



# 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**

The logo for the American Wind Wildlife Institute, featuring the text "AMERICAN WIND WILDLIFE INSTITUTE" in a stacked format with a stylized green and blue wave graphic.

*Developing a Research  
Framework for Increasing  
Understanding of  
Interactions between  
Eagles and Wind Energy*

American Wind Wildlife Institute  
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- The Framework Doesn't Cover:
  - Determining population status of bald and golden eagles
  - Evaluation of trends in eagle numbers relevant to establishing take thresholds
  - 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

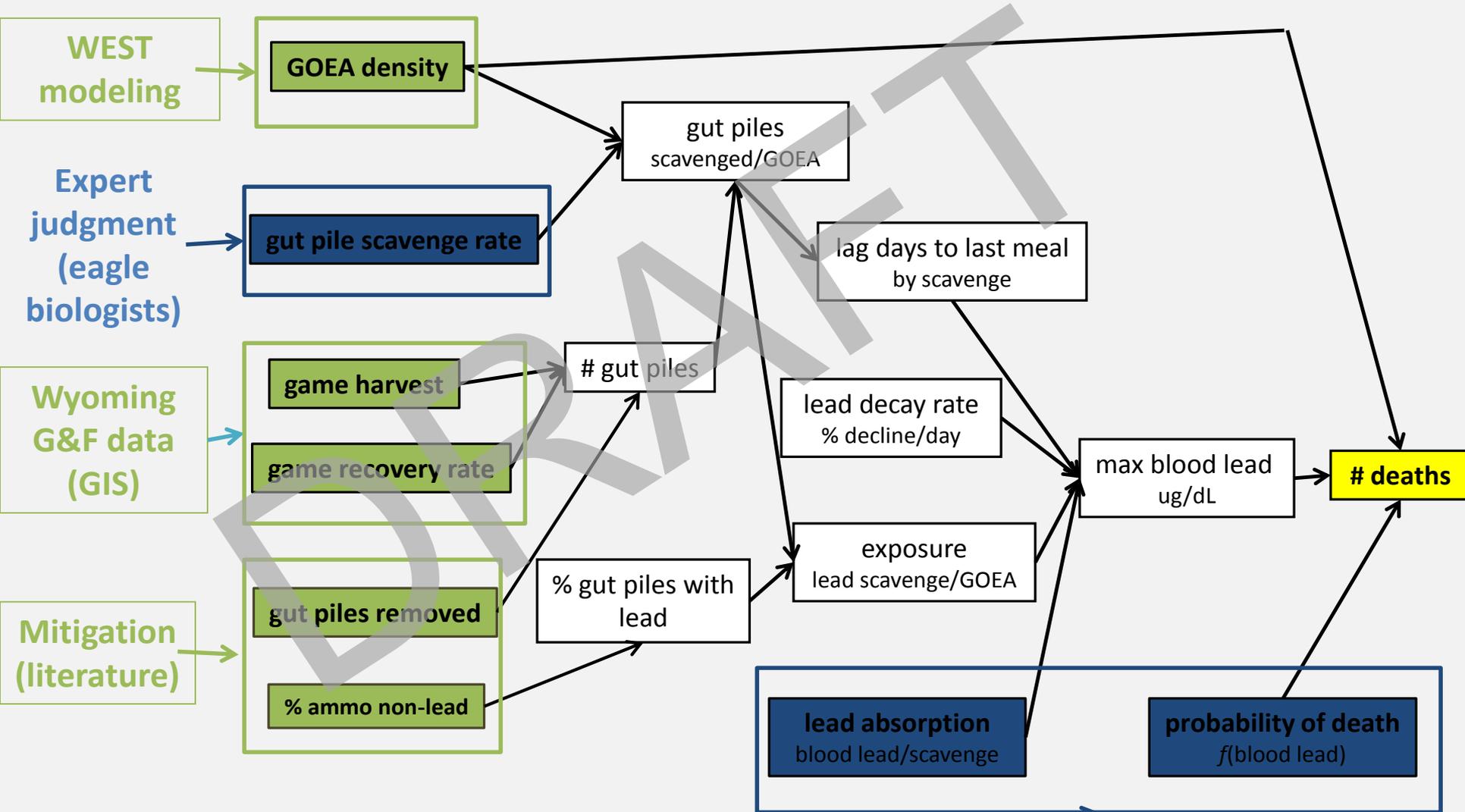
### Challenges and Opportunities for Research

- No approved ACPs
  - 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:
  - “Create an eagle”
    - Enhance habitat/prey to increase survival or productivity
  - “Save an eagle”
    - Eliminate or reduce golden eagle mortality from existing sources (e.g. electrocution, poisoning, etc.)

# (Preliminary) lead mortality model



Expert judgment (toxicologists)

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