

In the Weeds: What Should we Do About Invasive Plant Species in Florida?





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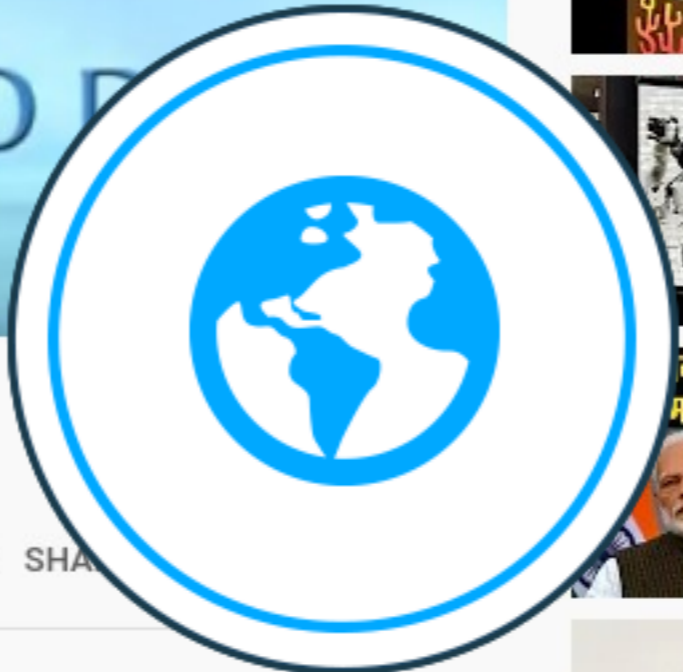
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Open Ended Question

Why do you think Australian Pines were a problem for turtles?

What Happened to the Turtles on Keewaydin Island?

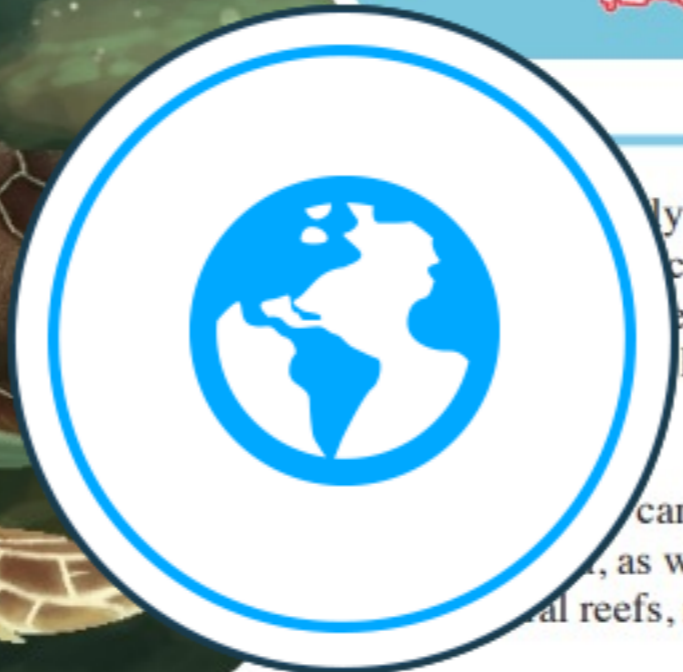


Loggerhead Sea Turtle

Caretta caretta



Distribution ■



ly 12-day intervals. An average
cludes 115 eggs, and the incubation
between 49 to 68 days (averaging at
hatchlings usually emerge at night.

can be found hundreds of miles into
, as well as in bays, lagoons, navigation
al reefs, rocky areas and shipwrecks.

Diet

These turtles are primarily carnivorous. Their diet includes crabs and other crustaceans, echinoderms, gastropods and fish.

<https://www.fws.gov/southeast/pdf/fact-sheet/loggerhead-sea-turtle-english.pdf>

Description

The loggerhead sea turtle is an unfamiliar sea turtle species in Puerto Rico. Adult turtles can reach a length of approximately 3 feet (1 meter) long and an average weight of 200 pounds (91 kilograms). It is characterized by its large head. Its rather peculiar

in temperate, subtropical waters around the Atlantic Ocean, the Mediterranean Sea, the Black Sea, and the Pacific and Indian Oceans. The beaches with the most nests are found in Australia, the Sultanate of Oman in Asia, and in southeast US. There are no known nesting sites in Puerto Rico, or in the US Virgin Islands. As a matter of fact, the only sightings of the loggerhead sea

Weed alert

Australian pine

(*Casuarina species*)



Australian pines in the Florida Keys



Australian pine

Species of *Casuarina* were introduced from Australia to Florida during the 1890s. Although they are called pines, these plants are angiosperms. Australian pines were widely planted in Florida for windbreaks around canals, agricultural fields, and houses. Habitats disturbed by both human activity and natural events seem particularly vulnerable to Australian pine. Because these trees are resistant to salt spray, they have invaded large areas of southeastern and southwestern Florida.



Why Australian pine must

<https://myfwc.com/media/3218/invasiveplants-australianpine.pdf>

spoils has been deposited, and beaches where a storm has destroyed existing vegetation. Australian pine trees have also invaded South Florida's hammock and tree island communities in the Everglades. These trees outcompete native vegetation by producing a dense leaf litter beneath them. Because of shallow root systems, Australian pine trees tend to uproot and topple during high winds and pose a significant hazard to coastal



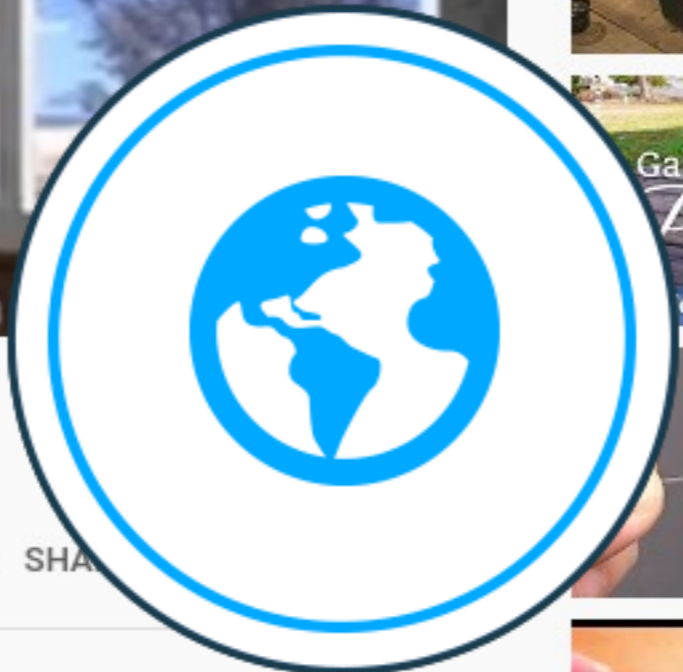
Australian pine forest with no understory vegetation.



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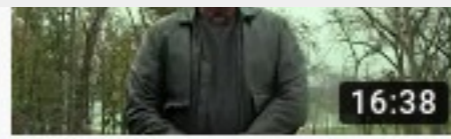


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Open Ended Question

What could be done about this problem?



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Warm weather and sandy dunes made it a perfect place for nesting.
Hatchlings could easily make their way to the ocean from these beaches.

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Open Ended Question

How was the problems with Australian Pines was handled?

Open Ended Question

1. Why are invasive species problematic for Florida's citizens and wildlife? 2. What are the economic impacts that invasive species can have on the economy of Florida? 3. Do you think there are other invasive plant species in Florida? How many? Where do you think they can be found?

On the next slide is a link to Florida Fish and Wildlife Conservation Commission.

Watch video about hydrilla in Lake Panasoftkee.

Prepare to discuss the issues with hydrilla and how it impacted the health of the lake and wildlife as well as economic impacts on the area.



Florida Fish and Wildlife Conservation Commission



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Invasive Plant Management



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<https://myfwc.com/wildlifehabitats/habitat/invasive-plants/>

aquatic plants pose a significant threat to human welfare by impeding flood control and affecting recreational use of waterways and its associated surrounding economy. The Invasive Plant Management Section is the lead agency in Florida responsible for coordinating and funding two statewide programs controlling invasive aquatic and upland plants on public conservation lands and waterways throughout the state. The section also ensures that beneficial native aquatic plants in

Open Ended Question

- 1. Why are Invasive Plant Species Harmful?**
- 2. What were the issues with hydrilla?**
- 3. How did hydrilla impact the health of the lake and wildlife?**
- 4. What was the economic impact of hydrilla on the area?**

Decisionomics: What Should Be Done About Invasive Plant Species in Florida



Florida Backyard Protection Society What's In Your Backyard?

Wanted:	Research teams to determine which invasive plant species is the most problematic for Florida's citizens and wildlife
Why:	Invasive plant species in Florida damage ecosystems, hurt wildlife, and cost the citizens of Florida millions of dollars.
Alternatives:	Conon grass, Japanese climbing fern, Old world climbing fern, Water hyacinth, and Water lettuce
Criteria:	Distribution across land, need for management, environmental damage
Task:	Research each type invasive plant to determine which is the most damaging to Florida's environment. Rank them from first to fifth, with the first choice being the most damaging plant.
Next Step:	Report your findings to the Florida Backyard Protection Society

Matrix for Research

		Distribution	Why it needs to be managed	Impact on animals and humans
Congon grass				
Japanese climbing fern				
Old world climbing fern				
Water hyacinth				
Water lettuce				

Weed alert

Cogon grass (*Imperata cylindrica*)

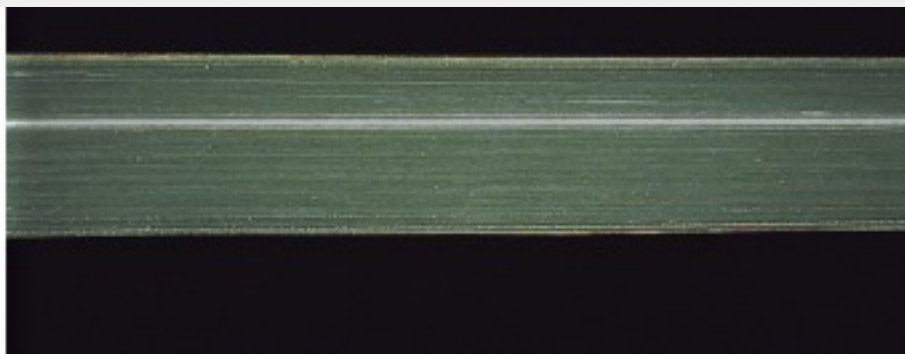
Cogon grass is considered to be one of the top 10 worst weeds in the world. This perennial grass from Southeast Asia was introduced to the U.S. in 1911 near Mobile, Ala. as forage material in a shipment of plants from Southeast Asia and into Mississippi as a forage crop in the 1920s. Later it was introduced into Florida for forage and soil stabilization. Cogon grass was found to be unsuitable for forage, and it rapidly spread and displace desirable native plants, outweighing any soil erosion control benefits.

Cogon grass has extensively invaded areas such as roadsides and fallow pastures throughout North and Central Florida but also in relatively undisturbed sandhill and pine flatwoods. Cogon grass forms dense stands that displace



Ripe Brazilian pepper berries produce a toxic effect on native wildlife.

<https://myfwc.com/media/3221/cogon.pdf>



pattern, cogon grass degrades native gopher tortoise and indigo snake habitats in Florida.

Cogon grass stands can create a severe fire hazard especially when mixed in with other volatile fuels such as young pine trees. Fires occurring in cogon grass infested woods have significantly

Weed alert

Water-hyacinth (*Eichhornia crassipes*)



A beautiful flower, but a major invasive weed species since the late 1890s.

Water-hyacinth

This native of South America is now considered a major weed species in 90 countries. The floating water-hyacinth was introduced in the 1880s and covered more than 17 million acres of land and navigable rivers by the early 1900s. Management efforts coordinated by the Environmental Protection Agency and the U.S. Army Corps of Engineers have reduced water-hyacinth to less than 1% of its former range.

Water-hyacinth is among the highest of any aquatic plant. Its populations can double in 12 days by sending off short runner stems (daughter plants). Water-hyacinth also reproduces by seeds.



Why water-hyacinth must be managed:

Water-hyacinth blocks waterways and limits boat traffic, recreation, flood control and wildlife use.



<https://myfwc.com/media/3222/hyacinth.pdf>

Water-hyacinth is a species that are important to wildlife.

Environmental damage caused by water-hyacinth populations:

- Water-hyacinth mats lower dissolved-oxygen concentrations, damaging fish populations.



Weed alert

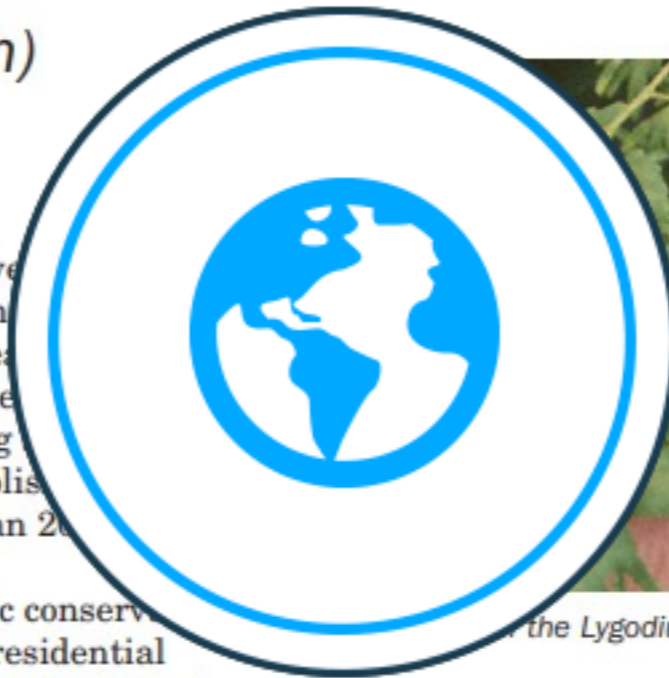
Old World climbing fern

(*Lygodium microphyllum*)

Old World climbing fern

Old World climbing fern is an aggressive invasive fern of moist habitats in South Florida. This rapidly spreading fern invades new areas without the need of habitat disturbance and often dominates native vegetation by forming a dense canopy. The fern, first found to be established in Martin County, now infests more than 20 counties in South Florida.

Although primarily a weed of public conservation areas, Old World climbing fern infests residential landscapes, horticultural nurseries, rangelands and other managed lands near infested natural vegetation. The fern's ability to grow up and over trees and shrubs and to form dense



the *Lygodium microphyllum*'s convoluted leaflets

Why the Old World climbing fern must be managed:

- Highly invasive in natural areas.

<https://myfwc.com/media/3225/invasiveplants-lygodium.pdf>



diversity. Old World climbing fern can grow in bald cypress stands, pine flatwoods, wet prairies, saw grass marshes, mangrove communities and Everglades tree islands. Some Everglades

- native tree canopies that normally wouldn't burn.
- The fern is rapidly spreading in South Florida's public conservation lands.



Weed alert

Water-lettuce

(pistia stratiotes)



Water-lettuce

Water

This water-lettuce is considered to be one of the most successful biological regions of the world. In Florida, its introduction is linked to early shipping routes from South America. Today, water-lettuce is found in the southern portions of the state, but new populations are being found in North Florida's spring-fed rivers. Despite statewide management efforts, water-lettuce populations are increasing in low population densities. Under ideal conditions, water-lettuce can double its population in 2 weeks. Seed production makes this plant resilient to adverse conditions such as freezing temperatures and drought.



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Why water-lettuce must be managed:



<https://myfwc.com/media/3230/invasiveplants-waterlettuce.pdf>

Water-lettuce can crowd out native submersed plant species and can uproot native emergent plants that are important to wildlife.

Environmental damage caused by water-lettuce populations:

- Water-lettuce mats can lower dissolved oxygen concentrations reducing aquatic life.



Weed alert

Japanese climbing fern

(*Lygodium japonicum*)

Japanese climbing fern

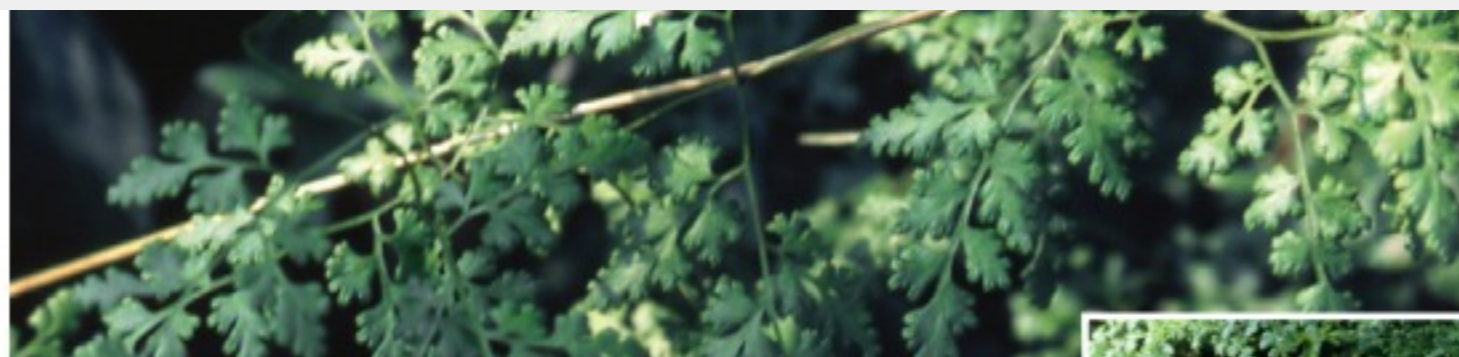
Japanese climbing fern is a highly invasive plant infesting public conservation lands in West Florida and present in much of the U.S. It grows in moist or dry woods, along rivers, and in various disturbed sites. It grows in sun and shade. Like Old World climbing fern (*microphyllum*), Japanese climbing fern



to the tops of trees where its dense growth can cut and eliminate the vegetation below. It was introduced into Florida as an ornamental plant. Japanese climbing fern appears to be common in North and West Florida, but also a significant threat to Central Florida.



<https://myfwc.com/media/3224/invasiveplants-japaneseclimbingfern.pdf>



Left and Below: Fertile leaflets of Japanese climbing fern

Open Ended Question

Make a decision. 1. Rank each invasive species from first to fifth. (Which is the worst threat to Florida? The second worse, etc.?) 3. Write a letter to the Florida Backyard Protection Society explaining how you made your rankings.