

**Challenges in and Solutions for Integrating Biological Assessments
Into Environmental Impact Statements**

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Abstract

In light of the National Environmental Policy Act's (NEPA) and the Endangered Species Act's (ESA) allowance for Federal agencies to concurrently fulfill their obligations under each statute, this paper considers potential challenges faced by Federal agencies when integrating biological assessments prepared pursuant to the ESA into environmental impact statements (EISs) prepared pursuant to NEPA. Such challenges can result from differences in how the two statutes and their implementing regulations direct Federal agencies to define a proposed action's environmental scope; evaluate impacts (including how and whether the agency addresses alternatives and cumulative impacts); consider mitigation measures; and frame impact conclusions. In describing these challenges, this paper considers the statutes themselves, each statute's implementing regulations, Council on Environmental Quality (CEQ) guidance, U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) guidance and resources, relevant examples from Federal agencies, and pertinent court opinions. Solutions that enable Federal agencies to concurrently fulfill requirements of both NEPA and the ESA in a single, integrated document are proposed in the paper's conclusion.

Challenges in and Solutions to Integrating Endangered Species Act Analyses Into Environmental Impact Statements

Introduction

NEPA¹ and its implementing regulations² direct Federal agencies to integrate analyses required under the ESA³ into EISs prepared pursuant to NEPA. Likewise, the ESA's implementing regulations⁴ allow Federal agencies to consolidate the preparation of biological assessments with the NEPA process. Although each statute's regulations mean to enable a more streamlined and efficient review, in practice, incorporating biological assessments into EISs can create challenges due to differences in how each statute directs agencies to define environmental scope; evaluate impacts; consider mitigation; and frame impact conclusions. This paper briefly reviews Federal agency obligations under NEPA and the ESA; considers the types of actions that require preparation of an EIS and biological assessment; discusses potential challenges in integrating an EIS and biological assessment; and presents solutions for these challenges that enable Federal agencies to concurrently fulfill requirements of both NEPA and the ESA in a single, integrated document.

Overview of Federal Agency Obligations Under NEPA and the ESA

NEPA Requirements

Section 102(2)(C) of NEPA requires Federal agencies to prepare detailed statements that consider the environmental impacts of and alternatives to proposed legislation or other major Federal actions significantly affecting the quality of the human environment. These statements are commonly referred to as EISs. NEPA's implementing regulations at Title 40, Parts 1500–1508, of the *Code of Federal Regulations* (40 CFR 1500–1508) further specify the process through which Federal agencies should develop EISs and include requirements pertaining to EIS content; scoping of issues to be addressed in the EIS; public participation; coordination with affected Federal, state, and local agencies and Indian tribes; and integration of the NEPA process with the requirements of other Federal acts. In general, prior to acting, the Federal agency is to publish a draft EIS for comment followed by a final EIS that considers comments received on the draft, and at the time of its decision, a record of decision that documents the agency's decision.

ESA Requirements

Section 7(a)(2) of the ESA requires Federal agencies to consult with the Secretary (of the Interior or of Commerce) to insure that any action that the Federal agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species (“listed species”) or result in the destruction or adverse modification of the habitat of such species determined by the Secretary to be critical (“critical habitat”). In practice, the FWS (for terrestrial and freshwater species) or NMFS (for marine and anadromous species) act as the consulting party, and the process is commonly referred to as “section 7 consultation.” The regulations that implement ESA section 7 at 50 CFR 402 further describe the consultation procedures. Consultation may be conducted informally or formally, may include the Federal agency’s development of a biological assessment, and may result in the FWS’s or NMFS’s (individually, “Service,” or collectively, “the Services”) issuance of a biological opinion.

Integrating the NEPA and ESA Processes

Both the NEPA and ESA regulations include provisions to consolidate the requirements of each act into a single process. The NEPA regulations at 40 CFR 1502.25(a) direct Federal agencies to integrate analyses required under the ESA into the EIS “to the fullest extent possible.” The ESA regulations at 50 CFR 402.06 allow Federal agencies to fulfill their obligations under the ESA in conjunction with the requirements of NEPA. In such cases, the Federal agency should include the results of its consultation with the Services in the EIS.⁵

EIS and Biological Assessment Preparation Requirements

The ability for Federal agencies to satisfy the requirements of NEPA and the ESA in a single, integrated process can shorten review timelines and gain agencies other resource efficiencies. However, the two statutes’ regulations are silent on how exactly Federal agencies should carry out such a process. While the regulations’ lack of direction on this matter allows Federal agencies flexibility, it can also create confusion beginning with a simple question: if an agency has to prepare an EIS under NEPA, does it also have to prepare a biological assessment under the ESA? To answer this question, we must first consider separately when a Federal agency must prepare an EIS and when a Federal agency must prepare a biological assessment.

“Major Federal Actions” Under NEPA

NEPA requires Federal agencies to prepare EISs for “proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.”⁶ The CEQ’s regulations provide further guidance on the term “major Federal action”;⁷ however, what constitutes such an action has been litigated many times, and courts have found that Congress’s intentionally vague language allows the term to apply to a broad range of agency operations.⁸ NEPA may require Federal agencies to prepare EISs for:

- projects, activities, or programs funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency;
- projects carried out with Federal financial assistance;
- projects requiring a Federal permit, license, or approval; and
- projects subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.⁹

“Major Construction Activities” Under the ESA

The ESA requires Federal agencies to prepare biological assessments for Federal actions that are “major construction activities.”¹⁰ The term “major construction activity” is defined in the regulations as “a construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in [NEPA].”¹¹ The Services’ *Endangered Species Consultation Handbook*¹² (“*Consultation Handbook*”) further clarifies that “as a rule of thumb, if an [EIS] is required for the proposed action and construction-type impacts are involved, it is considered a major construction activity.” In its 1986 *Federal Register Notice*¹³ (FRN) accompanying the final rule establishing regulations for interagency cooperation under ESA section 7, the Services envisioned the term to encompass dams, buildings, pipelines, roads, water resource developments, channel improvements, and other such undertakings which significantly modify the physical environment.

Does an EIS Necessitate a Biological Assessment?

While the preparation requirements of both EISs and biological assessments appear to be similar (the ESA even borrows NEPA's term "major Federal action"), actions requiring the preparation of an EIS must meet one condition—is the action a major Federal action?—while actions requiring the preparation of a biological assessment must meet two—is the action a major Federal action? *and* does the action include construction-type impacts? Thus, while agencies must prepare EISs for a broad range of actions, biological assessments are only necessary for a subset of those same actions.

Actions such as renewing the operating license for a hydropower facility or nuclear power plant, which constitute major Federal actions under NEPA and necessitate preparation of an EIS, often do not include construction-type impacts because such impacts have already been undertaken and accounted for at the initial licensing stage. The Federal Energy Regulatory Commission's (FERC) guidance on ESA compliance¹⁴ confirms that its staff is not required to prepare biological assessments for its relicensing actions "except where major new construction is proposed." FERC notes that while biological assessments are not mandatory in such cases, they are still highly recommended because they can help in identifying and resolving endangered species issues early in the review process. The U.S. Nuclear Regulatory Commission's (NRC) *Standard Review Plan* for nuclear power plant license renewal¹⁵ indicates that its staff should prepare a biological assessment if listed species or critical habitats are present in the area affected by the proposed license renewal or if requested by the Services as a prerequisite to making a finding under informal section 7 consultation. The presence or absence of construction-type impacts are not addressed, nor is the NRC's guidance explicit that its staff must prepare a biological assessment for nuclear power plant license renewal. NRC's guidance appears to be drawn from ESA section 7(c), which indicates that the Federal agency shall prepare a biological assessment for an agency action if the Services advise that listed species may be present in the area of the proposed action, rather than the more nuanced preparation requirements in the ESA regulations.

The ESA section 7(c) preparation requirement creates further confusion because it hinges on an "agency action," which is defined as "any action authorized, funded, or carried out" by a Federal agency.¹⁶ Neither major Federal actions under NEPA nor construction-type impacts are

mentioned in the act itself. The FWS's section 7 consultation "Frequently Asked Questions" (FAQs) webpage offers a blended preparation requirement:

A biological assessment must be prepared if listed species or critical habitat may be present in the area to be impacted by a "major construction activity"...A biological assessment is not required if the action is not considered a major construction activity; however, if listed species are present in the action area, the Federal agency must document to the Services its evaluation of the effects of the action to the listed species.¹⁷

The FAQ description combines the "species may be present" preparation requirement of ESA section 7(c) with the "major construction activity" requirement of the ESA regulations.

Similarly, the Services' *Consultation Handbook* notes that biological assessments are not required for actions that are not major construction activities but that the agency must provide the Services an account of the basis for evaluating the likely effects of the action if listed species or critical habitat are likely to be affected.¹⁸

Thus, it appears that Federal agencies can make a case that preparation of an EIS does not necessitate preparation of a biological assessment as long as the major Federal action does not involve construction-type impacts. However, the EIS should still address any listed species present or critical habitats in the action area because the Federal action could still necessitate section 7 consultation if the Federal agency determines that the action "may affect" listed species or critical habitat¹⁹ even if a biological assessment is not required. The Services' 1986 FRN supports this conclusion in stating that:

The Service will not require biological assessments for projects that are not major Federal actions for purposes of NEPA. Further, the Service will not require biological assessments for actions that do not involve construction or activities having physical impacts similar to construction...²⁰

Integrating the EIS and Biological Assessment

In cases where a Federal agency has determined that it must prepare both an EIS and a biological assessment, NEPA and the ESA allow the Federal agency to fulfill its requirement to prepare a biological assessment concurrently with the preparation of the EIS. Because the contents of biological assessments are at the discretion of the Federal agency²¹ and the ESA regulations do not specify a particular format, the agency may fulfill the biological assessment

preparation requirement in a variety of ways, including using the EIS to document the biological assessment²² by incorporating the relevant information within subsections of the EIS or attaching the biological assessment to the EIS as an appendix.

Challenges in Integrating the EIS and Biological Assessment

Although undertaking preparation of an EIS and biological assessment concurrently can be an efficient way to meet the requirements of both NEPA and the ESA, each statute includes different terminology with different definitions, which can make assessing impacts to listed species and critical habitats in one integrated document challenging. The following sections discuss these challenges.

Determining Environmental Scope

“Affected Environment” vs. “Action Area.” In NEPA, Federal agencies must evaluate the impacts to the environment affected or created by the alternatives under consideration (i.e., the “affected environment”).²³ CEQ guidance directs agencies to include all potentially affected resources, ecosystems, and human communities in its description of the affected environment with attention to geographic and temporal scope and potential for resource or system interactions.²⁴ Under the ESA, impacts to listed species and critical habitats are evaluated within the “action area,” which includes all areas to be affected directly and indirectly by the Federal action and not merely the immediate area involved in the action.²⁵ From these definitions, we can see that NEPA’s affected environment includes temporal, geographic, and relational elements, while the ESA’s action area is focused more narrowly on a particular geographic area.

A more significant distinction between the two statutes’ environmental scopes lies in the fact that NEPA requires Federal agencies to consider alternatives to the proposed action, while the ESA does not. Consequently, whether alternatives are considered will greatly affect the environmental scope. Alternatives are discussed in more detail in the subsection entitled “Considering Alternatives” below.

Evaluating Impacts

“Environmental Consequences” vs. “Effects of the Action.” When considering impacts, NEPA directs Federal agencies to evaluate the “environmental consequences,” while the ESA directs Federal agencies to evaluate the “effects of the action.” Evaluation of the

environmental consequences under NEPA includes the direct and indirect environmental impacts of the proposed action and alternatives as well as means to mitigate any adverse effects.²⁶ Under the ESA, the “effects of the action” include the direct and indirect effects of the action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.²⁷ “Interrelated actions” are those that are part of a larger action and depend on the larger action for their justification, and “interdependent actions” are those actions that have no independent utility apart from the proposed action.²⁸ For instance, in its May 2014 *Programmatic Biological Opinion on the U.S. Environmental Protection Agency’s Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act*,²⁹ the Services found that though the 316(b) regulations address requirements for cooling water intake structures at existing facilities, thermal discharges are an interrelated action because discharges would not occur but for the withdrawal of cooling water. The construction of power lines associated with a new energy-generating facility would be an example of an interdependent action: the power lines would have no independent utility apart from the construction and operation of the new generating facility. In general, though interrelated and interdependent actions are specific to the ESA, such actions would also fall within the scope of indirect effects and, thus, would be considered under NEPA, as well. The main differences in evaluating impacts under NEPA and the ESA lie in whether and how the Federal agency must consider alternatives and cumulative effects.

Considering Alternatives. NEPA requires Federal agencies to consider alternatives to the proposed action, while the ESA does not. In its regulations for implementing NEPA, CEQ considers alternatives to be the “heart” of the EIS.³⁰ The EIS is to present a clear picture of the impacts of the various options in order to inform the public and to provide a basis for the decisionmaker to take action. On the other hand, the ESA does not require the Federal agency to consider alternatives in the formulation of biological assessments.^{a, 31} Nevertheless, the ESA regulations suggest that the Federal agency *may* include “an analysis of alternate actions considered by the Federal agency” in the biological assessment, if prepared, but inclusion of this information is at the discretion of the Federal agency.³²

^a Although the ESA does not require the *Federal agency* to consider alternatives, the ESA section 7 regulations at 50 CFR 402.14(g)(5) require *the Services* to consider alternatives (“reasonable and prudent alternatives”) if the action may result in jeopardy to listed species or destruction or adverse modification of critical habitat. The Services may include such alternatives in the biological opinion.

Addressing Cumulative Effects. The cumulative effects^b of other actions must be addressed as part of the impacts analysis under both NEPA and the ESA. However, the way in which each statute directs Federal agencies to consider cumulative effects represents one of the most significant differences between the two statutes.

NEPA's regulations define "cumulative impact" to be the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.³³ Actions that overlap spatially or temporally with the proposed action or alternatives can contribute to cumulative impacts, and therefore, cumulative impacts are to be evaluated with the direct and indirect effects of each alternative.³⁴

The ESA's regulations define "cumulative effect" to be those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.³⁵ Unlike the NEPA definition of cumulative impacts, cumulative effects under the ESA do not include past actions or other Federal actions requiring separate ESA section 7 consultation. The Services must consider the ESA's definition of cumulative effects when determining the likelihood of jeopardy or adverse modification. Notably, the Services found enough confusion on the two competing definitions that in the *Consultation Handbook*, the Services cautions their staff to apply the ESA's more narrow definition of cumulative effects when preparing biological opinions rather than relying on the broader discussion of cumulative actions that the Federal agency may include in any associated NEPA documents.³⁶

The differences between the NEPA and ESA definitions of cumulative impacts can be summarized in three questions: who? when? and how certain? (see Table 1). The "who?" refers to the entity or person taking action. Under NEPA, the actor does not matter; the actions of all groups or individuals must be evaluated. Under the ESA, Federal actions are excluded from consideration because the effects of such actions on listed species or critical habitat would have been addressed in previous section 7 consultations and accounted for in the environmental baseline.^c

^b Unless otherwise noted, the terms "cumulative effects" and "cumulative impacts" are used interchangeably in this paper and are intended to be synonymous.

^c The "environmental baseline" is defined at 50 CFR 402.02 to mean "the past and present impacts of all Federal, State, or private actions and other human activities in an action area, the anticipated impacts of all proposed Federal

Table 1. Cumulative Actions Considered Under NEPA and the ESA

Cumulative Action Characteristic	NEPA	ESA
Who is taking the action?	anyone	State agencies and private individuals or entities
When is the action occurring?	in the past, present, or future	in the future
How certain must it be that the action will occur?	reasonably foreseeable	reasonably certain to occur

The second difference lies in the timing of the cumulative action. Under NEPA, a cumulative action can occur any time in the past, present, or future as long as the effects of the action can be shown to meaningfully overlap with the effects of the proposed action or alternatives. Under the ESA, only the cumulative impacts of future actions are to be addressed because past and present actions would have already been captured in the environmental baseline.

The third difference between the NEPA and ESA definitions of cumulative effects pertains to how certain the Federal agency must be that a future action will occur. The threshold for NEPA is that the action must be “reasonably foreseeable.” In its *Forty Most Asked Questions*,³⁷ CEQ notes that although Federal agencies should not speculate on future actions for which there is total uncertainty, agencies can often reasonably foresee many future activities, such as general development trends or the likelihood of land being used for energy projects, shopping centers, subdivisions, farms, or factories. However, if enough information is not available on future actions for the agency to perform a meaningful analysis, such actions need not be included, even if they are reasonably foreseeable.³⁸

For the ESA, the threshold for considering an action in the cumulative analysis is that it must be “reasonably certain to occur.” The Services provide several examples of such actions in the *Consultation Handbook*. Cumulative actions could include State, tribal, or local government approval of an action through the issuance of permits or grants or other indications that approval is imminent; a project sponsor’s assurance that an action will proceed; a project investor’s obligation of venture capital; or the initiation of contracts associated with a project.³⁹ The Services note that “the more State, tribal or local administrative discretion remaining to be

projects in an action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions that are contemporaneous with the consultation in process.”

exercised before a proposed non-Federal action can proceed, the less there is a reasonable certainty the project will be authorized.”⁴⁰ The ESA definition once again proves narrower in that it focuses on actions that require specific approvals or investments and for which such approvals or investments have been (or have been committed to being) made. The U.S. Court of Appeals of the Ninth Circuit (“9th Circuit”) confirmed the ESA’s narrower definition in a 2013 opinion, which states, “consideration of federal projects, past projects, and projects outside the [project] area exceed the scope of a cumulative effects analysis, as defined under 50 C.F.R. § 402.02.”⁴¹

Considering Mitigation

Mitigation is another area that varies considerably under NEPA and the ESA. Simply put, NEPA requires Federal agencies to consider mitigation, while the ESA is silent on the matter.

Mitigation Under NEPA. Under NEPA, mitigation can include voluntary activities that:

- (a) avoid the impact,
- (b) minimize the impact,
- (c) rectify the impact,
- (d) reduce or eliminate the impact over time, or
- (e) compensate for the impact through replacement or substitution.⁴²

Federal agencies must include such measures among the alternatives compared in the EIS.⁴³ Agencies may develop mitigation as a component of the project design, in which case the mitigation would be implemented with the proposed action.⁴⁴ In cases where the Federal agency uses mitigation to support its findings, the NEPA process should result in enforceable mitigation measures, and the agency should take steps to ensure that any mitigation commitments are appropriately implemented.⁴⁵

Mitigation Under the ESA. Neither section 7 of the ESA nor its implementing regulations at 50 CFR 402 specifically indicate whether a Federal agency should consider mitigation in its biological assessments to address a proposed action’s adverse impacts to listed species or critical habitats. However, in a 2012 ruling (“Ruby Pipeline Opinion”), the 9th Circuit determined that the Services cannot rely on mitigation in its jeopardy determination unless the mitigation is part of the proposed action itself.⁴⁶ This is because mitigation that is not part of the proposed action and not required under another statute or permit is not enforceable by the

Services (i.e., failure to implement such mitigation measures would not trigger the duty for the Federal agency to reinitiate section 7 consultation, would not be enforceable through the threat of penalties for takings of listed species if the mitigation is not complied with, and would effectively evade the potential for an ESA citizen suit to enforce the measures).⁴⁷ The Ruby Pipeline Opinion appears to indicate that under ESA section 7, Federal agencies should only consider mitigation as part of the proposed action, thereby effectively rendering it part of the proposed agency action, rather than mitigation *per se*.

If further measures are required to avoid the likelihood of adverse impacts to listed species or critical habitat or minimize the amount or extent of incidental take that would result from a proposed action, the Services could include such measures in the biological opinion. Thus, the section 7 process (rather than the Federal agency's biological assessment, specifically), may include *the Services'* consideration of mitigation measures, some of which fall into the categories of NEPA mitigation listed in the section above. Each type of NEPA mitigation is considered separately below in terms of whether the Services may address it through the section 7 consultation process or in the biological opinion.

Mitigation to Avoid the Impact. The first type of mitigation under NEPA avoids the impact altogether by not taking a certain action or parts of an action.⁴⁸ The informal consultation process allows the Services to suggest modifications to the action that the Federal agency or applicant could implement that would avoid the likelihood of adverse effects.⁴⁹

Mitigation to Minimize the Impact. The second type of mitigation limits the degree or magnitude of the action and its implementation.⁵⁰ Under formal consultation, the Services may include in the biological opinion "reasonable and prudent alternatives" (R&PAs), which are alternate actions that can be implemented consistent with the intended purpose of the action and that would avoid the likelihood of jeopardizing the continued existence of listed species or destroying or adversely modifying critical habitat.⁵¹ R&PMs do not assure that all adverse impacts are avoided; they only assure that adverse impacts do not reach the level of jeopardy or adverse modification. The Services may also include "reasonable and prudent measures" (R&PMs) that are necessary or appropriate to minimize the amount or extent of incidental take.⁵²

Mitigation to Rectify the Impact. This type of mitigation repairs, rehabilitates, or restores the affected environment.⁵³ Because Federal agencies may not take an action that jeopardizes listed species or destroys or adversely modifies critical habitat,⁵⁴ this type of mitigation is not

appropriate under the ESA, and the section 7 consultation provisions do not allow for either the Federal agency or the Services to consider actions that would compensate for adverse impacts to listed species or critical habitats through future restoration.

Mitigation to Reduce or Eliminate the Impact Over Time. Impacts may be reduced or eliminated over time through the preservation and maintenance operations during the life of the action.⁵⁵ Within the section 7 process, the Services could implement this type of mitigation through a biological opinion's R&PMs.

Mitigation to Compensate for the Impact Through Replacement or Substitution. The final type of mitigation under NEPA allows for compensatory actions that replace or provide substitute resources or environments.⁵⁶ As mentioned previously, Federal agencies may not take an action that jeopardizes listed species or destroys or adversely modifies critical habitat, so this type of mitigation, which assumes the loss of resources, would not be appropriate under the ESA.

Forming Conclusions

The final difference that this paper will consider is how NEPA and the ESA direct Federal agencies to form conclusions.

NEPA Conclusions. NEPA and its regulations do not specify how an agency should characterize its conclusions. Agencies must include in the EIS's discussion of environmental consequences any adverse environmental effects which cannot be avoided, the relationship between short-term uses and long-term productivity of the environment, and any irreversible or irretrievable commitments of resources that would occur, should the proposed action be taken.⁵⁷ However, Federal agencies can choose to express such effects in a variety of ways, both qualitatively and quantitatively. For instance, in a recent EIS, the National Park Service frames impacts qualitatively as: negligible, minor, moderate, or major.⁵⁸ Similarly, the NRC summarizes impacts as small, moderate, or large.⁵⁹ The NMFS describes the "risks" and "benefits" of various alternatives in a draft EIS on two salmonid management plans,⁶⁰ while the Federal Highway Administration describes the impacts of a road construction project qualitatively as either "adverse" or "beneficial" and further refines these effects in quantitative terms where possible.⁶¹

ESA Conclusions. The ESA regulations direct Federal agencies to determine in a biological assessment whether listed species or critical habitats "are likely to be adversely affected."⁶² The Services' *Consultation Handbook* further specifies that ESA effect

determinations should be characterized as “no effect,” “is not likely to adversely affect,” or “is likely to adversely affect.”⁶³ A conclusion of “is not likely to adversely affect” is the appropriate conclusion when effects on listed species are expected to be “beneficial,” “discountable,” or “insignificant,” each of which carries a specific meaning under the ESA.⁶⁴ If the Federal agency concludes “is likely to adversely affect,” the Services then review the Federal agency’s determination(s), to determine if the proposed action would “jeopardize the continued existence of” listed species or “result in destruction or adverse modification of” designated critical habitat.⁶⁵

A Federal agency’s ESA conclusions trigger specific section 7 consultation requirements. Consultation is required whenever a Federal agency determines that an action “may affect” listed species,⁶⁶ whether the action “is likely” or “is not likely” to result in adverse effects. The 9th Circuit has found that “may affect” includes any possible effect, whether beneficial, benign, adverse, or of an undetermined character⁶⁷ and includes effects that have any chance of affecting listed species or critical habitat—even if it is later determined that the action is “not likely” to do so.⁶⁸ If the agency determines that a particular action will have no effect on listed species, the consultation requirements are not triggered.^{69,70}

Solutions for Integrating the EIS and Biological Assessment

After reviewing the differences in NEPA and ESA terminology and definitions, a Federal agency may be left with several questions. Assuming a project requires both an EIS and a biological assessment, should the scope of a project be defined to meet the definition of NEPA’s affected environment or the ESA’s action area? Should the ESA analysis take into account NEPA alternatives? How should cumulative effects be addressed? What about mitigation? And finally, how should conclusions be characterized? These questions are addressed in the following sections and summarized in Table 2. The remainder of this paper assumes that the Federal agency has chosen to fulfill its duty to prepare an EIS and biological assessment in one integrated document, which is herein referred to as an “EIS/BA.”

Environmental Scope

Describing the affected environment is a regulatory requirement under NEPA. Conversely, the ESA regulations do not explicitly mention the action area when listing items that

the Federal agency might include in the biological assessment.⁷¹ Because a description of the affected environment is a regulatory requirement, and a description of the action area is not, the Federal agency should describe the project in terms of the NEPA definition of affected environment.

If the Federal agency determines that the ESA action area differs from the NEPA affected environment, the agency could also separately describe the action area in the EIS/BA. While a description of the ESA action area is not required by regulation because the contents of a biological assessment are at the discretion of the Federal agency, the ESA does require that the Federal agency determine what species occur in the action area, determine whether the action may affect listed species, and consult with the Services if effects are anticipated. Additionally, the Services must evaluate impacts to listed species and critical habitats according to the ESA's definition of action area, not NEPA's definition of affected environment. Thus, framing the scope of the EIS/BA's ESA analysis in terms of the ESA action area facilitates both the agency's compliance with the consultation requirements of ESA section 7 and the Services' review of the action and formulation of a biological opinion, if warranted. To do this, the Federal agency could include a subsection that specifically addresses the ESA action area within the EIS/BA's affected environment description. This would allow the Federal agency to describe the NEPA affected environment for ecological resources, while narrowing the focus to the ESA action area for listed species and critical habitats.

Impact Analysis

Alternatives. A Federal agency's consideration of alternatives is required by NEPA and optional under the ESA. Accordingly, the Federal agency must address alternatives in its EIS/BA to fulfill the requirements of NEPA. Although not required under the ESA, addressing the effects of alternatives on listed species and critical habitats could help the Services formulate R&PAs in a situation where the Services determine that the agency's preferred NEPA alternative would result in jeopardy or adverse modification.

To meet the requirements of NEPA and facilitate the agency's fulfillment of ESA section 7 requirements, the Federal agency should address the impacts of alternatives on listed species and critical habitats in biological assessment section(s) of the EIS/BA. Because only a difference in the requirement to include alternatives exists between NEPA and the ESA (rather

than a conflict in the definition of the term “alternatives”), the Federal agency would apply the same scope and format to its alternatives impact analysis for listed species and critical habitat as it applies to all other resource areas addressed in the EIS/BA.

Cumulative Effects. Cumulative effects under NEPA are inclusive of all reasonably foreseeable past, present, and future actions, while cumulative effects under the ESA focus on only future actions of State agencies and private individuals or entities. Although NEPA’s definition is broader, it is reasonable for a Federal agency to narrow the EIS/BA’s cumulative impact analysis for listed species and critical habitats to only those actions that would fit the ESA cumulative impact definition for two reasons.

First, inherent in the Services’ listing of a species is the fact that past and present actions have already cumulatively threatened or endangered the species’ continued existence. Thus, including past and present actions in the cumulative effects discussion may cloud the agency’s analysis and bias conclusions towards those actions, which have already had substantial impacts. Such an assessment could prohibit the agency from meaningfully evaluating whether future actions have the potential to further jeopardize the continued existence of listed species.

Second, and as already discussed, the Services must consider the ESA’s definition (not NEPA’s definition) of cumulative effects when determining the likelihood of jeopardy or adverse modification. Accordingly, narrowing the discussion of cumulative effects on future actions of State agencies and private individuals or entities would facilitate the Services’ review of the project during section 7 consultation.

The question remains, however, of how a Federal agency should evaluate past and present actions and other Federal actions required under NEPA as these remain a regulatory requirement. The Federal agency could address these actions within the EIS/BA’s affected environment discussion. Because such actions would have shaped the environmental baseline for listed species, the affected environment section would be an appropriate place to describe actions that have cumulatively brought the Services to a point where listing of a species is warranted. The EIS/BA’s ESA cumulative impact analysis could then describe the differences between the two definitions of cumulative impacts and refer the reader to the affected environment for a description of non-ESA cumulative actions.

Mitigation

NEPA requires Federal agencies to consider mitigation among the various alternatives considered in the EIS. However, under “Considering Mitigation,” this paper finds that it is most appropriate for the Services, and not the Federal agency, to consider and identify mitigation measures to avoid or minimize adverse impacts to listed species and critical habitats. The Services can develop such mitigation in coordination with the Federal agency during the section 7 consultation process or include it in the biological opinion as R&PAs or R&PMs.

Nonetheless, the requirement for Federal agencies to consider mitigation in its EISs remains. One way NEPA allows Federal agencies to consider mitigation is to develop mitigation measures as a component of the project design such that the measures would be implemented with the proposed action. The 9th Circuit has found that mitigation included in the proposed action is the only appropriate type of mitigation for the Services to rely upon in jeopardy determinations under the ESA. Accordingly, the most prudent way for a Federal agency to address mitigation that reduces or avoids impacts to listed species or critical habitat is to include such mitigation as a component of the proposed action or alternatives themselves. For clarity, the EIS/BA impact analysis could describe the ways in which the proposed action or alternatives have been modified to mitigate adverse effects and refer the reader to the corresponding description of those components in previous sections of the EIS/BA.

Impact Conclusions

NEPA does not specify how conclusions should be characterized, while the ESA regulations and the Services’ *Consultation Handbook* direct Federal agencies to conclude whether an action will result in “no effect,” “is not likely to adversely affect,” or “is likely to adversely affect.” As discussed previously, each of these conclusions triggers specific consultation requirements under ESA section 7. Accordingly, it is most appropriate for Federal agencies to characterize conclusions using the ESA’s terminology.

As with alternatives, because NEPA and the ESA do not contain conflicting requirements or definitions, a Federal agency can fulfill its duties under both statutes in a relatively straightforward manner by using the ESA’s terminology in its EIS/BA conclusions for listed species and critical habitats.

Table 2. Solutions to Address Conflicting NEPA and ESA Requirements

EIS/BA Component	NEPA Requirement	ESA Requirement	Conflict?	Resolution
Environmental Scope	An EIS must contain a description of the affected environment.	A Federal agency must initiate section 7 consultation if listed species or critical habitat in the action area may be affected.	Yes. The definitions of “affected environment” and “action area” could result in different environmental scopes.	The EIS/BA could describe the ESA action area within the ecological resources affected environment description.
Alternatives	An EIS must consider the environmental consequences of alternatives.	The ESA does not require Federal agencies to consider alternatives.	No. The absence of a requirement for agencies to consider alternatives under the ESA does not present a conflict.	The EIS/BA should address alternatives for listed species and critical habitats.
Cumulative Effects	Cumulative effects include all reasonably foreseeable past, present, and future actions.	Cumulative effects include only future actions of State agencies and private individuals or entities.	Yes. The definition of cumulative effects is different under NEPA and the ESA.	The EIS/BA should address ESA cumulative effects in its impact analysis and include non-ESA cumulative effects in the description of the affected environment as part of the environmental baseline.
Mitigation	An EIS must consider mitigation.	When forming its jeopardy statements, the Services can only rely on mitigation that is part of the proposed action or implemented as R&PAs or R&PMs.	Yes. The ESA is narrower in its allowance for Federal agencies and the Services to consider mitigation.	The EIS/BA should only include mitigation that would reduce or eliminate impacts to listed species or critical habitats if such mitigation is incorporated as a component of the proposed action or alternatives.
Impact Conclusions	NEPA does not specify how an EIS should characterize conclusions.	A Federal agency’s determination of “may affect” triggers consultation requirements under section 7.	No. The absence of specificity in how agencies should characterize conclusions under NEPA does not present a conflict.	The EIS/BA should characterize conclusions for listed species and critical habitats using the ESA’s terminology.

Conclusion

Although NEPA and the ESA allow Federal agencies to concurrently fulfill their obligations under each statute, agencies can face several practical challenges when integrating biological assessments into EISs in a manner that complies with both statutes. Such challenges arise from differences in how NEPA and the ESA direct Federal agencies to address environmental scope; evaluate impacts, including how to consider alternatives and cumulative effects; consider mitigation; and frame impact conclusions. This paper's review of each of these challenges reveals that Federal agencies can successfully fulfill the requirements of both NEPA and the ESA in one, integrated document.

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