

CURRICULUM VITAE

Aaron W. E. Galloway, Ph.D.

Assistant Professor

University of Oregon

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APPOINTMENTS (courses taught in bold)

Assistant Professor. **Marine Conservation Biology, Marine Ecology, Open access tools for modern ecological research.** University of Oregon, Oregon Institute of Marine Biology. Fall 2015-present.

Affiliate Assistant Professor, University of Washington (UW) Civil & Environmental Engineering. March 2017-present.

Instructor. **Ecology Between & Below Pacific Tides** (with Scientific Diving option). Session B Summer 2015. **Marine Subtidal Ecology** (with Scientific Diving option). Session A Summer 2017 (scheduled). UW, Friday Harbor Labs (FHL).

Postdoctoral Research Associate, Faculty. Washington State University, School of the Environment, Pullman WA, USA. Supervisor: Stephanie Hampton. September 2014-15.

Visiting Postdoctoral Researcher. Stockholm University, Department of Ecology, Environment and Plant Sciences, Sweden (Home Institution: UC Davis). Supervisor: Monika Winder. November 2013-14.

Postdoctoral Researcher. University of Eastern Finland, Department of Biology, Joensuu, Finland. Supervisor: Paula Kankaala. June-November 2013.

Graduate Research Assistant. UW, School of Aquatic and Fishery Sciences, FHL. Supervisors: Sebens, Duggins, Dethier, Brett, Simenstad. 2007-2013.

Graduate Teaching Fellow. National Science Foundation (NSF) Ocean and Coastal Interdisciplinary Science (OACIS) GK-12 Program Fellowship, **Biology.** Spring Street Int. School, FHL, UW. 2012-13.

Graduate Teaching Assistant. **Marine Invertebrate Zoology.** FHL, UW. Spring 2012.

Graduate Teaching Fellow. **Oceanography, Physics, Chemistry.** NSF OACIS GK-12, Friday Harbor High School, FHL, UW. 2010-11.

Graduate Teaching Assistant. **Marine Botany.** FHL, UW. Summer 2011.

EDUCATION

<i>University of Washington</i>	Aquatic and Fishery Sciences (Ecology)	Ph.D. 2013
<i>Central Washington University</i>	Resource Management (Wildlife Biology)	M.S. 2004
<i>The Evergreen State College</i>	Environmental Science and Policy	B.A. 1999

PEER-REVIEWED PUBLICATIONS (32) (♦=student co-authors, ‡=supervising author)

32. Sutherland, K, O Blondheim, R Brodeur, H Sorensen, SR Marion, and AWE Galloway. 2018. Range expansion of tropical pyrosomes in the northeast Pacific Ocean. **Ecology** doi:10.1002/ecy.2429
31. Hampton, SE, AWE Galloway, and 14 additional authors. 2018. Recent ecological change in ancient lakes. **Limnology and Oceanography** doi: 10.1002/lno.10938

30. JB Schram, JN Kobelt, MN Dethier, and AWE Galloway. 2018. Trophic transfer of macroalgal fatty acids in two urchin species: digestion, egestion, and tissue building. **Frontiers in Ecology and Evolution** 6:Art83 doi:10.3389/fevo.2018.00083
29. Winder, M, J Carstensen, AWE Galloway, H Jakobsen, J Cloern. 2017. The land-sea interface: a source of high-quality phytoplankton to support secondary production. **Limnology and Oceanography** 62(S1):S258-S271 doi:10.1002/lno.10650
28. Galloway, AWE and AL Shanks. 2017. Opening the black box of coastal crab life history: observation of an exceptionally high-density settlement event. **Bulletin of the Ecological Society of America** 98:236-239 doi:10.1002/bes2.1325
27. Galloway, AWE, AL Shanks, S Groth, SR Marion, AR Thurber. 2017. Massive crab recruitment events to the shallow subtidal zone. **Ecology** 98:1468-1470 doi:10.1002/ecy.1740
26. Brett, MT, SE Bunn, S Chandra, AWE Galloway, F Guo, MJ Kainz, DCP Lau, P Kankaala, TP Moulton, ME Power, JB Rasmussen, SJ Taipale, JH Thorp, JD Wehr. 2017. How important are terrestrial organic carbon inputs for secondary production in freshwater ecosystems? **Freshwater Biology** 62:833-853 doi:10.1111/fwb.12909
25. Hampton, SE, AWE Galloway*, and 60 additional authors. 2016. Ecology under lake ice. **Ecology Letters** 20:98-111 (*2nd Author, where author order is organized by level of contribution) doi:10.1111/ele.12699
24. Brett, MT, ME Eisenlord♦, and AWE Galloway‡. 2016. Using multiple tracers and directly accounting for trophic modification improves dietary mixing model performance. **Ecosphere** 7(8):e01440 doi:10.1002/ecs2.1440 [Special Issue on Biomarkers in Trophic Ecology]
23. Dalu, T, AWE Galloway, NB Richoux, and PW Froneman. 2016. Effects of substrate on biologically important fatty acids produced by phytobenthos in an austral temperate river. **Freshwater Science** 35(4):1189-1201 doi:10.1086/688698
22. Taipale, SJ, AWE Galloway, SL Aalto, KK Kahilainen, U Strandberg, and P Kankaala. 2016. Terrestrial carbohydrates support freshwater zooplankton during phytoplankton deficiency. **Scientific Reports** 6:30897 doi:10.1038/srep30897
21. Lowe, AT♦, EA Roberts♦, and AWE Galloway‡. 2016. Improved marine-derived POM availability and increased pH related to freshwater influence in an inland sea. **Limnology and Oceanography** 61:2122-2138 doi: 10.1002/lno.10357
20. Duggins, DO, M Gómez-Buckley, R Buckley, AT Lowe, AWE Galloway, and MN Dethier. 2016. Islands in the stream: kelp detritus as faunal magnets. **Marine Biology** 163:art17. doi:10.1007/s00227-015-2781-y
19. Galloway, AWE, M Winder. 2015. Partitioning the relative importance of phylogeny and environmental conditions on phytoplankton fatty acids. **PLoS ONE** 10(6):e0130053. doi:10.1371/journal.pone.0130053
18. Galloway, AWE, MT Brett, GW Holtgrieve, EJ Ward, AP Ballantyne, CW Burns, MJ Kainz, DC Muller-Navarra, J Persson, JL Ravet, U Strandberg, SJ Taipale, and G Ahlgren. 2015. A fatty acid based algorithm for inferring diet in aquatic consumers. **PLoS ONE** 10(6):e0129723. doi:10.1371/journal.pone.0129723
17. Hampton, SE, MV Moore, T Ozersky, E Stanley, CM Polashenski, and AWE Galloway. 2015. Heating up a cold subject: prospects for under-ice research in lakes. **Journal of Plankton Research** 37:277-284. doi:10.1093/plankt/fbv002
16. Strandberg, U, SJ Taipale, M Hiltunen♦, AWE Galloway, MT Brett, and P Kankaala. 2015. Inferring heterogeneous phytoplankton composition with a fatty acid mixing model. **Ecosphere** 6:art16. doi:10.1890/ES14-00382.1
15. Lowe, AT, R Whippo♦, AWE Galloway, KH Britton-Simmons, and MN Dethier. 2015. Sedentary urchins influence benthic community composition below the macroalgal zone. **Marine Ecology** 36:129-140 doi: 10.1111/maec.12124

14. McDonald, PS, AWE Galloway, K McPeck ♦, and GR VanBlaricom. 2015. Effects of geoduck (*Panopea generosa* Gould, 1850) aquaculture gear on resident and transient macrofauna communities of Puget Sound, Washington, USA. **Journal of Shellfish Research** 34:189-202. doi:10.2983/035.034.0122
13. McDonald, PS, TE Essington, JP Davis, AWE Galloway, BC Stevick ♦, GC Jensen, GR VanBlaricom, and DA Armstrong. 2015. Distribution, abundance, and habitat associations of a large bivalve (*Panopea generosa*) in a eutrophic fjord estuary. **Journal of Shellfish Research** 34:137-145. doi:10.2983/035.034.0117
12. Galloway, AWE, S Taipale, M Hultunen ♦, E Peltomaa, U Strandberg, MT Brett, and P Kankaala. 2014. Diet specific biomarkers show that high quality phytoplankton fuel herbivorous zooplankton in large boreal lakes. **Freshwater Biology** 59:1902-1915. doi:10.1111/fwb.12394
11. Galloway, AWE, ME Eisenlord ♦, MN Dethier, GW Holtgrieve, and MT Brett. 2014. Quantitative estimates of isopod resource utilization using a Bayesian fatty acid mixing model. **Marine Ecology Progress Series** 507:219-232. doi:10.3354/meps10860
10. Raymond, WR ♦, AT Lowe, and AWE Galloway. 2014. Degradation state of algal diets affects fatty acid composition but not size of red urchin gonads. **Marine Ecology Progress Series** 509:213-225.
9. Dethier, MN, A Brown ♦, S Burgess ♦, ME Eisenlord ♦, AWE Galloway, J Kimber ♦, AT Lowe, CM O'Neil ♦, WR Raymond ♦, EA Sosik, and DO Duggins. 2014. Degrading detritus: changes in food quality of aging kelp tissue varies with species. **Journal of Experimental Marine Biology and Ecology** 460:72-79. doi:10.1016/j.jembe.2014.06.010
8. Lowe, AT, AWE Galloway, JS Yeung ♦, MN Dethier, and DO Duggins. 2014. Broad sampling and diverse biomarkers allow characterization of nearshore particulate organic matter. **Oikos** 123:1341-1354 doi:10.1111/oik.01392
7. Galloway, AWE, AT Lowe, EA Sosik, JS Yeung ♦, and DO Duggins. 2013. Fatty acid and stable isotope biomarkers suggest microbe-induced differences in benthic food webs between depths. **Limnology and Oceanography** 58:1452-1462. doi:10.4319/lo.2013.58.4.1451
6. Taipale, S, E Peltomaa, U Strandberg, AWE Galloway, A Ojala, and MT Brett. 2013. Fatty acid composition as biomarkers of freshwater microalgae: analysis of 37 strains of microalgae in 22 genera and in 7 classes. **Aquatic Microbial Ecology** 71:165-178. doi:10.3354/ame01671
5. Dethier, MN, EA Sosik, AWE Galloway, DO Duggins, and CA Simenstad. 2013. Addressing assumptions: variation in stable isotopes and fatty acids in marine macrophytes can confound conclusions of food web studies. **Marine Ecology Progress Series** 478:1-14. *(Feature Article)*.
4. Galloway, AWE, KH Britton-Simmons, DO Duggins, PW Gabrielson, and MT Brett. 2012. Fatty acid signatures differentiate marine macrophytes at ordinal and family ranks. **Journal of Phycology** 48:956-965. doi:10.1111/j.1529-8817.2012.01173.x
3. Britton-Simmons, KH, AL Rhoades ♦, RE Pacunski, AWE Galloway, AT Lowe, EA Sosik, MN Dethier, and DO Duggins. 2012. Habitat and bathymetry influence the landscape-scale distribution and abundance of drift macrophytes and associated invertebrates. **Limnology and Oceanography** 57:176-184. doi:10.4319/lo.2012.57.1.0176
2. Galloway, AWE, RJ Hickey, and GM Koehler. 2011. A Survey of ungulates by students along rural school bus routes. **Society and Natural Resources** 24:201-204. doi:10.1080/08941920903222572
1. Galloway, AWE, MM Tudor, and M Vander Haegen. 2006. The reliability of citizen science: a case study of Oregon white oak stand surveys. **Wildlife Society Bulletin** 34:1425-1429.

NON-PEER REVIEWED PUBLICATIONS, SOFTWARE, and DATA SETS

5. Hampton, SE, SG Labou, KH Woo ♦, AWE Galloway, and 10 additional authors. 2016. Dataset: Winter and summer comparison of biological, chemical, and physical conditions in seasonally ice-covered lakes. **Knowledge Network for Biocomplexity**. doi:10.5063/F12V2D1V

4. Galloway, AWE, GW Holtgrieve, EJ Ward and MT Brett. 2015. Software/program: FASTAR (Fatty Acid Source Tracking Algorithm in R) mixing model approach. **EcologyBox** (an open-source code repository for ecological modeling and statistics). <http://conserver.iugo-cafe.org/user/gway>. Last updated June 2015. [475 total downloads as of April 2017]
3. Galloway, AWE. 2013. Trophic transfer of nearshore basal resources: interpreting fatty acid and stable isotope biomarkers. **PhD Dissertation**, UW.
2. Galloway, AWE, BL Murphie. 2007. Harbor seal haulout verification in Hood Canal, WA. Unpublished internal report, Washington Department of Fish and Wildlife, Wildlife Science Program, Marine Mammal Investigations. 22 pp.
1. Galloway, AWE. 2004. The use of rural school bus routes and students for monitoring ungulate distribution in Kittitas County, Washington. **Master's Thesis**, CWU.

RECENT PRESENTATIONS and POSTERS (*indicates presenter) at scientific meetings

- Interaction of trophic stressors and the role of cannibalism on newly recruited coastal Dungeness crab exposed to reduced seawater pH. *JB Schram, AWE Galloway. [POSTER]
- Gordon Research Seminar: Ocean Global Change Biology, 7/2019, Waterville Valley, NH
- Relationship of under-ice light environment with biomass and nutritional quality of winter phytoplankton. SE Hampton, S Labou, AWE Galloway, S Powers, N Lottig.
- Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting, 7/2018, Victoria, Canada
- Do *Daphnia* and *Aphanizomenon* have a symbiotic relationship? Evidence for highly selective zooplankton resource utilization in a hypereutrophic lake. MT Brett, JB Schram, AWE Galloway, A Střížek, J Kann, JM Nielsen.
- Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting, 7/2018, Victoria, Canada
- Why so blue? Assessing possible drivers for bright blue-colored flesh in lingcod. *AWE Galloway, JB Schram, M Thomas ♦, JL Watson.
- Western Society of Naturalists Annual Meeting, 11/2017, Pasadena, CA
- Algae and sea urchin feces as alternative prey for newly settled Dungeness crab (*Metacarcinus magister*). *Z Clark-Henry ♦, AWE Galloway. [POSTER]
- Western Society of Naturalists Annual Meeting, 11/2017, Pasadena, CA
- Cancer magister*, massive settlement events and their potential effect on crab recruitment and the ecology of the shallow subtidal. *AL Shanks, AWE Galloway.
- International Larval Biology Symposium, 8/2017, Honolulu, HI
- Purple urchin compensatory consumption of sympatric macroalgae maintains growth and influences nutritional subsidies. *JB Schram, AWE Galloway.
- North American Echinoderm Conference, 7/2017, Worcester, MA
- Go-Pros, kayaks and Gray Whales: linking fine-scale whale behavior with prey distributions on a shoestring budget. *FA Sullivan ♦, K Iddings ♦, E Rubio-Lopez ♦, AWE Galloway, L Torres.
- Society for Marine Mammalogy, 22nd Biennial Conference, 10/2017, Halifax, NS, Canada
- Influence of macroalgal diet on purple urchin trophic efficiency. *JB Schram, AWE Galloway.
- Ecological Society of America Annual Meeting, 8/2017, Portland, OR
- Massive crab recruitment events to the rocky nearshore subtidal. *AWE Galloway, AL Shanks.
- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA
- The influence of algal diet mixtures on isopod growth, tissue turnover, and coloration. *JB Schram, AWE Galloway.
- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA
- Take a Shot: integrating photography into natural history, science, and communication. *R Yoshioka ♦, AWE Galloway. [POSTER]

- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA
Trophic biomarkers reveal basal food web dynamics in changing environmental conditions. *JB Schram, AWE Galloway.
- Gordon Research Seminar: Ocean Global Change Biology, 7/2016, Waterville Valley, NH
Are zooplankton and clams dining on super food or junk food? Application of a phytoplankton food quality index. *T Schraga, M Peacock, AWE Galloway, M Winder, D Senn, R Kudela, JE Cloern.
- Biennial Bay-Delta Science Conference, 11/2016, Sacramento, CA

SELECTED INVITED TALKS and SEMINARS

- “Fatty acids as tracers for trophic interactions among herbivorous coastal invertebrates”. 19-Mar-2018. Invited Departmental Seminar. San Diego State University; San Diego, CA.
- “Fatty acids as trophic biomarkers for nearshore marine trophic ecology: opportunities and limitations”. 22-Feb-2018. Invited talk. Department of Fisheries and Oceans (DFO) Canada Nearshore Habitat Productivity Workshop and Gap Analysis. Vancouver, BC, Canada.
- “Combining traditional and novel approaches for observing trophic relationships in nearshore subtidal coastal zones”. 4-Dec-2017. Invited Departmental Seminar. Oregon State University, Hatfield Marine Science Center; Newport OR.
- “Preparing undergraduates for 'publish or perish' using model journals of course-related research”. 31-Mar-2017. Invited seminar. Annual Cyamus Regional Meeting of the International Association of Aquatic and Marine Science Libraries and Information Centers; Charleston OR.
- “Quantitative diet reconstruction of the food webs supporting juvenile suckers in the Upper Klamath Basin using fatty acid based mixing models”. 10-Mar-2017. Invited talk (with co-author MT Brett), Sucker Science Summit, Klamath Falls OR.

INVITED GOVERNMENTAL COUNCILS and PANELS

Oregon Coordinating Council on Ocean Acidification and Hypoxia. Invited council member (1 of 13); 2 year appointment. The council meets monthly, with a mandate to make recommendations to the Oregon Governor and State Legislature on actions to take to better understand and mitigate ocean acidification and hypoxia. [<http://www.oregonocean.info/index.php/oah-council-info>]

CURRENT GRANTS (3) – 5 additional grant proposals currently in review

- “Effects of ocean acidification on behavior, development, and nutritional value of newly recruited coastal Dungeness crab”
Aaron W. E. Galloway, Julie B. Schram, University of Oregon; Oregon Sea Grant 2018-2020 Biennial; Awarded 4-Oct-2017; Total: \$201,881; Start date: 1-Feb-2018
- “Gooseneck barnacles (*Pollicipes polymerus*) on the Oregon Coast; Population description, feasibility of a fishery, fishery enhancement, and aquaculture”
Alan L. Shanks, Aaron W. E. Galloway, University of Oregon; Oregon Sea Grant SEED Research; Total: \$49,999 (1-year project); Start date: 1-Apr-2017
- “Quantitative diet reconstruction of the food webs supporting juvenile suckers in the Upper Klamath Basin using fatty acid based mixing models”
Michael T. Brett, University of Washington; Aaron W. E. Galloway, University of Oregon; US Bureau of Reclamation; Total: \$57,000 (routed through University of Washington); Start date: Aug 2017