



Framework for Bird Impact Mitigation

As part of National Environmental Policy Act and other land use planning regulations, renewable energy facilities and other development should follow the mitigation hierarchy (i.e., avoid-minimize-mitigate) to minimize impacts and ultimately ensure a net benefit for birds, other wildlife and their habitats. The most critical element of project planning is appropriate facility siting to ensure that potentially harm-inducing infrastructure such as wind turbines is not placed in high-risk locations (i.e., “avoid”).

Such facilities must then incorporate effective measures to reduce risk and impacts, such as deployment of detection and deterrent technology (i.e., minimize). When these options are limited or insufficiently effective, impacts should be compensated by estimating risk and calculating likely losses to quantify necessary compensatory alleviation of impacts through separate conservation actions (i.e., mitigate).

Identifying effective minimization measures for affected species and best management practices that reduce mortality is ongoing, and to date, industry, agencies, academics, and conservation groups have made great progress in some arenas. This includes established practices to reduce mortality from communications towers, oil pits, power lines, and wind energy developments, though we note that the ability to detect, deter, and otherwise minimize impacts is relatively less for the offshore wind industry.

The framework below should be followed to mitigate for remaining impacts to birds when appropriate avoidance and minimization measures have been incorporated in development plans. Traditional mitigation measures developed on a project-specific basis remain the preferred approach. However, because identification of effective mitigation measures can be challenging, an option for compensating for impacts through a mitigation fund is included. Utilizing a mitigation fund is less likely to directly compensate for the specific impacts of a given facility and thus should be utilized only when effective project-specific conservation actions are deemed unavailable.

General Principles

- Mitigation by any means should adhere to a net benefit standard (i.e., setting benefit targets higher than impacts being compensated) to provide certainty of successful outcomes and align with the 2015 [Memorandum on Mitigation](#).
- Mitigation ratios should be utilized (i.e., requiring a target multiplier of benefit for each unit of impact, e.g., 3:1 – 3 birds “produced” for every 1 actual or anticipated mortality) to provide certainty of a net benefit.

Mitigation planning should follow a two-tier approach, prioritizing project- and species-specific action.

Tier 1: Project-Specific (Preferred) – Conservation Action for Species Actually or Likely to be Affected

Priorities: Actions should prioritize: (1) affected species (preferred), and/or (2) taxonomically similar species of conservation concern.

Process: To optimize efficiency, an independent avian stakeholder advisory group with relevant expertise should be formed for each project to generate and evaluate possible mitigation measures. A process and timeline by which this will occur should be developed and followed.

Authority and Oversight: The relevant federal or state wildlife conservation agency should have the authority and mandate to approve or deny mitigation measures based on likelihood of effectiveness. Said agency would similarly have authority and mandate to ensure legal compliance and adaptive management.

Adaptive Management: The need for and nature of any additional conservation measures should be informed by post-construction impact monitoring and monitoring of implemented conservation actions. Annual reports for both should be submitted to the federal or state wildlife conservation agency and made available to the public.

If all possible mitigation options have been evaluated and deemed unavailable or likely to be ineffective, the applicant should compensate for impacts via a mitigation fund.

Tier 2: Mitigation Fund

Priorities: Funding should prioritize on-the-ground measures for species of conservation concern at global (IUCN), national (ESA) and state level. Species covered by international treaties (ACAP, CMS) annex 1, should also be prioritized (highly migratory species and albatrosses and petrels).

Process: An avian conservation advisory group composed of representatives from agencies, academic institutions and NGOs with relevant expertise should be formed to generate, evaluate and prioritize mitigation measures to be funded.

Authority and Oversight: The relevant federal or state wildlife conservation agency, or natural resource management or trustees (including tribal or international entities) should have the authority and mandate to select mitigation measures to be funded, and administer any process to select grant awardees.

Implementation: Selected projects should be implemented by the relevant federal or state wildlife conservation agency or NGOs with relevant expertise. Private consultants with relevant expertise may be awarded funds, provided that the same level of desired outputs can be guaranteed for the same cost. For projects not to be implemented by the relevant public wildlife conservation agency, a process and timeline by which non-governmental awardees will be selected, such as a grants program, should be developed and followed.

Funding: For habitat impacts, funding level requirements should be determined by acreage and scaled based on the relative value of habitats affected for impacts resulting from habitat loss and degradation and the associated estimated costs of restoration efforts. For bird mortality resulting from industrial incidental take, funding level requirements should be determined by the number of individuals of each species affected, scaled based on the relative degree of conservation concern for each species and the associated estimated costs of compensatory conservation actions.

Evaluating mitigation necessary to effectively compensate for these losses should utilize resource equivalency analysis, which accounts for the fact that birds at different life stages do not functionally equate in conservation importance (e.g., one additional hatchling does not functionally replace a breeding adult bird). Funding levels should be based on data from pre-construction assessment and standardized formulas based on anticipated impacts. The need for any additional conservation funds should be informed by post-construction impact monitoring.

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