



REST LAKE DAM



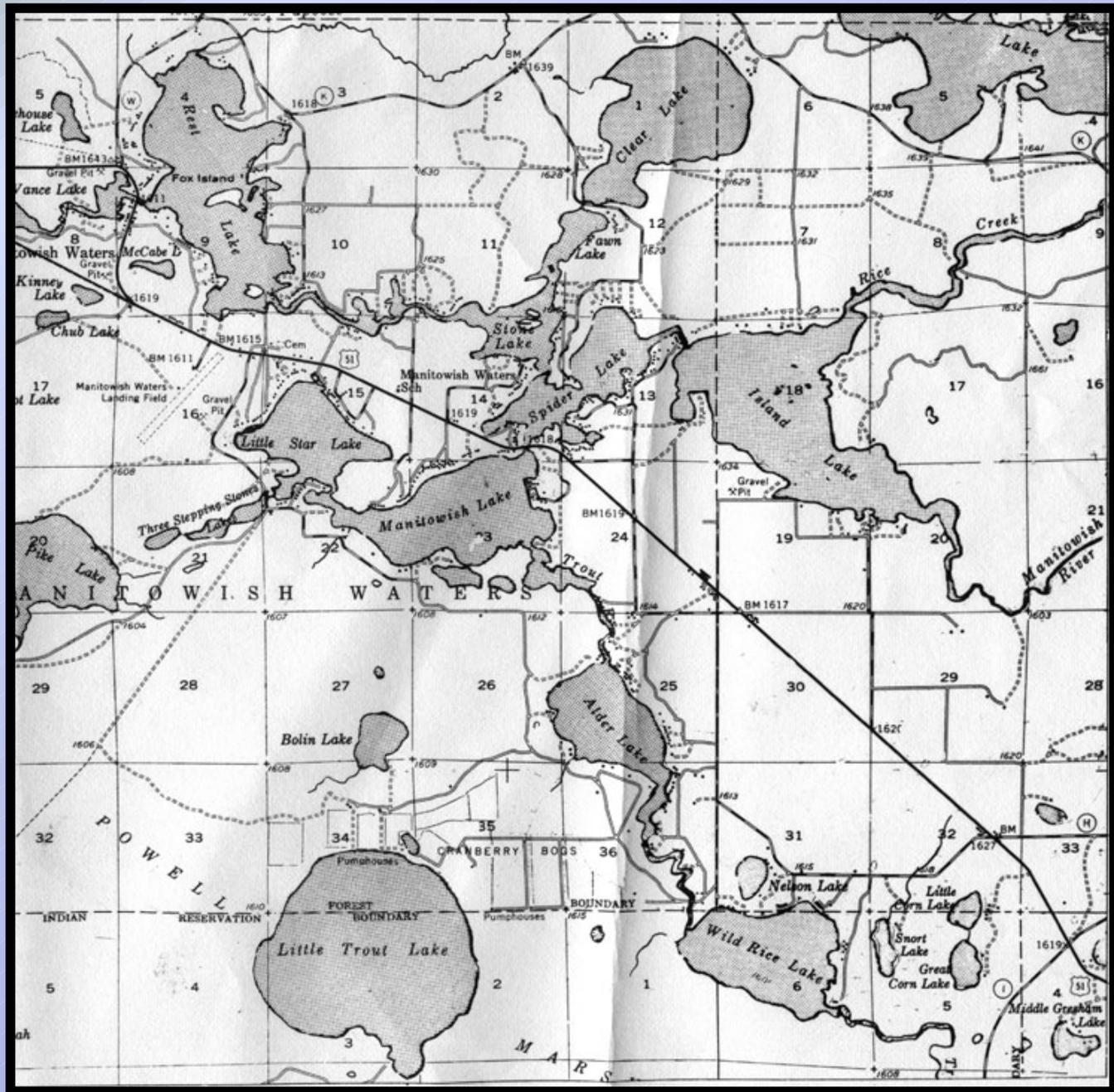
REST LAKE DAM AND FISHWAY (1930's?)

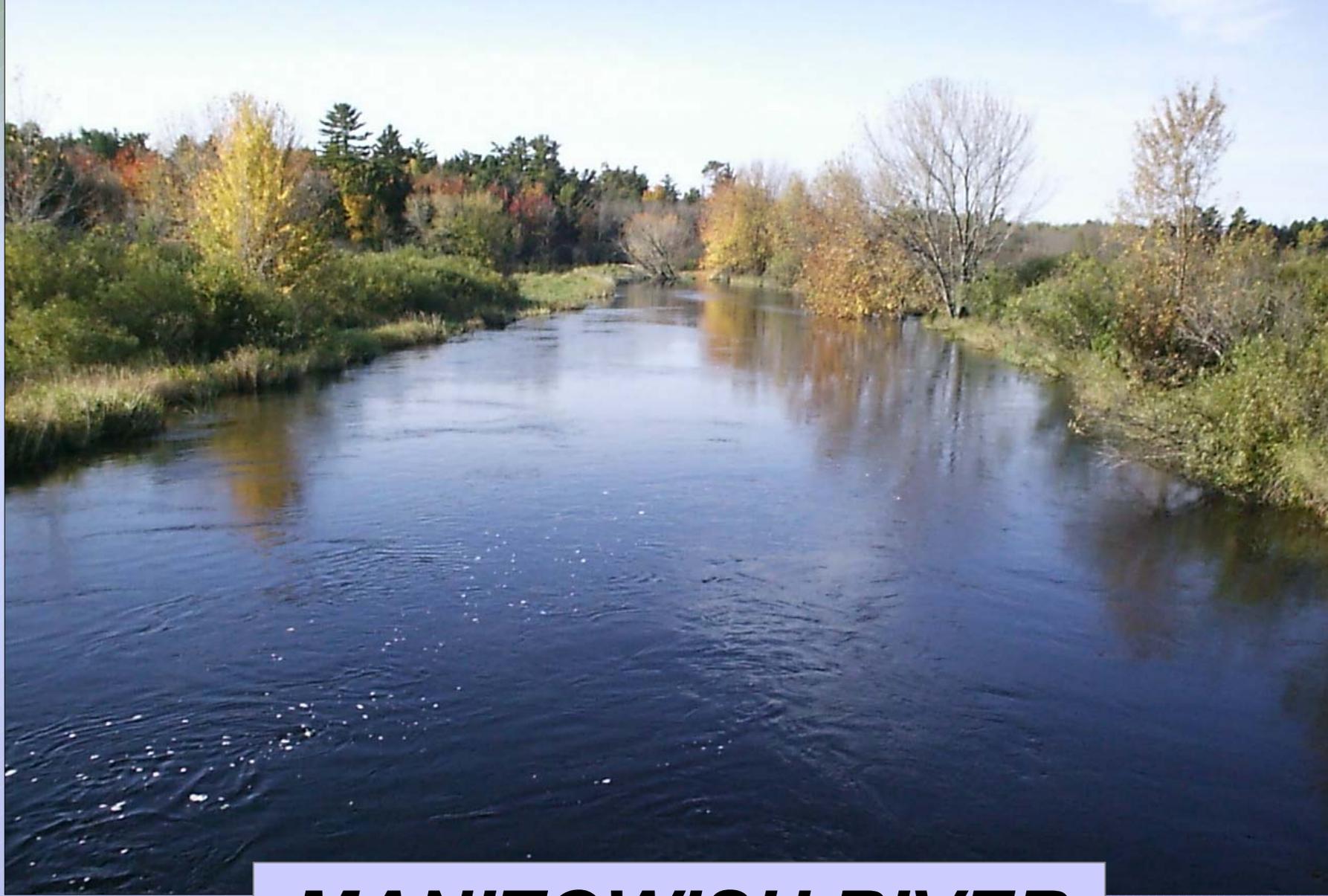


REST LAKE CHAIN

REST LAKE (MANITOWISH) CHAIN WATERSHED STATISTICS

- Drainage area is 243 square miles.
- This is about 12.9% of the total Flambeau River drainage area.
- The dam impounds ten natural lakes (Rest, Stone, Fawn, Spider, Clear, Island, Alder, Manitowish, Little Star and Wild Rice).
- The total surface area is 4,200 acres.
- The usable storage capacity is about 15,150 acre feet of water.

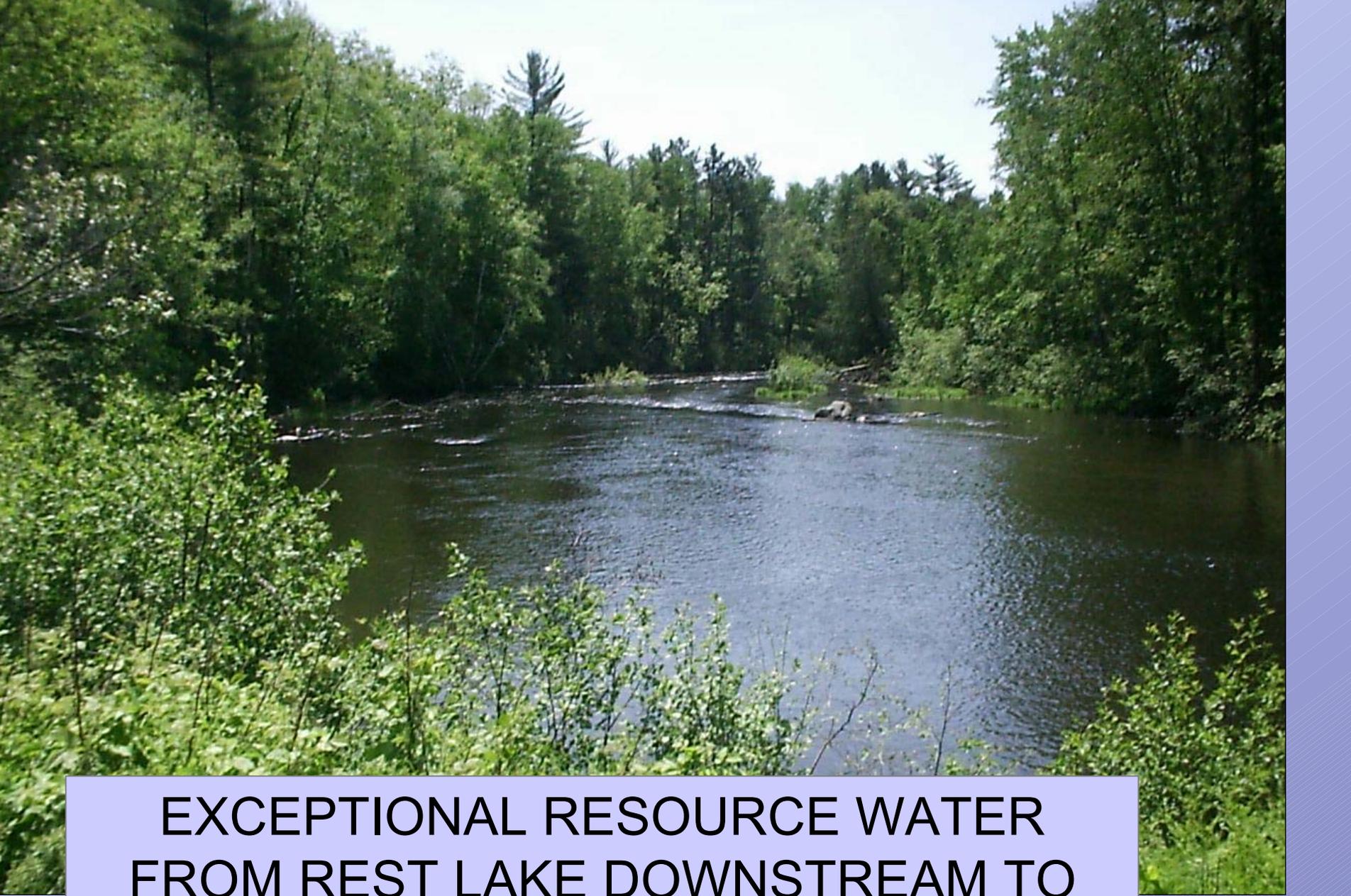




MANITOWISH RIVER



Flows 14 miles unimpeded before it enters the North Fork of the Flambeau River and then the Turtle Flambeau Flowage.



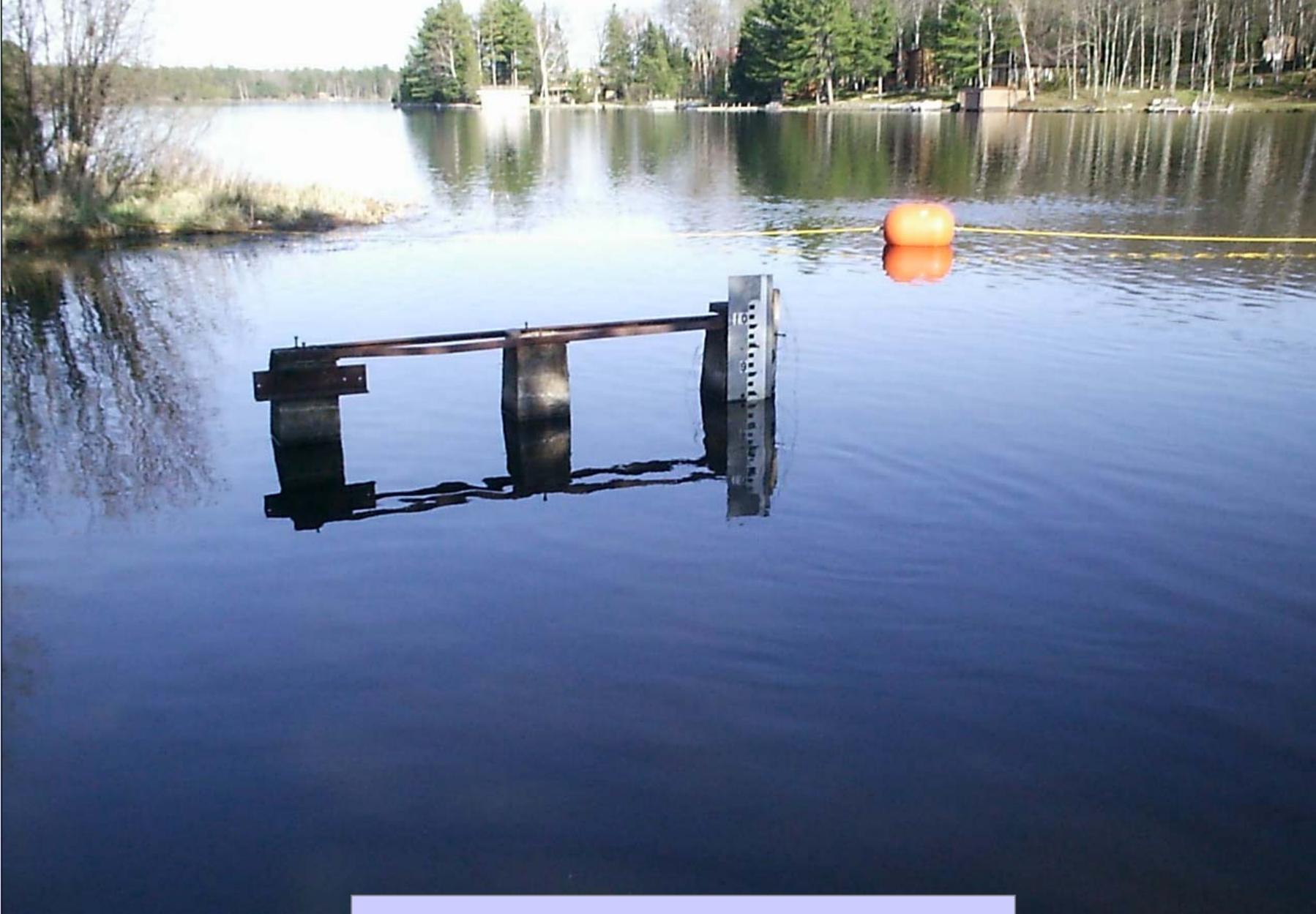
**EXCEPTIONAL RESOURCE WATER
FROM REST LAKE DOWNSTREAM TO
TURTLE FLAMBEAU FLOWAGE.**

HISTORY

- The Chippewa Flambeau Improvement Company (CFIC) owns and operates Rest Lake Dam
- The Rest Lake Dam was constructed in 1887 for use by the logging industry.
- The dam was acquired by CFIC in 1911.
- The dam is operated according to conditions established by a 1937 order of the Public Service Commission of Wisconsin
- The dam impounds the Manitowish Chain of Lakes.

JURISDICTION

- The Wisconsin Department of Natural Resources (WDNR) has authority over the Rest Lake Dam under Chapter 31 Regulations (permit # 2-wp-295).
- The Federal Energy Regulatory Commission (FERC) ruled on June 1, 2001 that the Rest Lake Dam is not required to be licensed by FERC.



DAM OPERATION

ANNUAL OPERATION

DATES

STAFF GAUGE READING

November 1 to Spring Ice Break-up

Minimum of 5'.0"

Spring Break-up to April 15

Minimum of 7'.3"

April 15 to July 1

7'.3" – 8'.6"

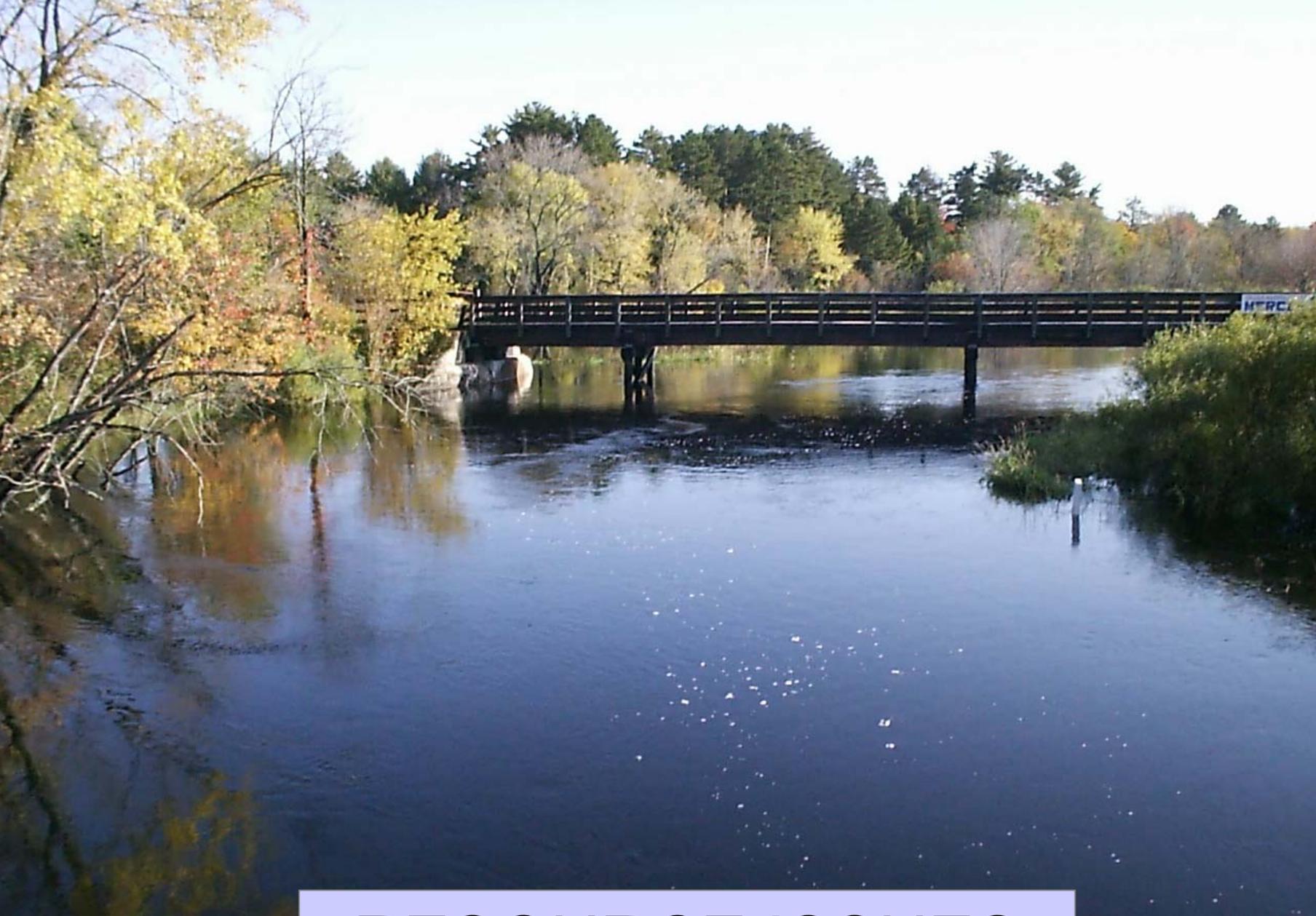
July 1 to September 1

No lower than 7'.3"

September 1 to November 1

No lower than 5'.0"

- At no time shall the chain be lowered at a rate exceeding 2 inches per day
- At no time shall the chain be lowered after ice forms.
- Required to pass 50 cfs base flow minimum



RESOURCE ISSUES

Vilas Co

Manitowish Chain

WAUSAU DAILY RECORD-HERALD, WAUSAU, WISCONSIN



... Mel Berg Photo

HERE'S A DANDY—Mr. and Mrs. Viri Peters, 1669 Grand Ave., display a pair of lake sturgeon caught recently in the Manitowish Waters chain, Vilas County. The larger of the two weighed 55 pounds and was 61 inches long. It took two and a half hours of slam-bang battling to land the whopper. The smaller fish measured 34½ inches. The hook and line season for sturgeon started Sept. 5 and continues through Oct. 15, with a season limit of two fish. Each fish must have a special tag attached.

STURGEON REPRODUCTION



LOW NUMBERS OF LARGE OLD FISH



NO EVIDENCE OF RECRUITMENT OCCURRING

Lake Sturgeon
(young of the year)

Konrad P. Schmidt



***REASONS FOR LACK OF
REPRODUCTION ARE NOT FULLY
UNDERSTOOD BUT COULD BE DO TO...***

Lake Sturgeon (Acipenser fulvescens)



Konrad P. Schmidt

LOW DOWNSTREAM RIVER FLOWS IN SPRING





Below 51 (lower), looking downstream, 24 cfs (9/12/03)



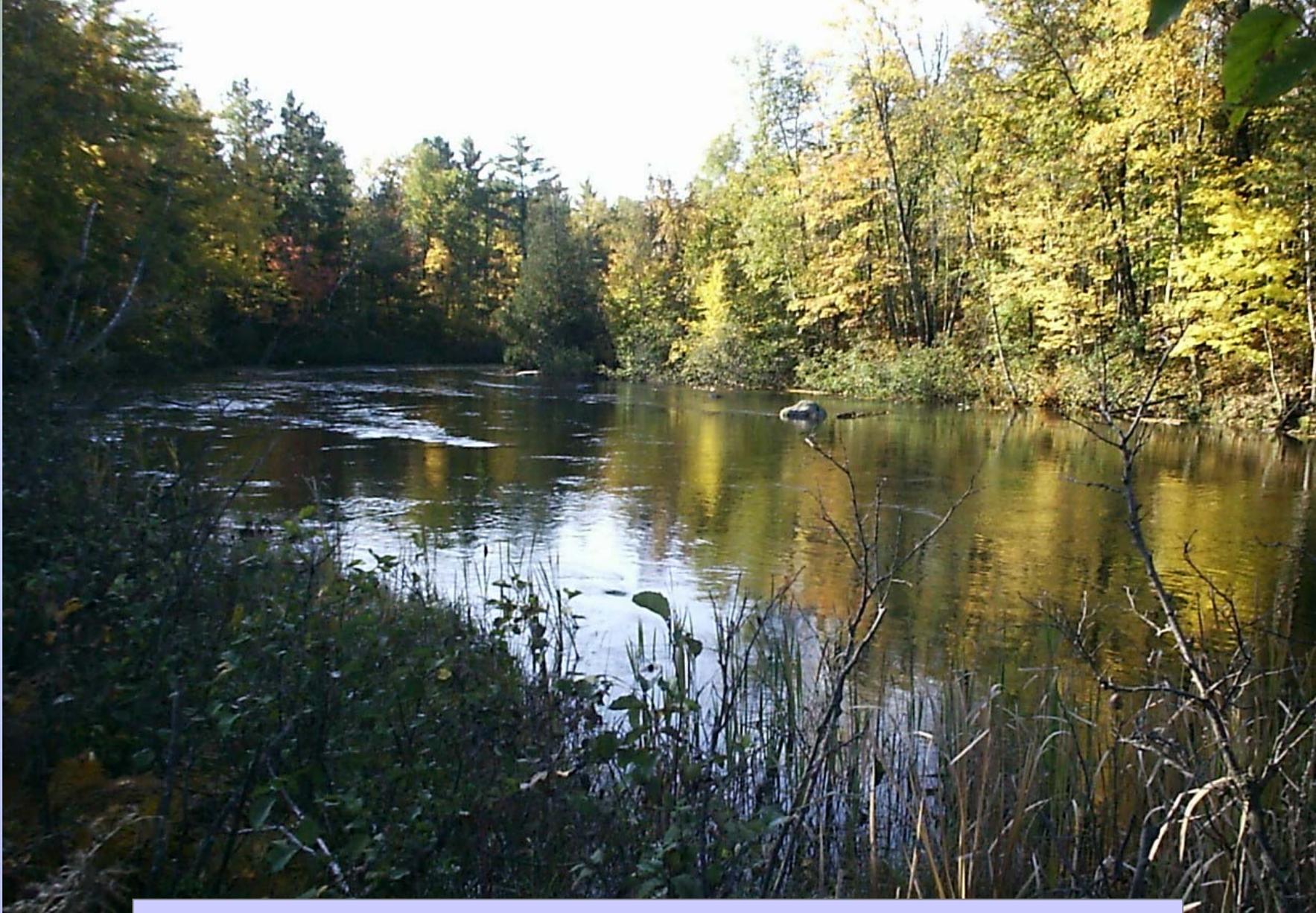
Below 51, looking downstream, 240 cfs (10/15/03)



Above Highway 47 (24 cfs) (9/24/03)



Above Highway 47 (214 cfs) (10/09/03)



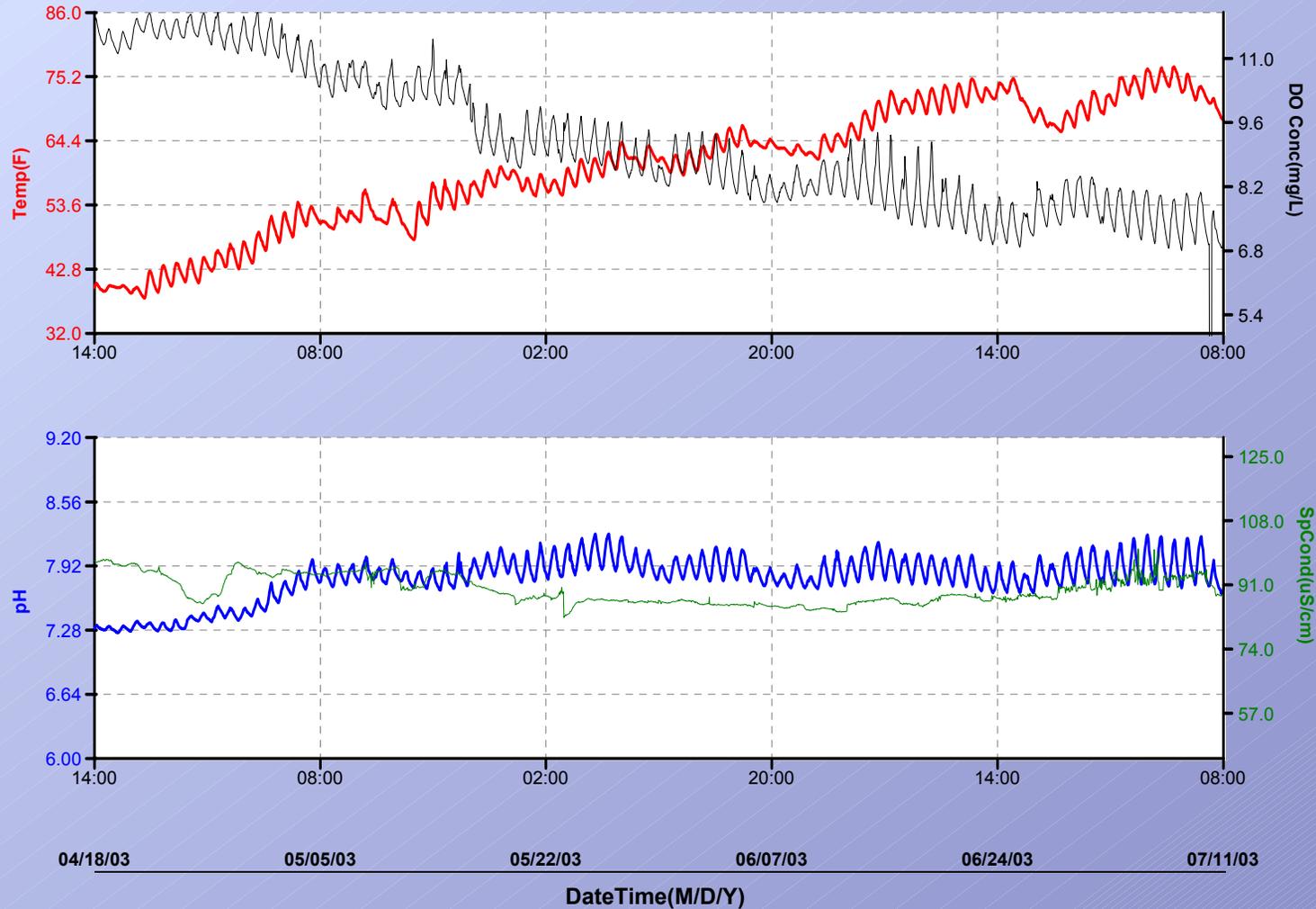
MAY BE TEMPERATURE RELATED



Deploying Sonde water quality monitoring meter

Manitowish River, Site 03

App. 1/4 mile downstream from STH-51 (Vilas Co)



Greater Redhorse (*Moxostoma valenciennesi*)

***PREDATION
BY
REDHORSE
SUCKERS***



Scott Niemela

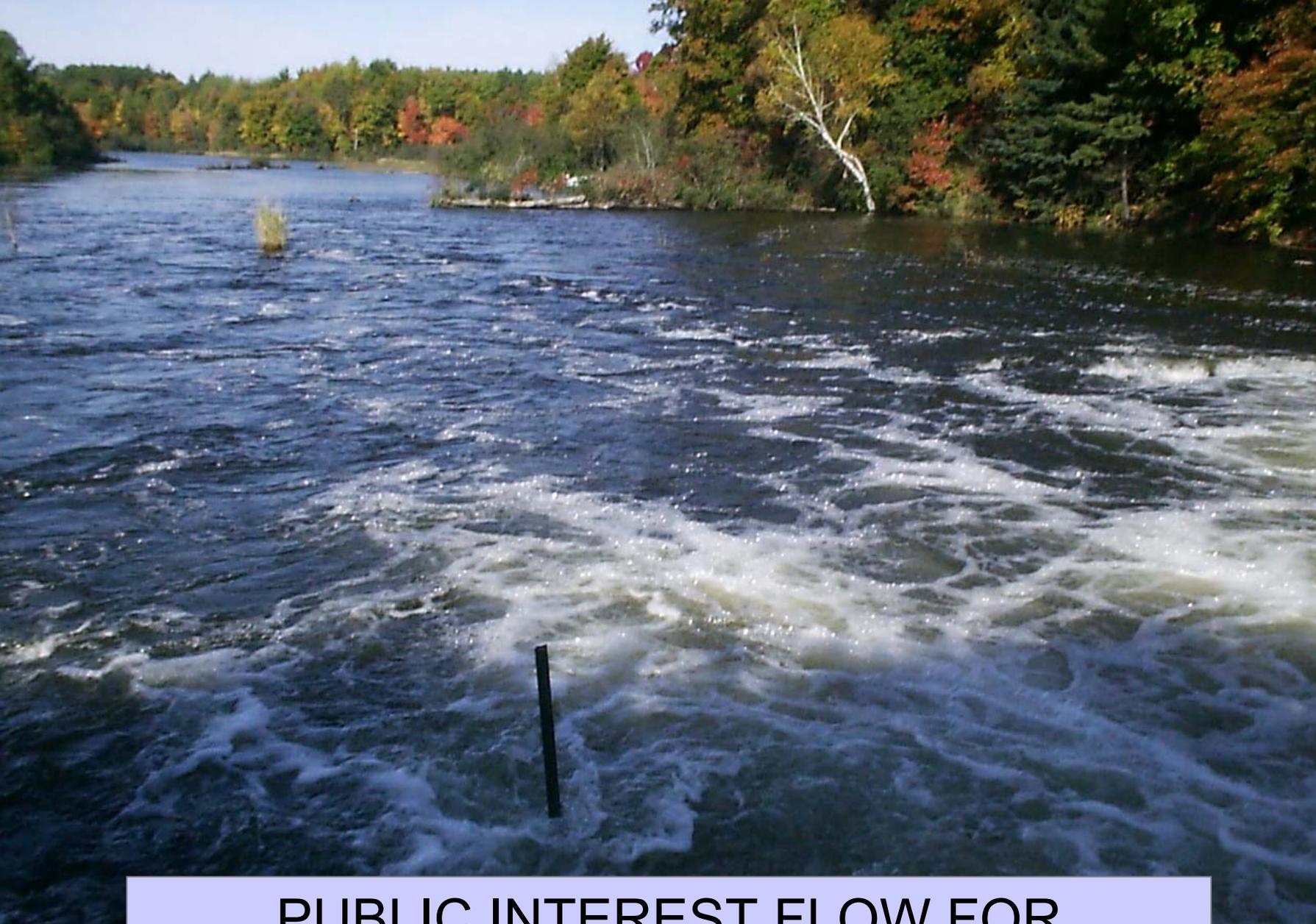


**PREDATION BY
RUSTY CRAYFISH**

WORK WOULD BE SUPPORTED BY THE WISCONSIN LAKE STURGEON MANAGEMENT PLAN

OBJECTIVES:

- Maintain and enhance current sturgeon populations.
- Identify critical habitats and habitat requirements.
- Use flow management at dams to benefit sturgeon.
- The Manitowish River system is a priority for sturgeon rehabilitation.



**PUBLIC INTEREST FLOW FOR
FISH/WILDLIFE AND RECREATION**

EXISTING MINIMUM FLOW OF 50 CUBIC FEET PER SECOND MAY BE TOO LOW TO PROTECT FISH/WILDLIFE AND RECREATION VALUES DOWNSTREAM





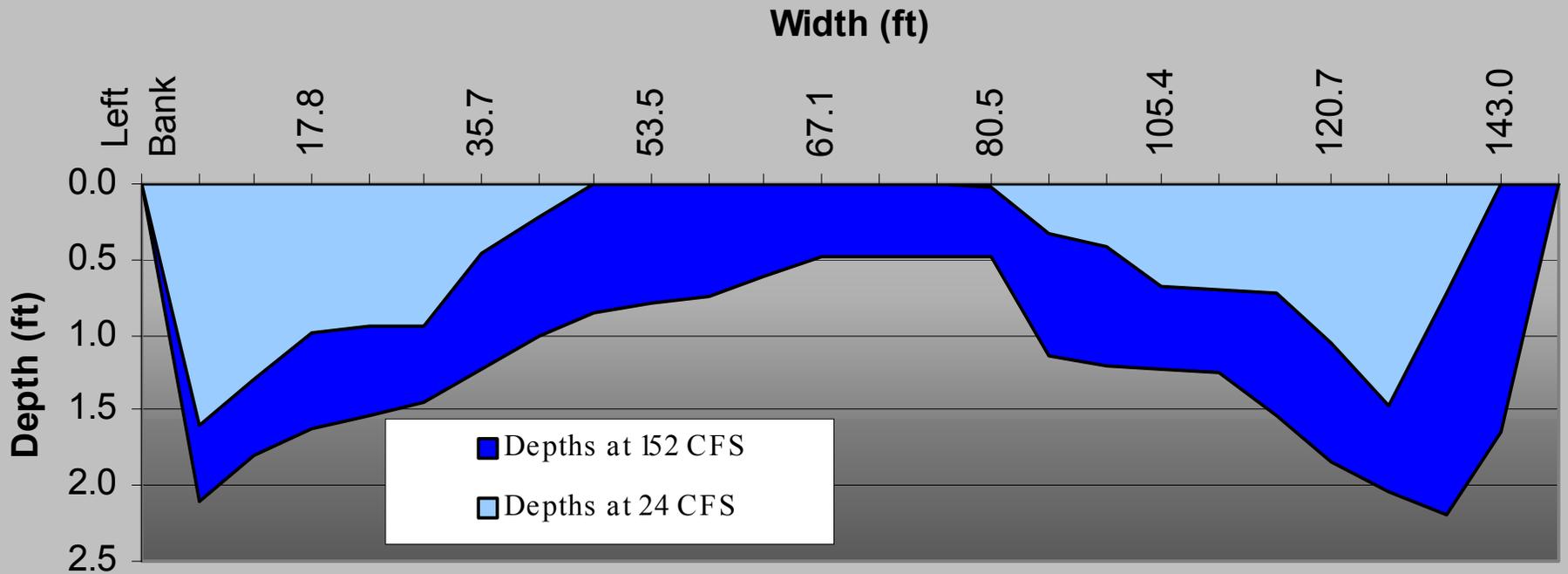
Looking upstream below Circle Lilly Creek (9/19/2003) (24 cfs)

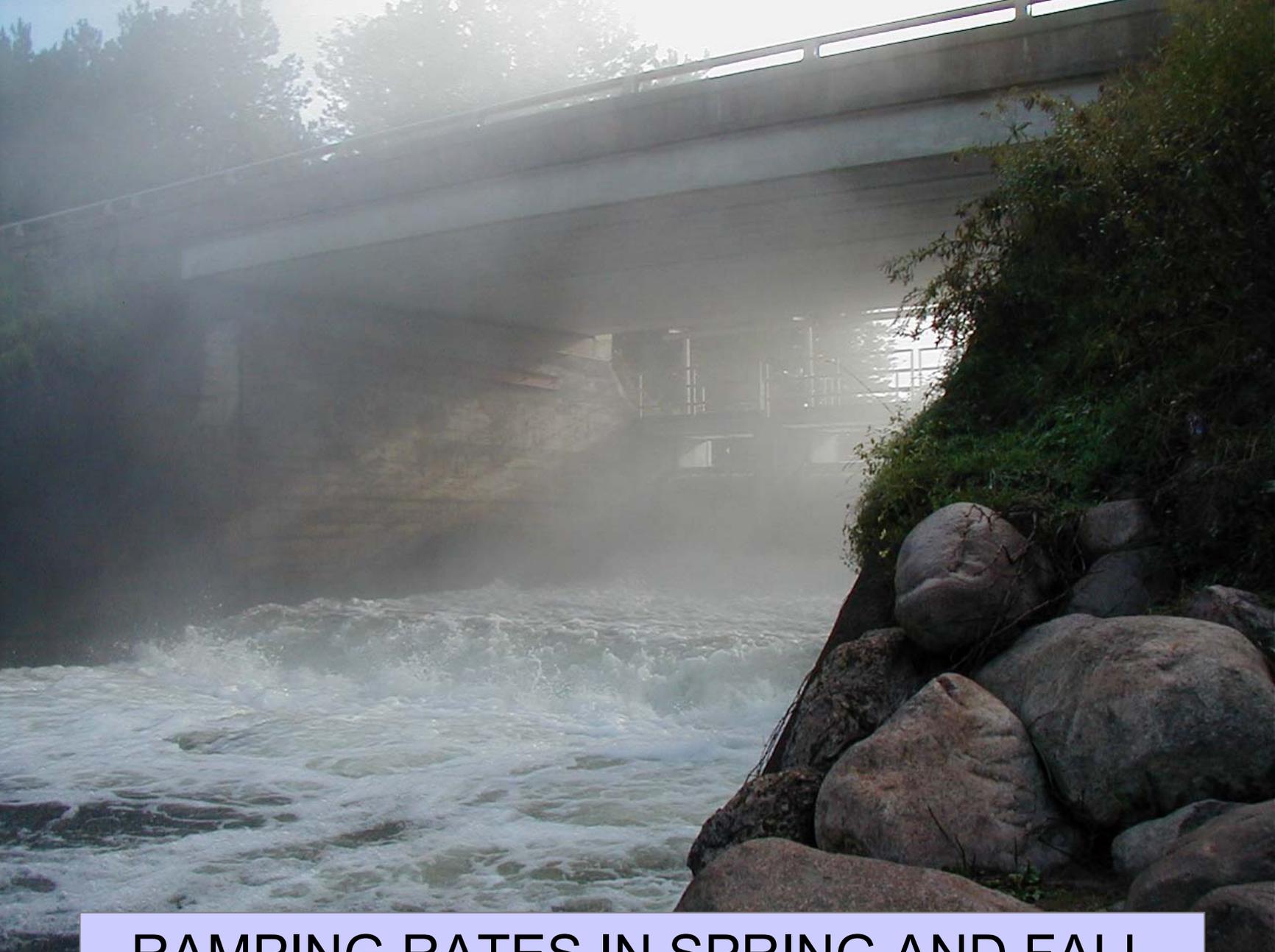


10/2/03 looking upstream below Circle Lilly Creek (shallow zone) 152 cfs

Manitowish River, Site 10

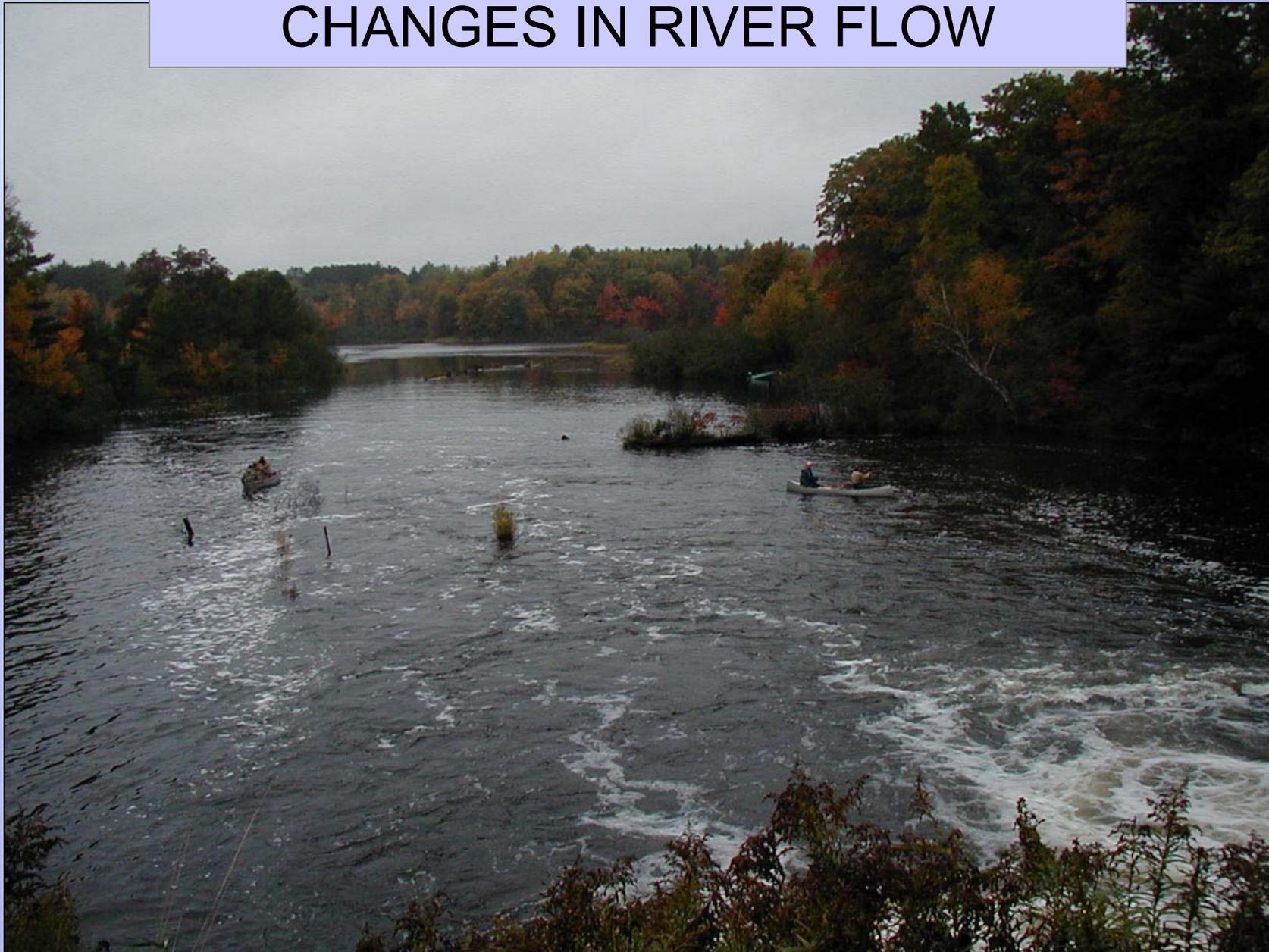
Sand flats downstream from canoe rental

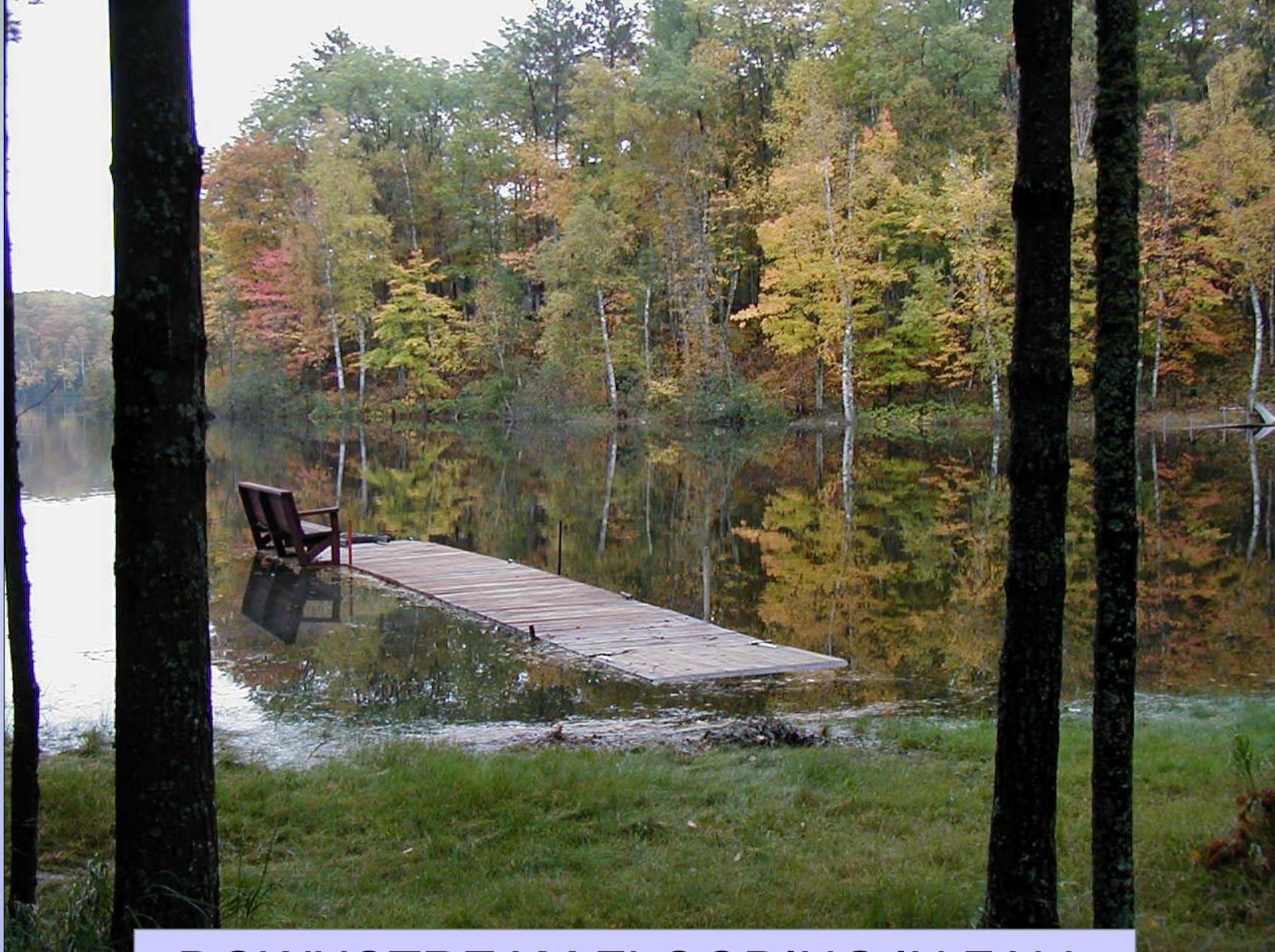




RAMPING RATES IN SPRING AND FALL

RESULTS IN MAJOR SHORT-TERM CHANGES IN RIVER FLOW





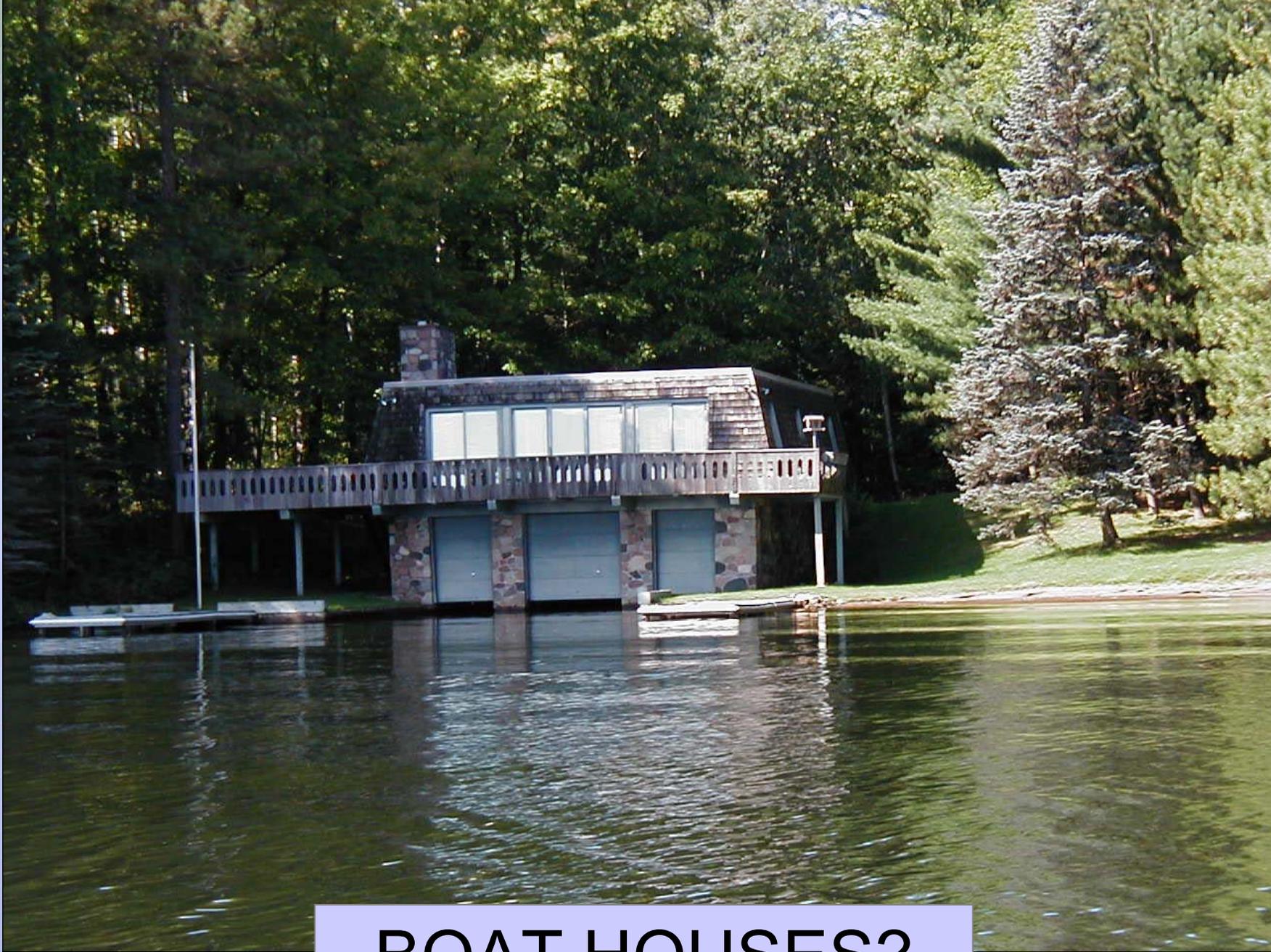
DOWNSTREAM FLOODING IN FALL

WINTER DRAWDOWNS OF 3.6 FEET





IS A 3.6 FOOT WINTER DRAWDOWN NECESSARY TO PROTECT SHORELINE STRUCTURES?



BOAT HOUSES?

SHORELINE STABILIZATION STRUCTURES?





**DOES DRAWDOWN PREVENT
ESTABLISHMENT OF
AQUATIC PLANTS?**

STRATEGY TO ADDRESS RESOURCE ISSUES

- Develop a summary that describes the history and resource issues.
- Meet with Chippewa Flambeau Improvement Company and other interest groups.
- Keep interest groups informed.
- Develop a public participation plan with input from interest groups.
- Hold public information meeting to gather public opinion about the issues.
- Strive to balance upstream and downstream concerns?

