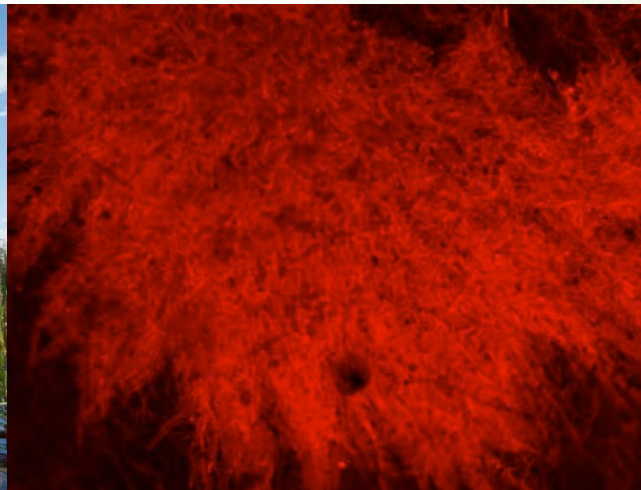


# Coordinating the detection and response to possible Vacuolar Myelinopathy outbreaks in Florida birds.

Tyler Beck

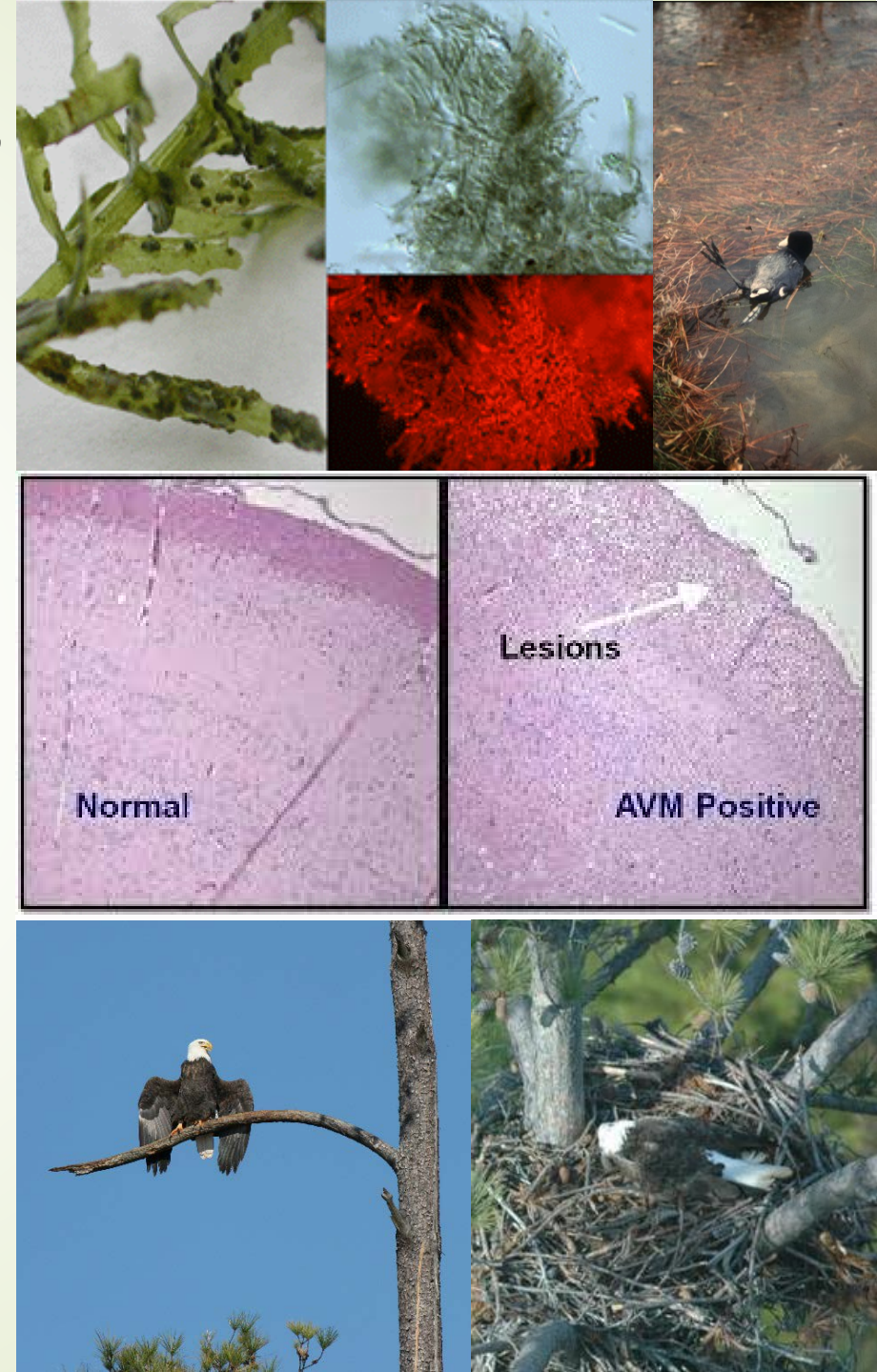
Snail Kite Conservation Coordinator

Florida Fish and Wildlife Conservation Commission



# What is Vacuolar Myelinopathy?

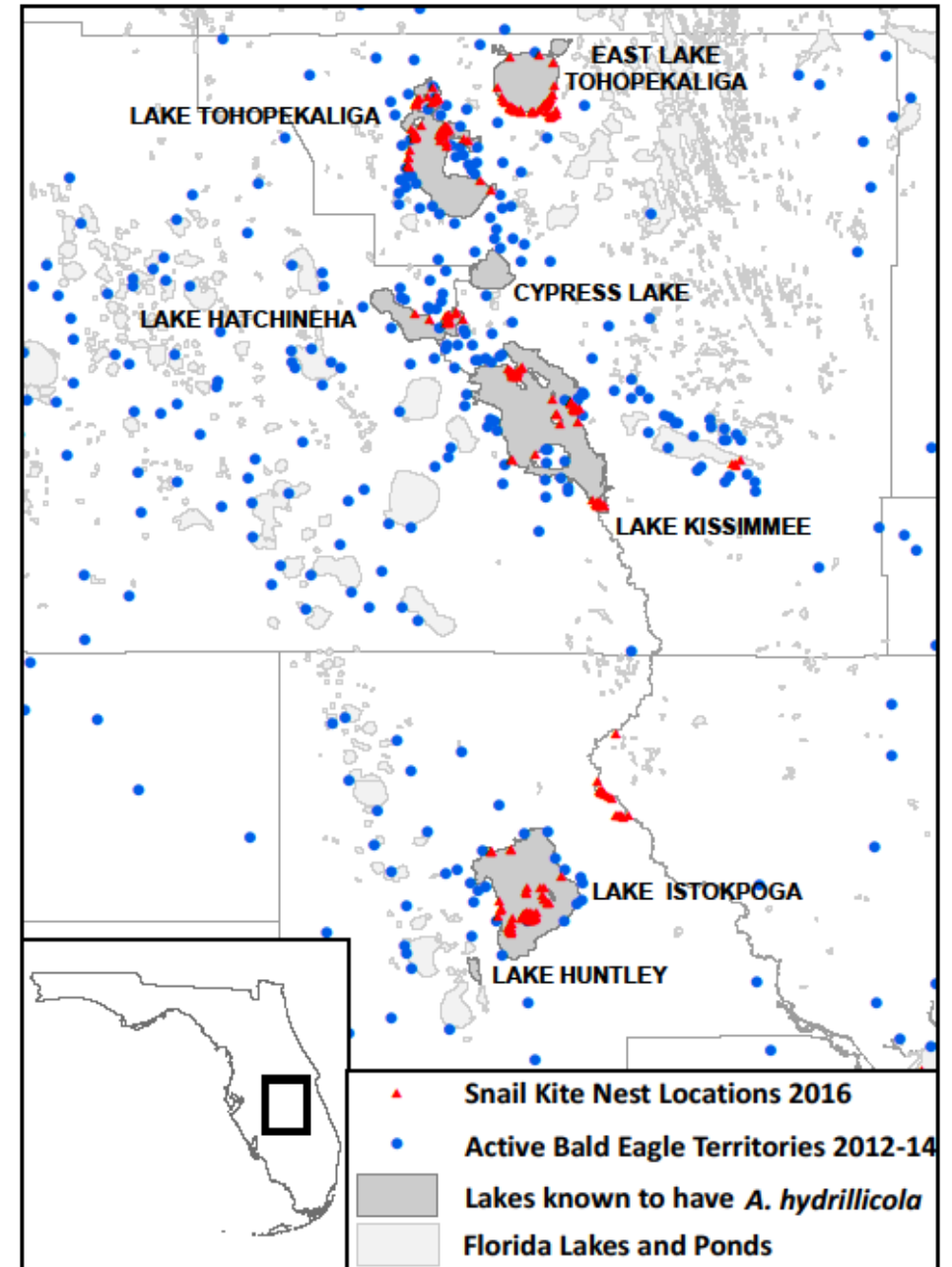
- Wildlife disease caused by consuming aquatic vegetation (mostly hydrilla) covered with a toxin producing cyanobacteria
- The toxin forms brain lesions
- Impairs movement, balance, vision and eventually leads to death
- Primarily affects avian species
- Can bioaccumulate up trophic levels
- Implicated in the deaths of hundreds of Bald Eagles and thousands of waterfowl throughout the Southeast U.S.





# Vacuolar Myelinopathy (VM) in Florida

- In Florida, the cyanobacteria has been documented in important Snail Kite and Bald Eagle nesting lakes.
- So far has not been implicated in any wildlife deaths in FL
- Experimental trials have shown that the Snail Kite's food source, apple snails, can be a vector for VM.
  - ✓ Cyanobacteria → Waterfowl → Eagles
  - ✓ Cyanobacteria → Snails → Chickens
  - ? Cyanobacteria → Snails → Snail Kites



# The Problem: Gameplan and Detection

## 1. Detection

- If VM is affecting Snail Kites, detection would be difficult
  - Diagnosis requires examination of fresh brain matter from an affected bird
    - Deterioration and freezing will compromise diagnosis
  - A dead or dying Snail Kite is likely to end up in thick marsh vegetation and never found
  - Who is allowed to cut the brains out of an endangered species?

## 2. Gameplan

- If we find out VM is affecting Snail Kites, then what?
  - Hydrilla is an important part of Snail Kite foraging habitat
    - Fishermen, waterfowl hunters and other wildlife value hydrilla
- However we respond, we should be able to learn from the results
  - Adaptive management

# Stakeholders

- USFWS
- FWC Law Enforcement
- Wildlife Rehabilitators
- Invasive Plant and Habitat Managers



# NRLI Competencies

- Identifying stakeholders
- Designing effective meetings
- Scenarios Planning
- Group Decision Making
- Difficult interpersonal and group dynamics?



# Outcomes - Gameplan

- ▶ Worked with FWC experts to draft a VM surveillance and response plan
  - ▶ Avian Coordinator
  - ▶ Invasive Plant Biologist
  - ▶ Bald Eagle Coordinator and Researcher
  - ▶ Harmful Algae Researcher
- ▶ Series of mostly conference calls
- ▶ Set of factors that need to be considered in a response
  - ▶ Not a prescription
- ▶ Components
  - ▶ Current state of knowledge and monitoring framework
  - ▶ Future monitoring need
  - ▶ Management considerations
  - ▶ Information gaps

## Avian Vacuolar Myelinopathy (AVM) Surveillance and Response Plan for Florida

Draft



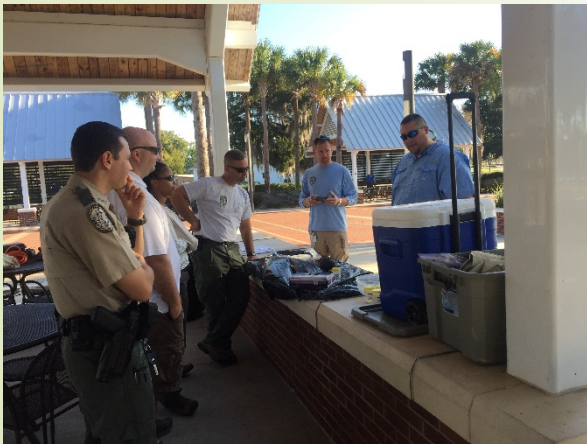
**Florida Fish and Wildlife  
Conservation Commission**

[MyFWC.com](http://MyFWC.com)



# Outcomes (future)- Detection

- Coordinating with the USFWS to determine the best course of action if a suspected case of VM shows up
- Issues
  - Who is allowed to handle a dead/dying endangered species?
  - Who can remove the brain from a dead endangered species?
  - Who is most likely to encounter a suspected case of VM?
- Solutions
  - Found out that I would be covered to perform all actions under an FWC ESA agreement
  - Next step train field staff and law enforcement to identify signs of VM and steps necessary to diagnose VM
  - Create a network of wildlife rehabilitators to be prepared to detect VM



# Lessons Learned

- ▶ The response plan was originally supposed to be simple but quickly snowballed
  - ▶ Adding one component would often necessitate the addition of another
  - ▶ Contributors also added important content
- ▶ I was impressed with what everybody brought to the table
- ▶ Few people understand the regulatory environment of the USFWS, even their own biologists
  - ▶ Delayed progress considerably
- ▶ Surely more to come



# Next Steps

- Reconvene plan contributors to complete Surveillance and Response Plan
- Train field staff, law enforcement and wildlife rehabilitators
- Work to support research in the understanding of VM in Florida

