



United States Department of the Interior

NATIONAL PARK SERVICE

Yosemite National Park
P. O. Box 577
Yosemite, California 95389

IN REPLY REFER TO:
L7615(YOSE-PM)

Memorandum

To: Garrett Dickman, Project Manager, Yosemite National Park

From: Superintendent, Yosemite National Park

Subject: NEPA and NHPA Clearance: Merced and Tuolumne Grove Giant Sequoia Protection (63606)

The Executive Leadership Team has reviewed the proposed project/action and completed its environmental assessment documentation, and we have determined the following:

- There will not be any effect on threatened, endangered, or rare species and/or their critical habitat.
- There will be no adverse effect on historical, cultural, or archeological resources.
- There will not be serious or long-term undesirable environmental or visual effects.

The subject proposed project, therefore, is now cleared for all NEPA and NHPA compliance requirements as presented above. Project plans and specifications are approved and construction and/or project implementation can commence.

For the proposed project actions to be within compliance requirements during construction and/or project implementation, the following mitigations must be adhered to:

- No mitigations identified.

Recommendations for Conditions or Stipulations: None

For complete compliance information see PEPC Project 63606.

//Don L. Neubacher//
Don L. Neubacher

Enclosure (with attachments)

cc: Statutory Compliance File

*The signed original of this document is on file at the
Environmental Planning and Compliance Office in
Yosemite National Park.*

Letter of Compliance Completion - Merced and Tuolumne Grove Giant Sequoia Protection - PEPC ID: 63606



Categorical Exclusion Form

Project: 2016-004 Merced and Tuolumne Grove Giant Sequoia Protection

PEPC Project Number: 63606

Project Description:

The closure of the Mariposa Grove has significantly raised the visitation level to Merced and Tuolumne Groves. The cumulative impact of larger numbers of visitors to the groves, and especially those leaving established routes, accelerates damage to tree root systems, causes wear and tear on bark of tree trunks, kills sequoia seedlings and other special status species by trampling.

The park will install approximately 20 feet of new zig-zag style fencing in the Merced Grove, 90 feet of zig-zag fencing in the Tuolumne Grove to protect a creek restoration site, and extend an existing double-post style fence in the Tuolumne Grove by 110 feet to protect several trees downhill from the main road/trail. This project will also add signs, on the fencing requesting that people do not enter the tree enclosures or leave the paths where seedlings are present.

Project Locations:

Tuolumne County, CA

Mitigations:

- No mitigations identified.

CE Citation: C.17 Construction of fencing enclosures or boundary fencing posing no effect on wildlife migrations.

Decision: I find that the action fits within the categorical exclusion above. Therefore, I am categorically excluding the described project from further NEPA analysis. No extraordinary circumstances apply.

Superintendent: //Don L. Neubacher//

Don L. Neubacher

Date: 5/4/16

Extraordinary Circumstances:

If implemented, would the proposal...	Yes/No	Notes
A. Have significant impacts on public health or safety?	No	
B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas?	No	
C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E))?	No	
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	No	
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	No	
F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?	No	
G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office?	No	
H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?	No	
I. Violate a federal, state, local or tribal law or requirement imposed for the protection of the environment?	No	
J. Have a disproportionately high and adverse effect on low income or minority populations (EO 12898)?	No	
K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 130007)?	No	
L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?	No	

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ENVIRONMENTAL SCREENING FORM (ESF)

Updated Sept 2015 per NPS NEPA Handbook

A. PROJECT INFORMATION

Project Title: 2016-004 Merced and Tuolumne Grove Giant Sequoia Protection
PEPC Project Number: 63606
Project Type: Resource Protection (PROT)
Project Location:
County, State: Tuolumne, California
Project Leader: Garrett Dickman

B. RESOURCE IMPACTS TO CONSIDER:

Resource	Potential for Impact	Potential Issues & Impacts
Air Air Quality	None	
Biological Nonnative or Exotic Species	None	
Biological Species of Special Concern or Their Habitat	None	
Biological Vegetation	None	
Biological Wildlife and/or Wildlife Habitat including terrestrial and aquatic species	None	
Cultural Archeological Resources	None	There are no archeological concerns and the proposed ground disturbance is minimal. No archeological monitoring is required.
Cultural Cultural Landscapes	None	
Cultural Ethnographic	None	Tribal Consultation conducted in April 2015 Tribal Spreadsheet, no ethnographic resources identified. No tribal comments received as of

Resources		4/19/2016 on project.
Cultural Museum Collections	None	
Cultural Prehistoric/historic structures	None	
Geological Geologic Features	Potential	Up to 15 rebar measuring 1/2 inch will be installed to reinforce the Merced Grove fence. Tuolumne Grove requires 24 postholes measuring 12 inches square and 12 inches deep. Ground disturbance will be minimal.
Geological Geologic Processes	None	
Lightscares Lightscares	None	
Other Human Health and Safety	None	
Other Operational	None	
Other Other	None	
Socioeconomic Land Use		
Socioeconomic Minority and low-income populations, size, migration patterns, etc.	None	
Socioeconomic Socioeconomic	None	
Soundscapes Soundscapes	None	
Viewsheds Viewsheds	None	
Visitor Use and Experience Recreation Resources	None	
Visitor Use and Experience Visitor Use and Experience	Potential	Fencing will protect the tree roots, bark, and seedlings of the Giant sequoias from further damage. Future visitor experience will be enhanced by the protection of these groves.
Water Floodplains	None	

Water Marine or Estuarine Resources	None	
Water Water Quality or Quantity	None	
Water Wetlands	None	
Water Wild and Scenic River	None	
Wilderness Wilderness	None	

Recommended:

Compliance Specialists	Date
<u>//Renea Kennec//</u> Compliance Specialist – Renea Kennec	<u>4/20/16</u>
<u>//Madelyn Ruffner//</u> Compliance Program Manager – Madelyn Ruffner	<u>4/27/16</u>
<u>//Randy Fong//</u> Chief, Project Management – Randy Fong	<u>5/2/16</u>

Approved:

Superintendent	Date
<u>//Don L. Neubacher//</u> Don L. Neubacher	<u>5/4/16</u>

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ASSESSMENT OF ACTIONS HAVING AN EFFECT ON HISTORIC PROPERTIES

A. DESCRIPTION OF UNDERTAKING

1. **Park:** Yosemite National Park

2. **Project Description:**

Project Name: 2016-004 Merced and Tuolumne Grove Giant Sequoia Protection

Prepared by: Sara Dolan **Date Prepared:** 04/19/2016 **Telephone:** (209) 379-1308

PEPC Project Number: 63606

Area of potential effects (as defined in 36 CFR 800.16[d])

Merced Grove and Tuolumne Grove

3. **Has the area of potential effects been surveyed to identify historic properties?**

 No

 X Yes

Source or reference: 1996A (Caputo 1996)
2005LL (Peabody and Bevill 2009)

4. **Potentially Affected Resources:**

Ethnographic Resources Affected Notes: 1996A (Caputo 1996); 2005LL (Peabody and Bevill 2009)

5. **The proposed action will: (check as many as apply)**

 No Destroy, remove, or alter features/elements from a historic structure

 No Replace historic features/elements in kind

 No Add non-historic features/elements to a historic structure

 Alter or remove features/elements of a historic setting or environment
 No (inc. terrain)

 Add non-historic features/elements (inc. visual, audible, or atmospheric)
 No to a historic setting or cultural landscape

 No Disturb, destroy, or make archeological resources inaccessible

 No Disturb, destroy, or make ethnographic resources inaccessible

 Yes Potentially affect presently unidentified cultural resources

 Begin or contribute to deterioration of historic features, terrain, setting,
 No landscape elements, or archeological or ethnographic resources

No Involve a real property transaction (exchange, sale, or lease of land or structures)
Other (please specify): _____

6. Supporting Study Data:

(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisors as indicated by check-off boxes or as follows:

[X] 106 Advisor
Name: Kimball Koch
Date: 04/21/2016

Check if project does not involve ground disturbance []
Assessment of Effect: ___ No Potential to Cause Effect X No Historic Properties Affected ___ No
Adverse Effect ___ Adverse Effect ___ Streamlined Review
Recommendations for conditions or stipulations:

[X] Anthropologist
Name: Eirik Thorsgard
Date: 04/19/2016
Comments: Tribal Consultation conducted in April 2015 Tribal Spreadsheet, no ethnographic resources identified. No tribal comments received as of 4/19/2016 on project.

Check if project does not involve ground disturbance []
Assessment of Effect: X No Potential to Cause Effect ___ No Historic Properties Affected ___ No
Adverse Effect ___ Adverse Effect ___ Streamlined Review
Recommendations for conditions or stipulations:

[X] Archeologist
Name: Sara Dolan
Date: 04/19/2016
Comments: There are no archeological concerns and the proposed ground disturbance is minimal. No archeological monitoring is required.

Check if project does not involve ground disturbance []
Assessment of Effect: ___ No Potential to Cause Effect X No Historic Properties Affected ___ No
Adverse Effect ___ Adverse Effect ___ Streamlined Review
Recommendations for conditions or stipulations:

Doc Method: Park Specific Programmatic Agreement

☒ Historical Landscape Architect

Name: Kimball Koch

Date: 04/13/2016

Comments: The installation of the rustic-style fencing is outside the boundary for the Merced Grove Ranger Station, a National Register of Historic Places property which is significant for its rustic design qualities.

Check if project does not involve ground disturbance ☐

Assessment of Effect: ☐ No Potential to Cause Effect ☒ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect ☐ Streamlined Review

Recommendations for conditions or stipulations:

No Reviews From: Curator, Historical Architect, Historian, 106 Advisor, Other Advisor

C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

1. Assessment of Effect:

☐ No Potential to Cause Effects
☒ No Historic Properties Affected
☐ No Adverse Effect
☐ Adverse Effect

2. Documentation Method:

☐ A. STANDARD 36 CFR PART 800 CONSULTATION

Further consultation under 36 CFR Part 800 is needed.

☐ B. STREAMLINED REVIEW UNDER THE 2008 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a streamlined review under section III of the 2008 Servicewide PA for Section 106 compliance.

APPLICABLE STREAMLINED REVIEW Criteria
(Specify 1-16 of the list of streamlined review criteria.)

☐ C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 2008 Servicewide PA and 36 CFR Part 800.

Specify plan/EA/EIS:

☐ D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.

1999 Programmatic Agreement

☐ E. COMBINED NEPA/NHPA Document

Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

☐ G. Memo to SHPO/THPO

☐ H. Memo to ACHP

SHPO/THPO Notes:

3. Additional Consulting Parties Information:

Additional Consulting Parties: No

4. Stipulations and Conditions:

Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

5. Mitigations/Treatment Measures:

**Measures to prevent or minimize loss or impairment of historic/prehistoric properties:
(Remember that setting, location, and use may be relevant.)**

No Assessment of Effect mitigations identified.

D. RECOMMENDED BY PARK SECTION 106 COORDINATOR:

Kimball

Koch

//Kimball Koch//

Date: 4/27/16

E. SUPERINTENDENT'S APPROVAL

The proposed work conforms to the NPS *Management Policies* and *Cultural Resource Management Guideline*, and I have reviewed and approve the recommendations, stipulations, or conditions noted in Section C of this form.

Superintendent: //Don L. Neubacher//

Don L. Neubacher

Date: 5/4/16

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Assess

Protection - PEPC ID: 63606

Merced and Tuolumne Grove Sequoia Protection

Reduce trampling to protect giant sequoia roots

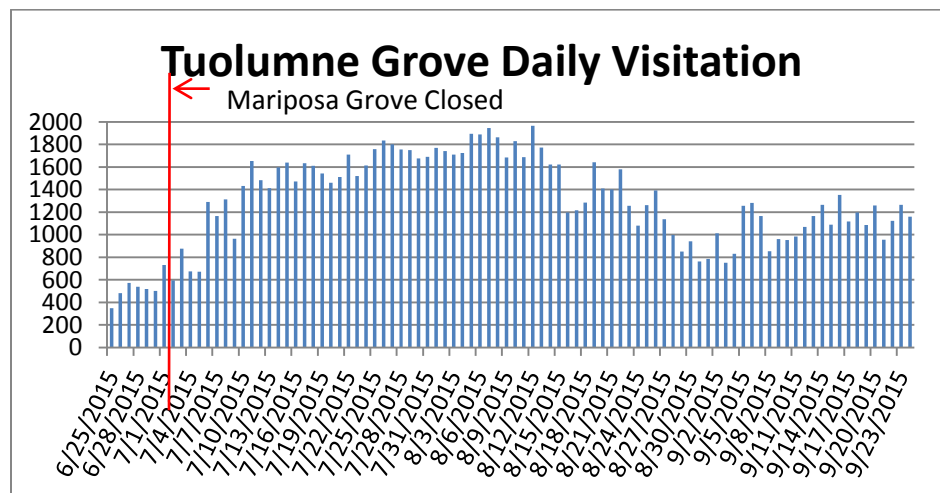
Summary

Problem statement: The closure of the Mariposa Grove has significantly raised the visitation level to Merced and Tuolumne Groves. Mechanical and personnel counts place the increase at 2.5 times the previous level (see below graph). The completion of the trailhead upgrade at the Tuolumne Grove has further increased attendance by increasing visibility. The cumulative impact of larger numbers of visitors to the groves, and especially those leaving established routes, accelerates damage to tree root systems, causes wear and tear on bark of tree trunks, kills sequoia seedlings and other special status species by trampling.

Past history: In anticipation of a surge in visitation to these groves in 2015, fencing and signs were installed to deter visitors from crushing sequoia roots. Hidden cameras trained on the completed fencing revealed that the fencing alone partially but not fully effective. Small signs were added to the fencing later in the summer.

The degree of visitation exceeded that which was anticipated and a clear need for additional steps to protect the resource prompts us to return with additional proposals for protections in these groves.

Proposed work: We propose to install approximately 20 feet of new zig-zag style fencing in the Merced Grove to protect an additional tree, 90 feet of zig-zag fencing in the Tuolumne Grove to protect a creek restoration site, and extend an existing double-post style fence in the Tuolumne Grove by 110 feet to protect several trees downhill from the main road/trail. We also propose to add signs requesting that people do not enter the tree enclosures or leave the paths where seedlings are present.



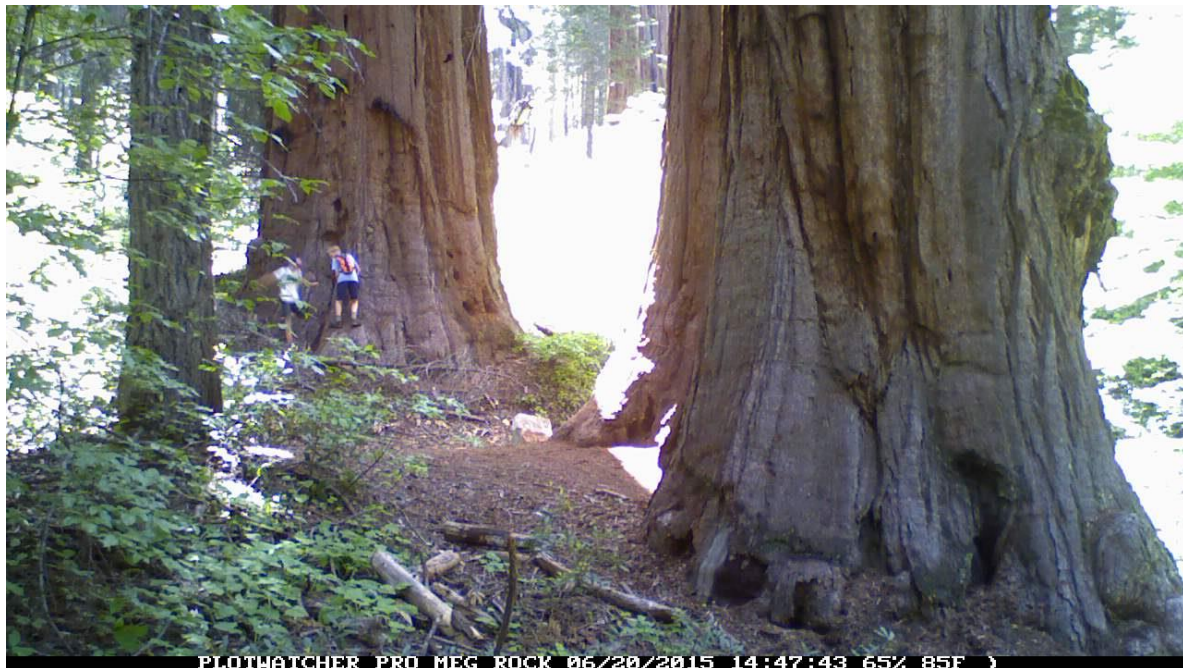
Merced Grove Fencing

The location for proposed fencing installation in the Merced Grove is at a cluster of sequoias directly adjacent to the Merced Grove Trail that receives considerable impact: a single tree on a steep bank above the trail, plus a pair of trees below the trail. (See photo below)

In 2015, as part of the fencing project in this grove, large branches and debris were placed in front of the uphill tree as a “natural barrier” to prevent visitor damage to the tree uphill of the road. Two rocks were placed on either side of the downhill tree closest to the road that showed damage from being clipped repeatedly by passing vehicles.

The natural barrier was an ineffective deterrent to people approaching the uphill tree and climbing on it. In addition, the steeply sloped road cut leading up to this tree is eroding as visitors climb up to approach the tree.

A camera, set up as part of a Visitor Use and Social Science (VUSS) study in the summer of 2015, reveals visitors approaching the base and climbing on this cluster of trees. In this image, two boys have climbed over the installed natural barrier and are using pockets in the bark to climb up the trunk.

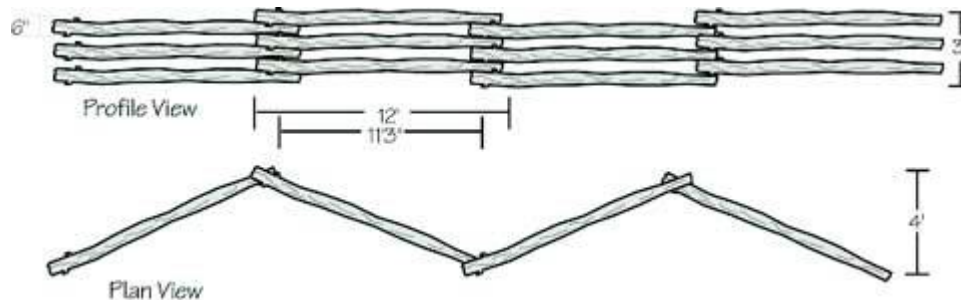


At this location, we would construct a 10-20-foot fence with a sign. The length of the fence will be adjusted to avoid damage to sequoia roots.

The proposed type of fencing for this project is the ‘Parallel Zig-zag’ style that is consistent with style and dimensions of existing fencing elsewhere in the Merced Grove. Zig-zag minimizes impacts to giant sequoia roots and archaeological sites as it does not require post holes to be dug as anchors. It is also the least costly to remove if found to no longer be needed in the future. Fences will be anchored with ½ inch gauge rebar at a depth of 12 inches for added stability. Rebar is installed at the end of both 10 foot cedar rails.

Fence Design: Parallel Zigzag (From a 1990 “Demonstration Fence Project Report” to the YOSE superintendent)

Because it does not require any holes dug for fence posts, it has minimal impact on archeological sites and tree roots. Depending on the message desired, it could be two, three, or four rails high. This is an easy fence to build well, requiring minimal skills. Fences will be three rails high, reaching a total height of about 3-feet.



Parallel zigzag fence

Tuolumne Grove Fencing

In the Tuolumne Grove, a fence currently runs parallel to Tuolumne Grove Road on the downhill side from the entrance to the Grove for about 700 feet, continuing beyond the picnic area. The fence ends near two very prominent sequoias that grow adjacent to one another. Directly beyond where the fence currently ends, at least two social trails leave the road and lead to the base of these trees. This area is particularly sensitive because it contains hundreds of seedlings that are in danger of being trampled. In



2015, the most prominent of these social trails had a trail counter installed and hundreds of visitors were counted.

The proposed fence in the Tuolumne Grove would extend the current fence for 110 more feet. This new segment will block access to two social trails. One of these social trails was heavily used according to trail counter data. The style of fence that will be used for this segment matches the current design. At the end of every 10 foot rail, two postholes are dug. Posts are approximately 10-12 inches wide, and will be placed at a depth of about 12 inches. Post holes will be dug adjacent to the Tuolumne Grove Road.



Example of fence in the Tuolumne Grove that was enhanced by addition of internal poles in 2015. The proposed new segment of fence will continue for 110 feet beyond the existing fence.

Additional fencing will be installed to protect the restoration area detailed below. Zig-zag style fences will be installed at each entrance of the social trail. At the south entrance, 40 feet of fencing will be installed adjacent to the official trail. This will require 5 rebar stakes to be driven into the ground at 10 foot intervals. At the north entrance, 50 feet of new fencing will be installed, requiring 6 rebar stakes.

Restoration

Social trails and other heavily disturbed areas of the Tuolumne Grove will be restored by volunteers and park staff to prevent any trampling to sequoia seedlings in the interior of the grove.

Unsustainable trails will be restored and revegetated by the Yosemite restoration crew and volunteers. Shovels will be used to decompact and aerate the soil, which allow root penetration and native plant establishment. After decompaction, the trail is recontoured back into the natural form of the hillslope.

To deter visitors from reopening the restored social trails, large woody debris and rocks will be placed within the trail footprints. Careful debris placement disguises the former trail and gives the restored area a more natural appearance, while making the area difficult and undesirable to walk through. All woody debris used to close trails will be collected locally, and will sometimes be partially buried in order to maintain a natural look and further stabilize the slope.

The largest proposed restoration site is a heavily used social trail that cuts through an ephemeral creek between the Tuolumne Grove Loop Trail and the Dead Giant Tunnel tree loop trail. The vegetation in this area has been denuded, and the streambank is eroding.



This social trail connecting the two loops in the Tuolumne Grove has widened and people have created a makeshift bridge that is causing damage to vegetation and altering streambed water flows. We propose to restore this area and install fences at either end of the social trail.

Signs

Currently, there are two types of restoration signs in the Merced and Tuolumne Groves, placed on every other fence rail in the most popular locations. This type of sign is affixed to the fence. Any newly built fence will have one of these signs attached.



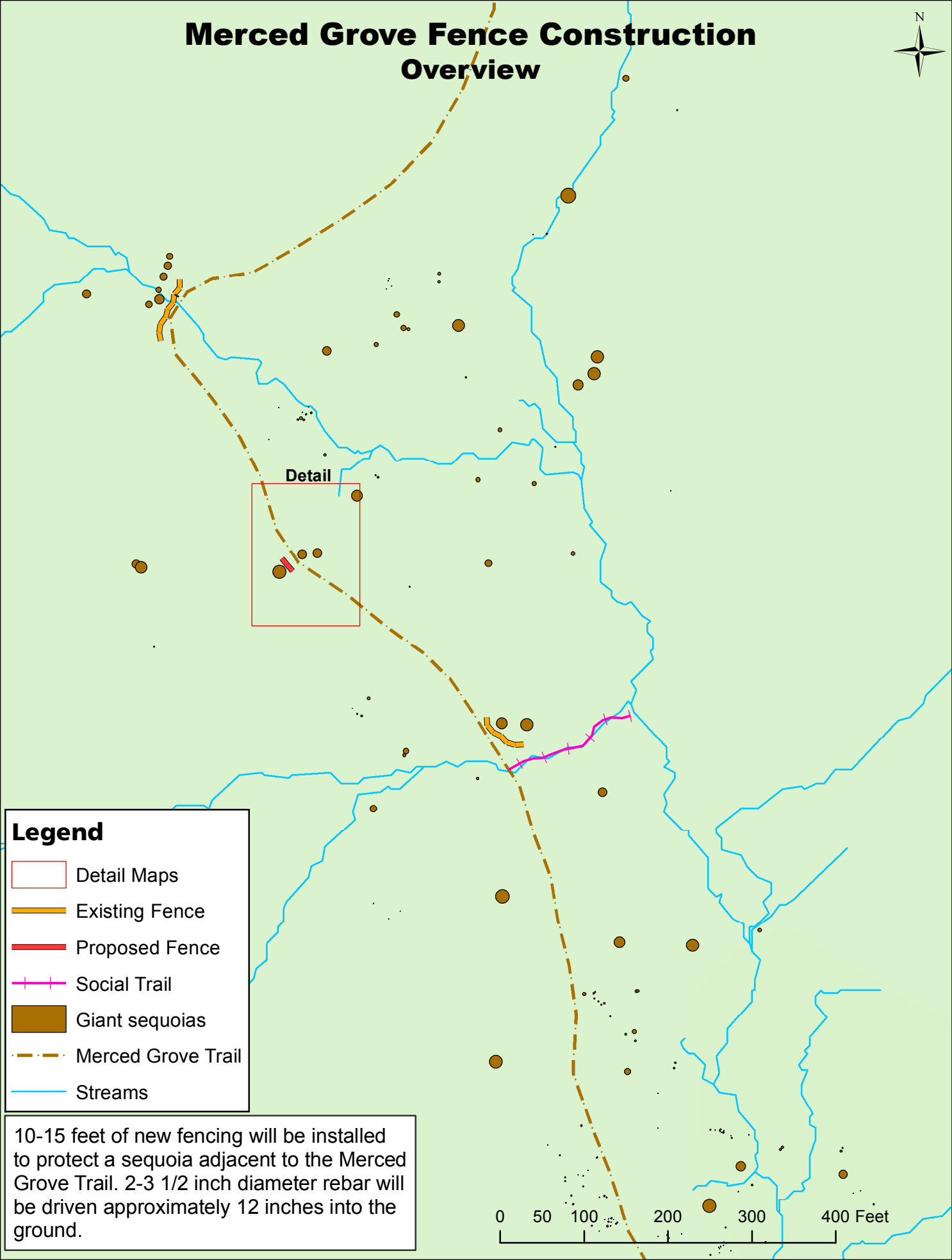
Larger signs created for the Mariposa Grove can be used in these groves until Mariposa Grove is reopened. One sign will be placed next to "Big Red" in the Tuolumne Grove as it receives the heaviest

visitation of any location in these two groves. Another sign can be placed in the Merced Grove, adjacent to the first tree enclosure encountered by visitors



A third kind of sign we propose to add is specifically to protect sequoia seedlings. The Tuolumne Grove in 2013 had its first hot burn in many decades, prompting sequoia seedlings to emerge in 2014 and 2015. Many of these seedlings were destroyed by trampling. The winter of 2015-2016 is wetter and we anticipate a greater germination of tree seedlings. If these are also trampled, then a rare recruitment opportunity for this sequoia grove will have been squandered. The proposed sign would include a drawing of a small sequoia and read something like “Protect the baby sequoias – please keep out “.

Merced Grove Fence Construction Overview



Legend

Detail Maps

Existing Fence

Proposed Fence

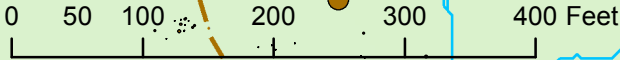
Social Trail

Giant sequoias

Merced Grove Trail


Streams


10-15 feet of new fencing will be installed to protect a sequoia adjacent to the Merced Grove Trail. 2-3 1/2 inch diameter rebar will be driven approximately 12 inches into the ground.





Merced Grove Fence Construction Detail Map


Legend

 Rebar

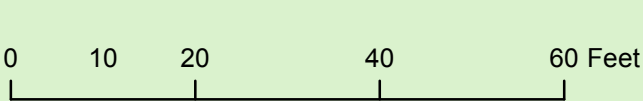
 Proposed Fence

 Giant sequoias

 Merced Grove Trail

 Streams

10-15 feet of new fencing will be installed to protect a sequoia adjacent to the Merced Grove Trail. 2-3 1/2 inch diameter rebar will be driven approximately 12 inches into the ground. The length of the fence may need to be adjusted to avoid damaging sequoia roots.



Tuolumne Grove Restoration Overview



Legend

Detail Maps

Proposed Fence

Social Trail

Giant sequoias

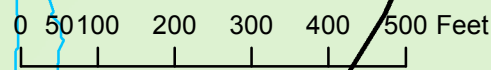
Loop Trail

Streams

Tuolumne Grove Road

110 feet of double-post style fence, and 90 feet of zig-zag fence will be installed, totaling 200 feet of additional fencing in the Tuolumne Grove.

Shortcut trails and any social trail leading into sequoia seedling areas will be decommissioned, restored and monitored throughout the summer season.








Tuolumne Grove Restoration

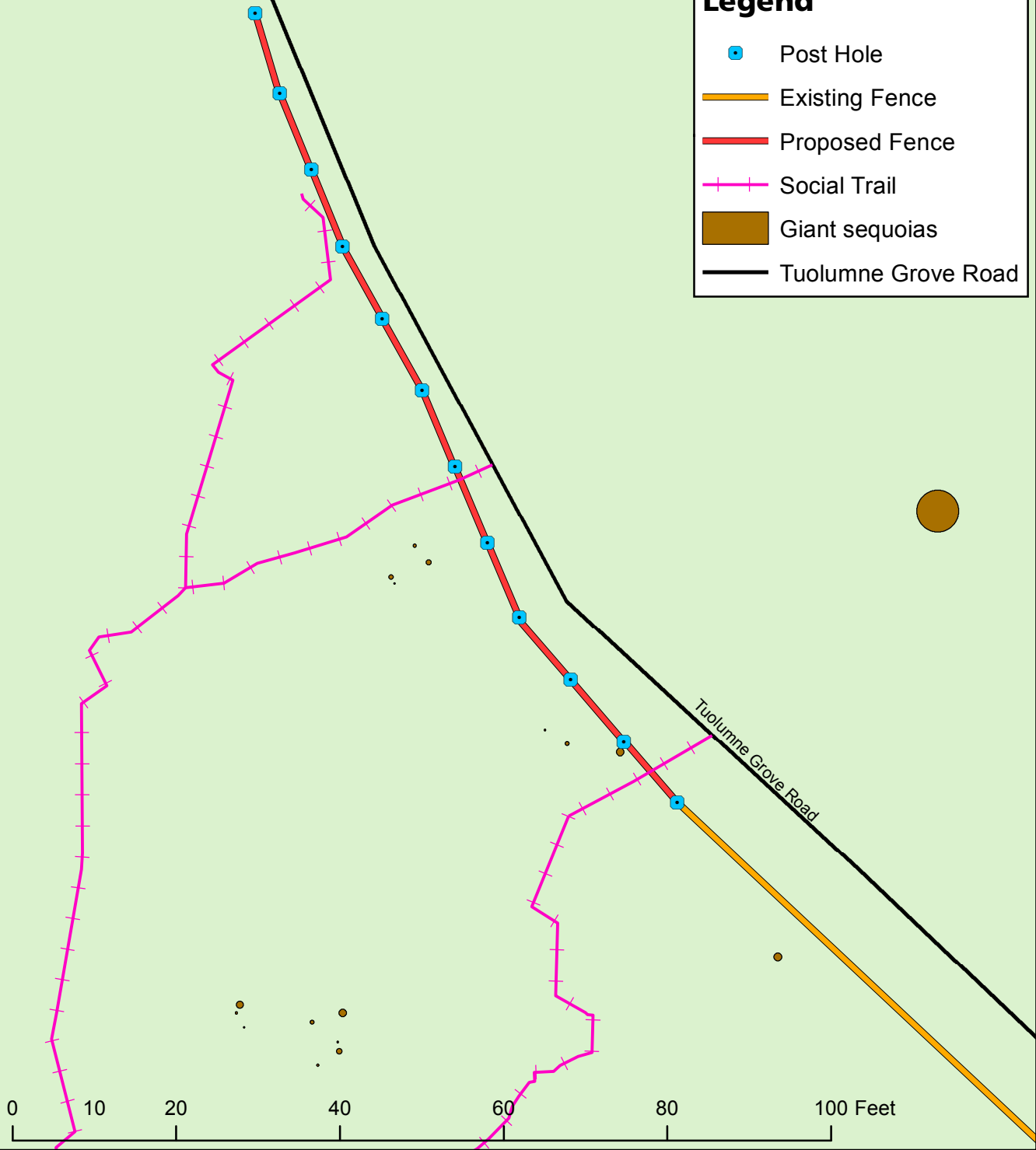
Map 1



This section of fence will be a 110-foot extension of the existing fence. The design will match that of the existing fence, which requires 2 postholes to be dug at 10-foot intervals. Postholes are approximately 10-12 inches wide, and will be dug approximately 12 inches deep. The proposed fence runs parallel to the existing historic road prism.

Legend

-  Post Hole
-  Existing Fence
-  Proposed Fence
-  Social Trail
-  Giant sequoias
-  Tuolumne Grove Road



Tuolumne Grove Restoration

Map 2

A shortcut social trail that runs from the tunnel tree to the fallen sequoia will be removed and restored. Woody debris will be removed from the stream channel, and all disturbed ground will be decompacted and naturalized.

Zig-zag fencing will be installed on both ends to decommission the trail. 50 feet of fencing will be installed on the north end, requiring 5 rebar stakes. 40 feet of fencing will be installed on the south end, requiring 5 rebar stakes.

