

Napa River Rutherford Reach Restoration Project
Final Memorandum Report for Annual Maintenance Activities
2011 Field Season



Prepared by: Napa County Flood Control and Water Conservation District

Napa County, California

December 2011



This memorandum provides a final summary report of maintenance work conducted pursuant to the recommendations in the 2011 Napa River Rutherford Reach Restoration Project (Project) Annual Maintenance Survey Report (Report). The Report, which was prepared by Napa County Flood Control and Water Conservation District (District), contained prioritized recommendations for maintenance issues identified during the summer 2011 survey along the 4.5 mile Project reach, such as removal of trash and debris, treatment of invasive plants, preservation and management of large woody debris (LWD), and replanting of treated areas. The Napa County Flood Control and Water Conservation District (District) completed most recommended maintenance activities outlined below between September 1st and November 25th 2011; however it should be noted that additional maintenance activities (such as willow stake planting) are scheduled to take place throughout the winter of 2011/2012. The July 2011 Report, and the final recommendations contained therein, can be accessed electronically from the Watershed Information Center & Conservancy of Napa County (WICC) website at http://www.napawatersheds.org/app_folders/view/3577 or via a hard copy obtained upon request from the District.

Trash and Debris

A total of 48 occurrences of trash and debris were initially documented in the Report, but 54 items were actually removed from the river channel. A total of 28 tires and 26 other items, including two large washing machines that were not documented in the June survey, were removed. All trash and debris items were removed over two days in September 2011 (Figure 1). Table 1 depicts the types and number of occurrences of trash detected and removed since the surveys began in 2009. Landowners who were identified during the June survey as having significant amounts of debris stored on the top of their river bank that is susceptible to washing into the channel during high flows were contacted by the District. These landowners have agreed to remove this material from the top of bank and report back to District staff once the debris has been removed.

Table 1: Trash and debris removed from the Napa River, Rutherford Reach, over 2009-2011 maintenance seasons

Maintenance Year	Trash/Debris Type Removed		
	Tires	Large Appliances/Drip Lines/etc.	Total Items Removed
2009	19	28	47
2010	33	27	60
2011	28	26	54

Invasive Plants

A total of 57 occurrences of invasive non-native and Pierce host plants were identified for treatment in the Report. Dominant target invasive and Pierce host plants identified for treatment included giant reed, Himalayan blackberry, periwinkle and native and hybridized grape. Species such as fennel, tree of heaven, etc were observed during the June survey but not treated as a result of land owners requests in previous meetings to focus on and use funds for treatment of only invasive plant species that are considered Pierce host's species as well.

Seventy-nine (79) combined occurrences of giant reed, periwinkle, grape, Himalayan blackberry, poison hemlock and sesbania were actually treated during late summer/fall 2011 covering a total area of approximately 134,771 square feet or 3.09 acres (Figure 2). Table 2 depicts the area by species and cumulative

area of invasive and Pierce host plants treated and/or removed since the inception of the maintenance surveys in 2009. Approximately half of the Himalayan blackberry and periwinkle, as well as the 2,461 square feet of poison hemlock that were treated in Reaches 1-3, was paid for with funds from the Restoration Project re-vegetation contract for this area; thus labor and materials for this work was not charged to the Rutherford Maintenance Assessment District (MAD) fund. Of particular interest this year was the discovery and treatment of a large population of highly invasive red sesbania on a tributary that is thought to be the main source for occurrences of this species found in the Rutherford Reach of the Napa River. Select populations of invasive species that were treated during the 2011 field season and have the potential to cause streambank erosion have been, or will be, replanted with willow and/or cotton wood stakes and/or broad cast seeded with appropriate native species throughout the winter and spring of 2011 and 2012 respectively.

Table 2: Invasive/Pierce host plant species treated over 2009-2011 maintenance seasons

Invasive/Pierce host plant species treated (Square Feet)							
Maintenance Year	Giant Reed	Himalayan Blackberry	Periwinkle	Poison Hemlock	CA Grape	Red Sesbania	Total Area Treated
2009	73,180	0	0	0	0	0	73,180
2010	23,599	952	17,389	17,424	0	86	68,923
2011	30,749	35,809	9,163	2,461	7,447	49,138	134,771

Large Woody Debris (LWD)

A total of 7 large woody debris (LWD) accumulations were documented during the 2011 survey that ranked as potential maintenance issues in the river channel. The Report recommended thinning out and/or realigning 3 of these 7 LWD occurrences. However, after several additional site inspections under low flow conditions, District staff concluded that only two LWD accumulations required treatment. The two occurrences of LWD that presented a maintenance issue were treated between October 1st and October 15th, 2011 respectively (Figures 3 and 4). Table 3 represents the number of LWD accumulations treated over the life of the Project thus far.

Table 3: LWD occurrences documented and treated over 2009-2011 maintenance seasons

Maintenance Year	LWD Documented as Potential Maintenance Issue	LWD Recommended for Maintenance Action	Total LWD Maintained
2009	9	2	2
2010	16	2	4
2011	7	3	2

Installed LWD Structures and Constructed/Graded Benches

At the time of the June 2011 survey, construction had been completed through Reach 3 resulting in the creation of 9 in-stream benches and 1 backwater alcove, installation of 27 bench logs, 10 rootwad structures, 1 boulder cluster and the setting back of over 8500 linear feet (1.6 miles) of agricultural berms. The Report recommended repairing the scoured stream bank at the downstream end of the instream bench constructed on the Caymus Vineyard property around a large willow tree (river station 181+50). The stream bank in this area was re-graded to a 3:1 slope, broadcast seeded and secured with bio-degradable erosion control fabric during November 2011 (Figure 5 and 6). Additional work will take place at this site in December and will consist of planting with willow and cottonwood stakes. Reach 3 construction funds will pay for this work and not maintenance assessment funds. Additional work including removal of various patches of dead giant reed rhizomes and re-planting of these areas with willow and cottonwood stakes is scheduled to take place during winter/spring 2011/2012. No other work is currently proposed or required for built Project features.

Landowner Requests for Maintenance

A total of 3 landowner requests forms were received by the District for maintenance activities during the 2011 field season. Landowners requested specific maintenance actions including removal of specific patches of invasive and Pierce Disease host plants and realignment and/or removal of large/small woody debris. All 3 landowner's maintenance requests were addressed during the 2011 maintenance season with the exception being removal of giant reed on the Frost Fire Vineyard property in Reach 8. While giant reed was treated on this property with herbicide to prevent further spread of the invasive species the occurrence will not be removed until restoration construction activities take place in this area, Reach 8, which will be projected for summer 2013.

Maintenance Access Agreements

The District will continue to work with landowners to acquire long-term maintenance access agreements in order to conduct maintenance activities for the entire Rutherford Reach in 2011/2012. To date, only 7 landowners have not signed long-term agreement but have continued to grant one time seasonal access to perform maintenance work. All 2011 maintenance work and reporting will continue to be conducted in accordance with regulatory permits issued and the final maintenance plan (Jones and Stokes, 2008, <http://www.napawatersheds.org/files/managed/Document/3590/Rutherford%20Reach%20Maintenance%20Plan.pdf>) prepared for the Rutherford Reach.

Budget

The Maintenance Assessment District has been in place since June 1, 2008. The budget shown in Table 4 details the assessment fund. With annual revenues of \$98,160, the total fund balance to date is \$226,033. Funds pay for a field team to conduct an annual survey of the river channel to assess the 37 maintenance needs along the entire Rutherford Reach each spring in addition to covering maintenance actions including invasive plant, LWD management, and repair of features constructed as part of the restoration project. Expenditures cover maintenance actions, including repair of features constructed as part of the restoration, with any remaining funds accumulating for future work. The Maintenance Assessment District funds also supported initial baseline surveys to gather data against which to monitor changes in channel incision and bank erosion.

Table 4: Budget

Annual Budget by Fiscal Year						
Task	Expenditures	Expenditures	Expenditures	Expenditures	Expenditures	
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	
Annual Surveys & Development of Work Plans, Report and Monitoring	0	20,954	37,495	27,440	28,008	
Trash Removal & Disposal Fees (Napa County Waste Management)	0	0	2,144	2,144	3,013	
Invasive Plant Management	0	1,320	8,027	8,479	10,519	
LWD Thinning and/or Removal	0	0	1,760	1,496	2,509	
Habitat Structure Maintenance/Re-vegetation/Erosion Repair	0	0	0	1,320	3,695	
Field Equipment, Supplies, Admin, Misc.	0	314	826	392	875	
Engineers Report/Public Notice/Legal	0	23,933	1,655	1,655	1,655	Total
Total Expenditures	\$11,250	\$46,521	\$51,907	\$42,926	\$50,274*	\$202,87
	\$11,250	\$120,457	\$99,635	99,410	98,160**	428,911
Fund Balance (with interest) to date	\$226,033 (Total interest earned to date \$3,139)					

* Includes encumbrances (\$26,932) and estimated expenditures through July 1st, 2012.

** Assumes full assessment of 98,160 collected for FY 2012.

References

Jones and Stokes. August 2008. *Final Maintenance Plan for the Napa River Rutherford Reach Restoration Project*.

Napa County Flood Control and Water Conservation District. July 2010. *Napa River Rutherford Reach Restoration Project Annual Maintenance Survey*.

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Figure 1: Trash and debris removal



**Figure 2: Invasive blackberry removal site
(Pre-re-vegetation)**



Figure 3: LWD thinning (before)



Figure 4: LWD thinning (after)



Figure 5: Erosion at constructed bench (before)



Figure 6: Erosion repair at constructed bench (after)