

Iguana Technical Assistance Workshop

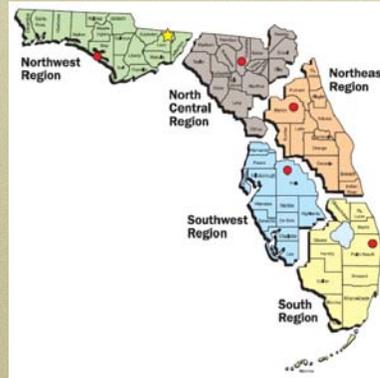
Presented by:

Florida Fish and Wildlife Conservation Commission



Florida Fish and Wildlife Conservation Commission

- Protects and manages
 - 575 species of wildlife
 - 700 species of fish
- Balancing the needs of natural resources with millions of residents and visitors



Our Mission:

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

The Florida Fish and Wildlife Conservation Commission (FWC) protects and manages 575 species of wildlife and 700 species of marine or freshwater fish while balancing the needs of these natural resources with the needs of millions of residents and visitors. Other public responsibilities include law enforcement, research, and outreach.

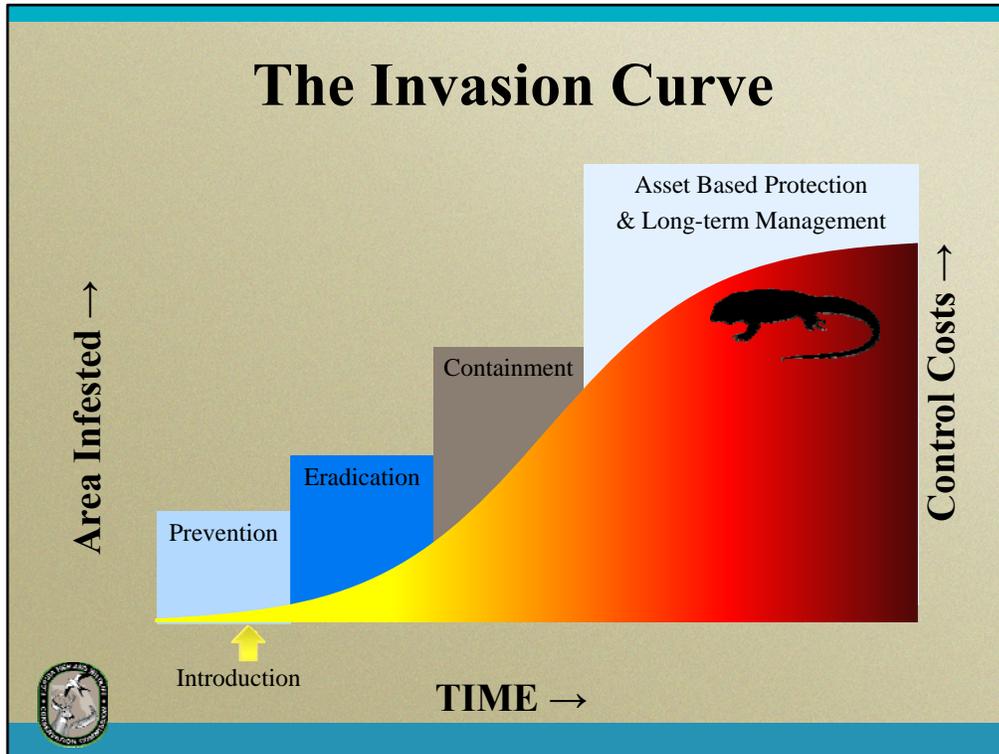
Nonnative Species in Florida

- Over 500 species of nonnative fish and wildlife observed
- More than 50 species of nonnative reptiles established in Florida



Although invasive species are not a problem unique to Florida, our subtropical climate has been conducive to the expansion of many nonnative species including pythons, large lizards such as monitors and iguanas, many freshwater fish species and more recently, lionfish. The citizens of Florida, particularly south Florida, frequently encounter these nonnative species.

As you can see on the map, over 55,000 observations of nonnative wildlife have been recorded in our state since 1924, representing over 500 different species. Despite it being illegal to release any animal nonnative to Florida, it is believed that most of these observations represent single individuals that may have been released or escaped from captivity. Of the 500 species; however, we estimate that more than 150 have reproducing populations, 50 of which are nonnative reptiles. Although this number seems high, not all observed nonnative species result in established reproducing populations. Of those species that do become established, few of these are considered invasive.



The Wildlife Impact Management section within the FWC is charged with determining which of these nonnative fish and wildlife species may become established and cause a problem. The term “invasive” applies to wildlife that pose a threat to the environment, the economy, or human health and safety. This slide illustrates what has been referred to as the invasion curve. As more area becomes occupied with an invasive species, the less likely the species will be eradicated and costs of management increase.

Preventing the release and establishment of nonnative wildlife is clearly the key; however, some species, like the green iguana are well established in Florida and require asset based protection and long term management strategies.

Iguanas in Florida



Mexican Spiny-tailed Credit: Adam Stern



Green Iguana



Black Spiny-tailed



Three members of the iguana family are now established in mainland South Florida: the green iguana (*Iguana iguana*), the Mexican spiny-tailed iguana (*Ctenosaura pectinata*), and the black spiny-tailed iguana (*Ctenosaura similis*).

In the Florida Keys, only the black spiny-tailed and green iguanas have been documented as established or breeding.

Black Spiny-tailed Iguanas

(*Ctenosaura similis*)

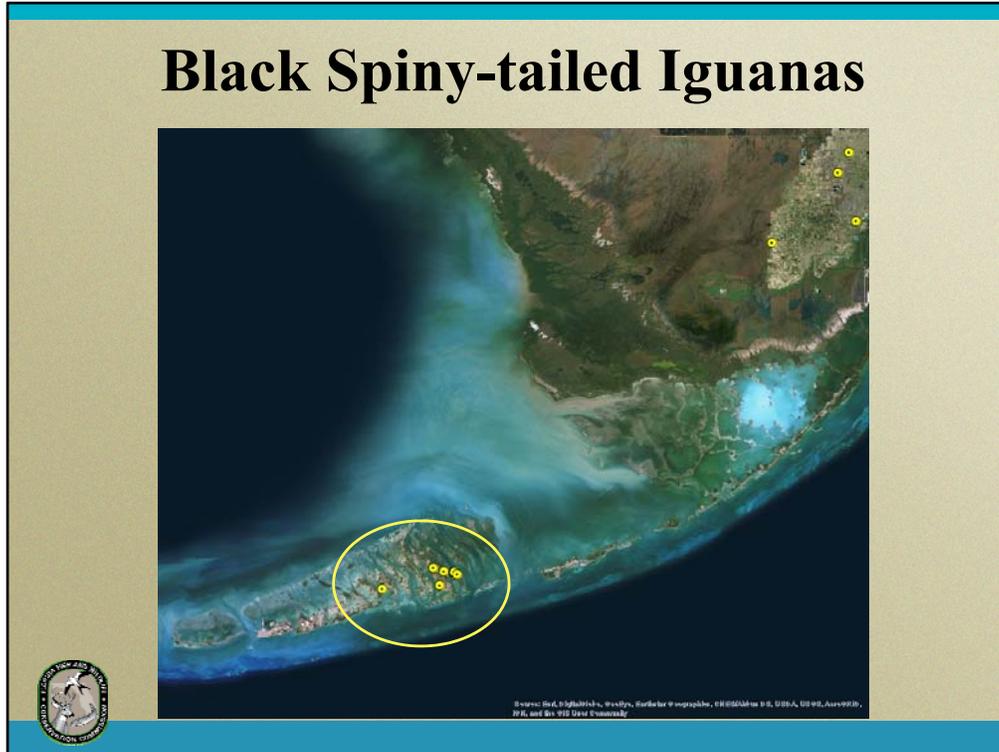
- Native to Central America
- Males reach up to 4 feet
- Omnivorous
- Live in a variety of habitats
- Lay between 10-30 eggs per clutch



Black spiny-tailed iguanas are large lizards, native to Central America. Adult males may reach nearly 4 feet in length. They are omnivorous, meaning they will consume plants and animals, and eat a wide variety of prey. In their native range they consume rodents, bats, frogs, small birds, and insects. In Florida, black spiny-tailed iguanas have been documented eating gopher tortoise hatchlings, an imperiled species.

Black spiny-tailed iguanas live in a variety of habitat types including coastal upland, disturbed areas, low density suburban areas, and agricultural areas. These primarily terrestrial lizards are extremely wary of people and will dash to their burrows to seek refuge, although they will climb if they cannot reach their burrows. They lay 10-30 eggs per nest and upon hatching, the young iguanas will consume insect prey.

Black Spiny-tailed Iguanas



An established population of black spiny-tailed iguanas exists on No Name Key and a few sightings have been reported on other islands, such as Big Pine Key.

Green Iguanas

(*Iguana iguana*)

- Native to South and Central America
- Can grow up to 6 feet
- Herbivorous
- Live in a variety of habitats
- Lay 10-70 eggs per clutch



The iguana species most commonly seen in the Florida Keys is the green iguana. Green iguanas are large lizards native to Central and South America. Males may reach over 6 feet in length and can weigh up to 17 pounds. In captivity they can live over 15 years. They are primarily herbivorous, feeding on leaves, flowers and fruits of various broad-leaved herbs, shrubs and trees. Green iguanas may also eat small animal prey, like insects and snails, opportunistically.

Iguanas may become abundant in areas of suitable cover and where food is readily available. In Florida, green iguanas have populated urban canals and surrounding areas, especially where trees form dense canopies near water. They occupy disturbed and developed habitats in south Florida, but in the Keys they also inhabit Rockland hammocks. Green iguanas are a tree-dwelling species, but when startled, they can drop from limbs of trees and retreat by swimming or running away from the perceived threat.

Green iguanas can have high reproductive output depending on the size and health of the female. Iguanas are capable of reproducing at approximately 2 years of age. Nesting typically occurs in March and April, with eggs hatching by August. Females can lay an average of 35 eggs per clutch; however, some female iguanas laid up to 70 eggs. Hatchlings are bright green, but adults tend to be grayish green to black in color and males may develop orange coloration during the peak of breeding.

Green Iguanas

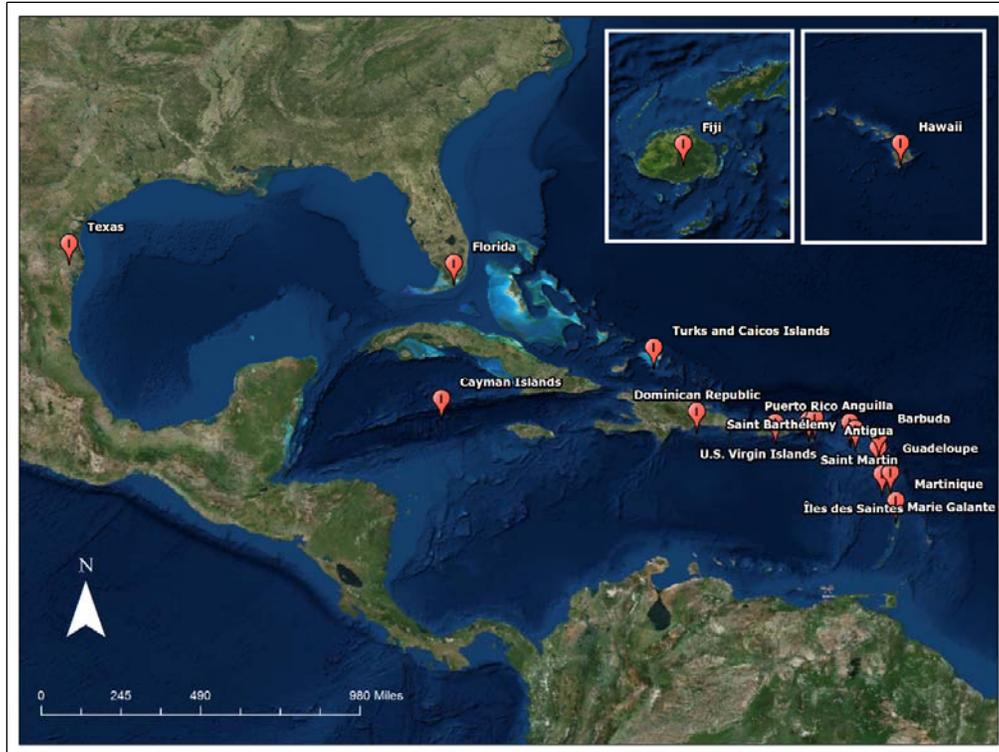
Invader in Florida

- High reproductive potential
- Occupy variety of habitats
- Subtropical climate in Florida
- Few predators/competitors



There are several attributes that have made green iguanas successful as an invader including their high reproductive output, their ability to occupy diverse habitats in Florida's subtropical climate, a lack of predators and minimal competition for resources.

South Florida's subtropical climate makes an ideal environment for iguanas to establish. Potential range expansion for this species is temperature-limited; however, as green iguanas are not cold hardy. The 2010 winter reduced green iguana abundance in some areas, but the population appears to have recovered. Iguanas have very few competitors or predators in Florida. Nest predators like raccoons and the occasional wading bird may prey upon eggs or a hatchling iguana. Few known large predators capable of taking an adult iguana exist in urban or suburban areas, which may allow iguana populations to thrive.



As you can see from this map, green iguanas have been introduced on many Caribbean islands and into Florida. Local natural resource agencies have implemented management efforts in places outside of the US where green iguanas have been introduced in order to protect their endemic native species of iguanas, such as the Cayman Islands.



These next few slides show where green iguanas have been observed and reported to the FWC. Early observations of this species in Florida were in Miami-Dade County in the mid 1960s. Since their introduction to the state, population numbers have increased and range has expanded. They have since spread across much of the south and southwest parts of the state, including Monroe, Miami-Dade, Broward, Palm Beach, Collier, and Lee Counties. Additional northward range expansion for this species is temperature-limited, as green iguanas are not cold hardy.



Over the years, the number of green iguana reports has increased which may be due to several factors: increasing iguana population size, heightened awareness and the availability of public reporting systems, increasing human population size, or a combination of these factors.

Confirmed Green Iguana Observations 1965-2007



Sources: Bird, DigiGlobe, Google, Hurricane Photographs, CHESA/Ames DS, USGS, USGS/Ames/ERD, FWS, and the Wild West Community

Confirmed Green Iguana Observations 1965-2010

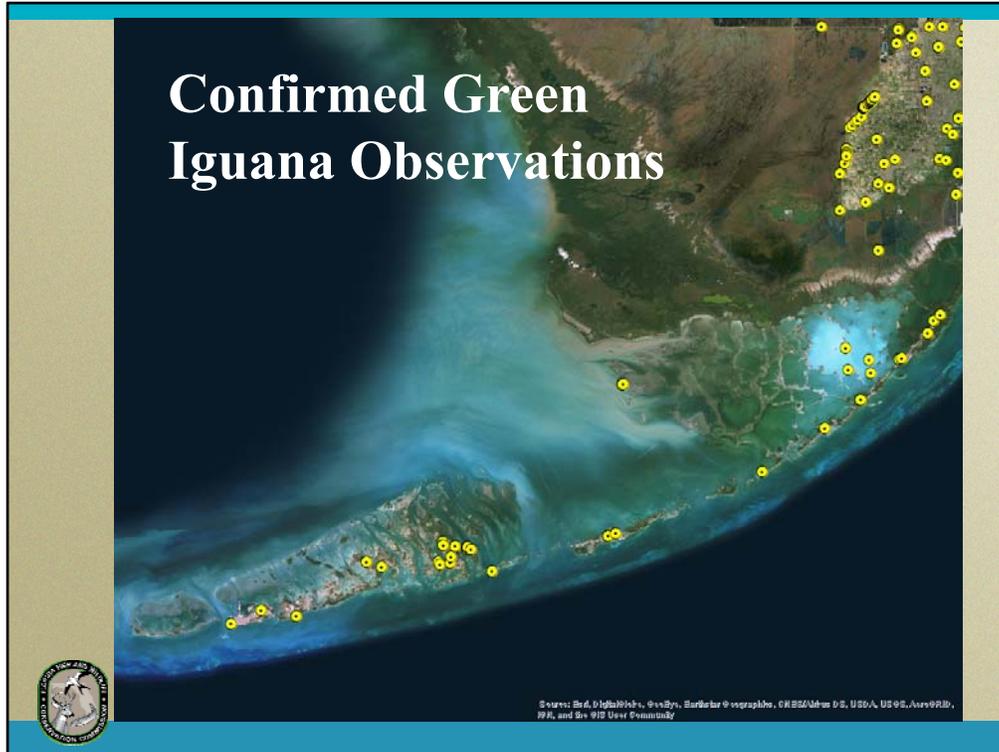


Sources: Bird, DigiBirds, Florida, Florida Geographic, FWS/AMWS D2, USGS, USGS, Aves910, WPA, and the Wild Bird Community

Confirmed Green Iguana Observations 1965-2013



Sources: Bird, Dight, White, & Snyder; Barbour & Seagraves; CRES/AMNH D.C., USGS, USGS/ANR/PRD, FWS, and the Wild Bird Community



Here you can see the distribution of green iguana observations reported to the FWC. These data do not represent iguana abundance or distribution, but rather reports received from the public.

Ecological Impacts



Credit: <http://animals.nationalgeographic.com>



Credit: <http://www.nbcnews.com/id/46396091/>



As previously mentioned, an invasive species can impart harm to the environment, the economy or human health and safety.

Due to their herbivorous nature, green iguanas are not typically considered a serious risk to Florida's natural resources across their introduced range; however, they may impact some sensitive ecological systems. Iguanas may consume threatened or endangered plant species and can function as a seed disperser, potentially acting a means to spread native or nonnative plants. Green iguanas have also been documented consuming the nicker bean plant, a larval host plant of the endangered Miami blue butterfly (*Hemiargus thomasi bethunebakeri*) in Bahia Honda State Park, though this relationship is not fully understood. Iguanas will occasionally consume small animal prey items as well. Lined tree snails (*Drymaeus multilineatus*) have been found in stomach contents of green iguanas collected from the wild in Florida.

Green iguanas may also use burrows of other wildlife, including state-listed burrowing owls and gopher tortoises, potentially competing with these native species for resources.

Other Impacts



Credit: <http://www.anapsid.org>



Credit: <https://www.flmnh.ufl.edu/>



The concerns we hear from our many of our constituents relate to green iguana impact on personal property, such as digging or burrowing into seawalls, destruction of ornamental plants and defecation on walkways, docks, and in pools.

Because of these impacts combined with potential impacts to our sensitive natural resources in the Florida Keys, the FWC has launched the first public technical assistance workshop regarding iguanas.

Iguana Technical Assistance Workshop

The FWC's technical assistance workshops in the Florida Keys aim to empower homeowners to remove nuisance iguanas from their own private property.



The Florida Keys are a beautiful, ecologically sensitive and important part of Florida. This evening, we are here to host the first of a series of public technical assistance workshops in the Florida Keys to empower homeowners to remove or deter nuisance iguanas from their private property.

We hope that after this workshop, residents will feel informed and empowered to manage iguanas on their own property. There are a variety of options and techniques residents can use to help reduce or eliminate nuisance iguana issues. We realize that we have a diverse crowd with diverse concerns and interests, so we want to offer a wide range of possible solutions. We are here to teach interested residents about some strategies they can use, answer any questions, and establish a relationship with residents in the community.

Iguana Technical Assistance Workshop

- **Goal:** Share information and answer your questions
- Open house until 8:00pm
- Three break-out sessions
 1. Rules and regulations
 2. Deterring/hazing iguanas
 3. Trapping demonstration



Thank you!

For more information, please visit
www.myfwc.com/iguana



Credit: <https://www.youtube.com/watch?v=Z-wpAkuy-Vg>

