

## Megan Feddern

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## EDUCATION

2016 - present **Ph.D, University of Washington, School of Aquatic and Fishery Sciences**, Seattle, WA

- Major: Aquatic and Fishery Sciences
- Committee Chair: Gordon Holtgrieve
- Committee Members: Eric J. Ward, Sarah Converse, Tim Essington, Cecilia Bitz
- Dissertation "Applied ecosystem chemistry: linking biogeochemical and physiological processes to ecological interactions and management practices"

2011 - 2015 **B.A., Boston University**, Boston, MA

- Major: Biology, specialization in ecology and conservation biology (*summa cum laude*)
  - Minor: Marine Science
  - Honors thesis: "Identifying high energy prey species in the Gulf of Maine ecosystem"
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## PUBLICATIONS & REPORTS

**Feddern, M.L.**, G.H. Holtgrieve, E.J. Ward. 2020. Climate condition alters Washington harbor seal foraging ecology over the past century. *In Prep.*

**Feddern, M.L.**, G.H. Holtgrieve, E.J. Ward. 2020. Stable isotope signatures in archival pinniped bone link food web-assimilated carbon and nitrogen to a century of environmental change. *In Review.*

**Feddern, M.L.**, G.H. Holtgrieve, S. Perakis, J. Hart, H. Ro, T.P. Quinn . 2019. Riparian soil nitrogen cycling and isotopic enrichment in response to a long-term salmon carcass manipulation experiment. *Ecosphere*. [doi.org/10.1002/ecs2.2958](https://doi.org/10.1002/ecs2.2958)

**Feddern, M.L.**, H.R. Bassett, K.N. McElroy, M. Ree, M. Gho, and R. Hilborn. 2018. A novel method for modeling age and length selectivity of sockeye salmon as applied to the Bristol Bay Port Moller test fishery. *Canadian Journal of Fisheries and Aquatic Sciences*. [doi.org/10.1139/cjfas-2018-0018](https://doi.org/10.1139/cjfas-2018-0018)

Anderson, C., M. Krigbaum, M. Arostegui, **M.L. Feddern**, J.Z. Koehn, P. Kuriyama, C. Morrisett, C. Allen Akselrud, M. Davis, C. Fiamengo, A. Fuller, Q. Lee, K. McElroy, M. Pons, and J. Sanders. 2018. How commercial fishing is managed. *Fish and Fisheries* [doi.org/10.1111/faf.12339](https://doi.org/10.1111/faf.12339)

**Feddern, M.L.** and A. Spevacek. 2017. Community Solar Legislation Considerations. [White Paper]. On behalf of Washington Department of Commerce. [doi.org/10.13140/RG.2.2.28538.03520/2](https://doi.org/10.13140/RG.2.2.28538.03520/2)

**Feddern, M.L.** 2015. Monitoring changes in water temperature after mixed pipeline replacement in Hanalei National Wildlife Refuge (NWR), Hanalei, Hawai'i. US Fish and Wildlife Service Inventory and Monitoring, Water Resources Branch. *Technical Report*.

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## PRESENTATIONS

**Feddern, M.** 2020. Food web-assimilated resources and a century of environmental change in the NE Pacific. University of Washington School of Aquatic and Fishery Sciences Graduate Student Symposium. Remote Conference.

**Feddern, M.** 2020. Reconstructing a century of predator trophic position in WA with archival harbor seal bone. Salish Sea Ecosystem Conference. Remote Conference.

**Feddern, M.** 2019. "Climate Change in the Pacific Northwest". Cascadia Climate Action Climate Science on Tap. Seattle, WA.

**Feddern, M.** 2019. "Reconstructing a century of coastal productivity and predator trophic position indicators in coastal WA and the Salish Sea with archival bone." University of Washington School of Aquatic and Fishery Sciences Graduate Student Symposim. Seattle, WA.

**Feddern, M.** 2019. "Reconstructing a century of coastal productivity and predator trophic position indicators in coastal WA and the Salish Sea with archival bone." NOAA California Current Integrated Ecosystem Assessment Meeting. Seattle, WA. *Invited Speaker*

**Feddern, M.** 2019. "Reconstructing a century of coastal productivity and predator trophic position indicators in coastal WA and the Salish Sea with archival bone." American Fisheries Society WA/BC Chapter Annual meeting. Bremerton, WA.

Ng, E., **Feddern, M.**, Sorel, M., and Thomas, R. 2019. "Translation of Uncertainty in Environmental Science in Popular Press." University of Washington, College of the Environment Research Derby. Seattle, WA

**Feddern, M.** 2017. "Reconstructing historic changes in marine mammal trophic position in response prey availability and primary productivity." University of Washington School of Aquatic and Fishery Sciences Graduate Student Symposim. Seattle, WA.

**Feddern, M.** 2017. "Recommendations for Washington's Community Solar Program: Case Studies from Minnesota and Colorado". UW Graduate Student and Professional Student Senate Academic conference. Seattle, WA.

Uyehara, K., M. Reynolds, K. Courtot, C. Malachowski, T. Mayer, M. DuhrShulz, **M. Feddern**, and B. Wolfe. 2016. "Avian botulism jeopardizes island water birds: Case studies from to of Hawaii's National Wildlife Refuges." Hawaii Wetlands and Waterbird Workshop. Kaneohe, HI.

**Feddern, M.** 2015. "Identifying high-energy prey sources in the Gulf of Maine Ecosystem: Implications for Marine Management." Kilachand Honors College Senior Research Symposium, Spring 2015. Boston, MA.

Altman, I., R. Boumans, J. Roman, **M. Feddern**, L. Smith, D. Wiley, and L. Kaufman. 2014. "Do Key Prey Species (KPS) drive ecosystem services in the Gulf of Maine?" Regional Association for Research on the Gulf of Maine, Boston MA.

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## POSTER PRESENTATIONS

**M. Feddern.** 2019. Reconstructing a century of coastal productivity and predator trophic position in coastal Washington and the Salish Sea using archival bone. SeaGrant National Review Symposium. Seattle, WA.

**M. Feddern**, Fisher, M., J. Twedt and S Rinnan. 2017. The Public Comment Project. UW Program on Climate Change Summery Symposium, September 2017. Friday Harbor, WA.

**Feddern, M.**, T. Mayer, B. Wishnek, and K. Uyehara. 2016. Water quality monitoring tools assist with avian botulism mitigation on Hanalei National Wildlife Refuge (NWR), Kauai, Hawaii. Hawaiian Wetlands and Water Bird Workshop, January 2016. Kaneohe, HI.

**Feddern, M.** 2015. Identifying high-energy prey sources in the Gulf of Maine Ecosystem: Implications for Marine Management. Kilachand Honors College Research Symposium, May 2015. Boston, MA.

**Feddern, M.** 2014. Identifying high-energy prey sources in the Gulf of Maine Ecosystem: Implications for Marine Management. Undergraduate Research Opportunities Symposium, Fall 2014. Boston, MA.

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## RESEARCH EXPERIENCE

Historical coastal productivity and environmental change 2016 - present

*University of Washington: Graduate Research* Seattle, WA

Applying compound specific stable isotope analysis from archival harbor seal museum specimens to address spatial variability in food web assimilated resources (carbon and nitrogen) in response to ocean conditions in 2 regions in WA, and 3 regions in AK. Development/Application of Bayesian Dynamic Factor Analysis using a Gaussian process model.

Spatio-temporal variability in predator trophic dynamics 2016 - present

*University of Washington: Graduate Research* Seattle, WA

Using compound specific stable isotope analysis to address changes in harbor seal trophic position in coastal WA and Puget sound over the past 100 years in response to productivity and prey availability to generate indicators for integrated assessments for management.

Methodological assumptions of trophic position estimates 2017 - present

*University of Washington: Graduate Research* Seattle, WA

Using a first order kinetics model applied to stable isotope data to quantify the effects of tissue turnover rates and variability in isotope signature of primary producers on trophic position calculations using theoretical and observed data.

Translation of uncertainty in environmental science in popular press 2019– present

*University of Washington: Research Derby* Seattle, WA

Using text mining strategies, we analyzed the way uncertainty is expressed in scientific articles compared to popular press reports on those articles. Popular press expresses more uncertainty when the article 'hedges' its results but this varies based on outlet.

Bio-geochemical cycling in riparian soils and compensatory management 2017 - 2019

*University of Washington: Graduate Research* Seattle, WA

Used stable isotopes of inorganic nitrogen sources to assess the contributions of salmon carcasses to soil productivity, and the effect of nitrogen transformations on isotopic signatures.

Age and length selectivity of sockeye salmon 2017– 2018

*University of Washington: Graduate Research* Aleknagik, AK

Testing age and length selectivity of Bristol Bay sockeye salmon in the Port Moller test fishery using an age-structured population model to assess in season management. Collaboration with Bristol Bay Science and Research Institute.

Monitoring and assessing salmonid escapement May 1, 2016- September 1, 2016

*US Forest Service: Fishery Technician* Sitka, AK

Collected and analyzed limnological data and conducted mark-recapture escapement counts for a subsistence sockeye salmon fishery.

Disease transmission and threats to endangered species June 1, 2015 - February 1, 2016

*US Fish and Wildlife Service: Hydrology and Wildlife Technician* Hanalei, HI

Collected and analyzed water quality and hydrologic data to assess the transmission of avian botulism in five species of endangered water birds.

## Investigations in tropical ecosystems

January 15, 2015 - June 1, 2015

### Boston University: Undergraduate Research

Tiputini, Ecuador

Research projects for the tropical ecology program included project planning, data collection and reports.  
Example Projects: plant distribution in terra firme versus varzea environments, and assimilation of foreign individuals into colonies of social spiders.

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## **HONORS**

Best Conference Talk, Graduate Student Symposium, 2020

Washington SeaGrant and National Marine Fisheries Service Population Dynamics Fellowship 2019-Present

University of Washington College of the Environment Research Derby, First Place, 2019

Jeff Cederholm Scholarship, American Fisheries Society WA/BC Chapter, 2018

Clairmont L. and Evelyn S. Egvedt Fellowship, University of Washington, 2016-2017

Pamela Posen Endowed Memorial Scholarship, Boston University, 2015

Undergraduate Research Opportunity Grant Recipient, Boston University, 2014

Laura Vincent Prize for Original Research, Boston University, 2013

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## **TEACHING EXPERIENCE**

Conservation and Management of Aquatic Resources (FSH 323): TA

Autumn 2017

University of Washington: Graduate Student

Seattle, WA

Conducted weekly lab sessions on fisheries management, conservation, and writing skills. Contributed to examine questions and graded writing assignments. Delivered three guest lectures.

Tropical Ecology Program (BI 438, BI 439, BI 440, BI 441): TA

February 1, 2016 - May 1, 2016

Boston University

Quito, Ecuador

Coordinated and led field excursions and assisted students in developing research projects, including 8 days in the Galapagos, 10 days on the Ecuadorian coast, and 28 days at in Amazonian Ecuador (Tiputini Biodiversity Station), prepared and delivered guest lectures.

Organic Chemistry and Basic Statistics and Probability

October 1, 2013- December 15, 2015

Boston University Educational Resource Center: Undergraduate

Boston, MA

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## **Career Development and Community Service**

USGS Washington Cooperative Fish and Wildlife Research Unit

2020-present

Assistant Unit Lead Search Committee, Graduate Student Representative

Fisheries Interdisciplinary Network of Students

2016-2018

Graduate Student Symposium Chair

Students Explore Aquatic Sciences

2017-2019

Outreach Volunteer

University of Washington Program on Climate Change

2017-2019

Graduate Student Steering Committee Representative

Public Comment Project

2017-2019

Content Contributor

American Fisheries Society

2018-2019

UW Student Chapter elected Secretary

Puget Sound Institute

2018

Science Communication Fellow

Burke Museum: Girls in Science Program

2018

Outreach Volunteer

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