

Appendix D: Advisory List of Invasive Aquatic Species

October 10, 2002

LATIN NAME	COMMON NAME	OCCURRENCE		BIO VIGOR		PATHWAYS										AL IMPACTS		SOCIO-ECONOMIC IMPACTS							ASSESSMENT CRITERIA							REFERENC			
		Established in Maine	Or Closest State/Area Where Established	Reproductive Rate	Adaptability	Few Predators	Equipment Transport	Fragmentation Within Waters	Live Bait	Water and Wetland Gardens	Aquarium and Pet Trade	Education & Research Supply	Illegal Introduction	Seafood Import/Sale	Aquaculture Practices	Marine Vessels	Natural (primary source)	Displace similar species	Decrease Diversity	Disrupt Food Chain	Change Habitat/Biotic Communities	Change Water Quality	Clog Water Intake	Impair Recreation	Impair Rec. Fishing	Impair Comm. Fin & Shellfish	Degrade Coastal Infrastructure	Public Health	Likelihood of ME Introduction	Likelihood of Spreading	Biological Vigor		Biological Impacts	Social & Economic Impacts	Management Difficulty
<b>FRESHWATER PLANTS</b>																																			
<b>Prevention and Eradication</b>																																			
<b>AQUATIC MACROPHYTES:</b>																																			
<i>Myriophyllum spicatum</i>	milfoil, Eurasian		MA, VT	X	X		X	X		X	X						X	X	X	X	X							H	H	H	H	H		4, 9, 10	
<i>Myriophyllum heterophyllum</i>	milfoil, variable	X		X	X	?	X	X		X	X						X	?	?	X	X		X	X					H	H	H	H	H		4, 10
<i>Myriophyllum aquaticum</i>	parrot feather		MA	X	X		X	X		X	X						X	X		?	X		X	X				L	M	M	M	H		4, 10	
<i>Egeria densa</i>	elodea, Brazilian		NH	X	X		X	X		X	X		X	X			X	X		?	X		X	X				M	H	H	H	H		4, 10	
<i>Hydrilla verticillata</i>	hydrilla		MA	X	X		X	X		X	X						X	X		?	X	X	X	X				M	H	H	H	H		4, 7, 9, 10	
<i>Cabomba caroliniana</i>	fanwort		NH, Qu	X	?		X	X									X	X			X		X	X				M	H	H	H	H		4, 10	
<i>Trapa natans</i>	water chestnut		NH	X	X		X	X									X	X			X	X	X	X				M	H	H	H	H		4, 9, 10	
<i>Potamogeton crispus</i>	curly leaf pond weed		NH	X	?		X	X									X	X			X	X	X					M	H	M	M	H		4, 10	
<i>Najas minor</i>	naiad, European		VT, NH?	X	X	X	X	X									X				X		X	X				L	L	H	M	H		3, 4, 5, 6, 10	
<i>Hydrocharis morus-ranae</i>	frog-bit, European		VT	X	?		X	X									X				X	X	X	X				M	M	L	L	H		1, 2, 10	
<i>Nymphoides peltata</i>	yellow floating-heart		MA	X	X		X	X									X				X		X	X				M	M	H	M	L		4, 10	
<b>Selective Control/Impact Management</b>																																			
None at this time																																			
<b>No Action At This Time</b>																																			
<i>Salvinia molesta</i>	giant salvinia																																	8, 10	

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<b>Freshwater References</b>																																	
1. Countryman, W.D.	Nuisance Aquatic Plants in Lake Champlain. Lake Champlain Basin Study. October 1978.																																
2. Hellquist, C.B.	Aquatic Weed Species for Possible Legislation. Department of Biology. North Adams State College, North Adams, MA																																
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4. Crow, G.E. and C.B. Hellquist	Aquatic and Wetland Plants of Northeastern North America, Vol. 1 and 2. University of Wisconsin Press. Madison, WI. 2000																																
5. Whitley, James R., et al	Water Plants for Missouri Ponds. Missouri Department of Conservation. Jefferson City, Missouri. 1990.																																
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20. U.S. Geological Survey	Florida Caribbean Science Center. Nonindigenous Aquatic Species Database. 2002. <a href="http://nas.er.usgs.gov/">http://nas.er.usgs.gov/</a> .																																
21. Counts, C.L., III	The Zoogeography and History of the Invasion of the United States by Corbicula fluminea. American Malacological Bulletin, Special Edition No. 2:1986, pp.7-39.																																
22. Williams, J.D.	Conservation status of freshwater mussels: Families Margaritiferidae and Unionidae. Journal of Shellfish Research. 1997. 16(1):327.																																
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<b>WETLAND PLANTS &amp; ANIMALS</b>																																					
<b>Prevention and Eradication</b>																																					
<b>ANIMALS:</b>																																					
<b>REPTILIA:</b>																																					
<i>Trachemys scripta elegans</i>	red eared slider turtle	X	MA	X	X				X								X								X	M	L	L	L	M					1, 10		
<b>AVES:</b>																																					
<i>Cygnus olor</i>	mute swan	X			X				? Pet trade								X	X	X									-	M	M	H	M	M			11	
<b>PLANTS:*</b>																																					
<i>Glyceria maxima</i>	English water grass		MA																																		
<i>Microstegium vimineum</i>	Japanese stiltgrass		CT																																		12
<b>Selective Control/Impact Management</b>																																					
<i>Phragmites australis</i>	European common reed	X		X	X	X											X		X		X							-	H	H	L	H				12	
<i>Lythrum salicaria</i>	purple loosestrife	X		X	X	X		X									X	X	X									-	H	H	M	H				12	
<i>Alliaria petiolata</i>	garlic mustard	X		X	X												X	X	X									H	H	H		H				12	
<i>Frangula alnus</i>	glossy buckthorn	X															X	X									-	H	H	H	L	H				13	
<i>Polygonum cuspidatum</i>	Japanese knotweed	X		X	X																							H	H	H		H				12	
<b>No Action At This Time</b>																																					
<b>MAMMALS:</b>																																					
<i>Myocaster coypus</i>	nutria		NY	X													X		X								L	L	H	M	M					6, 8, 9	
<b>PLANTS:</b>																																					
<i>Aegopodium podagraria</i>	goutweed	X																																			
<i>Amorpha fruticosa</i>	false indigo	X																																			
<i>Butomas umbellatus</i>	flowering rush	X																										-									2, 3, 4
<i>Iris pseudocorus</i>	yellow iris	X																																			
<i>Nasturtium officinale</i>	watercress	X																																			

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<b>Wetland References:</b>																																	
1. Hunter, Calhoun & McCollough	Amphibians and Reptiles of Maine. DATE?																																
2. Hotchkiss, Neil	Common Marsh, Underwater and Floating-leaved Plants of the United States and Canada. 1972.																																
3. Larson, Gary E.	Aquatic and Wetland Vascular Plants of the Norther Great Plains. Gen. Tech.Rep.RM-238, USDA Forest Service. Ft. Collins, CO.1993																																
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5. Hellquist, C.B.	Aquatic Weed Species for Possible Legislation. Department of Biology. North Adams State College, North Adams, MA																																
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7. Mehrhoff, Les.	New England Invasive Plant Atlas. Aug24,2000.																																
8. Gosling, L.M.	Towards an eradication plan for nutria in Maryland: A report to the Maryland Department of Natural Resources. Institute of Zoology, Zoological Society of London.																																
9. U.S.EPA	Nutria Marsh Damage Reduction: Pre-Decisional Environmental Assessment. March 2001.																																
10. Aguirre, W. and S.G. Poss	Non-Indigenous Species of the Gulf of Mexico Ecosystem Data Base. U. of So. Mississippi, Coll. of Marine Sciences. 2000. <a href="http://lionfish.ims.usm.edu/~musweb/nis/Myocastor_coypus.html">http://lionfish.ims.usm.edu/~musweb/nis/Myocastor_coypus.html</a> .																																
11. Degraaf, D.M. et al	New England Wildlife Habitat, Natural History and Distribution. 2001.																																
12. Weaterbee, P.B. et al	A guide to invasive plants in Massachusetts. Massachusetts Division of Fish and Wildlife. 1999.																																
13. NE Wildflower Society	Invaders. Conservation Notes of the New England Wildflower Society. 1998. Vol. 2(3).																																
* Note: <i>Lepidium latifolium</i> (pepperweed) and <i>Polygonum perfoliatum</i> (mile-a-minute vine) are invasive terrestrial plants that frequent upland shoreland and/or saltwater marsh areas.																																	

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<b>MARINE ORGANISMS</b>																																				
<b>Selective Control/Impact Management</b>																																				
<b>ANIMALS</b>																																				
<b>CRUSTACEA:</b>																																				
<i>Eriocheir sinensis</i>	Chinese mitten crab		Europe	X			X					X	X	X		X		?				X	X	X			?		H	H					11	
<i>Hemigrapsus sanguineus</i>	Asian shore crab	X		X	X	X	X						X	X		X	?	X	?								-	H	H	H	H	H	H		1, 6, 7	
<i>Carcinus maenas</i>	European green crab	X			X	X						X	X	X		X	X										-		H	H	H	H			5	
<b>ECTOPROCTA:</b>																																				
<i>Membranipora membranacea</i>	lace bryozoan	X	MA		X	X	X	X						X	X	X	X	X	X										H	M	H	H	H			8, 9
<b>MOLLUSCS:</b>																																				
<i>Crassostrea gigas</i>	Pacific oyster		CA		X				?	?		X	X	X		X						X	X					L	M	M		L			12	
<i>Rapana venosa</i>	veined rapa whelk		VA		X	X		X					X	X			X						X				L-M	M		H	H				4	
<i>Toredo navalis</i>	shipworm	X	MA										X	X							X		X				?			M	H				3	
<b>ALGAE</b>																																				
<b>CHLOROPHYTA: green algae</b>																																				
<i>Codium fragile tomentosoides</i>	dead man's fingers	X				X							X	X		X		X	X									-	H			H				
<b>RHODOPHYTA: red algae</b>																																				
<i>Porphyra yezoensis</i>	nori	X			X				X			X	X			?												L	L							
<b>CHORDATA:</b>																																				
<b>Ascidians:</b>																																				
<i>Ascidella aspersa</i>	tunicate		NE										X	X																						10
<i>Botrylloides violaceus</i>	tunicate	X											X	X														-								
<i>Botryllus schlosseri</i>	tunicate		MA										X	X																						
<i>Diplosoma listerianum</i>	tunicate		MA										X	X																						
<i>Styela dava</i>	tunicate	X											X	X														-								
<i>Stylea canopus</i>	tunicate		MA										X	X																						

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