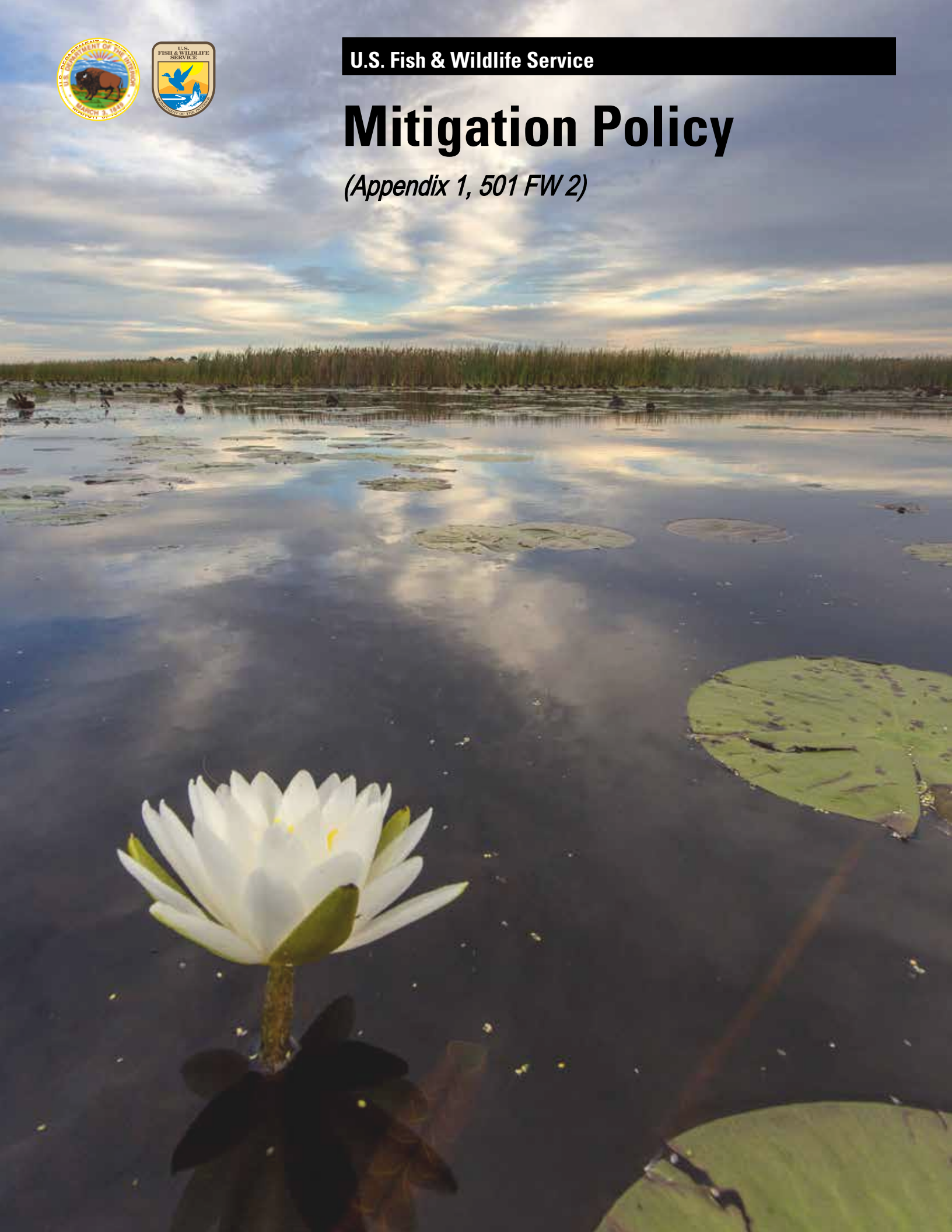




U.S. Fish & Wildlife Service

Mitigation Policy

(Appendix 1, 501 FW 2)



*U.S. Fish & Wildlife Service Mitigation
Policy Appendix 1, 501 FW 2, May 2023*

*Cover Photo: A water lily blooms at a marsh near New
Orleans, Louisiana. Photo by Ian Shive/USFWS-TV*

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Mitigation Policy

1. Background

This policy revises and builds upon the guidance in the 1981 Mitigation Policy (46 FR 7644-7663, January 23, 1981) (1981 policy) for U.S. Fish and Wildlife Service (Service) recommendations and requirements on mitigating adverse impacts of land and water developments on fish and wildlife.

As with the 1981 policy, the Service intends, with this revision, to conserve, protect, and enhance fish, wildlife, plants, and their habitats, and uses thereof, for future generations. Effective mitigation is a powerful tool for furthering this mission. Application of this tool should be guided by the best available science and contemporary practices to provide the greatest benefits to fish and wildlife (wildlife includes plants where applicable), within the limits of our authorities.

1.1. What is Mitigation?

In the context of impacts to environmental resources resulting from proposed actions, “mitigation” is a general label for measures taken to avoid, minimize, and compensate for those impacts. The 1981 policy adopted the definition of mitigation in the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations (40 CFR 1508.1). The CEQ mitigation definition remains unchanged since codification in 1978 and states that, “Mitigation includes:

- avoiding the impact altogether by not taking a certain action or parts of an action;
- minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- reducing or eliminating the impact over time by

preservation and maintenance operations during the life of the action; and

- compensating for the impact by replacing or providing substitute resources or environments.”

This definition is incorporated into this policy and clarifies the use of its components in various contexts. As a practical matter, the mitigation elements are categorized into three general types that form a sequence: avoidance, minimization, and compensatory mitigation for remaining unavoidable (also known as residual) impacts. In the 1981 policy, the Service stated that this is the desirable sequence of steps in the mitigation planning process. This policy affirms this approach, called the mitigation hierarchy in this document, while recognizing deviations may be appropriate under certain circumstances. This policy provides a logical framework for the Service to consistently make choices with respect to the mitigation hierarchy.

2. Purpose of the Policy

The purpose of this policy is to provide guidance to Service personnel in formulating and delivering recommendations and requirements to action agencies and project proponents so that they may avoid, minimize, and compensate for action-caused impacts to species and their habitats, and uses thereof.

This policy supersedes the 1981 policy and the Fish and Wildlife Service Manual chapter that summarized it at 501 FW 2, published February 24, 1993. This policy complements our authorities regarding resources for which the Service has authority to recommend or require mitigation and is intended to clarify expectations regarding mitigation to provide for a more predictable and transparent process. It is

non-binding and does not establish legally binding rules; nonetheless, it plays an important role in helping to ensure a consistent process for mitigation. Definitions for terms used throughout this policy are provided in section 7.

3. Authority

The Service has jurisdiction over a broad range of fish and wildlife resources. Service authorities are codified under multiple statutes that address management and conservation of natural resources from many perspectives, including, but not limited to, the effects of land, water, and energy development on fish, wildlife, plants, and their habitats. We list below the statutes that provide the Service specific authority for conservation of these resources and that give the Service a role in mitigation planning for actions affecting them. We further describe the application of mitigation under each statute and list additional authorities in the Appendix.

- Bald and Golden Eagle Protection Act, 16 U.S.C. 668 et seq. (Eagle Act)
- Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq. (ESA)
- Federal Power Act, 16 U.S.C. 791–828c (FPA)
- Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251 et seq. (CWA)
- Fish and Wildlife Conservation Act, 16 U.S.C. 2901–2912
- Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661–667(e) (FWCA)
- Marine Mammal Protection Act of 1972, as amended, 16 U.S.C. 1361 et seq. (MMPA)
- Migratory Bird Treaty Act, 16 U.S.C. 703–712 (MBTA)



Theo Stein/USFWS

A pronghorn seen in the Pinedale Anticline natural gas field in Wyoming.

- National Environmental Policy Act, 42 U.S.C. 4321 et seq. (NEPA)
- National Wildlife Refuge System Administration Act, 16 U.S.C. 668dd et seq.

Most statutes listed above give the Service an advisory role in mitigation. The limited circumstances under which the Service has specific authority to require, consistent with applicable laws and regulations, one or more forms of mitigation for impacts to fish and wildlife include:

- actions that the Service carries out, i.e., the Service is the action proponent;
- actions that the Service funds;
- actions to restore damages to fish and wildlife resources injured by spills of oil and other environmental contaminants under the Oil Pollution Act, 33 U.S.C. 2701 et seq. (OPA), and the Comprehensive Environmental Response,

Compensation, and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA);

- actions of other Federal agencies that require an incidental take statement under section 7 of the ESA (measures to minimize the impact of the incidental taking on the species);
- actions of non-Federal entities that require an incidental take permit under section 10 of the ESA (measures to minimize and mitigate the impacts of the taking on the species to the maximum extent practicable);
- fishway prescriptions under section 18 of the FPA, which minimize, rectify, or reduce over time, through management, the impacts of non-Federal hydropower facilities on fish passage;
- license conditions under section 4(e) of the FPA for non-Federal hydropower facilities affecting Service properties (e.g., a

national wildlife refuge) that protect and use the Federal property consistent with the purpose for which it was established;

- actions that require an “Incidental Take Regulation” or “Incidental Harassment Authorization” under the MMPA; and
- actions that require a permit for non-purposeful (incidental) take of eagles under the Eagle Act.

Our aim with this policy is to provide a common framework for the Service’s approach to mitigation across the full range of our authorities. However, this policy does not alter or substitute for the regulations implementing any of these authorities.

4. Scope

This policy serves as overarching Service guidance applicable to all actions for which the Service has

specific authority to recommend or require the mitigation of impacts to fish, wildlife, plants, and their habitats, and uses thereof. As necessary, we will develop program-specific mitigation policies that incorporate this overarching policy's concepts.

4.1. Actions

This policy applies to all Service activities related to evaluating the effects of proposed actions and subsequent recommendations or requirements to mitigate impacts to resources defined in section 4.2. For purposes of this policy, actions include: (a) activities conducted, authorized, licensed, or funded by Federal agencies (including actions proposed by the Service); (b) non-Federal activities where one or more of the Service's statutory authorities allows the Service to make mitigation recommendations or specify mitigation requirements; and (c) the Service's provision of technical assistance to partners in collaborative mitigation planning processes that occur outside of individual action review.

4.2. Resources

This policy may apply to specific resources based on any Federal authority or combination of authorities, such as treaties, statutes, regulations, or Executive Orders, that empower the Federal Government to manage, control, or protect fish, wildlife, plants, and their habitats that are affected by proposed actions. That Federal authority need not be exclusive, comprehensive, or primary, and in many cases may overlap with that of States or Tribes or both.

This policy applies to those resources identified in statute or implementing regulations that provide the Service authority to make mitigation recommendations or specify mitigation requirements for the actions described in section 4.1. The scope of resources addressed by this policy includes, but is not limited to, those covered by the concept of Federal trust fish and wildlife resources (commonly referred to as trust resources). The Service has traditionally described these resources as migratory birds,

federally listed endangered and threatened species, certain marine mammals, and inter-jurisdictional fish.

4.3. Applicability

This policy does not apply retroactively to completed actions or to actions specifically exempted under statute from Service review. It does not apply where the Service has already agreed to a mitigation plan for pending actions, except where: (a) new activities or changes in current activities would result in new impacts, (b) a law enforcement action related to non-compliant activities occurs after the Service agrees to a mitigation plan, (c) an after-the-fact permit is issued at a time when impacts have already occurred, or (d) where new authorities or failure to implement agreed-upon recommendations warrant new mitigation planning. Service personnel may elect to apply this policy to actions that are under review as of the date of its final publication. Further, while the policy does not apply retroactively, it does require the Service to review actions in the context of past and cumulative impacts to environmental resources, and to consider the likelihood and extent to which actions may encourage additional activities that could impact those resources.

5. General Policy and Principles

Consistent with congressional direction through the statutes in section 3 of this policy, the Service has a responsibility to ensure that impacts to fish, wildlife, plants, and their habitats are considered when actions are planned, and that those impacts are mitigated so that these resources may provide a continuing benefit to the American people. Accordingly, it is the policy of the Service to seek to mitigate losses of fish, wildlife, plants, their habitats, and uses thereof resulting from proposed actions.

The following fundamental principles should guide Service-recommended or required mitigation, as defined in this policy,

across all Service programs:

- a. Observe the mitigation hierarchy. The Service follows the mitigation hierarchy in sequence by first considering avoidance, then minimization, and then compensatory measures. However, to achieve effective conservation outcomes, the Service recognizes that some limited circumstances may warrant a departure from this preferred mitigation hierarchy.
- b. Avoid high-value habitats. The Service should seek avoidance of all impacts to high-value habitats (i.e., scarce and of high suitability and high importance). High-value habitats make an exceptional contribution to the conservation of species, and some have structure, function, or other characteristics that are irreplaceable. Preventing impacts to these habitats is the most effective means of maintaining the current status of species and natural communities, which is the goal of this policy.
- c. The overall goal is no net loss. The Service's mitigation planning goal is to maintain (i.e., no net loss) the current status of affected resources. Service mitigation recommendations and requirements should: focus on important, scarce, or sensitive resources, as informed by established conservation objectives and strategies; specify the means and measures that achieve no net loss; and be consistent with applicable statutory authorities and the responsibilities of action proponents.
- d. A landscape approach should inform mitigation. The Service should integrate mitigation into a broader ecological context with applicable landscape-level conservation plans, where available. The Service should consider climate change, cumulative impacts, possible future development scenarios, and other stressors that may affect ecosystem integrity and the resilience of fish, wildlife, and plant populations when considering the scale, nature,

and location of mitigation measures. The Service should foster partnerships with Federal and State partners, Tribes, local governments, and other stakeholders to design mitigation strategies that prevent fragmented landscapes and restore core areas and connectivity necessary to sustain species, their habitats, and uses thereof.

- e. Ensure consistency and transparency. The Service should use timely and transparent processes that provide predictability and uniformity through the consistent application of standards and protocols as may be developed to achieve effective mitigation.
- f. Science-based mitigation. The Service should use the best available science (including social and natural sciences and Indigenous Knowledge) when making mitigation recommendations and decisions.
- g. Durability. The Service should recommend or require that mitigation measures are durable, i.e., at a minimum, they maintain their intended purpose, including being resilient to changing circumstances (e.g., climate change, fire, invasive species), for as long as impacts of the action persist on the landscape, and that the effectiveness of mitigation measures is sustained for the duration of the associated impacts. The Service should recommend or require that action proponents provide assurances of durability, including, as appropriate, financial assurances, to support the development, maintenance, monitoring, and long-term effectiveness management of the mitigation measures for the duration of the impacts and the property protections.
- h. Effective compensatory mitigation. The Service should recommend that project proponents implement compensatory mitigation measures before the impacts of an action occur to avoid temporal loss. The Service should also consider “additionality”

when determining whether a compensatory mitigation measure will provide the expected amount of replacement or substitute resources or environments. Accordingly, the Service should recommend that a compensatory mitigation measure generate benefits at the mitigation site that are truly additional (i.e., would not have occurred without the measure) to the baseline conditions (including conditions anticipated in the foreseeable future) at that site.

- i. Nexus and proportionality. All appropriate mitigation measures must have a clear connection (i.e., nexus) with the anticipated effects of the action and be commensurate (i.e., proportional) with the scale and nature of those effects.
- j. Equivalent standards. To ensure consistent implementation and effectiveness of compensatory mitigation, the Service should apply equivalent standards to all compensatory mitigation mechanisms (i.e., proponent responsible mitigation, in-lieu fee, conservation banks).

6. Mitigation Framework

This section of the policy provides the conceptual framework and guidance for implementing the general policy and principles declared in section 5 in an action- and landscape-specific mitigation context. We implement the general policy and principles by integrating landscape-scale decision making within the Service’s existing process for assessing effects of an action and formulating mitigation measures. The key terms used in describing this framework are defined in section 7, *Definitions*.

6.1. Integrating Mitigation with Conservation Planning

This policy seeks to integrate mitigation recommendations and requirements into conservation planning to better protect or enhance fish and wildlife populations and those features on a landscape that are necessary for the long-term persistence of biodiversity and ecological

functions. Functional ecosystems enhance the resilience of populations challenged by the widespread stressors of climate change, invasive species, and the continuing degradation and loss of habitat through human alteration of the landscape. Achieving the mitigation goal of this policy involves:

- avoiding and minimizing those impacts that most seriously compromise resource sustainability,
- rectifying and reducing impacts over time by restoring or maintaining conditions in the affected area to attain resource sustainability, and
- strategically compensating for impacts so that actions result in no net loss of the affected resources.

Recommending and requiring mitigation is only part of how the Service achieves its conservation mission. The Service also pursues broader conservation goals through implementing provisions of various authorities (e.g., ESA, FWCA) that lead to proactive and beneficial conservation practices, species recovery, and resource enhancement. Those provisions may have purposes beyond mitigation and goals beyond no net loss. The Service’s mitigation goal of no net loss focuses on avoidance, minimization, and compensation of negative effects from either program or project actions. Achieving this policy’s mitigation planning goal of no net loss will be practicable in the context of many individual actions whenever doing so is allowed by existing statutory authority. The Service may provide mitigation recommendations or requirements along with separate conservation recommendations in the course of a project review.

The landscape-level approach to resource decision making described in this policy applies in contexts with or without established conservation plans, but its greatest effectiveness occurs when integrated with such planning.

Mitigation planning within a landscape conservation context

involves applying the types of mitigation where they are the most effective. The Service recognizes the potential inefficiency of automatically applying, under all circumstances, each mitigation type in the traditional mitigation hierarchy. In limited situations, specific circumstances may exist that warrant deviating from this hierarchy to achieve the maximum benefit to affected resources and their values, services, and functions. For example, the cost and effort involved in avoiding impacts to a habitat that is likely to become isolated or otherwise unsuitable for evaluation species in the foreseeable future may result in less conservation benefit than implementing offsite compensatory mitigation in areas that are more important in the long term to achieving conservation objectives for the affected resource(s). Conversely, onsite avoidance is the priority where impacts would substantially impair progress toward achieving conservation objectives.

The Service should rely on existing conservation plans that are based on the best available scientific information, consider climate change adaptation, and contain specific objectives aimed at the biological needs of the affected resources. Where existing, updated conservation plans are not available that incorporate all of these elements, Service personnel should incorporate the best available science into mitigation decisions and recommendations and should continually seek better information to address the greatest uncertainties. Without available conservation plans, Service personnel should use a landscape approach based on analysis of information regarding resource needs, including priorities for impact avoidance and potential compensatory mitigation sites. That information includes development trends, projected habitat loss and expected changes in uses, cumulative impacts of past development, the presence and needs of species, and restoration potential. Service personnel may access this information in existing mapping products, survey data, reports, studies, or other sources.

6.1.1. Proactive Mitigation Planning at Larger Scales

The Service supports the planning and implementation of proactive mitigation plans in a landscape conservation context, i.e., mitigation developed before actions are proposed, particularly in areas where multiple similar actions are expected to adversely affect a similar suite of species. Proactive mitigation plans should complement or tier from existing conservation plans relevant to the affected resources (e.g., recovery plans, habitat conservation plans, or other plans developed by State, Tribal, local, or nongovernmental entities). Effective and efficient proactive mitigation planning identifies high-priority resources on a regional or landscape scale prior to and without regard to specific proposed actions. In evaluating proactive mitigation plans, the Service considers: (a) resource protection for avoiding impacts, (b) resource enhancement or protection for compensating unavoidable impacts, and (c) measures to improve the resilience of resources in the face of climate change or otherwise increase the ability to adapt to climate and other factors that change landscapes and create risk.

Developing proactive mitigation plans should involve stakeholders in a transparent process for defining objectives and the means to achieving those objectives. Planning for proactive mitigation should establish standards for determining the appropriate scale, type, and location of mitigation for impacts to specific resources within a specified area. Adopted plans that apply these standards are likely to substantially shorten the time needed for regulatory review and approval as actions are subsequently proposed. For example, proactive mitigation plans, like those developed under a programmatic NEPA decision-making process or a Habitat Conservation Plan process, provide efficiencies for project-level actions and also better address impacts considered collectively.

Procedurally, proactive mitigation planning should draw upon existing land use plans and

databases associated with human infrastructure, including transportation and water and energy development, as well as ecological data and conservation plans for floodplains, water quality, high-value habitats, and key species. Stakeholders and Service personnel process these inputs to design a system of conservation lands and waters that considers needed community infrastructure and focuses mitigation on conserving natural features that are necessary for long-term maintenance of ecological functions on the landscape. As development actions are later proposed, an effective proactive regional mitigation plan provides a transparent process for identifying appropriate mitigation opportunities within the regional framework and selecting the mitigation projects with the greatest aggregated conservation benefits.

6.1.2. What Is a Landscape Approach?

Taking a landscape approach means considering the broader ecological context of both impacts and mitigation opportunities and is an effective means of implementing the Service's mission in ways that also benefit proponents. For example, siting the most effective mitigation treatments in locations most likely to produce lasting conservation outcomes helps ensure the success of a proponent's investments in mitigation.

For the purposes of this policy, the landscape-scale approach applies the mitigation hierarchy for impacts to resources and considers implications for associated values, services, and functions at the relevant scale, no matter how narrow or broad, necessary to sustain or otherwise achieve established goals for those resources and their values, services, and functions. The Service should use a landscape-scale approach when developing and approving strategies or plans, reviewing projects, or issuing permits. The approach identifies the needs and baseline conditions of targeted resources and their values, services, and functions, along with reasonably foreseeable

impacts related to future disturbance trends. The approach then uses that information to identify priorities for avoidance, minimization, and compensatory mitigation measures across that relevant area to provide the maximum benefit to the impacted resources and their values, services, and functions, with full consideration of the conditions of additionality and durability (see section 7, *Definitions*).

Landscape-scale strategies and plans can serve to assist project applicants, stakeholders, and land managers in preplanning as well as to inform NEPA analysis and decision making, including decisions to develop and approve plans, review projects, and issue permits. Land use planning processes provide opportunities for identifying, evaluating, and communicating mitigation in advance of anticipated land use activities. Consistent with their statutory authorities, land management agencies may develop landscape-scale strategies through their land use planning processes.

6.1.3. Implementing a Landscape Approach

When applying a landscape approach to individual project reviews, all the general principles and policies (in Section 5) apply, and any mitigation has a clear connection and is commensurate to any effects of the action. By taking a landscape approach, the Service does not assert authority to require proponents to consider mitigation for impacts unconnected to their project. This policy does not override any statutory or regulatory authority that describes the appropriate scope of review for a particular project. The landscape approach is not intended to supplant or disregard State, Tribal, or local plans or interests.

6.2. Collaboration and Coordination

The Service shares responsibility for conserving fish and wildlife with State, local, and Tribal governments and other Federal agencies and stakeholders. Our role in mitigation may involve Service biological opinions, permits, or other regulatory determinations as well as providing technical assistance.

Whenever appropriate, the Service should:

- a. coordinate with appropriate Federal, State, Tribal, and local agencies and other stakeholders who have responsibilities for fish and wildlife when developing mitigation requirements and recommendations for resources of concern to those entities;
- b. consider information resources (including Indigenous Knowledge) and plans made available by State, local, and Tribal governments and other Federal agencies;
- c. seek to apply compatible approaches and avoid duplication of efforts with those same entities;
- d. collaborate with Federal, State, Tribal, and local agencies and other stakeholders in the formulation of landscape-level mitigation plans; and
- e. cooperate with partners to develop, maintain, and disseminate tools and conduct training in mitigation methodologies and technologies.

The Carrizo Plain in California is home to solar energy projects that demonstrate how solar energy development can generate clean power and local jobs, while conserving and protecting threatened and endangered species. Photo by Sarah Swenty, USFWS.



The Service is encouraged to engage agencies and applicants during the early planning and design stage of actions. Coordination during early planning, including participation as a cooperating agency or on interdisciplinary teams, can lead to better conservation outcomes.

When we identify potential impacts to Tribal interests, the Service, in coordination with affected Tribes, may recommend mitigation measures to address those impacts. Recommendations should carry more weight when the Service and Tribe have overlapping authority for the resources in question and when coordinated through government-to-government consultation.

Coordination and collaboration with stakeholders allow the Service to confirm that the people conducting mitigation activities, including contractors and other non-Federal entities, have the appropriate experience and training in mitigation best practices.

6.3. Assessment of Effects

This policy addresses mitigation for impacts to affected resources and their values, services, and functions. We define impacts as adverse effects relative to the affected resources. Effects are changes in environmental conditions and impacts to species that are relevant to the resources this policy covers. They are caused by the action or, in the case of programmatic actions, a suite of actions. Effects may occur later in time and outside the immediate area involved in the action. Effects that occur later in time or outside the immediate area involved in the action are often major drivers in ecological systems, and they may have landscape-scale implications.

The Service should design mitigation measures to achieve no net loss for affected resources. This design should consider the degree of risk and uncertainty associated with both predicted project effects and predicted outcomes of the mitigation measures, i.e., mitigation measures should account for uncertainty and risk to ensure

that no net loss is achieved. The following principles guide the Service's assessment of both the anticipated effects and the expected effectiveness of mitigation measures.

1. The Service should consider effects and mitigation outcomes over a period of time commensurate with the expected duration of the action's impacts.
2. Action proponents should provide reasonable predictions about environmental conditions relevant to the affected area both with and without the action over the duration of the action's effects (i.e., baseline condition). If such predictions are not sufficient for the Service to assess mitigation needs, the Service should assess the effects of a proposed action in this time period considering: (a) the full spatial and temporal extent of direct and indirect effects caused by the action, including resource losses that occur after implementation of the action but before the mitigation measures; and (b) any cumulative impacts to the affected resources resulting from existing concurrent or reasonably foreseeable future activities on the landscape, taking into consideration the context of past impacts to environmental resources in the area. When assessing the affected area without the action, the Service should also evaluate: (a) expected natural species succession; (b) implementation of approved restoration/improvement/development plans; and (c) reasonably foreseeable conditions resulting directly or indirectly from any other factors that may affect the evaluation of the project, including, but not limited to, climate change and concurrent or possible future activities in the area that may impact environmental resources.
3. The Service should use the best available effect assessment methodologies that:
 - a. display assessment results in a manner that allows decisionmakers, action proponents, and the public to compare present and predicted

future conditions for affected resources;

- b. measure adverse and beneficial effects using the same metrics to determine necessary mitigation measures;
 - c. predict effects over time, including changes to affected resources that would occur with and without the action, changes induced by climate change, and changes resulting from reasonably foreseeable actions;
 - d. are practicable, cost-effective, and commensurate with the scope and scale of impacts to affected resources;
 - e. are sufficiently sensitive to estimate the type and relative magnitude of effects across the spectrum of anticipated beneficial and adverse effects;
 - f. may integrate predicted effects with data from other disciplines, such as cost or socioeconomic analysis; and
 - g. readily allow incorporation of new data or knowledge.
4. Where appropriate effects assessment methods or technologies useful in valuation of mitigation habitats are not available, Service employees should apply their professional judgment, supported by best available science, to assess impacts and to develop mitigation recommendations.

6.4. Evaluation Species

Section 4.2 identifies the resources to which this policy applies, and, depending on the authorities under which the Service is engaging an action, these resources may vary. However, one or more species of conservation interest to the Service is necessary to initiate mitigation planning, and under this policy the Service should explicitly identify evaluation species for mitigation purposes. In instances where the Service must issue a biological opinion, permit, or regulatory determination for specific species, the Service should identify those species, at minimum, as evaluation species.

Selecting additional evaluation species beyond those for which the Service must provide a regulatory determination varies according to action-specific circumstances. In practice, an initial examination of the habitats affected and review of typically associated species of conservation interest are usually the first steps in identifying evaluation species. The evaluation species should help illustrate causal links between the affected resource and evaluation species (see characteristics a. through l. below). The purpose of Service mitigation planning is to develop a set of recommendations that would maintain the current status of the affected resources, and when possible, align mitigation activities with other conservation efforts to improve species survival and ecosystem structure and function. When available, conservation planning objectives (i.e., the desired status of the affected resources) should inform mitigation planning (see section 6.1). Therefore, following those species for which we must provide a regulatory determination, species for which action effects would cause the greatest increase in the gap between their current and desired status are the principal choices for evaluation species.

An evaluation species must occur within the affected area for at least one stage of its life history, but as other authorities permit, the Service may consider evaluation species that are not currently present in the affected area if the species is:

- a. identified in approved State or Federal fish and wildlife conservation, restoration, or improvement plans that include the affected area; or
- b. likely to occur in the affected area in the reasonably foreseeable future with or without the proposed action due to natural species succession.

Evaluation species may or may not occupy the affected area year-round or when effects of the action would occur.

The Service should select the smallest set of evaluation species

necessary to relate the effects of an action to the full suite of affected resources and applicable authorities, including all species for which the Service is required to issue opinions, permits, or regulatory determinations. When an action affects multiple resources, evaluation species should be selected to represent the affected species or aspects of the environment so that the mitigation measures formulated for the evaluation species should mitigate impacts to all of the similarly affected resources to the greatest extent possible. Characteristics of evaluation species that are useful in mitigation planning may include, but are not limited to, the following:

- a. species of conservation concern, such as species that are listed, proposed for listing, candidates, or at risk of becoming candidates for listing (e.g., Birds of Conservation Concern) under the ESA;
- b. species addressed in conservation plans relevant to the affected area and for which habitat objectives are articulated;
- c. species strongly associated with an affected habitat type;
- d. species for which habitat-limiting factors are well understood;
- e. species that perform a key role in ecological processes (e.g., nutrient cycling, pollination, seed dispersal, predator-prey relations), that may serve as indicators of ecosystem health;
- f. species that require large areas of contiguous habitat, connectivity between disjunct habitats, or a distribution of suitable habitats along migration/movement corridors, that may serve as indicators of ecosystem functions;
- g. species that belong to a group of species (a guild) that uses a common environmental resource;
- h. species for which sensitivity to one or more anticipated effects of the proposed action is documented;
- i. species of cultural or religious significance to Tribes;

- j. species that provide monetary and non-monetary benefits to people from consumptive and non-consumptive uses including, but not limited to, fishing; hunting; birdwatching; and educational, aesthetic, scientific, or subsistence uses;
- k. species with characteristics such as those above that are also easily monitored to evaluate the effectiveness of mitigation actions; and
- l. species susceptible to direct mortality from an action (e.g., resulting from collision or crushing caused by an action).

6.5. Habitat Valuation

Species conservation relies on functional ecosystems, and conservation of existing habitat is generally the best means of achieving species population objectives. Section 6.4 provides guidance for selecting evaluation species. The value of specific habitats to evaluation species varies widely, such that the loss or degradation of higher value habitats has a greater impact on achieving conservation objectives than the loss or degradation of an equivalent area of lower value habitats. To maintain landscape capacity to support species, our mitigation policy goal (Section 5) applies to all affected habitats of evaluation species, regardless of their value in a conservation context. However, the Service should recognize variable habitat value in formulating appropriate means and measures. The primary purpose of habitat valuation is to determine the relative emphasis the Service should place on avoiding, minimizing, and compensating for impacts to habitats of evaluation species.

The Service should assess the overall value of affected habitats by considering their: (a) scarcity, (b) suitability for evaluation species, and (c) importance to the conservation of evaluation species.

- *Scarcity* is the relative spatial extent (e.g., rare, common, or abundant) of the habitat type in the landscape context.

- *Suitability* is the relative ability of the affected habitat to support one or more elements of the evaluation species' life history (reproduction, rearing, feeding, dispersal, migration, hibernation, or resting protected from disturbance, etc.) compared to other similar habitats in the landscape context. A habitat's ability to support an evaluation species may vary over time.
- *Importance* is the relative significance of the affected habitat, compared to other similar habitats in the landscape context, to achieving conservation objectives for the evaluation species. Habitats of high importance are irreplaceable, difficult to replace, or critical to evaluation species by virtue of their role in achieving conservation objectives within the landscape (e.g., sustain core habitat areas, linkages, ecological functions). Areas containing habitats of high importance are generally, but not always, identified in

conservation plans addressing resources under Service authorities (e.g., in recovery plans) or when appropriate, under authorities of partnering entities (e.g., in State wildlife action plans, Landscape Conservation Cooperative conservation "blueprints," etc.).

These three parameters are the considerations that should inform Service determinations of the relative value of an affected habitat that the Service should then use to guide application of the mitigation hierarchy under this policy.

When more than one evaluation species uses an affected habitat, the highest valuation should govern the Service's mitigation recommendations or requirements. Regardless of the habitat valuation, Service mitigation recommendations or requirements should represent our best judgment on the most practicable means of ensuring a proposed action results in no net loss of the affected resources.

6.6. Means and Measures

The means and measures the Service recommends for achieving the goal of this policy (see section 5) are action- and resource-specific applications of the five general types of mitigation: avoid, minimize, rectify, reduce over time, and compensate. This policy combines the third and fourth mitigation types, rectify and reduce over time, under the minimization label as they are in the mitigation planning practice for permitting actions under the Clean Water Act. All appropriate mitigation measures must have a clear connection with the anticipated effects of the action and be commensurate with the scale and nature of those effects.

The emphasis that the Service gives to each mitigation type depends on the evaluation species selected (section 6.4) and the value of their affected habitats (section 6.5). Habitat valuation aligns mitigation with conservation planning for the evaluation species by identifying where it is critical to avoid habitat impacts altogether and where

Chinook salmon often make extensive freshwater spawning migrations to reach their home streams. Dams and other impoundments prevent salmon from completing this migration, and are a main factor behind the species decline. Photo by Ryan Hagerty, USFWS.



compensation may more effectively advance conservation objectives. This may involve applying a combination of mitigation types.

For all habitats the Service should apply appropriate and practicable measures to avoid and minimize impacts over time, generally in that order, before applying compensation as mitigation for remaining impacts. For habitats we determine to be of high value (i.e., scarce and of high suitability and high importance), the Service should seek avoidance of all impacts. For habitats the Service determines to be of lower value, the Service should consider whether compensation is more effective than other components of the mitigation hierarchy to maintain the current status of evaluation species, and if so, may seek compensation for all such impacts.

Mitigating unavoidable impacts through measures that minimize, rectify, and reduce losses over time is often appropriate, but the costs or difficulties may prevent achieving the mitigation planning goal entirely within the action's affected area. A lesser or equivalent effort applied in compensatory mitigation elsewhere may achieve greater benefits for the evaluation species. Similarly, mitigation for impacts to a low-value habitat (i.e., low suitability, low importance, relatively abundant) may be more successful when invested in enhancing a habitat of moderate suitability and high importance. This policy is designed to apply the various types of mitigation where they may achieve the greatest efficiency toward accomplishing the mitigation planning goal.

The relative emphasis given to mitigation types within the mitigation hierarchy also depends on the landscape context and action-specific circumstances that influence the effectiveness of available mitigation means and measures. For example, it is generally more effective to emphasize avoidance and minimization of impacts to habitats that are either rare, of high suitability, or of high importance, than to rely on other measures

because these qualities are not easily repaired, enhanced through onsite management, or replaced through compensatory actions. Compensatory measures may be more feasible when their strategic application (i.e., to further the objectives of relevant conservation plans) would more effectively and efficiently mitigate impacts to habitats that are either abundant, of low suitability, or of low importance.

This section details the three mitigation types. For each mitigation type, the following subsections begin with a quote of the regulatory language at 40 CFR 1508.1(s), then provide an expanded definition, explain its place in this policy, and list generalized examples of use in Service recommendations. This policy acknowledges there may be circumstances where a measure seems to fit the definitions of multiple mitigation types. In those and all cases, the Service considers the conservation outcome to be more important than explicit conformity to mitigation type definitions. Ensuring that Service-recommended mitigation measures are implemented and effective is addressed in sections 6.8, *Documentation* and 6.9, *Followup*.

6.6.1. Avoid

“Avoid the impact altogether by not taking a certain action or parts of an action.” Avoiding impacts is the first tier of the mitigation hierarchy. The Service should recommend avoiding all impacts to high-value habitats. Avoidance includes modifying the action so that it does not adversely affect the resources at issue and ensures that an action or a portion of the action has no direct or indirect effects on fish, wildlife, plants, and their habitats, and uses thereof. Actions may avoid direct effects to a resource (e.g., by shifting the location of the construction footprint), but unless the action also avoids indirect effects caused by the action (e.g., loss of habitat suitability through isolation, accelerated invasive species colonization, degraded water quality, etc.), the impacts are not fully avoided. In some cases, indirect effects may result in population and habitat losses that

negate any conservation benefit from avoiding direct effects. An impact is unavoidable when the proposed action has no appropriate and practicable alternative that would not cause the impact. Generalized examples of measures to avoid impacts follow:

- a. Design the timing, location, or operations of the action so that specific resource impacts would not occur.
- b. Add structural features to the action, where such action is sustainable (e.g., fish and wildlife passage structures, water treatment facilities, erosion-control measures) that would eliminate specific losses to affected resources.
- c. Adopt a non-structural alternative to the action that is sustainable and that would not cause resource losses (e.g., stream channel restoration with appropriate grading and vegetation in lieu of rip-rap).
- d. Adopt the no-action alternative.

6.6.2. Minimize (Includes Rectify and Reduce Over Time)

“Minimize the impact by limiting the degree or magnitude of the action and its implementation.” Minimizing impacts, together with rectifying and reducing over time, is the second tier of the mitigation hierarchy. Minimizing is reducing the intensity of the impact (e.g., population loss, habitat loss, reduced habitat suitability, reduced habitat connectivity, etc.) to the maximum extent practicable. Generalized examples of types of measures to minimize impacts follow:

- a. Reduce the overall spatial extent or duration of the action.
- b. Adjust the daily or seasonal timing of the action.
- c. Retain key habitat features within the affected area that would continue to support life-history processes for the evaluation species.
- d. Adjust the spatial configuration of the action to retain corridors for species movement between functional habitats.

- e. Apply best management practices to reduce water quality degradation.
- f. Adjust the magnitude, timing, frequency, duration, or rate-of-change of water flow diversions and flow releases to minimize the alteration of flow regime features that support life-history processes of evaluation species.
- g. Install screens and other measures necessary to reduce the entrainment/impingement of aquatic life at water-intake structures.
- h. Install fences, signs, markers, and other measures necessary to protect resources from impacts (e.g., fencing riparian areas to exclude livestock, marking a heavy-equipment exclusion zone around burrows, nest trees, and other sensitive areas).

Rectify — This subset of the second tier of the mitigation hierarchy involves “repairing, rehabilitating, or restoring the affected environment.”

Rectifying impacts may address, relative to no-action conditions, a loss in habitat availability or suitability for evaluation species within the affected area and contribute to meeting the overall mitigation planning goal of this policy. Generalized examples follow:

- a. Repair physical alterations of the affected areas to restore pre-action conditions or improve habitat suitability for the evaluation species (e.g., regrade staging areas to appropriate contours, loosen compacted soils, restore altered stream channels to stable dimensions).
- b. Plant and ensure the survival of appropriate vegetation to restore or improve habitat conditions (quantity and suitability) for evaluation species and to stabilize soils and stream channels.
- c. Provide for fish and wildlife passage through or around action-imposed barriers to movement.
- d. Consistent with all applicable laws, regulations, policies,

and conservation plans, stock species that experienced losses in affected areas when habitat conditions in those areas can support them.

Reduce Over Time — his subset of the second tier of the mitigation hierarchy is to “reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action.”

Reducing impacts over time involves preserving, enhancing, and maintaining the populations, habitats, and ecological functions that remain in an affected area following the impacts of the action, including areas that are successfully restored or improved through rectifying mitigation measures. Preservation, enhancement, and maintenance operations may improve upon conditions that would occur without the action and contribute to no net loss (e.g., when such operations would prevent habitat degradation expected through lack of management needed for an evaluation species). Reducing impacts over time is an appropriate means to achieving the mitigation goal after applying all appropriate and practicable avoidance, minimization, and rectification measures. Generalized examples follow:

- a. Control land uses and limit disturbances to portions of the affected area that may continue to support the evaluation species.
- b. Control invasive species in the affected areas.
- c. Manage fire-adapted habitats with appropriate timing and frequency of prescribed fire.
- d. Maintain or replace equipment and structures in affected areas to prevent the loss of fish and wildlife resources due to equipment failure (e.g., cleaning and replacing trash racks and water-intake screens, maintaining fences that limit access to environmentally sensitive areas, or using bird collision prevention measures).
- e. Ensure proper training of personnel in operations necessary

to preserve existing or restored fish and wildlife resources in the affected area.

6.6.3. Compensate

“Compensate for the impact by replacing or providing substitute resources or environments.” Compensating for impacts is the third and final tier of the mitigation hierarchy. Compensation is protecting, maintaining, enhancing, or restoring habitats, and ecological functions, and uses thereof for an evaluation species. Importantly, even when impacts are minimized, compensation for temporary or permanent impacts to environmental resources is still appropriate.

Multiple mechanisms may accomplish compensatory mitigation, including habitat credit exchanges and other emerging mechanisms. Proponent-responsible mitigation, mitigation/conservation banks, and in-lieu fee funds are the three most common mechanisms. Descriptions of their general characteristics follow:

- a. Proponent-Responsible Mitigation. A proponent-responsible mitigation site provides ecological functions and services to offset the habitat impacts of a proposed action. As its name implies, the action proponent is solely responsible for ensuring that the compensatory mitigation activities are completed and successful. Proponent-responsible mitigation may occur onsite or offsite relative to action impacts. Like all compensatory mitigation measures, proponent-responsible mitigation should be delivered in accordance with Service-defined or Service-approved standards and should address the factors listed in section 6.6.3.1, *Equivalent Standards* intended to: (a) maximize the benefit to affected resources and their values, services, and functions; (b) implement in advance of project impacts; and (c) reduce risk to achieving effectiveness. When associated with a permit requirement, this mechanism is often referred to as permittee-responsible mitigation.



Katrina Liechty/USFWS

A fish passage engineer inspects new fish-friendly culvert.

b. **Mitigation/Conservation Banks.** A conservation bank is a site or suite of sites that provides ecological functions and services expressed as credits that are conserved and managed in perpetuity for particular species and are used expressly to offset impacts occurring elsewhere to the same species. A mitigation bank is established to offset impacts to aquatic habitats under section 404 of the Clean Water Act. Some mitigation banks may also serve the species-specific purposes of a conservation bank. Mitigation and conservation banks are typically for-profit enterprises that apply habitat restoration, creation, enhancement, or preservation techniques to generate credits on their banking properties. The establishment, operation, and use of a conservation bank requires a conservation bank agreement between the Service and the bank sponsor. Aquatic resource mitigation banks require a banking

instrument approved by the U.S. Army Corps of Engineers. Responsibility for ensuring that compensatory mitigation activities are successfully completed is transferred from the action proponent to the bank sponsor at the time of the sale/transfer of credits. Mitigation and conservation banks generally provide mitigation in advance of impacts.

c. **In-Lieu Fee.** An in-lieu fee site provides ecological functions and services expressed as credits that are conserved and managed for particular species or habitats and are used expressly to offset impacts occurring elsewhere to the same species or habitats. In-lieu fee programs are sponsored by governmental or nonprofit entities that collect funds used to establish in-lieu fee sites. In-lieu fee program operators apply habitat restoration, creation, enhancement, and preservation techniques to generate credits on in-lieu fee sites. The

establishment, operation, and use of an in-lieu fee program requires an agreement between regulatory agencies of applicable authority, including the Service, and the in-lieu fee program operator. Responsibility for ensuring that compensatory mitigation activities are successfully completed is transferred from the action proponent to the in-lieu fee program operator at the time of sale/transfer of credits. Unlike mitigation or conservation banks, in-lieu fee programs generally provide compensatory mitigation after impacts have occurred.

The mechanisms for delivering compensatory mitigation differ according to: (1) who is ultimately responsible for the success of the mitigation (the action proponent or a third party), (2) whether the mitigation site is within or adjacent to the impact site (onsite) or at another location that provides either equivalent or additional resource value (offsite), and (3) when resource benefits are secured



Scott Covington/USFWS

Wind turbines across the Wyoming prairie.

(before or after resource impacts occur). Regardless of the delivery mechanism, species conservation strategies and other landscape-level conservation plans are expected to provide the basis for establishing and operating compensatory mitigation sites and programs.

The Service’s preference, discussed in section 6.7.1, is that proponents offset unavoidable resource losses in advance of their actions. Further, the Service considers the banking of habitat value for the express purpose of compensating for future unavoidable losses to be a legitimate form of mitigation. Withdrawals from a bank must be commensurate with losses of habitat value (considering scarcity, suitability and importance) that they are offsetting and not based solely on the affected habitat acreage or the cost of land purchase and management. Resource losses compensated through purchase of conservation or mitigation bank credits may include, but are not limited to, habitat impacts to species covered by one or more Service authorities.

6.6.3.1. Equivalent Standards

Service mitigation recommendations or requirements should apply equivalent ecological, procedural, and administrative standards for all compensatory mitigation mechanisms. Compensatory mitigation measures should fully offset residual impacts to affected resources, reduce risk to achieving effectiveness, and use transparent methodologies. Mitigation that the Service recommends or approves through any compensatory mitigation mechanism should incorporate, address, or identify the following that are intended to ensure successful implementation and durability:

- a. type of resource(s) and/or its value(s), service(s), function(s), and amount(s) of such resources to be provided (usually expressed in acres or some other physical measure); the method of compensation (restoration, enhancement, establishment, preservation); and the manner in which a landscape-scale approach has been considered;

- b. factors considered during the site selection process;
- c. site protection instruments to ensure the durability of the measure;
- d. baseline information in order, among other things, to adequately verify the additionality of the compensatory mitigation;
- e. the mitigation value of such resources (usually expressed as a number of credits or other units of value), including a rationale for the value assigned;
- f. a mitigation work plan that includes the geographic boundaries of the measure, construction methods, timing, and other considerations;
- g. a maintenance plan;
- h. performance standards to determine whether the measure has achieved its intended outcome;
- i. monitoring requirements;
- j. long-term management commitments;

- k. adaptive-management commitments; and
- l. financial assurance provisions that are sufficient to ensure, with a high degree of confidence, that the measure can achieve and maintain its intended outcome, in accordance with the measure's performance standards.

Third parties may assume the long-term management responsibilities for implementing proponent-responsible compensation. The third party accepting the long-term management responsibility for the compensatory actions would assume all of the proponent's obligations for ensuring their success and durability.

6.6.3.2. Research and Education

Research and education, although important to the conservation of many resources, are not typically considered compensatory mitigation because they do not directly offset adverse effects to species or their habitats. In rare circumstances, research or education that is directly linked to reducing threats, or that provides a quantifiable benefit to the species, may be included as part of a mitigation package. These circumstances may exist when: (a) the major threat to a resource is something other than habitat loss, (b) the Service can reasonably expect the outcome of research or education to offset the impacts, or (c) the proponent commits to using the results/recommendations of the research to mitigate action impacts. Research should be included as part of a mitigation package only when other reasonable options for mitigation have been fully exhausted.

6.7. Recommendations

The Service should provide recommendations to mitigate the impacts of proposed actions at the earliest practicable stage of planning to ensure maximum consideration. The Service should develop mitigation recommendations in cooperation with the action proponent or the authorizing agency, or both, considering cost estimates and other information that the

proponent/agency provides about the action and its effects, and relying on the best scientific information available. Service recommendations should represent our best judgment as to the most practicable means of ensuring that a proposed action maintains the current status of the affected resources. The Service should provide mitigation recommendations under an explicit expectation that the action proponent or the applicable authorizing agency is fully responsible for implementing or enforcing all adopted recommendations.

The Service should strive to provide mitigation recommendations, including reasonable alternatives to the proposed action, which, if fully and properly implemented, would achieve the mitigation planning goal while also achieving the stated purpose of the proposed action. However, on a case-by-case basis, the Service may recommend the "no action" alternative. For example, when appropriate and practicable means of avoiding significant impacts to high-value habitats and associated species are not available, the Service may recommend the "no action" alternative.

6.7.1. Preferences for Compensatory Mitigation

Unless action-specific circumstances warrant otherwise, the Service should observe the following preferences in providing compensatory mitigation recommendations:

Advance compensatory mitigation. When compensatory mitigation is necessary, the Service prefers compensatory mitigation measures that are implemented in advance of project impacts.

Compensatory mitigation in relation to landscape strategies and plans. The preferred location for compensatory mitigation measures recommended or required by the Service is within the boundaries of an existing strategically planned, interconnected conservation network that serves the conservation objectives for the

affected resources in the relevant landscape context. Compensatory mitigation measures should enhance habitat connectivity or contiguity, or strategically improve targeted ecological functions important to the affected resources (e.g., enhance the resilience of fish and wildlife populations challenged by the widespread stressors of climate change).

Where existing conservation networks or landscape conservation plans are not available for the affected resources, Service personnel should develop mitigation recommendations based on the best available scientific information and professional judgment that would maximize the effectiveness of the mitigation measures for the affected resources, consistent with this policy's guidance on Integrating Mitigation Planning with Conservation Planning (section 6.1).

Service personnel should also consider the needs of local communities when collaborating on siting compensatory mitigation. Factors important to local communities, including the environmental justice implications of project impacts and mitigation siting, should be considered, consistent with applicable authority and resource management responsibilities. For example, if a project affects ecosystem services (e.g., flood storage, recreational opportunities, water quality, etc.) valuable to local communities, the Service should consider ways to site compensatory mitigation so that the replacement ecosystem services still benefit the affected local community to the same degree as before the action.

6.7.2. Recommendations for Locating Compensatory Mitigation on Public or Private Lands

When appropriate as specified in this policy, the Service may recommend establishing compensatory mitigation at locations on private, public, or Tribal lands. The Service should generally, but not always, recommend compensatory mitigation on lands with the same ownership classification as the

lands where impacts occurred. For example, impacts to evaluation species on private lands are generally mitigated on private lands and impacts to evaluation species on public lands are generally mitigated on public lands. However, most private lands are not permanently dedicated to conservation purposes and are generally the most vulnerable to impacts resulting from development actions; therefore, mitigating impacts to any type of land ownership on private lands is usually acceptable as long as the mitigation is durable. Locating compensatory mitigation on public lands for impacts to evaluation species on private lands is also possible, and in some circumstances may best serve the conservation objectives for evaluation species. These compensatory mitigation options require careful consideration and justification relative to the Service's mitigation planning goal, as described below.

The Service generally only supports locating compensatory mitigation on (public or private) lands that are already designated for the conservation of natural resources if generating additionality (see section 7, *Definitions*) is legally possible and is clearly demonstrated. In particular, the Service usually does not support offsetting impacts to private lands by locating compensatory mitigation on public lands designated for conservation purposes because this practice risks a long-term net loss in landscape capacity to sustain species by relying increasingly on public lands to serve conservation purposes. However, the Service acknowledges that public ownership does not automatically confer long-term protection or management for evaluation species in all cases, which may then justify locating compensatory mitigation measures on public lands in some cases, including compensation for impacts to evaluation species on either public or private lands. The Service may recommend compensating for private land impacts to evaluation species on public lands (whether or not designated for conservation of natural resources) when:

- a. compensation is an appropriate means of achieving the mitigation planning goal, as specified in this policy;
- b. the compensatory mitigation would provide additional conservation benefits above and beyond measures the public agency is foreseeably expected to implement absent the mitigation (only such additional benefits are counted towards achieving the mitigation planning goal);
- c. the additional conservation benefits are durable, i.e., lasting as long as the impacts that prompted the compensatory mitigation;
- d. the compensatory mitigation is consistent with and not otherwise prohibited by all relevant statutes, regulations, and policies;
- e. the public land location would provide a better conservation outcome, such as when private lands suitable for compensatory mitigation are unavailable or are available but provide a lesser contribution towards offsetting the impacts to meet the mitigation planning goal for the evaluation species; and
- f. project proponents have established a financing mechanism to cover the costs of implementation and long-term management of the compensatory mitigation on public lands.

Compensatory mitigation on public lands may require multiple tools beyond land use plan designations, including right-of-way grants, withdrawals, disposal or lease of land for conservation, conservation easements, cooperative agreements, and agreements with third parties so that assurances of durability, including financial assurances, are in place to support the development, maintenance, and long-term effectiveness of the mitigation measures. Mechanisms to ensure durability of land protection for compensatory mitigation on public and private lands vary among agencies, but should preclude conflicting uses and ensure that protection and management of the mitigation land is commensurate with the magnitude and duration of impacts.

When the public lands under consideration for use as compensatory mitigation for impacts on private lands are National Wildlife Refuge System (NWRS) lands, additional considerations may apply (see Appendix (A)(10)).

6.7.3. Recommendations Related to Recreation

Mitigation for impacts to recreational uses of wildlife and habitat. The Service should generally not recommend measures intended to increase recreational value as compensatory mitigation for habitat losses. The Service may address impacts to recreational uses that are not otherwise addressed through habitat mitigation but should do so with separate and distinct recreational use mitigation recommendations.

Recreational use of compensatory mitigation sites. Consistent with applicable statutes, the Service supports those recreational uses on compensatory mitigation sites that are compatible with the conservation goals of those sites. If certain uses are incompatible with the conservation goals for the compensatory mitigation sites, for example, off-road vehicle use in an area conserved for wildlife intolerant to disturbance, the Service should recommend against such uses. When compatible, the public access and consumptive and non-consumptive uses that can be accommodated may provide community benefits. These benefits may be important means of addressing environmental justice concerns in communities where recreational attributes are limited and may be further degraded by a proposed project. Service personnel should consider these benefits when developing mitigation recommendations.

6.8. Documentation

The Service should advise action proponents and decision-making agencies at timely stages of the planning process to ensure effective consideration of the Service's recommendations. Generally, Service personnel should communicate key concerns early in the process, continue

to communicate additional components during or following the initial assessment of effects, and provide written recommendations toward the end of the process, but in advance of a final decision for the action. The following outline lists the components applicable to these three planning stages. These stages may extend over a period of years or occur almost simultaneously, which may necessitate consolidating some of the components listed below. For all actions, the level of the Service's analysis and documentation should be commensurate with the scope and severity of the potential impacts to resources. Where compensation is used to address impacts, additional information outlined in section 6.6.3 may be necessary.

A. Early Planning

1. Inform the proponent of the Service's goal to maintain the status of affected resources.
2. Coordinate key data collection and planning decisions with the proponent, relevant Tribes, and Federal and State resource agencies, including, but not limited to:
 - a. delineate the affected area;
 - b. define the planning horizon;
 - c. identify species in the affected area that the Service is likely to consider as evaluation species;
 - d. identify landscape-scale strategies and conservation plans and objectives that pertain to these species and the affected area;
 - e. define surveys, studies, and preferred methods necessary to inform effects analyses; and
 - f. as necessary, identify reasonable alternatives to the proposed action that may achieve the proponent's purpose and the Service's no-net-loss goal.
3. As early as possible, inform the proponent of the presence of probable high-value habitats in the affected area (see

section 6.5), and advise the proponent of Service policy to avoid all impacts to such habitats.

B. Effects Assessment

1. Coordinate selection of evaluation species with relevant Tribes, Federal and State resource agencies, and action proponents.
2. Communicate the Service's assessment of the value of affected habitats to evaluation species.
3. If high-value habitats are affected, advise the proponent of the Service's policy to avoid all impacts to such habitats.
4. Assess action effects to evaluation species and their habitats, and uses thereof.
5. Formulate mitigation options in coordination with the proponent, relevant Tribes, and Federal and State resource agencies.

C. Final Recommendations

The Service's final mitigation recommendations should communicate in writing the following:

1. The authorities under which the Service is providing the mitigation recommendations consistent with this policy.
2. A description of all mitigation measures that are reasonable and appropriate to ensure that the proposed action maintains the current status of affected fish, wildlife, plants, and their habitats, and uses thereof.
3. The following elements, and where compensation is used to address impacts, all additional information outlined in section 6.6.3, should be specified within a mitigation plan or equivalent by either the Service, action proponents, or in collaboration:
 - a. measurable objectives;
 - b. implementation assurances, including financial, as applicable;
 - c. effectiveness monitoring;
 - d. additional adaptive

management actions as may be indicated by monitoring results; and

- e. reporting requirements.

4. An explanation of the basis for the Service recommendations, including, but not limited to:
 - a. evaluation species used for mitigation planning;
 - b. the assessed value of affected habitats to evaluation species;
 - c. predicted adverse and beneficial effects of the proposed action;
 - d. predicted adverse and beneficial effects of the recommended mitigation measures; and
 - e. the rationale for our determination that the proposed action, if implemented with Service recommendations, would achieve the mitigation policy goal.
5. The Service's expectations of the proponent's responsibility to implement the recommendations.

6.9. Followup

The Service encourages, and should initiate whenever practicable and within our authority, post-action monitoring studies and evaluations to determine the effectiveness of recommendations. Where Service personnel determine that action proponents have not carried out agreed-upon mitigation means and measures, the Service should request that the parties responsible for regulating the action initiate corrective measures. These corrective measures may include accessing the available financial assurances that were established to ensure long-term effectiveness and maintenance. Provisions in this section also apply when the Service is the action proponent.

7. Definitions

Definitions in this section apply to the implementation of this policy. They were developed to provide clarity and consistency within the

policy itself and to ensure general applicability to all mitigation processes the Service engages. Service authorities may define some of the terms in this section differently or more specifically, and these definitions do not substitute for statutory or regulatory definitions in the exercise of those authorities.

Action. An activity or program implemented, authorized, or funded by Federal agencies, or a non-Federal activity or program for which the Service has authority to make mitigation recommendations, specify mitigation requirements, or provide technical assistance for mitigation planning.

Additionality. A compensatory mitigation measure is additional when the benefits of the measure improve on the baseline conditions of the site that is compensating for the impacted resources and their values, services, and functions in a manner that is demonstrably new and would not have occurred at the compensatory mitigation site without the measure.

Affected area. The spatial extent of all effects, direct and indirect, of a proposed action to fish, wildlife, plants, and their habitats, and uses thereof.

Affected resources. Those resources, as defined by this policy, that are subject to the adverse effects of an action.

Baseline. Current and future environmental conditions (relevant to the resources covered by this policy and informed by the context of past and cumulative impact to such resources) that are expected without implementation of the proposed action under review. Predictions about future environmental conditions without the action should account for natural species succession, implementation of approved land and resource management plans, and any other reasonably foreseeable factors that influence these conditions.

Compensatory mitigation. Compensatory mitigation means to compensate for, or offset, remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied by replacing or providing substitute resources or environments through the restoration, establishment, enhancement, or preservation of resources and their values, services, and functions. Impacts are authorized pursuant to a regulatory or resource management program that issues permits, licenses, or otherwise approves activities. In this policy, “mitigation” is a deliberate expression of the full mitigation hierarchy, and “compensatory mitigation” describes only the last phase of that sequence.

Conservation. In the context of this policy, the noun “conservation” is a general label for the collective practices, plans, policies, and science that are used to protect and manage species and their habitats, and uses thereof, to achieve desired outcomes.

Conservation objective. A measurable expression of a desired outcome for a species or its habitat resources. Population objectives are expressed in terms of abundance, trend, vital rates, or other measurable indices of population status. Habitat objectives are expressed in terms of the quantity, quality, and spatial distribution of habitats required to attain population objectives, as informed by knowledge and assumptions about factors influencing the ability of the landscape to sustain species.

Conservation planning. The identification of strategies for achieving conservation objectives. Conservation plans include, but are not limited to, recovery plans, habitat conservation plans, watershed plans, green infrastructure plans, and others developed by Federal, State, Tribal, or local government agencies or non-governmental organizations. This policy emphasizes the use

of landscape-scale approaches to conservation planning.

Durability. A mitigation measure is durable when the effectiveness of the measure is sustained for the duration of the associated impacts of the action, including direct and indirect impacts. Action proponents provide assurances of durability, including financial assurances, to support the development, maintenance, and long-term effectiveness of the mitigation measures.

Effects. Changes in environmental conditions that are relevant to the resources covered by this policy. They are caused by the action or, in the case of programmatic actions, a suite of actions. Effects may also occur later in time and may occur outside the immediate area involved in the action.

Evaluation species. Fish, wildlife, and plant resources in the affected area that are selected for effects assessment and mitigation planning.

Habitat. An area with spatially identifiable physical, chemical, and biological attributes that supports one or more life-history processes for evaluation species. Mitigation planning should delineate habitat types in the affected area using a classification system that is applicable to both the region(s) of the affected area and the selected evaluation species in order to facilitate determinations of habitat scarcity, suitability, and importance.

Habitat Credit Exchange. An environmental market that operates as a clearinghouse in which an exchange administrator manages credit transactions between compensatory mitigation providers and project permittees. This is in contrast to the direct transactions between compensatory mitigation providers and permittees that generally occur through conservation banking and in-lieu fee programs. In appropriate circumstances, an exchange administrator may also be a mitigation provider. Exchanges

help connect mitigation providers and users to provide ecological functions and services expressed as credits that are permanently conserved and managed for specified species and are used to compensate for adverse impacts occurring elsewhere to the same species. Exchanges are not intended as a means to establish a secondary market for resale of credits.

Habitat value. An assessment of an affected habitat with respect to an evaluation species based on three attributes—scarcity, suitability, and importance—that define its conservation value to the evaluation species in the context of this policy. The three parameters are assessed independently but are sometimes correlated. For example, rare or unique habitat types of high suitability for evaluation species are also very likely of high importance in achieving conservation objectives.

Impacts. In the context of this policy, impacts are adverse effects relative to the affected resources.

Importance. The relative significance of the affected habitat, compared to other examples of a similar habitat type in the landscape context, to achieving conservation objectives for the evaluation species. Habitats of high importance are irreplaceable or difficult to replace or are critical to evaluation species by virtue of their role in achieving conservation objectives within the landscape (e.g., sustain core habitat areas, linkages, ecological functions). Areas containing habitats of high importance are generally, but not always, identified in conservation plans addressing resources under Service authorities (e.g., in recovery plans) or when appropriate, under authorities of partnering entities (e.g., in State wildlife action plans, Landscape Conservation Cooperative conservation “blueprints,” etc.).

Landscape. An area encompassing an interacting mosaic of ecosystems and human systems that is characterized by a set of common management concerns. The most relevant concerns to the Service

and this policy are those associated with the conservation of species and their habitats. The landscape is not defined by the size of the area, but rather the interacting elements that are meaningful to the conservation objectives for the resources under consideration.

Landscape-scale approach. A scale-appropriate decision-making approach that implements existing conservation plans, where available, and emphasizes early engagement and coordination across Federal, State, Tribal, local, and nongovernmental levels.

Landscape-scale strategies and plans. For the purposes of this policy, landscape-scale strategies and plans identify clear management objectives for targeted resources and their values, services, and functions at landscape scales, as necessary, including across administrative boundaries, and employ the landscape-scale approach to identify, evaluate, and communicate how mitigation can best achieve those management objectives.

Gulf sturgeon use Florida's Choctawhatchee River for spawning activities. Photo by Ryan Hagerty, USFWS.



Mitigation. In the context of this policy, the noun “mitigation” is a label for all types of measures (see mitigation types) that a proponent would implement toward achieving the Service’s mitigation goal.

Mitigation goal. The Service’s goal for mitigation is to maintain the current status of affected resources, as allowed by applicable statutory authority and consistent with the responsibilities of action proponents under that authority.

Mitigation hierarchy. The elements of mitigation, summarized as avoidance, minimization, and compensation, provide a sequenced approach to addressing the foreseeable impacts to resources and their values, services, and functions. First, impacts should be avoided by altering project design or location, or both, or declining to authorize the project; then minimized through project modifications and permit conditions; and, generally, only then compensated for remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied.

Mitigation planning. The process of assessing the effects of an action and formulating mitigation measures that would achieve the mitigation goal.

Mitigation types. General classes of methods for mitigating the impacts of an action (Council on Environmental Quality (CEQ), 40 CFR 1508.20(a–e)), including:

- a. avoid the impact altogether by not taking the action or parts of the action;
- b. minimize the impact by limiting the degree or magnitude of the action and its implementation;
- c. rectify the impact by repairing, rehabilitating, or restoring the affected environment;
- d. reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and

- e. compensate for the impact by replacing or providing substitute resources or environments.

These five mitigation types, as enumerated by CEQ, are compatible with this policy; however, as a practical matter, the mitigation elements are categorized into three general types that form a sequence: avoidance, minimization, and compensation for remaining unavoidable (also known as residual) impacts. Section 6.6 (*Means and Measures*) of this policy provides expanded definitions and examples for each of the mitigation types.

No net loss. Meeting the Service’s mitigation goal of no net loss means that with appropriate avoidance, minimization, and compensatory mitigation measures, the status of the affected resource is undiminished relative to pre-impact conditions. Mitigation that meets the no net loss goal should fully offset the impacts of the action to the affected resources, including considerations for temporal losses, risk, and uncertainty.

Practicable. Available and capable of being done after taking into consideration existing technology, logistics, and cost in light of a mitigation measure’s beneficial value and an activity’s overall purpose, scope, and scale.

Proponent. The agency(ies) proposing an action, and, if applicable, any applicant(s) for agency funding or authorization to implement a proposed action.

Resources. Fish, wildlife, plants, and their habitats for which the Service has authority to recommend or require the mitigation of impacts resulting from proposed actions.

Scarcity. The relative spatial extent (e.g., rare, common, or abundant) of the habitat type in the landscape context.

Suitability. The relative ability of the affected habitat to support one or more elements of the evaluation species’ life history

(reproduction, rearing, feeding, dispersal, migration, hibernation, or resting protected from disturbance, etc.) compared to other similar habitats in the landscape context. A habitat’s ability to support an evaluation species may vary over time.

Unavoidable. An impact is unavoidable when there is no appropriate and practicable alternative to the proposed action available that would not cause the impact.

Appendix. Additional Mitigation Authorities

A. Relationship of Service Mitigation Policy to Other Policies, Authorities

This section describes the application of mitigation under existing policies and authorities.

1. *Bald and Golden Eagle Protection Act (16 U.S.C. 668–668d) (Eagle Act)*

The Eagle Act prohibits take of bald eagles and golden eagles except pursuant to Federal regulations. The Eagle Act defines the “take” of an eagle to include the following actions: “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” 16 U.S.C. 668c. Our regulations codify the statutory definition at 50 CFR 22.3.

The Eagle Act allows the Secretary of the Interior to authorize certain otherwise-prohibited activities through regulations. The Service is authorized to prescribe regulations permitting the taking, possession, and transportation of bald and golden eagles provided that permitting is “compatible with the preservation of the bald eagle or the golden eagle” (16 U.S.C. 668a). The Service has regulations to issue permits for scientific and exhibition purposes, religious purposes of Native American Tribes, falconry (golden eagles only), depredation, protection of health and safety, golden eagle nest take for resource development and recovery, non-purposeful (incidental) take, and removal or destruction of eagle nests.

The Eagle Act allows for mitigation in the form of avoidance and minimization by restricting permitted take to circumstances where take is “necessary for the protection of wildlife or of agricultural or other interests in any particular locality.” The Service may thus require avoidance and minimization of potential take before determining that any

remaining take is necessary for protection of those interests. In addition, all forms of mitigation, including compensatory mitigation, can be used as a tool for ensuring that authorized take is consistent with the preservation standard of the Eagle Act. The regulations for eagle nest take permits and eagle non-purposeful (incidental) take permits explicitly provide for compensatory mitigation. Although eagle habitat (beyond nest structures) is not directly protected by the Eagle Act, the statute and implementing regulations do not preclude the use of habitat restoration, enhancement, and protection as compensatory mitigation so long as the mitigation can be shown to compensate for take as defined by the Act.

Under our non-purposeful take permit framework, the threshold for authorized take of golden eagles is set at zero throughout the United States because golden eagle populations are potentially declining, meaning those populations cannot absorb additional take while still maintaining current numbers of breeding pairs over time. Accordingly, all permits for golden eagle take must incorporate compensatory mitigation at a 1.2 to 1 ratio to ensure permits are compatible with the preservation of golden eagles, as required under the Eagle Act. See 81 FR 91494, 91504–05 (Dec. 16, 2016); 50 CFR 22.26. Because current golden eagle populations are primarily constrained by a high level of unauthorized human-caused mortality, rather than habitat loss, permits for golden eagle take require mitigation to be in the form of a reduction of a source of mortality or an increase in carrying capacity. Compensatory mitigation could take a variety of forms, including habitat restoration and enhancement, as long as the method

sufficiently offsets permitted take using reliable standards and metrics.

2. *Clean Water Act (33 U.S.C. 1251 et seq.)*

Several provisions within section 404 of the Clean Water Act describe the responsibilities and roles of the Service. Ecological Services field offices routinely recommend mitigation for impacts to aquatic resources nationwide under section 404(m). Under that provision, the Secretary of the Army notifies the Service Director that the Secretary has received an individual permit application or proposes to issue a general permit. The Service must then submit any comments in writing to the Secretary within 90 days. The Service has the opportunity to engage several thousand Corps of Engineers permit actions affecting aquatic habitats and wildlife annually and to assist the Corps in developing permit terms that avoid, minimize, or compensate for permitted impacts.

3. *Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)*

This policy applies to species listed and critical habitats designated under the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 et seq.). Although this policy is intended, in part, to clarify the role of mitigation in endangered species conservation, nothing within it replaces, supersedes, or substitutes for the ESA implementing regulations.

A primary purpose of the ESA is to conserve the ecosystems upon which species listed as endangered and threatened depend. Conserving listed species involves the use of all methods and procedures that are necessary for their recovery, which includes mitigating the impacts of actions to listed species and their habitats.

All actions must comply with the applicable prohibitions against taking endangered animal species under ESA section 9 and taking threatened animal species under regulations promulgated through ESA section 4(d).

Under ESA section 7(a)(2), Federal agencies must consult with the Service(s) to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. The Service may consider mitigation measures included in proposed actions that avoid or minimize adverse effects or incidental take when determining whether to concur with the action agency's finding that its action may affect, but is not likely to adversely affect, listed species or critical habitat.

If a proposed action triggers formal consultation, the Service will issue a biological opinion and, as necessary, an incidental take statement. When formulating its biological opinion, the Service takes into consideration the effects of the action as proposed, both beneficial and adverse. This includes measures "intended to avoid, minimize, or offset the effects of" the action. See 50 CFR 402.14(g)(8). Because jeopardy and adverse modification analyses weigh effects in the action area relative to the status of the species throughout its listed range and to the status of critical habitat as a whole, respectively, "beneficial actions" may also include proposed conservation measures for the affected species within its range but outside the action area (e.g., compensation).

For actions not likely to jeopardize listed species, Federal agencies and applicants are exempt from the ESA's take prohibitions if the Federal agency and applicants comply with the incidental take statement's reasonable and prudent measures (RPM) to minimize the impacts associated with incidental take, and the underlying terms and conditions. RPMs can include mitigation, in appropriate circumstances, if such a measure

minimizes the impact of the incidental taking on the species, is within the legal authority and jurisdiction of the Federal agency or applicant to carry out, and is consistent with the interagency consultation regulations at 50 CFR 402.14.

Likewise, the Service may apply all forms of mitigation, consistent with the guidance in this policy, in formulating a reasonable and prudent alternative (RPA) that would avoid jeopardy/adverse modification, if it is also consistent with the regulatory definition of an RPA at 50 CFR 402.02. It is preferable to avoid or minimize impacts to listed species or critical habitat before compensating for such impacts. Under some limited circumstances, however, the latter form of mitigation may provide all or part of the means to avoid jeopardy or adverse modification.

The Service may permit incidental take resulting from a non-Federal action under ESA section 10(a)(1) (B) after approving the proponent's habitat conservation plan (HCP) under section 10(a)(2)(A). The HCP must specify the steps the permit applicant will take to minimize and mitigate such impacts and state the funding that will be available to implement such steps.

4. Executive Order 13186 (E.O. 13186), Responsibilities of Federal Agencies to Protect Migratory Birds

E.O. 13186 (66 FR 3853, Jan. 10, 2001) directs Federal departments and agencies to avoid or minimize adverse impacts on "migratory bird resources," defined as "migratory birds and the habitats upon which they depend." The Executive Order is implemented to further the purposes of the migratory bird conventions, the MBTA, the Eagle Act, the Fish and Wildlife Coordination Act (16 U.S.C. 661–666c), the ESA, and the National Environmental Policy Act or "other established environmental review process" (section 3(e)(6)). Additionally, E.O. 13186 directs Federal agencies whose activities will likely result in measurable negative effects on migratory bird populations to collaboratively

develop and implement a memorandum of understanding (MOU) with the Service that promotes the conservation of migratory bird populations through implementing various measures, including the following: avoiding or minimizing adverse impacts, restoring and enhancing habitat, and preventing or abating pollution or detrimental alteration of the environment for the benefit of migratory birds (section 3(e)). These MOUs clarify how an agency can mitigate impacts and monitor implemented conservation measures. MOUs can also define how Federal agencies can implement appropriate corrective measures when needed, as well as what proactive conservation actions or partnerships can be formed to advance bird conservation, given the agency's existing mission and mandate.

The Service policy regarding its responsibility under E.O. 13186 (720 FW 2) states, "...all Service employees should: A. Implement their mission-related activities and responsibilities in a way that furthers the conservation of migratory birds and minimizes and avoids the potential adverse effects of migratory bird take, with the goal of eliminating take" (section 2.2A). The policy also stipulates that the Service will support the conservation intent of the migratory bird conventions by integrating migratory bird conservation measures into our activities, including measures for avoiding or minimizing adverse impacts on migratory bird resources, restoring and enhancing the habitat of migratory birds, and preventing or abating the pollution or detrimental alteration of the environment for the benefit of migratory birds.

5. Federal Power Act (16 U.S.C. 791–828c) (FPA)

The Federal Energy Regulatory Commission (FERC) authorizes non-Federal hydropower projects pursuant to the FPA. The Service's roles in hydropower project review are primarily defined by the FPA, as amended in 1986 by the Electric Consumers Protection Act, which explicitly ascribes roles to the

Service. In some circumstances, the FPA provides the Service with authority to require mitigation. The Service has mandatory conditioning authority for projects on National Wildlife Refuge System lands under section 4(e) and to prescribe fish passage to enhance and protect native fish runs under section 18. In other circumstances, the FPA provides the Service with authority to recommend mitigation. Under section 10(j), FERC is required to include license conditions that are based on recommendations made pursuant to the Fish and Wildlife Coordination Act by States, NOAA, and the Service for the adequate and equitable protection, mitigation, and enhancement of fish, wildlife, plants, and their habitats.

6. Fish and Wildlife Coordination Act (16 U.S.C. 661–667e) (FWCA)

The FWCA requires Federal agencies developing water-related projects to consult with the Service, NOAA, and the States regarding fish and wildlife impacts. The FWCA establishes fish and wildlife conservation as a coequal objective of all federally funded, permitted, or licensed water-related development projects. Federal action agencies are to include justifiable means and measures for fish and wildlife, and the Service's mitigation and enhancement recommendations are to be given full and equal consideration with other project purposes. The Service's mitigation recommendations may include measures addressing a broad set of habitats beyond the aquatic impacts triggering the FWCA and taxa beyond those covered by other resource laws. Action agencies are not bound by the FWCA to implement Service conservation recommendations in their entirety.

7. Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 et seq.) (MMPA)

While the MMPA contains a moratorium on take (i.e., hunting, killing, capture, and/or harassment) and import of marine mammals, section 101(a)(5) provides an exception that allows the Service to authorize the incidental, but not intentional, take of small numbers of marine mammals. The Service

can authorize take for a specified activity, other than commercial fishing, within a geographical region if the total of such taking will have a negligible impact on the marine mammal species and will not have an unmitigable adverse impact on the availability of these species for subsistence uses.

Incidental take authorizations can provide conservation and management benefits to covered marine mammals. The Service can recommend mitigation for impacts to marine mammal species consistent with this policy and the MMPA, which are separate and distinct from mitigative measures that affect the least practicable adverse impact that the Service must prescribe as part of an authorization. Project proponents may adopt these recommendations as components of proposed actions.

8. Migratory Bird Treaty Act (16 U.S.C. 703–712) (MBTA)

The MBTA disallows the take of migratory birds without a permit or other regulatory authorization (e.g., permit exception regulation, depredation order). The Service has express authority to issue permits for purposeful take and currently issues several types of permits for purposeful take of birds (e.g., hunting, depredation, scientific collection). Hunting permits do not require mitigation; rather, the Service sets annual regulations that limit harvest to ensure levels harvested do not diminish waterfowl breeding populations. See 50 CFR part 20. For purposeful take permits issued under 50 CFR part 21 (e.g., depredation, scientific collection), authorized take must be consistent with the conservation of the migratory bird species taken. Compensation and offsets are not required under these purposeful take permits.

In all situations of take, authorized or unauthorized, the Service encourages the avoidance and minimization of take to the maximum extent practicable, and may encourage voluntary offsets to meet conservation of the migratory birds. However, the Service cannot legally require or accept compensatory mitigation

for unauthorized, and thus illegal, take of individuals. While action proponents are encouraged to reduce impacts to migratory bird habitat, such impacts are not regulated under the MBTA. An exception is that nesting substrate may not be destroyed if it results in the destruction of an active nest (a nest with viable eggs or chicks present). Action proponents may use the full mitigation hierarchy to manage impacts to migratory bird habitats, regardless of whether or not an authorization for take of individuals is in place. Assessments of action effects should examine direct, indirect, and cumulative impacts to migratory birds and their habitats, as habitat losses have been identified as a critical factor in the decline of many migratory bird species. Assessments should also consider the conservation status of the migratory bird species, with an emphasis on Birds of Conservation Concern. Mitigation should reflect conservation of migratory bird resource but does not necessarily need to reflect the species taken.

9. National Environmental Policy Act (42 U.S.C. 4321 et seq.) (NEPA)

NEPA requires Federal agencies to integrate environmental values into decision-making processes by considering potential impacts of their proposed actions and reasonable alternatives. Agencies disclose findings through an environmental assessment or a detailed environmental impact statement and are required to consider inclusion of mitigation measures that could avoid, minimize, and compensate impacts of the proposed action. The Council on Environmental Quality's (CEQ) implementing regulations (40 CFR part 1508) under NEPA define mitigation as a sequence, where mitigation begins with avoidance of impacts and then is followed by minimization of the degree or magnitude of impacts; rectification of impacts through repair, restoration, or rehabilitation; reduction of impacts over time during the life of the action; and lastly, compensation for impacts by providing replacement resources. Effective mitigation through this ordered approach starts at the beginning of the NEPA process,

not at the end. The NEPA process, through scoping, public notifications, and commenting periods provides an opportunity for Service engagement on mitigation opportunities affecting fish and wildlife.

Service engagement in the NEPA process can be an effective tool to further conservation goals. The Service may serve as an action agency on Service-sponsored projects, leading the NEPA analyses and engaging other stakeholders. We can also serve as a participating or cooperating agency on the actions proposed by other agencies. CEQ's NEPA implementing regulations at 40 CFR 1503.2 note that "Cooperating agencies and agencies that are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction, expertise, or authority...." The Service, in its role as a participating or cooperating agency, can help incorporate conservation in project development and analyses through our fish and wildlife comments and recommendations, including conservation measures and mitigation of fish and wildlife impacts. When reviewing the proposed actions of other Federal agencies under NEPA, Service comments that provide mitigation recommendations are advisory to other Federal agencies but may aid in producing a powerful conservation outcome. Establishing a framework for Service staff to consider and provide this advice under NEPA was a central purpose of the 1981 policy and remains important in this policy.

10. National Wildlife Refuge Mitigation Policy (64 FR 49229-49234, September 10, 1999) (Refuge Mitigation Policy)

The Service's Final Policy on the National Wildlife Refuge System and Compensatory Mitigation under the Section 10/404 Program establishes guidelines for the use of Refuge lands for siting compensatory mitigation for impacts permitted through section 404 of the Clean Water Act (CWA) and section 10 of the Rivers and

Harbors Act (RHA). The Refuge Mitigation Policy clarifies that siting mitigation for off-refuge impacts on National Wildlife Refuge System lands is appropriate only in limited and exceptional circumstances. Mitigation banks may not be sited on refuge lands, but the Service may add closed banks to the National Wildlife Refuge System if specific criteria are met. The Refuge Mitigation Policy, which explicitly addresses only compensatory mitigation under the CWA and RHA, remains in effect and is unaltered by this policy. However, the Service will evaluate all proposals for using National Wildlife Refuge System lands as sites for other compensatory mitigation purposes using the criteria and procedures established for aquatic resources in the Refuge Mitigation Policy (e.g., to locate compensatory mitigation on National Wildlife Refuge System property for off-refuge impacts to endangered or threatened species).

11. Natural Resource Damage Assessment and Restoration (NR-DAR)

All NRDAR restoration projects, including restoration banks and other forms of advance restoration, must be evaluated within the criteria established by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), CWA, the Oil Pollution Act (OPA), environmental compliance statutes (e.g., NEPA, ESA, National Historic Preservation Act (NHPA)), and their corresponding regulations. Restoration banking and advance restoration methods and tools used in the regulatory context can potentially help Trustees meet their statutory requirement to "restore, replace, or acquire the equivalent of" injured natural resources.

The Service is authorized to seek compensation to restore injured natural resources resulting from the release of hazardous substances or oil into the environment, as stipulated in the statutory and regulatory framework that governs natural resource damages claims, including 42 U.S.C. 9601 et seq. and

42 CFR 11 (CERCLA), 33 U.S.C. 2701 et seq. and 15 CFR 990 (OPA), and 33 U.S.C. 1251 et seq. (CWA).

B. Additional Legislative Authorities

1. Clean Air Act; 42 U.S.C. 7401 et seq., as amended
2. Marine Protection, Research, and Sanctuaries Act; 16 U.S.C. 1431 et seq. and 33 U.S.C. 1401 et seq.
3. Resource Conservation and Recovery Act; 42 U.S.C. 6901 et seq.
4. Fish and Wildlife Conservation Act; 16 U.S.C. 2901-2912
5. Shore Protection Act; 33 U.S.C. 2601 et seq.
6. Coastal Zone Management Act; 16 U.S.C. 1451 et seq.
7. Coastal Barrier Resources Act; 16 U.S.C. 3501
8. Surface Mining Control and Reclamation Act; 30 U.S.C. 1201 et seq.
9. National Wildlife Refuge System Administration Act; 16 U.S.C. 668dd, as amended
10. National Historic Preservation Act; 54 U.S.C. 306108
11. North American Wetlands Conservation Act, 16 U.S.C. 4401 et seq.
12. Pittman-Robertson Wildlife Restoration Act; 16 U.S.C. 669-669k
13. Dingell-Johnson Sport Fish Restoration Act; 16 U.S.C. 777-777n, except 777 e-1 and g-1
14. Federal Land and Policy Management Act, 43 U.S.C. 1701 et seq.

C. Implementing Regulations

1. National Environmental Policy Act (NEPA), 40 CFR part 1508
2. Marine Mammal Protection Act (MMPA), 50 CFR part 18

3. Migratory Bird Treaty Act (MBTA), 50 CFR part 21
4. Bald and Golden Eagle Protection Act (Eagle Act), 50 CFR part 22
5. Guidelines for Wetlands Protection, 33 CFR parts 320 and 332
6. Compensatory Mitigation for Losses of Aquatic Resources, 33 CFR parts 325 and 332 (U.S. Army Corps of Engineers) and 40 CFR part 230 (Environmental Protection Agency)
7. National Coastal Wetlands Conservation Grants, 16 U.S.C. 3954
8. Natural Resource Damage Assessments (OPA), 15 CFR part 990
9. Natural Resource Damage Assessments (CERCLA), 43 CFR part 11
10. Endangered Species Act of 1973, as amended; 50 CFR parts 13, 17 (specifically §§ 17.22, 17.32, 17.50), part 402
11. Powers of the Secretary, 43 CFR part 24

D. Executive Orders

1. Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001
2. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, January 4, 1979
3. Executive Order 11988, Floodplain Management, May 24, 1977
4. Executive Order 11990, Protection of Wetlands, May 24, 1977
5. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, February 11, 1994

6. Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, October 5, 2009
7. Executive Order 13604, Improving Performance of Federal Permitting and Review of Infrastructure Projects, March 22, 2012
8. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000
9. Executive Order 13007, Indian Sacred Sites, May 24, 1996

E. Council on Environmental Quality (CEQ) Policy and Guidance

1. Guidance Regarding NEPA Regulations (48 FR 34236, July 28, 1983)
2. Designation of Non-Federal Agencies to be Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act (40 CFR 1508.5, July 28, 1999)
3. Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act (January 30, 2002)
4. Collaboration in NEPA, a Handbook for NEPA Practitioners (October 2007)
5. Memorandum, “Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact” (January 14, 2011)
6. “Memorandum on Environmental Collaboration and Conflict Resolution” (September 6, 2012)
7. NEPA and NHPA, a Handbook for Integrating NEPA and Section 106 (March 2013)
8. Memorandum for Heads of Federal Departments and Agencies, “Effective Use of

Programmatic NEPA Reviews” (December 18, 2014)

F. Department of the Interior policy and guidance

1. Department of the Interior National Environmental Policy Act Procedures, 516 DM 1–7
2. Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act (June 5, 1997)
3. Secretarial Order 3317, Department of the Interior Policy on Consultation with Indian Tribes (December 1, 2011)
4. Department of the Interior Climate Change Adaptation Policy, 523 DM 1

G. U.S. Fish and Wildlife Service (USFWS) policy and guidance

1. Service Responsibilities to Protect Migratory Birds, 720 FW 2
2. Final Policy on the National Wildlife Refuge System and Compensatory Mitigation under the Section 10/404 Program, 64 FR 49229–49234, September 10, 1999
3. Joint U.S. Fish and Wildlife Service and National Marine Fisheries Habitat Conservation Planning and Incidental Take Permit Processing Handbook, 81 FR 93702, 2016
4. Endangered Species Act Consultation Handbook (with NMFS), 1998
5. Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act’s National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act, 2002
6. Guidance for the Establishment, Use, and Operation of Conservation Banking, 2003

7. Endangered and Threatened Wildlife and Plants; Recovery Crediting Guidance, 2008
8. USFWS Tribal Consultation Handbook, 2018
9. Service Climate Change Action Policy, 056 FW 1
10. The Service's Native American Policy, 510 FW 1

H. Other agency policy, guidance, and actions relevant to Service activities

1. Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency, The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 1990
2. Federal Highway Administration, Consideration of Wetlands in the Planning of Federal Aid Highways, 1990
3. Interagency Agreement between the National Park Service, Fish and Wildlife Service, Bureau of Land Management, and the Federal Aviation Administration Regarding Low-Level Flying Aircraft Over Natural Resource Areas, 1993
4. USFWS Memorandum from Acting Director to Regional Directors, "Partners for Fish and Wildlife Program and NEPA Compliance," 2002
5. Agreement between the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers for Conducting Fish and Wildlife Coordination Act Activities, 2003
6. Memorandum of Agreement Between the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers, 2003
7. Partnership Agreement between the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service for Water Resources and Fish and Wildlife, 2003
8. Memoranda of Understanding with nine Federal agencies, developed under E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, 2001

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