### **EXHIBIT ARWA-701**

## EDUCATION

Master of Science, Fishery Resources, University of Idaho, 1985

Bachelor of Science, Fisheries, University of Washington, 1977

### **PROFESSIONAL AFFILIATIONS**

American Fisheries Society, Member

#### **INDUSTRY TENURE**

35 years

### **HDR TENURE**

20 years

# Paul M. Bratovich

Vice President/Principal Scientist

Mr. Bratovich is a highly accomplished, recognized fisheries expert. With 35 years of practical experience, he actively participates in a broad range of forums in various strategic planning and technical expert capacities. He has conducted numerous consultations with, and participated in proceedings before, federal and state agencies such as the Bureau of Reclamation (Reclamation), National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), California State Water Resources Control Board (SWRCB), California Department of Fish and Wildlife (CDFW), and the California Department of Water Resources (DWR). Mr. Bratovich's professional practice emphasizes technical and strategic support for water rights and regulatory compliance projects.

### RELEVANT EXPERIENCE

### **EXPERT WITNESS AND ADMINISTRATIVE PROCEEDINGS**

Remy, Thomas, and Moose. Mr. Bratovich served as a consulting expert to the law firm of Remy, Thomas and Moose, representing the Yuba County Water Agency (YCWA), in the case of South Yuba River Citizens League and Friends of the River vs. National Marine Fisheries Service, United States Army Corps of Engineers, and Yuba County Water Agency, before the United States District Court, Eastern District of California.

Yuba County Water Agency, Water Rights. Mr. Bratovich prepared exhibits and provided testimony at the SWRCB water rights hearing held in December 2007 regarding YCWA's petitions to: (1) modify its existing water right permits and implement the new lower Yuba River fisheries flow schedules proposed in the Lower Yuba River Accord (Yuba Accord); and (2) approval of the long-term water transfer of up to 200,000 acre-feet per year from YCWA to Reclamation and DWR. In March 2008, the SWRCB approved YCWA's petitions.

**Yuba County Water Agency, Water Rights Extension Petition Hearing.** Mr. Bratovich provided expert written and oral testimony at the 2006 SWRCB hearing regarding fisheries issues associated with the petition for extension of the effective date of State Board-ordered long-term instream flow requirements.

Yuba County Water Agency, Litigation Support for D-1644. Mr. Bratovich served as the lead scientific expert witness regarding fisheries and aquatic habitat resources in the lower Yuba River on behalf of YCWA. In response to requests to increase the instream flow requirements in the lower Yuba River, the SWRCB held a series of administrative hearings in 2000. In support of YCWA, Mr. Bratovich led the development of an instream flow pattern based on seasonal hydrologic and biologic conditions. Mr. Bratovich also prepared a declaration related to YCWA's petition for reconsideration. The SWRCB held supplemental hearings in 2003 and Mr. Bratovich served as the principal expert witness during these proceedings regarding fish resource issues and instream flow and water temperature recommendations for the Yuba River.

Mammoth Community Water District, Expert Witness and Litigation Support. In March of 1992, the SWRCB held a hearing to consider changes to the instream flow requirements in C&D No. 9P. Mr. Bratovich provided expert written and oral witness testimony at the SWRCB hearing regarding inflow requirements for brown and rainbow trout in Mammoth Creek located in Mono County, California on behalf of the Mammoth Community Water District. Testimony included discussion of physical habitat (weighted usable area), fish population dynamics, hydrologic interpretation and facilities operation with respect to water rights issues. Mr. Bratovich also prepared additional testimony for presentation before Mono County Superior Court.

Somach, Simmons and Dunn, Klamath Water Rights. Mr. Bratovich provided strategic assistance, technical support, and expert witness representation, including filing of an affidavit associated with the Klamath River Water Rights Adjudication, State of Oregon, Office of Administrative Hearings. Two individual cases involved: (1) the Klamath River instream flows required for anadromous salmonid passage; and (2) the upper Klamath Lake water surface elevations required for several target fish species.

Northern California Power Agency, Trinity River Litigation Issues. In February of 2001, Mr. Bratovich prepared expert witness testimony in advance of litigation regarding the resources of the Trinity River addressing flow, water temperature, fisheries and aquatic habitat assessment. Mr. Bratovich prepared declarations regarding these issues on behalf of the Northern California Power Agency to the United States District Court, Eastern District of California.

**El Dorado Irrigation District**. In 1996, Mr. Bratovich provided a deposition in the United States District Court, Eastern District of California, in the case of California Sportfishing Protection Alliance vs. El Dorado Irrigation District.

Sacramento County, Environmental Defense Fund et al. versus East Bay Municipal Utility District Litigation. Provided non-testifying technical support for Sacramento County in the Alameda County Superior Court proceedings (Case No. 425,955) in the case of the Environmental Defense Fund et al. versus East Bay Municipal Utility District regarding diversions from the lower American River.

### LOWER AMERICAN RIVER PROJECT EXPERIENCE

Sacramento City/County Office of Metropolitan Water Planning, Modified Flow Management Standard for the Lower American River. The Water Forum has developed the Modified Flow Management Standard (Modified FMS) to provide greater protection of the American River Basin water resources for water supply and environmental purposes, while maintaining an equivalent level of benefits as the 2006 FMS to resources outside of the American River Basin. Mr. Bratovich provided the biological justification and rationale which serves as the basis of the prescriptive minimum flow. The biological justification and rationale was based on steelhead and fall-run Chinook salmon lifestage-specific habitat and water temperature considerations.

Sacramento City/County Office of Metropolitan Water Planning, Lower American River Flow Management Standard. Mr. Bratovich was responsible for fisheries considerations in the development of a new flow management standard (FMS) for the lower American River. Development of the 2006 FMS considered indices of water availability for the American River Basin, as well as potential conflicts inherent in a regulated water system with numerous designated beneficial uses. Mr. Bratovich provided technical expertise and consultation regarding the

development of: (1) biological justification and rationale for the new flow standard; (2) narrative standards; (3) river flow management element; and (4) a Monitoring and Evaluation Plan for the lower American River. Coordination with, and presentations to, resource agencies and stakeholders was an integral component of this process.

Sacramento City/County Office of Metropolitan Water Planning, Water Forum Agreement EIR and Fisheries and Aquatic Habitat Management Plan. As Principal Scientist, Mr. Bratovich had a lead technical role in interest-based negotiation and problem-solving for over 40 separate parties, which include non-profit organizations, private landowners, and federal and state resource agency representatives, culminating in the completion of the EIR in support of the Water Forum Agreement. He developed the impact analysis framework for the EIR, conducted hydrologic and water temperature model output analyses, and prepared the fisheries and aquatic resources impact analysis. He also prepared the Fisheries and Aquatic Habitat Management Plan, an integral component of the Lower American River Corridor Management Plan.

Sacramento City/County Office of Metropolitan Water Planning, Aquatic Resources of the Lower American River: Baseline Report. Mr. Bratovich was the Principal Scientist for the preparation of the 350-page Lower American River Baseline Report, which is a compilation of historical American River fisheries data and related information since the early 1900s.

Placer County Water Agency/United States Bureau of Reclamation, American River Pump Station Project. Mr. Bratovich was Principal-in-Charge in the successful completion of the EIS/EIR for the American River Pump Station Project. The project involved construction and operation of a year-round pumping facility for PCWA to divert water from the North Fork American River in the vicinity of the Auburn Dam construction site, closure of the Auburn Dam bypass tunnel, and restoration of the three-quarter mile reach of the river that was dewatered and impacted by activities associated with Auburn Dam construction. Mr. Bratovich prepared the fisheries impact analysis and oversaw preparation of the Draft and Final EIS/EIR. The Final EIS/EIR included preparing responses to comments on over 300 comment letters received on the project.

Bureau of Reclamation, American River Basin Cumulative Impact Report. Mr. Bratovich served as the Principal Scientist for the American River Basin Cumulative Impact Report, a comprehensive cumulative impact analysis prepared for Reclamation to use in several environmental documents and biological assessments for reasonably foreseeable federal actions within the American River Basin. He provided technical input in the development of modeling parameters, aquatic resource-related impact considerations, and effects associated with anticipated future hydrology of the CVP/SWP resulting from implementing reasonably foreseeable federal actions.

Sacramento Area Flood Control Agency, Folsom Dam and Reservoir Interim Reoperation Agreement. Mr. Bratovich served as a technical expert as part of the contract negotiation team on behalf of the Sacramento Area Flood Control Agency for the 10-year Folsom Dam and Reservoir Reoperation Agreement with the Bureau of Reclamation.

Sacramento Area Flood Control Agency, Long-term Reoperation of Folsom Dam and Reservoir. HDR completed a study on the feasibility of indefinitely extending SAFCA's Folsom Dam and Reservoir Reoperation Agreement with Reclamation. Mr. Bratovich served as the Fisheries Lead in the preparation of the

Program EIR on flood control improvements along the mainstem of the lower American River, the Final EA, and the USFWS and NMFS Biological Assessments for the reoperation of Folsom Dam and Reservoir.

Sacramento County Water Agency, Central Valley Project Water Supply Contracts Environmental Impact Statement/Environmental Impact Report. As Principal-in-Charge, Mr. Bratovich provided technical and strategic oversight on the joint programmatic EIS/EIR regarding implementation of Section 206 of Public Law 101-514, the Energy and Water Development Appropriations Act of 1991.

City of Sacramento, Water Supply Expansion Project Environmental Impact Report. Mr. Bratovich assisted in the preparation of an EIR for the City's proposed water supply expansion project. Mr. Bratovich prepared the diversion-related fisheries and aquatic resources impact analysis and oversaw the preparation of terrestrial and riparian resources and habitats, water supply and hydrology, water quality, cultural resources, and recreation impact assessment associated with increased diversions from the Sacramento and American rivers.

Sacramento County, Lower American River Aquatic Ecology Investigation. Mr. Bratovich was responsible for the experimental design, implementation, and report preparation of a multi-faceted aquatic ecology investigation of the lower American River. The results of these investigations were used to provide technical support for the Alameda County Superior Court Lower American River Technical Advisory Committee associated with the retained jurisdiction in the case of the Environmental Defense Fund et al. versus East Bay Municipal Utility District.

**City of Sacramento, Fairbairn Water Treatment Plant Expansion Project.** As lead fisheries scientist, Mr. Bratovich conducted fisheries impact assessments to evaluate potential impacts for the EIR associated with the expansion of the E.A. Fairbairn Water Treatment Plant intake structure project.

**City of Sacramento, Fish Screen Replacement Project.** As Principal Scientist, Mr. Bratovich completed the EA/FONSI and IS/MND for the improvement of the fish screens at the City of Sacramento E.A. Fairbairn WTP intake structure on the lower American River and the Sacramento River WTP intake facility.

United States Fish and Wildlife Service, Lower American and Yuba River Components of the Anadromous Fish Restoration Program. Mr. Bratovich provided technical and strategic oversight for the development of the lower American River and Yuba River components of the USFWS's Anadromous Fish Restoration Program Working Paper. He developed a report identifying and prioritizing restoration and enhancement actions for the lower American and Yuba rivers.

### **ENDANGERED SPECIES ACT CONSULTATION EXPERIENCE**

Yuba County Water Agency, Yuba River Development Project. Mr. Bratovich led the Applicant Prepared Biological Assessment evaluating potential effects on steelhead and spring-run Chinook salmon in the lower Yuba River, submitted to FERC as part of the relicensing process for this project. He also led the preparation of the Essential Fish Habitat assessment document, focusing on fall-run Chinook salmon per the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).

United States Army Corps of Engineers, Operation and Maintenance of Englebright and Daguerre Point Dams. Mr. Bratovich led the ESA consultation and the preparation of the Biological Assessment evaluating potential effects on steelhead and spring-run Chinook salmon in the lower Yuba River, submitted to the National Marine Fisheries Service for this project. He also led the preparation of the Essential Fish Habitat assessment document, focusing on fall-run Chinook salmon per the MSFCMA.

Sacramento Area Flood Control Agency, Folsom Dam and Reservoir Longterm Reoperation Agreement. Mr. Bratovich provided support facilitating federal and state regulatory agency representative coordination to determine consultation requirements under the federal and state Endangered Species Acts (ESAs). He served as the Fisheries Lead in the preparation of the USFWS and NMFS Biological Assessments for the reoperation of Folsom Dam and Reservoir.

Sacramento County Water Agency, Central Valley Project Water Supply Contracts Environmental Impact Statement/Environmental Impact Report. As Principal-in-Charge, Mr. Bratovich participated in negotiations with the USFWS and Reclamation within the context of ESA Section 7 consultations, and developed a service area impacts analysis approach and mitigation package, and prepared a Biological Assessment.

United States Army Corps of Engineers/City of Roseville/City of Folsom/San Juan Water District, Folsom Outlet (Redundant Water Supply). Mr. Bratovich served as the Principal-in-Charge and the Fisheries Technical Lead in the preparation of the USFWS and the NMFS Biological Assessments for a proposed redundant urban water intake structure at Folsom Dam.