



**Giant Sequoia
National Monument
Specialist Report**

**Cultural Resources
and
Tribal and Native
American Interests**

Signature: *Sam Harrison*

Date: *July 1, 2012*

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Giant Sequoia National Monument Specialist Report

Table of Contents

Introduction	1
Current Management Direction	1
Types of Cultural Resources.....	3
Objectives	5
Monitoring.....	6
Current Management Direction Tribal and Native American Interests	7
Description of Proposal.....	11
Need for Change	11
Management Direction.....	11
Alternative B	14
Alternative C	14
Alternative D	15
Alternative E.....	15
Alternative F.....	15
Standards/Guidelines for No Action Alternative (A).....	15
Standards/Guidelines for All Action Alternatives (B, C, D, E, F).....	16
Description of Proposal for Tribal and Native American Interests	18
Affected Environment.....	19
Geographic forces on human occupation.....	20
Prehistoric Background.....	21
Southern Sierra Nevada (McGuire and Garfinkel 1980)	21
Great Basin (From Giambastiani and Sprengeler 2010)	22
Ethnography.....	27
Subsistence and Material Culture.....	31
Native Americans, Vegetation Manipulation, and Fire	33
Social Organization	34
Historical Background	35
Contact, Missionization, and Mexican Rule.....	35
The Gold Rush and Native Decline.....	36

Giant Sequoia National Monument Specialist Report

Emergence of Timber and Grazing	38
The Ghost Dance and the Reservation	40
Expansion and Monopolies.....	42
Logging Converse Basin and Hume Lake.....	43
Tourism and Recreational Development	45
Mining	46
Hydroelectric Development.....	46
Government Management: the Search for the Greatest Good, a Struggle of Utilitarian Conservation, Restoration and Preservation	47
California’s Forest Conserved under Federal Control (1890-1904).....	49
Rise and Early Development of National Forest System (1905-1911).....	52
California National Forest System Grows and Goes to War (1911-1918)	54
Maturation of District 5 to Region 5 and the Great Depression (1919-1932).....	58
A New Deal for Region 5 (multiple-purpose and multiple-use management) (1933-1941)	61
Region 5 at War (1941-1945).....	64
Golden State of Managing Growth and Multiple Use (1946-1954).....	65
Programmed Multiple-Use Maximus (1955-1967).....	65
Tribal and Native American Interests	66
Environmental Effects.....	68
Legal and Regulatory Compliance.....	68
Assumptions and Methodology.....	68
Archaeological Resources	72
Ethnographic Resources	73
Duration of impact.....	74
Cultural Landscape Resources, including Individually Significant Historic Sites and Structures	74
Measures or Factors Used to Assess Environmental Consequences.....	75
Tribal and Native American Interests - Assumptions	75
Direct Effects.....	76
Direct Effects to Cultural Resources	76
Direct Effects to Tribal and Native American Interests	76
Indirect Effects	76
Indirect Effects on Cultural Resources.....	76

Giant Sequoia National Monument Specialist Report

Effects of Air Resources on Cultural Resources	76
Effects of Wildlife Management on Cultural Resources	76
Effects of the Protection of Geologic and Cave Management on Cultural Resources	77
Effects of Botanical Features Management including Invasive Nonnative Species on Cultural Resources	77
Effects of Soil Resources Management on Cultural Resources	77
Effects of Vegetation Management on Cultural Resources.....	77
Effects of Hydrological Resources Management on Cultural Resources.....	78
Effects of Cultural Resource Management on Cultural Resources.....	79
Effects of Recreation Management on Cultural Resources.....	79
Effects of Scenery Management on Cultural Resources.....	80
Effects of Tribal Relations on Cultural Resources	81
Effects of Socioeconomics on Cultural Resources	81
Effects of Special Designation Areas on Cultural Resources.....	81
Effects of the Transportation System on Cultural Resources	83
Effects of Non-Motorized Trails on Cultural Resources.....	86
Effects of Livestock Grazing on Cultural Resources	86
Effects of Special Forest Products Collection on Cultural Resources	86
Effects of Wildland Fire and Community Protection on Cultural Resources.....	87
Summary of Environmental Consequences by Alternative for Cultural Resources	91
Alternative A	91
Alternative B	93
Alternative C	94
Alternative D	95
Alternative E.....	96
Alternative F.....	98
Indirect Effects to Tribal and Native American Interests.....	99
All Alternatives.....	99
Effects of Wildlife Management on Tribal and Native American Interests.....	99
Effects of Geologic Resources Management on Tribal and Native American Interests	100
Effects of Invasive Nonnative Species (Botanical Features) on Tribal and Native American Interests	100

Giant Sequoia National Monument Specialist Report

Effects of Soil Resources on Tribal and Native American Interests	101
Effects of Vegetation Management on Tribal and Native American Interests.....	101
Effects of Hydrological Resources Management on Tribal and Native American Interests.....	102
Effects of Cultural Resources Management on Tribal and Native American Interests	102
Effects of Recreation Management on Tribal and Native American Interests	102
Effects of Scenery Management on Tribal and Native American Interests.....	103
Effects of Socioeconomics on Tribal and Native American Interests	104
Effects of Special Area Designation on Tribal and Native American Interests	104
Effects of the Transportation System on Tribal and Native American Interests	105
Effects of Livestock Grazing on Tribal and Native American Interests	105
Effects of Special Forest Products on Tribal and Native American Interests.....	106
Effects of Wildland Fire and Community Protection on Tribal and Native American Interests	106
Summary of Environmental Consequences by Alternative on Tribal and Native American Interests ...	107
Alternative A	108
Alternative B	109
Alternative C	109
Alternative D	111
Alternative E.....	111
Alternative F.....	112
Cumulative Effects	113
Cumulative Effects for Cultural Resources	113
Cumulative Effects for Tribal and Native American Interests.....	115
Literature Cited and References	116
Appendix A.....	124
Summary Tables of Strategies and Objectives.....	124
Summary of Strategies by Alternative.	124
Appendix B.....	126
Cultural Resource Objective by FSM sections.....	126
2361 – COORDINATION AND CONSULTATION	127
2362 – PLANNING	127
2363 – IDENTIFICATION, EVALUATION, AND ALLOCATION TO MANAGEMENT CATEGORIES	127
2364 – PROTECTION AND STEWARDSHIP.....	128

Giant Sequoia National Monument Specialist Report

2365 – PUBLIC EDUCATION AND OUTREACH	128
2365 – PUBLIC EDUCATION AND OUTREACH	129
2366 – MANAGEMENT OF HERITAGE COLLECTIONS.....	130
2367 – PERMITS, AGREEMENTS, AND CONTRACTS.....	130
2368 – INFORMATION MANAGEMENT AND REPORTING	130
Appendix C.....	132
Cultural Resource Policy by FSM sections	132
2361 – COORDINATION AND CONSULTATION	133
2362 – PLANNING	133
2363 – IDENTIFICATION, EVALUATION, AND ALLOCATION TO MANAGEMENT CATEGORIES	134
2364 – PROTECTION AND STEWARDSHIP.....	135
2367 – PERMITS, AGREEMENTS, AND CONTRACTS.....	136
2366 – MANAGEMENT OF HERITAGE COLLECTIONS.....	137
2368 – INFORMATION MANAGEMENT AND REPORTING	138

Giant Sequoia National Monument Specialist Report

Introduction

The monument also has many archaeological sites recording Native American occupation and adaptations to this complex landscape, and historic remnants of early Euro-American settlement as well as the commercial exploitation of the giant sequoias (Proclamation).

Cultural resources are an object or definite location of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence. Cultural resources are prehistoric, historic, archaeological, or architectural sites, structures, places, or objects and traditional cultural properties (FSM2360.5). These resources are not mutually exclusive and can oftentimes overlap either in time and space (e.g., an historic building on a prehistoric archaeological site). Descriptions of each type are given below.

Cultural resources are archaeological, cultural, and ecological legacies from our past. Cultural resource information often includes environmental data, and can explain past relationships between people, climate, and the land. Study of cultural-ecological relationships help us understand how cultures changed, how culture affected and was affected by the environment, and how that information can be used to influence our future.

Current Management Direction

Cultural Resources are protected under the Organic Act of 1897 (Title 16, United States Code (U.S.C.), section 473-478, 479-482, 551), Antiquities Act of 1906 (16 U.S.C. 431), Historic Sites Act of 1935 (16 U.S.C. 461), National Historic Preservation Act of 1966, as amended (NHPA) (16 U.S.C. 470) and its implementing regulation 36 CFR 800, National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321-4346), Archeological and Historic Preservation Act of 1974 (AHPA) (16 U.S.C. 469), Federal Land Policy and Management Act of 1976 (FLPMA), (43 U.S.C. 1701), National Forest Management Act of 1976 (NFMA) (16 U.S.C. 1600), Archeological Resources Protection Act of 1979 as amended (ARPA) (16 U.S.C. 470aa et seq.) as implemented by 36 CFR part 296, Native American Graves Protection and Repatriation Act of 1990 as amended (NAGPRA) (25 U.S.C. 3001) as implemented by 43 CFR part 10, Subpart B – Human Remains, Funerary Objects, Sacred Objects, or objects of Cultural Patrimony From Federal or Tribal Lands, Federal Lands Recreation Enhancement Act of December 8, 2004, (REA) (16 U.S.C. 6801-6814), Executive Order 11593 - Protection and Enhancement of the Cultural Environment, issued May 13, 1971, Executive Order 13007 - Indian Sacred Sites, issued May 24, 1996, Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments, issued November 6, 2000, and Executive Order 13287 – Preserve America, issued March 3, 2003. In addition archaeological collections are managed by Curation of Federally-owned and Administered Archaeological Collections, 36 CFR part 79.

The Forest Service implements these laws and regulations through Forest Service Manual 2300, Chapter 2360, Heritage Program Management.

Giant Sequoia National Monument Specialist Report

The Forest Service mandates its Heritage Program activities to address three broad areas of responsibilities to:

1. Protect historic properties,
2. Share their values with the American people, and
3. Contribute relevant information and perspectives to natural resource management (FSM 2360.6).

Also it is the policy of the Forest Service to:

1. Establish and maintain effective relationships with federal, state, Tribal, and local governments and historic preservation organizations at all levels of the agency to ensure protection of cultural resources and to promote Heritage Program efficiencies.
2. Fully integrate opportunities for preservation, protection, and utilization of cultural resources into land use planning and decisions.
3. Manage cultural resources through a process of identification, evaluation, and allocation to appropriate management categories that protect cultural resource values and benefit the public.
4. Recognize cultural resources through National Register of Historic Places nomination, National Historic Landmark recommendation, and other special designations.
5. Provide opportunities for public use and enjoyment of cultural resources through education and outreach programs that promote resource stewardship.
6. Facilitate scientific research of cultural resources to increase understanding of past human cultures and environments.
7. Use cultural resource data to increase scientific understanding of the evolution and condition of ecosystems and to benefit Forest Service land management practices.
8. Protect cultural resources from the effects of Forest Service or Forest Service-authorized undertakings, unauthorized use, and environmental damage (FSM 2360.3).

Additional Objectives and Policy are established in detail through out FSM2360 they are summarized in Table 1

Table 1. Summary of Objective and Policy sections of FSM 2360

FSM section	Area covered
2361	Coordination and Consultation
2362	Planning

Giant Sequoia National Monument Specialist Report

2363	Identification, Evaluation, and Allocation to Management Categories
2364	Protection and Stewardship
2365	Public Education and Outreach
2366	Management of Heritage Collections
2367	Permits, Agreements, and Contracts
2368	Information Management and Reporting

The Sierra Nevada Forest Plan Amendment described the following elements of managing cultural resources (Volume 2, Chapter 3, Part 5.8, p. 510):

- Conducting inventories of proposed project areas to identify types and locations of heritage resources
- Determining sites that are eligible for the National Register of Historic Places
- Assessing potential project effects of cultural resources
- Avoiding or mitigating effects on sites eligible for the National Register or other significant sites
- Follow-up monitoring to assess the effectiveness of management procedures.

Types of Cultural Resources

The 1988 Forest Plan outlined three types of cultural and historic resources:

1. Prehistoric and historic Native American properties, including lithic scatters; food processing sites with midden, lithic material, or bedrock mortars; rock art sites; and quarries.
2. Practice of Indian religion: "These may or may not include tangible remains. Native Americans continue to receive permits for collecting foodstuffs and performing traditional ceremonies on public lands" (USDA Forest Service 1988a, pp. 3-10).
3. "Historic properties including old Forest Service administrative sites, log cabins, lookouts, mining sites, remains of railroad logging, or old homestead properties "(USDA Forest Service 1988a, pp. 3-10).

To better conform with Forest Service direction, NHPA, and the National Register of Historic Places (NRHP) currently define and manage cultural resources, this analysis will use the following five cultural resource types: archaeological sites, architectural sites, cultural landscapes and districts, ethnographic and traditional cultural properties, and object and museum collections.

Archaeological Sites: Prehistoric and Historic

Archaeology is the physical evidence of human actions in specific locations and interactions with the environment over the broader landscape. This evidence includes structures, remains of structures, accumulated or deposited trash, physical evidence of food extraction, mining, logging, livestock grazing, or agriculture. Archaeological evidence is often defined as a site, which under the NRHP is the

Giant Sequoia National Monument Specialist Report

location of a significant event, a prehistoric or historic occupation or activity, or a building or structure (whether standing, ruined, or vanished), where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

The Monument currently has over 900 recorded archaeological sites. These sites are the physical remains of human occupation over the last 9,000 years and range from small-scale obsidian flake scatters to large-scale complex Native American village sites occupied for thousands of years. Historic sites chronicle some of the earliest Euro-American exploration, settlement, and development of the southern Sierra Nevada. Historic sites in this part of California date from roughly 1850 to the 1960s.

Architectural Resources: Buildings and Structures

The NRHP divides architectural sites into buildings and structures. A building is created principally to shelter any form of human activity, while a structure is used to distinguish buildings whose functional constructions were usually made for purposes other than creating human shelter (e.g. dams, railroad grades, canals).

The Monument contains numerous buildings and structures, including historic buildings (e.g. Fire Lookouts and Forest Service Guard Stations) and historic structures (e.g. Hume Lake Dam), many of which are actively maintained and still function in their original capacity. These places reflect important historic eras, or the influence of individuals important in the human history of the Monument.

Cultural Landscapes and Districts

Cultural landscapes are geographic areas, subsuming both cultural and natural resources, and the wildlife or domestic animals therein, associated with an historic event, activity, or person, or exhibiting other cultural or aesthetic value. Cultural landscapes are not a recognized property type under the NRHP but are recognized as districts. The NRHP defines districts as possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. A district derives its importance from being a unified entity, even though it is often composed of a wide variety of resources. The identity of a district results from the interrelationship of its resources, which can convey a visual sense of the overall historic environment or be an arrangement of historically or functionally related properties. Cultural landscapes are also ecological legacies from our past.

Currently only one district has been formally recorded in the Monument, the Springville Work Center, while other historic work centers (e.g., Pinehurst Work Center) and logging remains (e.g., Millwood mill and townsite, Converse Basin mill, railroad and hoist system) in the Monument have been identified as potential districts.

Ethnographic and Traditional Cultural Properties

Traditional Cultural Properties (TCPs) are important places because of their association with the cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. TCPs include sacred sites, natural resource collection areas, and the occasional archaeological site associated with ancestral

Giant Sequoia National Monument Specialist Report

Native American groups. TCPs must be a tangible property, that is a district, site, building, structure, or object as defined in 36 CFR 64.4 (FSM 2360.5).

Objects and Museum Collections

The NRHP describes objects to be relatively small things that are associated with a specific setting or environment. These objects are often recorded or catalogued and then remain in their original context (e.g., large mining and logging equipment), where they can be used for interpretation (e.g., the Dolbeer donkey at Hume Lake Ranger Station, and Turtle Bay Exploration Park.).

In the past, many archaeological objects were collected and now form the bulk of federal museum collections. The acquisition and long-preservation of archival material, scientific reports, oral histories, ethnographic records, and/or archaeological materials (both historic and prehistoric) is important for documenting and understanding the natural and human history of the Monument and interpreting that understanding to the public. The location, management, and long-term preservation of these resources fall under museum collections. All artifacts and associated records (i.e. catalogues and photographs) removed from NFS lands remain federal property and must be managed according to 36 CFR Part 79.

The types and distribution of cultural resources in the Monument are determined by what, where, why, and how people of the past used the land. An overview of prehistoric and historic land use patterns and how that is manifested in currently known cultural resources is presented below.

Objectives

The 1988 LMP stated that "objectives for the Cultural Resource Management (CRM) Program are contained in Forest Service Manuals. The focus of these objectives is development and implementation of a long-term program to inventory, evaluate, protect, and enhance cultural resources on National Forest System lands" (LMP 1988, p. 3-10). It goes on to state that the CRM program was "not a comprehensive program which would also involve protection, interpretation, ethnography and history objectives" and was driven by the Section 106 of the NHPA (36 CFR 800) process for project specific planning.

The 1988 LMP did not propose any solutions or objectives to create a comprehensive CRM program.

The only other direction given in the LMP was a Forest Goal under Recreation to "enhance and interpret the more significant cultural resources to a level consistent with Forest use and resource management" (LMP 1988, p. 4-2).

The cultural resource objectives proposed in the GSNM draft EIS proposes the new objective of creating a comprehensive Cultural Resource Management Program for the Monument that complies with all cultural resource laws and direction from the 2009 Forest Service Manual (See Table 1 for summary of additional objectives).

Giant Sequoia National Monument Specialist Report

Monitoring

Appendix E of the 2001 SNFPA FEIS (p. E-31) describes the following monitoring questions for cultural resources:

Monitoring questions are designed to **accord** with the overall heritage resource management program of the Sierra Nevada recommended by the Framework for Archaeological Research and Management (FARM), which has been incorporated into the Sierra Programmatic Agreement. Provisions of the Sierra Nevada Programmatic Agreement, the purpose of which is to establish optimally efficient HRM programs in compliance with the NHPA include the establishment of a program of monitoring “designed to identify and assess the effects that may be associated with” forest use and management activities.

The Sequoia and the Monument was not part of FARM but was a part of the Sierra Programmatic Agreement.

The 2001 SNFPA FEIS (p. E-39) outlines the following approach and expected results and benefits for monitoring:

Approach

The highest status and change monitoring will address changes in the condition, integrity, and disturbance risk on various heritage resources in terms of prescribed fire and mechanical treatment. The highest priority cause and effect questions address the effects of natural wildland fire and prescribed fire on heritage resources. The questions focus on the standard protection measures and the quality of information that is available for planning fire and fuels treatments.

Affectors: Vegetation management, air/chemical pollution, fire management, roads and landings, and fuelwood harvest.

Expected Results and Benefits

Monitoring will provide knowledge of the status and change of heritage resources in areas treated for fuels reduction, and the effectiveness of protective measures employed during fire and mechanical treatment in the vicinity of various heritage resources. Monitoring can help protect significant heritage resources. The data obtained will assist managers in (1) evaluating and improving heritage resource inventory records, protective measures, and project planning information, (2) understanding the nature of fire and mechanical treatment effects on different classes of heritage resources, (3) formulating and applying protective measures for different classes of heritage resources under varying fuel management treatments and conditions, (4) identifying baseline conditions, (5) tracking variation in heritage resource condition across many locations and through time, and (6) identifying and assessing effects from fire and fuels management projects, and determining inadvertent impacts.

Additional Monitoring Questions regarding cultural resources are found in the Fire and Fuels Monitoring Questions (2001 SNFPA FEIS Appendix E-41)

- Are heritage resources identified, located, and incorporated into management fire response and the Computer-Aided Dispatch process (F18)?
- Are heritage resources adequately considered and protected in planning fire and fuels management actions?

Giant Sequoia National Monument Specialist Report

Current Management Direction Tribal and Native American Interests

Tribal and Native American Interests are based on unique government-to-government relationship based on U.S. constitution, treaties, Federal statutes, court decisions, and executive branch policies, as well as moral and ethical considerations. This special relationship has emphasized self-determination for Indian people and meaningful involvement by Indian people in federal decision-making (consultation) where such decisions affect Indian people, either because of their status as Indian people or otherwise. Thus tribal consultation is supposed to be fluid and responsive to the different needs and issues of tribe(s) involved. As such this Plan does not set any new strategies or objectives in addition to those set by law or policy.

Management of the Monument in terms of cooperation with Native American and Tribal interests is governed by Archaeological Resources Protection Act (Public Law 96-95, October 31, 1979), Native American Graves Protection and Repatriation Act (NAGPRA) (Public Law 101-601, November 16, 1990), National Indian Forest Resources Management Act (NIFRMA) (Public Law 101-630, November 28, 1990), American Indian Religious Freedom Act (AIRFA) (Public Law 103-344, October 6, 1994), Executive Order 13007 "Indian Sacred Sites", Executive Order 13175 "Consultation and Coordination with Indian Tribal Governments", Executive Memo, April 29, 1994 "Government-to-Government Relationship", Executive Memo, September 23, 2004 "Government-to-Government Relationship", Tribal Forest Protection Act of 2004 (Public Law 108-278, July 22, 2004), Healthy Forest Restoration Act (HFRA) (Section 303 of Public Law 108-148, December 3, 2003), Farm Bill: Food, Conservation, and Energy Act of 2008 (Public Law 110-234)

The Forest Service implements these laws and regulations through Forest Service Manual (FSM) 2300 Chapter 2360 Heritage Program Management, FSM 1500 - External Relations, FSH 1509.13 - American Indian and Alaska Native Relations Handbook. The Forest Service also follows Department of Agriculture Departmental Regulation 1350-001, September 11, 2008 and Departmental Regulation 1340-007, March 14, 2008.

In addition Region 5 has additional direction under Forest Service Manual Pacific Southwest Region (Region 5) Vallejo, Ca, FSM 1500 - External Relations, Chapter 1560 - State Tribal, County, And Local Agencies; Public and Private Organizations (2007).

American Indians and Alaskan Natives have a unique legal and political relationship with the government of the United States. This relationship is defined by history, treaties, statutes, executive orders, policies, court decisions, and the US Constitution. Forest Service policy in general states that the Forest Service will:

- Maintain a governmental relationship with federally recognized tribal governments;
- Implement our programs and activities honoring tribal rights and fulfill legally mandated trust responsibilities;
- Administer programs and activities to address and be sensitive to traditional relations beliefs and practices; and

Giant Sequoia National Monument Specialist Report

- Provide research, transfer of technology, and technical assistance to Tribes.

Tribal relations standards and guidelines have been developed to address the tribal concerns described in Chapter 1 of the 2001 SNFPA FEIS (p. 35). The direction is to:

1. Establish Tribal Relations Programs managed by qualified individuals on each national forest and develop formal protocols for government-to-government relations and other agreements as needed;
2. Consult prior to resource protection closures and road decommissioning;
3. Protect indigenous knowledge to the extent provided by law, including obtaining written permission prior to releasing traditional information to a third party;
4. Assess traditional cultural knowledge and needs of traditional practitioners during landscape or watershed scale ecosystem analysis and incorporate them into project implementation;
5. Ensure fire protection to all trust lands;
6. Establish herbicide free zones where needed; and
7. Give priority to noxious weed removal projects that restore, enhance, and maintain culturally significant species and their habitats. Inventories of culturally significant species are needed in order to provide protection and monitor their condition. In the absence of such inventories, the standards and guidelines and monitoring protocols for the various ecosystems and species would provide a proxy indicator of the status of traditional species and habitats.

Additionally Appendix D of the 2001 SNFPA FEIS (p. D-64) sets in place the following Process Guidelines (Table 2).

Table 2. 2001 SNFPA FEIS Process Guidelines for Tribal Interests

Redeem Federal government trust responsibilities	Work with tribal governments and communities to develop mutually acceptable protocols for government-to-government and other relations. -- Protocols will emphasize line officer and tribal official roles and responsibilities.
Fire protection	Consult with tribal governments and communities regarding fire protection and fuel management on, or affecting rancherias, reservations, and other occupied areas. – Develop fire protection plans in consultation with the appropriate administrative or intertribal organization. Coordinate with tribes and appropriate tribal organizations regarding training, outreach and other items of mutual interest in order to support tribal and forest fire programs.
Management of culturally important plants	Create prescribed burn plans that are responsive to tribal interests and needs. -- Inventory plants that are traditionally managed with fire. Consult and

Giant Sequoia National Monument Specialist Report

	collaborate on the development of burn plans, including approaches that accommodate traditional scheduling and techniques.
Maintain access to sacred and ceremonial sites and to traditional use areas.	Consult with affected tribes, communities, and individuals to address access to trust resources and culturally important areas, or when proposing road closure or decommissioning.
Plants are increasingly available for traditional Native American uses, and are not diminished by encroachment of noxious weeds.	During prioritization of noxious weed control and eradication projects, consider culturally significant species as a primary factor. -- Annually consult with appropriate tribe, community, individual, or intertribal organizations to determine areas of new or worsening weed infestations that need prompt control. Work with tribes on areas and guidelines for weed management and appropriate control measures.
Restore ecosystems	Incorporate American Indian vegetation management knowledge, strategies, and methods where appropriate. – Develop ecosystem stewardship projects with tribes, communities, and intertribal organizations.
Plants are available for traditional Native American uses.	During landscape analysis, or other planning efforts, assess vegetation community conditions where a specific area has an identified importance to an affected tribe, or American Indian community. -- Consult with affected tribes, and American Indian communities to consider traditional and contemporary uses and needs. Consider mineral withdrawals and other protection at inventoried sacred sites.
Protect sensitive and proprietary information	Protect sensitive or proprietary information to the greatest extent permitted by law. -- Secure permission to release information from the tribe, community, or individual who provided it.
Traditional Native American land management practices are integrated into adaptive management options.	Consider tribal water and other ecosystem restoration priorities early in planning, analysis and decision-making processes, and include them in adaptive management options, where appropriate.

Appendix D of the 2001 SNFPA FEIS (p. D-94) sets in place the following Inventory and Reporting Guidelines for Tribal Relations (Table 3).

Table 3. 2001 SNFPA FEIS Inventory and Reporting Guidelines for Tribal Relations

Objective	Inventory and Reporting Guidelines
Monitor status of culturally significant species.	Include culturally significant species in monitoring protocols -- Complete inventories of culturally significant species

Giant Sequoia National Monument Specialist Report

Appendix E of the 2001 SNFPA FEIS (p.E-118) set the following goals (1) to redeem Federal trust and other responsibilities by maintaining effective government-to-government and other formal relations with American Indian tribes, and (2) to Fulfill Forest Service obligations to monitor the effects of management on communities, consistent with the National Forest Management Act (NFMA).

Associated objectives include, (1) to comply with direction found in the suite of laws and Executive Orders pertaining to tribal relations, and (2) to conduct a program of monitoring and evaluation of the effects of the selected alternative that includes:

- “A quantitative estimate of performance comparing outputs and services with those projected by the forest plan” (36 CFR Part 219.12(k)(1)). Outputs include “appropriate marketable goods and services as well as nonmarket items, such as recreation” (36 CFR Part 219.12(g)(1));
- “Consideration of the effects of National Forest management on... communities adjacent to or near the National Forest being planned” (36 CFR Part 219.7(f)).

Appendix E of the 2001 SNFPA FEIS (p.E-119-120) monitor these tribal goals through peer review, tribal review and consultation, interviews, Rapid Social Assessment, and other social science methods. Rapid Social Assessment methods are most efficient as they are designed to quickly obtain reliable information for planning or other management purposes. The data obtained will insure positive working relationships between forests and tribes and guide the design of management programs that adequately meet the needs and interests of tribes, communities, and individuals.

Appendix E of the 2001 SNFPA FEIS (p.E-121) set the following monitoring questions:

1. Do Sierra Nevada National Forests consult with local tribes about tribal needs, issues, concerns, and opportunities during Forest and project planning and watershed assessments?
2. Is confidential and/or proprietary information used by Sierra Nevada National Forests protected from general public access as per management guidelines?
3. Are Sierra Nevada National Forests in compliance with Federal law, Executive Orders, and implementing regulations regarding tribal relations?
4. Are aboriginal management techniques considered for integration into fire and fuels and other management projects?
5. Are forest fire protection and fuels management plans completed and implemented in consultation with American Indian communities?
6. Has an independent review of the success of Sierra Nevada National Forest tribal relations programs and Forest compliance with legal direction and standards and guidelines been conducted?
7. Does the Forest Service consult with tribes about access to traditional use areas and resources during Forest and project planning and watershed assessments?

FSM 1563.03 provides direction to monitor compliance with policies relevant to tribal relations. Compliance includes: 1) maintaining a governmental relationship with Federally Recognized Tribal Governments; 2) implementing Forest Service programs and activities honoring Indian treaty rights and

Giant Sequoia National Monument Specialist Report

fulfill legally mandated trust responsibilities; 3) administering programs and activities to address and be sensitive to traditional Native religious beliefs and practices; and 4) providing research, transfer of technology, and technical assistance to Tribal Governments. Management direction is predicated on the assumption that institution and implementation of government-to-government protocols will facilitate the development of effective tribal relations programs. Monitoring legal compliance provides a measure of the Forests' state of compliance and the status and effectiveness of their tribal relations programs.

Description of Proposal

Need for Change

As previously stated in current management direction under the 1988 Forest Plan the only objective was to follow the law by complying with Section 106 of the NHPA (36 CFR 800) for project specific planning. The Forest Plan noted that this was not a comprehensive CRM program but did not propose any solutions or objectives to create one.

The desired condition for the Monument is to have a comprehensive CRM program creating a greater management emphasis on the rich cultural resources within the Monument as described in the Clinton proclamation. Cultural resources are identified and allocated to appropriate management categories (FSM 2363) (e.g., preservation, enhancement, scientific investigation, interpretation, release) so that they can be appropriately protected, maintained, studied, and used by the public.

Additionally direction from the 2001 SNFPA FEIS on monitoring was based on the FARM which the Sequoia and Monument were not a part of.

Management Direction

Objective

Develop and implement a complete cultural resource program that not only complies with Section 106 of the NHPA (36 CFR 800) but also complies with other sections of the NHPA, especially section 110 of NHPA and other laws and regulations while developing an evaluation context consistent with the two prominent cultural resource issues in the Proclamation.

In order to accomplish this change in directive and develop National Register of Historic Places contexts based on the Proclamation, the Monument staff will, within three years, develop a Monument Cultural Resource Management Plan (MCRMP) that emphasizes identification and research on issues identified in Proclamation.

Strategy - Monument Cultural Resource Management Plan (MCRMP)

The MCRMP will be developed based on examining the two prominent issues that the Clinton proclamation emphasized: (1) That sites within the monument have the potential to shed light on the roles of prehistoric peoples, including the role they played in shaping the ecosystems on which they depended; and (2) That the study of cultural resources within the monument present an outstanding

Giant Sequoia National Monument Specialist Report

opportunity for studying forest resilience to large-scale logging and the consequences of different approaches to forest restoration.

During the past 8,000 years, Native American peoples of the Sierra Nevada have lived by hunting and fishing, gathering, and trading with other people throughout the region. Archaeological sites such as lithic scatters, food-processing sites, rock shelters, village sites, petroglyphs, and pictographs are found in the monument. These sites have the potential to shed light on the roles of prehistoric peoples, including the role they played in shaping the ecosystems on which they depended.

One of the earliest recorded references to giant sequoias is found in the notes of the Walker Expedition of 1833, which described "trees of the redwood species, incredibly large...." The world became aware of giant sequoias when sections of the massive trees were transported east and displayed as curiosities for eastern audiences. Logging of giant sequoias throughout the Sierra Nevada mountain range began in 1856. Logging has continued intermittently to this day on nonfederal lands within the area of the monument. Early entrepreneurs, seeing profit in the gigantic trees, began acquiring lands within the present monument under the Timber and Stone Act in the 1880s. Today our understanding of the history of the Hume Lake and Converse Basin areas of the monument is supported by a treasure trove of historical photographs and other documentation. These records provide a unique and unusually clear picture of more than half a century of logging that resulted in the virtual removal of most forest in some areas of the monument. Outstanding opportunities exist for studying forest resilience to large-scale logging and the consequences of different approaches to forest restoration. (Clinton Proclamation)

From an archaeological perspective the greater understanding of these cultural resources can lead to a greater understanding of human environmental interactions. Not only how humans reacted to climate changes in the past but also how human manipulation of vegetation, either on the scale of food and material use by individual families, or on the large scale of Native American burning and Euro-American logging, interacted with the local environments. Cultural resources provide physical evidence of human land use patterns and can provide a greater understanding of culture change.

The FSM expands this view in its statement:

The study of cultural resources provides a broader understanding of past human interaction with the land. It helps guide actions that affect resources and the people who depend on them, and creates a sense of time and place for all who enjoy and depend on National Forest System (NFS) lands (FSM 2360.6).

And

Information derived from cultural resource survey, excavation, and other studies may provide baseline environmental data and temporal perspective important in agency land use analyses. Archaeological information about past fire regimes and changes in climate, flora, and fauna

Giant Sequoia National Monument Specialist Report

may provide essential contributions to understanding past and modern ecosystems. (FSM 2360.82)

Scientific studies on cultural resources must conform to FSM2364.43a – Scientific Investigation

The Forest Service has a stewardship responsibility to protect and conserve cultural resources for scientific study and investigation. Cultural resources may be “banked” for future scientific study when new data recovery, laboratory, and analytical methods are available. The agency official may allow for scientific research and investigation including experimental studies, for a specific cultural resource, or class of resources, provided that the studies:

1. Derive a tangible agency or public benefit.
2. Receive appropriate Tribal, SHPO, or other interested party review and consultation.
3. Are legally permitted and authorized.
4. Are completed and documented in a professional and timely manner.

This potentially consumptive use of cultural resources must foster understanding and appreciation of past human cultures and environments and/or enhance the stewardship of cultural resources on NFS lands.

The MCRMP is expected to identify specific goals and strategies, and research questions directly for non-Section 106 CRM work in the Monument, including but not limited to:

- Prioritization of locations for cultural resources surveys and site type identification.
- Development of priorities for site evaluation, and allocation of sites to appropriate management categories that protect cultural resource values and benefit the public.
- Recognize cultural resources through the National Register of Historic Places nomination, National Historic Landmark recommendation, and other special designations.
- Provide opportunities for public use and enjoyment of cultural resources through education and outreach programs that promote resource stewardship.
- Facilitate scientific research of cultural resources to increase understanding of past human cultures and environments.
- Use cultural resource data to increase scientific understanding of the evolution and condition of ecosystems and to benefit National Forest System land management practices.
- Provide the opportunity for continuing traditional use by culturally associated Native American people.

Giant Sequoia National Monument Specialist Report

- Preserve and adaptively use historic structures in place, whenever possible; preserve the integrity and character-defining features of historic districts.
- Focus on restoration of cultural resources through minimizing impacts of other resource uses (grazing reduction/changing seasons of use, campground and road realignments/closures, etc.).

Monitoring will be integrated into the MCRMP and where applicable will draw upon recommendations from the FARM as directed by the 2001 SNFPA FEIS (p. E-31).

Alternative B

Alternative B would place emphasis on the following in the MCRMP:

- Manage cultural resources with a process including identification, evaluation, and allocation to appropriate management categories, that protects cultural resource values and benefit the public.
- Recognize cultural resources through National Register of Historic Places nomination, National Historic Landmark recommendation, and other special designations.
- Provide opportunities for public use and enjoyment of cultural resources through education and outreach programs that promote resource stewardship.
- Facilitate scientific research of cultural resources to increase understanding of past human cultures and environments.
- Use cultural resource data to increase scientific understanding of the evolution and condition of ecosystems and to benefit National Forest System land management practices.
- Provide for continued traditional use by Native American people and protect those places that are most important to local Native American people in maintaining their traditional culture.
- Preserve and adaptively use historic structures in place, whenever possible; preserve the integrity and character-defining features of historic districts.
- Seek partnerships with tribes to develop cultural education programs.

Alternative C

While cultural resource management is mainly based on the National Historic Preservation Act and other laws which cover all federal agencies, these laws allow a great deal of latitude in the direction and preservation of cultural resources in place or preservation through documentation. Alternative C addresses the differences in emphasis between current Forest Service and National Park Service (NPS) management of cultural resources. Forest Service direction is found in the Forest Service Manual (FSM 2360), and NPS policy is found in NPS-28.

Alternative C would replace Alternative B's emphasis with the following:

Giant Sequoia National Monument Specialist Report

- Change emphasis from managing cultural resources only in response to proposed projects to systematically identifying, protecting, and sharing cultural resource information throughout the Monument. Include the development of an archaeological overview and assessment, archaeological identification/evaluation studies, a cultural affiliation study, an historic resource study, a cultural resources base map, an administrative history, and a scope of collection statement.
- Increase understanding of the problem of simultaneously protecting cultural resources and making them available to the public.
- Provide greater emphasis on investigation and documentation of cultural landscapes and historic buildings and structures.

Alternative D

Alternative D proposes one additional management strategy:

1. An expanded section of the MCRMP on protection from and management during fires, including fuels reduction to cultural resource and resource advisors.

Alternative E

Alternative E proposes three additional management strategies:

1. Study and protection of cultural resources within Converse Basin. This would include archaeological survey, site recording, and interpretation of the historic logging in the basin. In order to provide a better understanding of historic logging, baseline data for ecological restoration, determinations of cultural landscapes, and extensive research on the historic logging would be needed.
2. Research into Native American land use and use of fire and its interactions with the development of Sequoia groves.
3. Prioritize cultural resource survey, site evaluations for the National Register of Historic Places and conduct Historic American Buildings Survey/Historic Engineering Record survey and documentation within the proposed Moses Wilderness

Alternative F

Alternative F management strategies would be the same as those for Alternative B.

Standards/Guidelines for No Action Alternative (A)

The Forest Plan (1988, pp. 4-25 - 4-26 and 4-46) outlined the following standards and guidelines for cultural resources (Table 4).

Table 4: Alternative A Standards and Guidelines

Comply with 36 CFR 800 regulations by completing cultural resource inventories prior to any action which may effect cultural resources. Develop follow-up actions for evaluation, protection, and/or interpretation as result of inventory findings. (Forest Plan, p. 4-25)

Giant Sequoia National Monument Specialist Report

<p>Inventory (Forest Plan, pp. 4-25 - 4-26):</p> <ul style="list-style-type: none"> • Conduct inventories as necessary occasionally doing non-project-specific surveys which will result in partial achievement of the 1995 target for the total forest inventory. • Complete archaeological reconnaissance reports and site records to allow evaluation of site significance. • Release those site locations declared not significant for other management activities. • Approach systematically the reduction of the existing forest backlog of sites to be evaluated. Those types of sites deemed more potentially critical in the forest overview will receive priority.
<p>Protection (Forest Plan, p. 4-26):</p> <ul style="list-style-type: none"> • Post and sign (e.g. tractors prohibited or Antiquities Act) selected cultural resource sites where such signing will not endanger the sites. • Monitor number of sites for protection visits will be on revolving basis, and prioritized according to resource significance and vulnerability as developed in the forest overview. • Develop and provide interpretive brochures for selected sites.
<p>Interpretation (Forest Plan, p. 4-26):</p> <ul style="list-style-type: none"> • conduct on-ground interpretation at number of sites where highly significant properties exist or near developed sites where high level of use or exposure is possible (i.e., properties adjacent to campgrounds or historic logging activities in the vicinity of campgrounds).
<p>Ethnographic (Forest Plan, p. 4-26):</p> <ul style="list-style-type: none"> • Regularly consult with Native Americans as interested parties on proposed undertakings.
<p>History (Forest Plan, p. 4-26):</p> <ul style="list-style-type: none"> • Interview key knowledgeable informants occasionally for project-specific information. Bring together and organize archival resources according to forest archival policy. • Promote interpretation through 3FIA.
<p>Mgt Emphasis 1- General Dispersed Recreation (Forest Plan, p. 4-46):</p> <ul style="list-style-type: none"> • Establish specific program needs and direction to begin resolution of deficiencies in the forest CRM program, with priority established as follows - archaeology, history, ethnography

Standards/Guidelines for All Action Alternatives (B, C, D, E, F)

To better conform with current definitions and manage cultural resource under Forest Service manuals, NHPA, Archaeological Resource Protection Act and other laws, regulations and policies the Monument Plan will use the following standards and guidelines, Table 5, for all action Alternatives (B,C, D, E, F). The CRM program currently follows the following standards and guidelines from the National Historic Preservation Act, 1988 Forest Plan from the forest-wide list in Chapter 4 pp.4-16 to 4-39, Forest Service Manual 2360; the 1990 MSA; and the 2001 SNFPA S&Gs in the ROD Appendix A. These standards and guides that will drive the development of the MCRMP and serve as the base for the CRM program until the MCRMP is developed.

Table 5 Alternatives B, C, D, E, and F Standards and Guidelines

<p>Integration of Cultural Resources in Projects:</p>	<p>Protect cultural resources from the effects of Forest Service or Forest Service-authorized undertakings, unauthorized use, and environmental damage Integration of Cultural Resources in Projects by complying with National Historic Preservation Act (NHPA) and its implementing regulations</p>
---	---

Giant Sequoia National Monument Specialist Report

	36 CFR 800. This includes completing cultural resource inventories prior to any action which may effect cultural resources. Develop follow-up actions for evaluation of sites for the National Register of Historic Places (NRHP), protection, and/or interpretation as result of inventory findings. ¹
Non-project Inventory:	<p>Complying with section 110 of National Historic Preservation Act (NHPA) for non-project inventory, including: Non-project Inventory</p> <ol style="list-style-type: none"> 1. Conduct inventories as necessary occasionally doing non-project-specific surveys. 2. Complete archaeological reconnaissance reports and site records to allow evaluation of site significance. 3. Release those site locations declared not significant for other management activities. 4. Approach systematically the reduction of the existing forest backlog of sites to be evaluated. Those types of sites deemed more potentially critical in the forest overview will receive priority.
Protection	<p>Fully integrate opportunities for preservation, protection, and utilization of cultural resources into land use planning and decisions, through:</p> <ol style="list-style-type: none"> 1. Assessing potential effects on heritage resources on a project specific basis. 2. Avoiding or mitigating effects on sites eligible for the National Register or other significant sites 3. Follow-up monitoring to assess the effectiveness of management procedures. 4. Post and sign (e.g. tractors prohibited or Antiquities Act) selected cultural resource sites where such signing will not endanger the sites. 5. Monitor number of sites for protection visits will be on revolving basis, and prioritized according to resource significance and vulnerability as developed in the forest overview. 6. Develop and provide interpretive brochures for selected sites.
Interpretation	<ul style="list-style-type: none"> • Conduct on-ground interpretation at number of sites that exist at or near developed sites where high level of use or exposure is possible (i.e., properties adjacent to campgrounds or historic logging activities in the vicinity of campgrounds). • Develop a Monument Cultural Resource Management Plan that emphasizes identification and research on issues identified in Proclamation. • Promote interpretation through Three Forest Interpretive Association.
Tribal Relations	<ul style="list-style-type: none"> • Regularly consult with Native Americans as interested parties on proposed undertakings.
History	<ul style="list-style-type: none"> • Interview key knowledgeable informants occasionally for project-specific information.

¹ The Forest Plan standard and guideline to follow law and policy is retained for the purposes of clarity in that the Sequoia is not dropping or reducing its protection of Cultural Resources in the Monument.

Giant Sequoia National Monument Specialist Report

	<ul style="list-style-type: none">• Bring together and organize archival resources according to forest archival policy.
--	---

Description of Proposal for Tribal and Native American Interests

In addition to the current direction described in Chapter 1 of the 2001 SNFPA FEIS (p. 35), this plan will adopt the 2004 Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement Record of Decision direction for Native American Relations:

“The relationship of the Forest Service with American Indians is important in the management and restoration of ecosystems in the Sierra Nevada and Modoc Plateau. To meet our trust responsibilities and to encourage the participation of American Indians in national forest management, I am making the following commitments on behalf of the Forest Service:

- We will work with tribal governments and tribal communities to develop mutually acceptable protocols for government-to-government and tribal community consultations. These protocols will emphasize line officer and tribal official roles and responsibilities.
- We will consult with appropriate tribal governments and communities regarding Fire protection and fuels management activities that potentially affect rancherias, reservations, and other occupied areas. We will develop fire protection plans for such areas in consultation with appropriate tribal or intertribal organizations. We will coordinate with tribes and appropriate tribal organizations regarding training, outreach and other items of mutual interests in order to support tribal and national fire programs.
- Traditional American Indian land use practices, tribal watershed and other ecosystem restoration practices and priorities will be considered early in national forest planning, analyses, decision making and adaptive management processes. During landscape analyses and similar activities, we will assess vegetation community conditions where a specific area has an identified importance to an affected tribe or tribal community. We will consult with affected tribes and or tribal communities to consider traditional and contemporary uses and needs.
- We will consider traditional American Indian vegetation management strategies and methods, and integrate them, where appropriate, into ecosystem restoration projects.
- We will consider the relationship between fire management and plants culturally important to American Indians. Where fuels treatments may affect tribes or tribal communities, or plants culturally important to them, we will consult on the development of burn plans and consider approaches that accommodate traditional scheduling and techniques of fire and vegetation management.
- When implementing noxious weeds management programs we intend to maintain or, if appropriate, increase the availability of plants traditionally used by American Indians. We will consult with appropriate tribes, tribal communities, or tribal organizations to identify areas of new or worsening weed infestations and develop plans for appropriate weed control.
- We will, where appropriate, include culturally significant species in monitoring protocols related to management activities.
- We will maintain appropriate access to sacred sites and ceremonial sites and to tribal traditional use areas. We will consult with affected tribes and tribal communities to address

Giant Sequoia National Monument Specialist Report

access to culturally important resources and areas when proposing management that may alter existing access. After appropriate assessment and consultation, we will consider proposing mineral withdrawals and other protection on inventoried sacred sites.

- We will protect all sensitive and proprietary information to the greatest extent permitted by law. We will secure permission to release information from the tribe, tribal community or individual who provided it prior to release to others. (2004 SNFPA, ROD p. 25)

Affected Environment

Cultural resources in the Monument include prehistoric and historic archaeological sites, historic buildings and structures, cultural landscapes, and traditional cultural properties or ethnographic resources (both natural and cultural), the latter two being important to the continuing culture and traditions of monument-associated Native Americans. Some of the cultural resources are housed in museum collections. These resources reflect early settlement, use, and management of the lands by indigenous people; westward expansion of Euro-American people (as well as Asian, African, and other non-European people) and their conflicts with Native American groups; resource extraction such as logging, mining, and herding; early tourism; early environmental conservation efforts; development of water resources; and forest planning, design, and land management. Cultural resources are the physical evidence of human presence spanning the Holocene epoch (approximately 11,700 years ago to present).

The following discussion of cultural resources is based on the general overview outlined below and the specific cultural resource research of Theodoratus Cultural Research (1984). It is important to note the limitations inherent in the extant information about cultural resources. The Sequoia National Forest lacks key overview studies including an up-to-date archaeological overview and research design, systematic inventory, assessment of ethnographic resources, historic structures overview, and an administrative history.

Some limited, anecdotal information regarding ethnographic resources are available from other parts of the southern Sierra Nevada.

Only about 40 percent of the Monument has been inventoried for archaeological and historic sites; within this area, approximately 950 sites have been recorded. The survey coverage is relatively even throughout the Monument, with the exception of the northern portion of the Western Divide Ranger District, which has not been surveyed. Based on known sites, the predicted cultural resource site density is about one site per 98 acres, although site densities may vary greatly from one area to another. The potential number of sites, including sites not yet discovered, is estimated to be 2,400. This will increase as Forest Service structures age.

The known cultural resources in the Monument are 67 percent prehistoric, 27 percent historic, six percent multiple component (i.e., contain both prehistoric and historic components), and three percent are potential Traditional Cultural Properties (TCPs). The predominant prehistoric site components are bedrock milling features and lithic (e.g. obsidian or chert) scatters (Table 6). Twenty-six percent of prehistoric sites contain a bedrock basin feature.

Giant Sequoia National Monument Specialist Report

Table 6: Prehistoric site types by components

Lithic scatter	Bedrock Milling Feature	Midden	Rock Art	Basin	Rock Shelter
55%	77%	12%	7%	26%	3%

Historic sites predominately contain a structure, standing or collapsed and are related to logging operations (Table 7).

Table 7: Historic site types by components

Structure	Logging related	Road or Trail
87%	53%	10%

While most historic eras and events are documented, the location, extent, condition, and significance or many of the physical resources reflecting these episodes are unknown. The documentation available for known resources typically lacks data necessary to determine whether there is potential for impacts to occur prior to project-specific planning, including additional archaeological studies.

Of the known cultural resources few have been determined eligible or nominated for listing in the National Register of Historic Places.

Geographic forces on human occupation

South Sierra Nevada south of the Kings River has a unique geographic factor that influenced human occupation, settlement patterns, and trade routes. In the northern two-thirds of the Sierra, north of the Kings River, the crest is consistently very far east of the center of the range, and long river canyons drain the deeply eroded, but relatively gentle western slope. South of the Kings River, the “shape and texture of the Sierra change radically. South of the Kings River, the Sierra Nevada has a double crest. The main crest, and home of the highest peaks in the range, remains far to the east, but a second, parallel, crest appears – the Great Western Divide.” (Dilsaver and Tweed 1990:3) West of the divide, the Kaweah River, Tule River, and White River drop steeply into the San Joaquin Valley. “East of the Great Western Divide, but still west of the Sierran crest, is the fifteen-mile-wide canyon complex of the Kern River, draining not west, like every other Sierran river, but instead south for many miles, and finally, even reluctantly, west into the extreme southern end of the San Joaquin Valley.” (Dilsaver and Tweed 1990:3)

“These two factors—the presence of the highest peaks in the Sierra, and the well-spaced double crest with extensive uplands between—make the southern Sierra very different from the remainder of the range. Nowhere else is the Sierra so high. Nowhere else are the canyons so rugged and deep. And nowhere else does the Sierra rise so steeply from the west. The peaks of the Great Western Divide are much closer to the floor of the Great Central Valley than any other alpine area in the range.” (Dilsaver and Tweed 1990:3)

Giant Sequoia National Monument Specialist Report

This geographic difference between the Great Western Divide, on which the Monument is a part of, and the rest of the Sierra Nevada makes for the potential for the prehistoric habitation of the Great Western Divide to differ from that of the rest of the Southern Sierra Nevada. The potential differences include trade routes and outside cultural influences. Traditionally, the Monument has been associated cultural phases based on work from the Pacific Crest trail on the main crest of the Sierra Nevada with a major Great Basin influence without a discussion of the proximity to the Central Valley. More recent work has begun to explore the influence of central valley cultures on the Great Western Divide. Because this new line of research both the Great Basin influenced chronologies and the Southern San Joaquin Valley chronology are presented below.

Prehistoric Background

People first arrived in California more than 13,000 years ago (Johnson et al. 2002). Occupation of the higher elevations (above 7,000 ft) of the southern Sierra Nevada would have been limited prior to 14,000 years ago during the Tioga glaciation. Archaeological data indicates that humans have inhabited the Southern Sierra Nevada and portions of the Monument for at least 9,000 years. While currently there are no known sites older than 7,000 years old, there is the potential in the Monument to have some of the oldest sites in the Sierra Nevada; since this portion of the Sierra Nevada was not extensively glaciated during the Tioga glaciation. The earliest human occupation of the Monument could have come from either the west (Tulare and Buena Vista Lakes) or southeast (Great Basin), where fluted projectile points have shown the presence of people 8,000 to 10,000 years ago. Few large-scale archaeological excavations or data syntheses of sites in the southern Sierra Nevada have been undertaken, thus leading to the use of chronologies based on those from sites in the Mojave Desert and Great Basin with their emphasis on pinyon procurement, a resource not commonly found in the Monument. Using data from lower elevation sites in the foothills of the San Joaquin Valley, Moratto et al. (1978) hypothesized that early prehistoric settlement was large villages along the lower reaches of rivers near junctions with main tributaries, and large scale sites did not appear in the mid-elevations until after 3,000 years Before Present (B.P.). Unpublished data from archaeological sites in the Monument, however, have indicated that there were major villages located away from large rivers at times much earlier than Moratto et al. (1978) suggest. Currently the Monuments cultural chronology has been based on McGuire and Garfinkel's (1980) work along the Pacific Crest Trail but because of its geographic position and the unresolved question of influence chronologies for the southern Sierra Nevada, the Great Basin and the San Joaquin Valley are all presented here.

Southern Sierra Nevada (McGuire and Garfinkel 1980)

Work on the main crest of the Sierra Nevada along the Pacific Crest Trail by McGuire and Garfinkel (1980) defined a sequence of prehistoric phases of settlement for the southern Sierra Nevada. These phases of settlement according to McGuire and Garfinkel (1980, pp. 49-53) are as follows:

Paleoindian (9,000 to 6,000 B.P.): This phase is represented by isolated points, such as Lake Mojave and Silver Lake found in high altitudes, around 8,000 feet. McGuire (1981, p. 18) suggested that the associated sites resulted from trans-Sierran travel or temporary camps for hunting large game. Generally, the area was only used by nomadic groups on a sporadic basis.

Giant Sequoia National Monument Specialist Report

Lamont Phase (6000 to 3200 B.P.): This phase is marked by a dry period in the southwestern Great Basin. Prehistoric sites are located on ridges, saddles, and meadows. Visits to the area are sporadic and associated with the occasional gathering of pinyon nuts. Projectile points consist of Pinto series points (Campbell and Campbell 1935). The sites and points seem to be associated with large game hunting. Basalt was the choice material for flaked stone tools. It is thought that the warming conditions of the Altithermal climatic period caused the shift and expansion into the pinyon-juniper zones (Moratto 1984, p. 333).

Canebrake Phase (3200 to 1400 B.P.): This phase suggests that pinyon exploitation began around 3,200 years ago, and that by 1,400 years ago, regular use of the pinyon resources was taking place (Moratto 1984, p. 333). Characteristic artifacts include Elko series projectile points, manos, metates, blades, choppers, and hammerstones. Bedrock mortars and pestles are not present. Trading is for obsidian from the east and marine shell beads from the west. McGuire (1981, p. 21) suggested that this phase is the first intensive occupation within the southern Sierra Nevada and involved the beginning of a shift toward a more intensive use of plant resources.

Sawtooth Phase (1400 to 700 B.P.): This phase sees a shift from the atlatl and dart to the bow and arrow. Rose Spring and Eastgate are the typical projectile points and bedrock mortars now appear, indicating a more diverse subsistence. Sites are more dispersed in location and increase in number (Moratto 1972). The typical artifacts and features are bedrock mortars, cobble pestles, obsidian oval scrapers, flaked knives, and triangular drills (Bennyhoff 1956). Bedrock mortars and pestles also appear for the first time in this phase. Bennyhoff (1956) suggested that the use of bedrock mortars indicates an intensification of acorns processing. Trade may be lacking due to the limited amount of shell beads present, although some Olivella Spire-lopped beads have been found (Moratto 1984, p. 333).

Chimney Phase (700 B.P. to historic period): This phase is marked by high intensity use and great growth in occupation in the region. Sites are now located near major rivers. Sites include large villages, house pits, bedrock mortars, formal cemeteries, Owens Valley Brownware pottery, soapstone objects, Olivella and clam shell beads, Desert Side-notched and Cottonwood Triangular projectile points, pestles, manos, metates, historic glass beads, pictographs, and a variety of other artifacts (Moratto 1984). Villages were being reused, populations were increasing in size, ceremonial areas developed, and long distance trading occurred.

Great Basin (From Giambastiani and Sprengeler 2010)

Terminal Pleistocene

There is substantial evidence that human occupation of the arid west began at the end of the Pleistocene era with the presence of fluted-base projectile points dated to 12,000-10,000 B.P. many being surface finds, but sites at China Lake held fluted points in apparent association with the burned remains of extinct fauna.

Early Holocene

Giant Sequoia National Monument Specialist Report

Lake Mohave Period, roughly between 11,000 and 6,500 B.P., is distinguished by various stemmed projectile point forms known as “Great Basin Stemmed,” these artifacts are elongate, lanceolate forms often with subtle, sloping shoulders. The cultural complex to which these points belong have been termed Lake Mohave, San Dieguito and Death Valley I. Bifaces and formed flake tools, are common to Lake Mohave period sites, and milling implements are regular parts of lithic assemblages. Artifacts implies high residential mobility, though certain tool classes (e.g., formed flake tools) show preferences for specific kinds of lithic material (particularly cryptocrystallines). Finally, during this period there was a focus on the procurement of small game, rather than large mammals.

Middle Holocene

Dating between about 7,500-4,000 B.P. the middle Holocene is referred to as the Pinto Period, Pinto assemblages are typified by weak shouldered, indented-base, stemmed Pinto points, though leaf-shaped points and contracting stem Gypsum points sometimes co-occur with Pinto forms in the Mojave Desert. Other tools, especially bifaces and formal unifaces, normally complete Pinto flaked stone assemblages while simple flake tools and core cobble implements are also prevalent. In the Mojave Desert, the selection of lithics for points and bifaces may have favored fine-grained igneous stones like basalt and rhyolite; in southern Owens Valley and Rose Valley, obsidian (mainly from Coso) was the stone of choice. Handstones and millings are much more abundant in Pinto assemblages than in earlier times, being represented by bulky, non-portable and well-worn, shaped variants of both artifact types that were routinely transported and maintained .

In eastern California and the Mojave Desert, it is generally held that Pinto population densities remained low, and that subsistence adaptations were focused on game procurement but with a relative continuity between early and middle Holocene faunal assemblages. There is a shift toward vegetal use which included seed grasses but hunting remained focused on the capture of small game such as rabbits, hares, rodents, and reptiles. The fact that milling implements are comparable in frequency to later assemblages implies that Pinto populations had already become broad-spectrum foragers.

Olivella shell beads from the California coast were traded east reaching western Nevada as early as 7000 B.P. and spreading farther during the middle and late Holocene.

Late Holocene

The last 4,000 years of prehistory reflect a wide range of temporal and spatial variation in human adaptive strategies. The Mojave Desert this broad interval can be split into three major periods: the *Gypsum Period* (4000-1500 B.P.), the *Saratoga Springs Period* (1500-700 B.P.), and the *Shoshonean Period* (700-100 B.P.).

Gypsum artifact assemblages may contain several types of dart-sized projectile points, either contracting-stem (Gypsum), corner-notched or eared (Elko), or basal-notched forms (Humboldt). Saratoga Springs assemblages contain medium-sized arrow points (Saratoga Springs series), while Shoshonean materials include smaller side-notched (Desert Side-notched) or unnotched (Cottonwood)

Giant Sequoia National Monument Specialist Report

arrow points. Utilitarian tools include various bifaces (cores, knives, and refined blades), simple flake tools, milling stones and hand stones, with formed flake tools that are typical of earlier occupations being less prevalent. Seed-grinding implements are often quite formalized, having been retained and reused over longer periods of time. In Saratoga Springs and later assemblages, bifacial cores and preforms decline in number relative to non-bifacial flake cores, presumably due to the shift from dart-point production (requiring bifacial preforms) to arrow-point production (preforms not needed). Cryptocrystalline stones (jasper, chalcedony) generally replace fine-grained igneous stones (basalt, rhyolite, felsite) in flaked stone toolkits.

The late Holocene record in the Mojave Desert is typified by two main adaptive shifts: (1) the intensification of land-use strategies, resulting from changes in environmental productivity, population size and dynamics, and subsistence-settlement organization and technology; and (2) the influence of Southwestern cultures on desert inhabitants, manifested in the development of long-distance trade relations, the diffusion of material culture and adaptive strategies (e.g., irrigation agriculture), and the occupation of certain desert regions by Southwest groups. Large game again became the main focus of hunting economies, though vegetal use remained the staple of daily subsistence. In fact, it is long held that milling implements peaked in frequency during the late Holocene, and that the mortar and pestle (used to process mesquite) were introduced to desert people at this time.

Cultural relationships between the Mojave Desert and Southwest began at least as early as 4000 to 3000 B.P. with the similarities of split-twigg figurines from cave sites in California, Nevada, and Arizona. After ca. 1200 to 1100 B.P. Anasazi ceramic vessels and figurines are found in the Mojave Desert.

Late Holocene temporal intervals in eastern California are referred to as the Newberry Period (3300-1350 B.P.), *Haiwee* Period (1350-650 B.P.), and Marana Period (650 B.P. - Historic). Newberry period sites in southern Owens Valley and Rose Valley tend to show evidence of long-term seasonal residential occupation. Patterns of obsidian use in Owens Valley imply a relatively high degree of residential mobility that was fairly regular and, at times, was oriented on a north-south axis. Certain lowland sites were apparently reused frequently over a long period of time, beginning prior to or at the onset of the Newberry period, judging by the presence of residential structures, features, and cultural deposits that are separated both horizontally and vertically. These sites also show evidence of resource extraction from upland areas, including artiodactyl remains, pinyon hulls, and other non-valley food remains in midden deposits.

Haiwee-Marana adaptations show an even greater trend toward localization. The effects of increased population size and pressure in eastern California are demonstrated in archaeological patterns that reflect an intensification of subsistence production involving high-cost, low-return foods like seed grasses and pine nuts. Methods of bulk procurement and processing were critical to the intensive exploitation of such resources, seed grasses being “flash-burned” and ground into flour with large mullers on bedrock “threshing floors” and pine nut cones being collected during the unripened “greencone stage,” roasted in earthen ovens, and routinely stored in rock circle caches. Data from obsidian studies show that groups relied more heavily on whatever obsidian source was local, implying

Giant Sequoia National Monument Specialist Report

that regional population circumscription and resource competition were more amplified and that seasonal settlement rounds had decreased in extent.

Southern San Joaquin Valley

Archaeological investigations on Kern and Tulare lakes revealed that occupation occurred possibly as early as 11,000 years ago in the Southern San Joaquin Valley.

The Western Pluvial Lakes Tradition (pre-11000 B.P. –7000 B.P.?) is characterized by a large reliance upon the hunting of mammals and a toolkit that includes chipped stone crescents, large scrapers and choppers, hammerstones, several types of cores, drills, and graters. Sites attributed to this tradition are generally located on or near shores of former pluvial lakes and marshes, or along former stream channels. Population density was low at that time, with a few settlements focused around the shores of ancient lakes. Between 8000 and 4000 B.P., prehistoric economy centered on hunting and fishing, although mortars and pestles as well as ornamental *Olivella* and *Haliotis* shell appear occasionally in assemblages.

Research shows that beginning about 4000 B.P., the subsistence base expanded to include seed processing as a supplement to foraging for fish and fowl. Intensive occupation of the valley and foothill region may not have occurred until around 2500 B.C. Sites dating to this period contain assemblages comparable to the Early Horizon components of the Sacramento-San Joaquin Delta region (Moratto 1984; Riddell 1951; Walker 1947; Wedel 1941). It is difficult to clearly determine the ancestry of these early peoples, although artifact assemblages associated with occupations postdating 1000 B.C. may be linked to the ancestors of the ethnographic Yokuts. The latest period of occupation, from 1500 B.P. to historic contact, indicates a greater reliance on acorns and other plant foods as well as trade with the central coast region and southern California interior (Moratto 1984:183, 188).

The Early Buena Vista Lake Phase (approximately 2500 B.C. – 1000 B.C.?) was ill defined by stratigraphic levels unearthed during excavations at Lake Buena Vista. These excavations represent some of the most scientific and intense excavations ever performed in the southern San Joaquin Valley. Unfortunately, very little is known about this early occupation.

The Middle Buena Vista Lake Phase (approximately 1000 B.C. – A.D. 500?) was defined by stratigraphic levels discovered during excavations along the shoreline of Buena Vista Lake. Settlement during this phase was by people with strong cultural ties to the Delta, perhaps by ancestral Yokuts.

The Late Buena Vista Lake Phase (A.D. 1500-1850?) was defined by more recent stratigraphic levels unearthed during excavations at Buena Vista Lake. This phase reflects influence from both the Santa Barbara Coast and the southern California interior.

Giant Sequoia National Monument Specialist Report

Table 8 Table 1. Defined cultural phases of the San Joaquin Valley and the Southern Sierras (Moratto 1984).

Southern San Joaquin Valley	Southern Sierra Range	Dates (Years)
Yokuts	Tubatulabal	
Late Buena Vista Lake	Chimney Phase	1500
Hiatus?	Sawtooth Phase	1000
		A.D. 500
Middle Buena Vista Lake	Canebrake Phase	0
		500 B.C.
Early Buena Vista Lake		1000
		1500
		2000
	Lamont Phase	2500
		3000
?	P I N T O	3500
	?	4000
	P E R I O D	4500
		5000
San Dieguito		5500
		6000
		6500
Western Pluvial Lakes Tradition?		7000
	?	7500
		8000

Giant Sequoia National Monument Specialist Report

Ethnography

There are three identifiable ethnolinguistic groups whose traditional territories are now within the Monument: Western Mono, Yokut, and *Tubatulabal* (See Figure 1: overlay of current day counties and historical CA Tribal Indigenous language groups (Theodoratus,2010)Figure 1). These groups belong to three different language families, Penutian, Numic, and *Tubatulabal*. Anthropologists have traditionally grouped California cultures on the basis of language, since other sociocultural and political features between groups are so similar that language is the best differentiator. It is assumed that peoples who speak related languages share a common historical origin and cultural similarities, in contrast to others who speak unrelated languages.

These broad ethnolinguistic groups are further divided into tribal groups and tribelets. The tribelet was the basic political unit for the ethnographic groups in California. A tribelet is: 1) recognized by name, 2) occupied a recognized territory, usually included one or two drainage systems with several groups sharing a range during the year (Kroeber 1925, p. 497; Gayton 1945, pp. 415, 419; 1948a, pp. 95-97; Spier 1978, p. 492), 3) had a distinct dialect, 4) utilized autonomous social control, and 5) was headed by one or more acknowledged chiefs. Each tribelet was centered on a major winter village, which might encompass one or more secondary satellite communities (Gayton 1945, page 409). Although the tribelet was autonomous, it did engage in interrelationships with neighboring tribelets. This was in the form of marriages, use of one another's gathering areas, attendance at ceremonies, and sometimes engaging in hostilities (Gayton 1948).

The Western Mono, also known as the Monache, speak dialects of Mono which belongs to the Numic branch of the Uto-Aztecan language family. The preponderance of Numic speakers occupy the Great Basin, and it is thought that only within relatively recent prehistory that the Western Mono peoples moved across the Sierran crest to settle on the western slopes, in an elevational zone just above the Foothill Yokuts. This settlement is so recent that Gayton states, "The outward similarities of culture now to be found between Yokuts and Western Mono are largely a veneer assumed recently by the latter" (1948, p. 1).

The Yokuts speak dialects of Yokutsan which is a language group in the Penutian language family. The Yokutsan speaking groups are part of a widespread and populous set of peoples occupying the San Joaquin Valley from the Sacramento Delta to the Tehachapis, north and south, and from the east side of the southern Coast Ranges to the Sierra Nevada foothills, east and west. The "Yokutsan" language family is related to several other large central California language families, Wintuan, Maiduan, and Utian. Yokuts languages and dialects are subgrouped into three divisions which correspond only roughly to the environmental zones occupied: Foothill Division, Valley Division, and Buena Vista Division. The Yokuts seem to have been well established in their regions over a significant period of time, certainly in excess of 1,000 years.

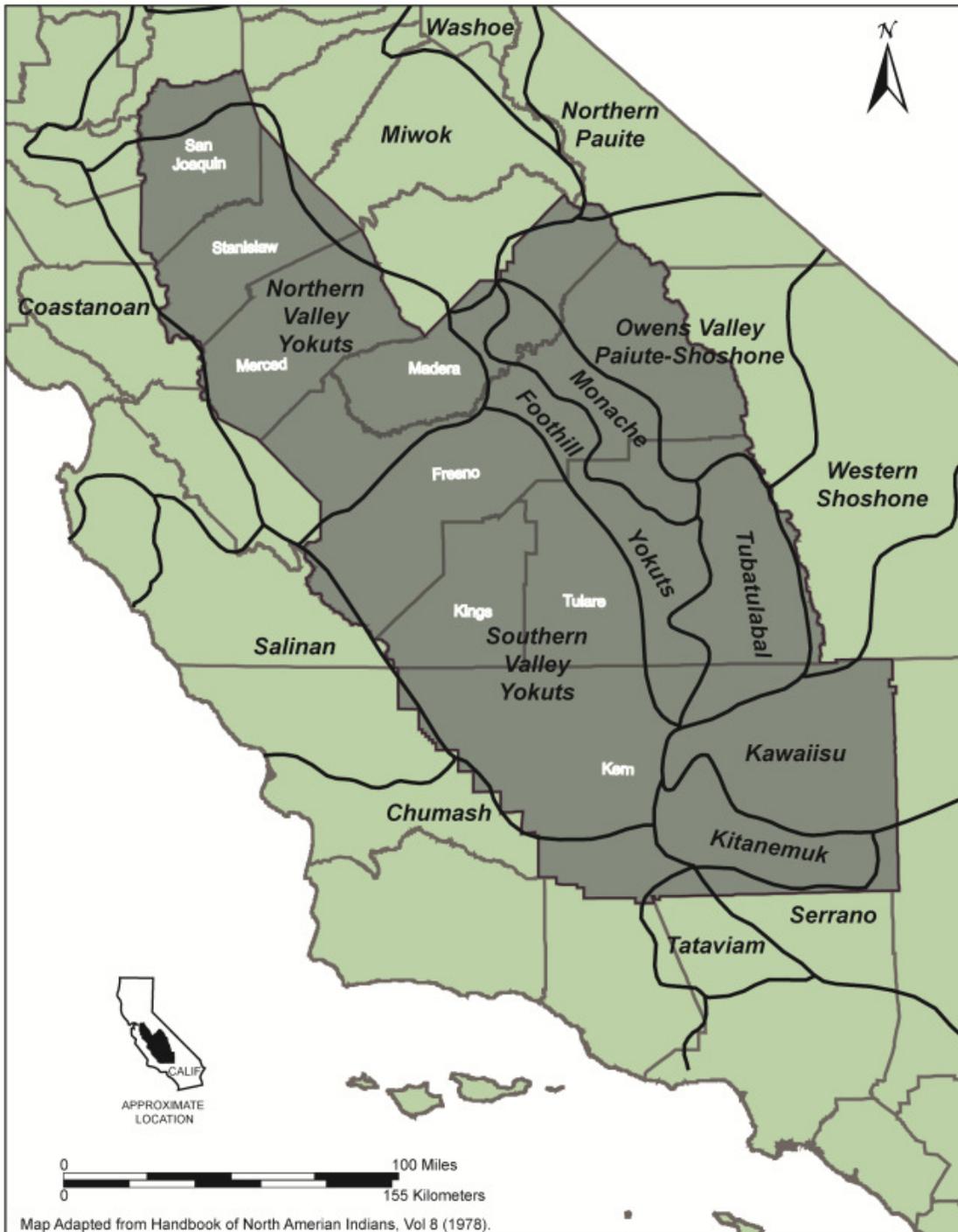
The *Tubatulabal* speak Tubatulabalic, a branch of the Uto-Aztecan language family, and are therefore related to the Mono peoples. However, Tubatulabalic is an "isolate" language, meaning that it is not

Giant Sequoia National Monument Specialist Report

closely related to any other language with which it forms a group or family. It is quite distinct from other California or Basin Uto-Aztecan languages, thus suggesting considerable time has elapsed since its divergence from other Uto-Aztecan relatives (Smith 1978, Whistler 1984). Based on the language isolation and the fact that their mythology contains no migration tales their occupation of the area is long-standing (Smith 1978; Voegelin 1938), and may be of substantial antiquity.

Figure 1: overlay of current day counties and historical CA Tribal Indigenous language groups (Theodoratus,2010)

Giant Sequoia National Monument Specialist Report



Northern Portion of Monument

The northern portion of the Monument, consisting of the Kings River and upper reaches of the Kaweah drainage, was inhabited by people from two language groups, Western Mono and Yokuts. Seven tribelets inhabited this area: *Michahai*, *Wobonuch*, *Waksachi*, *Patwisha*, *Entimbich*, *Choinimne*, and *Wukchumni*. The Yokuts occupied lands from the valley floor to about 3,000 feet elevation, and the

Giant Sequoia National Monument Specialist Report

Western Mono lived primarily between 3,000 and 7,000 feet elevation but also utilized and traveled in the higher elevations.

The *Michahai*, (also *Michahay*) a Western Mono tribelet, ranged between Squaw Valley and the Drum Valley-Badger area in the Kaweah River drainage. Smith (1978, p. 426) describes the *Michahai* as "basically Monache (Numic-speaking) peoples who have partially absorbed Yokut culture." No major village is identified for them. They shared Squaw Valley with the *Chukaimina* Foothill Yokuts, their neighbors to the west (Theodoratus Cultural Research 1984).

The *Wobonuch*, a Western Mono tribelet, occupied Mill Flat Creek in its entirety and the South Fork of the Kings River from its confluence with the North Fork Kings River and eastward into the higher elevations of the Sierra Nevada. Their territory reached as far north as the North Fork Kings River and as far south as the headwaters of Mill Flat Creek. To their west, south of the Kings River, *Wobonuch* territory touched with the *Entimbich* at Samson Flat. Eighteen hamlets were identified, including the major villages of *Yumsanyu*, *Ko'onikwe* and *Kadawinao* (Theodoratus Cultural Research 1984). The *Wobonuch* were forced south into the vicinity of Dunlap by sawmill operations and diseases in the twentieth century.

The *Waksachi*, a Mono tribelet, is considered "transitional" but their Mono origins are still clearly evident (Gayton 1948, pp. 143, 255). Smith (1978, p. 426) describes the *Waksachi* as "basically Monache (Numic-speaking) peoples who have partially absorbed Yokuts culture." The *Waksachi* were centered in Eshom Valley and ranged between Gaines Flat, Cactus Mountain and Old Baldy Ridge with important villages of *Chitatu*, and *Atitrao*. The *Waksachi* also shared hunting and foraging grounds at Three Rivers on the Kaweah River with the *Wukchumni* and *Patwisha*.

The *Patwisha*, a Mono tribelet, inhabited the upper drainages of the Kaweah to the confluence of the North and Middle Forks of the Kaweah River. Smith (1978, p. 426) describes the *Patwisha* as "basically Monache (Numic-speaking) peoples who have partially absorbed Yokut culture." Downstream from the confluence of the North and Middle Fork of the Kaweah River the *Patwisha* shared a village, *Hotnuny*, with the *Wukchumni*.

The *Entimbich*, a transitional Western Mono and Yokut tribelet, held a territory extending from the north side of Mill Creek to the east and southeast toward Sampson Flat and Dunlap. The major affiliation (i.e., Mono or Yokut) of the *Entimbich* is still open to question; Gayton (1948, 2, pp. 254-255) viewed the tribe as having lineages derived from both peoples but may have originally been Yokuts. Two important *Entimbich* villages, *Kudsowabi* and *Wojidu*, were located in the Dunlap area.

The *Choinimne*, a Yokut tribelet, were located historically on the south side of the Kings River in the vicinity of Mill Creek and on Mill Creek. Gayton (1948) names four important villages: *Kulushao*, *Washamao*, *Yegwonyu*, and *Lolonchu*.

The *Wukchumni*, a Yokut tribelet, had a core range extending from Antelope Valley up the Kaweah River to the east, Yokol to the south and Woodlake to the west. Gayton describes the *Wukchumni* boundaries as: "The limits of *Wukchumni* land are indefinite, for all so-called boundaries were

Giant Sequoia National Monument Specialist Report

trespassed by hunting and seed-gathering groups on all sides, yet limits were recognized at certain points by common consent” (Gayton 1948, p. 55).

Southern Portion of Monument

The southern portion of the Monument, consisting of the upper reaches of all forks of the Tule River, Little Kern River and western half of the upper Kern River watershed, was inhabited by people from two language groups, Yokuts and *Tubatulabal*. The Yokuts inhabited the Tule River area and the western portion of the Western Divide. *Tubatulabal* peoples occupied the upper Kern River reaching in the south from where the Kern enters the San Joaquin Valley to Mt. Whitney, in the north, and Walker Pass in the east and shared the Western Divide Range with the Yokuts in the west.

The southern portion of the Monument was inhabited by people associated with two language groups, *Tubatulabal* and Yokuts. Four tribelets were located in this area: the *Yaudanchi*, *Bokninuwad*, *Bankalachi*, *Pakanapul* (*Pahkanapil*) and Palagewan.

The *Yaudanchi*, a Yokut tribelet, had its residential core on the North and Middle Forks of the Tule River at the main winter village of *Shawahtau*.

The *Bokninuwad*, a Yokut tribelet, resided on the Southern Fork of the Tule River and on Deer Creek. Their main villages were *Keyau* and *Hoin Tinliu* (Kroeber, 1925, pp. 479-480).

The *Bankalachi* (or *Toloim*), a mixed Yokuts/*Tubatulabal* tribelet, lived above the *Bokninuwad* on Deer Creek at *Sototio* on White River (Gayton 1948, p. 50; Kunkel, 1962, p. 145). The *Bankalachi* had main villages of *Hoschui*, *Altau Bekiu*, *Holmiu*, and *Shikidapau* on Poso Creek and the White River (Kroeber 1925, p. 479).

The *Pakanapul*, a *Tubatulabal* tribelet, lived in the Upper Kern River Canyon from Mount Whitney to Lake Isabella and east to Ridgecrest. The *Pahkanapil* is the only band which has, to some degree, survived European transgression and occupancy.

The *Palegawan*, a *Tubatulabal* tribelet, lived near the junction of the South Fork Kern River and Kern River and the Kern Valley to Bakersfield, mostly in areas that are today is outside the Giant Sequoia National Monument.

Subsistence and Material Culture

The Yokuts, Western Mono and *Tubatulabal* relied on a hunting, fishing and gathering economy. This economy adapted to seasonal change wherein specific resources were targeted based on the season. Spring gathering involved young plants and greens such as clover (*Trifolium* spp.) and yucca blossoms (*Yucca* L.). Summer, the principal gathering season, brought a diversity of plant foods including varieties of grasses, seeds, tubers and berries. In summer the population of major villages would often divide, departing for temporary camps in the valley and foothills. Late summer provided the most essential storage foods including pine nuts (or piñon nuts) and acorns (Theodoratus Cultural Research 1984).

Giant Sequoia National Monument Specialist Report

This economy caused tribelets to have seasonal rounds where “permanent” villages were occupied for the most part in the winter months. During the summer, villages would split into groups of two or three families and travel to summer camps. The elderly or sick were left in the village with someone in attendance. Although there were no definite tribal boundaries, village sites were regarded as the seat of the tribelet, and territories were confined to hunting and gathering areas. In times of food shortage, adjacent tribes, who maintained friendly relations, shared available resources (Gayton 1930a).

Houses were constructed of thatch or cedar bark with a frame and support of thick but pliable willow or live oak branches. They were conical shaped measuring between six and twelve feet in diameter. Other village structures included storehouses or granaries for acorns and a sweathouse. Sweathouses were semi-subterranean and were constructed of one or two large center posts with a possible gable beam resting between the forks of two posts. Brush and willows were then piled onto the structure. The floor was excavated and the earth was then piled onto the top of the brush, securing the walls of the sweathouse so as to hold in the heat.

Winter villages were in the lower elevations where groves of black oaks (*Quercus kelloggii*) grew. Acorns were obtained while they were still slightly green and were knocked out of the trees by men using wooden hooks. Women would gather the acorns and carry them home in their burden baskets. Most acorns were stored in granaries outside the houses. Acorns were pounded, leached and then boiled in a water tight basket and cooked with hot stones.

Pine nuts were gathered by the men, who would hoist themselves into the pine trees and use the hooked stick to knock down the cones. “Green” or unopened pine cones would be placed on a big bed of coals. Once the opened cones cooled they were fully opened with obsidian blades and the nuts were removed.

Manzanita (*Arctostaphylos manzanita*) berries were gathered to create a refreshing cider drink. Once gathered, the berries were mashed with a pestle and put in a sieve above a large mush basket. Water was poured over the mash and the cider gathered in the large basket below. Yucca (*Yucca L.*) plants were gathered in the fall to obtain their roots for roasting, returning to the same patches again in the spring with hooked sticks to collect the tall blossom buds.

While women were the principal gatherers, men were responsible for fishing and hunting. Fish were obtained by various methods, including poisoning, spearing and trapping with weirs. Weirs were composed of woven willows braced with stones; a net bag was then arranged in the structure that would ensnare the fish. Poisoned fish floated to the surface and were collected into baskets.

A large variety of game animals were readily available and included mule deer, tule elk, antelope, black bear, rabbits and ground squirrels, as well as a variety of birds such as quail, pigeons and waterfowl (Theodoratus Cultural Research 1984). Bows and arrows were used most frequently, but snares and traps were also utilized. Both the plain bow, constructed of pepperwood or California Laurel (*Umbellularia californica*) and strung with a two-ply sinew cord and the sinew-backed bows made of juniper wood (*Juniperus sp.*) were utilized in the area. Obsidian for arrow points was traded in a rough

Giant Sequoia National Monument Specialist Report

form from the Great Basin. Spring traps were used to snare rabbits, jays and squirrels. Birds such as quail were shot, not trapped.

A variety of baskets and pottery vessels were produced for the acquisition, storage and consumption of foods. Twined baskets, including cooking baskets, sieves, burden baskets, seed-beaters, and triangular winnowing trays, were decorated with horizontal bands of redbud (*Cercis orbiculata*). Washing baskets, water baskets, serving containers, and bottleneck baskets for "treasures" were coil-made. Baskets were mainly produced with a creamy yellow background and decorated with red, reddish brown (redbud) or black (fern).

Rolled coiled clay pottery production was practiced throughout the region. These clay coils were flattened with a stone and the inside was scraped with Live Oak bark. The raw pots were then sun-dried for approximately two days and soapstone was rubbed over the entire surface as a finish. Pots were gradually fired in a pit for a period between 10 and 18 hours. When the pots were still at high heat a lacquer of acorn gruel was applied to the pots and at that point the pots were allowed to cool. Large pots were used primarily for cooking meat and sometimes for cooking acorn mush. Medium sized pots were serving vessels and small spherical dishes were used as cups or scoops.

A significant part of the economy was trade. The tribes from both sides of the Sierra Nevada traveled across the mountains for trade. Items brought from the east were rock salt, pine nuts, mountain sheep skins, moccasins, buckskin jackets, leggings made of fox skin, rabbit skin blankets, baskets, pine sticks, sinew-backed bows, and unfinished obsidian blanks. Items taken east were beads, acorn meal and baskets. In later times the tribes of the Great Basin desired red beads and Spanish blankets for trade. The *Waksachi* rarely traveled east and did not do so for the benefits of trade. Shell beads or "money" had derived from the west in the form of slender tubular beads called "humana" beads by the Yokuts and Mono. Also valued were small clamshell discs. These smaller beads were measured around the hand or wrist for their worth as a measure of money.

Native Americans, Vegetation Manipulation, and Fire

Native Americans and the groups that inhabited the area now known as the Monument manipulated the vegetation in order to provide diverse and sustainable food and material supply. This manipulation came in the form of gathering, cutting, sowing, burning, hunting, and limited planting (Anderson 1988). Direct intense hand manipulations would have been limited by population size, distance from habitation sites, and length of occupation. More indirect manipulations, such as fire, would not have had such limits and would have only been limited by the susceptibility of fuels to burn. Fire was used to promote vegetation regeneration, for hunting, to capture insects for food, and for other activities (Blackburn and Anderson 1993. Anderson and Moratto 1996. Lewis 1973. Bean and Lawton 1973). While the extent and scale of environmental impacts from Native American burning has been highly contested between anthropologists and natural scientists (Denevan 1992. Boyd 1999. Vale 2002. Whitlock and Knox, 2002. Lewis and Anderson, 2002. and Anderson, 2005), most scientists agree that within areas of habitation and traditional gathering Native Americans purposefully used fire and had a high degree of impacts. The loss of fire due to disruption of traditional tribal practices, plus subsequent fire suppression, has profoundly changed the forests. At 68 sites in the National Parks adjacent to the

Giant Sequoia National Monument Specialist Report

Monument, the median year of the last "natural" fire in 1875 (Caprio et al. 1997). The year 1875 also roughly corresponds to the time that logging and its effects began to become prevalent in the southern Sierra Nevada (Otter 1963).

Euro-American contact and settlement in the 19th century ended much of the tribal manipulation of the area's ecosystems.

Settlers often prevented the Indians from providing for themselves. To flush out a variety of animals, including fowl, Indians had long practiced the art of burning, especially during the dry season. In fact, the whites called the area from the Four Creeks [the four channels of the Kaweah River] to the Kings River the "burnt district" because much of it was covered in potash. On threat of severe punishment, settlers prohibited Indians from setting fires. When, in July 1856 along the Kings River, three Indians defied the order, whites killed one and forced his companions to flee. Subagent M. B. Lewis commented on the act: 'The justification of this unexpected and rash treatment towards these Indians for the exercise of a privilege which they have been allowed from their infancy, it is rather hard to explain to them.' (Phillips 2004)

Social Organization

The fundamental unit within each tribelet was the paternal lineage. Each lineage possessed a totemic animal that was inherited by the children along the male line. A woman would retain her totem upon marriage, however, it was not passed onto her children. Totemic lineage determined a person's basic societal role. Certain activities were exclusive to each lineage and were for the most part ceremonial (Gayton 1930a).

Each village had at least one chief. Their duties were many and included decision-making in regards to the time for ceremonies, the time to move, and when one was to be punished or, for instance, sanctioning the killing of malicious shamans or other evildoers. Chiefs also saw that the needy were fed and sheltered. A chief's power was not absolute and he was seen rather as a benevolent governor and advisor. A chief usually held council with his brothers or elders of his village so that his decisions were supported and acceptable to all. A chief kept an alliance with the shaman who he called on to work harm against his enemies or evildoers. Within a lineage, the position was passed on to son or brother, depending on who was fit for the title. An outgoing chief would name his preference for the successor, but his choice ultimately had to meet with that of his fellow villagers.

Other significant positions within a tribe included a secondary chief or sub-chief, and the official messenger. Secondary chiefs functioned as financial sponsors. They would aid in the expenses for mourning ceremonies or other celebrations. The official messenger was responsible for taking messages to and from his chief, or between people who would hire him. The messenger's other duties included supplying the chief with wood and water, giving orders around the village, and directing the proceedings at ceremonies. Women of the messenger's family would cook and serve food at ceremonies and would keep peace among quarrelsome women. The messenger carried a cane approximately eight feet long painted with red horizontal stripes and a string was tied on the top. This cane was recognized between villages. When a messenger was seen approaching a village he would be

Giant Sequoia National Monument Specialist Report

greeted by the local messenger and then ushered to the home of the chief. Messengers operated for specific people including the chief or the shaman. Messengers from differing villages would work together during intertribal ceremonies or the annual mourning ceremony.

Historical Background

Contact, Missionization, and Mexican Rule

Prior to direct contact between Europeans, and Native American cultures in the Sierra Nevada, Native Americans were impacted by European exploration and settlements outside the region. Europeans brought guns, horses and diseases which caused catastrophic plagues that decimated the indigenous peoples. These impacts also caused large-scale changes and interruptions in trade and social networks. Diseases brought death and large-scale depopulation which caused fluctuation in tribal boundaries. Horses brought changes in tribal interactions including the horse raiding staged by the Yokuts in the 1820s through 1840s (Phillips 1993).

Cook (1978) estimated that the native population in California as a whole, between 1770 and 1830, declined from 310,000 to approximately 245,000, the true extent and details of tribal change prior to direct contact is largely speculation at this time.

The first Spanish settlements along the California coast, starting in 1769, heavily impacted the population of coastal Indians, and these effects were also felt by peoples of the San Joaquin Valley and the Sierra foothills. The Spanish did not just stay in a small strip along the coast and by 1776, Spanish missionary Francisco Garcés, with a small group of soldiers, explored the eastern San Joaquin Valley visiting the Kern Valley, the White River, and possibly California Hot Springs, including the *Bokninuwad* village of Hoin Tinliu Yokuts (Latta 1977). The *Tubatulabal* were known to have come in contact with the Spanish at Mission San Buenaventura while on trading trips to the coast (Smith 1978). In 1806, Gabriel Moraga traversed the western foothills in search of favorable mission sites, ascending and camping along a river to which he gave the name *El Rio de Los Santos Reyes* (River of the Holy Kings), now known as the Kings River, and passing through the areas now occupied by Visalia and Porterville. Though subsequent plans to establish a mission near Visalia never materialized, the route traveled by Moraga and others during the Spanish and Mexican periods became known as the Old Spanish Trail, and later the Tulare or Visalia Trail (Hoover et al. 1966, p. 91). In 1819, Lt. Estudillo explored the Tule River and Deer Creek in Yokuts territory (Larson 1985, p. 4, Theodoratus Cultural Research 1984). In addition to direct contact with Spanish missionaries, soldiers and settlers, Native American populations also came into contact with "neophytes" (i.e., people newly converted to a belief, as a heathen, heretic, or nonbeliever) who were either released or had run away from the mission system.

The Mexican War of Independence from Spain ended with the *Plan of Iguala* peace treaty on February 24, 1821. This establishment of the First Mexican Empire an independent monarchy separate from Spain. This monarchy was short lived and by March 19, 1823, the Mexican Republic was established. What would become California was part of Mexican state of Californias. Independence of Mexico from Spain brought in new laws to the Region. The *Plan of Iguala*, also known as Plan of the Three

Giant Sequoia National Monument Specialist Report

Guarantees ("*Plan Trigarante*"), had three main goals "*Religión, Independencia y Unión*", (Religion, Independence and Unity) which were the establishment of Roman Catholicism, the proclamation of Mexico's independence, and social equality for all social and ethnic groups in the new country. This guaranteed citizenship to Native Americans and the protection of their person and property. Despite this legal guarantee, Mexican rule brought a significant increase in large land grants resulted in increased demand for labor and many Native Americans were forced into the slave-like "hacienda-peonage system," providing for the Mexican ranchos (Theodoratus Cultural Research 1984).

The early 1800s also brought an increase in American explorers passing through the southern Sierra Nevada including Jedediah Smith, who explored the upper reaches of the Kings and Kaweah Rivers in 1827, Joseph Walker in 1834, and Peter Skene Ogden in 1843 (Farquhar 1966; Hoover et al. 1966, p. 561). Ewing Young noted strong Hudson's Bay Company presence and evidence of a malaria epidemic among the Yokuts with funeral pyres and scattered corpses, between the Kings and San Joaquin Rivers in 1833-34 (Rehart et al. 2007, p. 5). Early mapping efforts of the region included that of John C. Fremont and Joseph Walker in 1845-46. Fremont with Kit Carson explored the upper North Fork of the Kings River and portions of the Tule River (Hoover et al. 1966, p. 561, Larson 1985, p. 11). The 1879 and 1884 GLO plat maps demarcates the "Trail to Independence" going through what is now the Hume Lake Ranger District (Holson and Lycett 1992, p. 3-5)..

The Mexican Period also brought increased resistance by Native Americans to Euro-American intrusions into their territories. But nothing prepared the Native Americans for the population influx that was created by the Gold Rush.

On June 14, 1846 a group of American settlers in Sonoma on what they claimed to be orders of Col. John C. Fremont, imprisoned General Vallejo, raised the Bear Flag, proclaiming independence from Mexican rule and a free country called the California Republic. A month later the Mexican-American War broke out and Commodore John D. Sloat of the United States Navy sailed into Monterey Bay beginning the military occupation of California by the United States. On January 13, 1847, the Capitulation of Cahuenga was signed securing American control in California.

Following the Mexican-American War, Mexico ceded California to the United States and it became the 31st state admitted to the union on September 9, 1850. Also in 1850, Lieutenant George H. Derby of the Topographic Engineers traveled up Deer Creek close to California Hot Springs (Larson 1985, p. 12).

The Gold Rush and Native Decline

The 1850s brought large-scale change to California and Sierra Nevada. The discovery of gold and the subsequent Gold Rush in 1849 brought some 100,000 gold miners into California. This influx of outsiders brought a devastating decline in the Native American population. Between 1845 and 1855, California's native population went from approximately 150,000 to 50,000 (Cook 1978). Miners brought whiskey, prostitution, rape, disease and murder which further impacted Native American cultures (Theodoratus Cultural Research 1984).

Discovery of gold in the southern Sierra Nevada during the early 1850s brought non-natives to the Greenhorn Mountains and the Kern River valley, south of the Monument. While the majority of miners

Giant Sequoia National Monument Specialist Report

went North or South of the Monument others used the trails passing through the mountains and caused development of the Jordan Trail, Camp Nelson, Ponderosa, and Mineral King. There were limited "diggings" in the White River area of the Monument. In addition to miners, military operations also took place within what is now the Monument; in 1850 Lieutenant George H. Derby of the Topographical Engineers carried out some surveys in the area. Much of the trail use and transportation of equipment was undertaken by independent packers who were often Mexicans (Jackson 2004, p. 49).

Native Americans responded to the presence of non-Native miners, explorers, and settlers in a number of ways. The three most common strategies were: 1) they stayed in their traditional area and adapted as needed (somewhat maintaining a traditional lifestyle, or entered the local wage-labor economy working for Euro-American); 2) they fled to areas remote from Euro-American settlements; or 3) they resisted and fought for their territory. These choices were not mutually exclusive or necessarily independent from each other as individuals or tribal groups might do all three throughout their lifetimes or across generations.

The large influx of people into the San Joaquin Valley and Sierra Nevada foothills during the 1850s brought major armed conflicts, including the Mariposa Indian War and the Tule River War which was fought at Battle Mountain near Springville. During the Mariposa Indian War, Company A of the Mariposa Battalion under Captain J. Kuykendall rounded up Native Americans between the Kings and Kaweah rivers. While pursuing "fugitives" towards the headwaters of the 'Kah-we-ah' Kuykendall observed "as to this region east and southeast of the termination of our pursuit, I have only this to say, that it is simply 'indescribable'."

While the governor was sending militia to fight, punish, and bring Native Americans to reservations, President Millard Fillmore, in 1851, sent three agents (O. M. Wozencraft, Redick McKee and George W. Barbour) to negotiate treaties with the California tribes. The agents negotiated and signed 18 treaties with representatives of various Native groups including four Yokut groups close to the Monument – the *Chunut*, *Wowol*, *Koyeti* and *Yowlumne*. The treaties released tribal lands in exchange for reservations and governmental services and supplies (Theodoratus Cultural Research 1984). One of the proposed reservations was the Tulare Lake Reservation to be located between Tulare and Buena Vista Lakes. The proposed Tule Reservation extended from the Tule River south to Paint Creek. The treaty also promised 200 head of beef cattle per year for the next two years (<http://www.tulerivertribe-nsn.gov/history>). None of these treaties were ever ratified by the U.S. Senate and, thus, the reservation was never formed and no cattle ever given to the tribes.

Subsequently, Congress authorized seven reservations of 25,000 acres each to be set aside. This was considerably less than what was agreed to by the treaties and many reservations were never 25,000 acres. Throughout the 1850s Tribal members were moved from one reservation to another. First Fort Tejon was formed in 1853, then the Tule Farms/River Reservation (also known as Madden Farm) was established in 1856; the Fresno River Reservation was established in 1857. In 1861, both the Fresno and Tule River were combined and moved to the mountains where the Tule River Reservation exists today (Theodoratus Cultural Research 1984).

Giant Sequoia National Monument Specialist Report

The Sierra Nevada, and particularly those areas not mined, became a refuge for Native Americans. In 1861 while William H. Brewer (1974) passed through the White River, Deer Creek, and the Kern River Canyon areas, he encountered two refugee populations in the southern Sierra and Great Basin. One camp of *Tubatulabal* was located in the upper Kern, whose population had fled the massacre at Tilly Ranch near Kernville. Another camp at Vermillion Valley included a large population of Mono, Miwok, and Yokuts who, according to Brewer, had been "hunted out of the valleys" (Theodoratus Cultural Research 1984).

Emergence of Timber and Grazing

While the area that is now the Monument was largely left untouched by miners, the Gold Rush left a significant impact on the San Joaquin Valley west of the Monument. The growth of the Euro-American occupation in the Monument is closely tied to that of the growth of the eastern San Joaquin Valley. By the mid-1850s the town of Visalia was a major station along the Stockton-Los Angeles and Butterfield Stage Roads, and in 1852 Tulare County was organized. Fresno County was organized in 1856. Cattle ranching and timber harvesting quickly spread eastward from Visalia into the foothills and mountains. By the early 1860s, foothill communities like Squaw Valley and Poso Flat were being settled and people were traveling through the area that would become the Monument on the Dennison, Jordan, and Hockett Trails.

Trail through the region generally followed Indian trails but were widened and rerouted to accommodate stock. The early 1860s saw construction of the Jordan and Hockett trails. The Jordan trail, built by John Jordan and finished by G.G. Warner in 1861 and 1862 opened to pack stock in June of 1862. The trail, which extended almost one hundred miles, enabled travelers to go from Independence to Visalia in three days and was used by Union soldiers patrols in 1863 (Jackson 2004, p. 53; Larson 1985, pp. 32-33). The Hockett Trail started in 1863 by John Hockett with construction help by Union soldiers, was completed in 1864 and "remained the principal trail route across the southern Sierra for the next forty years" (Jackson 2004, pp. 53, 57). Another trail in the Monument was the Dennison Trail which "was a rough, winding affair that linked nearly every mining camp, stock range and sheep camp south of the Kings River" (Jackson 2004, p. 53).

A drought in 1863-64 caused ranchers to drive their sheep, cattle and horses into the Sierra Nevada, following the Hockett and Jordan trail, for relief from the heat and provide forage in the mountain meadows. The number of livestock increased throughout the late 1800s with estimates of almost 1 million sheep in the San Joaquin Valley in the 1870s (Rose 2005, p.8).

By the mid-1850s, the demand for lumber in the valley brought loggers to the mountains. Paul Spivey documented over 35 sawmills operating in what is now the Hume Lake Ranger District between the mid 1850s and 1920 (Brown and Elling 1981, Larson 1985, pp. 69-71). One of the earliest mills, constructed and operated by Smith and Hatch was located near present-day Miramonte in 1854 or 1856 (Elliot 1883, p.157, as quoted in Brown and Elling 1981, p. 48 and Larson 1985, p. 68). By 1865, James R. Hubbs had established the first sawmill in the Tule River basin.

Giant Sequoia National Monument Specialist Report

These earliest lumber mills were located in the lower elevations, investments were minor and the operations were small. "In addition, these mills were technologically primitive, compared with the mills soon to follow. These technologies were not restricted to a single type, but they did generally represent low-level stages within the evolution of the sawmill" (Brown and Elling 1981, p. 54). The first sawmills "were always built where they could recover the most wood with the least effort. So, as trees continued to be felled, the sawmill sites moved progressively farther up into the mountains (Larson 1985, p. 58). The mills of this period were mostly owned by individuals or by small partnerships, operating with minimal capital, a small labor force, and served primarily local markets. Mills were "...changing hands, names, owners, and locations very often – so often, in fact, that accounts of this area during this period are often disorganized and confusing..." (Brown and Elling 1981, p. 48). They usually focused on sugar pine or yellow pine and only logged those redwoods in their way.

In 1869, Charles Converse made an unsuccessful individual attempt to log the giant sequoias (Rose 2005, p. 13). In 1873 the California State Legislature passed a law stating that "any person or persons who shall willfully cut down or strip of its bark any tree 'over sixteen feet in diameter' in the groves of big trees situated in the counties of Fresno, Tulare or Kern or shall destroy any of said trees by fire, shall be guilty of a misdemeanor" (Johnston 1974, p. 18).

As the logging industry expanded timber was viewed as Central California's "first merchantable wealth" and one writer, in describing the symbiotic relationship of lumber, mining, and agriculture stated: "The history of the lumber business is identical with that of the country. The progress of one is essential to the prosperity of the other" (Barton 1907, p. 1, as quoted in Brown and Elling 1981, p. 48).

Expansion of Euro-American populations into the San Joaquin Valley in the late 1800s brought the establishment of new towns including Porterville, Ducor, and Terra Bella. For the first 25 years of its existence, Porterville occupied a relatively isolated part of the valley until 1888 when the Southern Pacific Railroad arrived and the town grew to become one of the larger trade centers in Tulare County. Since the 1890s, the Porterville area has been a major supplier of citrus in the state. The rapid expansion of Porterville and other towns caused the need for more lumber, thus the growth of the timber industry and mills. By the mid-1870s, larger operations such as Hyde's Mill on Redwood Mountain were logging sequoia trees and processing as much as two million board feet per year (Dilsaver and Tweed 1990).

Logging began in the Mt Home area about 1870 with the Rand-Haughton Mill. However, very little acreage was cut over until in 1885 A. M. Coburn and L. B. Frasier built mills on Bear Creek, that cut 20 MBF and 40 MBF per day respectively. The Tule River Lumber Company became owners of the Frasier Mill and surrounding property in 1890. Primarily they cut yellow and white pine until around 1900, when the Enterprise Mill began logging the giant sequoia. (Krai 2009, p. 3)

The southern Sierra Nevada was open range and the high meadows were grazed by stockmen and settlers. During the Civil War many stockmen turned to sheep due to the loss of cotton and the need for wool. The turn to sheep brought foreign-born Basque, Portuguese, Mexican and Chinese herders who started as hired workers to the stockmen but later struck out on their own. The limited resources

Giant Sequoia National Monument Specialist Report

of the high meadows and the increasing numbers of cattle and sheep caused "grass wars". Drought in 1877 and 1898 brought increased pressure and violence. The area of Wishon Fork and Peck's Canyon of the Tule River was one of the many areas that were fought over (Rose 2005, p. 40).

Springville's first settlers were shepherds, who were drawn by its grassy pastures and relatively easy access to the highlands (Meighan et al. 1988b:217–219, 222). William Daunt opened a store in the 1860s near the soda springs that were to become the town's namesake, but urban development did not take hold until the late 1880s and early 1890s when Daunt's son-in-law, Avon Coburn, bought up property in the area and subdivided 18 acres of his newly acquired land for a town site. (Lloyd, Baloian, et. Al. 2010)

Early open range use included both cattle and sheep. The Peyrone Redwood Grove, Peyrone Creek, and Peyrone Camp are named after Celestrino Peyrone, a half-French, half-Indian shepherd who drove sheep from the Tule River Reservation through the Crawford compartment to the higher elevations each summer from the late 1800s to the early 1900s. Nobe Young Meadow and Creek were named after turn-of-the-century herder Nobe Young. Crawford Creek and Camp are named after Mr. Crawford, who homesteaded near Cow Mountain and ran cattle and hunting parties in the Slate Mountain area during the early 1900s.

Shepherders and cattlemen from White River and Linn Valley often drove stock following government trails such as the Bull Run Cattle Drive and Tobias Trail. Both trail systems were in use as early as 1910's. Government trails led to the summits of the first range of mountains. Favored trails to summer graze were in the general area of Tobias and Portuguese Meadows. Favored pack train destinations for hunting and fishing included Upper Tobias Meadow, Speas Dirty Camp, Dry Meadow, Peppermint Meadow, Funsten Meadow, and higher areas of the Kern River drainage. Trails were maintained on to the north as far as Big and Little Kern Rivers and even to Mt. Whitney (Berry 1975, p.70).

The valley to mountain meadow land-use pattern continued into the late historic period as evidenced by a reference to the Hugh Smith Ranch, a mile northwest of Posey. "Hugh took over the cattle business after his father's death in 1932, and ran his cattle on the original mountain ranch. He also grazed his herds on government land, and on the Greenhorn Mountains and down the mountains as far as Democrat Springs on the north side of Kern River (Berry 1975, p. 12)". Regional names like Bull Run Creek, Bull Run Meadow, and Bull Run Pass were named after an area cattle drive established by local rancher Joel Carver in the early 1880's.

The Ghost Dance and the Reservation

Native Americans continued go about their lives during this time of Euro-American expansion. The huge upheavals in their cultures continued and brought new responses including the expansion of the Ghost Dance religion to the southern Sierra Nevada.

The Ghost Dance religion emanated from the Northern Paiute and diffused among the Native Americans of the Western United States. This occurred in two waves, one in 1870 and another about

Giant Sequoia National Monument Specialist Report

1890. The doctrine of the movement was that, when the Ghost Dance was performed, the dead would return and peaceful and prosperous conditions would be re-established for the Native Americans (Gayton 1930b). Later, in 1871, a Paiute missionary came to a Western Mono group living along the North Fork of the San Joaquin River. A North Fork chief named Joijoi is responsible for spreading the doctrine throughout the foothills and to the south. Joijoi traveled about or sent messengers to the foothill Mono and Yokuts tribes as far south as Mill Creek and the Kings River to spread the news. The first dance was to be held at *Saganu*, in May of 1871, a site in Joijoi's territory (Gayton 1930b). The last large dance was in Eshom Valley at *Citatu* during the fall of 1872. Subsequent dances were held at the Tule River Reservation as the new religion spread further south.

The Ghost Dance was performed with great frequency during the first two years following its introduction, thereafter, it was danced less often. Enthusiasm for the religion had run its course though some individuals continued to sing the songs in the privacy of their own homes. By 1875, the Ghost Dance had been essentially abandoned. The Ghost Dance of 1890 did not penetrate into the southern Sierra Nevada as did the one in the 1870s. This is perhaps due to the disillusionment experienced earlier when the dance failed to bring ancestors back to life and return prosperous conditions. (Gayton 1930b)

The shuffling and segregation of Native American people continued when President Ulysses S. Grant issued an executive order on January 9, 1873, establishing the Tule River Indian Reservation at its present location. The new reservation comprised about 48,000 acres but was almost doubled in size on October 3, 1873, when President Grant issued a second executive order resetting the northern boundary to the drainage between the Middle and North Forks of the Tule River. The expanded reservation did not last long when, in 1878, President Rutherford B. Hayes cut the reservation to its original size and returned all the additional land to the public domain (<http://www.tulrivertribe-nasn.gov/history>).

The Indian Homestead Act of 1884 permitted Native Americans to homestead land similar to the way non-Native American settlers acquired land. But it was not until the General Allotment Act of 1887 that Native Americans not residing on reservations could receive title to land from the public domain. This latter act enabled Native Americans to obtain land in or near traditional tribal territories. The Mono and "San Joaquin Indians" (possibly Foothill Yokuts – no further specification or tribal affiliation was made) received 30 allotments (Theodoratus Cultural Research 1984).

Throughout the late 1800s, missions and mission schools were established in Native American communities and on Rancherias. These schools worked under the premise that Native American survival and success depended upon the Native Americans ability to assimilate into American society, both through religious conversion and complete immersion of American culture most often by removing children from their families and culture. Many families viewed enrollment in such schools as virtual kidnapping their children, as the children were not allowed to return for several years. This had widespread repercussions for continuation of Native culture as children were separated from their families during formative years, when they would normally learn traditional life skills and native language (Theodoratus Cultural Research 1984).

Giant Sequoia National Monument Specialist Report

Expansion and Monopolies

During the mid-to-late 1800s, despite difficulties involved in transporting the lumber (only primitive roads and trails were available and loggers utilized animal power), the lumber industry had developed a strong foothold in the western part of what would become the Monument, including Grover Mill, Redfield (Peel) Mill, and Parsons Mill. The late 1800s brought the introduction of well organized "outside" interests, and the local lumber industry transitioned from individual business enterprises to large corporate operations.

The expansion of associated settlements into the mountains also took place with the establishment of California Hot Springs by the Witt brothers in 1883 (Muller 1990, p. 1), Pine Flat in 1883, Camp Nelson in 1886, and Springville in 1890.

One of the first major logging of Sequoias occurred in the Big Stump Grove between 1883 and 1889 by Smith Comstock. In 1878, the Timber and Stone Act was passed which allowed people to purchase public domain land, that was "unfit for farming", but good for "timber and stone" purposes (logging and mining), for \$2.50 per acre in 160 acre blocks. The purchaser signed an affidavit that he was entering the land exclusively for his own use and there was no association to enter more than 160 acres. However, the act was often used by speculators to increase their land holdings at minimal expense and this is exactly what happened in the formation of the Kings River Lumber Company.

In the summer of 1886 and 1887, the land offices of Stockton and Visalia received a large number of filings under the Timber and Stone Act for specific 160 acre quarter sections in recently surveyed timber lands near Mill Flat Meadow (today known as Sequoia Lake). Two San Francisco lumbermen, Hiram C. Smith and Austin D. Moore were suspected of "importing" and having made prior arrangements with "locators", who, for a fee, would file for and obtain title to the quarter section of land, then turn it over to them. In March 1888, the San Francisco Chronicle announced that Smith and Moore had obtained thousands of acres of prime timber land on the Kings River and planned to build two sawmills with a combined capacity of 140,000 board feet per day (Johnston 1968, p. 24). The Kings River Lumber company was incorporated on April 24, 1888 with Austin D. Moore, president, and Hiram C. Smith, vice-president.

The two mills were the Lower Abbott Mill, along Abbott Creek, and the Millwood Mill (also known as the Sequoia Mill), along Mill Flat Creek. Their intention was that one mill was located below the snowline while the other mill was above the snowline, allowing year-round operation. The most notable accomplishment of this company was the constructed of a 54 mile long "V" shaped flume, which was constructed to float rough cut lumber from Millwood down the Kings River Canyon to the town of Sanger, where the company's drying and storage sheds and the spur line of the Southern Pacific Railroad were located.

Survey for the flume was completed in January 1889 and work began on the flume on July 29, 1889. The flume was constructed with lumber from the upper mill which began cutting on July 6 (Johnston 1974, p. 25). Upon completion the 54 mile long flume on September 3, 1890, it had consumed over 10 million board feet of lumber at a cost of about \$500,000 (Brown and Elling 1981, p. 69; Johnston 1974,

Giant Sequoia National Monument Specialist Report

p. 30). Much of the construction of the flume and the dam (which formed Sequoia Lake) that feed the flume was undertaken by Chinese laborers (Johnston 1974, p. 28).

The Kings River Lumber Company concentrated on logging the conifer forests surrounding the mills. The mills were relatively permanent structures, and were not intended to be moved about the forest like the earlier, portable mills were. Two railroads were built in 1891 in order to gain access to timber stands further away from the mills (Johnston 1974, p. 40). In 1892, as part of plans to begin logging the Converse Basin sequoia grove, a seven mile railroad and an incline to the top of Hoist Ridge were constructed.

The expense of the expansion and the country-wide financial depression of 1892 and 1893 caused the operations to shut down in July 1894, and the company folded shortly thereafter. Smith and Moore came back in October 1894, with a new organization under the name "The Sanger Lumber Company" and took title to all facilities and land claims of the now defunct Kings River Company.

Just before the operations shut down the U.S. Department of Interior paid \$15,000 to a local contractor to cut and deliver a sequoia to the World's Columbian Exposition at Chicago in 1893. The General Noble tree was selected and systematically cut in pieces, marked, created and hauled by railroad to Chicago where it was reassembled (Johnston 1974, p. 19). Called the California hoax because visitors did not believe it was one tree. The stump is today called the Chicago Stump and is a recreation site within the Monument.

Logging the sequoias was a multi-nationality endeavor with "big, raw-boned Swedes; husky Irishmen; sturdy Poles, Danes, Norwegians and Germans" and Native Americans comprising some of the nationalities of the 700 men who worked in the Converse Basin (Johnston 1974, p. 73).

The loggers did not confine their interest to northern portion of the monument. "On the North Fork of the Tule River, Comstock, Smith and Moore operated as partners in the Tule River Lumber Company" (Dilsaver and Tweed 1990, p. 56).

Logging Converse Basin and Hume Lake

It was reputed that in Converse basin had "thousands upon thousands of patriarchal forest giants stretching so high they almost blotted out the sky" (Johnston 1974, p. 59).

The Sanger Lumber Company moved forward with logging the sequoias in Converse Basin in the 1890s. The operation reached the Converse Basin through a series of railroad grades and incline hoists that moved the logs from Converse to Millwood. In 1897, they built the Converse Basin mill, which contained the "redwood splitter" a continuous 90-foot band saw blade, called the longest saw in the world at the time (Johnston 1974, p. 62). Cutting down the giant sequoias was a complicated and time consuming process. Although similar to the methods used for cutting smaller trees, special consideration had to be given to the size and weight (several thousand tons) of the trees. It was a dangerous process and included an enormous amount of labor.

Giant Sequoia National Monument Specialist Report

On November 11, 1905 the Converse Mill caught fire and burned to the ground (Johnston 1974, p. 81). During the nine years of logging in the Converse Basin, the Sanger Lumber Company milled a total of 191,000,000 board feet of lumber. It was reported that 1/3 to 1/2 of the total lumber cut were giant sequoias, and some experts believe that the company may have cut over 8,000 sequoias. One of the only old growth sequoias left standing was the Boole Tree, named in honor of the company's general manager and now the largest tree on any National Forest in the United States.

After a few years of full operations in the Converse Basin, the Sanger Lumber Company was still unable to fully recover from its prior financial problems. In December 1905, the Sanger Lumber Company was sold to Hume-Bennett Lumber Company. The Hume-Bennett Lumber Company was a Michigan corporation with Thomas Hume as President and Ira Bennett as vice-President.

The Hume Bennett Company began operations by rebuilding the Converse Mill. They began logging in an area northwest of Hoist Ridge, but by 1908, they decided to close the Converse Mill and relocate to where virgin stands of fir, pine, and cedar still remained. They intentionally burned down the converse mill. The site of the new mill and associated operations was Long Meadow, four miles east of Converse Basin. The first structure built for the new operations was a multiple-arch concrete dam built to retain waters from Tenmile and Long Meadow Creeks. The impoundment created a storage pond for logs and is the modern-day Hume Lake. In 1908 the company began construction on the John S. Eastwood designed Hume Lake dam which is the world's first multiple-arch dam. Nineteen new miles of flume was built up Tenmile Creek to the dam increasing its length to a total of 73 miles, making it the world's longest flume (Satterthwaite 1994, p. 14).

The new sawmill and supporting facilities represented the cutting edge of milling, including its own electrical generators. By 1912, 27,003,873 board feet of lumber was flumed to Sanger and almost 1,000 men worked at the mill or in the woods to provide that lumber (Johnston 1974, p. 119).

In 1914 the market for redwood was more active than pine and the Hume-Bennett Lumber Co. Converted its entire railroad from narrow gauge to standard gauge to transport the heavier redwood (Johnston 1974, p. 119).

1917 brought numerous changes to the Hume-Bennett Lumber Co.; first on January 24, 1917 the Hume-Bennett Lumber Company changed its name to Sanger Lumber Company. The United States entered World War One and 40 percent of the workforce joined the armed forces. On November 3, 1917 fire consumed the Hume Lake mill, damaged the drying kilns and upper portions of the flume (Johnston 1974, pp. 125,131).

The Hume Lake Mill was replaced with a smaller open-air circular mill in 1918 (Johnston 1974, p. 133). Sanger/Hume-Bennett operations continued at a decreased output until 1923. In 1924 manager George Hume left California and in 1926 a fire burned 2,000 boxes (16 foot sections) of flume along the Kings River and the section was never rebuilt (Johnston 1974, p. 135). In 1927, equipment was sold to E.M. Prescott and the flume was sold off in sections on an "as-is, where-is" basis. The remaining sections of the flume along Tenmile Creek burned in a fire started by construction of Highway 180 in 1931 (Johnston 1974, p. 138). In its lifetime the Sanger/Hume-Bennett Lumber Co. cut an average of

Giant Sequoia National Monument Specialist Report

twenty million board feet, using three locomotives, fifty log cars, and about fifty miles of track (Rehart et al. 2007, p. 67).

On April 8, 1935 over 20,000 acres of land owned by Sanger Lumber Company was sold to the U.S. Forest Service for \$319,276.75. The land included 11 sequoia groves. (Johnston 1974, p. 139)

Tourism and Recreational Development

Early recreation in what is today the Monument began in the 1870s and 1880s with families heading to higher elevations to escape the summer heat of the San Joaquin Valley. Families would explore the backcountry by pack trains, exploring "the old sheep, cattle, mining, and Indian trails". By 1868, Frank Dusy was offering professional packing and guiding services into the Kings and Kaweah backcountry. Mountaineering parties began to use the Dennison, Jordan, and Hockett Trails to access Mount Langley and Mount Whitney. (Jackson 2004, p. 65)

By the 1890s, John Nelson and Carmel Wilson opened a commercial pack station near Springville taking tourists and supplies to Camp Nelson.

Despite the financial difficulties, a town and resort began to develop around the Millwood Mill. In 1894, a road was completed from Sanger to Millwood and the community was promoted as a resort. The Millwood Mill grew to employed over 300 workers and a small community of company grew up around the mill. It was said, at times the peak population reached 1,000 or more people (Johnston 1974, p. 46).

In the early 1900s, realizing that tourism and recreational development of the region was suffering from lack of access, both local interests and Congress began to contribute to the establishment of pack trails and roads into the forest and the national parks. Early tent resorts in the parks became popular with visitors from the San Joaquin Valley in search of an escape from the oppressive summer heat and the opportunity to camp outdoors among the groves of giant sequoias (Tweed 1972). Road improvements resulted in marked increases in visitors, particularly as automobiles became an alternative means of transportation. During the 1890s, only a few hundred persons each year made the trek to the Sequoia and General Grant National Parks (Small 1926, p. 254). In 1907, however, the parks recorded approximately 2,000 visitors, and by the mid-1920s, numbers had jumped dramatically to more than 80,000 persons (National Park Service n.d; Small 1926, p. 254).

Early tourism in the Sequoia National Forest was somewhat hampered by the fact that the Forest Service did not consider recreation to be a primary use of public lands. Management and expenditure of funds on recreational development was initially limited to purposes of fire prevention and public safety (Lux et al. 2003, p. 29).

Despite the lack of interest in recreation by the Forest Service the Sierra Club began undertaking early backcountry expeditions starting in 1901. The 1902 expeditions consisted of over two hundred Sierra Club members being packed into the Kings River Canyon for two-weeks (Jackson 2004, p. 87). In 1903 the trip to Mount Whitney included thirty thousand pounds of baggage, provisions, and equipment on a pack train of eighty-five mules and saddle animals for five weeks (Jackson 2004, p. 88). While camped

Giant Sequoia National Monument Specialist Report

near Coyote Pass just north of the Monument the Sierra Club members caught over six hundred golden trout (Jackson 2004, p. 90). The Sierra Club expeditions continued into the 1950s.

In the 1910s, however, the dramatic growth of automobile tourism, and consequent increased public demand for recreational development on national forests, led to Congress passing the Occupancy Permits Act (1915). This law allowed the Forest Service to issue permits of up to 30 years for concessions, organizational camps, and private recreation residence tracts on forest land. Throughout the 1920s, virtually all recreational development in Pacific Southwest forests occurred from lease permits, and lease fees on recreation facilities came to represent a significant source of regional income (Lux et al. 2003, pp. 24, 30). In most cases, foresters would identify and survey suitable locations for permitted recreational facilities. Such locations included not only the most scenic and popular tourist spots, but previously used sites or semi-developed areas with good access roads and nearby guard stations for purposes of fire prevention.

The dramatic growth of the automobile industry and auto tourism in the 1910s and 1920s resulted in a correspondingly larger need for more recreational facilities on public lands. New roads were pushed further into scenic forest and mountain areas, and existing routes were improved for automobile passage. The Millwood Road was improved to provide access into the Converse Basin, Hume Lake and General Grant Park areas. Beginning in the 1920s, segments of nineteenth century logging roads and toll trails were incorporated into the Generals Highway, which accessed the groves from the south along the Kaweah River (Small 1926, p. 253). It was also during the 1920s and particularly in the 1930s, with the aid of federal work programs such as the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC), that the forest began a clean-up of obsolete lumber camps at Hume, Millwood, Converse Basin and began construction on Highway 180 (USDA Forest Service 2008).

Mining

For the most part little mining took place within what is today the Monument, but prospectors did explore the area while passing through on the way to areas with productive mines in Mineral King, Greenhorn Mountain, and Owens Valley. Some mines did produce gold along with tungsten, lead, zinc and copper. While the foothills west of the monument produced magnesite.

Beginning in the early 1890s, magnesite, used in the production of paper, was discovered and mined in the hills southwest of Springville, and by the early twentieth century Porterville Hill and Success Hill accounted for a significant portion of California's production of the mineral. William Pitt Bartlett, who headed the magnesite mining operations of the Willamette Pulp and Paper Company, was also instrumental in developing the area's granite industry. Granite mined from quarries in the nearby foothill was used in the construction of several buildings in Porterville. (Lloyd, Baloiian, et. al. 2010).

Hydroelectric Development

In addition to mining, people began to see the potential for hydroelectric development in the southern Sierra Nevada in the late 1800s. Most of the hydroelectric development in and around the Monument

Giant Sequoia National Monument Specialist Report

was focused on the Kaweah and Tule Rivers. In 1899, Albert Graves Wishon founded the Mt. Whitney Power Company, and built its first hydroelectric plant on the confluence of the South and Middle Forks of the Kaweah River. The facility produced hydroelectric power and diverted water to citrus lands around Exeter. Wishon was forced out in 1902. That same year, while seeking backers for a hydroelectric plant on the Tule River he became the manager for the San Joaquin Power Company.

In 1903 Wishon's former company and now rival, the Mt. Whitney Power Company formed the Globe Light Power Company and claimed water and power rights to the Lower Tule, the area lying below the junction of the North and South Forks of the Middle Fork Tule River, where Wishon wanted to place his plant. The competing claims for construction permits on Forest Service land lead to delays in completion. Wishon wrote to the District Forester (now known as Regional Forester) in 1910 about the situation:

Shortly after receiving these permits, as the record of the Land Department will show, controversies and contests arose in connection therewith and these controversies and contests continued before the Department of the Interior and Department of Agriculture for from two to three years after the permits were issued. (Wishon 1910, p. 2)

In 1905 Wishon with backing from Henry H. Hunting, William G Kerckhoff and A.C. Balch began construction on the 14 mile long, 30 feet wide wagon road on the north bank of the Middle Tule River and the road to Doyle Springs. In 1908 construction of the Camp One at Doyle Springs began. Doyle Springs was the headworks and water flowed into an aqueduct consisting of a series of 26 tunnels, over 16,960 feet long, ending on the point of the high ridge which overlooks the junction of the North and South Forks of the Tule River. The water then drops 1,523 feet vertically through a penstock.

The permit required Wishon to return the water he used to the intake point of the Globe Light and Power Company who was building the lower Tule River hydroelectric project.

Construction of the powerhouse complex began in 1913 and in January 1914 the system was completed.

The San Joaquin Power Company evolved into Pacific Gas and Electric Company, while the Globe Light Power Company later became part of Southern California Edison.

The Kings River had its first hydro plant in 1919.

Government Management: the Search for the Greatest Good, a Struggle of Utilitarian Conservation, Restoration and Preservation

The area that is now the Monument, the surrounding Sequoia National Forest, and the Sequoia and Kings Canyon National Parks have been the focus of battling views on how to manage timbered lands and Sequoiadendron giganteum since Euro-Americans began utilizing and settling in the area. Differences in opinions of what is the most appropriate management have ranged from exploitation to preservation. These opinions have been manifested in actions from all three branches of the

Giant Sequoia National Monument Specialist Report

government: Executive, Legislative, and Judicial and has left its mark on the land and in the cultural resources that remain on the landscape.

Past management of what is today the Monument is dominated by the private ownership and the Forest Service. The major influences of private ownership were presented previously and the Forest Service influence is presented below. Anthony Godfrey (2005) outlines eleven historic periods of Forest Service management in *The Ever-Changing View: A History of the National Forests in California*. These phases are summarized below and in Table 9.

Table 9: Forest Service Historic Periods (Godfrey 2005)

Period	Theme
Pre 1889	California's Forests Prior to Federal Controls
1890-1904	California's Forest Conserved Under Federal Control
1905-1911	Rise and Early Development of National Forests System
1911-1918	California National Forest System Grows and goes to war
1919-1932	Maturation of District 5 to Region 5 and the Great Depression
1933-1941	A New Deal for Region 5 (Multiple-purpose and multiple-use management)
1941-1945	Region 5 at War
1946-1954	Golden State of Managing Growth and Multiple Use
1955-1967	Programmed Multiple use Maximus
1967-1978	Region 5 Conservation Contested
1978-1987	Recommitment and Roots of Ecosystem Management

Another important influence development of the Monument were the Forest Supervisors of the Sequoia National Forest. These men and women left their mark to greater and lesser degrees. See the Table 10 for a complete list.

Table 10: Forest Supervisors

Forest Supervisor	Tenure
Charles H. Shinn (Sierra Forest Reserve)	1902-1905
Harrison White (Sierra Forest Reserve)	1905-1907
William B. Greeley (Sierra National Forest (South))	1907-1908
Edward A. (or C.E.) Sherman	1908-1910
Allen B. Patterson	1910-1915
W.J. Rushing (Kern National Forest)	1910-1915
Paul G. Redington	1915-1916
Sedman W. Wynne	1916-1918
Frank P. Cunningham	1918-1935
Joseph E. Elliott	1935-1941
Norman Norris	1941-1945
Joseph E. Elliott	1945-1946
Paul Stathem	1946-1952
Jack McNutt	1952-1953
Eldon Ball	1953-1964

Giant Sequoia National Monument Specialist Report

Lawrence Whitfield	1964-1968
Jim James	1968-1973
John Leasure	1973-1978
Joe Brown	1978-1982
James A. Crates	1982-1991
Sandra H. Key	1992-1995
Arthur L. Gaffrey	1996-2006
Tina J. Terrell	2007-2011
Kevin B. Elliott	2011-

The land use prior to federal control as it relates to cultural resources was previously presented but the development of government controls and the principles behind them began in Godfrey's pre-1889 period and are presented below.

The lands and the giant sequoias in the Monument and surrounding the Monument have been a center for the struggle between utilitarian conservation, restoration of cut over lands, and preservation since the beginning of government land management.

In the late 19th century, the expansion of logging in the Converse Basin brought increasing public attention to the need for protection of at least some of the Giant Sequoias. Following John Muir's first visit to the southern Sierra Nevada in 1873 which included a visit to the Millwood area and Kings Canyon, he began writing about the problems he saw with loggers, miners and sheepherders. On one trip Muir observed "large flocks of sheep had swept the South Tule basin bare of grass" (Rose 2005, p. 16). This brought the protection of Sequoia's from logging and impacts of sheep grazing to national attention. By 1889 Tulare County officials were petitioning Congress and federal officials to protect the San Joaquin Valley's water sources "which was endangered by timber speculators in the low mountains and by countless sheep in the high mountains" (Strong 1967, pp. 8-9 as quoted in Godfrey 2005, p. 38).

California's Forest Conserved under Federal Control (1890-1904)

The beginning of Government intervention in the land management in the region began with the establishment of Sequoia National Park (H.R. 11570) on September 25, 1890, and the Sequoia National Park expansion and creation of the General Grant National Park (H.R. 12187) on October 1, 1890 (Dilsaver and Tweed 1990, pp. 68-70).

The government's ability to set aside land for protection of forests was expanded in 1891 with the Section 24 of the "General Revision" Act which is known as the Forest Reserve Act. The Forest Reserve Act was passed in response to land frauds related to the Timber and Stone Act some of which had occurred in the creation of the Kings River Lumber Company. The Forest Reserve Act allowed the president to create Forest Reserves that retained public lands for the future use of citizens (Godfrey 2005, p. 36). By October of 1891 Government Land Office (GLO) Special Agent Benjamin F. Allen and Commissioner Thomas H. Carter began study of the "Tulare Reserve" by withdrawing from sale all public domain land in 230 townships in eight counties from Tuolumne on the north and Kern on the south, and Mono and Inyo on the east side (Godfrey 2005, p. 39). The withdraw was supported by the

Giant Sequoia National Monument Specialist Report

majority of local valley residents and protested by sheepmen and anti-park associations.

Conservationist Robert Underwood Johnson wrote the Secretary of the Interior "This would not be reserved for Park purpose, of course, but to save water supply for irrigation below and to preserve timber" (Godfrey 2005, p. 39).

On February 14, 1893, President Harrison used the Forest Reserve Act to create Sierra Forest Reserve, the second reserve in California and, at 4,057,470 acres, the largest federal forest reserve in the state. The reserve surrounded General Grant National Park, most of Sequoia National Parks and the private lands of the Kings River Lumber Company. The forest reserve boundary lines were changed and enlarged on February 7, 1905, by the Act of Congress, entitled, "An Act to exclude from the Yosemite National Park, California, certain lands therein described, and to attach and include the said lands in the Sierra Forest Reserve"; and enlarged again on July 25, 1905 by Theodore Roosevelt's Presidential Proclamation 586, entitled, "Enlargement of the Sierra Forest Reserve, California". The Sierra Forest Reserve reached a maximum of 6,602,353 acres (Godfrey 2005, pp. 39-40).

Though greatly significant the creation of the National Parks and the Forest Reserves came with no funding and no one to administer them, the Forest Service was not established until 1905 and National Park Service was not established until 1916. Initially, the lands of Sequoia and General Grant National Parks were under the protection of the United States Army Cavalry, the Cavalry provided little to no protection to the Forest Reserve except in its presence while crossing reserve lands between the parks. Thus, the creation of the Sierra Forest Reserve did not immediately protect any resources. As Godfrey (2005, p. 41) states:

The Forest Reserve Act made no provision for the active management of forest reserves and/or legitimate use within them – either for timber cutting, grazing, mining or any other use (Robinson 1975, p. 6). Forest watershed destruction by mining, lumbering and livestock interests, or by fire, did not halt simply because Washington "designated" an area a forest reserve. In fact, during the interim period between the passage of the Forest Reserve Act and the demarcation of the final boundaries of each forest reserve, private owners filed on millions of acres of California's choicest timberlands under the Timber and Stone Act.

Between 1891 and 1897 the USDA Division of Forestry had no part of forest reserves all management of the reserves was under the GLO. The GLO requested assistance from the War Department but the request was refused. With few people the GLO struggled with management of the vast reserves. In 1894 regulations prohibiting trespass and/or depredations within the forest reserves was promulgated, published in local newspapers, and hundreds of notices were posted along forest reserve boundaries (Godfrey 2005, p. 42). Shepherders tore down the notices and brought "half a million sheep in the [Sierra] reservation, more than anyone had previously remembered seeing" (Godfrey 2005, p. 43).

In 1895, Dr. William R. Dudley of Stanford University made an inspection of reserve lands of eastern Tulare County for the Sierra Club. He discerned no difference between reserve and non-reserve lands, with the results of sheep herders, and fire causing great concern (Rose 2005, pp. 21-22).

Giant Sequoia National Monument Specialist Report

On June 4, 1897 President McKinley signed the Sundry Civil Appropriation Act (also known as the Organic Act) into law. The Act specified that "No public forest reservation shall be established, except to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States" (Organic Act 1897). It also granted the Secretary of the Interior the authority to make rules and regulations, and hire employees to manage the reserves (Godfrey 2005, pp. 46-47).

Following the passage of the Organic Act of 1897 the GLO forest agent Charles Newhall hired "guardians" to patrol the Sierra Reserve and in 1899, 60 guardians were hired for the summer to patrol all 4 million acres of Sierra Reserve (Rose 2005, pp. 24-25). Guardians were paid \$60.00 to patrol the vast reserve, build trails, roads and firebreaks, string telephone lines and do all of the fire control jobs, including fighting fire and arresting fire violators, while maintaining good public relations

In 1899 the GLO approved the first timber sale in California, 33 acre for little more than a million board feet on the Sierra Forest Reserve. In 1903 the Sierra Forest Reserve began issuing the first grazing permits. These first grazing permits "generated considerable opposition. Accepting any kind of government mandate was particularly difficult for those who had known the days of the open range" (Rose 2005, p. 34).

In the first years of the 20th century in order to best manage the Forest Reserves the GLO created a Forestry Division (1901), entered into formal agreements with the USDA Division of Forestry (1901 and 1903) and the State of California (1903) to provide forestry services, prevent loss by forest fire, write fire control manuals, and improve forests following logging (Godfrey 2005). But the GLO continued to struggle with trespassing (both timber and grazing) and over-utilization.

In 1902 the GLO wrote the Forest Reserve Manual outlining the management of the Reserves. The Forest Reserve Manual was the "first time camping and travel for pleasure or recreation was even noted. Rangers were charged with instructing campers not to build large fires and to put their fires out before leaving - all this to be done very politely" (Godfrey 2005, p. 106).

During these emerging years the Forest Service began official timber reconnaissance of the Sierra which commented on the condition of trees and ground cover, as well as types and commercial value of timber (Theodoratus 1984:271). To that end George Sudworth, later the chief Dendrologist of the Forest Service, visited the Sequoia in 1900 and noted the destruction caused by the Sanger Lumber Company (Figure 2) and Flintham and Guthrie did "locality studies" on the Sierra Forest Reserve in 1904.

Figure 2: Converse basin by Sudworth 1900 Caption on Back - Looking over west side of Converse Cr. Basin after Sanger Lumber Co. and fire have finished! Big tree forest land – no reproduction now!

Giant Sequoia National Monument Specialist Report



Rise and Early Development of National Forest System (1905-1911)

In 1905, the Forest Transfer Act (33 Stat. L., 628) transferred manage of all forest reserves from the U.S.D.I. GLO to the U.S. Department of Agriculture, Forest Service (renamed from the Bureau of Forestry, on March 3, 1905). The Forest Transfer Act stated:

"Sec. 3. That forest supervisors and rangers shall be selected, when practicable, from qualified citizens of the States or Territories in which the said reserves, respectively, are situated.

"Sec. 4. That rights of way for the construction and maintenance of dams, reservoirs, water plants, ditches, flumes, pipes, tunnels, and canals, within and across the forest reserves of the United States, are hereby granted to citizens and corporations of the United States for municipal or mining purposes, and for the purposes of the milling and reduction of ores, during the period of their beneficial use, under such rules and regulations as may be prescribed by the Secretary of the Interior and subject to the laws of the State or Territory in which said reserves are respectively situated.

"Sec. 5. That all money received from the sale of any products or the use of any land or resources of said forest reserves shall be covered into the Treasury of the United States, and

Giant Sequoia National Monument Specialist Report

for a period of five years from the passage of this Act shall constitute a special fund available, until expended, as the Secretary of Agriculture may direct, for the protection, administration, improvement, and extension of Federal forest reserves.

On the day the Forest Transfer Act passed, Agriculture Secretary Wilson sent out a charter letter stating:

In the administration of the forest reserve it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and business-like manner, under such restrictions only as will insure the permanence of those resources...and where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

Gifford Pinchot the new "Chief" of the Forest Service merged the GLO Division of Forestry into the Forest Service and assigned Frederick Erskine Olmsted to rewrite the Forest Reserve Manual. Olmsted was helped by Ranger Mainwaring of the Sierra Forest Reserve. The rewrite produced the first Forest Service "Use Book" on July 1, 1905. The Use Book set forth the goals of the organization, regulations governing each form of use and activity, methods to be followed, administrative powers and responsibilities in bringing orderly use, and protection and development of the reserves (Godfrey 2005, p. 69). It also stated "Forest lands should be managed so as to produce the most valuable crop of timber, year after year, without interruption" (The Use Book as quoted in Rose 2005, p. 53).

In 1905 Forest Supervisor Harrison White asked Forester Gifford Pinchot for lumber to be used in "construction of building at Deer Creek Hot Springs" for the headquarters of the southern section of the Sierra Forest Reserve. By August 1906, the new headquarters appeared to be in-process, as Forest Supervisor White wrote The Forester in Washington D.C., "The building is not entirely completed, but is in suitable condition to be occupied".

In 1906 the Sierra National Forest was split and the "Sierra South" was formed with William B. Greeley appointed supervisor. Changes to the Forest boundary also occurred with the Forest Homestead Act of 1906. The Forest Homestead Act re-opened lands within the Reserve to agricultural claims. In 1907 forest reserves were renamed the national forests. The biggest change came on July 2, 1908 when the southern district formally became the Sequoia National Forest (Executive Order 904, July 2, 1908). Sequoia also added land from Sierra National Forest in 1910.

The new Forest Service hired rangers and assistant rangers who began to leave their mark on the land by constructing ranger housing, barns, fencing pastures, trails, bridges, camps, telephone lines, firebreaks, fire lookouts and other structures. Permanent winter stations were built at lower elevations or in valleys, and summer headquarters were constructed in the mountains, usually near meadows. Seasonal stations consisted of log or shake one-room cabins with pitched, shake-covered roofs or tents constructed on a leveled and cleared area. These stations often had a developed spring and/or corral

Giant Sequoia National Monument Specialist Report

or fenced-in pasture, associated with the cabin. They also began conducting inventories of timber and grazing resources.

The amount of construction was still minimal as more often than not, a forest ranger simply unrolled his blanket and slept out in the woods. Bundles containing camping gear were often left at strategic places, eliminating the need for the ranger to carry supplies on his saddle. These temporary camps often consisted of a fire circle by a spring and were not used on a regular basis.

The Forest Reserves did little to protect the meadows from overgrazing but with the creation of the Forest Service came the creation of grazing allotments. At first allotments did little to help because of "tramp bands" that grazed with impunity and blatant disregard for government regulations. In the summer of 1907 rangers on the Sierra South/Sequoia National Forest set a trap for "tramp bands". They captured nine thousand sheep and a dozen herders and Herders Pierre Grimaud and J.P. Carajous of Bakersfield were charged with grazing sheep on forest land without the necessary permit. After battling in the lower courts the case, *United States vs. Grimaud*, 220 U.S. 506 (1911), made it to the Supreme Court in 1910 where the sheep owners argued that the Forest Service regulations were "unconstitutional" because they were "an attempt by Congress to delegate its legislative power to an administrative officer," that is the Secretary of Agriculture (Rose 2005, p. 42). The Supreme Court affirmed the Forest Service position, "any use of national forest land for pasturage was subject to rules and regulations promulgated by the secretary of agriculture. The Court also concluded that fees were necessary 'to prevent excessive grazing'" (Godfrey 2005, p. 141) and that they were needed in order to provide for administrative expenses to manage this resources." grazing management included grazing fees, range allotments and restrictions including carrying capacity (Godfrey 2005, p. 141). This case turned the tides for grazing and by 1915, records show that there were no sheep still grazing on the Hot Springs Ranger District. There were however, 3,330 cattle and horses and 200 hogs (Larson 1985, p. 222).

On July 1, 1910, by Presidential Proclamation 1061, the Kern National Forest was established from the southern portion of the Sequoia National Forest. It did not last long and the Kern National Forest was merged back into the Sequoia on July 1, 1915, by Executive Order 2169, April 13, 1915.

January 7, 1910 Gifford Pinchot was fired and Henry S. Graves replaced him as the chief forester of the Forest Service.

In December 1910, District 5 (California) Forester Olmsted told a gathering of Forest Supervisors and District 5 staff, the Forest Service should be there for the "protection and use of natural resources of the West for all times" (Godfrey 2005, p. 98).

California National Forest System Grows and Goes to War (1911-1918)

In its first years the Forest Service struggled just to meet the basic goals of the Forest Transfer Act. In second decade of the 20th century the Forest Service began standardizing management. For timber management National Forest Surveys and Maps-Topographic Surveys (1916) set the procedures for cruising, and marking as it "pursued the first goal of silviculture - sustained-yield management"

Giant Sequoia National Monument Specialist Report

(Godfrey 2005, p. 93). For fire fighting, Fire Protection Plans (1911) encouraging a military operation with aggressive, proactive preparation before a fire start.

Godfrey (2005, pp. 159-160) states:

Some scholars have labeled the 1910s as the root years of the Forest Service's "forest protection or custodial management era (Williams 2000, p. 31). This label implies that the Forest Service simply held on to, looked after, or generally maintained national forests. During this period, this label may be a complete misnomer when it comes to the history of California's District 5. The Olmsted administration helped establish a permanent system of publicly-owned national forests in California; District Forester Coert Dubois actively put that system on a firm scientific basis. For most of the 1910s, whether it was timber or range resource management, or even fire control and protection. District Forester DuBois directed District 5 policy toward utilitarian conservation using scientific management principles.

California's national forests began conducting sustained-yield studies to determining the "proper cutting rotation". These studies culminated in silvicultural work plans that determined how much timber could be cut each year continuously without interfering with a forest's productivity. The utilitarian conservation stands in stark contrast to the logging practices of private lumber companies who clear cut with no thought of regeneration, and the preservation ethic of National Park Service and John Muir.

1911 also brought a new District Forester, Coert DuBois. DuBois moved management to scientific forestry employing "technical specialists in forest pathology, entomology, silvics, timber and forest influence questions, timber sale scaling and reconnaissance" (Godfrey 2005, p. 120). DuBois also brought standardization to the entire District calling for uniformity in claims reports, scales used in field maps, marking rules, methods of timber reconnaissance, spacing on plantations and uniforms (Godfrey 2005, p. 120). Timber sale operations began using sample marking and "marking boards" and standardized cruising methods starting in 1911. California marking boards "took the approach of saving about one-third of a total stand for future cut....based on a thirty-year first-cut cycle, and a fifty- to seventy-five year second-cut cycle. The main effect of this system was to 'leave intact groups of thrifty even-aged trees usually under 30 inches in diameter breast high'" (Godfrey 2005, p. 131). The standards became national standards with the publication of National Forest Surveys and Maps- Topographic Surveys in 1916. During this period California District 5 established timber marking rules that provided a 200-foot scenic corridor along roads, lakes, and riverfronts which aimed to improve the appearance of the forest (Godfrey 2005, p. 133).

The Weeks Act (36 Stat. 961), of 1911, authorized the Secretary of Agriculture to "Examine, locate and recommend for purchase ... such lands within the watersheds of navigable streams as ... may be necessary to the regulation of flow of navigable streams....". The act was mostly use for land acquisition in the East but was later extended to the west. Other sections of the act introduced the principle that the federal government contribute to state fire-suppression organizations if they complied with Forest Service standards, and that 25 percent of each national forest's receipts be

Giant Sequoia National Monument Specialist Report

returned to the states to fund public schools and public roads in counties where the forests were located.

The Weeks act codified the appreciation of income derived from timber sales. Godfrey (2005, p. 131) states timber sales were "seen as beneficial to the public for several reasons. First, a growing automobile-oriented populace, as well as tourists, appreciated the income derived from the sales because that went to road and trail building on the national forests. Second, in the opinion of some, Forest Service timber sales prevented monopolies of this resource, and therefore, the public was protected from timber being tied up in large holdings and held for speculation purposes. And third, the public was assured of the continuation of forest stands because the public believed that proper regulation and distribution of sales was confined to the most mature timber (Godfrey 2005, p. 131)

The "Big Blowup" fires of 1910 in the Rocky Mountains changed the nation's view of fire, fire suppression and the Forest Service's role in fighting for the remainder of the century. Forests started devising forest protection plans to protect from fire. Based on DuBois' Fire Protection Plans, District 5 began a "speedy campaign of erecting telephone lines, building lookout stations and distributing tool caches on each forest at strategic points. These continued with DuBois' 1914 Systematic Fire Protection in the California Forests.

In 1912 the Forest Service appointed a Sequoia National Forest ranger, Ralph Hopping, was appointed the first forest examiner in charge of insect control work in the office of silviculture.

Following the landmark Supreme Court United States vs. Grimaud grazing decision Forest Supervisor Patterson established new guidelines for issuing grazing permits including linking permits to "home ranch" or winter range.

In 1915 Sequoia's Forest Supervisor's Office was constructed in California Hot Springs where it stayed until 1927. Some winters the office was moved to Bakersfield, until 1920 when the winter office was moved to Porterville. In 1927, both offices were merged and permanently moved to Porterville.

"Increased recreation in California's national forests was due also in part to the growth of the California highway system, and use especially in the High Sierra grew in direct proportion to the development of the California highway system" (Godfrey 2005, p. 146). "Automobile camps on national forests offered an inexpensive rest in a tent with a campfire. In addition to these automobile camps, there were also municipal playground camps and historic signage (Godfrey 2005, p. 147)

Conflicts did occur between tourist and grazing on the Sequoia and "in recognition of the importance of recreational use, all livestock were 'kicked out' of the upper Kings and Kern river drainages and such use was one among many reasons why sheep were allowed on the High Sierra" (Godfrey 2005, p. 149).

The Occupancy or Term Permits Act allowed the granting of special permits for stores, hotels and other similar structures on national forests. Recreation residences began to be established after 1915 when Congressional legislation authorized the Forest Service to issue permits for a fixed term under the "Terminable Permit Act". The largest expansion in residences occurred during the 1920s along with the

Giant Sequoia National Monument Specialist Report

increase in automobile tourism and a strong economy (see Table 11). The Great Depression of the following decade slowed the recreation residence program and the New Deal shifted the emphasis of Forest Service recreation to public campgrounds in order accommodate the demands for stimulating the economy, providing jobs, and outdoor recreation opportunities. Public interest in recreation burgeoned after World War II. The recreation residence program began to be phased out after it peaked in 1966.

Table 11: Recreation Residences in the Monument

Recreation Residence Tract	Authorized
Hume Lake	
Hart Meadow	
Deer Creek	1921
Spear Creek	1923
White River	1923
McIntyre	circa 1906
Soda Springs	circa 1922

The 1916 creation of park service created a competition for recreation. District 5 hired Frank A. Waugh in 1918. With Waugh's publication "Recreation Uses on the National Forests" recreation and planned landscaping of recreation sites recreation began to have a more prominent place in the Forest Service.

World War I brought increased grazing utilization including increasing sheep herding and increased logging to meet war demands.

Along with the national forest came fire management. The government hired men to live in the mountains and look for smoke during fire season. First, heliographs (mirrors) were used to communicate from lookout to station or from any high spot in the forest to any lookout. Later, telegraph and telephone lines were strung and dry-battery crank telephones were hung at campgrounds, lookouts, and stations for easier and quicker communication.

Lookouts were constructed in trees, on peaks, and on mountaintops, any place with good 360-degree visibility over a large area. Early lookouts were towers, small cabins, or one-room tree houses. These were equipped with beds, stoves, and fire sighting and fighting equipment. Caches of tools were also placed in meadows and along trails for emergency use by rangers, recreation users, cattlemen, and sheep herders.

Guard stations were being constructed throughout the Sequoia "the prime considerations were horse feed and the proximity to another station. Originally, these outposts had been situated so that they were not more than a two-hour ride from another station, and assistance in an emergency. When the first hand cranked telephones began arriving in the forest in 1912, they eased the need for those regulations" (Rose 2005, p. 58). Today, the Monument has a outstanding collection of extant guard stations, Pinehurst, Big Meadows, Sequoia, Mt Home, Wishon, Quaking Aspen, and Poso, many of other are gone or have been replaced by modern buildings. Scattered boards, square or round nails,

Giant Sequoia National Monument Specialist Report

developed water troughs, corral poles, trash pits, and perhaps a privy might be found in some combination at the sites of these first stations.

Fire management activities were incorporated as part of the job. Tool caches may occasionally be located in remote areas of the southern Sierra Nevada. These may contain shovels, picks, axes, and canned goods. Most of the fire structures are no longer standing, but some remnants (trash pits, telephone lines and insulators, boards, nails, and water sources) may be in the immediate vicinity of historic trails (usually indicated by blazed trees), bridges, and developed campsites .

During this period packing businesses expanded including Art Griswold, Frank Negus, "Little George" Dillon, and Otis Lawson in the Tule River areas, Owen Rutherford at Quaking Aspen, Malvin Duncan, Jim McDonald, and Wally Rutherford at Camp Wishon (Jackson 2004, p. 76).

“Pre-World War I years are also highlighted by continued and increasing utilization of California’s forest resources – in direct contrast to the preservation ethic of the newly-created National Park Service” (Godfrey 2005, p. 160).

Maturation of District 5 to Region 5 and the Great Depression (1919-1932)

This period started with two former Sequoia Forest Supervisors taking leadership roles in the Forest Service. In November 1919 former Sequoia Forest Supervisor Paul G. Redington (1913-1916) became District 5’s third district forester and in 1920 William B. Greeley the former supervisor of the southern district of the Sierra Forest Reserve (1906-1908) was appointed the third Chief of the Forest Service. E.A. Sherman was also appointed the Sequoia's second Forest Supervisor in 1920.

Greeley continued the Forest Service’s mission of multiple use conservation stating:

The national forests are no longer primeval solitudes remote from the economic life of developing regions, or barely touched by the skirmish line of settlement. To a very large degree the wilderness has been pressed back. Farms have multiplied, roads have been built, frontier hamlets have grown into villages and towns, industries have found foothold and expanded. Although the forests are still in an early stage of economic development, their resources are important factors in present prosperity.

There is probably no large area of forest land in the world on which the use and conservation of multiple resources have been so thoroughly studied or so completely developed in practice as on the national forests of the United States....Nothing better illustrates the democracy of the American forest policy or the decentralization in administering national forests than the conscientious effort of the Forest Service to weight the importance of different uses on each unit and to give every use its merited place in a bewildering regimen of administrative detail. (USFS History - Forest History Society)

From the beginning of the Sequoia the policy was to preserve live sequoias. This policy on logging Sequoia's is captured in a 1912 letter from Forest Supervisor Allen B. Patterson to the District Forester concerning potential land exchanges with the Hume-Bennett Lumber Company.

Giant Sequoia National Monument Specialist Report

The main obstacle in the sale of any timber ... is the presence of redwood. Up to this time it has been a kind of unwritten law that no green redwood shall be cut. This restriction seems to be for sentimental reasons only, based on a former promise made by Mr. Pinchot, although I can find no record of it. (October 12, 1912)

This policy was reiterated in "Memo for Lands" from Assistant Chief of Forest Management concerning acquisition of land from the Sanger Lumber Company, April 29, 1930.

As you know, a very large portion of the stumpage is Big Tree and from our viewpoint, the only value that can be placed on this species is for esthetic purposes, since it is the Service policy to cut no green Big Trees.

During this period many of the Sequoia Groves especially those on the Hume Lake Ranger District were in private hands.

Gene Rose called the post war period on the Sequoia as "best described as custodial or caretaking management, aimed mainly at preventing forest fires" (Rose 2005, p. 73).

Despite the 1916 Forest Highway System Act that required each forest to develop a road system, road expanded slowly until the 1920s when prosperity of California, and Fresno and Kern counties brought increased roads and recreation to the forest. In the 1920s Congressional funding and the Federal Highway Act (42 Stat. 212) extended roads into the California's forests. People followed these roads and amenities began to be built to accommodate these visitors. The Hume Lake portion of the Monument saw the first expansion of roads in 1909 when Fresno County began building a road into Kings Canyon but the southern portion of the Monument did not see expansion until 1921 when Tulare County began improving the wagon road up the middle fork of the Tule River towards Camp Nelson (Jackson 2004, p. 75; Rose 2005, p. 70). For Hume Lake the 1920s brought construction of the Generals Highway which opened access to Big Meadows and the southern portion of the district.

In 1924 the Clarke-McNary Act (43 Stat. 653) was passed and provided for the protection of forestlands, reforestation of denuded areas, extension of national forests, and for other purposes, in order to promote the continuous production of timber. The 1911 Weeks Act also expanded purchases of forest land in watersheds and cooperation with state agencies for fire protection and forestry (Godfrey 2005, p. 183).

A detailed study by Duncan Dunning of cut-over lands on California forests including data from permanent plots on the Sequoia concluded "that past group selection system was a failure from a silvicultural standpoint. Instead of leaving groups of ponderosa pine, Dunning's conclusions advised supervisors to thin these groups in order to secure increased growth and for seed production" (Godfrey 2005, p. 184). This brought three major changes. First, reserves in cutting areas were increased to 15-20 percent of the stand. Second forests were divided into working circles and policy statements were made for each circle; and third, reforestation became an objective. (Godfrey 2005, pp. 183-186)

Giant Sequoia National Monument Specialist Report

The Sequoia began having airplane patrols for fire protection in 1919, but it only lasted until 1922 when the funding stopped (Godfrey 2005, pp. 186-188)

In 1923 the Sequoia had the second highest number of cattle grazing in California. Overall 195,000 cattle and 467,000 sheep grazed California national forest lands, representing 13 percent of all the beef cattle and 19 percent of all the sheep in California (Godfrey 2005, p. 196)

Stuart B. Show implemented a policy of full fire suppression throughout California's national forests when he became the District Forester in 1926.

The 1920 Water Power Act brought expansion of hydroelectric facilities to national forests and by 1931 California's national forests produced 72 percent of the total electrical energy generated in the state (Godfrey 2005, p. 224). The Sequoia with the Kern River hydroelectric plants (outside the monument) and Tule River hydro plants (inside the monument) played a role in this expansion.

In 1926, new regulations created a ten-year grazing term permit, which could not be revoked except for violation of the contract by a livestock owner. These regulations also encouraged individual grazing allotments wherever practicable under local conditions of range use.

According to a 1932 Forest Service report, the Grover, Peel, Parsons and Guernsey Mills, located on the southwest end of the district, and the Deer Creek and Manter Mills, located on the north, made up the Kern West Working Circle - essentially the Deer Creek Ranger District. At that time, the Kern West Working Circle contained the largest body of commercial timber on the Sequoia National Forest, now located on the southern portion of the Monument. Of these six historic mill sites, only the Guernsey Mill was still in operation in 1932. Guernsey Mill was operated from 1923 to 1947.

In the early 1920s the NPS and Forest Service work cooperatively including joint review of national forest sites best suited to transfer to national parks. The Forest Service protected park entrances from logging and grazing. By the mid 1920s the NPS aggressively sought transfer of some national forests recreation areas to the Park Service and there were efforts to return the Forest Service to the Interior department. District Forester Redington described the differences two agencies as "...the principle of use of resources is the vital distinction between National Forests and National Parks."; and:

The purpose of the NATIONAL FORESTS is to protect and maintain, in a permanent productive and useful condition, lands unsuited to agriculture, but capable of yielding timber, or other general benefits, such as forage for livestock, water for irrigation, domestic use and power, and playgrounds for our citizen. All the resources of the National Forest are developed to the greatest possible extent consistent with permanent productivity under the principle of coordinated use." [On the other hand,] the purpose in creating NATIONAL PARKS is to preserve the scenery, the natural and historic objects, and the plants and wild life. The objects are the enjoyment of the people and the aiding of education and scientific study by keeping such areas unimpaired. National Parks are protected completely from any and all utilitarian and commercial enterprises save those necessary for and subservient to legitimate park uses (California District News Letter 1923: No. 46 as quoted in Godfrey 2005, p. 176)

Giant Sequoia National Monument Specialist Report

In July 1926, Sequoia National Park was expanded to include Mt Whitney and the Kern River Canyon area of the Sequoia National Forest. Additional land was transferred to the Park Service in 1927. Some land was transferred to the Inyo National Forest in 1923.

Godfrey (2005, p. 203) notes "New emphasis was also placed on watershed management and hydropower development, and a "war" broke out between the Forest Service and the National Park Service over recreation issues, which led to the founding of California's first primitive areas". This "war" was for Kings Canyon which was then part of Sequoia National Forest. By 1927, NPS director Mather and the Sierra Club wanted Kings Canyon to become a national park and Chief Forester Greeley, District Forester Show actively conspired to resist it becoming a national park. (This is discussed in detail in the next section.)

During the mid 1920s the forest began looking at a system of wilderness areas "through which roads, buildings, and formal recreational developments would be barred." with the exception "large areas of presently or imminently commercially-exploitable timber" were to be excluded for qualifying and grazing, mining and waterpower development on recommended lands was allowable (Godfrey 2005, p. 215). Under the 1929 Regulation L-20 and a 1930 amendment fourteen wilderness areas in District 5 including the High Sierra Primitive Area, on the Inyo, Sequoia and Sierra National Forests were designated "primitive areas" (Godfrey 2005, pp. 216-218). The High Sierra Primitive Area was the largest wilderness created at this time.

On May 1, 1930 the Forest Service renamed districts to regions and District 5 became Region 5.

As the depression gripped the nation in 1931 the Sequoia established an unemployment work camp in cooperation with the State of California. As a forerunner of the Civilian Conservation Corps (CCC) camps the Sequoia took recruits from the Fresno area and furnished equipment, bedding and supervision costs, while the State of California paid for subsistence costs and local public agencies provided medical attention and transportation. The camps worked mostly on fuels projects including building firebreaks, and clearing roadsides of inflammable material. The camp closed in the spring of 1932 (Godfrey 2005, pp. 229-230).

A New Deal for Region 5 (multiple-purpose and multiple-use management) (1933-1941)

The biggest change that came to the Sequoia National Forest, the Region and the Nation in 1933 was Franklin D. Roosevelt and all that his administration set up including the Public Works Administration, the Central Valley Project, Emergency Conservation Work, and the Civilian Conservation Corps (CCC). The CCC has been called civilian forest army.

The second biggest change came following the "A National Plan for American Forestry" (also known as the Copeland Report) in 1933. The Copeland Report presented the term "multiple purpose management for production, conservation, and utilization of timber, forage, water, wildlife, and recreational values was first developed and is now generally found on the national forest" (Godfrey 2005, p. 257).

Giant Sequoia National Monument Specialist Report

Beginning in March 1933, the CCCs constructed many of the roads and foot trails currently in use throughout the forest. The CCC also strung telephone lines in the mountains, cleared brush, cut trees, and constructed permanent bridges. In addition, from 1933 to 1938 the CCC constructed many of the currently used Forest Service administrative structures. They usually had numbers of men and may be marked by concrete foundations, boards, nails, equipment, bunkhouse remnants, and assorted historic debris. The spike camps were temporary in nature and consisted of tents with small groups of men. These may be identified in the field by earthen tent platforms, portable privies, trash pits or scatters, and abandoned equipment. These temporary CCC camps occurred throughout the mountains and can still be found today. The documentary record gives the locations of many Forest Service cabins.

The CCC had a number of camps in what is today the Monument. These camps were run by the army with local experienced men (LEMs) who supervised the men in the field. The camps built the Springville Work Center, Pinehurst Work Center, Hume Lake Work Center (now known as Lakeshore), fire lookouts (Tobias, Needles, Jordan, and Mule Peak), guard stations (Mt Home, Quaking Aspen, Big Meadow, Eshom, and Poso). All of these structures were designed by regional architects Blanchard and Maher in the Mother Lode style. By July 1933, complete sets of standardized plans and specifications for nine different types of buildings were mailed off to each forest (Godfrey 2005, p. 244). In June 1933, the region appointed landscape and park engineers George Gibbs and L. Glenn Hall to develop administrative site plans, such as ranger stations, and to assist in the development of campgrounds.

The 1930s and the New Deal brought a dramatic shift in the magnitude and scope of the Forest Service recreation program resulted inevitably in significant and far reaching changes in its recreation policy. Changes began in 1933 when "A National Plan for American Forestry" (the Copeland Report) described the need and a plan to develop, rehabilitate, or restore natural resources, and develop and enhance the recreation resource. The section on recreation written by Robert Marshall (collaborator) discussed providing for the comfort and convenience of travelers: developing camp site areas would "curtail the very serious damage to forests which results when the hordes of tourists who throng many popular highways camp chaotically through the surrounding woods." The proposed program outlined the need for a "recreational survey" to determine what types of recreation the public desired and defined recreation land classifications -- superlative areas, primeval areas, wilderness areas, roadside areas, camp-site areas, residence areas, and outing areas. These land classifications, which would provide a range of settings that suited the various types of recreation activities and experiences desired. Marshall stated that "In national-forest recreational development the stress is laid not on preserving the primeval but in providing healthy outdoor recreation. Camping, the development of health resorts, and general frolicking are encouraged. As a result national forests ... provide wilderness areas, camp grounds, residence areas, and outing areas for millions of people." (A National Plan for American Forestry, Volume 1, p. 483).

The recreation program lacked formal structure or direction within the organization until the creation of the Division of Recreation and Lands in 1935. In May, 1937 the position of Chief [Director] of the Division was filled by Robert Marshall. Marshall believed fervently in the benefits of outdoor recreation and in the social values of the National Forests and that facilities should provide for the comfort and convenience of forest visitors and should be responsive to public demand.

Giant Sequoia National Monument Specialist Report

Under Marshall's guidance, and using mainly CCC labor, the Forest Service built substantial recreation structures from coast to coast. A tremendous variety of facilities were built, many of them elaborate, with types of recreation structures unprecedented in Forest Service plans. Facilities such as bathhouses, shelters, amphitheaters, and playgrounds were part of large recreation complexes. While most of the Civilian Conservation Corps' "forest improvement" projects on National Forest lands were based on the recreation program detailed in the Copeland Report. They followed Chief Silcox policy to give more attention to the "social" functions of the Forests. Work was to meet high quality standards: structures would not be other than substantial and aesthetically pleasing. Public service would be paramount. (Tweed, 1980, p. 18)

Campground development on the Sequoia followed the national trends with the earliest campgrounds on the Hume Lake and Western Divide Ranger districts date to the first wave of construction following the Copeland Act in the 1930s.

The National Industrial Recovery Act of 1933 (NIRA) brought funding for major road-building projects. Ponderosa Way (also known as Ponderosa Highway) firebreak, a 700 mile, one-hundred plus foot wide firebreak along the Sierra foothills, a portion of which went through the Sequoia was also funded by NIRA.

Under provisions of the Weeks Act, on April 8, 1935, the United States Forest Service purchased 21,500 acres of lands and the entire operation and its holdings of the Sanger Lumber Company, including the dam and forest surrounding Hume Lake. This land forms the majority of what is now the Hume Lake Ranger District and the Northern portion of the Monument.

During this period Dolbeer donkey engines used for yarding logs were replaced by Caterpillar Tractor Company tractors (Godfrey 2005, p. 261).

The second phase of CCC work took on range improvements including construction of drift fences, stock driveways, erosion control dams, stock bridges and trails, holding corrals, the development of springs, windmills, wells, reservoirs, and water tanks, the reseeding of range, the eradication of poisonous plants, and rodent control (Godfrey 2005, pp. 271-272).

In the 1930s under the direction of naturalist Aldo Leopold the Forest Service biological awareness began to rise. During this period the Sequoia along with what is now the Los Padres National Forest began a cooperative wildlife effort with the Audubon society to permanently protect the California condor (Godfrey 2005, p. 287). The Sequoia also began protection of the golden trout and the California fisher.

The proposal to add the Kings Canyon region to the National Park Service began in 1911 but was dismissed until the 1930s when California Senator Hiram Johnson revived the proposal. In response Regional Forester Show with the help of newly hired regional landscape engineer George Gibbs, prepared a detailed proposal for the Kings Canyon area to be the first show cased of the multiple-purpose management principle. The Kings Canyon recreation plan was completed in 1936 and

Giant Sequoia National Monument Specialist Report

proposed a plan for a "High Sierra Primitive Area, with the rest of the area open to logging, dams, reservoirs and every other use from summer homes to mining" (Godfrey 2005, pp. 257, 282-283).

By 1937 "the Forest Service-Interior Department transfer fight had broken out. By this date, the interdepartmental conflict had turned into a slugging match, and against this backdrop, Show fought to keep the Kings Canyon region as a Forest Service recreational area under his multiple-purpose plan" (Godfrey 2005, p. 283). Despite specific orders from President Roosevelt instructing all Forest Service employees to not speak against Senator Johnson's legislation, Show spoke lobbied vigorously against the park proposal (Godfrey 2005, p. 283). The Sierra Club supported Johnson's park proposal as they "felt the Forest Service could not guarantee the future protection of the scenic values of the canyon" (Godfrey 2005, p. 284). But in January 1939 the California state legislature passed a resolution petitioning the president and Congress to oppose the proposed Kings Canyon National Park (Godfrey 2005, p. 284). Throughout the rest of 1939 the House and Senate took up the issue and in 1940 Kings Canyon National Park was created.

Region 5 at War (1941-1945)

Godfrey (2005) notes this period as the "Demise of Pinchot Conservationism" and a marked shift in power caused by the struggle and defeat of the Forest Service over the Kings Canyon National Park. "At this time, Region 5 started its shift toward overlooking basic conservation principles in many areas such as timber, in order to meet national emergencies and needs. After forty years of essentially conserving timber for future use, Region 5 officials optimistically allowed steadily increasing timber sales for the next three or more decades" (Godfrey 2005, pp. 325-326).

The war in Europe spread to America in 1941 and caused many changes, some short term and some long term. The biggest long term effect was the termination of the CCC, when on June 30, 1942 Congress voted to terminate funding for the CCC.

Temporarily, Sequoia increased its grazing range by using recreation areas for grazing during the war (Godfrey 2005, p. 305). Lookouts became part of the defense operations by being part of the Aircraft Warning Service (AWS) and being operated 24 hours a day. The Aircraft Warning Service was terminated on June 1, 1944.

Many Forest Service employees served in the military and women temporarily took their positions. "The Sequoia National Forest relied to a great extent on women to help out in their fire organization. These included one woman patrol, six suppression crew members, three fire lookouts and nine combination fire lookouts and AWS observers" (Godfrey 2005, p. 318).

Fire suppression began using more equipment with tank truck use doubling during the 1940s and bulldozers began to be seen on large fires (Godfrey 2005, p. 313). The grazing program was reviewed and found that half of the grazing units in the region were found to be in unsatisfactory condition. Part of the overgrazing was the practice of ranchers sending cow and calf herds when the Forest Service only counted cow numbers and had a policy of free-range use by calves. This "essentially fostered a pattern of sanctioned heavy overuse (Godfrey 2005, p. 321).

Giant Sequoia National Monument Specialist Report

War efforts brought a huge demand for lumber and timber harvests on the National Forests grew to fill the need (Godfrey 2005, pp. 314-315).

Golden State of Managing Growth and Multiple Use (1946-1954)

Between 1940 and 1955 California's population increased from 6.9 million to 13 million people (Godfrey 2005, p. 327).

June 1, 1946 the new Division of Wildlife Management was created.

The 1940s and 50s brought a struggle to the forests with growing pressures for use of public lands and resources policy changed to reflex the new pressures. "By the 1950s, the three basic objectives of area planning were formulated: (1) to direct administration in event of conflicting demands for a particular land area; (2) to provide a guide for making the best use of land; and (3) to provide for continuity in administration of use within specific land units" (Godfrey 2005, pp. 341-342). Planning began to center around six major classes of resources or land uses, soil, water, recreation, timber, wildlife and forage with the principle of highest use for each piece of land (Godfrey 2005, p. 342). The overlap of two or more incompatible land uses became competition and conflict.

The 1944 Sustained-Yield Forest Management Act "authorized the Forest Service to enter into long-term, noncompetitive contracts with local lumber mills in timber-dependent communities to assure a continuous supply of wood products" (Godfrey 2005, p. 345).

As timber demand outstripped the private forest production there was a push to timber more of the national forests." In 1952, "maximum material production had become a national duty and a moral imperative," (Godfrey 2005, p. 348). As timber production increased so did the need for road access and fire control to protect this sizeable and valuable resource. The increase demands lead to "Region 5 changed its timber policies to meet the demand that could no longer be met through private forestry. The active custodial role of Region 5, which handled only limited timber sales prior to World War II, changed into a timber extraction business", and forest tried to meet ever-optimistic annual allowable cuts (Godfrey 2005, p. 373).

Fire protection expanded to include smokejumpers, fire retardant from air tankers.

The prosperity of America in the 1950s brought an explosion of recreationists and demand for recreation facilities, campgrounds and organization camps exploded. This lead to the reconstruction of most of the campgrounds in the monument and the construction of many of the organizational camps in the monument.

Programmed Multiple-Use Maximus (1955-1967)

Multiple-Use and Sustained-Yield Act of 1960 formalized what Region 5 had practiced since the end of World War II (Godfrey 2005, p. 373).

Giant Sequoia National Monument Specialist Report

Tribal and Native American Interests

Native Americans and Alaska Natives are recognized as people with distinct cultures and traditional values. Historically, Native Americans have cared for and occupied lands that are currently being administered by the United States government. They have a special and unique legal and political relationship with the government of the United States as defined by history, treaties, statutes, executive orders, court decisions, and the U.S. Constitution. Tribal governments have jurisdictional powers that are frequently separate and equal to those of state and local governments. The policy of the U.S. Government is to support Native American cultural and political integrity, emphasizing self-determination and government-to-government relationships. This support comes from implementing and following laws aimed at protecting tribal rights and religious beliefs. The American Indian Religious Freedom Act 1978, the Archeological Resources Protection Act 1979, the National Historic Preservation Act 1996, Executive Order 13175 on Tribal Consultation, and others all charge the federal government with protecting areas within public lands that are sacred to native peoples. In addition there are many Forest Service policies, including but not limited to Forest Service Manual 1500, Chapter 1560, the Traditional Gathering Policy, to help and assist with tribal relations between the Forest Service and tribal communities.

There are many rights and privileges associated with treaties, executive orders, and other agreements, such as grazing, hunting, subsistence gathering, and access to and gathering of national forest resources. In addition, land and resources hold a special and unique meaning in the spiritual and everyday lifeways of many Native Americans.

The Sequoia National Forest remains committed to cultivating good relationships with Native American tribes and Native American groups. National Forest System lands and resources represent significant cultural and economic values to Native Americans. Forest Supervisors have the responsibility to maintain a government-to-government relationship with federally-recognized Indian tribes. They are to ensure that forest programs and activities honor Indian treaty rights and executive orders, and fulfill trust responsibilities, as those responsibilities apply to National Forest System lands. Treaties, statutes, and executive orders often reserve off-reservation rights and address traditional interests relative to the use of federal lands.

The Forest Supervisor also administers programs and activities to address and be sensitive to traditional native religious beliefs and practices and provide research, transfer of technology and technical assistance to tribal governments. The Sequoia also confers with non-federally recognized tribes, organizations and individuals.

Currently, the Sequoia has one agreement in place with Native American tribes concerning Sequoia National Forest Protocol for the Inadvertent Discovery and Identification of Native American Human Remains, Funerary Objects, Sacred Objects and Objects of Cultural Patrimony, that applies equally to federally and non-federally recognized tribes. The forest is in negotiation on a memorandum of understanding with the Tule River Indian Council that formally recognizes our government-to-government relationship. This memorandum of understanding would outline the goal of increased cooperation between the national forest and the Indian tribe in order to develop community

Giant Sequoia National Monument Specialist Report

opportunities and partnerships in areas of mutual interest. It documents national forest recognition of the importance of the Indian tribe and its need to have access to and the use of certain natural resources existing within the national forest. Other Native American tribes have expressed interest in similar memorandums of understanding but no formal negotiations have taken place.

Native American people have occupied areas in the Monument for thousands of years. Archaeological evidence and historical and ethnographic accounts attest to the diversity, longevity, and importance that Native American groups have had in this area (see Table 12).

Table 12: Tribes and Native American Groups within the Monument's Sphere of Influence

Tribe	Federal Recognized
Tule River Indian Reservation	Yes
Santa Rosa Rancheria – Tachi Yokuts	Yes
Dunlap Band Of Mono Indians	Seeking
Tubatulabals Of Kern Valley	Seeking
<i>Wukchumni</i> Tribal Council	Seeking
Wuksachi-Michahai Tribe	No
Traditional Choinumni Tribe	Seeking
Kings River Choinumni Farm Tribe	No
California Choinumni Tribal Project	No

The Monument borders over one-half of the entire Tule River Reservation, and approximately 9,000 acres of the upper portion of the South Fork Tule River, to which the Tule River Tribe has water rights under the Winters Doctrine, are within the Monument. The Winters Doctrine established that when the federal government created Indian reservations, water rights were reserved in sufficient quantity to meet the purposes for which the reservation was established. Water rights affect over 1,500 residents of the Tule River Indian Reservation.

Contemporary uses or concerns have centered on the protection of and access to Monument resources of cultural or traditional importance and areas with special or sacred values, often the locales of ceremonial activities. These include access and use of Forest Service roads that access reservation land, protection of the Tule River watershed, and protection of reservation lands from fires that start in the Monument.

There are other local tribes, groups, and individuals who have not been federally recognized but who, like the federally recognized tribes, still look to the Monument for traditional and contemporary uses and as part of their ancestral homeland (see Table 12).

Studies indicate that Native Americans attach deep emotional, symbolic, and spiritual meanings for those areas that are their traditional lands, including those lands that are publicly owned and managed by government resource management agencies. These perceptions and meanings influence their current lifestyles, environment, and quality of life (McAvoy and others 2001). Researchers also have noted that the dominant society's (in this case, Anglo-Hispanic) sense of place often conflicts and

Giant Sequoia National Monument Specialist Report

competes with the minority people's (Native Americans) sense of place, resulting in different realities or "contested terrain" that present challenges for public land management agencies (McAvoy and others 2001).

Environmental Effects

Effects on cultural resources are described in terminology consistent with the regulations of the Council on Environmental Quality and in compliance with the requirements of both the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA). The determination of effect for the undertaking (implementation of the alternative) required by Section 106 of the NHPA is included in the summary of effects for each alternative.

Legal and Regulatory Compliance

Applicable law, policy and Forest Service Manual direction provide the basis for protection of cultural resources. Activities are subject to the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and as promulgated by 36 CFR 800, to address effects to cultural resources. Section 106 of the NHPA requires a federal agency to consider the effects of its actions on properties included in, eligible for inclusion in, or potentially eligible for inclusion in the National Register of Historic Places and provide the Advisory Council on Historic Preservation a reasonable opportunity to comment.

In addition to following 36 CFR 800, the Sequoia uses a number of Programmatic Agreements outlining alternative procedures, per 36 CFR 800.14, developed by the Pacific Southwest Region including the First Amended Regional Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region (2001) (Regional PA). The forest also follows alternative procedures under the Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties managed by the National Forests of the Sierra Nevada, California (1996) (Sierra PA). In addition the Region has programmatic agreements for individual historic property types including lookouts, administrative buildings, and recreation residences, and specific undertaking types of fuel reduction, and range.

Assumptions and Methodology

This impact analysis methodology applies to three primary types of cultural resources: archaeological sites, ethnographic resources (including Traditional Cultural Properties), and cultural landscape resources (including historic structures).

Giant Sequoia National Monument Specialist Report

The assumptions used in this effects analysis include:

- Cultural resources will be managed according to existing laws, regulations, and policy to protect these resources according to societal expectations.
- Active management, encompassing the greatest acreage, would provide the best opportunities for identifying, protecting, and interpreting cultural resources.
- Events outside of management activities, such as wildfires, have the greatest potential to negatively affect cultural resources; these unplanned activities do not lend themselves to identification, anticipation, or mitigation.
- Ground-disturbing management activities could have direct adverse effects on cultural resources.
- Public interest and support for cultural resource management will increase, including that of Native American tribes, groups, and individuals.
- Reduction of fuel loads on and around a cultural resource has a long-term protective effect.
- High intensity fire can have a detrimental effect to all cultural resources, regardless of class.
- Emphasizing fire suppression without an aggressive prescribed fire program would increase risks to cultural resources from catastrophic wildfires.
- Prescribed fire programs pose less risk to cultural resources than fuels management based primarily on fire suppression.
- Adaptive use of an historic structure or district is preferable to abandonment. Abandonment leads to benign neglect, which is considered a negative effect.
- Cultural resource management plans would improve management of cultural resources.

As a rule, any activity that causes ground disturbance (disturbance to the soil matrix that contains the cultural resource) has the potential to adversely affect cultural resources, both directly and indirectly. This results in changes to the physical attributes of the resources that, in turn, compromise the integrity of the cultural resource and its context. Its context (the spatial relationship between the various artifacts, features and components of the cultural resource) is what is scientifically studied and interpreted and is the basis for the site significance determination. This effect is irreparable and considered adverse. Even a scientific archaeological excavation has an adverse effect because it is destroying the integrity and context of the cultural resource by removing its artifacts, features and components. In addition the significance of cultural resources is often dependent on their context in the larger landscape as much as on their immediate physical features. Combined effects of ground disturbing activities may jeopardize the quality of cultural resources. Ground disturbing activities may affect the "feeling" of a cultural site, even when the activities occur beyond site boundaries. Indirect

Giant Sequoia National Monument Specialist Report

effects to setting, association, or feeling may also detract from the value of a cultural site for public interpretation and education.

Impact analysis follows established procedures and stipulations outlined in regulations implementing Section 106 of the NHPA (36 CFR 800) and Region 5 programmatic agreements. These include: (1) identifying areas and types of resources that could be impacted; (2) assessing information regarding historic properties within this area and conducting additional inventories and resource evaluations, as necessary; (3) comparing the location of the impact area with that of important cultural resources; (4) identifying the extent and types of effects; (5) assessing those effects according to procedures established in the Advisory Council on Historic Preservation's regulations; and (6) considering ways to avoid, reduce, or mitigate negative effects.

Site-specific compliance, with project-specific details, will be completed for every project in the Monument, consistent with Section 106 of the NHPA (36 CFR 800) and Region 5 programmatic agreements.

This methodology focuses on specific activities proposed in the alternatives, as well as areas containing known cultural resources that would be most likely to be negatively affected. Limits to current knowledge add uncertainty to the effects analysis of the alternatives.

Types of Impacts

Impacts are considered either adverse or beneficial to historic properties (cultural resources) when analyzed under NEPA. However, impact type is not viewed this way when conducting analysis under Section 106 of the NHPA for the purposes of assessing effects to historic properties under the Section 106 of NHPA, effects are either adverse or not adverse. Overall, non-beneficial effects usually result in compromising the nature of the cultural resource and may affect its eligibility for inclusion in the NRHP.

Impacts can be either direct or indirect. Direct impacts result from specific actions, such as vegetation removal or use of a bulldozer through a historic property. Direct effects can result both from natural events or processes and human activities.

Indirect impacts generally occur after an action, and are a result of changes in the condition of the landscape (such as loss of vegetation and subsequent erosion). Indirect effects can result from changed visitor use patterns and improved access that brings more visitors, resulting in the deterioration or loss of the site. Studies have shown that effects on sites have three basic characteristics: (1) impacts tend to be multiple (that is, several different impacts to the same site); (2) impacts are cumulative; and (3) many impacts are the result of land use activities rather than deliberate vandalism (Marshall and Walt 1984, US Army Corps of Engineers 1988).

There is also the potential for previously unknown cultural resources to be discovered through exposure and/or damage by land use activities that involve surface disturbance.

Giant Sequoia National Monument Specialist Report

Duration of Impact

Impacts to historic properties (cultural resources) could be of short-term, long-term, or permanent duration. Analysis of the duration of impacts is required under NEPA, but is not required and is not usually considered in assessing effects in terms of Section 106 of NHPA.

For cultural resources, the duration of an impact is usually not considered in assessing effects in terms of the NHPA. This is because, unlike most other types of resources, cultural resources are basically non-renewable resources. Damage or destruction to cultural resource sites is generally permanent. Effects on some cultural resources (such as the upgrading of windows in an historical building with non-compatible materials [wooden windows to aluminum]) can be reversed; however, until that happens, the effect is ongoing and potentially adverse.

Unlike most other types of resource values, cultural resources are basically non-renewable resources. Damage or destruction to cultural resource sites is generally permanent. Effects on some cultural resources (such as the upgrading of windows in an historical building with non-compatible materials (wooden windows to aluminum) can be reversed; however, until that happens, the effect is ongoing and potentially adverse.

Intensity of Impact

The main focus of the effects analysis for cultural resources is the intensity within the context of NRHP eligibility and integrity. The significance of cultural resources, particularly ethnographic, and cultural landscapes, often depends on their context in the larger landscape as much as their immediate physical features. Activities that occur beyond the physical boundaries of the cultural resource can affect the historic property if they affect the larger, landscape-level context.

The significance of cultural resources, particularly Traditional Cultural Properties and cultural landscapes, often depends on their context in the larger landscape as much as their immediate physical features. Activities that occur beyond the physical boundaries of the cultural resource can affect the historic property if they affect the larger, landscape-level context. Negligible: Impacts would be barely perceptible changes in significant characteristics of a historic property.

Minor: Impacts would be perceptible and noticeable, but would remain localized and confined to a single element or significant characteristic of a historic property (such as a single archaeological site containing low data potential within a larger archaeological district or a single contributing element of a larger historic district).

Moderate: Impacts would be sufficient to cause a noticeable but not substantial change in significant characteristics of a historic property.

Major: Impacts would result in substantial and highly noticeable changes in significant characteristics of a historic property.

Giant Sequoia National Monument Specialist Report

Duration plays a key role in the overall effect; impacts of minor intensity over a long duration may have the same effect on the characteristics of heritage resources as would impacts of moderate intensity over a short duration.

Mitigation of Impacts to the Cultural Environment

NEPA calls for a discussion of the "appropriateness" of mitigation, and an analysis of the effectiveness of mitigations. A reduction in intensity of impact from mitigation is an estimate of the effectiveness of this mitigation under NEPA. It does not suggest that the level of effect, as defined by implementation regulations for Section 106 of the National Historic Preservation Act (36 CFR 800), is similarly reduced. Although adverse effects under Section 106 may be mitigated, the effects remain adverse. Therefore, measures to address impacts under NEPA may not be sufficient to address the effects under NHPA. The Secretary of the Interior has published regulations designed for the preservation, restoration and rehabilitation of cultural resources. The Regional PA provides a list of standard protection measures that can be used, per 36 CFR 800.14. Ultimately, the universal mitigation measures will always be in compliance with the vast array of historic preservation legislation and mandates.

Mitigation generally includes the avoidance of adverse effects. Standard mitigation measures are included in programmatic agreements and stipulations or developed in consultation with the state historic preservation officer.

Mitigation in this document is based on the cultural resources programmatic agreements and includes the avoidance of adverse effects or the application of one or more standard mitigation measures described in the programmatic agreement stipulations, or consultation with the State Historic Preservation Officer during project specific planning. Mitigation measures for effects include pre-planning survey of all proposed activities and sites; survey of all existing structures not previously surveyed for cultural resources; and use of standard protection measures such as project redesign, relocation and monitoring to protect the affected cultural resources. Education of project workers and the national forest user in regards to site damage or vandalism would also be an effective mitigation measure.

Archaeological Resources

Type and Duration of Impacts

A change in the physical attributes of an archaeological site that affects the information contained in that site is irreparable and considered adverse and of permanent duration. Adverse impacts to archaeological resources can result from manual or mechanical fuels treatment, direct heating during fire, vegetation removal, ecological restoration and recreation construction. The intensity of impacts to archaeological resources can range from negligible to major, depending on the management actions taken and/or the intensity of burning or ground disturbance. The majority of these impacts are long-term in duration.

Fuel reduction and ecological restoration can also have beneficial impacts to archaeological resources. Burning duff and forest litter exposes mineral soil not visible during inventories of unburned areas, allowing for greater accuracy in documenting site constituents and boundaries. Burning within a

Giant Sequoia National Monument Specialist Report

natural fire regime also reduces the threat of high-intensity fire and the need for suppression activities. Restoration of unstable hydrological areas can stabilize and eliminate the loss of archaeological deposits.

Intensity of Impact

The intensity of impact to an archaeological resource would depend on the potential of the resource to yield important information, as well as the extent of the physical disturbance and/or degradation. For example, moving earth at an archaeological site(s) with low data potential might result in a minor, adverse impact.

Negligible: Barely perceptible and not measurable, and would usually be confined to archaeological site(s) with low data potential.

Minor: Perceptible and measurable, and would remain localized and confined to archaeological site(s) with low to moderate data potential.

Moderate: Sufficient to cause a noticeable change, and would generally involve one or more archaeological site(s) with moderate to high data potential.

Major: Substantial and highly noticeable changes, involving archaeological site(s) with high data potential.

Mitigation of Impacts

For archaeological resources, mitigation includes site avoidance during activities, protection of flammable materials during burns, and reducing heavy fuel loads in a manner that preserves and protects the site. In some situations standard treatments such as complete site documentation may be appropriate as a way to preserve site information and forego continued site management.

Ethnographic Resources

While developing this plan, the Sequoia National Forest consulted with culturally-associated Native American tribes and groups. The Sequoia will continue to consult with culturally-associated Native American tribes and groups on a project specific, quarterly, and in an appropriate manner. This provides Native American tribes and groups the opportunity to provide additional information or express concerns about ethnographic resources and to discuss appropriate treatments.

Type of Impact

Adverse impact to ethnographic resources can occur as result of fuels treatment, burning, restoration, and ground or vegetation disturbing project. For example, traditionally used plants can be damaged or destroyed if they are exposed to fire at the wrong point in their annual life cycle. Wooden features can be destroyed if not protected from burning. Most ethnographic resources that are known can be protected from adverse impacts through protection or, in the case of plants, benefit from fire by prescribing appropriate burn times and intensities. Fire was used extensively by Native Americans in managing and maintaining some plants for traditional use - continued burning is necessary to maintain the health, vigor, culturally-desirable characteristics, and extent of many traditionally used plants.

Giant Sequoia National Monument Specialist Report

Duration of impact

Short-term: Causes a temporary change in important vegetation or temporarily restricts access to an important resource, yet does not disrupt the cultural traditions associated with that resource, for a noticeable period.

Long-term: A change in culturally important vegetation or a cultural feature for a noticeable period. This period would vary by resource type and traditional practitioners. Long-term changes would disrupt cultural traditions associated with the affected resource, but the disruption would not alter traditional activities to the extent that the important cultural traditions associated with the resource are lost.

Permanent: Impacts to ethnographic resources would involve irreversible changes in important resources such that the ongoing cultural traditions associated with those resources are lost.

Intensity of Impact

The intensity of impacts to an ethnographic resource would depend on the importance of the resource to an ongoing cultural tradition, as well as the extent of physical damage or change.

Cultural Landscape Resources, including Individually Significant Historic Sites and Structures

Type of Impact

Adverse: Physical changes to significant characteristics of a resource or its setting, such as removal or burning of historically important vegetation or burning of historic structures.

Beneficial: Restoration of a natural setting or reduction in heavy fuels adjacent to structures, or measures that reduce the risk of loss of a structure.

Duration of Impact

Short-term: Activities such as temporary removal of vegetation or other contributing resources, road closures, or prescribed burns, where the impacts are noticeable for a period of one to five years.

Long-term: Reversible changes, lasting from five to twenty years, in a significant characteristic of a historic structure or landscape.

Permanent: Irreversible changes such as complete removal or burning of important vegetation or structures.

Intensity of Impact

Negligible: Barely perceptible and not measurable; would be confined to small areas or a single contributing element of a larger National Register district.

Minor: Perceptible and measurable; remain localized and confined to a single contributing element of a larger National Register district.

Giant Sequoia National Monument Specialist Report

Moderate: Sufficient to cause a change in a significant characteristic of an individually significant historic structure; or would generally involve a single or small group of contributing elements in a larger National Register district. Major: Substantial and highly noticeable changes in significant characteristics of an individually significant historic structure; or would involve a large group of contributing elements in a National Register district.

Mitigation of Impacts

Mitigation measures for historic structures and cultural landscape resources include measures to avoid impacts, such as removing heavy fuels in and adjacent to cultural landscape features and historic structures; protecting flammable historic structures from burning; and excluding fire from especially sensitive designed historic landscapes.

Measures or Factors Used to Assess Environmental Consequences

In all of the alternatives, the types of management activities proposed could indirectly or cumulatively affect cultural resources and are subject to the regulations outlined in Section 106 of NHPA, as amended and as promulgated by 36 CFR 800, to address those effects to cultural resources. Cultural resource management activities such as inventory, analysis, stabilization, or restoration, and public interpretation are present in all alternatives. To some degree, all alternatives will have irreversible commitments of cultural resources; the magnitude and degree of that commitment varies by the difference in acreage for those land use zones or allocations in which activities that result in ground disturbance are suitable.

The following factors were determined to be the best factors indicating potential effects on cultural resources:

- Total acres of potential ground disturbance, including restoration, wildland urban intermix (WUI), tribal protection, and wildfire
- Miles of potential road decommission
- Potential number of new cultural resource sites identified.

Tribal and Native American Interests - Assumptions

Applicable laws, policy, directions, and regulations provide the management direction for tribal relations and issues. Forest Service activities and special use authorizations will comply with the Forest Plan and the Monument Plan. All special use applications are subjected to environmental review before an authorization is issued. Tribal concerns are typically addressed during site-specific project design.

The following assumptions will apply in the assessment of the environmental consequences of the alternatives:

Giant Sequoia National Monument Specialist Report

- National forest planners view the national forest for land uses emphasizing resource values, while Native Americans view the national forests as a portion of their spiritual values, lifeways, and beliefs.
- Native people have a deep connectedness with the natural environment of the national forest.
- With open space around the national forests disappearing at a rapid rate because of urbanization, the Native American community will increasingly look to the national forests to meet their needs for traditional foods, plants, and places of solitude to conduct traditional activities.

Direct Effects

Direct Effects to Cultural Resources

The alternatives in this programmatic level plan do not propose site-specific projects; therefore they would not produce any direct effects on cultural resources. Future site-specific projects will be assessed for cultural resource impacts.

By developing a plan that does not direct or implement any actions across the broad Monument-wide landscape and leaves direct effects analysis to project specific planning forego opportunities to include cultural resource information into planning at a scale greater than the individual project. Planning at landscape scales would provide opportunities for identifying and incorporating information about cultural resources into ecosystem planning and management and allow project locations to be developed with integration of cultural resource rather than in a reactive Section 106 process. The lack of landscape scale planning does have a direct effect of continuation of benign neglect to cultural resources that do not fall under project specific planning.

Direct Effects to Tribal and Native American Interests

The alternatives in this programmatic level plan that does not direct initiation of any projects; therefore, it has no direct impact on tribal and Native American interests.

Indirect Effects

Indirect Effects on Cultural Resources

Effects of Air Resources on Cultural Resources

There are no indirect and cumulative effects of air resources on cultural resources.

Effects of Wildlife Management on Cultural Resources

Most activities associated with wildlife and fisheries management are proposed in site-specific projects, such as prescribed burns, revegetation, and terrestrial and aquatic structures. Some activities

Giant Sequoia National Monument Specialist Report

designed to protect threatened, endangered, proposed, candidate, and sensitive species would be subject to provisions of the NHPA because they could negatively affect cultural resources. The consistent protection of wildlife resources in all alternatives results in the same potential to affect cultural resources.

Effects of the Protection of Geologic and Cave Management on Cultural Resources

Activities associated with ground disturbance, such as gates and fencing to close or restrict access to caves, could have an effect on cultural resources. An indirect effect of a closure would be the restriction of public access to any cultural resources in the cave (beneficial) but, if the closure involves ground movement, cultural resources could be damaged or destroyed (negative).

Geologic and cave features are protected as objects of interest under the Clinton proclamation (2000). The physical protection of domes, spires, hot springs, and caves could also protect cultural resources, especially those associated with cultural landscapes and sacred sites. The protection of geological resources would also protect any cultural resources on those resources. The same is true for the protection of paleontological resources, although the retention of areas of significant sedimentation and meadow vegetation deposits could limit the type of historic preservation activities to be used as part of the cultural management program (for example, no excavation of the sites for scientific study). Also, management emphasis of some areas may result in the removal of non-compatible items such as evidence of human presence (historical buildings), which would be considered a negative effect on cultural resources.

Effects of Botanical Features Management including Invasive Nonnative Species on Cultural Resources

Preventing of invasive, nonnative species could have a beneficial effect on cultural landscapes, districts, and traditional cultural properties. Nonnative species could have a negative effect on cultural resources by altering botanical landscape features. However, the eradication of existing invasive populations could have a negative effect on cultural resources if ground-disturbing activities occur on a cultural resource. The consistent prevention of invasive, nonnative species across alternatives gives them each the same potential to affect cultural resources.

Effects of Soil Resources Management on Cultural Resources

Project activities that maintain soil stability on cultural resource sites by maintaining or improving vegetation coverage could preserve the soil matrix in which most cultural resources are found. Conversely, effects on cultural resources would be greatest where project activities remove the vegetation and the upper soil layer, resulting in the need for soil stabilization activities. The consistent protection of soil resources across alternatives gives them each the same potential to affect cultural resources.

Effects of Vegetation Management on Cultural Resources

The vegetation management program in all alternatives focuses on ecological restoration. Restoration activities that include mechanical removal of vegetation can affect cultural resources through ground

Giant Sequoia National Monument Specialist Report

disturbance by machinery and vehicles, by felling trees on certain types of cultural resources, by skidding of logs and trees, or by erosion caused by vegetation removal or damage. Vegetation removal could also increase the visibility of cultural resource sites, which may result in increased vandalism. Construction or reconstruction of permanent or temporary roads could also affect cultural resources.

Prescribed burning could damage or destroy cultural resources. Historic sites and structures are at a greater risk of destruction from fire.

Changing from grove influence zones (Alternatives A and E) to zones of influence (Alternatives B, and F) would double the number of cultural resources protected in these areas from 15 to 30 percent. The complete elimination of grove zones of any type in Alternatives C and D would decrease this protection of cultural resources.

Alternatives that propose the most forest restoration (Alternatives A, B, E, and F) would have a greater potential for beneficial effects on cultural landscapes than those proposing less (Alternatives C and D). Increased soil disturbance from mechanical treatments under Alternatives E and F would have a greater potential of negative effects on archaeological sites than under Alternatives A and B. Alternatives C and D would have the least potential for soil disturbance because they propose less mechanical manipulation of vegetation.

Alternatives A, B, E, and F would have the greatest potential for beneficial cultural resource identification and the use of standardized protection measures, due to increased forest restoration, than Alternatives C and D.

Mechanical treatments used for forest restoration may enhance or diminish the historic character in and around cultural sites; outcomes depend on the care taken and the measures taken to avoid long-term harm to sites. The emphasis on mechanical treatments on more acres in Alternative F would have the potential to negatively affect cultural resources, features, and landscape contexts. Alternatives A and E would also have the potential to negatively affect these resources, due to the same emphasis, but less so than under Alternative F due to fewer potential acres affected. Alternatives B and C emphasize prescribed fire more than mechanical treatments, which would reduce the potential of negative effects on some types of cultural resources. Alternative B would have more potential to affect cultural resources than Alternative C. Because Alternatives C and D emphasize re-introducing fire as a natural process and use fire to reduce fuels accumulations, rather than mechanical treatment these alternatives would have the least potential to affect cultural resources with mechanical treatments.

Site-specific analysis that includes the NHPA process of identification, evaluation, and mitigation would prevent or minimize the potential effects of vegetation management activities.

Effects of Hydrological Resources Management on Cultural Resources

Stable watersheds and hydrologic processes are beneficial to the long-term preservation of cultural resource sites. Watershed restoration treatments have a high potential to effect cultural resource due to the high percentage of sites near streams and rivers. Geographic information system (GIS) analysis

Giant Sequoia National Monument Specialist Report

of the Monument shows that 35 percent of the cultural resource sites are within 100 meters of streams and rivers.

The restoration of watersheds and critical aquatic refuges would benefit cultural resources in riparian areas by reducing soil erosion and grazing impacts, but could have the potential to negatively affect individual cultural resources if ground-disturbing activities take place within site boundaries. The consistent protection of watershed resources across alternatives gives them each the same potential to affect cultural resources.

Effects of Cultural Resource Management on Cultural Resources

Scientific archaeological excavation does affect cultural resources because it permanently destroys the physical context of archaeological deposits that cannot be replaced or replicated. Even though the archaeological deposit and its internal contextual relationship are preserved somewhat in the data recording associated with an excavation, there is the potential of scientific information being permanently lost because of limitations in current state-of-the-art data retrieval techniques.

An increase in scientific archaeological excavations would be expected under all action alternatives. The increase would be a mix of excavations in support of Section 106 of NHPA and those in support of cultural resource enhancing activities. Because of the anticipated increase in ground-disturbing activities (such as community protection), Alternatives B, E, and F would provide for an increase in scientific archaeological excavations in compliance with Section 106 of the NHPA. Alternative C has the potential to increase cultural resource enhancement activities, as well as the potential to increase site-specific ground-disturbing activities for recreation development. Alternative D would result in the smallest increase in excavation-based disturbance because it has the greatest restrictions on ground disturbing activities.

Effects of Recreation Management on Cultural Resources

Population growth in California is expected to increase the amount and types of recreation use within the Monument. Accordingly, use is expected to be more intense at existing sites and to increase at those sites and areas currently being lightly used.

The increase in visitors brings both positive and negative effects to cultural resources. Positive effects include opportunities for edification and education that may result in public support and advocacy for historic preservation and interpretation. Negative effects can result from increased frequency of vandalism as visitation increases, especially in those areas with little law enforcement (U.S. Army Corps of Engineers 1989b).

Construction, reconstruction, and maintenance of campgrounds and other developed facilities that include ground disturbance could affect cultural resources. Developed facilities are often situated on older historic camps or prehistoric sites and often qualify as historic. Cultural deposits at such sites may still contain valuable information, even though the surface has been modified for many years. Many developed sites have reduced vegetation or ground cover that exposes artifacts that can contribute to illegal collecting and excavation.

Giant Sequoia National Monument Specialist Report

Campground maintenance and public camping can have impacts on archaeological deposits. Ongoing camping activities can mix and disperse archaeological remains, fragment botanical remains (seeds) beyond recognition, and introduce modern material (such as charcoal, tin foil, beer bottle glass, fishing swivels) to sites, compromising scientific information.

Developed recreation has a negative effect in the trampling of cultural resources, increased vandalism, and access to adjacent areas that contain cultural resources. Beneficial effects consist of increased opportunities to provide cultural interpretation at sites located in developed recreation areas. New developed recreation sites can also be designed and located outside of known cultural resources.

Dispersed recreation is often unregulated and occurs in a wide area. Hunters and others can make camps on top of cultural resources, leveling the land for tent pads and disturbing the surface of cultural resources. Recreationists can also modify historic cabins for their own use; they remove wood from historic structures and sites for firewood, resulting in site damage. Other impacts can include surface disturbance (e.g., construction of campfire rings using stone artifacts from prehistoric site features), and the introduction of modern charcoal onto site deposits (i.e., possible contamination of radiocarbon assay dating). Increased use of national forests results in increased pot hunting and vandalism opportunities, including artifact collection. The unauthorized development of roads and trails can also damage or destroy cultural sites.

The anticipated effects on cultural resources from recreation would be greatest in those alternatives that promote the broadest range of recreation opportunities, Alternatives B, E, and F. Because the range of recreation opportunities is less in Alternative C, the potential for effects, especially those from dispersed recreation, would be reduced. Although concentrated developed recreation, as proposed in Alternative C, could have negative effects on individual cultural resources, the cessation of dispersed camping would reduce the total number of sites affected. The development of entrance stations or kiosks would increase opportunities to educate the public on cultural resource protection.

The two downhill ski areas proposed in Alternative A would have the potential to negatively affect cultural resources.

Effects of Scenery Management on Cultural Resources

The Native American community feels a close association with cultural and historic landscapes. Any activity that promotes scenery management and aims to maintain the feeling of the natural-appearing landscape would have a beneficial effect. Any alteration or permitted degradation of scenic integrity from the more natural settings or the settings associated with the cultural resources may affect potential cultural or historic landscapes or traditional cultural properties.

Mitigation could include the documentation and avoidance of historic and cultural landscapes and traditional cultural properties for site-specific projects.

The consistent protection of the scenic landscape across alternatives gives them each the same potential to affect cultural resources.

Giant Sequoia National Monument Specialist Report

Effects of Tribal Relations on Cultural Resources

Archaeological excavations and data recovery can come in direct conflict with Native American groups. Agreements with tribes and local Native American groups regarding the preservation of archaeological sites, if they include a prohibition on excavation of certain site types, help preserve cultural resources, but also make those sites unavailable for scientific study. This could affect the status of our knowledge of past cultures and ways of life.

Because of their proposals to increase ground-disturbing activities (such as those needed for community protection), Alternatives B, E, and F would provide an increase in scientific archaeological excavation in compliance with Section 106 of the NHPA. Alternative C has the potential to increase current levels of cultural resource enhancement activities, as well as to increase site-specific ground-disturbing activities during recreation development projects. Alternative D would provide for the smallest increase in excavation disturbance because it includes the greatest restrictions on ground-disturbing activities.

In all alternatives, the effects from restricting research on cultural sites would be minimized by close collaboration with local tribes and Native American groups. Research programs could be developed that address the need for information about past cultures and ways of life, support resource management decisions, and address and honor the concerns of the tribes and Native American groups to the extent practicable.

Effects of Socioeconomics on Cultural Resources

Increasing visitation by the public with changing cultural demographics may mean that new forest users (especially people from different parts of the world) may not have the same values or connection to cultural resources that other national forest users may have. This could result in an indifference or lack of concern for protecting or preserving cultural resources. Effects may differ depending on the way the Monument is being used by the public.

Potential effects would be greater in those alternatives that promote more use of the Monument (Alternatives A, B, D, and F), and would be less in those alternatives that may restrict access (Alternative C), or those that through special designation manage large portions of the Monument for single purposes (Alternative E). Appropriate mitigation could include an increased emphasis on educational programs focused on historic preservation and cultural resource values within the Monument and tailored to various national forest user groups.

Effects of Special Designation Areas on Cultural Resources

Designating special areas could reduce the range of activities that support the identification of cultural resources. Since current information about the Monument's cultural resources is based primarily on past program support of management activities, fewer activities could limit the ability to collect more information about cultural resources. For the proposed Windy Gulch Geologic Area (Alternatives B and F) and the Moses Wilderness (Alternative E) which are currently in Inventory Roadless Areas (IRA), the restriction of project activities in IRAs has already reduced NHPA Section 106 driven cultural resource surveys, site recording, and site management.

Giant Sequoia National Monument Specialist Report

Some designations could limit the type of historic preservation activities commonly used as part of a cultural management program (e.g., limitations on the scientific excavation of archaeological sites). Section 106 of the NHPA requires the identification of adverse effects to historic properties, and consideration of ways to reduce any identified effects (36 CFR 800). The effect of wilderness designation, however, could limit the Forest Service and others from maintaining, rehabilitating, or restoring historic structures that are eligible for inclusion in the National Register of Historic Places (36 CFR Part 63). Because preservation of historic structures is prohibited in most wilderness areas, unless provided for in enabling legislation, Alternative E's recommendation to designate Monument lands as part of the proposed Moses Wilderness could have an indirect adverse effect on any historic structures under 36 CFR 800. Mitigations to reduce potential adverse effects under NHPA Section 106 (36 CFR 800) include historic research and documenting historic structures following the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (1990) and use of the Historic American Buildings Survey/Historic American Engineering Record standards and heritage documentation programs.

Management emphasis of some areas (like wilderness) could result the reduction of tools available to maintain and preserve historic structures and buildings (e.g., no power tools, all equipment and materials brought in by pack animal). Management of cultural resources in a wilderness is directed by Forest Service Manual 2328.8 and states "Regional Foresters may approve stabilization or restoration and subsequent maintenance of such structures if their continued existence is essential to cultural resource management. Do not use motorized equipment for restoration or maintenance unless essential (FSM 2326)." Forest Service Manual 2328.8 (p. 43) direction also states "management direction for cultural resources eligible for nomination to the National Register is subject to compliance with section 106 of the National Historic Preservation Act and 36 CFR 800 (FSM 2366). A decision to remove, maintain, or allow a historic or prehistoric structure to deteriorate naturally is a Federal undertaking that will affect the cultural resource." (Forest Service Manual 2328.8, p. 43)

Recent court cases, *Wilderness Watch v. Mainella*, *Olympic Park Associates v. Mainella* and *High Sierra Hikers v. U.S. Forest Service*, 436 F.Supp. 2d 1117 (Dist. Ct. E.D. Cal.), have discussed some potential conflicts between the NHPA and the Wilderness Act regarding preservation of historic structures and buildings in Wilderness but these cases have only indirectly addressed the issue (Van Ness 2007:41-42). On March 27, 2012, the District Court Western District of Washington at Seattle in *Wilderness Watch vs. Y. Robert Iwamoto and USFS* wrote:

"The Court finds ... the NHPA does not compel particular preservation-oriented outcomes. Accordingly, the Court rejects the notion that the Forest Service had any affirmative obligation to preserve the Green Mountain lookout pursuant to sec 110 of the NHPA that must be balanced against its obligations under the Wilderness Act. In fact, there is no conflict between the Wilderness Act and the NHPA here since neither action nor inaction toward the Green Mountain lookout would have placed the Forest Service in violation of the NHPA, for the very reason that the NHPA itself that does not compel any particular outcome.

Giant Sequoia National Monument Specialist Report

The conclusion that the Wilderness Act – and not the NHPA – controls this case is further supported by the Wilderness Act. The Wilderness Act “emphasizes outcome (wilderness preservation) over procedure” and has been described to be “as close to an outcome-oriented piece of environmental legislation as exists.” *High Sierra Hikers Ass’n v. U.S. Forest Service*, 436 F.Supp.2d 117, 1138 (E.D. Cal 2006).”

Effects of the Transportation System on Cultural Resources

Given the predominant reliance on the automobile for access to national forests today, public use of an area is usually intense in areas immediately surrounding developed sites and roads, creating a heavy-use zone for recreation activities. GIS analysis of the Monument shows that approximately 55 percent of known cultural resource sites are located within 100 meters of a road, and approximately 75 percent of known sites are within 200 meters. The majority of known cultural resource sites are nearest the lowest maintenance level roads. This indicates that the majority of known sites are located in areas easily accessible to forest users. Many of the roads are of an age or have associations to qualify them as historic cultural resources or part of historic cultural landscapes, such as the landscapes associated with homesteading, ranching, or logging.

Maintaining roads, improving road facilities (replacing historic rock retaining walls with cement and metal retaining walls), and upgrading roads can affect the historic character or association from which the road derives its significance. Many roads have rock walls built by the Civilian Conservation Corps (CCC) or architecturally significant historic bridges. The retrofitting of the bridges or replacement of the walls and other features can affect the historical significance of the roads and their associated historic features. Degradation of these roads from lack of appropriate maintenance can result in damage to the road's historic character or association.

Road construction, reconstruction, and maintenance can affect cultural resources through ground disturbance. Roads can alter water and sediment runoff to flow onto cultural resources, resulting in erosion that damages the soil matrix. Many Forest Service roads are unsurfaced (dirt), so the continual grading of the roads as part of maintenance can affect any cultural resource that the road crosses. Proper maintenance can also have a beneficial effect on cultural resources by reducing the risk of soil erosion and the resulting impacts to soil matrices containing cultural sites.

Decommissioning roads can have a negative effect on cultural resources when it eliminates roads that are themselves cultural resources with important historical associations. The ground disturbance associated with decommissioning (such as installation of dirt barriers or gates, or ripping the roadway) can disturb archaeological deposits within and adjacent to the road prism. However, the more access is reduced, the less likely it is that vandalism and cultural resource site damage will occur.

Upgrading a road may facilitate and increase access to areas with cultural resources. New road construction or improving existing roads can affect areas that are traditional cultural properties, are considered sacred to Native American tribes, or are important to local communities. This could diminish those qualities held to be sacred or culturally important, and has the potential to introduce

Giant Sequoia National Monument Specialist Report

traffic into an area used for ceremonies, possibly limiting the ability to conduct those ceremonies. Conversely, limiting access to those authorized for this use (such as tribal members accessing ceremonial areas) could help protect cultural resources.

Alternative A maintains the current road system while the other alternatives (B, E, and F) would maintain a road system 18 percent small than current condition. The 64 percent reduction of the transportation system in Alternative C would have the greatest negative affect to historic roads and would have a beneficial effect by making cultural resources less accessible and less prone to vandalism. Alternative D would have less effect because of only a 40 percent reduction in the system.

Table 13 Proximity of Known Cultural Resource Sites to Roads

Road Maintenance Level	Road Distance from road (meters)	% of known Cultural Resource Sites
All (1-5)	100	58
All (1-5)	200	77
1	100	23
2	100	19
1 and 2	100	37
3	100	11
4	100	7
5	100	8

Maintaining roads, improving road facilities (replacing historic rock retaining walls with cement and metal retaining walls), and upgrading roads can affect the historic character or association from which the road derives its significance. Many roads have rock walls associated with the Civilian Conservation Corps (CCC) or architecturally significant historic bridges. The retrofitting of the bridges or replacement of the walls and other features can affect the historical significance of the roads and their associated historic features.

Degradation of these roads from lack of appropriate maintenance can result in damage to the road's historic character or association. Road construction, reconstruction, and maintenance can negatively affect cultural resources through ground disturbance. Roads can alter the water and sediment runoff to flow onto cultural resources, resulting in erosion that damages the soil matrix. Many Forest Service roads are unsurfaced (dirt) so the continual grading of the roads as part of maintenance can affect any cultural resource that the road crosses. Proper maintenance can also have a beneficial effect on cultural resources by reducing the risk of soil erosion and the resulting impacts to soil matrices containing cultural sites.

Decommissioning roads can have a negative effect on cultural resources when it eliminates roads that are themselves cultural resources with important historical associations. The ground disturbance associated with decommissioning (such as installation of dirt barriers or gates, or ripping the roadway) can potentially disturb archaeological deposits within and adjacent to the road prism. However, the

Giant Sequoia National Monument Specialist Report

more access is reduced, the less likely it is that vandalism and cultural resource site damage will occur. Upgrading a road may facilitate and increase access to areas with cultural resources. New road construction or improving existing roads can affect areas that are traditional cultural properties that are considered sacred, are important to Native American tribes, or are important to local communities. This could diminish those qualities held to be sacred or culturally important, and has the potential to either introduce traffic into an area used for ceremonies, or possibly limiting the ability Native American groups to conduct their ceremonies.

The larger the reduction of access, the larger the potential to reduce vandalism and cultural resource site damage while increasing access increases that potential for this use (such as tribal members accessing ceremonial areas) could help protect cultural resources.

Higher road decommissioning rates in Alternatives C and D would benefit cultural resources by making them less accessible and less prone to vandalism. The other alternatives (A, B, E, and F) would maintain a road system similar to the current condition. Maintaining roads, improving road facilities (replacing historic rock retaining walls with cement and metal retaining walls), and upgrading roads can affect the historic character or association from which the road derives its significance. Many roads have rock walls built by the Civilian Conservation Corps (CCC) or architecturally significant historic bridges. The retrofitting of the bridges or replacement of the walls and other features can affect the historical significance of the roads and their associated historic features.

Degradation of these roads from lack of appropriate maintenance can result in damage to the road's historic character or association.

Road construction, reconstruction, and maintenance can affect cultural resources through ground disturbance. Roads can alter water and sediment runoff to flow onto cultural resources, resulting in erosion that damages the soil matrix. Many Forest Service roads are unsurfaced (dirt), so the continual grading of the roads as part of maintenance can affect any cultural resource that the road crosses. Proper maintenance can also have a beneficial effect on cultural resources by reducing the risk of soil erosion and the resulting impacts to soil matrices containing cultural sites.

Decommissioning roads can have a negative effect on cultural resources when it eliminates roads that are themselves cultural resources with important historical associations. The ground disturbance associated with decommissioning (such as installation of dirt barriers or gates, or ripping the roadway) can disturb archaeological deposits within and adjacent to the road prism. However, the more access is reduced, the less likely it is that vandalism and cultural resource site damage will occur.

Upgrading a road may facilitate and increase access to areas with cultural resources. New road construction or improving existing roads can affect areas that are traditional cultural properties, are considered sacred to Native American tribes, or are important to local communities. This could diminish those qualities held to be sacred or culturally important, and has the potential to introduce traffic into an area used for ceremonies, possibly limiting the ability to conduct those ceremonies. Conversely, limiting access to those authorized for this use (such as tribal members accessing ceremonial areas) could help protect cultural resources.

Giant Sequoia National Monument Specialist Report

Higher road decommissioning rates in Alternatives C and D would benefit cultural resources by making them less accessible and less prone to vandalism. The other alternatives (A, B, E, and F) would maintain a road system similar to the current condition.

Effects of Non-Motorized Trails on Cultural Resources

Many of the trails in the Monument are of an age or have associations to qualify them as historic cultural resources or part of an historic cultural landscape. Trail construction and maintenance of existing trails can affect cultural resources through ground disturbance. Trail maintenance and reconstruction (i.e., upgrading culverts or bridges) can affect the historic character or association from which the trail may derive its potential significance. Water run-off and erosion caused by trails can affect the soil matrix containing cultural resources. Degradation of these trails from the lack of appropriate trail maintenance can result in damage to the trail's historic character or association.

Trails increase access into areas containing known or unknown cultural resources, which increases the possibility of vandalism. Use of the trails by foot or hoof (i.e., horse or pack animal) has the potential to affect those cultural resources crossed by trails by compacting soils, disturbing the soil matrix, and damaging artifacts.

Effects of Livestock Grazing on Cultural Resources

Effects of livestock grazing can be documented on two levels: impact on the soil matrices, in which cultural resources occur, and impacts on and damages to artifacts and other cultural remains (Horne and McFarland 1993; Jackson 1999). Currently, 78 percent of all known sites are within existing grazing allotments.

Fence construction, spring developments, wells, water holes, salt licks, stock tanks, pumps, pipelines, water storage, use of heavy equipment or fire for vegetation type conversions, cattle guards and non-structural projects such as noxious weed treatments, forage improvement, and livestock grazing can affect cultural resources. The actions of the livestock can result in chiseling in damp soils; compaction of soil and artifacts by concentration in small areas, such as around water tanks; collapse of stream banks and other soil features that may contain cultural resources; and displacement of artifacts (affecting site significance), which can compromise site integrity and research (Horne and McFarland 1993. Jackson 1999).

None of the alternatives would change management direction for grazing in the Monument.

Effects of Special Forest Products Collection on Cultural Resources

Some types of special forest products collection can have an impact on cultural resources. The gathering of plant material from site locations can increase the visibility of cultural resources, which may increase the potential for vandalism and site damage. The unregulated collection of special forest products allows the public to visit areas not previously inventoried for cultural resources, thus increasing the potential for site vandalism and damage.

Measures taken to avoid impacts on cultural resources from special forest products collection include the use of programmatic agreement standard protection measures, prior survey of all areas requested

Giant Sequoia National Monument Specialist Report

for special forest product collection, and, whenever possible, restriction of special forest product collection to areas previously inventoried for cultural resources. None of the alternatives would change management direction for special forest products in the Monument.

Effects of Wildland Fire and Community Protection on Cultural Resources

Fire and fuels management in all alternatives focuses on creating defensible space in the WUI, fuels reduction using both mechanical and fire treatments, and returning fire to the ecosystem through prescribed burning and managing wildfire.

Any fire can potentially affect cultural resources. The effects of fire on cultural resources are often divided into and described as direct fire, operational, and post-fire effects. Direct effects are those caused by the fire itself. These are caused by either direct contact with flames or being in close proximity to heat produced by combustion or smoke. Operational effects are the result of management operations like line construction or staging. Post-fire effects are most often those caused by the change in soil stability and vegetation following a fire.

The differences in effects on cultural resources from fire come with the differences in the intensity of a fire, the ability to identify cultural resources and initiate protective measures, the type of management actions taken to control the fire, and the post-fire effects.

The potential effect on cultural resources from direct fire depends on the material components of the cultural resource and the magnitude of the heating and combustion generated by a fire. Specifically, fire and its byproducts can alter such resources through total consumption, melting, breakage, spalling, charring, and discoloration. Different materials are vulnerable based on the peak and duration of the exposure to heat and combustion. For example, a wooden structure may easily ignite and be fully consumed, whereas a bedrock milling feature in the same fuel model is relatively impervious to fire. Further, some raw materials may have multiple importance attribute classes that are affected at different temperatures and/or durations. For example, in the case of obsidian artifacts, hydration rinds can be compromised at relatively low temperatures (<200–300°C), whereas severe morphological damage such as breakage or melting generally does not occur until higher temperatures (>700°C) are reached (Deal 2001).

Perishable artifacts (those that have carbon in their makeup) have virtually no tolerance for fire and would be destroyed by it. Non-perishable artifacts (depending on the artifact type) will tolerate only low- or moderate-intensity fire. Cultural landscapes can tolerate fire intensity that will not cause the introduction of non-compatible elements (such as bulldozed fire lines) or a change in vegetation community (chaparral to grasslands).

The magnitude and duration of the heat pulse depends on fuel loading, fuel moisture content, fuel distribution, rate of combustion, soil moisture content, and other factors. The movement of heat into the cultural material is not only dependent upon the peak temperature reached, but even more so upon the length of time that the heat source is present and the composition of the cultural resource. Because fuels are not evenly distributed on or around a cultural resource, and due to the variability of materials types that make up a cultural resource site, a mosaic of heating and corresponding effects

Giant Sequoia National Monument Specialist Report

usually occurs. The highest heat pulses are usually associated with areas of greatest fuel consumption and the areas that burn the longest.

Artifacts surrounded or in contact with fuels such as wood and duff are most susceptible to direct contact with flames and heat. These artifacts are affected by convection, radiation, and conduction heat transfer. Artifacts and features above the ground surface (i.e., structures, arboglyphs, rock art, etc.) are susceptible to preheating, convection heat transfer, and smoke impacts. Thus, surface and shallow cultural resources consisting of flammable organic components (i.e., wooden structures, botanical remains) are at greatest risk from direct flame impingement, especially high intensity fire.

High-intensity fire in general has a greater potential to negatively affect cultural resources than low-intensity fire. Fires with cool combustion temperatures, generated by sparse understories and light fuels, have a lower potential to affect diagnostic artifact characteristics. Fires designed for cool combustion temperatures, such as controlled burns, can avoid major impacts on archaeological sites and artifacts. Thus, prescribed burns can be effectively used to control vegetation on archaeological sites without damage to cultural resources (U.S. Army Corps of Engineers 1989a).

Operational effects are usually from ground-disturbing activities, but can also be from backfires and burnouts, and the use of fire retardants. They are not limited to wildfires, but can also occur during prescribed burns. These effects are not always in the immediate vicinity of a fire, but can occur miles away as a result of the construction of camps, fire lines, etc. Operational effects can be mitigated, if planned in advance, to avoid and protect cultural resources.

Wildfire ignitions are unplanned and thus limit the ability for prior cultural resources identification and the development and implementation of protective measures for cultural resources. These increase the potential for negative effects on cultural resources. Extreme fire behavior associated with uncontrollable wildfire has a higher potential to affect cultural resources. Suppression actions taken for uncontrolled wildfire typically have limited cultural resource management input and have a greater potential to negatively affect cultural resources than pre-planned projects. Managed wildfires, while often having lower fire intensity than uncontrolled wildfire, usually have limited cultural resource management input and also have more potential to negatively affect cultural resources than prescribed fire.

Activities associated with wildfire suppression that cause ground disturbance (such as fire lines, helicopter bases and heliports, base/spike camps, and drop points) can affect cultural resources. Foam or water applied to hot rock surfaces causes spalling, "potliding," or fracturing that can damage archaeological features. Water and retardant drops can damage or destroy historical structures or hasten their deterioration.

Any type of vegetation removal, from either mechanical treatment or fire, reduces protective vegetative cover and increases the visibility of cultural resources, which can result in unlawful collecting and excavation. The lack of vegetation can also contribute to an increase in erosion that can damage or destroy the site matrix. Fire on any level can result in the loss of ethnographic resources

Giant Sequoia National Monument Specialist Report

and the disturbance and degradation of traditional plant gathering areas, cultural sites, and sacred or spiritual places.

Fuelbreaks and other ground disturbances associated with fire protection often provide access into areas that were previously inaccessible, resulting in an increased potential for site damage and vandalism. Erosion runoff from these sites can affect cultural resource sites located within or adjacent to these features.

Low-intensity fire and planned vegetation reduction has a beneficial effect of protecting cultural resources from catastrophic, high-intensity fire and large-scale post-fire erosion.

Fire effects on rock art (a significant cultural resource) include discoloration, soot smudging, rock face spalling, and heat penetration, which changes the organic binder materials for painted elements (Kelly and McCarthy 2000). This effect can result from direct heat if fuels are in close proximity or by convection when an advancing fire preheats the rock surfaces.

Post-fire effects include increased erosion of soils that can remove or bury archaeological resources, increased tree mortality resulting in impacts from trees falling or uprooting, increased rodent and insect populations that can alter subsurface soil structure, intentional and inadvertent looting, increased microbial activity which can lead to increased feeding on organic matter within archaeological soils, and the addition of “new” carbon, which can be move through the soil column of archaeological sites by a variety of agents. These potential effects can be mitigated during prescribed burns through the use of fire prescriptions that limit the intensity of the fire.

In the case of fuels reduction, either by mechanical treatments or prescribed fire, the project planning process allows time to identify cultural resources and to develop and implement protective measures. This planning leads to greater protection of cultural resources and longer-term protection of cultural resources because of reduced fuel loads. The potential for operational effects is greatly reduced because control lines and staging can be placed to avoid cultural resources. The potential for direct fire and post-fire effects are also reduced because site-specific projects are planned to avoid extreme fire intensity, which has the greatest potential to negatively affect cultural resources.

Wildfire

Due to the present situation with vegetation, including high surface fuel loads, overstocked stands, and longer fire seasons, an increase in acres burned by wildfires can be expected during the life of this Monument Plan. The difference in fire occurrences by alternative is not expected to be significant early in plan implementation.

Alternatives C and D would rely most heavily on managed wildfire and thus have the greatest potential to negatively affect on cultural resources, because of the reduced ability to identify and protect resources in advance of the fire. Cultural resources would thus be more susceptible to damage from catastrophic wildfires and associated suppression activities. The reduced WUI zones in both alternatives would increase the number of sites not protected by controlled fuel load reduction projects.

Giant Sequoia National Monument Specialist Report

In Alternatives C and D, fuel loads would be less likely to be reduced and wildfire would be allowed to burn in some cultural resource sites. The lack of fuel reduction projects on a landscape level would decrease the identification of cultural resources. Because the knowledge of the Monument's cultural resources is based primarily on past program support of management activities, the restriction of these activities would limit the ability to increase that knowledge.

The higher potential for road closures in Alternatives C and D could reduce public access, thus reducing an ignition source.

Community Protection

The focus of Alternatives A, B, E, and F are community protection, with the potential for 190,864 acres to be treated in either WUI defense or threat zones. Alternatives B and F propose an additional 56,643 acres of fuels treatment in the TFETA. Thus, Alternatives B and F would have the greatest potential for ground disturbance effects on cultural resources, but also have the greatest potential to protect cultural resources through identification, fuels reduction, and reduced potential for high-intensity fire. Alternatives A and E have slightly less potential to affect cultural resources from ground disturbance because they do not propose the TFETA. Alternative C, with a reduced WUI zone (8,304 acres) and no TFETA, has a greater potential for effects from planned ground disturbance than Alternative D, but lower than Alternatives B and F. Alternative D would have the least effects on cultural resources because the potential for planned ground disturbance is the lowest.

Mechanical treatments to reduce fuels may enhance or diminish the historic character in and around cultural sites; outcomes depend on the care taken and the measures taken to avoid long-term harm to sites. The emphasis on mechanical treatments over the most potential acres under Alternative F could increase the potential to affect cultural resources, features, and landscape contexts. Alternatives A and E also have this potential, but it is reduced compared to Alternative F fewer acres affected because they do not propose the TFETA. Alternatives B and C emphasize prescribed fire over mechanical treatments, which reduces the potential negative effect on some types of cultural resources, but Alternative B has a much larger potential effect on cultural resources than Alternative C. Alternatives C and D emphasize the reintroduction of fire as a natural process and using fire to reduce fuels accumulations, especially in old forest emphasis areas and smaller fuels management areas. These alternatives would have the least potential effect on cultural resources from mechanical treatments.

Mitigation measures for cultural resource site protection include a program of pre-fire surveys of high-susceptibility areas, potential fire control lines, and other fire suppression-related activity locations. Where cultural resources are found, programmatic agreement standard protection measures would be used, such as project redesign, relocation, protective buffer areas, and monitoring to protect affected cultural resources. Inventories should also occur during fire suppression activities in areas not inventoried. Effective treatment measures should be used to rehabilitate fire suppression-related ground disturbance.

Alternatives B and F both have 77 percent of known sites within proposed fuels reduction areas (see Table 14).

Giant Sequoia National Monument Specialist Report

Table 14 Sites Inside and Outside of Fuels Reduction Areas

Percentage of Known sites		
Alternative	Within WUI and/or TEFTA	Outside fuels reduction areas
A	69	31
B	77	23
C	10	90
D	4	96
E	69	31
F	77	23

The potential effects to site types most at risk from direct fire effects were also analyzed to determine the relative potential effects of each alternative. At risk site types are those containing any of the following components: midden, rock art (i.e., petroglyph or pictograph), building or structure (standing or collapsed), logging, mill or railroad grade (see Table 15).

Table 15 Percentage of At-risk Site Types within Fuels Reduction Areas

Alternative	prehistoric	historic	multicomponent	midden	rock art	structure	logging/mill/rr
A	65	70	96	57	59	66	64
B	77	70	67	64	66	68	64
C	6	17	15	5	5	17	16
D	2	7	9	3	0	7	6
E	65	70	96	57	59	66	64
F	77	70	67	64	66	68	64

Summary of Environmental Consequences by Alternative for Cultural Resources

Alternative A

Vegetation

Alternative A would have the potential for beneficial effects on cultural landscapes through forest restoration similar to Alternatives B, E, and F. It would have less potential for negative effects on archaeological sites from mechanical treatments than Alternatives E and F, more than Alternatives C and D, and the same potential as Alternative B.

Alternative A would be similar to Alternatives B, E, and F in its potential for beneficial effects from cultural resource identification and the use of standardized protection measures do to the greater amount of pre-planned forest restoration when compared to Alternatives C and D.

Restrictions on mechanical entry within grove boundaries would have a beneficial effect on those historic cultural resources associated with logging the groves in the late 1800s and early 1900s.

Giant Sequoia National Monument Specialist Report

However, the increased fuel loading within groves as a result of those restrictions could be detrimental to cultural resources if a high intensity wildfire burns through a grove. Areas of the Converse Basin Grove that are set aside for preservation of cultural resources would be beneficial.

The cessation of development of new plantations following timber harvests has a potentially beneficial effect on cultural landscapes and archaeological sites by decreasing potential ground disturbing activities.

Additional restrictions on mechanical treatments, road building, and logging in sequoia groves would have an overall beneficial effect on cultural resources in that there would be less potential for effects from ground-disturbing projects.

The potential effects of vegetation management on cultural resources under Alternative A would be equal to those under Alternative E due to protection of sequoia groves, less than those under Alternatives B and F, and greater than those under Alternatives C and D.

Fire and Fuels

Establishing community protection WUI zones enables cultural resources to be identified and monitored, but the increased activity in and around cultural resources increased the potential for effects on cultural resource sites. Fuels reduction would potentially reduce fuel loads on cultural resource sites, protecting the sites from high-intensity fire, while the emphasis on mechanical methods could increase the potential to affect cultural resources. The potential effects of fire and fuels management on cultural resources under Alternative A would be equal to those under Alternative E, less than those under Alternatives F and B, and greater than those under Alternatives C and D.

Minerals

The withdrawal of Monument lands from mineral and mining claims results in an overall decrease in the potential effects on cultural resources, as the conflict between modern mining and historic mining sites is no longer relevant. The clean-up and reclamation of mining sites still has the potential to affect cultural resource sites. Many of the mines slated for reclamation are potential historic properties, and their cleanup could remove many of their significant features. The potential effects on cultural resources would be equal under all action alternatives.

Recreation

Recreation activities have the potential to affect cultural resources both positively through education and advocacy and negatively through vandalism, expansion of recreation facilities, maintenance of existing facilities, and expansion of dispersed recreation. The potential effects of recreation on cultural resources under Alternative A would be equal to those under Alternatives B, E, and F and greater than those under Alternatives C and D. Recreation development and the range of recreational opportunities are somewhat restricted in Alternatives C and D.

Special Areas

Alternative A does not propose additional special areas and thus would have less potential to affect cultural resources. The designation of Freeman Creek Grove as a botanical area would reduce the

Giant Sequoia National Monument Specialist Report

range of activities that could affect cultural resources. The potential effects of designating special areas on cultural resources under Alternative A would be more than those under Alternatives C and D, and less than under Alternatives B, E, and F.

Transportation

The closure of 71 miles of Maintenance Level 1 roads in Alternative A would halt the impacts on cultural resources that are crossed by motorized trails and roads. The potential for impacts from looting, vandalism, and dispersed camping brought by open access to cultural resource sites would also be decreased. Road closures would have the potential to negatively affect some historic roads, but this could be mitigated by re-using them as trails or through evaluation and recordation. The potential effects of the transportation system on cultural resources under Alternative A would be more than under Alternatives B, E, and F, and less than those under Alternatives C and D.

Alternative B

Vegetation

The potential effects of vegetation management on cultural resources under Alternative B would be greater than under Alternatives A and E, due to establishing the grove zones of influence. The effects would be equal to those under Alternative F and less than those under Alternatives C and D due to reduction in potential ground disturbance.

Alternative B would have the same potential for beneficial effects on cultural landscapes from forest restoration as Alternatives A, E, and F. It would have less potential for negative effects on archaeological sites from mechanical treatments than Alternatives E and F, more than Alternatives C and D, and the same potential as Alternative A.

Alternative B would be equal to Alternatives A, E, and F in its potential for beneficial effects from cultural resource identification and the use of standardized protection measures do to the increased greater amount of pre-planned forest restoration projects.

Fire and Fuels

Alternative B (and Alternative F) identifies the largest area for potential fuels reduction, with both WUI community protection zones and the TFETA. These areas contain 73 percent of the known cultural resources. These fuel reduction areas enable cultural resources to be identified and monitored, but the increased activity in and around cultural resources would also increase the potential for effects on cultural resource sites. Fuels reduction on and near cultural resource sites would protect the sites from high-intensity fire, while the emphasis on mechanical methods could increase potential effects on cultural resources. The potential effects of fire and fuels management on cultural resources under Alternative B would be equal to those under Alternative F, greater than those under Alternatives A, C, and E, and less than those under Alternative D.

Special Areas

Alternative B would have a moderate potential to affect cultural resources by proposing the addition of the Freeman Creek Grove Botanical Area and the Windy Gulch Geological Area. Alternative B has the

Giant Sequoia National Monument Specialist Report

potential to protect cultural resources by restricting ground disturbance in the proposed Windy Gulch Geological Area. The potential effects of designating special areas on cultural resources under Alternative B would be the same as those under Alternative F, more than those under Alternatives A, C, and D, and less than those under Alternative E.

Recreation

The potential effects of recreation on cultural resources under Alternative B would be equal to those under Alternatives A, E, and F, and greater than those under Alternatives C and D because of the potential for recreation development and the continued emphasis of allowing the widest range of recreational activities.

Transportation

Alternative B proposes the smaller than current transportation system. The potential effects of the transportation system on cultural resources under Alternative B would be equal to those under Alternatives E, and F, and greater than those under Alternatives C and D.

Alternative C

Vegetation

Alternative C emphasizes fire as the preferred tool for ecological restoration, but does not place any restrictions on mechanical treatments. In addition, this alternative eliminates the most restrictive land allocations, such as PACs and RCAs, and has the smallest protective areas for sequoia groves, only grove administrative boundaries. The lack of restrictive land allocations creates a potential effect on cultural resources in Alternative C that is at least equal to and potentially greater than the effects of vegetation management in Alternatives B and F. Effects would be potentially greater than those under Alternative A. Compared to Alternative D, Alternative C would have less potential to affect cultural resources through ground disturbance. Because the knowledge of the Monument's cultural resources is based primarily on the past program support of management activities, Alternative C would be more likely than Alternative D to increase this knowledge.

Fire and Fuels

Fuels reduction in the smaller WUI (64,895 acres) would reduce the potential for negative effects from ground-disturbing projects, but would also reduce the number of cultural resource sites that would be protected from high-intensity fire. The lack of TFETA under Alternative C decrease potential negative effects caused by mechanical treatments but increase the potential negative effects caused by less fuels reduction than Alternatives F and B.

The emphasis on managed wildfire in Alternative C would reduce the ability to identify and protect resources in advance of wildfires. Cultural resources would thus be more susceptible to damage from catastrophic wildfires and associated suppression activities.

The potential effects of fire and fuels management on cultural resources through fuels reduction under Alternative C would be slightly more than under Alternative D. It would be less than under Alternatives A and E, and even less than under Alternatives B and F.

Giant Sequoia National Monument Specialist Report

The potential negative effects from managed wildfire would be slightly less than under Alternative D. Potential negative effects would be greater than under Alternatives A and E and greatest compared to Alternatives B and F, due to the smaller fuel reduction areas and more managed wildfire.

Recreation

Because the range of recreation opportunities would be reduced under Alternative C, especially through the elimination of dispersed camping, effects on cultural resources would be reduced. Concentrated built recreation, as proposed in Alternative C, could have negative effects on individual cultural resource sites, but the cessation of dispersed camping would reduce the total number of sites affected. The development of entrance stations or kiosks would increase opportunities to educate the public on cultural resource protection.

The potential effects of recreation on cultural resources under Alternative C would be less than those under Alternatives A, B, D, E, and F.

Transportation

Alternative C has the potential to reduce the transportation system more than any other alternative. The reduction of the transportation system and decommissioning of roads could beneficially affect cultural resources that are bisected by a road and reduce the potential for looting, vandalism, and dispersed camping. Decommissioning could have a negative effect on historic roads and railroad features. The conversion of roads to trails could be an alternative to closing historic roads.

The potential effects of the transportation system on cultural resources under Alternative C would be more than under Alternative D, but greater than under Alternatives A, B, E, and F.

Special Designation Areas

Alternative C does not propose additional special designations and thus effects are equal to Alternatives A, and D. The potential effects of designating special areas on cultural resources under Alternative C are less than for Alternative B, and F and significantly less than under Alternative E.

Continued management of Converse Basin Grove for giant sequoia regeneration research, cultural resources, and interpretation would be a beneficial effect.

Alternative D

Vegetation

Alternative D emphasizes natural processes, especially the use of unplanned ignitions (managed wildfire), for ecological restoration. This emphasis could negatively affect cultural resources for three reasons: (1) because knowledge of the Monument's cultural resources is based primarily on past program support of management activities, the restriction of these activities would limit the ability to increase this knowledge; (2) the lack of fuels reduction over a large landscape means there would be a higher potential for high-intensity wildfires on or near cultural resources; and (3) unplanned ignitions would limit advanced cultural resource identification, and the development and implementation of protective measures.

Giant Sequoia National Monument Specialist Report

The potential effects of vegetation management on cultural resources would be the greatest under Alternative D, due to the lack of pre-planning and the ability to implement protective measures.

Fire and Fuels

Alternative D proposes the smallest WUI zones of all alternatives. The lack of fuels reduction over a large landscape means fuel loads would not be reduced on cultural resource sites. Wildfire would be allowed to burn. Lack of projects on a landscape level would decrease the identification of cultural resources. Alternative D would have the highest potential to affect cultural resources compared to all other alternatives.

Recreation

Alternative D proposes the least new recreation development and no new resorts, lodges, or organizational camps in the Monument. It would therefore have the least potential of all the alternatives to negatively affect cultural resources through new construction.

Transportation

Alternative D proposes a 40 percent reduction to the current transportation system, and restricts construction of new roads. The potential effects of the transportation system to cultural resources under Alternative D would be greater than those under Alternatives A, B, E, and F, and less than those under Alternative C.

The potential for a significant reduction in roads over time would be more likely to negatively affect historic road and railroad features in Alternative D. The conversion of roads to trails could be an alternative to closing historic roads.

Special Designation Areas

Alternative D does not propose additional special designation areas and thus would have less potential to affect cultural resources. The potential effects of designating special areas on cultural resources under Alternative D would be equal to those under Alternatives A and C, and less than under Alternatives B, and F, but less than under Alternative E

Alternative E

Vegetation

The potential effects of vegetation management to cultural resources under Alternative E would be equal to those under Alternative A. The effects would be less than under Alternatives B and F, because those alternatives protect sequoia groves with zones of influence; Alternative E has a smaller grove influence zone. Alternative E would have more potential to affect cultural resources than Alternatives C and D due to reduction in potential ground disturbance..

The preservation of 600 acres in Converse Basin for cultural resources has a beneficial effect on cultural resources.

Alternative E would have the potential for beneficial effects on cultural landscapes through forest restoration similar to Alternatives A, B, and F. It would have more potential for negative effects on

Giant Sequoia National Monument Specialist Report

archaeological sites from mechanical treatments that Alternatives A and B, less than Alternatives C and D, and the same potential as Alternative F.

Alternative E would be similar to Alternatives A, B, and F in potential for beneficial effects from cultural resource identification and the use of standardized protection measures do to the increased greater amount of pre-planned forest restoration.

Fire and Fuels

Community protection WUI zones would enable cultural resources to be identified and monitored, but the increased activity in and around cultural resources would increase the risk of effects on cultural resource sites. Fuels reduction would reduce fuel loads on cultural resource sites, protecting them from high-intensity fire. The emphasis on mechanical treatment methods could increase the potential of effects on cultural resources. The lack of TFETA under Alternative E decrease potential negative effects causes by mechanical treatments but increase the potential negative effects caused by less fuels reduction than Alternatives F and B. The potential effects of fire and fuels management on cultural resources under Alternative E would be equal to those under Alternative A, and greater than those under Alternatives C and D.

Recreation

The potential effects of recreation on cultural resources under Alternative E would be equal to those under Alternatives A, B, and F, and greater than those under Alternatives C and D. The potential for recreation development and the continued emphasis of allowing the widest range of recreational opportunities under the other alternatives are somewhat restricted in Alternatives C and D.

Transportation

Alternative E proposes use of a slightly smaller than the current transportation system. The potential effects of the transportation system on cultural resources under Alternative E would be equal to those under Alternatives A, B, and F, and less than those under Alternatives C and D.

Special Designation Areas

Alternative E would have the greatest potential to affect cultural resources by recommending the designation of 15,110 acres of the Moses IRA as wilderness. Since the knowledge of the Monument's cultural resources is based primarily on past program support of other management activities, the restriction of these activities would limit the increase in this knowledge.

Alternative E proposes the largest special designation area with the Moses Wilderness proposal. The effect of wilderness designation could limit the maintenance, rehabilitation, or restoration of historic structures; This potential indirect effect of designating a wilderness area on the preservation of historic structures (unless protection is provided for in enabling legislation) would be greatest in Alternative E than all other alternatives.

Giant Sequoia National Monument Specialist Report

Alternative F

Vegetation

The potential effects of vegetation management on cultural resources under Alternative F would be greater than those under Alternatives A and E due to the establishment of the zones of influence. The effects would be equal to those under Alternative B, and less than those under Alternatives C and D.

Alternative F would have the potential for beneficial effects on cultural landscapes through forest restoration similar to Alternatives A, B, and E. It would have more potential for negative effects on archaeological sites from mechanical treatments than any of the other alternatives.

Alternative F would be similar to Alternatives A, B, and E in its potential for beneficial effects from cultural resource identification and the use of standardized protection measures in forest restoration projects.

Fire and Fuels

Alternative F (and Alternative B) identifies the largest area for potential fuels reduction, with both community protection WUII zones and the TFETA. These areas contain 73 percent of the known cultural resources. These fuel reduction areas enable cultural resources to be identified and monitored but the increased activities in and around cultural resources would also increase the potential for effects on cultural resource sites. Fuels reduction on and near cultural resource sites would protect the sites from high-intensity fire, while the emphasis on mechanical methods could increase potential effects on cultural resources. The potential effects of fire and fuels management on cultural resources under Alternative F would be equal to those under Alternative B, greater than those under Alternatives A, C, and E, and less than those under Alternative D.

Special Areas

Alternative F would have a moderate potential to affect cultural resources by proposing the addition of the Freeman Creek Grove Botanical Area and the Windy Gulch Geological Area. Alternative B has the potential to protect cultural resources by restricting ground disturbance in the proposed Windy Gulch Geological Area. The potential effects of designating special areas on cultural resources under Alternative F would be the same as those under Alternative B, more than those under Alternatives A, C, and D, and less than those under Alternative E.

Recreation

The potential effects of recreation on cultural resources under Alternative F would be equal to those under Alternatives A, B, and E, and greater than those under Alternatives C and D. The potential for recreation development and the continued emphasis of allowing the widest range of recreational opportunities under the other alternatives are somewhat restricted in Alternatives C and D.

Transportation

Alternative F proposes the use of the smaller than current transportation system. The potential effects of the transportation system on cultural resources under Alternative F would be equal to those under Alternatives B, and E, and less than those under Alternatives C and D.

Indirect Effects to Tribal and Native American Interests

All Alternatives

In all alternatives, management activities, including those for camping, road maintenance, motorized and non-motorized trails, special uses, facility infrastructure, livestock grazing, and fuels reduction could indirectly or cumulatively affect the values that tribes and Native American groups and individuals may hold for the land in the Monument.

All of the alternatives would accommodate traditional and contemporary uses of the Monument.

The current lack of information is the limiting factor in the assessment of environmental consequences of activities on those items of concern to local tribes, Native American groups, and individuals. The desired information centers on the type of resources used (plants, stone, etc.), resource locations, and the relationship of the natural environment to native people. Fundamental baseline inventory data are limited and usually available on a project-specific basis rather than a landscape level. This is further accentuated by the hesitancy of the Native American population to share information with the national forests out of concern that the information will not remain confidential and the resources of concern will be damaged or destroyed.

Native Americans view their space within the Monument as a participant, not as a manipulator or manager, which is the view of non-indigenous cultures. Any alteration, such as ground disturbance, that is permanent and not in harmony with the environment could be a negative effect in the Native American view.

They are also concerned with impacts on cultural resources that are associated with their ancestors and other indigenous people who lived in the Monument area. The discussion of environmental effects in the Cultural Resources section of this chapter that is applicable to Native American cultural resources applies here and will not be repeated. Growing emphasis on Native American input to the management of national forests has the possibility of broadening the understanding and awareness of historical ecosystem management.

Discussions of the potential effects to archaeological resources are included in the Cultural Resources section of this chapter. Any management direction that could result in alteration of or the introduction of non-natural elements into the natural environment could be an issue of concern to tribes, Native American groups and individuals. Any direction that could promote, improve, preserve, or restore the natural environment and natural features, or promote the fabric of harmonious environment interactions, would probably not be viewed as an issue of concern. Any management direction that promotes the ability to access the natural open space of the national forests would be more acceptable to tribes, Native American groups and individuals than direction that restricts access.

Effects of Wildlife Management on Tribal and Native American Interests

Wildlife is an important part of Native American lifeways as a food source, and certain animals figure prominently in their traditional worldviews and cosmologies. Agency policies (both federal and state) on National Forest System lands (such as the taking of bears identified as public threats) might conflict

Giant Sequoia National Monument Specialist Report

with their values and in their view are not appropriate management practices and do not incorporate the proper respect.

Protection programs (including species strategies) for wildlife and botanical species (including threatened, endangered, proposed, candidate, and sensitive species) might affect the ability of Native Americans to practice traditional lifeways that today may not be reserved in treaty rights, by restricting access or use of the wildlife. Habitat protection measures, including area closures, might deny Native Americans access to ceremonial areas or other areas of cultural concern.

Protection of species-at-risk would generally benefit Native American interests where they overlap. Protection programs might also be consistent with Native American beliefs in protecting animal figures prominent in their traditional worldviews and cosmologies.

The consistent protection of wildlife resources under all alternatives gives each of them the same potential to affect tribal and Native American interests. Mitigation measures include pre-planning collaboration with the local Native American community to identify issues and effects associated with any site-specific projects.

Effects of Geologic Resources Management on Tribal and Native American Interests

The effects of geological resources on tribal and Native American interests are similar to that of the public and are addressed in the geologic resources section of this document.

Effects of Invasive Nonnative Species (Botanical Features) on Tribal and Native American Interests

Use of pesticides to eradicate or control invasive nonnative species could have a negative effect on traditional gathering, either through damaging the plants themselves or the Native Americans who work with them.

The use of pesticides (including herbicides), along with the off-site movement of chemicals, can result in the contamination of basket plants or other plants of traditional or cultural concern, and potential exposure of basketweavers. Studies show that herbicide residues are detectable in plants of interest to Native Americans, not only within those areas treated with herbicides, but also outside those areas (Segawa et al. 1997). The plants that are eliminated by herbicide spraying are often the same plants that provide Native people with traditional foods and teas and are used in baskets and for healing, ceremonial, and other traditional purposes (California Indian Basketweavers Association 1994). The issue of concern to Native Americans is the presence of poisons, regardless of levels, in the environment in which they interact and that they rely on for materials and practices important to their concept of being.

The use of pesticides on private and public lands is of utmost concern to California Indian basketweavers because of the harmful effects their use may have on the health of Native American plant gatherers and communities, as well as on the health and vitality of the environment. The use of pesticides may result in areas of the Monument being avoided or material not being collected by

Giant Sequoia National Monument Specialist Report

Native American plant gatherers and communities. This could restrict or alter traditional lifeways or practices that are associated with the national forests and indigenous cultures. The management direction in all of the alternatives except Alternative D would provide for the use of pesticides, but only when their use and application is designed for site-specific projects with the appropriate level of environmental analysis. Alternative C would place the greatest restriction on pesticides and their use. Therefore, Alternatives C and D would have the least potential effect on tribal and Native American interests from pesticide use.

Effects of Soil Resources on Tribal and Native American Interests

Those activities that maintain soil stability by preserving the soil matrix would have a beneficial effect on tribal and Native American interests. Conversely, effects on soil resources and stability could result in effects on tribal and Native American interests. Of greatest concern to Native American interests is the potential of detrimental effects on soil resources from catastrophic fire events, especially in the South Fork Tule River watershed, where negative effects on soil resources could have a negative effect on water quality in the Tule River Indian Reservation.

The consistent protection of soil resources across alternatives gives each of them the same potential to affect tribal and Native American interests.

Effects of Vegetation Management on Tribal and Native American Interests

Healthy and diverse vegetation potentially provides a wide range of plants that Native Americans use for a variety of cultural reasons. Although invasive species pose a threat to a healthy vegetation community, certain management activities pose environmental consequences that may be considered negative by the Native American community.

The Native American community acknowledges that protection and restoration of the giant sequoia groves was the primary reason for establishment of the Monument and agree that this protection is needed and appropriate. In addition, they acknowledge and urge the Sequoia National Forest to protect giant sequoias by closely linking vegetation management and fuels management. They further urge the forest to reduce the excessive numbers of shade-tolerant species in the groves to provide favorable conditions for giant sequoia establishment, protect the groves, and allow adequate openings for giant sequoia establishment, and growth.

The Tule River Tribe has expressed concerns that vegetation management should address the potential spread of forest insect and disease activity to tribal forestlands, fuels management within sequoia groves, and proactive management based on scientific research and proven management practices.

The change from grove influence zones (Alternatives A and E) to zones of influence (Alternatives B and F) could potentially increase fuels management and sequoia establishment and growth in areas surrounding groves, and thus greater potential for beneficial effects on tribal and Native American interests. The lack of either protective zone for the groves under Alternative D could provide the least protection of tribal and Native American interests.

Giant Sequoia National Monument Specialist Report

Alternatives that propose the most forest restoration (Alternatives A, B, E and F) would be more likely to have beneficial effects on tribal and Native American interests than those that propose less (Alternatives C and D). Increased soil disturbance from mechanical treatments under Alternatives E and F would be more likely to have negative effects on tribal and Native American interests than that under Alternatives A and B. Alternatives C and D would be the least likely to result in soil disturbance effects.

Tribal consultation and additional site-specific NHPA analysis would reduce potential negative effects of most site-specific vegetation management.

Effects of Hydrological Resources Management on Tribal and Native American Interests

Stable watersheds and hydrologic processes are beneficial to the long-term preservation of tribal and Native American Interests. Over 9,000 acres within the upper portion of the South Fork Tule River watershed lie within the Monument. The Tule River Tribe has water rights to the South Fork Tule River under the Winters Doctrine and any changes to the quality or quantities of water flowing out of the South Fork are of vital interest to the Tule River Tribe.

The consistent protection of watershed resources across alternatives gives all alternatives the same potential to affect tribal and Native American interests.

Effects of Cultural Resources Management on Tribal and Native American Interests

Archaeological excavation (whether scientific or vandalism-motivated) would have negative effects on values held by tribes, Native American groups and individuals. There is concern about the destruction of evidence of previous generations, including the removal of burials. Some tribes, Native American groups and individuals are opposed to any form of excavation. There is also conflict about information disclosure nature of the cultural resource management program and the confidential nature of the information that is seen by the tribes and other Native Americans see as essential to the maintenance of their way of life. There could be an increase in scientific archaeological excavation under Alternatives B, C, and F.

Development of collaborative strategies and memoranda of understanding with tribes, local Native American groups and individuals regarding the appropriate level of investigation, the treatment of the resources, and protection of sensitive information would have a positive effect for tribal and Native American interests.

Effects of Recreation Management on Tribal and Native American Interests

Substantial population growth in California is expected in the next 20 years, resulting in an increase in visitation. Accordingly, use is expected to be more intense, and potentially shift to those times of the year that have traditionally been low use (such as spring and fall). This will result in competition for currently used areas while increasing the presence of people in new areas on a level not presently seen, which could impact the ability of Native Americans to gather traditional and contemporary valued resources and practice ceremonies where privacy and solitude is essential.

Giant Sequoia National Monument Specialist Report

Developed recreation would introduce people and vehicles into an area such that may result in an urban park-like setting rather than a natural setting which could negatively affect tribal and Native American interests. Sometimes the use of areas for dispersed recreation is in conflict with areas of spiritual and cultural importance to the Native American community.

Some existing trails follow the routes of earlier Native American trails. Trails provide access to location that can create conflicts between Monument users desiring open space and Native Americans desiring areas to use for ceremonies that rely on privacy and solitude.

Native Americans are concerned about restrictions, including user fees, to the continuation of traditional activities of gathering and recreation. Fees can create an economic burden that might restrict Native American individuals' ability to camp, hunt, fish, ride horses, gather fuelwood, and participate in other recreational activities.

Traditional gathering effects are mitigated by Region 5 Forest Service direction under regional forester's FSM 1563.03 - Policy to support traditional native cultural practitioners in gathering culturally utilized plants for personal, community, or other non-commercial traditional use on lands administered by the agencies, consistent with applicable laws, regulations, and policy. Gatherers shall have access for traditional practices to lands managed by the agencies. Traditional practitioners are allowed free use, without permit, of culturally important plants; free use may be granted for traditional native cultural gathering. Local agreements are encouraged to support such gathering. In addition, local managers shall work in collaboration with tribes, tribal communities, tribal organizations, and traditional practitioners to identify, restore, and enhance traditionally important plant resources.

It is Forest Service direction to collaborate with the local Native American community to identify issues and effects associated with proposed activities (both authorized and unauthorized) and develop partnerships to resolve any conflicts.

The greatest potential for beneficial effects on tribal and Native American interests would result from those alternatives that promote the broadest range of recreation opportunities, Alternatives B, E, and F. The range of recreation opportunities would be less under Alternative C, limiting Native American's recreational activities within their traditional lands.

Effects of Scenery Management on Tribal and Native American Interests

The Native American community feels a close association with cultural and historical landscapes. Any activity that promotes scenery management and aims to maintain the feeling of the natural landscape would have a beneficial effect. Any alteration or permitted degradation of scenic integrity from more natural settings might affect potential cultural or historical landscapes or traditional cultural properties.

The consistent scenery management across alternatives gives each of them the same potential to affect tribal and Native American interests.

Giant Sequoia National Monument Specialist Report

Effects of Socioeconomics on Tribal and Native American Interests

Documentation presented in the Socioeconomics section of this chapter indicates that the Monument can expect the following trends:

- Relative percentage decreasing for number of whites and Native Americans in conjunction with an increasing number of Hispanics, which will bring different traditions (including characteristics of open settings).
- Decreasing percentage of Native Americans in conjunction with an increasing percentage of Hispanic population will result in the use of different botanical products for medicinal and other purposes.

Any management direction that would promote different traditions or use of different botanical products might affect tribal and Native American interests through restricting opportunities for Native Americans to practice traditional lifeways. This could affect their current lifestyles, environment, and quality of life. The development of education programs geared to different national forest user groups would help develop respect for the use of national forests by other cultural groups.

The Tule River Tribe has expressed that the designation of the Monument was a potential impact on tribal timber revenue due to sawmill closures and the loss of forest-related job opportunities for tribal members.

Those alternatives that would promote greater use of the Monument (Alternatives A, B, D, and F) would have the greatest potential to affect Native Americans' ability to practice traditional practices due to conflicts with other users. Alternatives that promote some recreational activities (Alternatives C and E) have the potential to negatively affect Native American ability to perform some activities without prior consultation with the Forest Service.

Effects of Special Area Designation on Tribal and Native American Interests

Alternatives that would increase special area designations and thereby the natural appearance of the landscape are of greater value for spiritual, ceremonial, and other uses by Native Americans. On a whole, those areas not designated as special areas might allow a range of activities that could affect values important to the local Native American community (such as wilderness). However, some special designations might reduce or limit the types of access, which might affect the ability of the Native American community to access areas used to practice traditional and contemporary lifeways.

The designation of the Monument was viewed by some tribes and Native Americans as detrimental to their interests in such areas as economics, fire protection, forest health, recreational and cultural use, and road access.

Alternative E would have the greatest potential effect on tribal and Native American interests through the recommended designation of 15,110 acres of the Moses Inventoried Roadless Area as wilderness. Alternative B and F would have a moderate potential to affect tribal and Native American interests via its proposed addition of Freeman Creek Botanical Area and Windy Gulch Geological Area. Alternative A

Giant Sequoia National Monument Specialist Report

would have minimal potential negative affect to tribal and Native American interests with the proposed addition of the Freeman Creek Botanical Area. Alternatives A, C, and D do not propose any new special designation areas and thus would have the least potential effects on tribal and Native American interests.

Site-specific project planning would ensure that tribal and Native American interests are identified and addressed in any wilderness and special area designations.

Effects of the Transportation System on Tribal and Native American Interests

Many ceremonial locations, cemeteries, traditional gathering areas, and cultural resource sites located in the Monument contribute to the Native American community's way of life, identity, traditional practices, and cohesiveness. Roads sometimes provide essential access to many of these areas. Reducing road access would limit the access by contemporary cultures to areas of cultural concern and importance; however, the restricting of roads to administrative use and allowing tribal access to areas of cultural concern and importance while still restricting access to other publics can mitigate this restriction. Less tangibly, but no less important, roads can affect areas considered sacred by Native Americans or other groups, because roads might limit their ability to conduct ceremonies that require privacy, and might even diminish the sacred qualities of such places (Gucinski et al. 2000).

The Tule River Tribe has expressed concern over the potential loss or restricted use of existing roads through the Monument that are used to access reservation lands. These roads are vital to tribal operations and community recreation access. "Any diminishment of the existing road uses will be significant to the tribe. Loss of or restrictions on roads presently utilized through the Sequoia National Forest will leave only one route in ingress and egress to our 54,000 acre + reservation" (letter from Tule River Tribal Council to Intertribal Timber Council, March 8, 2000).

Obtaining information about sacred places and other places of concern from some Native American groups is difficult because Forest Service styles of communication and negotiation are often incompatible with these cultures, and revealing sacred values and identifying sacred places to outsiders might be thought of as imperiling the very values in need of protection. Involving Native Americans in Forest Service information requests might help facilitate collaboration between groups and the sharing of information critical to sound management decisions.

Higher road decommissioning rates under Alternatives C and D could negatively effect tribal and Native American interests by limiting tribal access to lands. This plan does not make any site-specific recommendations for road closures; site-specific NEPA analysis would be needed to determine the potential effects on ingress and egress to the Tule River Indian Reservation. Alternatives A, B, E, and F would maintain road systems similar to the current situation.

Effects of Livestock Grazing on Tribal and Native American Interests

The grazing of livestock in areas that are considered important (such as traditional cultural properties) by the Native American community could constitute an introduction of a foreign element within the

Giant Sequoia National Monument Specialist Report

landscape context that defines why the area is special to Native Americans; however, grazing is recognized as an income-producing economy.

All alternatives would maintain livestock grazing at the same level. Consistent range management across alternatives gives each of them the same potential to affect tribal and Native American interests.

Effects of Special Forest Products on Tribal and Native American Interests

The inconsistency of management for the collection of special forest products results in confusion and often barriers to the collection of these products that have social or cultural importance to the Native American community. Increasing Hispanic and Asian populations using the Monument bring different traditional values regarding national forest use that may conflict with current and historical cultural uses. The increasing population diversity is resulting in increased use of different botanical products for medicinal and other purposes and, sometimes, competition for the same forest products. Harvesting of traditionally used plants or culturally important plants by non-Native Americans affects Native American collection of those plants.

Use of the Regional Forester's FSM 1563.03 direction on gathering and traditional practices, as well as consultation and collaboration with tribes, local Native American groups and individuals to identify areas and opportunities for protection and enhancement of special forest products considered of importance to the Native American community, can reduce potential negative effects. Educational messages that focus on the groups and populations who engage in the use of special forest products (regarding proper collection levels and the fact that other groups also have an interest in special forest products) can also mitigate the effects from competition for these products.

Effects of Wildland Fire and Community Protection on Tribal and Native American Interests

Due to the present situation with vegetation (high concentrations of fuels due to fire suppression over the last 100 years), an increase in acres burned due to wildland fires can be expected. Fire and fuels management is of great interest to tribes and Native Americans, especially to the Tule River Tribe whose reservation is partially surrounded by the Monument.

Wildland fire can disturb and degrade traditional plant gathering areas, archaeological sites, and sacred/spiritual places, as well as cause the loss of ethnographic resources. If not properly managed, prescribed fire can have the same results. However, with proper management, prescribed fire can be used to help promote the propagation of selected species of plants (basketry plants) important to Native Americans.

Fire of any nature may alter landscapes important to traditional cultural beliefs or practices. An indirect effect of wildland fire is an increase in access created by the removal of vegetation. This access could bring an increase in use to areas essential to Native Americans as places for solitude or privacy.

Giant Sequoia National Monument Specialist Report

Wildland fire suppression and fire protection programs (community defense zones) have the potential to introduce foreign visuals (firelines, etc.) into a traditional landscape that may be integral to traditional or contemporary ceremonies and practices.

The Native American community can be involved in the identification of issues and concerns for suppression and hazard fuels projects. The development of an on-call cadre of fireline-qualified Native American resource advisors would help lessen the potential effects of wildfire and suppression activities on landscape values and on specific sites and areas of concern.

Prescribed burning may directly damage or destroy cultural resources and other values held to be of significance by contemporary cultures, and it may alter landscapes important to traditional cultural beliefs or practices.

Mitigation measures suggested by the Native American community include focusing on land management activities to hinder the spread and establishment of invasive species. To be effective, eradication should include the correction of the chronic human-related land disturbance activity responsible for the conditions that facilitate the establishment of invasive species, and it should restore the native vegetation and natural disturbance regime (including fire). The use of alternative methods of plant control such as hand weeding or hand-removal (though potentially costlier) would reduce concerns about the use of herbicides as a vegetation management tool. If herbicides are chosen as a treatment option then, during the site-specific analysis, consultation with tribes and Native Americans would help identify areas of concern to avoid, identify alternative methods of eradication to minimize effects on these areas, and focus herbicide use in areas of lower sensitivity for the tribal and Native American community.

The community protection under Alternatives A, B, E, and F would have the potential for beneficial effects on tribal and Native American interests located near communities. The addition of 56,592 acres of fuels treatment in the TFETA under Alternatives B and F has the greatest potential beneficial effect on tribal and Native American interests by reducing the potential for large-scale uncontrolled fires burning from Monument lands onto the Tule River Indian Reservation.

Alternatives C and D rely most heavily on managed wildfire and thus would reduce the ability to identify and protect resources in advance of wildfires. Cultural resources and other values significant to contemporary cultures would be more susceptible to damage from catastrophic wildfires and associated suppression activities.

Summary of Environmental Consequences by Alternative on Tribal and Native American Interests

All alternatives would continue tribal relations protocols established by laws and regulation, the Forest Plan, and the 2001 SNFPA. Government-to-government consultation and consultation with non-federally recognized tribal groups and individual Native Americans would continue to follow existing laws and regulations. All action alternatives add the directions from the 2004 SNFPA ROD.

Giant Sequoia National Monument Specialist Report

Alternative A

Vegetation

The cessation of timber production has a negative effect on tribal and Native American socioeconomic interests through the loss of potential revenues and jobs. It could have a potential beneficial effect by reducing negative effects of ground disturbance in areas of tribal concern. The potential effects of vegetation management on tribal and Native American interests under Alternative A would be less than those under Alternative B due to the management of sequoia groves with zones of influence; equal to those under Alternatives C, E, and F, due to the combination of fuels and vegetation management for restoration and protection of sequoia groves; and less than those under Alternative D.

Fire and Fuels

Because Alternative A does not propose a fuels reduction area (the TFETA) along the Monument and Reservation boundary, it would have greater potential for negative effects than under Alternatives B, C, and F, but greater potential for beneficial effects than under Alternatives D and E.

Minerals

The withdrawal of Monument lands from mineral and mining claims resulted in an overall decrease in potential effects on tribal and Native American interests by reducing potential effects from ground disturbance in or near areas of interest such as ceremonial locations, cemeteries, traditional gathering areas, and cultural resource sites.

Recreation

Recreation has the potential to beneficially affect tribal and Native American interest by allowing Native Americans the largest spectrum of recreation opportunities, while providing for the protection of sensitive areas such as cultural resource and ceremonial areas. The potential effects of recreation on tribal and Native American interests under Alternative A would be equal to those under Alternatives B, E, and F, due to the continued emphasis on allowing the widest range of recreational activities, but less than those under Alternatives C and D. The potential for greater restrictions on recreation activities under Alternatives C and D has a greater potential to negatively affect tribal and Native American interests.

Special Designation Areas

The designation of Freeman Creek Botanical Area would reduce the range of activities that could affect tribal and Native American interests. The potential effects of special area designations on tribal and Native American interests under Alternative A would be equal to those under Alternatives B and F, more than those under Alternatives C and D, and less than those under Alternative E.

Transportation

The potential effects of the transportation system on tribal and Native American interests under Alternative A would be equal to those under Alternatives B, E, and F, and would be less than those under Alternatives C and D.

Giant Sequoia National Monument Specialist Report

Alternative B

Vegetation

The potential effects of vegetation management on tribal and Native American interests in Alternative B would be greater than those under Alternative A, due to management of the sequoia groves with zones of influence; equal to those under Alternatives C, E, and F due to the combination of vegetation and fuels management for restoration and protection of sequoia groves; and less than those under Alternative D.

Fire and Fuels

Alternative B (and Alternative F) identifies the largest area for potential fuels reduction, with both WUI community protection zones and the TFETA. Fuels management would potentially reduce fuel loads along the Monument and Reservation boundary, thus potentially reducing the potential for high-intensity uncontrolled fire to negatively affect tribal lands. The potential beneficial effects of fire management on tribal and Native American interests under Alternative B would be equal to those under Alternative F, and greater than those under Alternatives A, C, D, and E.

Recreation Management

The potential effects of recreation on tribal and Native American interests under Alternative B would be equal to those under Alternatives A, D, E, and F, and less than those under Alternatives C. Recreation development and the range of recreational opportunities would be somewhat restricted in Alternatives C.

Special Designation Areas

It is not currently known what the potential effects on tribal and Native American interests would be from designating the Windy Gulch Geological Area; these would be determined in site-specific project analysis. The potential effects of designating special areas on tribal and Native American interests under Alternative B would be equal to those under Alternative F, more than those under Alternatives A, C, and D, and less than under Alternative E.

Transportation

Alternative B proposes the current transportation system. The potential effects of the transportation system on tribal and Native American interests under Alternative B would be equal to those under Alternatives A, E, and F, and less than those under Alternatives C and D.

Alternative C

Vegetation

Alternative C would not include the most restrictive wildlife land allocations, such as protected activity centers (PACs) for spotted owls and goshawks, and riparian conservation areas (RCAs), and would use only smallest sequoia grove protection areas, the grove administrative boundaries. Fewer restrictive land allocations could potentially affect tribal and Native American interests if these conflicts with their values for wildlife, but this cannot be assessed without site-specific NEPA. The potential effects from

Giant Sequoia National Monument Specialist Report

vegetation management under Alternative C would be at least equal to or greater than those under Alternatives B and F, greater under Alternative A, and less than those under Alternative D.

Fire and Fuels

Less fuels reduction due to a smaller WUI (8.304 acres) gives Alternative C a potential negative effect on tribal and Native American interests than Alternatives B, E and F. Alternative C does not provide the Tribal Fuels Emphasis Treatment Area (TFETA) and this could have the potential to negatively affect tribal and Native American interests because fuel loads along the Monument and Reservation boundary would not be reduced.

The emphasis on managed wildfire in Alternative C would reduce the ability to identify and protect resources in advance of wildfire. Tribal and Native American interests would thus more susceptible to damage from catastrophic wildfires and associated suppression activities.

The potential effects of fuels reduction on tribal and Native American interests under Alternative C would be slightly more than under Alternative D, and less than Alternatives A and E, and reduced even further compared to Alternatives F and B.

The potential negative effects on tribal and Native American interests from managed and unmanaged wildfire under Alternative C would be slightly less than those under Alternative D, greater than under Alternatives A and E, and greatest compared to Alternatives B and F, due to reduced fuels reduction areas and larger land base managed through managed wildfire.

Recreation Management

Because the range of recreation opportunities is reduced under Alternative C, especially through the elimination of dispersed camping, the ability of Native Americans to enjoy the full spectrum of recreation would also be reduced thus negatively effecting tribal and Native American interests.

The potential effects of recreation on tribal and Native American interests under Alternative C would be greater than those under Alternatives A, B, D, E, and F.

Special Areas

Alternative C would not designate any special areas and thus potential effects would be equal to those under Alternative D. The potential effects on tribal and Native American interests from the designation of special areas under Alternative C would be less than those under Alternatives A, B, E, and F.

Transportation

Alternative C has the second greatest potential to reduce the transportation system. This reduction, as well as the decommissioning of roads, could potentially negatively affect Native American access to areas of interests.

Giant Sequoia National Monument Specialist Report

Alternative D

Vegetation

Alternative D emphasizes natural processes, especially the use of unplanned ignitions (managed wildfire), for ecological restoration. This emphasis has potential to negatively affect tribal and Native American interests because it does not address comments from the Native American community that the Sequoia National Forest should protect giant sequoias by closely linking vegetation management with fuels management. It does not address the Tule River Tribe's concern that vegetation management address the potential spread of forest insect and disease activity on tribal forestlands, fuels management within sequoia groves, and pro-active management based on scientific research and proven management practices.

The potential negative effects of vegetation management on tribal and Native American interests would be greater under Alternative D than under any of the other alternatives.

Fire and Fuels

Alternative D proposes the smallest fuels reduction areas and does not propose the TFETA. This could have the potential to negatively affect tribal and Native American interests because fuel loads along the Monument and Reservation boundary would not be reduced.

Recreation

Alternative D proposes the least amount of new recreation development and no new resorts, lodges, or organizational camps. It would thus have the least potential of all the alternatives to affect Tribal and Native American interests through new construction.

Special Areas

Alternative D would not designate any special areas and thus potential effects would be equal to those under Alternative C. The potential effects on tribal and Native American interests from the designation of special areas under Alternative D would be less than those under Alternatives A, B, E, and F.

Transportation

Alternative D proposes the largest potential decrease in the transportation system and would restrict the construction of new roads, so it would have the greatest potential for negative effects on tribal and Native American interests.

Alternative E

Vegetation

The potential effects of vegetation management on tribal and Native American interests under Alternative E would be equal to those under Alternatives A, B, and F. Alternative E would have more potential for beneficial effects on tribal and Native American interests than Alternatives C and D.

Fire and Fuels

The community protection WUI zones proposed in Alternative E would be the same as those under Alternative A, producing the same potential effects. Because Alternative E does not include the TFETA

Giant Sequoia National Monument Specialist Report

and fuels reduction directly along the Monument and Reservation boundary, it would have greater potential for negative affecting tribal and Native American interests than Alternatives B, C, and F. Alternative E would have a greater potential for beneficial effects than Alternative D, due to the latter's greater reliance on managed wildfire for fuels reduction.

Recreation

The potential effects of recreation on tribal and Native American interests under Alternative E would be equal to those under Alternatives A, B, and F. The potential effects under Alternative E nearly equal to those under Alternative D, due to range of recreational activities emphasized in both alternatives. Potential effects from recreation development under Alternative E and less than under Alternative C

Special Areas

Alternative E recommends the designation of 15,110 acres of the Moses Inventoried Roadless Area as wilderness. The potential effects of designating special areas on tribal and Native American interests under Alternative E would thus be greater than those under all of the other alternatives.

Transportation

Alternative E proposes continued use of the largest transportation system. The potential effects of the transportation system on tribal and Native American interests in Alternative E are would be equal to those under Alternatives A, B, and F, and less than those under Alternatives C and D.

Alternative F

Vegetation

The potential effects of vegetation management on tribal and Native American interests in Alternative F would be greater than those under Alternative A, due to management of the groves through zones of influence; equal to those under Alternatives B, C, and E, due to the combination of vegetation and fuels management for restoration and protection of sequoia groves; and less than those under Alternative D.

Fire and Fuels

Alternative F (and Alternative B) identifies the largest area for potential fuels reduction, with both WUI community protection zones and the TFETA. Fuels management would reduce fuel loads along the Monument and Reservation boundary, thus reducing the potential for high-intensity uncontrolled fire to negatively affect tribal lands. The potential beneficial effects of fire management on tribal and Native American interests under Alternative B would be equal to those under Alternative F, and greater than those under Alternatives A, C, D, and E.

Recreation

The potential effects of recreation on tribal and Native American interests under Alternative F would be equal to those under Alternatives A, B, D, and E. The potential for negative effects would be less than under Alternatives C because of the emphasis on allowing the widest range of recreational activities.

Giant Sequoia National Monument Specialist Report

Special Areas

It is not currently known what the potential effects on tribal and Native American interests would be from designating the Windy Gulch Geological Area; these would be determined in site-specific project analysis. The potential effects of designating special areas on tribal and Native American interests under Alternative F would be equal to those under Alternative B, more than those under Alternatives A, C, and D, and less than under Alternative E.

Transportation

Alternative F proposes the current transportation system. The potential effects of the transportation system on tribal and Native American interests under Alternative F would be equal to those under Alternatives A, B, and E, and less than those under Alternatives C and D.

Cumulative Effects

Cumulative Effects for Cultural Resources

Cultural resources (including ethnographic resources and their traditional cultural associations and landscape resources) have been lost or damaged in the Monument through past land management activities (including the development of facilities and infrastructure), visitor use, and natural events. Many of the activities that are affecting cultural resources were initiated prior to implementation of the NHPA of 1966, as amended. Some trails have been in use since the turn of the 20th century, so the long-term effect of their use on any cultural resources continues.

The destruction or damage of cultural resources in the Monument means the loss of information important to understanding the past (including information lost before the development of better research techniques), the loss of interpretive opportunities, and the incremental loss of the cultural resource base.

Because of the rapid rate of urbanization, the loss of cultural resources, often unmitigated, is putting greater significance on the cultural resources in the Monument. The cultural resources on National Forest System lands are afforded a higher level of protection than those on private lands, thus the public looks to the national forest cultural resources as a more valued resource. At the same time, given the changing cultural demographics, some national forest users may not see the relevance of cultural resource protection to their cultural norms and values, which impedes the effort to protect cultural resource sites.

Continual vandalism leads to the destruction of sites and irretrievable loss of information. Vandalism removes the most recognizable artifacts (such as projectile points and grinding stones), which causes misidentification of sites and can result in the proposal of ineffective management options. The removal of time-sensitive artifacts like projectile points hinders the research potential and documentation of past cultural groups and lifeways.

Giant Sequoia National Monument Specialist Report

Negative cumulative effects result from the advances of time, inadequate or inappropriate maintenance, outright destruction, and the steady loss of cultural resources through repeated mitigation of adverse effects rather than intact preservation. This could result in the reduction of cultural resources of a particular type (such as village sites), which diminishes the overall research value of cultural resources in national forests.

With implementation of the protection and mitigation measures provided by legislation, policy, and the management plan, the differences in cumulative effects on cultural resources by authorized activities under the different alternatives should be low. The difference in cumulative effects would be due to unlawful activities such as vandalism and unmanaged vehicle use.

Alternatives that would potentially result in more acres of site-specific management activities could reduce cumulative effects, as more acreage would be inventoried for cultural resources and more sites would be documented and managed.

By following the NHPA process of identification, evaluation, and mitigation, and FSM direction to protect cultural resources, all alternatives should have similar potential to affect cultural resources during site-specific projects. The greatest difference between alternatives and their potential effects on cultural resources is a result of differences in the potential area affected by future projects, in the reliance on unplanned natural processes (i.e., lightning fires), and in incremental cumulative effects, which lead to the loss of cultural resources or information, either through multiple small effects or through benign neglect.

Alternatives are discussed in order of their relative potential effects from greatest to least potential effect.

Alternative D would have the highest potential to negatively affect cultural resources because it relies on unplanned natural processes for ecological restoration while proposing the smallest fuel reduction areas (WUI). The reliance on managed wildfire would limit the ability for advanced cultural resources identification and the development and implementation of protective measures for cultural resources. This would increase the potential for negative effects on cultural resources. Extreme fire behavior associated with uncontrollable wildfire has a higher potential for negative effects on cultural resources. Suppression actions taken during uncontrollable wildfire have limited cultural resource management input and have a higher potential to negatively affect cultural resources than preplanned projects. Managed wildfire, while often having lower fire intensity than uncontrolled wildfire, often has limited cultural resource management input and has more potential to negatively affect cultural resources than prescribed fire. The lack of planned projects would restrict the ability to increase knowledge of the cultural resources. Smaller areas for fuels reduction would reduce the amount of protection for cultural resources from high-intensity fire and large-scale, post-fire erosion.

Alternative C would have a moderate potential to negatively affect cultural resources. While Alternative C has a greater reliance on managed wildfire and smaller fuels reduction areas, the change from managing cultural resources only in response to proposed projects to systematic identification and protection along with more Monument-wide cultural resource studies could beneficially affect

Giant Sequoia National Monument Specialist Report

cultural resources. The cessation of dispersed camping might reduce effects on numerous cultural resources, but road closures could have negative effects on historic roads and railroad features.

Alternative E has less potential to negatively affect cultural resources than Alternative C and D, but more than Alternatives A due to the potential designation of 15,110 acres of the Moses Roadless Area as wilderness. A wilderness designation restricts the potential for activities that require cultural resource identification and thus limits the ability to increase the knowledge of the cultural resources in these areas. It also potentially reduces the WUI areas and reduces the number of cultural resources that would benefit from fuels reduction and places more acres of the Monument into relying on unplanned ignitions, thereby increasing the potential to negatively affect cultural resources.

Alternative A would potentially provide less negative effects than Alternative C and E, but more potential effects than Alternatives B, and F. The greater protection of cultural resources as objects of interest under the Clinton proclamation and the fuels reduction areas are greater than Alternative D and provide a beneficial effect on cultural resources. Alternative A has the potential to negatively affect cultural resources because it continuance of a cultural resource program based only on compliance with section 106 of NHPA that lacks a comprehensive cultural resource management plan . The continuation of the existing road system would have a greater potential beneficial effect to historic roads and railroad features.

Alternatives B and F would have the lowest potential to affect cultural resources. The difference in potential effects on cultural resources between Alternatives B and F are so slight that they are considered equal. Both alternatives provide protection to cultural resources by proposing the largest fuels reduction areas, with both WUI zones and the TFETA, and less use of managed wildfire prior to fuels reduction. This would allow for more identification and protection of cultural resources. In addition, Alternatives B and F, along with Alternative C, propose the most balanced cultural resource management program.

Cumulative Effects for Tribal and Native American Interests

Due to the rapid rate of urbanization, the loss of natural open space outside the Monument's boundary is putting greater importance on the natural open space inside the Monument. The natural open space within the Monument is afforded a higher level of protection than those resources on private lands, and thus the Native American community looks to the Monument's natural open space as a valued resource. The continuing reduction of the natural open space within the Monument results in the loss of opportunities for Native American communities to continue to practice traditional and contemporary lifeways and to connect to values held in importance.

Cultural landscapes are the result of human adaptation and the use of natural resources. Ethnographic resources are features of a landscape that are linked by members of a contemporary community. Any use or activity that results in alteration of the landscape affects the viability of the cultural or ethnographic landscape to promote the values held to be of importance to a community. Over time, this could result in a loss of landscape and values, affecting the long-term viability of traditional cultures and lifeways.

Giant Sequoia National Monument Specialist Report

As the cultural demographics of the national forest user continue to change, the cultural relativity of Native American traditional practices to the new national forest user (based on their own cultural norms and values) may result in unmitigated impacts on the areas and resources held to be critical to the Native American community. If these impacts increase over time because of lack of management, then the long-term viability of traditional cultures and lifeways will be in question.

Alternatives are discussed in order of their relative potential effects from greatest to least potential effect.

Alternative D would have the greatest potential to negatively affect tribal and Native American interests because it relies on unplanned ignitions and managed wildfire for ecological restoration while proposing the smallest fuels reduction areas (WUI and no TFETA). This would create the greatest potential to have uncontrolled fire cross from the Monument to tribal lands, and would not reduce fuel loads in areas most important to Native American interests. Alternative D does not address issues of vegetation management from Native Americans.

Alternative C would have moderate potential to negatively affect tribal and Native American interests through the restriction of recreation activities and the greatest potential for reduction in roads. These could potentially reduce Native American access to ceremonial locations, cemeteries, traditional gathering areas and cultural resource sites that contribute to the Native American community's way of life, identity, traditional practices, and cohesiveness.

Alternative A and E would have the moderate potential to effect tribal and Native American interests. Overall Alternatives A and E have larger WUI zones would emphasize more fuels reduction. However, neither alternatives propose a TFETA and thus have a greater potential to negatively effect tribal and Native American interests. A continued wide spectrum of recreation activities and the existing transportation system under Alternatives A and E could potentially offer Native Americans greater access and ability to participate in the largest range of activities than Alternatives C and D.

Alternatives B and F would have the greatest beneficial effects on tribal and Native American interests due to the greatest diversity of recreation and the fuels reduction emphasis along the Tule River Indian Reservation boundary.

Literature Cited and References

Anderson, M.K.; Moratto, M.J. 1996. Native American land use practices and ecological impacts. In: Sierra Nevada ecosystem project: final report to congress, vol. II, assessments and scientific basis for management options, Ch. 9. Davis, CA: University of California, Centers for Water and Wildlands Resources: Volume 2 pp. 09-01 to 09-20.

Anderson, R.S. 1994. Paleohistory of a giant sequoia grove: the record from Long Meadow, Sequoia National Park. In:Aune, P., tech. coord., Proceedings of the symposium on giant sequoias: their place in the ecosystem and society. Gen. Tech. Rep. PSW-GTR-151. Visalia, CA U.S. Department of Agriculture, Forest Service, Pacific Southwest Region: 49-5.

Giant Sequoia National Monument Specialist Report

Anderson, R.S.; Smith, S.J. 1994. Paleoclimatic interpretations of meadow sediment and pollen stratigraphies from California. *Geology* 22, pp. 723-726.

Bean, L.J.; Lawton, H.W. 1993. Explanations for the Rise of Cultural Complexity in Native California with Comments on Proto-Agriculture and Agriculture. In *Before the Wilderness*. T.C. Blackburn and M.K. Anderson, eds. Pp. 27-54. Ramona, CA: Ballena Press.

Blackburn, T.C.; Anderson, M.K. eds. 1993. *Before the Wilderness: Environmental Management by Native Californians*. Menlo Park, CA: Ballena Press. 476p.

Brewer, W.H., 1974. Up and Down California in 1860-1864, *The Journal of William H. Brewer, Professor of Agriculture in the Sheffield Scientific School from 1864 to 1903*. Francis P. Farquhar, ed., Berkeley, CA: University of California Press

Brown, M.R. III, C.M. Elling. 1981. An Historical Overview of Redwood Logging Resources within the Hume Lake Ranger District, Sequoia National Forest, California. Sonoma State University Academic Foundation, Inc. Porterville, California.

Caprio, A.; Conover, C.; Keifer, M.; Lineback, P. 1997. Fire management and GIS: a framework for identifying and prioritizing fire planning needs. Presented at *Fire in California Ecosystems: Integrating Ecology, Prevention, and Management*, Nov. 17-20, San Diego, CA.

Castillo, E.D. 1978. The Impact of Euroamerican Exploration and Settlement. In *California*, edited by Robert F. Heizer, pp. 6-15. *Handbook of North American Indians*, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institute Washington, D.C.

Cook, S.F. 1978. Historical Demography. In *California*, edited by Robert F. Heizer, pp. 91-98. *Handbook of North American Indians*, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institute Washington, D.C.

Deal, K. 2001. Fire Effects to Lithic Artifacts. Paper presented at the Cultural Resource and Protection and Fire Planning Course, Tucson, AZ.

Dilsaver, L.M.; Tweed W.C. 1990. Challenge of the Big Trees. Sequoia Natural History Association, Three Rivers, California. 379p.

Elsasser, A.B. 1960. The Archaeology of the Sierra Nevada in California and Nevada. Reports of the University of California Archaeological Survey No. 51. University of California Archaeological Survey, Berkeley: 93p.

Elliot, W.W. 1882. *History of Fresno County*. W.W. Elliot, San Francisco, California.

Farquhar, F.P. 1924. Place Names of the High Sierra. *Sierra Club Bulletin* 12(1), p. 47-51.

Farquhar, F.P. 1966. *History of the Sierra Nevada*. University of California Press, Berkeley, California.

Giant Sequoia National Monument Specialist Report

Frank, G. 2008. Brief History of the Tule River Indian Reservation: the Struggle to Stay on the Land after 1850. Electronic document, http://tuleriver.org/reservation/reservation_after_1850.html, accessed September 5, 2008.

Gayton, A. H. 1930a. Yokuts-Mono Chiefs and Shamans. University of California Publications in American Archaeology and Ethnology 24, pp. 361-420. Berkeley, California.

Gayton, A. H. 1930b. The Ghost Dance of 1870 in South Central California. University of California Publications in American Archaeology and Ethnology 28, pp. 57-82. Berkeley, California.

Gayton, A. H. 1948. Yokuts and Western Mono Ethnography I: Tulare Lake, Southern Valley, and Central Foothill Yokuts. University of California Anthropological Records 10(1 and 2). Berkeley, California. 301p.

Gayton, A. H. and Newman, S.S. 1940. Yokuts and Western Mono Myths. University of California Anthropological Records 5, pp. 1-110. Berkeley, California.

Gifford, E.W. 1917. Tubatulabal and Kawaiisu Kinship Terms. American Archaeology and Ethnology 12(6), pp. 219-248. University of California Press, Berkeley.

Golla, V. 2007. Linguistic Prehistory. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 71-82. AltaMira Press, Lanham, Maryland.

Graumlich, L.J. 1993. A 1000-year record of temperature and precipitation in the Sierra Nevada. Quaternary Research 39, pp. 249-255.

Gucinski, H.; Furniss, M.J.; Ziemer, R.R.; Brookes, M.H., eds. 2000. Forest roads: A syntheses of scientific information. General Technical Report PNW-GTR-509. Portland, OR: Pacific Northwest Research Station, Forest Service, U.S. Department of Agriculture. 103p.

Holson, John and Mark Lycett. 1992. Archaeological Reconnaissance Report of Portions of the Box Helicopter Insect Salvage, Boulder Compartment, Cherry Gap Insect Salvage, Goodmill Thinning Project, Hume Lake Insect Salvage, and Pine Mill Insect Salvage, Hume Lake Ranger District, Fresno and Tulare Counties, California. On file Sequoia National Forest, Hume Lake Ranger District Office, Dunlap, CA.

Hoover, Mildred B., Hero E. Rensch, and Ethel G. Rensch. 1966. Historic Spots in California. 3rd Edition (Revised by William N. Abeloe). Stanford: Stanford University Press.

Horne, S.; McFarland, J. 1993. Issue paper – impacts of livestock grazing on cultural resources. Unpublished document on file, Los Padres National Forest, 6755 Hollister Avenue Suite 150 Goleta, CA 93117. 8p.

Hull, K.L. 2007. The Sierra Nevada: Archaeology in the Range of Light. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 177-190. AltaMira Press, Lanham, Maryland.

Giant Sequoia National Monument Specialist Report

Hull, K.L.; Moratto, M.J.; McCarthy, H.; Roper, C.K., Spaulding, W.G.; Hale, M.R.; Nilsson, E. 1999. Archeological Synthesis and Research Design, Yosemite National Park, California. Yosemite, Calif.: U.S. Dept of the Interior, National Park Service, Yosemite National Park, Yosemite Research Center.

Jackson, L.A., 2004. The Mule Men: A History of Stock Packing in the Sierra Nevada. Mountain Press Publishing Company, Missoula, Montana. 254p.

Jackson, R. J. 1999. Heritage Resources Management Module for Rangeland Management Activities on National Forest of the Sierra Nevada, USDA Forest Service, Pacific Southwest Region. Prepared for Sequoia National Forest. On file Sequoia National Forest, Supervisor's Office, Porterville, CA.

Johnson, J. R.; Stafford, Jr., T. W.; Ajie, H. O.; D. P. Morris D.P. 2002. Arlington Springs Revisited. In Proceedings of the Fifth California Islands Symposium, edited by D. Browne, K. Mitchell, and H. Chaney, pp. 541–545. USDI Minerals Management Service and the Santa Barbara Museum of Natural History, Santa Barbara.

Johnston, H. 1974. They Felled the Redwoods: A Saga of Flumes and Rails in the High Sierra. Trans-Anglo Books, Coronadel Mar, California. 160p.

Kelly, R.; McCarthy, D.F. 2000. Effects of fire on rock art. Paper presented at the 27th Annual American Rock Art Research Association, Phoenix, Arizona, p. 7.

King, T. 2003. Places That Count: Traditional Cultural Properties in Cultural Resources Management. Altamira Press, Lanham, Maryland. 335p.

Kroeber, A.J. 1976. Handbook of the Indians of California. Reprint originally published in 1925. Bureau of American Ethnology Bulletin 78. Dover Publications, Inc., New York, New York. 995p.

Krai, James J. 2009. Mountain Home Demonstration State Forest Draft Management Plan, California Department of Forestry and Fire Protection, The Natural Resource Agency.

Larson, R.C. 1985. Giants of the Southern Sierra: A Brief History of the Sequoia National Forest. On file: Heritage Resources Office, Sequoia National Forest Supervisor's Office, Porterville, CA.

Latta, Frank F. 1977 Handbook of Yokuts Indians. Bear State Books, Santa Cruz, California

Lewis, H.T. 1972. The Role of Fire in the Domestication of Plants and Animals in Southwest Asia: A Hypothesis. *Man, New Series* 7(2 June), pp. 195-222.

Lewis, H.T. 1973. Patterns of Indian Burning in California: Ecology and Ethnohistory. Ramona, CA: Ballena Press. 101p.

Lewis, H.T. 1980. Indian Fires in Spring: Hunters and Gatherers of the Canadian Forest Shaped Their Habitat with Fire. *Natural History* 89(1 Jan.), pp. 76-78, 82-83. 142

Lewis, H.T. 1985. Why Indians Burned: Specific Versus General Reasons. In Proceedings - Symposium and Workshop on Wilderness Fire. J.E. Lotan, B.M. Kilgore, W.C. Fischer, and R.W. Mutch, eds. Pp. 75-

Giant Sequoia National Monument Specialist Report

80. General Technical Report Int-182: USDA Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT.

Lewis, H.T. 1989. Non-Agricultural Management of Plants and Animals: Alternative Burning Strategies in Northern Australia. In *Wildlife Production Systems: Economic Utilization of Wild Ungulates*. R.J. Hudson, K.R. Drew, and L.M. Baskin, eds: Cambridge University Press. Pp. 54-74.

Lewis, H.T. 1993. In Retrospect. In *Before the Wilderness: Environmental Management by Native Californians*. T.C. Blackburn and M.K. Anderson, eds. Pp. 389-400. Menlo Park, CA: Ballena Press.

Lux, L.; Rose, J.; Supernowicz, D.; Conners, P.; Brady, J.; Cutts, J.; Brandoff-Kerr, J. 2003. Strategy for Inventory and Historic Evaluation of Recreation Residence Tracts in the National Forests of California from 1906 to 1959. Manuscript on file with the U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, 1323 Club Drive, Vallejo, Sonora, California. 129p.

Marshall, M.P.; Walt, H.J. 1984. Rio Abajo: Prehistory and history of a Rio Grande province. Santa Fe, New Mexico: Historic Preservation Division. Cited in U.S. Army Corps of Engineers. 1988. Site impacts in the Rio Abajo district central Rio Grande River Valley, New Mexico. In: *Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-7*. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 10.

McAvoy, L.; McDonald, D.; Carlson, M. 2001. American Indians: Sense of place and contested terrain. Final Report: PSW-98-0010CA. Riverside, CA: Wildland Recreation and Urban Cultures, Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 59.

McGuire, K.; Garfinkle, A. 1980. Archaeological Investigations in the Southern Sierra Nevada: The Bear Mountain Segment of the Pacific Crest Trail. USDI, Bureau of Land Management, Bakersfield. 304p.

Mithun, M. 2004. *The Languages of Native North America*. Cambridge University Press, Cambridge, Massachusetts. Originally published 1999.

Moratto, M.J. 1972. Study of Prehistory in the Southern Sierra Nevada Foothills, California. Ph.D. dissertation, University of Oregon, Eugene. 545p.

Moratto, M.J. 1984. *California Archaeology*. Academic Press, New York. 757p.

Moratto, M.J. 1988. Archaeological Excavations at Site CA-FRE-1671, Fresno County, California: Final Report. Report submitted to Caltrans, Sacramento.

Moratto, M.J. 1999 Cultural Chronology 2: The Yosemite Data. IN *Archaeological Synthesis and Research Design, Yosemite National Park, California*, edited by K.L. Hull and M.J. Moratto, pp. 121-204, USDI National Park Service Yosemite Research Center, El Portal, CA, *Publications in Anthropology* 21.

Muller, Jane Guthrie, 1990 History of Deer Creek Hot Springs. Los Tulares, *Bulletin of Tulare County Historical Society* 170, p.1-3.

Giant Sequoia National Monument Specialist Report

Napton, L.K. 1983. Southern Sierra Nevada Archaeology: Cultural Resource Survey of 15 Timber Sales on Sequoia National Forest, California. On file at the Hume Lake Ranger District Office, 35860 E. Kings Canyon Road, Dunlap, California, 93621.

National Park Service. [n.d.] History of Giant Forest Development. Electronic document accessed February 10, 2008, <http://www.nps.gov/seki/historyculture/gfhistory.htm>,

National Park Service. 1998. Director's Order (DO) 28: Cultural Resource Management Guidelines.

National Park Service. 1995. How to Apply the National Register Criteria for Evaluation. National Park Service Bulletin 15, Washington D.C. 54p.

Parker, P.L.; King, T.F. 1992. Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Park Service Bulletin 38, Washington D.C. 22p.

Phillips, G.H. 1993. Indians and Intruders in Central California, 1769-1839. Norman: University of Oklahoma Press.

Phillips, G.H. 2004. "Bringing Them Under Subjection": California's Tejon Indian Reservation and Beyond, 1852-1864. Lincoln: University of Nebraska Press. 369p.

Powers, B. 1981. Indian Country of the Tubatulabal. Western Lore Press, Tucson.

Powers, S. 1976 [1877]. Tribes of California. University of California Press, Berkeley, California. 480p.

Rehart, C.M.; Secret Jr., W.; McFarland, J. R.; Laval, E. 2007. "Celebrating the Journey" 150 Years of Fresno County and Beyond. Quill Driver Books. 294p.

Rose, Gene, 2005, Giants Among the Forests: A History of the Sequoia National Forest, Three Forests Interpretive Association, Tollhouse, California

Satterthwaite, J.L. 1994. The Flume that Carried Giant Sequoia. In History Line, A Newsletter of the Forest Service History Program, pp.13-16. U.S. Department of Agriculture, Forest Service.

Silverstein, M. 1978. Yokuts: Introduction. In California, edited by Robert F. Heizer, pp. 446-447. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Small, K.E. 1926. Early History of Tulare County, California. Reprint (2001) by Bear State Books, Exeter, California.

Smith, Charles R. 1978. Tubatulabal. In California, edited by Robert F. Heizer, pp. 437-445. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Giant Sequoia National Monument Specialist Report

Speir, R.F.G. 1978. Foothill Yokuts. In California, edited by Robert F. Heizer, pp. 471–484. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Swetnam, T.W. 1993. Fire history and climate change in giant sequoia groves. *Science* 262, pp. 885-889.

Theodoratus Cultural Research, Inc. 1984. Cultural Resources Overview of the Southern Sierra Nevada: An Ethnographic, Linguistic, Archaeological and Historical Study of the Sierra National Forest, Sequoia National Forest and Bakersfield District of the Bureau of Land Management. Prepared for the USDA Forest Service by Theodoratus Cultural Research Inc., Fair Oaks, California, and Archaeological Consulting and Research Services Inc., Santa Cruz, California. On file at: Sequoia National Forest, Supervisors Office, 1839 South Newcomb Street, Porterville, CA 93257. 672p.

Tule River Indian Tribe, N.D., History of the Tule River Band of Yokut Indians.
<http://www.tulerivertribe-nsn.gov/history> (18 February 2010)

Tweed, W. 1972. Sequoia National Park Concessions: 1898-1926. *Pacific Historian* (Spring), pp. 37-39.

U.S. Army Corps of Engineers. 1988. Site impacts in the Rio Abajo district central Rio Grande River Valley, New Mexico. In: Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-7. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 10.

U.S. Army Corps of Engineers. 1989a. Effects of forest fires and burn programs on archeological resources. In: Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-8. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 6.

U.S. Army Corps of Engineers. 1990. Impacts of domestic livestock grazing on archeological resources. In: Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-15. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 8.

U.S. Army Corps of Engineers. 1989b. Vandalism to cultural resources of the Rocky Mountain West. In: Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-12. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 9.

U.S. Army Corps of Engineers. 1992. Off-road vehicle impacts to archeological sites. In: Archeological Sites Protection and Preservation Notebook Technical Notes ASPPN I-18. Vicksburg: U.S. Army Engineer Waterways Experimental Station, Environmental Laboratory; 9.

USFS - Forest History Society. 2010.

<http://www.foresthistory.org/ASPNET/People/Greeley/Greeley.aspx>. Accessed February 1, 2010

Van Ness, James. "Federal Land Management" in Yearbook of Cultural Property Law 2007. Hutt, Sherry, editor. Left Coast Press, Inc Walnut Creek, CA.

Giant Sequoia National Monument Specialist Report

Voegelin, E. 1938. Tübatulabal Ethnography. Anthropological Records, 2(1). University of California Press, Berkeley.

Whistler, Kenneth, 1984, "Linguistics," Chapter 6 in. Cultural Resources Overview of the Southern Sierra Nevada, An Ethnographic, Linguistic, Archaeological, and Historical Study of the Sierra National Forest, Sequoia National Forest, and Bakersfield District of the Bureau of Land Management, Submitted by Theodoratus Cultural Research Inc. and Archaeological Consulting and Research Services, Inc, January 1984 to USDA Forest Service South Central Contracting Office Bishop CA.

Giant Sequoia National Monument Specialist Report

Appendix A

Summary Tables of Strategies and Objectives

Summary of Strategies by Alternative.

Strategy	Alt B	Alt C	Alt D	Alt E	Alt F
1. Manage cultural resources with a process including identification, evaluation and allocation to appropriate management categories.	X	X	X	X	X
2. Recognize cultural resources through National Register of Historic Places nomination, National Historic Landmark nomination, and other special designations as appropriate.	X	X	X	X	X
3. Provide opportunities for public use and enjoyment of cultural resources through education and outreach programs that promote resource stewardship. Focus on the need to protect cultural resources while simultaneously making them available to the public.	X	X	X	X	X
4. Provide for continued traditional use by Native American people and protect those places that are most important to local Native American people in maintaining their traditional culture. Seek partnerships with tribes to develop cultural education programs.	X	X	X	X	X
5. Protect cultural resources from wildfires and management activities associated with fuels reduction, when safe to do so.	X	X	X	X	X
6. Develop a cultural resource management plan for the Monument that:					
--facilitates scientific research of cultural resources to increase understanding of past human cultures and environments.	X	X	X	X	X
--uses cultural resource data to increase understanding of the evolution of ecosystems and to adapt management practices.	X	X	X	X	X
--preserves and adaptively uses historic structures in place wherever possible; preserves the integrity and character-defining features of historic districts.	X	X	X	X	X
--emphasizes partnerships with tribes to develop cultural education programs.	X	X			X
--develops an archaeological overview and assessment, archaeological identification and		X			

Giant Sequoia National Monument Specialist Report

evaluation studies, a cultural affiliation study, an historic resource study, and a scope of collection statement similar to National Park Service documents.					
--emphasizes the investigation and documentation of cultural landscapes, and historic buildings and structures.		X			
--emphasizes the protection and management of cultural resources during wildfires and fuels reduction management activities.			X		
--emphasizes the study and protection of cultural resources within Converse Basin, to include archaeological survey, site recording, and interpretation of the historic logging in the basin.				X	
--emphasizes research on Native American land use and the use of fire and their interactions with the development of the giant sequoia groves.				X	
--prioritizes cultural resource survey, site evaluation for the National Register of Historic Places, and Historic American Buildings survey/Historic Engineering Record survey and documentation within the proposed Moses Wilderness.				X	

Summary of objective for Cultural Resources, by Alternative

Objective	Alt B	Alt C	Alt D	Alt E	Alt F
1. Within 3 years, develop a Monument cultural resource management plan that includes identification, evaluation, and criteria for allocation of the resources to appropriate management categories. This plan will protect cultural resource values while allowing for public enjoyment.	X	X	X	X	X

Appendix B

Cultural Resource Objective by FSM sections

2361 – COORDINATION AND CONSULTATION

2361.02 – Objectives

The Forest Service objectives related to consultation and coordination are to:

1. Provide national leadership and direction in response to cultural resource and historic preservation policy, legislation, initiatives, issues, and partnership opportunities.
2. Improve management efficiency and effectiveness in response to regional cultural resource issues through consultation and coordination with State agencies, Tribes, historic preservation organizations, and other interested parties.
3. Increase and improve the protection and management of cultural resources on NFS lands through consultation and collaboration with Indian tribes, SHPOs, local communities, State and local governments, and other interested parties.

2362 – PLANNING

2362.02 – Objectives

The Forest Service objectives related to planning are to:

1. Integrate Forest Service Heritage Program priorities with Federal, State, Tribal, and local government historic preservation and heritage tourism planning, and with other Federal agencies and historic preservation organizations.
2. Integrate cultural resource issues and opportunities in all facets of land use planning on NFS lands.
3. Implement Heritage Program planning to benefit the long-term management of Priority Heritage Assets and other historic properties on NFS lands.

2363 – IDENTIFICATION, EVALUATION, AND ALLOCATION TO MANAGEMENT CATEGORIES

2363.02 – Objectives

When identifying, evaluating, and recommending management of cultural resources, the Forest Service objectives are to:

Giant Sequoia National Monument Specialist Report

1. Identify and document cultural resources that are historically important and that represent the history and cultural diversity of the United States.
2. Evaluate cultural resources to determine their scientific, historical and/or cultural values; eligibility for inclusion on the National Register; and potential for National Historic Landmark status or other special designations.
3. Recommend allocation of cultural resources to management categories that preserve and protect those attributes that make them archaeologically, historically, or culturally significant and that maximize their agency and public benefit.

2364 – PROTECTION AND STEWARDSHIP

2364.02 – Objectives

The Forest Service objectives related to cultural resource protection and stewardship are to:

1. Protect cultural resources in a manner consistent with their National Register qualities and management allocations.
2. Avoid or minimize the effects of Forest Service or Forest Service-authorized land use decisions and management activities on cultural resources.
3. Safeguard cultural resources on NFS lands from unauthorized or improper uses and environmental degradation.
4. Mitigate adverse effects to historic properties when it is impossible or impractical to maintain them in a non-deteriorating or threatened condition.
5. Recognize archaeologically, historically, or culturally significant properties and landscapes through formal National Register, NHL, and other special designations.
6. Develop, interpret, and use cultural resources for the public benefit under the framework of Windows on the Past.

2365 – PUBLIC EDUCATION AND OUTREACH

2365.02 – Objectives

The Forest Service objectives related to Heritage Program public education and outreach are to:

1. Develop and promote interpretive and educational programs and projects under the national framework of Windows on the Past.

Giant Sequoia National Monument Specialist Report

2. Reduce threats to cultural resources through education, interpretation, and public involvement that promote resource stewardship.
3. Manage cultural resources as assets with economic, social, cultural, and environmental values.
4. Meet the intent of ARPA, Section 10(c), which states “Each Federal land manager shall establish a program to increase public awareness of the significance of the archaeological resources located on public lands and Indian lands and the need to protect such resources.”

2365 – PUBLIC EDUCATION AND OUTREACH

2365.03 – Policy

It is the policy of the Forest Service to:

1. Implement a national program for heritage public education and outreach under the framework of Windows on the Past.
2. Coordinate with the Office of Communication at the national and regional levels to ensure that heritage information is included in the agency’s public outreach and media.
3. Coordinate with Forest Service Interpretive Services (FSM 2390) at the national, regional, and local levels to include history, prehistory, and cultural information in public programs.
4. Incorporate archaeology and history in the Forest Service Conservation Education Program to improve public understanding of the relationship between humans and the natural environment.
5. Foster private-public initiatives and investment in the sustained use, adaptive reuse, rehabilitation, and enhancement of cultural resources.
6. Promote community economic development through cooperative partnerships focused on heritage education and tourism with State, local, and Tribal governments; local communities and historic preservation organizations; businesses; schools; and others.
7. Involve local community and Tribal representatives in the formulation of interpretive plans and products, particularly when the interpretive presentation involves description of a living local community or Indian tribe and/or its archaeological, historical, cultural, artistic, and ethnic heritage.

2366 – MANAGEMENT OF HERITAGE COLLECTIONS

2366.02 – Objectives

The Forest Service objectives related to management of heritage collections are to:

1. Preserve heritage collections for the benefit of future generations.
2. Preserve, store, and manage heritage collections in agency, university, State, Tribal, or other professional curatorial facilities that provide proper protection from unauthorized use, theft, fire, floods, and other threats.
3. Provide appropriate access and use of heritage collections in support of research, public education, and agency management activities.
4. Manage collections containing human remains and associated materials according to standards and guidelines in NAGPRA and its implementing regulations.

2367 – PERMITS, AGREEMENTS, AND CONTRACTS

2367.02 – Objectives

The Forest Services objectives for permits, agreements, and contracts are to:

1. Administer special use permits, cooperative agreements, and contracts to further cultural resource knowledge in the public interest, to protect cultural resources, and to facilitate compliance with NHPA, ARPA, and related Federal statutes.
2. Consider the rights and interests of American Indians in authorizing access to or use of historic properties with religious or cultural significance to American Indians.

2368 – INFORMATION MANAGEMENT AND REPORTING

2368.02 – Objectives

The Forest Service objectives for Heritage Program information management and reporting are:

1. To ensure that cultural resource data and data management systems meet standards for Heritage Program management objectives, financial audits, and reporting requirements (FSH 6509.11k).

Giant Sequoia National Monument Specialist Report

2. To share information among Forest Service administrative units, Indian tribes, SHPOs, universities, and other qualified institutions to the fullest extent possible without compromising information protected under FOIA, ARPA, and NHPA.

Appendix C

Cultural Resource Policy by FSM sections

2361 – COORDINATION AND CONSULTATION

2361.03 – Policy

It is the policy of the Forest Service to:

1. Establish collaborative partnerships through formal agreements with national, regional, Tribal, and State organizations to improve preservation efforts and deliver public benefits.
2. Solicit Tribal, SHPO, local government, and public participation in development or revision of forest and grassland plans, project plans, and Heritage Program plans.
3. Identify heritage issues and opportunities in forest and grassland landscape, and Heritage Program plans through consultation with the SHPO, Indian tribes, local governments, applicants for Federal assistance, and other interested parties.
4. Develop national and regional programmatic agreements with the Advisory Council, SHPO, Indian tribes, and other interested parties to increase efficiency and consistency in cultural resource management.
5. Notify and consult directly with the SHPO, Indian tribes, representatives of local governments, applicants for Federal assistance, and additional parties with a demonstrated interest in the undertaking, under NHPA Section 106 or alternative procedures. This responsibility may not be assigned or delegated to a non-Federal party.
6. Cooperate with other Federal agencies to designate a lead Federal agency for NHPA Section 106 compliance for undertakings involving more than one Federal agency.
7. Maintain signatory status on any agreement involving NFS lands where another Federal agency has been designated the lead for NHPA Section 106 compliance on undertakings involving more than one Federal agency.

2362 – PLANNING

2362.03 – Policy

It is the policy of the Forest Service to:

1. Coordinate with Federal agencies and historic preservation organizations to inform and influence Federal historic preservation planning policies, goals, initiatives, and strategies.
2. Incorporate Forest Service Heritage Program goals, objectives, priorities, and opportunities in National and Regional strategic plans.
3. Implement Heritage Program planning on all NFS lands in order to:

Giant Sequoia National Monument Specialist Report

- a. Identify priority heritage assets,
 - b. Recommend allocation of cultural resources to management categories,
 - c. Develop historic preservation (management) plans, and
 - d. Guide implementation of compliance, protection, and stewardship activities.
4. Incorporate Heritage Program goals, objectives, desired outcomes, and standards and guidelines in forest and grassland landscape-watershed, and project planning.
 5. Solicit the views of the SHPO, Advisory Council, Indian tribes, other Federal agencies, State, and local governments, concerned ethnic groups, and other interested parties in forest and grassland, landscape-watershed, project, and Heritage Program planning.
- Implement cultural resource monitoring for all levels of land use and project planning.

2363 – IDENTIFICATION, EVALUATION, AND ALLOCATION TO MANAGEMENT CATEGORIES

2363.03 – Policy

It is the policy of the Forest Service to:

1. Develop and implement a program and schedule to complete an inventory of cultural resources on all NFS lands in accordance with NHPA, ARPA, and E.O. 11593.
2. Use landscape sensitivity, cultural resource probability, or similar predictive models or methods to assess cultural resource potential for land use and cultural resource planning and management.
3. Complete the appropriate level of cultural resource identification (inventory) during agency planning and for all agency and agency-permitted projects following regional guidelines or protocols and standards in programmatic agreements.
4. Inventory and document areas that may be affected by agency or agency-permitted undertakings by the methods and at a level commensurate with the nature of the proposed undertaking and its likely effects on cultural resources.
5. Complete National Register eligibility evaluations in conjunction with inventory or at the earliest stages of land use planning.

Giant Sequoia National Monument Specialist Report

6. Communicate with appropriate cultural groups about cultural resources and areas of religious or traditional importance as part of the identification and evaluation process.
7. Recommend allocation of cultural resources to management categories that protect their scientific, historical, and cultural significance, and that maximize their existing or potential agency and public benefit.

2364 – PROTECTION AND STEWARDSHIP

2364.03 – Policy

1. Protection. It is the policy of the Forest Service to:
 - a. Ensure that land use decisions and management practices do not have an inadvertent adverse effect on the characteristics that qualify cultural resources for listing on the National Register or on the uses determined appropriate through the evaluation and allocation processes.
 - b. Determine whether proposed Forest Service or Forest Service-permitted undertakings will have effects on National Register listed or eligible properties and take those effects into account in land use decisions, following the procedures set forth in 36 CFR part 800, or national, regional, or State programmatic agreements that are applicable to the undertaking proposed.
 - c. Consult with the SHPO, Indian tribes, Advisory Council, and the interested public about proposed land use decisions and their potential effects on cultural resources, in accordance with 36 CFR part 800 or national, regional, or State programmatic agreements that are applicable to the undertaking proposed.
 - d. Monitor, assess, and document the physical conditions of and human or environmental threats to National Register eligible or listed historic properties on a frequent and systematic basis.
 - e. Implement management treatments that protect, conserve, stabilize, rehabilitate, restore, and enhance cultural resources based on their National Register qualities and values, their importance to cultural groups, and their recommended management allocation.
 - f. Integrate law enforcement in cultural resources monitoring, protection, and investigation of human-caused disturbance, destruction, or theft.
 - g. Create public education and awareness programs under the Windows on the Past program and pursuant to ARPA Section 10(c).
 - h. In coordination with the Tribal Government Relations Program, treat American Indian human remains recovered from public lands in strict accordance with the requirements of NAGPRA and 43 CFR part 10, and any applicable State laws.

Giant Sequoia National Monument Specialist Report

Coordinate with the Tribal Government Relations Program to implement requests for reburial of remains on NFS lands (FSM 1563.3).

i. Follow State law or the “Advisory Council on Historic Preservation Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects,” for reburial of non-Indian remains.

2. Stewardship. It is the policy of the Forest Service to:

a. Complete National Register and NHL nominations and seek other special designations as appropriate for historic properties in collaboration with State and local governments, other agencies, Indian tribes, and interested historic preservation organizations.

b. Develop and implement preservation-related programs to recognize, enhance, restore, interpret, and use National Register eligible or listed properties in accordance with their management allocations.

c. Conduct stewardship-related activities in consultation and involvement with other Federal, State and local agencies, Indian tribes, historic preservation organizations, interested parties, and the private sector.

d. Develop historic property plans (FSM 2362) for National Register-eligible or listed historic districts, properties, or property types to establish short- and long-term stewardship goals (desired conditions), proposed treatments, funding needs, and work schedules.

e. Establish partnerships with the public and private sector to achieve stewardship goals and enhance capacity to meet public education and outreach goals (FSM 2365).

2367 – PERMITS, AGREEMENTS, AND CONTRACTS

2367.03 – Policy

It is the policy of the Forest Service to:

1. Authorize appropriate scientific use of cultural resources, consistent with applicable law and established objectives for specific historic properties or property types.

2. Issue and administer Permits for Archaeological Investigations in accordance with 36 CFR Part 251 Subpart B – Special Uses.

3. Execute programmatic agreements in accordance with 36 CFR 800.14(b) to facilitate and streamline compliance and consultation required in NHPA Sections 106 and 110.

Giant Sequoia National Monument Specialist Report

4. Enter into cooperative agreements and procurement contracts to achieve Heritage Program goals in accordance with legal requirements and guidelines in FSM 1580 and FSM 6320.
5. Meet national requirements to enter special use permit, cooperative agreement, and contract information into Forest Service corporate databases for timely and accurate tracking, analysis, and reporting.

2366 – MANAGEMENT OF HERITAGE COLLECTIONS

2366.03 – Policy

It is the policy of the Forest Service to:

1. Acquire artifacts and related materials according to regional or forest and grassland standards and guidelines, only in support of agency compliance requirements with well-defined research, educational, or management objectives, and only if funds and facilities are available to properly care for them in the short- and long-term.
2. Acquire private collections from NFS lands only when the acquisitions are unrestricted gifts and bequests accompanied by proof of title from the current owner(s) and are not in violation of ARPA.
3. Develop and implement national and Regional standards and guidelines for acquisition, storage, preservation, and access of archaeological collections in a designated curatorial facility that meets the standards in 36 CFR part 79 - Curation of Federally-Owned and Administered Archaeological Collections.
4. Develop State, regional, and/or forest and grassland curatorial strategies that address repository space, curatorial costs, and short- and long-term collection management guidance.
5. Manage heritage collections as Priority Heritage Assets with appropriate documentation in the Infra heritage corporate database.
6. Consult with Indian tribes on current collections or proposed acquisition to identify human remains and associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony.
7. Retain final responsibility for curation and compliance with NAGPRA for collections acquired under the authority of the Antiquities Act or ARPA for compliance or research projects.
8. Retain ownership of collections obtained through research or compliance projects by universities, contractors, cooperators-partners, or land use applicants under a Permit for Archaeological Investigations.

2368 – INFORMATION MANAGEMENT AND REPORTING

2368.03 – Policy

It is the policy of the Forest Service to:

1. Maintain and revise, as necessary, national agency protocols and standards for data entry, accuracy, and security.
2. Use GIS and the heritage module of Infra to track heritage resource activities, accomplishments, and to maintain a record of heritage data to satisfy agency compliance requirements.
3. Complete Infra and GIS database updates annually to meet upward reporting deadlines for the Performance and Accountability, Deferred Maintenance reports, and the Secretary of the Interior's Annual Report to Congress on the Federal Archaeology Program.
4. Complete the Secretary of the Interior's Annual Report to Congress on the Federal Archaeology Program in a timely manner in response to the National Park Service's annual request.