The effects of individual characteristics and ocean conditions on the reproductive phenology and demography of pigeon guillemots (Cepphus columba) on Protection Island, WA

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Warlick, Amanda, "The effects of individual characteristics and ocean conditions on the reproductive phenology and demography of pigeon guillemots (Cepphus columba) on Protection Island, WA" (2022). Salish Sea Ecosystem Conference. 43.
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The effects of ocean conditions on the demography of Pigeon Guillemots (Cepphus columba) on Protection Island, WA

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GOAL
Examine the effects of ocean conditions on survival and fecundity.

ECOLOGICAL MOTIVATION
• Pigeon Guillemots (PiGu; Cepphus columba) are an indicator species in Puget Sound, WA.
• Limited knowledge about population status, abundance, demography, or links to environmental variability.

PROTECTION ISLAND
• National wildlife refuge
• PiGu habitat with little human disturbance (steep bluffs and driftwood-covered beaches)
• 20-38 nest boxes and 200 banded birds monitored from 1994-2013

FECUNDITY & SURVIVAL OVER TIME
Greater variability in fecundity compared with adult survival

Methods
- Estimated fecundity (fledglings/ nest) and adult survival using Bayesian nest production and Cormack-Jolly-Seber models
- Effect of ocean conditions on demography, having either direct (e.g., storminess) or indirect (e.g., prey availability) effects
  - Pacific decadal oscillation (PDO); sea surface temperature (SST), chlorophyll, North Pacific Gyre Oscillation (NPGO), spring & fall transition dates

FUTURE DIRECTIONS
• 46 nest boxes to be used in a new study linking foraging with demographic rates.
• PiGu will be banded and tracked using GPS units to identify key foraging areas.
• Intersection of shipping lanes and foraging areas will be evaluated.

ACKNOWLEDGEMENTS & AFFILIATIONS
The University of Washington acknowledges the Coast Salish peoples of this land, the land that touches the shared waters of all tribes and bands within the Suquamish, Tulalip, and Muckleshoot nations.
This work would not be possible without support from the US Fish and Wildlife Service WA Maritime National Wildlife Refuge Complex.

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