Appendix A. Aquatic habitat prioritization methodology.

The following information provides details to the methodology used to identify and rank aquatic resources.

Data sources

Table A. Sources that provided data for this analysis.

Category	Data	Source Name	Source Agency
Conservation areas and sub-watersheds	Managed areas	Florida Managed Areas - March 2016	FNAI
	HUC-12 (sub-watersheds)	Florida NHD	USGS, DEP
Socio-Economic Importance	Boat Ramps	FWC Florida Boat Ramp Inventory	FWC
	Existing Recreational trails	Existing_trails_dec15	DEP
	Census Blocks	2010 US Census Blocks in Florida	U.S. Census Bureau
	Hunting Areas	Hunting Areas in Florida, 2015-2016	FWC-FWRI
	Great Florida Birding & Wildlife Trail	FWC, Office of Public Access and Wildlife Viewing Services (GFBT_Lakes_1mi_Clip)	FWC
Fish & Wildlife Populations	Wetlands/Streams	Florida NHD	USGS, DEP
	Stream Size (Strahler Order)	NHD PLUS Version2	USGS
	Avian Focal Areas	North American Bird Conservation Joint Ventures	USFWS
	Threatened, Endangered and Species of Greatest Conservation Need	Freshwater Obligate Species of Greatest Conservation Need [2017 list]	FNAI, FWC, USGS
Management Emphasis	Category I Invasive Aquatic/ Wetland Plants	Nonindigenous Aquatic Species Database, iMapInvasives	USGS, FNAI, FLEPPC
	Land Cover	Cooperative Land Cover Map	FWC, FNAI
	Impaired waters	Verified Impaired Waterbodies, Run 49, DEP - October 2014	DEP
	Roads	Multiple layers, 1 per county, TIGER/Line Shapefile, 2015	U.S. Census Bureau

Identification of publicly accessible wetlands

Publicly accessible freshwater forested and freshwater non-forested wetlands were determined by selecting the appropriate classes from the Cooperative Land Cover (CLC) layer V3.2 and clipping them by the March 2016 Florida Natural Inventory (FNAI) Florida managed areas layer. The CLC is a partnership between FNAI and Florida Fish and Wildlife Conservation Commission (FWC) to develop an improved statewide land cover map from existing sources and expert review of aerial photography. The Florida Managed Areas layer describes public lands that FNAI has identified as having natural resource value and that are being managed at least partially for conservation purposes. The term "Managed Area" refers to managed conservation lands.

Many land-cover classes in the CLC fall under two of the broader habitat types addressed in this guide: freshwater non-forested wetlands and freshwater forested wetlands. Polygons for these classes were dissolved to represent the area of each habitat (Table B).

Table B. Landcover classes of the CLC within forested and non-forested wetlands.

Freshwater Non-Forested Wetlands	
2100	Freshwater Non-Forested Wetlands
2110	Prairies and Bogs
2111	Wet Prairie
2112	Mixed Scrub-Shrub Wetland
2113	Marl Prairie
2114	Seepage Slope
2120	Marshes
2121	Isolated Freshwater Marsh
2122	Coastal Interdunal Swale
2123	Floodplain Marsh
2124	Slough Marsh
2125	Glades Marsh
2130	Marshes (Continued)
2131	Sawgrass
2140	Floating/Emergent Aquatic Vegetation
2141	Slough
2145	Duck Weed
2146	Water Lily
2150	Submergent Aquatic Vegetation
21111	Wiregrass Savanna
21112	Cutthroat Seep
21121	Shrub Bog
21211	Depression Marsh
21212	Basin Marsh
21231	Freshwater Tidal Marsh

Freshwater Forested Wetlands	
2200	Freshwater Forested Wetlands
2210	Cypress/Tupelo (including mix of species)
2211	Cypress
2212	Tupelo
2213	Isolated Freshwater Swamp
2214	Strand Swamp
2215	Floodplain Swamp
2220	Other Coniferous Wetlands
2221	Wet Flatwoods
2222	Pond Pine
2230	Other Hardwood Wetlands
2231	Baygall
2232	Hydric Hammock
2233	Mixed Wetland Hardwoods
2234	Titi Swamp
2240	Other Wetland Forested Mixed
22131	Dome Swamp
22132	Basin Swamp
22151	Freshwater Tidal Swamp
22211	Hydric Pine Flatwoods
22212	Hydric Pine Savanna
22311	Bay Swamp
22312	South Florida Bayhead
22321	Coastal Hydric Hammock
22322	Prairie Hydric Hammock
22323	Cabbage Palm Hammock
22331	Bottomland Forest
22332	Alluvial Forest
221312	Gum Pond
222111	Cutthroat Grass Flatwoods
222112	Cabbage Palm Flatwoods

Identification of publicly accessible streams

Stream flowlines were taken from the August 2016 National Hydrography Dataset (NHD). Streams were considered public if they were reachable from any public freshwater boat ramp. Streams were consolidated by sub-watersheds (HUC-12; HUC-12s are hydrologic unit codes developed by the USGS) (Table C).

Table C. Codes and stream types from the National Hydrography Dataset (August 2016).

Rivers and Streams	
33400	Connector
33600	Canal/Ditch
46000, 46003, 46006, 46007	Stream/River
55800	Artificial Path

Socio-Economic Importance

Accessibility

Accessibility was determined differently for streams than for conservation areas containing non-forested and forested wetlands. For streams within the sub-watershed, accessibility was assessed by straight line distance to a boat ramp. For forested and non-forested wetlands, accessibility was assessed by the number of unique roads occurring in the conservation area. Accessibility for lakes and all other analysis pertaining to lakes followed the process and procedures described in the Aquatic Restoration Prioritization and Evaluation Tool (ARPET; FWC 2012*b*).

Recreational trails

An existing recreational trail is defined as a paved or unpaved trail for hiking, biking, equestrian, multiple use, paddling, or motorized use (ATV, OHM, ROV) that is open to the public. Streams were buffered by one mile, and the sum of the miles of recreational trails within the buffer were summed and consolidated by sub-watershed (HUC-12). The miles of recreational trails existing within each conservation area were summed.

Population within a 50-mile radius

Stream sub-watersheds and conservation areas were buffered by 50 miles. The census blocks for March 2010 were each clipped by a 50-mile buffer. The new area for each census block was calculated and multiplied by the population density in that block to find the new population total for the census block occurring within the 50-mile buffer area. The populations of each census block within the buffer were totaled to give the population occurring within 50 miles of the stream sub-watershed or conservation area.

Fishing and hunting opportunities

Fishing was presumed to occur in all publicly-accessible streams (i.e., all streams occurring in this prioritization). Therefore, all streams were considered to have fishing opportunities. Any conservation area containing a stream was also considered to have fishing opportunities. Additionally, conservation areas that did not contain streams were manually inspected (based on satellite imagery) for the presence of fishing piers and an internet search was performed to check for fishing opportunities. The 2015-2016 “Hunting Areas in Florida” layer was used to determine hunting opportunities – any stream or conservation areas that intersected a hunting area (after visual assessment to determine whether the intersection was merely the result of slight differences in boundaries between the two layers) was considered to have hunting opportunities.

Great Florida Birding and Wildlife Trail

The Great Florida Birding and Wildlife Trail (GFBWT) is a statewide network of 515 sites spread throughout the state, created by FWC with support from the Florida Department of Transportation (FDOT) and the Fish and

Wildlife Foundation of Florida (FWFF), to develop wildlife viewing opportunities and encourage local communities to utilize their natural resources to stimulate the local economy (FWC 2012*b*). This 2,000-mile trail is designed to conserve and enhance Florida's wildlife habitats by promoting birding and wildlife viewing activities, conservation education and economic opportunity. Scoring is based on presence (1) or absence (0) of the GFBWT within the conservation area or sub-watershed.

Fish and Wildlife Resources

Conservation area size

Conservation area size was used to prioritize fish and wildlife populations. In general, larger size enhances habitat stability, increases the number of species that can potentially use the site, and increases potential for habitat complexity. Larger conservation areas are also most likely viewed as a priority by the public, local governments and other state agencies as they represent major resources for fish, wildlife, and people (FWC 2012*a*). Larger conservation areas are considered higher priority for aquatic habitat restoration and enhancement and are scored higher than smaller conservation areas. The acreage was calculated for each conservation area using the calculate geometry tool in ArcGIS 10.3.3. The appropriate acreage was used to determine the final ranking.

Wetland size within public lands

The acreage of each wetland type (freshwater forested wetland and freshwater non-forested wetland) was calculated separately for each conservation area. Total wetland sizes were calculated in acres for both wetland types using the calculate geometry tool in ArcGIS 10.3.3. The appropriate acreage was used to determine the final ranking.

Stream order in hydrography deals with the hierarchy of streams from the source (or headwaters) downstream. The headwaters are the first order; downstream segments are defined at confluences (two streams running into each other). At a confluence, if the two streams are not of the same order, then the highest numbered order is maintained on the downstream segment. At a confluence of two streams with the same order, the downstream segment gets the next highest numbered order (two second order streams flowing together form a third order stream). Divergences, such as braided streams, maintain the same order all the way through the braid; however, divergences that are not braided streams keep the upstream order number and follow the normal hierarchy further downstream. The NHD Plus includes the Strahler order of stream reaches; however, the NHD Plus is at a lower resolution than the NHD, meaning that many smaller streams are not included. The publicly accessible streams were joined to the NHD Plus layer to assign Strahler Order and any streams not included in the NHD Plus were assumed to have a Strahler Order of 1. The length of each stream segment was weighted by multiplying it by its Strahler order, and the weighted lengths were summed by sub-watershed (HUC-12).

Avian Focus Areas

Avian focus areas (AFA) within Florida were digitized from maps provided by the North American Bird Conservation Joint Ventures (Bird Conservation Area [BCR] 27 [panhandle Florida] and BCR 31 [peninsular Florida] for the following avian focal groups: wading bird, waterfowl, shorebird, seabird, and landbird. The Joint Ventures use state-of-the-art science to ensure that diverse habitat is available to sustain migratory bird populations for the benefit of those species, other wildlife, and the public. Scores were determined on a 1-point scale with 20% of 1 point awarded for each AFA occupied by each management area or sub-watershed.

Threatened, Endangered and Species of Greatest Conservation Need

Each species was assigned a value of 1 for presence, or 0 for absence, and the values for all species found within a one (1)-kilometer buffer around a site (conservation area for forested and non-forested wetlands or publicly-accessible stream) were summed. Species presence/absence was determined separately for freshwater forested wetlands versus freshwater non-forested wetlands, and the appropriate score was used

when determining the final rank. The resulting values were classified into five final classes, based on expert recommendation, using the Jenks natural breaks method (Jenks 1967, Jenks and Caspall 1971). The conservation areas or sub-watersheds with the highest number of Species of Greatest Conservation Need (from the 2017 list) within a region for that freshwater resource type ranked highest for enhancement, receiving a score of "1", and wetlands areas with no species receiving a "0". Freshwater resource areas with species counts between 0 and the highest count received a score between 0 and 1 on a sliding scale.

Species of Greatest Conservation Need, as well as state-Threatened and Endangered species were identified from the 2017 list of freshwater obligate species. Mammal occurrence localities were taken from the Florida Natural Areas Inventory (FNAI) 2007 Florida Element Occurrence Point Data Layer (FLEO). The Everglades Mink had no records in FLEO, therefore data was taken from A Species Action Plan for the Everglades Mink. Bird species occurrence localities were gathered from FLEO. Additional data was taken from the Marsh Bird Monitoring in Coastal and Freshwater Habitats of Florida 2012, wildlife habitat conservation needs in Florida (Endries et al. 2009), Florida wood stork nests (USFWS 2008), and Marsh Bird Monitoring in Coastal and Freshwater Habitats of Florida 2012. Amphibian and reptilian species occurrence localities were taken from point location data supplied by FWC biologist Kevin Enge in the Atlas of Amphibians and Reptiles in Florida 2011. Additional point location data were supplied by FLEO. Fish occurrence localities were drawn from an early version of the FWC Rare and Imperiled Fish in Florida: Point Locations, 2014. The database is a compilation of many sources of data including those collected by FWC staff, other agencies (e.g., USGS, EPA) and museum records. Additional localities were taken from FLEO. Mussel species occurrence localities were drawn from the Freshwater Mussels of Florida 2014 layers based on work by Jim Williams and Gary Warren (USGS unpublished data, FWC unpublished data). Additional mussel localities were taken from the FLEO. Crayfish species occurrence localities were obtained from FLEO, the Panama City Crayfish Surveys, 1999-2015 layer (FWC unpublished data) and the Black Creek Crayfish Surveys 1976-2014 (FWC unpublished data). Species are identified in Table D.

Management Emphasis

Riparian/freshwater buffer

Streams and freshwater forested and non-forested areas were buffered by 90 meters. Numerous riparian/freshwater buffer zone metrics were calculated but, for the composite index and assessment, only the field showing the percent of land cover classified as all human-altered uses (red bold text in Table E), excluding agriculture within 90 meters of a freshwater wetland or stream, was included and qualified the freshwater resource area as "in need of restoration, enhancement, or management."

Table E. Riparian and freshwater buffer zones within 90 meters of identified freshwater non-forested wetlands, freshwater forested wetlands, and rivers and streams. Areas identified as in need of restoration, enhancement, or management are **red**.

STATE	NAME_STATE	New_Class
18331	Cropland/Pasture	Agriculture
18332	Orchards/Groves	Agriculture
18335	Other Agriculture	Agriculture
18333	Tree Plantations	Agriculture
18333	Tree Plantations	Agriculture
18334	Vineyard and Nurseries	Agriculture
1700	Barren and Outcrop Communities	Barren and Outcrop Communities
1720	Upland Glade	Barren and Outcrop Communities
1640	Coastal Strand	Coastal Uplands
1600	Coastal Uplands	Coastal Uplands
1650	Maritime Hammock	Coastal Uplands
1670	Sand Beach (Dry)	Coastal Uplands
2400	**Cultural - Palustrine**	**Cultural – Palustrine**
1800	**Cultural - Terrestrial**	**Cultural – Terrestrial**
5300	Cultural – Estuarine	Estuarine

STATE	NAME_STATE	New_Class
5000	Estuarine	Estuarine
52111	Keys Tidal Rock Barren	Estuarine
5250	Mangrove Swamp	Estuarine
5240	Salt Marsh	Estuarine
5252	Scrub Mangrove	Estuarine
5220	Tidal Flat	Estuarine
7000	Exotic Plants	Exotic Plants
1880	**Bare Soil/Clear Cut**	**Extractive or Bare Soil/Extractive**
1870	**Extractive**	**Extractive or Bare Soil/Extractive**
22132	Basin Swamp	Freshwater Forested Wetlands
2231	Baygall	Freshwater Forested Wetlands
2211	Cypress	Freshwater Forested Wetlands
2210	Cypress/Tupelo (including Cy/Tu mixed)	Freshwater Forested Wetlands
22131	Dome Swamp	Freshwater Forested Wetlands
2215	Floodplain Swamp	Freshwater Forested Wetlands
2200	Freshwater Forested Wetlands	Freshwater Forested Wetlands
2200	Freshwater Forested Wetlands	Freshwater Forested Wetlands
2232	Hydric Hammock	Freshwater Forested Wetlands
2213	Isolated Freshwater Swamp	Freshwater Forested Wetlands
2220	Other Coniferous Wetlands	Freshwater Forested Wetlands
2230	Other Hardwood Wetlands	Freshwater Forested Wetlands
2214	Strand Swamp	Freshwater Forested Wetlands
2221	Wet Flatwoods	Freshwater Forested Wetlands
2221	Wet Flatwoods	Freshwater Forested Wetlands
2123	Floodplain Marsh	Freshwater Non-Forested Wetlands
2100	Freshwater Non-Forested Wetlands	Freshwater Non-Forested Wetlands
2121	Isolated Freshwater Marsh	Freshwater Non-Forested Wetlands
2120	Marshes	Freshwater Non-Forested Wetlands
2120	Marshes	Freshwater Non-Forested Wetlands
2110	Prairies and Bogs	Freshwater Non-Forested Wetlands
2110	Prairies and Bogs	Freshwater Non-Forested Wetlands
1120	Mesic Hammock	Hardwood Forested Uplands
1130	Rockland Hammock	Hardwood Forested Uplands
1140	Slope Forest	Hardwood Forested Uplands
1110	Upland Hardwood Forest	Hardwood Forested Uplands
1150	Xeric Hammock	Hardwood Forested Uplands
1214	Coastal Scrub	High Pine and Scrub
1200	High Pine and Scrub	High Pine and Scrub
1213	Sand Pine Scrub	High Pine and Scrub
1240	Sandhill	High Pine and Scrub
1210	Scrub	High Pine and Scrub
1231	Upland Pine	High Pine and Scrub
3200	Cultural - Lacustrine	Lakes
3000	Lacustrine	Lakes
3100	Natural Lakes and Ponds	Lakes
6000	Marine	Marine
1400	Mixed Hardwood-Coniferous	Mixed Hardwood-Coniferous
2300	Non-vegetated Wetland	Non-vegetated Wetland
183313	Improved Pasture	Pasture
1833121	Sugarcane	Pasture
1310	Dry Flatwoods	Pine Flatwoods and Dry Prairie
1330	Dry Prairie	Pine Flatwoods and Dry Prairie
1311	Mesic Flatwoods	Pine Flatwoods and Dry Prairie
1311	Mesic Flatwoods	Pine Flatwoods and Dry Prairie
1340	Palmetto Prairie	Pine Flatwoods and Dry Prairie

STATE	NAME_STATE	New_Class
1300	Pine Flatwoods and Dry Prairie	Pine Flatwoods and Dry Prairie
1320	Pine Rockland	Pine Flatwoods and Dry Prairie
1312	Scrubby Flatwoods	Pine Flatwoods and Dry Prairie
4200	Cultural – Riverine	Riverine
4100	Natural Rivers and Streams	Riverine
4000	Riverine	Riverine
1830	Rural	Rural
1500	Shrub and Brushland	Shrub and Brushland
1850	**Communication**	**Transportation, Communication and Utilities**
1840	**Transportation**	**Transportation, Communication and Utilities**
1860	**Utilities**	**Transportation, Communication and Utilities**
9100	Unconsolidated Substrate	Unconsolidated Substrate
1822	**High Intensity Urban**	**Urban**
1821	**Low Intensity Urban**	**Urban**

Impaired waters

The Verified Impaired Waterbodies, Run 49, DEP - October 2014 (DEP) layer contains polygons representing one several possible impairment parameters. These parameters were grouped into nine larger groups including: nutrients, conductivity, turbidity, pesticides/dioxin, un-ionized NH3, bacteria, metals, biological oxygen demand/dissolved oxygen and coliforms. Each of these source data layers was intersected with a data layer representing the resource type. The percentages of each resource type contaminated by each of the nine parameters were summed for each sub-watershed (HUC-12) or conservation area for a maximum total of 900%. Totals for forested wetlands and non-forested wetlands were calculated separately (Table F).

Table F. Impaired waters.

Group ID	Group Name	Parameters Included
21X	nutrients	"parameters" = 'nutrients (algal mats)' or "parameters" = 'nutrients (chlorophyll-a and historic chlorophyll-a)' or "parameters" = 'nutrients (chlorophyll-a)' or "parameters" = 'nutrients (historic chlorophyll-a)' or "parameters" = 'nutrients (historic tsi)' or "parameters" = 'nutrients (macrophytes)' or "parameters" = 'nutrients (tsi trend)' or "parameters" = 'nutrients (tsi)' or "paramgroup" = 'nutrients'
12 X	conductivity	"parameters" = 'specific conductance'
33	turbidity	"parameters" = 'turbidity' or "paramgroup" = 'turbidity' or "paramgroup" = 'dissolved solids'
1430	pesticides/dioxin	"parameters" = 'dioxin' or "parameters" = 'dioxin (based on fish consumption advisory)' or "parameters" = 'pesticide (in fish tissue)'
34	un-ionized NH_3	un-ionized nh_3
3 X	bacteria	bacteria, bacteria (in shellfish),or bacteria(shellfish harvesting classification)
5	metals	"paramgroup" = 'metals' or "paramgroup" = 'mercury (in fish tissue)' or "parameters" = 'copper' or "parameters" = 'iron' or "parameters" = 'lead' or "parameters" = 'mercury (based on fish consumption advisory)' or "parameters" = 'mercury (in fish tissue)' or "parameters" = 'nickel' or "parameters" = 'silver' or "parameters" = 'chloride'
01	BOD/DO	"paramgroup" = 'dissolved oxygen' or "parameters" = 'dissolved oxygen' or "parameters" = 'dissolved oxygen (bod)' or "parameters" = 'dissolved oxygen (nutrients and bod)' or "parameters" = 'dissolved oxygen (nutrients)'
9	coliforms	"parameters" = 'fecal coliform' or "parameters" = 'fecal coliform (2)' or "parameters" = 'fecal coliform (3)' or "parameters" = 'fecal coliform (5)' or "parameters" = 'fecal coliform (seas classification)'

Weighted Road Density

This data layer represents road density within a one (1)-mile buffer of streams/conservation areas, with roads weighted by number of lanes. Roads were obtained from the 2015 TIGER lines shapefiles. This data layer depicts road density per sub-watershed (HUC-12) unit for Florida using TIGER Roads 2015 data, and Florida Department of Transportation (FDOT) "surface width" data and "number of lanes" data from August 2016. The FDOT data enhances the original TIGER data by accounting for width of major road surfaces in the weighted calculation of road length. Multiplying the length of the roadway by a weighted width factor captured the larger footprint created by multi-lane roads. The following method was used to calculate weighted road density values:

1) Total road length for each area was calculated using only TIGER roads data.
2) The FDOT number of lanes was joined with FDOT surface width to attach a width to each roadway's number of lanes
3) The average road width per number of lanes was calculated e.g. 1 lane road averaged 12 feet wide, 2 lane road averaged 23 feet wide, etc.
4) After determining the average width per number of lanes a weighting scheme for roads of each width was developed. A road of width 18 feet (which corresponds to the average width of a 1 lane road) received a weighting factor of one. Roads of width 8-17 feet also received a weighting factor of one. The two-lane road averaged 21 feet wide. So roads from 19 to 20 feet wide received incremental weighting factors between 1 and 2. The three-lane road averaged 30 feet wide so roads from 22 to 29 feet wide received incremental weighting factors between 2 and 3. This process was repeated until reaching the upper limit of road width (98 feet) and number of lanes (8).
5) For this density analysis, all road segments not accounted for in the FDOT data were given a weighting factor of one.
6) Road length consisting of each surface width class for the FDOT roads for was multiplied by the weighting factor and summed by freshwater resource unit.
7) The unweighted length of FDOT roads in each resource unit was subtracted from the TIGER roads road length and the weighted FDOT road lengths were added to the difference, resulting in TIGER road length plus weighted FDOT road length.
8) Weighted road density was calculated as weighted road length/area in acres of the buffered resource unit.

Table G. Weighted road density variables.

Lanes	Width	Weight
1	4-18	1
Between 1 and 2	*19-21*	1.33-1.66
2	2 lanes - (21)	2
Between 2 and 3	22-30	2.11-2.88
3	3 lanes - (30)	3
4	4 lanes (31)	4
Between 4 and 8	32	4.14-7.9
8	96	8

Category I Invasive Aquatic/Wetland Plants

The list of included invasive aquatic plants were selected from the Florida Exotic Pest Plant Council's (FLEPPC) 2015 List of Invasive Plant Species (http://bugwoodcloud.org/CDN/fleppc/plantlists/2015/2015FLEPPCLIST-LARGEFORMAT-FINAL.pdf). The FLEPPC maintains a list of Category I invasive aquatic plants, defined as invasive exotics that are "altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic

severity or geographic range of the problem, but on the documented ecological damage caused" (FLEPPC 2015). This 2015 list was used to select only plants classified as category I from the USGS Nonindigenous Aquatic Species Program (NAS) and from the FL iMapInvasives run by FNAI. Data were included from the past 25 years (1991 through 2016) with the rationale that, if the plant was present in the past, then the possibility of the plant re-colonizing the same area exists. Each freshwater resource area was checked for the presence of each species, with a presence scored as a 1 and an absence scored as a zero. The conservation areas or sub-watersheds with the highest number of Category I species within a region for that resource type ranked highest for need for enhancement, receiving a score of "1", and resource areas with zero species receiving a "0". Freshwater resource areas with species counts between 0 and the highest count received a score between 0 and 1 on a sliding scale.

Table H. Invasive aquatic plants included in the analysis.

Scientific Name	**Common Name**
Acacia auriculiformis	earleaf acacia
Ardisia crenata	coral ardisia
Ardisia elliptica	shoebutton ardisia
Calophyllum antillanum	Santa Maria / mast wood / Antilles calophyllum
Casuarina equisetifolia	Australian-pine / beach sheoak
Casuarina glauca	suckering Australian-pine / gray sheoak
Colocasia esculenta	wild taro
Colubrina asiatica	lather leaf
Cupaniopsis anacardioides	carrotwood
Deparia petersenii	Japanese false spleenwort
Eichhornia crassipes	water-hyacinth
Hydrilla verticillata	hydrilla
Hygrophila polysperma	green hygro
Hymenachne amplexicaulis	West Indian marsh grass
Ipomoea aquatica	water-spinach
Ligustrum sinense	Chinese privet / hedge privet
Lonicera japonica	Japanese honeysuckle
Ludwigia hexapetala	Uruguay waterprimrose
Ludwigia peruviana	Peruvian waterprimrose
Luziola subintegra	Tropical American water grass
Lygodium japonicum	Japanese climbing fern
Lygodium microphyllum	Old World climbing fern
Melaleuca quinquenervia	melaleuca / paper bark
Mimosa pigra	catclaw mimosa
Nephrolepis brownii	Asian sword fern
Nephrolepis cordifolia	sword fern
Neyraudia reynaudiana	Burma reed / cane grass
Nymphoides cristata	crested floating heart
Panicum repens	torpedo-grass
Pennisetum purpureum	Napier grass / elephant grass
Pistia stratiotes	water-lettuce
Psidium cattleianum	strawberry guava
Psidium guajava	guava
Rhodomyrtus tomentosa	downy rose-myrtle
Ruellia simplex	Mexican petunia
Salvinia minima	water spangles
Sapium sebiferum	popcorn tree / Chinese umbrella tree
Schinus terebinthifolia	Brazilian-pepper
Scleria lacustris	Wright's nutrush
Senna pendula var. glabrata	climbing cassia / Christmas cassia / Christmas senna
Solanum tampicense (= S. houstonii)	wetland nightshade / aquatic soda apple
Tectaria incisa	incised halberd fern

Scientific Name	Common Name
Thespesia populnea	seaside mahoe
Tradescantia fluminensis	small-leaf spiderwort
Urena lobata	Caesar's weed
Urochloa mutica	Para grass

Final Ranking

Individual scores for each variable for each freshwater resource type for conservation areas with non-forested wetlands, conservation areas with forested wetlands, and stream sub-watersheds were scaled to fall between 0 and 1. These scores were summed across all variables. Scores were grouped by region, and the Jenk's natural breaks method available in ArcGIS 10.3 (Jenks 1967, Jenks and Caspall 1971) was used to determine the rank (low [1], medium low [2], medium [3], medium high [4] and high [5]) of each frehwater resource area in that region. Totals for conservation areas with forested wetlands and those with non-forested wetlands were calculated separately. Analysis for lakes was conducted within the ARPET format (FWC 2012*b*) and ranked within regions using the same ranking classification.

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