Appendix N. Invasive Species Control Plan

New York State Prohibited and Regulated

Invasive Plants

September 10, 2014













AGRICULTURE AND MARKETS

New York State Department of Environmental Conservation NYCRR Part 575 Invasive Species Regulations Questions and Answers

http://www.dec.ny.gov/regulations/2359.html

What are invasive species?

Invasive species means a species that is nonnative to a particular ecosystem, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Why are invasive species a problem?

Invasive species can harm natural communities and systems (plants and animals found in particular physical environments) by out-competing native species, reducing biological diversity, altering community structure and, in some cases, changing ecosystems. Invasive species threaten New York's food supply, not only agriculture but also harvested wildlife, fish and shellfish; our landscaping, parks, gardens, and pets; and our recreation resources and even animal and human health. All New Yorkers have a stake in the invasive species issue.

How will these regulations help?

These regulations are to help control invasive species by reducing the introduction and spread of them by limiting commerce in such species. By preventing introduction of new invasive species, New York will save time, effort, and money in the future.

How were the lists included in the regulations developed?

The lists of prohibited and regulated species were developed using the species assessment and listing process outlined in the 2010 report "A Regulatory System for Non-native Species," which can be found at http://www.dec.ny.gov/animals/63402.html.

When will the regulations be implemented?

The final regulations (or a summary) were published in the State Register September 10, 2014, they become effective 6 months thereafter.

What is the difference between prohibited and regulated invasive species?

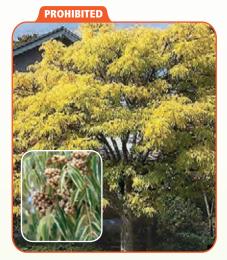
Prohibited invasive species cannot be knowingly possessed with the intent to sell, import, purchase, transport or introduce. In addition, no person shall sell, import, purchase, transport, introduce or propagate prohibited invasive species. Regulated invasive species, on the other hand, are species which cannot be knowingly introduced into a free-living state, or introduced by a means that one should have known would lead to such an introduction, although such species shall be legal to possess, sell, buy, propagate and transport.

What species have grace periods established in the regulations?

A one-year grace period is included in the regulations for Japanese Barberry (Berberis thunbergii), during which existing stock of this species may be sold.

Who will enforce the regulations?

The regulations will be enforced by the Department of Environmental Conservation, with assistance from the Department of Agriculture and Markets.



Amur Cork Tree Phellodendron amurense



Amur Honeysuckle Lonicera maackii



Autumn Olive Elaeagnus umbellata



Beach Vitex Vitex rotundifolia



Black Swallow-wort Cynanchum Iouiseae (C. nigrum, Vincetoxicum nigrum)



Bohemian Knotweed Reynoutria x bohemica (Fallopia x bohemica, Polygonum x bohemica)



Border Privet Ligustrum obtusifolium



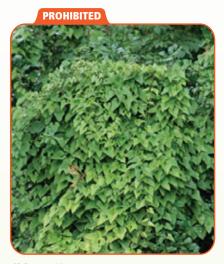
Broad-leaved Pepper-grass *Lepidium latifolium*



Canada Thistle *Cirsium arvense* (C. setosum, C. incanum, Serratula arvensis)



Chinese Lespedeza Lespedeza cuneata



Chinese Yam Dioscorea polystachya (D. batatas)



Cogon Grass Imperata cylindrica (I. arundinacea, Lagurus cylindricus)



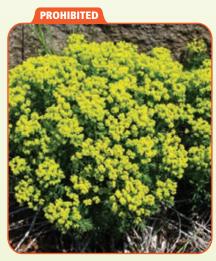
Common Buckthorn Rhamnus cathartica



Cup-plant Silphium perfoliatum



Cut-leaf Teasel Dipsacus Iaciniatus



Cypress Spurge *Euphorbia cyparissias*



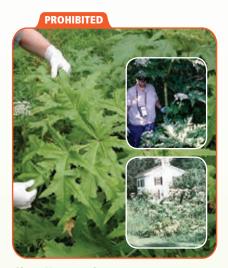
Fly Honeysuckle Lonicera x bella



Garden Loosestrife Lysimachia vulgaris



Garlic Mustard Alliaria petiolata



Giant Hogweed Heracleum mantegazzianum



Giant Knotweed Reynoutria sachalinensis (Fallopia sachalinensis, Polygonum sachalinensis)



Golden Bamboo Phyllostachys aurea



Gray Florist's Willow Salix atrocinerea



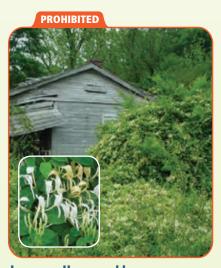
Japanese Angelica Tree Aralia elata



Japanese Barberry Berberis thunbergii



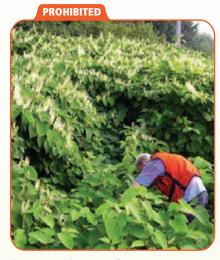
Japanese Chaff Flower
Achyranthes japonica



Japanese Honeysuckle Lonicera japonica



Japanese Hops Humulus japonicus



Japanese Knotweed Reynoutria japonica (Fallopia japonica, Polygonum cuspidatum)



Japanese Stilt Grass Microstegium vimineum



Kudzu Pueraria montana



Leafy Spurge Euphorbia esula



Lesser Celandine Ficaria verna (Ranunculus ficaria)



Mile-a-minute Weed Persicaria perfoliata (Polygonum perfoliatum)



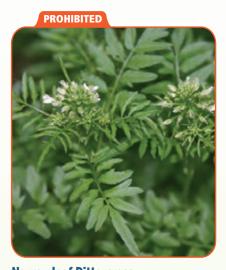
Morrow's Honeysuckle Lonicera morrowii



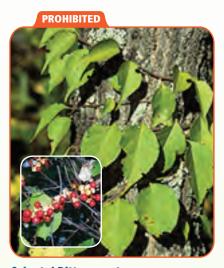
Mugwort Artemisia vulgaris



Multiflora Rose Rosa multiflora



Narrowleaf Bittercress Cardamine impatiens



Oriental Bittersweet Celastrus orbiculatus



Pale Swallow-wort Cynanchum rossicum (C. medium, Vincetoxicum medium, V. rossicum)



Porcelain Berry Ampelopsis brevipedunculata



Slender False Brome *Brachypodium sylvaticum*



Small Carpetgrass *Arthraxon hispidus*



Spotted Knapweed *Centaurea stoebe* (*C. biebersteinii, C. diffusa, C. maculosa* misapplied, *C. xpsammogena*)



Sycamore Maple Acer pseudoplatanus



Tartarian Honeysuckle Lonicera tatarica



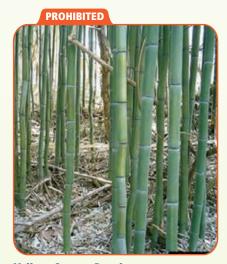
Wavyleaf Basketgrass Oplismenus hirtellus



Wild Chervil Anthriscus sylvestris



Wineberry Rubus phoenicolasius



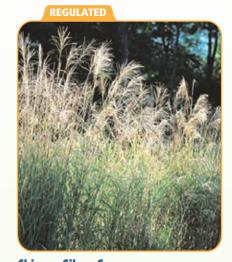
Yellow Groove Bamboo *Phyllostachys aureosulcata*



Black Locust Robinia pseudoacacia



Burning Bush Euonymus alatus



Chinese Silver Grass Miscanthus sinensis



Japanese Virgin's Bower *Clematis terniflora*



Norway Maple Acer platanoides

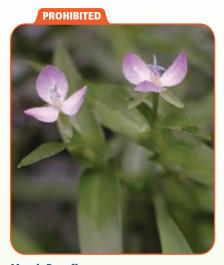


Winter Creeper Euonymus fortunei

WETLAND PLANTS



Common Reed Grass *Phragmites australis*



Marsh Dewflower Murdannia keisak



Purple Loosestrife Lythrum salicaria



Reed Manna Grass Glyceria maxima



Smooth Buckthorn Frangula alnus (Rhamnus frangula)



Yellow Iris Iris pseudacorus

AQUATIC PLANTS



Brazilian Waterweed *Egeria densa*



Broadleaf Water-milfoil Hybrid Myriophyllum heterophyllum x M. laxum



Curly Pondweed Potamogeton crispus



Eurasian Water-milfoil *Myriophyllum spicatum*



Fanwort Cabomba caroliniana



Floating Primrose Willow Ludwigia peploides



Frogbit Hydrocharis morsus-ranae



Hydrilla/Water Thyme Hydrilla verticillata



Parrot-feather Myriophyllum aquaticum

AQUATIC PLANTS



Uruguayan Primrose Willow Ludwigia hexapetala (L. grandiflora)



Water Chestnut Trapa natans



Yellow Floating Heart Nymphoides peltata

Photo Credits

TERRESTRIAL PLANTS, PROHIBITED: Amur Cork Tree: large photo and inset - Patrick Breen, Oregon State University, Bugwood.org; Amur Honeysuckle: large photo - John M. Randall, The Nature Conservancy, Bugwood.org, inset - Chuck Bargeron, University of Georgia, Bugwood.org; Autumn Olive: James R. Allison, Georgia Department of Natural Resources, Bugwood.org; Beach Vitex: Forest and Kim Starr, Starr Environmental, Bugwood.org; Black Swallow-wort: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Bohemian Knotweed: Robert Vidéki, Doronicum Kft., Bugwood.org; Border Privet: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Broad-leaved Pepper-grass: Steve Dewey, Utah State University, Bugwood.org; Canada Thistle: Steve Dewey, Utah State University, Bugwood.org; Chinese Lespedeza: James H. Miller, USDA Forest Service, Bugwood.org; Chinese Yam: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; Cogon Grass: Nancy Loewenstein, Auburn University, Bugwood.org; Common Buckthorn: large photo - Chris Evans, Illinois Wildlife Action Plan, Bugwood.org, inset - Paul Wray, lowa State University, Bugwood.org; Cup-plant: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Cut-leaf Teasel: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; Cypress Spurge: Todd Pfeiffer, Klamath County Weed Control, Bugwood.org; Fly Honeysuckle: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Garden Loosestrife: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Garlic Mustard: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; Giant Hogweed: large photo - Thomas B. Denholm, New Jersey Department of Agriculture, www.forestryimages.org, top inset - Terry English, USDA APHIS PPQ, www.forestryimages.org, bottom inset - Randy Westbrooks, U.S. Geological Survey, www.forestryimages.org; Giant Knotweed: Jan Samanek, State Phytosanitary Administration, Bugwood.org; Golden Bamboo: James R. Allison, Georgia Department of Natural Resources, Bugwood.org; Gray Florist's Willow: Leslie J. Mehrhoff, University of Connecticut, Bugwood. org; Japanese Angelica Tree: large photo - T. Davis Sydnor, The Ohio State University, Bugwood.org, inset - John M. Randall, The Nature Conservancy, Bugwood.org, Japanese Barberry: large photo and inset - John Ruter, University of Georgia, Bugwood.org; Japanese Chaff Flower: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; Japanese Honeysuckle: large photo and inset - Chuck Bargeron, University of Georgia, Bugwood.org; Japanese Hops: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Japanese Knotweed: Tom Heutte, USDA Forest Service, Bugwood.org; Japanese Stilt Grass: Chuck Bargeron, University of Georgia, Bugwood.org; Kudzu: large photo - James H. Miller, USDA Forest Service, Bugwood.org, top inset - Forest and Kim Starr, Starr Environmental, Bugwood.org, bottom inset - James H. Miller, USDA Forest Service, Bugwood.org; Leafy Spurge: Norman E. Rees, USDA Agricultural Research Service - Retired, Bugwood.org; Lesser Celandine: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Mile-a-minute Weed: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Morrow's Honeysuckle: large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - Stacey Leicht, University of Connecticut, Bugwood.org, Mugwort: large photo - Christian Fischer, WikimediaCommons.org, inset - Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org; Multiflora Rose: James R. Allison, Georgia Department of Natural Resources, Bugwood.org; Narrowleaf Bittercress: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Oriental Bittersweet: large photo - James H. Miller, USDA Forest Service, Bugwood.org, inset - James R. Allison, Georgia Department of Natural Resources, Bugwood.org; Pale Swallow-wort: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Porcelain Berry: James H. Miller, USDA Forest Service, Bugwood.org; Slender False Brome: Botanischer Garten, Frankfurt, Germany - Creative Commons Universal Public Domain; Small Carpetgrass: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Spotted Knapweed: Bruce Ackley, The Ohio State University, Bugwood.org; Sycamore Maple: large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - John Ruter, University of Georgia, Bugwood.org; Tartarian Honeysuckle: large photo - Patrick Breen, Oregon State University, Bugwood.org, inset - Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org; Wavyleaf Basketgrass: Kerrie L. Kyde, Maryland Department of Natural Resources, Bugwood.org: Wild Chervil: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org: Wineberry: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org: Yellow Groove Bamboo: Caryn Rickel, Institute of Invasive Bamboo Research, Bugwood.org

TERRESTRIAL PLANTS, REGULATED: Black Locust: large photo - Rob Routledge, Sault College, Bugwood.org, inset - Vern Wilkins, Indiana University, Bugwood.org; Burning Bush: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Chinese Silver Grass: James H. Miller, USDA Forest Service, Bugwood.org, Japanese Virgin's Bower: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, Norway Maple: large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - Rob Routledge, Sault College, Bugwood.org; Winter Creeper: James H. Miller, USDA Forest Service, Bugwood.org

WETLAND PLANTS, PROHIBITED: Common Reed Grass: Joseph M. DiTomaso, University of California - Davis, Bugwood.org; Marsh Dewflower: Linda Lee, University of South Carolina, Bugwood.org; Purple Loosestrife:

John D. Byrd, Mississippi State University, Bugwood.org; Reed Manna Grass: large photo - WikimediaCommons.org, top and bottom insets - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Smooth Buckthorn: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Yellow Iris: Nancy Loewenstein, Auburn University, Bugwood.org

AQUATIC PLANTS, PROHIBITED: Brazilian Waterweed: Robert Vidéki, Doronicum Kft., Bugwood.org; Broadleaf Water-milfoil Hybrid: Donald Cameron, gobotany.newenglandwild.org; Curly Pondweed: Leslie J.

Mehrhoff, University of Connecticut, Bugwood.org; Eurasian Water-milfoil: Alison Fox, University of Florida, www.forestryimages.org; Fanwort: large photo - Robert Vidéki, Doronicum Kft., Bugwood.org, inset - Leslie J.

Mehrhoff, University of Connecticut, Bugwood.org; Floating Primrose Willow: John M. Randall, The Nature Conservancy, Bugwood.org; Frogbit: large photo - Mark Malchoff, Lake Champlain Sea Grant Program, inset
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Hydrilla/Water Thyme: Jon Rodgers, http://www.galvbayinvasives.org/; Parrot-feather: John M. Randall, The Nature Conservancy, Bugwood.org; Uruguayan

Primrose Willow: Karan A. Rawlins, University of Georgia, Bugwood.org; Water Chestnut: large photo - John M. Randall, The Nature Conservancy, Bugwood.org,

inset - Steve Hurst, USDA NRCS PLANTS Database, Bugwood.org; Yellow Floating Heart: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Index by Common Name

COMMON NAME	SCIENTIFIC NAME	PAGE	COMMON NAME	SCIENTIFIC NAME	PAGE			
TERRESTRIAL PLANTS Morrow's Honeysuckle Lonicera morrowii 6								
			Mugwort	Artemisia vulgaris	6			
Amur Cork Tree	Phellodendron amurense	2	Multiflora Rose	Rosa multiflora	7			
	Lonicera maackii	3 3	Narrowleaf Bittercress	Cardamine impatiens	7			
Amur Honeysuckle				•				
Autumn Olive	Elaeagnus umbellata	3	Norway Maple	Acer platanoides	9			
Beach Vitex	Vitex rotundifolia	3	Oriental Bittersweet	Celastrus orbiculatus	7			
Black Locust	Robinia pseudoacacia	9	Pale Swallow-wort	Cynanchum rossicum	7			
Black Swallow-wort	Cynanchum louiseae	3		(C. medium,				
51	(C. nigrum, Vincetoxicum nigrum)	•		Vincetoxicum medium,				
Bohemian Knotweed	Reynoutria x bohemica	3	Davadain Dave	V. rossicum)	7			
	(Fallopia x bohemica,		Porcelain Berry	Ampelopsis brevipedunculata	7			
	Polygonum x bohemica)	•	Slender False Brome	Brachypodium sylvaticum	7			
Border Privet	Ligustrum obtusifolium	3	Small Carpetgrass	Arthraxon hispidus	7			
Broad-leaved Pepper-grass	Lepidium latifolium	3	Spotted Knapweed	Centaurea stoebe	7			
Burning Bush	Euonymus alatus	9		(C. biebersteinii, C. diffusa,				
Canada Thistle	Cirsium arvense (C. setosum,	3		C. maculosa misapplied,				
	C. incanum, Serratula arvensis)			C. xpsammogena)	_			
Chinese Lespedeza	Lespedeza cuneata	4	Sycamore Maple	Acer pseudoplatanus	7			
Chinese Silver Grass	Miscanthus sinensis	9	Tartarian Honeysuckle	Lonicera tatarica	8			
Chinese Yam	Dioscorea polystachya	4	Wavyleaf Basketgrass	Oplismenus hirtellus	8			
	(D. batatas)		Wild Chervil	Anthriscus sylvestris	8			
Cogon Grass	Imperata cylindrica	4	Wineberry	Rubus phoenicolasius	8			
	(I. arundinacea,		Winter Creeper	Euonymus fortunei	9			
	Lagurus cylindricus)		Yellow Groove Bamboo	Phyllostachys aureosulcata	8			
Common Buckthorn	Rhamnus cathartica	4						
Cup-plant	Silphium perfoliatum	4	WETLAND DLANTC					
Cut-leaf Teasel	Dipsacus laciniatus	4	WETLAND PLANTS					
Cypress Spurge	Euphorbia cyparissias	4						
Fly Honeysuckle	Lonicera x bella	4	Common Reed Grass	Phragmites australis	10			
Garden Loosestrife	Lysimachia vulgaris	4	Marsh Dewflower	Murdannia keisak	10			
Garlic Mustard	Alliaria petiolata	5	Purple Loosestrife	Lythrum salicaria	10			
Giant Hogweed	Heracleum mantegazzianum	5	Reed Manna Grass	Glyceria maxima	10			
Giant Knotweed	Reynoutria sachalinensis	5	Smooth Buckthorn	Frangula alnus	10			
	(Fallopia sachalinensis,			(Rhamnus frangula)				
	Polygonum sachalinensis)		Yellow Iris	Iris pseudacorus	10			
Golden Bamboo	Phyllostachys aurea	5						
Gray Florist's Willow	Salix atrocinerea	5	ACHATIC DI ANTO					
Japanese Angelica Tree	Aralia elata	5	AQUATIC PLANTS					
Japanese Barberry	Berberis thunbergii	5						
Japanese Chaff Flower	Achyranthes japonica	5	Brazilian Waterweed	Egeria densa	11			
Japanese Honeysuckle	Lonicera japonica	5	Broadleaf Water-milfoil Hybrid	Myriophyllum heterophyllum x	11			
Japanese Hops	Humulus japonicus	6		M. laxum				
Japanese Knotweed	Reynoutria japonica	6	Curly Pondweed	Potamogeton crispus	11			
	(Fallopia japonica,		Eurasian Water-milfoil	Myriophyllum spicatum	11			
	Polygonum cuspidatum)		Fanwort	Cabomba caroliniana	11			
Japanese Stilt Grass	Microstegium vimineum	6	Floating Primrose Willow	Ludwigia peploides	11			
Japanese Virgin's Bower	Clematis terniflora	9	Frogbit	Hydrocharis morsus-ranae	11			
Kudzu	Pueraria montana	6	Hydrilla/ Water Thyme	Hydrilla verticillata	11			
Leafy Spurge	Euphorbia esula	6	Parrot-feather	Myriophyllum aquaticum	11			
Lesser Celandine	Ficaria verna	6	Uruguayan Primrose Willow	Ludwigia hexapetala	12			
	(Ranunculus ficaria)			(L. grandiflora)				
Mile-a-minute Weed	Persicaria perfoliata	6	Water Chestnut	Trapa natans	12			
	(Polygonum perfoliatum)		Yellow Floating Heart	Nymphoides peltata	12			

Index by Scientific Name

SCIENTIFIC NAME	COMMON NAME	PAGE	SCIENTIFIC NAME	COMMON NAME	PAGE
TERRESTRIAL PLANTS			Lysimachia vulgaris	Garden Loosestrife	4
ILKKLJIKIAL I LANIS			Microstegium vimineum	Japanese Stilt Grass	6
Acer platanoides	Norway Maple	9	Miscanthus sinensis	Chinese Silver Grass	9
Acer pseudoplatanus	Sycamore Maple	7	Oplismenus hirtellus	Wavyleaf Basketgrass	8
Achyranthes japonica	Japanese Chaff Flower	5	Persicaria perfoliata	Mile-a-minute Weed	6
Alliaria petiolata	Garlic Mustard	5	(Polygonum perfoliatum)		
Ampelopsis brevipedunculata	Porcelain Berry	7	Phellodendron amurense	Amur Cork Tree	3
Anthriscus sylvestris	Wild Chervil	8	Phyllostachys aurea	Golden Bamboo	5
Andiniscus sylvesuis Aralia elata	Japanese Angelica Tree	5	Phyllostachys aureosulcata	Yellow Groove Bamboo	8
Artemisia vulgaris	Mugwort	6	Pueraria montana	Kudzu	6
Arthraxon hispidus	Small Carpetgrass	7	Reynoutria japonica	Japanese Knotweed	6
•	. 0	5	(Fallopia japonica,		
Berberis thunbergii	Japanese Barberry Slender False Brome	3 7	Polygonum cuspidatum)		
Brachypodium sylvaticum		7	Reynoutria sachalinensis	Giant Knotweed	5
Cardamine impatiens	Narrowleaf Bittercress	-	(Fallopia sachalinensis,		
Celastrus orbiculatus	Oriental Bittersweet	7	Polygonum sachalinensis)		
Centaurea stoebe	Spotted Knapweed	7	Reynoutria x bohemica	Bohemian Knotweed	3
(C. biebersteinii, C. diffusa,			(Fallopia x bohemica,		
C. maculosa misapplied,			Polygonum x bohemica)		
C. xpsammogena)	0 1 71 11	•	Rhamnus cathartica	Common Buckthorn	4
Cirsium arvense	Canada Thistle	3	Robinia pseudoacacia	Black Locust	9
(C. setosum, C. incanum,			Rosa multiflora	Multiflora Rose	7
Serratula arvensis)			Rubus phoenicolasius	Wineberry	8
Clematis terniflora	Japanese Virgin's Bower	9	Salix atrocinerea	Gray Florist's Willow	5
Cynanchum Iouiseae	Black Swallow-wort	3	Silphium perfoliatum	Cup-plant	4
(C. nigrum,			Vitex rotundifolia	Beach Vitex	3
Vincetoxicum nigrum)			Vitox rotunationa	Bodon Vitox	·
Cynanchum rossicum	Pale Swallow-wort	7	WETI AND DI ANTO		
(C. medium, Vincetoxicum			WETLAND PLANTS		
medium, V. rossicum)			Frangula alnus	Smooth Buckthorn	10
Dioscorea polystachya	Chinese Yam	4	(Rhamnus frangula)		
(D. batatas)			Glyceria maxima	Reed Manna Grass	10
Dipsacus laciniatus	Cut-leaf Teasel	4	Iris pseudacorus	Yellow Iris	10
Elaeagnus umbellata	Autumn Olive	3	Lythrum salicaria	Purple Loosestrife	10
Euonymus alatus	Burning Bush	9	Murdannia keisak	Marsh Dewflower	10
Euonymus fortunei	Winter Creeper	9	Phragmites australis	Common Reed Grass	10
Euphorbia cyparissias	Cypress Spurge	4			
Euphorbia esula	Leafy Spurge	6	A CHATIC DI ANTO		
Ficaria verna	Lesser Celandine	6	AQUATIC PLANTS		
(Ranunculus ficaria)			Cabomba caroliniana	Fanwort	11
Heracleum mantegazzianum	Giant Hogweed	5	Egeria densa	Brazilian Waterweed	11
Humulus japonicus	Japanese Hops	6	Hydrilla verticillata	Hydrilla/ Water Thyme	11
Imperata cylindrica	Cogon Grass	4	Hydrocharis morsus-ranae	Frogbit	11
(I. arundinacea,			Ludwigia hexapetala	Uruguayan Primrose Willow	11
Lagurus cylindricus)			(L. grandiflora)		
Lepidium latifolium	Broad-leaved Pepper-grass	3	Ludwigia peploides	Floating Primrose Willow	11
Lespedeza cuneata	Chinese Lespedeza	4	Myriophyllum aquaticum	Parrot-feather	11
Ligustrum obtusifolium	Border Privet	3	Myriophyllum heterophyllum	Broadleaf Water-milfoil Hybrid	11
Lonicera japonica	Japanese Honeysuckle	5	х М. Іахит	Diodalodi Hator Illinoii Hybrid	
Lonicera maackii	Amur Honeysuckle	3	Myriophyllum spicatum	Eurasian Water-milfoil	12
Lonicera morrowii	Morrow's Honeysuckle	6	Nymphoides peltata	Yellow Floating Heart	12
Lonicera tatarica	Tartarian Honeysuckle	8	Potamogeton crispus	Curly Pondweed	11
Lonicera x bella	Fly Honeysuckle	4	Trapa natans	Water Chestnut	12
			napa natano	mater offestifut	12







This publication, the Invasive Species Program, and the NY Invasive Species Clearinghouse are supported by the NYS Environmental Protection Fund through a contract with the NYS Department of Environmental Conservation.

Cornell Cooperative Extension is an equal opportunity, affirmative action educator and employer.

© Cornell University, September 10, 2014

New York Utility Company Best Management Practices for Preventing the Transportation of Invasive Species

Environmental Energy Alliance of New York Revisions January 2015

Table of Contents

1.0	Introduction
2.0	Definitions2
3.0	Purpose3
4.0	Applicability3
5.0	Procedures3
5.1	Equipment3
5.2	Inspection and Cleaning4
5.3	Disposal of Impacted Material4
5.4	Other Prevention Measures4
5.5	Site Restoration4
5.6	Vegetation Survey (Optional)5
6.0	Training
7.0	Emergency Work5
8.0	References6

Appendices

Appendix 1 - Best Management Practices (BMP's) for Invasive Species Transportation Prevention

Appendix 2 - 6 NYCRR Part 575 Prohibited and Regulated Invasive Species, September 10, 2014

1.0 Introduction

Invasive species are non-native plant, animal, or microbial species that cause, or are likely to cause, economic or ecological harm or harm to human health (Presidential Executive Order 13112). Invasive species means, "A species that is nonnative to the ecosystem under consideration; and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Harm must significantly outweigh benefit" [New York Environmental Conservation Law §9-1703(10)(a)] Invasive species have been introduced by human action into a region outside their natural geographic range. Introductions occur along a variety of pathways or vectors, either intentionally such as intentional transport of a species for trade, or by accidental means, as in the case of stowaway species found in the ballast-water of ocean-going vessels.

Most scientists regard invasive species as second only to habitat loss as a threat to biodiversity. The presence of invasive species in a given region is one of the leading causes of endangerment to species native to that region. On a nationwide basis, about half of plant and animal species listed as federally Endangered or Threatened are at risk because of invasive species.

Annual economic losses due to invasive species in the U.S. have been estimated at over \$138 billion (Pimentel et al. 2000). These losses include damage to crops and pasture, forest losses, damage from insect and other invertebrate pests, human diseases, and associated control costs.

In an effort, where feasible, to limit the introduction and spread of *invasive species*, this Best Management Practice ("BMP") will be employed when performing activities that occur in *jurisdictional areas* as authorized by the DEC. The BMP identifies procedures that will be incorporated into routine work practices to prevent the introduction and spread of *invasive species*.

2.0 Definitions

The following definitions are applicable to this BMP.

Environmental Energy Alliance of New York (EEANY) – is an association of electric and gas Transmission and Distribution (T&D) companies and electric generating companies that provide energy services in the State of New York. This BMP was prepared by the Land Use Subcommittee of the T&D Committee, which currently represents the following members: Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Long Island Power Authority, National Grid USA Service Company, Inc., New York Power Authority, New York State Electric & Gas Corporation, Orange and Rockland Utilities, and Rochester Gas & Electric Corporation.

Invasive species – species that are non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Management Plan National Invasive Species Council, 2001). For purposes of this document, *invasive species* are those contained on the list contained within 6 NYCRR Part 575 Prohibited and Regulated Invasive Species (Appendix – 2).

Invasive species plant material – seeds, roots, or pieces of plant material that could germinate into live plants.

Jurisdictional Area – lands under the statutory jurisdiction of the NYSDEC such as certain freshwater wetlands and adjacent areas, tidal wetlands, certain water bodies, and any protected and species habitat areas specified by natural resource supervisors.

NYSDEC General Permit – a NYSDEC permit authorizing certain utility line activities under Articles 15, 24, and 25 of NYS Environmental Conservation Law. These activities include: inspection, maintenance, repair, restoration, reconstruction of pre-existing structures, vegetation cutting and trimming, and emergency actions affecting tidal wetlands, protected waters, regulated freshwater wetlands, adjacent areas, and protected habitat areas.

Regulated Activity – an activity taking place within a *jurisdictional area* that requires authorization from the NYSDEC.

Utility Rights-of-Way - is an easement-acquired or fee-owned corridor in which gas or electric transmission facilities are located.

3.0 Purpose

This BMP provides guidance for inspecting and cleaning vehicles and equipment to help prevent the spread of invasive species. The procedures identified within this manual outline cost-effective and realistic practices that *Environmental Energy Alliance of New York (EEANY)* utility members will implement when conducting a *regulated activity* within a *jurisdictional area*.

4.0 Applicability

This management practice applies to all *EEANY* utility members performing NYSDEC *regulated activities* within *jurisdictional areas* with populations of *invasive species*.

5.0 Procedures

There are two procedural options for EEANY companies to follow; one is to conduct the BMPs as detailed in the following sections of this plan or to conduct vegetation surveys for invasive species as outlined in Section 5.6. Field crews will be provided a flowchart to assist with determining when to implement these best management practices (Appendix 1).

The following detailed practices will apply where feasible when invasive species are present and when the work is covered by a GP or individual wetland permit.

5.1 Equipment

- a. Equipment must arrive clean without visible soil clumps, plant or animal material.
- b. Equipment includes, but is not limited to, vehicles, trailers, machinery, matting, boats, barges, and other watercraft, tools, and other materials.
- c. Transporting equipment will be cleaned before accepting a new load.
- d. Consider tracking pads as a means to remove soil from equipment. If tracking pads are used they must be cleaned after each use in a specific area.
- e. Equipment will be cleaned using one of the methods listed below (use the most effective method that is practical):
 - Brush, broom, shovel or other similar hand tools (used without water)
 - High pressure air (when feasible)
- f. Equipment must be cleaned within one of the below areas:
 - the infested work area
 - an area immediately adjacent to the work area that is itself currently infested with invasive species
- g. Do not clean equipment in or near waterways as it may promote the spread of *invasive species* downstream.
- h. Where possible, staging areas will be established in locations that are free of *invasive species*. Otherwise, all equipment will be cleaned using the techniques described in 5.3 before leaving the area.
- i. When wetland matting is required, it will arrive on site visibly clean, be installed prior to any activities, and will be appropriately cleaned before leaving the area.

5.2 Inspection and Cleaning

- a. Inspections and cleaning should be conducted especially when moving from an infested area to an uninfested area.
- b. Prior to exiting work area clothing, footwear, and gear should be cleaned of visible signs of plant material.
- c. Carry appropriate cleaning equipment (e.g. wire brush, small screwdriver, boot brush) to help remove soils, seeds, and plant material.
- d. Preferred locations for cleaning are those where:
 - Work activities are taking place;
 - Invasive species are already established; or
 - An area immediately adjacent to the work site that is itself currently infested with invasive species.
- e. No cleaning of clothing, footwear, gear in or adjacent to waterways it may promote the spread of *invasive* species downstream.
- f. Cleaning will include brushing or self "pat down" of clothing, footwear, and other personal gear within the infested work area.

5.3 Disposal of Impacted Material

- a. Preferred locations for equipment cleaning are those areas where work activities are taking place or immediately adjacent areas currently impacted with *invasive species*.
- b. Do not clean equipment, vehicles or trailers in or near waterways.
- c. Do not dispose of soil, seeds, or plant material in storm drains.
- d. Any plant materials that are incidentally removed after completion of steps a-c from site will be properly disposed of in a manner that prevents viable plant parts and propagules from being spread

5.4 Other Prevention Measures

- a. Reasonable steps to avoid transportation of *invasive species,* including small, isolated, populations, will be taken
- b. As an alternative to cleaning, ancillary equipment such as spare tires and winches when feasible will be covered when entering *jurisdictional areas* containing populations of *invasive species*.
- c. Vehicular access into areas containing populations of *invasive species* will be reduced or minimized to the maximum extent practical. When practical vehicles will be parked outside of the impacted area and crews will enter on foot.

5.5 Site Restoration

- a. Minimize soil disturbances by reducing work areas and reducing activities that may result in soil disturbances.
- b. Re-vegetate bare soils as soon as feasible to minimize the possible establishment of invasive species. When seeding, non-invasive or local native species must be used (seed mixes will vary from region to region). Seed will be broadcasted over all bare soil areas and covered with a mulch layer such as straw. Choose appropriate seed mixes based on site conditions.

- c. On steep sloping areas (i.e. slopes exceeding 20 percent), soil erosion control matting (i.e. jute mesh or straw blankets) must be installed over the seeded area. The matting should be secured with biodegradable tacks.
- d. Stabilize disturbed soils using appropriate erosion and sediment control procedures as soon as possible. Use invasive free materials such as straw or wood chips; avoid using hay.

5.6 Vegetation Survey (Optional)

If the above BMPS are not followed, then vegetation surveys of site(s) to detect populations of invasive species should be made in advance prior to any activities. If the optional vegetation survey is performed and no invasive species are found, then the procedures outlined above in section 5.1 through 5.5 will not be followed. Survey inspections can be integrated with other activities such as ROW inspections and should be kept as simple as possible to meet invasive species management objectives. If significant populations of invasive species are detected on surveys, then Sections 5.1 to 5.5 apply.

- a. Prior to implementing activities scout for, locate and document significant invasive species infestations.
- b. Consider the need for actions based on: 1) the degree of invasiveness; 2) severity of the current infestation; 3) amount of additional habitat or host at risk for invasion; and 4) feasibility of managing the spread.
- c. Plan activities to limit the potential for introduction and spread of invasive species, prior to construction.
- d. Provide appropriate resources in identification of known invasive species for corridor workers.

6.0 Training

A flowchart (Appendix 1) to assist field crews on when to implement the above procedures will be distributed to all field crews.

All transmission vegetation management planners, foresters, and ROW maintenance personnel will be trained in the procedures outlined in Section 5.0 above. Additionally, training sessions focused on the identification of *invasive species* identified in Appendix 2 will be conducted by the individual utility companies. This may take the form of hard copy materials, tail gate briefings and/or presentations during regular staff meetings.

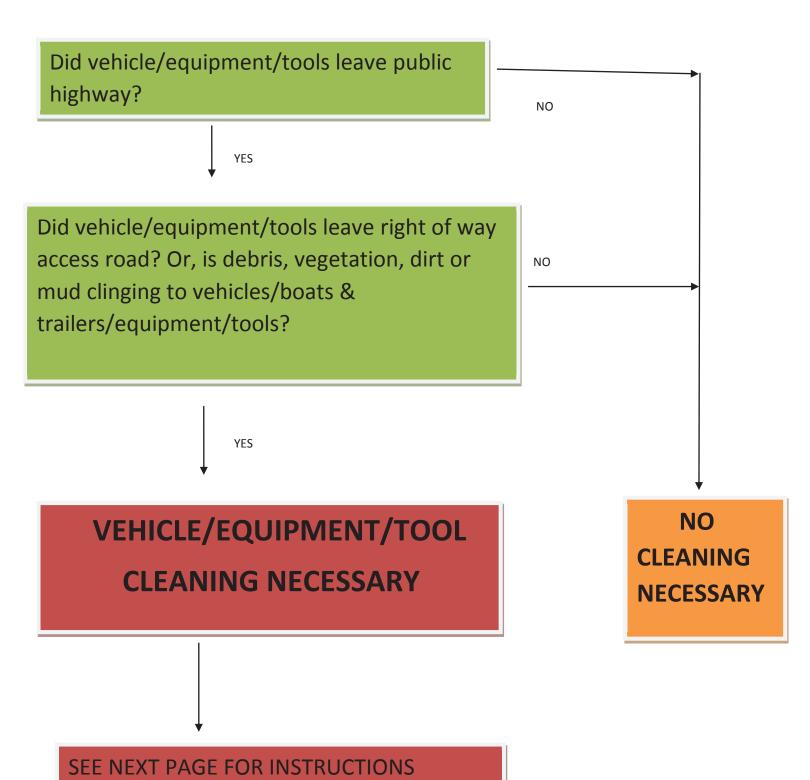
7.0 Emergency Work

During emergencies, *EEANY* utility members will strictly comply with the Emergency Action condition protocol outlined in the *NYSDEC General Permit*. Appropriate site-specific *invasive species* controls and restoration efforts will be determined on an individual basis in conjunction with the regional NYSDEC office.

8.0 References

- Electric Power Research Institute, 2008. "Invasive Species and Utility Rights of Way: A Review of the Science". EPRI Publication number 1014032, Palo Alto, CA
- Pimentel, D., Lach, L., Zuniga, R. & Morrison, D. 2000. Environmental and economic costs of nonindigenous species in the United States. Bioscience, 50(1): 53-65.
- Presidential Executive Order 13112. Volume 64, Federal Register 1999. Invasive Species.
- Wisconsin Council on Forestry. 2010. *Invasive Species Best Management Practice for Transportation and Utility Rights-of-Way*.

BEST MANAGEMENT PRACTICES (BMP'S) for INVASIVE SPECIES TRANSPORT PREVENTION



PRIOR TO LEAVING THE RIGHT-OF-WAY

- Prior to loading vehicle/equipment/tools remove as much debris, vegetation, dirt and mud clinging to the equipment as feasible using a brush, broom, shovel or other similar hand tool.
- High pressure air can be used on site for cleaning debris, vegetation, dirt and mud off vehicles/equipment/tools.
- Pick-ups and other small road vehicles shall remove on the right-of-way, as much debris, vegetation, dirt and mud clinging to vehicle as feasible prior to entering the highway.
- Small equipment/tools/boots shall be cleaned on site before removal or storage.
- Arrangements can be made for onsite cleaning or washing of vehicles/equipment/tools if deemed necessary.

PRIOR TO LEAVING A BOAT LAUNCH:

CLEAN, DRAIN, DRY -- Prior to leaving a boat launch, **Clean** any visible mud, plants, fish or animals before transporting equipment; **Drain** all water holding compartments including live wells, bait wells and bilge areas; **Dry** the boat, trailer and all equipment before use in another water body

APPENDIX - 2

6 NYCRR Part 575 Prohibited and Regulated Invasive Species September 10, 2014

ALGAE AND CYANOBACTERIA Prohibited:

Caulerpa taxifolia, Killer Green Algae Didymosphenia geminata, Didymo Prymnesium parvum, Golden Algae

Regulated:

Cylindrospermopsis raciborskii, Cylindro Grateloupia turuturu, Red Algae

Acer pseudoplatanus, Sycamore Maple

PLANTS

Prohibited:

Achyranthes japonica, Japanese Chaff Flower Alliaria petiolata, Garlic Mustard Ampelopsis brevipedunculata, Porcelain Berry Anthriscus sylvestris, Wild Chervil Aralia elata, Japanese Angelica Tree Artemisia vulgaris, Mugwort Arthraxon hispidus, Small Carpet Grass Berberis thunbergii, Japanese Barberry Brachypodium sylvaticum, Slender False Brome Cabomba caroliniana, Fanwort Cardamine impatiens, Narrowleaf Bittercress Celastrus orbiculatus, Oriental Bittersweet Centaurea stoebe (C. biebersteinii, C. diffusa, C. maculosa misapplied, C. xpsammogena), Spotted Knapweed Cirsium arvense (C. setosum, C. incanum, Serratula arvensis), Canada Thistle Cynanchum Iouiseae (C. nigrum, Vincetoxicum nigrum), Black Swallow-wort Cynanchum rossicum (C. medium, Vincetoxicum medium, V. rossicum), Pale Swallow-wort Dioscorea polystachya (D. batatas), Chinese Yam Dipsacus laciniatus, Cut-leaf Teasel Egeria densa, Brazilian Waterweed Elaeagnus umbellata, Autumn Olive Euphorbia cyparissias, Cypress Spurge Euphorbia esula, Leafy Spurge Ficaria verna (Ranunculus ficaria), Lesser Celandine Frangula alnus (Rhamnus frangula), Smooth Buckthorn

Glyceria maxima, Reed Manna Grass

Heracleum mantegazzianum, Giant Hogweed Humulus japonicus, Japanese Hops Hydrilla verticillata, Hydrilla/ Water Thyme Hydrocharis morsus-ranae, European Frogbit Imperata cylindrica (I. arundinacea, Lagurus cylindricus), Cogon Grass Iris pseudacorus, Yellow Iris Lepidium latifolium, Broad-leaved Pepper-grass Lespedeza cuneata, Chinese Lespedeza Ligustrum obtusifolium, Border Privet Lonicera japonica, Japanese Honeysuckle Lonicera maackii, Amur Honeysuckle Lonicera morrowii, Morrow's Honeysuckle Lonicera tatarica, Tartarian Honeysuckle Lonicera x bella, Fly Honeysuckle Ludwigia hexapetala (L. grandiflora), Uruguayan Primrose Willow Ludwigia peploides, Floating Primrose Willow Lysimachia vulgaris, Garden Loosestrife Lythrum salicaria, Purple Loosestrife Microstegium vimineum, Japanese Stilt Grass Murdannia keisak, Marsh Dewflower Myriophyllum aquaticum, Parrot-feather Myriophyllum heterophyllum, Broadleaf Water-Myriophyllum heterophyllum x M. laxum, Broadleaf Water-milfoil Hybrid Myriophyllum spicatum, Eurasian Water-milfoil Nymphoides peltata, Yellow Floating Heart Oplismenus hirtellus, Wavyleaf Basketgrass Persicaria perfoliata (Polygonum perfoliatum), Milea- minute Weed Phellodendron amurense, Amur Cork Tree Phragmites australis, Common Reed Grass Phyllostachys aurea, Golden Bamboo Phyllostachys aureosulcata, Yellow Groove Bamboo Potamogeton crispus, Curly Pondweed Pueraria montana, Kudzu Reynoutria japonica (Fallopia japonica, Polygonum cuspidatum), Japanese Knotweed Reynoutria sachalinensis (Fallopia sachalinensis, Polygonum sachalinensis), Giant Knotweed Revnoutria x bohemica (Fallopia x bohemica, Polygonum x bohemica), Bohemian Knotweed Rhamnus cathartica, Common Buckthorn Rosa multiflora, Multiflora Rose Rubus phoenicolasius, Wineberry Salix atrocinerea, Gray Florist's Willow Silphium perfoliatum, Cup-plant Trapa natans, Water Chestnut Vitex rotundifolia, Beach Vitex

Regulated:

Acer platanoides, Norway Maple Clematis terniflora, Japanese Virgin's Bower Euonymus alatus, Burning Bush Euonymus fortunei, Winter Creeper Miscanthus sinensis, Chinese Silver Grass Robinia pseudoacacia, Black Locust

FISH

Prohibited:

Channa argus, Northern Snakehead Channa marulius, Bullseye Snakehead Channa micropeltes, Giant Snakehead Clarias batrachus, Walking Catfish Gambusia affinis, Western Mosquitofish Gambusia holbrooki, Eastern Mosquitofish Hypophthalmichthys harmandi, Largescale Silver Carp

Hypophthalmichthys molitrix, Silver Carp
Hypophthalmichthys nobilis, Bighead Carp
Misgurnus anguillicaudatus, Oriental Weatherfish
Mylopharyngodon piceus, Black Carp
Neogobius melanostomus, Round Goby
Petromyzon marinus, Sea Lamprey
Proterorhinus semilunaris (P. marmoratus),
Tubenose Goby
Tinca tinca, Tench

Regulated:

Carassius auratus, Goldfish
Cyprinella lutrensis, Red Shiner
Cyprinus carpio, Common Carp/ Koi
Gymnocephalus cernuus, Ruffe
Monopterus albus, Asian Swamp Eel
Oreochromis aureus, Blue Tilapia
Oreochromis niloticus, Nile Tilapia
Pterois miles, Common Lionfish
Pterois volitans, Red Lionfish
Sander lucioperca (Stizostedion lucioperca), Zander
Scardinius erythrophthalmus, Rudd

AQUATIC INVERTEBRATES

Prohibited:

Bellamya chinensis (Cipangopaludina chinensis), Chinese Mystery Snail
Bellamya japonica, Japanese Mystery Snail
Bithynia tentaculata, Faucet Snail
Bythotrephese longimanus (B. cederstroemi), Spiny
Water Flea
Cercopagis pengoi, Fishhook Water Flea
Corbicula fluminea, Asian Clam
Crassostrea ariakensis, Suminoe Oyster
Didemnum spp., Carpet Tunicate

Dreissena polymorpha, Zebra Mussel
Dreissena rostriformis bugensis, Quagga Mussel
Eriocheir sinensi, Chinese Mitten Crab
Hemigrapsus sanguineus, Asian Shore Crab
Hemimysis anomala, Bloody Red Shrimp
Orconectes rusticus, Rusty Crayfish
Potamopyrgus antipodarum, New Zealand Mud Snail
Rapana venosa, Veined Rapa Whelk
Styela plicata, Asian Sea Squirt

Regulated:

Carcinus maenas, European Green Crab Daphnia lumholtzi, Water Flea Hemigrapsus takanoi (H. penicillatus), Brush-clawed Shore Crab/ Grapsid Crab

TERRESTRIAL INVERTEBRATES

Prohibited:

Achatina achatina, Giant Ghana Snail Achatina fulica (Lissachatina fulica), Giant African Land Snail

Adelges tsugae, Hemlock Woolly Adelgid
Agrilus planipennis, Emerald Ash Borer
Amynthas spp., Asian Earthworms
Anoplophora glabripennis, Asian Longhorn Beetle
Apis mellifera scutellata x A. mellifera ligustica/ A.
mellifera iberiensis, Africanized Honey Bee
Archachatina marginata, Giant West African Snail
Cryptococcus fagisuga, Beech Scale
Lymantria dispar, Asian and European Gypsy Moth
Monochamus alternatus, Japanese Pine Sawyer
Pityophthorus juglandis, Walnut Twig Beetle
Sirex noctilio, Sirex Woodwasp

TERRESTRIAL AND AQUATIC VERTEBRATES Prohibited:

Cygnus olor, Mute Swan
Lepus europaeus, European Hare
Myocastor coypus, Nutria
Nyctereutes procyonoides, Asian Raccoon Dog
Sus scrofa (excluding Sus scrofa domestica), Eurasian
Boar

Regulated:

Alopochen aegyptiacus, Egyptian Goose Cairina moschata, Muscovy Duck Myiopsitta monachus, Monk Parakeet Oryctolagus cuniculus, European Rabbit Trachemys scripta elegans, Red-eared Slider Xenopus laevis, African Clawed Frog

FUNGI

Prohibited:

Amylostereum areolatum, Sirex Wasp Fungus Geomyces destructans, White-nose Syndrome Geosmithia morbida, Thousand Canker Disease Phytophthora ramorum, Sudden Oak Death

For the official regulations and species lists please see: http://www.dec.ny.gov/regulations/265.html