



September 30, 2013

**VIA E-MAIL**

Mr. Colin Hoag, Policy Advisor  
Ontario Waterpower Association  
380 Armour Road, Suite 264  
Peterborough, Ontario K9H 7L7  
CANADA

Qualifications Statement for Mike Hreben  
Species Expertise – Regulation 242/08 – Endangered Species Act

Dear Mr. Hoag:

I present this statement of qualifications to the Ontario Waterpower Association for consideration as a subject matter expert for both the American Eel and Lake Sturgeon relevant to Ontario Regulation 242/08.

I joined Kleinschmidt Associates (Kleinschmidt) in 1997 as a fisheries biologist and currently hold the title of Senior Fisheries Biologist. I have over 25 years of experience determining potential impacts of hydroelectric operation on aquatic resources. Kleinschmidt is a member of the Ontario Waterpower Association.

**EXPERTISE / EXPERIENCE RELEVANT TO THE AMERICAN EEL**

Twenty years of American eel experience in eastern Ontario (St Lawrence and Ottawa Rivers) and the mid-Atlantic and New England Regions of the USA, including:

- Feasibility, engineering, and costing assessments of downstream passage facilities;
- Design and execution of state of the art behavioral deterrent studies for downstream migrants including large-scale studies on the effect of underwater light;
- Evaluation of Silver eel collection techniques for efficiency and injury;
- Assessment of turbine passage mortality;
- Telemetry studies to determine outmigrating behavioral preferences; and,
- Age, growth, and sexual maturation studies.

**EXPERTISE / EXPERIENCE RELEVANT TO THE LAKE STURGEON**

Fifteen years of Lake Sturgeon experience in eastern Ontario and the upper mid-West and New York Regions, US, including:

- Engineering and biological design of Lake Sturgeon spawning beds on the St Lawrence River;
- Habitat assessments to determine feasibility and selection of location for installation of Lake Sturgeon spawning beds;
- Feasibility, engineering, and costing assessments of upstream and downstream passage facilities for Lake Sturgeon at hydroelectric projects;
- Tropic level studies of Lake Sturgeon on the Ottawa River; and,
- Desktop assessments of potential mortality due to turbine passage.

**EXPERTISE/EXPERIENCE IN DEVELOPMENT AND IMPLEMENTATION OF MITIGATION, EFFECTS MONITORING, AND EFFECTIVENESS MONITORING**

Twenty-five years of experience in the USA and eastern Canada developing and implementing studies to determine the impact of hydroelectric generation on aquatic resources, designing and implementing mitigation efforts to offset or minimize impacts, and conducting studies to determine the effectiveness of mitigation efforts over time. Studies and mitigation topics include:

- Turbine entrainment and mortality,
- Habitat fragmentation impacts to resident and migratory fish species,
- Assessing the relationship between flow and habitat,
- Aquatic habitat creation and enhancement,
- Shoreline erosion and protection measures, and
- Impacts of hydroelectric operation on water quality.

**EXPERTISE/EXPERIENCE IN HYDROELECTRIC SECTOR**

Twenty-five years of experience as a fisheries scientist working in the hydroelectric industry throughout the US and eastern Canada. I have worked on over 100 hydroelectric projects of all sizes on many river systems in the following drainages/regions including but not limited to:

- Ottawa River,
- St Lawrence River,
- Niagara River,
- New England,
- Mid- Atlantic,
- Southeast,
- Mid-West,
- Pacific Northwest, and
- Inland Northwest.

Please see attached for my resume of direct relevance to the above mentioned criteria.

Mr. Colin Hoag  
September 30, 2013

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Please contact me at 717.687.7211 or at [Mike.Hreben@kleinschmidtusa.com](mailto:Mike.Hreben@kleinschmidtusa.com) should you have any questions or require additional information.

Sincerely,

**KLEINSCHMIDT ASSOCIATES**



Michael J. Hreben III  
Senior Fisheries Biologist

MJH:FHW  
Attachment: Resume

Michael Hreben is a Fisheries Biologist with Kleinschmidt Associates. He earned a Bachelor of Science degree in Biology from Pennsylvania State University in 1990.

Mr. Hreben joined Kleinschmidt Associates in September 1997. Prior to employment with Kleinschmidt Associates, Mr. Hreben was employed by Normandeau Associates/RMC Environmental Services Division as a Fisheries Biologist largely focused on fish entrainment, mortality, and passage at hydroelectric facilities.

Mr. Hreben has more than 20 years of experience managing and conducting environmental studies. His management experience includes projects dealing with instream flow, fish entrainment, turbine mortality, fisheries abundance and diversity, habitat creation and enhancement, research on American eel and lake sturgeon, and water quality issues. In addition, Mr. Hreben has managed FERC relicensing efforts involving multiple studies directed at various environmental, engineering, and socio-economic issues. Mr. Hreben has been involved in studies at hydroelectric facilities throughout the United States and Ontario.

Mr. Hreben has experience designing and utilizing specialized collection systems for use in traditional sampling methods to monitor fish populations and collect specimens for analysis. He is also trained to set up and conduct instream flow studies using IFIM technology. In addition, Mr. Hreben is a Certified Swiftwater Rescue Technician and has First Aid Training.

## **PROJECT EXPERIENCE**

### **Desktop Evaluations for American Eel and Lake Sturgeon**

#### **Ontario Power Generation Ontario, Canada**

Responsible for desktop evaluations of potential impacts to American eel and lake sturgeon due to operation of hydroelectric facilities. Development of research and mitigation plans for these species.

### **Technical and Economic Assessment on the Feasibility of Deploying a Fish Diversion and Bypass System at the Saunders and Beauharnois Generating Stations for American Eel**

#### **Ontario Power Generation Ontario, Canada**

Conducted an evaluation of the technical and economic feasibility of implementing various conceptual downstream passage measures for downstream migrating American eel. The evaluation included conceptual designs, opinions of cost, and effectiveness estimates.

### **Multiple Projects and Clients Water Quality Evaluation and Enhancement**

Project Manager and research biologist for evaluating potential impacts of hydro operations on water quality. Efforts include data collection and analysis, as well as identifying and implementing appropriate mitigation measures. Water quality targets were based on both regulatory obligations as well as the macrohabitat needs of target species and lifestages.

### **St. Lawrence Hydroelectric Project New York Power Authority White Plains, NY**

Assisted with various research and enhancement efforts involving multiple species and objectives. Specific examples are provided below. American eel research efforts including: abundance and distribution, telemetry, turbine passage survival, upstream passage, and tailwater surveys. Participated in lake sturgeon spawning bed creation efforts. Biologist assisting with evaluation of water level and fish passage requirements for target species associated with the Nichols Hill Island, Coles Creek, and Little Sucker Brook HIPs.

### **Various Hydroelectric Projects Multiple Clients**

Designed, managed, and conducted fish entrainment and mortality studies at hydroelectric facilities utilizing both desktop and field study efforts. Species of interest include American eel and lake sturgeon.