

Step 4

Determine the Approach



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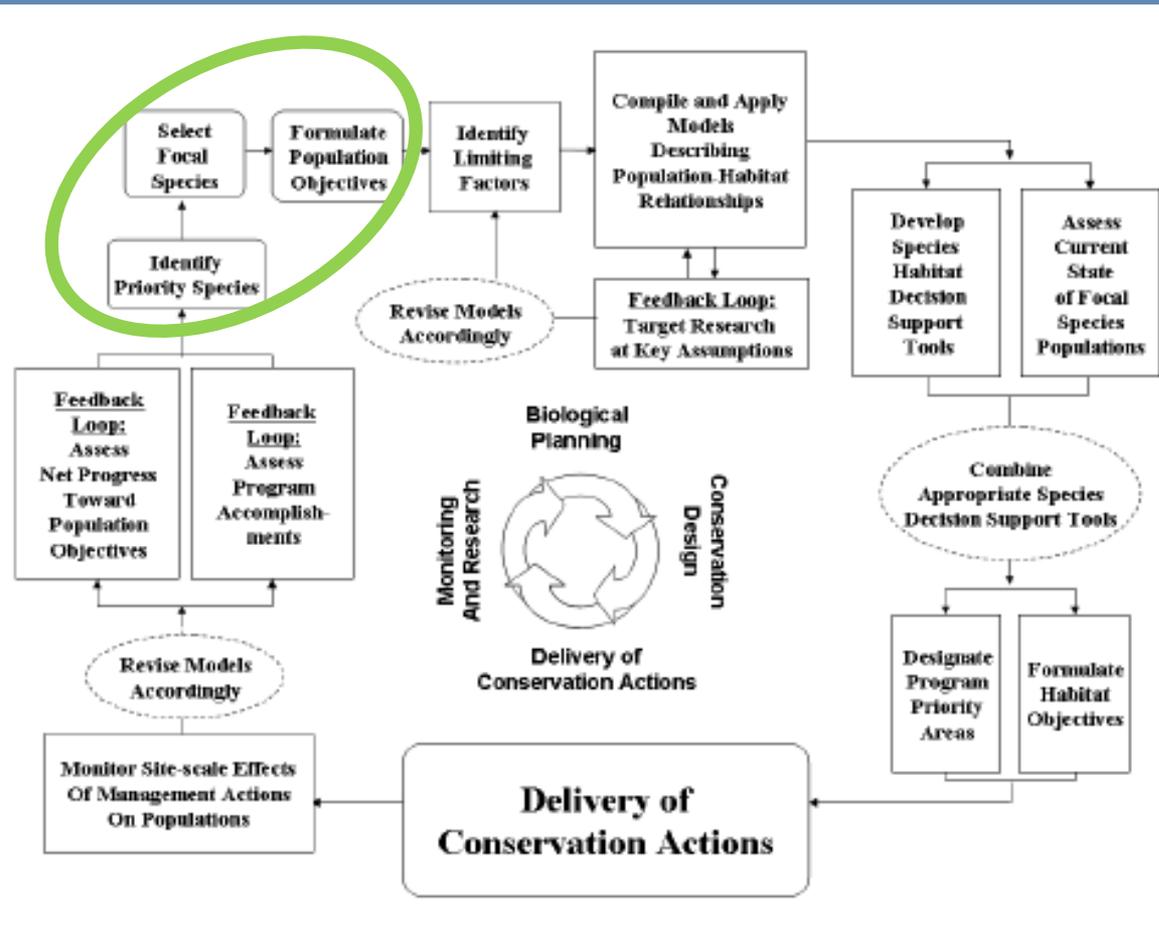


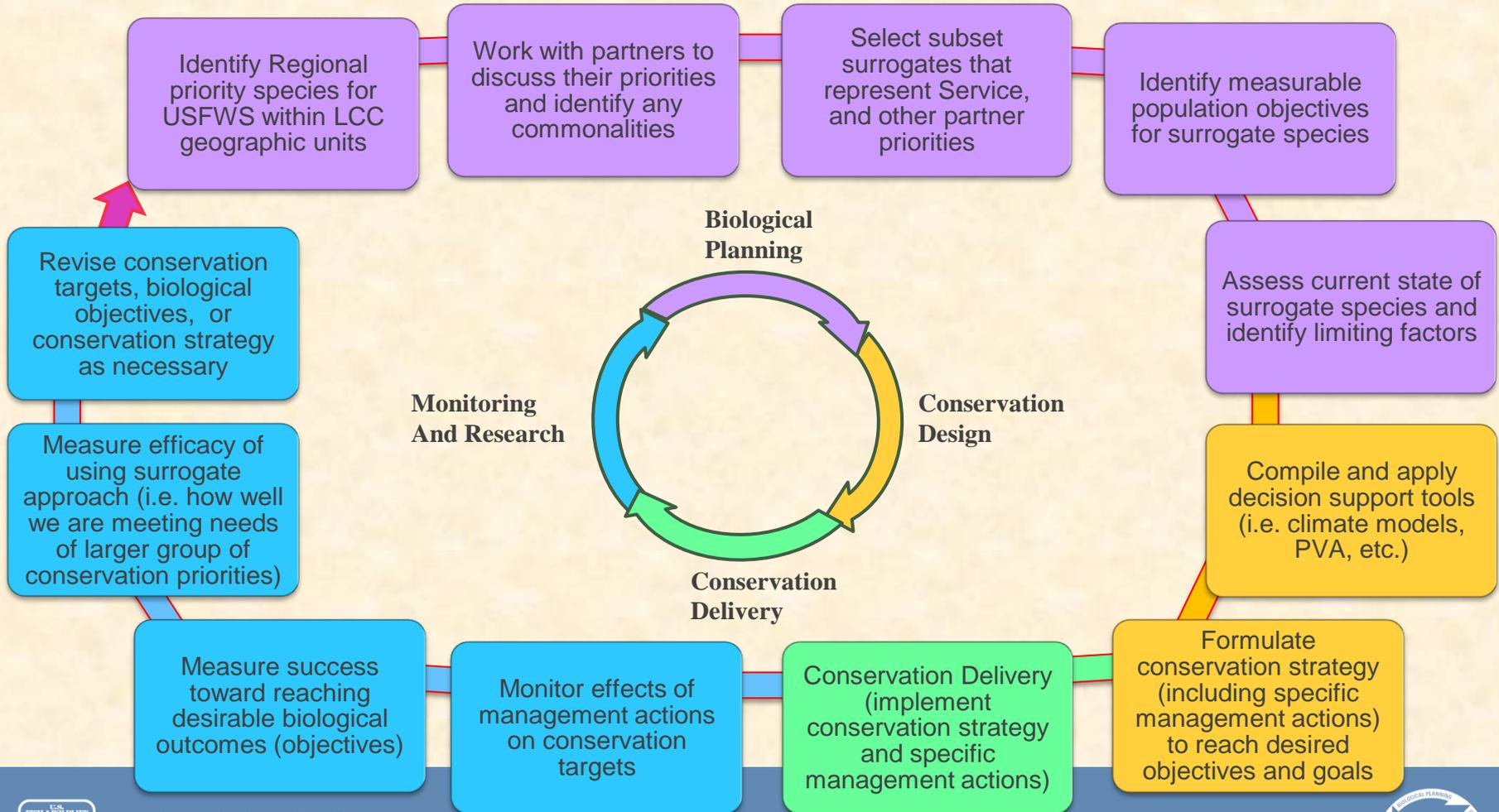
Learning Objectives

- *Discuss how the surrogate species approach differs from a priority species approach and what the benefits and ramifications of this approach are.*
- *Discuss how different surrogate species approaches are appropriate for different conservation “objectives”.*
- *Given the Service’s mission, describe the surrogate species approach that would be most appropriate to achieve it.*



Surrogate Species and SHC





Priority Species vs. Surrogate Species Approach

Priority Species

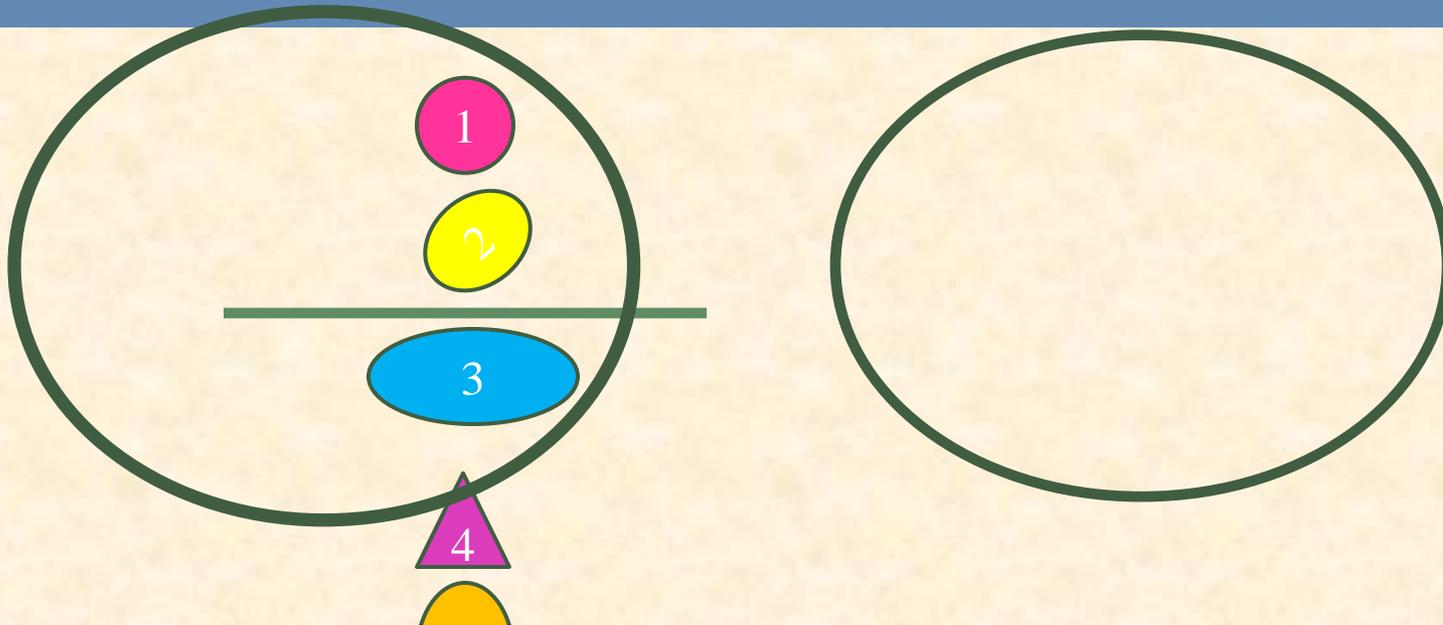
- Species in most need of management action
- Ranked
- Management focused on top species



Surrogate Species

- Considers species that are priority
- Assumption is that management for one species benefits other species





Surrogate Species: Species used to represent other species or aspects of the environment.



Discussion

Priority and Surrogate Species

How have you seen priority and surrogate species approaches applied?



Types of Surrogate Species

- **Focal species** in NEAT report
 - species that represent larger guilds of species that use habitats similarly
- **Focal species**
 - It is important to be clear on concepts behind terminology
 - Species that is being studied



Types of Surrogate Species

- Umbrella species and suites of umbrella species
- Landscape species and suites of landscape species
- Indicator species
- Management indicator species



Types of Surrogate Species

Umbrella Species

- A species, generally with large area requirements



The cheetah can be considered an umbrella species in its sub-Saharan range. Photo C. Michael Hogan

Conservation Objective

- Reserve design
- Conserve all species in a geography



Types of Surrogate Species

Landscape Species

- A species, generally with large area requirements
- Use large, ecologically diverse areas and often have significant impacts on the structure and function of natural ecosystems
- Often cultural icons

Conservation Objective

- Use wildlife to define and conserve functional landscapes (Wildlife Conservation Society 2008)



Types of Surrogate Species

Indicator Species

- Assess concentration of pollutants
- Assess environmental quality
- Assess market value
-

Conservation Objective

- Various
- Some definitions

It is important to be clear on concepts behind terminology



Documentation

- Description of surrogate species approach used
- Rationale
- Assumptions



Step 5

Establish Surrogate Species

- This step is the heart of the surrogate species process
- Critical to document process and assumptions
- Most opportunity for advancing the science behind the surrogate species approach



Learning Objectives

- *Discuss methods for grouping species and selecting surrogate species*
- *Describe key things to consider when selecting surrogate species*
- *Describe species information needed to group and select surrogate species*
- *List potential questions to test logic of surrogate species selection*



Criteria for Determining Surrogate Species

- Depends on the conservation objective and the surrogate species approach
- Identify surrogate species that best represent the full range of biological outcomes sought by conservation partners while maintaining the Service's commitment to its mission and trust responsibilities



Criteria for Determining/Grouping Surrogate Species

- Cover type associations
- Shared threats
- Similar life-history characteristics
- Categories of home range size
- Others



**Based on their relationship to
the conservation “objective”**



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Criteria for Selecting Surrogate Species

- Species' population dynamics track changes in the larger landscape or ecosystem
- Species and habitat parameters can be accurately and precisely estimated and are linked to changes in the landscape
- Likelihood of detecting a change in the species' status is high, given a change in the status of the ecosystem

From SHC Handbook (FWS 2008)



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Criteria for Selecting Surrogate Species

- Species/habitat dynamics have low natural variability, or additive variation, and changes in their values can be distinguished from background variation
- Cost of monitoring the species is not prohibitive
- Species are particularly adaptive to climate change and can be used to monitor species expanding their ranges

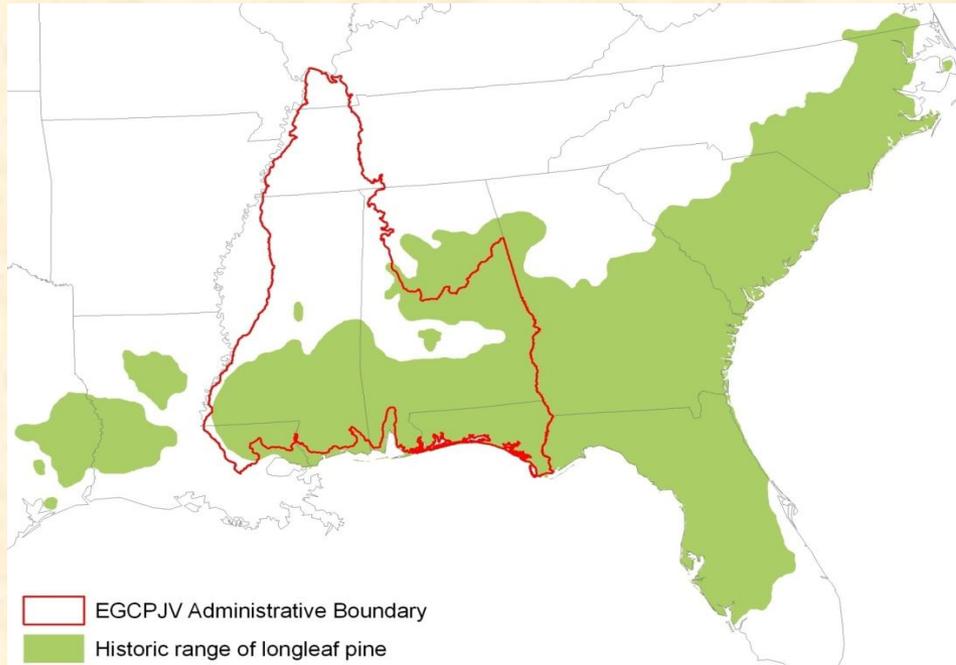
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Example : *Open and Longleaf Pine Avian Decision Support Tool (EGC PJV)*



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Example: Objectives

The Decision Support Tool (DST) was developed to prioritize the conservation value of areas to:

- Result in target populations of high priority birds
- Encourage longleaf reforestation where practical and appropriate
- Optimize use of limited resources and maximize benefits to birds by focusing efforts in the right places



Example: “*Focal Species*” Selection

“...a species whose conservation is expected to confer protection to a large number of naturally co-occurring species...”

- Team of regional experts (FWS and partners)
- Started with 86 avian species associated with open pine habitats
- Identified habitat characteristics required by priority species such as:
 - Low Percent Canopy Cover
 - Diverse and Herbaceous Understory
 - Low Basal Area/Tree Density
 - Significant Component of Old Trees
 - Presence of Dead Trees
 - Large Patch Size
 - High Fire Frequency



Example: “*Focal Species*” Selection

“...a species whose conservation is expected to confer protection to a large number of naturally co-occurring species...”

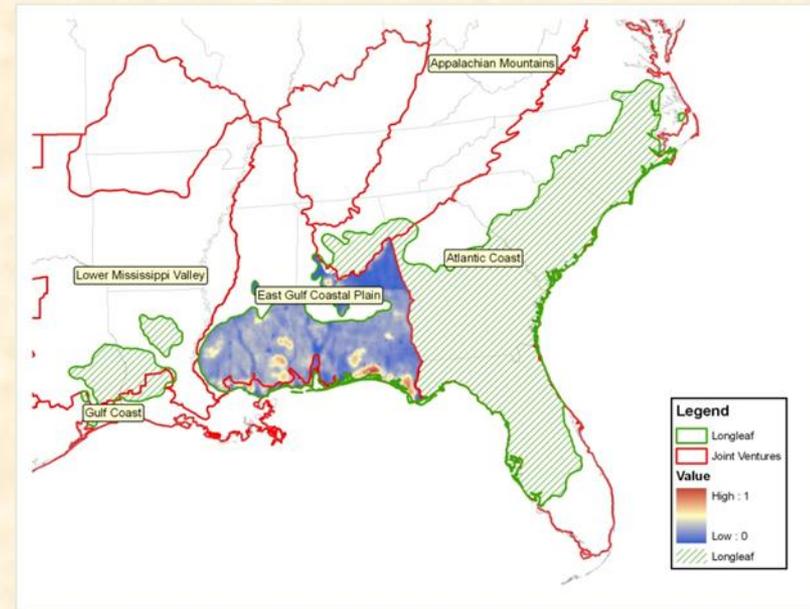
- Collectively, the team narrowed down the list of birds
- Six species ultimately chosen as representative species for one or more important habitat characteristics:
 - Red-cockaded Woodpecker – example: old trees, dead trees, large patch size
 - Northern Bobwhite – example: low % canopy, herbaceous understory, low tree density
 - Bachman’s Sparrow
 - Henslow’s Sparrow
 - Brown-headed Nuthatch
 - Southeastern American Kestrel



Example: *NEXT STEPS*

Rangewide DST for Open Pine Ecosystem Conservation

- Longleaf range greater than the EGCP JV boundary
- Longleaf restoration is high priority
- JVs and LCCs cover the entire range
 - Atlantic Coast JV
 - Lower Mississippi Valley JV
 - East Gulf Coastal Plain JV
 - Gulf Coast JV
- Add Other Wildlife Species of Concern
 - Black pine snake
 - Gopher tortoise
 - Others TBD



Documentation

- The universe of species considered
- Surrogate approach used
- Criteria used to determine groupings and surrogate species
- How the selection criteria were applied
- Surrogate species selected and what they represent
- Assumptions



Questions?



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