

MERCED WILD AND SCENIC RIVER

Draft Comprehensive River Management Plan / EIS



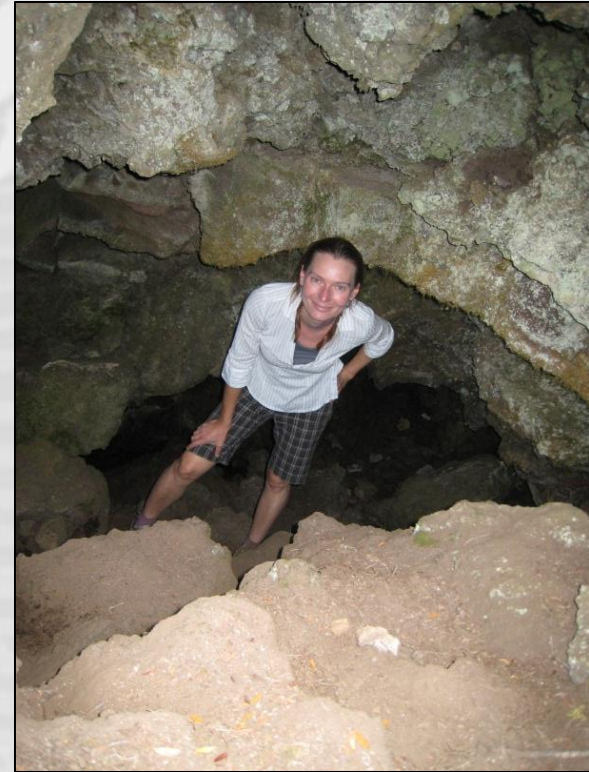
**Protecting and Enhancing
River Values
Webinar Feb. 7, 2013**



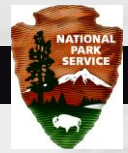
Today's Speakers



Kathleen
Morse

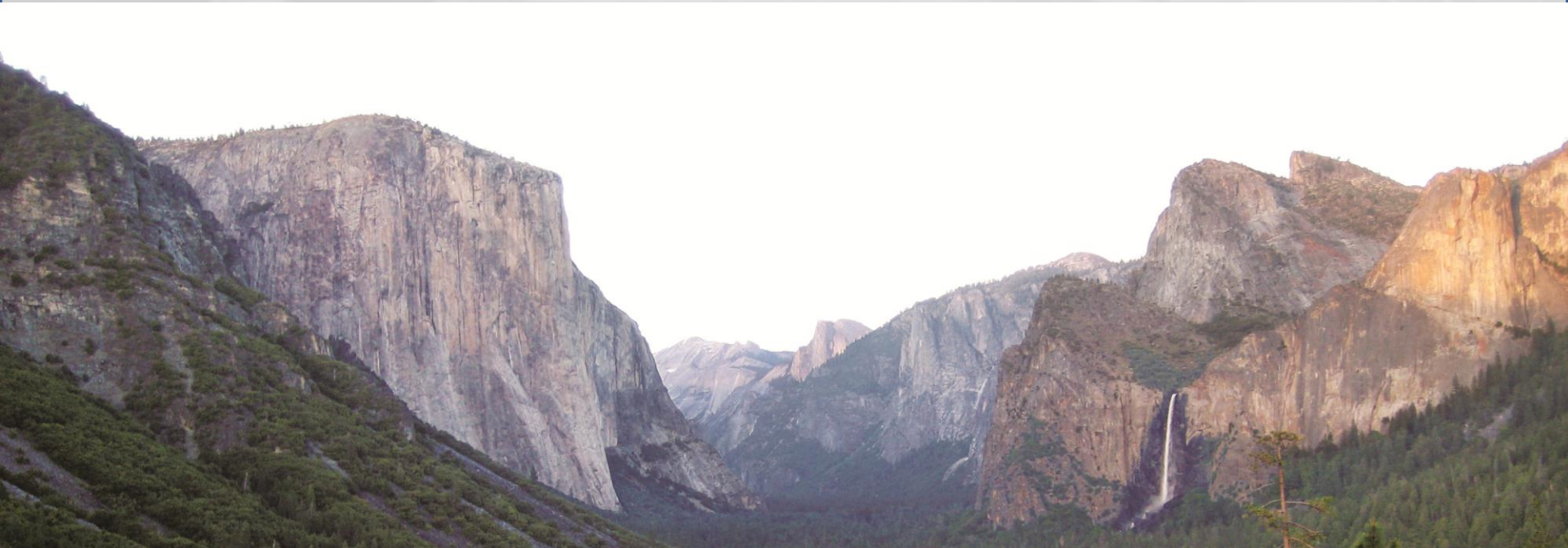


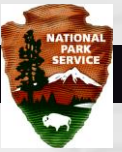
Mae
Frantz



Presentation Overview

1. The Wild and Scenic Rivers Act Protect and Enhance Mandate and Merced River Outstandingly Remarkable Values
2. Merced River Plan Foundational Planning Framework and River Value Conditions, Issues, and Opportunities
3. Merced River Plan Actions to Protect and Enhance River Values
4. Merced River Plan Monitoring and Management



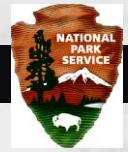


Section One

The Wild and Scenic Rivers Act Protect and Enhance Mandate

Merced River

Outstandingly Remarkable Values



Wild and Scenic Rivers Act of 1968

- Protects free-flowing condition
- Protects water quality
- Protects and enhances the river's *Outstandingly Remarkable Values* (ORVs)— the qualities that make the river worthy of special protection
- **Requires management plans to be completed to provide long-term guidance**



ORV Criteria

The value must be river related or river dependent:

- **Located in the river or on its immediate shorelands (within a quarter-mile on either side of the river)**
and
- **Contribute substantially to the functioning of the river ecosystem or owe its location or existence to the presence of the river**

The value must be rare, unique, or exemplary in a regional or national context.

“A conspicuous example from among a number of similar values that are themselves uncommon or extraordinary.”

(1999 IWSRCC Guidelines)



Merced River Biological ORVs

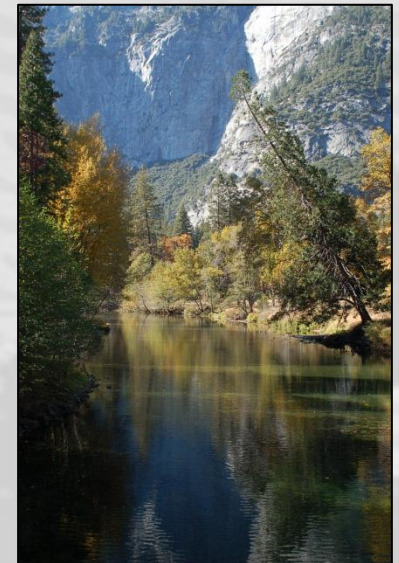
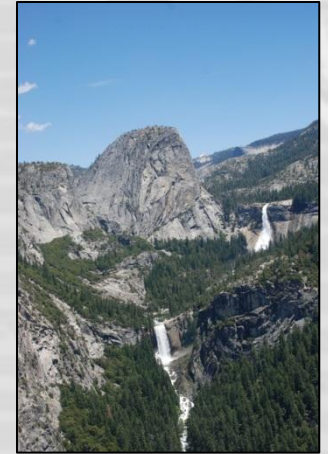
- High-elevation Meadows and Riparian Habitat
- Yosemite Valley Mid-elevation Meadows and Riparian Habitat
- Sierra Sweet Bay

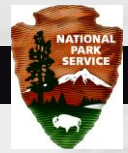




Geologic/Hydrologic ORVs

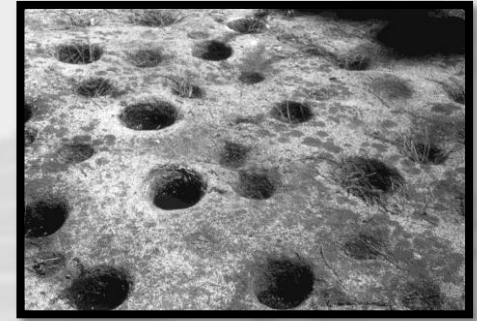
- **Glacially Carved Canyon Upper Merced**
- **“Giant Staircase”**
- **Rare, Mid-elevation Alluvial River**
- **Boulder Bar in El Portal**





Cultural ORVs

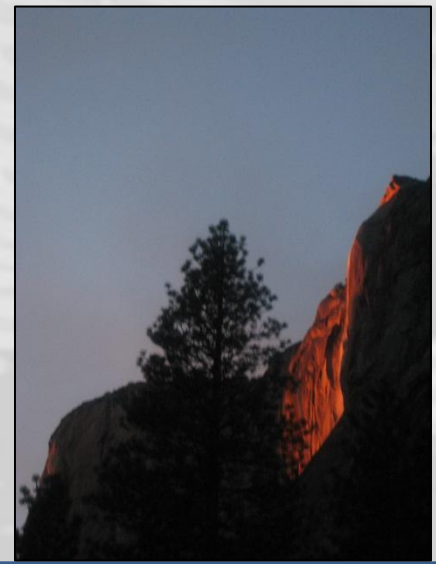
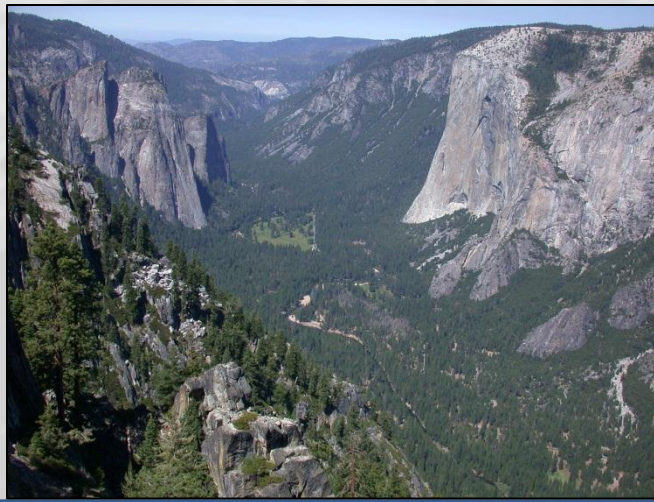
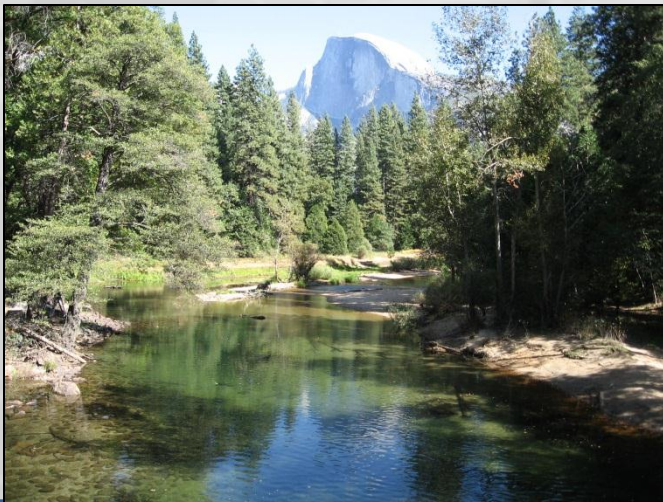
- **Yosemite Valley American Indian Ethnographic Resources**
- **Yosemite Valley Archeological District**
- **Yosemite Valley Historic Resources**
- **El Portal Archeological District**
- **Regionally Rare Archeological Features, including Rock Rings**
- **Wawona Archeological District**
- **Wawona Historic Resources**

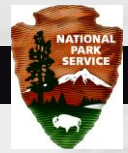




Scenic ORVs

- **Scenic Views in Wilderness**
- **Iconic Scenic Views in Yosemite Valley**
- **Scenic Views in the Merced River Gorge**
- **Scenic Wilderness Views along the South Fork Merced River**

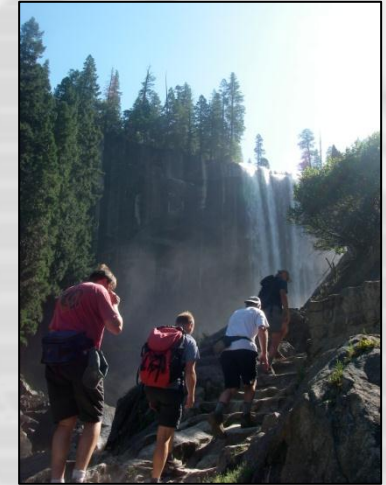




Recreational ORVs

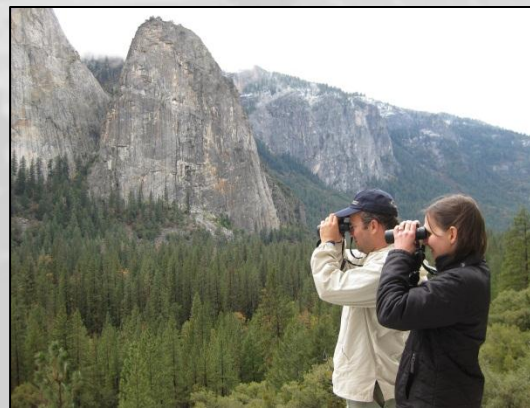
WILDERNESS ABOVE NEVADA FALL:

- Hiking
- Backpacking
- Swimming



YOSEMITE VALLEY:

- Viewing Scenery
- Swimming
- Hiking
- Camping
- Paddling
- Picnicking
- River Interpretation and Education





Section Two

Merced River Plan

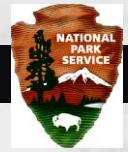
Foundational Planning Framework

River Value Conditions, Issues, and Opportunities

Foundational Framework

*“Each [river] will be managed to **protect and enhance** the values for which the river was designated, while providing for public recreation and resource uses which **do not adversely impact or degrade** those values.”*

WSRA Guidelines, 1982

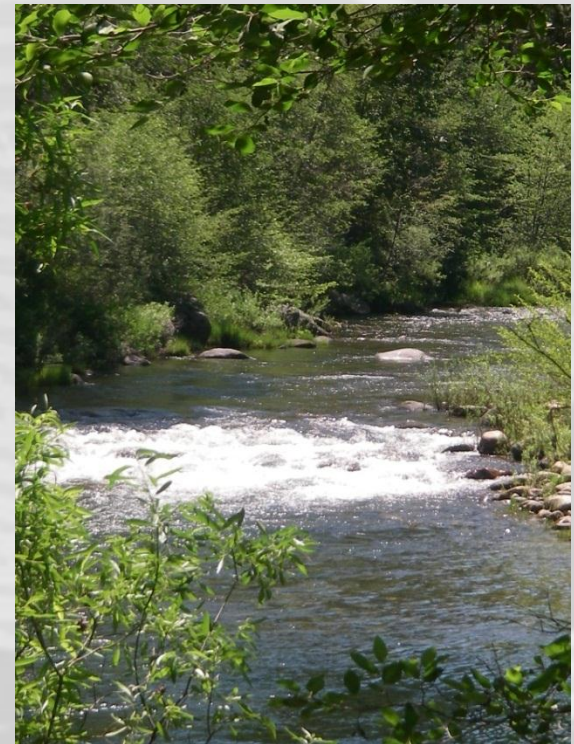


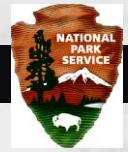
Foundational Planning Framework

To protect river values...

A comprehensive management plan must

1. Define, identify and correct any existing **adverse impacts** or **degradation** to river values;
2. Prevent future adverse impacts or degradation.





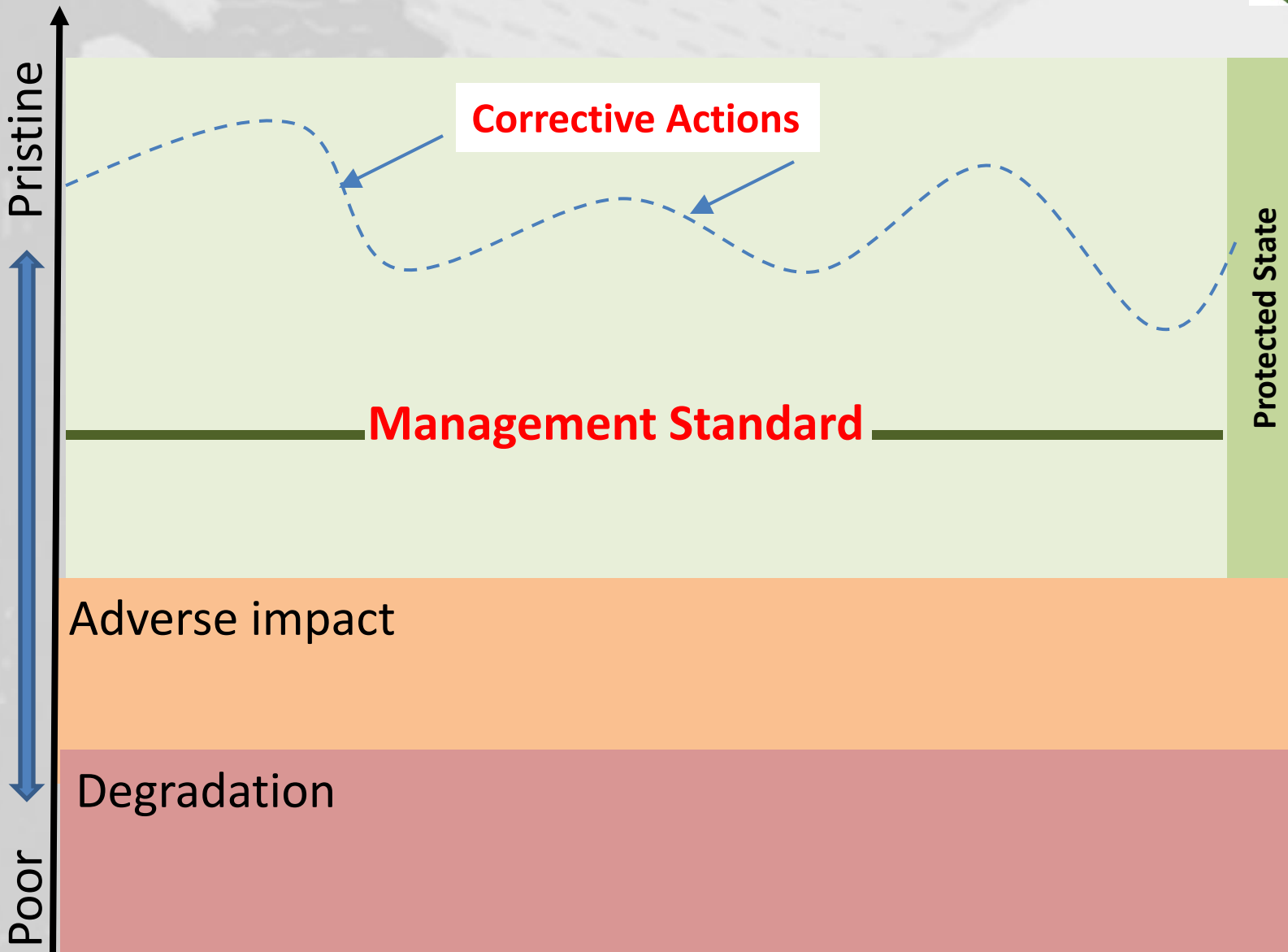
Foundational Planning Framework

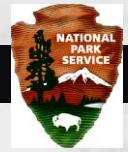
Adverse Impact: A significant reduction in the quality of a river value in relation to baseline conditions as a result of public use or development. Adverse impact is determined at a segment-wide scale and requires immediate attention by the agency.

Degradation: The state in which a river value has been fundamentally altered by public use or development to point that its value is lost for at least 10 years. Degradation is a segment-wide condition.



Resource Condition





Baseline Conditions

Draft Baseline Conditions Report updated in July 2012

DEIS: Chapter 5 includes **comprehensive assessment** of river values

Key Findings

- Local impacts in El Capitan Meadow
- Riparian areas between Clark's and Sentinel bridges
- Hydrologic impacts of Sugarpine Bridge
- Informal trails through Valley meadows
- Improve condition of national historic landmarks



Flooded informal trail in El Capitan Meadow

Localized riparian impacts



Hydrologic impacts of Sugar Pine Bridge



Foundational Planning Framework

To enhance river values...

The Merced River Plan must

1. Identify baseline conditions for each river value; and
2. Improve conditions in the river corridor
3. Outline a monitoring protocol to evaluate conditions over time and take appropriate management actions.

These actions have been linked with proactive restoration measures to form a **comprehensive restoration program** for the Merced River corridor.

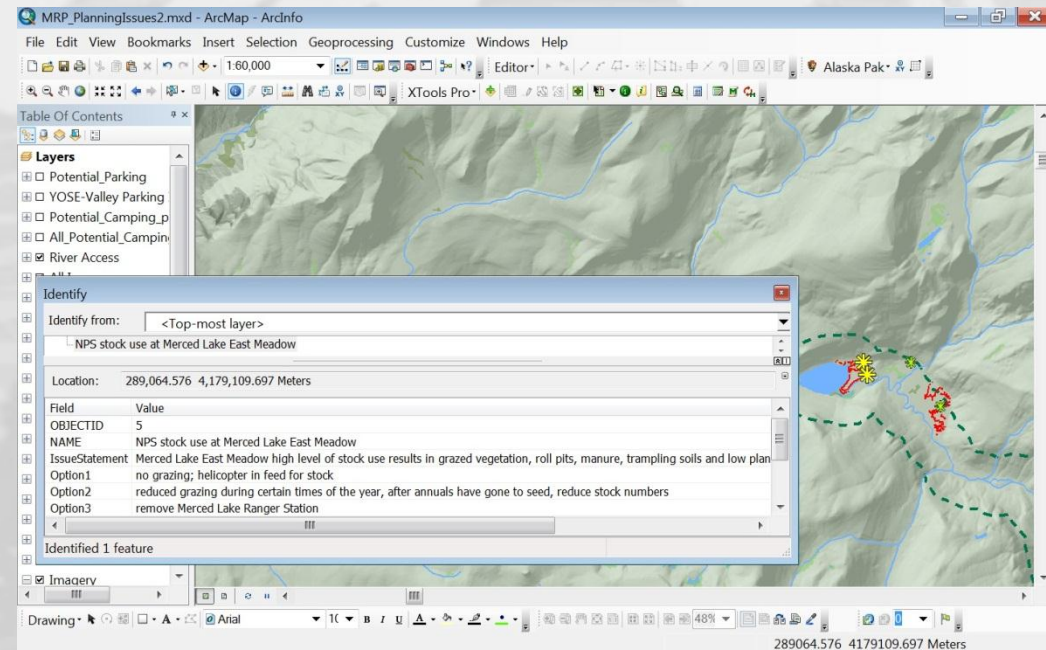


River Value Issue & Opportunity Analysis

Interdisciplinary team evaluation of entire river corridor

Used research studies, park data, subject-matter expertise, and public comment to identify:

- Significant **issues** in river management
- **Opportunities** to enhance river values





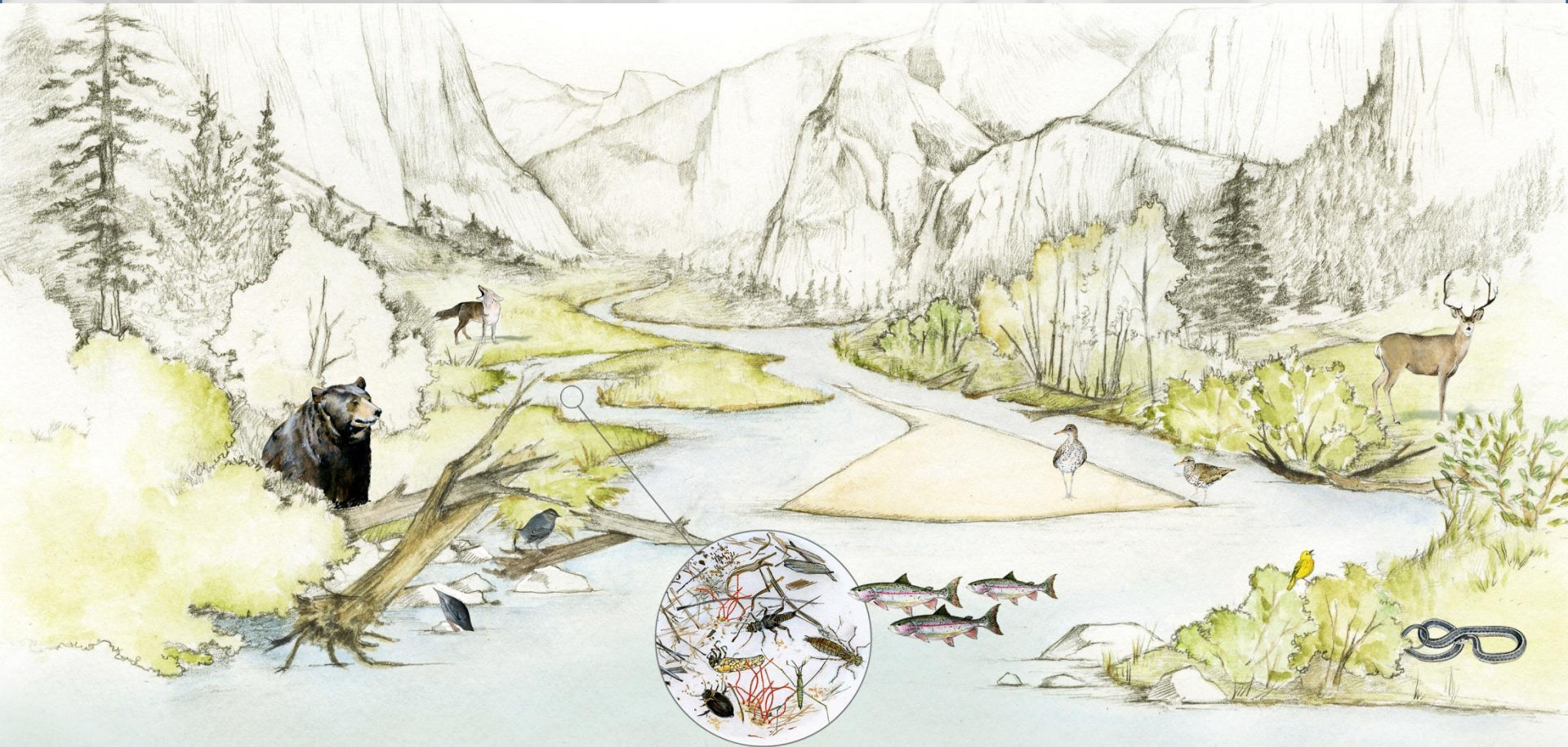
Section Three

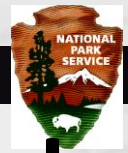
Merced River Plan

Actions to Protect and Enhance River Values



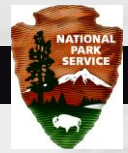
Actions to Protect & Enhance an Interconnected River System





Actions to Protect & Enhance River Values

Bed and Banks (ordinary high-water mark)	<ul style="list-style-type: none"> <input type="checkbox"/> Incorporate large wood into river channel to enhance habitat quality and channel complexity. <input type="checkbox"/> Direct river access to resilient sandy beaches and sandbars to prevent impacts to riparian areas. <input type="checkbox"/> Fence off sensitive areas, and direct use to more resilient areas. <input type="checkbox"/> Remove Housekeeping Camp lodging units out of ordinary high-water mark.
100 feet away from river	<ul style="list-style-type: none"> <input type="checkbox"/> Ecologically restore portions of Backpackers, North Pines, Lower Pines, and Wawona campgrounds. <input type="checkbox"/> Relocate or remove campsites at least 100 feet away from the river.
150 feet away from river	<ul style="list-style-type: none"> <input type="checkbox"/> Prohibit new development within a 150-foot riparian buffer. <input type="checkbox"/> Move Yosemite Village Day-use Parking Area north, at least 150 feet away from the river.
Meadow restoration	<ul style="list-style-type: none"> <input type="checkbox"/> Restore 171 – 337 acres of meadow by filling ditches and removing informal trails. <input type="checkbox"/> Remove roadside parking along meadows and associated fill material. <input type="checkbox"/> Restore hydrology and fire processes to increase the acreage of meadows and oak woodlands.
Scenic vistas	<ul style="list-style-type: none"> <input type="checkbox"/> Selectively thin trees that encroach on historic scenic views in the Merced River corridor.
Cultural restoration	<ul style="list-style-type: none"> <input type="checkbox"/> Remove informal trails, non-essential roads, and infrastructure that impacts archeological sites. <input type="checkbox"/> Delineate bike paths, roads, bridle paths, parking, staging, and trails away from sensitive resources. <input type="checkbox"/> Remove graffiti, and install fencing around rock art and other sensitive features.



Cultural ORV Protection & Enhancement (Ethnographic)

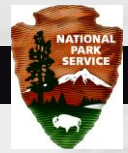
- Document the Yosemite Valley Traditional Cultural Property consisting of traditional use areas, spiritual places, and historic villages
- Remove conifers from meadows / black oak communities
- Restore traditionally-used plant populations



Cultural ORV Protection & Enhancement (Archeological)

- Remove informal trails, non-essential roads, campsites, and infrastructure that impact archeological sites
- Increase education efforts to minimize visitor use impacts to archeological resources
- Develop site management plans for exceptional sites
- Complete and update necessary archeological site and district documentation





Cultural ORV Protection & Enhancement (Historic Resources)

- Follow historic structures report recommendations to return structures at the Ahwahnee, Residence 1, and Wawona Hotel to “good” condition
- Develop historic structures report for Le Conte Memorial Lodge
- Continue regular routine preservation maintenance and rehabilitation





Scenic ORV Protection & Enhancement

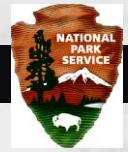
- Reduce visual intrusions as part of the ecological restoration program
- Ensure that new development is protective of scenic resources
- Implement management treatment—including removal of vegetation—to protect views from vista points within the corridor



Before Tunnel View Restoration , 2007

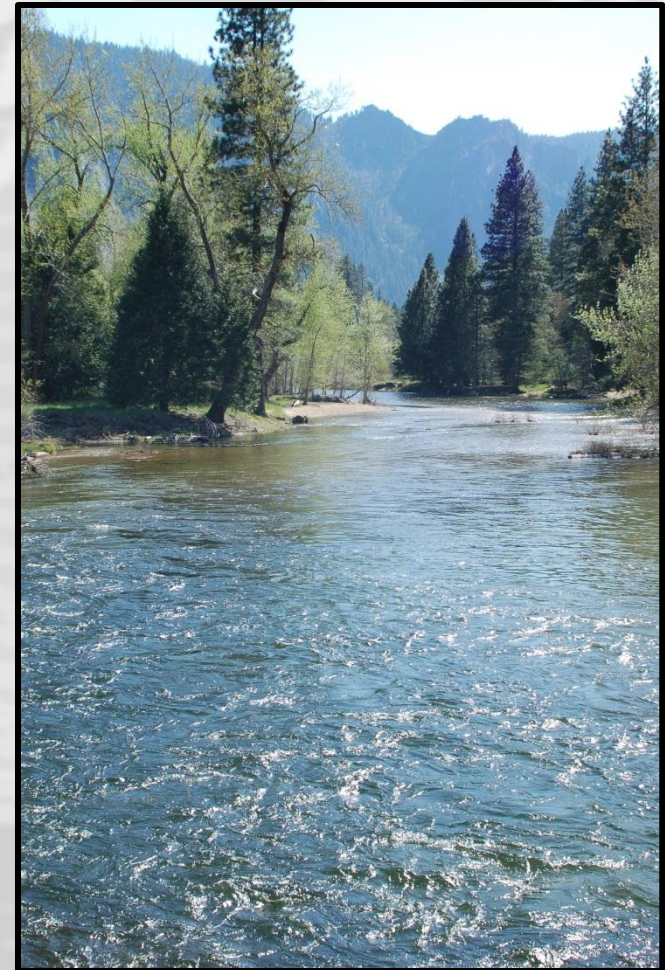


After Tunnel View Restoration , 2008



Water Quality Protection & Enhancement

- **Implement a riparian buffer to prevent erosion and trap sediment**
- **Relocate RV dump stations away from river**
- **Ensure parking area re-development is located away from the river and includes BMPs for water quality protection**
- **Connect Wawona campground to water treatment system**
- **Require minimum flows on the South Fork**





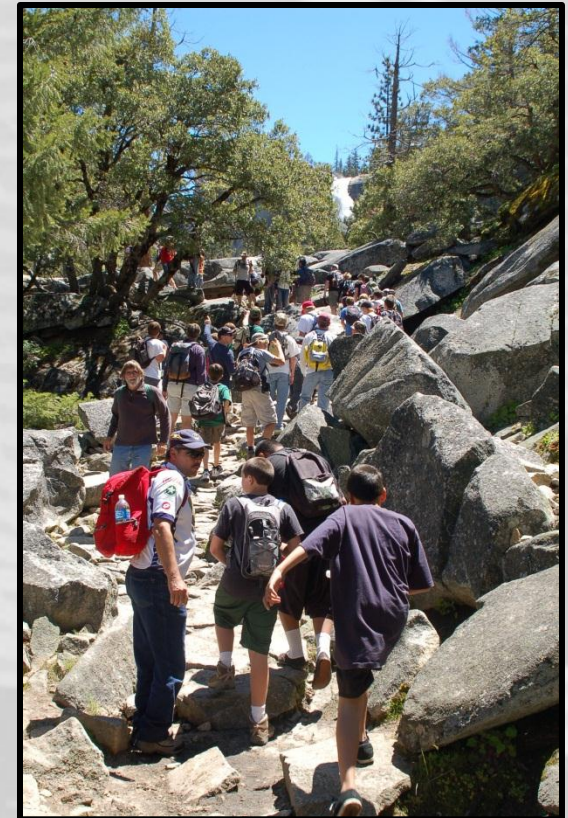
Recreation ORV Protection & Enhancement

Segment 1

- Sustain a range of high-quality, resource based recreational activities; allow private boating
- Manage visitor densities to ensure wilderness character qualities

Segment 2

- Improve circulation and access while reducing crowding at key attraction sites
- Manage boating to improve dispersed recreation along the river; designate put-in and take-out locations



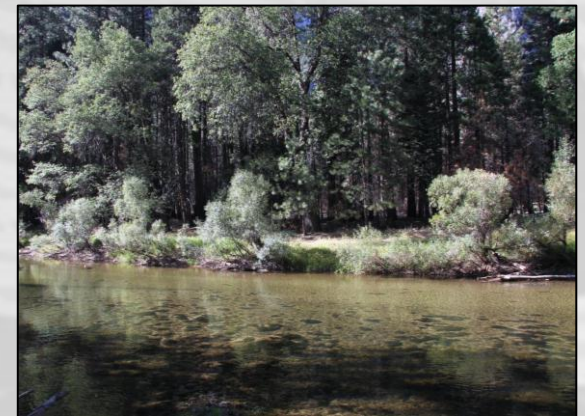


Biological, Hydrological ORVs & Free-flow Protection & Enhancement

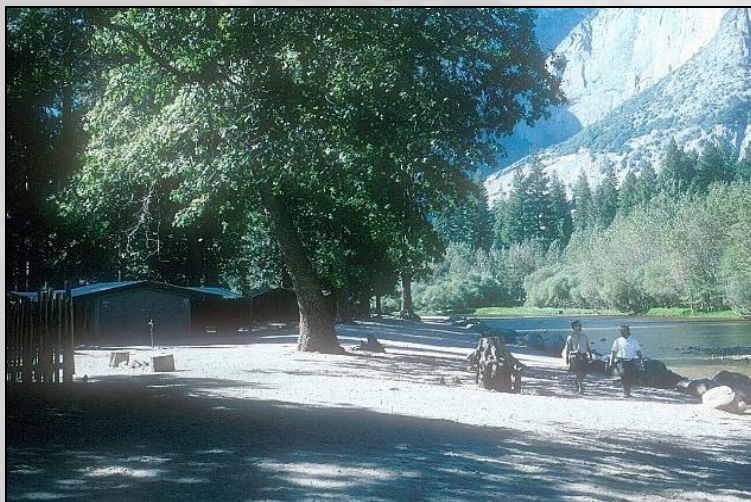
- Establish a riparian buffer; pull development back from river
- Remove riverside riprap
- Retain large wood in river channel
- Re-vegetate denuded riverbanks
- Remove ditches from meadows
- Remove informal trails from wet meadows
- Direct visitor use to more stable and resilient river access points



Denuded and riprapped riverbank



Healthy riverbank riparian vegetation



Before: Housekeeping Camp Restoration, 1995



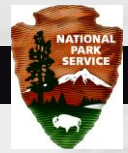
After: Housekeeping Camp Restoration, 2003



Before: Devil's Elbow, pre-restoration, 1993



After: Devil's Elbow, post-restoration, 1995



Biological, Hydrological ORVs & Free-flow Protection & Enhancement

- Ecologically restore at least 164 acres in the river corridor
- Remove at least 5,700 linear feet of riverbank revetment
- Implement a 50' riparian setback from Indian Creek
- Remove 6 miles of informal trails in Valley meadows
- Prohibit new development within 150' of the ordinary high water mark
- Remove campsites and associated development from within 100' of the bed and banks of the river

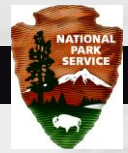




Biological, Hydrological ORVs & Free-flow Protection & Enhancement

- Construct engineered log jams between Clark's and Sentinel bridges to enhance riparian habitat and channel complexity
- Remove abandoned infrastructure in meadows and ecologically restore sites
- Revegetate denuded riverbank areas
- Improve meadow hydrology by removing artificial fill, filling ditches, and constructing culverts
- Eliminate roadside parking that impacts sensitive meadow and riparian habitat





Biological, Hydrological ORVs & Free-flow Protection & Enhancement

- Ecologically restore the Greenmeyer sand pit
- Remove bulk petroleum industrial fueling facility from the floodplain in El Portal
- Enhance valley oaks by establishing an oak recruitment area of at least 1 acre
- Provide designated river access to picnic areas with paths that encourage visitors to walk in resilient areas





Actions to Protect & Enhance that Vary by Alternative

Degree of ecological restoration in specific areas:

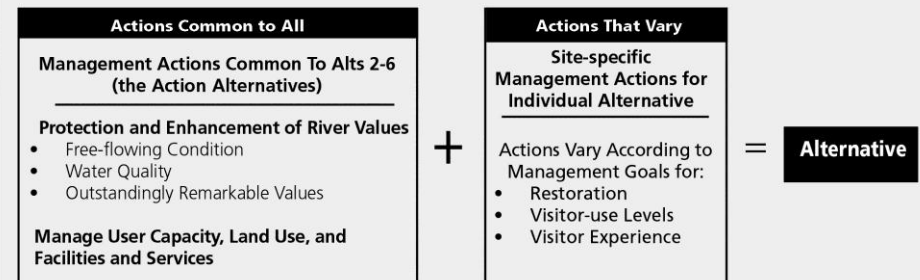
- Yosemite Valley day-use parking area
- Former Rivers Campgrounds
- Merced Lake High Sierra Camp
- Housekeeping Camp
- Valley bridges
- El Capitan Meadow

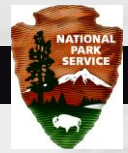
Alternative Comparison: A Range of Actions

	Alt 2	Alt 3	Alt 4	Alt 5 (Preferred)	Alt 6
Common to All Action Alternatives					
<ul style="list-style-type: none"> • Restoration • User Capacity • Mitigation Measures • Best Management Practices • Wild and Scenic River mandates • Outstandingly Remarkable Values 					
Restoration Values	Major restoration in the 100-year floodplain: 347 acres restored	Significant restoration within 150 feet of river: 302 acres restored	Targeted restoration within 150 feet of river: 223 acres restored	Essential restoration within 100 feet of river: 203 acres restored	Limited restoration within 100 feet of river: 170 acres restored
Facilities and Services	Significant reduction in facilities and services	Marked reduction in facilities and services	Reduced facilities and services with significant camping increase	Reduced facilities and services with moderate camping increase	Expanded facilities and services with largest camping increase
Visitor Use (compared to current condition*)	Significantly lower visitor-use levels: 13,900 people	Lowest visitor-use levels: 13,200 people	Low visitor-use levels: 17,000 people	Visitor-use levels similar to today: 19,900 people	Highest visitor-use levels: 21,800 people

* Alternative 1 (No Action) estimates daily visitation at 20,900 people in East Yosemite Valley on peak-use days.

Components that Equate to an Individual Alternative





Meadow Protection & Enhancement

- Increased monitoring
- Increased education and enforcement
- Trail delineation
- Removal of informal trails
- Recontour topography
- Soil decompaction
- Fences
- Boardwalks
- Adjust roadside parking
- Manage access



El Capitan Meadow in 2000



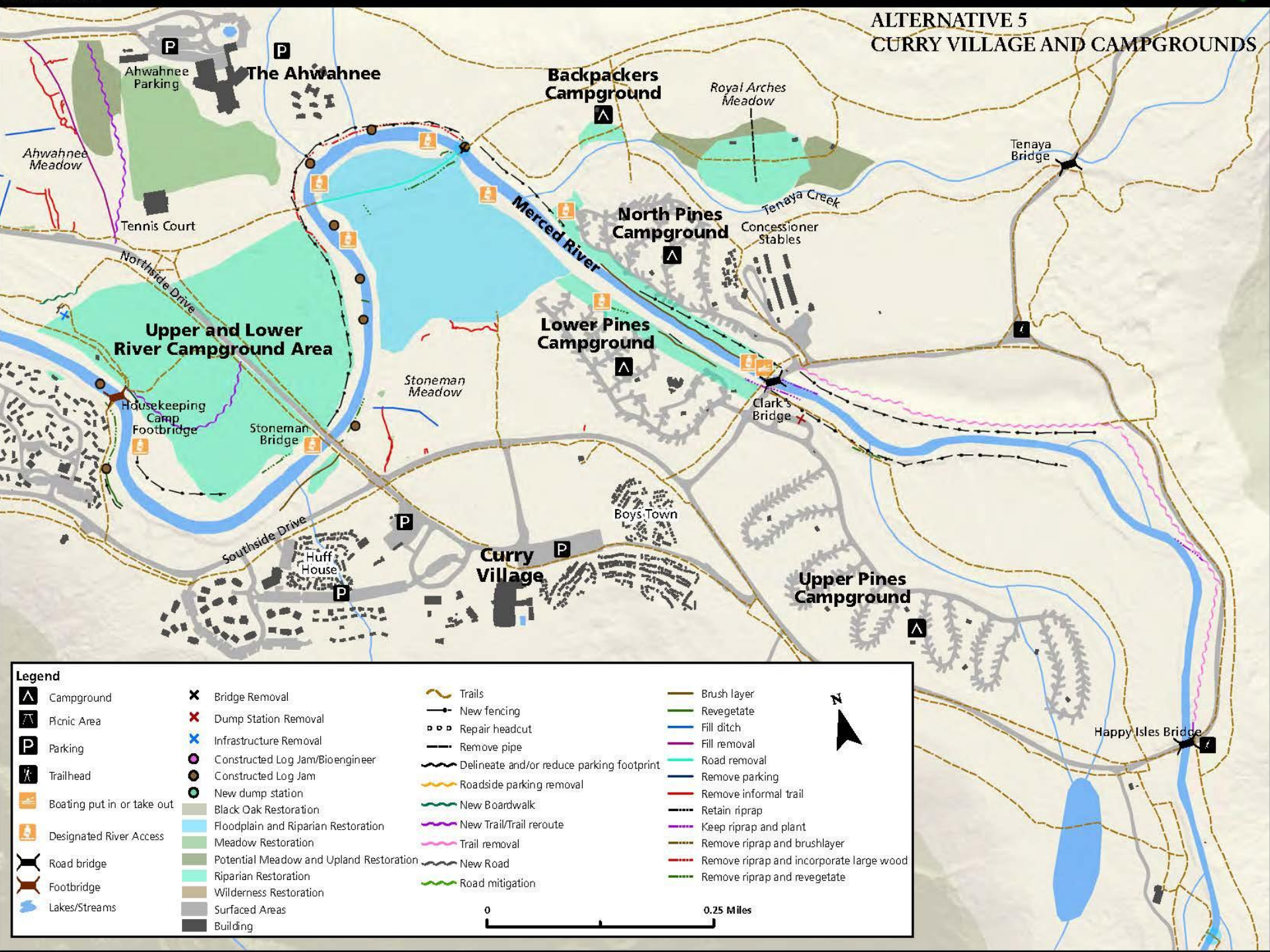
El Capitan Meadow in 2012



Actions to Protect & Enhance Specific to Alternative 5 (Preferred)

- **Relocate parking development at Yosemite Village day-use parking area at least 150 feet from river**
- **Locate walk-in camping near Upper Rivers out of the 25 year floodplain**
- **Remove 34 units from the observed ordinary high-water mark at Housekeeping Camp**
- **Retain all historic Valley Bridges except Sugar Pine, which is removed to enhance the free-flowing condition of the river**

ALTERNATIVE 5 CURRY VILLAGE AND CAMPGROUNDS



Legend

Campground	Bridge Removal	Trails	Brush layer
Picnic Area	Dump Station Removal	New fencing	Revegetate
Parking	Infrastructure Removal	Repair headcut	Fill ditch
Trailhead	Constructed Log Jam/Bioengineer	Remove pipe	Fill removal
Boating put in or take out	Constructed Log Jam	Delineate and/or reduce parking footprint	Road removal
Designated River Access	New dump station	Roadside parking removal	Remove parking
Road bridge	Black Oak Restoration	New Boardwalk	Remove informal trail
Footbridge	Floodplain and Riparian Restoration	New Trail/Trail reroute	Retain riprap
Lakes/Streams	Meadow Restoration	Trail removal	Keep riprap and plant
	Potential Meadow and Upland Restoration	New Road	Remove riprap and brushlayer
	Riparian Restoration	Road mitigation	Remove riprap and incorporate large wood
	Wilderness Restoration		Remove riprap and revegetate
	Surfaced Areas		
	Building		

0 0.25 Miles

Alternative 6 Restoration Areas

Yosemite Lodge

Yosemite Village

Curry Village



Alternative 5 (Preferred) Restoration Areas

Yosemite Lodge

Yosemite Village

Curry Village



Alternative 4 Restoration Areas



Alternative 3 Restoration Areas



Alternative 2 Restoration Areas

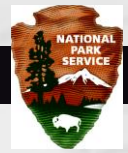


Yosemite Lodge

Yosemite Village

Curry Village





Section Four

Merced River Plan

Protection in Perpetuity: Monitoring and Management



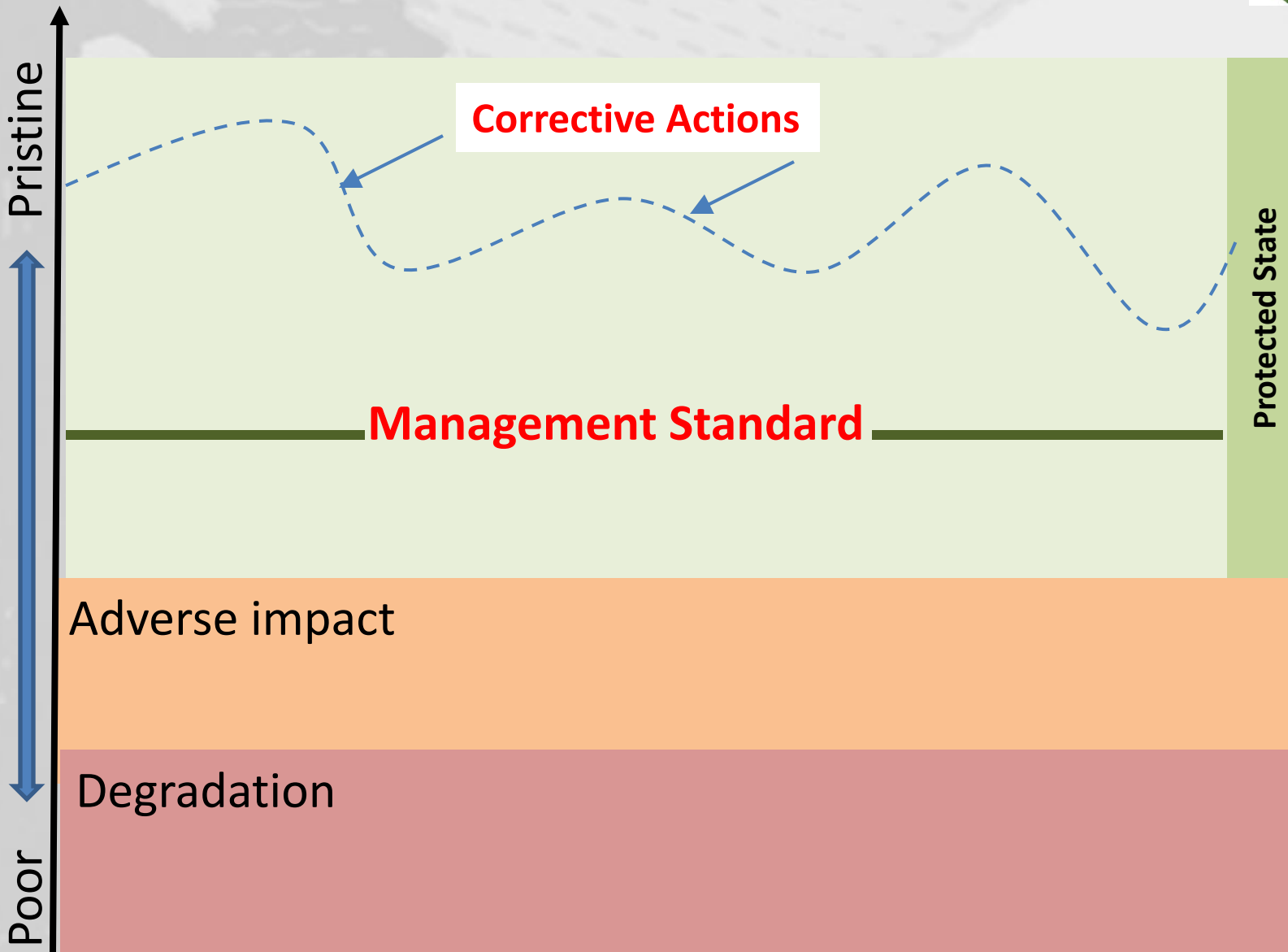
Protection in Perpetuity: Monitoring and Management

What about avoiding future impacts?

A series of **monitoring protocols** has been developed to evaluate conditions over time and thresholds have been set for taking appropriate **management actions**.



Resource Condition

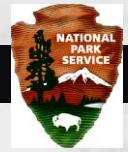




Monitoring and Management

- **Indicators:** measure of river value condition
- **Triggers:** levels at which NPS must respond to protect values from exceeding management standards
- **Management responses:** represent the potential actions available to prevent further impact and enhance values





Monitoring and Management: Triggers & Management Responses

Meadow Indicators:

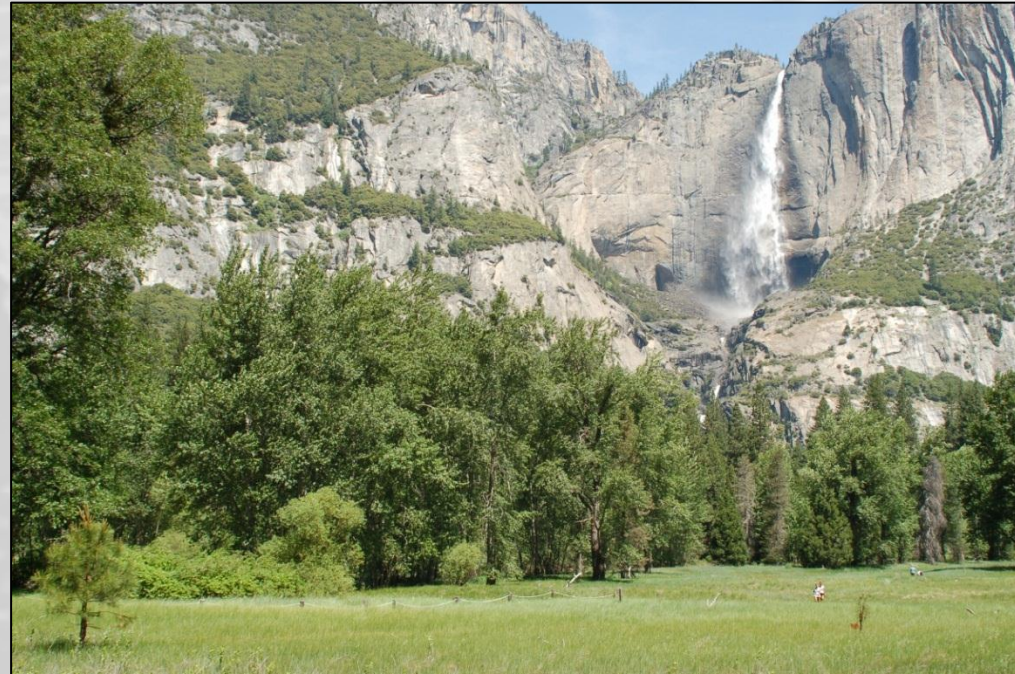
- Fragmentation
- Bare soil
- Streambank Stability

Initial Trigger (fragmentation):

- Fragmentation level in an individual meadow drops below 93%.

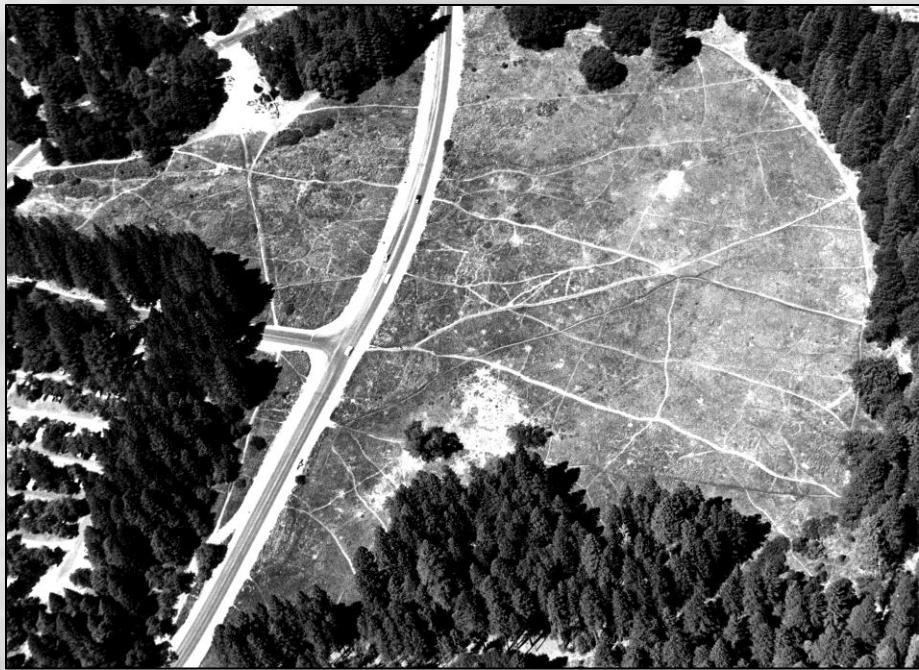
Management Response

- Increased visitor impact monitoring
- Implement appropriate restoration actions





EXAMPLE: FRAGMENTATION OF MEADOW
HABITAT DUE TO PROLIFERATION OF INFORMAL
TRAILS



1987: Stoneman Meadow informal trails

Using Largest Patch Index (LPI-5)

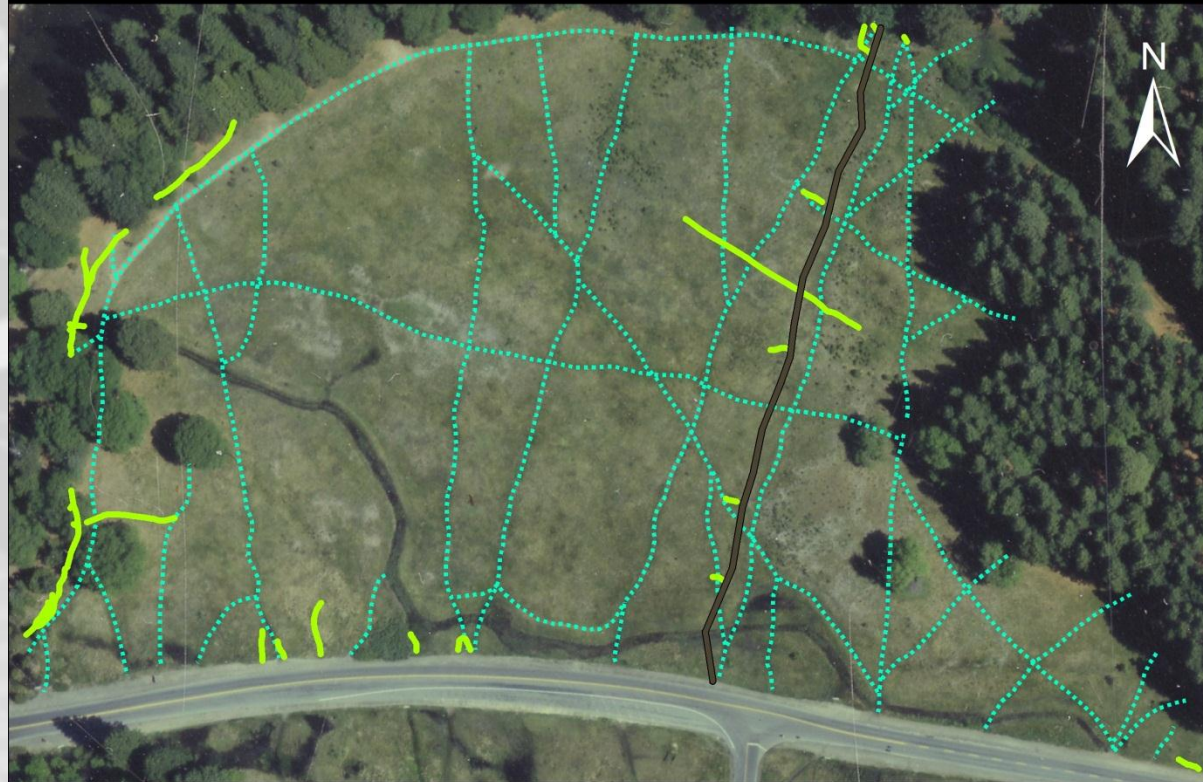
Management Standard is **93%**
weighted mean (segment-wide)
with no individual meadow less
than **90%**



Adverse impact is **81%** weighted
mean (segment-wide)

Degradation is **40%** weighted mean
(segment-wide)

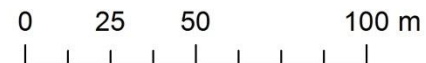


Stoneman Meadow 1978 vs. 2011



Trail Symbol	Total length of trails	LPI-5 Value
1978 	3170 meters	40.40
2011 	327 meters	99.12

 Current Boardwalk



These 1978 informal trail values were determined based on the presence of trails in this aerial photograph from the Yosemite Archives. For LPI-5 values, all 1978 trails were given a default trail width of 12".



8/2005

Image © 2012 DigitalGlobe

Google earth

Imagery Date: 8/9/2005



1987

37°44'25.89" N 119°34'15.38" W elev 3978 ft

Eye alt 5455 ft



Where to Learn More

Merced River Draft Plan and EIS

- Chapter 5- River Values and their management
- Chapter 8a- Alternatives
- Chapter 8b- River Value Analysis
- Appendix E- Proposed Restoration Actions
- Appendix M - Changes to ORVs Over Time

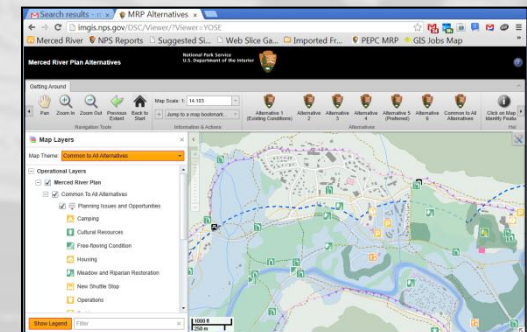
On the Internet

- For fact sheets and research studies, visit: www.nps.gov/yose/parkmgmt/mrp.htm
- For the Merced River Plan interactive map, visit: <http://imgis.nps.gov/yose>

MRP Document Organization

Volume 1

- Abstract
- Executive Summary
- Chapter 1: Introduction
- Chapter 2: Purpose and Need for the Plan
- Chapter 3: Boundaries and Segment Classifications
- Chapter 4: Section 7 Determination Process
- Chapter 5: River Values and their Management
- Chapter 6: Visitor Use and User Capacity
- Chapter 7: Facilities and Services Analysis
- Chapter 8a: Alternatives
- Chapter 8b: River Value Analysis





Merced River Plan Public Review & Comment Period

- 100-day review period
January 8 – April 18, 2013
- Comment online
http://parkplanning.nps.gov/mrp_deis
- Or via email:
yose_planning@nps.gov
- Or via US mail:
National Park Service
Merced River Plan
P.O. Box 577
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Questions?

