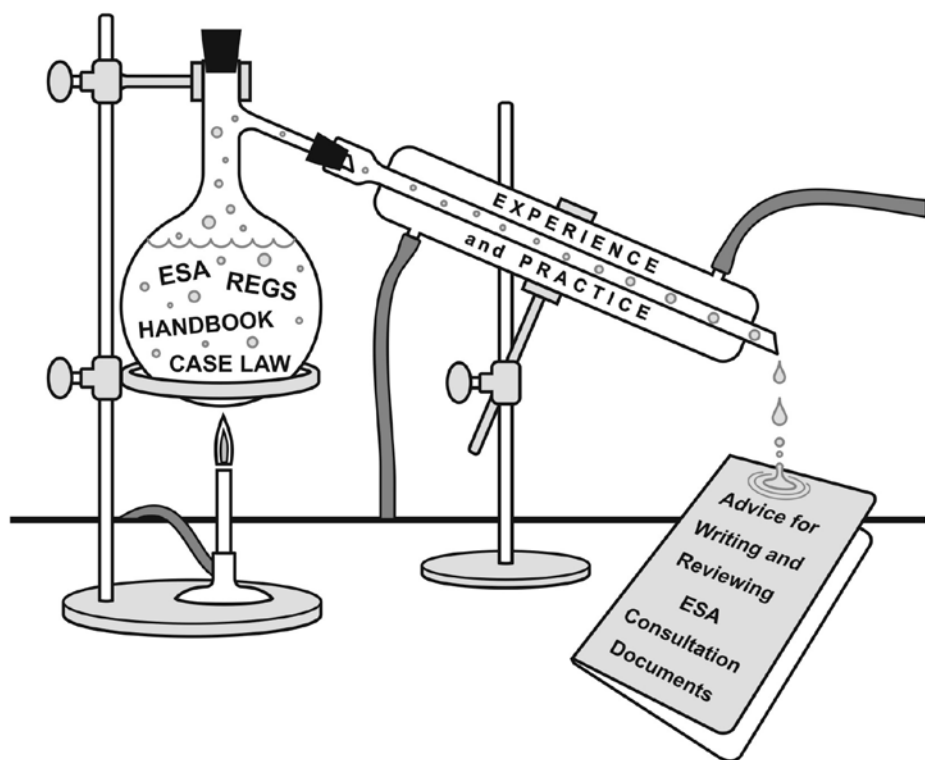




Advice for Writing and Reviewing Endangered Species Act Consultation Documents



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Note to reader

This booklet is intended to help writers and reviewers of biological opinions (and biological assessments) meet statutory, regulatory and policy requirements, and create a clear explanation of biological issues. **It does not replace or supersede existing law, regulations, or policy.** The consistent theme of this guide is connecting the dots between a project, the biology of a species, and the effects of an action, and making those connections clear.

Biological opinions and supporting documents are being read and scrutinized by a wider audience than anticipated when the regulations were promulgated in 1986 and the Consultation Handbook was written in 1998. Often readers are unclear about the specific purpose of the documents and unfamiliar with many of the concepts important to biological discussions and findings. Logical rationales and clear writing are essential to communication with this broader audience. Concurrent with this increase in the size and diversity of our audience has been the increased use of past documents as templates. This leads to unnecessarily “wordy” documents that repeat past documents weaknesses and disorganization.

While the 1986 regulations and the 1998 Handbook remain our foundational guides for completing consultations, since their publication, practice and legal review have improved our understanding of how to construct defensible, logical, easy-to-understand consultation documents. This booklet is intended to serve as a desk-top compilation and distillation of that new understanding.

Remember, readers are more likely to disagree with our decisions and/or challenge them if they do not understand our rationale, or are frustrated by our writing style and document organization.

Since this is the first edition of this booklet, suggestions and corrections are encouraged and can be sent to the compiler for consideration in future editions.

Acknowledgements

The ideas, tips, and concepts compiled in this booklet are not original to the compiler, new, or novel. They come from the Services' (both Fish and Wildlife Service and National Marine Fisheries Service) decades-long practice of writing and assembling consultation documents and lessons learned from practice and legal review. For that reason, I would be remiss if I didn't acknowledge the past and present Services' section 7 coordinators, the Services' and Department of Interior's Solicitors, and a long line of expert practitioners. By striving to implement section 7 of the Act with transparency and the goal of conservation of listed species, all have contributed to the information compiled and distilled here.

I'd like to extend a special thanks to Jerry Ziewitz the consultation coordinator for the Service's Southeast Region (R4). His enthusiasm for the concept of this booklet, and willingness to brainstorm, discuss, review and contribute text to several iterations improved the final product immensely. Save only for our agreement to distribute region-specific guides, he would be a co-compiler on this version.

In addition I would like to recognize Russ Holder, Sandi Fisher, and Karl Halupka for review of this booklet's earliest outline and suggestions for improvement.

Of course, special appreciation is given to Dani Thomson for her assistance in final editing and original cover art.

Doug Laye

Using this guide

This booklet is organized to coincide generally with the major headings of a biological opinion (and many sections of a biological assessment) for easy comparison. Writers can use this guide as a reminder of important concepts as they first plan, then write and assemble their document. Reviewers (even ones not very familiar with consultations) can use this as a guide to quickly check if the writer has included important points in the document and clearly laid out their logic. Statements marked with a “□” represent items that are very important and necessary to address. During review, the boxes can literally be “checked” off to insure that important items have been included in the biological opinion (or biological assessment). Bullets marked with a “◆” represent useful tips for improving the accessibility, clarity, and coherence of the document.

Below is a list of topics in the order of appearance.

General thoughts on consultation documents, and writing and format styles

Transmittal Documents

Concurrences

Biological Opinions

- Consultation History
- Description of Proposed Action
- Status of the Species and Critical Habitat
- Environmental Baseline
- Effects of the Action
- Cumulative Effects
- Conclusion

Incidental Take Statements

- Reasonable and Prudent Measures
- Terms and Conditions
- Reporting Requirements
- Conservation Recommendations
- Re-initiation Notice
- References Cited

General thoughts on consultation documents and Tips for more friendly writing and format styles

Following the tips in this section may make writing a biological opinion (BO) easier and should also make reading your BO easier. A BO that tells a coherent story is less likely to be misunderstood or challenged.

Plain language – Write so that a non-science audience can understand what you mean the first time they read it. Avoid jargon and always define uncommon terms and acronyms. Keep sentences simple. Avoid long, complicated, or run-on sentences. The Service’s Plain Language Policy is in the Service Manual at 116 FW 1.

Active voice – Use the active voice as much as possible. It is more direct, vigorous, and often more informative than passive voice.

Narrative – Strive for readability. Write a BO that tells a coherent and story about whether a proposed action is likely to jeopardize a species or destroy or adversely modify its critical habitat.

Creativity – Don’t be afraid to try different formats, outlines, sub-headings, diagrams, or narrative approach if it makes the BO clear and easy to follow.

Acronyms – Consider using words rather than letters for some acronyms. This is especially valuable with our listed species. A word is much friendlier than a bunch of letters strung together and helps our audience feel a little more connected to our species and its story.

Definitions – Use the exact definitions from the statute, regulations or handbook. Do not paraphrase or word-smith them. If in doubt, seek out the original source. There are a few instances in the handbook where definitions are incomplete or slightly modified (e.g. harm and harass). Compare to the regulations to ensure accuracy.

Multiple species outlines – For BOs that address two or more species and/or critical habitats, consider an organization that does not “shuffle” the species in each section. In other words, 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 Terms and Conditions (as appropriate). This outline appeals to readers who are interested in the analysis of only one species, because it packages the entire analysis for that species in a continuous sequence. It’s also easier to assemble and organize a BO this way if there are multiple authors for different species.

Outline numbering – Consider using a simple numeric system for labeling major headings to represent the document’s sequential and hierarchical structure rather than Roman numerals, alpha-numeric, etc. To avoid the numbering looking ridiculous, try not to carry the levels out to more than 3 or 4 places.

Headings – Headings should succinctly (a few key words) identify the subject of all material nested under that level of the outline. Consider following 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 original stated purpose. Use headings liberally to make it easy for a reader to follow the hierarchical structure of the document, and find sections of specific interest. For large or complex BOs give some thought to including the section name in the document's footer.

Paragraphs – In the text between headings, break long narrative into 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.

Clarity – Make sure the reader can follow the trail of effects through the sections of the document. Each section should naturally lead to the next. Avoid unnecessary redundancy, but don't expect readers to remember everything discussed in previous sections. As necessary, remind readers of key facts and important concepts that were introduced earlier.

Level of detail - All BOs must satisfy the same regulatory requirements, but all documents do not have to have the same level of detail. Provide the amount of detail and explanation in the consultation document to meet the regulatory requirements, but proportionate with the impacts to the species, complexity of the project and potential risk of confusion regarding biological information or legal issues.

Incorporate by reference – Incorporating the findings or analyses of previous BOs or other documents in a BO is often efficient, but always summarize the important points or arguments that you are incorporating. Cite specific page numbers so you and the reader can be clear on what is being brought into your document.

Tables and figures – Tables and figures are often better than narrative for communicating certain types of information, but their use in BOs is a balancing act. An excessive number of tables and figures, or very large and complex tables, detract from the narrative and it may be less disruptive to put such information in an appendix.

Effects Summary Matrix – Consider constructing a matrix to summarize conclusions in the effects analysis to help readers sort out the various effects. This is especially helpful to distinguish effects that represent take of the species from those effects that don't.

Metric units – Though common and required for most journal publication, having both U.S. and metric units after each measurement is very disruptive to the reader. Most readers will not be scientists, so consider using U.S. units only, unless there is a compelling reason not to. In either case, consider displaying one, not both.

TRANSMITTAL DOCUMENTS

The example of a formal consultation document in our Consultation Handbook (p. 4-13), formats a BO as correspondence. Because a BO is often a lengthy and complex document that may require an executive summary, table of contents, and appendices, using a correspondence format can be awkward. For that reason, consider using a separate document (cover letter or memo) to transmit the stand-alone BO.

- **TAILS number** - Don't forget to include the full TAILS consultation/activity number (e.g. 06EXXXXX-2014-F-XXX) on all documents.
- **Transmittal or cover document** – Consider using a brief cover memo (for intra-Service and DOI-bureau consultations) or cover letter (for all other consultations) to transmit a BO from the Service to the action agency. This 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.
- ♦ **Title Page** – If you use a transmittal document, a full title page preceding the body of the BO will look more professional. Include a signature block and date near the bottom. A signature and date on both the transmittal document and the title page of the BO is a redundancy, but it is also practical: (a) it allows the BO to stand alone as an official report apart from the transmittal document; (b) it immediately verifies that this is the final version; and (c) it avoids burying the signature somewhere later in the document. This approach can require the manager signing a BO to sign both the cover letter and the title page. If both the cover letter and title page are dated, the dates should match.
- ♦ **Table of Contents (TOC)** – Consider including a TOC if the BO exceeds 30 pages. A TOC makes the document look more professional and shows the reader its overall structure at a glance. For readers focused on particular aspects of a BO, this convenience limits the frustration they may otherwise experience with a lengthy document, especially if several species are addressed.
- ♦ **Executive Summary** – Consider writing a short (no more than 1 page) summary of the action, overview of our findings regarding adverse effects and our conclusion. Some of our most important readers have a short attention span, and including this section for large and complex BOs is a useful and courteous addition for both internal reviewers and action agencies.

CONCURRENCES (Handbook chapter 3)

A BO resulting from formal consultation addresses a determination of “may affect, likely to adversely affect” for listed species or designated critical habitat. Requests to initiate formal consultation may also be accompanied by determinations that the proposed action “may affect, but is not likely to adversely affect” one or more other species and critical habitats. We often concur with such determinations at the same time that we provide the BO; however, it is recommended that you do not embed this concurrence within the BO, because it confuses the reader about the BO’s purpose. (In addition, at least one court has suggested that any species included in the body of a BO requires an incidental take statement.) The rationale for our concurrence needs to be stand alone, easy to find and easy to understand. Consider one of the options below.

- ☐ 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 “Informal Consultation” or “Concurrences” attachment/enclosure referenced in the transmittal document. This is the best option when you have many species/critical habitats or when your rationale is lengthy.

BIOLOGICAL OPINION

(Handbook chapter 4)

- **Introduction** – Begin a BO with a paragraph naming the action and identifying the species and/or designated critical habitats that the BO addresses, just as you did in the transmittal document.
- **Framework** – Briefly explain the analytical framework for the BO. How do we determine if a proposed action may jeopardize a species or result in the destruction or adverse modification of designated critical habitat?

Example for Jeopardy Analysis

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).

Explain that we rely on four components:

- (1) the Status of the Species, which evaluates the species rangewide condition, the factors responsible for that condition, and its survival and recovery needs;
- (2) the Environmental Baseline, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species;
- (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and
- (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species.

Final conclusion – Explain that we examine how those four components relate to a change to the reproduction, numbers and distribution needed for survival and recovery at the listed entity scale.

Example for Destruction or Adverse Modification Analysis

Cite the regulatory definition: (if the proposed new one has been finalized). Otherwise refer to the Director’s 2004 guidance (**See Discussion and conclusion section**)

Explain that we rely on four components:

- (1) the Status of the Critical Habitat, which evaluates the rangewide condition of the designated critical habitat in terms of physical or biological features (PBFs) ¹ the factors responsible for that condition, and the intended recovery function of the critical habitat overall.;
- (2) the Environmental Baseline, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the intended recovery function of the critical habitat in the action area;
- (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PBFs and how that will influence the recovery role of the affected critical habitat units.;
- and
- (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the PBFs and how that will influence the recovery role of the affected critical habitat units.

Final conclusion – Explain that we examine how those four components relate to the critical habitat remaining functional range-wide (or would retain the current ability for the PBFs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the species.

¹ The older term Primary Constituent Elements term is being abandoned for the Act's terms Physical or Biological Features

CONSULTATION HISTORY

(Handbook p. 4-12)

- **Consultation History** - Only put the most pertinent milestones in the consultation history in the BO. For example include the date of requests for concurrence, formal consultation, written document exchanges for draft reviews, any agreements to alter the consultation timeline and Service response after receipt of consultation request. This shouldn't take more than a page.
- ◆ **Additional Information** - If you have compiled an exhaustive consultation history, including every meeting, major points of discussion, etc., put that in a separate document in the consultation record file, and include only the major points in the BO.

DESCRIPTION OF THE PROPOSED ACTION

(Handbook p. 4-15)

Introduction (Handbook p. 4-14)

- **Introduction** - Provide a very short (one paragraph) overview of the action. Provide detail in the following subsections as the action is deconstructed. If we don't understand the proposed federal action well enough to describe it in a paragraph or two, it's likely the reader won't understand it either.

Action Area (Handbook p. 4-22)

Action— *“all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include ... , but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.”* 50 CFR 402.02

Action Area - *“...all areas to be affected directly or indirectly by the federal action and not merely the immediate areas involved in the action”* (50 CFR 402.02).

- ◆ This definition (which pertains to all areas where land, water, or air is modified), does not necessarily include a broader area where affected wildlife might travel or move to after being exposed to those modifications in the action area.
- **Action Area Description** - Although the action agency identifies an action area for the purposes of obtaining a species list and for their effects analysis, make sure to describe the extent of the action area for the purposes of the BO, and explain why the Service chose the boundaries the way we did. This is especially important if the action area for the BO differs from the way the action agency described it (usually because the action agency missed an area that was affected indirectly by the action).
 - ◆ **Other area descriptions** – Action area should not be confused with analysis area, project area, recovery unit, management unit, etc. These may be helpful in analyzing population effects, but are not a substitute for the regulatory description of action area.
- **Deconstruct the Action into smaller Steps or sub-Activities** - For each activity, describe the “who, what, when, where, and how” at the appropriate level of detail that is necessary to evaluate the exposure and response of the listed species and designated critical habitats to that activity.

- ◆ **Brainstorming table** – As an exploratory tool, you may want to use a table to break the action into the sub activities. The action agency and their specialists can be very useful in helping with this effort since they know the sub activities better than the Service. In fact, the action agency should do this as part of their development of an assessment. Depending on the table’s use it could be appended to the BO or biological assessment.
- ◆ **Headings** - Ideally, the list of deconstructed components/activities provides the headings to organize the “Effects of the Action” section. This organization conveys the cause-and-effect logic of the BO to readers.
- ◆ **Schematic Diagrams** –Simple schematic diagrams are generally better than annotated photographs or highly detailed maps. Graphics should complement, not substitute for, the text.

- **Interdependent/Interrelated Actions** – Don’t forget to explore whether there are any interdependent or interrelated actions to the proposed action. Carefully think through and use the “but for” test (Handbook p. 4-26 and 4-27) to determine if potential actions fit in those categories.

Interdependent Actions – “... *those [actions] that have no independent utility apart from the action under consideration.*” (50 CFR 402.02)

Interrelated Actions – “...*those [actions] that are part of a larger action and depend on the larger action for their justification.*” (50 CFR 402.02)

- **Conservation Measures** - Describe any measures that the parties to the consultation have committed to implement to reduce the impacts to the environment and their resulting effects to listed species (Handbook p. 4-19). To avoid extra verbiage, don’t list measures that have no relevance to the species being analyzed.

- ◆ **Definition** – “*Conservation measures - are actions to benefit or promote the recovery of listed species that are included by the Federal agency as an integral part of the proposed action. These actions will be taken by the Federal agency or applicant, and serve to minimize or compensate for, project effects on the species under review. These may include actions taken prior to the initiation of consultation, or actions which the Federal agency or applicant have committed to complete in a biological assessment or similar document.*” (Handbook p. xi)

- ◆ **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 action as any other proposed components/activities; otherwise, they are speculative and not relevant to the analysis.
- ◆ **Compensation** – Timing of any compensatory measures (e.g., habitat restoration) associated with the action to benefit species and their habitats

influences how you treat them in the BO. Compensatory measures initiated in advance of the consultation may influence the status of the species and the environmental baseline, whereas measures initiated after action impacts occur do not.

STATUS OF THE SPECIES (and designated Critical Habitat) (Handbook p.4-19 thru 21)

This section should summarize effects of all past and present actions that led to the current status of the listed species and designated critical habitats relevant to formulating the BO. Use a “common currency” of reproduction, numbers and distribution to describe the condition of the species.

- ☐ **Scale** – The status of the species/critical habitat 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 focus at the action area scale.
- ☐ **Legal Status** – Give the legal status, but don’t go into an exhaustive history of the listing/designation. Briefly review the main reasons for listing to set the stage for comparing the effects of the action to the threats to the species. Cite the most recent Service document that addresses the species’ ESA classification, (5-year review, final listing rule, etc.) State specifically whether the Service has designated critical habitat for the species.
- ☐ **Life History Information** – Limit your information to what is relevant to the effects analysis. Detailed information such as variation in plumage, taxonomic history, etc., is likely not important to the analysis and gets in the way of a concise narrative.
 - ◆ **Life cycle** – 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. They can also remind authors of the temporal relationship between the action and effects.
 - ◆ **Unnecessary citations** – Don’t force your reader’s eye and brain to clamber over endless citations in sentences. Unless the information being presented is controversial or not well established it doesn’t need citations.
 - ◆ **Citations in small font?** – Consider putting in-text references in much smaller font than the narrative, so that the reader’s eye can move over them quickly and avoid their interfering with the narrative flow.
- ☐ **Reproduction, Numbers, and Distribution (a common currency)** – 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 using them under the Status section establishes a “common currency” for analysis discussion and sets the stage for

document coherence through the Baseline, Effects, and Conclusions sections.

- **Conservation Needs** – Identify the principal conservation needs of the species. These are typically actions that 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. Ideally, we have quantified or have a general idea about the reproduction, numbers, and distribution that are necessary to achieve recovery.
- **Recovery plans** – If the species has a recovery plan, recovery outline, or other management plans, discuss the conservation strategies that pertain to the BO analysis. Discuss any recovery units, management units, analysis units, etc., established for the species. Conversely, if no recovery plan exists, state that for the reader.
- **Climate change** – The Status section is the best place to discuss climate change, if that is a process that is affecting the trend/condition of the species or critical habitat.

ENVIRONMENTAL BASELINE (Species and Critical Habitat)

(Handbook p.4-22)

This section should be a discussion of “... *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 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.*” (50 CFR 402.02)

The environmental baseline is a “snapshot” of the species’ health (and designated critical habitat) in the action area at the time of the consultation, and does not include the effects of the action under review.

- ☐ **Scale** - environmental baseline is at the scale of the action area.
- ☐ **Species presence** - talk about how the species uses the action area, what life stages are present at what times and where.
- ☐ **Role of action area** - Discuss the role and importance of the action area for the conservation of the species. Check recovery plans and critical habitat designation final rules for information.
- ☐ **Units** – If the action area overlaps a management unit, recovery unit, etc., discuss the condition of that specific unit (reproduction, numbers, and distribution).
 - ◆ **Not action area** – Recovery units are not the same thing as action area and should not be used interchangeably (**See earlier discussion on Action Area**).
- ☐ **Species condition/conservation needs** - Describe the reproduction, numbers, and distribution of the species and its conservation needs for survival and recovery in the action area. If present, describe the condition of the critical habitat under a separate sub-heading.
- ☐ **Habitat condition** – Discuss the current quantity and quality of habitat relative to the species’ biological and conservation needs.
- ☐ **Threats** – Discuss the relative significance in the action area of the threats identified in the Status section.
- ☐ **Influences** – Describe any activities or conditions in the action area that have influenced the reproduction, numbers or distribution of the species in

the action area, or that have influenced the ability of designated critical habitat within the action area to fulfill its conservation role. You may also need to discuss impacts that are outside (but nearby) the action area if those have influenced the condition inside the action area.

- ◆ **Climate change** – If information is available at the action area scale, the baseline can discuss recognized climate-change effects to species or critical habitat.

- **Summary** – The environmental baseline section can be several pages long and covers many topics. Therefore, include a brief summary/conclusion regarding what that information says about the condition of the species (reproduction, numbers, and distribution) and, if applicable, the condition of the critical habitat in the action area.

EFFECTS OF THE ACTION

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

"Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action that will be added to the environmental baseline....

Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. **Interrelated actions** are those that are part of a larger action and depend on the larger action for their justification. **Interdependent actions** are those that have no independent utility apart from the action under consideration." (50 CFR 401.02) [Emphasis added]

- ◆ **Caution! Scientist at work!** - Scientists are trained to report findings in the “hypothesis-methods-results-discussion-conclusion” format. Therefore, we often try to think and write about a project’s effects in the same way. This is frustrating for most authors, because in consultation we are actually attempting to predict a likely outcome rather than report on something that has already happened. Recognize this important difference and shift your thinking and writing style to one which creates a well-supported prediction and science-based “argument” for your prediction.

- **Organization of the effects section** - It is helpful to organize the effects analysis consistent with the deconstructed action in the Proposed Action section. This structure helps keep the reader connected to the activities described earlier and the effects described in this section.
- **Style of effects discussion/analysis** – a suggested format for each impact
 1. **Brief overview** of what the applicable science has discovered regarding the species and its response to the types of environmental impacts that this project may cause.
 2. **Explanation of the complete pathways and mechanisms** that translate environmental change (impact) into effects to individuals and populations. [See **Unsupported claims in pitfall section below**]
 3. **Discussion and description of the change** (magnitude, duration, frequency) to land, water, or air from the project’s activities in the action area.
 4. **Exposure of the species** to change in the action area (what life stage, when and where, etc.)
 5. **Description of the specific behavioral or physiological response** by the species to that environmental change. Spectrum of responses ranges from mild

annoyance to death. Use of specific language here will help immensely when you get to the incidental take statement.

6. **Discussion of the proposed conservation measures** and how they may reduce or offset some of the effects of the action. It's the action's final net effects that drive the jeopardy and adverse modification conclusions.

- ◆ **Specific effects** – There is a broad spectrum of possible biological responses-effects from the sub activities of an action – these range from no response/effect on one end, to death on the other. In addition, not all effects that can be described as adverse (i.e. not beneficial, not discountable or not insignificant), necessarily will reach the level where take (e.g. “harm...actual injury or death”) is likely. Discuss and describe the predicted effects in words that relate to our definitions of no effect, non-adverse effects, take, harm, etc. By describing effects using the words and criteria from the definitions, we are forced to consciously lay out the expected degree of effect from the various sub activities.

- ◆ **Connecting the dots for take** – It isn't necessary to specifically use the work take in the effects section (in fact it may confuse readers), however, we should use the words and criteria that define the various forms of take (injury, death, impairment of...)to describe those types of effects if they are likely to occur. Using the definitions, separates and identifies only those effects that rise to the level of take, and makes describing the form and amount of take much easier in the Incidental Take Statement.

7. **Summarize clearly** – Summarize the final degree, amount or extent of effect (for each sub activity impact) that we predict will occur as a result of the proposed action.

- ◆ **Word choice** - Use words, definitions and criteria from our effects categories like insignificant or discountable if appropriate. Or use terms that relate directly to our definition and criteria for harm or harass e.g. “injure” or “... may include significant habitat modification...by significantly impairing essential ...”, etc. if that is appropriate. The clearer we lay the tracks here for specifically identifying the degree of effects from sub activities, the easier it will be to write the conclusion and incidental take statement. And the clearer it will be which parts of the actions we should potentially modify with Reasonable and Prudent Measures (RPMs).

- **Parallel analyses for critical habitat** – remember that if there are effects to CH, that analysis needs to be distinct from the analysis of effects to the species. Several court cases have made the point that the analysis of the species and the designated CH needs to be distinguishable from each other and not just jumbled together. This means that each one needs its own

clearly labeled heading in each section of a BO, so that the reader can follow the different analysis - all the way to the conclusion.

- **Consideration of conflicting or controversial information** – You may encounter conflicting or contradictory views in the literature when building a prediction of effect. Clearly acknowledge both viewpoints in the discussion and explain why the Service is choosing to use one of those views to inform its prediction.
- **Indirect effects** - Make sure to consider indirect effects that “...*are caused by or result from the proposed action, are later in time, and are reasonably certain to occur...*” (50 CFR 402.02).
 - ◆ **Reasonably certain to occur** - this phrase is found throughout the regulations and the Handbook (cumulative and indirect effects, etc.) but is never specifically defined. It is not a speculative standard. The regulations’ preamble discusses it on page 19933 and the Handbook discusses it most expansively on page 4-30.
- **Effects from interrelated or interdependent actions** - Make sure to consider any effects from the interdependent or interrelated actions (See earlier discussion in proposed action section for how to identify those actions).
- **Final summary** or Synthesis of Effects - Conclude the entire effects section with a summary of the effects to the individuals in the action area and how those effects relate to the conservation needs of the species (ideally, how they change the reproduction, numbers and distribution needed for survival and recovery) in the Action area. This summary will form one of the four pieces (Status+ Baseline +**Effects of the Action** +Cumulative Effects) of our jeopardy/destruction or adverse modification discussion and conclusion.

Avoid these pitfalls in effects discussions !!

- ◆ **Inappropriate use of mitigation** – make sure to understand the temporal and spatial relationship of any mitigation proposed in the proposed action. Unrealized future benefits to the species can't eliminate our full consideration of the immediate effect as it relates to Jeopardy/Destruction or Adverse modification.
- ◆ **Unclear transitions** – Make sure that your narrative is clear when you are reviewing the science on a class of effects and when you are actually using that information to predict the effects from this proposed action, in this action area, to this species.
- ◆ **Laundry lists of 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.
- ◆ **Information gaps and assumptions** – Specifically identify information gaps that make the analysis difficult or necessitate assumptions. Clearly identify assumptions and briefly explain why they are reasonable and necessary to move your analysis forward. For assumptions (or even some models) that are complex or require pages of explanation, consider putting the bulk of that discussion in an appendix. Make sure to describe how the risk or uncertainty of the assumptions may affect your conclusions about effects.
- ◆ **Weak or ambiguous words** - Avoid using soft words like may, might, could, potential, etc. Even though we are predicting an outcome and not reporting on something that is known, our jeopardy/destruction or adverse modification conclusion is definitive – so its support from wording in our effects section must be also.
- ◆ **Unsupported claims - connect the dots through use of pathways and mechanisms** - Discuss the pathways and mechanisms that translate environmental change (impacts) into effects to individuals and populations. Don't just make a claim without the rationale leading to that claim. For example, just saying “removing trees is bad for spotted owls” does not show the pathway. Instead, explain the pathway; e.g., removing trees of a certain size (the impact) 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). (**See additional discussion in jeopardy conclusion section**)

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.” (50CFR 402.02)

- **Cumulative effects** - Don't just list actions that fit the definition, say something about the specific predicted effects from those actions on the individuals or habitat in the action area. Use the same level of detail describing impact-response-effect as you did in the effects of the action section.
- **Summarize** - Finish the section with a summary of the specific impact that the cumulative effects represent for the species and critical habitat (i.e., impact to reproduction, numbers, or distribution; ability to serve conservation function) in the action area.
 - ◆ **Aggregate effects** – don't use the word cumulative when you are discussing aggregated effects. Cumulative effects have a specific definition (different than the NEPA definition). If you need to discuss aggregated effects – use other terms such as combined, aggregated, etc.
 - ◆ **Climate Change** – Climate change should not be considered a cumulative effect – it doesn't fit the definition. Discuss climate change, as appropriate, in the status and baseline sections.

DISCUSSION and CONCLUSION

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

This is the section where we take the summary of effects from the effects of the action and cumulative effects sections and use them to explore and explain whether (and how) the changes to the species in the action area result in a perceivable change in the condition of the species at the listed entity scale. If they do, the next question is “Do these changes meet the definition of jeopardy.” Likewise, if critical habitat has been impacted, has destruction or adverse modification been reached? This is not just a conclusion, but a full explanation that supports our finding and shows our thought process. That discussion, rationale and conclusion is the “opinion” required of us under section 7(b) of the ESA.

- ☐ **Survival and recovery** - Remember to 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 or adverse modification.
 - ◆ **Destruction or adverse modification**– Currently there is no regulatory definition. Our regulatory definition was found invalid by circuit courts in 2001 and 2004. The Service now relies on guidance from the December 9, 2004 memorandum to the Regional Directors from Marshall Jones, then Acting Director of the FWS. (“Application of ‘Destruction and adverse Modification’ Standard under Section 7(a)(2) of the Endangered Species Act”). **Note:** As of this writing, the Service is promulgating a new regulatory definition. Check to see that appropriate guidance or definition is used.
- ☐ **No new information** - The conclusions section should connect the dots, not introduce them, so don’t present information that you haven’t discussed earlier. If your summary sentences from the previous sections were written well, they should provide enough building blocks for the rationale leading to your conclusion.
- ☐ **Listed entity** - Remember that the determination regarding jeopardy, and destruction or adverse modification is made at the scale of the listed entity (commonly the entire range) – not at a management, analysis, recovery or critical habitat unit scale. Those units might be informative, but whatever effects are found at the scale of the action area have to be “rolled up” to determine if they are likely to cause jeopardy or destruction/adverse modification at the scale of the listed entity.

- **Keep it simple** - Support the conclusion with simple bullet-type statements of a full rationale. Make sure the statements don't just make a claim, but actually create a complete logical rationale (connect the dots) that addresses the specific elements of the definitions for jeopardy and destruction or adverse modification.
- **Biological rationale (not claim)** - Simply saying that the impact is "small" (e.g. 5 acres, 3 individuals) compared to the whole range (e.g. 24,000 acres, 3,000 individuals) is not a rationale; it's just a comparison. A rationale should explain why the impact of that loss does, or does 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 regarding condition or changes to condition in the Status, Baseline, and Effects sections should provide the basis for this explanation.

Example of claim vs. rationale

Here is a claim (not a rationale) using canned handbook language.

"As discussed in the BO above, after consideration of the status, baseline, effects of the action and cumulative effects, the proposed action is not likely to jeopardize the Detroit bat bird."

And here is an example of a claim that tries desperately (using the word "because") to look like a rationale, but really it just uses the definition of jeopardy to make it longer.

"As discussed in the BO above, after consideration of the status, baseline, effects of the action and cumulative effects, the proposed action is not likely to result in jeopardy of the Detroit bat bird, because the action will not reduce appreciably the likelihood of survival and recovery"

Here is a supported claim that has now become a rationale.

"The effects of the proposed action will reduce the number of Detroit bat-birds by 5 young-of-the year individuals (annually) and eliminate 200 acres of habitat used only for migration stops. The population of Detroit bat-birds in the action area is greater than 500 and models indicate that the loss of 5 young of the year will not change the reproduction rate or population trend in the action area. Migration habitat is not limited in the action area or across the range of the species. Across the range of the species recovery actions are slowly trending bird numbers higher. Therefore this actions' effect of losing a number of young birds each year and the permanent loss of 200 acres is not expected to cause appreciable change in the population trend, distribution of the bird in the action area or, by extension across its range.

Therefore, the Service's biological opinion is that this project is not likely to jeopardize the Detroit bat bird."

INCIDENTAL TAKE STATEMENT (ITS)

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

“...Incidental take” refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant.” [50 CFR 402.02]

Since take is a prohibited act with serious (and even criminal) legal ramifications, incidental statements are lightning rods for litigation. Only taking that is in compliance with the terms and conditions of an incidental take statement is considered to be exempt from section 9 of the Act. Therefore, take statements must be constructed carefully.

- ◆ **Adverse effects vs. take** – There is a broad spectrum of possible biological responses-effects from an action. Not all effects that can be described as adverse reach the point at which take occurs (e.g. “harm...actual injury or death”). Make sure any effects that the Service concludes are take are supported by specific discussion and conclusions in the effects section. This is another key reason to break an action down into its sub activities and discuss the effects specifically and thoroughly.

- **Heading** - Every BO should include a section labeled as an “Incidental Take Statement,” even if we anticipate no taking incidental from 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. This general direction comes from court review and it ensures that readers aren’t left with the impression that we forgot to address it.

- ◆ **4d rules** – 4d rules often establish that certain impacts to a listed species, under certain circumstances are not considered take. 4d rules do not change the ESA’s requirement for consultation if the proposed action may affect a listed species. If the species under consultation has a 4d rule, read it carefully and use it to inform your incidental takes statement as appropriate.

- **No take of CH or plants** - Remember that there is no such thing as take of critical habitat. Also, because plants are not included in the same prohibition of take as fish and wildlife, no take for plants is exempted in the incidental take statements.

- **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. (If you used words from the definition to describe the effects this will be easy.)

Harm - “...an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering.” 50 CFR 17.3

Harass - “... an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering.” 50 CFR 17.3

- ❑ **Template error** - Check the definition of “harass” and “harm” that you are quoting in your opening paragraph of the ITS. The Handbook did not correctly quote the regulatory definitions from 50 CFR 17.3. Documents that use the Handbook’s template language repeat these errors; however, the full and correct regulatory definitions are cited above.
- ❑ **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 bull trout using nets.”
- ❑ **Injury or Death?** - When take is in the form of harm, distinguish the amount or extent of anticipated mortality from the amount or extent of anticipated injury. For injury describe the time required for individuals to recover from the injury.
- ❑ **Surrogates** - Surrogate measures for the amount or extent of take are appropriate when it is difficult to either enumerate or detect take in terms of individuals. To use a surrogate, explain why expressing take as a number of individuals is not practical, then explain the close biological link between the surrogate and the take.
- ◆ **Local fact pattern** - Don’t just rely on the handbook’s template language (page 4-49) to explain why a surrogate is necessary. Give specific information about the local fact pattern that makes enumerating take difficult or impossible. If a surrogate is necessary, you have probably laid the groundwork for one to use in the effects section when you discussed the effects pathways and response by the species.

REASONABLE AND PRUDENT MEASURES (RPMs)

(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 section 7(b)(4)(C))]

- ☐ **RPMs** - 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 consistent with the regulations.
- ☐ **Minor change** - 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 should not include activities (or proposed conservation measures) that are described as components of the proposed action. The amount of incidental take that you anticipate already included the minimizing effects of all proposed activities. RPMs are the additional measures that the Service considers necessary or appropriate to reduce the anticipated amount of take. If you believe it is necessary to remind the action agency of its commitments to their conservation measures, you can do so in the introduction to the RPMs, but don't label them as RPMs.

TERMS AND CONDITIONS (T and Cs)

(Handbook p. 4-51)

“In order to be exempt from the prohibitions of section 9 of the ESA, the (agency) must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.” (Handbook p. 4-51)

- **T and Cs** – Terms and conditions are the very specific manner in which the more general RPMs will be accomplished. The action agency must understand, without debate or further explanation, what they need to do, when, where, and how.
 - ◆ **Link** – Clearly link the term and condition to the specific RPM that it is intended to implement.
 - ◆ **Be specific** – T and Cs must clearly communicate the steps for successfully implementing them. Vague T and Cs lead to arguments, put at risk the exemption from section 9, and often are the basis for legal challenge.
 - ◆ **Draft** – Once you have written the draft T and Cs, consider providing them to the action agency to see if they clearly understand them and can carry them out.

REPORTING REQUIREMENTS

(Handbook p. 4-51)

“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 take is exempted, monitoring is always necessary to ensure that the amount or extent anticipated is not exceeded.
- **Other monitoring** – Because the reinitiation clause relies on conditions other than exceeding take, monitoring may be necessary to ensure the project is proceeding the way it was proposed and has the effects it was expected to. Additionally, monitoring may be necessary to confirm any assumptions that were necessary for the effects analysis. Again, include the specifics for such monitoring and associated reporting.
 - ◆ **Make it easy** – Consider providing “fill-in-the-blank” forms in an appendix 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 the agency’s monitoring report, you are unlikely to get the information you hoped for.
 - ◆ **Less is more** – Try not to turn a monitoring report into an essay test. Limit the report to those things that are critical for take and project monitoring. It shouldn’t be a broad request for everything known about the project. Shorter reports are more likely to get completed by the action agency and read by the Service.
 - ◆ **Variations** – Some BOs include monitoring as a stand-alone RPM with the specific methods and reporting requirements as T and Cs.

CONSERVATION RECOMMENDATIONS

(Handbook p. 4-59)

“Conservation recommendations are suggestions of the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information.” (50 CFR 402.02)

- ☐ **Not restricted** - Conservation recommendations are not restricted to the action area.
- ☐ **Voluntary** – Conservation recommendations 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.”

RE-INITIATION NOTICE

(Handbook p. 4-60)

“Reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If the amount or extent of taking specified in the incidental take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action.” (50 CFR 402.16)

- **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 or useful to describe specific examples of circumstances that would suggest reinitiation, do so after the standard regulatory language. However, emphasize that they suggest reinitiation. Don’t write them in a manner that appears like we are adding them to the regulatory language. Respect the authority of the action agency under the regulations to determine if reinitiation is necessary and allow for dialog between the action agency and the Service to inform that determination.
- ◆ **Concurrence letters** – Concurrence letters represent the conclusion of a consultation under 7(a)(2) of the Act. Include reinitiation language at the end of concurrence letters. Since concurrence letters do not anticipate take, you can leave that phrase out.

LITERATURE CITED

- ☐ **Personal Communications** – Don't re-use the same personal communications in multiple BOs over a long period of time without again verifying its currency. A source may no longer stand by a statement made a year or more ago due to new information that you are not aware of - but should be.
- ☐ **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. Put verification in the consultation file.
- ☐ **Paper trail** – Leave a clear trail to the personal communications cited in the BO. A printed telephone conversation record or email is best.
 - ◆ **Citations in small font?** – Consider putting the literature cited section in smaller font than the main BO narrative. It can substantially reduce the size of the document. Also, consider putting in-text references in small font so that the reader's eye can move over them quickly and avoid their interfering with the narrative flow.

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