

Santa Clara River Watershed Feasibility Study

**Information Meeting
City of Santa Clarita
August 16, 2007**

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U.S. Army Corps of Engineers**



Public Issues and Concerns

- Balance economic and environmental objectives
- Restore degraded environment, sustain it
- Address aging infrastructure
- Enhance disaster response capability
- Implement better water management



LISTENING SESSIONS ACROSS THE NATION



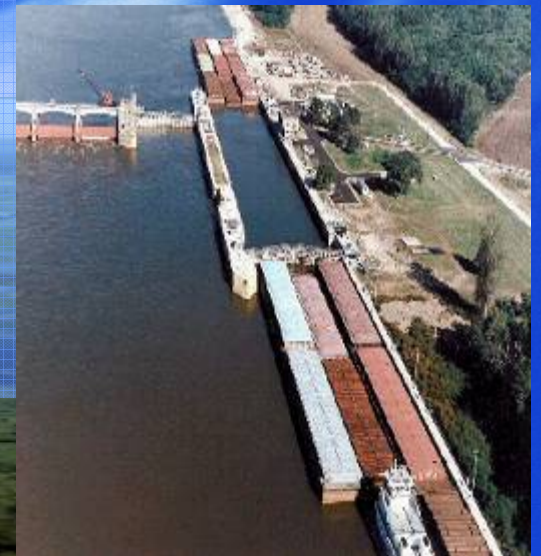


We Concluded ...

We need a bold new vision

Support comprehensive, sustainable solutions to meet the nation's water challenges

**Facilitate
"big picture"
thinking**





Chief of Engineers

"Experience has taught us that single projects with a limited focus may solve individual problems, but if we look at problems and solutions from a wider geographical view, we can better balance economic, environmental, and quality of life objectives."

LTG Robert Flowers, April 8, 2004



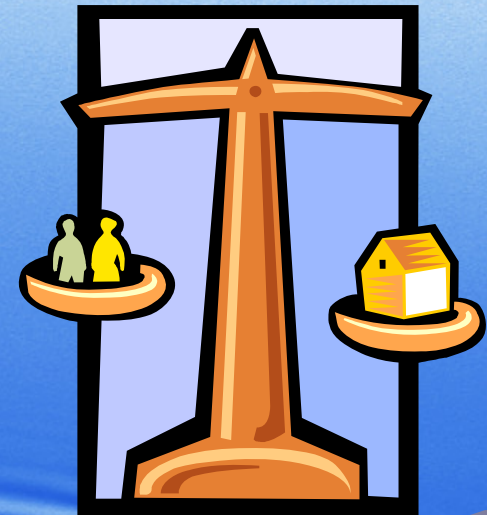
5 Strategic Goals

- 1: Provide sustainable development and integrated management of the nation's water resources.
- 2: Repair past environmental degradation and prevent future environmental losses.
- 3: Ensure that projects perform to meet authorized purposes and evolving conditions.
- 4: Reduce vulnerabilities and losses to the nation and the Army from natural and man-made disasters, including terrorism.
- 5: Be a world-class public engineering organization.



"Big Ideas"

- Work toward **sustainability** via more **balanced objectives**
 - Promote economic vitality
 - Promote ecosystem health
 - Protect quality of life
 - Protect infrastructure
- Promote **partnerships**
- Preserve federal **capabilities** for world-class planning, engineering, science and technology





Watershed Approach

- Adopt new roles
 - facilitator*
 - conveyor*
 - integrator*
- Take systems view
- Use systems tools
- Conduct watershed/basin scale of analysis
- Get early collaboration
- Address multiple objectives
- Apply adaptive management
- Focus on results
- Share data, lessons learned, technical assistance

collaborative,
intergovernmental
and private
partnerships for a
“problemshed”





Guiding Principles

Environmental Operating Principles

- Strive for sustainability
- Recognize interdependencies
- Design for balance
- Be accountable
- Mitigate cumulative impacts
- Integrate knowledge
- Respect multiple views

"Watersheds" Policy Policy Guidance Letter #61

- Coordinate planning and management
- Interagency cooperation
- Leverage resources
- Identify future water demands
- Use interdisciplinary teams

Strategic Plan

- Use systems approach
- Define broadest geographic scale
- Balance across multiple uses
- Employ collaborative approaches

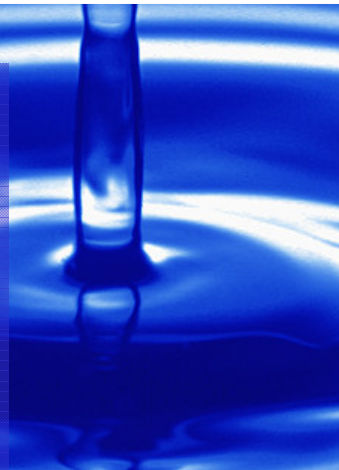


USACE Environmental Operating Principles

1. Strive to achieve Environmental Sustainability.
An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.

Environmental Sustainability

A process whereby environmental and economic considerations are effectively balanced in project planning, design, construction, operation and maintenance through project life.





USACE Environmental Operating Principles

2. Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.

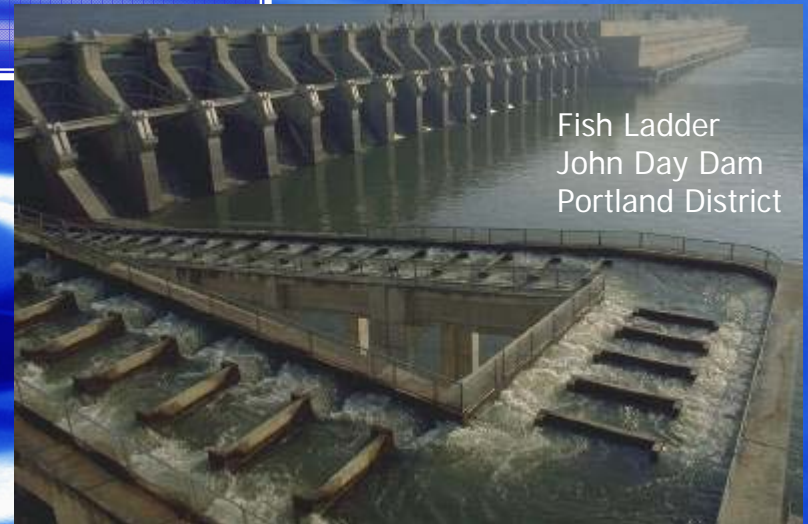


3. Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

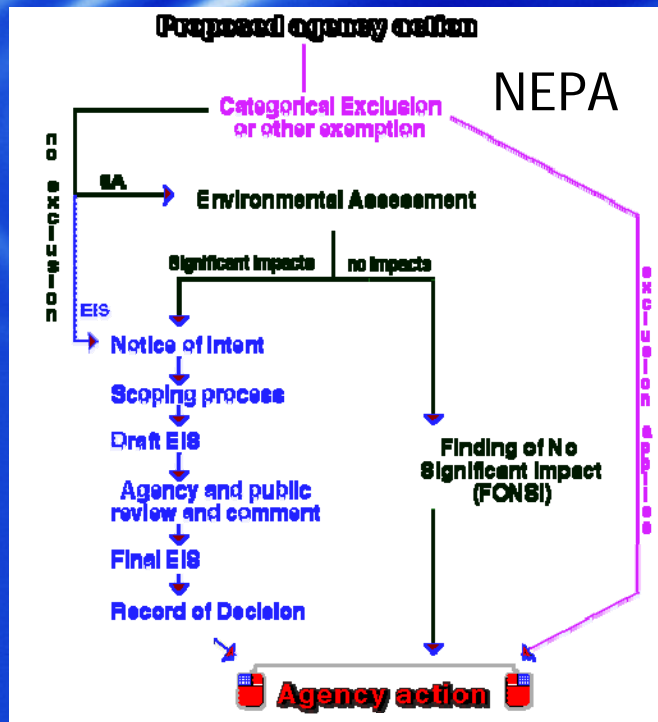


USACE Environmental Operating Principles

4. Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.



Fish Ladder
John Day Dam
Portland District



5. Seeks ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.



USACE Environmental Operating Principles

6. Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.





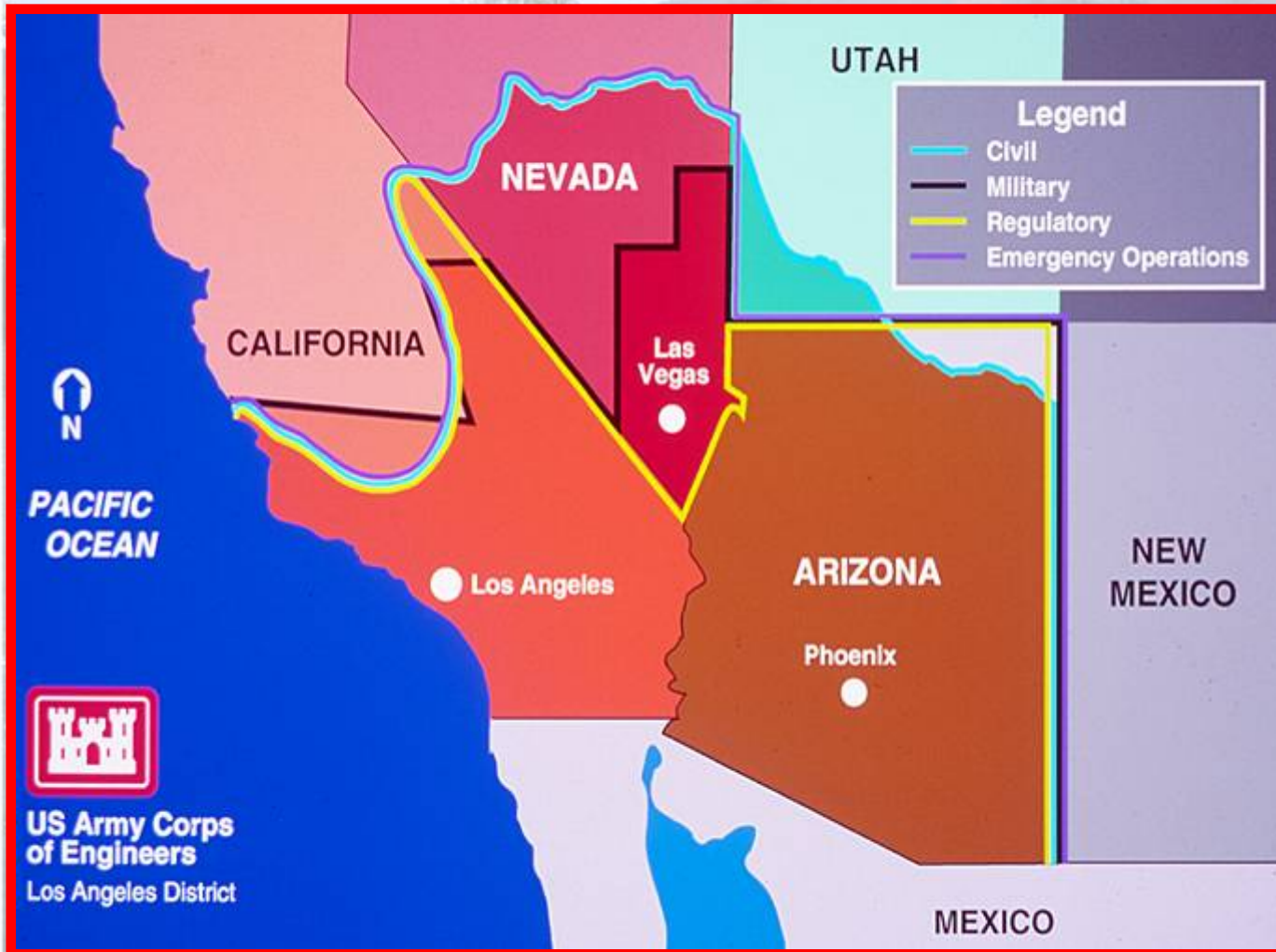
USACE Environmental Operating Principles



7. Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the Nation's problems that also protect and enhance the environment.



Los Angeles District Area



Los Angeles District

- 226,000 square miles
- 420 miles of shore line / 14 harbors
- Hottest and Driest Locations (Death Valley)
- Highest Elevation Mount Whitney (14,494 feet above sea level)
- Lowest Elevation Bad Water, Death Valley (282 feet below sea level)
- Critical Habitat / Biodiversity 385 Threatened / Endangered Species
- 30 Million people (1 in 10 Americans)
- Population growing by 500,000 annually
- 3 of 7 Most Populated US cities (Los Angeles / San Diego / Phoenix)
- 8 U.S. SEN / 46 U.S. REP / 4 GOV

Santa Clara River Watershed





General Overview of the Civil Works Process

- Reconnaissance Study [or 905 (b)]
- Feasibility Study
- Plans and Specifications
- Project Authorization By Congress
- Project Construction / Implementation
- Operations and Maintenance



Santa Clara River Watershed Feasibility Study

- Completed Reconnaissance: September 2002
- Initiated Feasibility: September 2004
- Sponsors:
 - Ventura County Watershed Protection District
 - Los Angeles County Department of Public Works
- Total Study Cost: \$8.1 million

Santa Clara River Watershed Feasibility Study Purpose

- Identify Watershed Problems and Opportunities
- Establish Baseline Conditions
- Develop Models to Evaluate Historic, Current and Future Conditions
 - Hydrologic, Hydraulic and Sediment Transport Models
 - Consider Infrastructure and the Cause and Effect of Land Use Changes
 - Promote Use for Watershed Planners and Decision Makers
- Identify Opportunities for Improvement Projects
- Evaluate and Prioritize Possible Projects in Both Counties
- Prepare a Watershed Management Plan

Santa Clara River Watershed Objectives

- Sustain, Protect and Restore Ecosystem Functions Throughout the Watershed
- Improve Water Supply
- Improve Water Quality
- Enhance Habitat
- Provide Compatible Watershed-Related Recreational, Public Access and Educational Opportunities
- Limited Recreation Opportunities in Areas
- Enhance Open Space and Recreation
- Protect People, Property and the Environment from Adverse Flooding Impacts

Sources: Los Angeles County and Ventura County IRWMPs

- Sustain Infrastructure for Local Communities

Santa Clara River Watershed Feasibility Study Progress

- Working with limited Federal funds
- Continuing efforts to gather data to define baseline conditions
- Sharing Development of Analytical Tools
 - Hydrologic Model: Ventura County Watershed Protection District
 - Hydraulic Model: US Army Corps of Engineers
 - Sediment Transport Model: Los Angeles County Dept. of Public Works
- Reviewing and Generating New Environmental Baseline Info
- Preparing Existing and New GIS Data for Use as Planning Tool



Santa Clara River Watershed Problems

- River and Tributaries Flood - Damaging Properties, Infrastructure and Agriculture
- Loss of Habitat Connectivity
- Invasive Species
- Decreased Water Quality

January 2005 Flood - Santa Clara River at Harbor Blvd Bridge



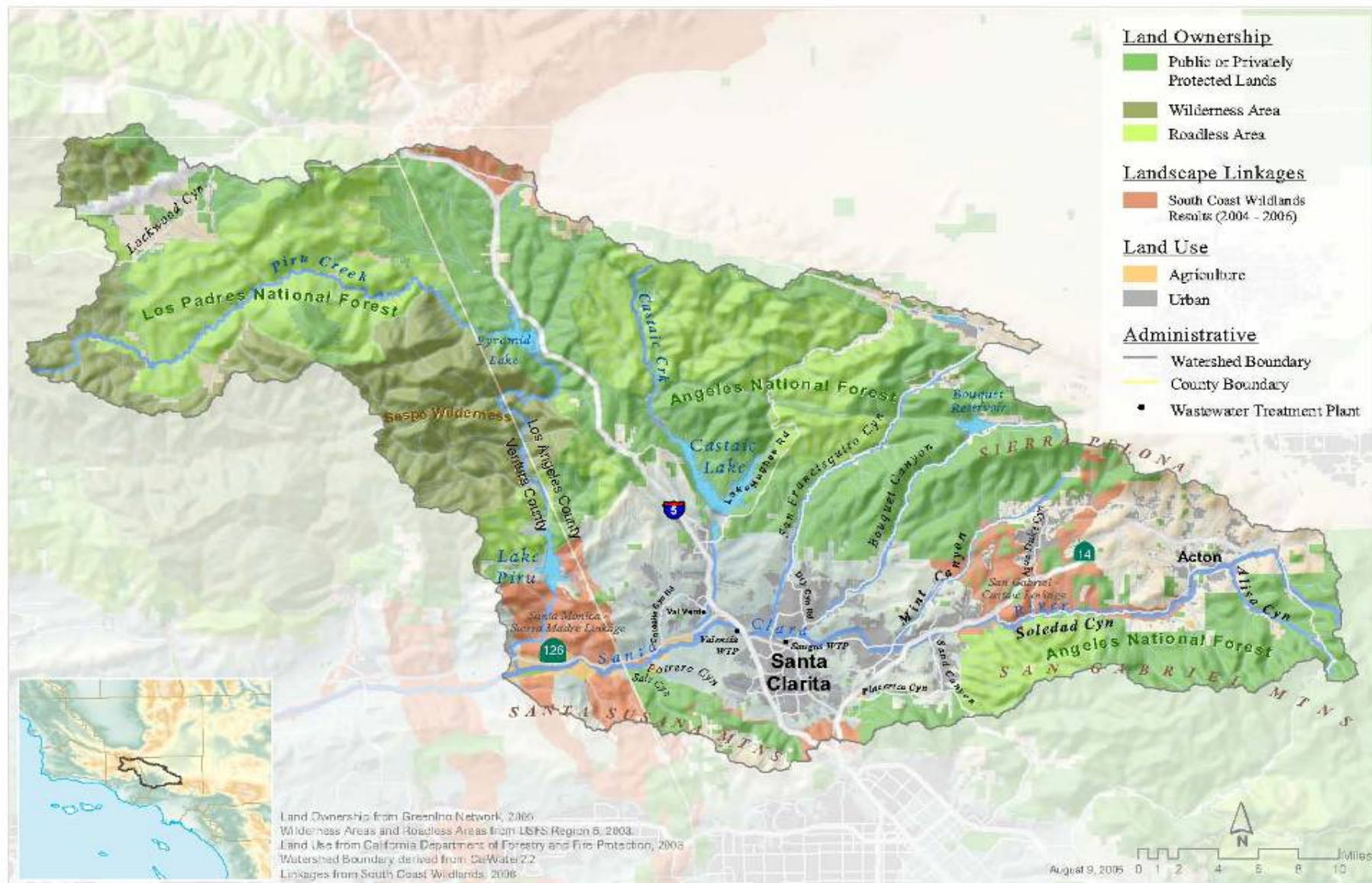
Freeman Diversion Dam - January 2005



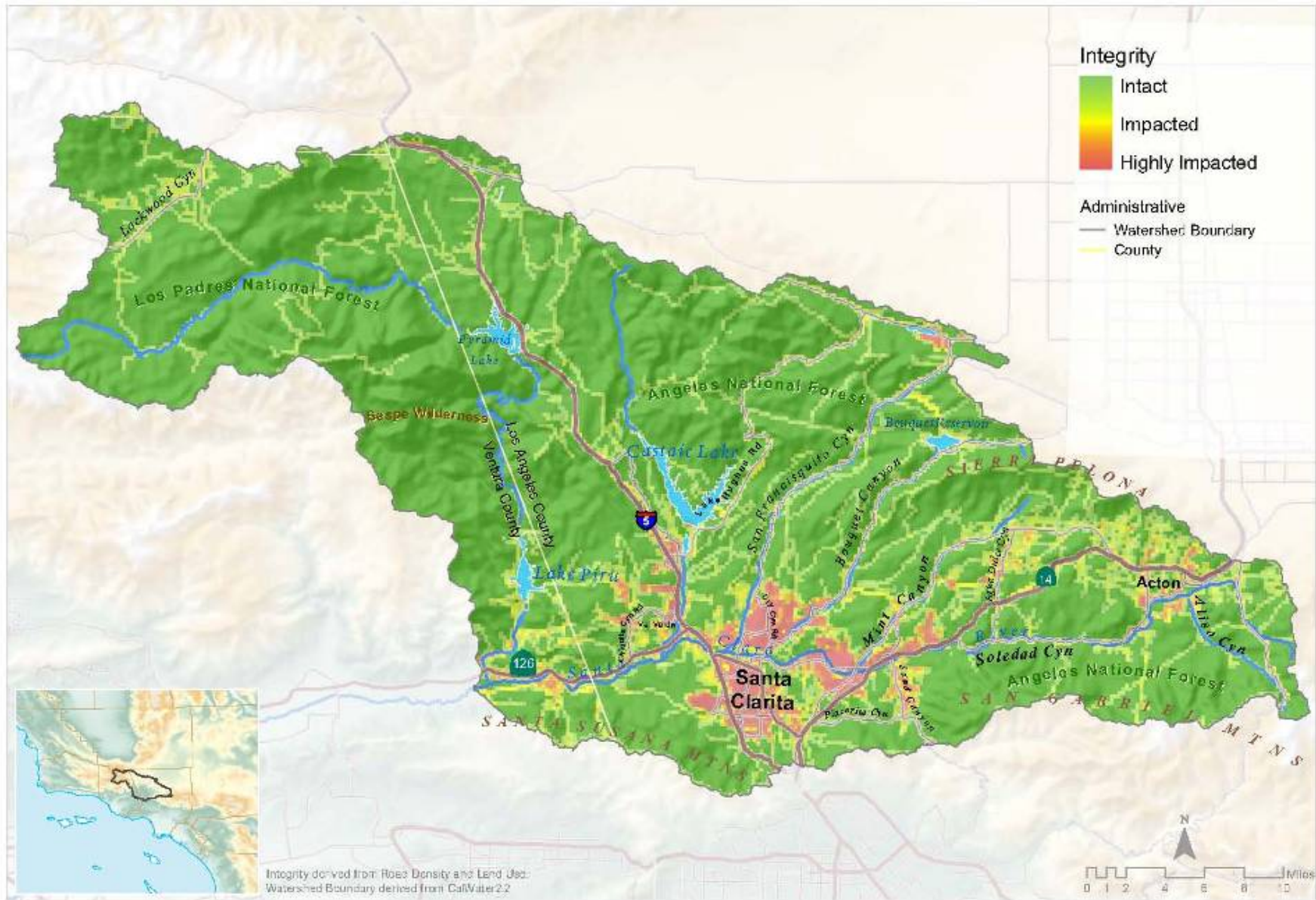
**JAN 05 FLOOD – SOUTHSIDE OF 12th ST. BRIDGE
SANTA PAULA CREEK**



The Upper Watershed of the Santa Clara River



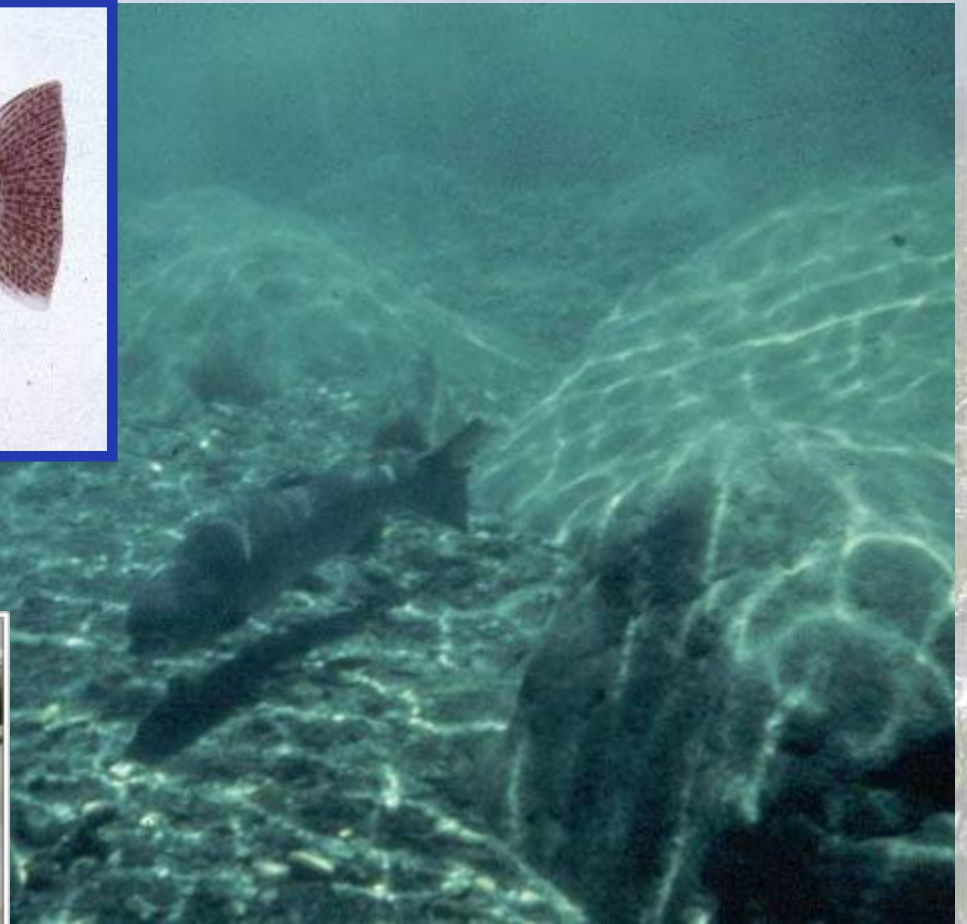
Land Ownership from GreenInc Network, 2005
 Wilderness Areas and Roadless Areas from USFS Region 6, 2003
 Land Use from California Department of Forestry and Fire Protection, 2004
 Watershed Boundary derived from CalWater2.2
 Linkages from South Coast Wildlands, 2006

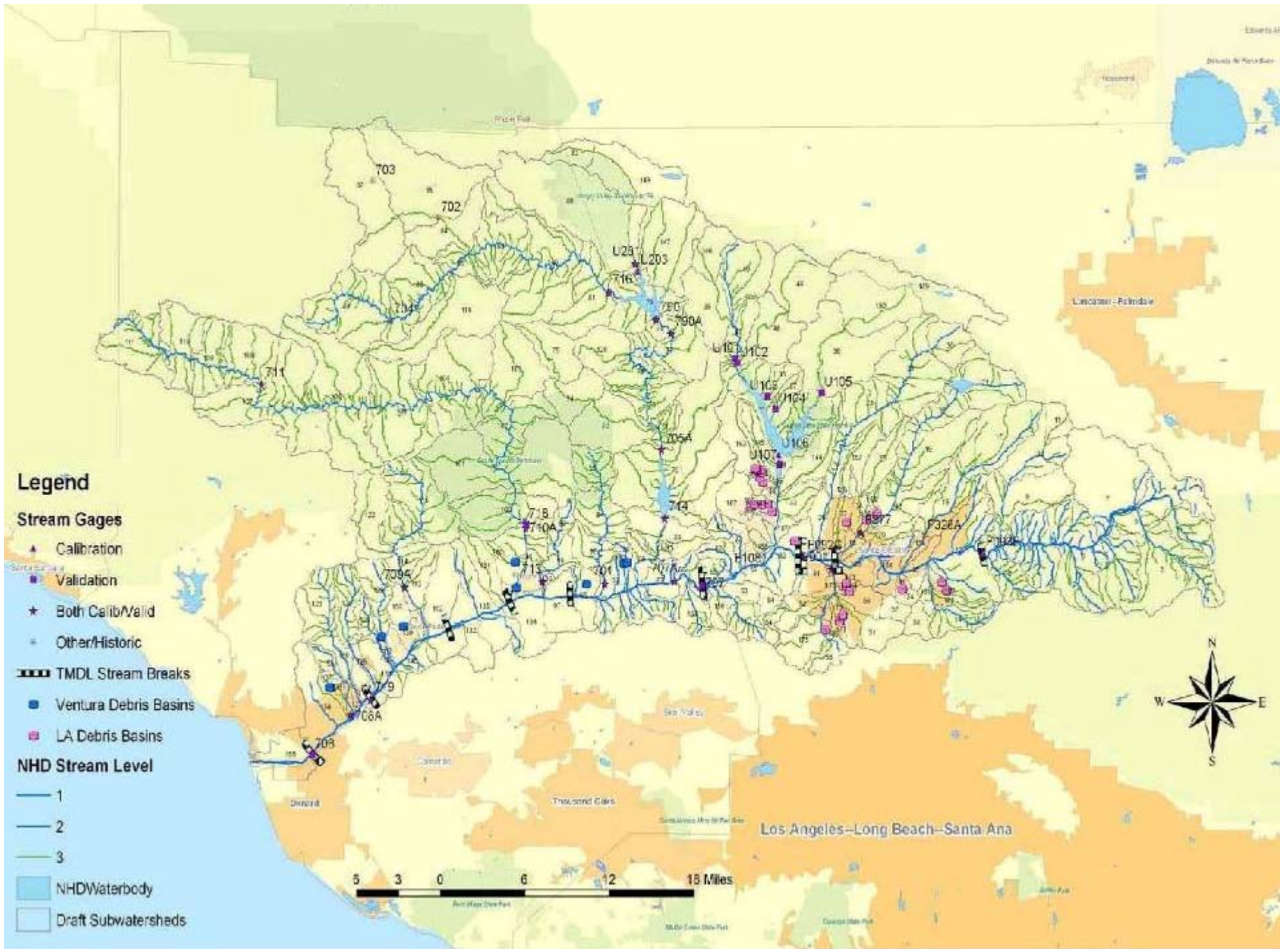


Threatened & Endangered Species



Steelhead Rainbow Trout
Salmo gairdnerii gairdnerii





Legend

Stream Gages

- ▲ Calibration
- Validation
- ★ Both Calib/Valid
- Other/Historic

TMDL Stream Breaks

- Ventura Debris Basins
- LA Debris Basins

NHD Stream Level

- 1
- 2
- 3

- NHD Waterbody
- Draft Subwatersheds

5 3 0 6 12 18 Miles



Los Angeles-Long Beach-Santa Ana

Watershed Riparian Ecosystem Restoration Plan

- Objective

- Develop watershed-wide restoration plan that establishes restoration templates and priorities for riparian ecosystems

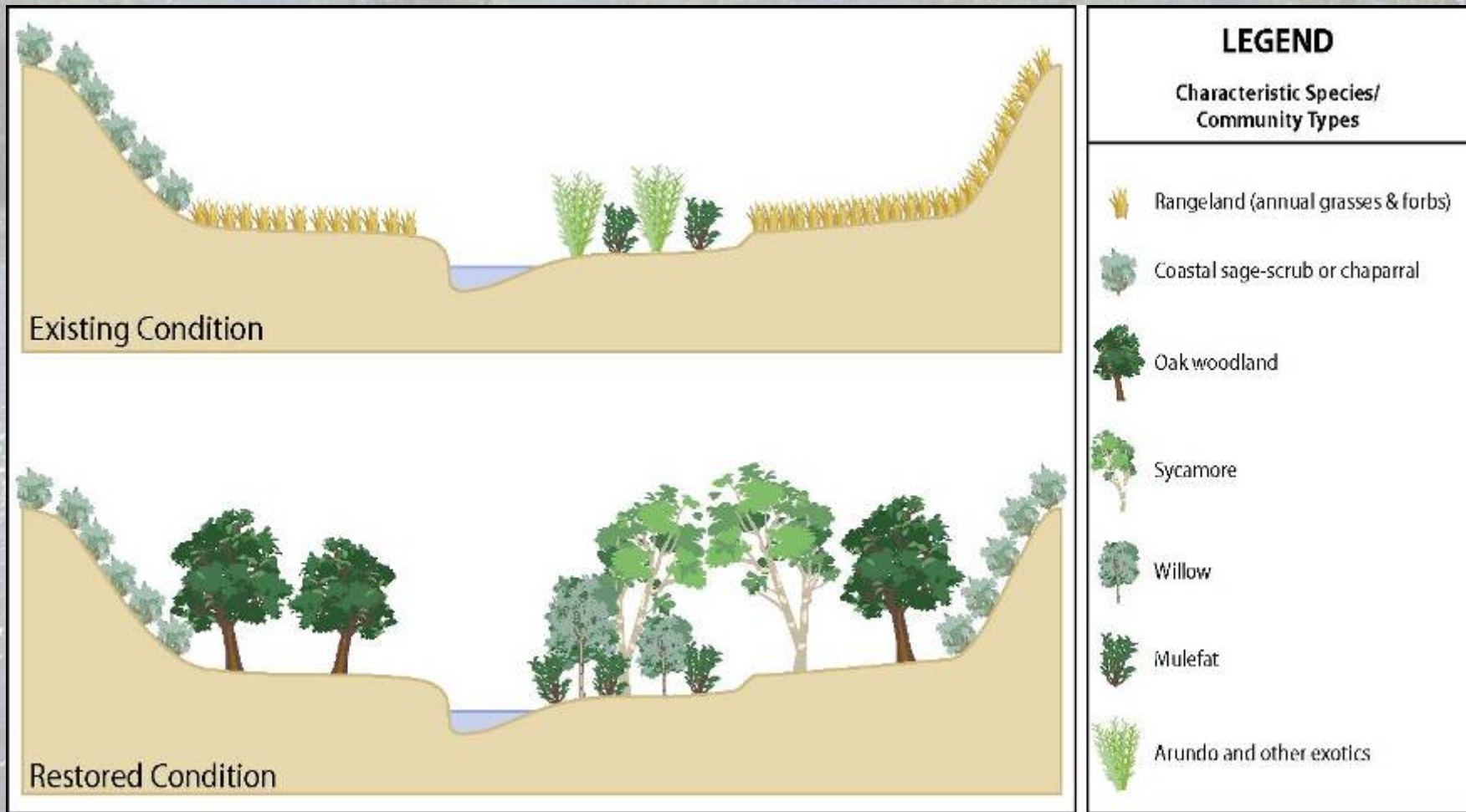
- Approach

- Classify each riparian reach by geomorphic zone
- Identify current condition of each riparian reach
- Determine appropriate restoration template based on condition
- Estimate relative level of effort required for restoration
- Simulate the change in hydrologic, water quality, and habitat indices following application of restoration template
- Identify priority restoration areas based on selected criteria

Potential Criteria for Prioritizing Restoration Opportunities

- Restore riparian corridors providing regional connectivity
- Restore riparian reaches in dedicated open space
- Restore riparian corridors disconnected locally
- Restore riparian reaches providing habitat for sensitive species
- Restore remaining reaches based on functional gain / level-of-effort
- Enhance remaining reaches

Example of Natural Restoration Template for Small Alluvial Valley



Feasibility Study Next Steps

- Continue efforts on Hydrologic, Hydraulic, and Sediment Models
- Continue efforts to gather and organize existing watershed information
- Utilize GIS to organize and display information
- Cooperate and collaborate with existing efforts
- Continue working on a Coordinated Watershed Plan

Contact Information

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