

### **3.5 NAPA WATERSHED MANAGEMENT AREA**

#### **Overview**

The Napa River Watershed (approximately 430 square miles) is the portion of western Napa County within the San Francisco Bay Water Board's jurisdiction; eastern Napa County (approximately 360 square miles) is in the Central Valley Regional Board's jurisdiction. The Napa River, a significant freshwater tributary to San Francisco Bay, runs 55 miles from Calistoga to San Pablo Bay, with the lower 17 miles being estuarine. Numerous tributaries enter the main stem from the mountains that rise abruptly on both sides of the valley. The Napa River watershed is largely rural and agricultural, with several fast growing urban areas including the City of Napa and City of American Canyon. The largest community, Napa, has a population of 72,585 (2000 census). Major land cover types in the watershed are forest (35%), grassland/rangeland (23%), and agriculture (19%). Approximately two-thirds of agricultural land is in vineyards (13% of total area). Developed land—residential, industrial, or commercial—accounts for approximately 8% of the watershed (Association of Bay Area Governments, 2000).

The Napa River and its numerous tributaries support steelhead, federally listed as a threatened species, and the California Freshwater Shrimp (*Syncaris pacifica*), listed as endangered by state and federal government. The beneficial uses of the river include: Cold Freshwater Habitat, Warm Freshwater Habitat, Fish Spawning, Fish Migration, Preservation of Rare and Endangered Species Habitat, Wildlife Habitat, Municipal and Domestic Water Supply, and Recreation. The extensive marshlands bordering the lower river teem with hundreds of thousands of migratory birds during the fall and spring and host two endangered species, the California clapper rail and the salt marsh harvest mouse.

The watershed supplies 85% of the county's total water demand through its ground and surface water production. The cities of Calistoga, American Canyon, Napa and Yountville also receive water from the State Water Project. Wastewater discharges to the Napa River occur during the wet season only; during dry months 100% of wastewater flows are reclaimed.

#### **Significant Water Quality Issues**

##### **TMDLs**

The Napa River Watershed is on the 303(d) list for nutrients, pathogens, and siltation. TMDLs have been developed for pathogens (adopted by the Board in 2006 and approved by the State Water Board and U.S. EPA) and sediment (adopted by the Board in September 2009 and under review by the State Board and EPA). A TMDL for Napa River nutrients is under development.

Pathogen TMDL: The Water Board adopted a TMDL for pathogens in the Napa River Watershed in November 2006. The major sources of pathogens were determined to be 1) On-site sewage disposal systems (OSDS or septic systems), a significant but localized source, 2) Sanitary sewer systems (sewer lines), also significant and localized, 3) Municipal runoff, which is widespread, 4) livestock grazing, 5) Confined animal

facilities. Municipal sewage treatment plants are considered a potential source in case of spills or poor management, and wildlife is a source that is not considered significant. The TMDL sets density-based load allocations for each of these categories and outlines implementation measures and implementation parties for each source category.

Implementation is through a variety of regulatory and non-regulatory actions, including general waste discharge requirements (WDRs) or WDR waivers from the Water Board, NPDES permits, city and county stormwater programs, and OSDS evaluations and remediation activities by the County. The Water Board has currently been focusing on developing a waiver of WDRs for grazing lands for Napa and Sonoma Counties, based on the model program initiated in the Tomales Bay Watershed in Marin County. This Waiver was adopted by the Board in September 2011. See

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/grazing/index.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/grazing/index.shtml) for more information.

Water Board staff, in cooperation with local stakeholders, will also be monitoring and evaluating compliance with TMDL targets. More information is available on the Water Board website at

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/napariverpathogentmdl.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napariverpathogentmdl.shtml)

**Sediment TMDL:** The Water Board adopted a TMDL for sediment in the Napa River Watershed in September 2009. The TMDL focuses on sediment reduction and habitat enhancement with the goals of conserving the steelhead trout population, establishing a self-sustaining Chinook salmon population, enhancing the overall health of the native fish community, and enhancing the aesthetic and recreational values of the river and its tributaries. The TMDL concludes that major sources of sediment are from land use activities, including roads, human-caused channel incision, vineyards, intensive historical livestock grazing, and urban stormwater runoff.

The TMDL sets numeric targets for spawning gravel permeability and streambed scour and for sediment load and percent of natural background and lays out implementation actions for each source category. A large emphasis will be on working with landowners and other stakeholders on channel restoration and habitat enhancement projects, as well as using some of the regulatory tools (WDRs, waivers) noted above. In 2011-12 Water Board staff will be developing a waiver for Vineyards: for more information, see:

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/vineyard/index.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/vineyard/index.shtml)

### **Napa River Flood Control Project**

After years of major flooding, the U.S. Army Corps of Engineers developed a standardized channel flood control project in 1965, which was rejected by Napa County voters in 1976 and 1977. A serious flood in 1986 created a new impetus to develop a flood control project, but local watershed stakeholders and resource agencies came together to develop a community consensus on a “living river” project to counteract the Corps proposal. In 1998 the voters of Napa County passed Measure A, a parcel tax to implement this “living river” plan.

The “Living River” design has been described as a new paradigm for flood protection projects in the United States. “Living River” principles include reconnecting the river to its historic flood plain; maintaining the natural slope and width of the river; allowing the river to meander as much as possible; retaining natural channel features like mud flats, shallows and sandbars; and supporting a continuous fish migration and riparian corridor along the river. To achieve these objectives, old dikes have been breached to restore tidal marshlands; bridges are being replaced to remove obstacles to water flow; riverbank terracing is creating more room for large volumes of water; a dry bypass channel will provide a shortcut for the river during high flood flows while sustaining the natural oxbow habitat; new dikes, levees and floodwalls will be built; bank stabilization will be used in specific areas; and detention basins and pump stations will accommodate runoff behind the floodwalls.

The project began in 2000 and will include changes to six miles of the Napa River through the town of Napa and below to the wetlands along San Pablo Bay. The project will include removal of 53 mobile homes, 16 other residences and 23 commercial buildings; creation of 400 acres of emergent tidal marsh and 150 acres of seasonal wetlands; and replacement of nine bridges. To date about 650 acres of farmed seasonal wetland and farmed upland are being converted to wetlands, mudflats, and upland woodlands; marsh and floodplain have been created; pollutants removed along previous highly industrialized areas adjacent to the river; floodwalls built along the riverfront in downtown Napa; several bridges replaced; and a number of building revitalization projects completed along the river. Future work will include an Oxbow Bypass Channel, replacement of two railroad bridges, and completion of floodwalls. Although funding for the project has come from the Measure A sales tax and some federal funding, the project has taken longer than anticipated due to a number of years of cutbacks in federal funding. In mid-2009, the project received a large amount from the 2009 federal stimulus funds, which will put the project back on track after a number of years of scarce federal funding.

## **Watershed Groups and Watershed Management**

### WICC (Watershed Information Center and Conservancy)

Many local, state and federal agencies are involved in watershed protection efforts in the Napa River Watershed. The Napa County Board of Supervisors convened a Napa River Watershed Task Force (NRWTF) in December 1998. This task force was comprised of local citizens selected for their expertise and their ability to represent the views of interest groups within the Napa County community as well as numerous agencies including the Regional Board, Natural Resources Conservation Service (NRCS) and the Napa County Resource Conservation District (RCD). The Task Force reached consensus on a number of specific recommendations regarding the County's zoning regulations, particularly the Conservation Regulations, and the Napa County Board of Supervisors unanimously approved these recommendations on May 18, 1999, as part of Phase I of this project.

In September of 2000 the Napa River Watershed Task Force released its Phase II Final Report. Two of the recommendations resulting from this multi-year study were the

formation of a Watershed Information Center and of a Conservancy; the joint Watershed Information Center and Conservancy (WICC) was created in May 2002 by resolution of the Board of Supervisors. The overall goals for the WICC are to enhance partnerships and collaboration among watershed stakeholders, protect and enhance watersheds and natural processes, and provide environmental and information to support community efforts to understand and protect County watersheds through an interactive website portal.

The WICC is designed to guide and support community efforts to maintain and improve the health of Napa County's watershed lands, through voluntary and collaborative efforts. It currently acts as a clearinghouse and web portal for watershed groups, data and report repository, map source, calendar of events, funding coordination, and information source, among other functions. In 2007 the WICC received a grant from CalFed to develop watershed health indicators. For more information, see <http://www.napawatersheds.org>.

#### Napa Resource Conservation District (RCD)

The Napa RCD has been a leader in many aspects of Napa County's watershed management activities. Their efforts have lead to successful implementation of many community based water quality projects, creek and river restoration projects, and establishment of nearly a dozen watershed stewardship groups.

<http://www.naparcd.org/>

#### Local Stewardship Groups

Napa County has been a leader in development of watershed stewardship groups, spearheaded by the Napa RCD outreach efforts and grant projects.

#### Watershed Projects

### **Rutherford Reach Restoration:**

The Napa River Rutherford Reach Restoration Project is comprised of a 4.5-mile reach of the mainstem Napa River south of the City of Saint Helena between Zinfandel Lane and the Oakville Cross Road, comprised of approximately 40 parcels owned and managed by 29 different private entities. Historic changes in land use and management in the Napa River watershed have resulted in confinement of the river into a narrow channel, loss of riparian and wetland habitats, accelerated channel incision and bank erosion, and ongoing channel degradation.

The Napa River Rutherford Reach Restoration is a landowner-initiated project that aims to reduce existing bank erosion and enhance riparian and aquatic habitats using a suite of approaches, including: setting back earthen berms from the top of the river bank; creating vegetated buffers between the river and adjacent land uses; excavating and planting inset floodplain benches; creating backwater habitat to provide high-flow refugia for native fish; removing non-native invasive and Pierce's disease host species; planting native understory species; installing biotechnical bank stabilization to stabilize actively eroding banks; and, installing instream structures to improve aquatic habitat. The project also includes an annual maintenance program to proactively address debris, bank erosion, and inputs of fine sediments and to maintain the functions of the restoration features.

Water Board staff have worked closely with this project, managing several 319(h) grants for several of the Project's phases and working with the project director and DFG on developing a comprehensive monitoring program. Further project information is available at [http://www.napawatersheds.org/app\\_pages/view/228](http://www.napawatersheds.org/app_pages/view/228)

### **Oakville to Oak Knoll Reach:**

In 2007 the California Land Stewardship Institute (CLSI) received funding from the California State Water Resources Control Board and Napa County (Measure A) to prepare an enhancement plan for nine miles of the Napa River between the Oakville Cross Road bridge and the Oak Knoll Avenue bridge. This plan was completed in 2010 and project proponents will be looking for implementation funding. CLSI has also applied for 319(h) funds to prepare a restoration plan for the upstream portion of the Napa River. This project would complete a plan for 4.6 miles of the Upper Napa River to address channel erosion, a fine sediment source identified in the Napa River Fine Sediment TMDL. Staff are also part of a Technical Advisory Group for these efforts.

### **Summary of Significant Issues**

#### Urban Runoff

- Impacts from new development

#### Stream and Wetland Habitat Protection

- Need for comprehensive baseline watershed assessment
- Alteration of flow regime due to water diversions and flood control levees and channelization leading to:
  - a) dry season streamflow reduction by surface water diversions and groundwater extraction

- b) peak flows during wet season potentially increases flooding and stream bank failure
- c) flooding and associated flood management practices
- Development and loss of wetlands south of Napa in the airport industrial area.
- Loss of riparian habitat due to farming practices and vineyard conversions

#### Impacts from Pollutants

- Impairment in the Napa River and tributaries due to siltation, nutrients, pathogens, and possibly dissolved oxygen, high temperature, and eutrophication, impacts in the Napa River.
- Wastewater discharge impacts on surface water and groundwater.

#### Program implementation by RWQCB staff and local partners

- More active response to major development plans by RWQCB staff
- More effective implementation of California's NPS Program Management Measures by RWQCB, local agencies, and land owners.
- More effective leveraging and oversight of grants
- Stormwater program improvements through review and comment on annual reports

#### **Staff Workplan for FY 2010/11 and 2011/12**

- Oversight of Phase II Stormwater Program
- Take action on 401/404 certifications
- Continue work with Napa RCD and other stakeholders on creek restoration and enhancement projects as part of grant management and/or technical advisory committee participation
- Ongoing participation in implementation of the Napa Living River Flood Management Project:
  - Reissue NPDES and Waste Discharge Permits as needed
  - Implement WDR waiver for grazing lands
  - Develop WDR waiver for vineyards
  - Manage 319(h) grants to County of Napa for Rutherford Reach restoration projects
  - Manage 319(h) grant to County of Napa to continue creek restoration and enhancement projects along a two-mile stretch of the Napa River as part of Rutherford Project
- Implement pathogen and sediment TMDL measures in addition to those noted above
- Pursue enforcement against estimated erosion, construction project, or illegal fill violators
- Take other enforcement action as needed

#### **High Priority Projects for Grant Funding**

- Develop and implement sediment control and habitat enhancement actions. Specifically, develop third party or technical assistance programs to assist with farm/vineyard plan development and implementation.
- Develop RWQPs and implement MPs for grazing lands. Develop third party or technical assistance programs to assist with RWQP development and implementation.
- Sediment control and habitat enhancement actions identified in Napa River Sediment Reduction and Habitat Enhancement Plan (TMDL).

November 2011

- Sediment and restoring in-stream channel complexity as called for in Sediment TMDL SEP: Develop plans for restoration of the Upper Napa River in reaches that have not yet been addressed.
- Implement reach-scale projects to restore stream-riparian habitat complexity and connection to floodplains, and to balance fine and coarse sediment budgets.
- Channel incision adaptation project and restoration of fish passage at Zinfandel Lane Crossing to address impacts of channel incision on habitat access and sediment transport dynamics.
- Road erosion control and prevention projects for rural lands
- Baseflow monitoring and related education and outreach projects to protect key tributaries for steelhead
- Salmonid population monitoring and modeling
- Implementation of vineyard erosion best management practices
- Study of groundwater discharge effects on stream recharge and temperature
- Evaluation of pesticide use and water quality monitoring