

South Florida Ecosystem Restoration Task Force

Invasive Exotic Species Strategic Action Framework

Containment Case Study: Argentine Black and White Tegu

The Argentine black and white tegu is a large lizard native to South America and popular in the pet trade, and several invasive populations are now established in the southeastern USA, including in southern Miami-Dade County. In their native range, tegus are habitat generalists and eat a wide variety of fruits, insects, small vertebrates, and specialize in eating the eggs of ground-nesting animals. Their high reproductive capacity, lack of potential predators, and adaptability to a wide variety of resources and environmental conditions make them a threat to Florida's wildlife and environment. From their current location in Miami-Dade County, tegus are dispersing west towards the sensitive habitats in Everglades National Park (ENP), south toward the Florida Keys, east towards Biscayne National Park and American crocodile nesting habitat at Florida Power and Light's Turkey Point power plant, and north into residential and agricultural areas. Since they are already widely established, the goal is to contain them to their current range and decrease the population size.

Case Presentation

A population of tegus was discovered in Florida City, a town just east of ENP, in 2008 by members of the Everglades Cooperative Invasive Species Management Area (ECISMA), an interagency group dedicated to cross-jurisdictional collaboration on invasive species management efforts. The following year, more investigation and limited trapping efforts confirmed that the tegus were breeding. There were no dedicated staff from any agency to initiate a rapid assessment and response effort at that time. The National Park Service (NPS) and Florida Fish and Wildlife Conservation Commission (FWC) were able to hire one trapper and redirect limited staff resources to develop trapping methods and track five telemetered tegus, including one female that led to the discovery of the first tegu nest in Florida. The stomach contents of tegus were analyzed to determine diet. During subsequent years, volunteer trapping efforts by more ECISMA partners enabled the continued assessment of tegus but did not appear to limit the expansion of the tegu population.

There was no dedicated funding for trapping efforts until 2011. Private trappers have also become involved with trapping tegus, and many of their captured tegus are re-sold into the pet trade. The exact number of tegus removed by private trappers and their ultimate fate is not available; nonetheless, the general number given by at least one trapper is that hundreds of individuals have been taken out of the wild and placed back into the pet trade. No permit is required to possess pet tegus in Florida at this time. People selling nonnative wildlife must have a valid License to Possess Class III Wildlife for Exhibition or Public Sale from FWC that authorizes the sale of Class III reptiles. Any sales to out-of-state entities must be conducted in compliance with any applicable federal or state rules.

From the first reports of tegus in 2008 in Florida City through 2019, the tegu population has continued to

The Tegu Curtain

The Argentine black and white tegu is a large, invasive lizard native to South America that has become established in southern Miami-Dade County. The goal is to protect sensitive habitats, including nearby national parks and crocodile nesting areas, by containing them within their current range and decreasing the population size.



Photo: Dennis Giardina.

grow and expand its range, despite increasing trapping efforts. Currently, tegus occur across over 100 square miles, including many natural areas and conservation lands. Despite being readily trappable, there is a consensus that eradication now appears unlikely, and containment is the appropriate objective.

Management Actions and Outcome

After their discovery, ECISMA quickly coordinated tegu trapping and removal efforts following the group's rapid response protocol, though limited staff and financial resources prevented an aggressive response. Alongside the efforts to remove tegus from natural areas, this included public outreach to facilitate removals from private lands and research to assess tegu biology and impacts and improve management practices. These initial efforts, which began within two years of discovery, led to relatively rapid determination of effective trapping methods and confirmation that the tegu may represent a significant threat to wildlife. The University of Florida, Zoo Miami, South Florida Water Management District, and the U.S. Geological Survey began providing staff to trap and track tegus starting in 2011, with FWC providing staff specifically to support tegu removal in 2012. In 2013, the idea of creating a "Tegu Curtain" was proposed, which includes utilizing camera traps and driving surveys to monitor the perimeter of the population and conduct intensive trapping in core areas that would expand to correspond with seasonal dispersal. The U.S. Department of the Interior provided support for this effort and NPS provided additional staff and volunteers in the field. This containment effort, coordinated among many partners, was expanded in 2014 and has undergone incremental changes in subsequent years. Although each participating organization is contributing available resources, existing funding and staffing levels appear insufficient to meet the containment objective, as tegus are now regularly observed in areas that were unoccupied just four years ago. Tegus are now occasionally removed just inside ENP, though in low numbers and there is not yet evidence that tegus are

reproducing there. Nonetheless, the dedication and persistence of ECISMA members and cooperators has led to increased efforts and larger numbers of tegus removed every year, and the tegu population may well have been larger and more widespread without these efforts. The knowledge base about the species and control options and methods has also significantly improved, and this knowledge will be important to the long-term management of tegus.

Key Recommendations

- Outreach to the public promoting early reporting can lead to more discoveries of newly established populations, possibly in time to contain further spread.
- Dedicated resources are needed to successfully respond, and resources must be consistent with the scale of the threat. Potentially significant threats warrant application of all available resources.
- Time is of the essence – developing methods and initial assessments should be quick, because incipient populations may grow rapidly, leading to larger costs and effort.
- Though the response to a newly established population should be quick, efforts may need to be sustained over multiple years to achieve eradication and future cost savings.
- A pre-existing coordination and decision-making framework among agencies, researchers, and partners would be helpful to expedite and improve the containment response.
- If containment of tegus is not possible, assessments should be conducted to quantify impacts and inform next steps and develop long-term strategies to protect key resources.
- Volunteer efforts are valuable, but dedicated staff are more effective.
- As invasive-animal populations move into long-term management, control efforts may shift from agency or university staff to contracted work, similar to how invasive plants are managed.