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November 10, 2000

Secretary David Boergers
Federal Energy Regulatory Commission
888 1st Street, N.E.
Washington, D.C. 20426

045

Little Quinnesec Falls Hydroelectric Project, FERC No. 2536 – Article 409, 2000 Exotic Species Report

Dear Secretary Boergers:

In accordance with the Commission order approving the monitoring plan for Purple Loosestrife and Eurasian Milfoil within the Project boundary, we are submitting the report for 2000. No evidence of either species was found within the Project. One site, downstream of the Project, contained a small colony of Purple Loosestrife. This information is being forwarded to the City of Niagara concurrent with this filing recommending that they treat the plants in accordance with our consultant's comments.

Sincerely,

STORA ENSO NORTH AMERICA

Mark E. Anderson
Resources Coordinator

Enclosure: White Water Associates, Inc. Report dated August 2000

Route: T.G. Scharff – R.L. Hilliker – File (Little Quinnesec Falls – LG-90-30, Article 403)

CC: Ms. Peggy A. Harding, Regional Director, Federal Energy Regulatory Commission, Chicago Regional Office, 230 South Dearborn St., Room 3130, Chicago, IL 60604
Mr. Tom Meronek, Wisconsin Department of Natural Resources, 101 N. Ogden, P.O. Box 208, Peshtigo, WI 54157
Mr. John Suppnick, Michigan Department of Environmental Quality, 2nd Floor – Knapp Center, 300 S. Washington, Lansing, MI 48933
Mr. Jim Fossum, U.S. Fish & Wildlife Service, 1015 Challenger Court, Green Bay, WI 54311
Mr. Don Novak, Administrator, City of Niagara, 1029 Roosevelt Road, Niagara, WI 54151

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WHITE WATER ASSOCIATES, INC.

PURPLE LOOSESTRIFE AND EURASIAN MILFOIL MONITORING

Hydro Project No. 2536, Little Quinnesec Falls

Submitted to:
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August 2000

I. SUMMARY

Annual monitoring for purple loosestrife (*Lythrum salicaria*) and Eurasian milfoil (*Myriophyllum spicatum*) has been designated as part of the FERC requirements for the relicensing of the Hydro Project No. 2536, Little Quinnesec Falls, on the Menominee River by Stora Enso North America Corp., Niagara Mill, formerly known as Consolidated Papers Inc., Niagara Division. One long day (August 1, 2000) was spent on the project area with visual and grab sample surveys conducted by boat from Little Quinnesec Dam to Big Quinnesec Dam. In addition, a short distance downstream of the Little Quinnesec Dam was inspected on foot. Purple loosestrife was found **only** downstream of the Little Quinnesec Dam, outside the project area, on the Wisconsin side in the village of Niagara. No plants were found that could definitively be called Eurasian milfoil.

II. INTRODUCTION

Monitoring for purple loosestrife (*Lythrum salicaria*) and Eurasian milfoil (*Myriophyllum spicatum*) was conducted on August 1, 2000 as required by Article 409 of the order issuing a license for Hydro Project No. 2536, Little Quinnesec Falls. There have been reports of both species within the Menominee River basin since 1990 although none from the project area. There were no reports of these alien species within the project area reported from surveys during the license application process (1990) and neither species was found within the project area during monitoring in 1998 or 1999. Purple loosestrife was found in 1998 and 1999 growing along the Wisconsin shoreline below the Little Quinnesec Dam, outside the project area, within the city of Niagara.

III. METHODS

On August 1, 2000, Elizabeth Rogers and David Tiller of White Water Associates, Inc. used a small boat and motor to look at most of the shoreline between the two dams, including the

numerous backwater wetlands. Most of the backwater wetlands are densely vegetated with a diversity of aquatic plants (submergent and emergent) making motor use impossible. Oars were used for complete access. Binoculars were used to scan the shore and less accessible backwater areas. Purple loosestrife in flower is a showy and easily identifiable plant during its peak blossoming period that extends from late July through August at this latitude, depending on the variation of the year. All wetlands and backwaters connected to the reservoir in the project area were visually inspected. As a single loosestrife plant can produce prodigious quantities of seeds and start a major "invasion," survey work, given current technology, must rely on physical surveys on-site, not remote techniques.

We surveyed for Eurasian milfoil by taking grab samples from beds of milfoil using hands, a grapple, and a metal garden rake. We then examined the leaves, counting leaflets and taking an average of average leaves. Number of leaflets is the main morphological trait that can be used to separate the native northern water milfoil (*Myriophyllum sibiricum*, formerly *exalbescens*) from Eurasian milfoil (*Myriophyllum spicatum*), although there is considerable variability within each species. Generally, the average number of leaflets for northern water milfoil is 5-11 with a reported maximum of 13. The average number for Eurasian milfoil is 14-17 with a maximum of 20. Also useful later in the season is the presence of winter buds (turions) on northern water milfoil, structures not found on Eurasian milfoil.

IV. FINDINGS AND MANAGEMENT RECOMMENDATIONS

Purple Loosestrife

Findings. No purple loosestrife was found within the project area, lying between the two dams. Below the Little Quinnesec Dam on the Wisconsin side of the river, associated with the Village of Niagara, we found one small patch of purple loosestrife that was not flowering (see map in Appendix). The site with the loosestrife seems to be shadier than in the previous two years. It may be a little less suitable for loosestrife. Nevertheless, this patch should not be allowed to flower and spread. The larger plants present in previous years were not seen in 2000.

Management Recommendations. The boat access site below the Little Quinnesec Falls Dam is surrounded by wet riparian edges. Perpetually disturbed areas such as boat landings need to be watched carefully for newly established loosestrife plants. Boat landings are particularly vulnerable as the seeds can be transported unwittingly by people and there is always ample disturbed soil in the vicinity. Purple loosestrife can establish itself in anything from pure muck to pure gravel.

Given its present low level of occurrence near the project area, purple loosestrife could easily be controlled with repeated applications of herbicide (*Round-Up®* on upland, or *Rodeo®* in wetlands). Application of herbicide in the wetlands may require permits from Wisconsin and Michigan. This will have to be done for several years until all the seeds in the soil seed bank have germinated and all the plants killed. Thereafter, monitoring should continue with control implemented as needed. Ideally, spraying should be done prior to seed development. Young plants without flowers are not as easily identified but certainly can be identified by persons familiar with the species. Control early in the season will prevent plants from flowering and setting seed.

Recent research has shown that pulling out loosestrife plants is not only ineffectual, but that it actually assists the plant in spreading. The species has many fine roots, all of which can potentially become propagules for a new plant if left behind in the soil. We have tried pulling out loosestrife and found that even if extreme care is taken, smaller roots invariably break off and remain in the soil. In addition, pulling out a plant creates soil disturbance on which the seeds thrive. Broad-scale spraying is not encouraged in sites where the loosestrife grows intermixed with a healthy native plant community as it hits non-target species, leaving a vacuum in the community that can then be easily colonized by loosestrife. Instead, individual plants should be sprayed by hand. If patches of bare earth are created by spraying, these should be planted with native species so as to leave no room for the exotic loosestrife to spread. The most extensive research on effective control of purple loosestrife has been occurring in the Bad River Sloughs (WI) under the direction of the Great Lakes Indian Fish and Wildlife Commission and the Bad River Chippewa Band.

Eurasian Milfoil

Findings. Eurasian Milfoil is an exotic submergent aquatic species capable of forming dense canopies of branching, floating plants to the detriment of native species. Most of the milfoil we found fell well within the range of number of leaflets that would identify it as northern water milfoil. In 1998, we found some plants with a borderline number of leaflets that could identify them as Eurasian and sent them to two experts. The professional opinions were inconclusive. Later season specimens obtained in 1998 exhibited winter buds or turions, strongly suggesting that the milfoil we were observing was the native species. In 1999 and 2000, we also retrieved some specimens with a borderline number of leaflets. At this juncture it appears to us that some of the individuals of the highly variable native milfoil in the reservoir simply exhibit a slightly higher number of leaflets than average. We observed no growth morphology (spreading masses of branching plants) that would cause us to think that we were observing Eurasian milfoil.

Management Recommendations. Once established, currently little can be done to control this submergent species without having a negative impact on the rest of the submergent community. Prevention is the best option. All boat landing should have posted literature warning boaters to clean their boats, motors and boat trailers of all weeds and invertebrates before entering another body of water.

IV. CONCLUSION

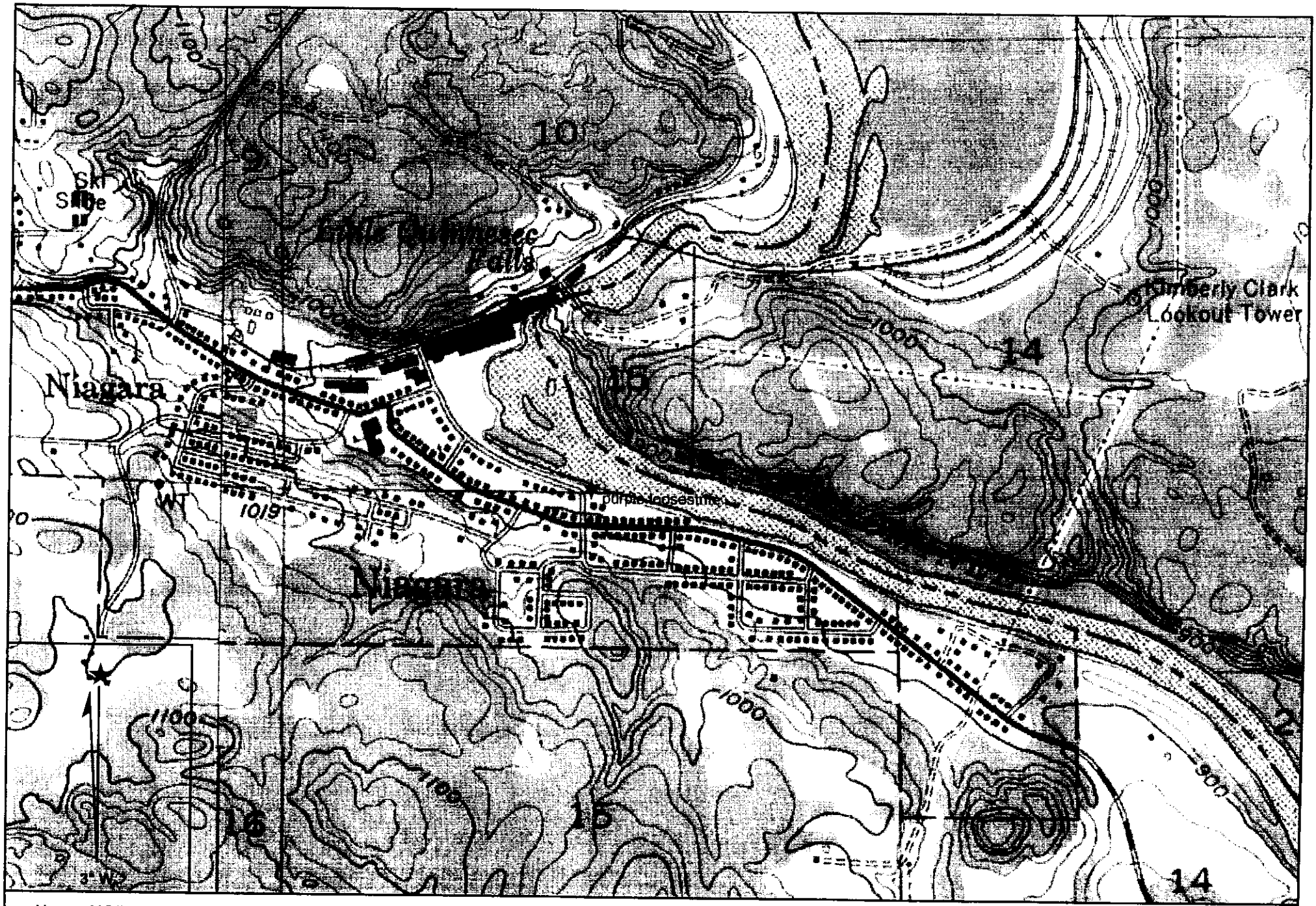
The purple loosestrife just downstream from the project area could be readily controlled through repeated applications of herbicide (*Round-Up or Rodeo*®). Given the species' propensity to spread, continued control of this alien even outside the project area appears to be a very worthwhile investment in terms of preventing the establishment of this alien within the project area. In 1999 brochures on loosestrife control were made available to the public.

Eurasian milfoil does not appear to be present at this time within the project area. Presently, the submergent, emergent, and shoreline wetland plant communities are diverse and composed primarily of native species. Control of purple loosestrife would ensure that this healthy and diverse reservoir plant community persists into the future, providing wildlife habitat and other natural

values. Posting of educational and warning signs telling boat owners about the importance of cleaning all aquatic vegetation and invertebrates off their boat motors should be implemented at all access sites in the project area.

APPENDIX

Map



Name: NORWAY
Date: 11/2/2000
Scale: 1 inch equals 1000 feet

Location: 045° 46' 12.8" N 087° 59' 10.0" W
Caption: Purple Loosestrife
August 2000