Eastern Black Rail

What You Need to Know to Evaluate Projects

Kevin Kalasz - USFWS
Coastal Program Coordinator – S FL Everglades
Florida Black Rail Lead

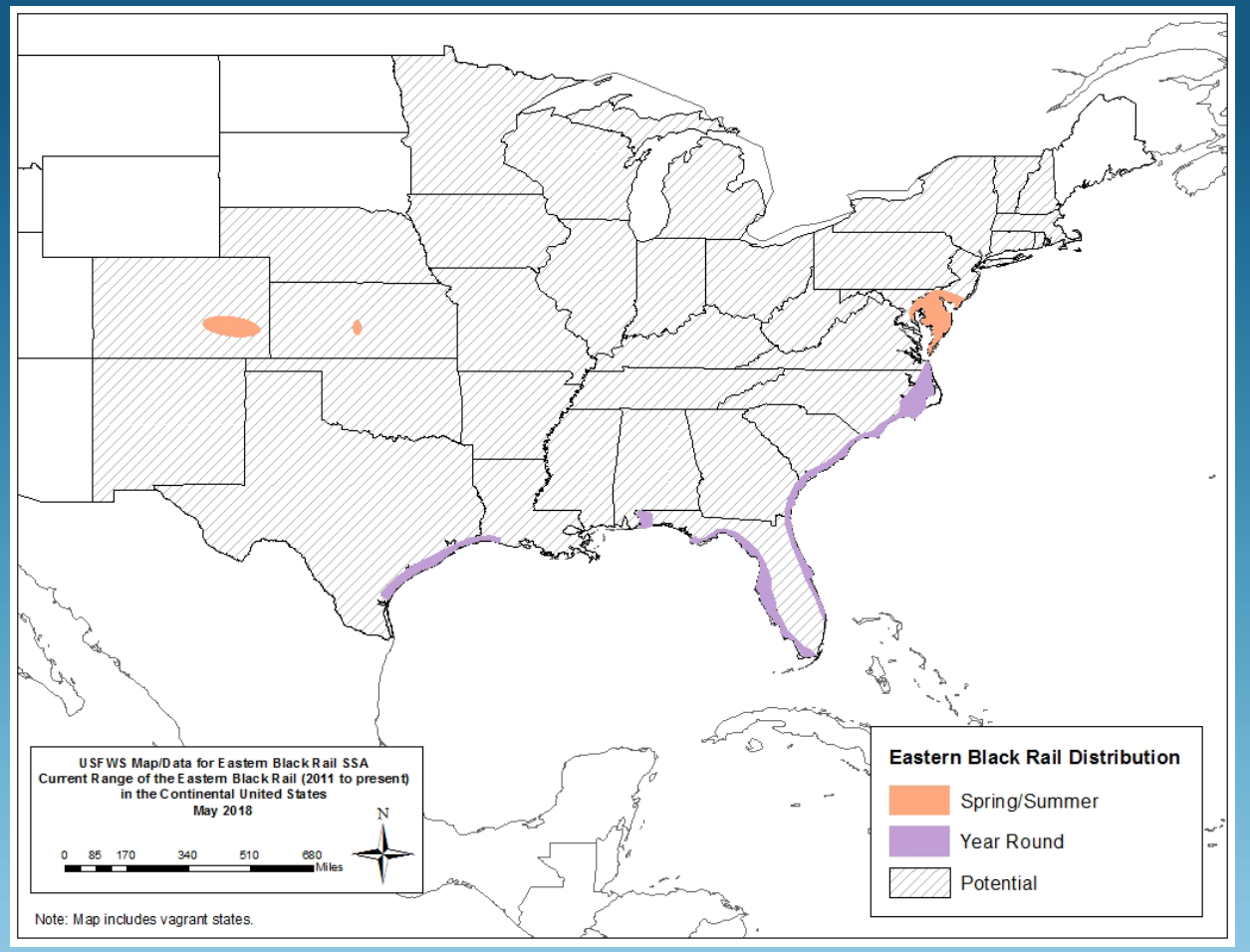
Caroline Walker, PhD – USFWS
Biologist

Species Overview

Life Stage	Resources Needs (Habitat)
Egg	•Nest well hidden in a dense clump of vegetation over moist soil or very shallow water (between 1-3 cm*) •Water level lower than nest height
Chick / Juvenile / Adult	•Moist to saturated substrates (occasionally dry) interspersed with or adjacent to very shallow water (between 1-6 cm) •Dense herbaceous vegetative cover that allows movement underneath the canopy •Elevated refugia to escape high water events •Food – small (<1 cm) aquatic/terrestrial invertebrates, seeds

Class: Aves
Order: Gruiformes
Family: Rallidae
Species: *Laterallus jamaicensis*
Subspecies: *Laterallus jamaicensis jamaicensis*

Species Range

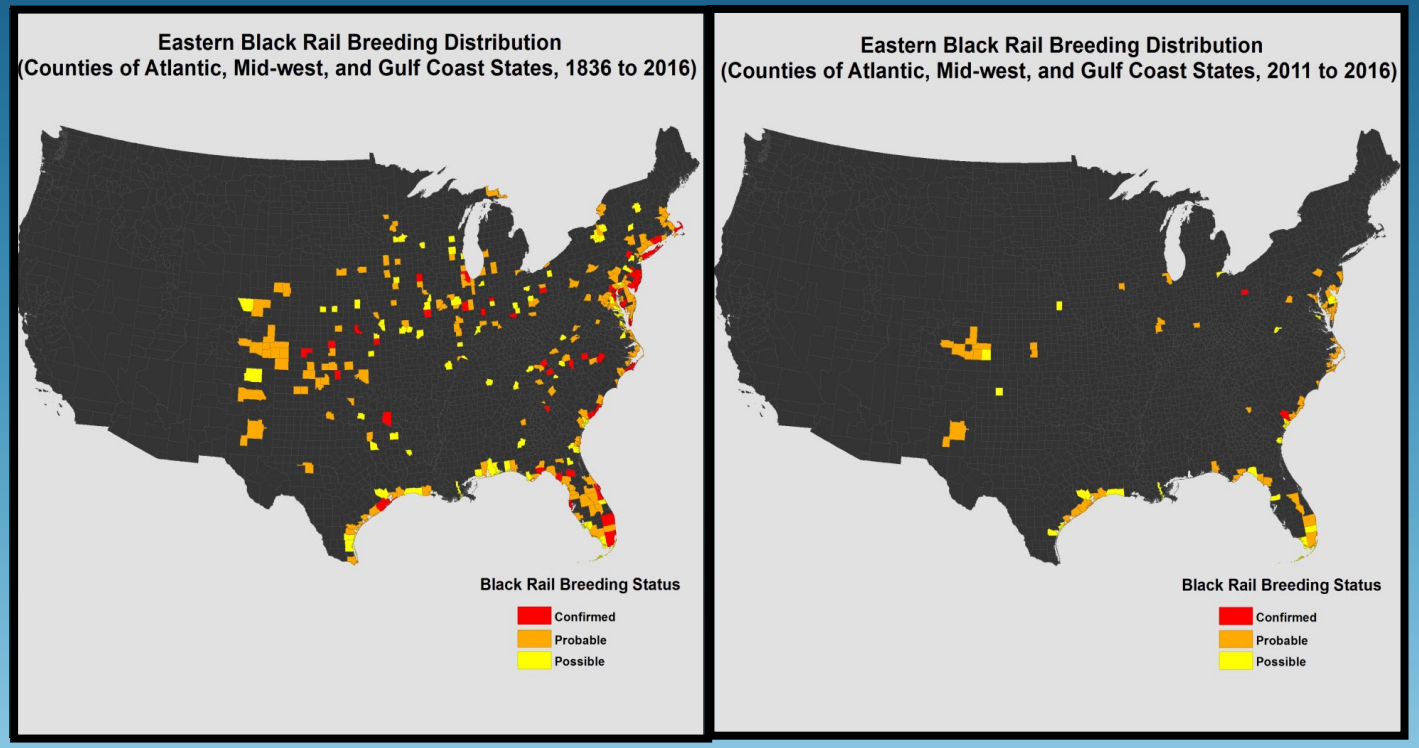


Range of the eastern black rail (*Laterallus jamaicensis jamaicensis*) in the contiguous United States

Reasons for Listing

Precipitous declines - >95% (listed as Threatened in 2020)
Range contraction of 450 km
Historic hotspots have disappeared

Changes in Occurrence

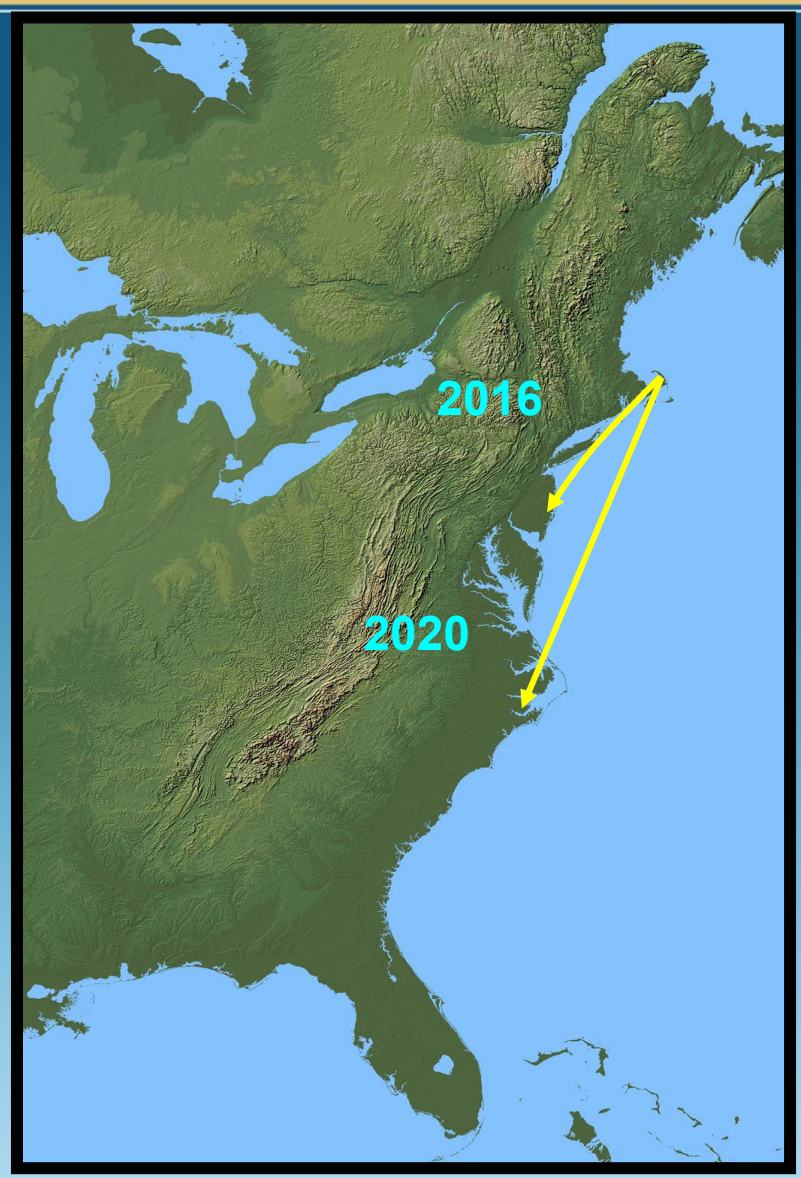


298 Counties **70 Counties**

Watts 2016

Range Contraction

2016: 450 km (MA-NJ)
2020: 940 km (NJ-SC)

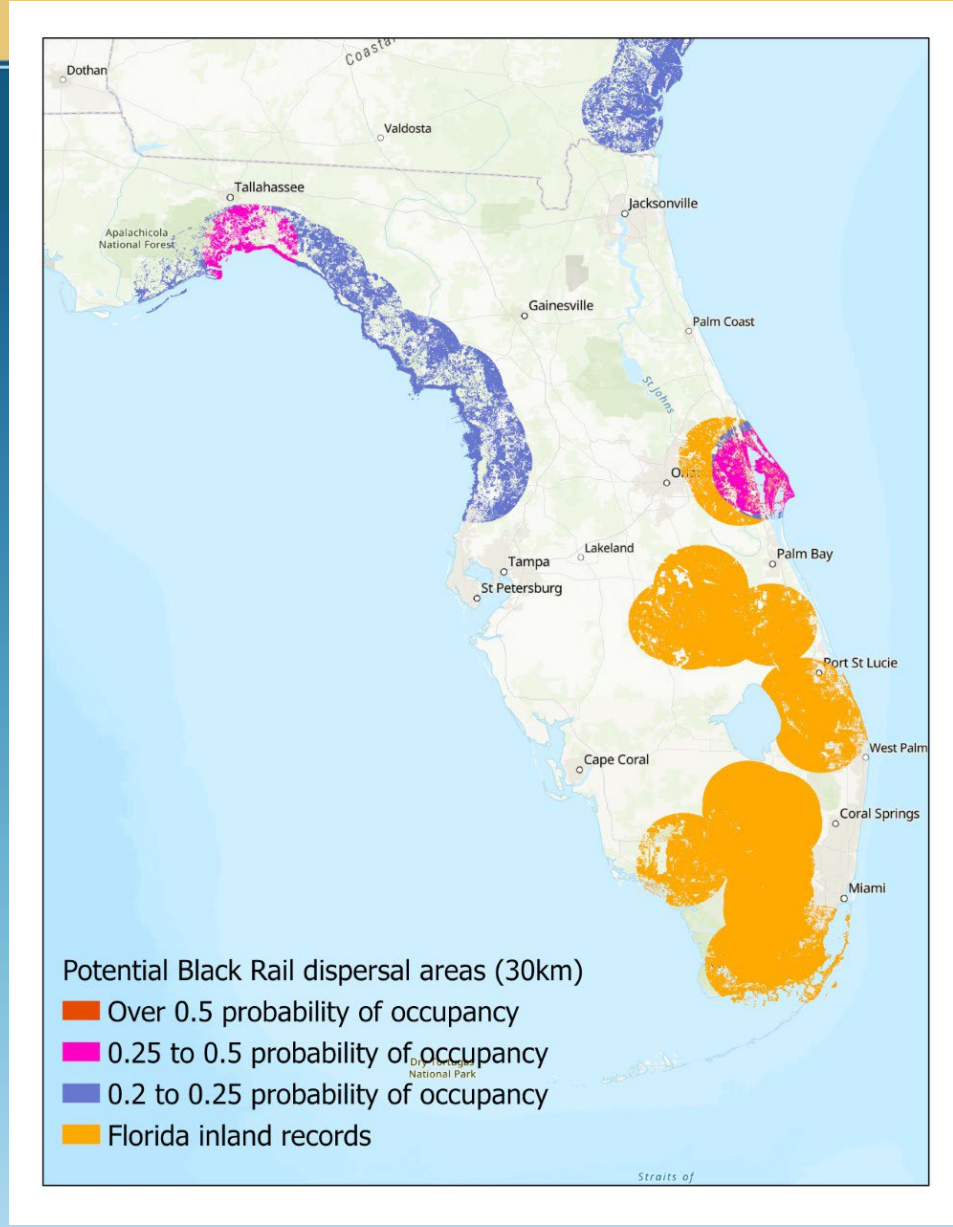


Population Estimates (pairs)

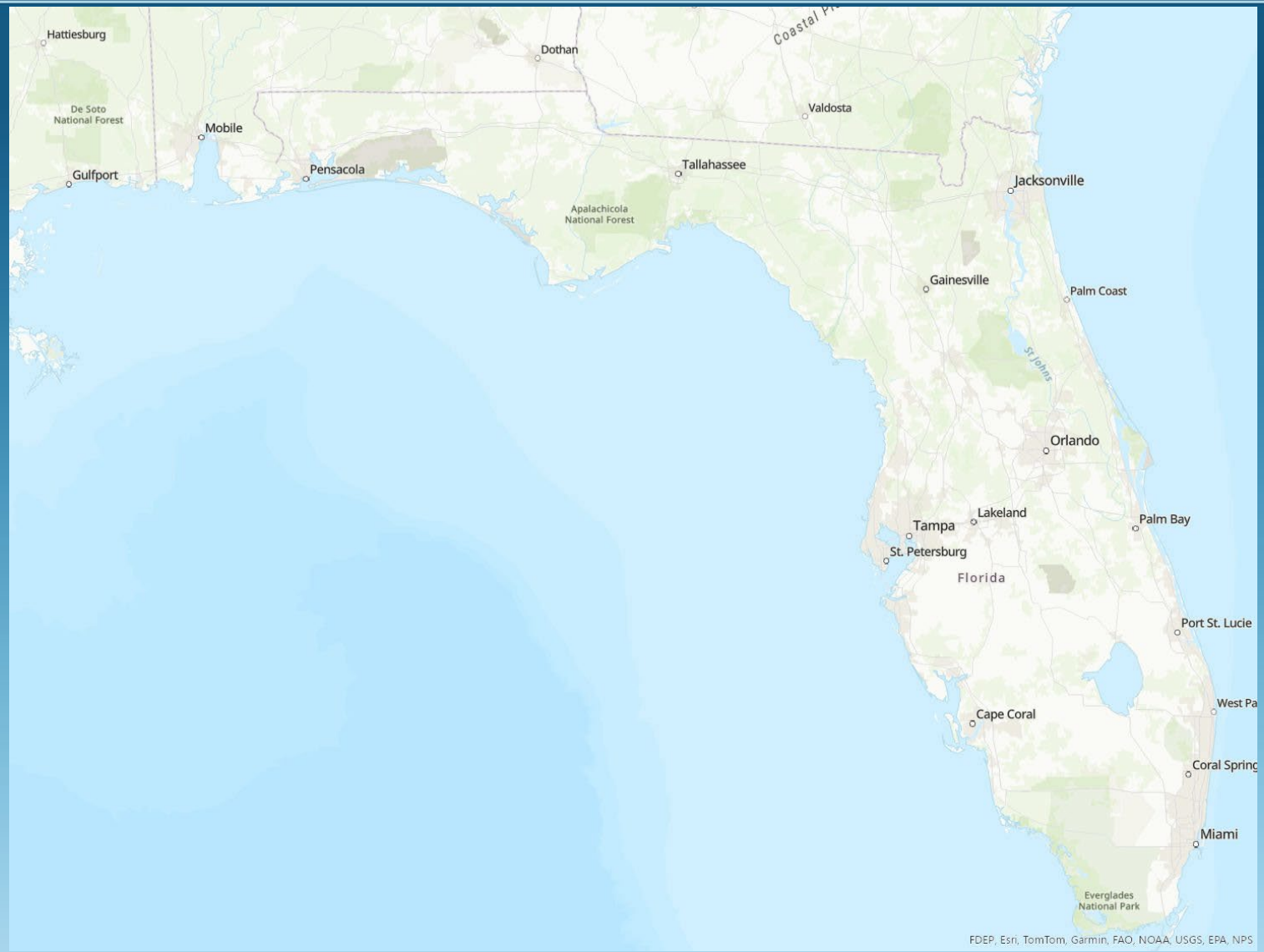
STATE	2016	Current
Massachusetts	0	0
Rhode Island	0	0
Connecticut	0	0
New York	0	0
Pennsylvania	0-5	0
New Jersey	40-60	0
Delaware	0-10	0
Maryland	15-30	0-15
District of Columbia	0	0
West Virginia	0	0
Virginia	0-10	0
Northeast Region	55-115	0-15
North Carolina	40-60	10-20
South Carolina	50-100	20-40
Tennessee	0	0
Georgia	10-40	0
Florida	200-500	200-500
Southeast Region	300-700	230-560
	355-815	230-575

Watts 2016

BLRA in Florida – A Species Stronghold



Three Distinct Regions in FL

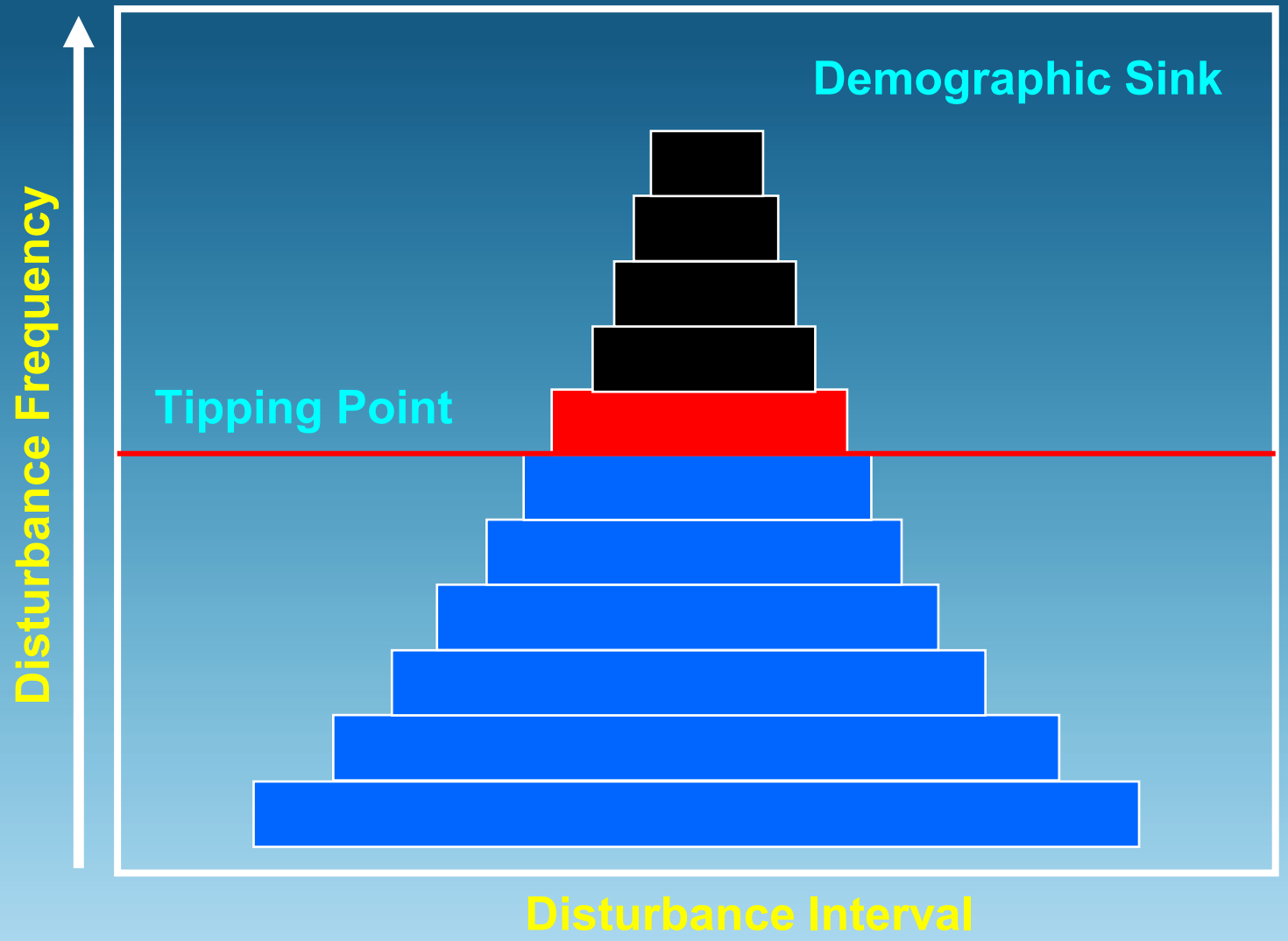


Reasons for Decline

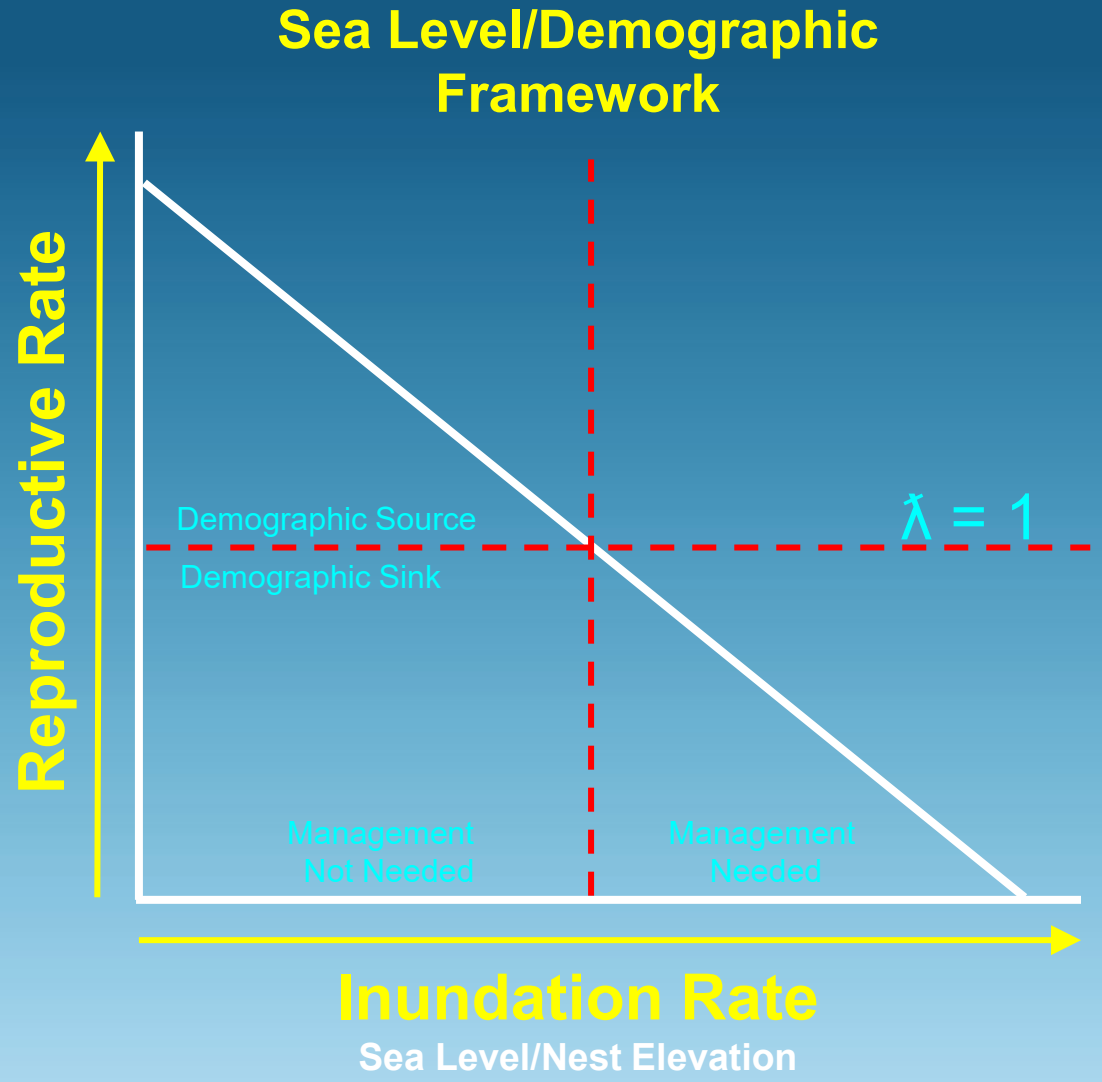
- Wetland Modifications
- Altered Hydrology
- Sea Level Rise
- Lack of Fire
- Predators (related to SLR)
- Incompatible Land Use

Inundation Frequency and Duration

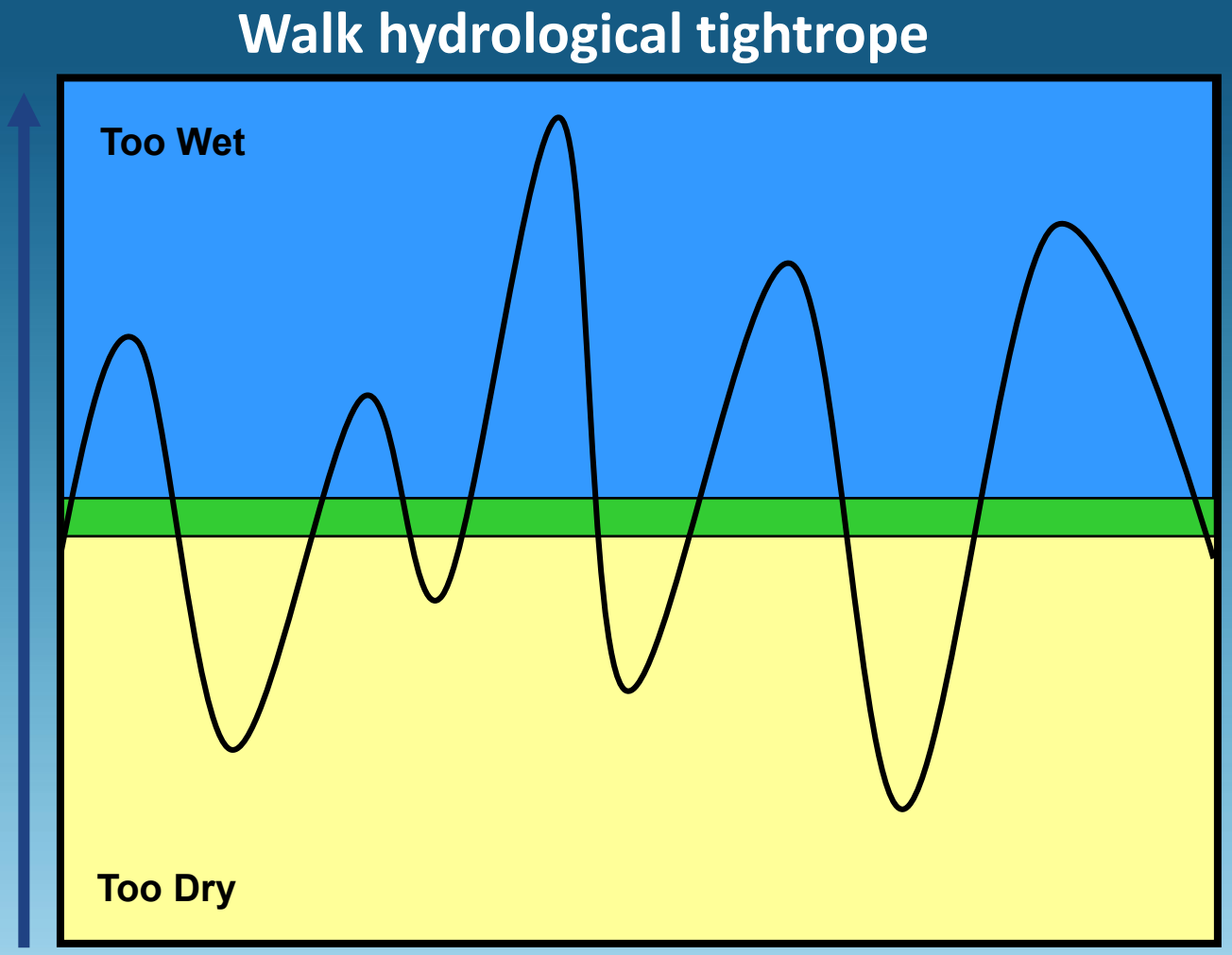
Demographic Threshold



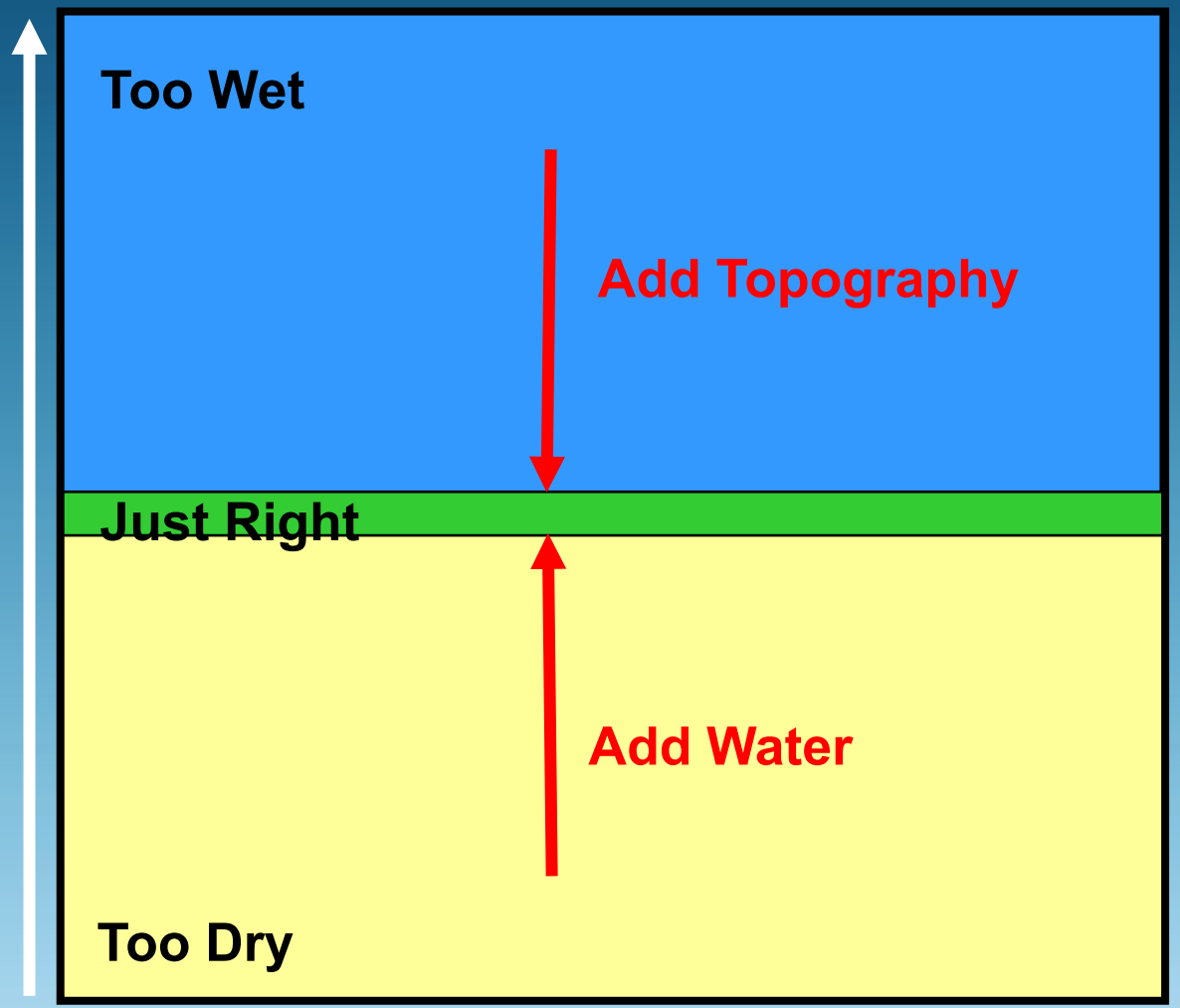
Sea Level Rise Effects



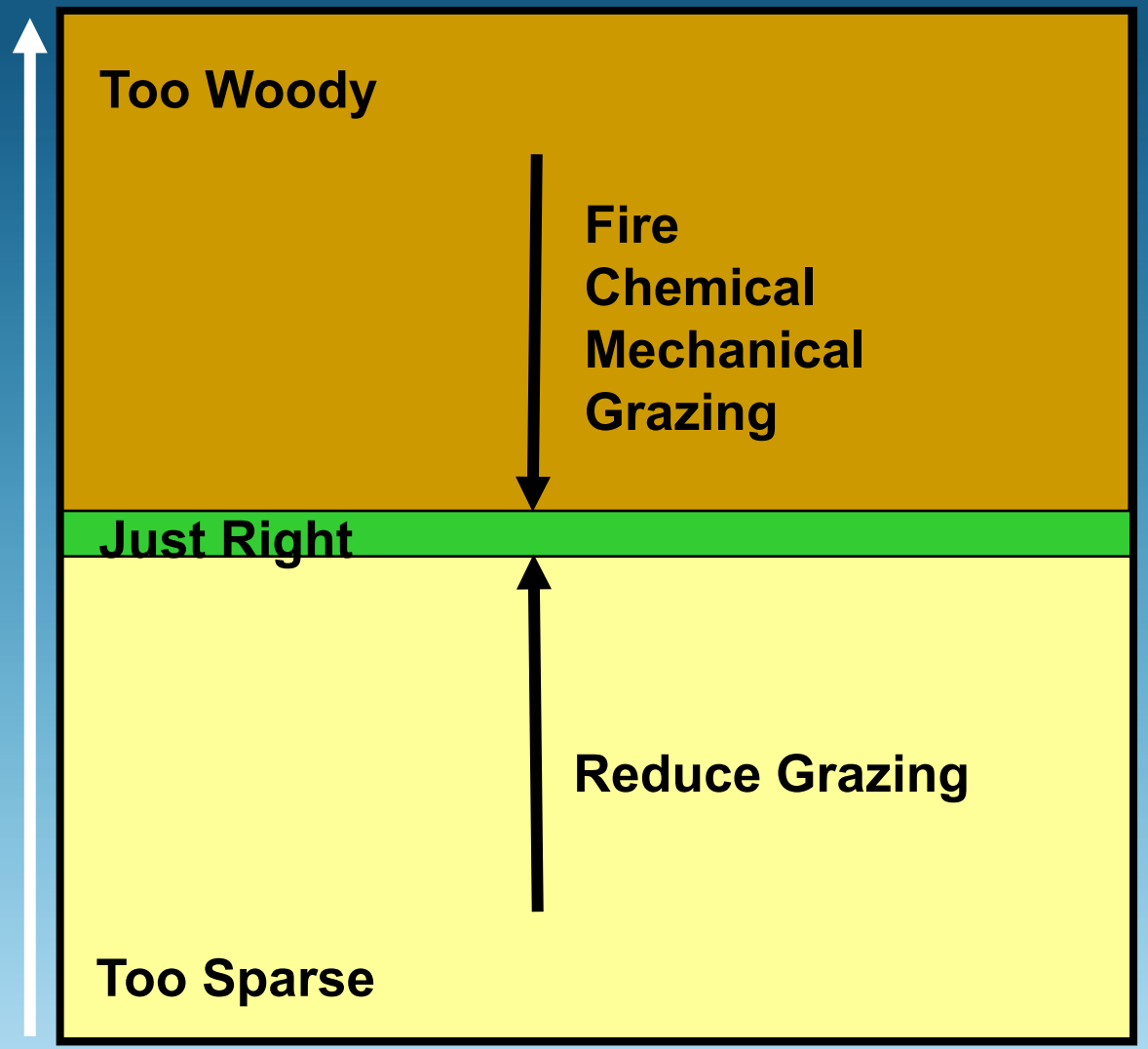
It’ Tough for Goldilocks!



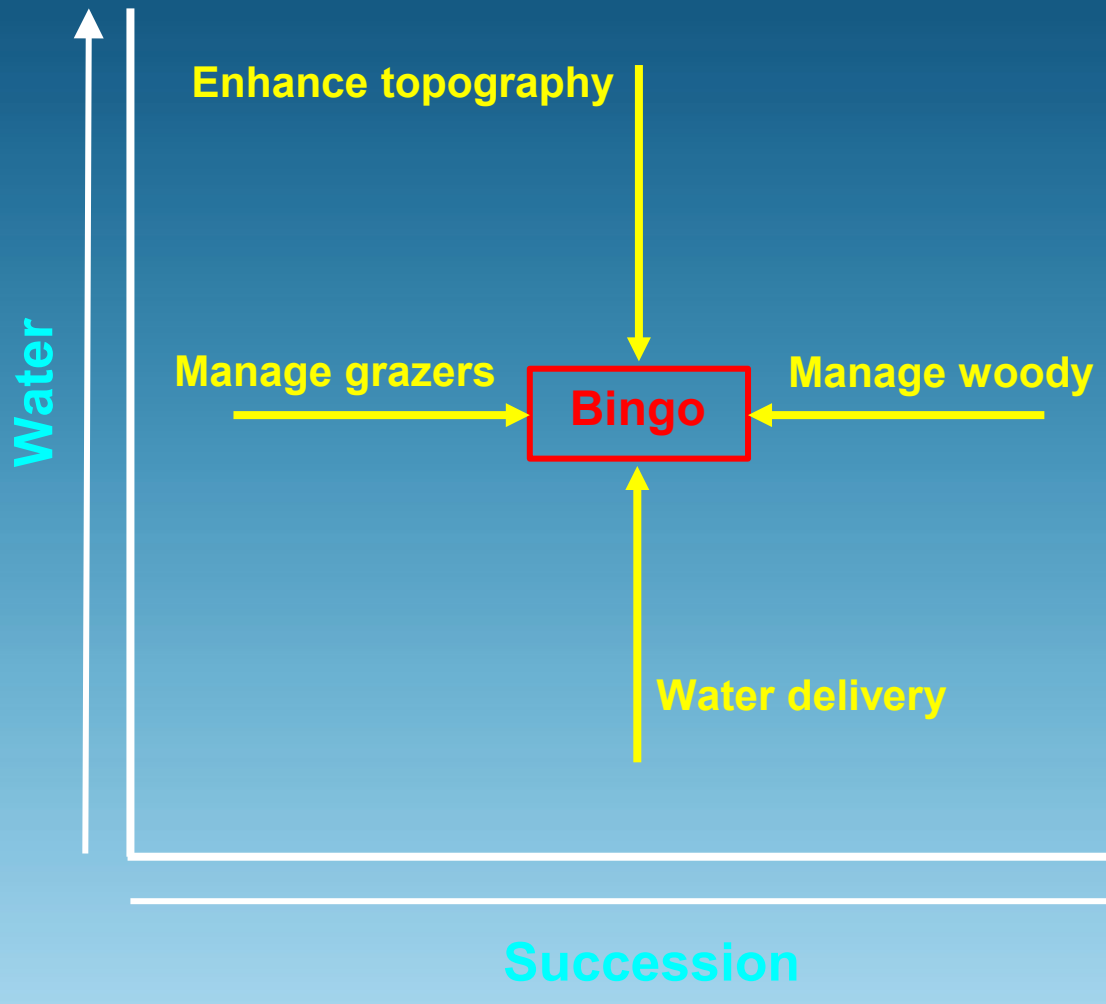
Managing Water



Managing Vegetation



Sweet Spot


Enhance topography
Manage grazers
Bingo
Manage woody
Water delivery
Water
Succession

Questions?

The Thing About Florida

- How do we know what makes suitable BLRA habitat in FL?
- Most ecosystems in FL is influenced by fire, water, and likely both!
- Need to know the system you're working in and understand its hydrlogy

Birds WILL move within and between seasons based on hydrology!!

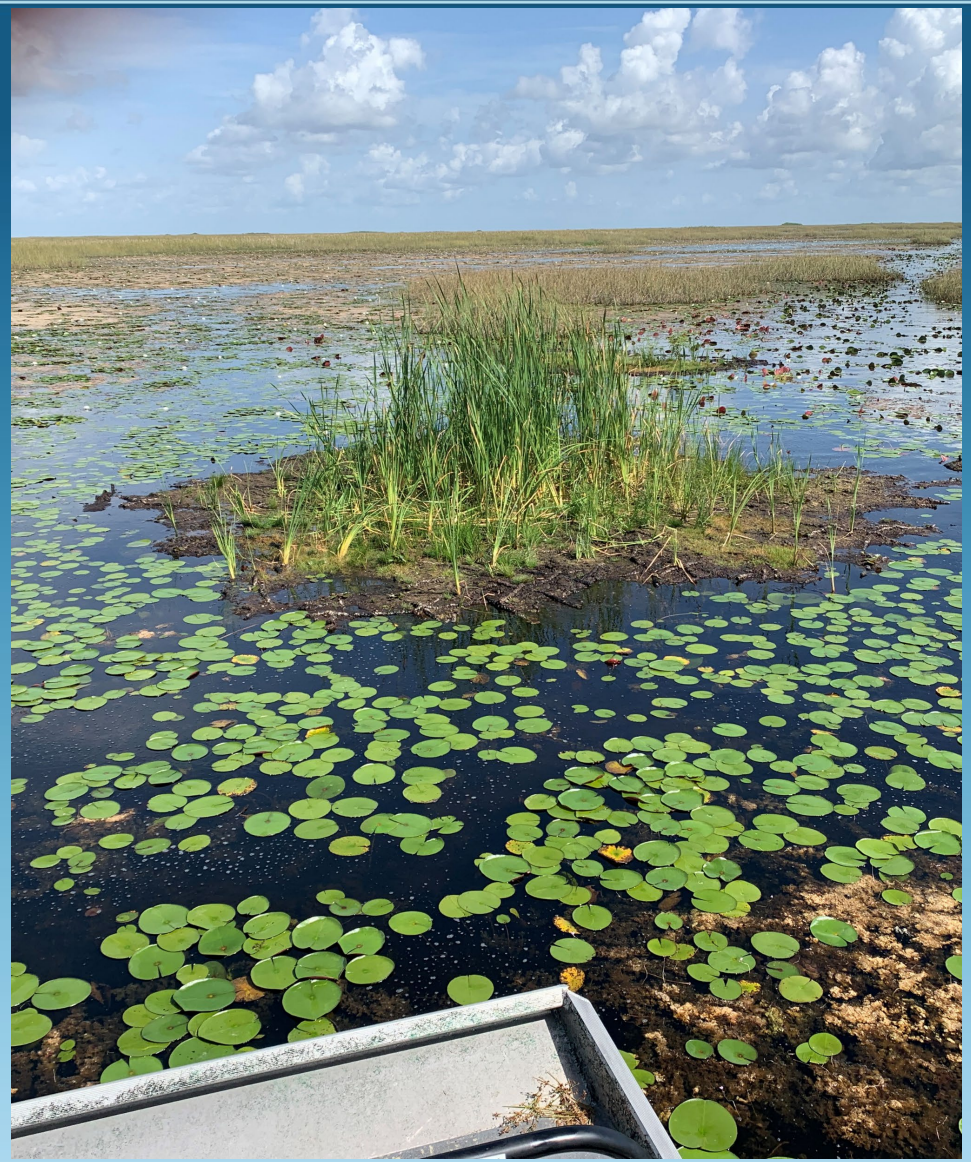
Novel Black Rail Habitats in South Florida

"Keeping Florida Weird"

Avon Park Air Force Range

South Florida Water Management District

Everglades Wildlife Management Area



Questions/Comments?

Break

Site Selection and Survey Design

- Primary Question: Is the habitat you are in suitable for Black Rail?
  - Factors:
    - Vegetation Structure
    - Hydrology
    - If suitable, surveys ARE recommended
- Next Question: What is the determination?
  - Factors:
    - Type of proposed action
    - Time of year

Site Selection and Survey Design

If you are in a Florida wetland that has dense herbaceous/grassy vegetation, you might be in BLRA habitat

If you are in Florida and in a wetland/upland transition zone, you might be in BLRA habitat

Site Selection and Survey Design

Things to Look For:

Wetland Types:

- –Tidal High Marsh
- –Everglades
- –Marl Prairie
- –Inland wet prairies
- –Managed wetlands
- –Etc.

We are still just beginning to understand the full breadth of wetlands the species occurs in FL!!
We rely on key habitat characteristics to guide our surveys

Site Selection and Survey Design

Things to Look For – Habitat Characteristics:

- Vegetation Structure:
  - VERY dense grassy herbaceous vegetation
    - Rushes, grasses, sedges including spartina, needlerush, and sawgrass
    - If you can see the ground, it's probably not dense enough
    - Highly dense vegetation can be smaller patches (as small as 30m dia.) within a larger wetland complex
  - Sparse to no woody vegetation (ideally in most circumstances)

Site Selection and Survey Design

Things to Look For – Habitat Characteristics:

- Hydrology:

  If vegetation structure is correct, the key determining character is hydrology

  - Moist soil to 3 cm of water for food production

    They're small birds and can't tolerate deep water

  - Microtopography/elevation heterogeneity

    They need areas that can be a little dry during high water/floods but still have at least moist soil during low water/droughts

    They like elevation transitions!

Site Selection and Survey Design

Cautions:

- The species has very low detectability even when specifically surveying for them

- Their dependence on shallow water/moist soil is ephemeral within and between seasons

Just because they aren't detected one year doesn't mean it isn't habitat under different hydrologic conditions in another year

Site Selection and Survey Design

Vegetation Structure

Site Selection and Survey Design

Suitable vegetation can be patchy within a wetland complex

Site Selection and Survey Design

Survey Design

- For evaluating proposed projects under ESA Section 7 we are only looking for presence/absence
- Choose survey sites that have suitable habitat
  - Appropriate vegetation structure
  - Appropriate hydrologic conditions (This may fluctuate!)
- Wetlands should be a minimum of 2 ha even if not entirely suitable habitat

Site Selection and Survey Design

Survey Design

- Survey points should be a MINIMUM of 400m apart

- Surveys should be conducted a minimum of 5 times within a nesting season

REMEMBER! These birds are extremely hard to detect

Site Selection and Survey Design

Hey! What about that thing I said about birds moving around the landscape based on hydrology??!!

One set of surveys SHOULD be enough as long as conditions remain the same!!

Questions?

Woody
Woodrow/USFWS

So Far…

We've covered:

- What: Federally Threatened Black Rail
- Why: To evaluate proposed project for impacts under ESA Section 7
- Where: Suitable habitat within wetlands >2ha

When?

Two Critical Time Periods

Nesting Season
(Determines presence/absence)

Florida • Everglades (area from Lake Okeechobee south)	16 Feb	15 May
• North and central interior, Gulf coast saltmarsh	16 Apr	15 Jul

Flightless Period
(Determination Implications)

Florida • Everglades (area from Lake Okeechobee south)	16 May	15 Jul
• North and central interior, Gulf coast saltmarsh	16 Jul	15 Sept

How?

Call-response Surveys
(because you will probably never see them!)

- Like avian point counts but using recording to elicit a response from territorial males

- Repeat visits a minimum of 7 days apart. Important!

- Timing of Surveys: Crepuscular Survey Period - 30 minutes before sunrise to 3 hours after sunrise OR 3 hours before sunset to 30 minutes after sunset

How?

Minute	Description
-0:15-0	15-second preparation period
0-1	passive
1-2	passive
2-3	passive
3-4	passive
4-5	passive
5-6	*kickee-doo*; 15 seconds of playback and 15 second break (2x)
6-7	*churt* and *grr-grr-grr*; 15 seconds of playback and 15 second break (2x)
7-8	break
8-9	*kickee-doo*; *churt* and *grr-grr-grr*; 15 seconds of playback and 15 second break (2x)
9-10	break
10-11	optional; heterospecific calls, black rail calls, or break
11-12	optional; heterospecific calls, black rail calls, or break

A Word About Automated Recording Units (ARUs)

Resources

A copy of the survey protocol, playback recordings (survey playback file and volume testing file), data entry spreadsheet, and editable datasheet are available here: https://www.fws.gov/EasternBlackRailSurveyProtocol. Call-type examples, surveyor training files, and versions of the playback recording in different formats and volumes are available here: https://drive.google.com/drive/folders/1_NgvU_VGrXWeP-PW-ItvpsM102gjxJFj

Questions?

Virginia Greene