

Selecting Species as Drivers of Landscape-scale Conservation



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Session Objectives

Encourage FEEDBACK and INVOLVEMENT in exploring and understanding:

- CONCEPTS associated with "species selection"
- CHALLENGES associated with "species selection"
- APPLICATIONS of "species selection"
- SURROGATE SPECIES as a form of "species selection"



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Conservation Objectives

- *SHC is driving us to take a broader, landscape approach to conservation*
- *Relies on an adaptive management framework to inform decisions about where, how, and how much is needed to achieve biological outcomes*
- *Objective - Characterize and maintain functional landscapes capable of supporting self-sustaining fish, wildlife, and plant populations.*

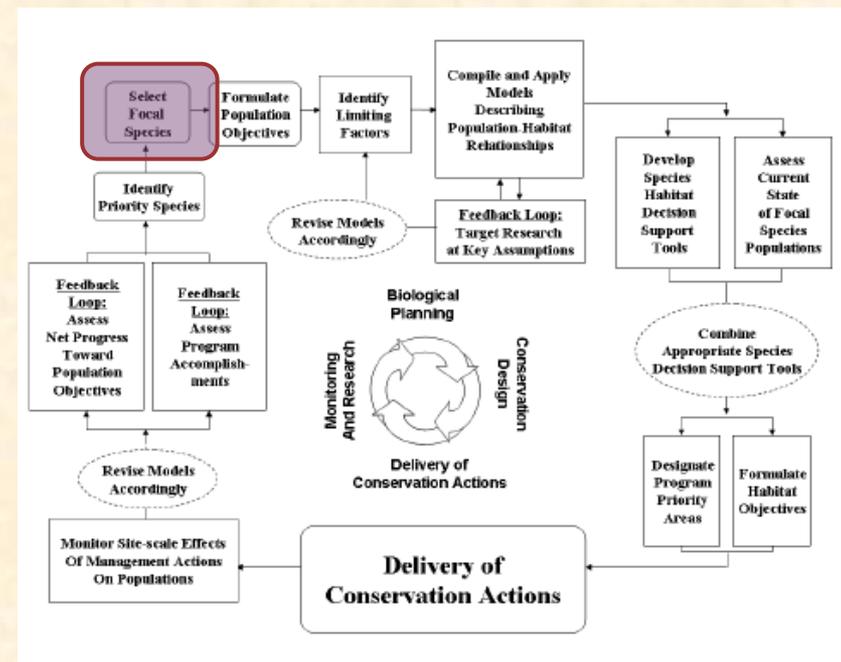


A Daunting Responsibility

Responsibility for
myriad species/resources

Unrealistic to:

set population objectives,
Conservation of landscapes capable
of sustaining all species is impractical
translate these to habitat objectives,
deliver habitat conservation specifically for,
on a species-by-species basis
and evaluate and monitor
every aspect of a functional landscape



How Can We Begin to Focus?

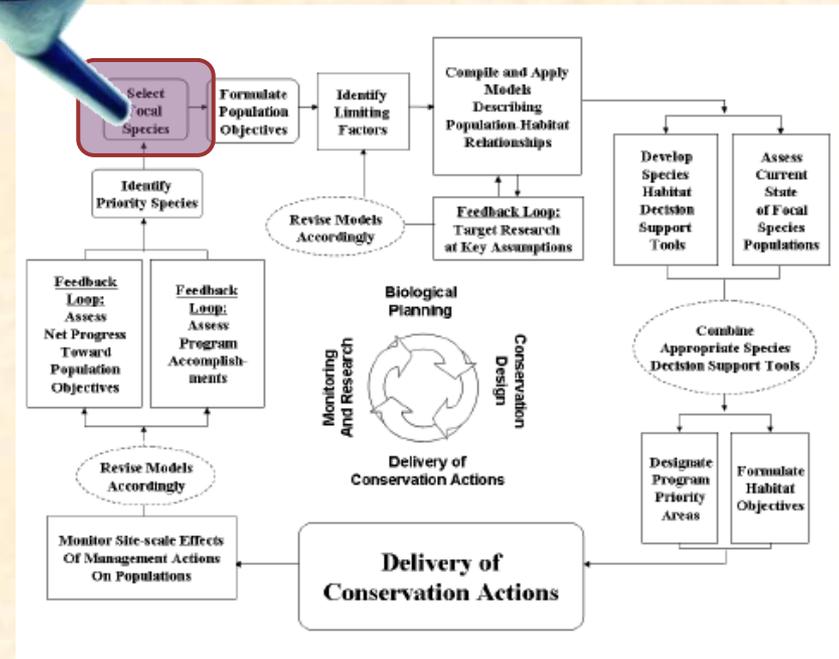


... in ways that best preserve our broad responsibilities to many species?

We all focus to some degree already!

How do YOU do it?

What do you consider?



Selecting Species

- Inherent Challenges -

Requires Consideration of:

- Objective(s)
- Scope & Scale
- Selection Criteria
- Assumptions, Uncertainties, Limitations, Risks
- Implications to Decision Making



Priority vs. Surrogate Species

- Concepts -

Priority Species

- Emphasize a subset based on any number of criteria
- Implies relative rank/importance
- Exclusionary approach
- 1:1 species benefits
- Any broader benefits implied/assumed



Surrogate Species

- Emphasize as many species as possible
- Not intended to imply relative rank/importance
- Inclusionary approach
- 1:many intended species benefits
- Broader species benefits explicitly stated, evaluated



Priority vs Surrogate Species

- Basis & examples -

Priority Species

- Conservation status & vulnerability
- Economically important
- Culturally important
- Program specific
- Organization specific
- E.g., Spotlight Species, Birds of Conservation Concern, ESA listed, etc

Surrogate Species

- Ability to represent other species or aspects of the environment.
- e.g., Umbrella, Keystone, Engineering, Indicator, Foundation, etc.



Surrogate Species Approaches

Variety of Specific Approaches:

Umbrella, Indicator, Keystone, Focal,
Representative . . .

- Suitability of any particular surrogate species concept depends on specific conservation objectives of the application, and relevant geographic scale



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The Power (& Pain) of Terminology

Surrogate Species



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Surrogate Species as Priorities?

Efforts to apply and identify surrogate species can be PRIORITIES, but surrogate species per se should not be confused with the traditional context of “priority species.”



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Should Surrogates Drive Resource Investments?

Like “priority species”, Yes!

Should they drive all investments? No!

**If concepts sound, and application successful:
investments in surrogates should equate with
investments in other species.**

The reciprocal should also be true.



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Key Surrogate Assumption

Undertaking actions that support conservation objectives for surrogate species in a given area will contribute to supporting the needs of larger sets of species characteristic of the area



What does “Support” Mean?

Sustainability
Viability
Persistence
Desired levels

Can not simply mean **MATCHING
PRESENCE!**



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Surrogate Species

A LENS through which to consider and approach broad responsibilities for ecosystem conservation

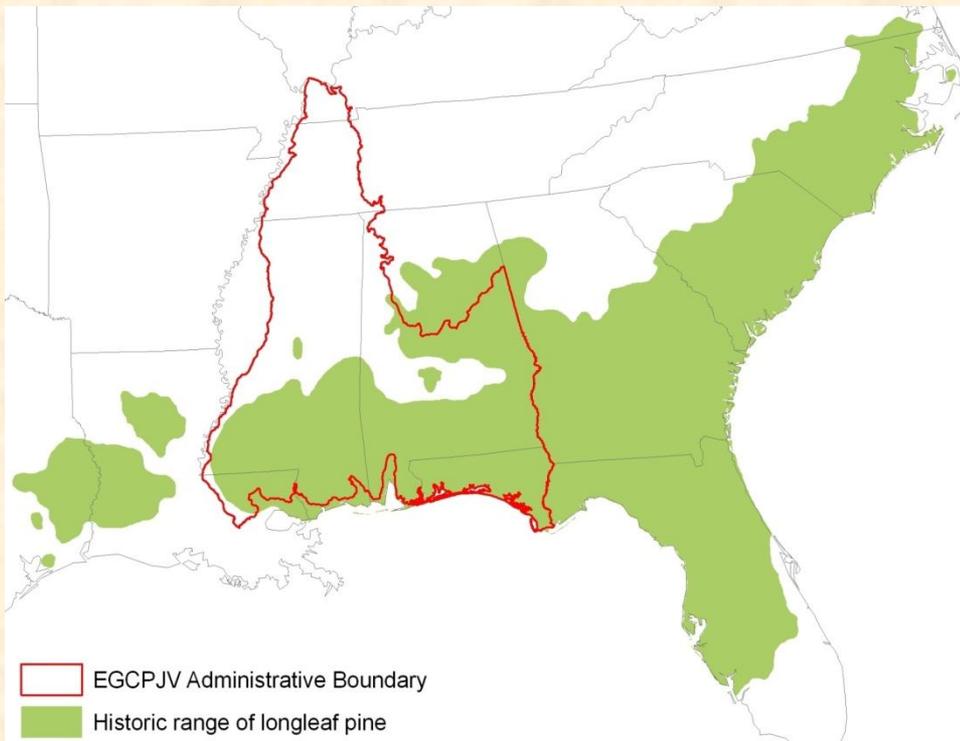


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Use of Surrogate Species East Gulf Coastal Plain

Open Pine Decision Support Tool



EGCP Surrogates in Open Pine

Red-cockaded Woodpecker

Southeastern American Kestrel

Bachman's Sparrow

Brown-headed Nuthatch

Northern Bobwhite

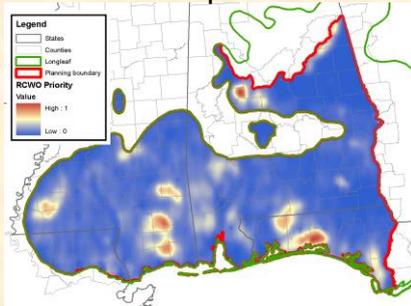
Henslow's Sparrow



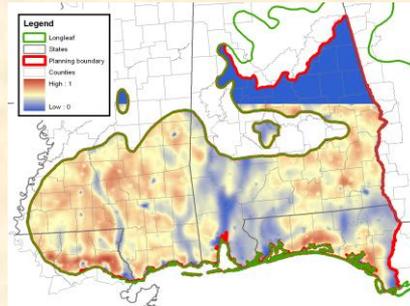
Use of Surrogate Species East Gulf Coastal Plain

Open Pine Decision Support Tool

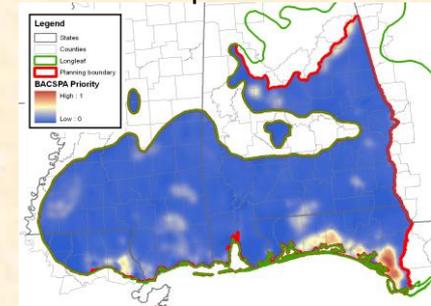
Red-cockaded
Woodpecker



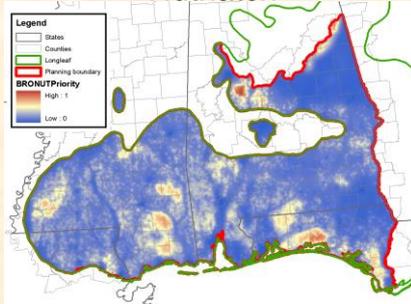
SE American
Kestrel



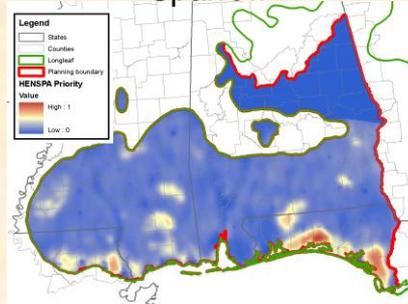
Bachman's
Sparrow



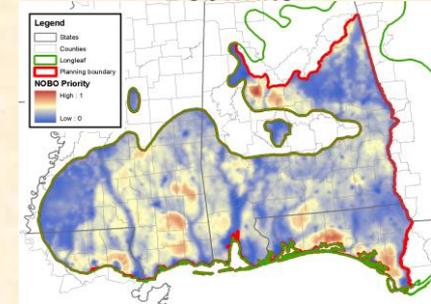
Brown-headed
Nuthatch



Henslow's
Sparrow



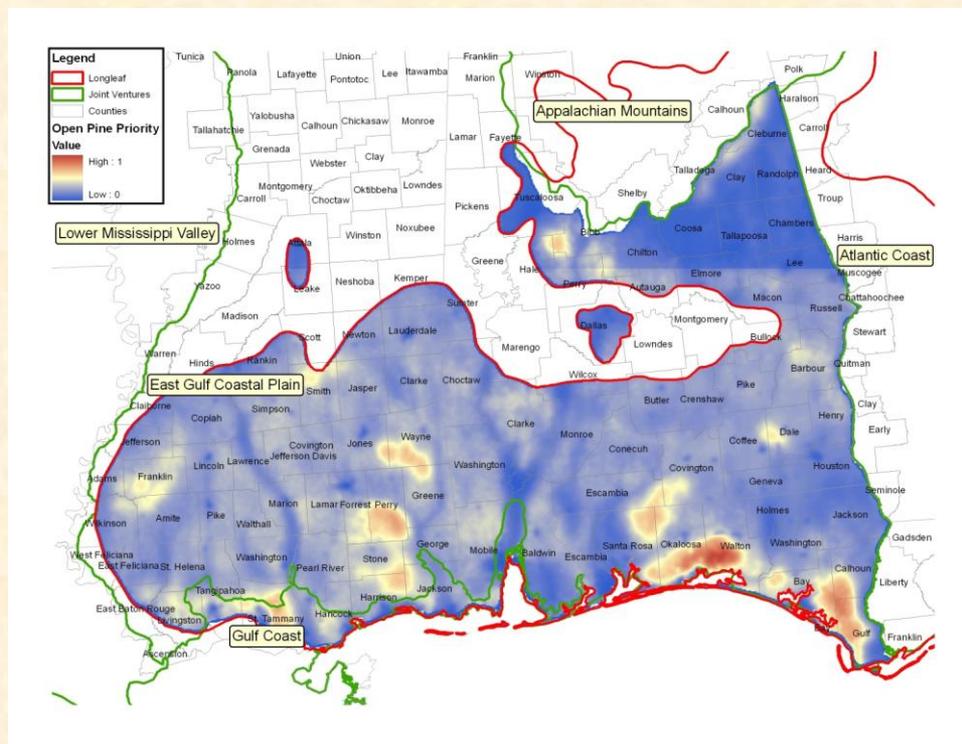
Northern
Bobwhite



Use of Surrogate Species

Real-World Examples

Open Pine Decision Support Tool (EGCJV)



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Use of Surrogate Species East Gulf Coastal Plain

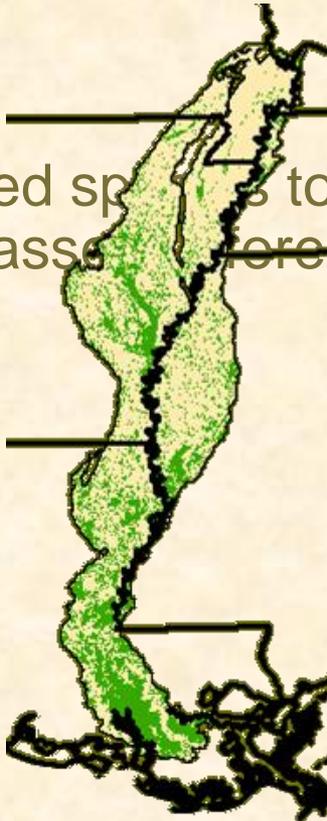
- Develop tools that enable more strategic conservation of open pine habitats.
- Guide decisions – where, when, how, and why to undertake conservation actions.
- Comprehensive landscape analysis; application of conservation biology principles (patch size, fire, viability, juxtaposition).
- Maximize conservation benefits for birds and other wildlife.



Use of Surrogate Species Lower Mississippi Valley

Forest Breeding Bird Decision Support Tool

- Selected species to represent three size classes of forest core



MAV Forest Breeding Bird Surrogates

Swainson's Warbler

Cerulean Warbler

Swallow-tailed Kite



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Use of Surrogate Species

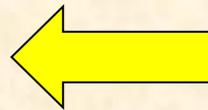
Lower Mississippi Valley

Ecological Suites

Habitat Needs



Swainson's Warbler
 Prothonotary Warbler
 Hooded Warbler
 Wood Thrush
 Acadian Flycatcher



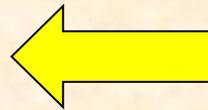
Forest Blocks $\geq 4,000\text{ha}$



500 Pairs



Cerulean Warbler
 Kentucky Warbler
 Summer Tanager
 Yellow-billed Cuckoo
 Eastern Wood-Pewee



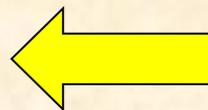
Forest Blocks $\geq 8,000\text{ha}$



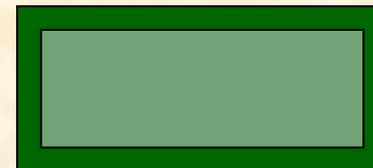
500 Pairs



Swallow-tailed Kite
 Red-shouldered Hawk
 Broad-winged Hawk
 Pileated Woodpecker
 Cooper's Hawk



Forest Blocks $\geq 40,000\text{ha}^*$



~80 Pairs



Other Examples

- Applications not restricted to bird world

THE POINT – all efforts involving use of surrogate species must tie back to effective conservation of “functional landscapes”



Surrogate Species

- Final Thoughts -

- Decision process best conducted within a community of stakeholders
- Finally, keep in mind that you could actually be talking about the same thing, just using different terminology!
- Going it alone or in independent directions won't be effective



Questions?



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