active sonar use; would not have significant long term or species level effects
- No strandings have been associated with Navy training in the GOA, and no Navy ship strikes of marine mammals have occurred

GULF OF ALASKA NAVY TRAINING ACTIVITIES SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (SEIS)

- Navy completed SEIS process for Gulf of Alaska Training Activities in April 2017, and received NMFS authorizations for 2017-2022
- Navy is currently completing an updated SEIS and NMFS permit renewals addressing training beyond 2022
- Proposed future training activities are consistent with those addressed in past EIS documents
- Draft Supplemental EIS released in December 2020 for public comment, with 2 virtual public meetings conducted
- Final Supplemental EIS is planned for release in Winter 2022
- Navy and NMFS documents available on project website: https://goaeis.com/

Marine Species Monitoring Program

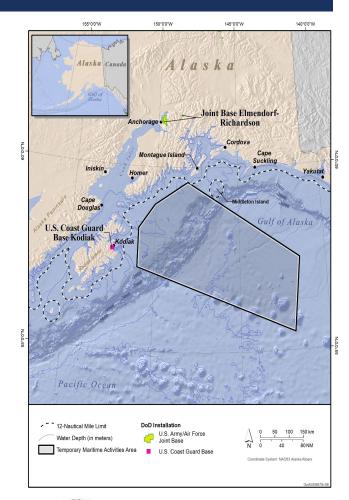
- The Navy is a world leader in marine species research and is responsible for compliance with environmental laws that apply to marine protected species
- Navy partners with state and federal agencies, universities, and research institutions to fund studies to better understand marine species occurrence and behavior
- Since 2009, the Navy has contributed approximately \$6 million to marine species monitoring projects in the GOA
- Projects tied to authorizations received from NMFS as part of Integrated Comprehensive Monitoring Program to coordinate efforts across all ocean regions





Purpose:

- Identify the temporal and spatial overlap of large immature Chinook salmon with Navy training area
- Identify specific Chinook populations in these areas using genetic tissue samples
- Understand Chinook salmon migration route from Alaska to the PNW: long route over the continental shelf or direct route straight across the GOA
- Use of the acoustic listening array deployed off of WA to determine on-shelf vs off-shelf return migration near system of origin

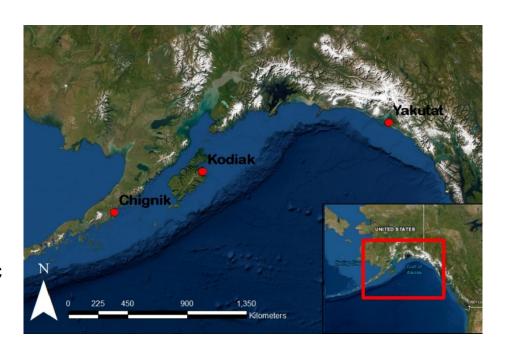






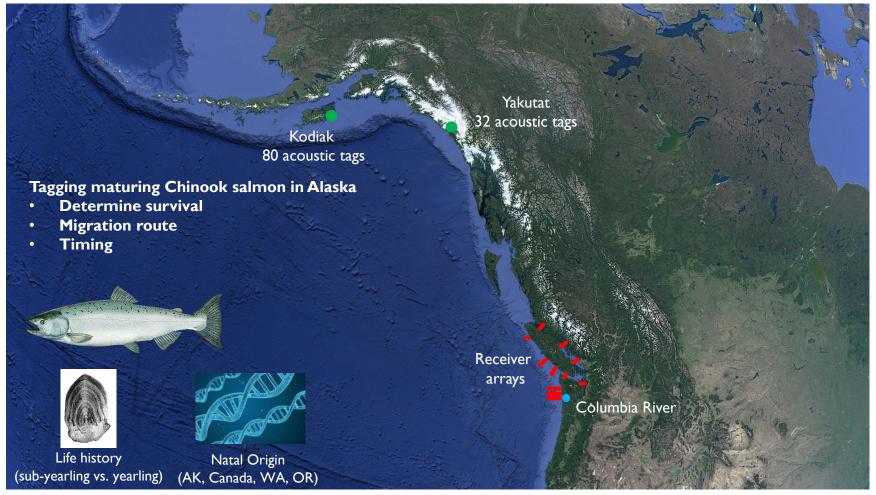
Methods:

- Currently funded at 3 locations.
 Looking forward at adding a fourth (Sitka)
- Tag 20 large Chinook using Popup Satellite Archival Tags at each location
- Tag large Chinook using acoustic tags at each location
- Collect tissue samples from large Chinook at each location



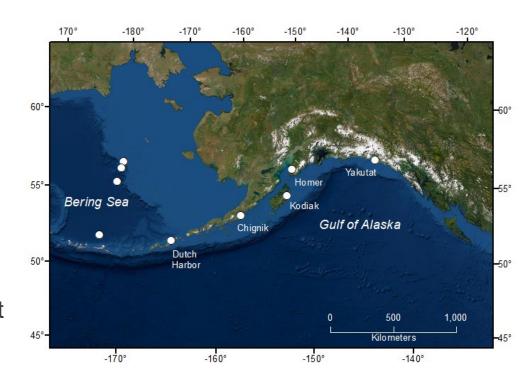








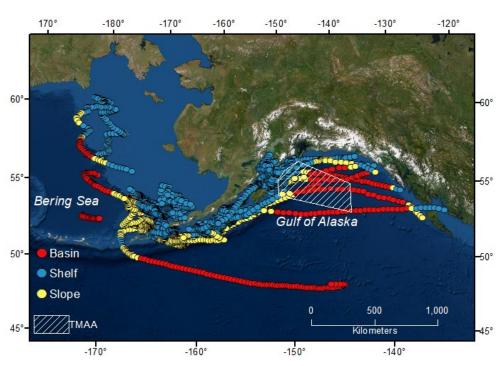
- Pop-up satellite tags
- For fish at liberty >21 days, reconstruct movement tracks
- Assign daily locations to shelf, slope, basin, TMAA
- Determined proportion of tagged fish and aggregated fish days in each place
- Assign natal origins based on SNPs for fish tagged in Cook Inlet and GOA







- 61 tags with >21 days of data
- Days at liberty = 67 ± 45 (max 260)
- Track lengths = 777 ± 627 km (max 2613 km)
- Of individual Chinook salmon, at some time, 97% shelf, 54% slope, 16% basin, 26% TMAA
- Of aggregated days (n = 4,105), 76% shelf, 17% slope, 6% basin, 5% TMAA
- Cook Inlet and GOA fish assigned origins (<u>preliminary</u>):
 - ∼35% Alaska
 - ∼40% British Columbia,
 - ~25% WA/OR (of which 70% Columbia)
- Caveats: study in progress, spatial and temporal gaps, more tags and analyses needed







Questions?

