

Rebecca J. Best**Assistant Research Professor**

School of Earth Sciences and Environmental Sustainability
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Education

PhD University of California, Davis, Population Biology, 2012. Advisor: Jay Stachowicz
MSc University of British Columbia, Forest Sciences, 2007. Advisor: Peter Arcese
BSc University of British Columbia, Environmental Sciences (Hons.), 2003.

Major research interests

Ecology, evolution, and conservation in aquatic systems, with a focus on connecting the evolutionary origins and ecological consequences of trait variation among and within species. I have worked on ecological and evolutionary constraints on community coexistence, species invasions, food webs, response to global change, and adaptive trait divergence.

Positions held

2016-present Assistant Research Professor - School of Earth Sciences and Environmental Sustainability, Northern Arizona University
2014-2016 Postdoctoral Scholar - EAWAG (ETH Institute of Aquatic Science and Technology - with Blake Matthews, Ole Seehausen, and Bernhard Wehrli)
2013 Postdoctoral Scholar - UC Davis (with Jay Stachowicz)
2003-04 Community Service Learning Coordinator - UBC

Research grants

2016 The evolution of functional diversity in aquatic ecosystems at climate margins. Academic Transition Research Grant (\$56,500 Eawag)
2014 Rapid phenotypic divergence in threespine stickleback: interactive effects of ecological context and genomic diversity. Adaptation to Changing Environments Synthesis Research Grant (\$33,000 ETH Zurich)
2009-12 Center for Population Biology Research and Travel Grants (\$6,675 UC Davis)

Scholarships and awards

2009-12 Bodega Marine Lab Graduate Fellowship
2011 College of Biological Sciences Mentorship Award (UC Davis)
2010-11 NSERC PGS-D Research Scholarship (Canada)
2007-10 Fulbright Science and Technology PhD Award (International)
2007 NSERC CGS-D for tenure in Canada (declined)
2007 Best Masters Thesis (UBC Faculty of Forestry)
2006-07 VanDusen Scholarship (UBC)
2005-06 Graduate Teaching Assistant Award (UBC Faculty of Forestry)
2004-06 Julie Payette-NSERC Research Scholarship (Canada)
2004-05 Graduate Entrance Scholarship (UBC)

2000-03	Wesbrook Scholar, Joan le Nobel Prize in Environmental Sciences, Charles and Jane Banks Scholarship, C A Rowles Alumni Prize, and the Thomas M C Taylor Prize in Botany (UBC)
2001	NSERC Undergraduate Student Research Award (Canada)
2000	Donner Canadian Foundation public policy internship grant (Canada)
1998-02	Canadian Merit Scholarship Foundation / Loran National Award (Canada)

Publications

* = mentored undergraduate student

** = mentored graduate student

-- *In press* --

15. Weber, M.G., C.E. Wagner, **R.J. Best**, L.J. Harmon, and B. Matthews. Evolution in a community context: on integrating ecological interactions and macroevolution. *In press, Trends in Ecology and Evolution*.

14. Leal, M.C., **R.J. Best**, D. Durston, R.W. El-Sabaawi, and B. Matthews. Stoichiometric traits of stickleback: effects of genetic background, rearing environment, and ontogeny. *In press, Ecology and Evolution*.

-- *Published* --

13. Lürig, M.D.** , **R.J. Best**, and J.J. Stachowicz. 2016. Microhabitat partitioning in seagrass mesograzers is driven by consistent species choices across multiple predator and competitor contexts. *Oikos* 125: 1324-1333.

12. **Best, R.J.**, M.N. Stone*, and J.J. Stachowicz. 2015. Predicting consequences of climate change for ecosystem functioning: variation across trophic levels, species, and individuals. *Diversity and Distributions* 21:1364-1374.

11. **Best, R.J.**, A.L. Chaudoin, M.E.S. Bracken, M.H. Graham, and J.J. Stachowicz. 2014. Plant-animal diversity relationships in a rocky intertidal system depend on invertebrate body size and algal cover. *Ecology* 95:1308–1322.

10. **Best, R.J.**, and J.J. Stachowicz. 2014. Phenotypic and phylogenetic evidence for the role of food and habitat in the assembly of communities of marine amphipods. *Ecology* 95:775–786.

9. **Best, R.J.**, and J.J. Stachowicz. 2013. Phylogeny as a proxy for ecology in seagrass amphipods: which traits are most conserved? *PLoS ONE* 8(3): e57550.

8. **Best, R.J.**, N.C. Caulk*, and J.J. Stachowicz. 2013. Trait vs. phylogenetic diversity as predictors of competition and community composition in herbivorous marine amphipods. *Ecology Letters* 16:72-80.

7. **Best, R.J.**, and J.J. Stachowicz. 2012. Trophic cascades in seagrass meadows depend on mesograzer variation in feeding rates, predation susceptibility, and abundance. *Marine Ecology Progress Series* 456:29-42.

6. Isaac-Renton, M., J.R. Bennett, **R.J. Best**, and P. Arcese. 2010. Effects of introduced Canada geese (*Branta canadensis*) on native plant communities of the Southern Gulf Islands, British Columbia. *Ecoscience* 17:394-399.

5. Hughes, A.R., **R.J. Best**, and J.J. Stachowicz. 2010. Genotypic diversity and grazer identity interactively influence seagrass and grazer biomass. *Marine Ecology Progress Series* 403:43-51.

4. Edwards, K.F., K.M. Aquilino, **R.J. Best**, K.L. Sellheim, and J.J. Stachowicz. 2010. Prey diversity is associated with weaker consumer effects in a meta-analysis of benthic marine experiments. *Ecology Letters* 13:194-201.

3. **Best, R.J.**, and P. Arcese. 2009. Exotic herbivores directly facilitate the exotic grasses they graze: mechanisms for an unexpected positive feedback between invaders. *Oecologia* 159:139-150.

2. Stachowicz, J.J., **R.J. Best**, M.E.S. Bracken, and M.H. Graham. 2008. Complementarity in marine biodiversity manipulations: reconciling divergent evidence from field and mesocosm experiments. *PNAS* 105:18842-18847.

1. **Best, R.J.** 2008. Exotic grasses and nutrient deposition by an exotic herbivore combine to reduce the relative abundance of native forbs. *Oecologia* 158:319-327.

Invited seminars

University of Wyoming Department of Botany, 2017

University of Northern Arizona School of Earth Sciences and Sustainability, 2016

Northeastern University Marine Science Center, 2015

University of Toronto School of Environment and Department of Ecology and Evolutionary Biology, 2014

Eawag/ETH Center for Ecology, Evolution, and Biogeochemistry, 2014

Selected conference presentations

Best, R.J., J.M. Anaya-Rojas, O. Seehausen, and B. Matthews. 2016. Ecological and evolutionary consequences of divergence and hybridization in Swiss sticklebacks. American Society of Naturalists Meeting, Asilomar, CA.

Lürig, M.D.** , **R.J. Best**, and J.J. Stachowicz. 2013. Microhabitat selection by seagrass mesograzers: Effects of predation, trait variation and species interactions. Western Society of Naturalists Annual Meeting. Oxnard, CA.

Best, R.J., and J.J. Stachowicz. 2013. Food vs. habitat and the assembly of grazer communities: Conflicting evidence from traits, phylogenies, experiments, and field surveys. Ecological Society of America Annual Meeting. Minneapolis, MN.

Best, R.J., and J.J. Stachowicz. 2013. Community assembly in seagrass grazers: Contrasting evidence from traits, phylogenies, experiments, and field surveys. Canadian Society for Ecology and Evolution Meeting. Kelowna, BC.

Best, R.J., N.C. Caulk*, and J.J. Stachowicz. 2012. Competitive outcomes and community composition in marine invertebrates are predicted by diversity in feeding traits and not by phylogenetic relatedness. Ecological Society of America Annual Meeting. Portland, OR.

Best, R.J., and J.J. Stachowicz. 2012. The value of trait vs. phylogenetic data for inferring community assembly processes in a system of herbivorous marine invertebrates. Evolution Meeting. Ottawa, ON.

Plank, C.A.* , **R.J. Best**, and J.J. Stachowicz. 2010. Habitat and feeding preference of *Ampithoe lacertosa* and *Idotea ressecata* in Bodega Harbor, CA. Western Society of Naturalists Annual Meeting. San Diego, CA. (poster)

Best, R.J., and J.J. Stachowicz 2010. Trophic cascades in seagrass meadows depend on mesograzer variation in both feeding rates and predation susceptibility. Western Society of Naturalists Annual Meeting. San Diego, CA.

Best, R.J. 2006. Inter-trophic invader interactions: an introduced herbivore facilitates replacement of native forbs with introduced grasses. Ecological Society of America Annual Meeting. Memphis, TN.

Mentoring experience

Awarded College of Biological Sciences Mentorship Award (2011, UC Davis)

Research advisor for nine undergraduates and three graduate students from four different countries, each receiving individual training in both statistics and scientific writing. Five students have been co-authors or co-presenters at conferences.

Teaching experience

University of Bern, Switzerland

Co-instructor: Practicum course in Aquatic Ecology and Evolution

University of California, Davis

Teaching Assistant: EVE 115 Marine Ecology
BIS 1 B Introduction to Animal Diversity

University of British Columbia

Awarded Faculty of Forestry Graduate Teaching Assistant Award (2006, UBC)

Workshop Organizer/Instructor: Why, When, and How to Use Linear Mixed Models
Teaching Assistant: FRST 533/430 Advanced Biometrics
Instructor: CONS 451 Conservation Field Course – Plant Taxonomy

Manuscripts reviewed for

Advances in Ecological Research, The American Naturalist, Ecology, Ecology Letters, Ecology and Society, Ecosphere, Evolution, Evolutionary Applications, Functional Ecology, Global Change Biology, Marine Biology, Marine Ecology Progress Series, Oecologia, Oikos, PLoS ONE, Proceedings of the Royal Society B

Grants reviewed for

US NSF Biological Oceanography, Czech Science Foundation

Professional society memberships

American Society of Naturalists, Canadian Society for Ecology and Evolution, Ecological Society of America, Western Society of Naturalists, Society for Conservation Biology

Outreach and service

- Reviewer for EcoEd Digital Library (Ecology Society of America)
- Student Coordinator for a Bodega Marine Lab Research Outreach class (2010)
- Graduate Student Mentor for the Lawrence Hall of Science Bodega Research Camp (2010):
- Project Leader for a UBC Learning Exchange Community Service Learning Project (2005-2006)
- Volunteer for the Let's Talk Science Partnership Program (2005-2006)
- Science Reviewer for Habitat Stewardship Program – Government of Canada (2005-2006)
- Member of the UBC Sustainability Advisory Committee and the UBC Sustainability Studies Steering Committee and Chair of WasteFree UBC (2001-2003)