

Guidance Manual for Writing Biological Assessment Documents



Oregon Department of Transportation

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How to Use this Document

The Guidance Document for Writing Biological Assessment Documents is intended to provide assistance to authors of Biological Assessments (BA) which are prepared on behalf of the Oregon Department of Transportation (ODOT)/Federal Highway Administration (FHWA).

This Guidance Document has been organized to mirror the BA document template, which is required by ODOT. The BA template, along with other resources such as the BA Guidance Manual (i.e., overview of the Endangered Species Act/ODOT Process) is available for download on the ODOT Natural Resources website:

www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/biology.

The Guidance Document is organized as follows:

- Sections A and B include the BA cover and signatory pages.
- Sections 1.0 through 10.0 mirror the BA template. In each of these sections, information is provided on the intent of the chapter, applicable subsections, information to include, and example language (if applicable).
- Section C provides a summary of resources mentioned in this guidance document.

Throughout the document there are call out boxes that include “helpful hints,” “important notes,” and “don’t forgets.” These boxed call outs are intended to draw attention to items that are most often overlooked or missing from BAs.

Throughout the document there are call out boxes that include “helpful hints,” “important notes,” and “don’t forgets.”

When example language is provided, the black text contains boilerplate template information, whereas the blue text contains guidance for inserting information. Red text lists information that should be inserted into the boilerplate language (if used). This example language can be cut and pasted into the BA document template as needed.

The information presented in this document is gathered from a number of sources, including the Endangered Species Act Consultation Handbook prepared by the U.S. Fish and Wildlife Service (USFWS) and advice or input provided by National Marine Fisheries Service (NMFS) staff (collectively Services). While some of the guidance is not related to specific regulations, it is useful. The overall intent of preparing a BA is to receive concurrence from the Services – either via a Letter of Concurrence or a Biological Opinion (BO).

This is a working document and may be updated periodically as guidance or example language is modified. The basis of the information presented here and the organization of the document will remain constant; however, please check the ODOT Natural Resources website for updates before starting a BA. Document revisions will be dated.



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SECTION A Cover Page
EXAMPLE LANGUAGE

The cover page should contain the following information and be formatted similarly:

BIOLOGICAL ASSESSMENT
[insert Project Name] PROJECT
(KN #####)

[insert Highway Name] Highway

*(This should be the standard (public) highway name/number and not the ODOT
secret highway number)*

[insert County Name] County

[insert 6th (NMFS) or 5th (FWS) Field HUC number] HUC

**[insert Species Name including the Evolutionary Significant Unit (ESU) or
Distinct Population Segment (DPS) as appropriate] *(May have multiple species)***



Prepared for:

[ODOT or other appropriate entity]

[Address of above entity]

Prepared by:

[insert name], Biologist

[insert ODOT or Company Name] *(Do not include consultant firm logo)*

[insert date]

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SECTION B Signature Page

EXAMPLE LANGUAGE

The signature page must include the following information and be formatted similarly:

Project Team Leader/District Manager Authorization of Conservation and Mitigation Measures

I have reviewed the **[insert project name and Key ID #]** project description for accuracy. I have also reviewed the conservation and mitigation measures for this project. I agree that the conservation and mitigation measures should be incorporated into this project's contract documents or implementation plans (in the case of use of in-house forces) so that ODOT will be in compliance with the Endangered Species Act and other applicable environmental laws and regulations.

[Project Team Leader or District Manager]

(The specific title of the signatory may vary depending on the nature of the project.)

Date

**[Construction Project Manager or
Consultant Project Manager (CPM)]**

(The specific title of the signatory may vary depending on the nature of the project.)

Date

[Certified Biologist and Firm/Organization Name]

(The specific title of the signatory may vary depending on the nature of the project.)

Date

(This signatory sheet must be completed and on file prior to transmittal to FHWA, NMFS or USFWS.)



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SECTION 1.0 Introduction

INTENT

The intent of this section is to:

- Provide a summary of the information on which the Biological Assessment is based, detailing how the agency's action (e.g., FHWA) affects the species and critical habitat (Section 7 [b][3][A]).
- Document that required information has been requested and received by the project biologist or action agency.
- State the Purpose and Need of the proposed action.

Helpful Hint:

If the project is related to an ongoing series of projects or actions, providing a brief history of the project can provide reviewers with useful insight into the larger picture or context in which the project is situated.

SUBSECTIONS

This section should include the following subsections:

- 1.1 PURPOSE AND NEED
- 1.2 PROJECT BACKGROUND
- 1.3 SPECIES AND CRITICAL HABITAT

INFORMATION TO INCLUDE IN THIS SECTION

The project purpose and need statement should:

- Provide a clear purpose for the proposed project.
- Include a brief description of proposed actions in relation to the needs discussed.

Important Note:

Ultimately, if the proposed action is determined to jeopardize the ESA listed species or destroy or adversely modify designated critical habitat, then the purpose and need will be used by the Services to develop Reasonable and Prudent Alternatives.

Information in this section should include brief summaries of the following:

- Relevant project history, such as:
 - Communications (i.e., letters, memoranda, public notices, meetings, telephone conversations, and site visits)
 - CETAS documents
 - NEPA documents
- Information regarding consultation with regulatory agencies (include documentation of the date consultation was initiated, chronology of subsequent request for additional data, extensions, or other applicable past or current actions). Conclusions reached in earlier informal and formal consultations on the proposed action may also be relevant.
- Species and/or critical habitat.
- Additional authorities or acts that may be applicable to the project, such as:
 - Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)



- Fish and Wildlife Coordination Act (FWCA)
- Marine Mammal Protection Act (MMPA)
- Migratory Bird Treaty Act (MBTA)

Don't Forget:

- If the specific project has a different action agency (federal nexus) or is administered differently, additional information may be needed.
- If there are multiple federal action agencies involved, list each and identify which is the lead federal action agency for the consultation.

EXAMPLE LANGUAGE

1.1 PURPOSE AND NEED

The purpose of the proposed action is to [insert purpose and need].

In [insert year ADT was measured or estimated], the Average Daily Traffic (ADT) figure for this roadway was estimated to be [insert ADT] vehicles [refer to project prospectus]. The ADT is expected to increase to [insert projected ADT] vehicles by the year [insert year of projection] (ODOT unpublished).

EXAMPLE LANGUAGE

1.2 PROJECT BACKGROUND

The purpose of this Biological Assessment (BA) is to address the effect of the [Insert project name] Project on ESA-listed species, listed as endangered or threatened under the federal and state Endangered Species Act (ESA). The Federal Highway Administration (FHWA) funds will partially finance this project and constitute the federal nexus. Oregon Department of Transportation (ODOT) will be responsible for administering the funds and the project. A summary of the key project elements are provided in the table below.

Early coordination and preconsultation with the Services was conducted during a series of site visits, meetings, and phone conversation, including: [Insert list of preconsultation coordination and dates here].

This BA, prepared by the [Oregon Department of Transportation] (or other appropriate entity), addresses the proposed action in compliance with Section 7(c) of the ESA of 1973, as amended. Section 7 of the ESA ensures that, through consultation (or conferencing for proposed species) with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat.

Project Summary	
Project Name	
ODOT Key #	
Location of Project	Highway name and mile post, or start and stop mile post
Watershed and HUC Field (5 th and 6 th)	
USGS Quadrangle Map Location	Quad Name, Township, Range, Section
Size of Action Area	
City	
County	
Project Staff	Name(s) of individual(s) who conducted the wetland delineation, surveys, etc.
Site Visits	Date(s) of visit(s)
Site Access Permission	Granted or not granted by landowner if area exceeds right-of-way (ROW)
Current Land Use(s)	Urban, rural residential, agriculture, forest land, open space, etc.
Waterways on Site	Drainages, creek names, river names or "unnamed tributary"
River Mile	
Prior Correspondence	Include dates of meetings and phone correspondence. Also include the names of the individuals involved in the correspondence.

EXAMPLE LANGUAGE

1.3 SPECIES AND CRITICAL HABITAT

The following species and critical habitat are included in this consultation.

Species and Critical Habitat Included in this Consultation		
Species		
Common Name	Scientific Name	ESU or Population Segment (if applicable)
Critical Habitat		
Species	Waterway or Geographic Extent	



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SECTION 2.0 Evaluation Methods

INTENT

The intent of this section is to provide a basis for how the effects of the action on species and/or critical habitat were evaluated. There are several accepted analytical methods; however, these do not cover all affect pathways or all species. It is especially important to outline these evaluation methods. For example: The determination of suitable nesting habitat was based on preferential characteristics outlined in the Recovery Plan. The affect on nesting habitat was evaluated based on the amount and proximity of other known suitable habitat within a 2 mile radius of the action area.

Additionally, this section should provide a summary of what information was gathered to support the affects analysis and take estimate (if applicable). Sources of information should be documented.

SUBSECTIONS

This section should include the following subsections:

- 2.1 ANALYTICAL FRAMEWORK
- 2.2 INFORMATION GATHERING

INFORMATION TO INCLUDE IN THIS SECTION

Information in this section should include the following:

- Analytical framework(s) as appropriate (i.e., NMFS' HCD Guidance for Determining Storm Water Effects).
- Evaluation methods used that are not included in accepted analytical frameworks. Include factors considered in evaluating project impacts such as dependence on specific habitat components, abundance and distribution of habitat and/or species, the degree of impact to habitat and/or species, and potential to mitigate the adverse effect.
- A summary of data collected (and used) in preparation of the BA. If germane; authors should also state how the information was used (e.g., to describe baseline conditions).

Helpful Hint:

Visit the ODOT Natural Resource Unit Website for example BAs.

Miller Creek Culvert BA (Key # 11517) is an example of a thorough and well-written Evaluation Methods section.

Important Note:

There can be sources with conflicting information (e.g., population estimates/distribution, habitat assessments). It is important to state if this is the case and what information source was used and why.



EXAMPLE LANGUAGE

2.1 Analytical Framework(s)

Factors considered in evaluating project impacts included the species' dependence on specific habitat components that would be removed or modified, the abundance and distribution of habitat, habitat components in the project vicinity, distribution and population levels of the species (if known), the possibility of direct impact to fish, the degree of impact to habitat, and the potential to mitigate the adverse effect. The methods outlined in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale (NMFS 1996) were used to analyze the potential for project impacts on water quality and in-stream and riparian habitat quality. The strategy outlined in this document is used to determine the environmental baseline for the watershed, discuss how the proposed action would affect the environmental baseline, and then use that information in a dichotomous key to arrive at a determination of effect.

EXAMPLE LANGUAGE

2.2 Information Gathering

Information for the preparation of the BA was gathered from the following sources [insert discussion on information gathering here]. Field visit(s) were conducted on [insert dates] and project biologists gathered field information on [insert information collected].



SECTION 3.0 Project Description

INTENT

The intent of this section is to provide a description of both the project and resultant action area. This chapter should provide enough information to support the effects analysis and the development/extent of the action area.

SUBSECTIONS

There are generally four subsections that should be included in this chapter (see below). The author should organize third tier headings in a manner that can most accurately and succinctly describe the project.

- 3.1 Project Area and Sequencing**
- 3.2 Interdependent and Interrelated Actions**
- 3.3 Mitigation and Monitoring**
- 3.4 Action Area**

INFORMATION TO INCLUDE IN THIS SECTION

The **Project Area and Sequencing** discussion should include:

- A brief overview of the project and anticipated construction sequencing.
- Construction techniques (e.g., general equipment, staging areas, location of project elements, and project element specifics.
- Project elements called out and included in details as needed. For example: Third tier headings could include storm water collection and treatment, in-water work, vegetative clearing.
- A project schedule focuses on providing detail where needed (e.g., in-water work would occur for a duration of 2 months within the designated in-water work window). If construction timing is not used for avoidance or results in affects, this information is less critical.
- Figures as needed to adequately convey the project area and components.

Helpful Hints:

This section should focus on describing the project elements as they relate to effects on species/critical habitat.

The type of information and level of detail provided should be related to the extent and duration of effects (i.e., exposure).

Helpful Hint:

If project details are still in flux at the time of BA preparation, include “sideboards” or conservative assumptions to describe project components and evaluate effects.

For example: The exact staging area location may not be identified; however, it can be phrased as follows: “Staging areas will be located at least 200 feet from the creek and will not require the removal of woody vegetation.”
Then follow up with a relevant construction specification!

Interrelated and Interdependent Actions subsection should include:

- A description of actions that are either related to or dependent on (i.e., “but for”) the “federal action” for justification.
- The relationship of the proposed action to any interdependent and/or interrelated actions.
- A description that commiserates with the affects that the action will have on species and/or critical habitat.

The analysis of whether other activities are interrelated to, or interdependent with, the proposed action under consultation should be conducted by applying a “but for” test. The BA author should ask whether another activity in question would occur “but for” the proposed action under consultation. *If the answer is “no”—that the activity in question would not occur but for the proposed action—then the activity is interrelated or interdependent and should be analyzed with the effects of the action. If the answer is “yes,” then the activity is not interdependent or interrelated and would not be analyzed with the effects of the action under consultation.*

Important Note:

It is not always important to distinguish between an interrelated and interdependent action. However, it is important to include these actions in the Action Area and to evaluate the affects of these elements.

The **Mitigation and Monitoring** subsection should include:

- Any proposed beneficial components of the project intended as offsetting actions for unavoidable potential adverse effects or as enhancement opportunities; i.e., in-stream habitat enhancements, riparian plantings, fish passage improvements, wetland creation, restoration or enhancements, etc.
- A description of mitigation actions, monitoring, or additional measures that are required by other regulatory mechanisms as part of the proposed action (i.e., Corps wetland mitigation).

The **Action Area** subsection should include:

- The geographic extent of physical, biological, and chemical impacts of the project in the action area (including interrelated, interdependent, and mitigation elements).
- A rationale for developing the action area (e.g., downstream effects on water quality, X number of feet with higher than baseline noise).
- A figure depicting the action area with call outs showing pathways (if applicable).

Don't Forget:

- The action area is defined as: "...all areas to be affected directly and indirectly by the federal action, and not merely the immediate area involved in the action (ESA 50 CFR 17.11)."
- The action area is almost always larger than the project area and sometimes greater than the project vicinity.
- The action area is not necessarily species-specific. Appropriate action area determination often will identify which species and habitats should be included in the document. (How do you know what species may be effected if you do not know the extent of your effect?)



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SECTION 4.0 Natural History and Species Occurrence

INTENT

The intent of this section is to provide an overview of the species natural history and occurrence within the action area. This section is intended to focus on the presence/absence of the species and/or critical habitat within the action area. Section 5.0, Environmental Baseline, is the section where site-specific habitat/ecosystem information and relationship is provided.

Although it is important to provide some general information on the species life cycles and needs, the focus of this section should be the critical habitat elements and species life cycles that are germane to the specific project. For example, if the proposed action is *not* going to affect salmon spawning habitat, it is not necessary to provide detailed discussion of the conditions necessary for spawning.

Conversely, if the project action is going to affect salmon migration (e.g., delay) or proposes in-water timing as minimization measures, it would be important to document timings of the runs specific to the action area, as well as affects to other life cycles (e.g., upstream spawning).

Important Note:

Provide general species status, additional critical habitat information, and general biological requirements as an Appendix. Remember that the Services are the experts on the species – information in the BA should be new or project-specific only.

SUBSECTIONS

The subsections can be organized in a manner that is most effective given the project specifics. The section should be organized in one of two ways (listed below). It is acceptable to group species (i.e., salmonids) with similar natural histories and biological requirements together.

4.1 Species X

- 4.1.1 Site-Specific Biological Requirements and Context
- 4.1.2 Site-Specific Critical Habitat Context
- 4.1.3 Site-Specific Limiting Factors for Recovery

4.2 Species Y

- 4.1.1 Site-Specific Biological Requirements and Context
- 4.1.2 Site-Specific Critical Habitat Context
- 4.1.3 Site-Specific Limiting Factors for Recovery

OR

4.1 Site-Specific Biological Requirements and Context

- 4.1.1 Species X
- 4.1.2 Species Y



4.2 Site-Specific Critical Habitat Context

4.2.1 Species X

4.2.2 Species Y

4.3 Site-Specific Limiting Factors for Recovery

4.2.1 Species X

4.2.2 Species Y

Helpful Hint:

This section can rely extensively on cross-referencing existing documents (e.g., Federal Register) if appropriate.

INFORMATION TO INCLUDE IN THIS SECTION

This section should include information on specific populations of the listed species potentially occurring in the project or action area. Include as much information as possible on the status of the local populations being evaluated. The **Site-Specific Biological Context** subsection should include the following:

- Appropriate information on the species' life history (e.g., the species habitat use within the action area for nesting, foraging, etc.).
- Distribution of species within the action area (and watershed or habitat unit, as appropriate).
- Local population estimates.
- Timing of species use of the action area (e.g., present from April to September).
- Include any information about ongoing monitoring efforts with respect to local population. This can include monitoring results or can be tied into conservation measures as a mechanism for evaluating success or failure of these measures.

Helpful Hint:

ODFW, NMFS, USFWS, or local land management biologists are good sources of site-specific species and habitat information.

Important Note:

When affected species and populations have been identified, the Services consider the relative status of the listed species, as well as the status of populations in the action area. This may include parameters of abundance, distribution, and trends in both. The final rule, which lists the species and designates critical habitat, is a good example of this type of information. Species' status reviews and factors of decline reports may also provide relevant information for this section.



- The **Site-Specific Critical Habitat** subsection should include the presence or absence of designated critical habitat.

If the project is within designated critical habitat, the BA should include:

- The extent of designated critical habitat.
- Reference to the specific unit(s) of critical habitat.
- The primary constituent elements identified in the final rule, and any activities identified as having the potential for altering the primary constituent elements.
- An assessment of the condition of the primary constituent elements (PCEs) present within the action area.

Important Note:

The BA should focus on discussion of critical habitat that would be affected by the proposed action. For example: If the action area includes designated bird nesting habitat but no vegetation will be removed, the BA does not need to provide detailed discussion of the nesting PCEs related to vegetation. Remember to keep it relevant to the discussion and maintain the thread of logic.

The **Site-Specific Limiting Factors for Recovery** subsection should include:

- Any available information on the limiting factors for the recovery of listed species affected by the proposed project.
- An assessment of current pressures or new threats that were not considered when a species was first listed but can threaten its continued existence. For example: The zebra mussel, an exotic species threatening native mussel fauna throughout its range, wasn't considered when most native mussels were listed.

Important Notes:

- Also important to consider are historical pressures or reasons for listing a species or designating critical habitat. For example, a species listed because of commercial exploitation may be less sensitive to habitat loss than a species listed because of habitat loss.
- It is important in the effects section to provide a relationship between this information and to the effects of the proposed action. For example, further degrading a limiting factor (e.g., spawning habitat) may have a greater impact on a listed species than the removal of a small number of trees in a heavily forested area, which is not a limiting factor for the species.

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SECTION 5.0 Environmental Baseline

INTENT

The intent of this section is to provide a summary of baseline habitat conditions that affect the species. This section presents an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem **within the action area**.

The discussion of environmental baseline conditions should focus on factors that are part of the biological requirements of the species being addressed. However, more distant linkages to the biological requirements of the species being reviewed should not be omitted. For example, biological requirements of prey species may be important to include, especially in situations where prey resources may be a limiting factor.

This information will then be used in Section 6.0, Analysis of the Effect of the Action, as the effects of the proposed action should be evaluated against baseline conditions. The habitat description should focus on habitat elements that would be affected by the proposed action and the level of detail should be commensurate with the extent of effects. If the proposed action would not affect the habitat element, then this can be stated in the appropriate subsection.

Important Note:

The environmental baseline is a “snapshot” of a species’ health at a specified point in time. It does not include the effects of the action under review in the consultation. Only include environmental baseline information regarding past or present activities that influence the project or action area

Don't Forget:

This is the author’s opportunity to establish the basis for the effects analysis. Be sure to include the data that will be needed later, while establishing the determination of effect.

SUBSECTIONS

The following subsections with appropriate third tiers have been developed to allow for template use for fish, terrestrial, and plant species. Subsections 5.2 through 5.4 should be deleted if not applicable to the BA. Under sections 5.2 through 5.4 there is a series of third tier subsections related to specific habitat conditions and pathways. A list of these are provided in the “information to include” section.

- 5.1 Existing Baseline Conditions**
- 5.2 Fish Species**
- 5.3 Terrestrial Species**
- 5.4 Plant Species**



INFORMATION TO INCLUDE IN THIS SECTION

The discussion of **Existing Baseline Conditions** needs to also focus on factors that are part of the biological requirements of the species being addressed. Focus on each subsection as it relates to the proposed project and affects. In general, the Baseline Section (including subsections) should include:

- State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation in progress. Unrelated federal actions affecting the same species or critical habitat that have completed formal or informal consultation are also part of the environmental baseline, as are federal and other actions within the action area that may benefit listed species or critical habitat.
- A description of habitat for listed or proposed species in the action area and amount of degradation that has occurred to date.
- As much specific data as is reasonably available. This would include information from habitat inventories and surveys completed in the action area or project area and what methods were used.
- A description of the critical habitat and level of degradation if the action area includes these for the listed species.
- Maps and figures of specific relevant biological features in relationship to the proposed action (project and action areas).
- Photographs whenever possible to assist in describing the environmental baseline conditions. This would include key features of the environmental baseline within the project and action areas.

Important Notes:

- Statements about baseline conditions should be supported by data or scientific rationale, including site surveys and previous scientific papers.
- This section is important for setting the context for the effects discussion, which should be consistent. For example: An inconsistency would be if the baseline conditions state there is not suitable nesting habitat in the action area, but the effects section states that nesting activity would be affected.

In the **Fish Species** subsection the following should be included:

- A description (by individual section) of:
 - Water quality
 - Habitat access and connectivity
 - Habitat elements
 - Channel characteristics and dynamics
 - Flow/hydrology
 - Watershed conditions

Important Note:

Be sure to keep discussion of the baseline conditions in context. For example: Discussion of the larger watershed may not be relevant to smaller projects on tributaries.



- Additional environmental baseline condition subsections as necessary to address specific species (e.g., bull trout, suckers, etc.).
- Justification for each rating assigned, if the matrix is used (i.e., each pathway and indicator is rated as “properly functioning,” “at risk,” or “not properly functioning”). This is especially important if pathways or indicators have been modified to more appropriately reflect the action area.

Helpful Hint:

One approach to discussing baseline conditions is described in the “Habitat Approach” document developed by NMFS. The Habitat Approach builds on the “Matrix of Pathways and Indicators” (Matrix Paper). Both NMFS and USFWS have developed matrices for assessing and documenting environmental baseline conditions in the action area. Currently these matrices focus on forested watersheds; however, additional matrices are currently under development for a variety of habitats.

For **Terrestrial Species** the following should be included:

- A description (by individual section) of:
 - Habitat elements necessary to provide shelter
 - Habitat elements and conditions necessary for feeding
 - Habitat conditions necessary for species reproduction
 - Habitat connectivity and migration (including migration corridors)
- Additional environmental baseline condition subsections as necessary for additional species (Bald Eagle, Marbled Murrelet, etc.).
- Discussion of Critical Habitat.

Helpful Hint:

For terrestrial species, a watershed may not be the best habitat unit for this section. The BA author should consider other geographic extents such as proximity to foraging areas (e.g., bald eagle) or contiguous habitat area.

Don't Forget:

It is important to include discussion of the habitat elements as they relate to overall species viability, both at the action area and at a larger scale. Because a “standard” protocol (i.e., Matrix of Pathways) is not available for terrestrial species (and plants) the author must develop the pathways that affect the overall viability of the species.

For **Plant Species** the following information should be included:

- A description (by individual section) of:
 - Habitat and vegetative community associations

- Soil conditions necessary to support plants
- Hydrologic conditions necessary for species
- Pollinators or specific reproductive measures necessary for species propagation
- Additional environmental baseline condition subsections as necessary for additional species (e.g., risk of collection).

Helpful Hint:

For plant species, a watershed may not be the best habitat unit for this section. Instead consider the Willamette Valley or other ecoregions.

Important Note:

Because the USFWS does not issue take for plant species, the Services will evaluate whether the proposed action will jeopardize the continued existence of the species. As a result, it is important to include information on the extent of the species that will allow the USFWS to make this determination (i.e., the analysis should focus on the relationship of the site population to larger populations). Conversely, the Oregon Department of Agriculture (ODA) evaluates the affects based on the population (not species).

EXAMPLE LANGUAGE

5.2 Fish Species

The [insert river name] originates on the [replicate following as available information allows and as checklist below applies: “western slope of the Blue Mountains province and flows in a westerly direction through the Columbia River province until it enters the Columbia at Umatilla, Oregon. Its course takes it through several different management areas, including US Forest Service (USFS) land, the Umatilla Indian Reservation, and private agricultural land. The area where the proposed project occurs is within the Columbia River province (Franklin, 1973). The Columbia River province is characterized by grass/steppe vegetation, warm summers, and cold winters. Streams in the Columbia River province tend to be alkaline in nature, subject to elevated temperatures in the summer and cold in the winter with the possibility of anchor ice forming.”]

Vegetation assemblages found in the [insert watershed name] watershed include [insert vegetation communities (i.e., deciduous forest, coniferous forest, grasslands and riparian communities)]. The riparian corridor at the project site consists of [insert list of plant species]. [Describe habitat elements per Table 1.] [Describe relevant game and nongame fish and wildlife species and habitat features.]

The [insert the reach name] reach of the [insert river name] River, which includes the project site, [is/is not] currently listed on the Oregon Department of Environmental Quality (DEQ) 303(d) List of Water Quality Limited Water Bodies. DEQ-listed water quality problems identified in the project area include [insert deficient criteria, if any] (DEQ 1999). [Describe water quality indicators in the watershed per Table 1.]

[Describe hydrology of project stream(s) and channel condition and dynamics per Table 1. If relevant to the proposed action, describe condition of impervious surface in the watershed/subbasin.]

The ODFW defined in-water work period for the [insert river name], including the project site, is [insert start date] to [insert ending date] (ODFW 2000).

Table 1. Checklist for Documenting Environmental Baseline of Proposed Actions on Relevant Indicators NMFS 1996) for the [insert ESU and species name].

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE
Water Quality	
Temperature	Properly or Not Properly Functioning
Sediment/Turbidity	Properly or Not Properly Functioning
Chemical Contamination	Properly or Not Properly Functioning
Habitat Access	
Physical Barriers	Properly or Not Properly Functioning
Habitat Elements	
Substrate	Properly or Not Properly Functioning
Large Wood	Properly or Not Properly Functioning
Pool Frequency	Properly or Not Properly Functioning
Pool Quality	Properly or Not Properly Functioning
Off-Channel Habitat	Properly or Not Properly Functioning
Refugia	Properly or Not Properly Functioning
Channel Condition and Dynamics	
Width/Depth Ratio	Properly or Not Properly Functioning
Streambank Condition	Properly or Not Properly Functioning
Floodplain Connectivity	Properly or Not Properly Functioning
Flow/Hydrology	
Peak/Base Flows	Properly or Not Properly Functioning
Drainage Network Increase	Properly or Not Properly Functioning
Watershed Conditions	
Road Density & Location	Properly or Not Properly Functioning
Disturbance History	Properly or Not Properly Functioning
Riparian Reserves	Properly or Not Properly Functioning

Important Note:

The above table is an example of a table used for bull trout— revise as necessary for your project. Edit the baseline column as appropriate to reflect function and effect (properly functioning or not properly functioning). Summarizing supporting data, where appropriate, in the table is recommended.

The checklist for documenting environmental baseline of proposed actions on relevant indicators (adapted from USFWS 1998) for the Distinct Population Segments of bull trout in Oregon may be different than NOAA-regulated species checklists. Refer to USFWS for these checklists.



SECTION 6.0 Analysis of Effect of the Action

INTENT

This section includes an analysis of the direct and indirect effects of the proposed action (along with interrelated and interdependent actions) on the species and/or critical habitat and its interrelated and interdependent activities. Factors to be considered in the analysis include proximity of the action, distribution, timing, nature of the effect, duration, and disturbance frequency, intensity, and severity.

As the analysis of effects narrative is developed, keep in mind that this section is the basis for the finding of effect or effects determination in Section 8.0. Review the outline for that section prior to writing this section. There should be a logical flow from the analysis of effect to the effects determination(s).

Important Note:

Remember that a “not likely to adversely affect” (NLAA) determination must be supported with an analysis of effects with no short-term or long-term adverse effects to the ESA-listed specie(s) and critical habitat(s). Otherwise the finding of effect should be “likely to adversely affect” (LAA).

This section should include a description of how effects from the proposed action would alter the environmental baseline (described in Section 5.0). A logical framework, such as the Habitat Approach and the Matrix of Pathways and Indicators should be used, or an alternate analytical framework should be used as appropriate. Effects from the proposed action should be assessed for each of the pathways and indicators. Ratings such as maintain, restore, or degrade should be used to indicate effects on the environmental baseline.

If critical habitat is proposed or designated, discuss effects of the action on essential elements [PCE ...] of critical habitat (e.g., cover or shelter, sites for breeding, reproduction, and rearing, etc.). An effects determination must be made for designated critical habitat. These effects can be associated with the discussion of effects on the species, if appropriate. However, a separate effects determination must be made for each species and any designated critical habitat.

SUBSECTIONS

There are several subsections within this section (listed below). Under Direct and Indirect effects (6.1 and 6.2), species/groups and/or critical habitat should be presented separately. It is acceptable to either include as subsections under Direct and Indirect the effects discussion by project element (e.g., effects of construction, effects of storm water) then species, or species then project element.

- 6.1 Direct Effects**
- 6.2 Indirect Effects**
- 6.3 Effect of the Proposed Action on Tribal Resources or Interests**
- 6.4 Estimating Take**
- 6.5 Cumulative Effects**

INFORMATION TO INCLUDE IN THIS SECTION

Both the Direct and Indirect Effects sections should include effects of the proposed action on the species or its critical habitat. The discussion should include:

- Nature of the Effect
- Timing of the Effect
- Proximity of the Effect
- Duration of the Effect
- Disturbance Frequency
- Disturbance Intensity
- Disturbance Severity
- Distribution of the Effects

Don't Forget:

- Indirect effects are defined as those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur.
- Direct effects are the direct or immediate effects of the project on the species or its habitat.
- Beneficial effects should be included in the effects discussion.

The **Direct Effects** subsection should include the direct or immediate effects of the project on the species or its habitat (e.g., driving an off-road vehicle through the nesting habitat of an endangered mouse). Direct effects include all immediate impacts (adverse and beneficial) from project-related actions. According to ESA rules and regulations, direct effects occur at or very close to the time of the action itself. Examples could include construction noise disturbance, loss of habitat, or sedimentation that results from construction activity.

Start this section with a description of likely effects on each species and designated critical habitat. Discuss the following as appropriate: temporal and spatial limits of effects, species tolerances, severity of effect, mortality and other forms of “take” (i.e., harm, harass, capture, etc.), and habitat loss. If the project is likely to have many potential effects to ESA-listed species or critical habitat elements, start with an introductory paragraph listing the specific effects to be discussed in detail in the subsequent paragraphs. Detailed guidance on each of these topics can be found in Section 7 of the ESA.

Important Note:

This is not the time to introduce new data. Information has been presented in the project description (Section 3), species abundance and needs (Section 4) and baseline conditions (Section 5) – this section should tie it all together.

The **Indirect Effects** subsection should include effects that are caused by or resulting from the proposed action, are later in time, and are reasonably certain to occur. For example, predators may follow ORV tracks into piping plover nesting habitat and destroy nests; people moving into the housing unit bring cats that prey on the mice left in the adjacent habitat. Indirect effects may occur outside the area directly affected by the action (and should be considered in the Action Area). Indirect effects may include other federal actions that have not undergone consultation as outlined in Section 7 of the ESA, but will result from the action under consideration.



Guidance Related to Effect Discussions

- Include Conservation Measures

As part of the project description, discuss the relationship of the specific conservation measures introduced that serve to avoid or minimize potential effects to ESA-listed species and critical habitat elements. Typically these measures include avoidance or preservation measures of some kind; for example, timing restrictions or buffers around sensitive habitat types and habitat features that are important to sensitive species. Best Management Practices (BMPs) are methods, facilities, built elements, and techniques implemented or installed during project construction to reduce short- and long-term project-related impacts. ODOT has developed specification language that act as conservation measures (see Section 7.0, Avoidance, Minimization, and Conservation Measures).

- Describing the Effects on Storm Water

Storm water effects are often difficult to analyze. Review and understand the NMFS' HCD Storm Water Online Guidance for ESA Guidance for Analyzing Storm Water effect prior to writing the storm water effects to either water quality or water quantity, available at http://www.nwr.noaa.gov/1habcon/habweb/habguide/stormwater_032003.pdf. If the project results in a "not likely to adversely effect" finding for storm water, it is strongly recommended that an appropriate dichotomous key be used to document findings for likely storm water effects to water quality and water quantity. Include this documentation in the BA (perhaps as an appendix) to facilitate review at the Services.

- Describing the Effects of Elevated Noise and Visual Disturbance

Noise and visual effects that may result in harassment of terrestrial species are often difficult to analyze. If harassment caused by noise or visual activity are potential issues for the proposed project, provide basic information on the activity; the baseline level of noise or visual activity; and the proximity to known nests, denning or fawning areas, or the occupied or suitable unsurveyed habitat. Any information on the decibel levels expected and the noise abating or visual screening characteristics of the area are also valuable for analyzing noise effects.

- Describing Effects on Plants

As described earlier, because incidental take does not generally apply to listed plants, a BA and BO are conducted to analyze the likelihood that a proposed action may jeopardize a species or adversely modify or destroy designated critical habitat. Thus, the analysis should be made at multiple scales that draw the connection from the project effects at the local scale to the species scale. For example, how do the X number of plants being lost from the project fit into the local population and how does the local population fit into the matrix of populations within the Willamette Valley (i.e., is the local population a critical link between other populations?).



For the **Effect of the Proposed Action on Tribal Resources or Interests** subsection information should be included that summarizes the discussion with the Tribes relevant to the proposed action.

The **Estimating Take** Subsection should include:

- A discussion of project elements that could cause take (e.g., project area isolation and fish handling).
- How and where take will likely occur in association with the proposed action.
- Estimate of take, including rationale for developing take number.
- List of resources (e.g., data, personal communication) used to estimate take.
- Distinguish between harm, harassment, etc., as appropriate.

Delineating the extent of take is important because if take occurs outside of the area identified in the BA, the Federal Agency (e.g., FHWA) may not have adequate incidental take coverage for that element of the project. This also allows the Services to provide take coverage utilizing a surrogate for “unquantifiable take” associated with effects due to construction. A description of the habitat loss, either temporary or permanent (i.e., length of stream habitat affected, acres of riparian impacts, etc.), can also be used as surrogates for take, assisting the Services with accurate take estimates. Information that should be included in the BA to help with this estimate might include square feet or acreage of stream channel disturbance, square feet or acres of riparian habitat lost due to impacts, square feet or acres of new impervious surface, linear feet and area of armored bank, expected extent of turbidity, etc.

ESA Section 7 regulations require the federal action agency provide an analysis of cumulative effects, along with other information, when requesting initiation of formal consultation. The **Cumulative Effects** subsection should include the following information:

- A list of all “nonfederal” actions reasonably certain to occur in the foreseeable future within the Action Area. This includes state, local, private, and tribal actions (e.g., residential developments, watershed enhancement, etc.);
- If there are multiple listed species with very similar biology and the cumulative effects on those species are likely to be the same (such as UWR Chinook Salmon and UWR Steelhead), the species may be grouped together for efficiency rather than repeat the same effects analysis over and over for each species. If the cumulative effects will be different, those differences need to be clearly identified by species.

Important Note:

The cumulative affects are merely presented in the BA; the affects of cumulative actions are not to be included as part of the finding of effect.



Important Note:

Regarding the use of best scientific and commercially available data: The Act requires the action agency provide the best scientific and commercial data available concerning the impact of the proposed project on listed species or designated critical habitat. If relevant data are known to be available to the agency or will be available as the result of ongoing or imminent studies, the Services should request those data and any other analyses required by the regulations, or suggest that consultation be postponed until those data or analyses are available. Where significant data gaps exist, there are two options: 1) if the action agency concurs, extend the due date of the biological opinion until sufficient information is developed for a more complete analysis; or 2) develop the biological opinion with the available information giving the benefit of the doubt to the species.

Giving the benefit of doubt to the species is often called the precautionary principle. If information is not available or is not provided to the Services, the precautionary principle will be applied. To avoid delays and maximize the ability of the Services to complete consultation, the action agency or BA preparer should include as much up-to-date information as possible when analyzing the potential effects to listed species.



EXAMPLE LANGUAGE

6.1 Direct Effects

Table 2. Checklist for Documenting Environmental Baseline and Effects of Proposed Actions on Relevant Indicators (NOAA Fisheries 1996) for the [insert ESU and species name] ESU.

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE	EFFECTS OF THE ACTION(S)*
Water Quality		
Temperature	Properly or Not Properly Functioning	Degrade Maintain Restore
Sediment/Turbidity	Properly or Not Properly Functioning	Degrade Maintain Restore
Chemical Contamination	Properly or Not Properly Functioning	Degrade Maintain Restore
Habitat Access		
Physical Barriers	Properly or Not Properly Functioning	Degrade Maintain Restore
Habitat Elements		
Substrate	Properly or Not Properly Functioning	Degrade Maintain Restore
Large Wood	Properly or Not Properly Functioning	Degrade Maintain Restore
Pool Frequency	Properly or Not Properly Functioning	Degrade Maintain Restore
Pool Quality	Properly or Not Properly Functioning	Degrade Maintain Restore
Off-Channel Habitat	Properly or Not Properly Functioning	Degrade Maintain Restore
Refugia	Properly or Not Properly Functioning	Degrade Maintain Restore
Channel Condition and Dynamics		
Width/Depth Ratio	Properly or Not Properly Functioning	Degrade Maintain Restore
Streambank Condition	Properly or Not Properly Functioning	Degrade Maintain Restore
Floodplain Connectivity	Properly or Not Properly Functioning	Degrade Maintain Restore
Flow/Hydrology		
Peak/Base Flows	Properly or Not Properly Functioning	Degrade Maintain Restore
Drainage Network Increase	Properly or Not Properly Functioning	Degrade Maintain Restore
Watershed Conditions		
Road Density and Location	Properly or Not Properly Functioning	Degrade Maintain Restore
Disturbance History	Properly or Not Properly Functioning	Degrade Maintain Restore
Riparian Reserves	Properly or Not Properly Functioning	Degrade Maintain Restore

* Definitions of Effects of the Action(s):

- Restore = system-wide beneficial effect
- Maintain(+) = localized benefit; no system-wide effect
- Maintain(-) = localized, temporary impact; no system-wide effect
- Maintain = no localized, temporary, or system-wide effect
- Degrade = system wide impact



EXAMPLE LANGUAGE

6.4 Estimating Take

Type of Project: Culvert replacement

ESA-Listed Species Present: Upper Willamette River Chinook salmon

Stream: Camp Creek tributary to the McKenzie River

Dewatered Section: 250 feet

Habitat Types: 60 feet of pool habitat and 190 feet of riffle habitat

In this example, a culvert needs to be replaced and 250 feet of stream channel will need to be dewatered with the fish salvaged via electrofishing. Using StreamNet, it was determined that Camp Creek is 7 miles long and has a Chinook smolt capacity of 15,251. On the average, this works out to 2,179 smolts per mile. The amount of stream that will be dewatered is 250 feet or 0.05 mile. This makes the potential Chinook smolt capacity for the dewatered section of stream 103 Chinook salmon. This information provides a rough estimate of Chinook salmon numbers that could be in the work area.

ODFW was then contacted to receive specific information about Chinook salmon in Camp Creek. Questions asked included:

- Do you feel Camp Creek is fully seeded or underseeded?
- Which habitat types do Chinook salmon use during the summer?
- Are there expected temperature issues that may limit Chinook salmon use or distribution in the area during this period?

(provide answers to the above in the BA)

These questions helped refine the estimate achieved based on the original StreamNet data. While rearing in the summer Chinook salmon prefer cooler pool-type habitat over riffle or fast water habitat types. It is expected that most Chinook salmon on this project site would utilize the 60 feet of pool habitat, with perhaps a few Chinook salmon in the riffle habitat. This brings the estimate to 25 Chinook salmon for the pool habitat within the work area.

Because of temperature and stress during electrofishing, a general guideline of five percent lethal take is usually expected. Most lethal take is from delayed mortality and will not be known at the time of fish release. This brings the take estimate to 25 Chinook salmon (2 lethal and 24 nonlethal).

Example of information gathered from StreamNet.org

Reach No.:	1709000408200.00	Name:	Camp Cr
From:	Mouth	To:	Wegner Cr
Length:	7.0 mi	Width:	12.0 ft
<hr/>			
Species:	Chinook salmon	Run:	Spring
Percent Present:	100%		
Smolt Capacity:	15,251		
Use Type:	Spawning and rearing		
Habitat Quality:	Fair		
<hr/>			
Major Habitat Constraints:	Flow Levels Low (Dewatering) High Temperatures		



SECTION 7.0 Avoidance, Minimization, and Conservation Measures

INTENT

This section is intended to summarize how ODOT will be enforcing the application of the avoidance, minimization, and conservation measures during the project. The BA author should have already introduced most or all of these avoidance, minimization, and conservation measures in the project description and included these in the analysis of effects.

This is where the avoidance, minimization, and conservation measures are listed comprehensively so that they can be reflected in contract language. This is also the section that shows how ODOT will be enforcing these measures. When presented as a comprehensive list, it allows the ODOT Service liaisons to easily include these in the Biological Opinion as needed.

SUBSECTIONS

The following subsections should be included in this section:

- 7.1 **Standard Specifications**
- 7.2 **Amendments to Standard Specifications**
- 7.3 **Noncontractual Obligations and Agreements**
- 7.4 **Summary of Avoidance, Minimization, and Conservation Measures**

INFORMATION TO INCLUDE IN THIS SECTION

The following information should be included in this section:

- A list of applicable ODOT specifications (<http://www.odot.state.or.us/tsspecs/index.htm>),
- A list of applicable Special Provisions (i.e., Amendments to the Standard Specifications) (<http://www.odot.state.or.us/tsspecs/02specials/updates/3-24-05/sp290.pdf>).

Contact an ODOT Biologist or ODOT Specifications Unit for up-to-date environmental special provision language.

A summary of noncontractual obligations and agreements should be included. Non-contractual obligations are items that ODOT *will* complete (i.e., not performed by contractor). Outline and summarize agreements made internally within ODOT, as well as obligations or agreements between ODOT and ODFW, DEQ, or USACE. This could include monitoring and review of documents, such as a revised Erosion and Sediment Control Plan (ESCP), planting plans, etc.

Important Notes:

- Do not place any agreements or contractual obligations in this section that need to be implemented by the contractor via the contract documentation (plans and specifications).
- Do not confuse “noncontractual obligations” as discretionary.
- Verify that contractual obligations (e.g., specs) actually make it into the project specifications. It would be unfortunate if commitments made to the Services were not implemented.



A summary of all avoidance, minimization, and conservation measures should be provided in this section. They should also have been presented in Sections 3.0 and 6.0 as a bulleted list of the measures (e.g., vegetation will be cleared during nonnesting season).

EXAMPLE LANGUAGE

Avoidance, minimization, and conservation measures are intended to minimize or avoid environmental impacts to listed species or critical habitat. Avoidance, minimization, and conservation measures for this project will follow practices outlined in ODOT's Standard Specifications for Highway Construction (2002) Section 00290.00 Environmental Protection and the Supplemental Standard Specifications for Highway Construction (1998). Standard Specifications will be amended in the Special Provisions for the project to include additional conservation measures as they appear in Section 7.2 of this document.

Additional avoidance, minimization, and conservation measures may be agreed upon by state and federal government representatives, as conditions of the resulting federal Letter of Concurrence or Biological Opinion. Failure to meet these conditions may have repercussions to the project. These measures will be incorporated into the contract document and will be treated as noncontractual obligations (Section 7.3) for ODOT.

7.1 Standard Specifications

Section 00280 – Erosion and Sediment Control

This section requires Contractor to implement ODOT's Erosion and Sediment Control Plan (ESCP) developed to comply with federal, state, and local laws, rules, and regulations, and the National Pollution Discharge Elimination System (NPDES) General Construction Permit regarding erosion prevention and sediment control for on-site construction activities. Typically included in this section are soil and slope protection and stabilization measures, and site restoration specifications, including planting materials and methods.

Section 00290 – Environmental Protection

This section directs the Contractor to implement measures and comply with laws and regulations designed to protect sensitive environmental resources. This section addresses hazardous waste and hazardous substances (00290.20); minimum required measures (00290.30); protection of fish, wildlife, and plants (00290.31); protection of wetlands (00290.41); and protection of sensitive cultural sites (00290.51); as well as other applicable safety, health, and human resources issues.

Section 00320 – Clearing and Grubbing

This section directs the Contractor on clearing operations (00320.40), including clearing, preserving, and trimming trees and other vegetation, as well as grubbing operations (00320.41), including providing limits on the Contractor's area of approved activity and scope of actions.



This section provides protection to vegetation both within and outside of the approved work areas.

Section 01040 – Planting

This section provides the Contractor with guidelines for furnishing, planting, and establishing specified plant materials in planting areas shown or directed in the project plans. This section includes directions for specific planting seasons, layout, and preparation of planting areas. In addition, it includes preparation of planting materials and requirements for establishment to ensure satisfactory growth and survival.

7.3 Noncontractual Obligations and Agreements

Prior to the preconstruction conference, environmental inspection staff shall review the ESCP and Pollution Control Plan PCP, and additional containment measures.

A copy of the Biological Assessment and Biological Opinion will be available at the Construction Project Manager's field office.



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SECTION 8.0 Finding of Effect

INTENT

The intent of this section is to provide an effect determination or “finding of effect” for each listed species and designated critical habitat. The determinations should reflect the analysis provided in Section 6.0. The BA author should include a thread of logic that ties the effects determination with all of the other information presented throughout the document. In this section, it is important to justify why the effects determination was reached.

Helpful Hint:

Reviewers at the Services often read the finding of effect section first. They then review the document with the expectation that all the information presented will ultimately support this determination. Try writing this section first, and then develop the other sections in support of the finding.

SUBSECTIONS

A subsection should be added for each species and each designated critical habitat present within the project area.

8.1 Species X

8.2 Species Y

8.3 Critical Habitat X

8.4 Critical Habitat Y

Helpful Hint:

- If you have multiple listed species with very similar biology and the effect determination is the same; the species can be grouped together for efficiency rather than repeat the same effects determination over and over for each species.
- If the species biology or project effects will be different, those differences need to be clearly identified by species.

INFORMATION TO INCLUDE IN THIS SECTION

This section should include a finding of effect for each listed species and designated critical habitat. The effects determination should be one of the following:

- **No Effect (NE):** This term means literally no effect whatsoever to the listed species or designated critical habitat. If the determination of No Effect is reached, a full BA should not be written, as a No Effect Memo may suffice.
- **May Affect, Not Likely to Adversely Affect (NLAA):** Effects to the listed species or designated critical habitat are insignificant and/or discountable. A determination of NLAA would also be made for those activities that have only a beneficial effect with no short- or long-term adverse effects.



- **Likely to Adversely Affect (LAA):** Effects to the listed species or designated critical habitat will result in a short -or long-term incidental take of the listed species or designated critical habitat. Definitive thresholds or triggers that result in an LAA determination of effect may include but are not limited to actions that involve salvage and rescue of listed fish or any incidental take associated with the project. This determination is appropriate if any adverse effects may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial.

Important Note:

Insignificant Effects are defined as effects that should never reach the scale where take occurs.

Discountable Effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur.

EXAMPLE LANGUAGE

8.1 Species X

The following is an example of NLAA species determination. [Edit accordingly](#)

After evaluating the potential effects (Table 2), ODOT Environmental Services concludes that the proposed actions described for the [\[insert project name\]](#) Project would result in a negligible probability of “take” for [\[insert ESU/DPS species name\]](#). Although this species is present at the project site, the proposed action will not “hinder the attainment of relevant functioning indicators” as defined in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). Thereby, we find a determination of **may affect, not likely to adversely affect** with regard to this ESU. [\[List justifications for determination\]](#).

The following is an example of NLAA critical habitat determination. [Edit or delete accordingly.](#)

This proposed action **may affect, but would not likely adversely modify** the proposed critical habitat of the [\[insert ESU name species name\]](#). The proposed conservation measures would limit any potential project-related effects to the project vicinity. Any impacts would be temporary and would not result in a net change in function of the existing riparian habitat. [\[List justifications for determination\]](#).

The following is an example of LAA species determination. [Edit or delete accordingly.](#)

After evaluating the potential effects (Table 2), ODOT Environmental Services concludes that the project elements described for the [\[insert project name\]](#) Project would result in a more than negligible probability of “take” for [\[insert ESU/DPS species name\]](#). Although the project may result



in short-term adverse effects in the action area, the project will not “hinder the attainment of relevant functioning indicators” as defined in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). Thereby, we find a determination of **may affect, likely to adversely affect** with regard to this [insert ESU/DPS species name]. The project will likely affect [insert ESU/DPS species name] by trapping juvenile Salmonids in the work isolation areas and by creating minor, short-term turbidity within [water body name]. The proposed project may affect [insert ESU/DPS species name] through minor short-term downstream effects such as turbidity or displacement within [water body name]. [List justifications for determination.]

Following is an example of LAA critical habitat determination. Edit or delete accordingly.

After evaluating the potential effects (Table 2), ODOT Environmental Services concludes that the project elements described for the [insert project name] **Project may affect, but is not likely to destroy or adversely modify** designated critical habitat. Adverse effects associated with this project would be temporary and would not result in any net change in function of the existing riparian habitat. [List justifications for determination.]

Due to this finding of effect, ODOT is requesting initiation of [informal/formal] consultation [include “and conferencing” if proposed critical habitat] in accordance with Section 7 of the ESA.

[Add a request for take statement if LAA determination.]

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SECTION 9.0 Essential Fish Habitat (EFH) Consultation

INTENT

The intent of this section is to outline and document the EFH consultation under the Magnuson-Stevens Act, and the requirement that federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency, that may adversely affect EFH. NMFS shall provide conservation recommendations for any federal or state activity that may adversely affect EFH.

EFH is broadly defined by the Act (now called the Magnuson-Stevens Fishery Conservation and Management Act) to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” This language is interpreted or described in the 1997 Interim Final Rule [62 Fed. Reg. 66551, Section 600.10 Definitions]. “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include historic areas if appropriate. “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.

“Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem. “Spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle. EFH consultation is required on all coastal pelagic fish, and for noncoastal areas, on all coho, pink, and Chinook salmon, regardless of ESU status.

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH. The consultation requirements of section 305(b) of the Magnuson-Stevens Act (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NMFS shall provide conservation recommendations for any federal or state activity that may adversely affect EFH.
- Federal agencies shall, within 30 days after receiving conservation recommendations from NMFS, provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the federal agency shall explain its reasons for not following the recommendations.

SUBSECTIONS

The following subsections should be included in this section:

- 9.1 Identification of Essential Fish Habitat**
- 9.2 Analysis of Effects**
- 9.3 Conclusion**



INFORMATION TO INCLUDE IN THIS SECTION

The following information should be included in this **Identification of Essential Fish Habitat** subsection:

- Identification of relevant streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by the Pacific Fisheries Management Council (PFMC) (PFMC 1999).
- Denotation of the extent of EFH in the project area, which extends from the near shore and tidal submerged environments within state territorial waters, out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception (PFMC 1999).

The **Analysis of Effects** subsection should include:

- Analysis of the affects of the project on EFH.
- References to the effects for fish habitat in Section 6.0 if the effects to EFH will be the same as those for fish habitat described above. If EFH for a composite of groundfish or costal pelagics is being analyzed, the project effects are not likely to be the same as those for salmonids.
- Conservation measures and special provisions described in Section 7.0 that are considered adequate to prevent adverse effects on EFH.

Important Notes:

- Only effects to EFH itself should be described in the Analysis of Effects, and **not** effects to the individual fish.
- Species included in the EFH consultation are not necessarily the same as those covered in the ESA. It is important to specifically identify for which species EFH consultation is being completed.

The **Conclusion** should include the following:

- A determination that the project either **will** or **will not** adversely affect EFH.
- Justification of the conclusion.

EXAMPLE LANGUAGE

9.3 Conclusion

The conservation measures and special provisions described in this BA (Section 7.0) are considered adequate to prevent adverse effects on EFH for [insert species name here for groundfish/salmon] in this project. ODOT believes the proposed action [will not/will] adversely affect EFH for [insert ESU information here] salmon. [List justification for conclusion.]



SECTION 10.0 References

INTENT

The author of the BA and the consultant must have referenced documents on hand to provide to the Services if requested. Please keep a record or copy of all documents referenced in the BA.

INFORMATION TO INCLUDE IN THIS SECTION

References should include all information used in the preparation of the BA, including:

- Internet data collection
- Publications
- Personal communication

EXAMPLE LANGUAGE

National Marine Fisheries Service (NMFS)

- 1996 Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. Environmental and Technical Services Division, Habitat Conservation Branch.

Oregon Department of Environmental Quality (ODEQ)

- 1999 DEQ's 1998 303(d) List of Water Quality Limited Waterbodies & Oregon's Criteria Used for Listing Waterbodies. Salem, Oregon. URL:
<<http://waterquality.deq.state.or.us> >

Oregon Department of Fish and Wildlife (ODFW)

- 2000 Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources

Oregon Department of Transportation (ODOT)

- Unpublished. Project Prospectus: [\[insert project name\]](#). Oregon Department of Transportation, Salem, Oregon.
- 1998 Supplemental Standard Specifications for Highway Construction. Oregon Department of Transportation, Salem, Oregon.
- 2002 Standard Specifications for Highway Construction. Oregon Department of Transportation, Salem, Oregon.

United States Fish and Wildlife Service/National Marine Fisheries Service (USFWS/NMFS)

- 1998 Endangered Species Consultation Handbook. *Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act.* March 1998 Final. [Endangered Species Section 7 Consultation, U.S. Fish & Wildlife Service](#)



For Bull Trout Consultations:

Buchanan, D. V., M. L. Hanson, and R. M. Hooton

1997 Status of Oregon's Bull Trout. Fish Division, Oregon Department of Fish and Wildlife, Portland, OR.

United States Fish and Wildlife Service (USFWS)

1998 *A framework to Assist in Making Endangered Species Act Documentations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale.* Department of the Interior.

Oregon Department of Transportation (ODOT)

Unpublished. Project Prospectus: [insert project name]. Oregon Department of Transportation, Salem, Oregon.



SECTION C Resources

INTENT

Below is a list of resources that can be used in the development and writing of BAs.

Data Sources	Information Location
NMFS information on species, critical habitat	http://www.nwr.noaa.gov/ http://www.nwr.noaa.gov/1salmon/salmesa/crithab/CHsite.htm)
ODOT information: BAs, Guidance Documents	http://egov.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/natural_resources_unit.shtml)
NMFS' ESA habitat analytical frameworks and guidance	http://www.nwr.noaa.gov/1habcon/habweb/habguide/habpub.htm
Estimating take	<ul style="list-style-type: none"> • http://rainbow.dfw.state.or.us/nrimp/information/smoltreports.htm • http://query.streamnet.org/Request.cfm?cmd=BuildCriteria&NewQuery=BuildCriteria&Required=Run&DataCategory=21&State=4 • http://oregonstate.edu/Dept/ODFW/inforeports/98-4.pdf • http://oregonstate.edu/Dept/ODFW/freshwater/inventory/projects.html
Additional guidance for EFH analyses can be found at the NOAA Fisheries	http://www.nmfs.noaa.gov/habitat/habitatprotection/essentialfishhabitat9.htm



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SECTION D Abbreviations and Acronyms

ADT	average daily traffic
BA	Biological Assessment
BMP	best management practices
BO/BiOp	Biological Opinion
CETAS	Collaborative Environmental and Transportation Agreement on Streamlining
DEQ	Oregon Department of Environmental Quality
DPS	Distinct Population Segment
EFH	essential fish habitat
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESU	Evolutionary Significant Units
FHWA	Federal Highway Administration
FWCA	Fish and Wildlife Coordination Act
HCD	Habitat Conservation Division
LAA	likely to adversely affect
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NE	No effect
NEPA	National Environmental Policy Act
NLAA	not likely to adversely affect
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
PCE	primary constituent elements
PCP	Pollution Control Plan
PFMC	Pacific Fisheries Management Council
ROW	right-of-way
USACE/USCOE/ ACOE/COE/Corps	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service



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