

Climate change, Carbon Markets and wildlife management in Florida



*Doug Parsons
Florida Fish and Wildlife Conservation Commission
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Florida Fish and Wildlife Conservation Commission Mission:

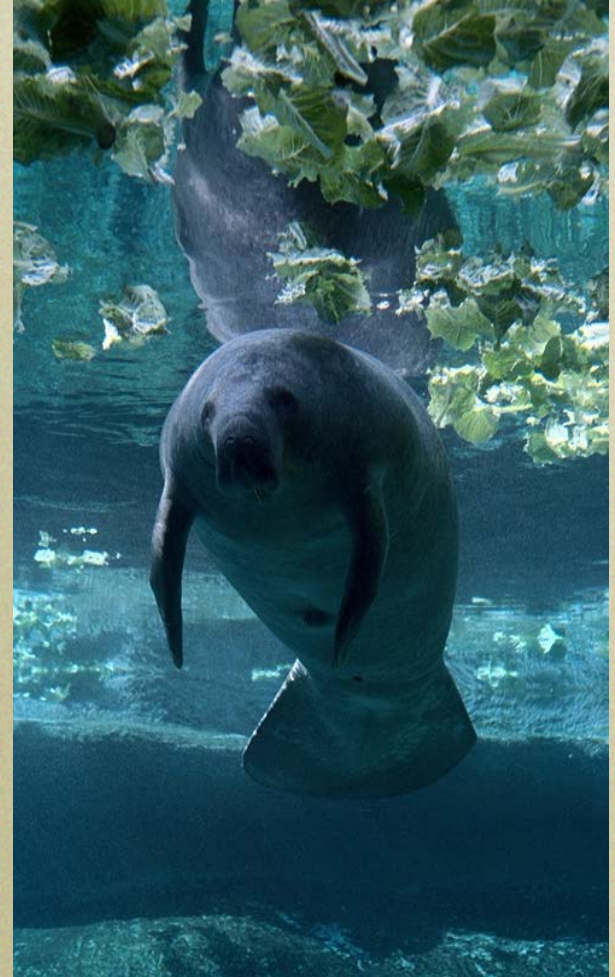
Managing fish and wildlife resources for their long-term well-being and the benefit of people.

- Fish and Wildlife Research Institute
- Freshwater Fisheries Management
- Habitat and Species Conservation
- Hunting and Game Management
- Law Enforcement
- Marine Fisheries Management



Climate Change Science

- Go to www.realclimate.org
- Click "start here."



Florida's Unique Vulnerability to Climate change



Key Biophysical Issues

- Warming climate and waters
- Changing precipitation patterns
- Sea level rise
- Alterations in life history
- Invasive exotics
- Increased rate of change



Climate Change 2100:

What's at stake for
Florida's Wildlife?



Captive Panthers

People retreat inland
from rising surf

- Public lands used to settle displaced residents
- Last wild panther captured
- Zoos only remaining refuge for homeless cats



Migrating Manatees

Ocean temperatures warm to record levels

- Warming waters a welcome to manatees
- Manatee range expands northward to the Carolinas
- Manatees off endangered list



Peacock Bass Boom

Florida waters warm as climate changes

- Peacock bass expand northward to Daytona
- Anglers flock to Florida for peacock bass
- Striped bass no longer caught in Florida



Disappearing Corals

Oceans acidify as they lose ability to buffer CO_2

- Florida reefs diminish due to repeated bleaching
- Diving revenues down 80% as reefs decline
- Scientists discover budding reefs off Georgia coast



Hunting Lands Lost

Conservation land uses change in face of global warming

- Public works, biofuels replace wildlife habitat
- Lands open to public hunting decrease 50% since 2000
- Number of hunters in Florida reaches record low



Giant Toads Now Native

Numerous species expand range northward

- Giant toad range grows to include Gulf states
- Chipmunks, copperheads no longer call Florida home
- Invasive exotic list tops 1,000 species



Imperiled Species List Swells

Most wildlife squeezed by changing climate and growth

- 30% of Florida's wildlife species listed as imperiled
- Climate changes disrupt many life history traits
- People place economy over species conservation



New Habitats Emerge

Vegetation adjusts to changing rain patterns

- Forests fade into grasslands
- Scientists recognize savannah as new habitat in Florida
- Grassland species flourish as forest dwellers diminish



FWC response to Climate Change

- Governor Crist's Climate efforts
- FWC Commission Resolution
- FWC Climate Summit
- Climate change Oversight Team



National and International Efforts

Don't reinvent the wheel...we are behind, far behind.

- Recent Federal activity
- USFWS Action Plan
- International efforts (Copenhagen, Australia, UK)



State agencies are poorly designed to deal with this issue:

- wildlife managers tend to connect single dots. Climate change is more complex than most wildlife management issues.
- Research needs - how do they fit into existing infrastructure.
- Interactions with existing issues



Mitigation versus Adaptation

Time to change the narrative: Wildlife agencies are in the business of adaptation.



Carbon Markets

- Cap and Trade
- Carbon Offsets
- Ecosystem Services
- Biofuels...no thanks.
- Funding adaptation versus mitigation



New Opportunities

- Universities leading on this issue.
- Need new generation of wildlife managers and climate strategists.
- Research and modeling desperately needed.
- Partnerships between universities and state agencies.



Climate Change Monitoring – Developing an Early Warning System

- Think big – rare opportunity! Look at the silver lining.
- Help define ‘triggers’ for policy action.
- New problems with our monitoring if it’s integrated in such a way.
- Our monitoring will be used by other sectors. First line of climate info.
- Insurance companies might start using our data.



Thank you.



Doug Parsons
FWC

Doug.parsons@myfwc.com
<http://www.ces.fau.edu/floc/>
850-251-0457

