

Chapter 3

Affected Environment/Environmental Consequences

3.1 Introduction

This chapter describes, for each resource area, the affected environment or environmental setting for the region of the Klamath Basin potentially affected by the dam removal and connected actions, should they be implemented. This chapter presents the analyses of the impacts that would result from the No Action/No Project Alternative or implementation of the Proposed Action and alternatives described in Chapter 2. This chapter also presents mitigation measures to reduce or eliminate the impacts. The sections of this chapter, by resource area, are as follows:

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| 3.2 | Water Quality | 3.14 | Land Use, Agricultural and Forest Resources |
| 3.3 | Aquatic Resources | 3.15 | Socioeconomics |
| 3.4 | Algae | 3.16 | Environmental Justice |
| 3.5 | Terrestrial Resources | 3.17 | Population and Housing |
| 3.6 | Flood Hydrology | 3.18 | Public Health and Safety, Utilities and Public Services, Solid Waste, Power |
| 3.7 | Groundwater | 3.19 | Scenic Quality |
| 3.8 | Water Supply/Water Rights | 3.20 | Recreation |
| 3.9 | Air Quality | 3.21 | Toxic/Hazardous Materials |
| 3.10 | Greenhouse Gases/Global Climate Change | 3.22 | Traffic and Transportation |
| 3.11 | Geology, Soils, and Geologic Hazards | 3.23 | Noise and Vibration |
| 3.12 | Tribal Trust | | |
| 3.13 | Cultural and Historical Resources | | |

Paleontological resources, which may appear in an Environmental Impact Statement (EIS) or an Environmental Impact Report (EIR) for other projects, were not considered in detail in this Klamath Facilities Removal EIS/EIR, with the exception of their potential presence in a diatomite bed near Copco Reservoir, because the Lead Agencies determined that the volcanic nature of the local geology at the dam sites precluded the presence of these resources in the project area. The potential for project related effects on paleontological resources at this diatomite deposit are described in Section 3.11, Geology, Soils, and Geologic Hazards.

3.1.1 Format of the Environmental Analysis

3.1.1.1 Area of Analysis

This document defines and describes an area of analysis for each resource area. In some cases, the area of analysis consists only of facility deconstruction/construction areas, or nearby areas that would be affected directly by the effects of deconstruction/construction, such as for the analysis of noise impacts. More often, the area of analysis includes the entire Klamath Basin. The area of analyses for water supply/water rights and for land use, agricultural and forest resources, for example, includes the entire Klamath Basin because implementation of the Klamath Hydroelectric Settlement Agreement (KHSA) and Klamath Basin Restoration Agreement (KBRA) could affect these resources not only at the project sites, but also in areas upstream and downstream of them. In a few cases, the area of analysis is even more geographically broad, such as for socioeconomics.

3.1.1.2 Regulatory Framework

Each resource area is evaluated within the existing framework of federal, state, and local laws, regulations, policies, and plans. For each resource area, the sub-sections of this chapter briefly list the laws and regulations that are relevant and applicable to the affected environment, area of analysis, and analysis of impacts. Chapter 6 of this EIS/EIR provides further discussion on how laws, regulations, policies, and plans would be addressed through implementation of the Proposed Action or alternatives.

3.1.1.3 Wild and Scenic River Act Component Analysis

The analysis of potential effects on Wild and Scenic River components is presented in Section 3.20, Recreation. The specific subsection and page numbers of this analysis are:

- Scenic Quality - Section 3.20.4.3, pages 3.20-47 and 59
- Recreation - Section 3.20.4.3, pages 3.20-50 and 59
- Fisheries - Section 3.20.4.3, pages 3.20-52 and 59
- Wildlife - Section 3.20.4.3, pages 3.20-55 and 59

3.1.1.4 Coastal Zone Management Act Consistency Determination

The Coastal Zone Management Act (CZMA) requires any applicant seeking a Federal License or permit that could affect land or water uses or resources of the California coastal zone to perform a Federal Consistency Determination for the proposed project. The determination provides a certification that the proposed action will be conducted in a manner that to the maximum extent possible is consistent with the policies of the California Coastal Management Program as outlined in the California Coastal Act (CCA) of 1976. The analysis of the consistency between the policies of the California Coastal Act and the Proposed Action is discussed in the following section:

- Discussion of CCA Section 30231 - Section 3.3.4.3 page 134
- Discussion of CCA Section 30236 - Section 3.3.4.3 page 135

The focused analysis in Section 3.3.4.3 considers at specific CCA policies; however, this information supplements the more comprehensive analysis of the near-shore impacts in Section 3.2, Water Quality and Section 3.3, Aquatic Resources.

3.1.1.5 Basis of Comparison for the Affected Environment/Environmental Setting

The analysis of impacts requires a basis for comparison of conditions during project construction and post-project. The National Environmental Policy Act (NEPA) basis of comparison is the No Action Alternative. Under the California Environmental Quality Act (CEQA), the basis of comparison is conditions at the time of the Notice of Preparation. As discussed in Chapter 2, the No Action Alternative is similar to conditions at the time of the Notice of Preparation; therefore, the basis of comparison for NEPA and CEQA are generally the same for this document. The impact analysis for each resource considered both the NEPA and CEQA basis of comparison together and, in cases where these baselines differ, further discussion is provided.

3.1.1.6 Environmental Consequences/Environmental Impacts

The methods used to evaluate impacts are described for each resource area. In general, the Lead Agencies identified the impacts that would result from implementation of each of the alternatives within the context of the environmental baseline and regulatory framework. The Lead Agencies used a variety of data sources, models, design documents, interviews, and various other types of research and analysis to predict the impacts. The Lead Agencies then determined the magnitude or significance of the impacts based on significance criteria, where required.

Significance Criteria

For each resource area, this chapter presents specific significance criteria that the Lead Agencies used to assess the significance level of the impacts under CEQA. Pursuant to NEPA, significance is used to determine whether an EIS or some other level of documentation is required, and once the decision to prepare an EIS is made, the magnitude of the impact is evaluated and no further judgment of significance is required. Therefore, any determinations of significance are for CEQA purposes only.

Impact Discussion

The impacts of each alternative are discussed in Chapter 3 by resource area and alternative. Each resource area section is structured so that an *italicized* impact statement introduces potential changes that could occur from implementation of each alternative. A discussion of how the resource area would be affected by the impact then follows this initial statement. The impact discussion is concluded with a **bold** significance determination that indicates if there is no impact to a resource area or if the impact to a resource area is beneficial, less than significant, or significant.

Mitigation Measures

For those impacts that would be significant, the Lead Agencies identified feasible mitigation measures, if they exist, to reduce the level of the impact. The discussion of mitigation measures presented in this chapter includes an assessment of which, if any, significant impacts would remain after mitigation. Chapter 5, Other Required

Disclosures, describes any irreversible and irretrievable commitments of resources that the Lead Agencies identified as part of this analysis.

Although existing adverse conditions associated with the No Action/No Project Alternative identified in this chapter would continue, it is not necessary or appropriate to formulate a mitigation measure and ascribe mitigation responsibility for these impacts. In accordance with the intent and requirements of CEQA (Guidelines Section 15126.6), delineating the nature and significance of impacts associated with the No Action/No Project Alternative serves to provide a basis for comparing the impacts of approving the proposed project with the impacts of not approving the proposed project. In particular, the evaluation of alternatives, including the “no project” alternative, serves to determine whether the significant impacts of the alternatives can be avoided or substantially lessened. The analysis presented for the No Action/No Project Alternative in this chapter has determined that the existing adverse conditions would continue for reasons not attributable to the Proposed Action or alternatives; this provides information to be considered by decision-makers in evaluating the impacts that are attributable to the Proposed Action.

Scope of the KBRA Evaluation

This EIS/EIR provides a project-level analysis of the KHSA and alternatives¹, but it evaluates the KBRA on a programmatic level. While the general goals of the KBRA actions and programs are known, the specific actions that would occur are not yet defined, and additional environmental analyses according to NEPA, CEQA, and other permits and authorizations would be required as necessary once the KBRA activities are defined at a project-level. The Lead Agencies considered the goals, programs, and plans as described in KBRA Appendix C-3 (summarized in this EIS/EIR in Chapter 2) in the impact analyses to determine their anticipated direct, indirect, and cumulative effects on each resource. Additionally, each section contains an analysis of the potential combined effects of KBRA actions and facility removal actions in the KHSA. These combined effects are described as a part of the programmatic significance determination on the specific KBRA actions. The KBRA programs described at a sufficient level of detail to support the programmatic analysis completed in this EIS/EIR are outlined in Table 3.1-1:

¹With the exceptions of the East and West Side Facility Decommissioning, a component of the Proposed Action and Alternative 3, and the trap and haul program included in Alternatives 4 and 5 which are both analyzed at the programmatic level.

Table 3.1-1 KBRA Plans and Programs Analyzed

KBRA Program	Sections Analyzed
Phase 1 Fisheries Restoration Plan	3.2 Water Quality, 3.3 Aquatic Resources, 3.4 Algae, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.11 Geology and Soils, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.16 Environmental Justice, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.20 Recreation, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Phase 2 Fisheries Restoration Plan	3.2 Water Quality, 3.3 Aquatic Resources, 3.4 Algae, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.11 Geology and Soils, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.16 Environmental Justice, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.20 Recreation, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Fisheries Monitoring Plan	3.3 Aquatic Resources, 3.15 Socioeconomics
Fisheries Reintroduction and Management Plan	3.2 Water Quality, 3.3 Aquatic Resources, 3.5 Terrestrial Resources, 3.8 Water Rights/Water Supply, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.13 Cultural and Historic Resources, 3.14 Land Use, Agricultural and Forest Resources, 3.15 Socioeconomics, 3.16 Environmental Justice, 3.19 Scenic Quality, 3.20 Recreation, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Wood River Wetland Restoration	3.2 Water Quality, 3.4 Algae, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.8 Water Rights/Water Supply, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.20 Recreation, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Water Diversion Limitations	3.2 Water Quality, 3.3 Aquatic Resources, 3.6 Flood Hydrology, 3.7 Groundwater, 3.8 Water Rights/Water Supply, 3.14 Land Use, Agricultural and Forest Resources, 3.15 Socioeconomics, 3.19 Scenic Quality, 3.20 Recreation
On-Project Plan	3.3 Aquatic Resources, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.7 Groundwater, 3.8 Water Rights/Water Supply, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.20 Recreation, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Future Storage Opportunities	3.6 Flood Hydrology, 3.8 Water Rights/Water Supply, 3.15 Socioeconomics
Water Use Retirement Program	3.2 Water Quality, 3.3 Aquatic Resources, 3.4 Algae, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.7 Groundwater, 3.8 Water Rights/Water Supply, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.13 Cultural and Historic Resources, 3.14 Land Use, Agricultural and Forest Resources, 3.15 Socioeconomics, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.20 Recreation, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration

Table 3.1-1 KBRA Plans and Programs Analyzed

KBRA Program	Sections Analyzed
Power for Water Management	3.14 Land Use, Agricultural and Forest Resources, 3.15 Socioeconomics, 3.18 Utilities and Public Services, Solid Waste, Power
Off-Project Water Settlement	3.8 Water Rights/Water Supply, 3.15 Socioeconomics
Off-Project Water Reliance Program	3.8 Water Rights/Water Supply, 3.15 Socioeconomics, 3.16 Environmental Justice
Emergency Response Plan	3.6 Flood Hydrology, 3.7 Groundwater, 3.8 Water Rights/Water Supply, 3.15 Socioeconomics, 3.18 Utilities and Public Services, Solid Waste, Power
Climate Change Assessment and Adaptive Management	3.6 Flood Hydrology, 3.8 Water Rights/Water Supply, 3.20 Recreation, 3.15 Socioeconomics
Interim Flow and Lake Level Program	3.2 Water Quality, 3.4 Algae, 3.5 Terrestrial Resources, 3.6 Flood Hydrology, 3.7 Groundwater, 3.8 Water Rights/Water Supply, 3.15 Socioeconomics, 3.16 Environmental Justice, 3.19 Scenic Quality, 3.20 Recreation
Fish Entrainment Reduction	3.3 Aquatic Resources, 3.9 Air Quality, 3.10 Global Climate Change/Greenhouse Gases, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.17 Population and Housing, 3.18 Utilities and Public Services, Solid Waste, Power, 3.19 Scenic Quality, 3.21 Toxic and Hazardous Materials, 3.22 Traffic and Transportation, 3.23 Noise and Vibration
Upper Klamath Lake and Keno Nutrient Reduction	3.2 Water Quality, 3.3 Aquatic Resources, 3.4 Algae, 3.15 Socioeconomics
Tribal Fisheries and Conservation Management Program	3.12 Tribal Trust, 3.15 Socioeconomics, 3.16 Environmental Justice
Tribal Programs Economic Revitalization	3.15 Socioeconomics, 3.16 Environmental Justice
Klamath River Tribes Interim Fishing Site	3.3 Aquatic Resources, 3.12 Tribal Trust, 3.13 Cultural and Historic Resources, 3.15 Socioeconomics, 3.17 Population and Housing, 3.19 Scenic Quality, 3.22 Traffic and Transportation
Mazama Forest Project	3.5 Terrestrial Resources, 3.12 Tribal Trust, 3.13 Cultural and Historic Resources, 3.14 Land Use, Agricultural and Forest Resources, 3.15 Socioeconomics
Klamath County Economic Development Plan	3.15 Socioeconomics, 3.16 Environmental Justice
California Water Bond Legislation	3.15 Socioeconomics, 3.16 Environmental Justice