

Appendix 9-1: Summary of South Florida's Nonindigenous Species by RECOVER Module

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Table 1. Summary of South Florida’s nonindigenous animal species and Category I invasive plant species by RECOVER module.¹

		KY	SE	GE	BC	NW	NE	LO	KR
Amphibians									
<i>Bufo marinus</i>	Giant toad	x	x	x	x	x	x	x	x
<i>Eleutherodactylus coqui</i>	Coqui	x	x	x					
<i>Eleutherodactylus planirostris</i>	Greenhouse frog	x	x	x	x	x	x	x	x
<i>Osteopilus septentrionalis</i>	Cuban treefrog	x	x	x	x	x	x	x	x
Reptiles									
<i>Agama agama</i>	African redhead agama	x	x	x	x		x		
<i>Ameiva ameiva</i>	Giant ameiva		x	x			x	x	
<i>Anolis chlorocyanus</i>	Hispaniolan green anole		x	x			x	x	
<i>Anolis cristatellus cristatellus</i>	Puerto Rican crested anole		x	x					
<i>Anolis cybotes</i>	Largehead anole		x	x				x	
<i>Anolis distichus</i>	Bark anole	x	x	x	x	x	x	x	
<i>Anolis equestris equestris</i>	Knight anole	x	x	x	x	x	x	x	x
<i>Anolis extremus</i>	Barbados anole					x			
<i>Anolis garmani</i>	Jamaican giant anole		x	x		x		x	
<i>Anolis porcatius</i>	Cuban green anole		x	x					
<i>Anolis sagrei</i>	Brown anole	x	x	x	x	x	x	x	x
<i>Basiliscus vittatus</i>	Brown basilisk		x	x	x		x	x	
<i>Boa constrictor</i>	Common boa			x	x				
<i>BOIGA IRREGULARIS*</i>	BROWN TREE SNAKE								
<i>Caiman crocodiles</i>	Common caiman		x	x				x	
<i>Calotes mystaceus</i>	Indochinese tree agama							x	x

Table Key		
KY = Keys	NW = Northern Estuaries West	Green Found in one module
SE = Southern Estuaries	NE = Northern Estuaries East	Orange Found in all modules
GE = Greater Everglades	LO = Lake Okeechobee	Blue Found in all but one module
BC = Big Cypress	KR = Kissimmee River	

* Seven Species designated for Early Detection and Rapid Response

Eighteen species entries in bold indicate they are discussed in Modules

SPECIES ENTRIES IN CAPITAL LETTERS NOT PRESENT IN SOUTH FLORIDA BUT REPRESENT EXTREME RISK (FIATT, 2007)

Table Summary		
Found in 1 Module	Found in All Modules	Found in All but 1 Module
0 amphibians	3 amphibians	0 amphibian
8 reptiles	6 reptiles	4 reptiles
2 birds	7 birds	0 birds
5 mammals	6 mammals	0 mammals
19 fish	0 fish	1 fish
31 invertebrates	7 invertebrates	0 invertebrates

¹ Due to limited availability of animal distribution data, species lists presented in table are not comprehensive but are considered to be representative of the species found within the modules.

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Reptiles (continued)									
<i>Calotes versicolor</i>	Oriental garden lizard						x		
<i>Cnemidophorus lemniscatus</i>	Rainbow lizard		x	x					
<i>Cnemidophorus motaguae</i>	Giant whiptail		x	x					
<i>Cosymbotus platyurus</i>	Asian flattail house gecko		x	x		x			
<i>Ctenosaura pectinata</i>	Mexican spinytail iguana		x						
<i>Ctenosaura similis</i>	Black spinytail iguana		x	x	x	x			
<i>Eunectes notaeus</i>	Yellow anaconda				x				
<i>Gekko gekko</i>	Tokay gecko	x	x	x	x	x			
<i>Gonatodes albugularis fuscus</i>	Yellowhead gecko			x	x				
<i>Hemidactylus frenatus</i>	Common house gecko	x	x	x	x	x	x	x	
<i>Hemidactylus garnotii</i>	Indo-pacific gecko	x	x	x	x	x	x	x	x
<i>Hemidactylus mabouia</i>	Tropical house gecko	x	x	x	x	x	x	x	x
<i>Hemidactylus turcicus</i>	Mediterranean gecko	x	x	x	x	x	x	x	x
<i>Iguana iguana</i>	Green iguana	x	x	x	x	x	x	x	
<i>Leiocephalus carinatus armouri</i>	Northern curlytail lizard	x	x	x	x		x	x	x
<i>Leiocephalus personatus scalaris</i>	Green-legged curlytail lizard			x					
<i>Leiocephalus schreibersii schreibersii</i>	Red-sided curlytail lizard		x	x					
<i>Leiolepis belliana belliana</i>	Butterfly lizard		x	x					
<i>Mabuya multifasciata</i>	Many-lined Grass Skink			x					
<i>Phelsuma madagascariensis grandis</i>	Giant day gecko	x	x	x	x	x			
<i>Phrynosoma cornutum</i>	Texas horned lizard		x				x		x
<i>Python molurus bivittatus</i>	Burmese python	x	x	x	x				
<i>Ramphotyphlops braminus</i>	Brahminy blind snake	x	x	x	x	x	x	x	x
<i>Sphaerodactylus argus argus</i>	Ocellated gecko	x							
<i>Sphaerodactylus elegans elegans</i>	Ashy gecko	x							
<i>Tarentola annularis</i>	White-spotted wall gecko		x	x		x			
<i>Tarentola mauritanica</i>	Moorish wall gecko		x	x		x			
<i>Trachemys scripta elegans</i>	Red-eared slider	x	x	x	x	x			x
<i>Tupinambus</i> spp.	Tegu Lizards		x	x		x		x	
<i>Varanus niloticus</i>	Nile monitor		x	x	x	x			x
<i>Varanus salvator</i>	Water monitor			x					x

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Birds									
<i>Acridotheres tristis</i>	Common myna	x	x	x	x	x	x	x	
<i>Alopochen aegyptiacus</i>	Egyptian goose		x	x					
<i>Brotogeris chiriri</i>	Yellow-chevroned parakeet	x	x			x			x
<i>Cairina moschata</i>	Muscovy duck	x	x	x	x	x	x	x	x
<i>Columba livia</i>	Rock dove	x	x	x	x	x	x	x	x
<i>Myiopsitta monachus</i>	Monk parakeet	x	x	x	x	x	x	x	x
<i>Nandayus nenday</i>	Black-hooded parakeet					x			
<i>Passer domesticus</i>	House sparrow	x	x	x	x	x	x	x	x
<i>Porphyrio porphyrio</i>*	Purple swamphen			x	x			x	x
<i>Streptopelia decaocta</i>	Eurasian collared-dove	x	x	x	x	x	x	x	x
<i>Sturnus vulgaris</i>	European starling	x	x	x	x	x	x	x	x
<i>Threskiornis aethiopicus</i>*	Sacred ibis			x					
<i>Zenaida asiatica</i>	White-winged dove	x	x	x	x	x	x	x	x
Mammals									
<i>Canis familiaris</i>	Feral dog	x	x	x	x	x	x	x	x
<i>Capra hircus</i>	Feral goat								x
<i>Chlorocebus aethiops</i>	Vervet monkey			x					
<i>Cricetomys gambianus</i>*	Gambian pouch rat	x							
<i>Felis catus</i>	Feral cat	x	x	x	x	x	x	x	x
<i>Lepus californicus</i>	Black-tailed jackrabbit		x	x			x	x	
<i>Macaca mulatta</i>	Rhesus monkey		x	x					
<i>Molossus molossus tropidorhynchus</i>	Pallas's mastiff bat	x							
<i>Mus musculus</i>	House mouse	x	x	x	x	x	x	x	x
<i>Mustela putorius</i>	Ferret						x		x
<i>Nasua narica</i>	White-nosed coati		x	x			x	x	x
<i>Rattus norvegicus</i>	Norway rat	x	x	x	x	x	x	x	x
<i>Rattus rattus</i>	Black rat	x	x	x	x	x	x	x	x
<i>Saimiri sciureus</i>	Squirrel monkey		x	x	x				x
<i>Sciurus aureogaster</i>	Mexican red-bellied squirrel		x						
<i>Sus scrofa</i>	Feral pig			x	x	x	x	x	x
<i>Vulpes vulpes</i>	Red fox	x	x	x	x	x	x	x	x

Table 1. Continued.²

		KY	SE	GE	BC	NW	NE	LO	KR
Fishes									
<i>Astronotus ocellatus</i>	Oscar		x	x	x			x	x
<i>Belonesox belizanus</i>	Pike killifish	x	x	x	x				
<i>Callichthys callichthys</i>	Cascarudo								x
<i>Channa marulius</i>	Bullseye snakehead		x						
<i>Chitala ornata</i>	Clown knife		x						
<i>Cichla ocellaris</i>	Butterfly peacock cichlid		x	x					
<i>Cichlasoma bimaculatum</i>	Black acara		x	x	x		x	x	x
<i>Cichlasoma citrinellum</i>	Midas cichlid			x					
<i>Cichlasoma managuense</i>	Jaguar guapote			x	x				
<i>Cichlasoma festae</i>	Guayas cichlid					x			
<i>Cichlasoma octofasciatum</i>	Jack Dempsey						x		
<i>Cichlasoma salvini</i>	Yellowbelly cichlid			x					
<i>Cichlasoma urophthalmus</i>	Mayan cichlid		x	x	x	x	x	x	
<i>Clarias batrachus</i>	Walking catfish		x	x	x	x	x	x	x
<i>Dorosoma petenense</i>	Threadfin shad								x
<i>Geophagus surinamensis</i>	Redstriped eartheater			x					
<i>Hemichromis letourneuxi</i>	African jewelfish	x		x	x	x			x
<i>Heros severus</i>	Banded cichlid			x					
<i>Hoplosternum littorale</i>	Brown hoplo			x	x	x	x	x	x
<i>Hypostomus plecostomus</i>	Suckermouth catfish			x					
<i>Macrogathus siamensis</i>	Spotfined spiny eel			x					
<i>Monopterus albus</i>	Asian swamp eel			x					
<i>Oreochromis aureus</i>	Blue tilapia		x	x	x		x	x	X
<i>Oreochromis mossambicus</i>	Mozambique tilapia			x		x	x		
<i>Pterois volitans</i>	Lionfish		x				x		
<i>Pterygoplichthys disjunctivus</i>	Vermiculated sailfin catfish								X
<i>Pterygoplichthys multiradiatus</i>	Orinoco sailfin catfish			x			x	x	X
<i>Sarotherodon melanotheron melanotheron</i>	Blackchin tilapia						x		
<i>Tilapia mariae</i>	Spotted tilapia		x	x	x	x	x		
<i>Tilapia zillii</i>	Redbelly tilapia						x		
<i>Xiphophorus hellerii</i>	Green swordtail						x		
<i>Xiphophorus maculatus</i>	Southern platyfish						x		
<i>Xiphophorus variatus</i>	Variable platyfish						x		

² This list contains only established records of nonindigenous fish according to the U.S. Geological Survey (USGS) definition (reproducing and overwintering population). Comprehensive exotic fish lists were reviewed by USGS experts (Bill Loftus and Pam Fuller), and U.S. Fish and Wildlife (USFWS) experts (Shafland, 1996) with unique knowledge of the subject. The FWS lab uses a more conservative listing of established fishes (permanent populations so widespread no elimination is possible). The USGS listing was chosen primarily because it provides an indication of species present and capable of expansion in the future. However, any USFWS occurrences not listed by USGS are included here. There were some differences between USGS listings, so Loftus occurrences were authoritative for KY, SE, GE, and BC; Fuller for NW, NE, LO, and KR; as agreed by those reviewers.

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Invertebrates									
<i>Aedes albopictus</i>	Asian tiger mosquito	x	x	x	x	x	x	x	X
<i>Aethina tumida</i>	Small hive beetle		x	x	x	x	x		
<i>AGRILUS PLANIPENNIS*</i>	EMERALD ASH BORER								
<i>Amblyomma auricularium</i>	Reptilian tick				x				
<i>Apis mellifera scutellata</i>	African bee			x					
<i>Aulacaspis yasumatsui</i>	Armored cycad scale insect			x					
<i>Balanus reticulatus</i>	Barnacle		x						
<i>Balanus trigonus</i>	Barnacle		x			x	x		
<i>Blattella asahinai</i>	Asian cockroach	x		x			x		
<i>Cactoblastis cactorum</i>	Cactus moth	x	x				x		
<i>Callinectes bocourti</i>	Bocourt's swimming crab		x						
<i>Cepolis varians</i>	Caribbean land snail		x						
<i>Ceroplastes rusc</i>	Fig wax scale			x		x	x		
<i>Chaetanaphothrips leeuweni</i>	Banana rust thrips			x					
<i>Charybdis helleri</i>	Indian Ocean portunid crab						x		
<i>Chelymorpha cribraria</i>	Tortoise beetle	x	x	x					
<i>Cipangopaludina japonica</i>	Japanese mysterysnail								x
<i>Cittarium pica</i>	West Indian top shell	x							
<i>Corbicula fluminea</i>	Asian clam		x	x	x	x		x	x
<i>Craspedacusta sowerbyii</i>	Freshwater jellyfish		x	x		x	x		x
<i>Crocothemis servilia</i>	Scarlet skimmer			x	x	x		x	x
<i>Cuthona perca</i>	Lake Merritt cuthona		x						
<i>Daphnia lumholtzi</i>	Water flea		x	x				x	x
<i>DREISSENA POLYMORPHA*</i>	ZEBRA MUSSEL								
<i>Erythemis plebeja</i>	Black pond hawk			x	x				
<i>Eupristina altissima</i>	Fig Wasp (of <i>F. altissima</i>)		x				x		
<i>Eupristina masoni</i>	Fig Wasp (of <i>F. benghalensis</i>)			x					

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Invertebrates (continued)									
<i>Glossodoris sedna</i>	Marine nudibranch	x	x						
<i>Haliplanella luciae</i> (= <i>H. lineata</i>)	Sea anemone		x			x			
<i>Iridomyrmex humilis</i>	Argentine ant	x	x	x	x	x	x	x	x
<i>Litopenaeus stylirostris</i>	Pacific white shrimp	x							
<i>Litopenaeus vannamei</i>	Pacific white shrimp	x							
<i>Lyrodus mediolobatus</i>	Indo-Pacific shipworm						x		
<i>Marisa cornuarietis</i>	Giant Rams-horn snail		x	x	x	x			
<i>Melanoides tuberculatus</i>	Red-rim melania		x	x	x				
<i>Metamasius callizona</i>	Mexican bromeliad weevil			x	x	x	x	x	x
<i>Micrathyria aequalis</i>	Spottedtailed skimmer			x					
<i>Micrathyria didyma</i>	Three-striped skimmer			x					
<i>Monomorium pharaonis</i>	Pharaoh ant	x	x	x	x	x	x	x	x
<i>Mylocerus undecimpustulatus undatus</i>	Sri Lanka Mimic Weevil		x		x	x	x		
<i>Mytella charruana</i>	Charru mussel						x		
<i>Oceanaspidiotus araucariae</i>	Scale			x					
<i>Ozamia lucidalis</i>	Moth	x							
<i>Parapristina verticillata</i>	Fig Wasp (of <i>F. microcarpa</i>)		x	x	x	x	x		
<i>Paratachardina lobata</i>	Lobate lac scale	x	x	x	x	x	x		
<i>Paratrechina longicornis</i>	Crazy ant	x	x	x	x	x	x	x	x
<i>Perna viridis</i>	Green mussel				x	x	x		
<i>Phyllorhiza punctata</i>	Spotted jellyfish						x		
<i>Phytoplasma (un-named)</i>	Texas Phoenix palm decline								x
<i>Pinctada margaritifera</i>	Black-lipped pearl oyster						x		
<i>Pomacea diffusa</i>	Spiketop applesnail		x	x	x				
<i>Pomacea haustum</i>	Titan applesnail			x					
<i>Pomacea insularum</i>	Island applesnail			x	x	x	x	x	x
<i>Raoiella indica</i> *	Red Palm Mite		x				x		
<i>Retithrips syriacus</i>	Thrips			x					
<i>Singhiella simplex</i>	Ficus whitefly		x				x		
<i>Solenopsis invicta</i>	Imported fire ant	x	x	x	x	x	x	x	x
<i>Sphaeroma terebrans</i>	Wood-boring isopod		x			x			
<i>Sphaeroma walkeri</i>	Fouling isopod		x				x		
<i>Styela plicata</i>	Sea squirt						x		
<i>Sundanella sibogae</i>	Bryozoan						x		
<i>Technomyrmex albipes</i>	White-footed ant	x	x	x	x	x	x	x	x
<i>Tridacna crocea</i>	Giant clam		x						
<i>Tridacna maxima</i>	Giant clam		x						
<i>Victorella pavidata</i>	Bryozoan						x		
<i>Wasmannia auropunctata</i>	Little fire ant	x	x	x	x	x	x	x	x
<i>Watersipora subovoidea</i>	Bryozoan						x		
<i>Xyleborus glabratus</i>*	Redbay ambrosia beetle			x			x		x
<i>Zachrysia provisorica</i>	Cuban garden snail	x	x	x			x		

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Category I Invasive Pest Plants									
<i>Abrus precatorius</i>	rosary pea	x	x	x	x	x	x	x	x
<i>Acacia auriculiformis</i>	earleaf acacia	x	x	x	x	x	x	x	
<i>Albizia julibrissin</i>	mimosa, silk tree				x		x		x
<i>Albizia lebbbeck</i>	woman's tongue	x	x	x	x	x	x		
<i>Ardisia crenata</i>	coral ardisia						x		
<i>Ardisia elliptica</i>	shoebuttan ardisia	x	x	x	x	x	x		x
<i>Asparagus aethiopicus</i>	asparagus-fern	x	x	x	x	x	x	x	
<i>Bauhinia variegata</i>	orchid tree	x	x	x	x	x			
<i>Bischofia javanica</i>	bishopwood		x	x	x	x	x		
<i>Calophyllum antillanum</i>	Santa Maria	x	x	x			x		
<i>Casuarina equisetifolia</i>	Australian-pine	x	x	x	x	x	x	x	x
<i>Casuarina glauca</i>	suckering Australian-pine	x	x	x	x	x	x		
<i>Cinnamomum camphora</i>	camphor tree								x
<i>Colocasia esculenta</i>	wild taro	x	x	x	x	x	x		
<i>Colubrina asiatica</i>	lather leaf	x	x		x				
<i>Cupaniopsis anacardioides</i>	carrotwood		x	x	x	x	x		
<i>Dioscorea alata</i>	winged yam		x	x		x	x		
<i>Dioscorea bulbifera</i>	air-potato	x	x	x	x	x	x	x	x
<i>Eichhornia crassipes</i>	water-hyacinth		x	x	x	x	x	x	x
<i>Eugenia uniflora</i>	Surinam cherry	x	x	x	x	x	x	x	x
<i>Ficus microcarpa</i>	laurel fig	x	x	x	x	x	x	x	x
<i>Hydrilla verticillata</i>	hydrilla		x	x	x	x	x	x	x
<i>Hygrophila polysperma</i>	green hygro								x
<i>Hymenachne amplexicaulis</i>	West Indian marsh grass				x	x		x	x
<i>Imperata cylindrica</i>	cogon grass	x	x	x	x	x	x	x	x
<i>Ipomoea aquatica</i> eradicated?	waterspinach	-	-	-	-	-	-	-	-
<i>Jasminum dichotomum</i>	Gold Coast jasmine	x	x		x	x	x		
<i>Jasminum fluminense</i>	Brazilian jasmine	x	x						
<i>Lantana camara</i>	lantana, shrub verbena	x	x	x	x	x	x	x	x
<i>Ligustrum lucidum</i>	glossy privet								x
<i>Ligustrum sinense</i>	Chinese privet			x					
<i>Lonicera japonica</i>	Japanese honeysuckle	x	x	x					
<i>Ludwigia peruviana</i>	Peruvian primrosewillow		x	x	x	x	x	x	x
<i>Lygodium japonicum</i>	Japanese climbing fern	x	x	x			x		x
<i>Lygodium microphyllum</i>	Old World climbing fern	x	x	x	x	x	x	x	x
<i>Macfadyena unguis-cati</i>	cat's claw vine		x	x			x		x
<i>Manilkara zapota</i>	sapodilla	x	x	x	x	x			
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	x	x	x	x	x	x	x	x
<i>Mimosa pigra</i>	catclaw mimosa			x			x	x	x
<i>Nandina domestica</i> not in S.F.L.	nandina, heavenly bamboo	-	-	-	-	-	-	-	-

Table 1. Continued.

		KY	SE	GE	BC	NW	NE	LO	KR
Category I Invasive Pest Plants (continued)									
<i>Nephrolepis cordifolia</i>	sword fern		x	x	x		x	x	x
<i>Nephrolepis multiflora</i>	Asian sword fern	x	x	x	x	x	x	x	x
<i>Neyraudia reynaudiana</i>	Burma reed, cane grass	x	x	x	x	x	x		
<i>Paederia cruddasiana</i>	sewer vine, onion vine		x						
<i>Paederia foetida</i>	skunk vine	x	x						x
<i>Panicum repens</i>	torpedo grass	x	x	x	x	x	x	x	x
<i>Pennisetum purpureum</i>	Napier grass			x	x	x	x	x	x
<i>Pistia stratiotes</i>	waterlettuce		x	x	x	x	x	x	x
<i>Psidium cattleianum</i>	Strawberry guava		x	x	x	x	x	x	x
<i>Psidium guajava</i>	guava	x	x	x	x	x	x	x	x
<i>Pueraria montana var. lobata</i>	kudzu		x	x		x	x		
<i>Rhodomlyrtus tomentosa</i>	downy rose-myrtle			x	x	x	x	x	x
<i>Rhynchelytrum repens</i>	Natal grass	x	x	x	x	x	x	x	x
<i>Ruellia tweediana</i>	Mexican petunia		x	x	x	x	x		
<i>Sapium sebiferum</i>	Chinese tallow tree			x			x		x
<i>Scaevola taccada</i>	beach naupaka	x	x			x	x		
<i>Schefflera actinophylla</i>	Queensland umbrella tree	x	x	x	x	x	x		
<i>Schinus terebinthifolius</i>	Brazilian pepper	x	x	x	x	x	x	x	x
<i>Senna pendula var. glabrata</i>	Christmas senna	x	x	x	x	x	x	x	x
<i>Solanum tampicense</i>	aquatic soda apple				x	x			
<i>Solanum viarum</i>	tropical soda apple		x	x	x	x	x	x	x
<i>Syngonium podophyllum</i>	arrowhead vine	x	x	x	x	x	x	x	
<i>Syzygium cumini</i>	jambolan plum, Java plum			x	x	x	x	x	x
<i>Tectaria incisa</i>	incised halberd fern			x			x		
<i>Thespesia populnea</i>	seaside mahoe	x	x			x	x		
<i>Tradescantia fluminensis</i>	small leaf spiderwort	x					x		
<i>Urochloa mutica</i>	Para grass		x	x	x	x	x	x	x