



Wisconsin Public Service Corporation
(a subsidiary of WPS Resources Corporation)
600 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002

FILED
OFFICE OF THE SECRETARY
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FEDERAL ENERGY
REGULATORY COMMISSION

January 10, 1997

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL 21.3
888 1st Street N.E
Washington, DC 20426
Attention: Director, Office of Hydropower Licensing

N

Dear Secretary:

-012

Wausau Hydroelectric Project - FERC Project No. 1999 (NATDAM No. WI00752)

Enclosed is the Purple Loosestrife Monitoring Plan as required by article 408 of the Wausau Project license. Also enclosed are copies of the draft plan as sent to the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service (USFWS), and correspondence from the USFWS. We did not receive a response from the WDNR and do not expect to because the 30 day window for comment has lapsed.

As per the USFWS request, the following changes have been incorporated in the plan:

Annual monitoring of purple loosestrife will be conducted, and biennial reporting will be completed. The results of the surveys will be supplied to the WDNR and the USFWS.

Spread of the plant species will be controlled by pulling colonies of 1 to 5 plants on land owned by WPSC and/or below the ordinary high water mark of the project reservoir. Hand pulling will be used as a method of control instead of digging to help minimize soil disturbance. WPSC does not have the authority to access or modify vegetation on private lands within the project boundary. As a result, purple loosestrife cannot be removed from private lands by WPSC.

A purple loosestrife pamphlet will be made available at company business locations where our hydroelectric brochures are provided, on the condition that complimentary copies are available through the WDNR.

Sincerely,

Thomas P. Mainz
Power Supply & Engineering Executive

wab/pah

cc - W. A. Bloczynski, WPSC (Merrill Hydro)
R. H. Schmidt, WPSC (D2)

Attach.

9702030144

cc

FERC DOCUMENT

JAN 23 1997

Purple Loosestrife Monitoring Plan for Wausau Hydroelectric Project,
FERC Project no. 1999

Objective: To monitor the spread of Purple Loosestrife (*Lythrum Salicaria*) on Wausau hydroelectric project lands. Purple Loosestrife is an invasive plant that exhibits aggressive characteristics. The plant is becoming increasingly common to wetland areas. In consultation with the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service (USFWS), Wisconsin Public Service agrees to periodically monitor the species.

I. Methods

- A. The monitoring methods will include a shoreline survey utilizing a boat to determine a baseline of existing colonies and then continued monitoring to determine the increase of density and abundance of the species.

II. Frequency of Survey

- A. The survey will be taken in June or July 1997 during the time when the plants are in bloom and annually thereafter.

III. Documentation existing colonies.

- A. The results of the survey will be displayed on a map of the total project area. A copy of the completed map will be provided the the Wisconsin Department of Natural Resources no later than October 31, every second year in which the monitoring was completed.
- B. The map will indicate relative populations based on the following criteria:
 - a. Small Colonies of 1-5 plants
 - b. Medium Colonies of 6-50 plants
 - c. Dense Colonies of >50 plants
- C. The need for further action will be discussed with the Wisconsin Department of Natural Resources.

IV. Control of existing colonies.

- A. Small colonies of 1 to 5 plants will be removed from WPSC project property during the annual survey. The removal will consist of pulling the stems by hand.

V. Public Awareness.

- A. Public awareness about purple loosestrife will be increased by providing pamphlets supplied by the WDNR at all public access areas near the project.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Green Bay ES Field Office
1015 Challenger Court
Green Bay, Wisconsin 54311-8331
December 18, 1996

Mr. Gregory W. Egtvedt
Environmental Services
Wisconsin Public Service Corporation
700 North Adams Street
P.O. Box 19002
Green Bay, Wisconsin 54307-9002

re: Purple Loosestrife Monitoring Plan
Compliance with License Articles for
the Jersey Hydroelectric Project
(FERC No. 2476), and the Wausau
Hydroelectric Project (FERC No. 1999)
Wisconsin River

Dear Mr. Egtvedt:

Your letter of November 14, 1996, requested U.S. Fish and Wildlife Service (FWS) review of the Wisconsin Public Service Corporation's purple loosestrife monitoring plan for the referenced hydroelectric (hydro) projects. We concur with your plan for both hydro projects, but recommend the following additional measures.

1. Since purple loosestrife is very prolific, monitoring should be conducted annually; however, biennial reporting is acceptable to the FWS. Please also send results of the survey to the FWS. It may be necessary to do the survey in early August during some years to monitor during the bloom.
2. To help control the spread of this plant species, the small colonies (i.e., 1 to 5 plants) should be dug out of the riverbed such that as much of the root system is removed as possible. This could be done during the annual surveys.
3. A purple loosestrife pamphlet should be available at public access areas to increase public awareness of this problem. We suggest using Wisconsin DNR pamphlet "PUBL-WM-250-95," which contains information on purple loosestrife identification and the prevention of further spread of this species (reference enclosure).

We hope these comments are helpful for final preparation of your compliance monitoring plan. If you need to discuss this further, please contact Jim Fossum of my staff at 414-465-7421.

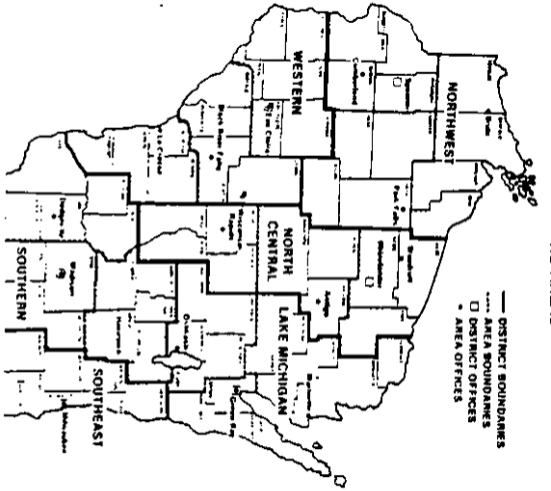
Sincerely,


Janet M. Smith
Field Supervisor

Enclosure

cc: Bob Martini, Wisconsin DNR, Rhinelander, WI
Al Hauber, Wisconsin DNR, Wausau, WI

DNR FIELD DISTRICTS AND AREAS



DISTRICT OFFICES

- NORTHWEST DISTRICT**
Department of Natural Resources
Box 309
Spooner, WI 54801
(715) 635-2101
- NORTH CENTRAL DISTRICT**
Department of Natural Resources
Box 818
Rhinelander, WI 54501
(715) 362-7616
- WESTERN DISTRICT**
Department of Natural Resources
1300 W. Clairmont Avenue, Box 4001
Eau Claire, WI 54702
(715) 839-3700
- LAKE MICHIGAN DISTRICT**
Department of Natural Resources
1125 N. Military Avenue, Box 10448
Green Bay, WI 54307
(414) 487-4920 492-5900
- SOUTHEAST DISTRICT**
Department of Natural Resources
2300 N. Dr. Martin Luther King, Jr. Drive
Box 12436
Milwaukee, WI 53212
(414) 263-8500
- SOUTHERN DISTRICT**
Department of Natural Resources
3811 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266

Field Notes

Handwritten notes in a box:

Leah's - FIS
Spartan to
and Osceola
MANKS
Gum F
12-17-91

Gene Tiser
492-5936

Purple Loosetrife

(*Lythrum salicaria*, *L. virgatum*, and their hybrids)



An Attractive but **Deadly Threat** to Wisconsin's Wetlands and Waterways

- displacing native wetland vegetation
- degrading wildlife habitat
- displacing rare plants and animals
- choking waterways



Identification

Growth: Upright, semi-woody, hardy perennial with a dense bushy growth of one to 50 stems. The stems grow four to eight feet tall and die back each year.

Flowers: Purple to magenta, and numerous on long spikes. Individual flowers are 1/2" to 3/4" across, with five to six petals.

Leaves: Variable (usually opposite), linear shaped, smooth edged, and attached directly (without stalks) to four-sided stems. Sometimes alternate on the stem or are even bunched in whorls. Foliage may be hairy.

Roots: Woody taproot with numerous fibrous side shoots that form a dense mat.

Blooming Period: Early July into early September.

Habitat: Moist soil to shallow water sites, such as wet meadows and pastures, marshes, stream and river banks, lake shores and ditches. Established plants can tolerate dry conditions, and are sometimes planted in lawns and gardens.



2-7 ft. in height

Flowers on spike; closely attached to stem

5-6 petals per flower

Stiff, four-sided stem

Opposite leaf arrangement



Damage

Purple loosestrife is native to Europe and Asia. After being introduced to North America, it managed to escape the specialized insects and diseases that keep it in check in its native lands. Free from these natural controls, loosestrife gained a competitive edge over our native wetland plants. This advantage, along with prolific seed production and a large, hardy growth, allowed purple loosestrife to invade our wetlands to the near total exclusion of most other vegetation; it literally shades everything else out. Loosestrife's numbers and rate of spread have increased rapidly in the Midwest during the past 10 to 15 years. As a result, not only is our diverse wetland vegetation (including rare and endangered plants) threatened, but also most wildlife that depend upon native vegetation for food and shelter. Once a wetland is dominated by loosestrife, traditional residents such as muskrat and waterfowl decline in numbers significantly. Others, such as marsh wrens and least bitterns, are displaced completely from the wetland. Loosestrife itself provides habitat and food for few wildlife species. Once loosestrife begins to invade, canopy closure is likely and a virtual biological "desert" develops underneath.

Spread

Purple loosestrife spreads primarily by seed, but can also spread from broken-off stems that root themselves in moist soil. Loosestrife plants produce over 100,000 seeds a year. These tiny seeds can live in the soil for many years. Although most fall within a few yards of the parent plant, water, animals and humans can transport seeds long distances. Horticultural use of purple loosestrife probably caused its initial establishment in many areas of Wisconsin.

Any sunny wetland is susceptible to purple loosestrife invasion. But disturbances such as water drawdowns, damaged vegetation or exposed soil greatly accelerate the process by providing the substrate and sunlight exposure needed for germination. A loosestrife invasion usually begins

Preventing Further Spread

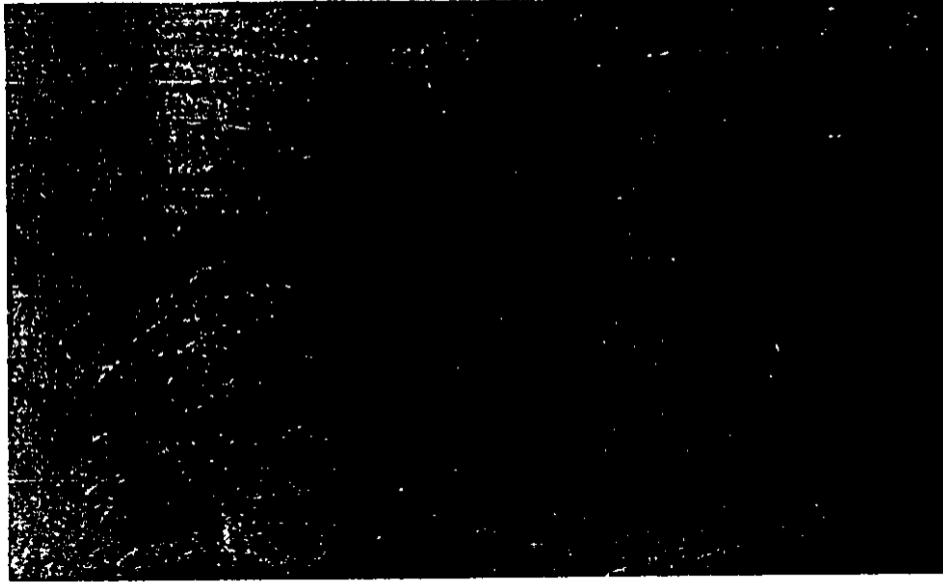
Prevention is the best way to stop the purple loosestrife invasion. The Department of Natural Resources recommends the following steps to prevent its further spread:

- 1) Be on the lookout for pioneering plants or isolated small colonies, especially in areas otherwise free of loosestrife. Remove pioneer plants immediately.
- 2) Rinse off equipment, gear, clothing and footwear used in infested areas before moving into uninfested areas.
- 3) Remove and destroy purple loosestrife planted in lawns and gardens. It's now illegal to cultivate purple loosestrife in Wisconsin.

Although loosestrife in gardens may seem harmless, its seeds eventually will spread to favorable moist soil. Some plant producers claim to have sterile varieties of purple loosestrife. It appears, however, that all cultivars are capable of producing seeds if they cross pollinate with another loosestrife plant. And, plants don't have to be near each other for pollination to occur. Honeybees, the main pollinators of loosestrife, commonly travel one to two miles during their foraging.

As of 1987, state law bans the sale, offering for sale, distribution, planting, or cultivation of non-native purple loosestrife. Each violation is subject to a \$100 fine (sec. 66.955(2)(5)). This ban covers both *Lythrum salicaria* and *L. virgatum*. There are no exceptions for cultivars or so-called sterile varieties. Illegal *Lythrum* plants have many horticultural names, some of which are:

Rose Queen	Brightness
The Rocket	Lady Sackville
Morden Pink	Atropurpureum
Morden Rose	Happy
Dropmore Purple	Roseum Superbum
Columbia Pink	Purple Spire
The Beacon	Mr. Robert's



Herbicide Application

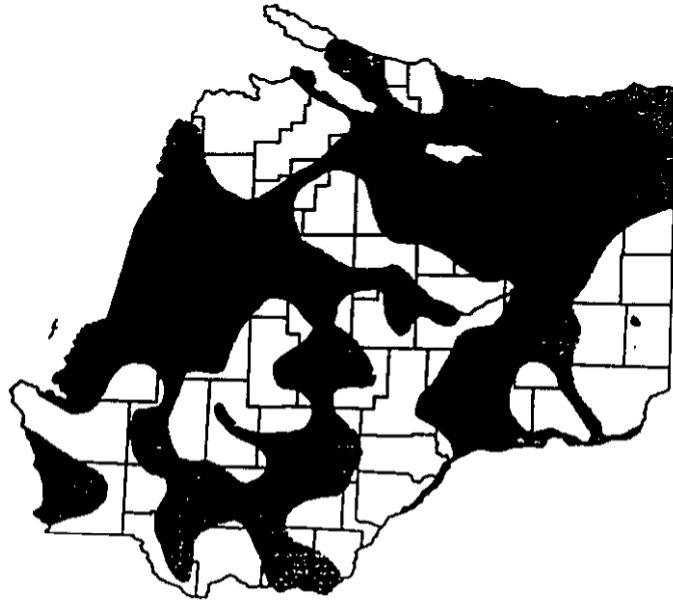
- Careful use of herbicide is the most effective, efficient and least destructive means of removing large purple loosestrife plants.
- Currently glyphosate is the most effective active ingredient for killing loosestrife. It comes in two forms: (1) "Roundup" for use on dry sites, and (2) "Rodeo" for use on wet or standing water sites. Glyphosate must be applied in late July or August to be most effective. It can be sprayed onto loosestrife foliage in a 1 percent solution. Glyphosate is a non-

with a few pioneering plants. These first plants may not spread for several years as they build up a large seed bank in the soil. When the right disturbance occurs, the loosestrife often spreads rapidly. Complete takeover of a wetland rarely occurs over night, however. More like a one-way ratchet, the loosestrife persistently takes space, never giving any up.

Distribution

Purple loosestrife can be found throughout Wisconsin, but it is still in low density in most areas. In fact, only about 3 percent of our total wetland acreage currently has loosestrife. As of 1988, half the colonies in the state had fewer than 20 plants. Nearly 80 percent had fewer than 100 plants. There is still time to act.

Purple Loosestrife as of 1988



- — little or no infestation
- ▒ — lightly to moderately infested
- — heavily infested

Sale violations should be reported to:

Department of Agriculture, Trade and Consumer Protection, Plant Industry Lab
P. O. Box 78834
Madison, WI 53707

Cultivation violations should be reported to:

Local Department of Natural Resources
Conservation Warden

green foliage that it comes in contact with. Therefore, great care must be taken to avoid treating non target plants. A more selective method of applying glyphosate is to cut the loosestrife stems near the ground and paint or dab the fresh cut surface with a 50 percent solution of the herbicide. The cut stems must be removed from the wetland or they may take root.

- "Garlon 3A" is a broadleaf (dicot) specific herbicide recently found to be effective on loosestrife. Its advantage over glyphosate is that it doesn't harm monocots such as grasses, sedges, cattails, rushes, reeds, etc. Garlon 3A currently can be used on dry sites. However, it's not yet approved for over-water use. Approval for wet site use is expected by 1991. Check with the Aquatic Plant Coordinator at the DNR offices listed below for the current status of this herbicide.
- Follow all label instructions when using herbicides.
- A permit is needed from the Department of Natural Resources when applying herbicides to Wisconsin waters. The permit is an important safeguard against possible harm to people and the environment. Applicants for permits to treat loosestrife are exempt from all permit fees. To determine whether you need a permit, contact your DNR District Headquarters.

Control Methods

Any control method you select should be repeated for several years to catch missed plants and those reestablishing from seed.

Hand Pulling/Digging

- Small young plants can be hand pulled, especially those rooted in loose soil. Be sure to get the entire root. Those left behind will resprout.
- Older plants are generally too big for pulling and may even be too big for digging.
- Avoid excessive soil disturbance. If this is unavoidable, consider chemical methods.
- Handle plants prior to the onset of seeds (early August), or bag and cut the seed heads to avoid spreading seeds.
- Removed plant parts should be dried and disposed of in a landfill, or preferably burned. Don't throw them in your compost pile.

Mowing

Mowing hasn't been found to be an effective way to destroy purple loosestrife.



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700 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002

November 14, 1996

Mr. Bob Martini
Department of Natural Resources
P.O. Box 818
Rhineland, WI 54501

Dear Bob:

Re: Wausau Hydro Purple Loosestrife Monitoring Plan

Enclosed is the Purple Loosestrife Monitoring Plan for the Wausau Hydroelectric Project for Wisconsin Department of Natural Resources review as per Article 408 of the new Federal Energy Regulatory Commission license (License # 1999-004).

To comply with license article requirements, please provide your response within 30 days of this letter. Should you require clarifications or additional information for your review, don't hesitate to contact me. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory W. Egtvedt". The signature is written in a cursive style with a large, looping initial "G".

Gregory W. Egtvedt
Assistant Director
Environmental Services

cc - Bill Bloczynski - MERH
Ron Schmidt - D2

Purple Loosestrife Monitoring Plan for Wausau Hydroelectric Project.
FERC Project no. 1999

Objective: To monitor the spread of Purple Loosestrife (*Lythrum Salicaria*) on Wausau hydroelectric project lands. Purple Loosestrife is an invasive plant that exhibits aggressive characteristics. The plant is becoming increasingly common to wetland areas. In consultation with the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service (USFWS), Wisconsin Public Service agrees to periodically monitor the species.

I. Methods

- A. The monitoring methods will include a shoreline survey utilizing a boat to determine a baseline of existing colonies and then continued monitoring to determine the increase of density and abundance of the species.

II. Frequency of Survey

- A. The survey will be taken in June or July 1997 during the time when the plants are in bloom and biennially thereafter.

III. Documentation existing colonies.

- A. The results of the survey will be displayed on a map of the total project area. A copy of the completed map will be provided the the Wisconsin Department of Natural Resources no later than October 31, of the year in which the monitoring was completed.
- B. The map will indicate relative populations based on the following criteria:
- a. Small Colonies of 1-5 plants
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P.O. Box 19002

Green Bay, WI 54307-9002

November 14, 1996

Mr. Jim Fossum
U.S. Fish & Wildlife Service
1015 Challenger Court
Green Bay, WI 54311

Dear Jim:

Re: Wausau Hydro Purple Loosetrife Monitoring Plan

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Gregory W. Egtvedt
Assistant Director
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