

# Step 8

## Test for logic and consistency



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# Learning objectives

- *Explain the importance of evaluating the effectiveness of selected species for representing a broader suite of species*
- *Describe strategies for evaluating effectiveness of a surrogate species approach*
- *Discuss why it is important to ensure consistency across landscapes*



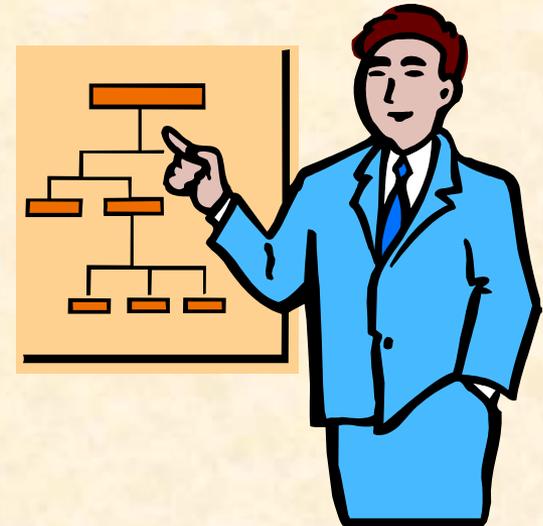
# Why evaluate effectiveness?

- *Key reminder: selection of surrogate species is part of the biological planning process that will aid in decisions for conservation actions*
- *Key assumption: surrogate species or groups are proxies for management of a larger suite of species*
- Surrogate approaches in the past have had mixed results; following selection of surrogate species it is important to rethink/test if they are appropriate to achieve your objectives



# Options to test logic of selection

- Document the linkages
  - Descriptive text
  - Conceptual diagrams
    - Stressors, how surrogate species and the others relate to habitat, expected biological outcomes, etc.
- Expert review
- Examine the geographic overlap
- Simulation modeling



# Consistency

- To achieve range-wide biological outcomes we must be consistent in selection of species and their objectives across the landscape.



# Cautions

- Expert review and simulation modeling are not a replacement for monitoring
- This step is to evaluate the logic of the selected surrogate species, not the effectiveness of management



# Activity

- How would you ensure consistency within and across landscapes?
  - Population objectives
  - Surrogate selection
  - Other issues
- What is the role of individual programs of FWS in implementing this step?
- What is the role of partners in implementing this step?



# Step 9 Identify knowledge gaps and uncertainties



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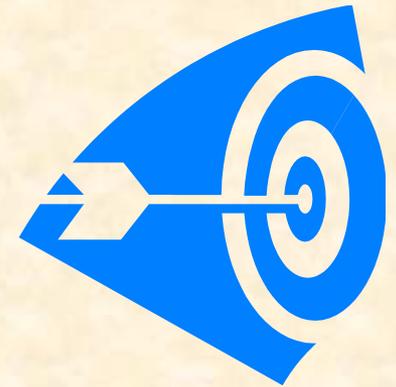
# Learning objectives

- *Discuss reasons why it is important to identify knowledge gaps and uncertainties throughout the process.*
- *Explain how you can use this information to identify future needs for research and monitoring that will improve our ability to meet our objectives.*
- *Describe how uncertainty and knowledge gaps might influence selection of species.*



# Why identify knowledge gaps and uncertainties?

- *Key reminder: management decisions and actions will be made despite uncertainty.*
- Clearly documenting knowledge gaps and uncertainties allows us to target resources to the most pressing needs.



# Gaps and uncertainties drive research and monitoring

- Throughout the process of surrogate species selection and establishing biological outcomes you will document assumptions
  - Knowledge gaps
  - Uncertainties
- Not all knowledge gaps and uncertainties are equal
  - What is the strength (i.e., how uncertain)?
  - What is the gap/uncertainties importance in achieving the objective?



# Caution

- Areas of high uncertainty may require immediate research or a cautionary approach to selection of species
- As the complexity of problems grow it is important to make decisions in a structured and transparent way



# Step 10

Setting the stage for monitoring effectiveness of the surrogate species approach



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# Learning objectives

- *Describe how you would determine the effectiveness of a surrogate species approach (i.e., test the assumptions made when selecting surrogate species).*
- *Identify what information you would need to determine effectiveness.*
- *Discuss how effectiveness of this approach could be improved by iteratively repeating the steps in the process with lessons learned from this evaluation.*
- *Consider what biological outcomes would need to be measured to demonstrate effectiveness of a surrogate species approach.*



# Testing surrogate species approach effectiveness

- *Key reminder: selecting surrogate species is of the pieces of the biological planning process of SHC*
- Related to step 8, but involves empirical testing of how well selected surrogate species represent other species
- **THIS STEP IS NOT TO TEST MANAGEMENT EFFECTIVENESS!**
- Tests the conceptual “linkage” developed between the surrogate species and the species it represents



# Designing monitoring to test effectiveness

- Protocols should be developed to identify if needs of surrogate species = needs of species it is meant to represent
  - Requires development of the expected biological outcomes for both the surrogate and the other priority species
  - Should be attempted in areas with great uncertainty and risk



# Considerations

- What biological outcomes to measure?
- What are the potential sources of information? Can models be used?
- Is there additional research is needed to test the surrogate approach?
- Should all species be monitored with equal rigor to assess effectiveness?
- After acquiring information needed to test the relationships you may need to go back to select new or different surrogates until you have representation for all priority species.



# Activity

- How is monitoring to test the assumptions related to surrogate species selection different than monitoring for management outcomes?
- What biological outcomes should be measured to determine effectiveness of the approach?
- How would you determine which species need to be monitored to assess the approach?

