

Environmental Management Involving  
Tuolumne Evaluation  
(EMITE)  
Yosemite Valley Watershed

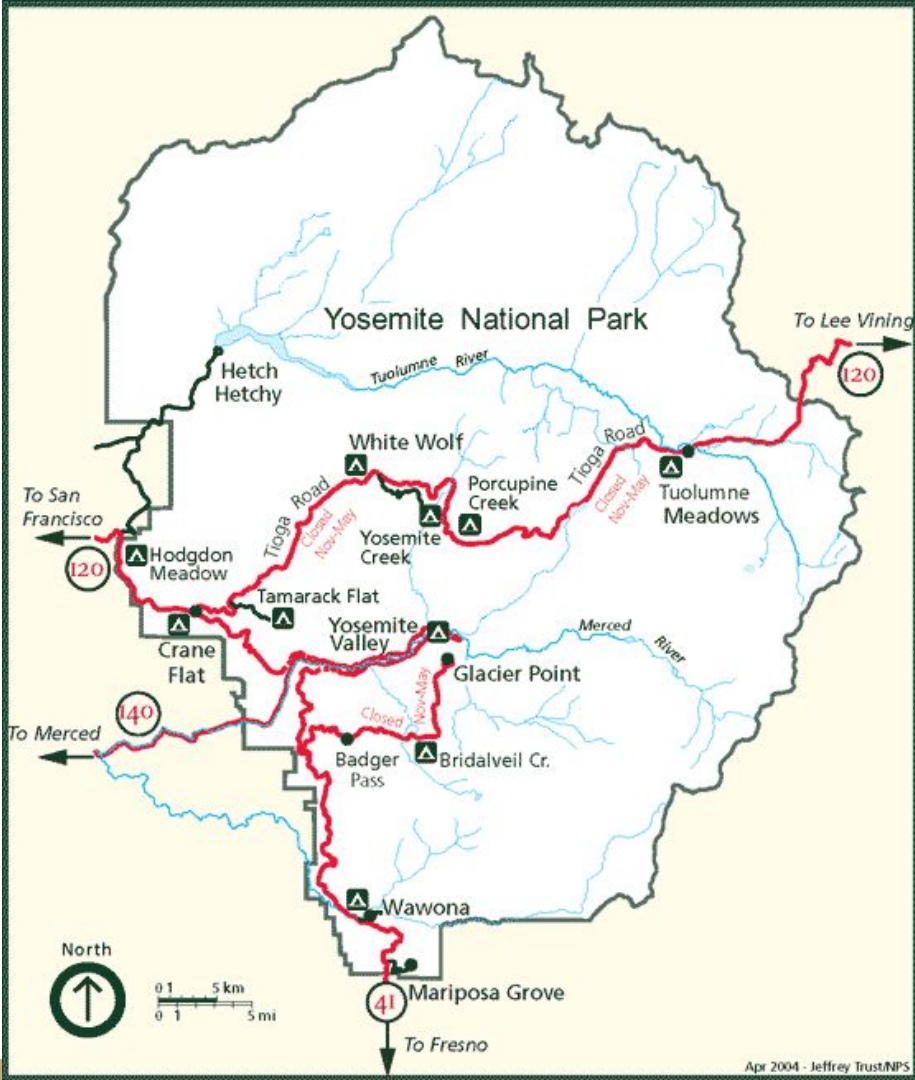
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# Outline

- Background and History
- Mission Statement
- Policies and Mandates in Place
- Problem 1 Goal 1
- Problem 2 Goal 2
- Problem 3 Goal 3
- Conclusion and Recommendation



# Map



# Background

- Located Southern California, east of San Francisco
- 3 million visitors annually
- 750,000 acres of land with 1,600 miles of streams
- 300 species rely on the unique Mediterranean climate
- Up until the early 1900s, Yosemite was free of fish
- Fish population endanger the native species that haven't adapted to defend themselves
  - Only 5% of the Sierra Nevada yellow-legged frog population are still around today.



# History

- Congress created Yosemite National Park on October 1, 1890. Signed by Harrison.
- The Yosemite Valley was the home of Native Americans until the 1849 gold rush.
- Miners and tourists damaged the valley's ecosystems.
- Abraham Lincoln declared Yosemite a public trust of California in 1864 to prevent commercialism.
- In 1903, Theodore Roosevelt and John Muir went camping. Roosevelt then expanded the park to include the Mariposa Groves.



# Mission Statement

EMITE's mission is to maintain a water quality that is swimmable until 2030 in Yosemite National Park of Southern California. We also aim to prevent erosion and the growth of invasive species that could harm the watershed.



# Policies and Mandates

- Wilderness Permits
- Wild and Scenic River Act (WSRA)
  - Promotes free flowing conditions, water quality, and preserve attractions for future generations
- National Historic Preservation Act (NHPA)
  - Law with the intent to preserve historic and archaeological sites in the United States
- National Environmental Policy Act (NEPA)
  - United States environmental law that promotes environment longevity and environmental quality.

# Problem 1: Warming Climate

- Mediterranean Climate: Dry summers and wet winters with deep snowpack up to 6,000 ft.
- Dry summers rely on melting snow or a “spring pulse” to bring water and nutrients downstream.
- Southern California’s temperatures are expected to increase 5-11°F by 2100.
- With increased winter temperatures, Yosemite does not have as much snow. Yosemite could experience droughts which can also lead to forest fires.
  - Forest fires contaminate the water by polluting the watershed with ash and wood debris

Goals: Prevent droughts and forest fires. Would like to limit effects of global warming but that is hard to do with worldwide greenhouse gas emissions.

Creating reservoirs to retain water, angle ground to ensure snowpack melts into stream, and planting fire resistant shrubs.



# Problem 2: Effects due to park visitors

- High Volume of Visitors
  - About 5 million visitors a year with around 75% visiting between May and October.
- History of Weak Mandates
  - Precautions are in place limit and monitor effects on the environment in relation to visitors. However in the past regulations to campers were not as strict therefore erosion occurred to the watershed.



Goals: Expand monitoring of visitors impacts on the watershed.  
Increase education to public on ways to prevent erosion.

# Problem 3: The Effects of Invasive Species

- Description
  - NZ mud snail: nonnative species that alters freshwater ecosystems and can "completely cover a river streambed"
  - Didymo: freshwater algae that can form algal blooms
- Causes
  - Invasive and nonnative species can easily travel to new places with globalization
  - Didymo likely came to CA via fishing equipment and boats
  - NZ mud snail came to CA via live sports shipments and has spread with recreational activities
- Goals
  - Prevent further spreading of invasive species through the park via careful monitoring of those species already introduced.



# Conclusion and Recommendation

- **For warming climate:**
  - Creating reservoirs to retain water
  - Change slope of ground to increase amount of snowpack melting into the streams
  - Plant fire resistant shrubs
- **For park visitors:**
  - Expand monitoring systems
  - Strengthen federal laws protecting natural lands
  - Create initiative to expand education for visitors to the park
- **For invasives species:**
  - Park funds be allocated to invasive species monitoring and removal initiatives
  - Advisory panel review effectiveness of current invasive species management program