

Tips for Writing Biological Opinions and Conference Opinions

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1st Edition
January 5, 2015

Contents

Preface	iii
Acknowledgements	iii
Conservation Outcomes and Consultation Expectations	1
BOs and COs.....	1
The Transmittal Document.....	2
Some “Packaging” Options.....	2
Concurrences	3
CONSULTATION HISTORY.....	4
BIOLOGICAL OPINION.....	4
DESCRIPTION OF THE PROPOSED ACTION.....	5
STATUS OF THE SPECIES / CRITICAL HABITAT.....	7
ENVIRONMENTAL BASELINE (Species and Critical Habitat).....	9
EFFECTS OF THE ACTION	10
CUMULATIVE EFFECTS	13
CONCLUSION.....	13
INCIDENTAL TAKE STATEMENT.....	15
REASONABLE AND PRUDENT MEASURES	16
TERMS AND CONDITIONS.....	17
Monitoring and Reporting Requirements	17
CONSERVATION RECOMMENDATIONS	18
REINITIATION NOTICE.....	18
REFERENCES CITED	19
Tips for Reader-Friendly Writing Styles and Formats in BOs	19

Preface

This guide is intended to help Southeast Region Ecological Services biologists write biological opinions and conference opinions. These documents are about “connecting the dots” between the effects of a proposed federal action, the biology of listed/proposed species, and compliance with the Endangered Species Act (ESA). The purpose of an opinion is best served when the lines of logic between these dots are clearly discernable.

A much wider audience reads and scrutinizes the Service’s opinions today than when our consultation regulations were adopted in 1986. Many of our readers do not have a strong understanding of the purpose of an opinion and the mix of biological and legal logic that we must apply to reach its conclusions. Writing an opinion that communicates this logic effectively to a diverse audience is challenging. This guide compiles the lessons learned from several federal court decisions and from practical experience (my own, plus that of several others) writing and reviewing opinions. Concurrent with the growth of our audience, we have come to rely increasingly on computers to help us do our jobs, which make it very easy to cut and paste pertinent language from previous opinions to write a new one. Unfortunately, this practice often results in opinions that are much longer than necessary, repeat the weaknesses of the previous opinions, and lack clarity. This guide is also intended to help you avoid the pitfalls of unmindfully borrowing from previous opinions.

This guide is not official regional policy or guidance, but is consistent with the advice I provide as your regional coordinator when asked to review your opinions. It is organized along the major headings of a formal opinion, but it is not an outline, a step-by-step guide, or a template. ***Instead, this guide is an annotated checklist of the elements that a sound opinion must include and the qualities that a readable one should display.*** Use it as a supplemental aid for applying the regulations and the Consultation Handbook to help ensure that an opinion is defensible and comprehensible. Remember, readers are more likely to disagree with Service opinions and/or challenge them if they cannot follow our reasoning, or are frustrated by our writing style and document organization.

Acknowledgements

Doug Laye, my counterpart in Region 6, wrote the initial draft from which this guide evolved. Without his original effort, this Region 4 - 1st Edition wouldn’t exist. His name doesn’t appear on the title page of this version only because we agreed to distribute our own separate versions as advice from the Regional Section 7 Coordinator to staff within each of our regions. I also received extremely valuable comments and suggestions from Holly Herod and my supervisor, Roxanna Hinzman.

Conservation Outcomes and Consultation Expectations

The Endangered Species Act (ESA) is intended to conserve the ecosystems upon which endangered and threatened species depend, and the ESA describes in its various sections general means for achieving this purpose. ESA §7 is titled “Interagency Cooperation.” Under §7(a)(1), all federal agencies are charged with using their authorities to carry out programs for the conservation of listed species in consultation with the Secretary (Commerce, for listed marine species, and Interior, for all others). Under our §7(a)(1) consultation role, the U.S. Fish and Wildlife Service (Service): (a) advises federal agencies about the conservation needs of listed species; (b) works with agencies to identify and implement actions consistent with their authorities to promote recovery; and (c) should expect to achieve net gains in conservation outcomes.

§7(a)(2) is different from §7(a)(1). Instead of a proactive conservation mandate, it is a “safety net” designed to ensure that proposed federal actions do not jeopardize species or destroy designated critical habitat, and to minimize the impacts of species’ taking that occurs incidental to these actions. The clear prohibitions of the ESA against jeopardizing species, destroying designated critical habitat, and taking species make it an unusually strong safety net relative to other federal environmental laws. When proactive §7(a)(1) consultation is effective, proposed federal actions that may also require §7(a)(2) consultation can, and often do, result in a net conservation gain. However, the Service cannot expect its authority under §7(a)(2) *alone* to “move the needle” any closer to recovery than the action agency is willing and able to move it. Mandatory “terms and conditions” of incidental take statements are limited to measures that minimize the impacts of taking and make only minor changes to the proposed action. This is why it is so important to engage action agencies before it’s time to write an opinion to identify recovery opportunities and other conservation measures they may build into their proposed actions. Although §7(a)(2) consultation is not intended as the primary means of recovering listed species, it is still a vitally important process in the conservation toolbox, because it can prompt §7(a)(1) actions, prevent and slow losses to listed species and critical habitats, and sometimes avoid disastrous outcomes altogether.

BOs and COs

This guide is about writing opinions under ESA §7(a)(2). A Biological Opinion (BO) addresses the effects of a proposed federal action to listed species and designated

critical habitats, and a Conference Opinion (CO) does the same for proposed species and proposed critical habitats. A CO must include various caveats that are unique to this type of opinion, because the prohibitions of the ESA do not yet apply. Otherwise, a CO follows the same regulations (50 CFR §402.14) and must meet the same standards as a BO, so that we may adopt the former as the latter after the Service issues a final decision listing a species or designating a critical habitat. For this reason, I do not further distinguish BOs from COs in this guide, and for simplicity, I refer to both types of opinions as BOs.

The Transmittal Document

The outline of a formal consultation package in our Consultation Handbook (p. 4-13) formats a BO as a correspondence, i.e., as a memo or letter addressed to the official who is responsible for the federal action on the first page. There is no transmittal document for a BO formatted in this manner, because the BO *is* a memo or letter. The problem with this approach is that most BOs bear little resemblance to a memo or a letter. They are typically lengthy and complex documents that may require an executive summary, table of contents, and sometimes even appendices. A BO is more like a report than a correspondence, and I recommend treating it as such.

- Use a brief cover memo (for intra-Service and DOI-bureau consultations) or cover letter (for all other consultations) to send a BO from the Service official signing it to the action agency official receiving it.
- The transmittal document should only give the basics about the attached/enclosed BO: i.e., the action and species evaluated, our primary source(s) of information about the proposed action (e.g., the biological assessment, draft environmental impact statement, etc.), our conclusions relative to each species, and contact information.
- TAILS number – Don't forget to include the *full* TAILS consultation number on the transmittal document (e.g., 04E00000-2014-F-0001) and on the BO title page. Although your office may recognize the activity code without the office prefix (first 8 characters), no one else (like me) will. The RO has actually received FOIA requests referencing a partial consultation number, requiring detective work on our part to figure out which office wrote the BO.

Some “Packaging” Options

- Title Page** – If you use a brief transmittal document as I recommend above, a full title page preceding the text of the BO makes it look more professional.

Include a signature block and date near the bottom of the title page. A signature and date on both the transmittal document and the title page of the BO is redundant, but also practical: (a) it allows the BO to stand alone as an official report apart from the transmittal document; (b) it immediately verifies that you are looking at the final version; and (c) it avoids burying the signature somewhere later in the document.

- **Table of Contents (TOC)** – Consider including a TOC if the BO exceeds 30 pages. Like a title page, a TOC makes the document look more professional and shows the reader at a glance its overall structure. Our BOs are increasingly distributed widely in electronic formats. Headings marked for inclusion in a word-processor-generated TOC can also become electronic “bookmarks” for quick navigation in electronic versions of the document. For readers that are focused on particular aspects of a BO, this convenience is one easy way to limit the frustration they may otherwise experience with a lengthy document.
- **Executive Summary** – Consider writing a short (2 pages or less) summary that gives a brief overview of the action, the high points of our analysis, and our conclusions. Some of our most important readers will not read an entire BO, but will read an executive summary.

Concurrences

(Handbook chapter 3)

A BO addresses a federal agency’s determination that a proposed action *is likely* to adversely affect listed species or designated critical habitat. Requests to initiate formal consultation are often accompanied by determinations that the proposed action *is not likely* to adversely affect one or more other species and critical habitats. We sometimes concur with such determinations at the same time that we provide the BO; however, **do not** embed this concurrence within the BO, because concurrence is not the purpose of a BO. Depending on the number of “not likely” determinations and the complexity of the concurrence response, I recommend one of two options:

- Provide concurrence *in the transmittal document* under a separate paragraph or under a heading “Informal Consultation” or “Concurrences.” This is the best option when you have relatively few species/critical habitats to address and you can provide concurrence without an extensive rationale.
- OR -
- Provide concurrence *in a separate attachment/enclosure* called “Informal Consultation” or “Concurrences,” that is referenced in the transmittal document. This is the best option when you have many species/critical habitats that require concurrence or when your rationale takes more than a

page or so to express. A good place for this document in the sequence of the full package to the action agency is between the Consultation History and the title page of the Biological Opinion.

CONSULTATION HISTORY

(Handbook p. 4-12)

The Consultation History section and the Literature Cited section together provide the primary (but not necessarily exhaustive) list of documents that constitute the administrative record of a formal consultation.

- This section should list in chronological order the key milestones and correspondence for the consultation, which typically include:
 - a request for concurrence and the Service response, if provided in advance of the BO;
 - the request to initiate formal consultation;
 - the Service response during the 30 days after receipt of the formal consultation request;
 - any exchange of draft documents for reviews;
 - any meetings, emails, or phone calls in which *substantive* agreements pertaining to the action were reached; and
 - any agreements to alter the consultation timeline.
- If you prepare a more exhaustive consultation history, i.e., one that lists *every* email exchange and phone conversation record pertinent to the consultation, it belongs in a separate document that you may reference in the BO.
- Ensure that all documents, emails, and phone records referenced in the Consultation History or in a separate, more exhaustive history, are available for the administrative record.

BIOLOGICAL OPINION

- Introduction** – I recommend beginning a BO with a single paragraph telling the reader that a BO “is the document that states the opinion of the Service as to whether a federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat” (50 CFR §402.02). This opening paragraph should then name the action and list the species and/or designated critical habitats that the BO addresses, just as you did in the transmittal document.
- Framework** – Following this opening paragraph, I then recommend briefly explaining the analytical framework for a BO. What does “jeopardize” mean?

What does “adverse modification” mean? Tell the reader that this BO evaluates the effects of the proposed action, interrelated and interdependent actions, and cumulative effects relative to the status of the species and the status of the critical habitat to arrive at a Service opinion that the proposed action is or isn’t likely to jeopardize species or adversely modify critical habitat.

- **Jeopardy analyses** – cite the regulatory definition: “*Jeopardize the continued existence of* means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR §402.02).
 - **Destruction and adverse modification analyses** – the courts have vacated our regulatory definition; therefore, until we establish a new one, it is very important to declare the framework we are using, and the very beginning of the BO is a good place to do so. Our current approach to conducting destruction/adverse modification analyses is described in a memo from Marshal Jones [Acting Director] to all Regional Directors dated December 9, 2004 (available at <https://www.fws.gov/midwest/endangered/permits/hcp/pdf/adversemodguidance.pdf>).
 - State specifically whether the BO addresses species for which the Service has *not* designated critical habitat, so that readers understand they won’t see critical habitat analyses for those species.
- Parallel analyses** – the courts have ruled that we must clearly distinguish the analyses supporting jeopardy conclusions from those supporting adverse modification conclusions. One way to accomplish this clear separation is to use parallel sub-headings for species and critical habitats under the Status, Baseline, Effects, Cumulative Effects, and Conclusions sections. Alternatively, bundle all of these components under a major section for species and again under another major section for critical habitats. It’s not necessary to explain this separation at the beginning of a BO – this check box is to remind you to make sure that clearly distinguished jeopardy and adverse modification analyses/conclusions are apparent throughout the BO.

DESCRIPTION OF THE PROPOSED ACTION

(Handbook p. 4-15)

- Introduction** – Provide a very short (one paragraph) overview of the action. Provide details in following sections as the action is deconstructed. If you don’t understand the federal action well enough to describe it in a few

sentences, it's likely that readers won't either. At minimum, address these three questions:

- *What* will the agency do?
- *When* will the agency do it?
- *How* will the agency monitor and mitigate the impacts?

Action Area (Handbook p. 4-22). This subsection addresses the question “*Where* will the agency do it.”

- **Definition** – “...all areas to be affected directly or indirectly by the federal action and not merely the immediate areas involved in the action”. Don’t confuse this definition, which pertains to *all areas* affected, with the narrower definition for Effects of the Action, which pertains to *listed species* and *designated critical habitats* affected.
- **Description** – Although the action agency identifies the action area for the purposes of obtaining a species list and completing their own effects analysis, describe the extent of the action area for the purposes of the BO, and provide any necessary explanation of its boundaries. This is especially important if the action area for the BO differs from the action agency’s description (usually because one or more indirect effects were overlooked).

Deconstruct the Action

- **Components and Activities** – Break an action down into logical spatial, temporal, or topical components, and for each component, describe all activities that will cause a change to the environment that is relevant to the listed species and designated critical habitats.
 - Deconstructing a land or water development action into sequential components is often useful; e.g., mobilization, construction, demobilization, operations and maintenance, decommissioning, restoration, etc.
 - For each activity, describe the “who, what, when, where, and how” at a level of detail (no more, no less) that is necessary to subsequently evaluate the effects of the activity to listed species and designated critical habitats.
 - Ideally, the list of deconstructed components/activities provides the headings under “Effects of the Action.” Such parallel construction helps convey the cause-and-effect logic of the BO to its readers, which is apparent even in the Table of Contents, if you include one.
- **Conservation Measures** – (Handbook p. 4-19) When describing the components of the deconstructed action, include any measures proposed to

mitigate (avoid, minimize, rectify, reduce over time by preservation and maintenance operations, or compensate for) environmental impacts that are relevant to the listed species and designated critical habitats. The effects of these measures figure into your analysis of the action's total effects.

- *Commitments* – Verify that the parties to the consultation are committed to implementing the conservation measures, i.e., they are as much a part of the project description as any other proposed components/activities; otherwise, they are speculative and not relevant to your analysis.
- *Compensation* – the timing of any proposed compensatory measures (e.g., habitat restoration, use of conservation banks or in-lieu fund accounts) associated with the action that may benefit species and their habitats influences how you treat them in the BO. Compensatory measures that were completed in advance of the consultation may influence the status of the species and the environmental baseline. Compensatory measures are always irrelevant to predicting the amount or extent of incidental taking associated with an action's unavoidable impacts.
- **Schematic diagrams** – It is true that a “picture is worth a thousand words;” however, simple schematic diagrams are generally better than highly detailed graphics in a BO. Use narrative to convey the necessary details, relying on graphics to complement, not substitute for, the text. High-quality graphics lend a professional appearance to a BO, but the ability of visual aids to help readers understand your statements is more important than how cool they look. Unless color is essential, use black-and-white, because it is more easily copied.
- **Interdependent/Interrelated Actions** – Remember to explore the possibility of interdependent or interrelated actions to the proposed action. Use the “but for” test (Handbook p. 4-26 to 27) to help determine whether any fit in those categories. Consider what is “reasonably certain” to occur due to the proposed action and is supportable as such without over-reaching speculation.

STATUS OF THE SPECIES / CRITICAL HABITAT

(Handbook p.4-19 thru 21)

This section **summarizes** the biology and current condition of the listed species and designated critical habitats, with an emphasis on information that is relevant to formulating an opinion about the proposed action. Although we do nothing to assess action-area effects in this section, it is absolutely essential. To reach an opinion about whether the action is likely to jeopardize species or adversely modify critical habitat, we must predict how the action, interrelated/interdependent actions, and other reasonably foreseeable non-federal actions will change the status of the species and critical habitat.

- **Scale** – The status of the species/critical habitat section is an overview at the scale of the full range of the species or distinct population segment that is listed under the ESA. Later sections will zoom in to the action-area scale. For some species, Service templates are available that may avoid the need to write this section from scratch; however, always verify their accuracy and currency.
- **Legal status** – Give the legal status, but don't go into an exhaustive history of the listing/designation. Summarize the main reasons for listing to set the stage for comparing the effects of the action with threats to the species' viability. Cite the most recent Service document that addresses the species' ESA classification, either a 5-year review or the final listing rule itself. State specifically whether the Service has designated critical habitat for the species.
- **Critical habitat** – Clearly distinguish your description of the status of critical habitat from the status of the species. If critical habitat is designated but not present in the action area, say so, and provide a minimal description or citation only, as more detailed information about its status will have no further relevance to formulating the opinion.
- **Life history information** – Limit your summary to information that is relevant to the effects analysis. Detailed information such as variation in plumage, taxonomic history, etc., is rarely important to the effects analysis and can bore or even frustrate readers.
- **Life cycle** – Sometimes a diagram showing a species' life cycle can help the reader understand its needs and how these change over the course of a year or a generation.
- **Reproduction, numbers, and distribution** – *Important!* Give a sense of the species' range-wide condition in terms of its reproduction, numbers, and distribution. These are terms in the jeopardy definition, and specifically addressing them under the Status section sets the stage for document coherence through the Baseline, Effects, and Conclusions sections.
- **Conservation needs** – *Important!* The ESA defines conservation as all methods necessary to recover listed species, and recovery is another term in the jeopardy definition. Identify the principal conservation needs of the species. These are typically actions that would reduce or eliminate threats or relieve factors limiting the species' reproduction, numbers, or distribution. Conservation needs are usually described in the listing document and the recovery plan/outline. If no recovery plan exists, state that for the reader. Ideally, we have quantified or have a general idea about the reproduction, numbers, and distribution that are necessary to achieve recovery.
- **Past and present actions/threats affecting the species throughout its range** – Without repeating information provided for the species' legal status

and conservation needs, summarize the history of adverse/beneficial actions and other factors leading to the species' current condition.

- Consider including a table of previous BOs and HCPs, conservation actions, etc.
- Characterize any new threats that were not addressed in the listing document or most recent 5-year status review. Discuss all such stressors in the context of the species' reproduction, numbers, and distribution, including, but not limited to, climate change, disease (e.g., white-nose syndrome was not evident when several species of bats were listed), invasive species, alternative energy development, etc.

ENVIRONMENTAL BASELINE (Species and Critical Habitat)

(Handbook p.4-22)

This section is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the listed species, their habitat (including critical habitat), and ecosystem *within the action area*. The environmental baseline is a “snapshot” of the species' health in the action area at the time of the consultation, and does not include the effects of the action under review. As with all other BO sections, clearly distinguish your description of the environmental baseline for critical habitat from that for the species.

- Scale** – environmental baseline is at the scale of the action area rather than the species' range.
- Species presence** – talk about how the species uses the action area, i.e., what life stages are present at what times and where. Describe the reproduction, numbers, and distribution of the species within the action area, if known.
- Conservation significance** – Discuss the current quantity, quality, and importance of the habitat in the action area relative to the species' conservation needs as described in the Status section.
- Units** – If the action area is within or overlaps a management unit or recovery unit established in applicable conservation plans, etc., discuss the condition of that unit.
- Threats** – Discuss the relative significance in the action area of the threats identified in the Status section.
- Influences** – Describe any activities or conditions *outside* the action area that have influenced the reproduction, numbers, or distribution of the species *inside* the action area, or that have influenced the ability of designated critical habitat within the action area to fulfill its conservation role.

- **Climate change** – If information is available at the scale of the action area, the Baseline section is also a spot to discuss recognized climate-change effects to the species or critical habitat.
- **Summary** – Summarize the condition of the species (reproduction, numbers, and distribution) and (if applicable) the condition of the critical habitat (physical and biological features considered essential for the species’ conservation [primary constituent elements]).

EFFECTS OF THE ACTION

(Handbook p.4-23 thru 4-29)

This section addresses the direct and indirect effects of the action, including the effects of interrelated and interdependent activities. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the proposed action, but are later in time and reasonably certain to occur.

As scientists, we are trained report the findings of our work in the “hypothesis-methods-results-discussion-conclusion” format that is required for scientific journals. Because the Effects section of a BO is in many ways similar to a scientific study, our tendency is to write it like a journal article. Although the scientific integrity and transparency of our effects analysis should be of journal quality, its organization and writing style are necessarily different, because it is only one component of several that are equally important (Status, Baseline, etc.) in supporting our opinion.

- **Critical habitat** – When applicable, remember that you need an analysis of effects to CH that is distinct from the analysis of effects to species, which means that each analysis needs its own clearly labeled space within the Effects section.
- **Deconstructed action** – Organize the effects analysis along the same lines that you deconstructed the action in the Proposed Action section. Parallel sub-headings in these two sections help the reader see the causal linkage between the activities described earlier and the effects described in this section.
- **Stressor/exposure/response/effect** – A stressor is an alteration of the environment that is relevant to the species/critical habitat of interest (e.g., vegetation removal during project construction). Species and the resources upon which they depend (e.g., vegetation that provides food) must be exposed to the stressor for it to cause a response (e.g., direct mortality; changes in the species’ ability to breed, feed, or shelter; changes in the ability of the critical habitat to provide its conservation role). The effect depends on the nature of

the stressor, the exposure of species and their resources to the stressor, and the species'/critical habitat's response to the stressor:

$$\text{Stressor} + \text{Exposure} + \text{Response} = \text{Effect}$$

Effects that are most important to identify and estimate in a BO are changes in a species' reproduction, numbers, or distribution, and changes in the physical and biological features of critical habitat that are essential to the conservation of the species. Organizing your effects analysis (and cumulative effects analysis) around this general model provides a clear and logical basis for accomplishing the purpose of a BO.

- **Pathways and mechanisms** – Discuss the known causal pathways or mechanisms from stressors to effects. Don't declare an effect without a rationale; e.g., removing trees will reduce the size of the owl population. Instead, explain the pathway; e.g., removing trees of a certain size (the stressor) that owls use for nesting (the exposure) will reduce the number of available nest trees and opportunities for nesting (the response), which will reduce the reproduction and eventually the numbers of owls in the action area (the effect). Use words and phrases like “because” and “as a result of” to help tie the logic together.
- **Magnitude, duration, and frequency** – Describe the magnitude, duration, and frequency, of action-caused stressors, as these will inform predictions of the effects in terms of changes in reproduction, numbers, or distribution.
- **Species response** – Specify the type of behavioral or physiological response that individuals of the species are likely to have when exposed to the action-caused stressors. The spectrum of responses ranges from mild annoyance to mortality.
- **Effects** – Describe the nature and degree of a species' responses to stressor exposure at the individual level in terms of changes in reproduction, numbers, or distribution in the action area. As much as practicable, quantify the degree of the effects, or use terms like insignificant or discountable, if appropriate. Summary statements for each activity discussed in the Effects section will directly inform the Conclusions section and the Amount or Extent of Take Anticipated section in the Incidental Take Statement. They will also identify potential modifications of the action through Reasonable and Prudent Measures.
- **Organization** – Consider organizing your discussion of each activity from the deconstructed action in this way (using sedimentation resulting from proposed road construction as an example):
 - *Applicable science*, e.g., peer-reviewed literature on sedimentation effects.

- *Stressor + exposure + response = effect* pathways of the proposed activity, including any proposed conservation measures; e.g., using Best Management Practices (BMPs) A and B, sediment runoff from road construction (stressor) into the adjacent stream that supports the species' spawning (exposure) will result in reduced egg survival due to smothering (response), which will reduce reproduction for 1 year (effect). The BMPs will become fully effective after year 1; therefore no effects from sedimentation are expected after year 1.
 - *Conclusion/summary*. End each subsection with a clear statement summarizing the degree and nature of the anticipated effects; e.g., project-induced sedimentation will reduce recruitment from # to # in 1 mile of stream during the first year following construction, but is not expected to reduce recruitment in subsequent years.
- **Clear transitions** – Distinguish between discussions that apply to action effects and those that don't. Your narrative should make it clear when you are reviewing the science on a class of effects and when you are actually applying that science to predict the effects from this proposed action, in this action area, to this species.
 - **Possible effects** – If you open a door by discussing a type of effect that is reported in the literature, you must also close that door with a conclusion as to its applicability and severity in the action area. Leaving it open makes readers wonder why you mentioned it without analyzing it.
 - **Assumptions** – Clearly identify assumptions and briefly explain why they are reasonable and necessary. If you're relying on relatively complex models or analyses that involve many assumptions or require pages of explanation, prepare a brief summary and conclusion for the Effects section that references a fuller discussion compiled in an appendix.
 - **Information gaps** – Specifically identify information gaps that make the analysis difficult or necessitate assumptions, and describe the resulting risk or uncertainty associated with your conclusions about effects.
 - **Conservation measures** – Discuss how the proposed conservation measures may reduce or offset the adverse effects of the action. An action's net effects, beneficial minus adverse, figure into the jeopardy and adverse modification conclusions, whereas only the unavoidable adverse effects resulting in take figure into the Incidental Take Statement.
 - **Conservation needs** – Conclude the Effects section with a discussion about how the effects relate to the conservation needs of the species (ideally, how they change the reproduction, numbers and distribution needed for survival and recovery) that you documented at the scale of the species' range in the Status section and at the scale of the action area in the Environmental Baseline

section. Comparing the effects to the species' conservation needs is the primary basis for judging whether the effects would “reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild.”

CUMULATIVE EFFECTS

(Handbook p. 4-30 thru 31)

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area.

This section must not merely list the actions that fit the definition. It needs to also describe the effects of future non-federal actions to the species and critical habitat so that we can add them to other effects in the action area. We examine four classes of effects in the action area: those resulting from (a) past and ongoing factors (environmental baseline); (b) the proposed action; (c) interrelated and interdependent actions; and (d) other non-federal actions that are reasonably certain to occur (cumulative). All are equally relevant to the final opinion, and in some action areas, cumulative effects are the dominant class. Apply a level of effort and detail to the cumulative effects analysis that is proportionate to its relative significance, which may involve using comparable, or even more rigorous, methods than you used for the Effects section.

- **Summary** – Finish the section with a summary of the impact that the cumulative effects represent for the species and critical habitat (i.e., impact to reproduction, numbers, or distribution; ability of the critical habitat to serve its designated/proposed conservation function).
- **Conservation measures** – Although commitments to conservation measures (e.g., proposed compensatory mitigation) on the part of the action agency and/or the applicant are “reasonably certain to occur,” they do not otherwise fit the definition of cumulative effects and *do not* belong in this section. They are part of the proposed action, and you have already accounted for their contribution to reducing take and net effects in the Effects section.

CONCLUSION

(Handbook p. 4-31 to 4-30)

The Conclusion section must “connect the dots”, i.e., provide the logical linkage, between the previous major sections: Proposed Action, Status, Baseline, Effects, and Cumulative Effects. The latter three sections examined effects in the action area

resulting from: (a) past and ongoing factors; (b) the proposed action (including interrelated and interdependent actions); and (c) non-federal actions that are reasonably certain to occur. The Conclusion section revisits the Status section considering that these three types of effects will alter the action area. Compared to the current range-wide status, will these alterations of the action area appreciably diminish the likelihood of the species' survival and recovery or the conservation value of the critical habitat? Our answer to that question is the "opinion" required of us under §7(b) of the ESA.

- **Survival and recovery** – Specifically address how the project's effects and cumulative effects are likely to impact both survival and recovery.
- **Distinct conclusions** – Make specific and separate statements regarding jeopardy and destruction/ adverse modification.
- **No new information** – The Conclusions section should connect the dots, not introduce new dots, so don't present information that you haven't already discussed. Your summary sentences from the previous sections should provide the building blocks for the rationale leading to your conclusion.
- **Listed entity** – Remember that determinations regarding jeopardy and adverse modification are at the scale of the listed entity (commonly the entire range), not at the scale of a management, analysis, recovery, or critical habitat unit. Effects at the action-area scale result in jeopardy or adverse modification when they make an appreciable difference at the listed entity scale.
- **Keep it simple** – Support the conclusion with a simple bullet-type rationale that addresses the elements of the regulatory jeopardy definition and the current guidance for adverse modification determinations. Use non-technical plain language.
- **Biological rationale** – Just saying that the impacts are "small" compared to the larger range is not an adequate rationale. The summary sentences from the Effects and Cumulative Effects sections should characterize the nature and scale of the action-area impacts. The summary sentences from the Status section should do the same for pertinent conditions at the listed entity scale. *Your rationale in the Conclusion section should compare these; e.g., we predict a loss of 5 acres of suitable breeding habitat in the action area from 24,000 acres in the species' range. Then explain why the impacts do, or do not, make a biological difference in terms of reproduction, numbers, or distribution, or in terms of the ability of critical habitat to serve its conservation role. The summary sentences about the species' conservation needs from the Status, Baseline, and Effects sections should provide the context for this explanation.*

INCIDENTAL TAKE STATEMENT

(Handbook p.4-43 thru 4-49)

Under the terms of §7(b)(4) and §7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the ESA, provided that such taking is in compliance with the terms and conditions of an Incidental Take Statement (ITS). Note that incidental taking is “exempted” from the taking prohibition through §7; it is “permitted” through §10.

- **Heading** – Every BO must include a section labeled as an “Incidental Take Statement,” even if we anticipate no taking incidental to the proposed action. In those cases, just note that no effects were determined to meet the definition of take. Likewise for reasonable and prudent measures and the terms and conditions that implement them.
- **No take of CH or plants** – Remember that there is no such thing as take of critical habitat. Because plants are not included in the §9 prohibition either, we do not exempt the taking of plants in ITSs.
- **Check definitions** – The definitions for “harm” and “harass” are different. Make sure that the effects described in the analysis fit the definition for the form of take identified.
- **Template error for “harass”** – Check the definition of “harass” that you are quoting in your opening paragraph of the ITS. The Handbook inadvertently misquoted the regulatory definition at 50 CFR §17.3 by changing the word “wildlife” to “listed species”, and by omitting the words “by annoying it.” Documents that use the Handbook’s template introductory language for ITSs repeat these errors; however, the Handbook provides the full and correct regulatory definition at page 4-44.
- **Form of take** – From the definition of take, identify the amount of each form of taking that is anticipated; e.g., “The action will capture (non-lethal) 10 Gulf sturgeon through netting, and harass 5 Gulf sturgeon through herding fish from the work area” (underlining for emphasis in this example only).
- **Harm** – When take is in the form of harm (which includes death and injury resulting from habitat modification), distinguish the amount or extent of anticipated mortality from the amount or extent of anticipated injury, and for the latter, the time required for individuals to recovery from the injury.
- **Surrogates** – Surrogate measures for the amount or extent of take are appropriate when it isn’t practical to either predict or monitor taking in terms of individuals. To use a surrogate, explain why expressing take as a number of individuals is not practical, then explain the causal linkage between the surrogate and the take. You have laid the groundwork for these explanations in

the Effects section, because you have already analyzed the effects of action-caused stressors. The spatial or temporal extent of stressors that result in take effects are likely candidates as surrogate measures. In some cases, it is practical to estimate anticipated take in terms of individuals (e.g., total number of listed mussels in the footprint of a bridge project based on a sample of mussel density in the footprint), but it is not practical to detect take during action implementation. In such cases, it is appropriate to use the surrogate for monitoring purposes only (e.g., monitor and verify the extent of the stressors that can cause take).

- **Be specific** – Don't just say that detecting take of individuals is difficult to justify using a surrogate. Cite reasons that specifically apply to the species and/or the action to explain why enumerating take is impractical.

REASONABLE AND PRUDENT MEASURES

(Handbook p. 4-50 thru 4-51)

“...the Secretary shall provide the Federal agency and the applicant concerned, if any, with a written statement that—

- (i) specifies the impact of such incidental taking on the species, [and]
 - (ii) specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact,...
- (ESA §7(b)(4)(C))

- **Minimize the impact of the taking** – Formulate reasonable and prudent measures (RPMs) that directly address the anticipated taking. Measures that mitigate impacts to other environmental resources, *but have no effect on reducing the amount or extent of taking* that is anticipated, are not valid RPMs.
- **Monitoring** – is not an RPM because it doesn't reduce take. However, monitoring is critical (see “Monitoring and Reporting Requirements” below).
- **Minor change rule** – By regulation, RPMs “cannot alter the basic design, location, scope, duration or timing of the action” (50 CFR §402.14(i)(2)).
- **No repeats** – RPMs cannot include activities (e.g., proposed conservation measures) that are described as components of the proposed action. The amount of incidental take that you anticipate accounts for all proposed activities. RPMs are the *additional* measures that the Service considers necessary or appropriate to reduce this anticipated amount of take. If you believe it is necessary to remind the action agency of its commitments, you can do so in the introduction to the RPMs, but don't label this reminder as a RPM.

TERMS AND CONDITIONS

(Handbook p. 4-51)

In order for the exemption from the prohibitions of §9 of the ESA to apply to the action, the federal agency must comply with the terms and conditions of this statement. These terms and conditions are mandatory.

- **T&Cs** – Terms and conditions are specific instructions for implementing the RPMs.
- **Link** – Clearly link each T&C to the specific RPM that it is intended to address. An exception to this practice is a stand-alone monitoring and reporting requirement for incidental taking during action implementation, which is necessary whenever take is exempted (see next section).
- **Be specific** – T&Cs should very clearly communicate the steps for successfully implementing the corresponding RPMs so that the responsible action agency officials understand, without debate or further explanation, *what* they need to do, *when*, *where*, and *how*. Put yourself in the shoes of the action agency official. You have to write contracts, permits, or instructions for personnel implementing the RPMs: *what do you need to know to do this?*

Monitoring and Reporting Requirements

“In order to monitor the impacts of incidental take, the Federal agency or any applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement” (50 CFR §402.14(i)(3)).

- **Take monitoring** – If any take is exempted, monitoring is always necessary to determine whether the amount or extent anticipated is exceeded, and if so, to prompt a reinitiation of consultation. It is good practice to provide any specifics needed for such monitoring and associated reporting as T&Cs.
- **Other monitoring** –RPMs often need data about physical and biological conditions (e.g., temperature, flow, onset of seasonal biological processes) during action implementation to determine when, where, or how to take specific actions that would reduce the potential for take. Again, include the specifics for such monitoring and associated reporting as T&Cs.
- **Make it easy** – Consider providing in an appendix “fill-in-the-blank” forms that the action agency can use to report any monitoring results that you need to receive. This is better than a list of general data categories, which the agency must determine how to organize. If you are not clear about what you want in a

report, it falls to the action agency to define it, and adds to your own workload if you don't receive what you need when you need it.

- **Variations** – Some BOs include monitoring as stand-alone RPMs with the specific methods and reporting requirements as T&Cs. This is fine, if the purpose for the monitoring is linked to the take-minimization function of one or more other RPMs.

CONSERVATION RECOMMENDATIONS

(Handbook p. 4-59)

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities that an action agency may undertake to minimize or avoid the adverse effects of a proposed action, implement recovery plans, or develop information useful for the conservation of listed species.

- **Not restricted** – Conservation recommendations are not restricted to the action area and are voluntary.
- **Be reasonable** – Don't recommend a huge list, because it devalues the items in the list. Select tasks from a recovery plan or other conservation strategy that the action agency is well suited to implement.
- **Be specific** – Provide enough specificity in each recommendation for the action agency to seriously consider implementing it; e.g., “design and implement a program to minimize sediment loading from unpaved roads in the following stream reaches,” is better than “work to reduce stream sedimentation.”

REINITIATION NOTICE

(Handbook p. 4-60)

- **Standard language** – Include the standard Handbook language. Remember that the action agency ultimately has the responsibility for determining whether reinitiation is needed. We can request reinitiation, but cannot require it.
- **Examples** – If you believe it's necessary to describe examples of circumstances that would warrant reinitiation, do so *after* the standard language and emphasize the need for a dialogue when these circumstances occur. Do not imply that Service authority trumps that of the action agency or otherwise restricts the agency's decision space.

REFERENCES CITED

When a BO is challenged, the court will require the Service to submit a complete administrative record of the consultation, which includes copies of all materials upon which we relied to reach our opinion. Ideally, all of these materials are listed in the Consultation History and the References Cited. Ensuring that these lists are complete and accurate is a tedious, but essential, task for preparing a BO. Don't let personal communications "slip through the cracks" in compiling the consultation record.

- ❑ **Paper trail** – Leave a clear trail to the personal communications cited in the BO. A printed telephone conversation record or email is best.
- ❑ **Verify** – Ensure that personal communications accurately represent the view of the person cited. Consider sending a copy of the pertinent text to the source with a request for verification.
- ❑ **Cut and paste** – Don't re-use the same personal communications in multiple BOs over time without verifying their currency. A source may have new information, of which you are unaware, and may no longer stand by a statement made a year or more ago.

Tips for Reader-Friendly Writing Styles and Formats in BOs

Writing a BO is hard work. The tips I offer in this section don't make it any easier, but following them will make reading your BO easier. Many BOs that are challenged in court are upheld, but some would probably not have gone to court if the party filing the complaint had better understood the purpose of a BO and how we fulfilled it. With or without the threat of court challenges, we have an obligation as public servants to document agency decisions clearly.

- ❑ **Organization** – The Handbook gives us a general outline for BOs, which this guide mirrors, but because BOs may address many species, may or may not address critical habitat, and may sometimes include a conference opinion, this outline is necessarily flexible. Under all circumstances, use headings liberally to make it easy for a reader to follow the hierarchical structure of the document, and to find sections of specific interest.
- ❑ **Headings** – Headings should succinctly (a few key words) identify the subject of all material nested under that level of the outline. Follow each heading with a sentence or two that explains the purpose of that level of the outline, and finish each level of the outline with a sentence or two or a summary paragraph that reaches a conclusion relative to that purpose.

- **Paragraphs** – In the body text between headings, use paragraphs as the basic unit of discussion. Begin each paragraph with a sentence that describes its topic or that provides a transition from the previous paragraph. Thereafter, arrange the content in an order that makes sense; e.g., general to specific, chronological, procedural steps, etc.
- **Outline numbering** – Use a simple numeric system for labeling major headings (those that would appear in a Table of Contents, if you compile one) to represent the document’s sequential and hierarchical structure, where the number of digits in the label signifies its nested level in the outline; i.e., one digit is level 1, two digits is level 2, etc. For example:
 - 2 Status of the Species / Critical Habitat
 - 2.1 Eastern Indigo Snake
 - 2.1.1 Species Description
 - 2.1.2 Life History
 - 2.1.3 Population Estimates
 - 2.1.4 Distribution
 - 2.2 Gopher Tortoise
 - 2.2.1 Species Description
 - ..., etc.

This approach is very helpful in BOs that address more than one species, because we repeat many of the same headings under each species, e.g., “Species Description” in the example above. I advise against using Roman numerals or letters for headings – they make it too hard for readers to figure out where they are in the document.

- **Plain language** – Write so that a lay audience can understand what you are saying the first time they read it. Avoid jargon and always define uncommon terms and acronyms that you must use. Break up long, complicated, or run-on sentences into two or more sentences. A good general rule of thumb is to divide a sentence that exceeds three full lines on the page. The Service’s Plain Language Policy is in the Service Manual at 116 FW 1 (<http://www.fws.gov/policy/manuals>).
- **Active voice** – The passive voice has a place in BOs, but generally use the active voice, which is more direct, vigorous, and often more informative than the passive. Some examples:
 - Active:* “The Service provided bat survey recommendations to the applicant.”
 - Passive:* “Recommendations regarding bat surveys were provided by the Service to the applicant.”

 - Active:* “The Corps proposes to implement the following conservation measures.”

Passive: “The following conservation measures are proposed to be implemented.”

Active: “Service biologists investigating the incident found many fresh-dead mussels in the exposed streambed.”

Passive: “Investigating the incident, there were many fresh-dead mussels found in the exposed streambed.”

In the first example above, note that the active voice conveys in 9 words the same meaning as 12 words in its passive counterpart. Brevity is a significant by-product of the active voice. In the second and third examples, the passive voice fails to identify *who* is doing something, yet the active voice counterparts communicate this additional information with the same number of words and greater vigor. One quick way to identify passive voice is to search for the words “by,” “be,” and “there.” These are necessary and useful words, but are frequently the crutches for weak and vague sentences.

- **Clarity** – Make sure that the reader can follow the trail of effects through the document from Proposed Action to Conclusion to Terms and Conditions. Minimizing redundancy along this trail controls the length of the document, but don’t expect readers to remember everything you’ve discussed in previous sections. As necessary, remind readers of key facts and important concepts that you introduced earlier (e.g., conservation needs of the species) to help them, without backtracking, understand a point you’re making.
- **Incorporate by reference** – Adopting the findings of previous BOs or other documents in a BO is often useful, but always summarize the important points or arguments that you are relying upon, and as appropriate, cite specific page numbers from the source document.
- **Alternative BO Outline** – For BOs that address several species and/or critical habitats, consider the possibility of organizing the document at level 1 of the outline hierarchy by species and/or critical habitats instead of the traditional level-1 headings (Status, Baseline, Effects, etc.). Under this approach, after Description of the Proposed Action, the document treats each species/critical habitat separately from start to finish, i.e., all the way from Status to Conclusion, and for species, all the way to Terms and Conditions. The topical continuity of this outline appeals to readers who are more interested in the analysis of one species or a subset of the species/critical habitats evaluated, because it packages the entire analysis for each species/critical habitat in a single block of the document. It’s also an advantage for assembling the BO when different biologists are handling different species/critical habitats. Each biologist’s contribution to the BO is dropped into the particular section for the species/habitat that he/she analyzed instead of into several sections.

- **Tables and Figures** – Tables and figures are much better than narrative for communicating many types of information, but their use in BOs is a balancing act. Tables and figures must always complement, not substitute for, the narrative. The narrative must always contain at least one specific reference to each table and figure you’ve included in the BO. An excessive number of tables and figures, or very large and complex tables, detract from the narrative and belong either in an appendix or in a “Tables and Figures” section situated at the end of the major section in which they are referenced.
- **Lists and formatting** – Avoid lengthy paragraphs (more than about half a page), because they are hard to read and are actually intimidating to many readers. When a long paragraph includes a long string of related items, use a vertical list (delimited with bullets, numbers, or letters) to break it up. For shorter strings, use horizontal lists (delimited with numbers or letters) within a sentence. Use bold, italics, and other formatting features as necessary to provide emphasis.
- **Effects Summary Matrix** – Consider constructing a matrix to summarize conclusions in the effects analysis to help readers sort out the various effects, especially to distinguish those that represent take of the species from those that don’t. This also helps identify the effects for possible RPMs.
- **Level of detail** – All BOs must satisfy the same regulatory requirements, but beyond that, the level of detail can vary tremendously, depending on the nature and scale of the action’s effects, and yes, on the level of controversy associated with the action or the affected species and critical habitats. Always mindful of the need for clarity, *provide a level of detail that is proportionate to the action’s complexity, its impacts, or the potential for confusion* regarding the findings of the BO. Remember, readers that don’t understand the purpose of a BO and how we fulfilled it are more likely to challenge it.
- **Creativity** – The purpose of a BO is not entertainment, but it is not punishment either (“This court sentences you to reading three BOs!”). Strive for readability. Write a BO that tells a coherent story about whether a proposed action is likely to jeopardize a species or destroy its critical habitat. This guide is a check list for the elements and qualities that should accomplish that purpose. Writing the basic narrative that gets the job done requires your knowledge of the action, the species, and the regulations. Getting it done well requires substantial skill as a communicator, but also some creativity. Most of the details in a BO are up to your discretion. Don’t get creative with the standard required language and the regulations, but otherwise, don’t be afraid to innovate.