Feather River Regional Water Management Group

Organizational Chart

- RWMG Members
- Steering Committee
- Secretary
- Consultants
- Workgroup Chairs
- Staff
Organizations

- Audubon Society
- County of Plumas
- Feather River Coordinated Resource Management
- Feather River Resource Conservation District
- Greenhorn Creek Community Services District
- Grizzly Lake Resort Improvement District
- Honey Lake Resource Conservation District
- Maidu Summit Consortium
- Plumas Corporation
- Plumas County Fire Safe Council
- Quincy Community Services District
- Sierra Institute for Community and Environment
- Sierra Valley Mutual Water Company
- University of California Cooperative Extension
- USDA Forest Service Plumas National Forest
- Walker Ranch Community Services District
- W.M. Beaty & Associates, Inc.

City of Portola
County of Sierra
Feather River Land Trust
Gold Mountain Community Services District
Greenville Rancheria
Grizzly Ranch Community Services District
Indian Valley Community Services District
Mountain Meadows Conservancy
Plumas County Community Development Commission
Plumas County Flood Control and Conservation District
Sierra County Fire Safe and Watershed Council
Sierra Valley Groundwater Management District
Sierra Valley Resource Conservation District
Upper Feather River Watershed Group
USDA Natural Resources Conservation Service
Feather River Watershed Coordinators
1985 to Present

Feather River Coordinated Resource Management Group

21 agencies and other members
(DWR, CDF, DFG, USFS, NRCS, PG&E, Local Gov’t)

Formed to address:
• Loss of Floodplain Connection
• Loss of Vegetative Structure
• Loss of Biological Processes
• Loss of Physical Inputs
• Loss of Chemical Processes
2005 to Present Regional Priorities

Prop. 50/84 IRWM Planning and Implementation

Improving Water Supply and Water Quality for all designated beneficial uses through a focus on “Watershed Management” and “Disadvantaged Communities”

- Integrating land use and water use across jurisdictions, land ownerships, and beneficial uses of water.

- A consistent strategy to restore hydrologic function and biological connectivity across urban and rural landscapes and land uses.
IWRM Projects must advance integrated watershed resource goals:

1. **Restore 250,000 acres of degraded alluvial valleys**
   - 1985 to 2010 - 3,900 acres and 44 miles of stream channel by Feather River CRM
   - 1998 to 2010 - 4,300 acres of riparian restoration by Forest Service/Quincy Library Group
   - *3% of the targeted landscape in 25 years*

2. **Forest management to enhance upland recharge on 2 million acres while sequestering carbon and reducing threat of catastrophic wildfire**
   - > 100,000 acres (private lands)
   - > 187,000 acres (National Forest)
   - *14% of the targeted landscape in 12 years*
Post-Project Last Chance Creek, Alkali Flat, May 2005
Declining Runoff

East Branch of No Fk Feather River, CA  FNF
1935-2009 moving average of 30-yr** April-June mean Roff starting 1964

Overall trend indicates a 3,005 Ac Ft annual decrease in spring (April through June) snowmelt runoff

Trend Decrease of 40% in the 30-Yr Mean Moving Average of the Apr-June Snowmelt Runoff

** Record started in 1950 30-yr mean prior to 1964 based on available data

\[ y = -3.0054x + 350.45 \]

\[ R^2 = 0.9363 \]
New Regional Challenges

Reduced Snowpack Storage

Chester Annual Snowfall - 1949-2008  Elevation=4,520'

24% Trend Loss since 1950

<table>
<thead>
<tr>
<th>Year</th>
<th>Median</th>
<th>Average</th>
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</thead>
<tbody>
<tr>
<td>1949-1978</td>
<td>141.6</td>
<td>144.8</td>
</tr>
<tr>
<td>1979-2008</td>
<td>104.3</td>
<td>104.0</td>
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</table>

Change: -0.26, -0.28

MONTHLY EVAL

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th></th>
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<tbody>
<tr>
<td>1-30</td>
<td>27.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-60</td>
<td>23.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-30</td>
<td>41.6</td>
<td></td>
<td>-14.9%</td>
</tr>
<tr>
<td>31-60</td>
<td>26.7</td>
<td></td>
<td>-35.9%</td>
</tr>
<tr>
<td>February</td>
<td></td>
<td>-12.7%</td>
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</table>

January w/35.9% decrease is the Month w/largest decrease

GFreeman, Water Management, PG&E  July 14, 2009
### Regional Challenges – Collapse of Delta Fisheries

Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta  
*DRAFT*  
California Department of Fish and Game  
September 21, 2010

<table>
<thead>
<tr>
<th>Category</th>
<th>Function</th>
<th>Flow (cfs)</th>
<th>Year Type</th>
<th>Months</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sacramento River</td>
<td>Increase juvenile salmon outmigration survival and abundance for fall-run Chinook salmon. Increases juvenile salmon outmigration survival</td>
<td>At Wilkins Slough: pulse flow: 20,000 cfs for 7 days&lt;sup&gt;3&lt;/sup&gt;</td>
<td>All</td>
<td>1 1 1</td>
<td>SWRCB (2010)</td>
</tr>
<tr>
<td></td>
<td>Increase juvenile salmon outmigration survival by reducing diversion into Georgiana Slough and the central Delta</td>
<td>At Freeport: 13,000 - 17,000&lt;sup&gt;6&lt;/sup&gt;</td>
<td>All</td>
<td>1 1 1</td>
<td>SWRCB (2010)</td>
</tr>
<tr>
<td></td>
<td>Promote juvenile salmon outmigration</td>
<td>At Rio Vista: 20000 – 30000</td>
<td></td>
<td>1 1 1</td>
<td>DFG (2010a)</td>
</tr>
</tbody>
</table>
Headwaters solutions to regional and statewide natural resource challenges

Meadow water storage to augment spring pulse flows and summer baseflows for water quality and fisheries

Forest fuels management to mitigate the fire/flood/mud/mercury cycle and to enhance spring and fall pulse flows and winter flood attenuation for downstream water quality and fisheries
Enhance coordination between federal and state resource agencies to address interconnected forest, water, ecosystem, and human health problems.
“We propose that the 2011 Planning Rule guide management of NFS lands with a goal of maintaining and restoring healthy, resilient watersheds in order to protect and enhance America’s water resources for humans and the environment.”

“Water is a resource that epitomizes the need for a collaborative all-lands approach: in order to accomplish this goal, managers will need to work closely with neighbors, partners and stakeholders, within the context of the broader landscape.”

“Maintaining healthy watersheds and restoring damaged or degraded watersheds will help them be more resilient to climate change and other stressors, and will optimize their potential to continue to supply clean water and critical aquatic and terrestrial habitat, along with cultural services, recreation opportunities, and other benefits, far into the future.”
Water Yield Opportunities From National Forests

Water Yield Capability Estimates

Runoff water in California totals about 71 million acre feet per year. During Forest Plan preparation, analyses were performed to determine each National Forest’s potential water yield:

<table>
<thead>
<tr>
<th>Forest</th>
<th>per yr.</th>
<th>yield/acre</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>MAF</td>
<td>AF</td>
</tr>
<tr>
<td>Six Rivers</td>
<td>5.169</td>
<td>5.2</td>
</tr>
<tr>
<td>Mendocino</td>
<td>3.404</td>
<td>3.8</td>
</tr>
<tr>
<td>Tahoe</td>
<td>2.010</td>
<td>2.4</td>
</tr>
<tr>
<td>Shasta-Trinity</td>
<td>5.303</td>
<td>2.4</td>
</tr>
<tr>
<td>Klamath</td>
<td>3.950</td>
<td>2.3</td>
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<tr>
<td>Stanislaus</td>
<td>1.970</td>
<td>2.1</td>
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<tr>
<td>Eldorado</td>
<td>1.444</td>
<td>2.1</td>
</tr>
<tr>
<td>Plumas</td>
<td>2.470</td>
<td>2.1</td>
</tr>
<tr>
<td>Sierra</td>
<td>2.565</td>
<td>1.9</td>
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<tr>
<td>Lassen</td>
<td>1.310</td>
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</tr>
<tr>
<td>Sequoia</td>
<td>0.734</td>
<td>0.6</td>
</tr>
<tr>
<td>Inyo</td>
<td>1.093</td>
<td>0.6</td>
</tr>
<tr>
<td>Los Padres</td>
<td>0.715</td>
<td>0.4</td>
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<tr>
<td>Modoc</td>
<td>0.566</td>
<td>0.3</td>
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<tr>
<td>Angeles</td>
<td>0.226</td>
<td>0.3</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>0.195</td>
<td>0.3</td>
</tr>
<tr>
<td>Cleveland</td>
<td>0.095</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33.536</strong></td>
<td></td>
</tr>
</tbody>
</table>

USDA Forest Service
Pacific Southwest Region
630 Sansome Street
San Francisco, CA 94111
2003 to 2009 – Plumas Watershed Forum

Plumas County ~ Department of Water Resources ~ SWP Contractors

Formed for watershed investment and management for local and downstream benefit

2008 Jones & Stokes Review:
1. Positive cost/benefit if new “useable” water valued at only $150/af
2. One-time construction cost for meadow/aquifer storage = $550/af
Some things have endured; some things have evolved.

*Endured:*

- Progress on the ground is the teacher and the driver of more progress. (adaptive management)
- On-the-ground knowledge is as important as state-of-the-art science for a continuous commitment to positive change. (civic science)
- Stewardship ethic permeates the community decade after decade and inspires outside support.
- Local institutional memory offsets agency turnover and shifting politics, policies, and priorities. (institutional continuity with change)
- Restoring the natural functions and hydrology of healthy watersheds solves old problems and new ones. (working with nature for aggregated benefits)
What have we learned in 25 years?

Some things have endured; some things have evolved.

Evolved:

• Interagency and NGO connections evolve to address emerging regional issues – snowpack change; Delta species crash; watershed health and human health connection (e.g. mercury, air quality)

• Examples:
  • DACs and tribal issues and entities span regions
  • Increased connections between rural and urban watershed communities on energy, water, and forests.
  • Problems grow larger and more connected, while local, state, and federal agency resources and budgets shrink.
New Directions

• Increased attention to needs of Disadvantaged Communities (DACs) for community water and wastewater systems upgrades and a new focus on assessing the vulnerability of domestic wells to non point source pollution.
New Directions

• Continued refinement of Tribal consultation and engagement protocols with particular emphasis on mercury pollution and reduction and exposure minimization strategies.

• Continued work with other entities (IRWMs, Mountain Counties Water Association, Sierra Water Workgroup, etc.) on forest-water interactions and water quality and supply reliability at the Mountain Counties scale through a federal-state partnership approach.
New Directions

• In upcoming Upper Feather River IRWM Plan update, a commitment to develop “findings” and a “determination of consistency” between the new Upper Feather River IRWM Plan and the USFS Forest Plan(s), the Water Board Basin Plan, the California Water Plan, and the local General Plan through mechanisms such as the Plumas County Coordinating Council, the Maidu Summit Consortium, the Plumas County General Plan Community Plan Committees, and the IRWM Regional Water Management Group.