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## SILENT TAKEOVER! Invasive Plants in Florida

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# SILENT TAKEOVER!

## **Invasive Plants in Florida**

Written by Katherine Harris, Linda Walters, Samantha Yuan

Illustrated by Owen Fasolas



**This book is dedicated to the memory of  
Dr. Michael D. Netherland, Research Scientist, US  
Army Engineer Research and Development Center,  
who had a special talent of putting complex  
botanical information and knowledge into easily  
understandable writing and conversation.  
He had a passion to mentor and educate the next  
generation and is sorely missed.**



## **About the Authors:**

Katherine Harris received her bachelor's degree in biology and a minor in studio art from the University of Central Florida in 2018. Her involvement in UCF's Coastal and Estuarine Ecology Lab and her background in art helped develop her passion for environmental education. She interned at the Smithsonian Institution and Georgia Aquarium and plans a career that combines science and art to create compelling ways of engaging and educating people on environmental problems. This book was one of Harris' first opportunities to educate children and families on a pressing environmental problem: invasive plants.

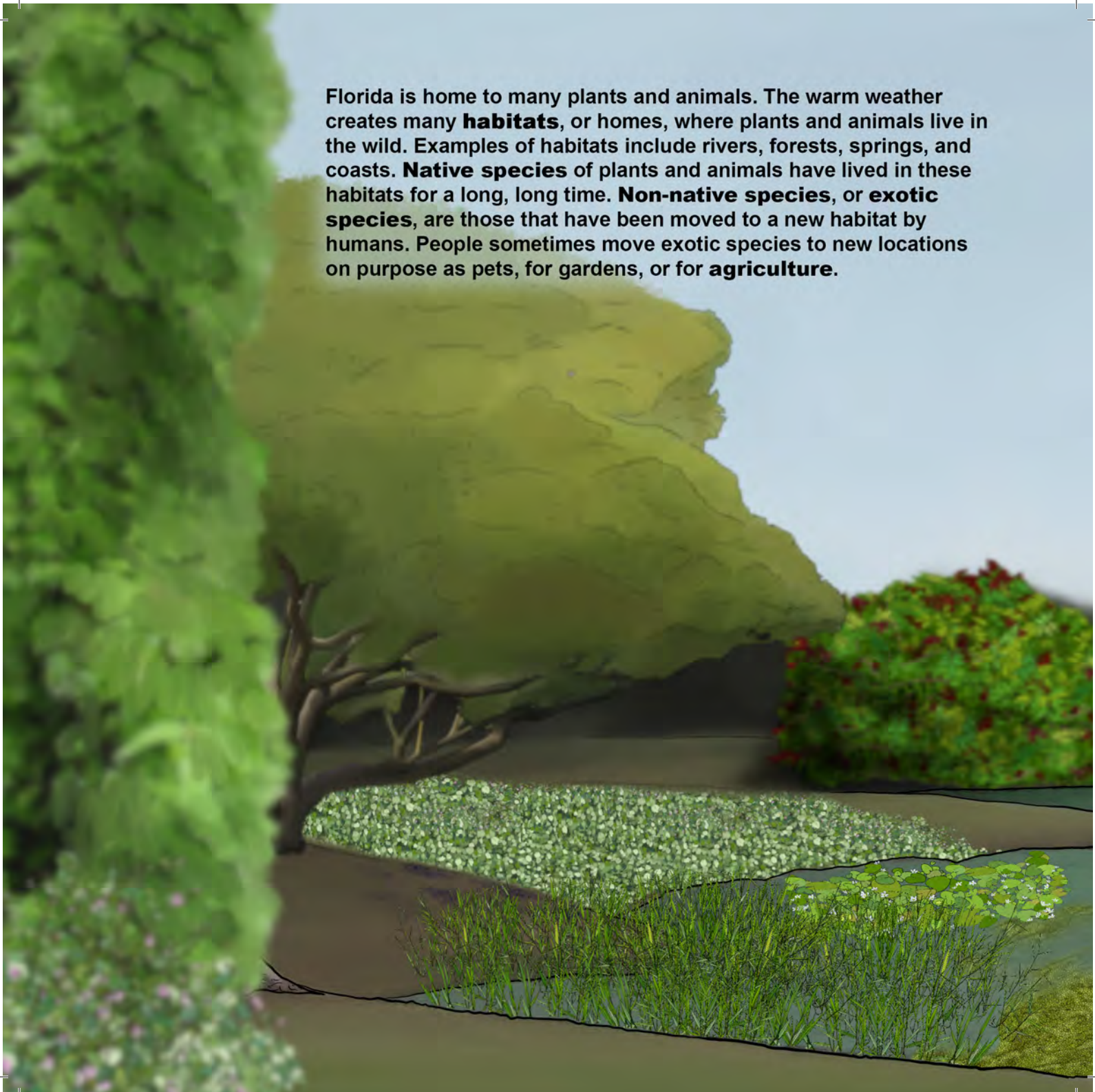
Dr. Linda Walters is a Pegasus Professor of Biology at the University of Central Florida, where she has been on the faculty for 22 years. She runs UCF's Coastal and Estuarine Ecology Lab and her research focuses on ecology, conservation and restoration. With funding from numerous state and federal agencies, Walters has developed eight other children's storybooks on marine conservation. All have been distributed at no cost to interested educators and families to help improve our understanding of the environment and how we can work together to improve Florida for future generations.

Samantha Yuan joined the Invasive Plant Management Section (IPMS) of the Florida Fish and Wildlife Conservation Commission in 2016 as the Research and Outreach Manager. She is responsible for administering and contracting all of the research and outreach projects that the IPMS oversees. Yuan holds bachelors and masters degrees in Biology from University of Central Florida. She is always looking for new outreach ideas and opportunities if you have one to share.

## **About the Illustrator:**

Owen Fasolas is an artist and designer from Winter Park, Florida. Specializing in illustrations and digital design, Fasolas works to bring local businesses, wildlife, sports and entertainment to life through his art.

Florida is home to many plants and animals. The warm weather creates many **habitats**, or homes, where plants and animals live in the wild. Examples of habitats include rivers, forests, springs, and coasts. **Native species** of plants and animals have lived in these habitats for a long, long time. **Non-native species**, or **exotic species**, are those that have been moved to a new habitat by humans. People sometimes move exotic species to new locations on purpose as pets, for gardens, or for **agriculture**.



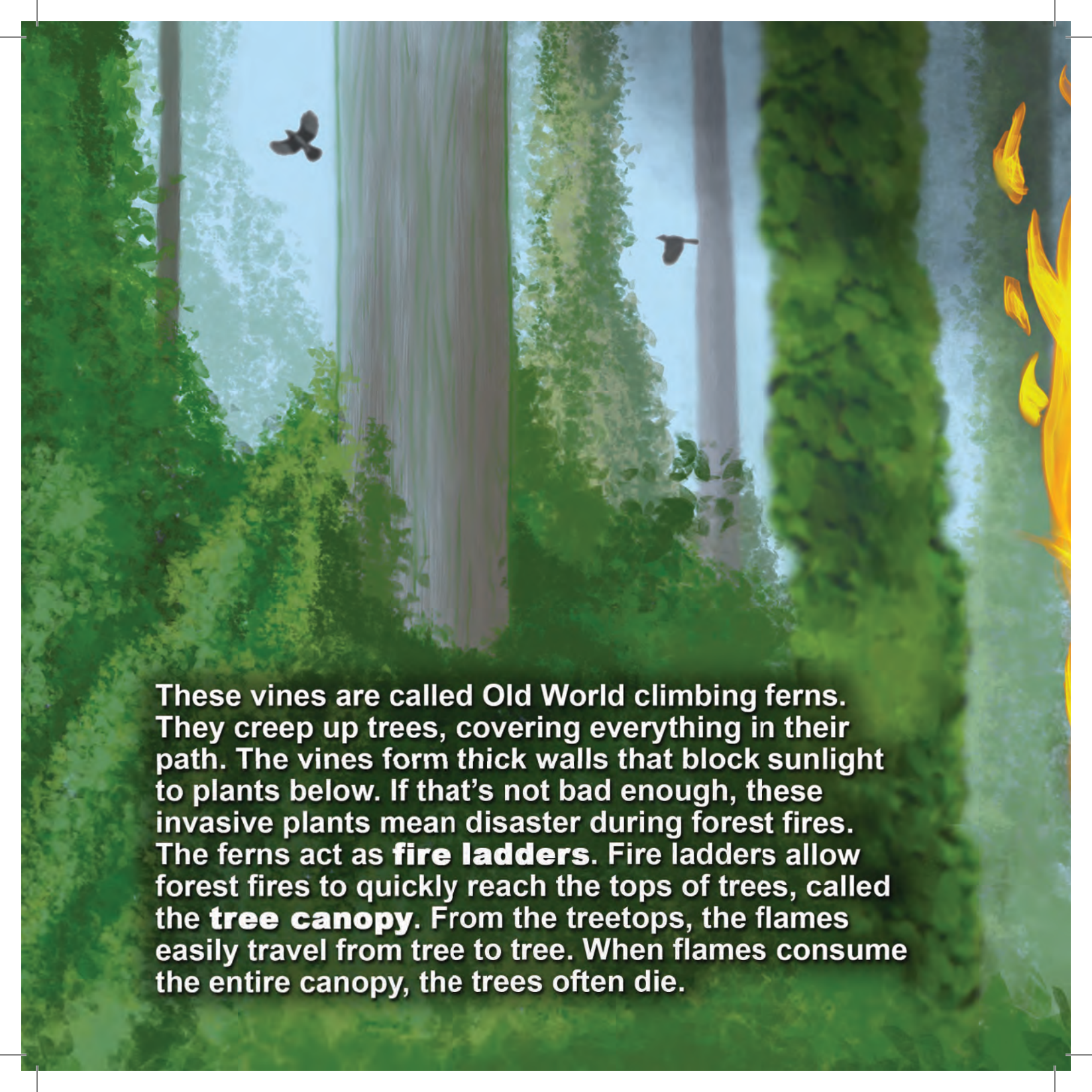


Other introductions are accidental and occur when humans unknowingly move a plant or animal to a new location. For example, seeds might stick to your shoes when you go hiking or animals might attach to the bottom of your boat. If the seeds or animals survive, they may become established in the new location. A plant or animal becomes an **invasive species** if it grows and survives in the new habitat better than the native plants and animals. Florida has hundreds of invasive species, some of which may even be found in your backyard!

Plants often look harmless, but what happens if no one takes action to remove the invasive species? Silent takeover! Invasive plants can dominate native plants and animals. With nowhere else to go, native plants and animals may even become endangered. If invasive plants are left uncontrolled for too long, they could take over all of Florida. On the following pages, we describe some of Florida's current invasive plants, the problems they cause, and ways you can help reduce these and future invasions.








These vines are called Old World climbing ferns. They creep up trees, covering everything in their path. The vines form thick walls that block sunlight to plants below. If that's not bad enough, these invasive plants mean disaster during forest fires. The ferns act as **fire ladders**. Fire ladders allow forest fires to quickly reach the tops of trees, called the **tree canopy**. From the treetops, the flames easily travel from tree to tree. When flames consume the entire canopy, the trees often die.







A detailed illustration of a rural scene. In the background, a black and white cow peeks over a three-rail wooden fence. The field is filled with tall green grass and several large, feathery white seed heads of invasive grasses. To the left, a red octagonal stop sign with the word 'STOP' in white is partially obscured by the vegetation. The sky is blue with light clouds.


It's just grass, so it must be harmless, right? Well, not exactly. Cogon, natal and torpedo grasses are all fast-growing, invasive plants in Florida. People brought these grasses to Florida from Asia and Africa to feed cattle. Farmers soon discovered the cattle did not prefer these grasses. By then it was too late. The grasses were growing out of control.



These invasive grasses can overgrow pastures, forests and roadsides. In some places, the grasses grow tall enough to cover road signs. This can make driving dangerous. Torpedo grass has likewise taken over many of Florida's native freshwater habitats.





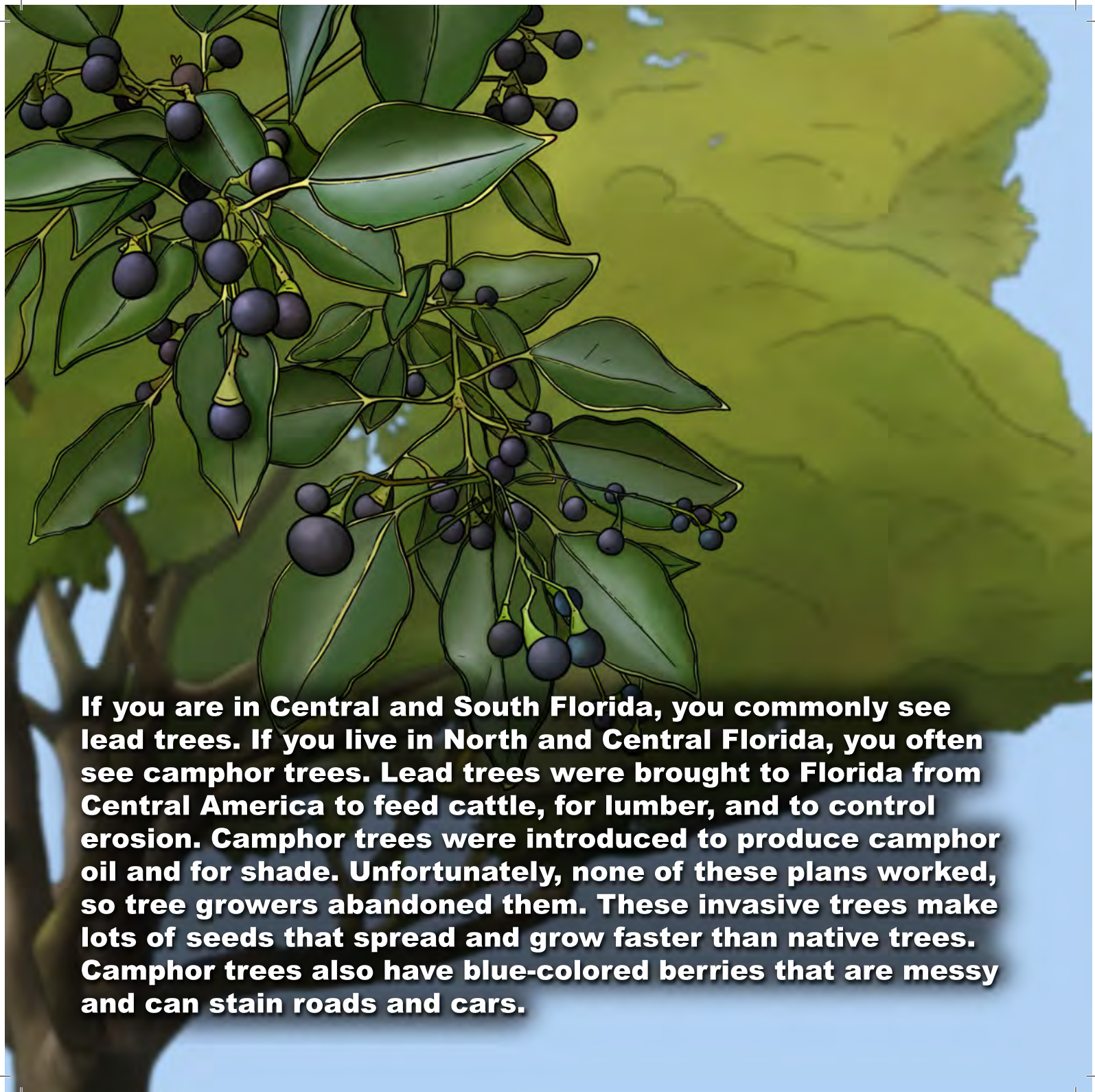
A detailed illustration of a light brown rabbit with long ears, partially hidden within a dense thicket of Caesar's weed. The plant features large, rounded green leaves and numerous small, five-petaled pink flowers. Some of the plant's seed heads are visible, showing their characteristic spiky, brown, hook-like structure. The background is a soft-focus view of more greenery and a hint of a greyish ground surface.

Caesar's weed is an invasive plant that takes over crop fields and meadows where cattle graze. It has pretty, pink flowers. Not so pretty are the spiky seeds that hook onto clothes, shoes and animal fur. Thus, this plant is called a **hitchhiker weed**. Its seeds can hitch a ride on any animal that passes by. This allows the seeds to spread quickly to new places.









**If you are in Central and South Florida, you commonly see lead trees. If you live in North and Central Florida, you often see camphor trees. Lead trees were brought to Florida from Central America to feed cattle, for lumber, and to control erosion. Camphor trees were introduced to produce camphor oil and for shade. Unfortunately, none of these plans worked, so tree growers abandoned them. These invasive trees make lots of seeds that spread and grow faster than native trees. Camphor trees also have blue-colored berries that are messy and can stain roads and cars.**









The Brazilian pepper tree is one of the most aggressive invasive plants in Florida. It was brought to Florida as an **ornamental plant** because during winter it has bright red berries surrounded by green leaves. For this reason, it is nicknamed Florida holly.





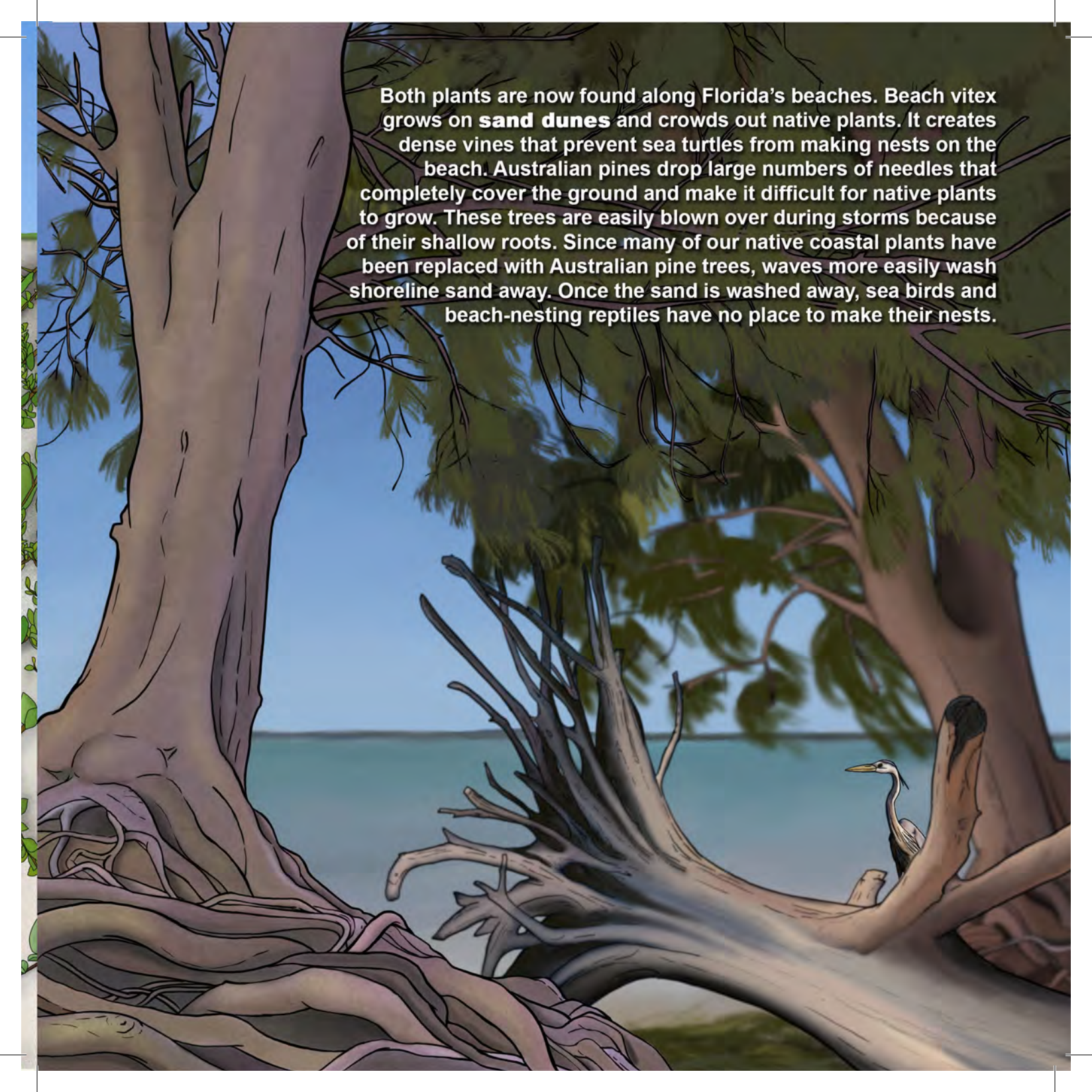
Brazilian pepper trees can commonly be seen along roadways and coastal areas. The seeds are transported by cars, birds, winds, and water currents. Handle this invasive plant with care because it can cause an itchy rash similar to poison ivy. Brazilian pepper trees can take over native mangrove and pine forests. Without mangroves and pine forests, many native plants and animals would be left homeless.



Both beach vitex and Australian pines were brought to the United States to help protect our native habitats. People brought beach vitex to North Carolina to help hold down beach sand. Australian pines were brought to Florida and planted along coasts to protect citrus groves from strong winds. Scientists realized, however, that native plants are much better at doing both of these things.





An illustration of a coastal scene. In the foreground, a large tree with thick, gnarled roots dominates the left side. To its right, a fallen tree trunk lies on the ground. In the background, a body of water is visible under a clear blue sky. A white bird with a long neck and a black cap is perched on a branch of the fallen tree. The text is overlaid on the upper right portion of the image.

Both plants are now found along Florida's beaches. Beach vitex grows on **sand dunes** and crowds out native plants. It creates dense vines that prevent sea turtles from making nests on the beach. Australian pines drop large numbers of needles that completely cover the ground and make it difficult for native plants to grow. These trees are easily blown over during storms because of their shallow roots. Since many of our native coastal plants have been replaced with Australian pine trees, waves more easily wash shoreline sand away. Once the sand is washed away, sea birds and beach-nesting reptiles have no place to make their nests.





**Feathered  
Mosquitofern**



**Giant  
Salvinia**

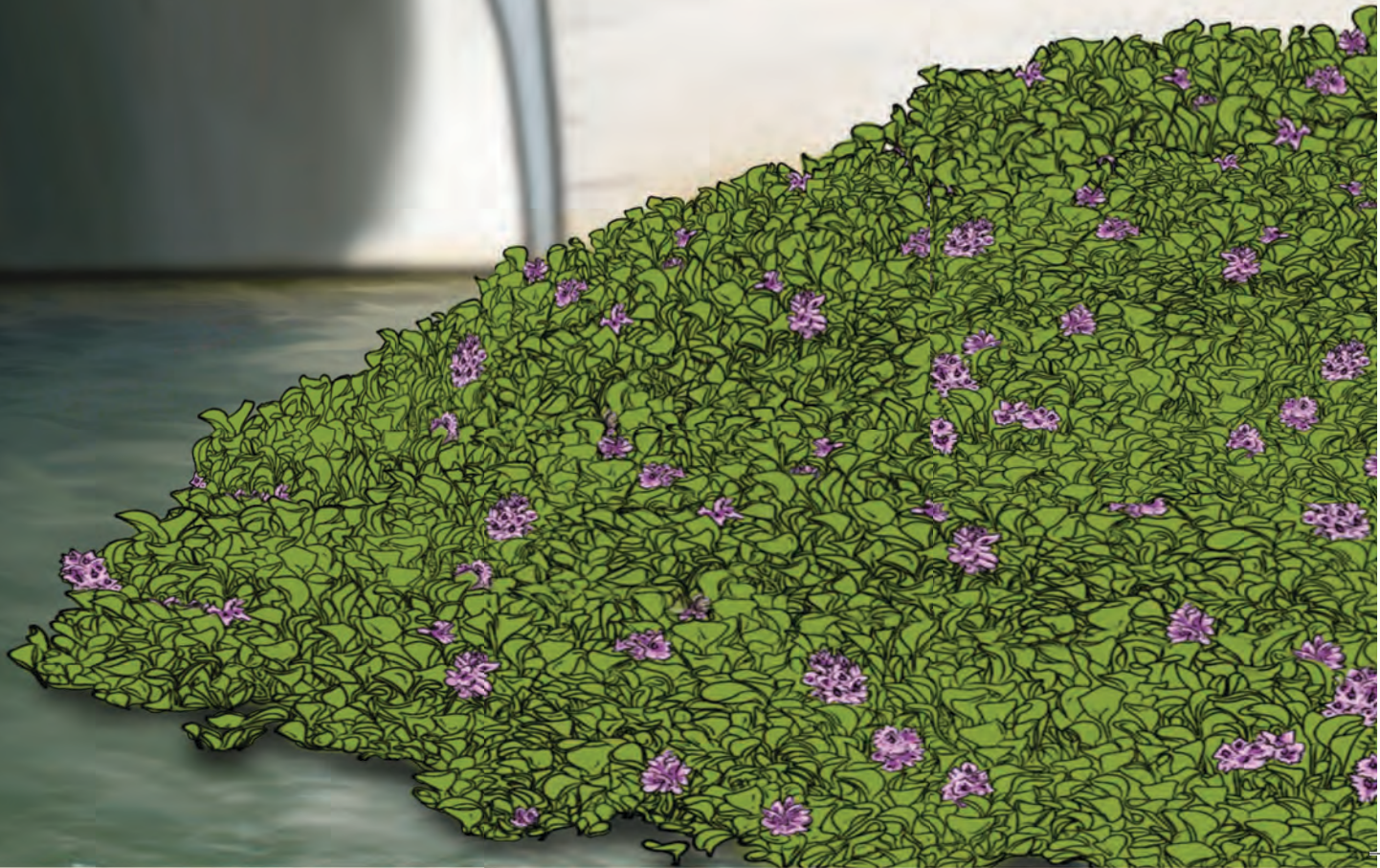


**Water  
Hyacinth**

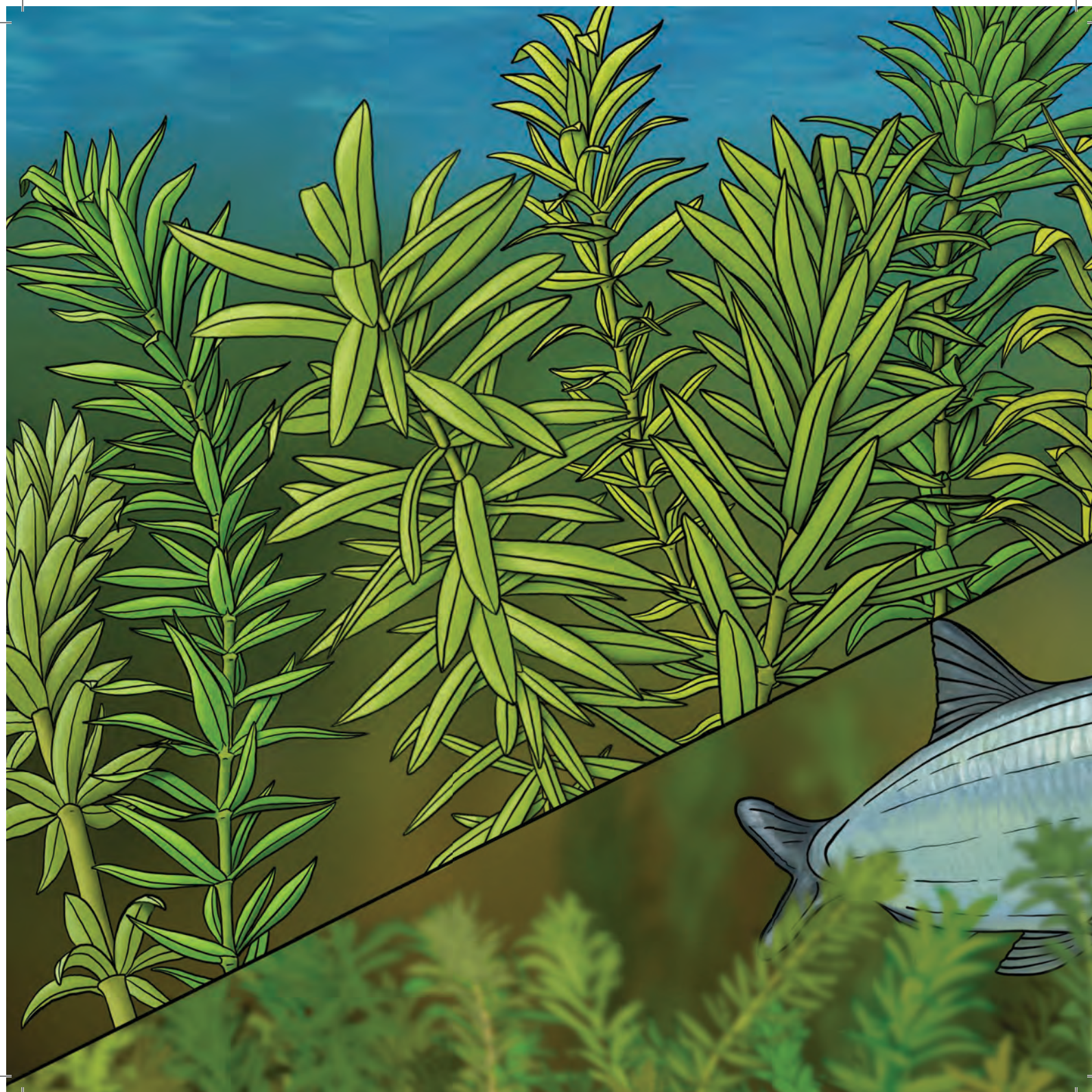




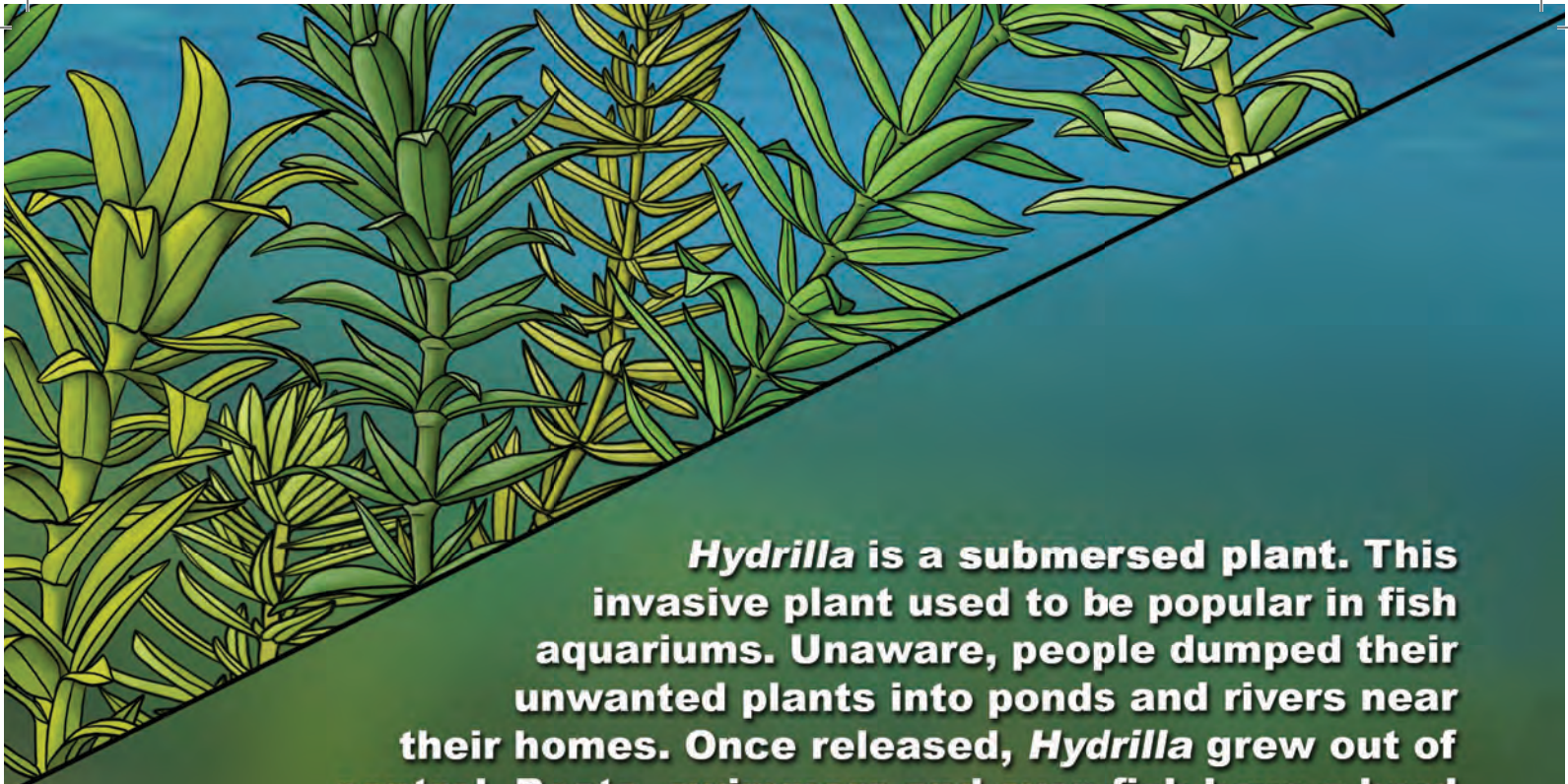
Giant *Salvinia*, water hyacinth, and feathered mosquitofern are all floating plants. **Floating plants** float on the surface of the water and are not attached to the bottom. These plants make dense mats of leaves. The mats prevent sunlight and oxygen from reaching below the surface, harming fish and native underwater plants that need oxygen and sunlight in order to survive. Mats can even become so large that they block canals and rivers. By blocking the water's natural flow, these plants often cause flooding. Large mats can even push hard enough on docks and bridges to damage them.












***Hydrilla* is a submersed plant. This invasive plant used to be popular in fish aquariums. Unaware, people dumped their unwanted plants into ponds and rivers near their homes. Once released, *Hydrilla* grew out of control. Boats, swimmers and even fish have a hard time moving through thick mats of *Hydrilla*.**









An illustration showing several plants with thick, rounded green leaves and tall, slender stems topped with clusters of small pink flowers. The plants are shown both above and below a horizontal line representing the water surface. The stems are reddish-brown. The background is a clear blue sky.

Roundleaf toothcup and crested floating heart are two funky invasive plants found in Florida's lakes and rivers. Roundleaf toothcup can grow completely underwater as a **submersed plant**, or rooted with their leaves reaching above the surface of the water as an **emergent plant**. Crested floating heart is a **floating-leaved plant**, which is a type of emergent plant. Both of these invasive plants prevent sunlight from reaching the native plants under the water. This is bad for the underwater plants that need sunlight to grow.



With so many silent invaders in Florida, why haven't we been completely overrun by them? Fortunately, scientists and **resource managers** have come up with many ways to control invasive plants. With good control measures that focus on plant biology, lake chemistry and plant removal, we can continue to enjoy Florida's wild and native habitats.





Even with scientists and resource managers working on these issues every day, they need your help to stop the spread of invasive plants. Here are a few things you can do to make a difference:

- Never release unwanted plants or plant fragments into the wild. Likewise, never release any animals, including pets, into the wild. This includes plants and pets you have purchased or were given to you. Florida Fish and Wildlife Conservation Commission hosts amnesty days at which you can turn in pets that you can no longer keep.
- If you are removing invasive plants from your yard, follow local yard waste removal plans rather than placing plants in **compost**. Some invasive plants readily regrow from small fragments.
- Another great thing to do is to plant a lot of native species in your yard. Not only will they look beautiful, but native birds, bees and butterflies need them to survive.

To learn more about invasive plant management go to:  
[myfwc.com/wildlifehabitats/habitat/invasive-plants](http://myfwc.com/wildlifehabitats/habitat/invasive-plants)





## **Glossary**

**Agriculture** – The practice of cultivating soil, growing crops, and raising livestock.

**Compost** – Dead plant material (examples: tree leaves, vegetable scraps from kitchen) that is placed in containers or outdoor piles to break down through the activities of worms and microorganisms. With time, this material can be used as a fertilizer.

**Emergent plant** – An aquatic plant that is rooted along shorelines or shallows of a body of water with stems and leaves that grow above the water's surface.

**Fire ladder** – A plant that allows a forest fire to reach the tops of trees in a forest.

**Floating plant** – An aquatic plant that floats freely and is not anchored.

**Floating-leaved plant** is rooted in the bottom sediment and has floating leaves on the surface of the water.

**Habitat** – A place in the environment where an animal or plant lives; a plant or animal's home.

**Hitchhiker weed** – A plant (native, exotic or invasive) with seeds that have hooks or sticky substances surrounding the seeds. The hooks or glue enable the seeds to stick on clothing, shoes, or animal fur, spreading the seeds far from the parent plant.

**Invasive species** – A plant or animal that has been transported by people to a new habitat and negatively impacts that habitat.

**Native species** – A plant or animal that historically has naturally occurred in a habitat.



**Non-native (exotic) species** – A plant or animal that has been transported by people to a new habitat, but does not necessarily negatively impact that habitat.

**Ornamental plant** – A plant that is grown as a decoration in homes or gardens.

**Resource manager** – A person who maintains environmental resources and manages the impact that people have on the environment.

**Sand dunes** – Mounds or hills of sand that form along a beach.

**Submersed (submerged) plant** – An aquatic plant that grows primarily below the water's surface. Some species are rooted on the bottom of a lake or river, while others are not attached.

**Tree canopy** – The uppermost layer of a tree or group of trees.

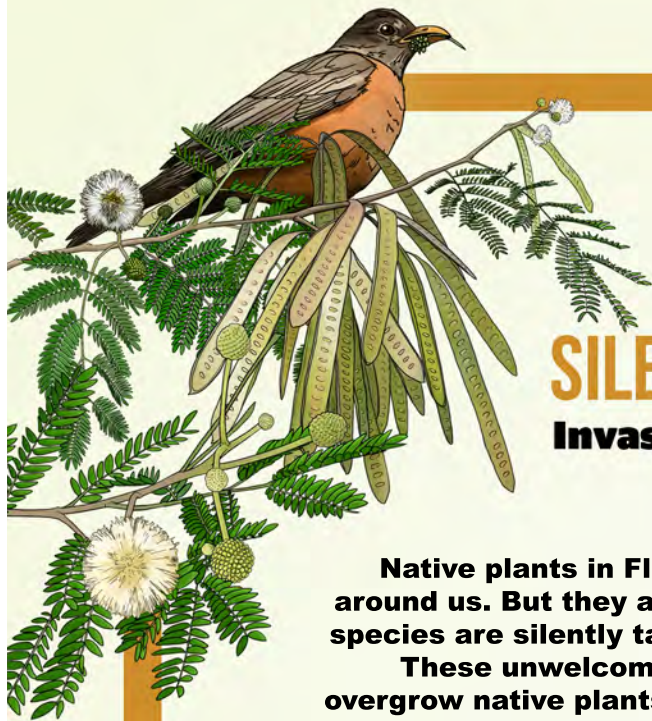
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**This book was reviewed by numerous educators, scientists, resource managers, conservation advocates, and students. We thank the following for their assistance:**

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## **SILENT TAKEOVER!**

### **Invasive Plants in Florida**

**Native plants in Florida create the beautiful, wild world around us. But they are in danger! Hundreds of invasive plant species are silently taking over Florida's natural environment.**

**These unwelcome plants grow aggressively and can overgrow native plants and animals in many different habitats. Invasive plants are so widespread that there may even be some growing in your backyard.**

**Look inside to learn about Florida's invasive plant problem. Find out about some of the most harmful invasive plants, the problems they cause to natural ecosystems, and how you can help to manage invasive plants to help keep Florida native and wild!**

