Caltrans Standard Biological Assessment
and Essential Fish Habitat Assessment Template for Caltrans FESA Section 7 Consultations: National Marine Fisheries Service and U.S. Fish and Wildlife Service

June, 2020

Caltrans Division of Environmental Analysis, Office of Biology

Template Introduction and Instructions

The first three pages contain information and guidance text that should be omitted from the final document.

Questions and comments regarding this template should be forwarded to Chris Pincetich, (916) 653-6121, or christopher.pincetich@dot.ca.gov of the Biological Studies Office or to any member of the Caltrans Biological Consultancy Group (BCG).

In early 2000s when the Caltrans BCG was formed, the group of Caltrans Biologists developed the first biological assessment (BA) standard template. The template was updated in 2018 to provide more detail and complement the federal Endangered Species Act (FESA) training outline, with extensive reference to the [Effects Pathway: Describing the Action e-magazine](http://nctc.fws.gov/courses/csp/csp3153/resources/action_emag.pdf), developed by the USFWS.

This third revision incorporates changes to FESA regulations published in 2019. A summary of the revisions to the 2020 BA template is provided below.

The [2019 FESA regulatory changes](https://www.govinfo.gov/content/pkg/FR-2019-08-27/pdf/2019-17517.pdf) eliminated the use of the terms “direct, indirect, interrelated and interdependent” to describe effects and instead rely on determining “all effects of the action” leading up to the effects determinations made in a BA. Additional clarifications and updated definitions of terms are included in the [2019 FESA regulatory changes](https://www.govinfo.gov/content/pkg/FR-2019-08-27/pdf/2019-17517.pdf) that are incorporated into this 2020 BA template but are not described in detail here.

The 2020 BA template also addresses FESA revisions in 2016 regarding designated critical habitat regulations (81 FR 7414), which replaced the term primary constituent element (PCE) or essential features with physical or biological features (PBFs) for describing the designation of critical habitat for listed species. The PBFs relate to the listed species needs essential for its conservation and are listed in the critical habitat federal ruling for each species. These federal rules, and other federal documents concerning protected and listed species, can be found under the species’ profile in the United States Fish and Wildlife Service (USFWS) [Environmental Conservation Online System (ECOS).](https://ecos.fws.gov/ecp/) The shift in terminology does not change the approach used in conducting an effects analysis, which is the same regardless of whether the analyses identified PCEs, PBFs, or essential features. In this BA Template the term PBF is used to replace PCE or essential feature when describing critical habitat.

All new BA, Natural Environment Study (NES) and Natural Environment Study – Minimal Impacts (NES-MI) documents prepared for projects on the State Highway System will be prepared by or reviewed by an Associate Environmental Planner (Natural Science), or by a Senior Environmental Planner with experience as an Associate Environmental Planner (Natural Sciences). See [Quality Control Guidance for Standard Biological Technical Documents and Reports](https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/qc-guidance-a11y.pdf#faqs) for additional guidance. The NES is not acceptable or allowable as the BA.

A BA is required for major construction activities with a federal nexus and if listed species or designated critical habitat may be affected in the action area (50 CFR Ch. IV Section 402.12). The BA is prepared in accordance with 50 CFR Ch. IV Section 402.14(c), information required to initiate formal consultation. The BA analyzes all potential effects reasonably certain to occur from a proposed project on listed species and designated critical habitat and provides scientific-based rationale and supporting information used to develop an effects determination for each listed species and/or designated critical habitat addressed.

The Biologist will work with the Environmental Generalist/Planner on the data gathering for this study as it will be overlapping and should be consistent. The purpose and need should be obtained from the Environmental Generalist/Planner. The level of analysis shall be commensurate with the complexity of the project.

The [Standard Environmental Reference](https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser) (SER) provides conventions and guidance for the preparation of content relevant to this document. See also [SER Glossary](https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser-glossary-a11y.docx). Microsoft Word guidance should be consulted in order to create or update the table of contents of for any added tables and figures.

Document Standards:

• SER conventions

• Italicize scientific names [*Arundo donax*].

• If acronyms are used, use all three terms for a species at the first occurrence in the document, e.g., giant reed (GR) [*Arundo donax*]. Use only the acronym after the first occurrence.

• If acronyms are not used, use the common name and the scientific name at the first occurrence, e.g., giant reed (*Arundo donax*). Use only the common name after the first occurrence.

The following sections of the 2020 BA Template are optional:

**4.6 Discussion supporting determination.** This section can contain additional information above and beyond that presented in Section 4.4 Effects of the Action. It can be short, or it can be omitted when the BA shares all relevant details supporting the determination in previous sections.

**5.0 Essential Fish Habitat Assessment.** Use these sections only where applicable to comply with The Magnuson-Stevens Fishery Conservation and Management Act when the proposed action occurs in essential fish habitat.

Standards used in this template are designed to comply with the Americans with Disabilities Act (ADA) and Caltrans ADA policies. Colored text is used to convey meanings throughout the 2020 BA template and in some cases the sections of colored text are preceded with the definition of the colored text in parenthesis to convey the meaning of the colored text to users relying on screen reading software. The definitions of the colored text and examples of the use of preceding definitions in parenthesis are below.

* Black text = Required headings with navigable header tags.
* Blue text = (Guidance text) Instructions and guidance to be considered and deleted from the final document.
* Red text = (Boilerplate text) Boilerplate text to be inserted into document, as appropriate.
* Purple text = (Sample text) Sample text that can be used and edited in document, as appropriate.
* Green text = (Local Assistance guidance text) Special guidance text for Local Assistance projects, which are local roadway projects off the State Highway System using Federal-aid funds.

Underlined text (regardless of text color) = Internet or Intranet web links.

**The text in this document is guidance unless it is a heading (headings should be retained and used) or is otherwise specified.**

**Enter project title**

A photograph of your project can be added below this line. Remember to tag the photograph with alt text if posting to the internet.

**Biological Assessment**

Enter general location information

Enter District-County-Route-Post Mile(s)

Enter project number(s)

**Enter month and year**

Delete the boilerplate text below if the project is being processed as a Categorical Exclusion under 23 USC 326. Confirm with project generalist if unsure.

(Boilerplate text) The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.



This page is used for documents that are **prepared by Caltrans**. Please use the form fill boxes on this page to include information specific to your project. This page must include a paragraph telling the public how to obtain the document in alternative formats.

**Biological Assessment**

Enter general location information

Enter general location information

Enter District-County-Route-Post Mile(s)

Enter project number(s)

**Enter month and year**

STATE OF CALIFORNIA
Department of Transportation

Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Enter preparer's name and title

Enter phone number

Enter office name

Enter District/Region

Recommended for

Approval By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Enter reviewer's name and title

Enter phone number

Enter office name

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Approved By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

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**Biological Assessment**

Enter general location information

Enter general project information

Enter District-County-Route-Post Mile(s)

Enter Federal project number

**Enter month and year**

STATE OF CALIFORNIA

Department of Transportation
Enter local agency or agencies

Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Enter preparer's name and title

Enter phone number

Enter office name and address

Enter consulting form name

Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Enter name and title of authorized local agency representative

Enter phone number

Enter office name and address

Enter agency name

Recommended

For Approved By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Enter name and title of Caltrans Peer Reviewer

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Enter office name

Enter District/Region

Approved By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

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Enter phone number

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Table of Contents

[Executive Summary 1](#_Toc43969195)

[Chapter 1. Introduction 1](#_Toc43969196)

[1.1. Purpose and Need of the Proposed Action 1](#_Toc43969197)

[1.2. Species and Critical Habitats Assessed 2](#_Toc43969198)

[1.3. Authorities and Discretion 3](#_Toc43969199)

[1.4. Consultation History 3](#_Toc43969200)

[1.5. Resource Agency Coordination and Professional Contacts 4](#_Toc43969201)

[1.6. Study Methods 5](#_Toc43969202)

[1.6.1. Personnel and Survey Dates 5](#_Toc43969203)

[1.6.2. Limitations and Assumptions that may Influence Results 5](#_Toc43969204)

[Chapter 2. Proposed Agency Action 6](#_Toc43969205)

[2.1. Proposed Action Location 6](#_Toc43969206)

[2.2. Description of Proposed Action 6](#_Toc43969207)

[2.3. Deconstruct the Proposed Action 6](#_Toc43969208)

[2.3.1 Construction Scenario Summary 7](#_Toc43969209)

[2.3.2 Project Operation and Maintenance 7](#_Toc43969210)

[2.3.3 Sequencing and Schedule 7](#_Toc43969211)

[2.4 Conservation Measures 8](#_Toc43969212)

[2.4.1 Project Design Modifications for Avoidance and Minimization 8](#_Toc43969213)

[2.4.2 Species Specific Conservation Measures – Species X 9](#_Toc43969214)

[2.5 Compensation 9](#_Toc43969215)

[Chapter 3. Environmental Baseline 10](#_Toc43969216)

[3.1 Summary of Environmental Baseline 10](#_Toc43969217)

[3.2 Description of the Action Area 10](#_Toc43969218)

[3.3 Habitat Conditions in the Action Area 12](#_Toc43969219)

[3.4 Status of Federally-Listed/Proposed Species 12](#_Toc43969220)

[3.4.1 Discussion of Species “X” 13](#_Toc43969221)

[3.4.2 Survey Results 13](#_Toc43969222)

[3.4.3 Status of Designated Critical Habitat in the Action Area for Species “X” 14](#_Toc43969223)

[Chapter 4. Effects of the Action 14](#_Toc43969224)

[4.1 Stressors from the Action 14](#_Toc43969225)

[4.2 Exposure to Stressors from the Action 15](#_Toc43969226)

[4.3 Response to the Exposure 16](#_Toc43969227)

[4.4 Effects of the Action 18](#_Toc43969228)

[4.5 Cumulative Effects 20](#_Toc43969229)

[4.6 Discussion Supporting Determination 21](#_Toc43969230)

[4.7 Determination 21](#_Toc43969231)

[4.7.1 Species and critical habitat determination 21](#_Toc43969232)

[1) No Effect 21](#_Toc43969233)

[2) May Affect-Not Likely to Adversely Affect 21](#_Toc43969234)

[3) May Affect-Likely to Adversely Affect 22](#_Toc43969235)

[Chapter 5. Essential Fish Habitat Assessment 23](#_Toc43969236)

[5.1 Essential Fish Habitat 23](#_Toc43969237)

[5.1.1 Essential Fish Habitat Background 23](#_Toc43969238)

[5.2 Managed Fishery Habitats with Potential to Occur in the Action Area 25](#_Toc43969239)

[5.3 Potential Adverse Effects on Essential Fish Habitat 25](#_Toc43969240)

[5.3.1 Potential Adverse Effects on Essential Fish Habitat for Pacific Salmonids 26](#_Toc43969241)

[5.3.2 Potential Adverse Effects on Essential Fish Habitat for Pacific Coast Ground Fishes 26](#_Toc43969242)

[5.3.3 Potential Adverse Effects on Essential Fish Habitat for Coastal Pelagic Species 26](#_Toc43969243)

[5.4 Essential Fish Habitat Conservation Measures 26](#_Toc43969244)

[5.5 Essential Fish Habitat Conclusions 26](#_Toc43969245)

[Chapter 6. Literature Cited 27](#_Toc43969246)

[Appendix A [Appendix title] 27](#_Toc43969247)

List of Tables

Table 1. Threatened, endangered and proposed species and designated and proposed critical habitat and effect determinations. 2

List of Figures

Figure 1. Map of action area 12

Acronym List

To create a or update the Table of Contents in Word, go to the References tab, click the Table of Contents drop-down (far left corner) to choose type and options.

To create or update a list of tables or figures In Word, first create a caption for each table or figure title: under the References tab, click on Insert Caption and select option type table or figure. To insert the list of tables or figures in the Table of Contents: under the References tab, click on Insert Table of Figures (use caption label under General to specify table or figure).

Acronym List for BA Template

BA – biological assessment

BO – biological opinion

Caltrans – California Department of Transportation

CDFW – California Department of Fish and Wildlife

CESA – California Endangered Species Act

CFR – Code of Federal Regulations

DPS – distinct population segment

EFH – essential fish habitat

ESA – Environmentally Sensitive Area

ESU – evolutionarily significant unit

FESA – Federally Endangered Species Act (referred to as ESA in USFWS/NOAA Fisheries literature)

FHWA – Federal Highway Administration

FMP – Fishery Management Plan

IPaC – Information for Planning and Consultation

ITP – Incidental Take Permit

MSFCMA – Magnuson-Stevens Fishery Conservation and Management Act

NEPA – National Environmental Protection Act

NOAA Fisheries – National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service branch

PFMC – Pacific Fisheries Management Council

PDT – Project Development Team

PM – postmile

USC – United States Code

UTM – Universal Transverse Mercator

USGS – United States Geological Survey

USFWS – United States Fish and Wildlife Service

# Executive Summary

(Boilerplate text) The purpose of this biological assessment is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project potentially may affect threatened, endangered, or proposed species. The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this biological assessment (BA) under its assumption of responsibility at 23 United States Code (USC) 326 or 23 USC 327. The biological assessment is also prepared in accordance with 50 Code of Federal Regulations (CFR) 402, legal requirements found in section 7 (a)(2) of the federal Endangered Species Act (FESA; 16 United States Code (USC) 1536(c)) and with FHWA and Caltrans regulations, policy and guidance. The document presents technical information upon which later decisions regarding project effects are developed.

(Guidance text) The Executive Summary should briefly present the title and purpose of the transportation project that is the proposed action and focus of the section 7 consultation, the federally listed or proposed species and their designated or proposed critical habitat(s) assessed for potential effects, and the determinations made to those focal species and habitats a result of the analyses of the proposed action. Additionally, if the BA includes an analysis of Essential Fish Habitat, a brief summary of those results can be included in the Executive Summary.

The target audience for biological technical documents is primarily the technical reviewers in the regulatory and partner agencies, secondarily for decision makers, and lastly for the interested public. Documents should be written in technically appropriate language that conveys particular technical meaning, without using unnecessary technical jargon. Take all opportunities to use common language when it does not confuse technical issues.

# Chapter 1. Introduction

## 1.1. Purpose and Need of the Proposed Action

This section of the Introduction provides a concise statement of the project’s purpose and need and briefly describes the proposed project scope and general location.

* Project purpose and need to be obtained from the Environmental Planner/Generalist.
* Clear statement describing the project purpose.
* Clear statement describing why the project is needed.
* Consistent with purpose and need being developed for the environmental document, a document that logically follows the technical documents.

## 1.2. Species and Critical Habitats Assessed

(Boilerplate text) A species list was provided by U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NOAA Fisheries) on (insert date of list(s)) for the action area of this project (Appendix A). The following listed and proposed species and/or designated or proposed critical habitats were identified on the updated federal species list and are considered during this analysis:

**Threatened and Endangered Species**

Common name (Scientific name) T

Common name (Scientific name) E

**Critical Habitat**

The proposed action addressed within this document falls within designated critical habitat for [identify species].

**Proposed Species**

The following federal proposed species may be affected by the proposed action:

Common name (Scientific name) PT

Common name (Scientific name) PE

**Proposed Critical Habitat**

The proposed action addressed within this document falls within proposed critical habitat for [identify species].

Table 1. Threatened, endangered and proposed species and designated and proposed critical habitat and effect determinations.

| Threatened, Endangered, Proposed Species, or Designated Critical Habitat | Scientific Name | Listing Status | Presence of Species in Action Area (Yes/No) | Presence of Critical Habitat in Action Area (Yes/No) | Effect Determination |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

(Guidance text) These lists above and Table 1 should include all species from the species lists obtained from USFWS and NOAA Fisheries. USFWS species lists are obtained from [IPaC](https://ecos.fws.gov/ipac/) and NOAA Fisheries lists are obtained using the [California Species List Tools](https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html).

Briefly discuss the effect determination on each species and/or critical habitat included in this section. Include all effect findings (No Effect; May Affect, Not Likely to Adversely Affect; May Affect, Likely to Adversely Affect) and each species and/or critical habitat for which they have been made (Refer to Section 4.6). The BA must include an effect determination for all listed/proposed species and designated or proposed critical habitat identified on the species lists.

Note that at the Draft Environmental Document (DED) stage, a clear statement of no effect or may affect related to each listed species and/or critical habitat should be made in the DED. A table can be used to summarize effect findings in the DED but if a different table format from the BA is used in the DED (for example, one that includes threatened and endangered species under California Endangered Species Act (CESA) as well), there MUST be a column which shows FESA effect determinations.

For purposes of addressing long-lead projects, it is important to include federal proposed species that may become listed during project development or implementation. Caltrans may only conference on proposed species. For the purpose of the BA the analysis would be the same for proposed species as listed species. Hereafter in this document any reference to listed species and designated critical habitat also refers to proposed species and proposed critical habitat. More on how to address proposed species and proposed critical habitat in the BA can be found in the [Endangered Species Consultation Handbook](https://www.fws.gov/endangered/esa-library/index.html#consultations).

## 1.3. Authorities and Discretion

A description of the federal and state authorities and policies under which the project is being proposed, implemented, maintained, regulated, or otherwise affected.

(Local Assistance guidance text) A description of the federal, state and local authorities, policies, and ordinances under which the project is being proposed, implemented, maintained, regulated, or otherwise affected.

## 1.4. Consultation History

This section includes a detailed description of agency coordination/consultation with USFWS/NOAA Fisheries as part of section 7 consultation with respect to studies performed or technical assistance received that guided studies. It can be organized into a table or bulleted list.

* Summarize dates, discussions, meetings, and written correspondence with USFWS/NOAA Fisheries or other partners that are relevant to describing the proposed action, effects of the action and plans for the FESA consultation. Include staff names from all relevant agencies.
* Identify documents provided to or received from USFWS/NOAA Fisheries that are related to the proposed action or effects of the action.
* Include USFWS/NOAA Fisheries species lists, including all letters and lists from [IPaC](https://ecos.fws.gov/ipac/) and NOAA Fisheries [California Species List Tool](https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html). Ensure list(s) are less than 180 days old and that all species and critical habitats from all federal lists are addressed in the BA. Species lists and other database search results can be added in Appendices.

## 1.5. Resource Agency Coordination and Professional Contacts

This section can cover broad aspects of the project environmental assessments and should focus on coordination with agencies other than USFWS/NOAA Fisheries, such as the US Army Corps of Engineers, California Department of Fish and Wildlife (CDFW), and/or expert biologists from natural resource agencies, universities, or consulting firms. Include dates of coordination and contacts with notation of topic(s) discussed in appropriate detail. Use a table format or a bulleted list in chronological order if there are many entries.

The following language can be used when section 7 consultation is focused on species also listed under CESA where coordination with CDFW is planned to obtain an Incidental Take Permit or consistency determination:

(Sample text) The [insert species name(s)] is also listed as [threatened/endangered/a candidate for listing] under the California Endangered Species Act (CESA), which is described in Fish and Game Code sections 2050 through 2100. Compliance with CESA requires the impacts of any take of a CESA-listed or candidate species incidental to otherwise lawful activities to “be minimized and fully mitigated.” Under Fish and Game Code, section 86, “take” means hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch, capture, or kill. Under Fish and Game Code section 2080.1, CDFW may determine that the results of section 7 consultation are consistent with CESA. If a consistency determination is made, no further approval or authorization is necessary under CESA for listed or candidate species identified in the section 7 consultation. If a consistency determination is not made, CDFW may authorize incidental take of CESA-listed or candidate species through an incidental take permit pursuant to Fish and Game Code section 2081.

Caltrans [has/has not] begun coordination with CDFW on the proposed action and anticipates applying for a [incidental take permit/consistency determination] for CESA compliance.

## 1.6. Study Methods

Describe methods used for studying the potential effects of the action for the listed/proposed species or designated/proposed critical habitat identified in Table 1 that have the potential to occur within the project action area.

* Include additional information that may have been obtained through agency coordination, CNDDB, FESA, CESA, Environmental Setting, etc.
* Include recent publications/journal articles/agency data and technical reports ([Caltrans Library and History Center](https://ctlibrary.onramp.dot.ca.gov/)) that were used and cited. Include local information relative to the project vicinity, views of recognized experts, and results from recent studies, life history, population dynamics, trends and distribution. Reference field notes, unpublished data, research in progress, etc. Include local population info. Describe the search method for identifying relevant information available.
* Identify any recovery plan implementation that is occurring in the project area, especially priority action items from recovery plans. Include recovery area and recovery unit (provide unit name or number).
* Describe and reference methods used to do surveys – protocols, guidelines, etc.
* Describe modifications and justifications, if any, to the survey methods.

### 1.6.1. Personnel and Survey Dates

In this section, include Caltrans, consultants, and other partners used to complete biological field surveys and/or studies. Note qualifications (i.e. B.S. in Biology or other related field), especially if a survey permit is required (include permit number). Use a table format or bulleted list in chronological order to describe all field surveys if there are many entries.

### 1.6.2. Limitations and Assumptions that may Influence Results

Consider possible problems including: low rainfall, drought, species seasonality and/or detectability, potentially out of date surveys (in general, negative results > 3 years old should be viewed with caution), partial survey protocol completion, or incomplete fieldwork due to limited access, deviations from survey protocol, and incomplete surveys of action area due to access restrictions or safety. Discuss if inferred presence approach was used due to limitations. See SER, [Inferred Presence of Federally Listed Species](https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/other-guidance#ip).

# Chapter 2. Proposed Agency Action

## 2.1. Proposed Action Location

This section will describe the proposed action location in detail.

* Project location; county, route, post-mile, lat/long coordinates, Universal Transverse Mercator (UTM) coordinates, U. S. Geological Survey (USGS) coordinates, section, township, range, 7.5’ quadrangle, and other appropriate locality information.
* Map of project location/vicinity, including topographic and aerial photographs if available.
* Site photos can be included here or in an appendix.
* Other geographic information that will help describe the physical location of the project such as adjacent land uses.

## 2.2. Description of Proposed Action

This section will describe the proposed action in detail. Include all relevant components of the project, including pre-construction actions to manage or exclude species and post-construction actions for habitat restoration. Specific details of construction actions will be described in detail in later sections, such as Section 2.3 Deconstruct the Proposed Action. The [Endangered Species Consultation Handbook](https://www.fws.gov/endangered/esa-library/index.html#consultations) (1998) pg. 4-15, has additional guidance for requirements to describe the proposed action.

## 2.3. Deconstruct the Proposed Action

Use this section to break down and list the actual construction activities of the project (as described in Section 2.2 Description of Proposed Action). Focus on only those activities that are likely to affect the species. The depth of analysis required should be commensurate with the complexity, context, and intensity of the project.

The deconstruction of actions should identify all components of the action including those that: are permanent or temporary, are likely to adversely affect, are likely to benefit, and are likely to have no effect on listed species and designated critical habitat. Describe what the activities are, and where and when they will occur. Describe how the construction activities will be accomplished, including the various activities that comprise the whole action, the methods, and the types of equipment used. This is key in determining which of these actions will have an effect on the species and/or habitat and how that species will respond to that effect.

### 2.3.1 Construction Scenario Summary

This section will describe the planned construction activities as this will have direct or potential indirect bearing on the effects to listed species or critical habitat. This section includes, but is not limited to a description of staging, borrow and disposal sites, utility relocation, project footprint, construction access, detours, on-site habitat restoration, and off-site habitat restoration or compensation. This includes a discussion and quantification of all permanent and temporary impacts. This information is developed by the Project Development Team (PDT) and is the best available at the time the BA is completed.

### 2.3.2 Project Operation and Maintenance

Describe activities that typically occur after construction and during the operation and maintenance of the project that may result in stressors to any of the listed species or critical habitat including:

* Plant establishment periods
* Special vegetation treatments -Districts’ annual vegetation control plans (VegCon Plan) (part of the Integrated Maintenance Management System (IMMS))
* Stormwater BMPs
* Restoration areas
* Foreseeable maintenance activities that might occur.

### 2.3.3 Sequencing and Schedule

This section will describe the timing of planned construction activities as this will have direct or potential indirect bearing on the effects to listed species or critical habitat. This information is developed by the PDT and is the best available at the time the BA is completed. A table indicating proposed work windows within different habitats can be useful. Items to consider include, but are not limited to:

* Duration
* Phasing of construction
* Order of work
* Work windows
	+ - night work
		- seasonal restrictions

## 2.4 Conservation Measures

Conservation measures should be used to avoid, minimize or offset project effects to a species or critical habitat. All conservation measures proposed will become part of the project description as approved by the PDT. It is important that the entire PDT approves and follows each conservation measure proposed through construction and into long-term maintenance. Things to consider when developing conservation measures include: cost, duration, timing, funding source, feasibility, maintenance, and backup plan. If a potential effect to a species or critical habitat cannot be fully avoided or minimized a compensation strategy may be proposed. Summarize all conservation measures in the following sections. Additional considerations for conservation measures are listed below.

* Conservation measures should avoid all potential effects while fully addressing the purpose and need of the project.
* Identify opportunities to reduce or eliminate potential effects caused by the direct effect or stressor. These effects of the project to the species should be clearly stated in Section 4.4.
* When effects can’t be avoided, conservation measures should aim to directly reduce identified effects to the species or critical habitat.
* All proposed conservation measures should be discussed with USFWS, NOAA Fisheries and the PDT prior to inclusion into the BA.
* Examples of conservation measures: seasonal work window, habitat avoidance, habitat restoration, revegetation, limited day or night work, establishment of Environmentally Sensitive Areas (ESAs), removal of fish barriers, restoring natural hydrology, silt fencing, wildlife exclusion fencing, storm water BMPs, nesting deterrents, etc.
* It is important to account for any maintenance of conservation measures during and after construction. Be sure to include your measures and materials in the Contract Special Provisions and Basic Engineering Estimating System (BEES) list of cost estimates.

Once all potential effects to an individual, population, and critical habitat have been identified, additional conservation measures can be logically developed. Most conservation measures are standard measures consistently requested by USFWS and NOAA Fisheries. Conservation measures for the BA can also come from [Caltrans Standard Specifications](https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications). The development of conservation measures is often an iterative process.

### 2.4.1 Project Design Modifications for Avoidance and Minimization

Discuss the steps taken to avoid or minimize effects to species and habitats during project development, including modified or rejected alternatives, design exceptions to avoid or minimize effects, ESAs and ESA fencing, wildlife exclusion fencing and other components that are not specific to the species being consulted on.

### 2.4.2 Species Specific Conservation Measures – Species X

* Describe in detail measures developed specifically for each species, such as species-specific work-windows, specific exclusion fencing, or surveys.
* Describe measures to avoid or minimize effects to designated critical habitat.
* Create a separate heading (i.e. 2.4.3, 2.4.4, 2.4.5…etc) for each species assessed in the BA that has species-specific conservation measures.

## 2.5 Compensation

This section describes proposed compensation or mitigation to offset adverse effects of the proposed action. Because the FESA regulations do not contain the word “mitigation” this section uses “compensation”. Use the following guidance to complete this section.

* Compensation strategies should only be proposed once all avoidance and minimization efforts have been exhausted.
* Compensation should focus on offsetting project action effects to species or critical habitat identified in Section 4.4.
* An effort should be made to mitigate on-site or within the microhabitat of the species or critical habitat being affected. Sometimes this may not be possible and off-site compensation may be the only option.
* Examples of compensation include: purchasing credits at an approved conservation bank, restoration or creation of habitat on-site, habitat restoration off-site, purchase of land for conservation, removing a fish passage barrier, improving habitat connectivity, installation of bat or bird boxes, preventing erosion, restoring natural hydrology, etc.
* All compensation measures must be discussed with the PDT.
* On-site measures must be approved by the PDT to avoid conflicts if space at the site is a limiting factor, if plans conflict with other agency permits, or if there are potential conflicts with standard designs used by project engineers.

The following language can be used at the beginning of this section when section 7 consultation is focused on species also listed under CESA where coordination with CDFW is planned to obtain a consistency determination:

(Sample text) To comply with sections 2080.1 and 2081(b) of Fish and Game Code, Caltrans must minimize and fully mitigate the impacts of its activities and ensure adequate funding to implement mitigation including compliance and effectiveness monitoring. When determining the amount of compensatory mitigation, CDFW generally applies a mitigation ratio of mitigation acres per acre of impact on a case-by-case basis. Caltrans has begun coordination with CDFW on the proposed action and seeks to obtain a consistency determination through compliance with section 2080.1 of the Fish and Game Code. The following proposed compensation was developed in coordination with CDFW to fully mitigate the impacts of the proposed action with the goal of obtaining a consistency determination.

# Chapter 3. Environmental Baseline

(Boilerplate text) Environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR §402.02).

(Guidance text) The environmental baseline discussion gives the reader a concise description of a listed species habitat conditions for each life-stage of that species as well as the status of the species found within the action area. A clear description of the setting helps to explain the context and intensity of effects.

Hyperlinks to optional analyses tools – [USFWS National Wetlands Inventory Mapper](https://www.fws.gov/wetlands/Data/Mapper.html), [Flash Earth aerial imagery,](http://www.flashearth.com/) [Google Earth](https://www.google.com/earth/), [USDA NRCS Web Soil Survey](https://websoilsurvey.nrcs.usda.gov/app/), [USFWS ECOS](https://ecos.fws.gov/ecp/)

## 3.1 Summary of Environmental Baseline

These sections describe the action area. Briefly introduce the general conditions of the action area, habitats, and listed species known to occur. Detailed descriptions are provided in the sections below.

## 3.2 Description of the Action Area

This section describes the action area. Discuss use of resource agency protocols, literature, previous project info, and any other relevant data used to determine the extent of the physical disturbances caused by the proposed action and used to determine the size and location of the action area. When describing conditions in the action area, always consider how the listed species’ critical habitat Physical and Biological Features (PBFs) relates to the listed species needs. PBFs are listed in the critical habitat federal ruling for each species’ profile within the [USFWS ECOS website](https://ecos.fws.gov/ecp/). Include seasonal changes to hydrological, aquatic, natural and vegetative communities when pertinent.

The action area is the spatial extent of all physical consequences of all effects of the action. To determine the action area, first break the action down into its components, including pre-construction preparation (e.g., vegetation clearing, access routes, staging areas, materials storage areas), construction actions (such as the installation of cofferdams, placement of pipelines, intake structures, borrow areas, operations, maintenance, pile driving, etc.) and post-construction site cleanup. For example, sound levels from machinery or pile driving may be detectable hundreds of feet, thousands of feet, or even miles away. Calculate these distances when delineating the extent of the action area. For work in aquatic habitats, complete guidance on hydroacoustic effects, methods to determine them and calculation tools to use, can be found on the [Caltrans Biology Hydroacoustics website](http://website.dot.ca.gov/env/bio/hydroacoustics.html). Determine the stressors that are expected to result from each project component, and map the action area to include them all.

Description of the action area should include the following as applicable:

* Land owners – private or public lands, land use, list and map
* Aerial photos of the project action area (if many, put in Appendix)
* Description of the topographical features
* Topographic map of the project area
* Map and/or text description of soil and geologic information, if pertinent
* Description of the hydrological resources
* Description of the natural communities
* Description of vegetation communities
* Descriptions of the dominant plant species
* Descriptions of the common animal species
* Description of migration and travel corridors
* Description of aquatic resources
* Description of invasive species.

Mapping of the action area is required. Provide a logical, defensible description of how the action area was developed. To reduce redundant descriptions of how the action area was developed, it may be possible to refer to Section 4.4 Effects of the Action for supporting details and further analyses.

Figure 1. Map of action area

## 3.3 Habitat Conditions in the Action Area

This section should describe:

* The habitat conditions specific to the site (not an exhaustive description of regional features).
* An assessment of whether the habitat needs of the listed species are present/absent.
* The quality and quantity of that the specific habitat types.
* An assessment focused on the areas within the action area that are either occupied habitat or contain one or more of the specific PBFs that occur within a federally designated critical habitat unit for the species being assessed.

## 3.4 Status of Federally-Listed/Proposed Species

Use the sections below to deconstruct the biology of all federally listed plant and animal species that may be affected by the project action either individually or by a logical grouping (e.g., riparian birds, vernal pool species, fishes, etc.). Be sure to include all species listed in Table 1 within the assessment in these following sections. If there are potential effects to a proposed species, discuss with environmental team and make sure to evaluate effects to the proposed species per [Endangered Species Consultation Handbook](https://www.fws.gov/endangered/esa-library/index.html#consultations) (1998).

The biology deconstruction step in the effects analysis involves focusing on the biology of the listed resources as appropriate to the action at hand. The goal is to understand more about the relevant biology of the listed resource before we can assess how the species is exposed to the different, relevant stressors caused by the action.

### 3.4.1 Discussion of Species “X”

Utilize the best available scientific and commercial information available for each species. Keep the discussion brief and relevant. Present the abundance, distribution, and diversity of the species. Present biological aspects that may be affected and limit the discussion of biology that is totally unrelated to project effects (i.e. if no breeding habitat exists in the action area, don’t include lengthy details on breeding biology and needs).

* Discuss changes in population trends related to the species.
* Describe habitat condition and habitat designations, such as:
	+ - Critical habitat
		- Breeding habitat
		- Rearing habitat
		- Feeding habitat
		- Transit habitat
		- Resting and sheltering habitat.
* Discuss habitat use patterns, including seasonal use, home range, dispersal and migration (if relevant), and identify habitat use pattern needs such as breeding, rearing, feeding, and sheltering.

### 3.4.2 Survey Results

Discuss/describe the federally-listed/proposed species that occur or have a potential to occur in the project action area. Discuss protocols used during surveys and any deviations or modifications. Identify the particular species, its specific habitat requirements at each life stage, closest known population, when that known population was last surveyed, and results of field surveys [presence/absence] and, if data available, estimate numbers of species that may be present by life stage.

Presence/absence and protocol-level wildlife surveys may confirm the presence of a special-status species, but negative results do not guarantee that the species is absent. For practical purposes, inferring potential occurrence within the action area of the proposed project is reasonable, given the species’ known occurrences near the action area and presence of suitable habitat in the action area.

When the species is not found, provide an analysis of the habitat condition and discuss the potential for the species to be present regardless of negative survey result. Include a discussion of the habitat conditions that were found that would support any federally-listed/proposed species that were not discovered during the surveys. Identify and quantify the listed-species’ habitat remaining in the action area. GIS layers are useful here, as are land ownership patterns--especially local land trusts and open space designations.

### 3.4.3 Status of Designated Critical Habitat in the Action Area for Species “X”

Describe and discuss the critical habitat designated in the action area for each species and the PBFs of the critical habitat. Include the status of designated critical habitat for the species, the total area of designated critical habitat for the species, the total area of critical habitat in the action area and the number and names of critical habitat units in the action area. Evaluate the presence, absence, and condition of the PBFs for each life-stage of the species present in the action area. PBFs are listed in the critical habitat federal ruling for each species, typically available through the [USFWS ECOS website](https://ecos.fws.gov/ecp/).

# Chapter 4. Effects of the Action

(Boilerplate text) Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including consequences of other activities that are caused by the proposed action. The analysis of effects of the action first identifies stressors from project actions, then exposure to stressors, and finally the response to exposure to stressors to determine consequences. The effects of the action are used to make determinations for each listed species and critical habitat.

The effects analysis should identify all effects from the project actions to each federally listed plant and animal species, either individually, or by a logical grouping. [Revisions to the FESA regulations in 2019](https://www.govinfo.gov/content/pkg/FR-2019-08-27/pdf/2019-17517.pdf) eliminated the use of the terms direct, indirect, interrelated and interdependent to describe effects and instead rely on determining all effects of the action. The scope of the analysis considers effects and ecological consequences that occur later in time and outside the immediate area that an action initially occurs.

## 4.1 Stressors from the Action

(Boilerplate text) Stressors induce an adverse response in an organism by any physical, chemical, or biological alteration of the environment that can lead to a response from the individual.

(Guidance text) Summarize the stressors and indicate how these activities will affect the species or critical habitat. The main point in thinking about stressors is to identify the direct effect to the individual or the change in a required resource that could occur. Repeat this for each species and critical habitat.

Examples of stressors can include:

* Increase in turbidity
* Increase in temperature
* Increase in noise or vibrations
* Removal of vegetative cover
* Introduction of invasive competitors
* Change in microclimate
* Change in fire regime to more/less frequent
* Change in visual features of the habitat area
* Alteration of channel morphology
* Increases in stream velocity
* Removal of hibernacula
* Removal of soil
* Vehicle strike.

## 4.2 Exposure to Stressors from the Action

(Boilerplate text) Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action.

(Guidance text) Exposure is a result of the co-occurrence of the species and its resources with any stressors resulting from the action. Discussing exposure means how individuals of the listed species or the resources they depend upon are EXPOSED to the stressors from our action. For instance, because of the clearing of brush that provides habitat for fox during the heat of the day, there is an increase in temperature. The fox is exposed to this stressor (increase in temperature) because of our action. Types of exposures may be the same for habitat PBFs as for individual species, and both should be stated and described.

This section should include a detailed exposure analysis to all stressors identified in the previous section. What is critical is that the scope of the analysis also consider stressors and ecological consequences that occur later in time and outside the immediate area that an action initially occurs. Examples:

• Exposure to abiotic factors affecting land, air or water

• Exposure to biotic factors affecting species behavior

• Spatial or temporal changes to designated critical habitat or PBFs

• Loss or gain of habitat – temporary or permanent

• Fragmentation of habitat – loss or gain of access to habitat or corridors

• Loss or gain of forage and/or foraging potential

• Loss or gain of shelter/cover

To begin the analysis of exposure, below is a basic set of questions you might answer. For individuals, exposure analysis should identify:

* How many individuals of which populations will be exposed?
* What life stage and sex will be exposed?
* What are the specific stressors associated with exposure?
* What is the intensity of the exposure?
* What is the exposure pathway?
* Where, when, how long, and how often will exposure occur?

For natural resources, habitat and designated critical habitat, the exposure and analysis should identify:

• What portions of critical habitat will be exposed?

• What are the PBFs that are going to be exposed?

• What are the specific stressors causing the exposure?

• What is the intensity of the exposure?

• What are the exposure pathways?

• Where, when, how long, and how often will the exposure occur?

## 4.3 Response to the Exposure

In this section the analysis should include a detailed response analysis for each of the stressor exposures identified in the previous section for all species addressed in the BA, either individually or by a logical grouping. The exposure analysis identifies the stressors and resulting exposure caused by the proposed action that will likely overlap with species presence.

A species response to a stressor can be expressed in several ways:

* Behavioral – alert, startle, flush, flee or avoid (staying away from the stimulus).
* Physiological – increased heartrate, loss of muscle mass, reduced gas exchange, hormone disruptors in wastewater that impair reproduction or alter the sex of individuals (a physical expression of a physio-change).
* Physical – bodily injury; or altering a component or habitat (e.g., removing forage plants).

To begin the analysis of response to the exposures, below is a basic set of questions you might answer. For individuals, exposure response analysis should identify:

* What is the intensity of the exposure? Does the intensity warrant a response?
* What is the exposure pathway? Will it produce a response?
* Where, when, how long, and how often will exposure occur? Will it produce a response?
* How many individuals of which populations experience a response?
* What life stage and sex will have a response to stressor exposures?
* What are the specific stressors associated with the exposure and response?

For the analyses of natural resource, habitat and critical habitat responses, describe the response and quantify the area of response using acres, square feet, or both. For habitats, exposure response analysis should identify:

* What is the intensity of the exposure? Is it enough to result in a response?
* Where, when, how long, and how often will the exposure occur?
* What reductions are expected to occur in resource availability?
* What reductions are expected to occur in habitat quantity and/or quality?
* What critical habitat PBFs are going to be exposed and have a response?
* Are there landscape fragmentation and barriers to movement?
* Is there disruption of ecological processes that maintain resources?
* Are there changes in habitat conditions that benefit competitors?
* Could there be introduction of organisms that compete for resources?

The response analysis determines how listed species are likely to respond after exposure to these effects. Analyze per the environmental baseline for each life stage and each life-stage habitat. The anticipated responses are based upon information in peer-reviewed literature, field studies, and reports from previous projects.

## 4.4 Effects of the Action

(Boilerplate text) Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur (50 CFR §402.17). Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR §402.02). The effect of the action is the consequence (behavioral, physical, or physiological) of a response to a stressor.

A conclusion that activities are reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available. Factors to consider whether an activity caused by the proposed action is reasonably certain to occur include, but are not limited to: past experiences with similar activities that have resulted from actions that are similar in scope, nature and magnitude to the proposed action; existing plans for the activities; any remaining economic, administrative and legal requirements necessary for the activity to go forward.

Considerations for determining a consequence to the species or critical habitat is not caused by the proposed action include, but are not limited to: the consequence is so remote in time from the proposed action that it is not reasonably certain to occur; or the consequence is so geographically remote from the immediate area involved in the proposed action that it is not reasonably certain to occur; or the consequence is only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur (50 CFR §402.17).

(Guidance text) This final effects analysis determines the consequences of the project action for each federally listed plant and animal species (either individually, or by a logical grouping) and designated critical habitats by combining the exposure and response analyses to determine if an effect occurs.

Now that deconstruction of the action has been clearly described, the stressors associated with each of the action’s components have been identified, and responses of individuals have been identified, the final step is to connect all these elements in order to determine consequences for each listed species and critical habitat. Ensure all aspects of potential effects have been included. Other factors to consider:

• Proximity of the action to listed species

• Proximity of the effects to listed species

• Distribution of species and habitat use

• Timing of stressors

• Duration of stressors

• Type of stressors

• Frequency, intensity, severity of stressors.

A thorough analysis of the effects of the action will consider the “when” in determining if a stressor results in an exposure and subsequent response or effect. Understanding these factors helps develop proper conservation measures and BMPs to avoid or minimize effects. These are the details that support conclusions.

If the action area covers a large portion of a species’ population, or an entire population (geographically), analyze population-level effects. Most proposed projects and their BAs do not need to encompass an entire population. However, the USFWS/NOAA Fisheries will still need to consider how the proposed action could affect a population at the scale that it is listed, for example the complete geographic region, a distinct population segment (DPS), or an evolutionarily significant unit (ESU). The USFWS/NOAA Fisheries will need to establish the various causal links that will be used to support its determinations in their biological opinion (BO). So, they will need to translate individual responses to potential population-level responses (e.g. into terms that relate to population ecology) in the BO (for formal consultation).

When analyzing population-level effects after it has been determined that a listed species or its designated critical habitat is adversely affected by an action, consider the following:

* How do the effects relate to resiliency (the population’s ability to bounce back after a stochastic event) and representation (the population’s ability to adapt to changing environmental conditions) and redundancy of the total population, DPS or ESU?
* Consider what percentage of the total population of the species occurs in the action area.
* Consider quality and type of habitat that will be altered in proportion to what will remain unaffected.
* Consider what percentage of the total population will be exposed to stressors and experience a deleterious effect.
* Consider what natural resources, requirements and/or circumstances are needed for species’ population persistence and how the proposed action may alter or affect them.

Plants and animals with very limited ranges and low ability to disperse have the highest likelihood of warranting a discussion of population-level effects in the BA.

## 4.5 Cumulative Effects

(Boilerplate text) Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area described in this biological assessment. Future federal actions that are unrelated to the proposed action are not considered in this cumulative effects analysis because those actions will require separate consultation pursuant to section 7 of the Federal Endangered Species Act.

(Guidance text) Describe cumulative effects – that is future non-federal actions reasonably certain to occur in the action area. Please note that there is a difference between the definition of cumulative effects for FESA and the National Environmental Policy Act (NEPA).

FESA definition of cumulative effects: Future state, private, and non-federal activities that are reasonably certain to occur within the action area.

NEPA definition of cumulative effects: The effect on the environment which results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes them.

Factors to be considered as part of the cumulative analysis:

• Proximity of the action to listed species

• Proximity of the effects to listed species

• Distribution of species and habitat use

• Timing of stressors

• Duration of stressors

• Type of stressors

• Frequency, intensity, severity of stressors.

For a BA that that results in only informal consultation where all species and designated critical habitats in the action area receive a may affect, not likely to adversely affect determination, the need for the cumulative effects analysis is not supported by FESA regulations and the following text may be used:

(Sample text) Cumulative effects of the proposed action are not described as part of this analysis because all listed species and designated critical habitat within the action area are not likely to be adversely affected by the proposed action.

## 4.6 Discussion Supporting Determination

This section can contain additional information above and beyond that presented in the previous Section 4.4 Effects of the Action. It can be short, or it can be omitted when the BA shares all relevant details supporting the determination in previous sections.

In this section describe the logic of the analysis that supports the determination for each listed species or critical habitat. Provide supporting statements that lead to the determination. Summarize all potential effects of the action for the proposed project. Then describe how the potential effects to each species or critical habitat can be avoided or minimized through implementation of conservation measures. Next describe how the compensation strategy presented above will offset any potential effects resulting from construction of the proposed project. This section should also include a discussion of any viewpoints that may be considered in opposition to the determination.

## 4.7 Determination

In this section one of the following determinations is made for each listed or proposed species and critical habitat. These determinations must match the determinations from Table 1.

### 4.7.1 Species and critical habitat determination

### 1) No Effect

* Action will not pose any effects to listed species or designated critical habitat.
* Effects are measured at the individual scale not population scale.
* No consultation is required; rationale for project findings will be described in the NES.

(Boilerplate text) A no effect determination was made for the following species and designated critical habitat. No consultation is required.

List species and/or critical habitats here.

### 2) May Affect-Not Likely to Adversely Affect

Effects on listed species are expected to be discountable, insignificant or beneficial.

* Discountable effects: Those effects that are extremely unlikely to occur. Based on best judgment, a person would not expect discountable effects to occur.
* Insignificant effects: Insignificant effects relate to the size of the effect and should never reach the level where “take” occurs. Based on best judgement, a person should not be able to meaningfully measure, detect or evaluate insignificant effects.
* Beneficial effects: Are contemporaneous positive effects without any adverse effects to the species or habitat.
* Species example: Actions that may result in changes to water quality, water supply, water chemistry; soil compaction; or the introduction of artificial lighting, etc. but with the incorporation of conservation measures, including avoidance and minimization measures, would be insignificant or discountable and not to the extent of causing harm.
* Critical habitat PBF example: Actions that may affect designated critical habitat with suitable PBFs but are able to meet all identified measures to avoid and minimize adverse effects to PBFs.

(Boilerplate text) A may affect-not likely to adversely affect determination was made for the following species and designated critical habitat. Informal consultation is required.

List species and/or critical habitats here.

### 3) May Affect-Likely to Adversely Affect

Any adverse effect to listed species or designated critical habitat that may occur as a result of the proposed action and the effect is not:

* Discountable,
* Insignificant, or
* Beneficial (see definition of “not likely to adversely affect” above).
* Species Example: Actions that may result in disturbance of suitable habitat or individuals to a level that causes harm (via species handling and translocation activities, habitat disturbance or modification).
* Actions that exceed noise and vibration alert and disturbance levels to the extent of causing harm
* Critical habitat PBF Example: Actions that may temporarily or permanently affect designated critical habitat with suitable PBFs but are not able to meet all appropriate measures to avoid and minimize adverse effects to PBFs

If the overall effect of the proposed action is beneficial to the listed species, but is also likely to cause some adverse effects, then the proposed action “is likely to adversely affect” the listed species.

(Boilerplate text) A may affect-likely to adversely affect determination was made for the following species and designated critical habitat. Formal consultation is required.

List species and/or critical habitats here.

Any adverse effects to a listed species or critical habitat or incidental take to any individual of a listed species from any capture activity, relocation effort, or efforts to do so resulting from the proposed action necessitates a “likely to adversely affect” determination and requires the initiation of formal section 7 consultation.

The terms “jeopardize the continued existence of the species” or “adversely modify critical habitat” are reserved for use by USFWS/NOAA Fisheries in their response to the BA. These terms are not to be used in the BA as part of the effects determination.

# Chapter 5. Essential Fish Habitat Assessment

Use this section only where applicable.

(Boilerplate text) The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) takes immediate action to conserve and manage fishery resources found off the coasts of the US, and the anadromous species and Continental Shelf fishery resources of the US, by exercising sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone of the US, and exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources and fishery resources in the special areas.

(Guidance text) The MSFCMA requires federal agencies such as the FHWA, and Caltrans through NEPA Assignment, to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by that agency that may adversely affect essential fish habitat (EFH) for those species covered under a Fisheries Management Plan, as identified under the MSFCMA. Federal agencies may use existing consultation/environmental review procedures, such as a BA, to satisfy the MSFCMA consultation requirements. Refer to [Consultations for Essential Fish Habitat](https://www.fisheries.noaa.gov/national/habitat-conservation/consultations-essential-fish-habitat), [Essential Fish Habitat Mapper](https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper) and [Essential Fish Habitat Consultation Guidance](https://archive.fisheries.noaa.gov/wcr/publications/habitat/essential_fish_habitat/efh_consultation_guidance_2004.pdf) (April 2004).

## 5.1 Essential Fish Habitat

### 5.1.1 Essential Fish Habitat Background

(Boilerplate text) Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the MSFCMA to establish new requirements for essential fish habitat (EFH) descriptions in federal fishery management plans. In addition, the MSFCMA established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. Pursuant to the MSFCMA:

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

EFH has been defined for the purposes of the MSFCMA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”. NOAA Fisheries has further added the following interpretations to clarify this definition:

* “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where 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; and
* “Spawning, breeding, feeding, or growth to maturity” covers the full life cycle of a species.

Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

EFH consultation with the NOAA Fisheries is required regarding any federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action may adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH. Under section 305(b)(4) of the MSFCMA, NOAA Fisheries is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that may adversely affect EFH. Wherever possible, NOAA Fisheries utilizes existing interagency coordination processes to fulfill EFH consultations with federal agencies. For the proposed action, this goal is being met by incorporating EFH consultation into the FESA section 7 consultation, as represented by this Essential Fish Habitat Assessment.

(Guidance text) If EFH for groundfish or coastal pelagics is being analyzed, the project effects are not likely to be the same as those for salmon. Keep in mind that only effects to EFH itself should be described here and not effects to the individual fish.

## 5.2 Managed Fishery Habitats with Potential to Occur in the Action Area

(Boilerplate text) The MSFCMA requires that EFH be identified for all federally managed species including all species managed by the Pacific Fisheries Management Council (PFMC). The PFMC is responsible for managing commercial fisheries resources along the coast of Washington, Oregon, and California. Managed species that have a potential to occur in the action area are described in a Fishery Management Plan (FMP).

(Guidance text) Provide statement which describes fish species subject to any FMP that occur within the action area. Optional, example text samples are provided below:

(Sample text) The only species subject to any fish passage that regularly occurs within the action area is fall-run Chinook salmon. However, spring-run Chinook salmon and Sacramento winter-run Chinook salmon occasionally occur in the river. These runs of Chinook salmon are regulated by the PFMC’s Pacific Coast Salmon FMP.

Chinook and Coho salmon, groundfishes, and coastal pelagic fish species, managed under the MSFCMA, may potentially be present in the action area. Chinook and Coho salmon are managed under the Pacific Coast Salmon FMP, coastal pelagic species are managed under the Coastal Pelagic Species FMP, and groundfish species are managed under the Pacific Coast Groundfish FMP.

## 5.3 Potential Adverse Effects on Essential Fish Habitat

Optional example text and example section headers are presented below:

(Sample text) Potential effects to EFH evaluated include those that relate to: (1) sedimentation and turbidity; (2) hazardous materials and chemical spills; (3) re-suspension of contaminants; (4) aquatic habitat modification and shading; (5) entrainment and stranding potential; (6) predation risk; and (7) food resources.

### 5.3.1 Potential Adverse Effects on Essential Fish Habitat for Pacific Salmonids

### 5.3.2 Potential Adverse Effects on Essential Fish Habitat for Pacific Coast Ground Fishes

### 5.3.3 Potential Adverse Effects on Essential Fish Habitat for Coastal Pelagic Species

## 5.4 Essential Fish Habitat Conservation Measures

Describe the conservation measures that have been incorporated into the project that will minimize the potential adverse effects to EFH.

An optional example is:

(Sample text) The following conservation measures will be implemented to minimize the potential adverse effects to designated EFH described above.

* [1. Conservation measure 1]
* [2. Conservation measure 2]
* [3. Etc.]

A table summarizing conservation measures that will be taken to minimize potential adverse effects to EFH may be useful here. It is also possible to list the conservation measures and refer to previous sections of the BA that describe the conservation measures in more detail.

## 5.5 Essential Fish Habitat Conclusions

Summarize the potential effect that the project will have on EFH. This takes into account all of the conservation measures proposed as part of the project.

* Describe if the adverse effects will be minimal, more than minimal but less than substantial, or substantial based on the information discussed above.
* Describe the spatial extent of the effect.
* Describe the duration of the effect (e.g., temporary or permanent, short-term, or long-term).
* Describe the justifications for the conclusion and determination.

Include the statement:

(Boilerplate text) Caltrans has determined that the proposed action [may not/may] adversely affect EFH for [insert name of fish(es) and appropriate FMP(s) here].

# Chapter 6. Literature Cited

The standard reference system for biological technical documents is the Name-Year citation system [e.g., Smith 1999, Smith and Jones 1899] common to many wildlife and natural resource publications. A discussion of the different systems and specific usage guidance for the Name-Year System may be found in Chapter 30 of the Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers, 6th ed.

Preparers should have copies of cited references available for reviewers at the reviewer’s request and are responsible for the applicability of the references to the study.

The first citation is a book citation. The second citation is a journal article citation.

Council of Biology Editors Style Manual Committee. 1994. Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers. 6th ed. NY. Council of Science Editors. 704 p.

Author(s). Year. Article Title. Journal Title and Volume number (issue number): inclusive pages.

# Appendix A [Appendix title]

* Appendices are to be in order of the first occurrence in the text and separated from the main text by a divider or colored paper.
* Include information from the IPaC, the NOAA Fisheries California Species List Tools, CNDDB or other lists of potential federally-listed species in the project area, references, photos, etc., as appropriate.
* **CAUTION:** DO NOT INCLUDE SPECIFIC INFORMATION, SUCH AS LOCALITY DATA, THAT IS NOT IN THE PUBLIC RECORD. FOR CNDDB SENSITIVE DATA INCLUDE ONLY THE LOCALITY RECORD NUMBER. CNDDB DATA MUST BE DISPLAYED IN A WAY THAT IS CONSISTENT WITH THE CNDDB LICENSE AGREEMENT AND DATA USE GUIDELINES. Provide appropriate information as necessary so that a reviewer may confirm or review the findings. Sensitive data should not be made public here.