Eagles and Wind: The Path Forward

Avoiding, Minimizing, and Mitigating Eagle Take at Wind Energy Facilities

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National Eagle Research Framework

Based on the Eagle Conservation Plan Guidance. Module I. Version 2

1. Collect data on eagle use at the proposed site to **accurately predict potential take** of eagles by collisions and disturbance

2. Implement Advanced Conservation Practices (ACPs) that will **reduce the predicted take** to the maximum extent practicable

3. Implement compensatory mitigation to **numerically offset remaining, unavoidable eagle take**
National Eagle Research Framework

• The Framework Doesn’t Cover:
  o Determining population status of bald and golden eagles
  o Evaluation of trends in eagle numbers relevant to establishing take thresholds
  o Estimating total number of eagles killed at wind energy facilities
1. Predicting Risk

- Improved understanding of populations and risk factors
- Updated take prediction models
- Informs siting decisions
2. ACPs – Minimizing Take

- ACPs are defined as “scientifically supportable measures that are approved by the Service and represent the best available techniques to reduce eagle disturbance and ongoing mortalities to a level where remaining take is unavoidable.”

- Some (theoretical) options
  - Turbine micro-siting
  - Curtailment
  - Deterrent technologies
  - Perch and nest management
2. ACPs – Minimizing Take

Challenges and Opportunities for Research

• No approved ACPs
  o Facilities must apply using “experimental ACPs”
• Take is rare
• Verifying ACPs will require results from multiple facilities in order to accumulate the sample size needed to provide solid, statistical results
• The Gold Standard: facilities coordinate in advance to standardize their testing of the same ACPs
3. Compensatory Mitigation

• Unavoidable take must be offset by compensatory mitigation that is quantifiable and verifiable

• Options:
  o “Create an eagle”
    ▪ Enhance habitat/prey to increase survival or productivity
  o “Save an eagle”
    ▪ Eliminate or reduce golden eagle mortality from existing sources (e.g. electrocution, poisoning, etc.)
(Preliminary) lead mortality model

Contains preliminary information. Please do not quote or cite.
Summary

• Avoid take by improving understanding risk and improving predictions
• Minimize take using (experimental) ACPs
• Compensate for unavoidable take via mitigation options
Questions?

Facilitating timely and responsible development of wind energy while protecting wildlife and wildlife habitat.