

Amanda C. Bird

Curriculum Vitae

Amanda@pauamarineresearch.com

Education

- M.S. Biology, California State University, Fullerton - 2018
M.S. Thesis: Determining population structure, reproductive potential and habitat associations of pinto abalone (*Haliotis kamtschatkana*) in southern California
Adviser: Dr. Danielle Zacherl
- B. S. Conservation Biology, Arizona State University, Tempe, AZ - 2008
Senior thesis: The effectiveness of marine protected areas around the world

Work Experience

Paua Marine Research Group, Senior Biologist - January 2016 to Present, San Diego, CA

- Coordinate field operations for abalone restoration work in Southern California with NOAA National Marine Fisheries Service, including scientific diving, small boat operations, deployment of oceanographic sensors and use of time-lapse photography for data collection
- Assist NMFS with young-of-year rockfish surveys in Puget Sound, Washington and coordinate citizen-scientist survey program
- Plan and implement marine habitat restoration activities including, primarily eelgrass restoration in bays, estuaries and open-coast habitat and mitigation in accordance with the California Eelgrass Mitigation Policy (CEMP)
- Conduct subtidal and intertidal biological monitoring to inform resource management policies, including invasive species surveys and protected species and habitat monitoring
- Data organization and analysis and incorporation into relevant reports and presentations

California State University, Fullerton, M.S. Student Researcher - 2013 – 2017, Fullerton, CA

- Thesis research: Determining population structure, reproductive potential and habitat associations of pinto abalone (*Haliotis kamtschatkana*) in southern California
- Field surveys involve assays of abalone abundance, spatial distribution, size frequencies, and habitat associations measured through the use of SCUBA-based line transect surveys and video transects.
- *Post hoc* analysis of habitat associations (e.g., substratum composition, relief structure, invertebrates, macroalgal species, and fishes), from video transect surveys and photo plots
- Analysis of habitat associations, depth preferences, and spatial distribution using spatial analysis in GRASS and ArcGIS; other statistical analysis using R and JMP
- Over 100 hours operating an 18' Boston Whaler research vessel in southern California

- Coordinating, training and supervision of 12 dedicated American Academy of Underwater Sciences (AAUS) volunteer scientific divers
- Purchase and maintenance of all diving and boating-related equipment and supplies including diving equipment and tanks, survey supplies, annual dive gear maintenance, and boat safety supplies (e.g., PFDs, First Aid, Oxygen)
- Obtained over \$28,000 in grant and scholarship funding for this project

Tierra Data, Inc., Biological Technician – 2015 to 2017, Escondido, CA

- Project-based field work associated with U.S. Navy marine biological assessments in San Diego Bay and at San Clemente Island
- Eelgrass habitat impact assessments and mitigation planning
- Sensitive and endangered species' monitoring for in-water construction projects
- Sediment and water quality sampling
- Marine mammal monitoring in association with in-water construction projects

Coastal Resources Management, Inc., Biological Technician – 2009 to 2016

- Impact assessments for kelp forest, rocky reef, intertidal, bay/estuarine mudflat, eelgrass and salt marsh habitats and sensitive/endangered species
- Surveys of eelgrass density, percent cover, and associated epifaunal diversity and abundance to inform mitigation and restoration efforts
- Water quality/light sensor deployment and maintenance – YSI, Apogee PAR meters, and HOBO remote temperature/light loggers
- Field collection, processing, and quality analysis of fresh and saltwater samples using SCUBA or methods from boat using Van Dorn water samplers and Ekman/Ponar/Van Veen grab samplers
- Collection of bay sediment for toxicity testing
- Underwater seagrass habitat mapping using surface-supplied air and OTS Guardian underwater communication mask systems
- Kayak-based GPS mapping of eelgrass areal cover
- Eelgrass collection, transport, and transplantation in bay/estuarine habitats
- Eelgrass transplantation using novel techniques including hand-bundling, Transplanting Eelgrass Remotely with FrameS, and Buoy-Deployed Seeding methods
- *Caulerpa* surveys

National Park Service, Seasonal Biological Technician (GS-04) – 2015, Ventura, CA

- Seasonal position performing kelp forest surveys at 33 long-term monitoring sites at each of the Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara Island)
- Bi-monthly, multi-day (typically 5 or less) research cruises on a 60ft research vessel with 10 biologist/divers and up to five dives per day in water temperatures ranging from 50-72°F
- Collected data on population dynamics of over 150 kelp forest community species using SCUBA and surface-supplied air diving techniques
- Fish, invertebrate, and benthic composition band transects, quadrats, random point contacts, video transects, fish transects, size-frequency measurements, and photo/video documentation in kelp forest/rocky reef habitats
- Data entry, QA/QC, analysis, and reporting
- Maintenance and organization of dive gear, sampling equipment, and NPS research vessel

Orange County Coastkeeper, Marine Restoration Coordinator – 2009-2014, Costa Mesa, CA

- Designed and implemented a four-year, community-based eelgrass (*Zostera marina*) restoration project in Newport Bay, Newport Beach, CA using eelgrass survey and water quality sampling methodologies used as a Marine Biologist for Coastal Resources Management, Inc.
- Oversaw a team of scientific volunteer divers to collect epipodial tissue samples from green abalone (*Haliotis fulgens*) in nearshore kelp forests in Orange County in order to examine the genetic structure of green abalone in the southern California Bight in coordination with federal and state agencies, academic institutions and other non-profits
- Assisted Dr. Danielle Zacherl at California State University, Fullerton in the implementation of a native Olympia oyster (*Ostrea lurida*) restoration project in Alamitos Bay, Long Beach, CA
- Designed and implemented a junior high and high school educational field trip program directly associated with the Olympia oyster restoration project
- Obtained over \$400,000 in grant funding for educational programs, public outreach, and restoration projects

Professional Skills, Certifications & Qualifications

Megalodon 2.7 CCR Normoxic Trimix Plus - 2019

Megalodon 2.7 CCR Air Dil - 2018

TDI Hammerhead CCR Heliotrox/Decompression - 2017

TDI Advanced Nitrox/Decompression Procedures/Trimix - 2016

Certified for *Caulerpa* surveys

AAUS Scientific Diver - 2012

PADI Master Scuba Diver Trainer #316224 - 2012

- Courses taught: Open Water, Advanced, Rescue, and Divemaster

- Specialties taught: Deep, Wreck, Night, Navigation, EANx, and Drysuit

Emergency First Response Instructor #316224

First Aid / CPR / AED / Emergency O2 Administration

NAUI Scuba Instructor #52022 - 2009

- Courses taught: Open Water, Advanced, Rescue, EANx and Divemaster

Grant Writer, The Grantsmanship Center, Los Angeles, CA - 2008

100-hour intensive course on grant research and writing

Seven years of grant research, writing and administrative experience and over \$430,000 in grant funding

Selected Grants & Awards

2016 Associated Students Inc. Graduate Student Research Grant -\$950

2015 Western Society of Malacologists Student Research Grant - \$500

2015 Dr. and Mrs. Donald Bright Environmental Scholarship - \$3,000

2015 CSU COAST Graduate Student Research Award - \$3,000

2014 CSU Initiative Grant, Determining population structure, reproductive potential and habitat associations of threaded abalone (*Haliotis kamtschatkana assimilis*) in southern California - \$10,000

- 2014 California Sea Grant Program Development Award, Determining population structure, reproductive potential and habitat associations of threaded abalone (*Haliotis kamtschatkana assimilis*) in southern California - \$10,000
- 2014 Rachel Carson Scholarship in Conservation Biology, Department of Biological Science, CSU Fullerton - \$1,000
- 2014 Southern California Wetlands Recovery Project, Community-Based Restoration Grant, Eelgrass restoration in Upper Newport Bay. With Orange County Coastkeeper - \$15,000
- 2013 California State Parks Foundation, Restoration and Conservation of Green abalone (*Haliotis fulgens*) in Southern California. With OC Coastkeeper and Reef Check California - \$7,400
- 2012 NOAA Habitat Restoration Center and State Coastal Conservancy, Restoration of native oysters, *Ostrea lurida*, in Alamitos Bay, CA. With Dr. Danielle Zacherl, California State University, Fullerton, OC Coastkeeper, and KZO Education - \$89,100
- 2012 The Surfer's Journal, Restoration and Conservation of Green (*Haliotis fulgens*) in Southern California. With OC Coastkeeper - \$10,000
- 2011 NOAA Habitat Restoration Center and State Coastal Conservancy, Upper Newport Bay Eelgrass Restoration Project. With OC Coastkeeper and Coastal Resources Management, Inc - \$156,000
- 2004-2008 Arizona State University Provost's Scholarship, full 4-year academic scholarship

Publications

Bird, A.B. 2018. Determining population structure, reproductive potential and habitat associations of threaded abalone (*Haliotis kamtschatkana assimilis*) in southern California. Thesis (MS). California State University, Fullerton.

Gruenthal, K.M., Witting, D.A., Ford, T., Neuman, M.J., Williams, J.P., Pondella II, D.J., Bird, A., Caruso, N., Hyde, J.R., Seeb, L.W., and Larson, W.A. (2013). Development and application of genomic tools to the restoration of green abalone in southern California. *Conservation Genetics*. doi: 10.1007/s10592-013-0524-5.

Select Reports

Obaza, A., A. Bird, M. Neuman and D. Witting. 2018. Abalone surveys and research at San Nicolas Island, CA. Report submitted in accordance with US Navy and NMFS Agreement #WCR-1511. 25 pp.

Neuman, M., K.L. Stierhoff, D. Witting, A. Bird, and A. Obaza. 2019. Report on Studies of Abalone Survey Methods, Habitat Monitoring and Movement. Final Report to Satisfy Interagency Agreement # US Navy WCR-1621. 48 pp.

Presentations

Posters

Bird, A. B., M. Neuman, and D. Zacherl. 2015. Determining population structure, reproductive potential and habitat associations of threaded abalone (*Haliotis kamtschatkana assimilis*) in southern California. National Shellfisheries Association Annual Meeting, Monterey, CA.

Bird, A. B., and D. Zacherl. November 13 – 16, 2014. Determining population structure, reproductive potential and habitat associations of threaded abalone (*Haliotis kamtschatkana assimilis*) in southern California. Western Society of Naturalists Annual Meeting, Tacoma, WA. ~600 attendees.

Oral Presentations

Bird, A.B., Neuman, M.J., Ostrowski, E., and Zacherl, D.C. 2016. *Determining population structure and habitat associations of pinto abalone (Haliotis kamtschatkana) in southern California*. Western Society of Naturalists Annual Meeting, Monterey, CA.

Bird, A.B., Neuman, M.J., Ostrowski, E., and Zacherl, D.C. 2016. *Determining population structure and habitat associations of pinto abalone (Haliotis kamtschatkana) in southern California*. Western Society of Malacologists Annual Meeting, Ensenada, Baja California Sur, Mexico.

Bird, A. B. 2014. Restoration and conservation of green abalone (*Haliotis fulgens*) in southern California. Orange County Coastal Coalition, Newport Beach, CA.

Bird, A. B. and Briley, S. 2012. Marine Habitat Restoration Techniques: Eelgrass (*Zostera marina*) in Upper Newport Bay and Olympia Oysters (*Ostrea lurida*) in Alamitos Bay, CA. Guest lecture for Saddleback College course, “Ecological Restoration Techniques”, Newport Beach, CA.

Bird, A. B. 2010. Eelgrass education and restoration in Upper Newport Bay. Monthly meeting of the Orange County Coastal Coalition, Newport Beach, CA.

Ware, R. R., M. Curtis, B. Chesney, and A. B. Bird. 2010. Eelgrass. What is it, where is it, and why is it important? Orange County Natural History Lecture Series, Newport Beach, CA.

Bird, A. B. 2010. Upper Newport Bay Eelgrass Restoration Project. Biannual meeting of the Southern California Wetlands Recovery Project, Costa Mesa, CA

Service

Volunteer Aquarist, NOAA Southwest Fisheries Science Center, La Jolla, CA, 2016 – 2018

- Assisted the head aquarist with daily feeding, tank maintenance and health assessments for the resident fish and abalone species

Volunteer Marine Educator, Back Bay Science Center, Newport Beach, CA, 2009 – 2014

- Assisted CDFW staff with monthly Marine Life Inventory and other special events

Grant Researcher/Field Technician, San Diego Habitat Conservancy, San Diego, CA 2008 – 2009

- Performed grant research and writing and assisted the Senior Habitat Biologist with surveys of vegetation, birds, and mammals within lands managed by the Conservancy

San Diego Coastkeeper, Education and Events Volunteer, San Diego, CA 2008 – 2009

- Assisted with public outreach events and volunteer coordination