

RAYNE BILLINGS

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EDUCATION

B.L.A. in **Environmental Humanities** – *May 2023*

University of Alaska Southeast, Juneau, AK

- Thesis: (Advisor Dr. Kevin Maier) In Progress, expected completion Spring 2023
- Biology Individual Research Capstone: (Advisor Dr. Heidi Pearson) Alaska Resident killer whale demography, range, and sociality

RESEARCH GRANTS

URECA Creative Research Grant–*Spring 2023*

Awarded \$2500: Passive acoustic monitoring of killer whales

Biomedical Learning and Student Training Research Grant –*Spring 2023*

Awarded \$2500: Killer whale demography & behavior

Preparing Coastal Alaskan Students Research Funding –*Fall 2022*

Funds research salary October – December 2022: Marine mammal demography & behavior

Biomedical Learning and Student Training Research Grant –*Summer 2022*

Awarded \$5000: Humpback whale hormonal study

URECA Creative Research Grant –*Summer 2021*

Awarded \$2500: Wolf reintroduction politics

RESEARCH EXPERIENCE

BREACH Marine Mammal Laboratory, Research assistant to Dr. Heidi Pearson.

Received \$12,500 of funding to conduct research on killer whales and humpback whales in Juneau, Alaska

Passive Acoustic Monitoring of Killer Whales in Lynn Canal, Alaska, Student Research Project –*Spring 2023*

- Utilizing long-term hydrophones installed in Lynn Canal during spring 2023 to study killer whale presence in the region. Project will result in a poster presentation and manuscript with the potential for future publication.

Killer Whale Demography and Behavior, Individual Research Capstone Course – *Fall 2022, Spring 2023 (six credits)*

- Created a comprehensive, multi-ecotype identification guide for killer whales in the Juneau area. Utilized a combination of historical photographs, accounts, and present-day encounters to begin an analysis of killer whale demography, travel patterns, and behavior for both resident and transient ecotypes. Currently investigating the potential usage of strategically placed long-term hydrophones for further data collection of habitat use.
- Currently mapping killer whale encounters from 2016-2022 utilizing ArcGIS to define key areas of habitat use in the Juneau area. Second-by-second GPS location information from killer whale encounters is being utilized to further understand feeding patterns in accordance with area bathymetry, boat traffic patterns, and salmon density.

Humpback Whale Long-Term Stress Study Research Assistant – *January 2022 to Present*

- Collaborates with NOAA Marine Mammal Research Unit to conduct field-based behavioral research and sample collection from humpback whales. Assists with the utilization of a crossbow to obtain blubber core samples for further hormone analysis to study long-term stress trends in relation to local whale watching vessel density and presence. Collects skin samples during surface-active behavioral encounters for analysis of whale sex and age. Information obtained from samples is also utilized for further demographic studies of the local population.
- Manages field-based data-collection through Mysticetus program. Identifies whales and records behavioral state. Utilizes GPS technologies to record whale encounter locations for further analysis and mapping. Processes photographic data and investigates trends in individual feeding ground usage. Coordinates updates in whale identification catalogue and blubber sample datasheets.

Wolf Reintroduction and Politics in the American West – *2020 to 2022*

\$2500 Research Grant, URECA Research and Creative Activity, University of Alaska Southeast

- Guiding Questions: How do photography, science, and politics serve as mediators in wolf reintroduction projects and subsequent wolf encounters? What implications does the medium of photography hold for wildlife science?
- Engaged in several months of fieldwork during summer 2021 to study the current Colorado wolf reintroduction project and historic Yellowstone wolf reintroduction project. Project consisted of hands-on encounters with captive wolves and extensive backcountry travel through Colorado, Wyoming, and Montana.

Undergraduate Academic Journal Founder, University of Alaska Southeast

- Developed the University of Alaska Southeast's first academic journal. This project was intended to create a space on-campus to celebrate academic writing and allow students to showcase their work, publish their writing, and improve their writing skills. The journal is now going on its fourth year.
- Applied for several grants and received \$700 during the journal's inaugural year for use towards physical publication and judge compensation. In following years, the journal has been fully funded by the Student Government.
- Assign a panel of faculty, staff, and students to judge student submissions and decide what pieces should be published in the journal. Created a rubric for use during these meetings.
- Edited student writing for publication. Worked closely with the art faculty to invite prominent student artists to create journal covers. Organized student writing submissions, wrote journal introductions, and formatted journal for publication.

PUBLICATIONS AND PRESENTATIONS

Conference Presentations

- *Upcoming*: Passive Acoustic Monitoring of Killer Whales in Lynn Canal, Alaska. URECA Research Symposium, University of Alaska Southeast. Poster presentation, April 2023.
- *Upcoming*: Whale Watching Guidelines Along the Pacific Coast: Identifying Areas for Improvement of Conservation and Welfare. Emerging Voices of Animal Tourism Conference. March 2023.
- Ghosts of the Salish Sea: Endangered Animal Tourism in Washington's San Juan Islands. Emerging Voices of Animal Tourism Conference. 2022.
- Mourning Animal Lives: Love and Loss with the Southern Resident Killer Whales. Anthrozoology as International Practice Conference. 2021.
- Utilizing the Court System in the Fight for Environmental Justice. UAS Power and Privilege Symposium. 2019.

Publications

- Billings, R. Materializing the Gay Stroll: Toxic Killer Whales, Notions of Gender, and Ecological Change. *Summit Academic Writing Journal*. 2021.
- Billings, R. Brend, O. A Study in Milk. *Summit Academic Writing Journal*. 2020.

Guest Lecturer

- Biology Seminar Guest Lecturer (BIOL 492), University of Alaska Southeast. "Killer Whale Conservation." February 2021.

EMPLOYMENT

Southeast Alaska Intern – *April to July 2022*

Alaska Wildlife Alliance, Anchorage AK (remote)

- Created weekly wildlife fact sheets and videos, planned and managed community events throughout Southeast Alaska, and assisted with special projects.

Education Coordinator – *Summer 2021*

Seaquest Interactive Aquarium, Littleton CO

- Managed the education department, built a cohesive, developmentally appropriate curriculum focused on place-based education for use during field trips and events.
- Served as the primary trainer and educator for the interpretive team, created a training manual and aquarium guide to serve as a resource for new and experienced interpreters.

Writing Tutor – *2019 to 2021*

University of Alaska Southeast Writing Center, Juneau AK

- Served as the primary tutor for science writing: edited student papers, provided a variety of feedback, handled booking system and internal calendar, and collaborated with professors to discuss student work when necessary.

Orca Survey Center Volunteer – *Two spring/summer seasons, 2018, 2019.*

Center for Whale Research Orca Survey Center, Friday Harbor WA

- Provided interpretation for guests regarding the natural history of killer whales in the Salish Sea.

Lead Marine Naturalist – *Two spring/summer seasons, 2018, 2019.*

Western Prince Whale and Wildlife Tours, Friday Harbor WA

- Led whale watching tours focused on killer whales. Provided interpretation and education to guests. Collected behavioral field data to send to local researchers.