

**CURRICULUM VITAE  
JANE D. ARNOLD**

**PROFESSIONAL EXPERIENCE**

**Department of Fish and Wildlife                      Staff Environmental Scientist                      November 2007 to present**

Assist in development of Department of Fish and Wildlife (Department) water right policies affecting the region and state including the State Water Resources Control Board (SWRCB)'s Policy for Maintaining Instream Flows in Northern California Coastal Streams and new Small Irrigation Registration program and other water related plans. Participate in Department and in multi-agency coordination meetings concerning environmental issues for permitting projects. Coordinate with non-profit government organizations focused on water conservation projects benefiting fish and wildlife. Make presentations on environmental issues concerning water rights and the Department's policies and programs in public forums. Review new water right applications and petitions for change to identify environment issues and potential mitigations. Work with SWRCB staff and water right applicants and their representatives to resolve Department's environmental concerns and develop appropriate mitigations for projects. Review and provide comments on technical reports, water availability analyses, public trust resource assessments and California Environmental Quality Act documents. Prepare written testimony and Department policy statements describing public trust resource concerns for presentation at SWRCB hearings. Develop natural resource conservation Terms and Conditions for SWRCB Registration program applications. Review Lake or Streambed Alteration Agreement (LSAA) notifications and draft LSAA environmental protective conditions. Participate in field reviews of project sites and respond to requests from other agencies to consult on public trust resource issues. Assist Law Enforcement Division in investigation of environmental crimes associated with marijuana, provide natural resource damage assessment reports for the District Attorney's office review, and provide expert witness testimony. Coordinate with Division of Water Rights and Regional Water Resources Control Board enforcement staff on violations of Water Code. Serve as Leadperson for Environmental Scientists reviewing water right applications and LSAAs.

**Department of Fish and Wildlife                      Environmental Scientist                      July 1999 to November 2007**

Reviewed Timber Harvesting Plans and LSAA notifications for completeness, conducted field reviews of proposed project activity sites, made environmental protective recommendations, and prepared LSAAs. Worked with a multi-agency and multi-disciplinary team to implement The Pacific Lumber Company's (PALCO) Habitat Conservation Plan (HCP). Reviewed and helped to develop methods for conducting watershed analysis including cumulative watershed impact assessment. Worked with PALCO and other agency staff to develop site-specific timber harvesting prescriptions to provide for timber harvesting while protecting environmental resources based on watershed analysis results. Met with the public to discuss methods for watershed analysis and specific issues of concern. Facilitated and participated in meetings with other agencies and PALCO staff for required amphibian and reptile, trends, instream effectiveness, and hillslope management monitoring programs of PALCO's HCP. Developed Hillslope Monitoring protocols for the HCP Monitors to implement and oversaw implementation of monitoring protocols. Presented "Watershed Management in Timberlands Supporting Listed Salmonids" at the American Fisheries Society 2007 Annual Meeting. Oversaw the HCP Monitors daily activities, reviewed compliance reports, and represented the Department at compliance meetings.

**Department of Fish and Wildlife                      Associate Biologist                      October 1997 to July 1999**

Interagency Ecological Program's (IEP) primary investigator responsible for the Skinner Fish Salvage Monitoring Project. Analyzed and edited fish salvage monitoring data from the State Water Project (SWP) and Central Valley Project (CVP) and produced reports of the results for the IEP. Monitored and oversaw fish salvage operations conducted at the SWP and CVP delta fish salvage facilities. Developed computer programs analyzing salvage data for weekly, quarterly, and annual reporting as well as for impact of facility operations on delta fish. Evaluated salvage and losses of threatened and endangered species at the fish salvage facilities. Monitored and trained staff at the SWP and CVP fish salvage facilities in collection methods, data recording, and fish identification. Coordinated interagency activities between the SWP and CVP facilities. Determined appropriate actions for the SWP pumping plant in the event of a power outage or limitation in salvage capability at the SWP fish facility. Represented the Department at various interagency meetings for fish salvage operations, threatened or endangered fish species impacts at fish facilities, and other issues related to the delta fish facilities. Served as the Leadperson for six permanent staff at the SWP salvage facility.

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**Department of Fish and Wildlife                      Biologist                      April 1992 to October 1997**

Implemented various special studies and monitoring programs to research the effects of the State Water Project and Central Valley Project water pumping on fish population trends in the Sacramento-San Joaquin Delta. Duties included participating in interagency meetings, scheduling sampling, lead over field personnel, field sampling, data management and analysis, and reporting results weekly and annually to the Interagency Ecological Program. Provided information on estuarine biota, biological processes, project planning, and sampling methodology to state and federal agencies, consultants, and the public. Acted as Leadperson for laboratory technical and boat staff. Prepared written testimony describing water management impacts on fisheries resources for the 1992 Proceeding on the San Francisco Bay and Sacramento-San Joaquin Delta. Served as the Leadperson for laboratory and field staff.

**State Lands Commission                      Graduate Student Assistant                      June 1989 to March 1991**

Reviewed scientific and environmental literature on California's coastal fisheries and natural resources to generate section reports for use in the California State Lands Commission. 1991. California Comprehensive Offshore Resource Study. California State Lands Commission Report.

**Humboldt State University                      Teaching Assistant                      January 1989 to April 1989  
January 1990 to May 1990**

Cultured algae, marine invertebrates and fish for the Mariculture class at Fred Telonicher Marine Laboratory. Prepared informational materials for laboratory use, collected, conditioned, and spawned broodstock, and assisted students.

**California Conservation Corps                      Fishery Technical Assistant                      April 1989 to June 1989**

Worked as a project liason between the California Conservation Corps and the Department of Fish and Game. Supervised Corps member's work on salmonid habitat enhancement projects. Conducted stream surveys.

**Humboldt State University                      Microtechnician                      March 1987 to July 1987  
January 1988 to April 1989**

Responsibilities included specimen preparation, sectioning with a microtome, mounting, staining, and labeling slides of specimens. Ordering supplies, preparing chemical and dye solutions.

**Smithsonian Tropical Research Institute                      Research Diver                      July 1987 to January 1998**

With minimal supervision, maintained ongoing coral reef fish and invertebrate research projects using snorkel and SCUBA gear. Collected specimens and other data.

**Humboldt State University                      Assistant Hatchery Manager                      June 1987 to July 1987**

Reared adult yearling, and juvenile salmonid fishes, and cleaned and maintained hatchery facilities.

**University of Maryland                      Assistant Hatchery Manager                      June 1986 to August 1986**

At Horn Point Environmental Laboratories, spawned and reared oysters, collected and maintained broodstock, settled spat, and cleaned and disinfected the hatchery.

**University of Oklahoma                      Research Specialist                      May 1985 to March 1986**

Conducted behavioral experiments on gymnotid fish. Responsibilities included analyzing data, preparing histological slides and chemical solutions, general care and feeding of and disease prevention and treatment for fish.

Other prior positions include Naturalist, Animal Caretaker, Undergraduate Teaching Assistant

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**EDUCATION**

- Master of Science Fishery Biology      1992      Humboldt State University, Arcata, California  
 Studied fisheries biology and pathology, completed independent research  
 Thesis: Pathogens and Parasites of *Crangon franciscorum* and *Crangon nigricauda* from the Little  
 and Mad Rivers, and Humboldt Bay.
- Bachelor of Science Zoology      1985      University of Oklahoma, Norman, Oklahoma  
 Independent research on *Ornithodoros* ticks and participated in paddlefish spawning project

**PUBLICATIONS**

- Arnold, Jane D. and Gary L. Hendrickson. In Press. *Pleistophora* Sp. N. (Microsporidia) from *Crangon franciscorum* and *Crangon nigricauda*. California Fish and Game.
- Bryant, Marade and Jane D. Arnold. 2007. Age-0 striped bass diet in the San Francisco Estuary (1973-2002). California Fish and Game 93:1-22.
- Arnold, Jane D. and Holly S. Yue. 1997. Prevalence, relative abundance, and mean intensity of plerocercoids of *Proteocephalus* sp. in young striped bass in the Sacramento-San Joaquin Estuary. California Fish and Game 83:105-117.
- Arnold, Jane D. and Gary L. Hendrickson. 1997. Bacterial shell disease in crangonid shrimp. California Fish and Game 83:118-127.
- Arnold J.D. and T. Heyne. 1994. Seasonality and quality of eggs produced by female striped bass (*Morone saxatilis*) in the Sacramento and San Joaquin Rivers. Interagency Ecological Program for the San Francisco Bay-Delta Estuary, Technical Report 39.

**RELEVANT COURSE WORK AND TRAINING***Course Work*

Advanced Fish Diseases  
 Animal Behavior  
 Aquaculture  
 Biomechanics  
 Cell Biology  
 Coastal Marine Life  
 Comparative Vertebrate Anatomy  
 Computer Science  
 Embryology  
 Fish Physiology  
 Genetics  
 Geology  
 History of Science  
 Ichthyology

Independent Research Projects  
 Induced Fish Spawning  
 Inorganic Chemistry  
 Invertebrate Culture  
 Invertebrate Zoology  
 Mariculture  
 Marine Invertebrate Zoology  
 Natural History of Marine Life  
 Physics  
 Principles of Ecology  
 Organic Chemistry  
 Scanning Electron Microscopy  
 Statistics  
 Wastewater Reuse Systems

*Environmental Review*

Advanced California Environmental Quality Act  
 California Environmental Quality Act  
 Cumulative Watershed Effects  
 Environmental Review of Water Projects  
 Fish Passage and Diversion Structures  
 Geomorphic and Ecological Fundamentals  
 for River Restoration  
 Interagency Training on Watercourse Crossings

*Communication and Leadership*

Community Mediator  
 Equal Opportunity Counselor  
 Employee Performance: Difficult People  
 Expert Witness  
 How to Handle Difficult People  
 Leadperson Training  
 Leadership Development Series  
 Mediating Mental Health Conflicts

**CURRICULUM VITAE  
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Road Restoration Effectiveness Monitoring  
Stream Channel and Habitat Typing and Assessment  
Stormwater Management, Erosion and Sediment Control  
Water Law Update  
Water Resource Planning  
Water Sustains Life – We Have Met California's Future  
Watershed Academy

Presentation Skills  
Sexual Harassment Prevention  
Supervisor Training  
Time Management and Organization