### Eastern Georgian Bay Stewardship Council





## Who / What is the Eastern Geo. Bay Stewardship Council?

MNR's community, volunteer, environmental program called the "Ontario Stewardship Program"



Supported by ... but operates independent of MNR

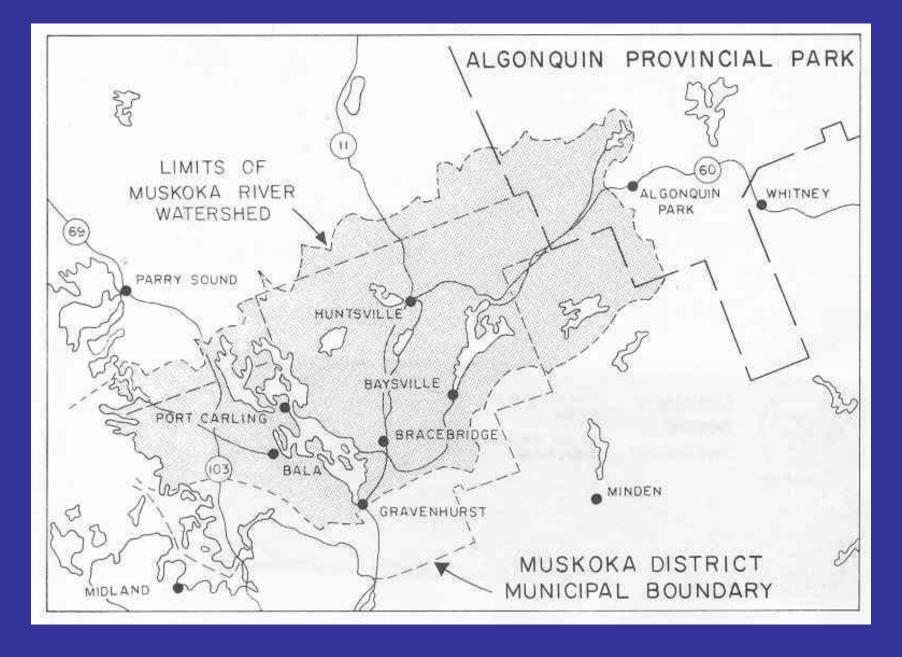
Founded on model of collaboration and partnership with existing community groups.

Have no legislative authority; exert influence through cooperation and collaboration with community partners.

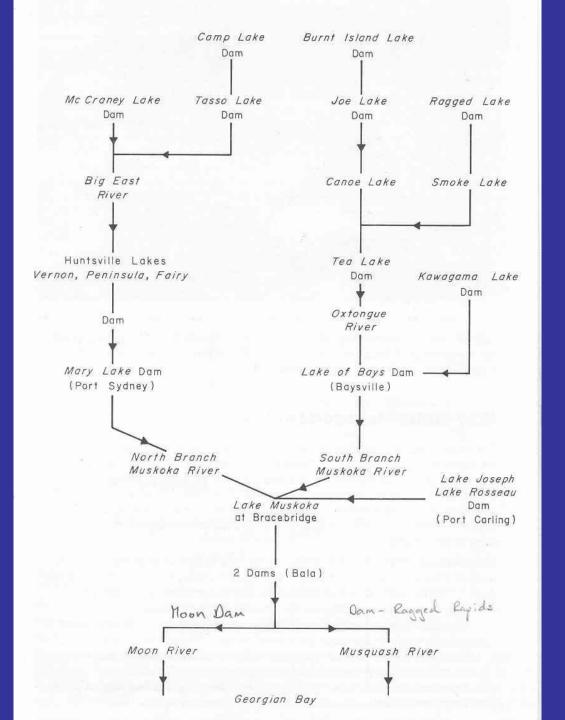
Members are volunteers representing various partners and interest groups.

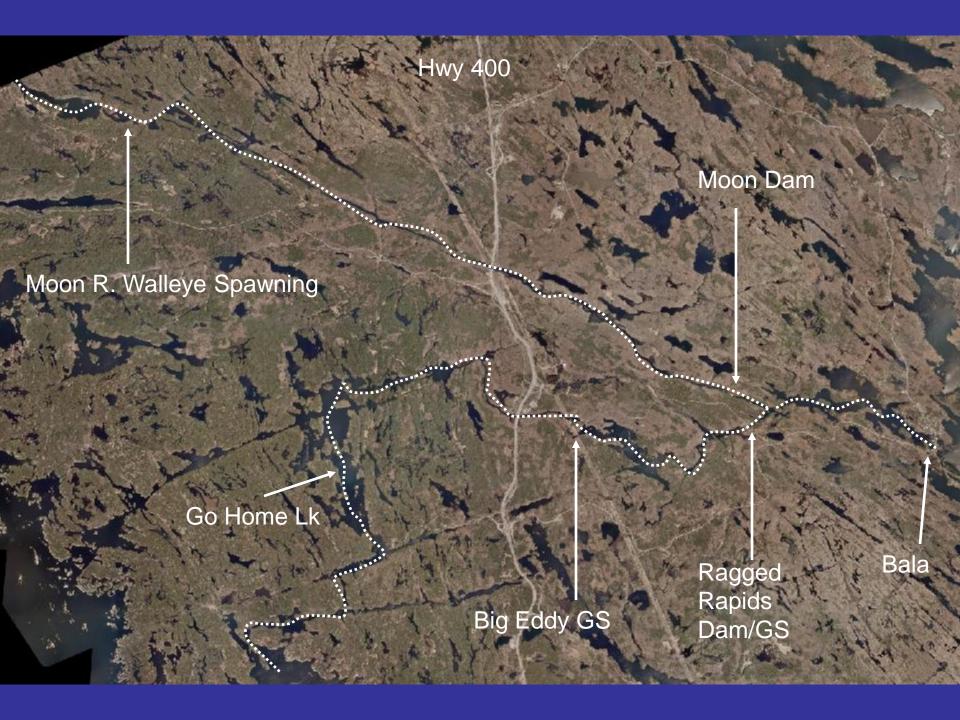






1800 square MILES; approx. 2000 lakes covering 300 sq. miles; 1300 ft elevation





### Walleye Reproductive Strategies:

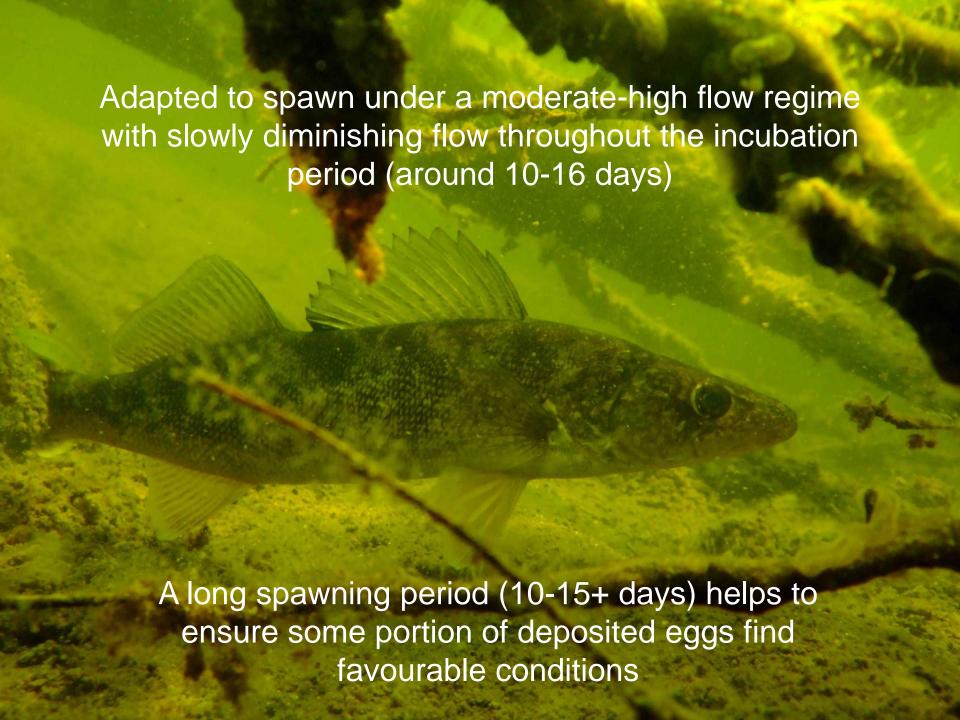
Spring Spawners – Temp 6 – 12° C.

Moving Water: 0.6 to 0.9 cubic meters per second

Substrate: gravel, rubble, cobble; ~ 2 feet deep

Broadcast spawners: 55,000 eggs / kilogram !!!

Strategy is one of mass production; no parental care; exceptionally high mortality of eggs and fry; success largely dependent on capricious environmental factors -> -> -> generally poor to moderate year class success with intermittent "super year class" ("boom-bust cycle")

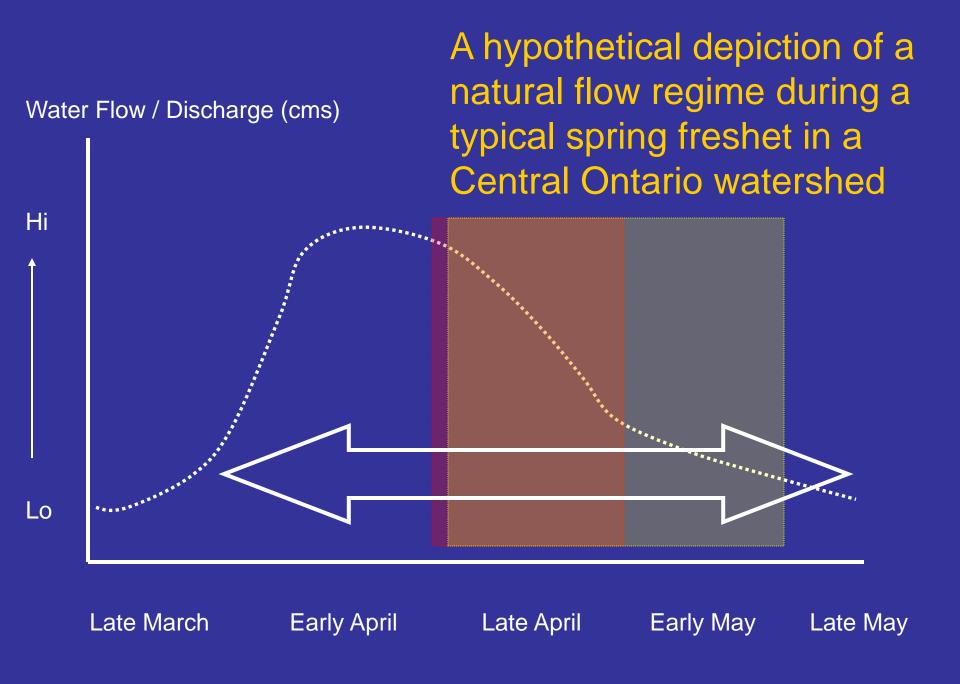


## What do you need for a strong walleye year class ... ???

(Assume high quality habitat ... not necessarily a large spawning pop)

- Favourable flow regime (0.6 .09 cms & diminishing)
- Favourable water temp. (egg development & food)
- Abundant zooplankton production
- Abundant food supply pisciverous feeding (critical fat reserves for first winter
- Low predation by natural predators (crappie, smelt, gobies & many others)

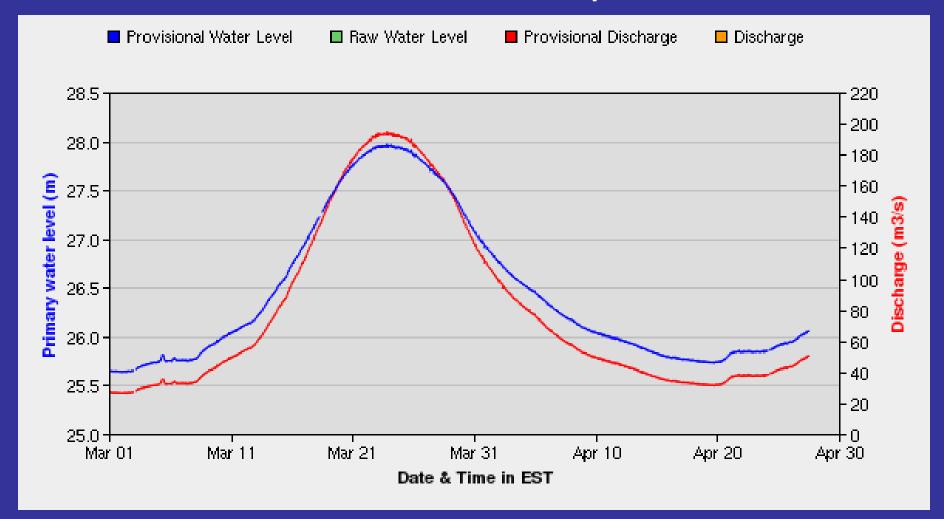
Year class strength established at yearling stage







### Magnetawan River at Hwy 69 (Britt) – Flow Curve Mar.1 to April 27, 2012



# Moon River Walleye Spawning Population Estimates

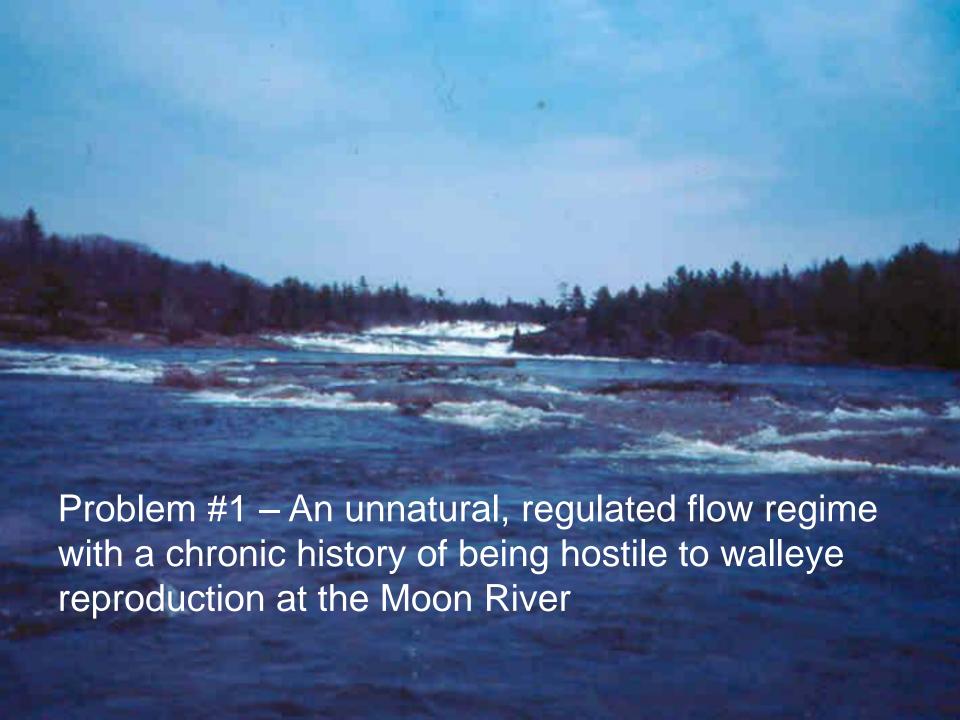
Year	Population Estimate
	Estimate
1968	24, 969
1969	29, 309
1970	24, 518
1971	17, 954
1972	12, 523
2004	4, 817
2005	1, 197
Pre 1968	?



#### **Problems?**

- 1. Unnatural regulated flow regime
- 2. Historic Sport / Comm. Fish (Over) Harvest
- 3. Changing Ecology (invasive species)
- 4. Spawning area
- 5. Others? (logging, poaching, habitat degradation, acidification) Not likely



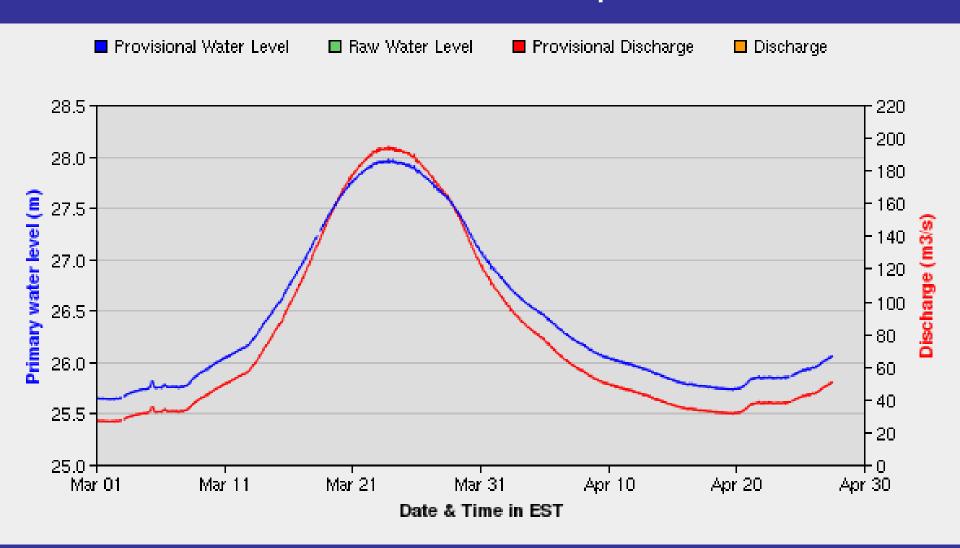




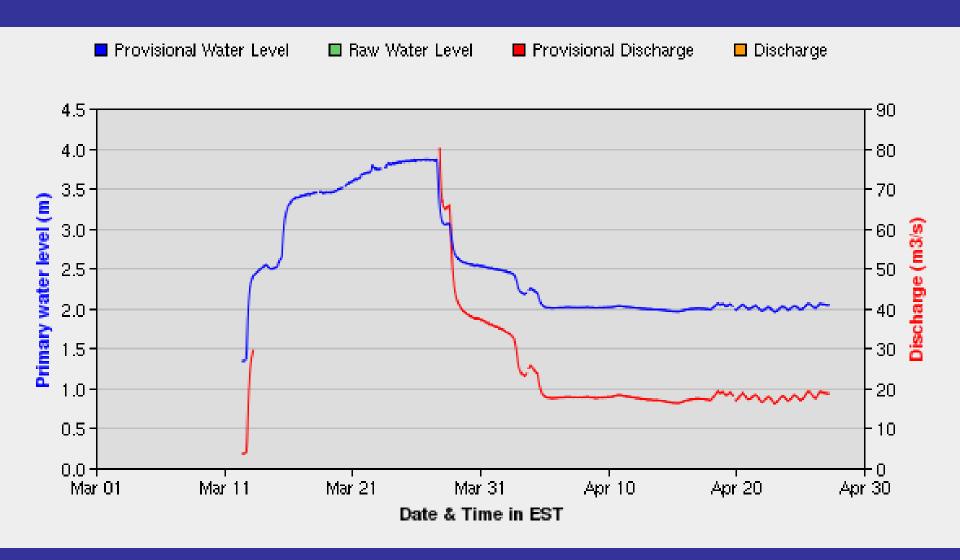


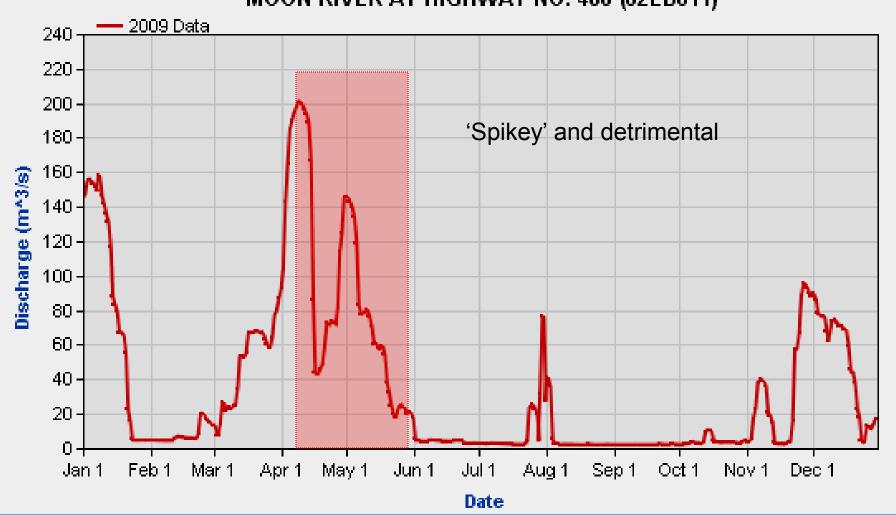


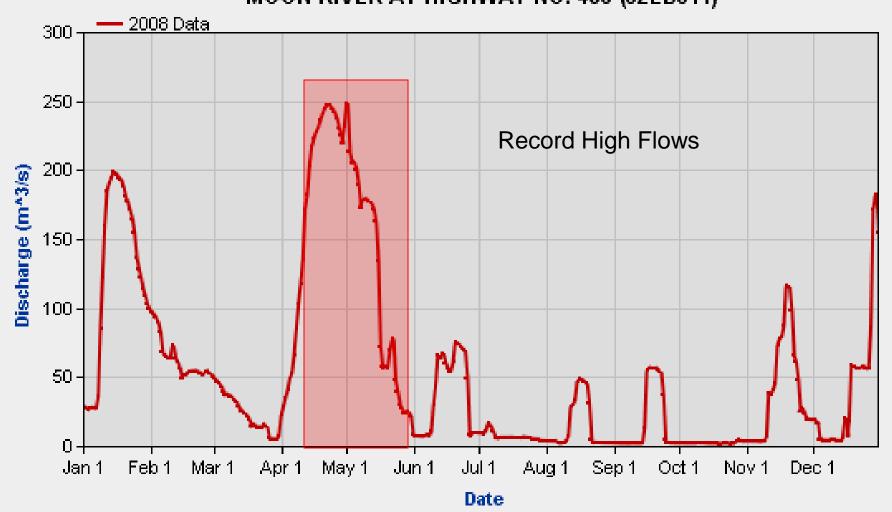
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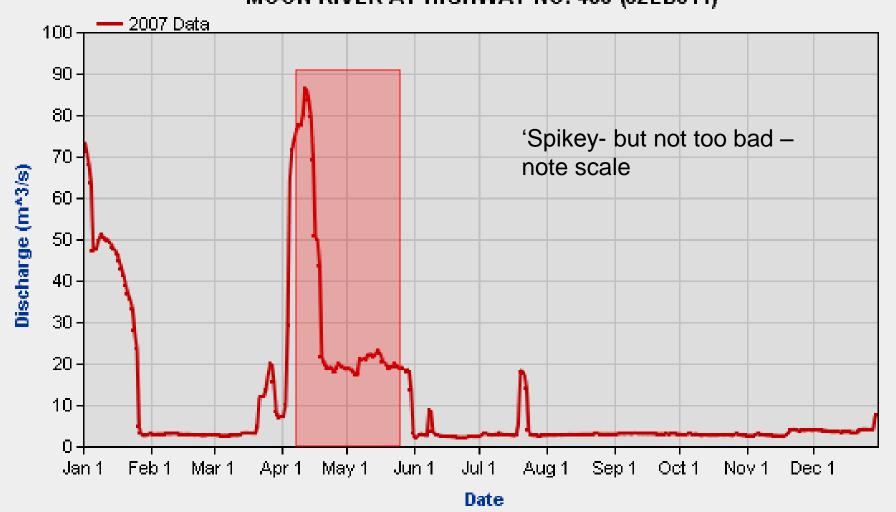


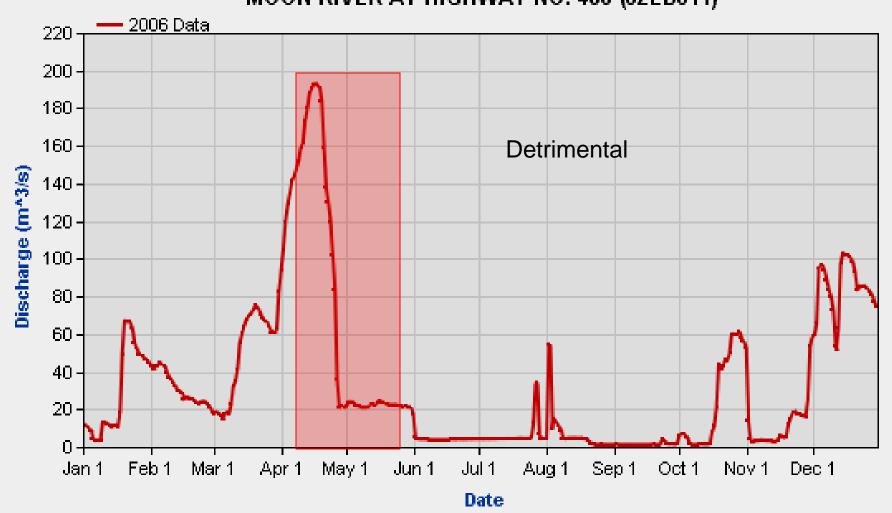
### Moon River at Hwy 400 – Flow Curve Mar.1 to April 27, 2012

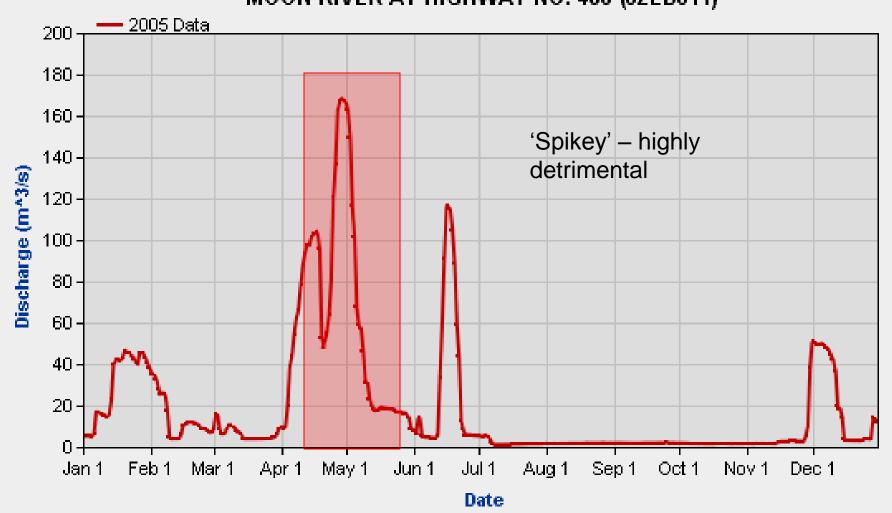




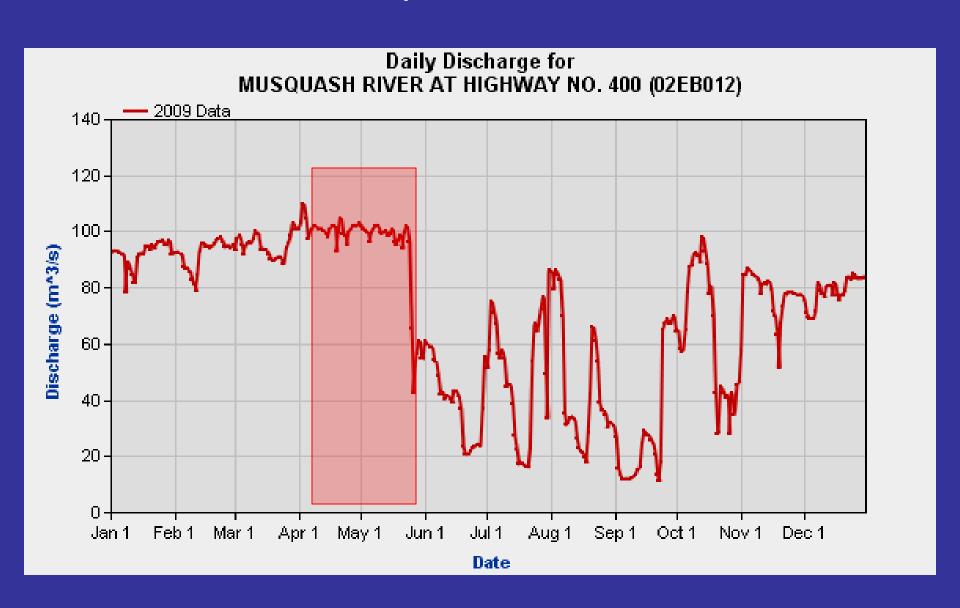








#### Musquash River - 2010







## Multiple water-related interests considered in MRWMP:

Flood Control / Public Safety Cottage / Property Damage Hydro power production Recreation / Navigation Ecological and aquatic objectives

Moon River Walleye Fisheries Interests

Muskoka River Water
Management Plan –
What accommodation
is there for the Moon
River walleye
population?



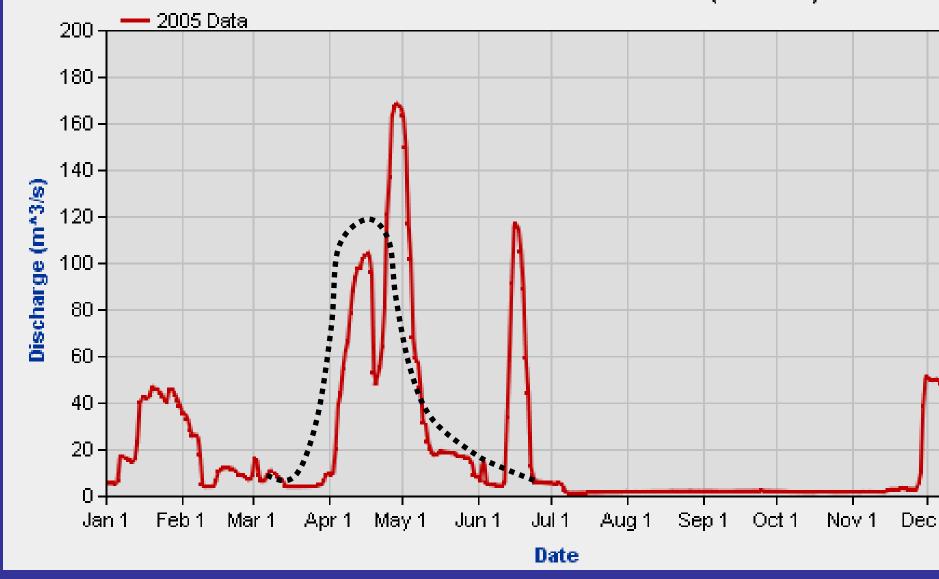
"The operating strategy ... will target a minimum of 14 cms at the Moon Falls spawning site during the spring (walleye spawning and incubation) period ...

"MNR and OPG will utilize an adaptive management approach to address outstanding data gaps and issues."

# Moon River ... What's your problem?

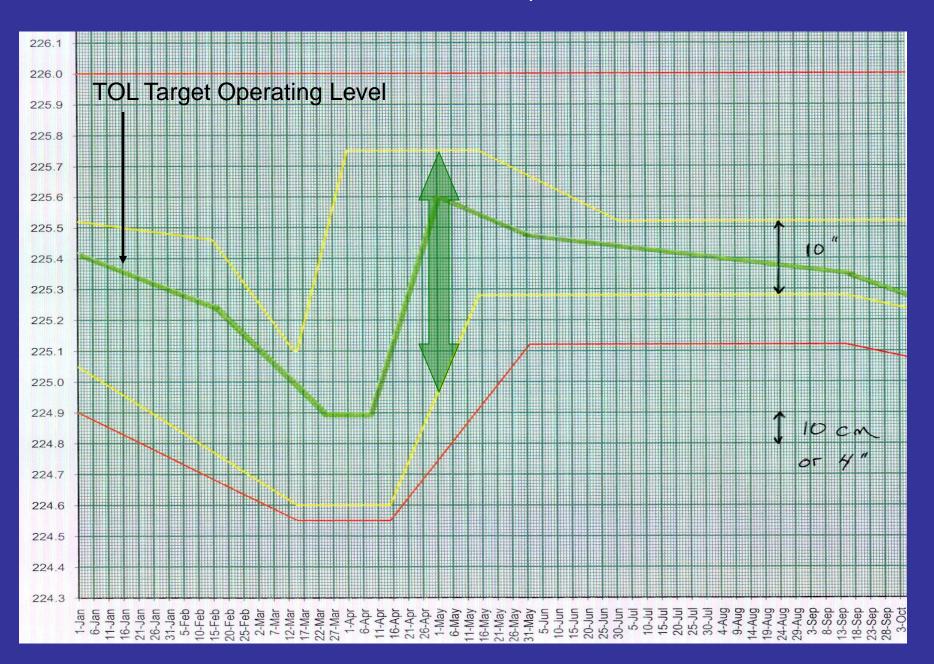
1. Too much water? 2. Too little water? ∵3. Significant fluctuations? 4. All of the above?

Daily Discharge for MOON RIVER AT HIGHWAY NO. 400 (02EB011)





#### Lake Muskoka Rule Curve – per MRWMP



#### What is the purpose of this presentation?

- 1. Increase understanding and awareness of the consequences of water management activities especially as they relate to the Moon River walleye population of eastern Georgian Bay
- 2. By increasing understanding lay the foundation (public acceptance) for future modifications in water management strategies that are more conducive to walleye reproduction.
- 3. Promote modifications to water management strategies that more closely emulate a natural flow regime under which walleye have evolved and are more likely to reproduce successfully.
- 4. If required and appropriate, formalize these modification when the Muskoka River Water Management Plan is reviewed.



