

LYONS RESERVOIR PLANNING UNIT

Stanislaus River Watershed

Existing Conditions & Uses

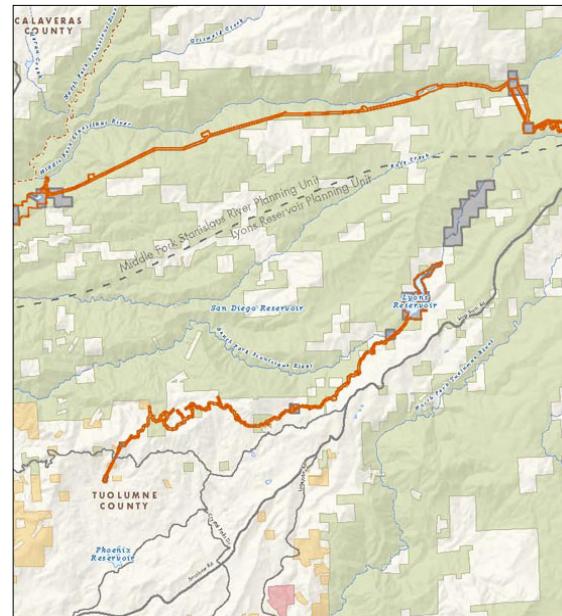
Overview

- Provides popular fishing and hiking access and valuable cultural and biological resources
- 1,087 acres in Tuolumne County; 832 acres outside the FERC boundary and 255 acres inside the FERC boundary
- Part of the Phoenix Project (FERC #1061); New License Order issued September 1992

The Lyons Reservoir Planning Unit is located between 2,600 and 4,700 feet in elevation, approximately 10 miles northeast of the City of Sonora in Tuolumne County. Parcels at the northern end of the planning unit are surrounded by Stanislaus National Forest as well as private lands, including those of Sierra Pacific Industries (see Figure SR-5). Parcels at the southern end of the planning unit are surrounded by private lands. Mi-Wuk, Twain Harte, and Long Barn are the closest urban areas to this planning unit. This planning unit contains Lyons Reservoir, portions of the Main Tuolumne Canal, South Fork Stanislaus River, and the Phoenix Powerhouse. Lyons Reservoir is formed by waters of the South Fork Stanislaus River impounded by Lyons Dam.



Lyons Dam & Reservoir



Lyons Reservoir Planning Unit
Tuolumne County

Lyons Reservoir serves as the primary drinking water supply for the Tuolumne Utilities District (TUD); serving the majority of the population of Tuolumne County. TUD has plans to expand Lyons Reservoir in the future to provide for additional water storage. Raising the dam would inundate the meadow area north of Lyons Reservoir.

State Highway 108 provides the main access to the planning unit, with Lyons Reservoir and the Tuolumne Canal accessible by secondary and unimproved roads from this highway. Lyons Dam Road, the primary access to Lyons Reservoir, is closed by a gate, and access is limited to the recreation season. Phoenix Powerhouse is accessible via Lyons Bald Mountain Road off of Highway 49 on the southern end of the planning unit.

Fish, Plant, and Wildlife Habitat

Lyons Reservoir, South Fork Stanislaus River, Main Tuolumne Canal, numerous intermittent streams, and associated riparian areas provide wildlife and plant habitat values. Several special status wildlife species may be present in this planning unit, including bald eagle, northern



Lyons Reservoir Planning Unit

Existing Conditions



Figure SR-5

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goshawk, and great gray owl. Wetland and meadow areas located along the South Fork Stanislaus River, north of Lyons Reservoir, provide habitat for special status species including foothill yellow-legged frog and willow flycatcher. The USFS has designated spotted owl and willow flycatcher Protected Activity Centers (PACs) adjacent to Lyons Reservoir and north along the South Fork Stanislaus River. Both migratory and resident populations of the Stanislaus deer herd are located in the area. In addition, regular detections of osprey have been reported at Lyons Reservoir, and a nest exists near the parking area.

Habitat types within this planning unit include mixed conifer forest, ponderosa pine forest, riparian woodland, and montane meadow. Special status plant species are known to be located within one mile of the planning unit, and one special status plant may grow in this planning unit. A variety of noxious weeds may also be located within the planning unit, according to the USFS Central Stanislaus Watershed Analysis.

Two special status fish species, hardhead and San Joaquin roach, could occur in this planning unit. Both PG&E and DFG stock catchable trout in the Main Tuolumne Canal, and DFG also stocks rainbow trout in Lyons Reservoir. Lyons Reservoir is inhabited by at least seven species of fish.

A biological assessment was conducted on a portion of this planning unit as part of PG&E's recent Rushing Meadow Timber Harvesting Plan (THP). In this assessment, bald eagles were observed along with osprey nests, and good habitat was identified for black bear, black-tailed deer, mountain lion, and gray fox. The assessment also cited survey results from 2001 that identified moderately to highly suitable habitat for special status amphibians and reptiles in the project area, though there were no detections of special status species.

Open Space

The planning unit provides open space adjacent to the small town of Twain Harte, as well as viewshed values for anglers and recreationists who enjoy the Sugar Pine Railroad Trail.

Outdoor Recreation

Recreation activities at Lyons Reservoir are limited to the recreation season (May 1st to October 31st) and include bank angling, hiking, picnicking, horseback riding, and bicycling. Boating and body contact recreation on Lyons Reservoir are prohibited to protect the water supply in the reservoir. The Class IV-V Strawberry whitewater run take-out is located just north of Lyons Reservoir on the South Fork Stanislaus River; however, this run is said to receive little to no use. Dispersed camping also occurs in the northern portion of the planning unit, as well as on adjacent USFS lands.

Hiking, mountain biking, and horseback riding on the historic Sugar Pine Railroad grade, as well as hiking along the Tuolumne Ditch trail, are popular activities. PG&E has produced a brochure about the Sugar Pine Railway history and posted an interpretive sign at the Lyons Reservoir parking area. In addition, there is a popular trail that crosses Lyons Dam and provides access downstream to the base of the dam.



Stairway path to the base of Lyons Dam

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PG&E signs by the Lyons Reservoir parking area

The only formal recreation facility at Lyons Reservoir is a parking area that includes a toilet, trash containers, one picnic table, and drinking water. A caretaker maintains the recreation facilities in this planning unit and patrols the Lyons Reservoir area during the recreation season. PG&E's fishing access facility at the Section 4 Canal by Twain Harte is flat, easily accessible from the road, provides parking, and is stocked with fish through a partnership between DFG and PG&E. The area surrounding the Phoenix Powerhouse has no developed recreational facilities.

Peat soil erosion problems have occurred in the vicinity of Lyons Reservoir. This is of particular concern because of water quality considerations, given that Lyons Reservoir is a source of domestic drinking water. Unauthorized public use and OHV use have caused serious erosion problems and degraded natural and cultural resources in the past; however, PG&E has installed barriers on access roads to minimize such impacts. Remaining unauthorized trails have been mapped by the USFS south of Lyons Reservoir, on the northwest side of the reservoir, as well as north of Lyons Reservoir.

Forest Resources

Timber within the planning unit is contained within three PG&E Timber Management Units (TMUs). The planning unit contains 756 timbered acres of Sierra mixed conifer with

ponderosa pine, sugar pine, white fir, Douglas-fir, and incense-cedar present. The TMUs located by Lyons Reservoir and north along the South Fork Stanislaus River are managed under a Recreation and Sustainable Timber Management prescription, meaning that recreation in this area is compatible with timber management. Forest management in designated recreation areas is limited to fuels reduction, hazard tree removal, and improvement of aesthetics. Outside of designated recreation areas, sustainable timber management is emphasized.

The parcel by the Section 4 Canal is currently under a Salvage timber management prescription, meaning that the lands are primarily managed for uses other than sustained timber production, but may require management to mitigate for emergency forest and watershed health issues, such as insect attacks. The parcels by Columbia Ditch and Phoenix Powerhouse are not contained within TMUs. Timber within the planning unit was harvested in the late 1980s or early 1990s and was scheduled to be harvested again in 2006.¹ Private lands surrounding Lyons Reservoir are primarily commercial timberlands.

Agricultural Uses

There are several small cattle ranches near the project; however, the area around Lyons Reservoir is heavily forested and grazing occurs only at the upper end of the reservoir. There is



Northern arm of Lyons Reservoir

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one lease for grazing on 620 acres to the north of Lyons Reservoir. This lessee also grazes cattle on neighboring USFS lands. The adjacent Stanislaus National Forest has a number of grazing allotments including the Rushing Allotment that encompasses the northern portion of the planning unit.

Historic Resources

The Lyons Reservoir Planning Unit was once inhabited by the Miwok Tribe. Several prehistoric and historic sites have been identified in this planning unit, particularly around Lyons Reservoir and at the Phoenix Powerhouse. One historical site is a two-mile section of the pre-1912 Sugar Pine Railroad, which is now used as a trail. Unauthorized collecting of railroad ties and looting of sites have occurred in the past and are currently being monitored by PG&E. Several archeological and historical sites may be eligible for inclusion in the NRHP. A Cultural Resources Management Plan (CRMP) was developed by PG&E in 1990 to avoid and mitigate impacts to particular NRHP eligible archeological and historic sites. The portion of this planning unit included in the recent Rushing Meadow THP was surveyed for archaeological resources.

Stewardship Council Recommendations

The Stewardship Council recommends that the land and land uses at Lyons Reservoir be preserved and enhanced by focusing on habitat, forestry, and cultural resources, agricultural values, and recreation opportunities. In presenting the Recommended Concept provided here, our objective is to preserve and enhance cultural and habitat resources, as well as agricultural values, while also enhancing recreation and forest management. We recommend this effort be conducted in close coordination with PG&E and the TUD. The following recommendations would need to be re-evaluated if the TUD has imminent plans



Walkway at the base of Lyons Dam to expand Lyons Dam and thereby raise the reservoir level.

Objective: Preserve and enhance biological, cultural and agricultural resources, and enhance the recreation experience and sustainable forestry management.

As shown on Table SR-3, the Stewardship Council has identified a number of preservation and/or enhancement measures that may contribute to the conservation management program for Lyons Reservoir. Additional detail and background regarding these potential measures can be found in the Supporting Analysis for Recommendations, provided under separate cover. These measures are intended to be illustrative in nature, not prescriptive, and will be amended, deleted, or augmented over time in coordination with future land owners and managers to best meet the objective for this planning unit.

Fish, Plant, and Wildlife Habitat

Objective: Preserve and enhance habitat in order to protect special biological resources.

The Lyons Reservoir Planning Unit provides forest, meadow, riparian, and aquatic habitat for a wide range of special status wildlife and fish

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species. In order to preserve and enhance the habitat and resources found here, the Stewardship Council recommends that baseline studies and plans be developed to gain a clear understanding of the resources (particularly outside the FERC boundary where little information is currently available). These studies will likely be followed by management plans to ensure implementation of preservation and enhancement measures for specific resources. Management of the property to preserve and enhance habitat will also include addressing noxious weeds. Additionally, restoration of unauthorized OHV trails and additional management of dispersed recreation use at Lyons Reservoir are recommended to protect habitat values and control erosion. We encourage close coordination with the USFS and other resource-focused organizations working in the area, and all planning should be considered in conjunction with rangeland, forest, and fuels management plans.

Open Space

Objective: Preserve open space in order to protect natural and cultural resources, agricultural land uses, recreation experiences, and viewsheds.

This concept would preserve open space by limiting new construction to signage and minor recreation facility additions, as well as through permanent conservation easements. Conservation easements would describe all prohibited uses to



Section 4 Canal fishing access & parking lot



Lyons Dam

maintain open space values, including the level of uses allowed and the requirement to maintain scenic qualities.

Outdoor Recreation

Objective: Enhance recreational facilities in order to provide additional education opportunities, recreation management, and enhance the recreation experience.

Recreation at Lyons Reservoir Planning Unit mainly consists of fishing, hiking, and day use opportunities with some dispersed camping. There is also unauthorized OHV use. As shown in Figure SR-6, the Stewardship Council looks to enhance these authorized opportunities by recommending facility and signage enhancements. We recommend enhancements focused on providing day use amenities at two fishing access sites, installing signage on a variety of topics, and increased opportunities for youth education and recreation. The Stewardship Council also recommends supporting any future steps to formalize the Sugar Pine Railroad Trail.

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Sustainable Forestry

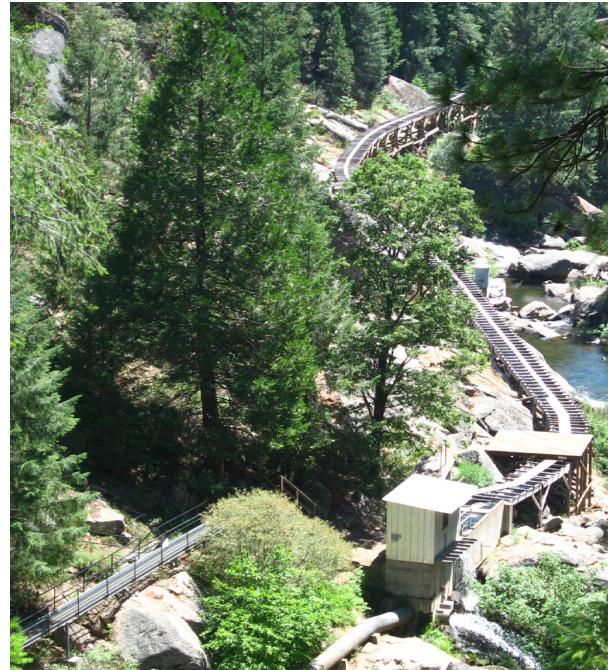
Objective: Develop and implement forestry practices in order to contribute to and promote a sustainable forest, preserve and enhance habitat, as well as to ensure appropriate fuel load management.

The Lyons Reservoir Planning Unit contains over 750 acres of valuable forest stands and plantations. The Stewardship Council recommends that future care and management of the land include developing a long-term vision for forest management in the area, addressing silvicultural practices, holistic watershed management, plantation management, and fuels management. The fuels and forest management plans should be developed in conjunction with the rangeland, noxious weed, and wildlife and habitat management plans. We expect that all of these plans would be developed in coordination with adjacent landowners and USFS management and practices as appropriate. The Stewardship Council also recommends assessing the potential to develop a demonstration forest to promote sustainable forestry research and management.

Agricultural Uses

Objective: Preserve and enhance grazing in order to support associated economic benefits, as well as to protect open space and habitat resources.

The area north of Lyons Reservoir provides over 600 acres of cattle grazing. The Stewardship Council looks to preserve this important economic use as part of the long-term management of Lyons Reservoir. To support this effort, we anticipate a baseline conditions report will be required to describe current agricultural, physical, and overall biological conditions of the area. From this, specific determinations can be made to identify and manage grazing practices in balance with other uses and values of the property.



Main Tuolumne Canal south of Lyons Reservoir

Preservation of Historic Values

Objective: Identify and manage cultural resources in order to ensure their protection, as well as to support opportunities for public education.

Several prehistoric and historic cultural sites have been identified within the Lyons Reservoir Planning Unit, along with identification of damage and looting at some sites. The Stewardship Council aims to support an increased understanding of these resources and ensure they are appropriately protected. To meet this objective, we recommend that cultural resource studies be conducted to understand the resources found at Lyons Reservoir (particularly outside the FERC cultural resource study area where less information is available), that appropriate management plans be developed and implemented, and that opportunities to support public education regarding cultural resources be considered. Additionally, restoration of unauthorized OHV trails and additional management of dispersed recreation use at Lyons Reservoir are recommended to protect historic values. Throughout this effort, the Stewardship

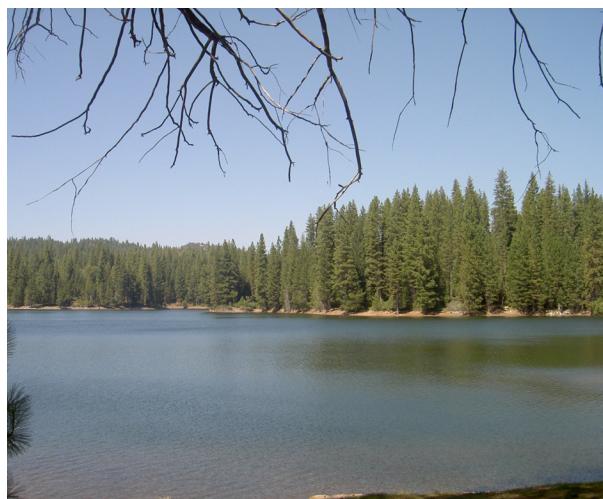
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Council recommends close coordination with Native American entities. Development of the cultural resources management plan should be consistent with the existing FERC license required CRMP.

Endnote

¹ The Rushing Meadow THP was recently completed by PG&E and was approved by CDF on August 24, 2006. This THP includes a total logging area of 687 acres that will be harvested using the selection method.



Lyons Reservoir

Table SR-3 Objectives to Preserve and/or Enhance – Recommended Concept

Planning Unit Objective: Preserve and enhance biological, cultural and agricultural resources, and enhance the recreation experience and sustainable forestry management.		
Beneficial Public Value	Objective	Potential Measures to Preserve and/or Enhance BPVs – Not Requirements*
Protection of the Natural Habitat of Fish, Wildlife, and Plants	Preserve and enhance habitat in order to protect special biological resources.	<ul style="list-style-type: none"> Conduct surveys of lands outside the FERC boundary to identify biological resources and enable their protection. Develop a wildlife and habitat management plan for the planning unit. Develop a noxious weed management plan for the planning unit. Remove and restore unauthorized OHV trails to control erosion and protect resource values.** Formalize or restrict dispersed recreation use north of Lyons Reservoir.**
Preservation of Open Space	Preserve open space in order to protect natural and cultural resources, agricultural land uses, recreation experiences, and viewsheds.	<ul style="list-style-type: none"> Apply permanent conservation easements to ensure a higher level of open space protection.
Outdoor Recreation by the General Public	Enhance recreational facilities in order to provide additional education opportunities, recreation management, and enhance the recreation experience.	<ul style="list-style-type: none"> Add day use amenities at Lyons Reservoir and the Section 4 Canal fishing access areas.** Install interpretive signage at Lyons Reservoir regarding drinking water quality protection, rare species, and cultural resources in the area.** Install signage to minimize trespassing by the Section 4 Canal onto adjacent private lands.** Support any future steps to formalize the Sugar Pine Railroad Trail.** Assess the potential for youth program opportunities at Lyons Reservoir.
Sustainable Forestry	Develop and implement forestry practices in order to contribute to and promote a sustainable forest, preserve and enhance habitat, as well as to ensure appropriate fuel load management.	<ul style="list-style-type: none"> Evaluate existing timber inventory data and supplement as appropriate. Develop a forest management plan for the planning unit to promote natural forest development and structural and physical diversity in forests for long-term ecological, economic, social, and cultural benefits. Develop a fuels management plan to ensure long-term forest health and reduce fuel loading and fire hazard throughout the planning unit. Manage plantations to mimic forests in the natural landscape.** Assess the potential to develop a demonstration forest for sustainable forestry research and management.
Agricultural Uses	Preserve and enhance grazing in order to support associated economic benefits, as well as to protect open space and habitat resources.	<ul style="list-style-type: none"> Develop a baseline conditions report that describes current agricultural, physical, and overall biological conditions of the area, including current uses and state of improvement. Develop a rangeland management plan for grazing use that includes goals and objectives and a monitoring and adaptive management strategy, and specifies grazing prescriptions that address soil and water conservation, erosion control, pest management, nutrient management, vegetation management, habitat protection, and cultural resources management.
Preservation of Historic Values	Identify and manage cultural resources in order to ensure their protection, as well as to support opportunities for public education.	<ul style="list-style-type: none"> Conduct surveys outside the FERC Project APE to identify cultural resources and enable their protection. Develop a cultural resources management plan for areas not already included in the FERC-mandated CRMP. Coordinate with Native American entities when conducting cultural resource measures. Remove and restore unauthorized OHV trails to protect cultural resources.** Formalize or restrict dispersed recreation use north of Lyons Reservoir to protect cultural resources.**

* This is a set of recommended possibilities for the preservation and enhancement of BPV's, and is not intended to be a set of requirements for future land management.

** Denotes site specific measure.

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Lyons Reservoir Planning Unit Recommended Concept

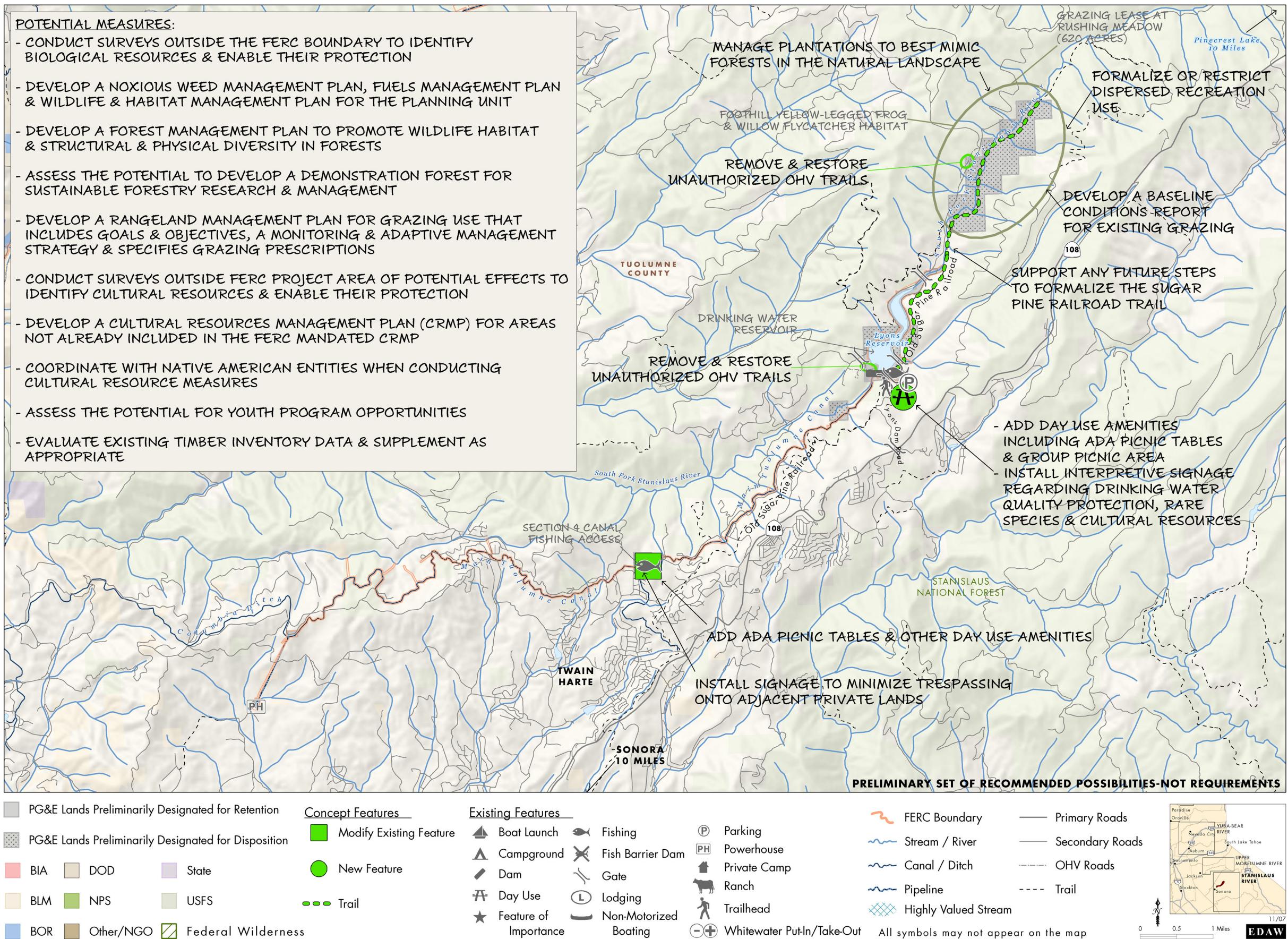


Figure SR-6

Lyons Reservoir Planning Unit

Recommendations would need to be re-evaluated if the Tuolumne Utilities District (TUD) has imminent plans to expand Lyons Dam and thereby raise the reservoir level.

Outdoor Recreation

Potential Measure:

- *Add day use amenities at Lyons Reservoir and the Section 4 Canal fishing access areas.*

Opportunities for enhancement of recreation facilities within the Lyons Reservoir Planning Unit are somewhat limited by drinking water quality considerations and persisting OHV impacts; however, several new and enhanced recreation opportunities are recommended, while the existing recreational opportunities would also remain. Measures to enhance the recreation experience include the addition of a formal day use area including picnic tables and other day use amenities at the southern end of Lyons Reservoir. Day use activities including fishing, hiking, bicycling, and horseback riding currently occur by Lyons Reservoir, indicating that there may be a need for formalized day use facilities. The area south of Lyons Reservoir currently has a parking area, toilet, trash containers, one picnic table, and drinking water; however, no group picnic facilities are available and the existing picnic table is not ADA accessible. Prior to implementation, studies would need to be completed to further evaluate the need for group picnic facilities and ADA picnic tables, as well as determine if a suitable location exists.

In addition to adding new day use amenities at Lyons Reservoir, the Stewardship Council recommends adding similar amenities at the Section 4 Canal Fishing Access. Day use enhancements would include ADA picnic tables and other appropriate day use facilities to support this popular local fishing area and improve the overall recreation experience. Prior to implementation, studies would be completed to further evaluate the need for day use facilities as well as determine if a suitable location exists.

Potential Measure:

- *Support any future steps to formalize the Sugar Pine Railroad Trail.*

Efforts were made during past relicensing to secure legal easements for portions of the historic Sugar Pine Railroad Trail; however, attempts to obtain a continuous alignment for the trail have so far been unsuccessful. Despite past difficulties, the Stewardship Council recommends supporting any future steps to formalize the Sugar Pine Railroad Trail. A project to improve a 2.3-mile portion of the Sugar Pine Railroad Trail in Twain Harte, just south of the planning unit, has been in progress for many years and has yet to find resolution due to conflicts with adjacent landowners. More than \$500,000 in Federal transportation funds has been allocated to this project. If the portion of the Sugar Pine Railroad trail that crosses planning units lands is formalized in the future as part of the larger trail, the Stewardship Council recommends the addition of interpretive displays along this trail to enhance the recreation experience.

Potential Measure:

- *Assess the potential for youth program opportunities at Lyons Reservoir.*

Due to the outstanding opportunities to see and learn about endangered species, water quality protection, as well as logging and ranching history at Lyons Reservoir, there are likely excellent

opportunities to educate youth on a variety of topics within the planning unit. Lyons Reservoir is only 10 miles north of Sonora and is easily accessible to local youth groups. Therefore, the Stewardship Council recommends assessing the potential for youth programs. Programs could teach youth about topics such as wildlife and botanical resources, including threatened and endangered species, sustainable forestry, agricultural uses, cultural resources and the heritage of the area, and how youth program participants can contribute to protecting local drinking water quality.

Potential Measures:

- *Install interpretive signage at Lyons Reservoir regarding drinking water quality protection, rare species, and cultural resources in the area.*
- *Install signage to minimize trespassing by the Section 4 Canal onto adjacent private lands.*

The Stewardship Council also recommends installation of interpretive signage or displays at the southern end of Lyons Reservoir to educate the public about drinking water quality protection, prehistoric uses, the history of logging and ranching in the area, and rare species (e.g., California spotted owl, great gray owl, northern goshawk, pansy monkeyflower). This measure would educate the public about some of the values that make the Lyons Reservoir area special and enhance their enjoyment and appreciation of those values. The addition of interpretive features could also encourage better stewardship of the area. To minimize trespassing on adjacent private lands, an information kiosk or signage would be provided at the Section 4 Canal to inform anglers of public fishing locations.

Fish, Plant, and Wildlife Habitat

Potential Measures:

- *Remove and restore unauthorized OHV trails to control erosion and protect resource values.*
- *Remove and restore unauthorized OHV trails to protect cultural resources.*

Existing formal recreation opportunities offered in the Lyons Reservoir area would be maintained; however, the Stewardship Council recommends additional management of informal and unauthorized recreation use. Unauthorized OHV trails on this planning unit cross from PG&E to USFS lands; therefore, decisions to either formalize or close these trails should be made jointly. The USFS has not yet made decisions regarding formalization or closure of unauthorized OHV route on USFS lands, so the Stewardship Council recommends coordinating with the USFS on any OHV route decisions to create consistency in management. It is recommended, however, that unauthorized OHV trails within the planning unit be removed and restored. Vehicles should be restricted to established roads and damaged areas should be revegetated. Unauthorized OHV use has been a long-standing issue, and measures should be taken to continue to manage unauthorized uses through the use of gates, bouldering, and revegetating of closed trails. Management of unauthorized OHV trails would reduce potential sources of road sediment and thereby protect water quality, biological resources, and cultural resources. Vehicular access should also be restricted to formal roads to prevent disruption of nesting raptor species (e.g., osprey).

Potential Measures:

- *Formalize or restrict dispersed recreation use north of Lyons Reservoir.*
- *Formalize or restrict dispersed recreation use north of Lyons Reservoir to protect cultural resources.*

In addition to potentially removing and restoring unauthorized OHV trails throughout the planning unit, informal recreation uses north of Lyons Reservoir (including dispersed car camping) would be formalized or restricted, depending on the result of resources studies in the area. Existing formal campgrounds are located at the Sand Bar Flat and Fraser Flat Campgrounds, about three miles north and east of the planning unit. These two USFS campgrounds are developed facilities that provide piped water, vault restrooms, and tables and grills, so there is likely no need to provide additional developed facilities on PG&E lands. If existing dispersed sites are determined to be impacting sensitive habitat or cultural resources, they would be revegetated, and “no camping” signs would be posted to notify recreationists of this restriction. Otherwise, these sites should be formalized to focus recreation uses in appropriate areas away from sensitive resources. Measures to formalize or restrict recreation uses would not only benefit habitat values and protect cultural resources, but they would also enhance the recreation experience by clarifying appropriate uses. If dispersed sites are formalized, these sites should be added as a non-jurisdictional appendix to the existing 1990 FERC license required Report on Recreation Resources, as they are located outside the FERC boundary.

Potential Measure:

- *Conduct surveys of lands outside the FERC boundary to identify biological resources and enable their protection.*

Though many biological resource studies were conducted for the Phoenix Project relicensing, often these studies focused on resources within the FERC boundary. In addition, biological studies were conducted as part of the recent Rushing Meadow THP; however, these studies may not have included the entire planning unit area and were not specifically focused on identifying opportunities for enhancement and restoration of biological resources. Therefore, the Stewardship Council recommends conducting surveys of the planning unit, particularly outside the FERC boundary, to identify biological resources and enable their protection.

Potential Measure:

- *Develop a wildlife and habitat management plan for the planning unit.*

The Stewardship Council also recommends using biological resource survey data to create a wildlife and habitat management plan. The planning unit contains potential habitat for several special status species including northern goshawk, red-legged frog, foothill yellow-legged frog, western pond turtle, bald eagle, and willow flycatcher, as well as potential rare plant species. Recommended surveys may reveal additional special status plants and wildlife. Once recommended surveys are completed, potential habitat enhancements and restoration opportunities can be identified and developed into a comprehensive plan describing goals and objectives for habitat and species, as well as measures to enhance and protect habitat for both wildlife and plant species. In addition, existing management practices, which could degrade suitable habitat for special status species, would be re-examined for suitability (e.g., stocking non-native fish species in occupied or suitable habitat for native amphibians). Monitoring of species and/or habitats would also be a component of the plan. The wildlife and habitat management plan should be developed in conjunction with rangeland, noxious weed, forest, and

fuels management plans. The recommended wildlife and habitat management plan would also include measures to protect late successional or other suitable habitat for spotted owl, willow flycatcher, osprey, and goshawk. This measure would provide consistency with adjacent USFS designated spotted owl and willow flycatcher Protected Activity Centers (PACs).

Potential Measure:

- *Develop a noxious weed management plan for the planning unit.*

A variety of noxious weeds may be located within the planning unit, according to the USFS Central Stanislaus Watershed Analysis. The Phoenix Project License Order does not include management of noxious weeds. The Stewardship Council therefore recommends developing a noxious weed management plan for the planning unit to eradicate existing populations of noxious weeds where possible and implement preventative measures to minimize the spread of weeds in the future. This plan would also provide for consistency in management of noxious weeds with adjacent management and should be coordinated with the USFS, Central Sierra Partnership Against Weeds, and the Tuolumne County noxious weed programs. This plan should be developed in conjunction with rangeland, fuels, forest, and wildlife and habitat management plans.

Preservation of Historic Values

Potential Measures:

- *Conduct surveys outside the FERC Project APE to identify cultural resources and enable their protection.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

It is likely that cultural resource surveys conducted for relicensing efforts were limited to the FERC Project Area of Potential Effects (APE), generally defined as all lands within the FERC boundary. Therefore, lands outside the APE were likely not surveyed. It is also unclear the extent to which the area outside the APE has been studied, possibly for timber harvests and other activities. There is a high likelihood of cultural sites outside the APE; therefore, the Stewardship Council recommends conducting surveys outside the APE to identify cultural resources and enable their protection. Documentation of cultural sites should be coordinated with Native American entities.

Potential Measures:

- *Develop a cultural resources management plan for areas not already included in the FERC-mandated CRMP.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

Although a Cultural Resources Management Plan (CRMP) was developed in 1990 as part of relicensing, it only included measures to avoid and mitigate impacts to particular NRHP eligible archeological and historic sites. Assuming that recommended surveys identify additional cultural sites within the planning unit, the Stewardship Council recommends developing a cultural resources management plan for the area not included in the FERC license required CRMP to ensure that cultural resources are provided adequate protection in the future. The plan would include appropriate measures for the identification, evaluation, and treatment of cultural resources (archeological and historical), as well as traditional use areas. Treatment measures could

include avoidance, specific protective measures (e.g., fencing), site monitoring, and methods to preserve, restore, or enhance cultural resource values through conservation easements, management agreements, or through public interpretation and education programs. The plan would also include working with local tribes to maintain access for gatherings. Development of the cultural resources management plan should be consistent with the existing FERC license required CRMP and should be coordinated with Native American entities.

Open Space

Potential Measure:

- *Apply permanent conservation easements to ensure a higher level of open space protection.*

The Stewardship Council recommend preserving open space values through permanent conservation easements. Conservation easements would describe all prohibited uses to maintain open space values, including the level of uses allowed. Recommendations include only minor additions of recreation facilities and are not expected to decrease the scenic quality of the viewsheds. The parcel south of Lyons Reservoir and the small parcels by Phoenix Powerhouse and Columbia Ditch are not recommended for additional recreation development or timber harvesting due to their remoteness and isolation within private property. These areas would be maintained for open space values; however, existing hydroelectric infrastructure is present in some areas.

Agricultural Uses

Potential Measure:

- *Develop a baseline conditions report that describes current agricultural, physical, and overall biological conditions of the area, including current uses and state of improvement.*

The northern area in the Lyons Reservoir Planning Unit provides opportunities for existing cattle grazing. It is unknown if range assessments have been completed for the planning unit and whether or not the existing lessee is employing appropriate grazing practices. Thus, the Stewardship Council recommends developing a baseline conditions report that describes current agricultural, physical, and overall biological conditions of the area, including current uses and state of improvement. This report should include a stream assessment to determine if cattle are affecting sensitive habitat (e.g., amphibian) by Rushing Meadow. This report would help determine appropriate grazing practices, regime, and management.

Potential Measure:

- *Develop a rangeland management plan for grazing use that includes goals and objectives and a monitoring and adaptive management strategy, and specifies grazing prescriptions that address soil and water conservation, erosion control, pest management, nutrient management, vegetation management, and habitat protection.*

Once the recommended baseline conditions report is completed, the Stewardship Council recommends developing a rangeland management plan for grazing use that includes goals and objectives and a monitoring and adaptive management strategy, and specifies grazing practices that may address topics including soil and water conservation, erosion control, pest management,

nutrient management, vegetation management, habitat protection, and cultural resources management. If cattle are determined to be affecting sensitive habitat north of Lyons Reservoir, fencing or other appropriate protection measures to restrict cattle from willow flycatcher and amphibian habitat may be installed. Fencing would also serve to protect water quality at Lyons Reservoir if it is determined that cattle are entering and polluting the reservoir. This plan would ensure that grazing use within the planning unit meets the Stewardship Council policy for agricultural uses on Watershed Lands. The rangeland management plan should be developed in conjunction with development of the noxious weed, forest, and wildlife and habitat management plans, as well as development of recommended recreation facilities within the planning unit to ensure consistency and complementary actions.

Sustainable Forestry

Potential Measures:

- *Evaluate existing timber inventory data and supplement as appropriate.*
- *Develop a forest management plan for the planning unit to promote natural forest development and structural and physical diversity in forests for long-term ecological, economic, social, and cultural benefits.*

The Stewardship Council recommends developing a forest management plan for the planning unit through the evaluation of existing forest inventory data and supplemental information, when appropriate. In addition to supporting natural forest development, the forest management plan would promote holistic watershed management, supporting the enhancement of other BPVs over the long term. The forest management plan would be compatible with both current and recommended recreation uses, grazing, and areas of biological and cultural importance. Forest management practices would protect late successional trees, particularly in areas adjacent to USFS spotted owl PACs. As the parcel by the Section 4 Canal is currently managed under the Salvage prescription by PG&E, snags and downed woody debris would be maintained when not deemed a safety, fire, or disease hazard as these are important components for wildlife habitat and forest regeneration. The forest management plan should be developed in conjunction with rangeland, fuels, noxious weed, and wildlife and habitat management plans. Future timber management would also need to comply with logging restrictions to protect cultural resources, as outlined in the FERC license required CRMP.

The small size and dispersed nature of the western parcels by Phoenix Powerhouse make substantial forest management in this area unlikely in the future; however, there may be opportunities for timber harvesting on other parts of the planning unit. In areas where timber extraction is consistent with the forest management plan, timber harvesting techniques would be promoted that maintain mosaics of forest stands of different age, size, and rotation period. In addition to utilizing PG&E's uneven-age selection harvest system, the concept would include harvesting practices and a monitoring program to protect watercourses and lakes and promote the restoration and conservation of natural forests. Post-harvest, a monitoring plan would be developed to ensure that forest management and the proposed harvesting schedule are consistent with the forest management plan, promoting natural forest development in perpetuity. Monitoring would focus on erosion control and sedimentation into the watercourse post-harvest and could include revegetation and erosion control of watercourse banks.

Potential Measure:

- *Assess the potential to develop a demonstration forest for sustainable forestry research and management.*

In addition, the Stewardship Council also recommends assessing the potential for the development of a demonstration forest to promote sustainable forest management and research. This demonstration forest would represent the Sierra mixed conifer forest type which exists in the northern portion of the planning unit. The development of a demonstration forest would be consistent with the goals and objectives of the forest management plan for the planning unit.

Potential Measure:

- *Manage plantations to mimic forests in the natural landscape.*

Plantations were noted as being present north of Lyons Reservoir in PG&E's September 2001 Timber Management Plan; however, the size and condition of plantations are unknown. In addition, no mention of plantations was made in the Rushing Meadow THP. Presuming that plantations exist north of Lyons Reservoir, the Stewardship Council recommends managing existing plantations to mimic forests in the natural landscape. The scale and layout of plantation blocks would be consistent with the patterns of forest stands found in the natural landscape. Trees would be selected that are suitable for the natural conditions of the site. Unless unsuitable based on regeneration potential, native species would be selected and exotic species used only minimally and only when determined to present no adverse ecological impacts. Management of plantations to mimic forests in the natural landscape would be addressed in the forest management plan.

Potential Measure:

- *Develop a fuels management plan to ensure long-term forest health and reduce fuel loading and fire hazard throughout the planning unit.*

Management of fuels is very important in reducing fire risk in this high fire hazard area. Therefore, the Stewardship Council recommends developing a fuels management plan for this planning unit. Development of such a plan was also suggested in the USFS Central Stanislaus Watershed Analysis to reduce the fire hazard characteristics of the area. The fuels management plan would ensure long-term forest health and reduce fuel loading and fire hazard throughout the planning unit. Coordination with adjacent landowners and USFS management would provide a consistent approach to management of the forest, habitat, and recreation resources in this area.