

WHISKEYTOWN UNIT

**WHISKEYTOWN-SHASTA-TRINITY
NATIONAL RECREATION AREA**

GENERAL MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Pacific West Region
June, 1999

**General Management Plan
and
Environmental Impact Statement**

**Whiskeytown Unit
Shasta County, California**

This document presents a proposed plan and three alternatives for the management, use, and development of the Whiskeytown Unit.

The proposed **General Management Plan** for Whiskeytown emphasizes nature-oriented water-based recreation such as sailing, canoeing, and fishing and expands opportunities for visitor discovery and enjoyment of the significant natural and cultural resources of the park, and opportunities for escape from the noise and crowding associated with urban/suburban environments. The proposed plan is similar to Alternative C in the draft plan.

Alternative A: No Action assumes that physical facilities would remain largely unchanged and that staffing and operational funding would remain constant.

Alternative B: Minimum Requirements would achieve the legislative mandates and administrative requirements for a unit of the National Park System. The concept of this alternative is to take all necessary steps to provide for essential long-term protection of natural and cultural resources, assuring that there are no irreversible adverse impacts, and to provide for basic visitor access to the park resources while ensuring the health and safety of visitors and employees.

Alternative D: Expanded Recreation, would continue the current character of visitor use and experience, with a predominant emphasis on water-related recreation, and would expand day and overnight use facilities to accommodate greater visitor use. The lake would be zoned to provide recreation environments for both nature-oriented and more active boating activities.

Significant adverse environmental impacts would be expected to result only from Alternative A as the other alternatives would contain mitigation features to preclude significant adverse impacts.

The period of availability for this document will end 30 days after the Environmental Protection Agency has published a notice of availability in the Federal Register. Any comments on the document should be addressed to the Superintendent, Whiskeytown Unit, P.O. Box 188, Whiskeytown, Ca. 96095. The park's telephone number is (530) 241-6584.

SUMMARY OF THE GENERAL MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

This document presents a proposed general management plan and three alternatives, and evaluates the environmental impacts of each alternative.

The proposed **General Management Plan** emphasizes visitor enjoyment of the significant natural and cultural resources of the park, in a setting providing opportunities for escape from the noise and crowding associated with urban/suburban environments. Water-related recreational uses would emphasize low impact, nature-oriented activities such as sailing, canoeing, and fishing. The use of personal watercraft, which has a major negative impact on the quality of these experiences, would be eliminated. Increased emphasis would be placed on visitor enjoyment of the backcountry and enhanced interpretation of cultural and natural resources, including Gold Rush history, archeology, Wintu indigenous culture, landscape restoration, threatened and endangered species, and fire and fuel management.

Staff increases would be made to augment resource management and protection. Staff would also be added in the education and interpretation functions, and the "Clear Creek Watershed Management Field Station and Education Center" would be established to facilitate higher education and research and promote watershed restoration throughout the region. Recreation facilities on the lake would be modified to provide a broader range of opportunities, including small-scale boat-in and walk-in rustic tent sites at locations on the lake. Backcountry touring and camping opportunities would also be expanded.

Capital costs for this alternative, including major replacements, are estimated at \$ 17,460,000, while annual operating costs would approximate \$ 3,466,000.

The proposed plan is similar to Alternative C as presented in the draft GMP/EIS. Differences include a potential OHV access in the vicinity of New York Gulch, the elimination of the major boat-in camp at the mouth of Boulder Creek in favor of dispersed boat-in sites, deletion of the proposal for on-lake camping, and the redesign of units at the Oak Bottom campground to include adjacent lands.

Alternative A: No Action assumes that physical facilities would remain largely unchanged and that staffing and operational funding would remain constant. Visitor use pressure is assumed to increase consistent with population growth in the region and statewide.

Replacement of obsolete and worn-out facilities would require capital expenditures of approximately \$ 8,370,000. Annual operating costs for this alternative would be approximately \$ 2,146,000.

Alternative B: Minimum Requirements would achieve the essential legislative mandates

and administrative requirements for a unit of the National Park System. The concept of the plan is to take all necessary steps to provide for essential long-term protection of natural and cultural resources, assuring that there are no irreversible adverse impacts, and to provide for basic economical visitor access to the park resources while ensuring the health and safety of visitors and employees.

Staff for resource management and protection would be increased but existing developments and facilities would be unchanged under this alternative except for a new or expanded administration building, a fire cache, maintenance shops, and curatorial storage facility. Visitor and interpretive services would operate on an information-only basis.

Capital costs for this alternative are estimated at \$ 12,230,000, including major replacements of obsolete and worn out facilities, while annual operation and maintenance costs would approximate \$ 2,774,000.

Alternative D: Expanded Recreation would continue the character of current visitor use and experience, with a predominant emphasis on water-related recreation, and would expand day and overnight use facilities to accommodate greater use. This approach would in general incorporate the objectives and the development proposals contained in the park's 1976 master plan.

The lake would be zoned under this alternative to provide a low-speed zone for nature-oriented uses and an open zone for use of speedboaters, waterskiers, and personal watercraft users.

A major feature of this alternative would be the development of a major new use facility at the mouth of Boulder Creek, roughly on the scale of the existing Brandy Creek complex. Camping, picnicking, and beach facilities would be provided. Access to the site would be provided by paving and upgrading South Shore Drive.

Capital costs for this alternative, including major replacements, are estimated at \$ 36,930,000, while annual operation and maintenance costs would approximate \$ 3,640,000.

Significant adverse environmental impacts would be expected to result only from Alternative A. The other alternatives are formulated to provide for long-term protection of resources and include mitigating provisions to ensure that new developments and programs will have minimal environmental impacts. Beneficial impacts would accrue in the areas of natural and cultural resource protection and visitor use. Minor adverse impacts would result from added structures' visual disruption of the natural and historic scene, and some vegetation would be removed in development areas, with resulting minor impacts on wildlife.

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INTRODUCTION

Whiskeytown is a unit of the Whiskeytown-Shasta-Trinity National Recreation Area (NRA). It is located in Shasta County, California, about 8 miles west of downtown Redding. The park is within California's Second Congressional District.

The park contains approximately 42,500 acres of land and water. Elevations range from 800 feet in lower Clear Creek below Whiskeytown Dam to over 6200 feet atop Shasta Bally. Vegetation is a mixture of pine forest, riparian associations, and chaparral. The lake, created by an earth-filled dam on Clear Creek, has a surface area of approximately 3200 acres.

Whiskeytown was established by the Act of November 8, 1965 "...to provide..., for the public outdoor recreation use and enjoyment of the Whiskeytown reservoir and surrounding lands... by present and future generations and the conservation of

scenic, scientific, historic and other values contributing to public enjoyment of such lands and waters..."

Whiskeytown Lake provides high-quality reservoir recreation opportunities because of its forested mountain setting, and its lake-like appearance due to a mode of operation which keeps the reservoir full throughout the primary extended recreation season. In this regard Whiskeytown is unlike most other major California reservoirs, including the other two reservoir units of the Whiskeytown-Shasta-Trinity NRA, which experience large drawdowns during summer months, with extended denuded bands between vegetation and water surface and considerable distances between the lake and permanent facilities. At Whiskeytown, quality swimming beaches and lakeside camp and picnic areas can be provided.

The park has averaged about 850,000 visitors per year for the last four years. Visitation levels can soar in poor water years when other reservoirs are severely drawn down. For example, during the drought period 1986-1991, visitation averaged 1,580,000 per year. Visitor use at the park is heavily concentrated on the lake and at shoreside developed areas, and a large proportion of visitor use occurs in the summer season, April through September.

The power and water supply functions of Whiskeytown dam and reservoir are managed by the Bureau of Reclamation. The Bureau has one small administrative and maintenance complex adjacent to the dam and another complex at the Carr Powerplant area.

The authorizing legislation includes provision for mining. A portion of the unit has been designated as available for mineral leasing since 1988 but no leases are currently in effect.

PURPOSE AND NEED FOR THE PLAN

Public Law 95-625 requires an up-to-date general management plan (GMP) for each unit of the National Park System, and identifies four elements which must be included in the plan:

1. Measures for the preservation of the area's resources.
2. Measures and facilities to accommodate visitor use.
3. Strategies for managing visitor use within carrying capacities.
4. Evaluation of the need for boundary changes.

Park Service planning policies call for the plan to address a fifteen year period. NPS Special Directives provide specific guidance on boundary evaluations and the presentation of development cost data.

PLANNING ISSUES

Planning issues to be addressed in the plan were identified during a series of meetings with the public and the park staff. They are described below.

NATURAL RESOURCE MANAGEMENT

Watershed Management

Beginning with the mid-19th century gold rush, and continuing for the next 100 years, lands within the park boundary were subject to intensive mining exploration and development. Extensive logging of the area occurred immediately prior to the designation of the NRA. These activities, along with some residential development, have left substantial areas of disturbed ground and many miles of abandoned roads and skid trails which are subject to erosion during heavy winter rains. Impacts on water quality, riparian habitat, and aquatic habitat are significant. A long-term strategy is needed for stabilization of these eroding areas.

Fire Management

The long-standing policy of natural fire suppression in the area has resulted in significant fuel accumulation, and high potential for catastrophic wildfire. Further expansion of residential development adjacent to the boundary makes this situation more urgent.

While the GMP will not outline the specifics of a fire management program at Whiskeytown, the GMP can help to guide fire management planning through clarification of natural resource management goals, determination of cultural resource protection requirements, and the establishment of management zones.

Wildlife Management

Most developments and facilities at Whiskeytown lie within prime wildlife habitat, resulting in serious conflicts between visitors and various species of wildlife. Bear and mountain lion problems have led to safety concerns and restrictions on visitor use in recent years. A draft Bear Management Plan prepared by the park provides guidelines for resolving bear conflicts, including the destruction in some cases of problem bears. Other wildlife issues involve species such as ground squirrel, bats, deer, otters, and flickers.

Threatened and Endangered Species

The President has directed federal agencies managing land within the range of the northern spotted owl to work cooperatively in ecosystem management. The presence of owls has been documented at Whiskeytown. Other threatened, endangered, and candidate species of animals and plants within the park need to be considered as well.

Additional Natural Resource Study Needs

The GMP needs to identify the additional resource studies that are needed to support an effective natural resource management program.

CULTURAL RESOURCE MANAGEMENT

Historic Mining Resources

There are numerous sites in the park showing evidence of past mining use, e.g. tailings piles, roads, mine-shafts, abandoned equipment, etc. Identification and evaluation of some mine sites occurred in the fall of 1997. Mine sites examined at this time include Mt. Shasta Mine, Salt Creek Mine, Desmond Mine, Ganim Mine, and various adits throughout the park. These mines were inventoried, evaluated, rated for hazard potential, and closed where appropriate. They will be further evaluated for eligibility for listing on the National Register of Historic Places.

Many other mine sites remain largely undocumented. It will likely not be possible or desirable to preserve and/or interpret all of the sites within the park, and the restoration of

some mine-disturbed areas to natural conditions may be desirable. A strategy is needed for the evaluation, classification, and appropriate treatment of these sites.

Collections Management

Funding has been received in recent years to address the number of backlog items in the park's museum collection. In 1997, 2907 additional objects were cataloged.

Current storage facilities are inadequate to house the growing museum collection. Overall the program has suffered from a lack of expertise, staff, funding, and attention since establishment of the NRA. A strategy is needed to ensure progress toward meeting curatorial standards.

Resources of Special Importance to American Indians

Past use of the area by Wintu Indians has been documented and a number of archeological sites have been identified. However, little organized information is available regarding cultural and natural resources within the park which are of special importance to contemporary American Indians. A strategy is needed to determine the extent to which such resources are present and how best to manage them, including opportunities for expanding interpretation of Wintu history and culture at the park.

Additional Cultural Resource Study Needs

The GMP needs to identify the additional resource studies that are needed to support an effective cultural resource management program.

COMMUNITY RELATIONS AND PARK PARTNERS

There is a potential for establishing cooperative relationships with the adjacent communities of French Gulch and Shasta, which are historic communities contemporary with the park's Tower House Historic District, and with nearby American Indian tribal groups with special associations to the park. There is also a growing community near the east boundary. A strategy is needed to provide for coordination with these communities in the planning and provision of resource management and visitor use activities.

There is a need to better define the park's relationships with various park partners such as U.S. Forest Service, California Division of Forestry, Bureau of Land Management, Bureau of Reclamation, etc. and determine the need for cooperative agreements.

VISITOR SERVICE AND FACILITIES

Visitor Experience

Since its creation, Whiskeytown has focused heavily on providing opportunities for water-based recreation on the lake. While these activities will continue to be an important part of visitor use, the park's large land base offers a number of additional visitor use opportunities which may appropriately be supported and encouraged by the park. For example, opportunities exist for additional backcountry use, and for additional programs to encourage appreciation of the park's cultural and natural resources.

Increasing levels of personal watercraft use on the lake have resulted in visitor experience conflicts with users such as fishermen, sailboaters and swimmers who are seeking a more nature-related experience and are adversely affected by the sounds of the craft and their often aggressive operation.

Interpretation

Opportunities need to be considered for better addressing a number of interpretive themes relating to human use of the Whiskeytown area and its effects on the park's natural and cultural resources, mining, westward expansion and settlement, the story of the Wintu, past and present, the natural history of the area, and water development, including the Central Valley Project.

The GMP should identify the studies and plans needed to provide guidance for the park's interpretive program.

The present visitor center is a small structure with limited space. A larger building, capable of providing a full program of cultural, natural, and recreation interpretation, information, education, and visitor services needs to be considered in the context of the overall visitor experience strategy.

Campground Design and Rehabilitation

Whiskeytown's campgrounds were developed in the 1960's prior to the emergence of the recreational vehicle as a major factor in campground design. The existing tent campground at Oak Bottom, which was originally designed as a picnic area, has experienced extensive soil compaction and vegetation damage. The same type of adverse impacts occur at Dry Creek group campground.

While the GMP will not provide specific plans or designs for campgrounds, the GMP should define the park's goals for providing camping in terms of numbers of sites and the character

of the experience.

Opportunities should be explored for improving RV camping experience at Whiskeytown. While the current large parking lots see substantial RV use, they do not offer high quality recreation experience.

Backcountry Camps

The demand for and feasibility of providing developed and maintained backcountry camps and the need for establishing backcountry use guidelines need to be evaluated for the dual purposes of facilitating backcountry use and managing such activity to protect sensitive cultural sites and natural areas. While the GMP would not designate specific backcountry sites, it should establish a rough scale for the program, recommend design guidelines for sites, and provide general location criteria.

Architectural Guidelines

The recreation sites developed in the 1960's were designed to serve and survive heavy visitor use and lack the softening and blending architectural and landscape design features that can significantly improve the sites' esthetics and the quality of the visitor experience. Also, modern energy-efficient technologies, including solar facilities, have become available in recent years and may be usefully employed at the park.

The plan should promote the use of NPS' Guiding Principles of Sustainable Design in the design of both new facilities and in rehabilitating older areas.

REGULATION

Highway 299 Corridor

State Route 299 traverses the north shoreline of Whiskeytown Lake. It is a major highway linking the Central Valley with the coast and carries heavy commercial and recreation traffic. It also provides the most important access to Whiskeytown. There are safety, lake access, and aesthetic concerns about this corridor which need to be considered and addressed by the plan.

South Shore Road

The steep, winding South Shore Road provides a scenic route for visitors and access to points on the lake shore. The road is unpaved and portions of the route are too narrow to accommodate safe two-way traffic for the range of visitor vehicles using the park.

Management objectives for this route need to be formulated.

Abandoned Logging/Mining Roads

There are numerous primitive roads in the park which were developed to serve logging, mining, power transmission lines, and residential uses prior to the establishment of the park. Some of these roads, i.e. those more than 50 years old, may have historical significance under Section 110 of the National Historic Preservation Act. Roads which are historically significant and/or useful to park purposes should be retained and maintained, while those which are causing erosion, detracting from esthetics, creating maintenance nuisances, and encouraging undesired use and impacts and access to sensitive sites, should be obliterated and natural conditions restored. The GMP should provide criteria to be followed in disposition of these roads.

Off Highway Vehicle (OHV) Use

The Bureau of Land Management's plan for the Interlakes Special Recreation Management Area, encompassing public lands north of the park boundary and including the Chappie-Shasta Off-Highway Vehicle Area, calls for development of a staging area to access the OHV area from State Route 299, to be located on BLM lands beyond the northern boundary of Whiskeytown. Another option for the staging area would be to locate it within the park. The plan should evaluate the feasibility and desirability of developing such a facility.

Trails

Opportunities for expanding the park trail system and for linking park trails with regional trails need to be considered. The authorizing legislation references the potential for trails extending along Clear Creek below the dam and beyond the boundary to connect with other trails and public roads. The need for and feasibility of establishing this trail needs to be evaluated.

RELATION TO OTHER PLANS

MASTER PLAN

A master plan for Whiskeytown Unit was completed in 1976 and was amended in 1988 in order to further refine the parkwide zoning scheme and identify portions of the park suitable for mineral leasing. That master plan is largely obsolete. Some of the master plan's proposals have been implemented, while others have been incorporated in the plan alternatives presented in this document.

STRATEGIC PLAN

The Government Performance and Results Act (GPRA) has instituted a government-wide performance management system with requirements for the preparation of five year strategic plans and annual performance plans and reports. The Park Service approach to compliance with GPRA requires the completion of such plans at the unit level as well as at the servicewide level. The park completed its first strategic plan in 1997. General management planning at Whiskeytown is being integrated with the GPRA requirements and much of the GPRA specialized terminology has been used in this document.

The NPS approach to GPRA uses an 8-step process as follows:

1. Review Servicewide Strategic Plan
2. Establish Park Mission
3. Develop Park Mission Goals (Desired Future Conditions)
4. Determine Long-Term Goals (Measurable 5-year goals)
5. Assess Resources
6. Develop Annual Performance Plan
7. Implement Annual Plan
8. Develop Annual Performance Report

The general management plan will deal with the first 3 steps of the GPRA process and this information will be incorporated into the next 5-year strategic plan which will be prepared by the park.

ACTION PLANS & DEVELOPMENT DESIGN

The general management plan is intended to provide a vision and long-term direction for the park, and does not include a great deal of detail. A number of action plans and development plans/designs will need to be prepared to implement the GMP and provide

specific guidance for park activities, e.g. the natural and cultural resource management plan, interpretive prospectus, land protection plan, fire plan, facility development designs, etc. As these plans are completed and revised, they will reflect the management direction in the approved general management plan. Where necessary, these action plans and designs will include additional environmental and cultural resources compliance.

ALTERNATIVES

The following mission statement for Whiskeytown NRA guided the development of all alternative plans.

Whiskeytown National Recreation Area provides compatible water and land-based recreation in a mountain setting and conserves and interprets scenic, scientific, natural, cultural, and other values for the enjoyment and benefit of present and future generations.

The alternatives presented below were developed by an interdisciplinary team of planners, resource management specialists, park managers, and interpretive specialists. They use different approaches, different levels of staffing and financial resources, and different visitor experience objectives to fulfill the mission of the unit. The alternative plans incorporate the range of feasible and acceptable proposals and suggestions which surfaced during the public scoping process.

Each of the alternatives addresses the three major components of the Park Service mission as outlined in the National Park Service Strategic Plan: Preserve Park Resources, Provide for Public Enjoyment and Visitor Experience, and Ensure Organizational Effectiveness. These mission components are also used in the strategic plan for Whiskeytown.

PROPOSED GENERAL MANAGEMENT PLAN

This alternative emphasizes visitor enjoyment and diversification of use of the significant natural and cultural resources of the park, in a setting providing opportunities for escape from the noise and crowding associated with urban/suburban environments. The plan would emphasize visitor enjoyment of the lake in an atmosphere providing respite from intense urban type activities, greater use and enjoyment of the backcountry, greater interpretation of natural phenomena, and opportunities for appreciation of the many facets of the area's history.

PLAN GOALS & ACTION PROGRAM

**Goal 1:
Cultural sites,
structures,
and**

Preserve Park Resources

landscapes are identified and evaluated for significance, management guidelines are established, and adequate funds and staff are available for protection. Selected cultural resources are rehabilitated or restored.

Although the park has been in existence since 1965, there is much that is still unknown about its cultural resources. Inventories and surveys which have been completed have for the most part been closely focused on specific project areas or specific structures where some action was proposed. Only a small percentage of the park has been surveyed for archeological sites. Because of the number of sites identified in surveyed areas, it can be expected that there are numerous sites in the unit yet to be identified.

Likewise, many of the cultural sites already known to exist in the park have not been sufficiently studied to provide the basis for assessing significance and the need for and desirability of preservation action and their potential for use as interpretive sites.

Efforts would be undertaken to improve the knowledge base on cultural resources in the unit and to protect the known resources. This alternative would go beyond information gathering and resource protection to actively seek out opportunities to restore and/or rehabilitate cultural resources and sites.

Action Program

- Complete Historic Property Preservation Database for historic and archeological sites, structures, and landscapes. Special attention would be directed to historic mining sites and historic water distribution systems.
- Assess significance and treatment priority of cultural resources.
- Complete needed cultural resource studies including:
 - Fire Protection and Security Survey of Historic Structures and Museum Collection
 - Cultural Landscape Inventory
 - Archeological Overview and Assessment
 - El Dorado Mine Complex Historic Structures Report
 - Crystal Creek Water Ditch Management Plan
 - Clear Creek "Great Ditch" Historic Resource Assessment & Documentation
 - Preservation schedule for Tower House Historic District, and for other cultural resources at Whiskeytown as appropriate.
- Provide funds and staff needed to monitor and protect resources.
- Rehabilitate historic water system components for interpretive potential. Components should show variety of water uses (mining/irrigation/domestic) and historic periods. Examples of possible elements are:
 - portions of Great Ditch
 - Crystal Creek ditch
 - Tower House irrigation system
 - Mill Creek/Willow Creek Ditch System
- Rehabilitate historic mine sites for interpretive value. Selected sites should show range of size and types of mining use, i.e. early small scale vs. later corporate. Possible sites include:
 - Mt. Shasta mine
 - Orofino Mine
 - Salt Creek Mine (at NEED Camp)
 - El Dorado Mine
 - Ganim Mine
- Rehabilitate/restore Tower House Historic District (THHD) cultural landscape including the historic orchard and traditional/historic roads, trails, and irrigation systems.
- Establish historic preservation schedule for THHD and other sites as needed, including those water development and mining sites selected for rehabilitation.

- Identify traditional native cultural sites and manage to enhance cultural landscape values. Examples include:
 - prescribed burns to increase acorn production
 - cultivation of native plants for basketmaking materials
- Complete Historic Furnishings Report for the Camden House. This information would be used to develop appropriate interpretation of the Gold Rush story.
- Conduct parkwide cultural landscape inventory.
 - Ensure timely and appropriate consultation with the State Historic Preservation Officer and Advisory Committee on Historic Preservation as outlined in Appendix B.

Goal 2: Collections of cultural and natural resources are stored, documented, and protected. Collections are managed to serve scientific, interpretive, and educational purposes.

The park has a substantial collection of cultural items such as historic and prehistoric tools, and natural resource items such as plant and insect specimens. These collections arise both from park management activities and from donations. They are important information resources to the park staff and historical researchers, and are in some cases used in interpretive exhibits. Care of such items to prevent theft, breakage, and deterioration requires appropriate storage areas specifically designed to safeguard and control temperature and humidity.

This alternative includes steps to preserve and protect the existing collection, but also includes the expansion of the collection to better support the interpretive program and to serve scientific research and educational purposes. The park would collaborate and coordinate with other curatorial organizations.

Action Program

- Provide sufficient curatorial space meeting NPS standards for existing collections and to accommodate expansion. Requires addition of 2500 square feet, or the adaptive use of existing structures (houses, Tenaant House barn)
- Update Collection Management Plan and Scope of Collections Statement.
- Complete needed collection management plans/studies including:
 - Preventive Conservation Management Plan

- Museum Object/Specimen Research Report
- Collection Storage Plan

- Allocate funding and staff to conserve collections.

- Accession and catalogue all items in park collections.

- In accordance with the Scope of Collections Statement, historic furnishings plan, research performed through scientific collection permits, archeological permits, and Section 106 compliance projects, expand collections in areas of ethnography, mining, water development, Camden House furnishings, and natural resources.

- Conduct research on all artifacts already in collection.

- Expand information sharing and cooperative arrangements with museums, agencies, and private institutions.

Goal 3: The physical and biological systems of the undeveloped portions of the park approximate early 1800 conditions and processes.

A basic principle applicable to natural resource units of the National Park System, including Whiskeytown NRA, is that physical and biological systems and processes should be allowed to function as much as possible unimpaired by man's interference. This means that efforts should be made to prevent human impairment now and in the future, and where practical and feasible, the impacts of past interference should be reversed or minimized. Generally this goal is expressed as achieving ecosystem integrity and stability.

While the general concepts of ecosystem are widely understood, the level of knowledge about the actual functioning of the Whiskeytown regional ecosystem, and the functional relationships between biological and physical elements and processes, is minimal. Preservation efforts in the past have been largely piecemeal, aimed at preserving specific species, solving site-specific problems related to fire and erosion, and eliminating or reducing exotic plant and animal species in competition with native species.

While legislation and servicewide policy require at minimum the protection of the natural environment, and minimization of ecosystem disruptions, this plan proposes an active role in reversing the more significant physical and biological intrusions of the last decades and aims at restoring the park to conditions that existed upon arrival of non-native settlers in the 19th century. The target conditions, which realistically cannot be attained but may be approached, are recognized to include the impacts of management and use activities by the Wintu.

Action Program

- Cooperate with other agencies and land owners in management of the Clear Creek watershed.
- Continue wildfire pre-suppression and suppression program, including efforts to reduce hazardous forest fuel buildups, but also expand the purpose of the fire program in order to:
 - improve wildlife habitat
 - stimulate biodiversity
 - maintain healthy watersheds
 - reduce exotic species
 - restore circa 1800 landscape reflecting American Indian fire practices, except in developed areas and designated cultural landscapes where target years may vary
- Upgrade wildlife resource protection programs to desirable standards, with special emphasis on bears and mountain lions. Action elements would include:
 - Public and employee information and education
 - Enforcement of regulations regarding food storage, garbage disposal, and feeding of wild animals
 - Removal of human food sources.
 - Management of wildlife/human interactions
 - Bear and lion management research
- Develop protocol to inventory, assess condition of, and understand functional relationships of plant and animal species and physical resources (air, water, earth).
- Identify and monitor key plant and animal species.
- Preserve plant and animal diversity.
- Take an active role in regional air and water quality issues; ensure park values are considered in land use and regulatory decisions.
- Encourage voluntary conversion of watercraft engines to designs that minimize water pollution and noise, and actively enforce laws and regulations that may be enacted to require such equipment.
- Restore natural landscapes and land forms. Examples of potential restoration sites include:

- road cuts from logging and power line roads
- mine and tunnel tailings
- log decks and landings
- unnatural stream channels
- Reduce or eliminate exotic species such as:
 - Scotch broom
 - star thistle
 - Himalayan blackberry
 - ailanthus (tree of heaven)
 - cowbirds
 - feral cats and pigs
- Improve forest health by:
 - developing and implementing a forest management plan
 - completing research on historic forest conditions
 - thinning and planting native species
 - restoring fire as a part of the natural system
- Improve water quality by:
 - restoring natural landforms and hydrology
 - reducing unnatural sediment loads
 - establishing stream monitoring system (giardia, coliform bacteria, etc.)
 - managing recreation use
 - reducing use levels as needed
 - providing better sanitary facilities
 - encouraging use of watercraft engines that minimize pollution

Goal 4: Whiskeytown contributes to the preservation of the Wintu culture and other ethnographic traditions.

The Whiskeytown region was occupied by the Wintu native peoples for many centuries prior to the arrival of the miners in the nineteenth century. Mining, and subsequent agricultural, water development, and commercial activities, severely disrupted and displaced the Wintu way of life in the area. However, contemporary Wintu retain cultural interests in the lands of Whiskeytown both in terms of spiritual and religious values and as a place to gather materials for traditional activities such as basket-making.

The traditional cultural needs of the Wintu at Whiskeytown, and the opportunities to

interpret Wintu culture for the general park visitor, have not been sufficiently investigated and pursued.

Legislation and administrative policies require that ethnographic resources are identified and protected, and identified groups have access to the resources as appropriate. A further commitment is made in this plan to request assistance from the Wintu community in documenting cultural traditions associated with the Whiskeytown area, and in working with the Wintu, and possibly other groups, to retain and perpetuate aspects of their culture and share that culture with others through park interpretive and education programs.

Action Program

- Conduct ethnographic overview and assessment.
- Establish and cultivate relationships with affiliated groups.
- Conduct regular consultations with affiliated groups.
- Provide opportunities for traditional uses.
- Encourage and support American Indian cultural education programs. Examples may include:
 - construction of roundhouse at NEED camp
 - cultivation of native plants for traditional uses
 - sponsor cultural demonstrators
 - Cultural educational programs and camps
- Encourage formation of a consultative group to represent Wintu interests.

Goal 5: Whiskeytown contributes to the recovery of threatened, endangered, and sensitive plants and animals.

Federal law prescribes a system for identifying species of plants and animals which may be headed for extinction, and taking steps to avoid such an occurrence if possible. The Fish and Wildlife Service manages this program and other Federal agencies, including the National Park Service, cooperate in implementing recovery plans.

At Whiskeytown, there are two animals listed as "threatened", the southern bald eagle and the northern spotted owl.

While federal legislation requires efforts to protect federally listed species, this alternative would extend the park's efforts to additional species which are not federally listed but are known to be sensitive or are of special concern.

Act i on Program

- Inventory, monitor, and protect federally designated species consistent with federal recovery plans.
 - southern bald eagle
 - northern spotted owl
 - puccinellia howelii

- Reintroduce and/or enhance habitat for sensitive or extirpated plant and animal species. Examples are:
 - spring run chinook salmon
 - steelhead
 - red-legged frog
 - osprey

Goal 6: Whiskeytown serves as an outdoor laboratory for watershed and landscape management.

Substantial portions of Whiskeytown's land area have been damaged by past logging, mining, and construction activities, as have many millions of acres in the region. Watershed restoration is needed at Whiskeytown, and there is a need for research and training to better deal with regionwide watershed problems. Whiskeytown offers a significant opportunity for pursuit of watershed restoration research and training function by virtue of its accessible location, its land management goals, and its existing programs and facilities.

Act i on Program

- Continue support of Shasta College's watershed restoration curricula and field activities, and similar activities of other educational institutions as they develop.
 - Establish a "Clear Creek Watershed Management Field Station and Education Center" at the NEED Camp to guide and support in-park restoration projects and provide training and information transfer to others and research on watershed and landscape management including:
 - water quality monitoring
 - erosion control
 - fuel reduction and treatment

-use of prescribed fire

Goal 7: *Whiskeytown contributes to regional scenic, cultural, recreational, and ecosystem values.*

In this alternative a comprehensive regional approach would be taken toward resource management, emphasizing greater cooperation with adjacent public and private land managers and relationships with natural and cultural resources outside the park. Regional partnerships are essential in this concept to achieve ecosystem restoration and watershed protection goals and to provide education and interpretation of cultural and natural resource connections beyond the park boundary.

Act i on Program

- Actively cooperate and participate with programs, groups and local communities such as the following toward ensuring mutual benefit:
 - Clear Creek Cooperative Resource Management Planning group
 - Shasta-Tehama BioRegional Council
 - Western Shasta Resource Conservation District
 - Shasta County Historical Society
 - Neighbor communities such as Igo, French Gulch, and Shasta
 - Provincial Advisory Committee
 - Local museums & Institutions, such as Museums of Turtle Bay
 - Northwest Forest Plan
 - Shasta Cascade Wonderland Association
 - Redding Convention & Visitor Bureau
 - Local colleges and universities
 - Bicycle and horseback riding groups and organizations
- Support and encourage the development of public mass transit services between Redding and Whiskeytown as an alternative to the use of the private automobile and to reduce single occupant automobile travel.
- Support and encourage the provision of trails and bike paths or lanes between Redding and Whiskeytown to facilitate bicycle and equestrian access to the park.

**Goal 1:
Visitors to
Whiskeytown
Lake enjoy a**

Provide for Public Enjoyment & Visitor Experience

wide range of compatible water-based and water-related activities, including the opportunity to enjoy a predominantly natural setting.

The great majority of Whiskeytown's current visitors are attracted to the lake or its vicinity for a range of recreation activities on the lake itself and in areas immediately adjacent where activities such as camping and picnicking are enhanced by the lake.

Basic facilities such as parking lots, restrooms, and launch ramps, and staff services such as law enforcement, visitor information, and maintenance, are essential to provide for visitor access to the lake and the protection of basic health and safety for visitors. More highly specialized facilities, such as snack bars, and staff such as lifeguards, are also valued by many users but are not essential and generally add to the costs of park operation.

The past few decades have seen an explosive growth in recreation technology and recreation uses. A prime example at Whiskeytown is the emergence of personal watercraft use. New activities in some cases are fully compatible with existing uses, and in other cases cause conflicts. It is impossible to foresee what new uses and technologies may appear on the recreational scene in future years.

There are a number of undeveloped sites around the lake which are accessible by motor vehicle and which provide informal recreation sites for groups and individuals. Litter and sanitation are problematic at some sites, and the sheer number of such sites places a burden on the limited capabilities of the park staff.

In addition to providing the essential facilities and operations necessary to make the lake accessible and enjoyable for a wide range of activities, this plan would provide additional amenities for existing uses, features to reduce conflicts among user groups, and actions to provide opportunities for more nature-based recreation on the lake.

Action Program

- Improve visitor experience at Oak Bottom tent campground and Dry Creek group campground by reducing density by approximately fifty percent. Oak Bottom campground would be expanded to the north to retain approximately the same number of sites.
- Designate and develop small-scale boat-in/walk-in (from lake shore) low density campgrounds at various locations on the lake shore where environmentally acceptable and economically feasible.

- Emphasize opportunities for visitors to escape from the stresses of urban/suburban environments, including noise, crowding, pollution and other disruptions of personal space, quiet, and solitude. To help achieve this recreation setting:
 - Discontinue use of personal watercraft on Whiskeytown Lake.
 - Rigorously enforce existing noise standards for boats.
- Accommodate new recreation activities/technologies that do not adversely affect natural and cultural resources and that do not conflict with the goal of providing visitors a refuge from urban/suburban stresses. Activities not compatible include those which are loud and visually obtrusive.
 - Restrict boat launching to existing developed launching sites.
- Undertake cooperative planning with the Forest Service to ensure the most efficient and desirable provision of recreation services and opportunities among the three lakes of the National Recreation Area. This would ensure that quality opportunities are provided for activities such as
 - powerboating, sailing, jet-skiing, and fishing as overall demand increases in the 21st century.
- Maintain existing water-related facilities and services and in addition:
 - Increase life guard services to include more days and a longer season
 - Add floating restrooms
 - Increase boat patrols
 - Improve navigation aids
- Increase enforcement of alcohol ban at Oak Bottom, Brandy Creek, and East Beach areas and evaluate possible extension of the ban to additional areas of the park.
- Improve Carr Powerhouse lakeshore fishing access.
- Inventory and evaluate dispersed use areas on the lake. Some would be retained unaltered, others would be improved with defined access and/or parking, toilets, and trash cans, while access to some areas, where they are difficult or impractical to maintain or where there are visual quality conflicts, would be eliminated.

Goal 2: Visitors to the backcountry enjoy a variety of activities, including camping, driving for pleasure, trail activities, and hunting using an integrated network of designated backcountry roads and trails.

Backcountry use at Whiskeytown is currently fairly limited. There is some individual and group horseback use, vehicle use of the primitive roads occurs to some extent, and seasonal hunting for deer, bear, and small game occurs over much of the park. Primitive designated campsites, accessible via the unpaved roads, are available at several locations and receive considerable use. The marked and designated trail system at Whiskeytown is limited.

The system of backcountry roads and trails at Whiskeytown was inherited from and is largely a product of the logging and mining in the area prior to park creation. Some of the roads provide access to areas of prime recreational or scenic interest, e.g., Shasta Bally and Coggins Park, while others have little recreational utility and receive little or no use. Some roads have been closed to use because of resource protection or safety concerns. In all cases these primitive roads are contributing to drainage and erosion problems in the park.

This plan would improve the accessibility of the backcountry for both casual sightseeing and more extended overnight activities, and ensure the preservation of quality experiences for backcountry users. A backcountry management plan would be completed by the park to outline the specific required facilities and improvements, direct operation and maintenance activities in the backcountry, and provide for monitoring to ensure that the use capacity is not exceeded.

Action Program

- Improve selected backcountry roads for public use and access. Backcountry roads would remain unpaved but would be improved and maintained to 2 wheel drive standard. Roads to be improved are shown on the proposed plan map.
- Maintain the minimum roads needed to provide access to private property, to utilities, and to water project facilities to the standard required for administrative use.
- Complete and implement a trail network plan to facilitate backcountry travel by foot, trail stock, and bicycle. Some trails or portions of trails would be designed to be wheelchair usable. Where feasible, bike trails or lanes would be provided on or adjacent to all of the paved roads in the park.
- Complete a Clear Creek non-motorized trail corridor extending from the county road crossing near Igo, around the south side of Whiskeytown Lake, and extending north to the vicinity of French Gulch.

- Improve trail information for backcountry users through publication of trail maps and guides and through improved signage. Published trail information should include grade (average and maximum), width (minimum and average), obstacle height, and surface. Trail signs should include trail name or identification and mileage.
- Ensure trails are regularly and actively maintained, with assistance sought from user groups such as equestrians and mountain bikers.
- Improve backcountry camping opportunities.
 - As demand for backcountry camping increases, designate backcountry camping zones and manage use levels by zone to protect resources and provide quality, nature-based experience.
 - As economically feasible and environmentally acceptable, provide additional walk-in primitive campsites on Mill Creek, Boulder Creek, Lower Clear Creek, Crystal Creek to provide tranquil and quality experiences. Sites would include:
 - nearby vehicle access and parking
 - fire grills or circles
 - toilets
 - bear-proof trash cans/dumpster
 - food storage lockers
 - handicap accessibility
 - Develop and designate a horse camp for horse groups only. Features would include:
 - toilets
 - water supply
 - food storage lockers
 - fire circles/grills
 - hitch posts/rails
 - bear-proof garbage cans
- As an element of Clear Creek trail corridor through Whiskeytown, develop a picnic and non-motorized trail staging area on Clear Creek adjacent to the Merry Mountain Road crossing.
- Assist the Bureau of Land Management (BLM) with development of an OHV staging area on Whiskey Creek north of Whiskeytown boundary, or the development of a staging area at New York Gulch to provide Off Highway Vehicle access to BLM lands in the Interlakes Special Recreation Management Area.

Goal 3: Visitors enjoy facilities which are clean, safe, convenient, attractive, and

accessible to all.

It is important that public facilities meet established safety and public health standards, are usable by persons with disabilities, and are designed to minimize water and energy use.

Many of the facilities developed in the 1960's were soundly constructed but are utilitarian and generally unattractive. In addition to continuing to meet all safety, public health, and accessibility standards for public facilities, this plan adds the goal of making facilities and developed areas more in keeping with the landscape qualities of Whiskeytown and attractive to visitors.

Act i on Program

- Develop and implement park architectural and developed-area landscape guidelines in consultation with architects and landscape architects. These guidelines would provide a consistent approach to apply to new buildings, renovation of older buildings, and use of landscape elements such as walkways, fences, benches, light fixtures, barriers, trash cans, trees and other plantings, and signs. Guidelines should encourage use of native plant materials in landscaping.
- As feasible, replace obsolete public buildings with pleasing, energy-efficient structures designed to blend with the landscape, e.g. replace Brandy Creek marina restroom to increase fixtures, employ sustainable design, and improve visual quality through design, finish, and landscaping.
- Improve visual quality of developed areas by painting cinder block buildings with environmentally compatible colors, adding native or environmentally compatible canopy trees as feasible in parking lots, along walkways, and on the upper portions of beaches, and organizing sign messages into message boards or kiosks at walkway entrances or trailheads.
- In close cooperation with CALTRANS, complete a coordinated study of Highway 299 through the park to improve safety, recreational access, and landscape esthetics.
- Make, as feasible, portions of beaches accessible to all. For example, provide a curb cut at the beach to the east of Brandy Creek Marina to facilitate wheelchair access.
- Improve roadway identification and directional signs to help ensure that visitors know the location of the visitor center and other key destinations.
- As feasible, remove facilities such as overhead power lines and employee housing which

intrude on natural view sheds.

Goal 4: Visitors are safe from crime and are aware of hazards.

Crime is an unpleasant reality in many park areas, including Whiskeytown. There are also many hazards in the park, ranging from natural hazards such as rattlesnakes and poison oak to recreational hazards such as excessive boat speed and driving on steep and narrow backcountry roads. An enjoyable park experience is more likely if the potential for criminal activity is minimized and visitors are aware of potential hazards and risks.

Action Program

- Increase level of resource and visitor protection patrol activity to minimum standards based on level of park use and reported criminal activity.
- Upgrade all emergency equipment and training to meet national and state standards.
- Provide information on crime and significant safety hazards through signs and other means.
- Continue to implement the abandoned mine lands program of information and "mine-safing."

Goal 5: Visitors are provided with information on significant natural, cultural, and recreational themes at Whiskeytown, such as watershed restoration, wildlife management issues, Gold Rush history, Wintu culture, and water development history and have the opportunity to develop an appreciation for the integrity and range of park values particularly in light of the changing/developing surroundings.

The park contains a wealth of natural, cultural, and recreational resources and many opportunities for enjoying and learning about them. Readily accessible information for visitors and prospective visitors, including those who are disabled, is important to help them derive the greatest value from a park visit.

In addition to providing essential user information at the visitor center and making information available to interested users, this plan would expand interpretive efforts in cultural and natural resource subject areas, making use of restored and rehabilitated mining and water development sites and interfacing with the watershed research and training program.

Action Program

- Expand the interpretive program to include all of the important themes and subthemes identified for the park.
- Maintain and enhance relationships with the park cooperating association and other park partners in order to disseminate information.
- Prepare needed plans to provide detailed guidance for expansion of the interpretive program, including:
 - Comprehensive Interpretive Plan
 - Wayside Exhibit Plan
- Expand the level of services to address varying degrees of visitor knowledge and interest. Offer such programs as:
 - conducted programs: walks, talks, evening programs
 - field seminars
 - offsite interpretation/outreach to local and regional populations
 - expanded visitor center hours
 - cultural demonstrators
 - electronic media such as park "website", low power AM radio transmission, etc.
- Modify and construct facilities to interpret park themes. Possible examples include:
 - Adapt barn at Tower House Historic District for interpretive uses
 - Adapt Camden House as interpretive center
 - Develop campfire program facilities at Dry Creek and Horse Camp.
 - Provide interpretive trails (accessible) at variety of locations such as Tower House and along portions of Great Ditch.
- Expand non-personal interpretive services. Examples include:
 - publications
 - wayside exhibits
 - audio visual materials
 - Upgraded World Wide Web site
 - AM radio transmissions
- Improve visitor center
 - enlarge building
 - improve exhibits
 - increase sales area
 - add audio-visual area

- add museum space
- Interpret rehabilitated cultural and natural sites.
 - watershed
 - mining sites
 - cultural landscapes, including irrigation systems

Goal 6: Visitors have the opportunity for educational programs.

Because of its location near a substantial population center, and because of the investment already made in development of the NEED (National Environmental Education Development) camp, the park offers excellent opportunities for serving as an outdoor classroom for environmental and cultural heritage subjects.

Continuation of the NEED camp programs is a major feature of this plan. However, additional outreach programs, and watershed education and training programs for all ages would be included as well.

Act i on Program

- Maintain cooperative relationship with Shasta County Office of Education to provide for WHIS environmental school at the NEED camp, and implement the NEED camp 10-year plan.
- Establish additional partnerships to support park educational programs.
- Provide pre- and post-visit materials for school groups to increase understanding and retention.
- Develop education program consistent with California state curriculum guidelines.
- As discussed above, establish Clear Creek Watershed Management Field Station and Education Center at the NEED camp. This Center, requiring relatively modest new facilities, would provide opportunities for college-level study, research, and student teaching in conjunction with the current grade-school NEED program.
- Expand involvement with museums and educational institutions such as the Museums of Turtle Bay.

Six goals have been formulated to guide the park toward a more efficient and effective operation. These include:

Ensure Organizational Effectiveness

Goal 1: Workplaces are safe and free of hazards.

Workplace accidents are costly in terms of lost time and impacts on employee morale.

Act i on Program

- Conduct regular safety programs with all employees.
- Implement and periodically update park safety plan.

Goal 2: Employees are properly trained and equipped to accomplish their work.

Training is an investment in employees that pays off in increased productivity and better service to visitors. Likewise the right tools and equipment make for safety and efficiency.

Act i on Program

- Designate a park training coordinator to identify and prioritize staff training needs.
- Meet minimum levels of training required by staff.
- Acquire needed equipment for safety and efficiency.

Goal 3: Employee housing is limited to that which is required to achieve the park mission and is safe, clean, efficient, and economical.

Current servicewide housing policy directs that employee housing may be made available for employees whose physical presence is required within a specific geographic area to provide timely response to emergencies outside normal working hours. Employee housing may also be provided where the residential presence of employees serves as a deterrent to vandalism and crime within the park, and where remoteness of the park, temporary workforce, or use of historic structures provide a compelling rationale to provide housing. Parks are required to prepare a plan for dealing with excess housing.

The housing policy also requires that any housing that is provided meets certain minimum standards.

Act i on Program

- Complete a housing condition assessment and business plan based on servicewide policy.
- Evaluate options for disposition of excess housing, e.g. conversion of housing to administrative uses.
- Maintain housing as needed.

Goal 4: Park support facilities provide an efficient and safe work environment, incorporating efficient and sustainable design principles, and are maintained to achieve their maximum useful life.

Well-designed work spaces allow employees to accomplish their jobs efficiently and safely and minimize the costs of operation and maintenance. The existing headquarters building was constructed by the Bureau of Reclamation in the 1960's as a temporary automotive repair shop to serve a limited number of workers, with little consideration given to its eventual administrative uses. Over the years the park staff has outgrown the original structure and trailers were added to provide the needed workspace. The existing workspace is inefficient and insufficient and expensive to heat and cool. Because of its age and construction method, it is also an expensive complex to maintain.

Act i on Program

- Establish baseline information on energy use and implement conservation and recycling efforts.
- Implement preventive maintenance program.
- Develop a fire cache to properly house fire equipment.
- Improve maintenance shop space as needed.
- Develop modern headquarters facilities by making use of excess housing units, or

explore other alternatives such as office space in Redding.

Goal 5: Volunteers-In-Park, park partners, and local communities contribute significantly to protection of resources and operations of Whiskeytown.

The Park Service is committed to working in partnership with individuals, private organizations, and other government agencies to achieve its own and mutually advantageous goals.

Act i on Program

- Enlist and encourage recreational user groups to help maintain park facilities used in their activities.
- Recruit and train volunteers to provide information services.
- Maintain and augment cooperative agreements with park partners such as Shasta College, Americorps, California Department of Forestry, etc.
- Coordinate and cooperate with other federal land managing agencies.

CARRYI NG CAPACI TY MANAGEMENT

Public Law 95-625 requires that general management plans include strategies for managing visitor use within carrying capacities. Carrying capacity has both a physical and a social dimension. Physical carrying capacity describes the ability of the park resources to sustain given levels of visitor use without damage. In concept, this is a fairly simple and straightforward matter subject to observation and measurement. In reality, of course, it may be quite difficult to assess the impacts of visitor use on park resources, particularly where they include complex natural systems. Social carrying capacity describes the capacity of visitors to enjoy and appreciate the park resources while confronted with the presence of other visitors. Naturally this capacity or tolerance varies considerably among individuals, making determination of capacity a conceptually difficult matter.

Park managers have long recognized that carrying capacity is a complex and dynamic concept, and that in most cases there is no single number which constitutes capacity. Rather, the capacity of any particular area is to a large extent determined by management through the placement of physical facilities such as barriers and trails, operational activities such as law enforcement and maintenance, and information devices such as interpretive exhibits and warning signs. A statement of carrying capacity without reference to these management aspects is virtually meaningless.

Management of visitor use within carrying capacities at Whiskeytown would be achieved through designation of zones with specified resource quality and visitor experience objectives, the development of practical and objective indicators of these objectives, regular and systematic monitoring of the indicators, and adjustment of management activities as needed to correct any shortfalls. This approach is commonly referred to as a Visitor Experience/Resource Protection or VERP system.

The management zoning system to be used at Whiskeytown is discussed below. Substantial additional work will be undertaken in future years to select appropriate measures, develop baseline data, and establish cost-effective monitoring programs.

MANAGEMENT ZONING

The purpose of parkwide zoning is to establish resource protection and visitor experience standards appropriate for different areas of the park. The zones described below may be modified in the future based on the development and implementation of a VERP system.

Lake Zone (3,200 acres)

No Boat Sub-Zone- All private watercraft are excluded from these areas of the lake for safety and reservoir operations purposes. At Whiskeytown this zone includes water areas immediately adjacent to swim beaches and water intake and discharge facilities.

No Wake Sub-Zone- The required low operating speed for all watercraft in these areas is intended to achieve safety, environmental protection, and property protection objectives. Low boat speeds reduce collision potential in congested areas, reduce wave-action erosion on shorelines, and reduce wave-action damage to moored craft. Areas near marinas and launch ramps, adjacent to shorelines, and in the upper reaches of the lake's arms are included.

Low Speed Sub-Zone- Operating speeds of private watercraft are controlled in these areas to provide for safer and more enjoyable water recreation experience for visitors swimming or using sailboats, rowboats, canoes and kayaks, and fishing craft, where a nature-oriented experience is sought and the quality of experience is significantly diminished by large wakes and loud engines.

Multi-use Sub-Zone- In this area visitors may seek a wide range of experiences, some of which may be speed or equipment oriented, and there are no use or speed restrictions other than those standards and requirements pertaining to safe navigation and permissible noise levels.

Frontcountry Zone (900 acres)

Developed Sub-Zone- These are the areas where public use, concession, special use, or administrative facilities are developed. Included are major developed areas at Brandy Creek, Oak Bottom, Whiskey Creek, Carr Powerhouse, and the NEED camp. Landscaping, using native species, would be used to soften visual impacts and blend with adjacent zones. However, the visitor experience is that of a built environment.

Dispersed Lakeshore/Creekside Recreation Sub-Zone- These areas are accessible by auto or boat and are used as parking and/or congregating places for various activities. They offer a place for individuals and groups to escape the crowds at the developed areas and enjoy the water area. The experience is primarily natural. Users supply their own amenities to facilitate use of the area, e.g., RV, lawn chairs, inflatable rafts, etc. Dispersed areas are intended to remain primarily undeveloped, although minor improvements may be made to protect resources, e.g., by delineating parking, and provide for public health, e.g., by providing trash cans and vault toilets. Any landscape restoration in these areas would use native plants.

Backcountry Zone (36,825 acres)

This zone would be managed so as to provide a largely natural experience with opportunities for escape from crowding and urban influences. Motorized vehicles and equipment would be allowed only on designated roads. Areas impacted by man's past activities such as roads and mine sites would be restored to natural conditions except where historically or archaeologically significant. Maximum overnight use levels would be prescribed by sector and adjusted over time based on resource condition monitoring and visitor satisfaction surveys. Unpaved road corridors in the backcountry would be managed so as to retain primarily natural character and provide a largely natural experience. Small unpaved parking lots and rustic overnight facilities could be provided adjacent to existing roads.

Mineral Utilization Zone (1,575 acres)

This zone, established by the 1988 amendment to the master plan, is the portion of the park where applications for mineral leasing would be considered. No critical natural,

cultural, scenic, or recreational values have been identified in this area. Recreation uses would not be encouraged in this area and restoration activities would not be undertaken. Management would be aimed at minimizing impacts of mining activities on vegetation, wildlife, soils and landscape esthetics. Detailed cultural resource and sensitive plant surveys would be required prior to any leasing.

FUNDING AND STAFFING REQUIREMENTS

Capital Costs

The following tables show the major projects required over the next several years in order to achieve the plan's objectives.

The cost estimates below are referred to as "Level C estimates". They are the lowest order of cost estimates used by NPS in construction planning and are based mainly on unit costs from similar projects rather than site-specific engineering and architectural analyses, and hence the margin of error for individual projects can be high. Level C estimates are used primarily in comparing costs among planning alternatives. They are based on 1998 price levels.

Timing of implementation for these projects is not known. Ideally, all of the listed projects would be completed within the next five years, and in roughly the sequence shown. In fact, it is recognized that some of the projects may not be completed for many years, and that the sequence will be significantly influenced by the availability of funds from different funding sources.

The following table shows the replacements needed to keep existing facilities at the park in functional condition.

REPLACEMENTS	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Replace Comfort Stations (10)	\$1,010,000	\$190,000	\$1,200,000
Rehab NEED Lodge	280,000	50,000	330,000
Replace Brandy Creek Wastewater Treatment Plant	465,000	50,000	515,000
Replace water lines (40,000 lineal feet)	1,090,000	210,000	1,300,000
Replace sewer lines (40,000 lineal feet)	930,000	170,000	1,100,000
Replace Visitor Center Sewage	130,000	20,000	150,000

Proposed General Management Plan

System			
Resurface Paved Roads (17 miles)	1,090,000	210,000	1,300,000
Rehab Whiskey Creek Parking & Boat Launch	403,000	27,000	430,000
Replace NEED Camp Bridge	750,000	140,000	890,000
Replace Bridge at Tower House Area	400,000	80,000	480,000
Replace Brandy Creek Foot Bridge	43,000	7,000	50,000
TOTAL COSTS			\$ 7,745,000

The following table shows the major new facilities needed to achieve the goals of the alternative. It should be noted that not all of the costs would necessarily be funded by federal appropriations. In some cases donated funds and labor would significantly reduce the federal costs.

NEW FACILITIES	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Tower House Historic District Potable Water System	\$ 480,000	\$ 90,000	\$ 570,000
Fire Cache	400,000	40,000	440,000
Maintenance Shops	420,000	80,000	500,000
Curatorial Facility	540,000	100,000	640,000
Rehab Tower House Historic District Cultural Landscape	200,000	40,000	240,000
Redesign Oak Bottom and Dry Creek CG's	580,000	110,000	690,000
Dispersed Lake Shore Boat Camps	240,000	50,000	290,000
Clear Creek Trail	940,000	180,000	1,120,000
Walk-In Backcountry Camps	310,000	60,000	370,000
Horse Camp	80,000	15,000	95,000
OHV Staging Area	280,000	50,000	330,000
Merry Mountain Road Picnic Area and Trail Staging	130,000	20,000	150,000
Visitor Center Expansion	170,000	30,000	200,000

Alternatives

Bicycle Trails/Lanes	3,010,000	570,000	3,580,000
Adaptive Rehabilitation of Camden House Outbuildings	90,000	10,000	100,000
Rehabilitate Mill Creek Irrigation System	170,000	30,000	200,000
Stabilize Eroding Archeological Sites	170,000	30,000	200,000
TOTAL COSTS			\$ 9,715,000

Operation and Maintenance Costs

The budget required to operate Whiskeytown under this alternative would be approximately \$ 3,466,000.

Staffing

Staffing requirements for the park under this alternative are approximated below in terms of full-time equivalents (FTE), e.g. 1 person for 12 months, 3 persons for 4 months each, etc.:

<u>Function</u>	<u>Full-Time Equivalent</u>
Superintendent & Administration	7
Visitor Services	17
Natural Resource Management	19
Interpretation/Cultural Resource Management	13
Maintenance	30
Total FTE	87

ALTERNATIVE A: NO ACTION

The no-action plan or scenario serves as the base condition against which the impacts of the "action" alternatives are measured. The "no-action" plan projects the existing conditions and operations through the 15-year project period. It assumes that physical facilities will be maintained and replaced as needed but will otherwise remain unchanged. Staffing and operational funding are assumed to remain constant in real dollar terms. Visitor use pressure is assumed to increase consistent with population growth in the region and statewide. For Whiskeytown, this is expected to result in annual visitor use in 2015 approximately 25-30 percent above current levels.

Preserve Park Resources

Current funding for natural and cultural resource management at Whiskeytown is directed toward the most pressing and immediate issues. Park management is necessarily reactive rather than proactive. At current funding and staffing levels, the park is unable to meet servicewide standards for documentation, monitoring and protection of natural and cultural resources, including threatened and endangered species and cultural resources eligible for listing on the National Register of Historic Places.

The park would continue to be managed without the benefit of important basic information on both cultural and natural resources. While some initial steps have been taken to organize existing data using geographic information system (GIS) technology, there are significant data gaps in information on archeological resources, historic resources, cultural landscapes, biological resources, and geologic resources in the park.

The park has an active but modest program for fire management in the park. A park fire crew is available to attack all unplanned fires that occur within the park. The staff is pursuing forest fuel reduction to the extent possible, involving several prescribed burns each year, along with some mechanical reduction. However, the overall build-up of forest fuels continues and makes the risk of a destructive and uncontrollable wildfire greater with each passing year.

Wildlife management efforts are focused on major problem areas. Nesting bald eagle and northern spotted owl pairs are monitored and adjacent areas closed to visitor use as needed to prevent disturbance. Fishery improvement projects are undertaken on a cooperative basis with the state and private organizations. Visitor education efforts are carried out and improvements such as bear-proof lockers and garbage cans are installed to minimize conflicts with bears.

Some projects are carried out to reduce exotic vegetation such as ailanthus, Himalayan blackberry, and Scotch broom. However, many known areas of concentrated exotic plants cannot be treated under the current program.

The park is taking some initial steps toward watershed management through a pilot program with Shasta College and others, and cooperation in an interagency program for the Clear Creek watershed. This program will develop the information needed to undertake a more substantial program in the event resources become available in the future.

Provide for Visitor Enjoyment and Visitor Experience

The park seeks to ensure a safe and orderly environment for visitors to pursue water-oriented and backcountry activities. Achieving this goal requires substantial commitments in law enforcement. A substantial part of the park's natural resource management activity is also necessarily aimed at visitor safety. This includes control of poison oak and yellowjackets in high use areas, and pruning or removal of hazard trees in recreation use areas where they pose a threat to visitors.

Because of funding and staffing limitations, relatively limited interpretation of natural and cultural phenomena can currently be provided by the park. As future visitation grows, and the park's funding and staffing for visitor services remain constant, it will likely be necessary to divert even more staff and funds from interpretation into law enforcement. The park's capability to interpret its resources, and provide educational opportunities, would be diminished. Visitor satisfaction levels at Whiskeytown may be expected to decline.

Ensure Organizational Effectiveness

The existing headquarters facility consists of a temporary building dating from the dam construction years. The area overall is dilapidated, work space is inadequate and inefficiently configured, and it is expensive to operate and maintain. As these facilities further age, a higher proportion of the overall park budget will need to be dedicated to their maintenance.

Management Zones

The water and land zones-natural, historic, development, and special use- elaborated in the 1988 amendment to the master plan would be retained. These zones are intended to guide management emphasis. In practice, these zones have not proven to be useful tools for park management.

Funding and Staffing

Capital Costs

Under this alternative, capital costs would be incurred only for the replacement of existing facilities. Because many park facilities are nearing the end of their useful lives, these expenditures will be substantial.

The cost estimates below are referred to as "Level C estimates". They are the lowest order of cost estimates used by NPS in construction planning and are based mainly on unit costs from similar projects rather than site-specific engineering and architectural analyses, and hence the margin of error for individual projects can be high. Level C estimates are used primarily in comparing costs among planning alternatives. They are based on 1998 price levels.

Timing of implementation for these projects is not known. Ideally, all of the listed projects would be completed within the next five years, and in roughly the sequence shown. In fact, it is recognized that some of the projects may not be completed for many years, and that the sequence will be significantly influenced by the availability of funds from different funding sources.

REPLACEMENTS	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Replace Comfort Stations (10)	\$1,010,000	\$190,000	\$1,200,000
Rehab NEED Lodge	280,000	50,000	330,000
Replace Brandy Creek Wastewater Treatment Plant	840,000	160,000	1,000,000
Replace water lines (40,000 lineal feet)	1,090,000	210,000	1,300,000
Replace sewer lines (40,000 lineal feet)	930,000	170,000	1,100,000
Replace Visitor Center Sewage System	130,000	20,000	150,000
Resurface Paved Roads (17 miles)	1,090,000	210,000	1,300,000
Rehab Whiskey Creek Parking & Boat Launch	370,000	70,000	440,000
Replace NEED Camp Bridge	750,000	140,000	890,000
Replace Bridge at Tower House Area	400,000	80,000	480,000
Replace Brandy Creek Foot Bridge	100,000	20,000	120,000

Replace Camden House HVAC System	50,000	10,000	60,000
TOTAL COSTS			\$ 8,370,000

Operation and Maintenance Costs

The fiscal year 1998 budget for Whiskeytown is \$ 2,146,000. The largest share of this total, approximately 44%, is allocated for maintenance activities. Visitor services, which includes law enforcement and a number of other functions, will consume another 19%, while natural resource management and interpretation/cultural resource management are allocated about 18% and 7% respectively. The 12% balance of the funds supports administration and parkwide management.

Staffing Requirements

FY 1998 staffing for the park is summarized below in terms of full-time equivalents (FTE), e.g. 1 person for 12 months, 3 persons for 4 months each, etc.:

<u>Function</u>	<u>Full-Time Equivalent</u>
Superintendent & Administration	5.0
Visitor Services	13.0
Natural Resource Management	9.8
Interpretation/Cultural Resource Management	3.5
Maintenance	24.0
 Total FTE	 56.3

ALTERNATIVE B: MINIMUM REQUIREMENTS

This alternative would achieve the essential legislative mandates and administrative requirements for a unit of the National Park System. The concept of the plan is to take all necessary steps to provide for essential long-term protection of natural and cultural resources, assuring that there are no irreversible adverse impacts, and to provide for basic visitor access and enjoyment of the park resources while ensuring the health and safety of visitors and employees.

PLAN GOALS & ACTION PROGRAM

The plan is outlined below corresponding to the three aspects of the park mission—preservation of park resources, provision of visitor enjoyment, and operation of the park in an efficient manner.

Goal 1:

Cultural sites, structures, and landscapes

Preserve Park Resources

are known and evaluated for significance, management guidelines have been established, and adequate funds and staff are available for protection.

Action Program

- Complete Historic Property Preservation Database for historic and archeological sites, structures, and landscapes. Special attention is needed for historic mining sites and historic water distribution systems.
- Evaluate significance and determine treatment priority for cultural resources.
- Complete needed cultural resource studies including:
 - Fire Protection and Security Survey of Historic Structures and Museum
 - Cultural Landscape Inventory
 - Archeological Overview and Assessment
 - El Dorado Mine Complex Historic Structures Report
 - Crystal Creek Water Ditch Management Plan
 - Camden House Historic Furnishings Report
 - Preservation schedule for Tower House Historic District, and for other cultural resources at Whiskeytown as appropriate.

- Provide funds and staff needed to monitor and protect resources.

Goal 2: Collections of artifacts and archives relating to cultural and natural resources are properly stored and documented.

Act i on Program

- Update Collection Management Plan and Scope of Collections Statement.
- Complete needed collection management plans/studies including:
 - Preventive Conservation Management Plan
 - Museum Object/Specimen Research Report
 - Collection Storage Plan
- Allocate funding and staff to preserve and manage collections.
 - Accession and catalogue all items in park collections.
- Provide sufficient space meeting NPS standards for existing collections. Approximately 1500 square feet of additional space are required.
- Conduct fire and security survey for collection storage area protection.

Goal 3: The physical and biological systems of land and water resources of the park are protected from further degradation.

Act i on Program

- Cooperate with other agencies and land owners in analyzing the Clear Creek watershed, which constitutes most of the park area. Improved watershed management will have significant benefits to both terrestrial and aquatic species and also will contribute to visual quality through restoration of natural landscapes.
- Continue wildfire pre-suppression and suppression programs. The fire program would be aimed primarily at the prevention of an uncontrollable and catastrophic fire capable of damaging park facilities and adjacent properties. The focus of the fire program would be continued efforts to reduce hazard fuel accumulations through the use of controlled burning, contingency planning, monitoring of conditions, and the development and maintenance of fire suppression capability.
- Upgrade wildlife resource protection programs to minimal standards, with special emphasis

Alternative B: Minimum Requirements

on bears and mountain lions because of the potential of these species for conflict with visitors.

- Develop research protocol to inventory, assess condition, and understand functional relationships of plant and animal species and physical resources (air, water, earth).
- Monitor key plant and animal species.
- Preserve existing degree of plant and animal diversity.
- Play an active role in regional air and water quality issues; ensure park values are considered in land use and regulatory decisions.
 - Encourage voluntary conversion of watercraft engines to designs which minimize water pollution and noise, and actively enforce laws and regulations that may be enacted to require such equipment.

Goal 4: Whiskeytown recognizes Wintu culture and makes use of ethnographic data on Wintu and other park-associated cultural groups.

Act i on Program

- Conduct ethnographic overview and assessment.
- Establish relationships with affiliated groups and conduct regular discussions or formal consultations.
- Provide access to park-associated American Indians for compatible traditional uses in accordance with legislation and administrative directives.

Goal 5: Whiskeytown contributes to the recovery of threatened and endangered species.

Act i on Program

- Inventory the occurrence of such species in the park.
- Monitor the health and well-being of identified species.
 - Take action as needed and prescribed in recovery plans.

Goal 1:
Visitors to
Whiskeytown
enjoy a wide
range of water-
based and water-related activities, including boating, fishing, swimming, camping,
picnicking, and waterfowl hunting.

Provide for Public Enjoyment & Visitor Experience

Action Program

- Maintain existing essential water-related facilities including launch ramps, marinas, and groomed beaches.
- Maintain existing essential services and increase law enforcement activity such as boat patrols as needed to maintain safe boating as use levels increase over time.
- Restrict boat launching to existing developed launching sites as a means of limiting use levels, reducing the incidence of litter and sanitation problems, and reducing water pollution from fuel spills.
- Eliminate lifeguard services and snack bars.
- Accommodate new recreational activities/technologies that do not adversely affect natural and cultural resources, are compatible with established resources, and do not result in significant additional management costs.
- Classify auto-accessible dispersed use areas around the lake for retention in current state, improvement with parking and sanitation, or elimination.

Goal 2: Visitors to the backcountry enjoy a variety of activities including camping, driving for pleasure, trail activities, and hunting using the existing network of designated backcountry roads and trails.

Action Program

- Maintain designated backcountry roads, including roads to private property, utilities, and water project facilities at a standard required for administrative uses, and in accordance with watershed management principles. Alternative B map shows the roads which would be maintained and open to public vehicular use.

Alternative B: Minimum Requirements

- Provide adequate information to guide public use of roads and trails.
- Maintain existing backcountry related facilities at current levels.
- Accommodate new backcountry recreational uses/technologies to the extent they are compatible with existing uses and resource management goals.
- Encourage trail improvement through donations or work projects by private organizations.

Goal 3: Visitor facilities are safe, clean, sustainable, and accessible to all.

Action Program

- Comply with established health and safety standards.
- Comply with accessibility standards.
- Roads, bridges, and other structures comply with Federal Highway and other applicable standards.
- Comply with NPS sustainable design guidelines.
- Comply with Department of Energy guidelines to minimize energy use.
- Comply with building codes such as National Electric Code, National Plumbing Code, and Uniform Building Code.
- Use native plants in landscaping to enhance habitat and limit water use.

Goal 4: Visitors are safe from crime and are aware of hazards.

Same as the proposed plan.

Goal 5: Visitors have access to information on significant natural, cultural, and

recreational resources.

Act i on Program

- Maintain and further cultivate relationships with the park cooperating association and other park partners in order to develop and disseminate information.
- Maintain interactive computer system at visitor center.
- Maintain interpretive media at professional standards.
- Ensure wide distribution of safety and park resource information.
- Maintain current level of interpretive services at the visitor center.

Goal 6: *Students have the opportunity for educational programs.*

Act i on Program

- Continue cooperative relationship with Shasta County Office of Education to provide the Whiskeytown Environmental School at the NEED Camp, and facilitate the implementation of the NEED Camp 10-year plan.
- Establish additional partnerships to augment park educational services.
- Provide pre- and post-visit materials for school groups to increase understanding of natural and cultural resource issues.

Same as the proposed plan.

Ensure Organizational Effectiveness

CARRYING CAPACITY MANAGEMENT & MANAGEMENT ZONING

Same as the proposed plan.

FUNDING AND STAFFING REQUIREMENTS

Capital Costs

Alternative B: Minimum Requirements

The following tables show the major projects required over the next several years in order to achieve the plan objectives.

The cost estimates below are referred to as "Level C estimates". They are the lowest order of cost estimates used by NPS in construction planning and are based mainly on unit costs from similar projects rather than site-specific engineering and architectural analyses, and hence the margin of error for individual projects can be high. Level C estimates are used primarily in comparing costs among planning alternatives. They are based on 1998 price levels.

Timing of implementation for these projects is not known. Ideally, all of the listed projects would be completed within the next five years, and in roughly the sequence shown. In fact, it is recognized that some of the projects may not be completed for many years, and that the sequence will be significantly influenced by the availability of funds from different funding sources.

The projects in the following table are those that would be needed to keep existing facilities at the park in functional condition.

REPLACEMENTS	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Replace Comfort Stations (10)	\$1,010,000	\$190,000	\$1,200,000
Rehab NEED Lodge	280,000	50,000	330,000
Replace Brandy Creek Wastewater Treatment Plant	840,000	160,000	1,000,000
Replace water lines (40,000 lineal feet)	1,090,000	210,000	1,300,000
Replace sewer lines (40,000 lineal feet)	930,000	170,000	1,100,000
Replace Visitor Center Sewage System	130,000	20,000	150,000
Resurface Paved Roads (17 miles)	1,090,000	210,000	1,300,000
Rehab Whiskey Creek Parking & Boat Launch	370,000	70,000	440,000
Replace NEED Camp Bridge	750,000	140,000	890,000
Replace Bridge at Tower House Area	400,000	80,000	480,000
Replace Brandy Creek Foot Bridge	100,000	20,000	120,000
Replace Camden House HVAC System	50,000	10,000	60,000
TOTAL COSTS			\$ 8,370,000

The following table shows the major new facilities needed to achieve the goals of the alternative. It should be noted that not all of the costs would necessarily be funded by federal appropriations. In some cases donated funds and labor would significantly reduce the federal costs.

NEW FACILITIES	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Curatorial Facility	\$ 330,000	\$ 60,000	\$ 390,000
Headquarters Facility	1,260,000	240,000	1,500,000
Fire Cache	590,000	110,000	700,000
Maintenance Shops	420,000	80,000	500,000
Tower House Historic District Potable Water System	480,000	90,000	570,000
Stabilize Eroding Archeological Sites	170,000	30,000	200,000
TOTAL COSTS			\$ 3,860,000

Operation and Maintenance Costs

The annual budget required to operate Whiskeytown under this alternative would be approximately \$ 2,774,000.

Staffing

Staffing requirements for this alternative are summarized below in terms of full-time equivalents (FTE), e.g. 1 person for 12 months, 3 persons for 4 months each, etc.:

<u>Function</u>	<u>Full-Time Equivalent</u>
Superintendent & Administration	6
Visitor Services	15
Natural Resource Management	14
Interpretation/Cultural Resource Management	9
Maintenance	25
Total	69

ALTERNATIVE D: EXPANDED RECREATION

This alternative would continue the existing character of visitor use and experience, with a predominant emphasis on water-related recreation, and would expand day and overnight use facilities to accommodate greater visitor use. This approach would in general incorporate the objectives and the development proposals contained in the park's 1976 master plan. Lake zoning would be used to separate loud and high speed boating activities from activities such as sailing and fishing.

PLAN GOALS AND ACTION PROGRAM

Resource management would be similar to Alternative B, Minimum Requirements, with efforts aimed at meeting basic requirements for resource identification and protection and avoiding irretrievable losses to natural and cultural resources.

Preserve Park Resources

Goal 1:
Visitors to
Whiskeytown
Lake enjoy a
wide range of water-based and water-related activities, including boating, fishing, water fowl hunting, swimming, camping, and picnicking.

Provide for Public Enjoyment & Visitor Experience

This alternative would add to the capacity of the area to sustain use by developing a major new day and overnight use area and expanding the capacity of the Oak Bottom area. More highly developed and specialized facilities and services, both NPS and concession, would also be included in this alternative.

Action Program

- Maintain existing water-related facilities and services. Lifeguard services would be retained and expanded as needed.
- Zone lake to segregate high-speed activities such as waterskiing and jet-skiing from activities such as sailing and fishing which are diminished in quality by loud noise and high wakes. The high speed zone would be the open portion of the lake located east of the Brandy Creek launch ramp while the lake area to the west would be designated for low speed use. See zones on Alternative D map.

- Develop separate jet-ski launch area on the east or south shore of the lake to facilitate access to the high-speed zone.
- Restrict boat launching to developed launch sites only.
- Develop a major new day/overnight use area at the mouth of Boulder Creek. The new area would include 200 campsites, 100 picnic sites, and an 800 linear foot swim beach, with supporting parking and utilities.
- Pave and upgrade South Shore Drive.
- Provide a concession restaurant at Brandy Creek or Oak Bottom. Consider expanding other concession recreation functions, e.g., in-line skate rentals, bike rentals, horse/llama/mule trips.
- Encourage competitive events such as boat races, regattas, whitewater rafting, etc.
- Pave portions of various front country trails to facilitate wheelchair use.
- Develop boat-in picnic sites on islands and in secluded shoreline areas.
- Improve fishing access and picnicking facilities at the Carr Powerhouse area.
- Develop new 100-unit drive-in tent/RV campground at Oak Bottom on peninsulas to the west of the existing campground.
- Designate the existing campground at Oak Bottom as a picnic area.
- Accommodate new recreational activities/technologies that do not adversely affect natural and cultural resources and are compatible with established activities.

Goal 2: Visitors to the backcountry enjoy a variety of activities including camping, hunting, and using the existing network of designated backcountry roads and trails.

Additional backcountry use would be encouraged under this alternative.

Action Program

- Improve backcountry roads for public use and access. Roads would remain unpaved but would be improved and maintained to 2 wheel drive standard. Roads to be improved are shown on Alternative D map. Roads providing access to private property, to utilities, and to water project facilities would continue to be maintained to the standard required for administrative use.
- Provide adequate information to guide public use of roads and trails.
- Maintain existing backcountry related facilities at current levels.
- Accommodate new recreational uses/technologies to the extent they are compatible with resource management goals. Under this concept, for example, the park might accommodate and facilitate paragliding.
- In cooperation with the Bureau of Land Management (BLM), develop an OHV staging area at New York Gulch or Whiskey Creek to provide Off Highway Vehicle access to BLM lands in the Interlakes Special Recreation Management Area.
- Provide shuttle bus to trailheads and other points of interest.
- Complete a Clear Creek non-motorized trail corridor extending from the county road crossing near Igo, around the south side of Whiskeytown Lake, and extending north to the vicinity of French Gulch.
- Consider expansion of backcountry concession facilities, e.g. rental wall tents, horse/llama/mule trips, etc.
- Establish hostel at NEED Camp during non-school months.

Goal 3: Visitor facilities are safe, clean, sustainable, and accessible to all.

Same as Alternative B.

Goal 4: Visitors are safe from crime and are aware of hazards.

Same as proposed plan.

Goal 5: Visitors have access to information on significant natural, cultural, and recreational themes.

Same as Alternative B.

Goal 6: Students have the opportunity for educational programs.

Same as Alternative B.

Management considerations would be similar to Alternative B,

Ensure Organizational Effectiveness

Minimum Requirements. However, staffing and funding would need to be significantly augmented in the areas of protection to deal with increasing visitor loads and pressures on the lake area, and in maintenance of the increased facilities throughout the park.

CARRYING CAPACITY AND MANAGEMENT ZONING

Carrying capacity concepts and the zone descriptions would be the same as those discussed under the proposed plan.

FUNDING AND STAFFING REQUIREMENTS

Capital Costs

The following tables show the major projects required over the next several years in order to achieve the plan objectives.

The cost estimates in the tables are referred to as "Level C estimates". They are the lowest order of cost estimates used by NPS in construction planning and are based mainly on unit costs from similar projects rather than site-specific engineering and architectural analyses, and hence the margin of error for individual projects can be high. Level C estimates are used primarily in comparing costs among planning alternatives. They are based on 1998 price levels.

Timing of implementation for these projects is not known. Ideally, all of the listed projects would be completed within the next five years, and in roughly the sequence shown. In fact, it is recognized that some of the projects may not be completed for many years, and that the

sequence will be significantly influenced by the availability of funds from different funding sources.

The table below shows the replacements needed to keep existing facilities at the park in functional condition.

REPLACEMENTS	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Replace Comfort Stations (10)	\$1,010,000	\$190,000	\$1,200,000
Rehab NEED Lodge	280,000	50,000	330,000
Replace Brandy Creek Wastewater Treatment Plant	840,000	160,000	1,000,000
Replace water lines (40,000 lineal feet)	1,090,000	210,000	1,300,000
Replace sewer lines (40,000 lineal feet)	930,000	170,000	1,100,000
Replace Visitor Center Sewage System	130,000	20,000	150,000
Resurface Paved Roads (17 miles)	1,090,000	210,000	1,300,000
Rehab Whiskey Creek Parking & Boat Launch	370,000	70,000	440,000
Replace NEED Camp Bridge	750,000	140,000	890,000
Replace Bridge at Tower House Area	400,000	80,000	480,000
Replace Brandy Creek Foot Bridge	100,000	20,000	120,000
Replace Camden House HVAC System	50,000	10,000	60,000
TOTAL COSTS			\$ 8,370,000

The following table shows the major new facilities needed to achieve the goals of the alternative. It should be noted that not all of the costs would necessarily be funded by federal appropriations. In some cases donated funds and labor would significantly reduce the federal costs.

NEW FACILITIES	CONSTRUCTION COST	CONSTRUCTION PLANNING COST	TOTAL COST
Tower House District Potable Water System	\$ 480,000	\$ 90,000	\$ 570,000

Fire Cache	590,000	110,000	700,000
Maintenance Shops	420,000	80,000	500,000
Curatorial Facility	540,000	100,000	640,000
Headquarters Facility	1,260,000	240,000	1,500,000
Rehab Tower House Historic District Cultural Landscape	200,000	40,000	240,000
New Oak Bottom Campground	850,000	160,000	1,010,000
Boulder Creek Major Area	14,480,000	2,760,000	17,240,000
Clear Creek Trail	940,000	180,000	1,120,000
Walk-In Backcountry Camps	310,000	70,000	370,000
Horse Camp	140,000	20,000	160,000
Merry Mountain Road Picnic Area and Trail Staging	130,000	20,000	150,000
Visitor Center Expansion	170,000	30,000	200,000
Bicycle Trails/Lanes	3,010,000	570,000	3,580,000
OHV Staging Area	280,000	50,000	330,000
Adaptive Rehabilitation of Camden House Outbuildings	90,000	10,000	100,000
Rehabilitate Mill Creek Irrigation System	170,000	30,000	200,000
Stabilize Eroding Archeological Sites	170,000	30,000	200,000
TOTAL COSTS			\$28,560,000

Operation and Maintenance Costs

The budget required to operate Whiskeytown under this alternative would be approximately \$ 3,640,000.

Staffing Requirements

Staffing requirements for the park under this alternative are summarized below in terms of full-time equivalents (FTE), e.g. 1 person for 12 months, 3 persons for 4 months each, etc.:

<u>Function</u>	<u>Full-Time Equivalents</u>	
Superintendent & Administration	8	
Visitor Services		20
Natural Resource Management		19
Interpretation/Cultural Resource Management	13	
Maintenance	34	
Total FTE		94

ALTERNATIVES CONSIDERED BUT REJECTED

The scoping process surfaced a number of concepts and a great many specific suggestions for managing or developing the park. All of the general concepts, e.g. increase interpretation of historic sites, reduce adverse impacts of personal watercraft, improve opportunities for volunteer activities, expand trail system, etc., which were suggested have in one way or another been developed and included in one or more of the alternatives. However, many of the more specific suggestions, relating to operational details and specific facilities, are not appropriately included in a general management plan. All of these suggestions will, however, be considered by the park staff in making operational improvements and in future, more detailed plans.

THE AFFECTED ENVIRONMENT

SOCIOECONOMIC SETTING

Whiskeytown is located in Shasta County, a jurisdiction of some 3785 square miles straddling the Sacramento River. Shasta County's current population of 161,700 is forecast by the California Department of Finance to increase to 178,500 in 2000, 213,100 in 2010, and 247,000 in 2020. The county's population is concentrated along the Interstate 5 corridor, and in and around three principal cities- Redding, the county seat with 76,700 persons, Shasta Lake with 9200, and Anderson with 8650.

Substantial population growth has occurred in recent years immediately west of Redding, in the vicinity of the park.

The county population is somewhat older than the state as a whole, with over 14% of the population over 65, and birth rates are considerably lower. Education levels are considerably lower in Shasta County than statewide, with only 13.7% college graduates compared to 23.4% statewide. Per-capita income in Shasta County is \$17,646, some 20% lower than the statewide figure. However, the poverty rate is slightly lower than the state level.

The county population includes a relatively small number of American Indians who are descendants of the many native Wintu-speaking people who lived in the area at the time Jedediah Smith and Peter Ogden entered the Sacramento River Valley in 1826 and 1827. While the territory of the Wintu comprised much of present day Trinity, Siskiyou and Tehama counties, in addition to Shasta County, the Redding Rancheria, located south of Redding, is the only federally recognized tribe with Wintu members in Shasta County. The population of Redding Rancheria is about 100 individuals, which also includes descendants of Yana and Pit River tribal groups whose contact period homeland territories were east and northeast of Northern Wintun territory.

Although the contemporary Wintu community is relatively small in terms of the number of individuals, it is larger than the number of Wintu descendants who are members of the Redding Rancheria. Dispersed throughout Shasta and Trinity counties are at least four additional Northern Wintu groups in various stages of seeking federal recognition. Some descendants of native residents of the Whiskeytown area may also be living further away at reservations such as the Round Valley Reservation in Mendocino County where members of at least seven different cultural or linguistic native groups were relocated between 1855 and 1865.

The regional economy in past years was dominated by mining, forest products, and agriculture. In more recent years, the economy has come to be heavily dominated by services

and wholesale and retail trade. Recreation and travel-related businesses are important employers.

The unemployment rate in Shasta County, influenced by the long-term decline in forest products industries, is currently well above the statewide rate.

Transportation facilities are well developed in the area. Interstate 5 provides a major high-speed highway link to the north and south, while State Highway 299 provides a connection between the coast to the west and the central valley to the east. Redding Municipal Airport provides scheduled service and connections to major hubs.

Land ownership in Shasta County includes a significant public component, including National Forest land, public domain lands managed by the Bureau of Land Management, and major reservoirs managed by the Bureau of Reclamation. Whiskeytown Unit is the only National Park Service administered area completely within Shasta County. Lassen Volcanic National Park, located approximately 50 miles east of Redding, is partially within Shasta County.

CULTURAL RESOURCES

Whiskeytown National Recreation Area contains a number of significant and potentially significant cultural resources including archeological sites, historic structures, cultural landscapes, traditional cultural properties, and objects.

PREHISTORY

Whiskeytown is located within the territorial boundaries of the Wintu, an area which includes the northern Sacramento River, tributaries to the east and west, and portions of the upper Trinity River drainage. The Wintu utilized the area for hundreds of years before the arrival of Euro-Americans in the nineteenth century. Wintu life centered around villages which were situated along rivers and larger streams such as Clear Creek. Deer and acorns were primary sources of food, and a wide variety of other plant and animal resources were also used. Traditional ties to Whiskeytown remain among contemporary Wintu.

Prehistoric archeological sites have been recorded in a variety of settings throughout Whiskeytown. These sites represent almost 7000 years of use of the area by native peoples. They include habitation sites with diverse artifact assemblages, midden and in some cases housepits; seasonal camps; resource procurement sites; and what may be a spiritual site high on Shasta Bally with a view of Mount Shasta. Some of these sites have the potential to yield important information about local and regional research interests including the development of cultural chronologies and diagnostic artifact typologies, settlement/subsistence patterns, population movements and exchange patterns.

To date, approximately 3520 acres (about 8%) of the Whiskeytown Unit outside of the reservoir have been archaeologically surveyed and 84 archeological sites have been recorded. Of these, 46 are prehistoric, 21 are historic and 17 have both prehistoric and historic components. Portions of the reservoir area were surveyed in 1958 prior to closure of the dam. Twenty sites recorded at that time are now under water. Past archeological surveys focused on high use and developed areas, and on areas considered to be sensitive for cultural resources. More recently, however, cultural resources inventories of prescribed fire units have provided survey coverage of a variety of environments throughout the unit. The information developed suggests a significant number of sites are located throughout the park.

Most of the recorded cultural resources at Whiskeytown have not been evaluated for eligibility to the National Register of Historic Places (NRHP). Currently, 10 prehistoric archeological sites are listed in the NRHP as part of the Tower House Archeological District. One additional archeological site has been determined eligible for listing by the California State Historic Preservation Officer, and another is in process of evaluation.

Most of the archeological sites within the unit have been impacted by natural processes and also by human activities including logging, construction of the reservoir, illegal collecting, and park projects and developments. The condition of sites varies from destroyed to good depending on the nature and extent of impacts.

HISTORY

Explorers and trappers began visiting the upper Sacramento Valley in the early part of the nineteenth century. They were soon followed by parties of settlers on their way to central California and Oregon, and in 1848 gold was discovered on the Trinity River just west of Whiskeytown. "Boomtowns" such as Shasta, Whiskeytown, and French Gulch grew quickly as large numbers of miners arrived in the area. Placer mining for gold required dependable water supplies, and emigrant Chinese laborers helped to build an elaborate system of ditches and flumes, and also mined many abandoned claims. By the turn of the century, lode mining had replaced placer mining, leaving behind a profusion of tailings, pits, tunnels, and shafts. The remnants of the mining history of the area are clearly evident at many places within the park.

In the fall of 1850 Levi Tower and Charles Camden arrived in the area and began mining for gold, and soon expanded their business prospects by investing in a hotel, orchard, sawmill, and construction of a toll road. An extensive water ditch was also built for irrigation and mining purposes. The hotel, with its lush gardens and fruit orchards, became a popular stopover for people traveling to the California coast and northern Oregon.

HISTORIC STRUCTURES

The Tower House Historic District, listed on the National Register of Historic Places in 1973, encompasses 20 acres and includes 16 structures. The district is significant because of the contributions of its two primary residents, Levi Tower and Charles Camden, in the development of commerce, transportation, agriculture, and industry in northern California in the two decades following the discovery of gold in 1848.

The only historic structures in the park that have been evaluated for inclusion in the NRHP are those which are located in the Tower House Historic District. The district includes the Camden House which has been preserved and stabilized, the tenant house which is currently used as staff housing, a barn, outbuildings, a bridge, an extensive irrigation system and the El Dorado Mine and Stamp Mill. The condition of these structures is generally good. Numerous additional structures/features associated with historic mining activities, such as mines, stampmills and ditches, are present at various locations. These have not been evaluated, and some may be eligible for listing in the NRHP.

The List of Classified Structures is attached as Appendix C.

CULTURAL LANDSCAPES

Funding was obligated in FY96 for the cultural landscape report. Two projects were contracted out with park and regional oversight utilizing available funds. The first project entailed documenting the historic Crystal Creek and Willow Creek gravity fed irrigation systems in the Tower House Historic District, with recommendations on how to use the system to irrigate the historic orchard in the southeastern portion of the district. Documentation was in the form of a site map with elevations of the system at a scale to sufficiently portray the various components, and a report analyzing options for extending the system. The irrigation system is very significant, is one of the best engineered systems for local agriculture remaining, and retains a good deal of integrity. The irrigation system was also found to be more extensive, for a third ditch system was discovered during field work. The operation of one or more of the irrigation systems is critical to landscape restoration. The second project was to survey and prepare a landscape map of 2.5 acres of the Tower House Historic District in the vicinity of the Camden House. Work on both projects was completed in FY97.

Despite these two projects, much work still remains to be done to complete a cultural landscape report for the district, and additional funding was requested and approved for FY98. Vital research still needs to be conducted, archeological investigations completed, and existing orchard stock stabilized and preserved.

Historical and existing maps, photographs, drawings, and documents need to be located and reviewed. Building plans, site plans, and any oral or written histories must be researched to provide important information. The lack of documentation is adversely affecting the preservation and management of the resource.

Other components are still missing from the cultural landscape report, such as site sketches and maps from various historical periods, and the placement of the landscape in historical context. Boundaries need to be defined, and landscape characteristics need to be documented, such as land use, circulation, vegetation, response to natural features, spacial relationships/arrangements, archeological sites and sensitivities, buildings, structures, and objects, as well as evidence of cultural traditions.

Professional evaluation is needed to establish character defining features, including extant landscape characteristics and features, physical change and stability over time, and the connection to the historic context. Historic significance needs to be defined, as well a determination of integrity.

COLLECTIONS

The park maintains a significant collection of historical, archeological and natural history specimens. Cataloged items currently total 93,668 archeological, 576 historical and 1078 natural history specimens including mostly vascular plants and insects. Archeological specimens are important for documenting the history and prehistory of the Northern Sacramento Valley since much of that interpretation remains to be completed. The park soon will receive archeological materials associated with several Caltrans and California State University Chico collections which may double the size of the present collection.

Uncataloged items include archival materials associated with the administrative history of Whiskeytown, including natural and cultural resource management and research. In addition, many of the existing mining tools associated with the park are not cataloged. As efforts are undertaken to ensure mine safety and obtain historic documentation of mine sites, it is likely that in situ materials will be discovered that will become a part of the collection as well.

Although the current storage facility is adequate in terms of environmental control, fire protection and security, it is not large enough to safely house the existing collection and it will clearly be inadequate should the collection expand. Adequate space is needed not only for existing and additional collections, but also to provide for a research and collection management work area adjacent to the storage facility.

RESOURCES OF SIGNIFICANCE TO CONTEMPORARY AMERICAN INDIANS

Among the many groups of American Indians living in northern California there is a continuing interest in many aspects of their traditional culture. One of these groups, the Wintu, previously occupied lands now within Whiskeytown's boundaries. Initial consultations with local Wintu people indicate that there is an interest in places such as Whiskeytown with which they have traditional ties. Significant sites at Whiskeytown include resource gathering places, spiritual places such as Shasta Bally and places where traditional gatherings could take place. In consultation with the Wintu, the NEED camp archeological district as well as the Tower House Historic District archeological district have been identified as having significance.

NATURAL RESOURCES

TOPOGRAPHY

The topography of the area can generally be described as rolling to steep hills with steeply graded, high velocity watercourses. Most slopes are in excess of 20 percent. Elevations above mean sea level range from 800 feet on the south boundary at Clear Creek to 6209 feet on Shasta Bally. Adjacent peaks include Little Bally at 5419 feet, South Fork Mountain at 5189 feet, Buckhorn Bally at 5053 feet, and Kanaka Peak at 2618 feet.

CLIMATE

The climate in Whiskeytown National Recreation Area varies considerably with the seasons and elevations. Typically, summers are hot and dry, and winters are cool with moderate rainfall. One hundred degree plus fahrenheit readings often occur during the months of May through October, with occasional sub-freezing temperatures from November through March. The growing season averages 150 days.

The mean annual temperature is 58 degrees F., as recorded at the weather station located at Whiskeytown headquarters. Significantly cooler temperatures are experienced at higher elevations.

The average annual precipitation at the weather station at park headquarters is 60 inches. The south side of the lake receives higher total rainfall than the north side. Seventy-five to ninety percent of the total annual rainfall occurs between November 1 and April 30. Reliable figures on snowfall are not available, but snow often falls at the higher elevations and in many years remains well into June.

BIOLOGICAL RESOURCES

The natural vegetative communities at Whiskeytown are varied, providing shelter and sustenance to a large variety of resident and migratory wildlife, including some endangered species, as well as providing pleasant natural settings for recreation activities.

The biological resources of the area have been profoundly influenced by disruption of the natural fire regime, introduction of exotic species, reduction or extirpation of native species, alteration of native species interactions, disruption of natural hydrology and aquatic environments, and other impacts related to past consumptive uses of resources.

Vegetation

Plant communities in the park include mixed chaparral, ponderosa pine forest, mixed conifer forest, riparian communities, black oak woodlands, blue oak grasslands, and knobcone pine forests.

The mixed chaparral communities cover approximately 20 percent of the land area at Whiskeytown. The chaparral is a mosaic of shrub communities adapted to extremes of temperature and precipitation and periodic consumption by fire. Dominant plants are manzanita, Ceanothus, and chamise. Other common plants of this community include yerba santa, toyon, and poison oak. Oak and pine species are scattered throughout chaparral communities.

Typical chaparral vegetation is located on the slopes north of the lake which were previously forested. Manzanita-dominated chaparral has replaced most of the trees in this area which were killed by a large wildfire in 1922. This vegetation type thrives on the steep slopes which receive intense and prolonged sunlight due to their southwest aspect.

Chaparral shrubs flower in winter or spring and set seed by mid-summer. The structure, chemical composition, and low moisture content of mature chaparral encourages complete combustion of above-ground parts in summer or fall fires. Chaparral plants are rejuvenated by intense fire, either resprouting from below ground or sprouting from seed that lies dormant in the soil until scarified by fire.

Ponderosa pine forest can be found below 6,000 feet on north and east exposures. These slopes are dominated by ponderosa pine while sugar pine, knobcone pine, grey pine, Douglas fir, incense cedar, black oak, and other oak species are also well represented.

Remnants of a heavily logged mixed conifer forest are found on the higher ridges of the southern and western boundaries of the park. Scattered white fir, incense cedar, and sugar pine grow interspersed with brush, including ceanothus, shrub tan oak, and chinquapin. Exposed, decomposed granitic soil occurs exclusively in this area. Approximately six sections of mixed conifer forest lands have never been logged, providing valuable examples of old growth forest.

Riparian communities cover about 10 percent of Whiskeytown's area. Primary plants are grey pine, willow, white alder, dogwood, Oregon ash, bigleaf maple, and Fremont and black cottonwood. Wild grape is also very common, and common riparian shrubs include snowberry, California blackberry, toyon, buckeye, and button willow. Flowering herbaceous plants, cattails, sedges, rushes, and ferns make up the riparian understory. The riparian habitats are generally vigorous and well-vegetated, especially in the most favorable locations, such as canyons and stream bottoms.

Blue oak grasslands cover approximately 400 acres of lower elevation lands. This community is characterized by open stands of blue oak and sometimes grey pine, with an understory of annual and perennial grasses. In some areas, brush species are encroaching on these oak grasslands.

Black oak woodlands cover about 7000 acres at Whiskeytown. This community is dominated by black oak and canyon live oak, with tan oak at higher elevations. Big leaf maple, ponderosa pine, and douglas fir are found on wetter sites. The brush understory is a typical Whiskeytown mix of manzanita, toyon, poison oak, and ceanothus, with chinquapin at higher elevations.

Knobcone pine forests are found below 2,000 feet throughout the park. The dominant species is knobcone pine with an understory of manzanita, toyon, poison oak, and ceanothus. These forests of even-aged knobcones are mature to over-mature due to the exclusion of fire, and subsequent lack of regeneration. A large percentage of the cones of knobcone pine are serotinous, i.e. require fire, heat, or stress to open and drop their seed.

Threatened, Endangered, & Sensitive Plant Species- There are no federally listed plant species at Whiskeytown at this time. However, sixteen "sensitive" plants, listed by the California Native Plant Society, are found at Whiskeytown. The plants are rare, threatened, or endangered in California, as well as elsewhere in some cases, or are plants of limited distribution or for which more information is needed. These 15 plants are: Puccinellia howellii, an alkali grass whose only known global location is in the Whiskeytown Unit; clustered lady's slipper, Cypripedium fasciculatum; western trillium, Trillium ovatum; Sanborn's onion, Allium sanbornii ssp. sanbornii; snowmountain beard tongue, Penstemon purpusii; Tehama navarretia, Navarretia heterandra; yellow triteleia, Triteleia crocea Greene var crocea; Sanford's arrowhead, Sagittaria sanfordii; small spikerush, Eleocharis parvula; three-bracted onion, Allium tribracteatum; Mildred's clarkia, Clarkia mildrediae; Sierra clarkia, Clarkia virgata; red-anthered juncus, Juncus marginatus; canyon stonecrop, Sedum paridisum; and Rattan's linanthus, Linanthus rattanii; and Arnica venosa.

Wildlife Resources

The Whiskeytown Unit 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 20 reptile and amphibian species. 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. The population of Redding has grown from 16,000 to 70,000 in the last 20 years, and some encroachment on wildlife habitat near the park has occurred. Human-wildlife incidents also increase as visitor use increases. Bear-human incidents and mountain lion-human incidents are of particular concern to land managers because of the potential for injury.

The legislation creating Whiskeytown mandates that hunting and fishing activities continue, subject to their management in such a way that other park resource objectives are achieved. Visitors to Whiskeytown hunt blacktail deer, black bear, grey squirrel, mountain quail, California quail, wild turkey, band-tailed pigeon, mourning dove, coyote, grey fox, and bobcat.

Many waterfowl species use Whiskeytown Lake but numbers of popularly hunted species are normally too low to attract many hunters. The shallow water and emergent vegetation required by many dabbling ducks are absent due to the normal winter draw-down of lake levels. Dabbling ducks which are present include mallards, green-winged teal, ring-necked ducks, lesser scaup, redheads, American wigeon, and wood ducks. Diving ducks such as buffleheads, common goldeneyes, ruddy ducks, common mergansers, and hooded mergansers are more plentiful, and American coots are present in large numbers during most of the winter months.

Sport fishing is one of the most popular recreational activities at Whiskeytown. The lake and streams support a large variety of fish, both native and exotic. The state regularly stocks rainbow trout in Whiskeytown Lake and some of the perennial streams during the spring and summer months, and the lake has been stocked with brown trout and kokanee salmon in the past. Fish commonly caught by anglers include rainbow trout, largemouth bass, smallmouth bass, spotted bass, Kokanee salmon, bluegill, black crappie, brown trout, brook trout, channel catfish, and brown bullheads. Native fish found at Whiskeytown include squawfish, hardhead, riffle sculpins, western suckers, and rainbow trout.

Game fish habitat in the lake has been enhanced by anchoring cut manzanita brush to the lake bottom with concrete blocks. Approximately 50 brush structures were constructed in 1996 through the efforts of a volunteer organization. The brush provides critical winter cover for small fish as well as ambush sites for larger fish during the winter months when the lake level is drawn down. Increased fish populations benefit bald eagles, osprey, and other wildlife species which utilize fish as a food source.

Anadromous Fish- The streams in the Whiskeytown Unit historically supported anadromous fish runs but have neither salmon nor steelhead in them today, in large part due to the construction of dams that block the passage of salmon and steelhead in Clear Creek and reduce flows in lower Clear Creek to 13% of normal. The reduced flows result in high sediment deposition because normal high winter flows are not available to flush out the excess

sediment.

An analysis of the Clear Creek watershed by the inter-agency Lower Clear Creek Watershed Analysis core team estimates that the Clear Creek watershed presently supports an estimated 2% of the Sacramento River's salmon population. The analysis further estimates that with the implementation of basic rehabilitation measures, the Clear Creek watershed could support 6% of the Sacramento River's salmon population. Under the proposed rehabilitation measures, spring run Chinook salmon, a California State Species of Special Concern, and steelhead would be able to move upstream past Saeltzer Dam and conceivably as far upstream as Whiskeytown Dam. Fall, late fall, and winter run Chinook salmon, a federally Threatened and California State Endangered Species, would be limited to Clear Creek below Saeltzer Dam. With the completion of an assessment of Clear Creek from Whiskeytown Dam to the south boundary, salmon and steelhead spawning areas could be identified and habitat protected or improved accordingly.

Black Bears- Whiskeytown National Recreation Area has a substantial population of black bears and, as with most national parks with bears, bear-human conflicts occur in and around developed areas. The result is an increase in the bear population in these areas and alteration of their natural behavior and foraging habits. Recently the Whiskeytown Unit has had as many as 30 bear incidents per year involving property damage. Most of this damage is to ice chests and tents. Bear-proof food storage lockers have been installed in all campsites and bear-proof garbage cans have been installed throughout the park, with the exception of portions of the Oak Bottom Tent Campground. These actions have helped to remove the human food source from black bears.

Habituated bears that have become conditioned to foraging for human-based food are more likely to be in frequent contact with humans. Frequent contact with humans and their food sources results in bears that lose their natural fear of humans. As these bears become more conditioned to foraging for a human-based food source they often become aggressive or destructive and potentially dangerous to visitors and employees. Ultimately, aggressive or destructive bears may be destroyed to protect visitor safety and property.

Whiskeytown has identified three goals in the bear management program designed to manage black bears in developed areas and decrease bear-human incidents.

1. Maintain, to the extent possible, the natural integrity, distribution, abundance and behavior of the endemic black bear population, and provide for recreational hunting consistent with California State law.
2. Prevent bears from accessing all human-based food sources; thereby, precluding the learned association by bears that humans provide food.

3. Provide opportunities for visitors to enjoy, understand, and appreciate black bears while minimizing confrontations between bears and people.

Threatened and Endangered Wildlife Species- Whiskeytown is known to contain populations of two federally threatened wildlife species: the southern bald eagle and the northern spotted owl. The southern bald eagle is currently a California state endangered species, but will likely be reclassified as threatened within the next year.

Southern bald eagles were first documented as nesting at Whiskeytown Lake in 1973. There are currently two nesting pairs of bald eagles at Whiskeytown as well as a substantial wintering population. Eagles at Whiskeytown are closely monitored for nesting success and productivity, and areas of the park that contain potential bald eagle nesting habitat are surveyed annually for potential new nesting territories. The goals of bald eagle management are to protect nesting bald eagles from disturbance and to maintain and enhance bald eagle habitat.

A pair of nesting northern spotted owls has been documented in the park since 1994. The nesting area is monitored annually and records kept detailing nesting status and production. Spotted owl surveys are ongoing and eventually all suitable habitat within the park will be surveyed. The detection of additional pairs of northern spotted owls is possible as some suitable habitat exists in some of the more remote areas of the park.

The peregrine falcon, a federal and state endangered species, has been reported a few times by local bird watchers and is probably a migrant, although potential nesting habitat may exist on the southeast side of Shasta Bally.

Whiskeytown contains habitat suitable for red-legged frogs, a federally listed species, but no red-legged frogs have been found to date in the park. The park continues to survey for the frog in suitable habitat areas delineated by the Fish and Wildlife Service.

The park also contains four species which were listed as federal Category 2 candidate species until recently, when the category was eliminated. Category 2 species were those thought likely to warrant listing but for which insufficient data existed at that time. Those species are: foothill yellow-legged frog, northwestern pond turtle, pacific fisher, and the pacific western big-eared bat.

Whiskeytown also contains several species listed by the State of California. The bank swallow, a California threatened species, has been observed several times within the park by local bird watchers and is probably a rare summer resident. The following species are confirmed to occur at Whiskeytown and are California Species of Special Concern: Cooper's hawk, sharp-shinned hawk, osprey, yellow-breasted chat, yellow warbler, common loon, California gull,

double-crested cormorant, pallid bat, and merlin. Additional species with federal or state status may be discovered within the park as wildlife inventories become more complete.

GEOLOGIC AND SOIL RESOURCES

The geology and soils in the Unit are typical of the southern Klamath Mountains geologic province. The bedrock underlying the park is extensively tilted, folded and fractured. Metamorphosed sections of these rocks are generally ore bearing, and have produced copper, zinc sulfides, talc, pyrite, gold, and silver.

The Paleozoic rocks range in age from Middle Devonian to Mississippian. The oldest of these rock formations, the igneous Copley Greenstone, is exposed in deeply eroded gorges which form the narrow, deep, Clear Creek Canyon below Whiskeytown Dam. Copley Greenstone is overlain by Balakala Rhyolite, which in turn is overlain by sedimentary layers consisting of either the Kennett or Bragdon formations. These are partially intruded by the Shasta Bally batholith which is of late Jurassic or early Cretaceous age.

The Shasta Bally batholith is composed of biotite quartz diorite, a granitic rock, and forms the mountains in the southern and western part of the park. The northeastern edge of the batholith is approximately two miles from the south shore of the lake. The soil of the batholith area is derived from the decomposition of this granitic rock. Decomposed granite is extremely friable and subject to erosion. Heavy logging in the past has left some bare slopes where revegetation proceeds very slowly.

In addition to the decomposed granite of the Shasta Bally batholith, other soils in the Unit can generally be divided into five groups with similar soil characteristics, which are described below.

Group 1. Soils in this group are classified as BkD, Boomer gravelly loam with slopes of 15% to 30%. These soils were derived in place from metavolcanic rock. This is good timber growing soil, with slight erosion hazard, slight equipment limitation, and slight seedling mortality, but severe plant competition. These soils occupy a small area of about 20 acres in the south portion of the Unit between Monarch Mountain and Kanaka Peak, and another small area just west of Boulder Creek along the south shore of the lake.

Group 2. Soils in this group are classified as HcE, Holland Sandy Loam with slopes from 15% to 50%. These soils were derived in place from granitic rock, are well drained with medium runoff. Equipment limitation is moderate to severe, while plant competition and erosion hazard are both severe. This is a good timber growing soil. Maintenance of plant cover is necessary to reduce erosion, and special attention is needed for any soil disturbance. These soils occupy about 30 acres east of the conservation camp on Crystal Creek Road, and a smaller

area on the east side of Crystal Creek Road south of the conservation camp where the penstocks cross the area. There are a few very small areas in the south portion of the Unit.

Group 3. Soils in this group are classified as Bke Boomer loam, BoE2 Boomer very stony clay loam, CbD2 Chaix sandy loam, DfD2 Diamond Springs very stony sandy loam, and Neuns very stony loam. Slopes range from 8% to 50%, and these soils were derived in place from metavolcanic and granitic rock. Plant competition, seedling mortality, and equipment limitation are slight to moderate. Erosion hazard is slight to severe relative to the degree of the slope. These soils are moderately good for timber growing, and make up about 25% of the land south of the lake and east of Dry Creek, with some smaller, isolated patches on the north side of the lake.

Group 4. Soils in this group are classified as BIF Boomer very stony loam, CbE Chaix sandy loam, CaE3 Chaix coarse sandy loam, CsF Colluvial land, Dx E Corbett loamy coarse sand, and NdG Neuns very stony loam. Slopes range from 15% to 70%. Plant competition is slight to moderate, but brush competition becomes strong above 4000 feet. Seedling mortality is slight to moderate, equipment limitation moderate to severe, and erosion hazard is severe. These soils comprise at least 50% of the land immediately south of the lake extending to both east and west boundaries of the Unit, and are moderately good for timber growth. Smaller patches occur west of Shasta Bally, and a few very small patches are found north of SR 299.

Group 5. Soils in this group make up the Shasta Bally Batholith and comprise more than one-third of the land in the Unit. They are classified as CbF Chaix sandy loam, CaF3 Chaix loamy coarse sand, CxF3 Corbett loamy coarse sand, CxG Corbett loamy coarse sand, and CyG Corbett rocky loamy coarse sand. They are derived in place from granitic rock. Plant competition is slight to moderate. Equipment limitation and erosion hazards are severe. Most of these soils are in the southwest part of the Unit, but a significant area is located north of SR 299 on the west side of South Fork Mountain Road. Smaller areas are found in the southeast corner of the Unit. These soils are considered moderately good for growing timber.

WATER RESOURCES

Whiskeytown Lake

When full, Whiskeytown Lake has a surface of 3,220 acres and contains 240,000 acre feet of water. The lake is fed by seven major streams: Clear Creek, Mill Creek, Crystal Creek, Boulder Creek, Willow Creek, Brandy Creek and Whiskey Creek, which empty directly into the lake. Paige Boulder Creek drains into Clear Creek about 1 mile downstream from the Whiskeytown Dam. Intermittent streams abound throughout the NRA, and many springs are found at higher elevations.

The park has insufficient information regarding its water resources. An inventory of park water resources is needed to identify, map, and describe surface waters, springs, and seeps, and to quantify the amount of water flowing from these sources. An analysis of water rights is also needed. Whiskeytown has wetlands of unknown extent. These need to be inventoried, mapped, and classified according to the system developed by the Fish and Wildlife Service. Information is also needed on historic floodplain levels and locations in the park.

Projects for remedying these deficiencies in water resource information are identified in the park's 1997 Resources Management Plan.

Whiskeytown Lake was constructed on Clear Creek by the Bureau of Reclamation in 1962. In addition to fishing, boating, and other recreational activities, the lake is used to provide drinking and domestic water for the park as well as for several local municipalities, including Shasta, Keswick, Centerville, Redding, and Happy Valley. The water in Whiskeytown Lake is managed by the BOR, and the lake level fluctuates seasonally. The lake level is maintained at a steady full pool of 240,000 acre feet from May 1 through September 30. The lake is normally drawn down 13 feet in the winter for flood control purposes, although it can be lowered as much as 30 feet for maintenance purposes. The Carr Powerhouse and Spring Creek Tunnel are operated by BOR for the Central Valley Project water diversion and power generation, usually at a flow rate of 3000 cubic feet per second through the lake.

Water temperature control curtains, which prevent mixing of the warmer lake water with colder water from Carr Powerhouse, were installed in 1993 at Oak Bottom and near the Visitor Center overlook to provide the cool water temperatures required for the reproduction of chinook salmon. The cool water is diverted through the Spring Creek Tunnel to Keswick Reservoir, and then released into the Sacramento River. It is hoped this technology will contribute to the survival of chinook salmon.

Clear Creek Watershed

Whiskeytown lies almost entirely within the watershed of Clear Creek, a tributary of the Sacramento River. The watershed is approximately 35 miles long, ranges from 5 to 12 miles wide and covers 242 square miles or 154,820 acres. The federal government is the largest landholder in the watershed with 105,560 acres. The National Park Service administers 42,100 of these acres in Whiskeytown National Recreation Area, BLM administers 37,760 acres, and the U.S. Forest Service administers 25,600 acres. The State of California and the City of Redding administer small amounts of public land, principally in the lower reaches of the watershed. Approximately 18,600 acres are owned by timber corporations, and other individual holdings comprise about 10,000 acres. The community of French Gulch and surrounding rural residential areas occupy about 800 acres. The lower Clear Creek area includes some rural residential and industrial commercial properties.

The highest elevation in the watershed is found in the Whiskeytown Unit on Shasta Bally at 6209 feet. The lowest elevation is 425 feet at the confluence of Clear Creek and the Sacramento River.

Prior to the establishment of the park, mining, logging and development impacted the resources of the watershed. Mining resulted in numerous dredge tailing piles and ditches in and around creekbeds and sedimentation of creeks, as well as numerous pits, adits, tunnels, scars, and roads and trails. Massive amounts of gravel were extracted, and gravel extraction continues currently in the lower reaches of Clear Creek. Resultant gravel pits altered streambeds in much of the floodplain and left some deep pits which entrap young fish after flood events. Logging has occurred on most commercially valuable timberland and most old logging roads and landings interfere with natural drainage patterns and revegetation. The south-central portion of the watershed is dominated by a huge granite batholith which contributes significant amounts of decomposed granite to creeks and Whiskeytown Lake as a result of past logging practices. Some decomposed granite makes its way into lower Clear Creek via the South Fork of Clear Creek and other sub-watersheds. The increased sediment decreases anadromous fish-spawning habitat, as well as habitat for insects on which fish feed.

The Clear Creek watershed lies within the Northwest Sacramento Province, one of three physiographic provinces in northern California defined in the President's Forest Plan as being within the range of the northern spotted owl. The President has directed Federal agencies to work together toward implementing the concepts of ecosystem-based land management. Under the directive, management decisions are based on ecological principles and knowledge of ecological systems of entire watersheds and larger landscapes, rather than on the smaller individual parts that comprise the system. All federal resource management agencies have begun promoting cooperative ecosystem planning to increase the sustainability of healthy ecosystems.

A multi-agency watershed analysis for lower Clear Creek has been recently completed. Participants in the analysis included: National Park Service, Bureau of Land Management, Western Shasta Resource Conservation District, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Forestry, Natural Resource Conservation Service, U.S. Forest Service, Shasta-Tehama Bioregional Council, Environmental Protection Agency, and California Regional Water Quality Control Board.

AIR RESOURCES

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 which 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.

Visibility refers to the clarity of the atmosphere and is typically measured as the distance one can see at a particular location and time. The absorption and scattering of light by both gasses and particles in the atmosphere restricts visibility. Natural factors which contribute to decrease visibility include fog, precipitation, blowing dust and snow, and relative humidities above 70 percent. Human activities that reduce visibility include the combustion of fossil fuels which transforms emissions into tiny visibility-reducing particles termed "aerosols".

Vegetation is considered an air quality related value because several plant species found at Whiskeytown are known to be sensitive to air pollution. Genera sensitive to ground-level ozone air pollution are Pinus, Prunus, and Populus. Symptoms of ozone damage include reduced photosynthesis, chlorotic mottling, and premature senescence. It is unknown if air pollution is affecting vegetation at Whiskeytown.

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency to identify national ambient air quality standards (NAAQS) to protect public health and welfare. NAAQS have been set for six pollutants; particulate matter less than 10 microns (PM₁₀), carbon monoxide, nitrogen oxides, sulphur dioxide, ozone, and lead. These pollutants are called "criteria" pollutants, because the standards satisfy criteria specified in the CAA. NAAQS are shown in Appendix A. An area where NAAQS are exceeded more than three times in three years can be considered a "non-attainment area" subject to planning and pollution control requirements that are more stringent than areas which meet the NAAQS.

The State of California Air Resources Board has set ambient air quality standards to protect public health and welfare which are more strict than the NAAQS. These standards are also shown in Appendix A.

New federal 8-hour ozone and fine particulate matter (PM_{2.5}) standards were promulgated by the Environmental Protection Agency on July 18, 1997. These standards are averaged over a three year period. Whiskeytown currently meets all federal standards which are evaluated over a one year period and is expected to meet the new 3-year average federal standards as well. Whiskeytown currently meets all state standards except for ozone and particulate matter

(PM₁₀), for which Shasta County is designated as non-attainment.

Ozone may cause irreversible reduction of lung capacity, lower stamina, increase vulnerability to long-term respiratory problems, and effect changes to immune system. Children, elderly people, and those with heart or lung disease are most susceptible to ozone's effects. It adds stress to the body in general and is a strong irritant which may restrict airways causing more stress to respiratory system, coughing, chest pains, headaches, nausea, asthma, eye and throat irritation.

Particulate matter also contributes to serious health problems. It aggravates existing respiratory disease and damages lung tissue and alters defense system. A national study shows a 17 percent increase in deaths from respiratory and heart disease in polluted cities compared to clean cities.

Areas which exceed federal and/or state air quality standards must develop a State Implementation Plan (SIP) defining methods to achieve attainment. Basic components of a SIP include legal authority, emissions inventory, air quality monitoring network, control strategy demonstration modeling, rules and emission limiting regulations, new source review provisions, enforcement and surveillance, and other programs as needed to attain standards.

Sections 118 and 176 of the Clean Air Act require Federal agencies/facilities to meet all Federal, state, and local air pollution control laws and regulations, and in the case of units/facilities located in areas not meeting Federal or state air pollution control standards (non-attainment areas), that such units/facilities conform to requirements established to attain and maintain those standards. The requirements may include provisions to reduce emissions from existing facilities and limit emissions from proposed facilities on a greater than 1:1 basis.

FIRE

Most fires in the park and the surrounding area have been suppressed for the past 80 years. This has resulted in significant alterations of plant communities since plant communities have evolved with fire. Fire is a major factor in controlling nutrient cycles and energy pathways, and contributes to the diversity, productivity, and stability of ecosystems. Vegetation and wildlife communities evolved over millions of years in partial response to periodic lightning-caused fires.

Regeneration of some vegetation types will not occur until stand alteration is reversed by prescribed burning or mechanical means. Plant succession and plant diversity will undoubtedly increase as the prescribed fire cycle is established and restored.

Normal successional changes are being accelerated in some areas as a result of fire

suppression. For example, most mixed conifer forest species are not shade-tolerant, and require the open, sunny habitat resulting from fire in order to germinate and grow. When fire is continually suppressed, dense stands of shade tolerant white fir dominate.

Wildlife is affected by fire suppression because old stands of decadent brush do not provide good browse. Following fire, regeneration of forbs, young shrubs, and open spaces provide essential wildlife habitat and food sources.

The exclusion of fire has also resulted in dangerously high fuel accumulation levels and altered fire-related processes in all biotic communities of the Whiskeytown area. Fires which do occur are larger and more intense than they would be otherwise due to the unnaturally high fuel loads.

The revised Fire Management Plan for Whiskeytown, completed in 1993, provides for the use of mechanical clearing and prescribed burning to enhance control actions in wildfire situations and to reduce hazardous fuel loads.

Fire history information is the key to understanding fire regimes and the role of fire in plant communities and ecosystems. To date, no fire history studies have been done at Whiskeytown and there is some question as to how often fire has historically occurred in the area. U.S. Forest Service researchers have conducted studies in similar vegetation types and geographical areas, allowing some generalizations about the historical role of fire in Whiskeytown's plant communities, and these generalizations have been used to determine appropriate fire regimes for the park.

Monitoring plays a critical role in determining the success of management programs. Monitoring prescribed fires gives managers knowledge of fire effects on the landscape. Positive and negative effects on vegetation communities are measured. Fire effects monitoring plots have been installed in most vegetation types.

INTERPRETIVE THEMES

Interpretation is essential to visitor understanding of any National Park Service site. Through the process of interpretive planning, park managers consider such resources as visitor use patterns, nature of park resources, park management goals, and interpretive themes to establish a balance of visitor services. Interpretive themes are the key ideas and concepts that define the park's significance and resources values. Interpretive themes form the framework for which messages and stories will be told at a park. The key themes at Whiskeytown are described below.

Whiskeytown National Recreation Area exemplifies the history and evolution of water development in the United States, as well as of renewed westward expansion.

The Central Valley Project was established by the federal government to create an economically viable region by managing the water of the Sacramento River and providing for its use in the Central Valley.

Whiskeytown-Shasta-Trinity National Recreation Area, established by Congress in 1965, is administered in coordination with the other authorized purposes of the Central Valley Project, including flood control, irrigation, and power generation.

Whiskeytown Lake is an impoundment of water created by the construction of Whiskeytown Dam, which was built by the Bureau of Reclamation in 1962. The Bureau of Reclamation operates the dam and administers various water conveyance and hydroelectric generation facilities.

In 1992 Congress enacted the Central Valley Project Improvement Act which reformed the federal water project in order to guarantee water for California fish and wildlife and habitat restoration.

During the California Gold Rush, Whiskeytown was a crossroads for people and transportation due to its location in the northern "diggings" and the gateway north to Oregon, or westward to the California coast.

After gold was discovered in the area by Pierson B. Reading in 1848, the area became a major settlement with the founding of the town of Shasta, the "Queen City of the North."

Settlers were drawn to the area for it offered a place to make money and a name for themselves. Two such settlers were Charles Camden and Levi Tower. These men exemplify the legacy of the gold rush, either lasting prosperity acquired through a

diversity of interests, or hopes dashed and fortunes lost quickly.

Gold was not the only commodity which allowed settlers to prosper in the Whiskeytown area. The sparsely populated region quickly grew, supporting retail businesses, irrigation systems, agriculture, and a diverse population consisting of Anglos, Asians, Blacks, Latinos, and Native Americans.

The mines located at Whiskeytown represent an expanse of mining history and the evolution of technology, beginning with placer mining, then quartz mining during the period of 1850-1975, to singular or short-lived mining operations from 1896-1960, including granite and talc extraction.

Whiskeytown provides an opportunity to interpret the culture of the Wintu Indians and their predecessors and their habitation of the Whiskeytown area.

Prehistoric sites provide evidence of early occupation by small, highly mobile groups of hunter-gatherers, extending over almost 7000 years.

A more settled lifestyle developed with people occupying villages at lower elevations along the larger streams for part of the year, and dispersing in spring and summer to seek out seasonally available resources. This settlement/subsistence pattern continued, marked by increasing complexity, into the 19th century when Euro-Americans entered the area.

The discovery of gold dramatically affected the Wintu Indians and their traditional way of life. Wintu life centered around their villages which were situated along rivers and larger streams. A deep reverence for the land and intimate knowledge of the environment led to a balanced use of natural resources. The influx of settlers to the area, resulting in the loss of land and resources, as well as the introduction of disease, decimated the population. The community continues to survive, preserve its traditions, and educate its children.

The interplay between human activity and the environment is well represented in the landscapes of Whiskeytown.

Whiskeytown has been heavily impacted by the harvesting of natural resource commodities such as timber and minerals, and grazing and introduction of exotic species. The impacts of mineral extraction and logging has resulted in altered streambeds, interference of natural drainage patterns and revegetation, as well as loss of habitat.

Whiskeytown is home to rich and varied flora and fauna, including threatened species. Current land management practices emphasize protection, illustrating that use and

development of the physical setting is rooted in evolving perceptions and attitudes.

Salmonid fisheries continue to decline in the Whiskeytown area as more runs of salmon and steelhead trout are listed as endangered or threatened. A primary cause of this decline is the loss of habitat due to dam construction and subsequent impacts from upland erosion and sedimentation. Watershed restoration will return the ecosystem to a healthier state.

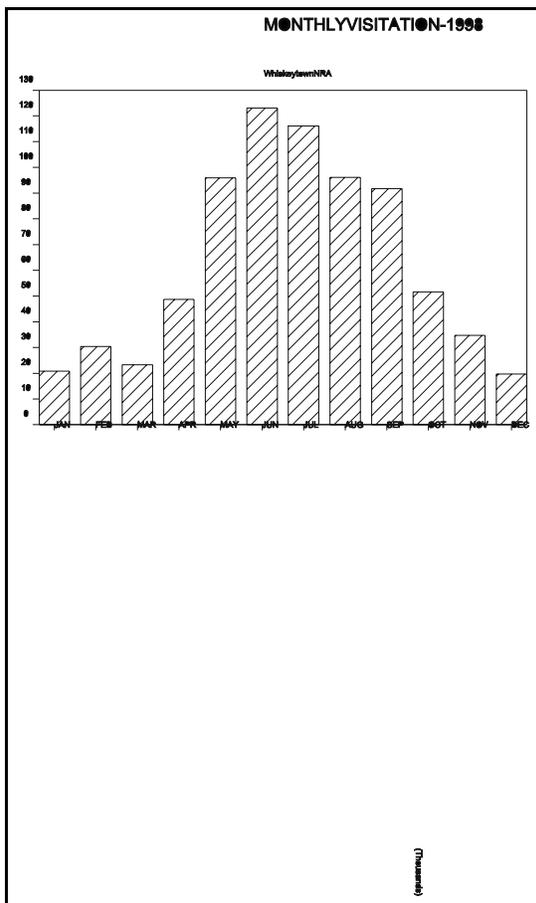
The suppression of fire has resulted in the buildup of extensive fuels throughout the watershed. The extremely high fuel loads increase the risk of catastrophic wildfires and continue to decrease suitable habitat and food sources for native wildlife and plantlife. Fuel reduction treatment options are available to remedy these problems.

VISITOR USE ANALYSIS

Park visitation amounted to 950,586 visitors in 1994, 914,470 in 1995, 850,303 in 1996, 670,049 in 1997, and 758,749 in 1998. The decline in visitation in 1997 was likely the result of the imposition of fees at major lakeside areas. Past experience at other areas where fees have been imposed is that attendance generally recovers to previous levels within a year or two. Visitation at Whiskeytown increases markedly in dry years when other reservoirs in the area are severely drawn down.

The park is open year-round. A substantial part of the visitation occurs during the summer months, June through August. Highest visitation periods are summer weekends, and the lowest on cold, snowy days during winter.

The following graph shows monthly visitation for 1998.



A visitor use survey was completed for Whiskeytown in 1985 by Oregon State University. The survey analyzed more than 2300 responses and produced a detailed statistical analysis. Some of the key findings were:

- 90% of visitors to Whiskeytown are California residents and half of the California visitors live within 20 miles of the park.
- The great majority of visitors are day users with half the day users spending four hours or less on a typical visit.
- 55% are repeat visitors.
 - 60% are younger than 30 years old.
- 55% come to the unit as part of a family group.
- Swimming is the most popular single activity, but "activity sets" comprising a combination of swimming, sunbathing, relaxing, and picnicking, reflect the dominant type of use.

- Over 50% of visitors also use Shasta and Trinity Lakes.

A visitor survey scheduled for the summer of 1998 will provide additional information on current visitor patterns.

The table below shows the distribution of visitors among the primary use areas at Whiskeytown in 1997. The data illustrates the very heavy focus of use around the lake.

DEVELOPED AREA	1998 VISITATION	% OF VISITORS
Brandy Creek	357,317	47.0
Visitor Center/Overlook	190,414	25.0
Oak Bottom	82,696	10.9
Whiskey Creek Areas	41,848	5.5
Carr Powerhouse	33,798	4.5
NEED Camp	12,534	1.7
Group Camp	7,533	1.0

Based on visitation trends at outdoor recreation attractions in northern California, and population projections for Shasta County and for the State, it is expected that demand for recreation visits at Whiskeytown will increase at an average of 2% per year over the next several years, leading to a potential annual visitation at the end of the 15-year planning period approximately 30-40% higher than current levels.

FACILITY ANALYSIS

The existing facilities at Whiskeytown are substantial and require a major maintenance program. Structures range from comfort stations to historic structures and employee housing. Sewage treatment systems range from residential septic systems to complex sewage treatment plants. Water systems include springs, wells, water treatment plants, and distribution systems. Circulation facilities include dirt roads, paved roads (18) and a number of paved and unpaved parking areas. Trails range from backcountry trails and paved walks. Water access facilities include multilane public launch ramps, docks, and navigational aids. Recreation facilities include primitive and developed campgrounds, family and group picnic areas, and extensive swimming beaches. The park operates a complete fleet maintenance shop for 30+ vehicles and 10+ pieces of heavy equipment.

Park facilities are itemized below.

Maintained Roads and Trails:

Roads, Paved	29.6 miles
Roads, Unpaved	57.9 miles
Trails, Paved	2.00 miles
Trails, Unpaved	50.5 miles
Parking Areas	15
Bridges	12
Fencing	1560 Linear Feet

Buildings and other Structures:

Public Buildings	24
Employee Quarters	9
Maintenance & Other Buildings	35
Comfort Stations	12
Vault Toilets	11
Picnic Areas	9
Campgrounds	8
Picnic Tables	225
Toilets, Chemical	4
Landscaped Grounds	9 acres
Wayside Exhibits	10
Multilane Launch Ramps with Courtesy Docks	3
Swimming Beaches	4
Floating Restrooms	2

Utility Systems:

Sewage Systems & Treatment Plants	2
Water Systems and Treatment Plants	12
Lift Stations	8
Septic Tanks	11
Water Tanks	14
Alternative Energy Systems	4
Fuel Storage Tanks (Above ground)	11

Many of these facilities were in existence before the National Park Service assumed responsibility for managing the recreation area in 1965. Most either were not built to modern standards or are approaching the end of their useful lifetime. Even those facilities built after the NPS took over are now over 30 years old and will need to be upgraded soon.

Concession-operated facilities at Whiskeytown include marinas, stores, and snack bars serving the Brandy Creek and Oak Bottom developed areas, and a fenced-in dry boat storage area at Brandy Creek. A campground store at Oak Bottom also serves the tent campground and RV campground which are managed by the concessioner.

There are a number of non-park facilities located within the boundary. The Bureau of Reclamation manages the dam, intake and discharge facilities, a powerhouse, and electrical transmission lines. In addition, the Bureau has an administrative area with buildings and parking areas immediately adjacent to the dam.

The State of California manages State Highway 299 and Shasta County manages the Crystal Creek Regional Boys Camp, a minimum security youth penal institution which occupies a 29 acre tract in the northwest part of the park.

ENVIRONMENTAL CONSEQUENCES

The various actions in the alternative plans are evaluated in terms of potential impact in several different areas: Soils, vegetation, wildlife, air quality, water quality, cultural resources, visual quality, visitor experience, and environmental justice. The analysis presented below evaluates each of the alternatives in terms of these categories.

Because the general management plan is conceptual, the environmental analysis is necessarily quite general. Many of the action items presented in the general management plan will require additional environmental analysis, in the form of environmental assessments, prior to implementation. Many action items will also require additional cultural resources compliance, as provided for in sections 106 and 110 of the National Historic Preservation Act.

THE PROPOSED GENERAL MANAGEMENT PLAN

SOILS

Impacts on soils would be largely positive with active participation of the park in studies and management efforts on the lower Clear Creek watershed aimed in part at the significant reduction of erosion. Also, greater capability for wildfire control, including accelerated efforts toward forest fuel reduction and preparation for effective response to wildfires, under this alternative would reduce the probability of a catastrophic wildfire resulting in large areas of exposed soil subject to extensive erosion.

Restoration of land forms would be undertaken at North Star and Ganim mine sites, and tailings piles on Clear Creek above the lake would be evaluated as to feasibility of reclamation.

Some adverse development impacts would occur as a result of development of dispersed boat-in/walk-in campsites at various locations on the lakeshore, development of trails, new primitive backcountry camps, and the Merry Mountain road picnic/staging area. Affected areas would be small and designed to avoid creating erosion potential.

Beneficial effects on soil would result from reducing density at the Oak Bottom tent campground and the Dry Creek group campground, and the phasing out of some of the dispersed use areas around the lake.

Beyond the plan's specific physical impacts, the park would invest additional staff and funds, and development of partnership efforts, in watershed restoration research and on-the-ground projects which should result in long-term significant reduction of erosion, with far-reaching environmental benefits to vegetation, wildlife habitat both terrestrial and aquatic, and visual quality through elimination of exposed soil landscape scars.

VEGETATION

Vegetation impacts would be similar in scale to those described above for soils. Proposed development areas would be surveyed for sensitive plant species prior to any disturbance. In addition, natural vegetation would be enhanced through development and implementation of a forest management plan, initiatives to reduce or eliminate exotic plant species, use of prescribed fire to restore natural vegetative succession, and additional monitoring and management of listed and sensitive plant species populations.

WILDLIFE

Wildlife would benefit from improvements to natural vegetation and water bodies from cooperative watershed management. Steps would be taken to restore aquatic habitat for anadromous and native fish species, e.g. the program of anchoring manzanita brush offshore to enhance fish habitat would be continued and expanded. The park's capability to achieve healthy populations of mountain lions and black bears, which are subject to visitor conflicts, would be enhanced through management efforts aimed at reducing the potential for conflict. Park efforts in surveying, monitoring and managing to protect known endangered species such as southern bald eagle and northern spotted owl, and locating other listed or sensitive species which may be present in the park, such as the western pond turtle, would be increased.

AIR QUALITY

Park capability for monitoring regional air-impacting activities would be increased and the potential impacts on park values would be made known for use in the decision-making process. Better regional air quality, protecting visibility, biological resources, and human health should result from the park efforts.

The more extensive and aggressive vegetation management program of this alternative, to the extent that it involves increased use of fire, would contain an increased risk of periodic adverse air quality impacts. However, safeguards, established procedures, and coordination with regional air quality management officials would ensure infrequent and minor impacts.

WATER QUALITY

There would be no increased potential for water quality impacts from in-park development actions under this alternative. The park would continue to properly treat wastewater and manage stormwater flows to prevent pollution. Actions taken by the park to begin to deal with the potential for sedimentation of waterways from erosion of previously-disturbed areas would have some positive impact on water quality.

Additional research and projects would be stimulated by the Watershed Management Education Center and additional involvement of staff to regional ecosystem concerns and land use planning decisions should contribute to better water quality in Clear Creek.

Elimination of personal watercraft, particularly those powered by 2-stroke engines should reduce petroleum pollution in the lake. Elimination of pwc use would also reduce shoreline erosion and water turbidity.

CULTURAL RESOURCES

Impacts of this alternative would be primarily positive, with additional funding and staffing to complete inventory and assessment of historic and archeological resources and to manage and protect those which are found to be significant. Collections would be better preserved through expanded and improved storage facilities and treatment. Ethnographic resources would be preserved through the completion of needed analyses and the park would assist the Wintun community to retain and perpetuate cultural aspects at Whiskeytown.

Because some ground disturbance is anticipated in developing new recreation use sites and in restoring previously disturbed areas, there is some potential for adverse impacts to cultural resources including archeological and historic sites. However, the detailed planning procedures for these projects would include cultural site surveys and compliance with all applicable laws and regulations, and it is not anticipated that significant impacts would occur.

Targeted cultural resources would be rehabilitated or restored and afforded a greater degree of management under this alternative.

VISUAL QUALITY

Greater attention and commitment to watershed restoration and involvement in land use decisions and regulatory processes should benefit visual quality both in the park and outside through repair of existing landscape scars and prevention of new scars in sensitive locations. The renovation and/or replacement of visually unappealing structures, and the use of landscaping to provide screening, should improve visual quality markedly in lakeshore recreation areas.

VISITOR EXPERIENCE

This alternative would make major improvements in visitor use quality by expanding

interpretive media and programs, expanding education opportunities for visitors of all ages, and improving opportunities for backcountry use and discovery. Although personal watercraft use would be eliminated, the plan provides opportunities for tranquil boating recreation on Whiskeytown Lake not available at the other two lakes of the NRA, thereby expanding the spectrum of visitor experience.

In addition, OHV activities on adjacent BLM lands would be increased through the development of a staging area north of Route 299.

Student opportunities for environmental education at the NEED camp would be maintained and improved through implementation of the 10-year plan and continued park cooperation with Shasta County.

ENVIRONMENTAL JUSTICE

This alternative is not expected to create any adverse impacts on minority or low income communities, but rather would expand recreational and educational opportunities for those communities as well as for the general population. This alternative includes the most aggressive measures to ensure that Wintu cultural interests are recognized in management of the park.

SHORT TERM USES AND LONG TERM PRODUCTIVITY

This alternative does not trade off short term advantages against long-term productivity. First priority is placed on long-term protection of primary park resources.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are no known or anticipated irreversible and irretrievable commitments of resources in this alternative.

CUMULATIVE IMPACTS

Environmental resources in the Whiskeytown region have been cumulatively impacted over the last 150 years by water development, by mining activities, and by extensive logging.

Water development, beginning with small-scale diversions for irrigation and hydraulic mining during the Gold Rush period and concluding with the impoundment of Whiskeytown reservoir as a feature of the Central Valley Project, has significantly affected regional biological systems through modification of aquatic habitat and through the creation of barriers to the passage of anadromous fish. Whiskeytown reservoir has also significantly

affected cultural resources by inundating an area rich in archeological, historic, and possibly ethnographic resources.

Mining activities, beginning in Gold Rush years and continuing to recent times, have directly affected soils, terrestrial and aquatic habitats, and air and water quality through extraction and refinement activities, and indirectly through the diversion of water and development of an extensive system of access roads to serve exploration and extraction operations. Some mining occurred within the park itself, leaving behind landscape scars and adits; however, most activity and related impacts occurred on adjacent lands.

Logging, which was conducted extensively on private lands in the area in mid 20th century, including much of the area of the park, significantly altered vegetation patterns and significantly disrupted watersheds. Not only was much of the forest cover removed, but an extensive network of inadequately engineered roads continue to disrupt drainage patterns and contribute to erosion problems.

Additional impacts from water development, mining, and logging within the park area were precluded when Whiskeytown was added to the National Park System in 1965.

Resource management planning and programs within the park are aimed in large part at repairing the cumulative damage from these past activities, and ensuring that significant environmental values are protected. Outside the park, cooperative planning involving federal, state, and local government and private organizations is aimed at achieving improvements in watershed stability, restoring aquatic habitat to again support anadromous fish runs, providing a diversity of resource-based recreation activities, and protecting air and water quality. Overall the quality of the heavily-impacted environment of the region appears to be improving.

No actions proposed in this alternative are expected, in concert with past, current, and future activities of others in the region, to adversely affect environmental resources, and park management will endeavor to support regional efforts to repair the past cumulative damage to environmental resources.

ALTERNATIVE A: NO ACTION

SOILS

Although there would be no additional land disturbance from park development under this alternative, with the consequent potential for erosion, the major erosion potential at the park is in the many thousands of acres of already-disturbed areas which were mined and logged prior to park creation. While the park staff cooperates in regional watershed improvement efforts to the extent possible, and has completed some small restoration projects using its own staff, the park does not have the capability for undertaking remedial erosion treatment on the scale to significantly address the problem. Significant continued soil erosion can be expected to occur during the planning period.

VEGETATION

No vegetation would be displaced by new park development under this alternative. However, the park capability to identify and manage alien species would remain very limited, and these species would continue to extend their encroachment on native species. The capability to monitor and protect listed and sensitive plant species is currently very limited and would remain so, with the potential for the loss of rare plants.

WILDLIFE

There would be no direct additional impacts on wildlife or habitat resulting from park action in this alternative. As in the case of vegetation, the park capability to control and reduce alien animal species would remain limited and these species would be expected to increase their numbers and impacts on the natural system. Park capability to identify, monitor, and protect listed and sensitive species would remain limited and very likely insufficient to avoid losses.

The significant sediment loads caused by the degraded watershed conditions have historically adversely affected stream fisheries both native and anadromous, and would not be significantly improved in this alternative.

AIR QUALITY

No action proposed in this alternative would lead to violation of Federal or state air pollution control laws or regulations, or increase emissions which would violate the state conformity requirements. Park staff would work with appropriate air pollution control officials to assure compliance with those requirements.

The park's primary air quality concerns relate to external sources and in this regard it is desirable that the park be able to participate in and represent the park interests in regulatory and land use decision-making processes. Park capability for providing meaningful input for these decisions would remain very limited.

WATER QUALITY

There would be no increased potential for water quality impacts from park development actions under this alternative. The park would continue to properly treat wastewater and manage stormwater flows to prevent pollution. The potential for sedimentation of waterways from erosion of previously-disturbed areas would remain significant. The high level of motor boating use, including the use of 2-stroke engines on personal watercraft and other boats, would continue to result in pollution from petroleum products.

CULTURAL RESOURCES

Because of staff limitations, deficiencies would remain in the treatment and documentation of items in the park's collection of artifacts and archives. Also, the state of knowledge regarding the existence and significance of archaeological, historic, and ethnographic resources within the park would remain limited, if not static, and significant resources would remain unprotected and subject to damage from vandalism and weathering.

VISUAL QUALITY

The aging park buildings in primary use areas such as Oak Bottom and Brandy Creek would continue to detract from the visitor experience in those areas. In addition, the erosion-exposed backcountry areas would continue to detract from more distant views. Limitations on park staff and their participation in regional land use planning may mean that currently attractive vistas from the park will be degraded by inappropriate external developments.

VISITOR EXPERIENCE

The range of visitor use activities would remain basically the same. Over time, the quality of visitor service would be expected to decline somewhat as volume of use increases and the Park Service capability to serve the visitor remains constant.

Visitors would not have access to a full range of interpretive services dealing with the spectrum of cultural and natural themes.

ENVIRONMENTAL JUSTICE

Under Executive Order # 12898, issued by President William Clinton on February 11, 1994, agency compliance under the National Environmental Policy Act is to include analysis of the environmental, social, and economic effects on minority and low-income communities. Continuation of the existing situation is not expected to create any adverse impacts on minority or low income communities.

SHORT TERM USES AND LONG TERM PRODUCTIVITY

This alternative represents the least-cost approach to managing the area in the short term. In the longer term, the inability of the park to address major resource management issues such as watershed restoration and regional ecosystem viability, and to take steps to inventory, monitor and protect natural and cultural resources within the boundary, as well as the park's inability to provide a quality experience to its visitors, will reduce Whiskeytown's value as a heritage and recreation resource and diminish its capability to serve its legislated purpose.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The park will not undertake projects with irreversible and irretrievable commitments. However, park resources may be irretrievably degraded by natural and human forces beyond the control of the park staff.

CUMULATIVE IMPACTS

As discussed above, over the long term there may be significant adverse cumulative impacts on Whiskeytown's natural, cultural, and recreational resources because of the park's inability to adequately monitor and protect resources.

ALTERNATIVE B: MINIMUM REQUIREMENTS

SOILS

Impacts on soils would be largely positive with active participation of the park in studies and management efforts on the lower Clear Creek watershed aimed in part at the significant reduction of erosion. Also, greater capability for wildfire control, including accelerated efforts toward forest fuel reduction and preparation for effective response to wildfires, under this alternative would reduce the probability of a catastrophic wildfire with the potential for resulting in large areas of exposed soil subject to extensive erosion.

Restoration of land forms would be undertaken at North Star and Ganim mine sites, and tailings piles on Clear Creek above the lake would be evaluated as to feasibility of reclamation.

VEGETATION

Natural vegetation would improve as a result of watershed management efforts and increased resources for identifying and eradicating exotic species. Expanded staff would allow increased efforts in identification and protection of threatened and sensitive plant species.

WILDLIFE

Wildlife would benefit from improvements to natural vegetation and water bodies from cooperative watershed management. Steps would be taken to restore aquatic habitat for anadromous and native fish species, e.g. the program of anchoring manzanita brush offshore to enhance fish habitat would be continued and expanded. The park's capability to achieve healthy populations of mountain lions and black bears, which are subject to visitor conflicts, would be enhanced through management efforts aimed at reducing the potential for conflict. Park efforts in surveying, monitoring and managing to protect known endangered species such as southern bald eagle and northern spotted owl, and locating other listed or sensitive species which may be present in the park, such as the western pond turtle, would be increased.

AIR QUALITY

Similar to proposed plan.

WATER QUALITY

There would be no increased potential for water quality impacts from in-park actions under this alternative. The park would continue to properly treat wastewater and manage stormwater flows to prevent pollution. Actions taken by the park to begin to deal with the potential for sedimentation of waterways from erosion of previously-disturbed areas would have some positive impact on water quality. Petroleum pollution from motor boats would continue as in Alternative A.

CULTURAL RESOURCES

Impacts of this alternative would be primarily positive, with additional funding and staffing to complete inventory and assessment of historic and archeological resources and to manage and protect those which are found to be significant. Collections would be better preserved through expanded and improved storage facilities and treatment. Ethnographic resources would be preserved through the completion of needed analyses and the development of working relationships with affected groups such as the Wintu.

VISUAL QUALITY

Visual quality at the park and in surrounding areas visible from park viewpoints should be better protected under this alternative with the increased park capability for participating in regional planning and development decisions. The park would ensure that park visual values are understood and considered in the decision-making process.

VISITOR EXPERIENCE

The quantity of visitor use would increase over time. Impacts on the quality of the park experience would be mixed. Increased park capabilities for law enforcement and emergency response, and improved information on hazards, should reduce the number of unpleasant incidents for visitors. However, interpretive programs and opportunities for visitors would be reduced and, especially for lake users, the quality of experience could decline somewhat as non-essential facilities such as snack bars are phased out.

Student opportunities for environmental education at the NEED camp would be maintained and improved through implementation of the 10-year plan and continued park cooperation with Shasta County.

ENVIRONMENTAL JUSTICE

This alternative final plan is not expected to create any adverse impacts on minority or low income communities, but rather would retain recreational and educational opportunities for those communities as well as for the general population. Wintu people would be served by the plan's provisions for improving communication and cooperation with Wintu representatives to better manage resources of cultural significance.

SHORT TERM USES AND LONG TERM PRODUCTIVITY

Unlike the no-action alternative, this alternative does not trade off short term advantages against long-term productivity. First priority is placed on long-term protection of primary park resources.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are no known or anticipated irreversible and irretrievable commitments of resources in this alternative.

CUMULATIVE IMPACTS

Same as the proposed plan.

ALTERNATIVE D: EXPANDED RECREATION

SOILS

Similar to Alternative B for most of the park area. However, approximately 25 acres of soils would be disturbed and exposed temporarily at the Boulder Creek development site and the Oak Bottom camp area. In addition, approximately 5.2 miles of South Shore Road would be widened and paved, with substantial cuts and fills involved, and an OHV access area of approximately 1 acre would be developed.

Construction would be scheduled for dry parts of the year to minimize the potential for erosion, steps would be taken to control erosion at construction sites, and disturbed areas would be restored and landscaped.

VEGETATION

Similar to Alternative B except that approximately 25 acres of native vegetation at the Boulder Creek and Oak Bottom development sites would be displaced by recreation facilities and parking lots. Another 2-3 acres would be displaced by widening South Shore Drive and development of an OHV access area. Most of the displaced vegetation would be chaparral, with some digger and knobcone pine. All development sites would be surveyed for listed and sensitive plants prior to any construction work.

WILDLIFE

Similar to Alternative B except that wildlife habitat would be reduced to some extent by the elimination of the 27-28 acres of natural vegetation as discussed above, and the development of a major new recreation site. Also, visitor/wildlife conflicts can be expected to increase as more encroachment of habitat occurs. There are no known listed or sensitive species in these proposed development areas-however, surveys would be accomplished prior to any construction activity.

AIR QUALITY

Similar to proposed plan.

WATER QUALITY

Same as Alternative B.

CULTURAL RESOURCES

Similar to Alternative B, although the increased level of recreation use under this alternative increases the potential for disturbance and vandalism of archeological and historic sites. However, there are no known archeological, historic, or ethnographic sites known to occur at proposed development sites, all such sites would be surveyed prior to the development of detailed plans and the commencement of construction, and mitigation would be included in any plans or projects.

VISUAL QUALITY

Development of a major new site on the lake and the expansion at Oak Bottom would detract to some extent from the natural appearance of the lakeshore. The substantial cuts and fills on the improved South Shore Road would also detract from the natural scene. Visual impacts would be minimized by careful siting of facilities, retention of larger trees in most cases, and landscaping to soften visual impact.

VISITOR EXPERIENCE

The same type and range of activities currently available at Whiskeytown would be provided, but instantaneous capacity (persons at one time) would be increased. This would have the effect of lessening the number of days that potential visitors would be turned away but would increase the amount of congestion on the lake surface and on primary roadways in the park. In addition, OHV activities on adjacent BLM lands would be increased through the development of a staging area north of Route 299.

ENVIRONMENTAL JUSTICE

This alternative is not expected to create any adverse impacts on minority or low income communities, but rather would expand recreational opportunities for those communities as well as for the general population. As in the case of Alternative B, increased attention to ethnographic concerns would serve the interests of the Wintu community.

SHORT TERM USES AND LONG TERM PRODUCTIVITY

Similar to Alternative B, this alternative addresses the long-term protection of natural and cultural resources.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are no known or anticipated irreversible and irretrievable commitments of resources in this alternative.

CUMULATIVE IMPACTS

Same as the proposed plan.

ENVIRONMENTAL CONSEQUENCES SUMMARY

IMPACT	ALTERNATIVE A	ALTERNATIVE B	GENERAL MANAGEMENT PLAN	ALTERNATIVE D
Soils	Continued significant erosion in backcountry from untreated logging & mining disturbed areas. Continued shoreline erosion on lake from personal watercraft use.	Reduced erosion in backcountry due to active watershed management program and improved fire management. Shoreline erosion same as Alternative A.	Some adverse impacts from new minor developments but overall reduced erosion in backcountry as in Alternative B. Also, reduced density in campgrounds will decrease erosion. Shoreline erosion reduced by elimination of personal watercraft use on lake.	Similar to Alternative B for most of park area. Major road construction and major new development will increase erosion in those areas. Shoreline erosion reduced by zoning portion of lake for low-speed use.
Vegetation	Exotic species continue to expand in park. Information re sensitive species in park remains limited.	Natural vegetation enhanced by watershed management, fire management, and additional natural resources staff.	Minor areas displaced by recreation development. Major beneficial impacts on backcountry vegetation from watershed management activities, use of prescribed fire, and initiatives to eliminate exotic plants.	Similar to Alternative B except that 25-30 acres of chaparral would be displaced by recreation facilities and parking lots.
Wildlife	Park capability to control competing exotic species and protect threatened and	Improved park capability for control of exotic species and protection of T&E	Similar to Alternative B. Additional coordination with outside groups for regional	Same as Alternative B.

	endangered (T&E) species remains limited.	species. Restoration of natural vegetation improves habitat values.	ecosystem improvement further aids wildlife.	
Air Quality	Staff capability to participate in regional air quality regulation affecting park values would remain limited.	Augmented staff able to participate in air quality regulatory process should contribute to air quality.	Similar to Alternative B. Some reductions in boat emissions due to elimination of personal watercraft use on the lake.	Similar to Alternative B. Slight increase in emissions at park due to more visitation in peak periods.
Water Quality	Erosion from damaged watersheds and from wave action from high-speed boating activities would continue to degrade water quality. Continued use of 2-stroke engines and extensive high-speed boating use would continue to pollute the lake with petroleum products.	Attention to watersheds reduces sediment pollution. Sediment and petroleum impacts from boating activities would continue.	Sedimentation greatly reduced from watersheds and boating activities. Petroleum pollution in lake significantly reduced but not eliminated.	Same as Alternative B.
Cultural Resources	Documentation of cultural resources would remain incomplete and resources would continue to be damaged by vandalism and weathering.	Documentation of resources would be undertaken, plans and guidelines would be completed to guide programs, and significant resources would be protected. Collection storage would be expanded and improved.	Similar to Alternative B with increased efforts to restore or rehabilitate historic sites and assist Wintun community to retain cultural aspects at Whiskeytown.	Similar to Alternative B, although the increased recreation development has the potential for causing disturbance to presently unidentified archeological sites.
Visual Quality	Visual quality would	Watershed restoration	Further efforts would be	Similar to Alternative B.

	continue to be degraded by views of erosion-exposed lands in backcountry, and by aging park buildings in primary visitor use areas. Little staff capability to participate in regional land use decisions affecting vistas from the park.	efforts would reduce backcountry landscape marring. Staff increases would permit park participation in regional land use decisions.	made in this alternative to watershed management, with benefits to visual quality. Aging park buildings would be replaced or upgraded: exterior appearance would be improved and added landscaping would help to screen.	However, the new major development area at Boulder Creek and the cuts and fills on South Shore Road would degrade visual quality to some extent.
Visitor Experience	Visitor experience would be largely unchanged. Over time the quality of experience would degrade somewhat as use levels increase and NPS service levels remain constant.	Visitor service in terms of law enforcement and emergency services, and information services would be increased in response to increases in visitor use levels. Interpretive services would be reduced, and non-essential recreation facilities would be phased out.	Visitor experience would be significantly improved by expanding interpretive activities and improving backcountry use opportunities. Visitor experience would be greatly improved for low-speed boating activities but eliminated for personal watercraft users.	Increased visitor use would be matched with increased law enforcement and emergency services, but visitors would be subject to some additional congestion on park roads and on the lake. Lake zoning would improve experience for low-speed boaters.
Environmental Justice	No impacts on minorities or low income groups.	Additional efforts made to protect Wintu resources and involve Wintu people in park decisions.	Similar to Alternative B but with additional provisions for cooperation with Wintu people in resource management and interpretation.	Same as Alternative B.
Short Term vs. Long Term	Short term cost-saving is favored. Natural resources will be damaged and cultural resources will be	Priority given to resource identification and protection. Adequate staff and budget provided to	Same as Alternative B.	Same as Alternative B.

	lost to weathering and vandalism under this alternative.	ensure long-term benefits are realized.		
Irreversible Impacts	Losses of cultural resources will be irreversible. Continued disruption of natural processes will make restoration of natural system more difficult and possibly impossible.	Steps taken to preserve resources will largely prevent irreversible losses to cultural resources and improve prospects for ultimate restoration of natural processes.	Same as Alternative B.	Same as Alternative B.
Cumulative Impacts	Losses of natural and cultural resources on a parkwide basis will contribute to the cumulative decline of cultural resources and natural systems in the region.	No cumulative impacts would occur due to measures taken to preserve resources.	Same as Alternative B.	Same as Alternative B.

CONSULTATION AND COORDINATION

SCOPING

The formal scoping period for the general management plan extended from June 1 until July 31, 1996. Letters announcing initiation of the planning process were sent to known interests and news releases were provided to local media. Three scoping sessions for the general public were held during the scoping period in local communities. In addition, a scoping session for all park staff was conducted and a meeting was held to consult with members of the local Indian community.

The results of the scoping sessions were subsequently summarized in a newsletter which was distributed to all persons participating in the scoping process. The newsletter stimulated considerable additional interest in the planning process among frequent Whiskeytown visitors.

The State Historic Preservation Officer was also contacted at this time and invited to participate in scoping the planning project.

ALTERNATIVES REVIEW

The Whiskeytown planning team met in September, 1996 to review the suggestions and proposals from the scoping process, and to develop a range of conceptual alternatives. These alternatives were subsequently summarized in a newsletter which was distributed to the public in late December, 1996. In February, 1997, three public workshops were held in local communities to present the alternatives and obtain public response. A meeting was held at this time also with members of the local Indian community to brief them on the alternatives.

REVIEW OF THE DRAFT GENERAL MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

The draft document was mailed to interested groups and individuals on September 8, 1998 with a comment closing date of November 30, 1998. Availability of the draft document was formally announced by the Environmental Protection Agency in the Federal Register dated September 11. A Park Service notice appeared in the Federal Register of September 25. News releases announcing the availability of the document and the scheduling of public meetings were broadly distributed to northern California media.

Several hundred copies of the draft plan and EIS were sent to interested individuals.

Public meetings on the draft plan and EIS were conducted October 13 and 14 in French Gulch and in Redding. The public meetings were attended by 142 persons, 42 of whom made comments for the record.

A total of 1162 written or Email communications on the draft were received by the park during the comment period. These communications included six form letters with 921 copies, and 241 individually composed cards and letters.

CONTENT OF PUBLIC REVIEW COMMENTS

Comment on the GMP/EIS was highly polarized between those in favor of continued personal watercraft (PWC) use at Whiskeytown and those who supported the termination of such use pursuant to the draft proposed plan, Alternative C. Very few letters were received that did not include a position statement on the PWC issue. However, a considerable number of letters on both sides of the PWC issue endorsed the other features of Alternative C. Little support was expressed for Alternatives A, B, or D.

A total of 241 individually composed letters were received from agencies, organizations, and individuals. Most of these letters were from local residents familiar with the lake. Of these letters, 207 endorsed the elimination of personal watercraft use. Most (160) cited offensive noise and disturbance of the tranquil setting as a primary reason for their position. Other rationales included offensive and incompatible behavior by PWC users (79), safety concerns (57), water pollution (71), and the availability of larger and more appropriate lakes in the immediate region (32).

A total of 31 individual letters opposed the termination of PWC use. Most cited the need for equity of treatment with other gas-powered watercraft (19). Several (12) indicated that problems could be solved by increased regulation and stepped up enforcement in lieu of a ban, and a few (5) indicated the acceptability of a zoning arrangement confining PWC's to specified portions of the lake.

Sample copies of each of the form letters are presented in Appendix D, and responses are provided for the substantive issues raised. A total of 801 form letters opposed restrictions on PWC use at Whiskeytown while 120 form letters supported termination of PWC use.

Of the forty-two persons making oral statements at the public meetings, a total of 28

rejected Alternative C's proposal for terminating PWC use, while 8 persons supported the ban. The remaining 6 speakers were neutral or silent on the PWC issue and expressed views on other aspects of the plan.

Copies of all written comments, as well as tapes of oral statements received at the public review meetings regarding the plan, are available for inspection at the office of the superintendent of Whiskeytown National Recreation Area.

NATIONAL PARK SERVICE RESPONSE TO COMMENTS

Copies of letters encompassing all substantive issues are printed in Appendix D along with the National Park Service response to those issues. The issues in the letters are inclusive of issues surfaced in oral statements at the public meetings.

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