

US Fish & Wildlife Service grant to address Zebra mussels (RI AIS Management Plan Implementation funding)

Zebra Mussel Risk Assessment
Risk of invasion by the invasive zebra mussel
(*Dreissena polymorpha*) to Rhode Island
freshwaters



Rhode Island Department of Environmental
Management
Office of Water Resources – Surface Water
Monitoring Program

February 2011

- Drafted Zebra Mussel
Risk Assessment

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Table 1. Criteria used for determining risk classes.

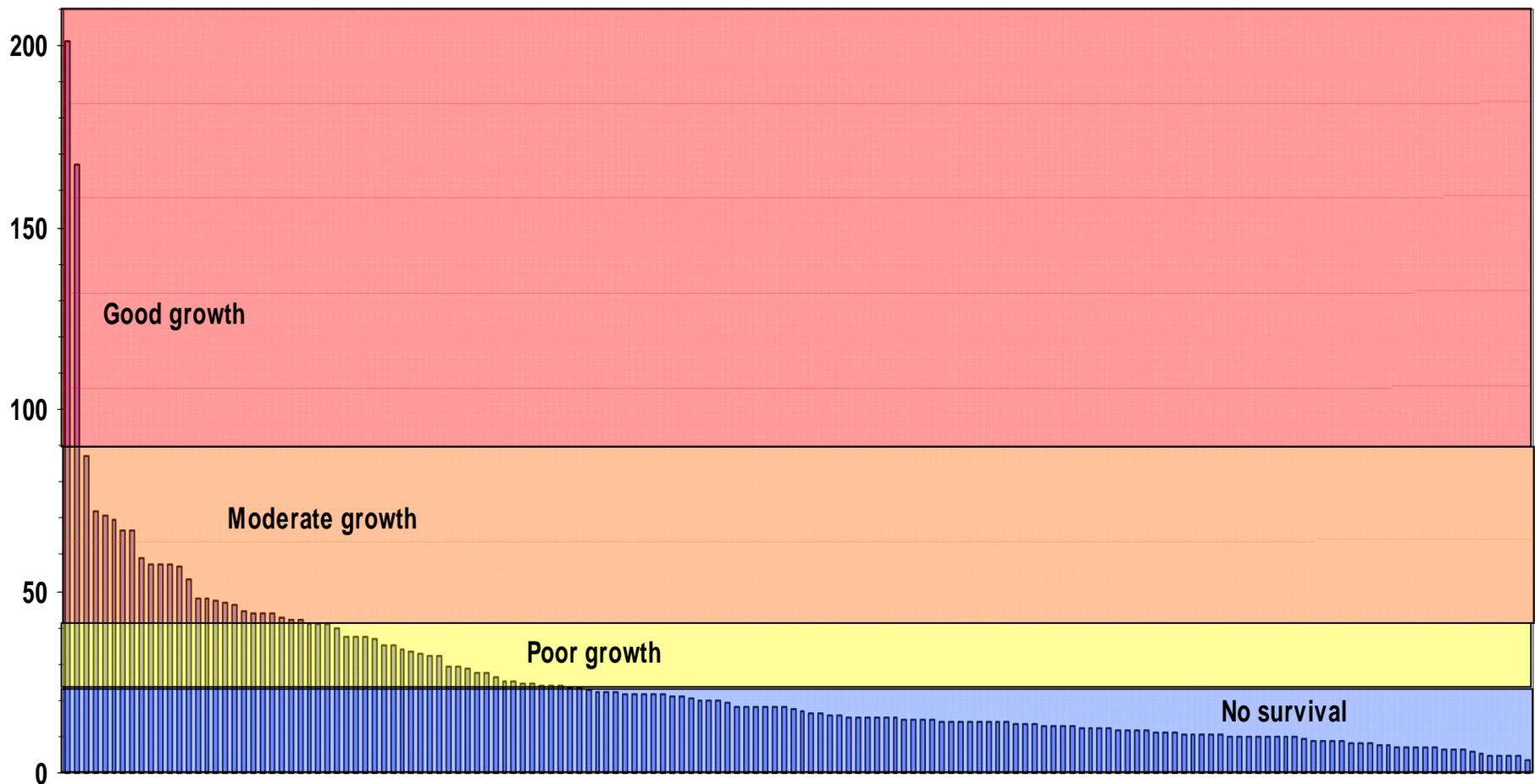
*Based on risk classes used by Nedeau (2009)

**Based on risk classes used by Claudi and Mackie (1994)

	Risk			
Criteria	Low	Moderate	High	
Calcium (mg/L)	<12	12-20	>20	
pH	<7.4	7.4-8.0	>8.0	
Alkalinity* (mg/L CaCO ₃)	<20	20-65	>65	
	Growth			
	No Survival	Poor Growth	Moderate Growth	Good Growth
Alkalinity** (mg/L CaCO ₃)	<18	18-35	36-87	>87
Hardness** (mg/L)	<23	23-41	42-90	>90

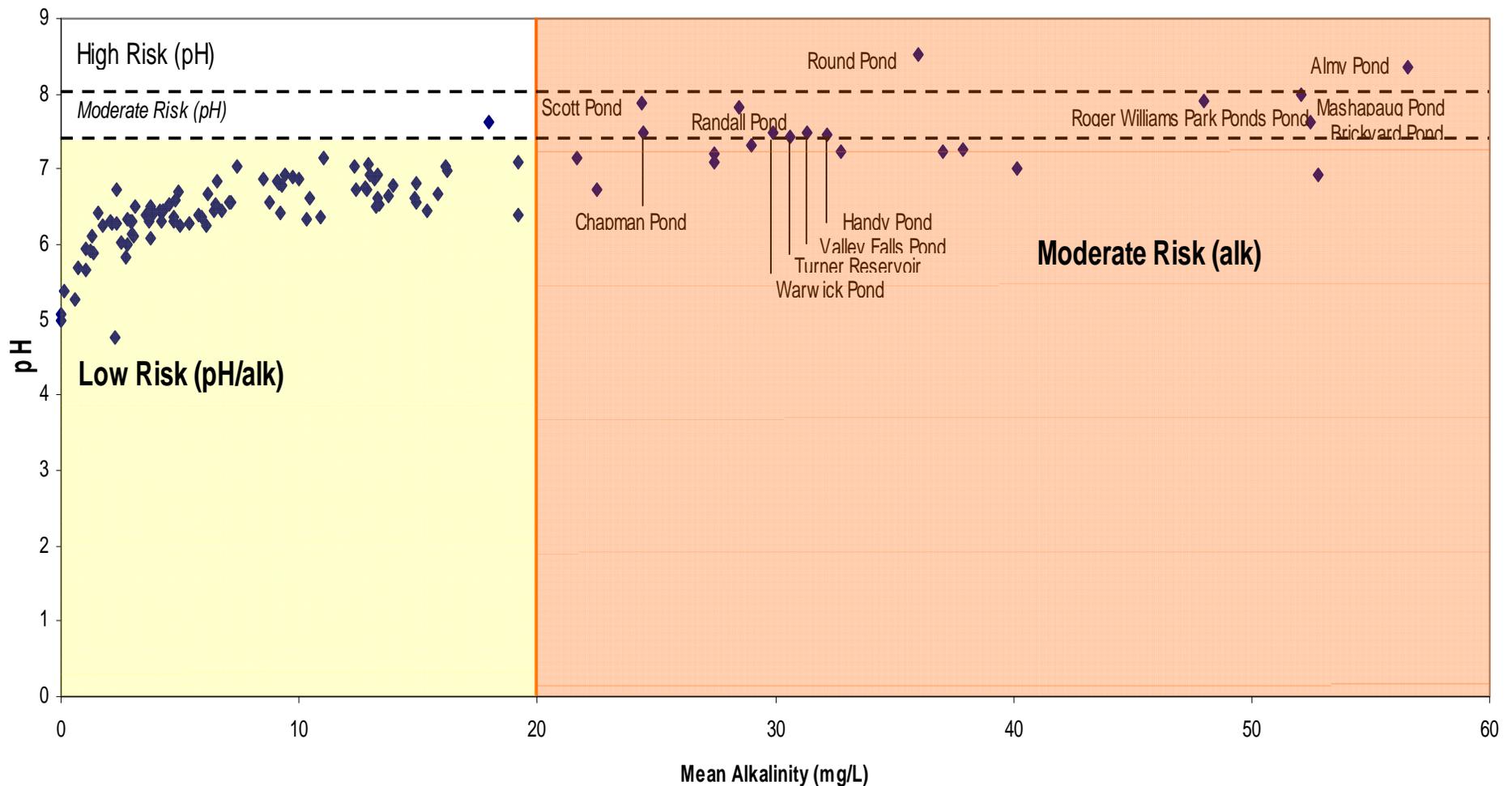
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Mean Hardness (mg/L ; n = 158 waterbodies)
-Categories based on Claudi & Mackie, 1994-



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Risk Assessment will focus Early Detection Monitoring Mean Alkalinity and Mean pH (n = 112 waterbodies)

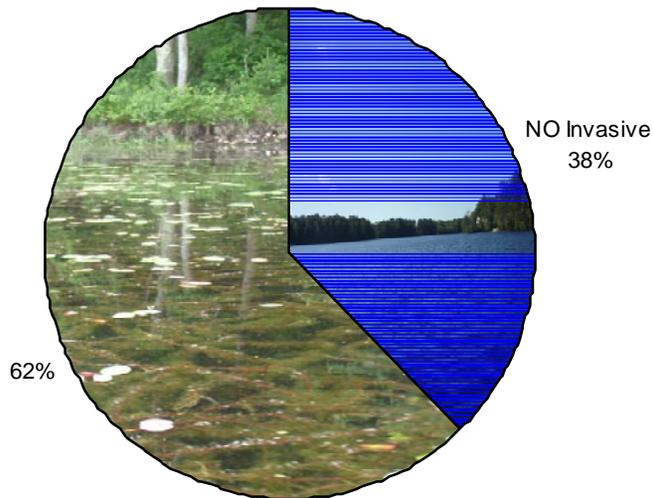


Freshwater Invasive Monitoring

Distribution Monitoring:

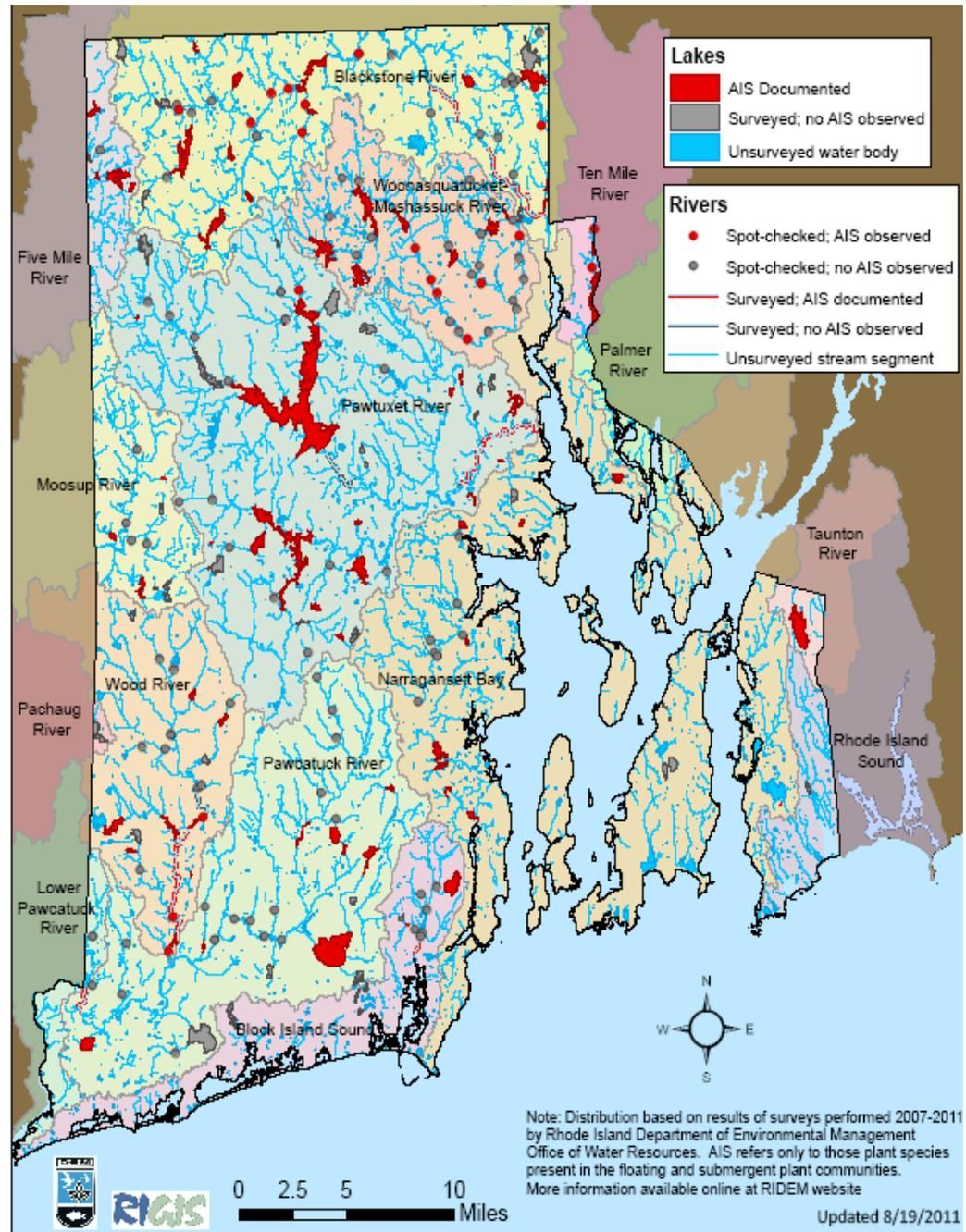
- 123 lakes visited
- 75 lakes have at least 1 AIS
- 43 lakes have >1 AIS

Lakes Visited



Note:

- RI has 145 lakes \geq 20 acres
- we have visited 97 (67%)



	Common Name	Latin Name	Number of Lakes	Number of Rivers
1	Variable milfoil	<i>Myriophyllum heterophyllum</i>	54	12
2	Fanwort	<i>Cabomba caroliniana</i>	44	10
3	Curlyleaf pondweed	<i>Potamogeton crispus</i>	8	3
4	Spiny naiad	<i>Najas minor</i>	6	
5	Mudmat	<i>Glossostigma cleistanthum</i>	6	
6	Water chestnut	<i>Trapa natans</i>	5	
7	Eurasian milfoil	<i>Myriophyllum spicatum</i>	4	2
8	Inflated bladderwort	<i>Utricularia inflata</i>	4	
9	Water hyacinth	<i>Eichhornnia crassipes</i>	4	
10	Brazilian elodea	<i>Egeria densa</i>	2	
11	Yellow floating heart	<i>Nymphoides peltata</i>	2	
12	American lotus	<i>Nelumbo lutea</i>	2	
13	Parrot feather	<i>Myriophyllum aquaticum</i>	1	
1	Asian Clam	<i>Corbicula fluminea</i>	7	1

For full details, see www.dem.ri.gov search: invasive

Instituted decontamination protocols



Chapman Pond Water Chestnut Pulls

June 15, 2011

Sept 10, 2011





Currently drafting report to legislature by Jan 31, 2012:

“To assess feasibility of instituting a
boat sticker program to support
AIS control in freshwaters”

