

Elizabeth C. Atwood

Quantitative Ecology and Resource Management
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Education

- 2008 **Master's student**, Dr. John Horne, University of Washington, Seattle.
- 2005 **B.S. with Honors in Marine Biology,**
B.A. in Mathematics, University of California Santa Cruz, CA.

Honors and grants awarded

- 2008 North Pacific Research Board, Anchorage, AK. "Influence of coastal-origin mesoscale eddies on ichthyoplankton assemblages in the Gulf of Alaska". \$20,000.
- 2007 GeoBio Center, Ludwig-Maximilians-Universität, München. €800.
- 2007 Freunde der Zoologische Staatssammlung München. €100.
- 2005 Meyers Research Grant Fund, Monterey, CA. "Variation in breeding display behavior and evidence of laterality in male harbor seals (*Phoca vitulina*)", \$500.
- 2005 Senior thesis, Variation in breeding display behavior and evidence of laterality in male harbor seals (*Phoca vitulina*), awarded honors.

Research and employment

- 2007 **Project Collaboration**, Zoologische Staatssammlung München, Munich, Germany
Dr. Roland Melzer

Collaborative work. Research investigating limitation to vertical movement of larval crab (zoea) in the Comau Fjord. I had already collected and preserved samples while on the Huinay Scientific Field Station in Chile, thus my work in Munich consisted of identifying and quantifying zoeas in each sample, plus analysis of these data. Preliminary results suggest strong inhibition of vertical migration due to a persistent fresh water pycnocline in the fjord, which we present in a paper submitted to the Journal of Plankton Research.

- 2006 **Research and Technical Assistant**, Huinay Scientific Field Station, Región X^a, Chile
Dr. Verena Häussermann

Full time paid position. Work as one of two research assistants on a remote field station in the Chilean Patagonia fjords. Major duties include facilitating the work of both Chilean and international visiting research groups in various types of research ranging from oceanographic system dynamics to identification

of new species. Duties also include general station maintenance, largely without direct supervision. Skills required for this position covered high computer competence, ability to drive small water crafts, scientific SCUBA diver, proper laboratory skills (microscope maintenance, sample preparation, seawater system maintenance), invertebrate taxonomy, and ability to work long hours. During the final months on the station, I initiated a project investigating larval decapod populations in the Comau Fjord (see above).

2005-2003 **Field Assistant**, PISCO, Long Marine Lab, California

Jared Figurski

Volunteer followed by paid position. Assisted thesis work of Jared Figurski (advised under Dr. Mark Carr) investigating the community role of detritus kelp as a habitat for various invertebrates and as potential nursery habitat for recently recruited rockfish (*Sebastes spp.*). Work included SCUBA surveys of fish, invertebrate, and algae species. Other duties included building materials underwater, small boating skills, project design, data entry (Excel) and data analysis (SYSTAT).

2005-2002 **Lab Assistant**, Pinniped Cognition and Sensory Systems Lab, Long Marine Lab, California

Dr. Colleen Reichmuth-Kastak, Dr. R. Schusterman

Volunteer position. Major duties included care and maintenance of 3 captive pinnipeds (sea lion, harbor and elephant seal), extensive help in various physiological experiments involving hearing, as well as cognition experiments of basic logic concepts. Work through this lab lead to other positions, such as a field assistantship studying elephant seal acoustics and my senior thesis work with harbor seals. I was advised for my thesis by Dr. Ron Schusterman, the founder of the lab, and also aided extensively by Dr. Colleen Reichmuth-Kastak.

2005 **Data Analysis**, FishWise, Santa Cruz, California

Dr. Teresa Ish, Dr. Shelly Benoit

Part time paid position. Main focus of my work was analysis of sales data before and after implementation of a seafood labeling program in grocery stores. This information was not only used to assure continued support of participating companies, but also in acquiring new clients. Other duties included aiding in program publicity, publications, and general office work.

2005-2004 **Field Assistant**, Pinniped Cognition and Sensory Systems Lab, Long Marine Lab,
California

Dr. Marla Holt

Volunteer position. Field work at Año Nuevo State Reserve studying male elephant seals during the breeding season. Completed an independent study in winter 2004 looking at nearest neighbor distance between males competing for harem control, and quantifying dynamic hierarchy relationships using different methods than previously employed for this species (Elo-ranking system). In the breeding season winter 2005, aided in play-back studies with male-male elephant seal acoustic behavior.

2003 **Field Assistant**, Doak Lab, UCSC, California

Jacob Pollock

Internship position. Performed an independent study working with Jacob Pollock, PhD student of Dan Doak, looking at movement of coyote populations in Elkhorn Slough. Duties included help in trapping surveys of prey, design of a motion-sensitive camera, and occasional input on research methods.

1998 **Lab Assistant**, Santa Cruz Institute for Particle Physics, UCSC, California

Dr. Robert Johnson

Full time paid position. Summer job doing PC board layout using SYMPAD. Final product used in the GLAST satellite project, launched in 2008.

Presentations and teaching

2009 Alaska Marine Science Symposium, Anchorage, AK

Presented a talk “Influence of mesoscale eddies on ichthyoplankton assemblages in the Gulf of Alaska”

2006 Huinay Scientific Field Station, Región X^a, Chile

During my employment on the station, I was responsible for organizing a variety of presentations and workshops for the local schools concerning the Comau fjord.

2005 Animal Behavior Society 42nd Annual Meeting, Snowbird, UT

Presented a talk on my senior thesis work “Breeding behavior and evidence of laterality in male harbor seals (*Phoca vitulina*)”.

2004 UCSC Undergraduate Research Symposium, Santa Cruz, CA

Poster presentation on the results of an independent study in winter 2004 looking at nearest neighbor distance between male elephant seals competing for harem control. Dynamic hierarchy relationships were quantified using different methods than previously employed for this species (Elo-ranking system).

Education research experience

2005 **Thesis Work**, UCSC, California

Dr. Ron Schusterman, Dr. C. Reichmuth-Kastak

Complete study of breeding male harbor seal behavior: Variation in breeding display behavior and evidence of laterality in male harbor seals (*Phoca vitulina*). This study grew out of an opportunity presented to access an old data set of Dr. Ron Schusterman, which I was preliminarily interested in using to practice statistical analyses. As I became more involved with questions concerning male harbor seal behavior, I initiated field work to boost my sample size and decided to turn this work into my senior thesis.

2004 **Marine Ecology Field Quarter**, UCSC, California / Moorea, Tahiti

Dr. Pete Raimondi, Dr. Giacomo Bernardi

First half of course work completed at UCSC, looking at topics in marine ecology, coral reef systems, and ichthyology. Second half completed in Moorea, Tahiti, where we continued class work concerning coral reef dynamics and also performed individually designed projects. I completed a study investigating costs (survival and growth rate) of delayed metamorphosis to recruiting larval *Acanthurus triostegus*.

2003 **Kelp Forest Ecology**, UCSC, California

Dr. Pete Raimondi, Dr. Mark Carr

Focus on ecology topics specifically pertinent to kelp forest marine systems. The first half of the course consisted mainly in class work, while the second half finished with primarily field work where students completed an independent experiment. Building on experience volunteering for PISCO, I performed a

methods study of line transect techniques used extensively in abundance estimates titled: Examination of Variability in Surveys due to Surge and Visibility Factors.

2003 **Quantitative Ecology & Conservation**, UCSC, California

Dr. Dan Doak

Focusing on topics in quantitative ecology and practice in population modeling using Matlab. For a final class project, I performed an analysis of failing cabezon (*Scorpaenichthys marmoratus*) populations along the western continental US utilizing CPUE data from the California Department of Fish & Game.

Publications & Newsletter contributions

Atwood, E., Horne, J.K., Duffy-Anderson, J.T. & C. Ladd (2009). Influence of mesoscale eddies on ichthyoplankton assemblages in the Gulf of Alaska. Alaska Marine Science Symposium, Anchorage, 19-23 January 2009: p. 10.

Willenz, P., Häussermann, V., Försterra, G., Schrödl, M., Melzer, R., Atwood, E. & Jorda, C. (2007). Finding more pieces of the Chilean puzzle. *Global Marine Environment* 5: 26-29.

Atwood, E., Kastak, C. R. & R. Schusterman (2005). Breeding behavior and evidence of laterality in male harbor seals (*Phoca vitulina*). Proceedings Animal Behavior Society 42nd Annual Meeting, Snowbird, Utah, 6-10 August 2005: p. 6.

References

Dr. John Horne; Research Associate Professor, joint Aquatic & Fishery Sciences and Quantitative Ecology & Resource Management, University of Washington, (206) 221-6890, jhorne@u.washington.edu

Dr. Janet Duffy-Anderson; Research Fishery Biologist, NOAA/NMFS Alaska Fisheries Science Center, (206) 526-6465, Janet.Duffy-Anderson@noaa.gov

Dr. Mark Kott; Chair of Quantitative Ecology and Resource Management, University of Washington, (206) 543-0908, kot@amath.washington.edu

Dr. Roland Melzer; Professor and Docent, Zoologische Staatssammlung München, Munich, Germany (0049 – 89) 8107 – 141, melzer@zi.biologie.uni-muenchen.de