

## 2013 JNDDNWR WEBSITE INVASIVE SPECIES PROJECT

### Invasive Species

An invasive species is a plant or animal that is not native to an ecosystem and which causes, or is likely to cause, economic or environmental harm or impacts, or harm to human health. Invasive non-native species have become the single greatest threat to the Refuge System and the Service's core wildlife conservation mission impacting natural habitats and native plants and animals including threatened and endangered species.

### Invasive Plants

National Wildlife Refuges, including the J.N. "Ding" Darling NWR Complex, are in no way immune to the impacts of invasive non-native plants. Over 25,000 non-native plants have been introduced to Florida since the New World was discovered. Approximately 1200 non-native plant species have escaped cultivation and can be found in Florida's native habitats. Of these, one to four percent have become serious plant pests, and have become naturalized in the environment, and are readily reproducing and spreading (Table 1.).

With its subtropical climate, South Florida provides an ideal situation for the growth and spread of invasive pest plants. All of South Florida's ecosystems and habitats are susceptible to invasion including pine flatwoods, sand pine scrub, mangrove communities, cypress swamps, tropical hardwood hammocks and freshwater marshes. Without native insect predators to keep populations in check, these introduced weeds spread uncontrolled throughout South Florida's natural areas. Non-native plant species reduce habitat integrity and viability, compete directly with or displace native plant and wildlife species, affect water flow and drainage, alter prescribed- and wildfire behavior, and impact public viewing opportunities and recreational uses. Overall, non-native plants decrease native plant and wildlife abundance and diversity.

Table 1. Florida Exotic Pest Plant Council Category I and II non-native invasive plants documented on the J.N. "Ding" Darling Complex – includes satellite refuges.

<b>Scientific Name</b>	<b>Common Name</b>	<b>FLEPPC Category</b>	<b>Gov't Listed</b>
<i>Abrus precatorius</i>	rosary pea	I	N
<i>Acacia auriculiformis</i>	earleaf acacia	I	
<i>Albizia julibrissin</i>	silk tree	I	
<i>Albizia lebbek</i>	Woman's tongue	I	
<i>Bauhinia variegata</i>	orchid tree	I	
<i>Bischofia javanica</i>	bischofia or toog tree	I	
<i>Casuarina equisetifolia</i>	Australian pine	I	P,N
<i>Cupaniopsis anacardioides</i>	carrotwood	I	N

<i>Dioscorea alata</i>	winged yam	I	N
<i>Dioscorea bulbifera</i>	air potato	I	N
<i>Eugenia uniflora</i>	Surinam cherry	I	
<i>Ficus microcarpa</i>	laurel fig	I	
<i>Imperata cylindrica</i>	cogongrass	I	N, U
<i>Lantana camara</i>	lantana	I	
<i>Lygodium microphyllum</i>	Old World climbing fern	I	N,U
<i>Manilkara zapota</i>	sapodilla	I	
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	I	P,N,U
<i>Melinis repens</i>	Natal grass	I	
<i>Nephrolepis cordifolia</i>	sword fern	I	
<i>Panicum repens</i>	torpedo grass	I	
<i>Psidium guajava</i>	guava	I	
<i>Scaevola taccada</i>	beach naupaka, half-flower	I	N
<i>Schefflera actinophylla</i>	Queensland umbrella or octopus tree	I	
<i>Senna pendula</i>	climbing cassia	I	
<i>Syngonium podophyllum</i>	arrowhead vine	I	
<i>Syzygium cumini</i>	Java plum	I	
<i>Thespesia populnea</i>	seaside mahoe	I	
<i>Tradescantia fluminensis</i>	small-leaf spiderwort	I	
<i>Urena lobata</i>	Caesar's weed	I	
<i>Urochloa mutica</i>	para grass	I	
<i>Agave sisalana</i>	Sisal hemp, century plant	II	
<i>Antigonon leptopus</i>	coral vine	II	
<i>Broussonetia papyrifera</i>	paper mulberry	II	
<i>Cocos nucifera</i>	coconut palm	II	
<i>Cryptostegia madagascariensis</i>	rubber vine	II	
<i>Ficus altissima</i>	council tree	II	
<i>Flacourtia indica</i>	Governor's plum	II	
<i>Kalanchoe pinnata</i>	life plant	II	
<i>Leucaena leucocephala</i>	lead tree	II	N
<i>Melia azedarach</i>	Chinaberry	II	
<i>Panicum maximum</i>	Guinea grass	II	
<i>Phoenix reclinata</i>	Senegal date palm	II	
<i>Ricinus communis</i>	castor bean	II	
<i>Sanseveria hyacinthoides</i>	bowstring hemp, snake plant	II	
<i>Syagrus romanzoffiana</i>	Queen palm	II	
<i>Talipariti tillaceum</i>	Mahoe, sea hibiscus	II	
<i>Terminalia catappa</i>	tropical almond	II	
<i>Vitex trifolia</i>	Shrub vitex, chaste tree	II	
<i>Washingtonia robusta</i>	Mexican (Washingtonia) fan palm	II	

<i>Wedelia trilobata</i>	wedelia	II	
--------------------------	---------	----	--

P = Prohibited by Florida Department of Agriculture & Consumer Services (FDACS)

N = Listed Noxious Weed (FDACS)

U = Listed Noxious Weed by U.S. Department of Agriculture

### Invasive Animals

Florida is home to more non-native wildlife species than any other region in the United States, and many have been documented on the J.N. “Ding” Darling NWR Complex or on adjacent areas (Table 2.). Over 439 non-native wildlife, fish and invertebrates have been observed or documented, and at least 123 are established and reproducing. Approximately 26% of all resident mammals, birds, reptiles, amphibians, and fish are non-native. There are now more non-native lizards established in Florida than native species.

Non-native species cause severe ecological, economic, and resource management problems in South Florida. Adverse impacts associated with introduced or established non-native invasive animals include: habitat modification or alteration, direct predation on native plants and animals, transmission of diseases to native plants, animals and humans, hybridization with native wildlife species and competition for the same niche. In general, habitat modification for human habitation favors the establishment of non-native animal species. Non-native wildlife thrives in human-modified areas, quickly adapt and establish, and displace native wildlife. Human planting of invasive pest plants provides a readily available food source encouraging establishment and spread. Other factors which contribute to non-native wildlife establishment include a favorable sub-tropical climate, abundant supply of man-made lakes, ponds and inter-connecting network of canals, abundant ports of entry, and a thriving aquaculture and pet trade industry.

Table 2. Non-native wildlife documented on or near the JNDDNWR Complex.

<u>Group</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Refuge Breeding Status</u>
<b>Mammals</b>	Black rat	<i>Rattus rattus</i>	y
	Coyote	<i>Canis latrans</i>	y
	Feral pig	<i>Sus scrofa</i>	y
	House mouse	<i>Mus musculus</i>	y
	Nine-banded armadillo	<i>Dasypus novemcinctus</i>	y
	Norway rat	<i>Rattus norvegicus</i>	y
<b>Birds</b>	Cattle egret	<i>Bubulcus ibis</i>	y
	Eurasian collared-dove	<i>Streptopelia decaocto</i>	y
	European starling	<i>Sturnus vulgaris</i>	y
	House sparrow	<i>Passer domesticus</i>	y
	Monk parakeet	<i>Myiopsitta monachus</i>	y
	Rock dove	<i>Columbo columbo</i>	y
	White-winged dove	<i>Zenaida asiatica</i>	y
<b>Reptiles</b>	Brahminy blind snake	<i>Ramphotyphlops braminus</i>	y
	Brown anole	<i>Anolis sagrei</i>	y
	Green iguana	<i>Iguana iguana</i>	y
	Indo-pacific gecko	<i>Hemidactylus garnotii</i>	y
	Knight anole	<i>Anolis equestris</i>	y
	Nile monitor lizard	<i>Varanus niloticus</i>	y
	Northern curly-tailed lizard	<i>Leiocephalus carinatus</i>	y
	Red-eared slider	<i>Trachemys scripta elegans</i>	y
	Red-headed agama	<i>Agama agama africana</i>	n
	Savannah monitor lizard	<i>Varanus exanthematicus</i>	n
	Tokay gecko	<i>Gekko gekko</i>	y
	Tropical house gecko	<i>Hemidactylus mabouia</i>	y
<b>Amphibians</b>	Cane toad	<i>Bufo marinus</i>	y
	Cuban treefrog	<i>Osteopilus septentrionalis</i>	y
	Greenhouse frog	<i>Eleutherodactylus planirostris</i>	y
<b>Fish</b>	African jewel fish	<i>Hemichromis letourneuxi</i>	y
	Armored catfish	<i>Hoplosternum littorale</i>	y
	Blue tilapia	<i>Oreochromis aureus</i>	y
	Common carp	<i>Cyprinus carpio</i>	y
	Mayan cichlid	<i>Cichlasoma urophthalmus</i>	y

	Red lionfish	<i>Pterois volitans</i>	y
	Spotted tilapia	<i>Tilapia mariae</i>	y
	Walking catfish	<i>Clarias batrachus</i>	y
<b>Invertebrates</b>	African honey bee	<i>Apis mellifera scutellata</i>	y
	Air potato leaf beetle	<i>Liliocercis cheni</i>	y
	Australian cockroach	<i>Periplaneta australasiae</i>	y
	Bondar's nesting whitefly	<i>Paraleyrodes bondari</i>	y
	Cactus moth	<i>Cactoblastis cactorum</i>	y
	Croton scale		y
	Diaprepes root weevil	<i>Diaprepes abbreviatus</i>	y
	Dusky lady beetle, a.k.a., mealy bug destroyer	<i>Cryptolaemus montrouzieri</i>	y
	Ficus white fly	<i>Singhiella simplex</i>	y
	German cockroach	<i>Blattella germanica</i>	y
	Ghost ant	<i>Tapinoma melanocephalum</i>	y
	House fly	<i>Musca domestica</i>	y
	Imported red fire ant	<i>Solenopsis invicta</i>	y
	Mexican elongate twig ant	<i>Pseudomyrmex gracilis</i>	y
	Oriental cockroach	<i>Blatta orientalis</i>	y
	Rugose spiraling whitefly	<i>Aleurodicus rugioperculatus</i>	y
	Asian freshwater clam	<i>Corbicula fluminea</i>	y
	Channeled apple snail	<i>Pomacea canaliculata</i>	y
	Giant ramshorn	<i>Marisa cornuarietis</i>	y
	Green mussel	<i>Musculista senhousia</i>	y
	Green porcelain crab	<i>Pterolisthes armatus</i>	y
	Island apple snail	<i>Pomacea insularum</i>	y
	Mangrove box jelly	<i>Tripedalia cystophora</i>	y
	Mystery snail	<i>Pomacea bridgesii</i>	y
	Pleated sea squirt	<i>Stylea plicata</i>	y
	Red-rimmed melania	<i>Melanoides tuberculata</i>	y
	Sauerkraut bryozoan	<i>Zoobotryon verticillatum</i>	y
	Spiketopped apple snail	<i>Pomacea diffusa</i>	y
	Star tunicate	<i>Botryllus schlosseri</i>	y
	Wedge clam, Atlantic rangia	<i>Rangia cuneata</i>	y