



Environmental Assessment and Assessment of Effect

Princess Ditch Trail Construction

March 2014



Princess Hydraulic Mine. Monitors undercutting a bank of auriferous gravel. (Photo ca 1900 by Adele Kiessling, in Clark 1970:134).

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National Park Service

Whiskeytown National Recreation Area
California

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PURPOSE AND NEED

Introduction

Whiskeytown National Recreation Area (NRA) is a unit of the national park system in Shasta County, California, approximately 8 miles west of downtown Redding. The NRA encompasses approximately 42,500 acres (approximately 39,042 acres of land and 3,458 acres of water). Elevations range from 800 feet (ft.) on lower Clear Creek below Whiskeytown Dam in the southeastern corner of the park, to 6,200 ft. atop Shasta Bally (Figure 1). Vegetation generally includes mixed pine-oak woodlands and forests, riparian, Mediterranean and montane chaparral, and oak woodlands. Whiskeytown Lake was created by a 263 ft. tall earth-filled dam constructed by the U.S. Bureau of Reclamation's Central Valley Water Project on Clear Creek in 1963. The lake has a catchment area of approximately 203 square miles, and is capable of storing approximately 241,100 acre-feet of water for irrigation, flood control, and electricity generation. Annual visitation to the NRA has averaged around 800,000 in recent years, with weather boosting visitation numbers.

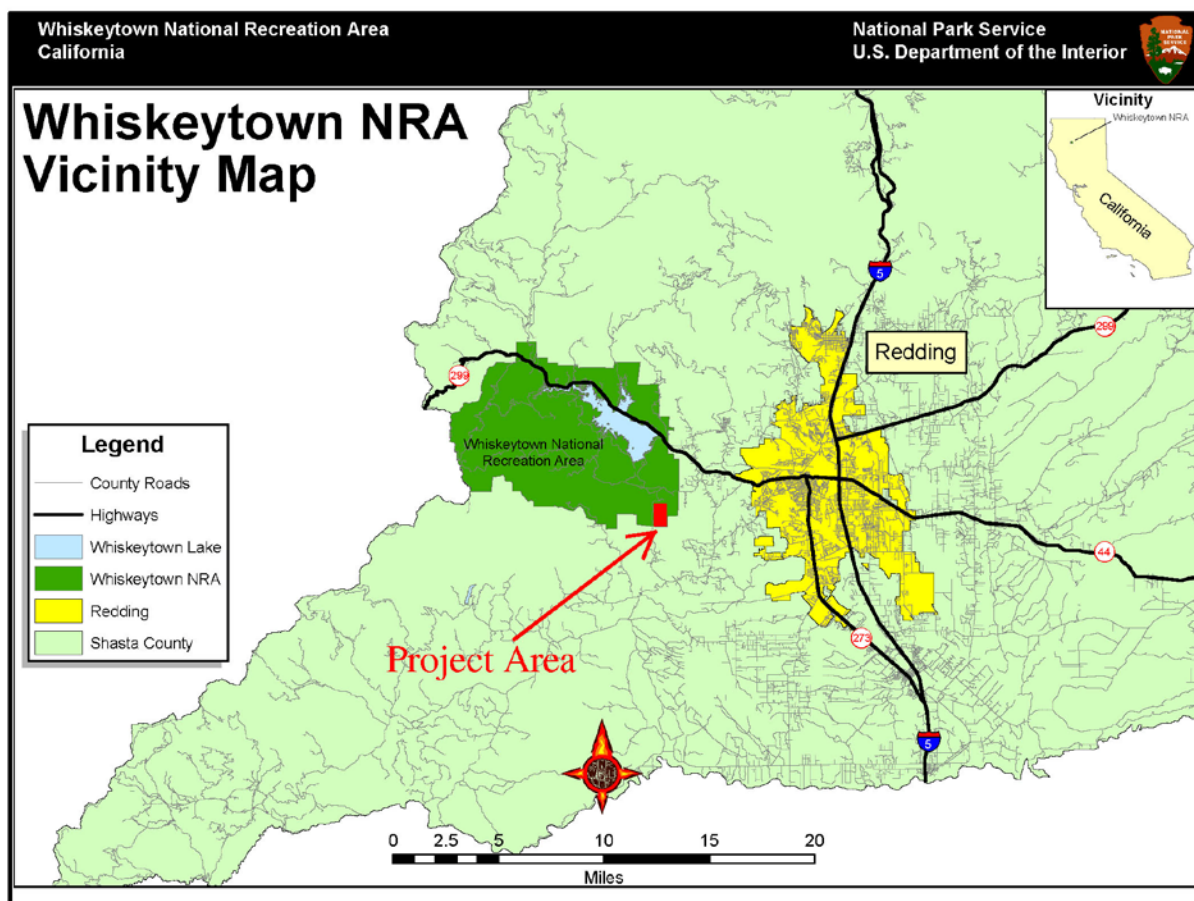


Figure 1. Area Map.

Purpose and Need

The purpose of the proposed action is to provide public access to a network of trails connecting the Bureau of Land Management (BLM) and Whiskeytown NRA lands in the southeast portion of the park. The NPS and BLM have been expanding the trail system that connects Whiskeytown with the BLM administered Swasey Recreation Area. The BLM has completed two sections of the Princess Ditch Trail that lead to the boundary of Whiskeytown National Recreation Area, and a short (1.9 miles) connecting trail is needed through the park to join these two new trail segments (Figure 2). This proposed routing of the trail is along an existing historic water ditch, the Princess Ditch, for approximately 1.4 miles and will require about 0.5 miles of newly constructed trail to connect the historic ditch to the existing park trail system.

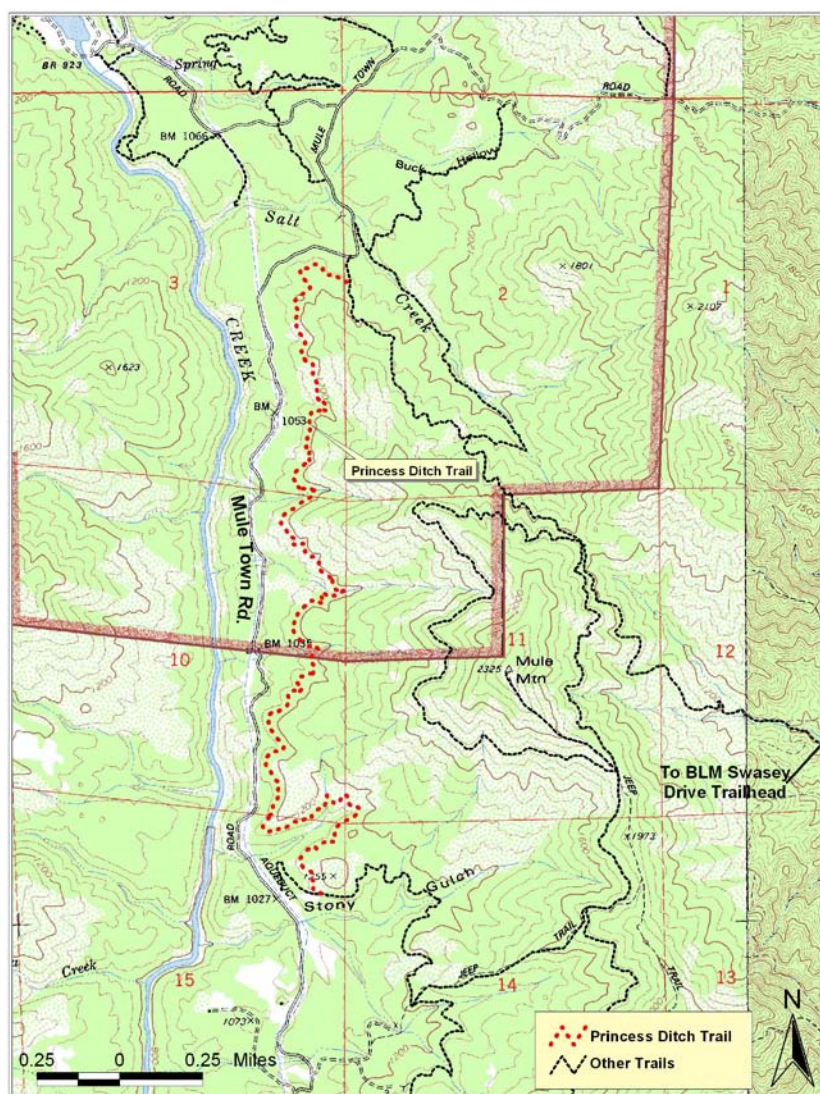


Figure 2. Map of Princess Ditch Trail showing route and nearby trails.

In 2008, the NPS and BLM collaborated with the McConnell Foundation, Redding Foundation, and Shasta County's Healthy Shasta Program, to promote a healthy living style through outdoor

exercise. It is generally understood that there is a growing obesity problem with our Nation's youth. The NPS and its' partners believe developing outdoor opportunities for the public will help solve this serious problem. A statement from the Healthy Shasta, Healthy Community web page states:

"Parks, trails, forests, meadows, wetlands, agricultural lands, and any open space is considered green space. These green spaces provide community members an opportunity for recreation and relaxation and we're fortunate in Shasta County to have a considerable amount available to us. As our community continues to grow, it will be important to preserve these unique natural resources that benefit our health and symbolize our country. Public spaces allow for friends and family to gather for events, get physical activity, and a sense of pride their community".

This environmental assessment will analyze the Proposed Action and No Action alternatives and their potential impacts on the environment. It has been prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA); the regulations of the Council on Environmental Quality (40 *Code of Federal Regulations* [CFR] 1508.9); National Park Service Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*; the National Historic Preservation Act of 1966, as amended (NHPA); and the Endangered Species Act of 1973, as amended. The assessment of effect analyzes potential effects to historic properties under section 106 of the NHPA.

Scoping

A press release initiating scoping and describing the proposed changes to the park trail system was issued on February 15, 2012 (Appendix A). A public meeting was held on February 29, 2012, at Redding City Hall. Approximately 60 people attended. Comments were solicited during a public scoping period that ended on March 30, 2012. See the "Consultation and Coordination" section of this environmental assessment for additional scoping information. Additionally, the BLM consulted with the NPS, Redding Rancheria, Shasta County, McConnell Foundation, Redding Foundation, local residents and the Redding Mountain Bike Club as part of their NEPA analysis (BLM, 2011) for the Princess Ditch Trail construction. The NPS conducted its own scoping session because the Princess Ditch Trail was one of several park trails that were being proposed as new trails, even though there had been close coordination with the BLM with regards to their planning efforts.

Issues and Impact Topics

Issues

Issues and concerns affecting this proposed action were identified from past NPS planning efforts, and agency and public input from the scoping process. The important issues that were identified are potential impacts to air quality, soundscapes, NRA operations, visitor experience, health and safety, geology and soils, historic structures, ethnographic resources, and cultural landscapes, archeological resources, vegetation, wildlife, Threatened and Endangered Species, and water resources.

NEPA requires the consideration of impacts on affected ecosystems and is the basic national charter for protection of the environment (CEQ Part 1500). NEPA requires federal agencies to use all practicable means to restore and enhance the quality of the human environment and to

avoid and minimize any possible adverse effects of their actions on the environment. The proposed action would minimize impacts to natural resources and visitor use and experience, while protecting health and safety. Issues and mitigation measures are included in the rationale for selection of impact topics for further consideration or for dismissal from further consideration per the ensuing discussion.

Derivation of Impact Topics

Specific impact topics were developed to focus discussion and to allow comparison of the environmental consequences of each alternative. Selected impact topics were identified based on federal law, regulations, executive orders, NPS Management Policies (2006), and NPS knowledge of special or vulnerable resources. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Included in this Document

Impact topics for this project have been identified on the basis of federal laws, regulations, and orders; NPS Management Policies (2006); and NPS knowledge of resources at Whiskeytown NRA. Impact topics that are carried forward for further analysis in this environmental assessment are listed below, along with the reasons why the impact topic is further analyzed as described in the “Affected Environment” chapter and potential impacts analyzed in the “Environmental Consequences” chapter.

Impact topics are dismissed from further evaluation in this environmental assessment (EA) if:

- they do not exist in the analysis area, or
- they would not be affected by the proposal, or the likelihood of impacts are not reasonably expected.

Due to there being no effect or negligible effects, there would either be no contribution towards cumulative effects or the contribution would be low. For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct and indirect, and cumulative effects is presented. There is no impairment analysis included in the limited evaluations for the dismissed topics because the NPS's threshold for considering whether there could be impairment is based on "major" effects.

Impact Topics Retained For Further Analysis

Air Quality

Trail construction activities such as hauling materials and operating motorized equipment could result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Overall, the project could result in a much localized degradation of air quality. Because there would likely be an increase in vehicle exhaust from crews traveling to the trail and a temporary suspension of dust particles in the general vicinity of the construction, this topic has been carried forward for further analysis.

Soundscapes

During construction, human-caused sounds would likely increase due to trail construction activities, motorized equipment, chain saws, and trail crews. Because the construction will have potential impacts on the soundscapes due to the construction activities, this topic has been carried forward for further analysis.

National Recreation Area Operations

Whiskeytown NRA operations that could be affected by the alternatives are Maintenance, Resource, and Law Enforcement Divisions. Installation of the Princess Ditch Trail will affect the Maintenance Division because the new trail will require crews to maintain the trail at a cost to the NRA. Construction of the new trail will affect the Resource staff in that invasive plant surveys will now need to occur along the trail annually. Also, law enforcement and emergency staff will be affected because the trail location is in a relatively remote portion of the park where visitation has been traditionally very low. After construction of the trail, law enforcement will have to increase patrols in this remote location.

Visitor Use and Experience

Providing for visitor enjoyment is one of the primary purposes of the NPS, according to the 1916 Organic Act and NPS Management Policies (2006). Furthermore, the enabling legislation for the park stipulates that management will promote, or is compatible with, and does not significantly impair, public recreation, and conservation of scenic, scientific, historic, or other values contributing to public enjoyment. The proposed Princess Ditch Trail will affect the visitor experience by providing a better recreation experience for visitors interested in the southeast portion of the park. Therefore, this topic is considered for further evaluation.

Geology and Soils

Construction of the Princess Ditch Trail using motorized equipment and hand tools will disturb soil and bedrock in the process of installation. Therefore, this topic is considered for further evaluation.

Water Resources

The proposed route for the Princess Ditch Trail crosses numerous ephemeral streams within the park boundary. Construction of the trail has the potential to divert watercourses and temporarily increase sedimentation from disturbed soil. Therefore, this topic is considered for further evaluation.

Vegetation

The vegetation in the project area is dominated by mixture of black oak, knobcone pine, canyon live oak, and chaparral plant communities. Construction of the trail will require removal of vegetation through the trail corridor. Trail corridors also become avenues for the spread of invasive plants. Additionally, there is suitable habitat for some sensitive plant species within the proposed project area, so this topic is considered for further evaluation.

Wildlife and Fish

There are a wide variety of wildlife and fish species found in the project area. Some will be affected more than others. There is suitable habitat for some special status fish and wildlife species as well, so this topic will be considered for further analysis.

Cultural Resources

The Princess Ditch is an historic archeological site that is an historic structure and potentially part of a cultural landscape. Because construction and use of the ditch as a trail will affect the ditch as a cultural resource, it has been retained for further analysis.

Impact Topics Dismissed from Further Analysis

Wetlands

Executive Order 11990 (DOI 77), Protection of Wetlands, states each agency shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. For regulatory purposes under the Clean Water Act (1972), the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." NPS staff reviewed the U.S. Fish and Wildlife Service's National Wetlands Inventory Map and the USGS topographic map to determine if the project would have an impact on any wetlands or require significant amounts of fill or grading. The site is not located in a recognized National Wetland area nor are wetlands located downstream of the site. Because there are no wetlands in the proposed project area or downstream and because there would be no unacceptable impacts, this topic is dismissed from further analysis in this document.

Floodplains

Executive Order 11988 (DOI 77), Floodplain Management, states each agency shall take action to reduce the risk of flood loss, to minimize floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. No floodplains would be affected by actions proposed in this EA. The proposed location of the trail is not within floodplains and the construction would not result in any impacts on floodplains, therefore, this topic is dismissed from further analysis in this document.

Lightscape Management

The proposed Princess Ditch Trail will not utilize exterior lighting and therefore would have no effects on the existing outside lighting or natural night sky of the area. This topic is dismissed from further analysis in this document.

Prime and Unique Farmlands

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. The proposed project area does not contain prime or unique farmlands. Because there would be no effects on prime and unique farmlands, this topic is dismissed from further analysis in this document.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by the Department of Interior agencies be explicitly addressed in environmental documents. There are no Indian trust resources at Whiskeytown NRA. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Because there are no Indian trust resources located in the proposed construction areas and there would be no impacts on Indian Trust Resources, this topic is dismissed from further analysis in this document.

Environmental Justice

Executive Order 12898 General Actions to Address Environmental Justice in minority populations and low-income populations requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. No alternative under consideration would have disproportionately high and adverse health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Draft Environmental Justice Guidance (July 1996). Therefore, environmental justice has been dismissed from further analysis in this EA.

Climate Change and Sustainability

Climatologists are sure about the long-term results of global climate change, and it is clear that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. Currently, there is no evidence that construction of a trail has potential to impact climate change, or that the potential impacts of climate change would alter future use of this trail or cause any cumulative impacts to park resources. The effects of future climate changes are not discussed further.

Socioeconomics

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Any increase in workforce and revenue would be temporary and negligible, lasting only as long as construction. Because the impacts to the socioeconomic environment would be negligible, this topic is dismissed.

Ecologically Critical Areas

Whiskeytown has identified four areas which are considered to be ecologically sensitive since they embody unique and special resource values found in the park. These areas include some of the park's high elevation old growth forests, the mineral springs located along Highway 299 West, the top of Shasta Bally, and riparian habitats. None of these ecological critical areas are located within the project area and are excluded from any further analysis.

ALTERNATIVES

In 2005, after the completion of the Shasta Trinity Trail Plan and EA, Whiskeytown NRA staff began exchanging information with park partners and the public about the Princess Ditch Trail proposal as a means of addressing unmanaged recreational uses. The Princess Ditch Trail was identified as a high priority trail that the park would construct to continue the trail started by BLM which ended at the park boundary.

This chapter describes the two alternatives analyzed in this document: Alternative A – No Action/Current Management and Alternative B – Proposed Action/Preferred Alternative. These alternatives were developed through evaluation of comments provided by individuals, organizations, governmental agencies, and the park's interdisciplinary management staff. The proposed action will operate as the Princess Ditch Trail, if approved. A summary table comparing alternative components is presented at the end of the chapter.

Alternative A – No Action/Current Management

The No Action Alternative is a continuation of current environmental conditions and trends. It is defined as a continuation of the existing situation or not implementing the proposed action. This alternative would not allow for the construction of the Princess Ditch Trail or the enhancement of the recreational opportunities. The No Action alternative also serves as a baseline for evaluating the environmental effects of the proposed action alternative. The park objective of continuing the trail that the BLM completed and which ends at the park boundary would not be met.

Alternative B – Proposed Action/Preferred Alternative

The Proposed Action Alternative is to construct the Princess Ditch Trail. The trail would allow the NPS to provide recreational opportunities in a part of the park where a water ditch once existed and that would now be available for hikers to use and to tie in with network of trails on BLM property.

Approximately 1.9 miles of trail would be constructed, most of which would occur along the framework of the Princess Ditch which was a water-delivery system built in the mid-19th century. Much of the ditch has lost its structural integrity and is overgrown with vegetation that will need to be cleared for the trail to be built. To access this section of trail from the existing park trail network, approximately 0.5 miles of newly constructed trail will need to be created.

Standards for trail design and maintenance will follow guidelines set forth in the NPS Trails Management Handbook (NPS, 1983) with adaptations for use by Whiskeytown NRA. Sensitive, fragile, and hazardous resources such as archeological sites, rare and sensitive plant habitat, wildlife nesting sites, and mine openings will be avoided or mitigated for trail construction.

Trail construction along the existing historic Princess Ditch will involve the removal of vegetation along the ditch and the thinning of vegetation to open the trail corridor to approximately 4-5' from the center of the ditch. Upslope from the trail, dead and down material will be removed and pile-burned within the ditch. This will be done with chainsaws and hand tools. In areas where water pools within the ditch, washed and weed-free ¾ inch angular rock may be distributed to create a more sustainable trail surface. Aside from motorized wheelbarrows, mechanized equipment (e.g., trail dozers, small excavators, etc.) will not be used within the footprint of the historic water ditch. Newly-constructed trail to access this historic

structure may involve such methods as hand tools, chainsaws, and in some areas the use of a mini-dozer. To establish bridges to cross drainages, mechanized equipment such as a trail dozer or small excavator might be used, as necessary.

New trail construction from the Mule Mountain Trail to the end of the Princess Ditch will involve the installation of a 4 to 6 foot wide trail constructed at an average of 3 to 5 percent grade. Vegetation will be cleared 2 feet on each side allowing for a 8 to 10 foot wide trail corridor, and a minimum of 10 feet overhead to allow for horse-riding. Short sections of trail that exceed 10 percent tread grade will be limited to 300 feet in length and cannot exceed more than 10 percent of every mile (approximately 600 feet). No new trail construction will occur on sections that exceed 20-percent tread grade. All spoils generated during construction will be incorporated back into trail tread away from the hydrologic crossings. The trail will be out-sloped from 8 to 12 percent to pass overland flow.

Low water crossing and culverts will be installed where needed. Low-water crossings will be hardened at the exit point and along the tread with the appropriate size rock (usually 3 inch minus) protecting the trail and fill slope from erosion. If culverts are installed, hydrologic crossings will also be confined by critical dip(s) on the downhill side of the crossing or on both sides if needed. Culverts will be designed to pass a 100-year flow at 80 % capacity. The culvert inlet point will be hardened and energy dissipaters (large native rock) will be installed below the culvert. Additionally, rock walls, rolling dips and others features will be installed to reduce erosion and provide for a sustainable trail.

Bridges will be constructed over four ephemeral stream crossings and will be designed to pass a 100-year flow with 2 feet of freeboard. Bridges will be designed to accommodate multiple user groups and engineered to support stock on selected load weight, the length and the width.

Mitigation Measures

The following mitigation measures were developed to minimize the degree and/or severity of adverse effects and would be implemented during construction of the action alternative, as needed:

- Cut vegetation along the trail will be either saved or used for mulch/erosion control material or it will be pile burned. If burned, vegetation piles will be located 10 – 20 feet away from large diameter oaks and conifers to avoid overstory tree mortality.
- During new trail construction, silt fencing will be established downslope of any work involving a trail dozer. This fencing material will be removed once the trail is compacted and established.
- Before any equipment is brought into the park, it will be pressure or steam-washed in order to remove non-native seeds. Cleaning shall consist of the removal all dirt, grease, debris, and materials that may harbor noxious weeds and their seeds. Cleaning shall occur off the project site. Examples of equipment are backhoes, tractors, loaders, excavators, dozers, bobcats, wheeled compressors, or trucks and trailers that have traveled off-road. Park staff will inspect all equipment to ensure that it is weed and seed-free.

- If equipment temporarily leaves the park boundary for work, or moves to another work site within the park, it shall be cleaned in accordance with the above procedures prior to re-entering the park or being moved back to the project site.
- Topsoil, gravel, rock, straw or hay materials shall not be imported into the park. If absolutely necessary, consultation with the park's Resource Management staff will be necessary to accommodate the trail's needs. Consultation with Resource Management staff shall occur two weeks in advance of material need, and staff will inspect source locations for the presence of invasive species.
- Large washed and weed-free angular rock may be distributed to create a more sustainable trail surface. The material type must be approved by Resource Management staff and be inspected for weed seed prior to use. To retain this material and stabilize trail tread, synthetic geo-grid reinforcement products may be considered.
- Seasonal trail closures will be considered, if sections of trail are unable to be drained without compromising the historic integrity of the ditch structure.
- After completing construction, exposed soil outside the trail footprint will be covered with local litter and native vegetation slash as soon as possible. This mulch will provide a source of seeds to reestablish native vegetation and reduce the risk of non-native seeds germinating. Ideally, the litter and duff should be collected from surrounding areas, but do not denude the collection area. Leave at least 50 percent of the material in place and don't disturb vegetation. In the absence of native vegetation, certified weed free rice straw can be used. Hay, straw, and even certified weed-free hay is not permissible.
- Minimize the area of soil disturbance.
- To minimize the amount of ground disturbance, staging and stockpiling areas will be in previously disturbed sites, away from visitor use areas to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.
- Trail construction zones will be identified and signs or fencing will be placed to prevent visitors from entering the area.
- Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of any discovery and the recreation area would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.

Alternatives Considered and Dismissed

The following alternatives were considered for project implementation, but were ultimately dismissed from further analysis. Reasons for their dismissal are provided in the following alternative descriptions.

An alternative considered but dismissed by the NPS was construction of the Princess Ditch Trail adjacent to the actual ditch to protect the ditch on NPS lands. However, after planning meetings and discussions, it was demonstrated that using and maintaining the ditch as a trail will help preserve this feature, which suffers from benign neglect as vegetation encroaches.

Another alternative considered but dismissed would have resulted in the paving of the trail. This would not be consistent with any of the other backcountry trails in the park and was dismissed as a reasonable alternative.

Table 1: Summary of Alternatives and How Each Alternative Meets Project Objectives

Alternative Elements	Alternative A - No Action	Alternative B – Construct Ditch Trail
New Trail Constructed	The Princess Ditch Trail would not be completed, and therefore there would be no link or continuation of the trail to connect with the BLM portion of the trail or with other park trails.	The Princess Ditch Trail would be constructed, providing a multiuse trail to connect with the BLM section of this trail and with other park trails. This would provide an extensive, continuous trail that would provide an extended, relatively flat trail in an undeveloped area of the park that would be welcome by the public.
Park Operations	The Princess Ditch Trail would not be completed, and therefore there would be no impact to park operations.	The Princess Ditch Trail would be constructed and will require trail maintenance, law enforcement patrols, and invasive plant surveys and treatments in the absence of additional park funding.
Recreational Opportunities	The Princess Ditch Trail would not be completed, and there would be no change in trails available to the public or the current use of the park trail system.	Under this alternative the Princess Ditch Trail would not be available to provide increased recreational opportunities to the public in an area of the park that has no trail running north-south from the park boundary on the south end of the park and that would also connect with the trail system already completed by the BLM.
Project Objective	Meets Project Objective?	Meets Project Objective?
Provide recreational opportunities in the southeast section of the park.	No. The lack of a trail in this section of the park would not provide the public with the opportunity to hike or ride horses on a trail that would continue the trail that currently ends at the park boundary.	Yes, a new trail would provide a continuous recreational link from BLM land into the park and connect with existing park trails. This trail is expected to receive substantial use due to the link with trails outside the park.

Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which guides the Council on Environmental Quality (CEQ). The CEQ provides direction that the environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA's §101:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

- assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative A, the No Action Alternative, is not the environmentally preferred alternative because it does not provide the public with a range of beneficial uses of the environment nor the opportunity to experience a part of the cultural history of the area.

Alternative B is the environmentally preferred alternative because it best addresses the six evaluation factors. Alternative B, Construct the Princess Ditch Trail, would provide the NPS with a trail that would allow the public to travel along a century-old ditch and provide a connection to an existing trail system along the Princess Ditch on BLM administered lands. The new trail would also connect with an existing trail in the park allowing recreationists more choices of routes and destinations. The increased recreational opportunities have the potential to increase the health of park visitors by providing more opportunities for recreation and a link to trails outside the park boundaries. The ditch is currently overgrown with vegetation and inaccessible. By completing this trail, the NPS will have access and perform regular maintenance which will serve to preserve the ditch. The trail will also provide insight into a past era of park history and is likely to become a very popular trail, as it has proven to be popular with visitors to the BLM trail section.

No new information came forward from public scoping or consultation with other agencies and park specialists to necessitate the development of any new alternatives, other than those described and evaluated in this document.

Affected Environment and Environmental Consequences

Introduction

In this environmental assessment, the *Affected Environment* and *Environmental Consequences* sections are combined. The *Affected Environment* describes the area and resources that could have potential impacts from implementation of either of the alternatives. The *Environmental Consequences* describe the direct, indirect, and cumulative impacts to those resources from the actions proposed in the alternatives. The *Environmental Consequences* also analyzes any impairment to park resources.

Methodology for Assessing Impacts

Topics analyzed in this chapter include: Air Quality; Soundscapes; National Recreation Area Operations; Visitor Use and Experience; Geologic Resources and Soils; Water Resources; Vegetation; Sensitive Plant Species; Invasive Plant Species; Wildlife and Fish; and Cultural Resources.

Direct, indirect, and cumulative effects, as well as impairment are analyzed for each resource topic carried forward. Potential impacts are described in terms of type, context, duration, and intensity. General definitions are as follows, while more specific impact thresholds are given for each resource topic.

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:
 - Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource towards a desired condition.
 - Adverse: A change that moves the resources away from a desired condition or detracts from its appearance or condition.
 - Direct: An effect that is caused by an action and occurs in the same time and place.
All impacts identified in this document are “direct” unless otherwise stated.
 - Indirect: An effect that is caused by an action but is later in time and farther removed in distance, but is still reasonably foreseeable.
- **Context** describes the area or location in which the impact will occur. Are the effects site-specific, local, regional, or even broader?
- **Duration** describes the length of time an effect will occur, either short-term or long-term. Because definitions of duration can differ by resource topic, definitions are provided separately for each impact topic.
- **Intensity** describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major.

Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations, which implemented the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), requires assessment of cumulative impacts in the decision-making process for federal projects. A cumulative effect is described in the CEQ regulations (1508.7) as: *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action.* Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. To determine potential cumulative impacts, projects within the project area and surrounding NRA were identified. Potential projects identified as cumulative actions included any planning or development activity that was completed, that is currently being implemented, or that would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular natural resource, cultural resource, visitor use and experience, or the socioeconomic environment.

Examples of projects that have been completed or are in the process of being planned or implemented that are relevant to the cumulative impacts discussion include:

- Construction of the Papoose Trail as part of the Shasta-Trinity Trail (current and future)
- Rerouting of the Kanaka Peak Trail (past)
- Road/Gate Closures (past) – no gates have been placed in the area of proposed projects in this plan, although additional gates may be installed (past, future).
- Backcountry and Comprehensive Trails Management Plan (future) – assessment will analyze the parks existing trail system for appropriate use, sustainability and future needs.

Cumulative impacts were addressed by considering the effects of the alternatives, combined with the effects of the following past, present, and reasonably foreseeable future actions that were identified in and around the study area. Cumulative impacts are considered for both alternatives and are presented at the end of each impact topic discussion analysis.

Air Quality

Affected Environment

Whiskeytown is located in the Sacramento Valley Air Basin. The Shasta County Air Quality Management District oversees air quality matters in the Whiskeytown area. Sections 160-169 of the Clean Air Act (CAA) established the Prevention of Significant Deterioration program to preserve, protect, and enhance air quality in regions of the United States that are of special national or regional natural, recreational, scenic, or historic value. Under these provisions Congress instituted a classification approach for controlling the increase of air pollution based on existing clean air condition. Class I areas are afforded the greatest degree of air quality protection against industrial growth. Class II areas allow for moderate deterioration, associated with well-managed growth. Class III areas allow the greatest amount of deterioration. Whiskeytown NRA is a Class II air quality area. Air quality-related concerns at Whiskeytown include visibility, vegetation, and visitor and employee health.

Impacts of Alternative A (No Action Alternative)

The No Action Alternative would have no impact on the air quality of Whiskeytown National Recreation Area because under this alternative, the Princess Ditch Trail would not be constructed.

Impacts of Alternative B (Proposed Action)

Under the Proposed Action Alternative, trail construction would temporarily contribute negligible amounts of fugitive dust emissions and vehicle and equipment exhaust in the immediate vicinity of the construction areas. It is unlikely that any fugitive dust would impact park operations or visitor experience as work will occur in a very small area of the park.

Cumulative Effects: Under the No Action Alternative, the Princess Ditch Trail would not be built and there would be no cumulative effects on the air quality in the park. The proposed Princess Ditch Trail installation would contribute a negligible increment to the total cumulative past, present and reasonable foreseeable future air pollution in the park. While fugitive dust will be generated in the immediate vicinity of the proposed location, it will be limited in duration and will

not continue after construction of the trail is completed. Thus, the proposed action will temporarily contribute negligible amounts of fugitive dust, and vehicle and equipment emissions.

Conclusion: The No Action Alternative would have no effect on park air quality at Whiskeytown. The Princess Ditch Trail would not be built and this would have no impact on park air quality when considered with other past, present and reasonably foreseeable future actions. The proposed action would have a minor and temporary impact on air quality in the immediate vicinity of the construction zones in the short-term and there would be no impact to the park's air quality in the long term.

Soundscapes

Affected Environment

Natural soundscapes in parks are often evaluated in terms of a human need for quiet and solitude. Research in acoustics and natural sound, however, demonstrates that natural sound is an important ecological attribute. Impacts to natural sound not only affect the human environment but can threaten the underpinnings of park ecology.

Impacts of Alternative A (No Action Alternative)

The No Action Alternative would have no impact on the natural soundscapes in Whiskeytown.

Impacts of Alternative B (Proposed Action)

Under the Proposed Action Alternative, a slight increase in ambient noise would occur during the installation of the Princess Ditch Trail. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds and would have a negligible impact on the park soundscapes limited to the immediate vicinity of the proposed area of construction. There is also expected to be an increase in noise from hikers utilizing the trail system. Trail is expected to occur primarily during the daylight hours. The proposed trail is located adjacent to other park trails and Muletown road, and is expected to have a negligible, long-term adverse impact through the addition of human cause sound in the trail corridor.

Cumulative Effects: Under the No Action Alternative, the Princess Ditch Trail would not be built and there would be no cumulative effects on park soundscapes. The proposed Princess Ditch Trail installation would contribute a negligible and localized increment to the total cumulative past, present and reasonable foreseeable future soundscapes in the park. While noises will be generated in the immediate vicinity of the proposed location of the trail during construction, after the trail is completed only intermittent sounds from trail use will persist. Thus, the proposed action will contribute negligible long-term noise impacts.

Conclusion: Under the No Action Alternative, the Princess Ditch Trail would not be built and there would be no effect on soundscapes at the park and thus no impact on park soundscapes when considered with other past, present, and reasonably foreseeable future actions. The proposed Action Alternative would have a minor and temporary impact on the natural soundscapes in the immediate vicinity of the project area during the construction. After construction human use of the new trail would introduce intermittent negligible noise that would have a long-term adverse impact on natural soundscapes.

National Recreation Area Operations

Affected Environment

Whiskeytown operations that would be primarily affected by the alternatives are the park's Law Enforcement, Maintenance, and Resource Management staff. The Law Enforcement staff for the park currently has 8 permanent Park Rangers and no seasonal Rangers. Responsibilities of this staff include search and rescue, emergency medical assistance, assistance with traffic accidents, providing resource protection messages, and maintaining law and order in the park. The Maintenance Division has 18 permanent employees and approximately 20 seasonal employees, in aggregate totaling 3 FTE (full-time equivalents). Maintenance staff are responsible for the care and maintenance of park facilities, infrastructure, which includes trails. The Maintenance staff performs a variety of duties including hazard tree removal and brushing trailside vegetation, inspecting and maintaining picnic areas and campgrounds, and maintaining water and wastewater systems throughout the park. There are 5 permanent employees, 1 Term, and approximately 1 – 5 seasonal employees in Resources Management. Primary duties include restoration, exotic plant control, water quality monitoring, research, and cultural and environmental compliance (e.g., NEPA and Section 106).

Impacts of Alternative A (No Action Alternative)

The No Action Alternative would have no impact on the Law Enforcement, Resource Management, or Maintenance operations of the park because under this alternative, the Princess Ditch Trail would not be constructed. Rangers would not have to patrol the area, and Maintenance would not have to construct and maintain the trail.

Impacts of Alternative B (Proposed Action)

Under the Proposed Action Alternative, the construction of the Princess Ditch Trail is anticipated to have a long-term minor adverse impact to Law Enforcement, Resource, and Maintenance operations. Installation of the trail will require regular maintenance, which will be performed by the Maintenance Division. Since no additional FTE's will be hired to maintain the trail, trail crews will have to do more with the same amount of resources. Since no FTE's will be hired to patrol the new trail, Park Rangers will have to spend more time in an area with a traditionally low use and low ranger presence. Additional visitor use could result in an increased need for ranger patrols to protect resources, provide for visitor safety, or respond to emergencies. Resource Management staff will monitor, map, and treat invasive plant species as trails typically serve as corridors for the spreading of weeds.

Cumulative Effects: Under the No Action Alternative, the Princess Ditch Trail would not be built and there would be no cumulative effects on park operations at the NRA. The Proposed Action Alternative would contribute a minor increment to the total cumulative past, present and reasonable foreseeable future park operations. While increased maintenance requirements of additional trail infrastructure will result in an additional workload and cost to park Maintenance, Law Enforcement and Resource Management operations, the cumulative effect will be minor in that the overall workload to maintain this trail will not impact park operations significantly when added to the other trails in the park requiring upkeep.

Conclusion: The No Action Alternative would have no effect on park operations at the NRA. The Princess Ditch Trail would not be built and this would have no impact on the efficiency of law enforcement and maintenance. The Proposed Action would have an overall minor and long-term adverse impact on park operations, primarily because the trail will require additional

maintenance and upkeep, law enforcement staff will have to increase patrols and/or emergency response in the area, and resource staff will have to monitor and treat invasive plant in perpetuity along this new routes with existing staffing.

Visitor Use and Experience

Affected Environment

The park attracts an average of about 800,000 visitors per year, mostly drawn to the recreational opportunities provided by Whiskeytown Lake. Boating, kayaking, wakeboarding, fishing, swimming, and sailing are popular pastimes. Whiskeytown also offers numerous land-based activities such as hiking, backpacking, biking, hunting, horseback riding, wildlife viewing, and gold panning. Several campgrounds are available, ranging from RV camping at Brandy Creek, RV and tent camping at Oak Bottom, and primitive camping at six locations throughout the area.

Most visitor use occurs from Memorial Day to Labor Day, when air and lake temperatures are warm and students are out of school. Weekends in the fall can also be busy if the weather is mild. Whiskeytown Lake is generally full from May to October, as opposed to many other reservoirs in the area, which makes it even more attractive.

Visitors hike on over 60 miles of maintained trails, the majority of which are located in the backcountry. Trails range from short, easy walks near popular camping and swimming areas to longer, more strenuous hikes such as the trail to Whiskeytown Falls or Shasta Trinity Trail. Some visitors venture out for overnight trips or extended stays in the backcountry, but most prefer to stick to the established trail and campground system. Longer and more remote trails are proposed park's Backcountry Management Plan, which is currently being developed by park staff.

Impacts of Alternative A (No Action Alternative)

Since there would be no installation of Princess Ditch Trail, the No Action Alternative could potentially impact visitor use by concentrating recreational activities on existing trails in this area of the park and increasing visitor use conflicts. Recreational opportunities would not be expanded in an area of the park with minimal trails and there would be a failure to connect with a very popular existing trail on BLM lands which leads up to the park boundary. Visitors would also not have an opportunity to easily access the Princess Ditch, an interesting cultural feature, within the park boundary.

Impacts of Alternative B (Proposed Action)

The proposed trail is relatively level, as it follows an historic ditch that carried water, and would connect with the BLM trail coming from outside the park. This trail will expand the recreational opportunities in the southeast area of the park and will enable visitors to connect with trails on BLM land. For these reasons, it is expected to be a popular addition to the park trail system. There is the potential for conflicts between the different user groups, such as hikers and horseback riders because the trail has narrow turns. However, conflicts between these two user groups have been rare in the park on other trails with similar conditions. This trail would expand the existing trail system and potentially have an effect of spreading out trail use and reducing density, but this will depend on visitor use patterns.

This trail would be a continuation of the trail that the BLM has already completed and which currently ends at the park boundary. Where the BLM trail terminates, trail users currently have the option of continuing into the park via Muletown road, a poorly maintained county road, and reconnecting with the parks trail system from multiple locations along this road.

At the north end of the proposed trail, where the ditch ends, a short section of new trail (approximately 0.5 miles) will be constructed to connect the Princess Ditch to the Salt Creek Trail, an existing trail within the park. The Salt Creek Trail connects with rest of the park trail system, making it possible for a visitor to travel many miles both inside and outside the park. Alternative B would have beneficial, long-term impacts on visitor use and experience due to the increase in recreational opportunities both in the park and outside its boundaries.

Cumulative Impacts: Under the No Action Alternative, the Princess Ditch Trail would not be built and there may be a negligible long-term cumulative impact of this alternative's actions on visitor use and experience due to the lack of increased recreational opportunities in an area of the park with minimal trails and the failure to connect with a very popular existing trail network that would allow visitors to travel close to 20 miles on a relatively flat trail in an undeveloped setting. Numerous trails have been constructed and more are planned both in the park and in the immediate area. Failure to offer connections to larger regional trail planning efforts may have a negative impact on visitor use and experience in the future.

The Proposed Action Alternative would contribute a minor increment to the total cumulative past, present and reasonable foreseeable future park operations. With the completion of this trail, combined with the other trails in the area, especially the BLM portion of the Princess Ditch trail, there will be increased opportunities for the public to recreate and explore the park so the impact will be a positive one. Future trail management proposed in the upcoming Backcountry and Trails Management Plan will also complement this effort by analyzing visitor use of the park trail system and focus park trail management on future needs and sustainability.

Conclusion: The proposed trail is in an area of the park where there are very few trails and it is expected that this trail will become very popular with recreationists. The proposed trail would add to the existing trail system and is expected to have a long-term minor to moderate beneficial impact on visitor use and experience in the park.

Geologic Resources and Soils

Affected Environment

Whiskeytown National Recreation Area is located in the Eastern Klamath Metamorphic Belt of the Klamath Geologic Province. The five major exposed bedrock units range in age from the very old lower Devonian Copley greenstone to the relatively younger lower Cretaceous Shasta Bally batholith. Also present within Whiskeytown National Recreation Area are several dike intrusions ranging in composition from aplite to dacite. All Paleozoic units are folded, jointed, and thrust faulted and/or normal faulted. Unconsolidated Quaternary units expressed as colluvial and alluvial deposits locally overlie all units.

The oldest exposed bedrock units are the volcanic lower Devonian Copley greenstone and the Balakala rhyolite, which cover about 30% of the geology within Whiskeytown National Recreation Area. The units are considered contemporaneous in age and emplacement with an often inter-fingering contact relation. Both of these units are highly fractured, faulted, and folded, increasing their susceptibility to erosion. Stratigraphically above and in unconformable contact

with these is the Bragdon formation of Mississippian age. This formation is highly fractured, faulted, and folded, increasing its susceptibility to erosion.

The Jurassic Mule Mountain stock covers about 20% of the geology within Whiskeytown National Recreation Area and is stratigraphically above and in unconformable contact with the Bragdon formation. The Mule Mountain stock is very unstable due to the highly fractured, faulted, and folded history and post-emplacement albitization.

The youngest non-Quaternary rock is the Cretaceous Shasta Bally batholith and associated dike intrusions that cover about 35% of the park. A large zone (70% within the park) of the batholith has a very high ratio of biotite to hornblende and is extremely erosive. Several dikes occur within Whiskeytown National Recreation Area are a result of emplacement of the batholith.

Whiskeytown National Recreation Area has a long history of placer and ore mining that dates back to the 1850s. Two past igneous events, emplacement of the Mule Mountain stock and Shasta Bally batholith, created conditions for gold and base metal ore deposits. These deposits are not just within Whiskeytown National Recreation Area, but are also exposed outside of the park boundary.

Soils

The soils within Whiskeytown National Recreation Area are typical of soil formation within the Eastern Klamath Metamorphic Belt of the Klamath Geologic Province with the exception of soils formed on the Shasta Bally batholith. Generally, soils within Whiskeytown National Recreation Area can be described according to parent material, elevation, slope, and vegetation cover. The general Great Soil Groups in Whiskeytown National Recreation Area as defined by the Natural Resource Conservation Service (formerly the Soil Conservation Service) consist of entisols, inceptisols, spodosols, alfisols, and limited mollisols. More specific soil descriptions vary depending on localized conditions.

The higher elevation steep slopes (greater than 30°) have poorly developed soils described as entisols and inceptisols. More specifically, the decomposed granite entisols of the Shasta Bally batholith, which forms most of the high elevations on the south side of Whiskeytown National Recreation Area, can be described as having no soil horizons except for areas with vegetation laying on top of the decomposed granite. The inceptisols tend to be found on less steep slopes with vegetation and exhibit a higher degree of soil formation than the entisols; usually having organic material incorporated and exhibiting weak horizon formation.

The lower elevations of Whiskeytown National Recreation Area tend to have less steep slopes (less than 30%) with a mix of a variety of conifer species, oak woodlands, and chaparral. Here, soils have greater horizon formation than the entisols and inceptisols. Typical of these environments, spodosols and alfisols form depending upon the local vegetation cover. The spodosols form in more acidic conditions inherent to coniferous vegetation and the alfisols form in less acidic conditions in oak woodland and chaparral vegetation. The mollisols form in grassland environments.

Impacts of Alternative A (No Action Alternative)

Under Alternative A, there will be no impacts from trail construction. There will be continued erosion occurring at points along the historic ditch alignment which are unstable, particularly where the ditch crosses stream drainages. These crossings are all of ephemeral streams.

Generally, impacts to geologic resources and soils under this alternative are adverse and long-term in duration, and minor in intensity for the existing ditch.

Impacts of Alternative B (Proposed Action)

Proposed actions in Alternative B include use of the existing ditch and the construction of a short section of new trail that will connect with the Mule Mountain Pass Trail. New trails will be constructed both in the Princess Ditch and the area adjacent to the ditch, and in both of these areas impacts to geologic resources and soils include increased bedrock erosion if construction occurs beneath the soil profile. The impacts are considered to be adverse, long-term, and negligible in intensity. The techniques used in construction will reduce overall erosion of the trail and are considered to be beneficial, long-term, and minor in intensity. Overall, once the trail has stabilized after the first season of rainfall, impacts will be adverse, long-term, and minor.

Four bridges will be installed across ephemeral streams. This light impact design is consistent with most bridges in the backcountry area of Whiskeytown located in the lower drainages where periodic flooding occurs. However, the bridge abutments will be firmly established into bedrock well above flood levels of these drainages. Impacts to geologic resources from installation of these foot bridges are considered adverse, long-term and minor in intensity.

Newly disturbed soils are susceptible to erosion and run-off after rains until a stabilizing cover of vegetation has re-grown along trail edges or a layer of duff has covered exposed soils. To reduce the potential for erosion, exposed soils on the trail tread would be lightly compacted and covered with local duff or small pieces of vegetation removed from the construction site.

There would be an increase in soil disturbance associated with the newly-constructed sections of trails. Soil disturbance would be most pronounced in the winter months when soils are wet and where there is standing water in the ditch due to the lack of opportunities for water to be displaced out of the ditch. This would be an adverse, long-term moderate impact to previously disturbed soils during wet periods and adverse, short-term and minor during dry periods. Mitigation measures will be taken where possible to ensure drainage of the trail without impacting the historic integrity of the ditch system.

Cumulative Impacts

Cumulative impacts to geologic resources and soils for Alternative A will be negligible because there is no additional trail construction. The proposed trail building under Alternative B would contribute a minor increment to the total past, present and reasonably foreseeable future actions affecting park geologic resources and soils. Past park trail construction efforts and future trail building that may be proposed in the upcoming Backcountry and Trails Management Plan are likely to have an added net long-term minor effect as soils and geologic resources are disturbed during construction and from trail use.

Conclusions

There will be continued minor adverse impacts from ongoing erosion occurring along the princess ditch under Alternative A. Under Alternative B, there will be minor long-term impacts in the trail construction area to the soils and geologic resources during the dry months and potentially adverse, long-term, minor to moderate impacts to these resources during the wetter winter months, as a result of poor drainage in portions of the ditch system.

Water Resources

Affected Environment

Whiskeytown National Recreation Area is noted as a water-based recreation area with significant year-round water resources that attract many visitors. Whiskeytown Lake covers 3,220 surface acres with 240,000 acre-feet of water at full capacity. Whiskeytown Dam impounds the Clear Creek watershed on the southeast end of the recreation area and the lake is fed by seven major watersheds: Clear Creek, Brandy Creek, Crystal Creek, Boulder Creek, Mill Creek, Willow Creek, and Whiskey Creek. During the dry summer months, Whiskeytown Lake receives most of its water from Trinity Lake via an 11-mile underground tunnel which empties at the Carr Powerhouse. Approximately one mile below the dam, the major tributary to Clear Creek is Paige Boulder Creek which drains into Clear Creek. Additionally, many intermittent streams drain into Whiskeytown Lake. Whiskeytown Lake supplies power generation at the Spring Creek Powerhouse along the Sacramento River via an underground tunnel, irrigation for the California Central Valley crops, and drinking water for the Lower Clear Creek Water District.

Water quality within the park is generally of high quality. In 2011, twenty-two sites were sampled by the National Park Service Inventory and monitoring program. The water chemistry results indicated overall excellent conditions. Based on Total Nitrogen, Specific Conductivity and ANC, all sites were in the EPA category “least disturbed.”

Watersheds on the north side of Whiskeytown National Recreation Area all have past mining activities that have impaired or have the potential to impair water quality. Base metal and gold mining inside and outside of the park boundaries has left a legacy of acid mine drainage problems in Willow Creek, Whiskey Creek and other smaller tributaries.

Willow Creek originates west of Whiskeytown National Recreation Area enters Clear Creek near the Tower House District. This stream is listed on the California State 303d list for non-attainment of water quality standards. Large amounts of iron, zinc, aluminum, and lesser quantities of cadmium and other metals drain from the old Greenhorn Mine into Willow Creek and the waters of Whiskeytown Lake.

In the park, there is some limited semi-quantitative data on the lake sediments and invertebrates (May et al., 2001). Samples were found to have concentrations of arsenic and nickel higher than USEPA Probable Effects Levels (May et al., 2001). They also found elevated concentrations of cadmium and selenium in invertebrates. Pathways for metals into aquatic organisms can be through water or sediments and the amount of bioconcentration or biomagnification is dependent on the metal and ecosystem involved. Certain metals, such as mercury, highly bioconcentrate and have major effects even at relatively low concentrations. Others, such as arsenic do not readily bioconcentrate and must reach higher levels to cause noticeable effects to biota or humans consuming that biota (e.g., fish).

Impacts of Alternative A (No Action Alternative)

Under the No Action Alternative, there would be no impacts from trail construction. Streams that traverse the proposed trail construction site would remain in their present condition.

Impacts of Alternative B (Proposed Action)

Adverse, short-term and minor effects on water quality are anticipated from construction of the Princess Ditch Trail. Adverse impacts to streams or associated riparian areas from soil erosion and run-off following trail construction would be avoided or minimized by constructing trails when soils are not saturated or susceptible to erosion and run-off. The proposed trail is located away from perennial and intermittent streams. The proposed trail crosses several ephemeral streams that would be affected by trail crossings during wet periods and would require more intensive maintenance.

Bridges will be constructed across four ephemeral streams and designed to span the stream channel completely rather than being supported by piers within the active channel. Bridges will be constructed well above high water marks out of floodplains.

Because the trail would be built in the spring, fall and winter months, and the ephemeral or streams may have water, the mitigation measures described previously in this document would be utilized to minimize sediment from reaching any of the creeks. This may include covering exposed soil with local litter and native vegetation slash as soon as possible. In the absence of native vegetation, certified weed free rice straw can be used. The new section of trail, beyond the ditch, is expected to contribute only minimally to overland water flow due to trail grade and out-sloped design. Therefore, the impacts to water quality would be adverse, short-term, and minor for the first season following trail construction. After the first season, the impacts would be adverse, long-term, and negligible.

Cumulative Impacts

Cumulative impacts to water quality for Alternative A will be negligible because there is no additional trail construction. The proposed trail building under Alternative B would contribute a negligible increment with this proposed project corridor to the total past, present and reasonably foreseeable future actions affecting park water resources. Past park trail construction efforts and future trail building that may be proposed in the upcoming Backcountry and Trails Management Plan are likely to have an added net long-term negligible effect as increased sediment is transported during construction and from trail use.

Conclusions

There will be no additional impacts to water quality under Alternative A, as the trail will not be built. There will be adverse, minor, short-term impacts under Alternative B due to the localized temporary effects resulting from sediment release from trail construction. The mitigation measures employed during construction of the trail are intended to protect the immediate area under construction and the water quality and stream habitat of the streams affected by construction. After the first season, the trail tread would compact and stabilize, though continued visitor use would still mobilize small amounts of sediment, therefore overall impacts would be adverse, negligible, and long-term.

Vegetation

Affected Environment

Whiskeytown National Recreation Area lies at the juncture of several of northern California's physiographic regions and is one of the most floristically diverse ecological units in the western United States. The diverse plant communities gradually blend with one another in such a way

that distinct boundaries are seldom observed. The patchy vegetation pattern reflects a broad range in elevation, rugged topography, diverse soil types, and history of natural and human disturbance. Most vegetation in the park was cleared or otherwise affected by historical land use practices.

For the purposes of this Environmental Assessment, these diverse habitats have been grouped into the potentially affected vegetative communities present in or near portions of the proposed Princess Ditch Trail within Whiskeytown National Recreation Area. The communities are based on descriptions by Biek (1988) and Sawyer and Keeler-Wolf (1995), as well as the Alliance/Association system of classification developed by the Ecological Society of America as part of the U.S. National Vegetation Classification effort.

The primary plant communities described below are: ponderosa pine (*Pinus ponderosa*), knobcone pine (*Pinus attenuata*), grey pine (*Pinus sabiniana*), black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), chaparral and riparian plant communities. The following sections describe the plant communities, their distribution, and typical plant species.

Ponderosa pine

This community covers approximately 10,000 acres in the park and sometimes has ponderosa pine as the sole, dominant overstory tree with assorted other conifer and oak species also present in the canopy. Numerous other tree species that may be present include dogwood species (*Cornus spp.*), knobcone pine, incense cedar (*Calocedrus decurrens*) and sugar pine (*Pinus lambertiana*). Ponderosa pine contributes less canopy cover than the hardwoods, which grow in a tier below the conifers. Black oak is co-dominant with ponderosa pine in many areas, and ponderosa pine often commingles with mixed oak woodlands. Shrub species that are common within this alliance include poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), and whiteleaf manzanita (*Arctostaphylos viscida*). Other shrubs that may occur include bracken fern (*Pteridium aquilinum* var. *pubescens*), snowdrop bush (*Styrax officinalis*), Ceanothus species, sword fern (*Polystichum munitum*), and Himalayan blackberry (*Rubus armeniacus*). Herb species that may occur include spreading dogbane (*Apocynum androsaemifolium*), California pipevine (*Aristolochia californica*), Iris species, snowberry (*Symphoricarpos albus* var. *laevigatus*), fescue (*Vulpia microstachys*), silver hair grass (*Aira caryophylla*), Western needlegrass (*Achnatherum occidentale*), yerba santa (*Eriodictyon californicum*), narrowleaf mule ears (*Wyethia angustifolia*), false foxtail fescue (*Vulpia myuros* var. *myuros*), and sock destroyer (*Torilis arvensis*).

Knobcone Pine

This vegetation community has knobcone pine as the sole or dominant species in the tree canopy. Knobcone pine comprises at least 10% relative cover in the tree canopy and emerges above the other trees, creating a two-tiered canopy. This alliance is also marked by having a preponderance of shrub cover and typically contains Lemmon's' ceanothus (*Ceanothus lemmonii*), whiteleaf manzanita, toyon and poison oak which provide 45-75% absolute cover. Other tree species vary but typically black oak, canyon live oak, and interior live oak (*Quercus wislizeni*) may be present. Herbaceous cover is extensive and species rich and may include large, continuous areas of silver hair grass, as well as small amounts of such species as Klamath weed (*Hypericum perforatum*), goldwire (*Hypericum concinnum*), creeping snowberry (*Symphoricarpos mollis*), bedstraw (*Galium bolanderi*), mule ears (*Wyethia glabra*), buckwheat (*Eriogonum spp.*), bracken fern and everlasting (*Gnaphalium spp.*) and western needle grass. This plant community is common within the park and occurs primarily on south-facing slopes with gentle gradients, frequently near Whiskeytown Reservoir.

Grey Pine

Grey pine is dominant within the tree canopy in this community, generally with sparse tree cover and dense shrub cover, primarily whiteleaf manzanita. Canyon live oak is normally present as well. Black oak, interior live oak, and California buckeye (*Aesculus californicus*) may also be present in the tree layer. Toyon, poison oak, snowdrop bush and Lemmon's ceanothus are often present in the shrub layer. Silver hair grass, bedstraw, sock destroyer, snowberry, and annual grasses are often present as well.

Black Oak

This community may have black oak as the sole important tree in the canopy providing at least 50% relative cover or it can share importance with canyon live oak or Douglas-fir (*Pseudotsuga menziesii*). Shrub species that are typically present include poison oak, whiteleaf manzanita, toyon, redbud (*Cercis occidentalis*), and snowdrop bush. Herb species that are often present include bedstraw, western needle grass, snowberry, and iris species.

Canyon Live Oak

This community is defined as having canyon live oak as the sole, dominant, or important tree in the canopy tanoak (*Lithocarpus densiflorus*), or Douglas-fir possibly present. Canyon live oak typically contributes at least 50% relative cover, and often more than 75%. Black oak is often also present in the tree canopy. Poison oak, whiteleaf and greenleaf manzanita (*Arctostaphylos patula*), and toyon may be present in the shrub layer. This community is widespread throughout the park and occurs on all aspects and at all but the highest elevations.

Chaparral

Chaparral plant communities cover approximately 8,000 acres in the park. The chaparral plant community varies in species composition and vegetation structure from distinct monocultures to combinations of shrub and small tree species that intergrade with other plant communities. Thick, leathery, oily leaves that form a highly flammable leaf litter layer characterize chaparral species. Such characteristics enable chaparral plant communities to withstand extremes in temperature and precipitation, as well as their periodic consumption by fire. This broad-leaved community is diverse, ranging from dense, impenetrable thickets to open, mixed shrub-oak woodlands.

Chaparral communities in the park are dominated by whiteleaf and greenleaf manzanita, Ceanothus species, chamise (*Adenostoma fasciculatum*), toyon, yerba santa, and poison oak. Whiteleaf manzanita often provides at least 50% relative cover. Oak and pine species are also sparsely scattered throughout many of the drier areas and occur with some density on wetter sites and north and northeast facing slopes. A thick layer of leaf litter and lack of light result in a sparse herbaceous understory of species such as brodiaeas (*Brodiaea* spp.), wild onion (*Allium* spp.), chaparral honeysuckle (*Lonicera interrupta*), creeping sage (*Salvia sonomensis*), and Indian warrior (*Pedicularis densiflora*). Common exotic grasses include rye (*Lolium perenne*), cheat grass (*Bromus tectorum*), and fescues (*Vulpia* spp.).

Riparian Vegetation

Riparian plant communities along the proposed Princess Ditch Trail are primarily comprised of intermittent streams which support a variety of riparian plant species, depending on elevation, steepness of slope, aspect, and quantities and timing of the water source. The more well-watered streams would support such species as big-leaf maple, willows (*Salix* spp.), , and

dogwoods (*Cornus spp.*). The exotic Himalayan blackberry has invaded a significant portion of the riparian community. Other shrub species are also quite variable, and can include California blackberry (*Rubus ursinus*), wild grape (*Vitus californica*), miner's dogwood (*Cornus sessilis*), spice bush (*Calycanthus occidentalis*), button willow (*Cephalanthus occidentalis var. californica*), snowberry, and California wild rose (*Rosa spp.*), with chaparral species such as buckeye and snowdrop bush mixed in along the periphery. The understory is a combination of grasses such as slender hair grass (*Deschampsia elongata*) and rattlesnake grass (*Briza spp.*), Horsetails (*Equisetum sp.*), sedges, rushes, ferns, and herbaceous species such as soaproot (*Chlorogalum pomeridianum*), California pipevine, buttercups (*Ranunculus spp.*), monkeyflower (*Mimulus spp.*), mugwort (*Artemisia douglasiana*), miner's lettuce (*Claytonia perfoliata*), dock (*Rumex spp.*), and violets (*Viola spp.*).

Impacts of Alternative A (No Action Alternative)

Under this alternative, since there would be no brushing or clearing of vegetation for the trail, there would be no impacts to the above-described plant communities.

Impacts of Alternative B (Proposed Action)

Under the Action Alternative, both the new segment of trail and the trail along the historic ditch would result in direct adverse impacts to the above-mentioned plant communities. These impacts are a result of the direct removal of vegetation with chainsaws and hand tools. The trail will be routed around large trees to minimize impacts and limbs that need to be removed from large trees will be cut at the limb collar whenever possible to promote healing and reduce the long-term impacts to the trees. Impacts to vegetation will be adverse, long-term and minor in intensity due to the limited extent of the vegetation that would need to be removed to establish the trail tread and corridor. Brush and understory vegetation removed during trail construction will be piled and burned away from large diameter trees (especially oaks and pines) to avoid overstory tree mortality.

Cumulative Impacts

Cumulative impacts to vegetation with the No Action Alternative would be negligible, as direct mortality to vegetation would not occur to accommodate the Princess Ditch EA. In addition to routine trail maintenance, additional trails are being proposed in the Backcountry Management Plan, which will have adverse impacts. Also, fire management activities in the area of the park include the hand thinning of dense brush in oak woodlands and coniferous forests along the park's boundary, as well as the construction of burn unit boundaries for prescribed fire preparation. Under the proposed Action Alternative, the cumulative impacts to vegetation and plant communities is likely to be adverse, long-term, and minor, although the degree of potential impacts is difficult accurately access.

Conclusion

The No Action Alternative would result in negligible impacts to vegetation in this area of the park. Impacts to vegetation under the proposed Action Alternative would be adverse, long-term and minor in intensity due to the limited extent of the vegetation that would need to be removed to establish the trail tread and corridor.

Sensitive Plant Species

NPS Management Policies (2006) and the Endangered Species Act mandate protection of special status plants and their habitats. The National Park Service is also responsible for providing information to the U.S. Fish and Wildlife Service on the status of candidate or proposed candidate plants within their jurisdiction. Specifically, NPS Management Policies state that the NPS “will inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the Service will inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance.”

An extensive floristic inventory of the park and collection of herbarium voucher specimens was initiated in 1986 by David Biek and completed with the assistance of the Shasta Chapter of the California Native Plant Society. Nine sensitive plants species have been verified within the park. Sensitive plant species are plants that are not officially listed as threatened or endangered by the State of California or the Federal Endangered Species Act, but warrant consideration and protection due to limited distribution, scarcity of individuals, or the likelihood of becoming listed as threatened or endangered. There are no known federally or state listed plant species within the project area, although blue elderberry is host to the federally-listed threatened valley elderberry longhorn beetle, and the elderberry must be protected as if it were listed.

Upland plant species of special concern (threatened, endangered, candidate, or sensitive species) found in the park include: Howell's alkali grass (*Puccinellia howellii*), Shasta County arnica (*Arnica venosa*), clustered lady's slipper (*Cypripedium fasciculatum*), Oettinger's trillium (*Trillium ovatum* ssp. *oettingeri*), Sanborn's onion (*Allium sanbornii* ssp. *sanbornii*), Tehama navarretia (*Navarretia heterandra*), yellow triteleia (*Triteleia crocea* var. *crocea*), Sanford's arrowhead (*Sagittaria sanfordii*), Geyer's sedge (*Carex geyeri*), fox sedge (*Carex vulpinoidea*), Mallory's manzanita (*Arctostaphylos malloryi*), , canyon stonecrop (*Sedum paradisum*), and McNab cypress (*Cupressus macnabiana*).

Table 2. California Native Plant Society (CNPS) Rare Plant List and Status for Whiskeytown NRA

Family		Scientific Name	CNPS Ranking	Park Status
Alismataceae		<i>Sagittaria sanfordii</i>	1B.2	Verified
Asteraceae		<i>Arnica venosa</i>	4	Verified
Caprifoliaceae		<i>Sambucus mexicana</i>	None ¹	Verified
Cupressaceae		<i>Cupressus macnabiana</i>	None ²	Verified

Table 2. California Native Plant Society (CNPS) Rare Plant List and Status for Whiskeytown NRA

Cyperaceae	<i>Carex geyeri</i>	4	Needs verification
Cyperaceae	<i>Carex vulpinoidea</i>	2	Needs verification
Ericaceae	<i>Arctostaphylos malloryi</i>	4.3	Verified
Liliaceae	<i>Allium sanbornii</i> var. <i>sanbornii</i>	4	Verified
Liliaceae	<i>Trillium ovatum</i> ssp. <i>oettingeri</i>	4	Verified
Liliaceae	<i>Triteleia crocea</i> var. <i>crocea</i>	4	Needs verification
Orchidaceae	<i>Cypripedium fasciculatum</i>	4	Verified
Poaceae	<i>Puccinellia howellii</i>	1B	Verified
Polemoniaceae	<i>Navarretia heterandra</i>	4	Needs verification
Potamogetonaceae	<i>Potamogeton epihydrus</i> ssp. <i>nuttallii</i>	2	Verified
Crassulaceae	<i>Sedum paradisum</i>	1B.3	Verified on boundary

¹*Sambucus mexicana* is not a California Native Plant Society-listed species; however, it is potential habitat for the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

²*Cupressus macnabiana*, although not listed on the California Native Plant Society rare plant list, is considered sensitive by NRA staff because of its recent and rapid decline within the NRA over the past 70 years.

None of these species of special concern are known to occur in the proposed Princess Ditch Trail project area. However, there is suitable habitat for several species of concern, especially Shasta arnica, McNab cypress, and Sanborn's onion. Park personnel and trail crew leaders will be educated about the key characteristics of such plants. If any species of concern is found, trail construction would be stopped and mitigation measures would be implemented to protect these or other plants of special concern discovered during project work.

Shasta County arnica (*Arnica venosa*) is a plant limited in distribution known to occur only within a 35-mile radius area around Shasta Lake, Trinity Lake, and Whiskeytown Lake. It is ranked by the California Native Plant Society (www.rareplants.cnps.org) as CNPS 4.2, which means it has

a limited distribution in California and is moderately threatened. It's Global and State ranks (G3 and S3.2) indicate that the plant is vulnerable due to restricted range, relatively few populations, recent widespread declines, or other factors making it vulnerable to extirpation. In the park, Shasta arnica appears to prefer open areas, along road cuts and shaded fuel breaks, so may benefit from minor clearing along the trail.

Sanborn's onion (*Allium sanbornii* var. *sanbornii*) is an uncommon perennial herb that is native to California and Oregon and ranked by the California Native Plant Society as 4.2; has a limited distribution in California and is moderately threatened. It commonly found in chaparral and low elevation woodlands within the park and has been found in areas where brush and vegetation has been thinned.

There is the outside chance of McNab Cypress (*Cupressus macnabiana*) to be in the project area. Although McNab Cypress is not listed as threatened, endangered, or sensitive by federal or state governments or the California Native Plant Society, the park considers McNab Cypress to be a species of concern due to its limited range and recent decline in the park. Whiskeytown National Recreation Area is the northernmost extension of McNab cypress and the type location for the species. According to Biek (1988), a grove of McNab Cypress grew on metavolcanic rock along Clear Creek downstream from the historic town of Whiskeytown. This area is now beneath the waters of Whiskeytown Lake. Anecdotal information indicates a few specimens were transplanted to various locations in the park and to two residences in the towns of French Gulch and Redding. One specimen that appears to be naturally recruited is found near Clear Creek near the Tower House Historic District. There were a number of others scattered around the park. Three of these specimens remain; the others have been inadvertently removed by work crews or died from disturbance associated with development. McNab Cypress is exceedingly difficult to propagate but several have been successfully grown from seed and are being planted in appropriate areas in the park. These appear to be doing well and the park will continue to propagate and plant this unusual and uncommon tree.

Impacts of Alternative A (No Action Alternative)

Under this alternative, there would be no brushing or clearing of vegetation for the trail, so there would be no impacts to the above-described sensitive plant species, if present. However, Shasta arnica and Sanborn's onion have been found in areas that have had vegetation thinned for fire management activities and seem to proliferate in open canopy conditions which mimic a natural fire regime. The lack of thinning would have a short to long-term, negligible to minor adverse impact on these two species, if present.

Impacts of Alternative B (Proposed Action)

Under the Action Alternative, both the new segment of trail and the section along the historic ditch would result in direct adverse impacts to most rare plant species – if present - particularly if such species were directly removed with chainsaws and/or hand tools. However, thinning/brushing through potential Shasta arnica and Sanborn's onion habitat could have a short to long-term, negligible to minor and beneficial impact to such species, if present.

Cumulative Impacts

Cumulative impacts to sensitive plant species under the No Action Alternative would be negligible, as direct mortality to sensitive plants would not occur to construct the Princess Ditch Trail. Also, fire management activities in the area of the park include the hand thinning of dense brush in oak woodlands and coniferous forests along the park's boundary, as well as the

construction of burn unit boundaries for prescribed fire preparation. Under the proposed Action Alternative, the cumulative impacts to sensitive plant species will likely be beneficial to adverse, short to long-term, and minor to moderate.

Conclusion

The No Action Alternative would result in negligible direct impacts to sensitive plant species in this area of the park, but the indirect effect of not thinning brush and vegetation would make adverse conditions for certain photophilic species, such as Shasta arnica and Sanborn's onion, if present. Direct impacts to sensitive plant species under the proposed Action Alternative would be beneficial to adverse, short to long-term, and negligible to moderate in intensity.

Invasive Plant Species

Invasions by non-native species are perhaps the most pressing threat to Whiskeytown's ecosystems, jeopardizing the park's ability to preserve and protect natural resources and cultural landscapes. In particular, nonnative plant species consistently ranked among the highest priorities for biological inventory and monitoring among the Klamath Network Parks, and was the top ranked vital sign for all three of Whiskeytown's Vital Sign Scoping meetings. The rationale for this is clear – nonnative plant species pose one of the greatest threats to park resources. For NPS policies which support this concern see Table 3:

Table 3. NPS policies which support the prevention and control of invasive plant infestations.

Regulations and Policies	Content
NPS Management Directive No. 038	Preventing Introduction and Spread of Invasive Non-Native Plants: provides guidance for eliminating weeds. It is an important reference for government employees, park concessionaires, permittees, contracts and partners.
NPS Management Policies 2001, 4.4.4	Non-native species will not be allowed to displace native species if displacement can be prevented.
NPS Management Policies 2001, 4.4.4.1	New non-native species will not be introduced into parks, except in specific rare situations
DO-12 Handbook 3.5N, Federal Noxious Weed Control Act	Activities may not be categorically excluded from NEPA if they contribute to the introduction, continued existence, or spread of federally listed noxious weeds
DO-12 Handbook 3.50, Executive Order 13112	Activities may not be categorically excluded from NEPA if they contribute to the introduction, continued existence, or spread of non-native invasive species or actions that may promote the introduction, growth or expansion of the range of non-native invasive species.

Within Whiskeytown National Recreation Area there are 195 known exotic plants, several of which are considered invasive and subject to eradication. The priority invasive species are: tree of heaven (*Ailanthus altissima*), giant reed (*Arundo donax*), yellow star thistle (*Centaurea solstitialis*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea maculosa*), puncture vine (*Tribulus terrestris*), bull thistle (*Cirsium vulgare*), Scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), English ivy, (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), Spanish broom (*Spartium junceum*), moth mullein (*Verbascum blattaria*), common mullein (*Verbascum thapsus*), sock destroyer (*Torilis arvensis*), and periwinkle (*Vinca major*).

Treatment priorities for the park have been established for known and potential infestations based on the species' abilities to invade un-infested lands within the park and their difficulty to control. These control strategies take into account the empirical data reflecting Whiskeytown staff's many years of experience in invasive control, the biology of the target species, and current research recommendations from experts such as UC Davis, CAL-IPC, CaEPMT, and the Shasta County Weed Management Area (SCWMA). This is an implementation of an integrated pest management approach to control invasive species and includes a combination of manual, mechanical, and chemical control methods. Treatment methods have been defined for each species based on established procedures used in the park's integrated pest management program. Treatments have been targeted to coincide with the timing of phenology of specific species to maximize treatment success.

Whiskeytown's exotic plant program is dependent on soft funding, which varies from year to year. Typically, treatment areas are mapped using Trimble GPS units and data is collected on the number, percent cover, and phenology of invasive species and extent of the area treated. Park staff keep track of the types of herbicides or mechanical treatments used, concentration, quantity, effort, and supporting metadata. The effectiveness of treatments is measured by revisiting each site and continuing to map and measure the degree and extent of infestation. This information will be incorporated into a geospatial database. Photopoints are usually established to capture the effectiveness of mechanical and chemical treatments and to monitor the native vegetation response to the treatments.

Impacts of Alternative A (No Action Alternative)

Under this Alternative, no brushing, scraping the spread, density patterns, and level of new introductions of invasive plant species will remain consistent with current levels.

Impacts of Alternative B (Proposed Action)

Invasive plant species known to occur at the trailheads on BLM land, as well as in this area of the park, include yellow star thistle, sock destroyer, Klamath weed (*Hypericum perforatum*), and barbed goatgrass (*Aegilops triuncialis*). Scotch broom, French broom, tree of heaven, bull thistle, and common mullein are also found within the general area. Within the park boundary, the infestations near the proposed Princess Ditch Trail will be treated prior to trail construction. The introduction and spread of invasive plant species is a concern in the construction of trails, as it is well-documented that these activities favor invasions by transporting propagules on contaminated equipment and materials, disturbing the soil surface, and by creating gaps in the canopy.

The infestations found at trailheads outside the park boundary will undoubtedly serve as a seed source to be spread along the trail by visitors; either in dirt and mud attached to shoes, bicycle tire treads, or by horses and dogs. The trail will inevitably act as a vector of dispersal from invaded areas outside the park, to uninfested areas within the park boundary. These conditions have the potential to not only spread existing exotic plant species, but also introduce new invasive plants to the park as well.

To minimize impacts associated with invasive exotics within Whiskeytown, the trail will need to be monitored and new infestations of invasive exotic plants will need to be treated as they occur. Several mitigation measures are in place to help control the introduction and spread of invasives, which include the cleaning of equipment before it is brought into the park or moved to the site, avoiding the use of foreign materials such as weed-free hay, and cleaning the angular rock that may be used in muddy sections. Such mitigation measures have not been taken along

the sections of the trail which lead up to the park boundary, which increases the likelihood of introducing and spreading invasive plants. The park will coordinate with the BLM to implement actions that reduce the spread of invasives from BLM land to park land, as well as to provide interpretive materials at the visitor center and trailheads to inform visitors of the ways invasive species are transported and the things they can do to prevent it from occurring.

The impacts from the proposed trail may be somewhat exacerbated due to the fact that the areas where additional trails are planned are impacted from historic human use and many of the areas have already been colonized by invasive plant species. The repeated ground disturbance from traffic and trail maintenance has the potential to amplify the degree of infestation, introduce new non-native and invasive species and spread to uninfested areas.

Therefore, it is unlikely that these impacts can be avoided, despite mitigation measures in place. Environmental impacts to this area will likely be adverse, long-term and minor to moderate in intensity.

Cumulative Impacts

Cumulative impacts to the park due to invasive plants under the No Action Alternative would be negligible as the pattern of invasive plant invasion would not change as a result of trail building. In addition to routine trail maintenance, additional trails are being proposed in the Backcountry Management Plan, which will have adverse and long-term impacts. Also, fire management activities in the area of the park include the hand thinning of dense brush in oak woodlands and coniferous forests along the park's boundary, as well as the construction of burn unit boundaries for prescribed fire preparation. Cumulative impacts to native plant communities from the introduction and spread of invasive exotic plants will include impacts from recreational use such as trampling, collecting, soil compaction, litter and waste depositions, the potential spread of plant pathogens and increased species and numbers of exotic plants transported by pedestrians, horses, equipment, and bicycles and wildland or prescribed fire impacts. Under the proposed Action Alternative, the cumulative impacts to vegetation and plant communities is likely to be adverse, long-term, and minor to moderate in intensity.

Conclusion

The No Action Alternative would result in negligible impacts to vegetation in this area of the park. Impacts to vegetation under the proposed Action Alternative would be adverse, long-term and moderate in intensity, but limited in the extent due to the small area of vegetation that would need to be removed to establish the trail tread and corridor.

Wildlife and Fish

Affected Environment

Whiskeytown National Recreation Area supports an abundant and diverse wildlife community, which reflects the diversity of the vegetative communities in the park. More than 200 vertebrate species are known to occur in the park, including at least 35 mammal species, 150 bird species, and 25 reptile and amphibian species. Additional species are likely to be confirmed in the park as wildlife inventories become more complete. The perpetuation of relatively intact wildlife populations within the park is partially dependent on the ability of public and private land managers to ensure that adequate habitat is protected in and around the park boundary.

Whiskeytown Lake and its tributaries also supports a large variety of fish, both native and exotic. Fish present at Whiskeytown National Recreation Area include rainbow trout (*Salmo gairdnerii*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), spotted bass (*Micropterus punctulatus*), Kokanee salmon (*Oncorhynchus nerka kennerlyi*), Chinook salmon (*Oncorhynchus tshawytscha*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), channel catfish (*Ictalurus punctatus*), brown bullheads (*Ictalurus nebulosus*), Sacramento pikeminnow (*Ptychocheilus grandis*), hardhead (*Mylopharodon conocephalus*), green sunfish (*Lepomis cyanellus*), Western suckers (*Catostomus occidentalis*), and riffle sculpins (*Cottus gulosus*). The California Department of Fish and Wildlife regularly stocks rainbow trout and brook trout in Whiskeytown Lake and some of the perennial streams during the spring and summer months. The lake has also been historically stocked with brown trout and kokanee salmon.

Special Status Fish and Wildlife Species

Whiskeytown National Recreation Area has a responsibility to protect and perpetuate sensitive, unique, rare, threatened, or endangered fauna. Good data exists documenting most rare, threatened, or endangered animals. The following are special status fish and wildlife species known to occur within the park.

Lower Clear Creek within Whiskeytown National Recreation Area contains the federally Threatened spring-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead trout (*Oncorhynchus mykiss*). The Park also contains the federally listed Threatened northern spotted owl (*Strix occidentalis caurina*) as well as a Candidate Species, the Pacific fisher (*Martes pennanti*). The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a federally threatened species, has not been reported in the park, however, a small stand of blue elderberry, the host plant for the beetle, is present along Trinity Mountain Road near the northern park boundary.

Spring-run Chinook salmon and Central Valley steelhead trout

Two federally Threatened fish species occur in Clear Creek below Whiskeytown Dam. These are the spring-run Chinook salmon and Central Valley (Evolutionary Significant Unit) steelhead trout. The removal of McCormick-Saeltzer Dam on lower Clear Creek in the fall of 2000 has allowed these two species access to the upper reaches of Lower Clear Creek. These anadromous fish are now utilizing portions of lower Clear Creek within Whiskeytown National Recreation Area for spawning.

Spring-run Chinook salmon and steelhead trout only occur in Lower Clear Creek as Whiskeytown Dam effectively blocks them from accessing much of their historic spawning habitat. Numerous restoration efforts within the Lower Clear Creek watershed are ongoing in an effort to increase the productivity of this stream. The objectives of many of these projects are to reduce erosion and sedimentation within the Lower Clear Creek watershed and provide suitable spawning habitat.

Northern spotted owl

The northern spotted owl is found throughout much of northern California in dense old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 7600 ft. (Zeiner et al. 1990). The western area of the park falls within the

reported range of the northern spotted owl and contains some areas of suitable habitat. Forested areas with greater than 70% canopy closure are potential spotted owl nesting and roosting areas, while areas with greater than 40% canopy closure provide foraging areas. Old growth forests provide the best habitat. Most spotted owl habitat owes its structure and species composition to fire (Lujan 1992). Historically, spotted owls occupied a dynamic landscape that often consisted of large areas of burned and unburned forest. Today, however, habitat is greatly reduced and fragmented, and owl populations have become increasingly vulnerable to loss of habitat due to fire (Lujan 1992). Fires can cause further habitat fragmentation and loss of preferred suitable old growth. One study showed that areas that had been clear-cut or burned within the previous 20 years were rarely used by spotted owls for foraging. Additionally, spotted owls usually avoided crossing burned areas by traveling through corridors of unburned timber around the area.

Spotted owls are also intolerant of high temperatures and are stressed at temperatures above 80 to 87 degrees Fahrenheit (27-31 deg. C) (Gutierrez 1985). Spotted owls tend to roost in small trees in the forest understory during warm weather and high up in the large trees during cold or wet weather. The layered canopy structure in old forests provide both types of roosts. (Thomas et. al. 1990). There is one known spotted owl site within the park, but more sites may be found as surveys are completed in some of the more remote areas of the park. Much of the higher elevations along the western boundary of the park that historically may have supported spotted owls was heavily altered by timber harvest activities in the 1960's and early 1970's. It is possible that these areas will be repopulated by spotted owls as the forest regenerates, matures and develops the complex structural characteristics commonly found in areas occupied by spotted owls. No suitable habitat for northern spotted owls exists in or near the project area.

Pacific fisher

The Pacific fisher (*Martes pennanti*) is a Candidate Species under the Federal Endangered Species Act. Fishers are known to be among the most habitat-specific mammals in North America, living in landscape mosaics of conifer-dominated forest stands, and avoiding open areas that have no overstory or shrub cover. Late successional mid to low elevation coniferous or mixed forests provide the most suitable habitat because they provide abundant potential den sites and prey. The presence of large deciduous trees, such as oaks, also appears to be important. Fishers den in a variety of protected cavities, brush piles, logs, or under an upturned tree. Hollow logs, trees, and snags are especially important habitat components. Forest type is probably not as important to fishers as structural characteristics, such as dense canopies, and large trees, snags, and down logs. Riparian areas are also important. Fishers may be extirpated from much of their historical range in Washington, Oregon, and California. Trapping at the end of the 19th century severely reduced fisher populations, but the reasons for the lack of recovery in the species in the absence of trapping are unclear. Factors may include loss of suitable habitat from logging and fire suppression, fragmentation of habitat, disturbance and mortality from roads, and anti-coagulant rodenticide poisoning. Distribution and populations of fishers are not known at Whiskeytown, but the Wildlife Observation Database, dating from the early 1970's to present, reports numerous fisher observations throughout many areas of the park. It is likely that fishers occur within most habitat types present at Whiskeytown National Recreation Area with the exception of areas dominated by dense stands of chaparral. Fisher sightings have been recorded in and near the project area.

Sensitive Species

The park also contains numerous species that are on the USFS and BLM list of Sensitive Species. Those species are: foothill yellow-legged frog (*Rana boylei*), northwestern pond turtle (*Clemmys marmorata marmorata*), tailed frogs (*Ascaphus truei*), northern goshawk (*Accipiter gentilis*), olive-sided flycatcher (*Contopus cooperi*), rufous hummingbird (*Selasphorus rufus*), red-breasted sapsucker (*Sphyrapicus ruber*), California thrasher (*Toxostoma redivivum*), long-eared myotis bat (*Myotis evotis*), fringed myotis bat (*Myotis thysanodes*), Yuma myotis bat (*Myotis yumanensis*) and the Pacific western big-eared bat (*Corynorhinus townsendii townsendii*).

Impacts of Alternative A (No Action Alternative)

Under the No Action Alternative, impacts to wildlife and fish communities will continue approximately at current rates. Current impacts to wildlife include some minor disturbance to nesting species from trail users along current trails. Adverse impacts to fish spawning areas are due to unnaturally high levels of erosion and sedimentation resulting from poorly designed existing trails, particularly at stream crossings. Under the No Action Alternative, impacts to fish and wildlife within all sections are adverse, long-term and minor in intensity.

Under this Alternative, impacts to spring-run Chinook salmon and Central Valley steelhead trout will continue approximately at current rates.

There will not be any impacts to the northern spotted owl as suitable habitat is not present in or near the project area.

Under Alternative A, impacts to fishers will remain at current levels, which are likely limited to minimal disturbance due to encounters with trail users or maintenance crews.

Under Alternative A, impacts to Sensitive Species will remain consistent to current levels. Some long-term, adverse impacts to aquatic species such as the foothill yellow-legged frog, northwestern pond turtle, and tailed frog will continue due to increased levels of erosion and sedimentation in areas where existing roads and trails are overly steep and poorly designed. These impacts may cause decreases in reproduction rates and are minor in intensity. Impacts to terrestrial species will be negligible.

Impacts of Alternative B (Proposed Action)

Primary impacts to terrestrial wildlife will likely be due to temporary disturbance during trail construction and from visitor use. Some vegetation will be removed along the trail route but similar vegetation and habitat will continue to exist in abundant quantities adjacent to the trail corridor. Impacts to wildlife are expected to be adverse, short-term, and minor. Impacts to aquatic species and fish are expected to be negligible. Best Management Practices will be used during trail construction to minimize erosion and sedimentation. Additionally, nearly all of the trail will occupy an historic water ditch which is nearly level and this significantly reduces the likelihood of any erosion or resulting sedimentation.

Potential impacts to the wildlife and fish populations of the park resulting from the construction of the Princess Ditch Trail include the following:

- Removal of habitat

- Disturbance from workers and trail users
- Erosion/Sedimentation

The alternatives for the Princess Ditch Trail were developed specifically to avoid or minimize potential impacts to special status species. The primary means of avoiding impacts to special status species was to locate the potential trail away from areas where special status species are known to occur or where critical habitat exists. Additionally, Best Management Practices will be used during trail construction to prevent erosion and sedimentation of streams. The majority of the trail will occupy an historic water ditch which is nearly level and significantly reduces the likelihood of erosion or sedimentation.

Impacts to spring-run Chinook salmon and Central Valley steelhead trout are expected to be negligible. Best Management Practices will be used during trail construction to minimize erosion and sedimentation. Additionally, nearly all of the trail will occupy an historic water ditch which is nearly level and this significantly reduces the likelihood of any erosion or resulting sedimentation. Bridges will also be constructed in several locations where the trail crosses seasonal streams to reduce erosion along stream banks. The proposed trail location is also located a substantial distance upslope of Clear Creek, where these two species spawn.

Alternative B will not have any impacts to the northern spotted owl as suitable habitat is not present in or near the project area.

Primary impacts to terrestrial wildlife Sensitive Species under Alternative B will likely be due to temporary disturbance during trail construction and from visitor use. Some vegetation will be removed along the trail route but similar vegetation and habitat will continue to exist in abundant quantities adjacent to the trail corridor. Impacts are expected to be adverse, short-term, and minor. Impacts to aquatic Sensitive Species are expected to be negligible. Best Management Practices will be used during trail construction to minimize erosion and sedimentation. Additionally, nearly all of the trail will occupy an historic water ditch which is nearly level and this significantly reduces the likelihood of any erosion or resulting sedimentation.

Impacts to fishers under Alternative B in all sections will primarily be limited to temporary disturbance during trail construction and post construction visitor use. Habitat modification due to trail construction will be minimal and small in scale as the components important to fisher habitat such as large trees, snags, denning sites, and riparian habitat will be retained. Many of the sightings of fishers in the park's wildlife observation database are along existing trails, so it is unlikely that the presence of trails or trail users causes fishers to avoid the area. Impacts to fishers under Alternative B will likely be adverse, long-term, and minor in intensity.

Cumulative Impacts

Cumulative impacts to wildlife and fish species under Alternatives A and B will mostly result from additional impacts due to trail construction activities and increased recreational use on the trails west of Redding. The increased use, presence, and expansion of Whiskeytown's trail network has the potential to increase conflict between wildlife and trail users over time. These conflicts and impacts are primarily related to temporary disturbance. These impacts are minimized by aligning the trail to avoid known habitat of listed species. Cumulative impacts from habitat loss or modification are minor due to the small amount of habitat affected, especially when compared to other park projects such as fuel break construction and use of prescribed fire. Cumulative impacts to wildlife and fish species is likely to be adverse, long-term, and minor.

Potential impacts from this project to special status species are considerably less than those from other ongoing park programs such as prescribed fire projects, fuel break construction and maintenance, and wildland firefighting. Cumulative impacts to special status wildlife and fish species from both alternatives is likely to be negligible.

Conclusion

There will be minimal impacts to wildlife and fish species under the No Action Alternative in the project area. Conditions along the trail route would remain the same and no habitat modifications would occur.

Under the Proposed Action Alternative, a small amount of potential habitat for neotropical birds and native wildlife species may be removed or modified along the trail edge. There could also be some minor disturbance to nesting species from trail construction activities. This loss or modification would be negligible due to the large amounts of suitable habitat to be retained on NPS and nearby BLM lands. Impacts to wildlife and fish species are likely to be adverse, long-term, and minor.

Cultural Resources

Cultural resources consist of archeological sites, historic structures, cultural landscapes, ethnographic resources, and museum objects. Archeological sites are the location of a significant event, prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value. Historic structures are material assemblies that extend the limits of human capacity, and comprise such diverse objects as buildings, bridges, monuments, fences, and canals. Cultural landscapes are settings we have created in the natural world. They are intertwined patterns of natural and constructed features that represent human manipulation and adaptation of the land. Ethnographic resources are the basic expression of human culture providing the basis for continuity of cultural systems encompassing both the tangible (native languages, subsistence activities) and intangible (oral traditions, religious beliefs). These can include archeological sites, old ethnographic village sites, travel routes, fishing and hunting camps, locations of ceremonial significance, and areas traditionally used to gather resources. Museum objects consist of those constructions that are primarily artistic in nature or relatively small in scale. Although objects, by nature or design are moveable, they are associated with a specific setting or environment. No potential impact to museum objects nor ethnographic resources are anticipated by this project and they are not discussed below.

Affected Environment

Archeological Resources

Numerous archeological inventories have been completed covering approximately twenty-one percent of the park (8,900 acres) with 152 archeological sites currently recorded. Two prehistoric archeological districts within the park boundaries are listed on the National Register of Historic Places (NRHP) including Lower Clear Creek Archeological District (added 1979 - District - #79003812) and the Tower House Archeological District (Tower House--Soo-Yeh-Choo-Pus) (added 1985 - District - #85003483).

It appears that there is still archaeological information to be derived regarding engineering and construction methods of the Princess Ditch. Thick brush and steep terrain has limited possible discovery of tools and materials used to build the ditch, as well as personal items left by its builders. A minor amount of metal detector work along several hundred feet of the Princess Ditch only revealed some early shotgun shells. It is likely that artifacts from construction and builders are present along the ditch that might help illuminate ethnic associations, construction activities, and behavior/lifeways of the construction crews. It is possible that there are a few construction camps adjoining the ditch but these have not been identified. By and large we cannot say with certainty what the ditch and its archaeological associations could reveal concerning the past but there are certainly possibilities in this regard. We will ensure through the above mitigations and on-site monitoring that no unacceptable impacts to the ditch's integrity will occur.

Historic Structures

The Clear Creek Ditch, a forty mile-plus long water conveyance system constructed in the early 1850s, was evaluated in conjunction with a federal land exchange project east of Whiskeytown and determined to be National Register eligible (Bevill and Nilsson 2001). The ditch originates in Whiskeytown, and portions of it are maintained through use as recreational trails. The ditch continues onto BLM land into the Swasey Recreation Area and for several miles parallels, but never intersects the Princess Ditch. The Clear Creek Ditch is significant in both the scope of the construction implemented and its' contribution to the local economy. The Clear Creek Ditch was found eligible for the National Register of Historic Places in 1993.

The Princess Ditch is a historic water ditch which was recently determined by the National parks Service to be eligible for the National Register of Historic Places. The Princess Ditch begins at Whiskeytown and continues onto BLM land for several miles. The Whiskeytown portion of the ditch is about one mile in length. It was originally recorded as "firebreak ditch" and thought to be an isolated segment and not related to any larger system. On May 8th, 2012, it was resurveyed by Park Archeologist, Danica Willis and McConnell Foundation Trail Specialist Brian Sindt. The Princess Ditch was confirmed and documented as the Princess Ditch System that continues onto BLM land. A historical study was completed to document the Princess Ditch's historical significance for the National Register of Historic Places (NRHP). Under the criteria for the NRHP, the ditch was found significant under criterion A, for its association with events that made a significant contribution to the broad patterns of local history; under criterion C, for its unique example of ditch constructing methods; and under criterion D was the possibility that more archeological information could be derived from the ditch with regards to its early engineering and construction methods. The study agreed that the Princess Ditch could be converted to a trail open to hikers and non-motorized vehicles without adverse effects to its historical integrity.

The survey began from the BLM and NPS border just above Muletown Road. A short access trail was constructed on BLM land to access the ditch at this juncture. The ditch was well-constructed with a berm of three to four feet deep and a width of three to four feet in the ditch. The ditch continues onto BLM land for an additional twelve miles after leaving the park boundary.

Along the ditch, various examples of rock walls were revealed. Additionally, barbed wire was uncovered as it crossed the path of the ditch. This style of barbed wire was first patented in 1892, however it is still in production today. From the discoloration and general condition of the wire, it is possible that it dates from the historic era. However, historic-era property lines do not

follow the fence line. It is most likely installed for ranching or grazing of animals. This isolated feature location and photos were recorded in the WHIS Cultural Resources database. If the trail is constructed in the ditch, this wire will need to be removed for visitor safety. No artifacts were discovered during the survey. The survey ended where the ditch ended on the north side of Muletown Road. Historically, the ditch had a long flume that carried the water from across the canyon where the ditch continues. Abutments do still exist on the south side of the ditch; however, there is no current plan to continue the trail on the ditch on the south side of Muletown Road. No abutments or foundations remain on the north side of Muletown Road. These features exist on the Whiskeytown portion of the ditch as well as the portions that continue onto BLM land in the Swasey Recreation Area.

Cultural Landscapes

The ditch is part of a large complex of mining features that tell the story of Whiskeytown. The ditch has not been evaluated nor inventoried as a cultural landscape as of yet. In the meantime, the area is being managed as eligible for the National Register and features are being preserved.

Impacts of Alternative A (No Action Alternative)

The No Action alternative would leave the water ditch in its current dilapidated condition. Without some care it will continue to deteriorate. Overall impacts to cultural resources as a result of not maintaining the princess ditch are adverse, long-term and minor in intensity.

Impacts of Alternative B (Proposed Action)

Under the Proposed Action Alternative, the trail would be built in the Princess Ditch and would use the ditch as the trail bed. If mitigations are followed correctly, the project will have beneficial impacts to the ditch. The project will remove vegetation overrunning the ditch and visitor use of the ditch will preserve the ditch tread. The temporary disturbance in the ditch will be negligible in the long term and will be reversible. The use of the trail by hikers and horses will contribute to the deepening and widening of the trail tread. This will not affect the integrity of the ditch, nor make it ineligible for the National Register of Historic Places. Furthermore, all flumes that were used to historically convey water in the ditch have disappeared with time. Building bridges to cross streams and drainages will add to the historic value by showing where flumes historically existed. The trail, in the long term and if all mitigations are followed, will help to protect and preserve the Princess Ditch as an archeological site, a historic structure, and a cultural landscape. As a result, overall impacts to cultural resources as a result of constructing this trail are expected to be beneficial, long-term and minor.

Cumulative Impacts:

In addition to routine trail maintenance, additional trails are being proposed in the Backcountry Management Plan. Fire management activities in this area of the park include the construction of burn unit boundaries for prescribed fire preparation. Additional projects are also proposed that would expand the park infrastructure, such as the Oak Bottom Campground Redesign. All of these projects have the potential to adversely impact cultural resources, though in each case mitigation measures will be put in place to protect resources, including those that may not have yet been discovered. As a result, cumulative impacts to cultural resources with the No Action Alternative would be long-term, adverse and minor. The Princess Ditch Trail would not be built and the ditch would be allowed to deteriorate as natural forces like erosion and vegetation

continue to degrade it. The proposed trail installation would contribute long-term beneficial effects to the park's cultural resources. In doing so, this action will contribute a beneficial impact in preserving and interpreting a historic structure, but the over cumulative impacts from future development to cultural resources would remain long-term, adverse and minor.

Conclusions

Under the no action alternative, the Princess Ditch would not be built and the cumulative effects would be the ultimate deterioration of the ditch as natural forces like erosion and vegetation continue to degrade the ditch. The proposed trail installation would contribute beneficial effects on the park's cultural resources. The trail, if all mitigations are followed, will help to protect and preserve the Princess Ditch as an archeological site, a historic structure, and a cultural landscape resulting in a minor, long-term beneficial impact to the cultural resources of the park.

CONSULTATION AND COORDINATION

Internal Scoping

Internal scoping was conducted by the park's Planning and Compliance Committee on several occasions in early 2012. The Princess Ditch Trail was included in the list of trails the park was presenting to the public as part of the proposed Backcountry Management Plan (BMP). Since the initial scoping sessions, there have been more discussions and meetings and it was decided to break out this trail from the rest of the other proposed trails in the BMP and begin work sooner. Park staff also met with representatives from the BLM and McConnell Foundation (who assisted the BLM with trail planning efforts in the Swasey Recreation Area) to discuss details of the project. An Environmental Screening Form (ESF) was completed by Whiskeytown National Recreation area which discusses the purpose and need for the project.

External Scoping

A press release initiating public scoping and describing the proposed action was issued on February 15, 2012 (Appendix A). A public meeting was held on February 29, 2012, at Redding City Hall. Approximately 60 people attended. Comments were solicited during a public scoping period that ended on March 30, 2012. The park received close to 70 comments related to the proposal to construct new trails. Nearly all of them were supportive of new trails in the park. There was also consultation between the BLM Supervisory Outdoor Recreation Planner and the NPS Natural Resources Management Specialist during the planning phase of the project. The public and other interested parties will also have an opportunity to review and comment on this Environmental Assessment.

The Redding Rancheria was contacted to determine if there were any ethnographic resources in the project area or if they had any other concerns related to the proposed project. The letter sent to the Tribe is found in Appendix B. No response was received by the park from the Redding Rancheria about this project.

The park began consultation with the California State Historic Preservation Office (SHPO) in May of 2012. The SHPO responded via email on July 18, 2012 with concerns which included ground disturbance due to bridge construction and if trail construction would damage any of the ditch's contributing features to its significance. The park addressed the SHPO's questions with a follow-up email on November 11, 2012. The park followed-up formally with letter to the SHPO on February 1, 2013 assuming concurrence with the project, the conclusion that there will be no adverse effect on the historic structure, and the park's determination that the ditch is eligible for

the National Register of Historic Places. The park will provide the SHPO a copy of the Environmental Assessment and continue consultation during the public review period.

Whiskeytown NRA falls within the area covered under the Northwest Forest Plan. Under the streamlined consultation process, agency actions that would result in a “no effect” determination do not require further section 7 consultation with the U.S. Fish and Wildlife Service. Therefore, consultation with the U.S. Fish and Wildlife Service was not initiated.

REFERENCES

- BLM 2011 *Environmental Assessment DOI-BLM-CA-N060-2011-0028-EA*, U.S Department of the Interior, Bureau of Land Management, Redding Field Office.
- DOI 1977 *Executive Order 11988: Floodplain Management*, 42 FR 26971.
- DOI 1997 *Executive Order 11990: Protection of Wetlands*, 42 FR 26961.
- NPS 2006 *Management Policies*, National Park Service, U.S. Department of the Interior, December 2006.
- NPS 2001 Director's Orders #12: Conservation Planning, Environmental Impact Analysis, and Decision-making.
- NPS 2001 Executive Order #13186 - Responsibilities of Federal Agencies to Protect Migratory Birds, 2001.
- NPS 1998 National Parks Omnibus Management Act of 1998 and NPS Organic Act.
- NPS 1973 Endangered Species Act, 1973, as amended.
- NPS 1916 U.S. Department of Interior, National Park Service. National Park Service Organic Act.
- Woodrum, Barbara 2011 The Princess Ditch and Princess Hydraulic Mining Company; Historic Background Research, Evaluation of Significance, and Recommendations. Bureau of Land Management, Redding Field Office.

Whiskeytown News Release

February 15 , 2012
For Immediate Release
Jim Milestone (530) 242-3410

Public Meeting to Discuss Upcoming Park Projects

A public scoping meeting will be held on February 29, 2012 at 6:30 p.m. to assist the National Park Service in the planning of two upcoming park projects. The meeting will be held in the Community Room of Redding City Hall at 777 Cypress Avenue, Redding, California. Whiskeytown National Recreation Area staff are currently developing Environmental Assessments (EA's) for 1) managing the park's backcountry and 2) installing a microwave communication system to connect the Whiskey Creek Ranger Station to the park's information technology infrastructure.

Backcountry Management Plan

The National Park Service is preparing a Backcountry Management Plan (BMP) and Environmental Assessment (EA) to guide future management of the park's backcountry. Potential alternatives could include expansion of the trail system in the backcountry, new campgrounds and campsites in more remote areas, and hiker's huts in several locations scattered throughout the park. The park would like to know what you value about Whiskeytown's backcountry as well as any issues or concerns you have regarding how the backcountry is used and managed.

All interested individuals and agencies are encouraged to review potential alternatives and provide comments either at this meeting, online at: <http://parkplanning.nps.gov/BackcountryManagementPlanScoping>, or by mail to Whiskeytown National Recreation Area, Backcountry Management Plan Comments, P.O. Box 188, Whiskeytown, CA 96095-0188.

Whiskey Creek Ranger Station Communication Link

The National Park Service (NPS) is proposing the use of microwave technology to create a communications link between the Park Headquarters and the Whiskey Creek Ranger Office. The Whiskey Creek Ranger Office is located on Whiskey Creek Road and currently only has basic telephone service available. In order to connect to National Park Service computer intranet systems, the NPS is proposing linking this facility to existing information technology infrastructure available at the Park Headquarters. This solution is the most cost effective option to providing data services to this location. In order to create this link, two 30 foot high self-supporting towers with dish antennas would be installed in administrative areas and painted dark green in order to blend in with the surrounding vegetation.

All interested individuals and agencies are encouraged to review potential alternatives and provide comments either at this meeting, online at: <http://parkplanning.nps.gov/WhiskeyCreekCommunicationLink>, or by mail to Whiskeytown National Recreation Area, Whiskey Creek Ranger Office Communications Link, P.O. Box 188, Whiskeytown, CA 96095-0188.

APPENDIX B – Tribal Consultation



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
WHISKEYTOWN NATIONAL RECREATION AREA
P.O. BOX 188
WHISKEYTOWN, CA 96095-0188



L7617

January 14, 2013

Jason Hart, Chairperson
Redding Rancheria Tribe
2000 Redding Rancheria Road
Redding, CA 96001

Dear Chairman Hart:

The staff at Whiskeytown National Recreation Area have completed their Section 106 review of an upcoming project to build a new section of trail on a historic water ditch called the Princess Ditch. Based on field surveys and our historical records, the park staff have determined there will be no adverse affects impacting the historic ditch and surrounding landscape from our trail project.

The purpose of the proposed action is to provide public access to a network of trails connecting BLM and Whiskeytown NRA lands in the southeast portion of the park. The NPS and BLM have been constructing a trail system that connects Whiskeytown NRA with the BLM Clear Creek Greenway and Swasey Recreation Area. As part of this trail network project, the 17.6 mile Princess Ditch Trail is proposed to connect the Clear Creek Greenway (BLM) with the Swasey Recreation Area. The BLM has completed two sections of the Princes Ditch Trail that lead to NPS lands and a short (1.5 mile) connecting trail through NPS lands is needed to connect these two new trail segments and complete the trail (see project location map).

No known prehistoric sites are located within the project area. Ground disturbance will be monitored by the park archeologist. If cultural resources are discovered, work will cease until the resources can be identified and a protection plan can be put into effect. All culturally significant items will be recorded and returned to their original position. Photo points will be established for before, during, and after project work.

The NPS is requesting any comments or questions regarding our determination that this project will have no adverse affect to the historic ditch and surrounding landscape. In order to facilitate and finalize the planning process, the NPS respectfully requests a response by February 14, 2013.

If you have any questions about this project you can contact me directly at (530) 242-3460 or Danica Willis at (530)242-3438. Thank you for your assistance with the matter.

Sincerely,

Jim F. Milestone
Superintendent

Enclosures: Project Location Maps

APPENDIX C – Guiding Laws, Regulations and Policies

Other Applicable Federal Laws, Executive Orders, Regulations and Policies

The NPS is also required to comply with the following laws, executive orders, regulations, and policies in developing this EA.

Endangered Species Act of 1973, as Amended

This act requires all federal agencies to consult with the Secretary of the Interior on all projects and proposals with the potential to impact federally endangered or threatened plants and animals.

Executive Order #13186 - Responsibilities of Federal Agencies to Protect Migratory Birds (2001)

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of Americans who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. Such conventions include the Convention for the Protection of Migratory Birds with Great Britain on behalf of Canada 1916, the Convention for the Protection of Migratory Birds and Game Mammals-Mexico 1936, the Convention for the Protection of Birds and Their Environment-Japan 1972, and the Convention for the Conservation of Migratory Birds and Their Environment-Union of Soviet Socialist Republics 1978. These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the Migratory Bird Treaty Act, the United States has implemented these migratory bird conventions with respect to the United States. This executive order directs executive departments and agencies to take certain actions to further implement the act. The EA will consider this executive order and the potential impacts of the alternatives to migratory birds.

National Historic Preservation Act of 1966, as Amended

Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register. All actions affecting the park's cultural resources must comply with this law, which is implemented through 36 CFR Part 800.

Qualities of historic properties, such as historic structures and cultural landscapes, which contribute to their listing or eligibility are protected in accordance with the Secretary of the Interior's standards unless it is determined through formal processes that disturbance or natural deterioration is unavoidable.