

Fisheries Impact Review

**Ojibway Power and Energy Group (OPEG)
Draft Environmental Report
Namakan River Hydro Development Project**

Katherine Donald, M.Sc.

1. Qualifications

I am a *Juris Doctor* candidate with experience in both environmental law and resource ecology management. I obtained a Bachelor of Science degree in Biology from the University of Georgia where I was an intern at the University of Georgia Natural History Museum in the ichthyology department. I have also done invasive species research at the Center for Limnology at the University of Wisconsin. I obtained a Master of Science degree in Resource Ecology Management from the School of Natural Resources at the University of Michigan. During this period I did 2 years of research tracking juvenile lake sturgeon movements in the St. Clair River. I am currently in my last year of law school at William Mitchell College of Law. I have worked for both a private environmental law firm and a non-profit that focuses exclusively on environmental litigation. I currently work at the State of Minnesota, Public Defender Office, Appellate Division.

A Curriculum Vitae outlining my education and professional experience is attached to this report.

2. Report Review

I have conducted a review of the Draft Environmental Report prepared by the Ojibway Power and Energy Group (OPEG) focusing on the issues of potential impacts to Lake Sturgeon and corresponding implication in United States environmental law. Based on this review, I have prepared this report. The report is based on my individual professional opinion and its contents should not be considered a position, opinion, or statement from the State of Minnesota regarding this subject.

3. Findings

See attached document

**COMMENT ON THE ENVIRONMENTAL ASSESSMENT PERTAINING TO
THE PROPOSED NAMAKAN RIVER HYDRO DEVELOPMENT PROJECT**

Katherine Donald, M.Sc

Impacts on Lake Sturgeon

This proposed project will cause severe degradation to the lake sturgeon, *Acipenser fulvescens*, habitat located in and around the Namakan River. Due to the sensitive nature of sturgeon development, this dam project will likely increase adult sturgeon mortality rates, and, more significantly, negatively impact reproduction rates. This will cause a noticeable decrease in the sturgeon population located in the Namakan River Basin, as well as downstream populations in Canada and the United States.

Life history traits such as longevity, large size and late sexual maturity have made lake sturgeon especially vulnerable to ecological and sturgeon population density changes, making rehabilitation and stabilization of their populations a slow process. Lake sturgeon are currently listed as threatened in twenty U.S. States and seven Canadian provinces.¹ Loss of spawning habitat and rearing habitat, coupled with blockage or degradation of migratory spawning routes are the leading factors keeping sturgeon populations repressed.²

Juvenile lake sturgeons require sand or clay organic substrates that contain the highest concentration of Diptera, Hexagenia, and Trichoptera larvae.³ Juveniles and

¹ Knights, B. C., J. M. Vallazza, S. J. Zigler, and M. R. Dewey. 2002. Habitat and Movement of Sturgeon in the Upper Mississippi River System, USA. Transactions of the American Fisheries Society 131: 507-522.

² Auer, N. A.. 1996. Importance of habitat and migration to sturgeons with emphasis on lake sturgeon. Canadian Journal of Fisheries and Aquatic Science 53: 152-160.

³ Borkholder, B. D., S. D. Morse, H. T. Weaver, R. A. Hugill, A. T. Linder, L. M. Schwarzkopf, T. E. Perrault, M. J. Zazher, and J. A. Frank. 2002. Evidence of a Year- Round Resident

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adults also feed on Gastropods and Pelecypods when present.⁴ It can take up to 25 years for a sturgeon to reach maturity. Depth preference is more variable for juveniles, with results ranging from two to seventeen meters.⁵ Most importantly, a high degree of site fidelity is often observed in juvenile lake sturgeon.⁶ Additionally, it is vital to the sturgeon population that rocky substrates, with a constant current of water, are available for sturgeon to spawn. Sturgeon release sticky eggs that adhere to

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- Population of Lake Sturgeon in the Kettle River, Minnesota, Based on Rediotelemetry and Tagging. *North American Journal of Fisheries Management* 22: 888-894.
- Smith, K. M., and D. K. King. 2005. Movement and Habitat Use of Yearling and Juvenile Lake Sturgeon in Black Lake, Michigan. *Transactions of the American Fisheries Society* 134: 1159-1172.
- Benson, A. C., T. M. Sutton, R. F. Elliot, and T. G. Meronek. 2005. Seasonal Movement Patterns and Habitat Preferences of Age-0 Lake Sturgeon in the Lower Peshtigo River, Wisconsin. *Transactions of the American Fisheries Society* 134: 1400-1409.
- Beamish, F. W. H., D. L. G. Noakes, and A. Rossiter. 1998. Feeding Ecology of Juvenile Lake Sturgeon, *Acipenser fulvescens*, in Northern Ontario. *The Canadian Field-Naturalist* 112: 459-469.
- Holtgren, M. J., and N. A. Auer. 2004. Movement and Habitat of Juvenile Lake Sturgeon (*Acipenser fulvescens*) in the Sturgeon River/Portage Lake System, Michigan. *Journal of Freshwater Ecology* 19(3): 419-432.
- Kempinger, J. J.. 1996. Habitat, Growth, and Food of Young Lake Sturgeons in Lake Winnebago System, Wisconsin. *North American Journal of Fisheries Management* 16: 102-114.
- Peake, S.. 1999. Substrate preferences of juvenile hatchery-reared lake sturgeon, *Acipenser fulvescens*. *Environmental Biology of Fishes* 56: 367-374.
- Werner, R.G., and J. Hayes. 2005. Contributing Factors in Habitat Selection by Lake Sturgeon (*Acipenser fulvescens*). Grey Literature, Unpublished. United States Environmental Protection Agency- Great Lakes National Program Office: 1-24.
- ⁴ Boase, Jim, James Diana, Michael Thomas. "Habitat use and prey distribution of adult lake sturgeon in Lake St. Clair." University of Michigan, M. S. Thesis, 2005.
- ⁵ Holtgren, M. J., and N. A. Auer. 2004. Movement and Habitat of Juvenile Lake Sturgeon (*Acipenser fulvescens*) in the Sturgeon River/Portage Lake System, Michigan. *Journal of Freshwater Ecology* 19(3): 419-432.
- Benson, A. C., T. M. Sutton, R. F. Elliot, and T. G. Meronek. 2005. Seasonal Movement Patterns and Habitat Preferences of Age-0 Lake Sturgeon in the Lower Peshtigo River, Wisconsin. *Transactions of the American Fisheries Society* 134: 1400-1409.
- Werner, R.G., and J. Hayes. 2005. Contributing Factors in Habitat Selection by Lake Sturgeon (*Acipenser fulvescens*). Grey Literature, Unpublished. United States Environmental Protection Agency- Great Lakes National Program Office: 1-24.
- ⁶ Smith, K. M., and D. K. King. 2005. Movement and Habitat Use of Yearling and Juvenile Lake Sturgeon in Black Lake, Michigan. *Transactions of the American Fisheries Society* 134: 1159-1172
- Haxton, T.. 2004. Movement of Lake Sturgeon, *Acipenser fulvescens*, in a Natural Reach of the Ottawa River. *The Canadian Field-Naturalist* 117: 541-545.

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rocky substrates.⁷ Sturgeon loyally and diligently migrate to these unique habitats each year. These eggs will not adhere to sandy substrates. If there is any amount of increased sedimentation, the already adhered eggs will suffocate, and sturgeon will be unable to reproduce, at this site, in the future.

The Namakan River Hydro project will damage sturgeon populations. The proposed dam installation and completion will disrupt migratory destinations, and increased sedimentation is inevitable. The construction of multiple cofferdams at several named sites will cause increased sedimentation, as well as the dams themselves. Once completed, the cofferdams will block the natural flow of the river. As such, more sediment will leave suspension and fall to the bottom. This sedimentation will have a two-fold effect on the lake sturgeon population. First, it will suffocate the sturgeon's food source. Many invertebrates believed to be the sturgeon's main food source cannot sustain a drastic increase in silt, due to lack of oxygen. Second, the sedimentation will blanket the rocky substrates needed for egg adhesion, and block the sturgeon from historical breeding habitats.

Legal Implications in the United States

In the United States, the National Environmental Protection Act (NEPA) requires companies to assess the environmental impact any major proposed project will have, and identify adequate alternatives. Alternatives are based on the societal need of the project. Furthermore, a project will not be approved if it will impact a

⁷ Zorn, S. A., T. L. Mergenau, J. S. Diana, C. J. Edwards. 1998. The Influence of Spawning Habitat on Natural Reproduction of Muskellunge in Wisconsin. Transactions of the American Fisheries Society 127: 995- 1005.

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protected species as a whole, regardless of its density in a particular area.⁸ In addition to NEPA, the Endangered Species Act was passed to halt the degradation of certain listed species. This act has been used to halt dam projects in the United States on several occasions.⁹

Though these are United States laws, they could be applicable to the Namakan River project. The Namakan River provides 80% of the flow for Namakan Lake, a lake which shares a border between Canada and the United States. More importantly, the United States border is the protected Voyageurs National Park. First, it is unlikely that the limited need for this hydro project warrants harming a listed species. Furthermore, this project will likely harm sturgeon populations in the United States, thus giving standing to the United States to bring suit. Therefore, if sturgeon populations, which are heavily researched in the northern Great Lakes area, are damaged, the United States could gain standing to halt dam construction utilizing United States laws.¹⁰

Conclusion

It is my opinion that the proposed dam project is likely to drastically harm the lake sturgeon population in Namakan River. The environmental assessment that has been performed does not adequately address these issues and provide viable alternatives. Further study and assessment is required.

⁸ See www.epa.gov

⁹ See Tennessee Valley Authority v. Hill

¹⁰ See Babbitt v. Sweet Home Chapter

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EDUCATION:

William Mitchell College of Law: St. Paul, MN

Juris Doctor expected May 2010

Activities: Student Ambassador, Treasurer/Co-Founder of the Animal Law Society, VP of the Environmental Law Society

University of Michigan, School of Natural Resources and Environment, Ann Arbor, MI

Masters of Science in Resource Ecology Management, Specialization in Aquatic Ecology, May 2007

GPA: 7.31/8.00

Coursework: Environmental Law, Negotiations, Environmental Policy, Wetland Ecology, Principles of GIS, Biology and Ecology of Fishes, Conservation Biology, Woody Plants

Academic Accomplishments: Received a research internship at the University of Michigan with full funding and the opportunity for research driven study.

University of Georgia, Athens, GA

Bachelors of Science in Biology, May 2003

GPA: 3.30/ 4.0

Academic Accomplishments: Awarded HOPE Scholarship, full funding throughout four years of college; Awarded American Athlete Scholarship in fall 2002

Activities: Women's Triathlon Team captain, 2002-2003; Women's Cycling Team co-captain 2001-2003

LEGAL WORK EXPERIENCE:

Clerkship: State of Minnesota Public Defender Office, Appellate Division: St. Paul, MN; August 2009- Current:

- Performed in depth legal research on a variety of criminal law topics.
- Drafted detailed memoranda used in appellate briefs filed at the Minnesota Court of Appeals and the Minnesota Supreme Court.

Clerkship: Minnesota Justice Foundation Position at the Minnesota Center for Environmental Advocacy: St. Paul, MN; May 2009- August 2009.

- Performed extensive legal research and wrote several memoranda on a multitude of environmental law issues involving the Clean Air Act, the Clean Water Act, and the Minnesota Environmental Rights Act
- Attended several meetings at the Minnesota Pollution Control Agency, and negotiated a settlement offer with the Attorney General
- Presented arguments for legal action to the legal board and observed multiple arguments at the Minnesota Court of Appeals

Internship: 10th Judicial District Public Defender Office: Stillwater, MN; May 2008- May 2009.

- Handled the daily bail calendar: independent representation of over 300 clients – included interviewing each client currently being held at the Washington County Jail and making bail arguments on their behalf
- Conducted numerous case reviews and developed memoranda and arguments

Externship: Environmental Advantage Law LLC: St. Paul, MN; May 2008- August 2008.

- Developed, researched and updated seminar materials pertaining to the concept of fusing profitable business practices with sustainable techniques that would benefit both business and the environment.
- Aided in building client base by heightening the awareness of the services offered at the law firm through conferences, outreach programs, and other media outlets

OTHER WORK EXPERIENCE:

Development Associate: Minnesota Land Trust, St. Paul, MN; October 2006- July 2007. Assisted in all development operations, including handing donations and co-writing fundraising materials and newsletter articles.

Juvenile Lake Sturgeon Researcher: University of Michigan, Ann Arbor, MI; Aug. 2004 – May 2007. Led a team of employees from the Michigan Department of Natural Resources in a study that tracked juvenile lake sturgeon movements and habitat utilizations through implanted ultrasonic transmitters.