

**Christopher Kent Kwan**  
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### **Education**

#### **M.S. in Ecology (Ph.D. in December 2015)**

University of California, Davis and San Diego State University

#### **B.S. in Evolution, Ecology, and Biodiversity (June 2009)**

#### **Minor in Environmental Toxicology**

University of California, Davis

### **Research Interest**

I am interested in how human-caused stressors affect aquatic ecosystems through alterations in water quality, organism abundance, community structure, and ecosystem function. I combine ecological and toxicological perspectives to address these growing and prolific environmental issues using laboratory and field studies. My career goals are to broaden science communication to the public and more effectively incorporate research into solving societal issues through interdisciplinary research.

### **Positions Held**

**Adjunct Faculty**, Life Sciences Department, Santa Rosa Junior College, 2015 – present

**President**, Bodega Marine Sciences Association, 2013 – present

**Co-Chair**, California Estuarine Research Society Conference, 2014

**Research Scientist**, Coastal Marine Institute, San Diego State University, 2010 – present

**Research Scientist**, Bodega Marine Laboratory, UC Davis, 2008 – present

**Environmental Scientist**, NOAA - National Marine Fisheries Services, 2009

**Laboratory Assistant**, Plant Ecology Laboratory, UC Davis, 2007 - 2008

**Academic Peer Advisor**, Department of Evolution and Ecology, UC Davis, 2007 – 2009

**Resident Advisor**, UC Davis, 2006-2007

**Zoo Camp Intern**, San Francisco Zoo, 2005 – 2006

**Zoo Camp Volunteer**, San Francisco Zoo, 2003 – 2004

### **Research Experience**

Research Scientist

**May 2010 – present**

*Advisors - Dr. Jeremy Long, San Diego State University and Dr. Eric Sanford, UC Davis*

- Designed and conducted field and laboratory experiments and surveys investigating climate change and pollution impacts on aquatic food webs in San Francisco Bay, Bodega Bay, Tomales Bay, Tijuana Estuary, and Sweetwater Marsh
- Examined how rising sea level, ocean acidification, warming waters, and pollutants combine to impact coastal and wetland ecosystems
- Wrote grants and proposals to fund research that emphasized on finding solutions to managing and restoring natural habitats in California
- Performed 5+ years of habitat impact assessment and environment surveys from research in the California, Oregon, and New England Coasts
- Authored multiple publications on my research in peer-reviewed science journals

Bodega Marine Lab Research Scientist, Stachowicz Lab **June 2009 - May 2010**  
*Supervisor - Dr. Jay Stachowicz, Dept. of Evolution & Ecology Faculty, UC Davis*

- Led multi-year, \$500,000+ NSF-funded study on the effects of algal species diversity on intertidal community function and structure
- Resulted in NSF-funded grants, peer-reviewed journal publications, and presentations at research conferences
- Monitored percent cover of harbor fouling species for a long-term study on invasive and native aquatic species; recorded species recruitment rates, abundances and diversity
- Managed paid lab assistants and unpaid volunteers in doing lab and field work; many of them went to graduate school and found other jobs in science
- Collaborated with ecologists, oceanographers, toxicologists, government officials, private companies, and the public for successful completion of a 6+ year long-term study of the impacts of biodiversity loss

National Oceanic and Atmospheric Administration Scientist **January 2009 - September 2009**  
*Supervisor – Howard Brown, Sacramento River Branch Head, NOAA*

- Assisted in editing and revising of the salmon recovery plan; resulted in finalization of large-scale annual report on salmon fishery recovery in California
- Provided advice and suggestions for habitat restoration of the Central Valley salmon recovery plan
- Designed ArcGIS maps and figures for reports and data analysis
- Implemented NEPA and CEQA knowledge to facilitate decisions on salmon recovery procedures and habitat management
- Helped search and quantify population size viability and population growth rates for Chinook Salmon in the recovery strategies and goals section of the salmon recovery plan
- Led to successful re-opening of salmon fishery in California the following year

Bodega Marine Laboratory Research Scientist, Sanford Lab **April 2008 - October 2009**  
*Supervisor – Dr. Eric Sanford, Bodega Marine Laboratory Faculty, UC Davis*

- Monitored over 200 intertidal snails in predation laboratory experiment
- Resulted in multiple \$200,000+ NSF-funded grants, journal publications, and scientific conference presentations
- Constructed mussel assemblages and cages for own research project; prepared and deployed cages in the Bodega Marine Reserve intertidal coast

Plant Ecology Laboratory Assistant, Richards Lab **June 2007 - January 2008**  
*Supervisor, Emily Sharp, Lab Manager, Richards Lab, UC Davis*

- Researched ideal plant and soil conditions for higher fitness of community plants in a multi-year study
- Prepared and weighed more than 300 *Arabidopsis* plant samples for isotope measurements
- Led to multiple multi-disciplinary, multi-year, \$200,000+ NSF research grants and journal publications
- Prepared nutrient water for an assortment of plants with various chemicals in the lab to understand abiotic impacts on plant growth

- Managed psychomotor measuring units used for finding water potential of salt grass plant for increasing growth and reproduction

### **Funding and Awards**

NSF Coastal, Atmospheric, Marine Environmental Observing Studies Fellowship (2013-2014) – Amount: \$45,000

Harold & June Grant Memorial Scholarship (Summer 2013) – Amount: \$2,000

San Diego State University Graduate Student Travel Fund (2013-2014) – Amount: \$1,000

NSF Graduate Research Fellowship Honorable Mention (2012)

Council of Ocean Affairs, Science and Technology (COAST) Student Award for Marine Science Research (Summer 2011) – Amount: \$1,500

Department of Evolution and Ecology Departmental Citation Award (June 2009)

UC Davis Deans Honor List (Winter 2006, Spring 2007)

Henry A. Jastro Scholarship (Summer 2005)

### **Publications**

**Kwan CK**, Sanford E, Long J (2015). Copper Pollution Increases the Relative Importance of Predation Risk in an Aquatic Food Web. *PloS ONE* 10(7): e0133329.

Long JD, Porturas L, Jones E, **Kwan C**, Trussell GC (2013). Seaweed traits linked to wave exposure determine predator avoidance. *Marine Ecology Progress Series*, 483:143-151.

### **Presentations**

**Kwan, CK**, E Sanford, and J Long. Context-Dependency of Predator Effects in an Estuarine Food Chain: Impact of Copper Pollutants and Environmental Factors. Oral Presentation, Ecology Graduate Symposium, February 2015.

**Kwan, CK**, E Sanford, and J Long. Context-Dependency of Predator Non-Consumptive Effects in an Estuarine Food Chain: Impact of Copper Pollutants and Abiotic Factors. Oral Presentation, Western Society of Naturalists, November 2014.

**Kwan, CK** and J Long. Smell You Later: Sub-Lethal Copper Effects on an Estuarine Food Chain. Oral Presentation, Bodega Marine Laboratory, June 2013.

**Kwan, CK** and J Long. Copper Weakens Trait-Mediated Indirect Interactions in an Estuarine Tri-Trophic System of Predator Crab, Invasive Whelk and Barnacles. Oral Presentation, Western Society of Naturalists, November 2013.

**Kwan, CK**, J Long, and E Sanford. Testing for Community-level Effects of Copper Pollutants on an Estuarine Tri-Trophic System. Poster Presentation, Western Society of Naturalists, November 2012.

Seubert, E and **CK Kwan**. Trait-Mediated Indirect Interactions between a Predatory Crab and Different Populations of the Striped Dogwhelk, *Nucella ostrina*. Poster Presentation, Western Society of Naturalists, November 2012.

**Kwan, CK** and B Gaylord. Reduction effects of mussel assemblages on hydrodynamic forces influencing predation behaviors of the intertidal whelk, *Nucella ostrina*. Oral Presentation, Bodega Marine Laboratory Undergraduate Research Symposium, August 2008.

### **Teaching Experience**

**Instructor**, Introduction to Principles of Biology, Santa Rosa Junior College (2015)

**Teaching Assistant**, Wildlife Conservation and Restoration in the Field, UC Davis (2015)

**Teaching Assistant**, Introduction to Biology: Evolution and Ecology, UC Davis (2014)

**Science Teacher**, NSF CAMEOS, Lawrence Cook Middle School (2013-14)

**Teaching Assistant**, Biostatistics, San Diego State University (2013)

**Teaching Assistant**, Coastal Marine Research, Bodega Marine Lab, UC Davis (2012-15)

**Teaching Assistant**, Experimental Biology, Bodega Marine Lab, UC Davis (2012-15)

**Teaching Assistant**, Ecology and the Environment, San Diego State University (2010-11, 13)

Science Teacher, UC Davis, San Diego State University, Santa Rosa JC   **August 2010- Present**

- Guided 500+ college students in biology, ecology, environmental sciences, statistics, GIS, and wildlife conservation classes; led to posters, presentations at conferences
- Mentored 100+ college students in conducting own scientific research and presenting results
- Instructed and informed 50 middle school students from low-income, English as second language families of the importance of science, math, and conserving the natural environment; taught them to conduct science projects and communicate findings to science community; resulted in first ever participation of scientific symposium for this school
- Created and presented lectures on ecology principles to undergraduate biology students
- Coordinated courses in general biology, field biology, ecology, statistics, wildlife conservation, environmental sciences, and environmental management
- Advised undergraduate biology students in course requirements, graduation completion, and career searches

### **Affiliations**

Bodega Marine Sciences Association, President and Member

Western Society of Naturalists, Meeting Organizer and Member

Strategies for Ecology, Education, Diversity and Sustainability, Mentor and Member

California Estuarine Research Society, Member

Ecological Society of America, Member

Society of Toxicology and Chemistry, Member

Marine Ecology and Biology Student Association, Member

The National Society of Collegiate Scholars, Member

### **References**

**Jeremy Long**, Department of Biology Associate Professor, San Diego State University

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**Eric Sanford**, Bodega Marine Laboratory Faculty member, Department of Evolution and Ecology Professor, UC Davis  
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**Howard Brown**, National Oceanic and Atmospheric Administration – Fisheries Branch Head  
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**Sherri Mann**, Department of Evolution and Ecology Graduate Program Administrator and Undergraduate Academic Advisor, UC Davis  
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