



Strategic Habitat Conservation:

Selecting Species for Designing Functional Landscapes





The 21st Century Conservation Vision

To meet the challenges of the 21st Century, we must:

- Make strategic, cost-effective conservation investments;
- Increase efficiency, transparency, accountability; and
- Design/manage for landscapes that support self-sustaining populations of fish and wildlife and provide for the needs of people.



Leaving a lasting wildlife legacy for future generations



The 21st Century Conservation Vision

Focus Our Thinking

by shifting from site-specific or a single-species approach to a more integrated and complex landscape-scale model – one that accounts for the complexity and interrelated nature of ecosystems.

Connect and Organize

our planning to work at the landscape-scale by addressing challenges like habitat degradation, encroaching development, climate change, and loss of biodiversity.

Build Consistency

by coordinating with partners across programs, agencies, and boundaries to apply the best available science and technology to address the conservation challenges we face.



Continuing the SHC Cycle



2006
Adoption of
SHC



2009
Development
of LCC's



2012
Species and
Functional
Landscapes



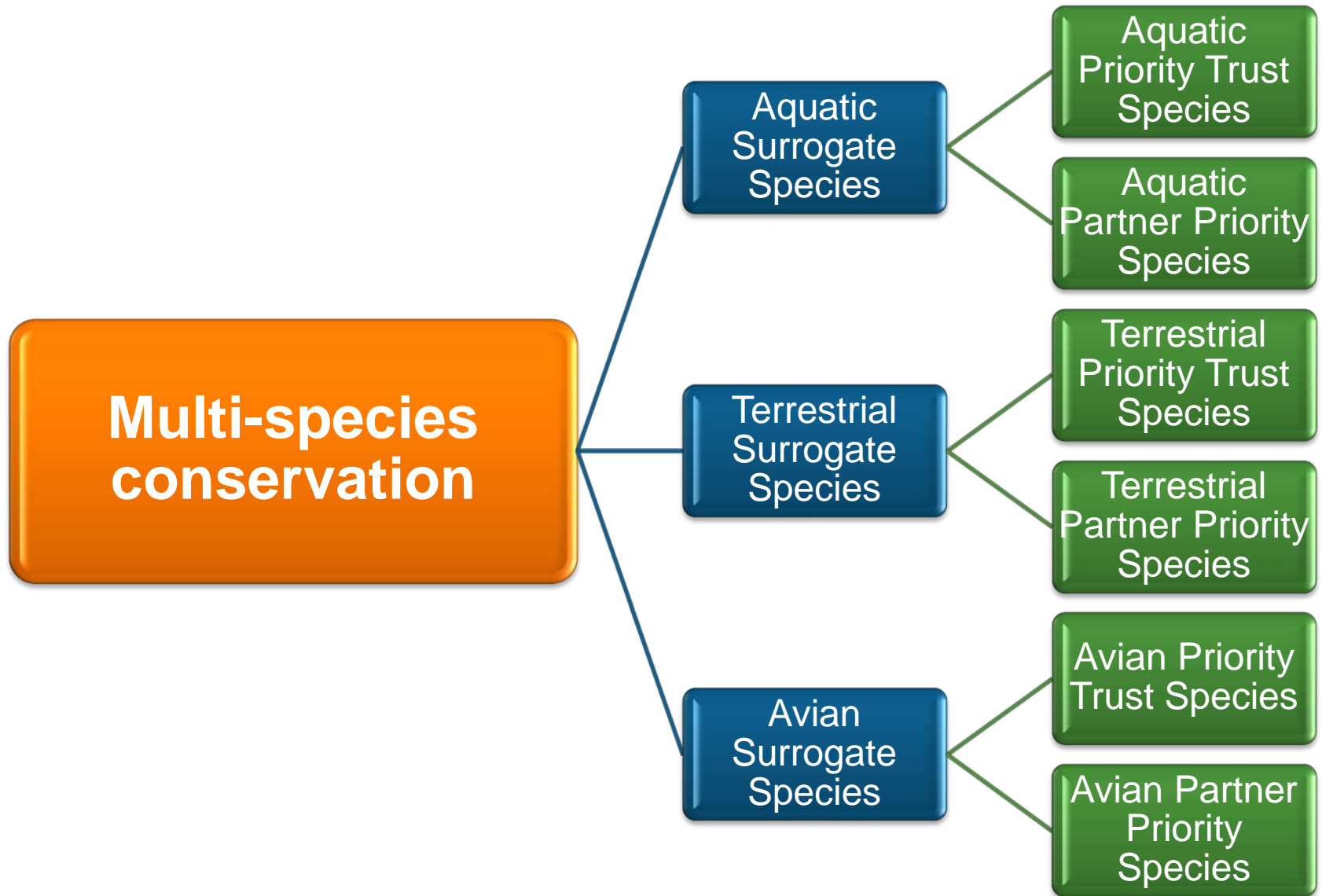
What Are Surrogate Species?

Surrogate species are used to represent other species or aspects of the environment. They are used for comprehensive conservation planning that supports multiple species and habitats within a defined landscape or geographic area.





What is the Surrogate Approach?





What is in the Draft Guidance?



The guidance describes **an approach, not a prescription**, for selecting a subset of focal conservation targets that can represent other species or aspects of the environment.



The guidance describes steps for identifying and selecting surrogate species.



It discusses the advantages, conservation applications, and limitations of this conservation planning technique



Regional Science Working Group

This team serves across programs as reference and in-reach specialists to refine and implement science related activities:

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- Greg Watson Science Applications, Chief, Landscape Conservation
- Meg Estep Budget and Administration, Water Resources
- Larry Gamble Geo Supervisor Fisheries
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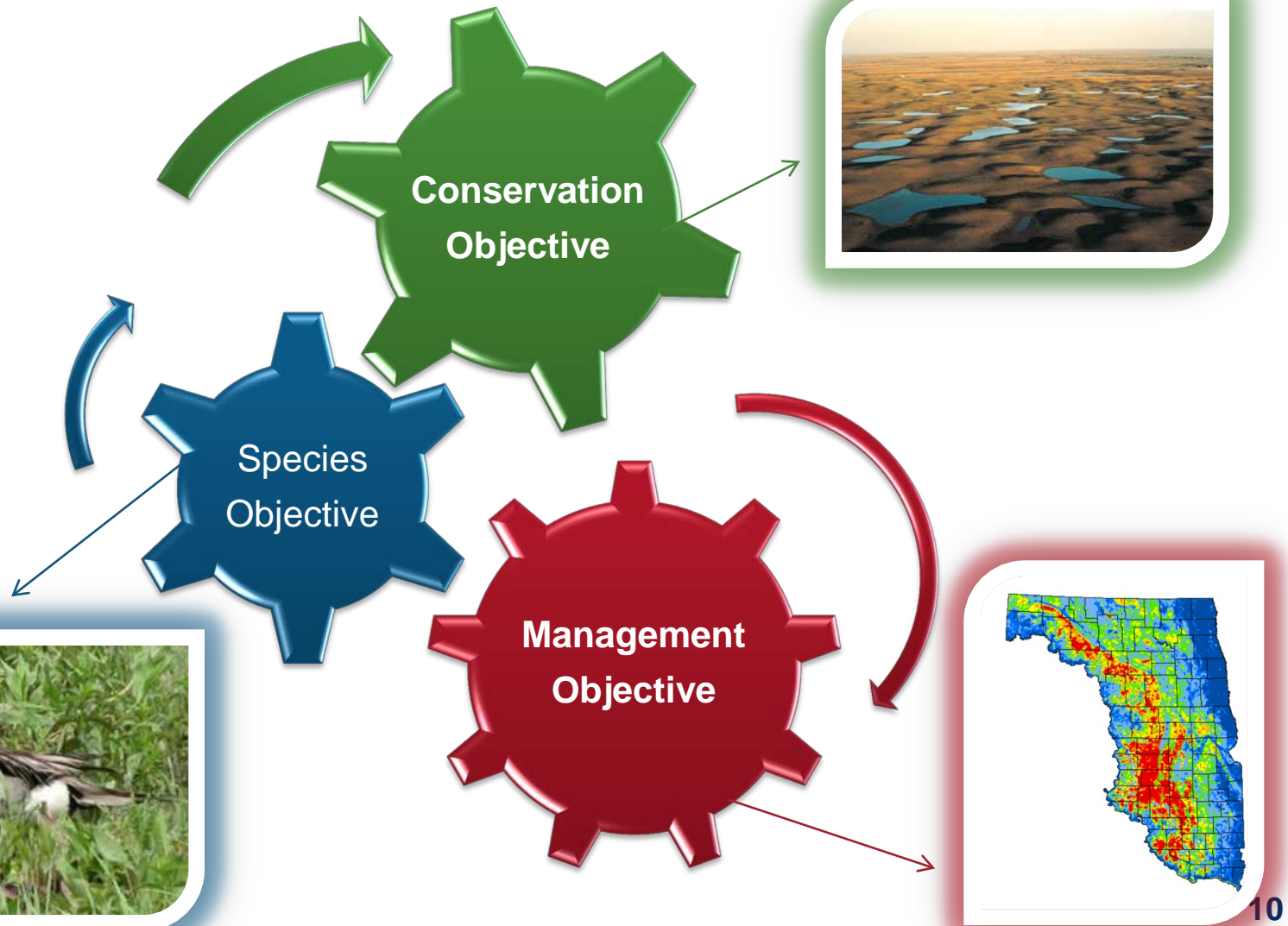
Step 1: Specify Conservation Objectives

- Surrogates allow for translation of Conservation Objective to tangible Management Objectives.
- For USFWS - Characterize and maintain functional landscapes capable of supporting self-sustaining fish, wildlife, and plant populations.





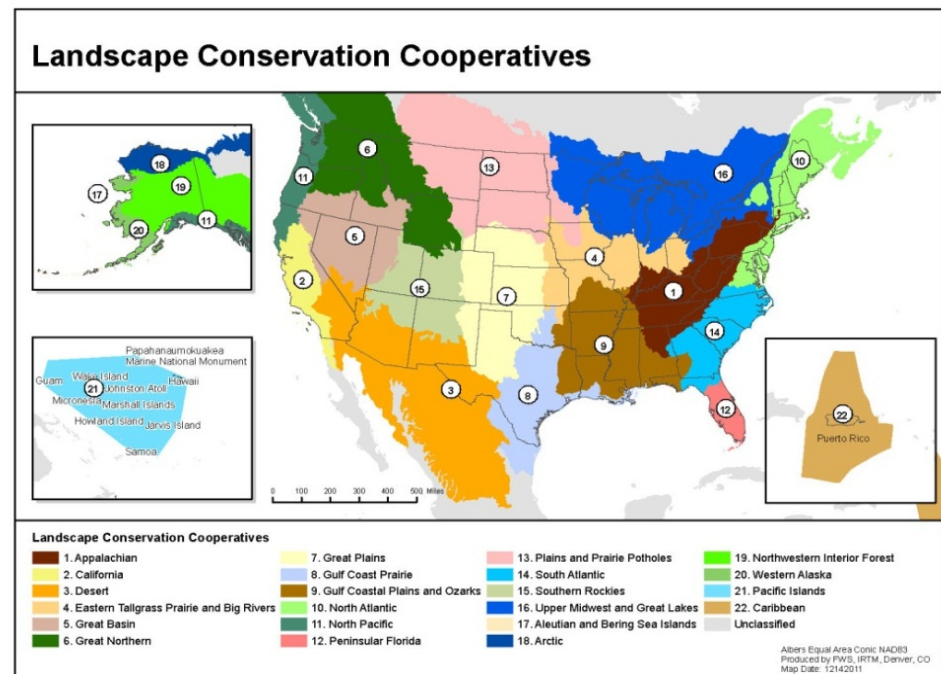
A Prairie Pothole Example





Step 2: Select Appropriate Scale

- Ecologic/Geographic units could be used to aggregate/subdivide Landscape Conservation Cooperative geographies, including aquatic frameworks
- Subunits or aggregates provide basis for conservation targets to be rolled up or down to “fit” management and/or monitoring scales





Step 3: Decide Which Species To Consider

Potential Surrogate Species

- Measureable expression of desired ecological outcomes.
- For FWS, outcomes expressed in terms of Federal trust species.
- The Service can only achieve desired outcomes by working with our conservation partners - partner priorities must be integrated.
- Surrogates should effectively represent merged priorities.

Potential Surrogate Species

USFWS Priority
Trust Species



Partner Priority
Species





Step 4: Determine Approach

The Surrogate Species approach assumes a management action for one species will similarly affect other species.



Keystone Species:

Have a disproportionate effect on community structure.



Umbrella species:

Represent a large geographic area of species that use habitats similarly.



Indicator Species:

Reveal significant changes to the environment due to pollutants, temperature changes etc.



Step 5: Establish Surrogate Species

- Criteria for determining surrogate species depends on the desired management objectives and the ability of the species to “track” those objectives.
- Selection of surrogates will be documented – including criteria and assumptions.
- Factors
 - cover types
 - shared threats
 - similar life-history
 - home range size

The Goal: To 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.





Step 6: Identify Species Requiring Special Attention

- There may be priority species with management needs that will not be met by conservation of the selected surrogate species
- Those that:
 - Have unique habitat needs
 - Experience unique threats
 - Have limited ranges
- Specific “alternate” management considerations may be required



Bat with White-Nose Syndrome



Step 7: Identify Population Objectives

- A population objective represents a measurable expression of a desired outcome.
- The purpose of population objectives and performance measures is to link measurable response to landscape change. Change resulting from conservation actions, land use conversion and effects of system change (e.g., climate).



Golden Eagle

– Abundance

Ex: 5,000 eagles

– Trend

Ex: 10% annual increase

– Vital Rates

Ex: 2 fledglings/pair/year

– Population index

Ex: 300 active territories

Example only: not actual numbers







Potential Sources of Existing Population Objectives


| Conservation Target/ Species Groups | Existing Guidance with Goals & Objectives |
|--|---|
| Migratory birds | Goals and objectives from continental plans for waterfowl, land birds, water birds and shorebirds; Joint Venture or Bird Conservation Region implementation plans |
| Species of Greatest Conservation Need | State Wildlife Action Plans |
| Fish and aquatic resources | Management plans by stocks or sites; National Fish Habitat Action Plan partnerships |
| Threatened and endangered species | Recovery plans, Spotlight Species Action Plans, 5-Year Reviews |
| Game species | State management plans |
| Ecological services and other more traditional conservation targets (species, habitat types) | Other partner strategic planning documents and implementation plans. |




Step 8: Test for logic and consistency

- 
- Evaluate effectiveness of surrogates in representing the needs of the larger set of species.

- 
- Be consistent in selection of species and their management objectives across the landscape.

- 
- Can engage expert review and simulation modeling for scenario testing.

- 
- Evaluate logic of the selected surrogate species and not the effectiveness of the management practice.



Step 9: Identify knowledge gaps and uncertainties

- Make management decisions and actions despite uncertainty.
- Document knowledge gaps and uncertainties to target resources with the most pressing needs.
- Use gaps and uncertainties to drive research/monitoring.
- Throughout the process of surrogate species selection and establishing biological outcomes, we must document assumptions to be tested through experimentation and/or monitoring.



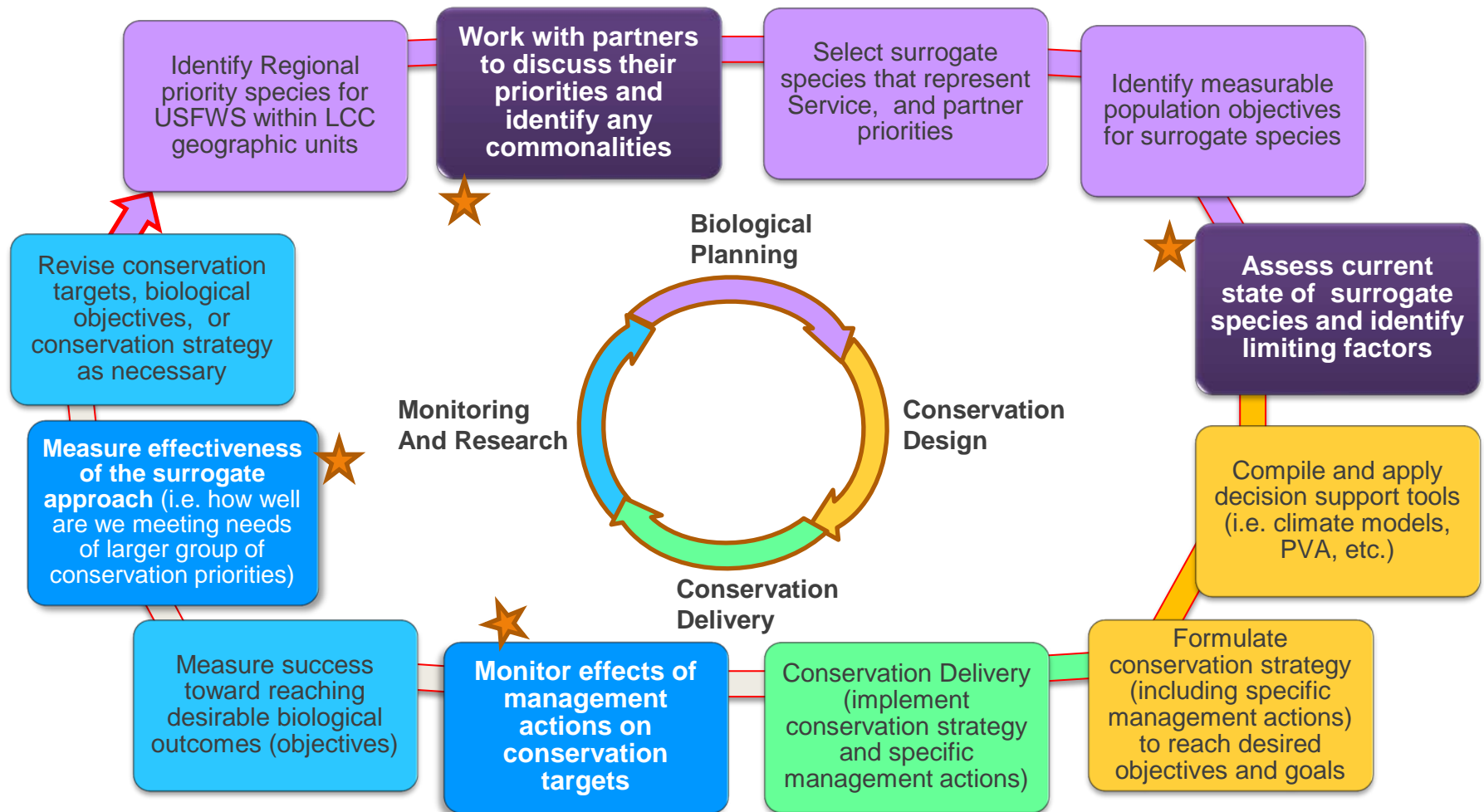


Step 10: Setting the stage for monitoring the effectiveness of the surrogate species approach

- Selecting surrogate species is a key piece of the biological planning process of **Strategic Habitat Conservation**.
- Test the conceptual “*linkage*” between the surrogate species and the species it represents, and not the management practices.
- Design monitoring to test effectiveness of approach.
- Develop expected biological outcomes for both the surrogate species and the represented species.



Strategic Habitat Conservation Conceptual Diagram





FWS Region 6 Proposed Convergence Approach

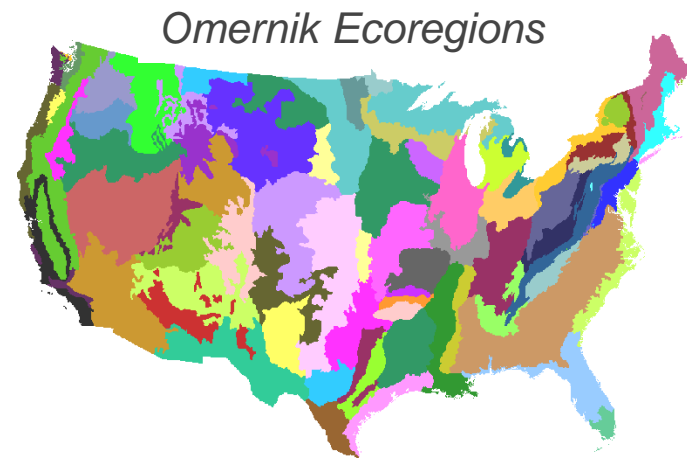




Potential Rule Sets & Considerations for Surrogate Species Identification With Partners

Spatial Delineation and Scale Consideration

- LCC Boundaries as “starting place” – scale up, scale down?
- Omernik Ecoregions, watershed Boundaries to define finer scale?
- Species ranges to define broader scale?
- Limits on number of species by “analysis area”?



Risk Factors: urgency, extent.

Life Form: avian, aquatic, terrestrial.



Potential Rule Sets & Considerations for Surrogate Species Identification With Partners

Once refined, critical assessment of “draft surrogates” should adequately represent ecological functions for example:





Next Steps - Timeline

Feedback & Workshop Process

Fall 2012

Peer Review of Technical Guidance

Winter 2012

Finalize Technical Guidance

Spring 2013

Develop Surrogate Species List

Summer 2013

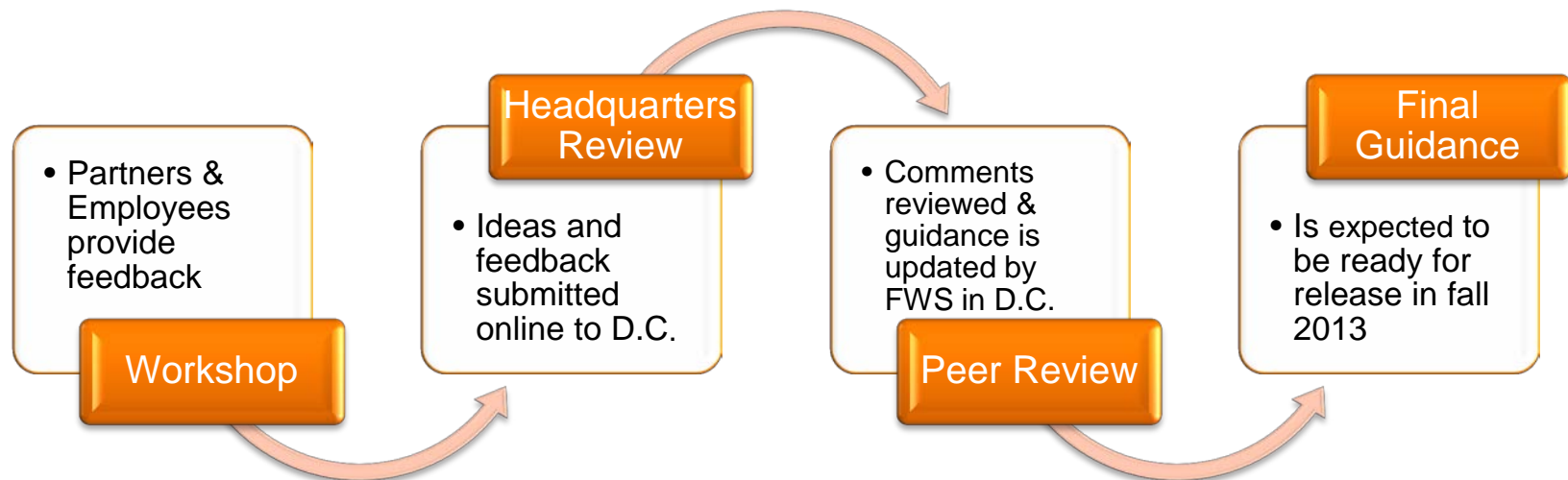
Finalize Surrogate Species

Fall 2013



We value your feedback!

- Input through a web based form: <http://1.usa.gov/SfXgfM>
- Or send an e-mail to: shc@fws.gov
- For employees: <http://goo.gl/fE2zF>
- Surrogate Species Information on the web: <http://go.usa.gov/rJZB>



Comment Deadline: December 7, 2012





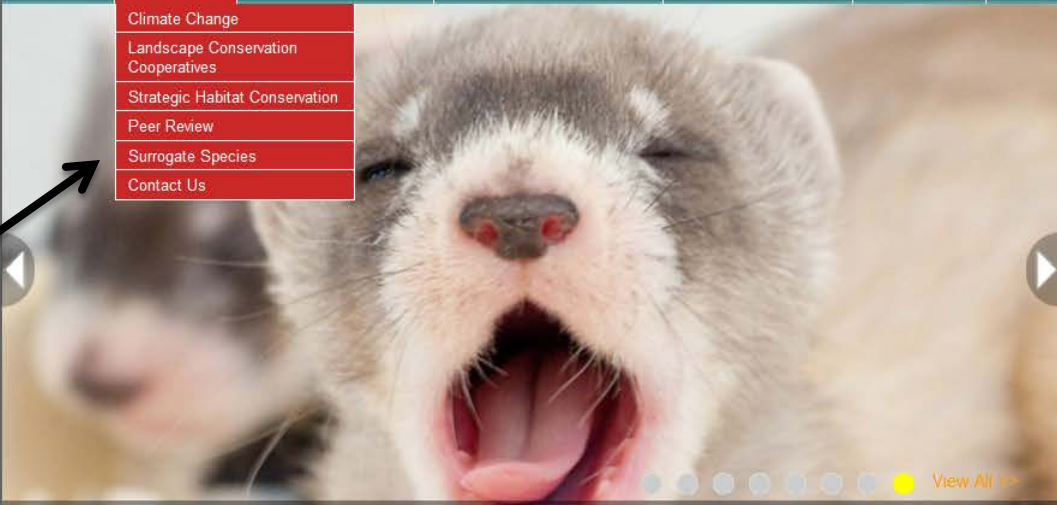
U.S. Fish & Wildlife Service Mountain-Prairie Region

Mountain-Prairie Region

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The Mountain-Prairie Region of the U.S. Fish & Wildlife Service consists of 8 states in the heart of the American West.

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Surrogate Species - Windows Internet Explorer
http://www.fws.gov/mountain-prairie/science/surrogate_species.cfm

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Surrogate Species

Surrogate species is a commonly-used scientific term for system-based conservation planning that uses a species as an indicator of landscape habitat and system conditions. Surrogate species are used for comprehensive conservation planning that supports multiple species and habitats within a defined landscape or geographic area.

To enable effective and efficient fish and wildlife conservation, the Service has developed draft technical guidance to help employees and partners establish biological outcomes at defined landscape scales. This guidance describes a standard process and criteria for defining biological outcomes using a surrogate species approach, reducing the burden of addressing the requirements of many species individually. The application of this guidance represents an opportunity for the Service to participate with partners in advancing understanding of surrogate species science and refining application of the Strategic Habitat Conservation (SHC) framework to our conservation activities.

[View the Draft Technical Guidance](#)
[The Surrogate Species Approach](#)
[Frequently Asked Questions](#)

Presentations

An overview look at [surrogate species](#)
An in-depth look at the [surrogate species guidance](#)
View a working [Montana example](#)

Upcoming Workshons

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Species Presenta... Ivy Allen - Inbox -... Surrogate Species...

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Key Concerns and Questions We've Heard

Partners don't see an incentive or benefit for them to engage in the process.

How will monitoring be conducted and funded?

Will surrogate species impact funding levels?

What are the appropriate scales?

States are concerned with any federal process to set population objectives for state trust species.

Everyone has expressed a need for more time to evaluate the draft guidance.

Western states want to help design the implementation strategy.



Feedback and Discussion



What do you think of this approach?

Is this feasible?

What do you see as critical flaws to this approach?

What assumptions or hypotheses must be tested in the development of rule sets or representative species selection?

Is your agency/organization willing to work with the Service in the development of this strategy?