Stephen H. Arnold

Senior Advisor - Licensing & Compliance
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Education & Expertise

MS Biological Sciences Michigan Technological University
BS Natural Resources University of Michigan
BA (*Cum Laude*) Biology Northland College
Albert Hazzard Award - 1982 excellence in fisheries graduate research
IFIM Training Colorado State University – 2 Classes
Fish Passage Technology and Design - 6 Workshops
36 Years Consulting Experience at over 100 Hydro Developments

Experience

Americas Energy Services, LLC
Hydropower Licensing & Compliance Advisor (2017-present)

Objective: Provide client-focused Hydropower Licensing & Compliance advisory services with the goal of preserving generating capacity, peaking and/or operational flexibility, with cost-effective compliance measures, while satisfying relevant laws and regulations. Provide technical expertise in Fisheries & Aquatic Resources, and Fish Passage & Protection applied to FERC Hydropower Licensing & Compliance. Support clients with excellent technical writing and communication/negotiating skills across a broad range of environmental documents, permit applications, and permit compliance tasks.

Hydroelectric Projects and Clients at Americas Energy Services include:

- Cocheco Falls Hydroelectric Project, TLP relicensing studies, Cocheco Falls Associates, NH
- Watson Hydroelectric Project, TLP relicensing studies, Watson Associates, NH

HDR
Professional Associate – Senior Scientist (1983-2017)

Mr. Arnold worked at HDR for 34 years providing consulting services in aquatic ecology, fisheries, wetland and water quality studies, general environmental impact analysis and assessments, and federal and state licensing and permitting activities. His clients have included hydropower project owners, fossil and nuclear steam electric power producers, and waterfront developers. Beginning in 1989, Mr. Arnold focused exclusively on hydroelectric project services.

During this period, he was involved in assessments of anadromous fish restoration, fish passage and entrainment studies, upstream and downstream fishway design, instream flow assessments, impoundment fluctuation effects on fish, wildlife, wetlands and water quality, general fish population and habitat assessments, water quality studies, and wetlands assessments at over 100 hydroelectric developments, nationwide. His FERC relicensing experience includes involvement with Traditional (TLP), Alternative (ALP), and Integrated Licensing Process (ILP). Mr. Arnold is also experienced with resource agency consultation and negotiations, public meeting participation, providing testimony as an expert witness, and settlement negotiations in support of hydroelectric project relicensing.

Hydroelectric Projects and Clients during his HDR tenure include:

- York Haven Hydroelectric Project, Nature-Like Fishway Design and Permitting, Cube Hydro Partners, LLC, PA
- Ellsworth Hydroelectric Project, Fish Passage Alternatives Study, Brookfield Renewable, Ellsworth, ME
- Heuvelton Nature-like Fishway Project, Oswegatchie River, Brookfield Renewable, Heuvelton, NY
- Eel Weir Development, Nature-Like Fishway, Oswegatchie Hydroelectric Project, Brookfield Renewable, NY
- Cataract Hydro Project, Springs and Bradbury Dam Fish Passage, Saco River, Brookfield Renewable, ME
- Hogansburg Project, Relicensing, Brookfield Renewable, NY
- Chasm Hydroelectric Project, Relicensing, Brookfield Renewable, NY
- Lower Connecticut River Hydroelectric Projects, ILP Study Plan Development, Federal Energy Regulatory Commission
- Wateree Hydroelectric Development, Fish Passage, Duke Energy
- Holyoke Dam/Hadley Falls Station, Downstream Fish Passage, Holyoke Gas & Electric, MA
- York Haven Hydroelectric Project, Relicensing, Olympus Power, PA
- Toledo Bend Hydroelectric Project, Relicensing, Sabine River Authority of Texas and Sabine River Authority, State of Louisiana
- Oswegatchie Hydroelectric Project, Relicensing, Brookfield Renewable, NY
- Great Bend and Felts Mills Hydroelectric Projects, Redevelopment Study, Brookfield Renewable, NY
- Spearfish Hydroelectric Project, Relicensing, City of Spearfish, South Dakota
- Roosevelt Island Tidal Energy (RITE) Project, Pilot Project Licensing, Verdant Power, Inc.
- Tacoma and Ames Hydroelectric Projects, Relicensing, Public Service Company of Colorado (Xcel Energy), CO
- Catawba-Wateree Hydroelectric Project, Relicensing, Duke Power Company
- Lake Blackshear Hydroelectric Project, Relicensing, Crisp County Power Commission
- New Savannah Bluff Lock and Dam, Fish Passage, U.S. Army Corps of Engineers, Mobile and Savannah Districts

- Bar Mills Hydroelectric Project, Fish Passage, FPLE Maine Hydro, LLC
- Yadkin-Pee Dee River Hydroelectric Project, Relicensing, Progress Energy
- Osage Hydroelectric Project, Relicensing, AmerenUE, Osage River, Missouri
- Great Works Hydroelectric Project, Relicensing, Fort James Operating Company
- Indian Pond/Harris Hydroelectric Project, Relicensing, Central Maine Power Company
- St. Lawrence/FDR Power Project, Impoundment Fluctuation Studies, New York Power Authority
- Presumpscot River Hydroelectric Projects, Relicensing, S.D. Warren Company
- Lower, Middle, and Upper Raquette River and Carry Falls Projects, Relicensing, Niagara Mohawk Power Corporation
- St. Lawrence/FDR Power Project, Relicensing GIS Database Design, New York Power Authority
- St. Lawrence/FDR Power Project, Water Quality Investigation, New York Power Authority
- Noxon Rapids and Cabinet Gorge Hydroelectric Developments, Relicensing, Washington Water Power Company
- Beaver River Project, FERC AIR Response, Niagara Mohawk Power Corporation
- Basin Mills Hydroelectric Project, New License, Bangor Hydro-Electric Company
- West Enfield Hydroelectric Project, Turbine Entrainment, Bangor Hydro-Electric Company
- Baldwin Hydroelectric Project, New License, Baldwin Hydroelectric Associates
- Allegheny Lock and Dam Nos. 5 and 6 Hydroelectric Projects, Turbine Entrainment, Sithe Energies, USA
- South Berwick Hydroelectric Project, Relicensing, Consolidated Hydro, Inc.
- Graham Lake Water Elevation Management Plan, Bangor Hydro-Electric Company
- Stillwater Hydroelectric Project, Relicensing, Bangor Hydro-Electric Company
- Augusta Hydroelectric Project, Relicensing, Edwards Manufacturing Company, Inc.
- Messalonskee Hydroelectric Projects, Relicensing, Central Maine Power Company
- Eustis Hydroelectric Project, Relicensing, Consolidated Hydro, Inc.
- Aroostook Hydroelectric Project, Relicensing, Maine Public Service Company
- York Haven Hydroelectric Project, Fish Passage, Metropolitan Edison (Met-Ed) Company
- Holyoke Dam/Hadley Falls Station, Fish Passage, Northeast Utilities Service Company/New England Power
- Proposed Boonton Reservoir Hydropower Project, Feasibility Study, City of Jersey City, New Jersey

Additional Experience

Michigan Technological University, and University of Wisconsin, Green Bay
Research Associate (1981-1982)
Performed fisheries research in Lake Superior and water quality studies in Green Bay

University of Michigan, Great Lakes Research Division
Lab Technician (1978-1979)
Collection, sorting, and identification of larval and juvenile fish as part of an impingement and entrainment impact assessment of two Lake Michigan power plants.

Wisconsin Department of Natural Resources
Seasonal Technician (1977-1979)
Three summers of performing electrofishing surveys, commercial fishery monitoring, aquatic invertebrate studies, and a fish parasite study in Lake Superior and tributary rivers.

Publications

The source of continuing lake herring (Coregonus artedii) recruitment failure as indicated by sex ratio and egg resorption in Keweenaw Bay, Lake Superior.
Master's Thesis, Michigan Technological University, 1981.

Planning for fishery habitat mitigation in an estuarine environment.
In: Proceedings of the Fourth Symposium on Coastal and Ocean Management, 1985 (with R.A. Alevras, K.A. Abood, D.M. Bell, and G.R. McVoy).

Density-dependent maturation, growth, and female dominance in Lake Superior lake herring (Coregonus artedii).
Canadian Journal of Fisheries and Aquatic Sciences. Vol. 48, Nov. 4, 1991 (with S.H. Bowen, D.J. D'Angelo, M.J. Keniry, and R.J. Albrecht).

Collaborative Instream Flow Resolution Utilizing an Enhanced Delphi Technique.
In: Proceedings of the International Conference on Hydropower, 1997 (with D. Culligan, J. Homa, and J. Sabattis).

Memberships

American Fisheries Society: National, Atlantic International, Southern New England, New York Chapters, and Bioengineering Section
National Hydropower Association
Midwest Hydropower Users Group