

Sonoma County Water Agency

Russian River Recreation Assessment 2009

**Related to Russian River Flow Changes
Associated with the
Temporary Urgency Change in Russian River Flows
July 1, 2009 through October 2, 2009**

as authorized by

**The State of California
California Environmental Protection Agency
State Water Resources Control Board
Division of Water Rights Order WR 2009-0034-EXEC**



November 24, 2009

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TABLE OF CONTENTS

Introduction.....	1
Study Methods.....	1
Outreach	1
Recreation Assessment Participants	10
Study Area And Survey Protocol	10
Study Results	13
Observations/Discussion.....	22

APPENDICES

Appendix A	Data Results
Appendix B	Data Sheets
Appendix C	Photographs
Appendix D	Newspaper Articles

Introduction

On April 6, 2009, the State Water Resources Control Board (State Water Board) approved the Sonoma County Water Agency's (SCWA) petition requesting approval of a Temporary Urgency Change (TUC) to allow temporary reductions to the Russian River instream flow requirements. The TUC request was made to prevent depletion of storage in Lake Mendocino which would severely impact threatened or endangered Russian River fish species, create serious water supply impacts in Mendocino County and in Sonoma County's Alexander Valley, and harm Lake Mendocino and Russian River recreation. The TUC order allowed for "dry" year flow conditions and required SCWA to reduce diversions from the Russian River by 25 percent through October 2, 2009.

Instream flows in the Russian River under the TUC were allowed from July 1, 2009 to October 2, 2009, to drop to as low as 25 cubic feet per second (cfs) in the Upper Russian River (from the confluence with the East Fork of the Russian River to its confluence with Dry Creek) and down to 35 cfs in the Lower Russian River (from its confluence with Dry Creek to the Pacific Ocean). In comparison, under normal water supply conditions, minimum instream flows in these reaches at the same time of the year range from 150-185 cfs for the Upper Russian River and 125 cfs for the Lower Russian River.

Under the TUC, the SCWA was required to undertake a variety of fisheries, water temperature, and water quality monitoring to assess potential impacts that may occur as a result of implementing the TUC. An assessment of impacts to recreation activities in the Russian River was not a required monitoring element of the TUC; however, the SCWA recognizes that the Russian River is heavily utilized as a recreation resource and voluntarily undertook an assessment of how the lower flows under the TUC may have impacted the ability of people to utilize the Russian River for recreational activities. SCWA staff took before and after measurements at various riffle points between Rio Linda (approximately 5 river miles upstream of Healdsburg Memorial Beach) and Casini Ranch (approximately 3 river miles downstream of Monte Rio) to compare water depth changes between the higher Russian River flows in June of 2009 with the lower flows that occurred under the TUC between July and October 2009.

Study Methods

The Russian River and surrounding areas are utilized for a wide variety of different recreation activities (fishing, swimming, boating, camping, bird watching, etc.). However, when considering potential recreational impacts related to changes in flow during the summer months, boating is the primary recreational activity with the highest exposure for being impacted by lower flows. Boating in the Russian River typically consists of the use of canoes or kayaks, although there is also a limited amount of motorized boat traffic. Many people bring their own boats to the Russian River, but there are also several commercial canoe/kayak operators that require flow in the Russian River to operate their businesses. Boating typically consists of putting a canoe or kayak into the river at some point and floating with the flow of the river to some downstream exit point. A reduction in river flow has the potential to significantly impact the ability for people to be able to float down the river.

Outreach

On May 22, 2009, Ann Dubay (SCWA Public Information Officer), met with Don McEnhill (Russian River Keeper) regarding the recreation concerns and the scope of the recreation assessment that was to

be conducted by the SCWA. SCWA staff met on June 9, 2009 at the Monte Rio Community Center with representatives of recreation companies/advocates to discuss the purpose and scope of the recreation assessment. The following people were in attendance at the June 9, 2009 meeting:

- Ron Moore, Monte Rio Parks & Recreation District and Rio Villa
- Roberta Pollard, Monte Rio Parks & Recreation District
- Suzi Sheffert, Monte Rio Parks & Recreation District
- Linda Burke, Burke's Canoes
- Don McEnhill, Russian Riverkeeper
- Brenda Adelman, RR Watershed Protection Committee
- Laura Wilson, Johnson's Beach
- Lollie Mercer, River's Edge
- Suki Waters, Water Treks
- Larry Laba, Soar Russian River Adventures
- Royce Brooks, Oddfellow's Recreation Park
- Paul Casini, Casini Ranch
- Mike ?, Casini Ranch
- Jim Tyler, Sonoma County Environmental Health
- David Manning, SCWA
- Jessica Martini-Lamb, SCWA
- David Cuneo, SCWA
- Ann DuBay, SCWA

Based on input and feedback from the June 9, 2009 meeting, SCWA staff decided to include the Guerneville-Casini Ranch reach in the recreation assessment.

SCWA staff offered to provide the dates, locations, and times of scheduled floats for the recreation assessment and invited any interested representatives of recreation companies/advocate groups to attend.¹

In addition to SCWA's scheduled floats collecting data for the recreation assessment, Linda Burke and Don McEnhill organized two floats for policymakers to see what the Russian River looks like at different flow conditions. These floats occurred on June 29, 2009 and on September 8, 2009 and went from the Burke's Canoes put-in location near Mirabel to their take-out location just upstream of Guerneville. Agency staff, the Board of Supervisors, and representatives from local elected official's offices were invited to attend these floats.

The following people attended the June 29, 2009 float:

- Efren Carrillo, Sonoma County Supervisor, 5th District
- Jazmin Rodriguez, California State Senator Pat Wiggins' office
- Ed Sheffield, California Assemblywoman Noreen Evans' office
- Linda Burke, Burke's Canoes
- Don McEnhill, Russian Riverkeeper
- Grant Davis, SCWA

¹ Larry Laba from SOAR Russian River Adventures accompanied SCWA staff on their June 27, 2009 float from Healdsburg Memorial Beach to Wohler.

- Pam Jeane, SCWA
- Jessica Martini-Lamb, SCWA
- Dave Cuneo, SCWA
- Justin Smith, SCWA
- Marc Bautista, SCWA
- Ann DuBay, SCWA

The following people attended the September 8, 2009 float:

- Efren Carrillo, Sonoma County Supervisor, 5th District
- Don McEnhill, Russian Riverkeeper
- Ed Sheffield, California Assemblywoman Noreen Evan's office
- Laura Robinson, California Senator Patricia Wiggins'
- Fred Euphrat, California State Senator Pat Wiggins' office
- Grant Davis, SCWA
- Mike Thompson, SCWA
- Dave Manning, SCWA
- Brad Sherwood, SCWA
- Dave Cuneo, SCWA
- Marc Bautista, SCWA
- Ann DuBay, SCWA

Photos from June 29, 2009 float with Don McEnhill and Burke's Canoes



June 29, 2009. Burke's Canoe Put-In



June 29, 2009. Discussing one of the riffle areas measured as part of the Recreation Assessment.



June 29, 2009. Discussing one of the riffle areas measured as part of the Recreation Assessment.



June 29, 2009. Coming into Summerhome Park Beach



June 29, 2009. Summerhome Park Beach



June 29, 2009. Summerhome Park Beach



June 29, 2009. Summerhome Park Beach

Photos from September 8, 2009 float with Don McEnhill and Burke's Canoes



September 8, 2009. Burke's Canoe Put-In



September 8. Discussing one of the riffle areas measured as part of the Recreation Assessment.



September 8. Discussing one of the riffle areas measured as part of the Recreation Assessment.



September 8. Russian River near Odd Fellows Park.

Recreation Assessment Participants

Field work for the data collection for the recreation assessment was conducted by:

- David Cuneo, SCWA
- Justin Smith, SCWA
- Nathan Goddard, SCWA
- Andrew Moratto, SCWA
- Larry Laba, SOAR Russian River Adventures

Study Area and Survey Protocol

On June 1st, 2009, David Cuneo and Justin Smith with the SCWA went on a preliminary float from the Alexander Valley Road Bridge in Jimtown down to Healdsburg Memorial Beach. This reach of the river is approximately 12 river miles in length. Based on the time required for this preliminary float, it was determined that collecting data along river reaches 5 to 10 miles in length would be more reasonable to cover in one day. For the Recreation Assessment, the river was divided up into the following reaches:

- Rio Linda to Healdsburg Memorial Beach (4.85 river miles)
- Healdsburg Memorial Beach to Wohler (8 river miles)
- Wohler to Johnson's Beach, Guerneville (9.30 river miles)
- Johnson's Beach, Guerneville to Casini Ranch (8 river miles)

The following figures show the locations of the riffles measured for each of these reaches.

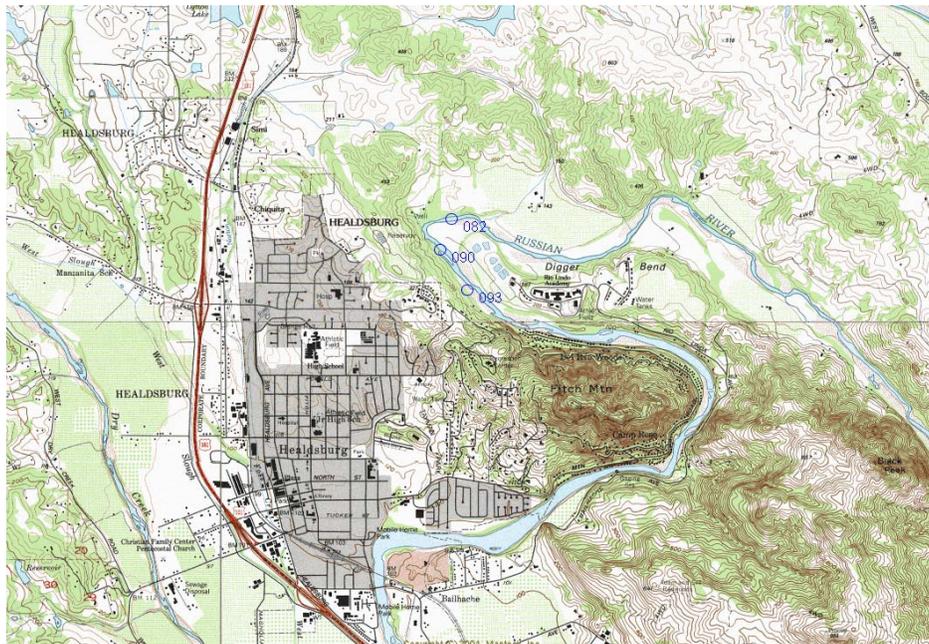


Figure 1. Rio Linda to Healdsburg Memorial Beach (points 082, 090, and 093 shown are GPS waypoint labels for three riffles measured within this reach)

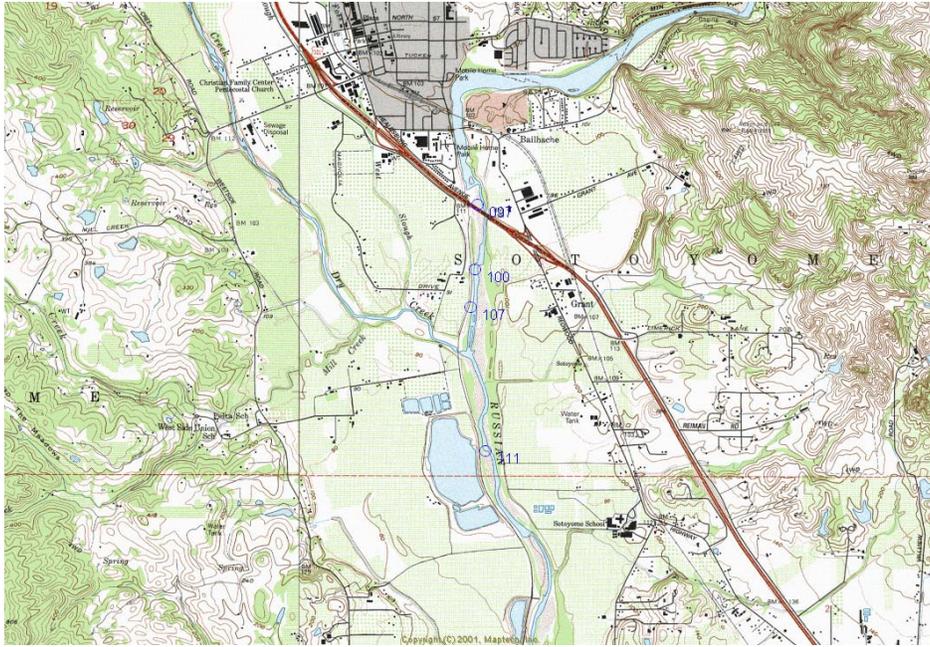


Figure 2. Healdsburg Memorial Beach to Wohler (points 097, 100, 107, and 111 shown are GPS waypoint labels for four riffles measured within this reach)

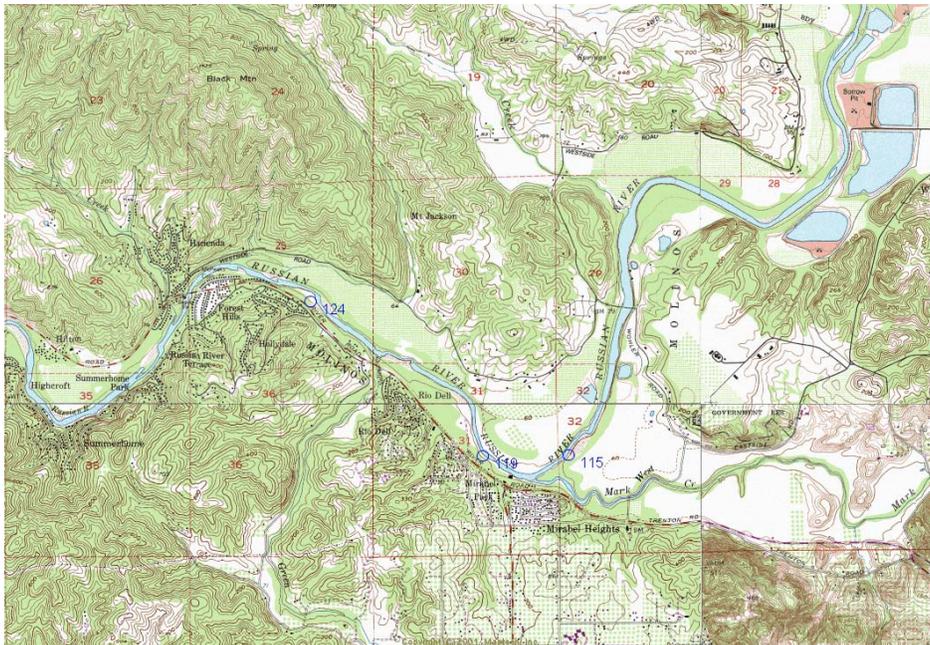


Figure 3. Wohler to Johnson's Beach, Guerneville points 115, 119, and 124 shown are GPS waypoint labels for three riffles measured within this reach)

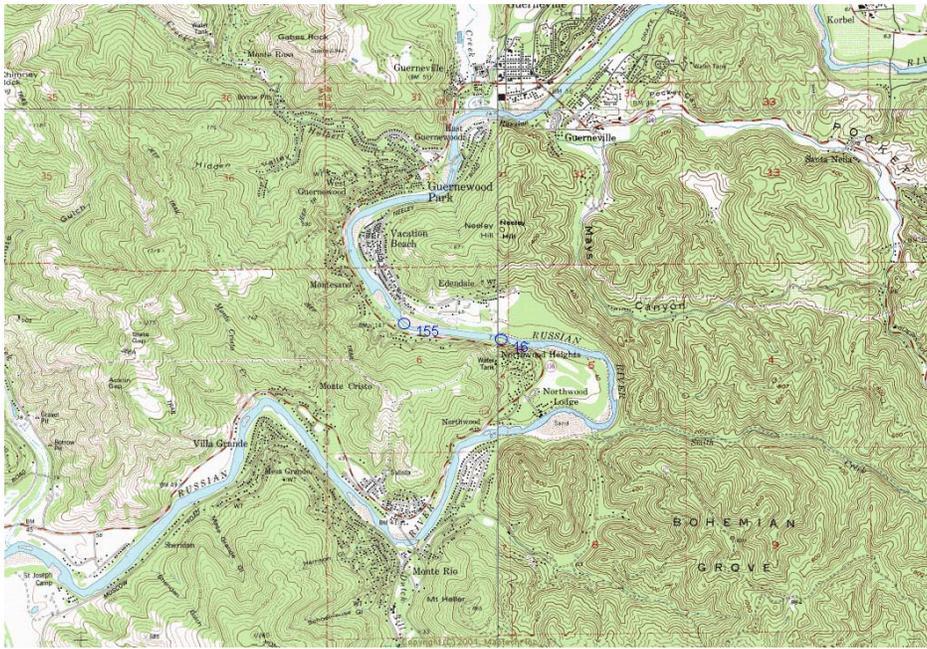


Figure 4. Johnson’s Beach, Guerneville to Casini Ranch (points 155 and 160 shown are GPS waypoint labels for two riffles measured within this reach)

One concern that SCWA staff heard during the meeting on June 9, 2009 (at the Monte Rio Community Center with representatives of recreation companies/advocates) was that it was necessary for SCWA to use the same types of boats that are most commonly utilized by the commercial recreation operators. Using these craft would allow SCWA to observe potential flow change effects in a similar manner as the recreational boaters. Lollie Mercer (River’s Edge Kayak and Canoe Trips) and Laura Wilson (Johnson’s Beach) both provided aluminum canoes for SCWA staff to use for collecting data for the recreation assessment. SCWA staff also used hard-sided kayaks for floating the different reaches. Generally, with either the aluminum canoes or hard-sided kayaks, these boats would start coming into contact with the river bottom at water depths of 0.6 to 0.7 feet (7 to 8 inches). These boats would generally strongly scrape bottom and get stuck at water depths below 0.5 feet (6 inches).

SCWA staff utilized the following protocol for data collection for the recreation assessment:

- Measure the first 3 riffles in a reach that are shallow enough that a canoe would have trouble crossing. Use a GPS to take a waypoint at each riffle. If time allows, additional riffles, if encountered, can be measured.
- Identify where in the channel, if possible, the thalweg (deepest flow line) through the riffle is located. Measure the length of the riffle along this thalweg line to the nearest foot. If the riffle is greater than 400 feet long take a 200 foot long representative sample of the riffle.
- Longitudinal profile measurements (depth measurements along the thalweg)
 - Divide the length of the riffle into 20 parts. On the data sheet note the length where each depth measurement will be taken. The zero point for the length of the longitudinal profile is at the upstream end of the riffle.

- Starting at the top of the riffle Take a depth measurement at each of the 20 sections following the best path a boat could navigate. This is generally the thalweg. However if the thalweg goes under trees then stretch the tape over the best path a boat could travel. If the depth of the riffle is uniform, run the tape down the center of the wetted width. Make a note on the longitudinal profile portion of the data sheet where the 25%, 50%, and 75% transects are located.
- Take a photograph of the longitudinal profile while standing at the upstream end of the riffle and facing downstream.
- Cross-Section measurements
 - Divide the length of the riffle into 4 parts and make a cross-section at 25%, 50%, and 75% downstream from the top of the riffle.
 - Flag each of the cross-section locations with surveyors' tape. On the surveyors' tape write "Rec. survey", the date, the riffle number, and the cross-section number. Number the riffles starting from the top of the reach and work down stream (i.e. the first riffle measured in that reach would be riffle #1 and the next riffle measured downstream of riffle #1 would be riffle #2). Number the cross-sections starting at the top of the riffle and work down stream (25% cross-section would be labeled "T-1" for transect number one). Mark each cross-section by hanging the labeled surveyors' tape from a tree branch in a location that accurately marks the cross-section, can be seen by SCWA staff, and is difficult for the general public to remove.
 - Take a photograph facing across the river at each transect. Take all photographs from the river right bank. If it is not possible to take the photographs from the river right bank then make a note on the data sheet that the photos were taken from the river left bank. This will allow us to take a multiple photos from the same location as the flows change during the summer and visually track these changes.
 - Stretch a measuring tape across the wetted width at each cross-section location. The zero reading for length for each cross-section should start at the river right bank and the tape should be stretched to the river left bank. Take the first depth measurement at 3 feet and take depth reading every 3 feet until the opposite bank is reached. Record all depths to the nearest 1/10 of a foot. Record the wetted width to the nearest foot. Make a note on each cross-section where the longitudinal profile intersected that cross-section.
- General comments
 - Make a note of anything related to recreation that occurs in the riffle that was just measured. For example this could be downed trees or large boulders that are difficult to navigate around, it could be that 3 canoes and a kayak pass over the riffle without the paddlers having to getting out of the boat, or it could be that 2 canoes capsize in the riffle.
 - Note general observations regarding other recreational activities or potential impacts to recreational activities (rope swings, popular swimming locations, algae blooms, etc.).

Study Results

For the high flow period (measurements taken June 16-19, 2009), SCWA staff took measurements at a total of 10 riffle sites in the study area. At each riffle site, measurements of the longitudinal profile and three cross-section transects were taken. SCWA staff then returned to these same 10 riffle sites at a lower flow (July 28 and 29 and August 3 and 4, 2009) and again took measurements of the longitudinal profile and three cross-sections at each riffle. SCWA staff also took measurements of two additional

riffle sites during the lower flow measurement period. Earlier measurements at these two sites weren't taken because it was not evident at the time that these sites would be riffle areas.²

The results of this data collection effort are summarized below in Tables 1 through 8. For these tables, the average depths along the longitudinal profile and each transect is provided. Please refer to Appendix A for a more detailed compilation of the data collection results.

For the Rio Linda to Healdsburg Memorial Beach reach (**Tables 1 and 2**), the changes in wetted widths at each of the cross-section transects ranged from increasing in width by 3 feet to decreasing in width by almost 50 feet. The change in average cross-section depths measured for this reach was generally a decrease in water depth of approximately 0.2 to 0.4 feet (2 to 5 inches). The change in average longitudinal profile depths measured for this reach ranged from an increase in water depth of 0.1 feet (1 inch) to a decrease of 0.4 feet (5 inches).

For the Healdsburg Memorial Beach to Wohler reach (**Tables 3 and 4**), the changes in wetted widths at each of the cross-section transects ranged from increasing in width by 3 feet to decreasing in width by a little over 80 feet. The change in average depths measured for this reach was generally a decrease in water depth of approximately 0.3 feet (4 inches). The change in average longitudinal profile depths measured for this reach ranged from a decrease in water depth of 0.3 to 0.6 feet (4 to 7 inches).

For the Wohler to Johnson's Beach (Guerneville) reach (**Tables 5 and 6**), none of the measurements for wetted width decreased within this reach. The wetted width measurements at each of the cross-section transects ranged from increasing in width from 3 feet up to 57 feet. Although the wetted width measurements for this reach increased, the average depths measured for this reach generally decreased by approximately 0.3 to 0.4 feet (4 to 5 inches). The change in average longitudinal profile depths measured for this reach ranged from a decrease in water depth of 0.1 to 0.4 feet (1 to 5 inches).

For the Johnson's Beach (Guerneville) to Casini Ranch reach (**Tables 7 and 8**), no measurements were taken during the June float because SCWA staff did not encounter any areas within this reach that could be characterized as riffles. At the time of the June float, the entire area of this reach from Johnson's Beach to Vacation Beach was impounded due to the presence of the Vacation Beach summer dam. In addition, at the time of the June float, the area between Vacation Beach and Casini Ranch was impounded (at least 1 foot or deeper) due to an extended closure of the sandbar at the mouth of the Russian River at Jenner. During the July/August float, the area upstream of Vacation Beach was still impounded; however, the sandbar at the mouth of the river was open and the area downstream of Vacation Beach was no longer significantly pooled. SCWA staff took measurements at two riffle points that were now evident during the July/August float through this reach with the average cross-section depths ranging from 0.3 to 0.8 feet (4 to 10 inches) and the average longitudinal depth ranging from 0.7 to 1.2 feet (8 to 14 inches).

² This was primarily due to the fact that the sandbar at the mouth of the Russian River at Jenner was closed at the time of the June float which resulted in deeper water depths in this location.

Table 1. Rio Linda to Healdsburg Memorial Beach – Longitudinal Profile

Date of Float	June 16, 2009	August 4, 2009	Change
Flow (cfs)			
RR at Digger Bend	142	76	-66
RR at Healdsburg	145	69	-76
RR near Guerneville	196	71	-125
Riffle 1 (feet)			
<i>Longitudinal Profile</i>			
Length	140	120	-20
Average Depth	1.7	1.3	-0.4
Shallowest Point	1.4	1.2	-0.2
Deepest Point	2.3	1.5	-0.8
Riffle 2 (feet)			
<i>Longitudinal Profile</i>			
Length	160	200	40
Average Depth	1.6	1.7	0.1
Shallowest Point	1.0	1.1	0.1
Deepest Point	2.7	2.5	-0.2
Riffle 3 (feet)			
<i>Longitudinal Profile</i>			
Length	400	300	-100
Average Depth	1.1	1.0	-0.1
Shallowest Point	0.8	0.6	-0.2
Deepest Point	1.5	1.3	-0.2

Table 2. Rio Linda to Healdsburg Memorial Beach – Cross Section

Date of Float		June 16, 2009	August 4, 2009	Change
Flow (cfs)				
	RR at Digger Bend	142	76	-66
	RR at Healdsburg	145	69	-76
	RR near Guerneville	196	71	-125
Riffle 1 (feet)				
	<i>Transect T1</i>			
	Width	84	84	0
	Average Depth	1.0	0.7	-0.3
	<i>Transect T2</i>			
	Width	87	90	3
	Average Depth	1.3	0.9	-0.4
	<i>Transect T3</i>			
	Width	87	84	-3
	Average Depth	1.7	1.3	-0.4
Riffle 2 (feet)				
	<i>Transect T1</i>			
	Width	177	165	-12.0
	Average Depth	1.0	0.5	-0.5
	<i>Transect T2</i>			
	Width	147	126	-21.0
	Average Depth	0.8	0.7	-0.1
	<i>Transect T3</i>			
	Width	126	111	-15
	Average Depth	1.3	2.0	0.7
Riffle 3 (feet)				
	<i>Transect T1</i>			
	Width	99	51	-48
	Average Depth	0.6	0.7	0.1
	<i>Transect T2</i>			
	Width	48	45	-3
	Average Depth	1.0	0.9	-0.1
	<i>Transect T3</i>			
	Width	60	54	-6
	Average Depth	1.1	0.8	-0.2

Table 3. Healdsburg Memorial Beach to Wohler – Longitudinal Profile

Date of Float		June 17, 2009	August 3, 2009	Change
Flow (cubic feet per second, cfs)				
	RR at Digger Bend	139	74	-65
	RR at Healdsburg	142	69	-73
	RR near Guerneville	185	75	-110
Riffle 1 (feet)				
	<i>Longitudinal Profile</i>			
	Length	160	121	-39
	Average Depth	1.4	0.8	-0.6
	Shallowest Point	1.1	0.6	-0.5
	Deepest Point	1.7	1.1	-0.6
Riffle 2 (feet)				
	<i>Longitudinal Profile</i>			
	Length	200	179	-21
	Average Depth	1.1	0.7	-0.4
	Shallowest Point	0.6	0.5	-0.1
	Deepest Point	1.9	1.3	-0.6
Riffle 3 (feet)				
	<i>Longitudinal Profile</i>			
	Length	200	200	0
	Average Depth	1.2	0.9	-0.3
	Shallowest Point	0.8	0.6	-0.2
	Deepest Point	1.4	1.4	0
Riffle 4 (feet)				
	<i>Longitudinal Profile</i>			
	Length	105	120	15
	Average Depth	1.5	1.2	-0.3
	Shallowest Point	0.9	0.6	-0.3
	Deepest Point	2.2	2.4	0.2

Table 4. Healdsburg Memorial Beach to Wohler – Cross Section

Date of Float		June 17, 2009	August 3, 2009	Change
Flow (cubic feet per second, cfs)				
	RR at Digger Bend	139	74	-65
	RR at Healdsburg	142	69	-73
	RR near Guerneville	185	75	-110
Riffle 1 (feet)				
	<i>Transect T1</i>			
	Width	81	78	-3
	Average Depth	0.8	0.6	-0.2
	<i>Transect T2</i>			
	Width	78	81	3
	Average Depth	1.0	0.6	-0.4
	<i>Transect T3</i>			
	Width	78	75	-3
	Average Depth	1.0	0.7	-0.3
Riffle 2 (feet)				
	<i>Transect T1</i>			
	Width	60	57	-3
	Average Depth	1.3	1.1	-0.2
	<i>Transect T2</i>			
	Width	63	63	0
	Average Depth	0.9	0.7	-0.2
	<i>Transect T3</i>			
	Width	42	45	3
	Average Depth	1.2	0.8	-0.4
Riffle 3 (feet)				
	<i>Transect T1</i>			
	Width	96	93	-3
	Average Depth	1.3	1.0	-0.3
	<i>Transect T2</i>			
	Width	90	90	0
	Average Depth	1.3	1.0	-0.3
	<i>Transect T3</i>			
	Width	87	87	0
	Average Depth	1.3	1.0	-0.3
Riffle 4 (feet)				
	<i>Transect T1</i>			
	Width	138	81	-57
	Average Depth	1.0	1.4	0.4
	<i>Transect T2</i>			
	Width	123	102	-21
	Average Depth	0.8	0.8	0
	<i>Transect T3</i>			
	Width	147	66	-81
	Average Depth	0.8	1.2	0.4

Table 5. Wohler to Guerneville – Longitudinal Profile

Date of Float	June 18, 2009	July 29, 2009	Change
Flow (cubic feet per second, cfs)			
RR at Digger Bend	131	73	-58
RR at Healdsburg	138	65	-73
RR near Guerneville	176	81	-95
Riffle 1 (feet)			
<i>Longitudinal Profile</i>			
Length	126	100	-26
Average Depth	1.0	0.9	-0.1
Shallowest Point	0.6	0.6	0
Deepest Point	1.6	1.5	-0.1
Riffle 2 (feet)			
<i>Longitudinal Profile</i>			
Length	160	180	20
Average Depth	1.5	1.1	-0.4
Shallowest Point	1.1	0.7	-0.4
Deepest Point	1.8	2.0	0.2
Riffle 3 (feet)			
<i>Longitudinal Profile</i>			
Length	112	120	8
Average Depth	1.1	0.8	-0.3
Shallowest Point	0.6	0.6	0
Deepest Point	2.0	1.6	-0.4

Table 6. Wohler to Guerneville – Cross Section

Date of Float		June 18, 2009	July 29, 2009	Change
Flow (cubic feet per second, cfs)				
	RR at Digger Bend	131	73	-58
	RR at Healdsburg	138	65	-73
	RR near Guerneville	176	81	-95
Riffle 1 (feet)				
	<i>Transect T1</i>			
	Width	129	132	3
	Average Depth	1.0	0.8	-0.2
	<i>Transect T2</i>			
	Width	123	132	9
	Average Depth	1.1	0.7	-0.4
	<i>Transect T3</i>			
	Width	105	108	3
	Average Depth	1.5	1.1	-0.4
Riffle 2 (feet)				
	<i>Transect T1</i>			
	Width	81	84	3
	Average Depth	0.9	0.6	-0.3
	<i>Transect T2</i>			
	Width	75	84	9
	Average Depth	0.8	0.4	-0.4
	<i>Transect T3</i>			
	Width	66	72	6
	Average Depth	1.0	0.6	-0.4
Riffle 3 (feet)				
	<i>Transect T1</i>			
	Width	222	231	9
	Average Depth	0.6	0.3	-0.3
	<i>Transect T2</i>			
	Width	126	183	57
	Average Depth	1.1	0.4	-0.7
	<i>Transect T3</i>			
	Width	114	150	36
	Average Depth	1.4	0.8	-0.6

Table 7. Guerneville to Casini – Longitudinal Profile

Date of Float	June 19, 2009	July 28, 2009	Change
Flow (cubic feet per second, cfs)			
RR at Digger Bend	123	77	-46
RR at Healdsburg	133	69	-64
RR near Guerneville	172	78	-94
Riffle 1 (feet)	No data collected		
<i>Longitudinal Profile</i>			
Length		100	
Average Depth		1.2	
Shallowest Point		0.7	
Deepest Point		2.8	
Riffle 2 (feet)	No data collected		
<i>Longitudinal Profile</i>			
Length		140	
Average Depth		0.7	
Shallowest Point		0.5	
Deepest Point		1.2	

Table 8. Guerneville to Casini – Cross Section

Date of Float	June 19, 2009	July 28, 2009	Change
Flow (cubic feet per second, cfs)			
RR at Digger Bend	123	77	-46
RR at Healdsburg	133	69	-64
RR near Guerneville	172	78	-94
Riffle 1 (feet)	No data collected		
<i>Transect T1</i>			
Width		90	
Average Depth		0.6	
<i>Transect T2</i>			
Width		87	
Average Depth		0.4	
<i>Transect T3</i>			
Width		93	
Average Depth		0.3	
Riffle 2 (feet)	No data collected		
<i>Transect T1</i>			
Width		186	
Average Depth		0.7	
<i>Transect T2</i>			
Width		147	
Average Depth		0.6	
<i>Transect T3</i>			
Width		156	
Average Depth		0.8	

Observations/Discussion

SCWA staff noted a measureable drop in average water depths of 3 to 5 inches in the shallow riffle areas along the Russian River in the study area. However, when looking at the overall cross-section measurements (Appendix A), SCWA staff found that there was generally a sufficient depth at most of the riffle areas to maneuver a boat if the boat operator selected the right course.³ SCWA staff also noted that the Russian River within the study area has numerous deep pools and runs that are separated by short riffle areas. The change in flows essentially had no impact in the deep pool and run areas from a boating perspective. Seasonal impoundments⁴ appeared to impact boating opportunities more than the flow changes experienced during the data collection for this assessment. These summer impoundments set the water elevation for the pool that backs up behind the impoundment, and as long as water is still flowing over the impoundment, the pool area available for boating remains relatively unchanged under

³ This appeared independent of flow conditions. SCWA staff observed under both the flow conditions that some people managed to get stuck in a riffle while others did not. Operator skill is a difficult factor to replicate.

⁴ Healdsburg Memorial Beach Summer Dam, SCWA's inflatable dam at Mirabel, Johnson's Beach Summer Dam, Vacation Beach Summer Dam, and the sandbar at the mouth of the Russian River at Jenner.

different flows. A more noticeable impact to boating opportunities occurred when there was a change in the summer impoundments. In the Rio Linda to Healdsburg Memorial Beach reach, the Healdsburg Memorial Beach Summer Dam was not in place when SCWA staff floated this reach during the higher June flows. Water depths in June in the lower portion of this reach were much lower than later in the summer when flows were decreased but the summer dam was in place. In addition, as already noted, the area below Vacation Beach was similarly affected by the opening of the sandbar at the river mouth.

Although SCWA staff documented measurable changes in water depth at riffles, these changes did not appear to hamper recreational opportunities. The Russian River was generally navigable under the range of flows evaluated. Please refer to Appendix C for photos documenting the conditions experienced by SCWA staff along the Russian River from June through August 2009. In addition, please refer to Appendix D for various newspaper articles on Russian River recreation that were published in different newspapers this summer.

Appendix A

Data Results

Rio Linda to Healdsburg Memorial Beach

Location:

R1	waypoint 82 ¹	N 38° 37.984'	W 122° 51.177'
R2	waypoint 90	N 38° 37.838'	W 122° 51.246'
R3	waypoint 93	N 38° 37.648'	W 122° 51.083'

Date of Float:

June 16, 2009

August 4, 2009

Russian River Flows:²

RR at Digger Bend (Station No. 11463980)	142	76
RR at Healdsburg (Station No. 11464000)	145	69
RR near Guerneville (Station No. 11467000)	196	71

Crew:

David Cuneo	David Cuneo
Justin Smith	Justin Smith
Nathan Goddard	Andrew Moratto

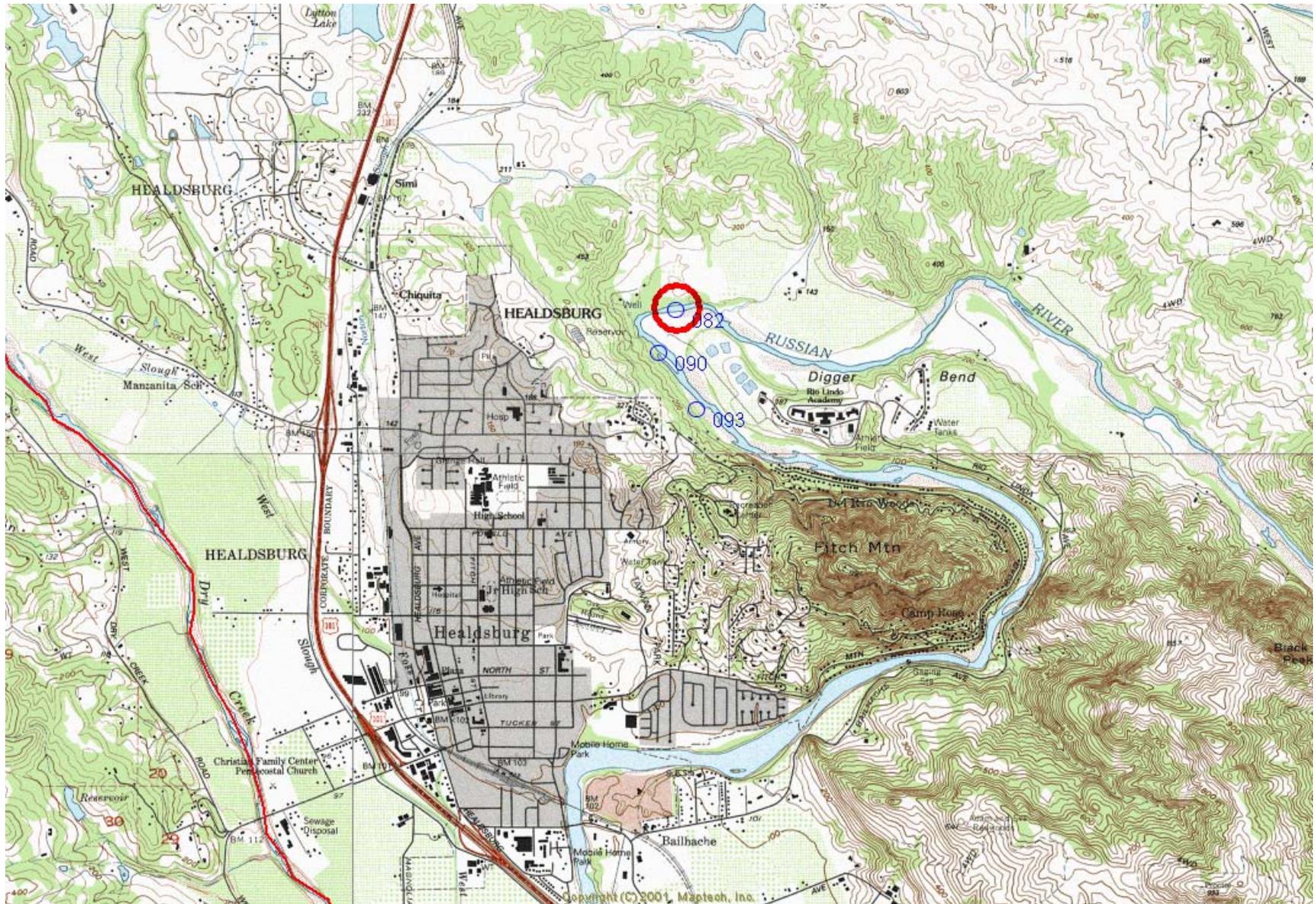
Boats:

Canoe	Canoe
Kayak	Kayak

¹ Garmin GPS 12 handheld GPS unit used. All coordinates using WGS 84 Datum.

² Flow is in cubic feet per second (cfs). All flow data is the noontime reading for the day of the float obtained from the U.S. Geologic Survey :

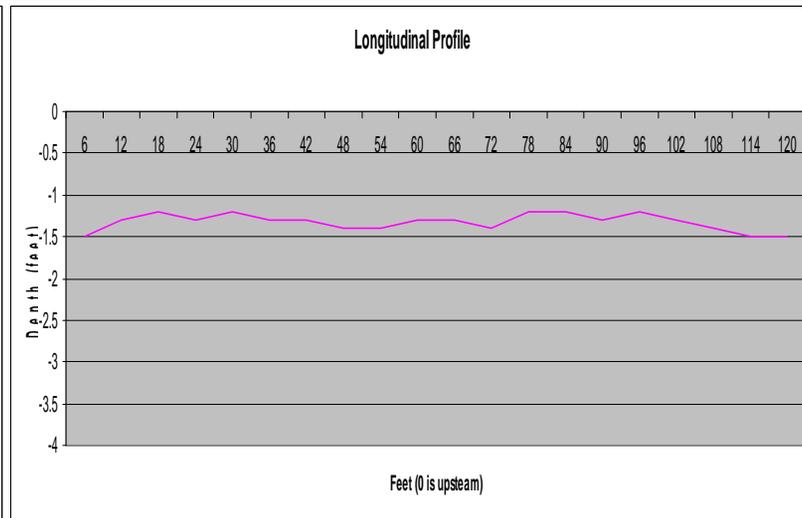
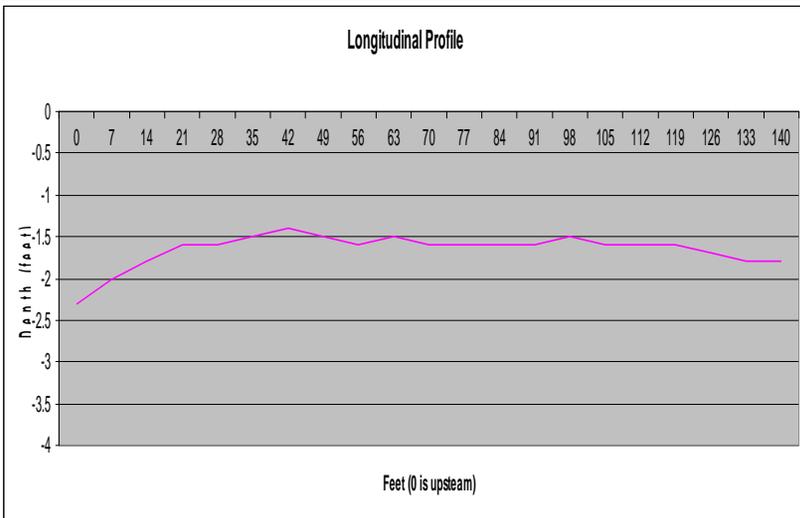
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RioLinda to Healdsburg Memorial Beach – Riffle 1

June 16, 2009

August 4, 2009



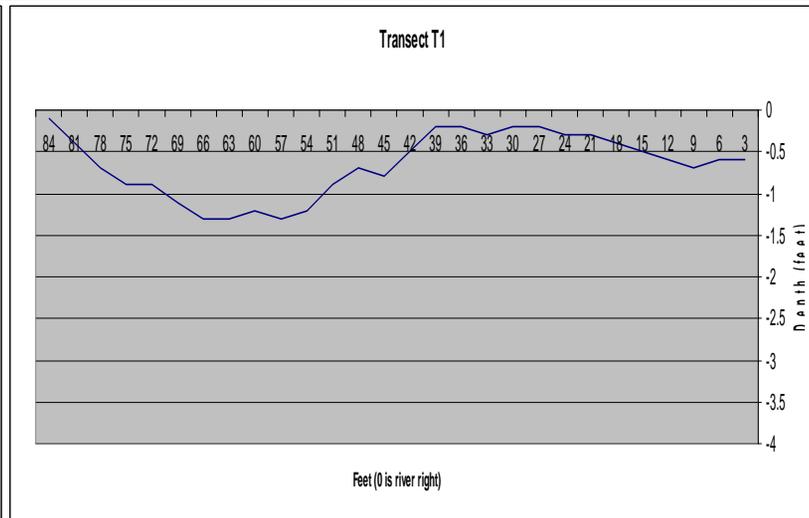
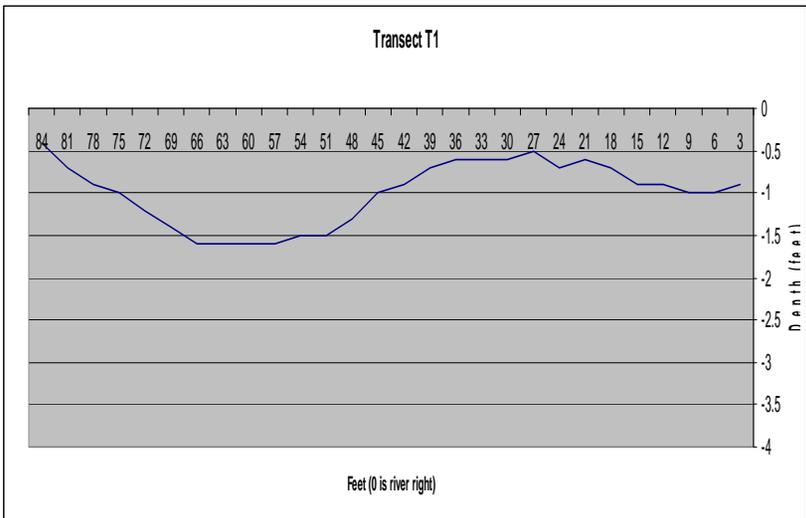
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 RR at Healdsburg 145cf
 RR near Guerneville 196cfs

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 71cfs

RioLinda to Healdsburg Memorial Beach – Riffle 1

June 16, 2009

August 4, 2009



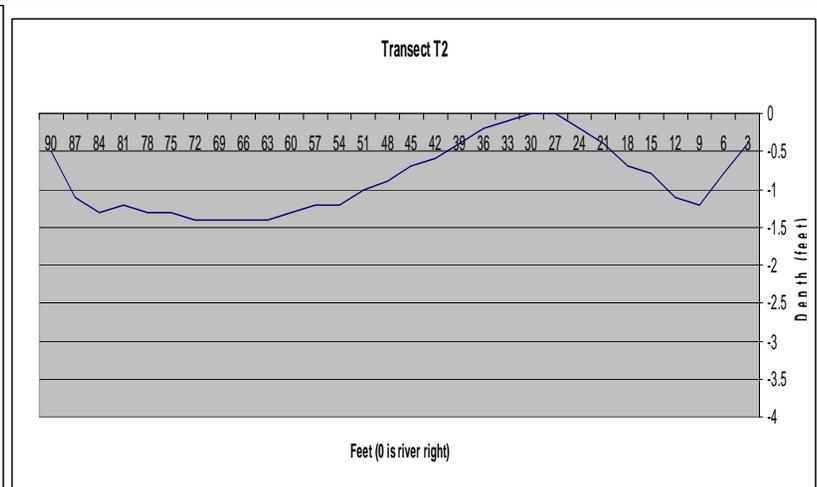
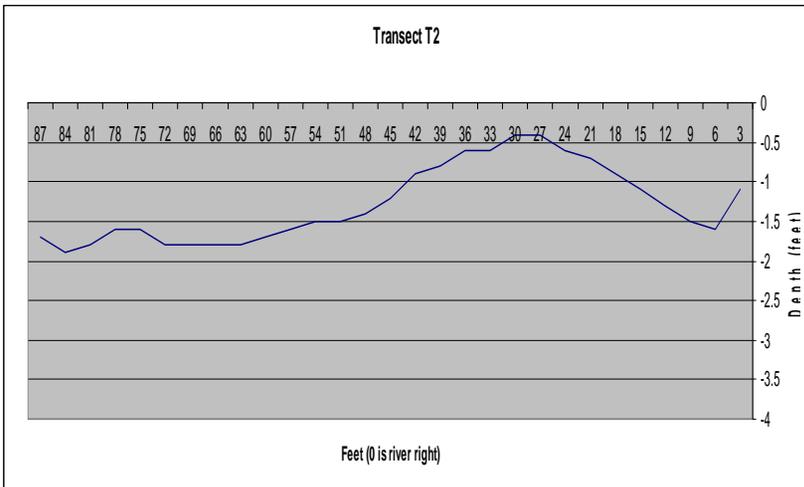
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RioLinda to Healdsburg Memorial Beach – Riffle 1

June 16, 2009

August 4, 2009



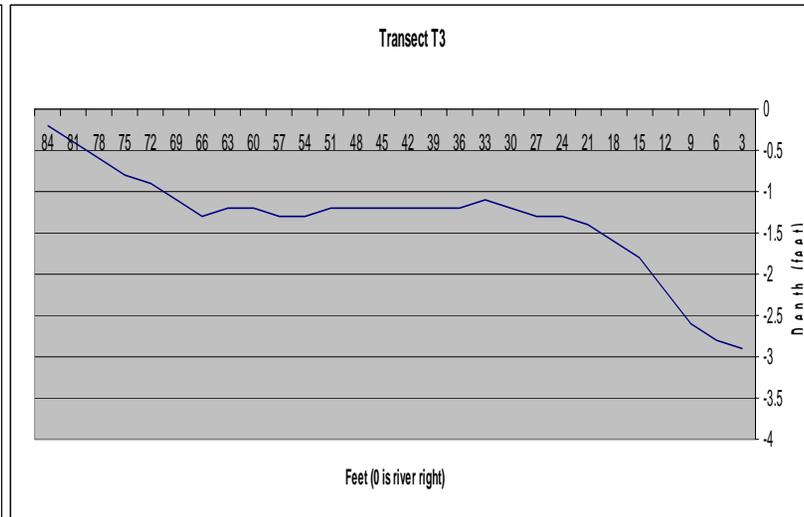
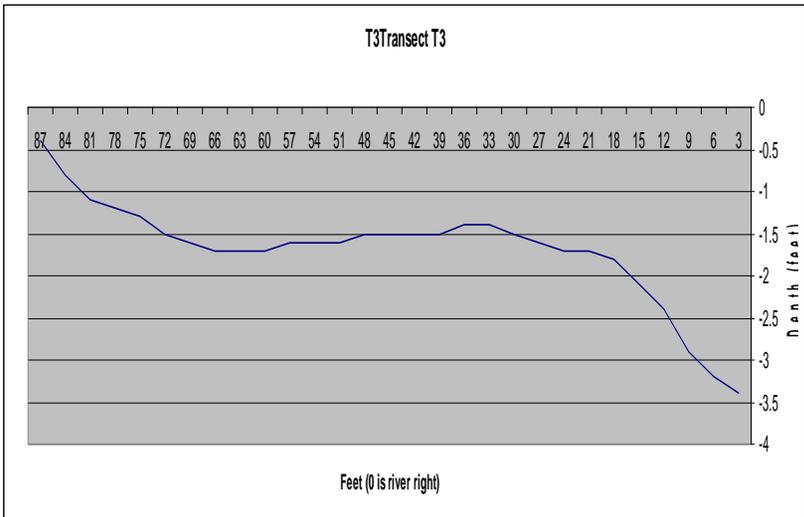
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76cfs
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 71cfs

RioLinda to Healdsburg Memorial Beach – Riffle 1

June 16, 2009

August 4, 2009



RR at Digger Bend 142cfs
 RR at Healdsburg 145cf
 RR near Guerneville 196cfs

76cfs
 69cfs
 71cfs

RioLinda to Healdsburg Memorial Beach – Riffle 2

June 16, 2009

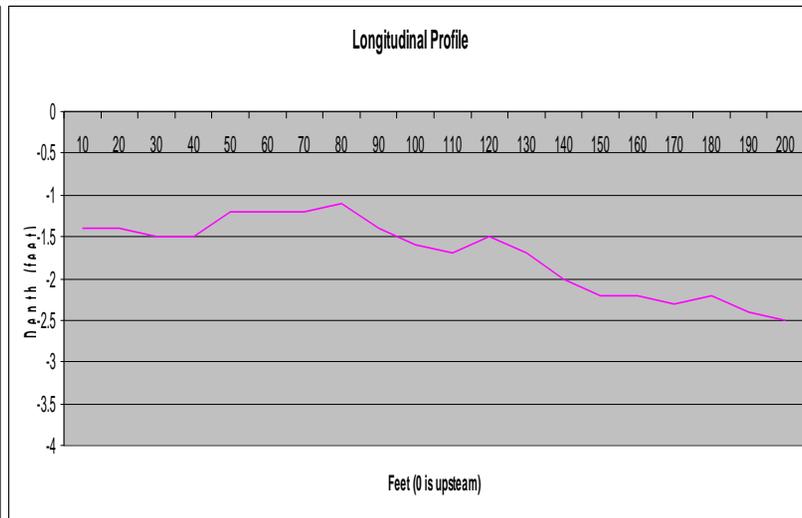
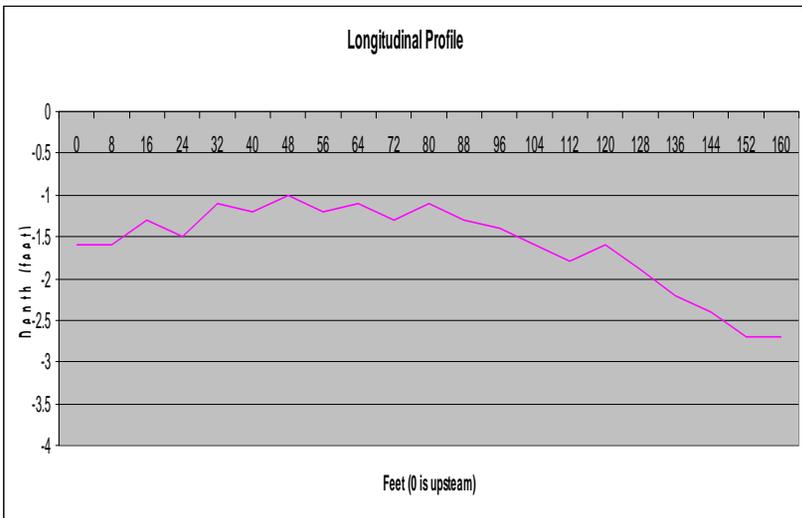
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RioLinda to Healdsburg Memorial Beach – Riffle 2

June 16, 2009

August 4, 2009



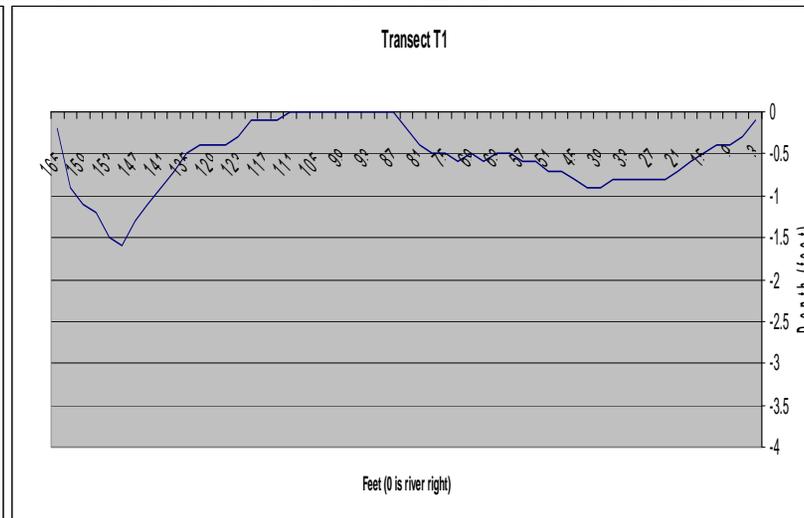
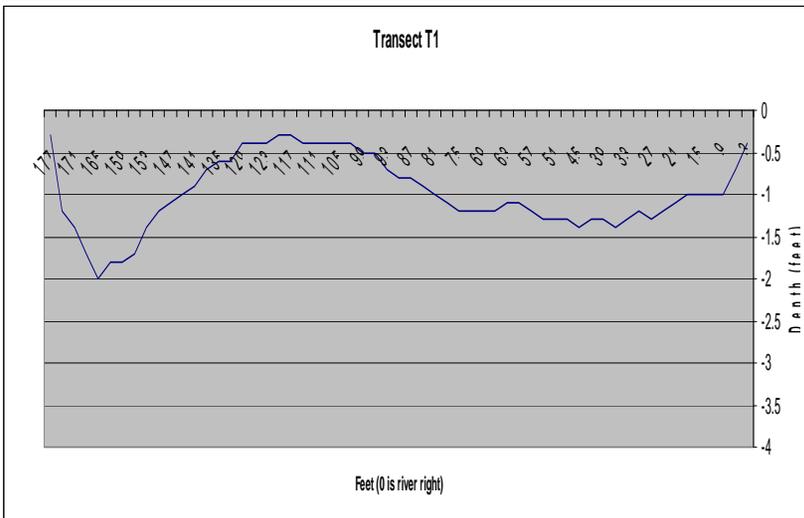
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RioLinda to Healdsburg Memorial Beach – Riffle 2

June 16, 2009

August 4, 2009



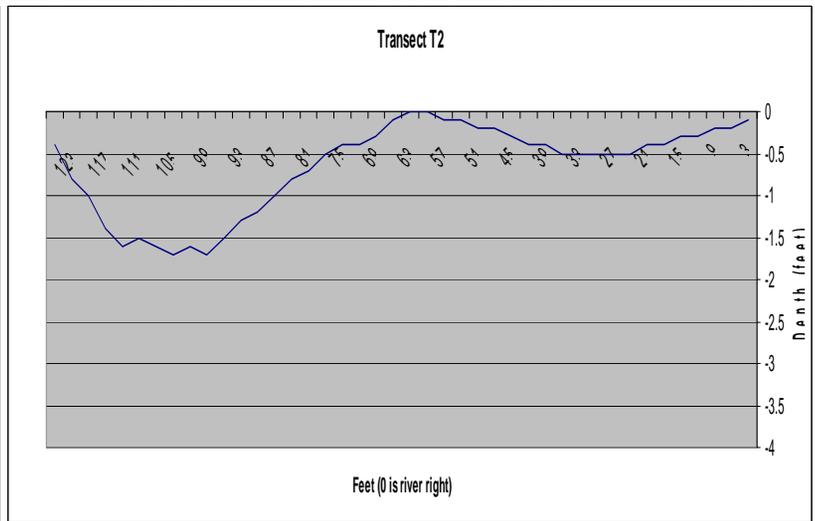
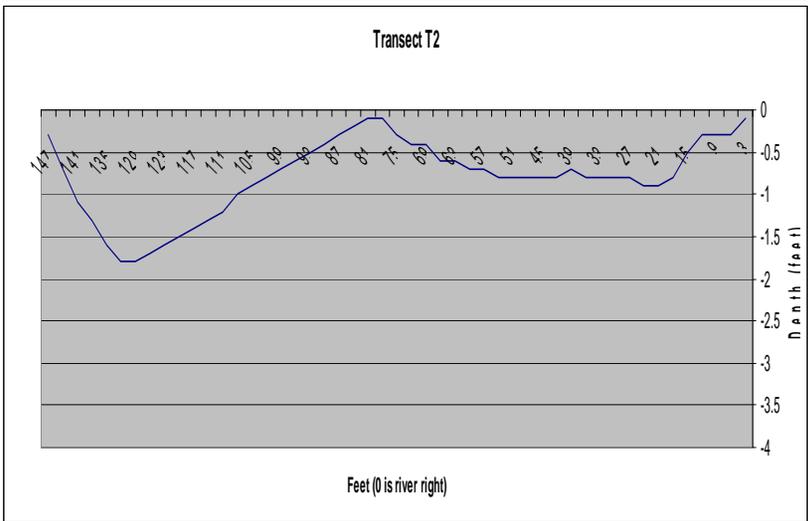
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RioLinda to Healdsburg Memorial Beach – Riffle 2

June 16, 2009

August 4, 2009



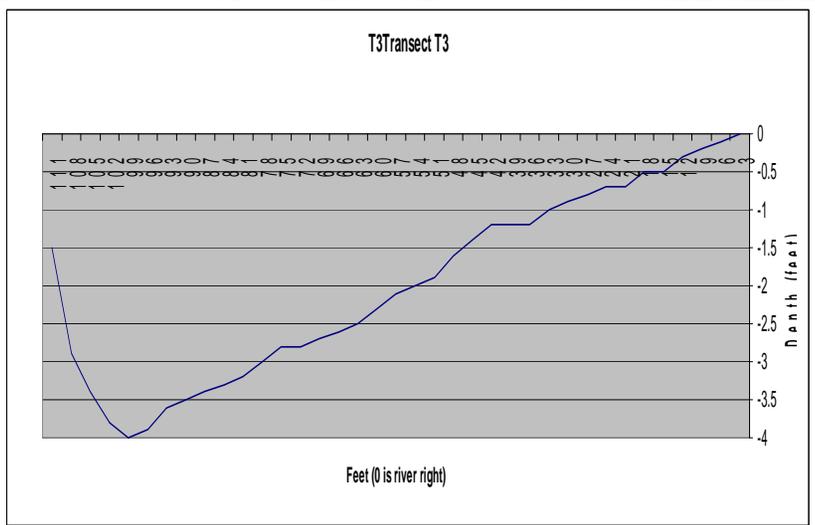
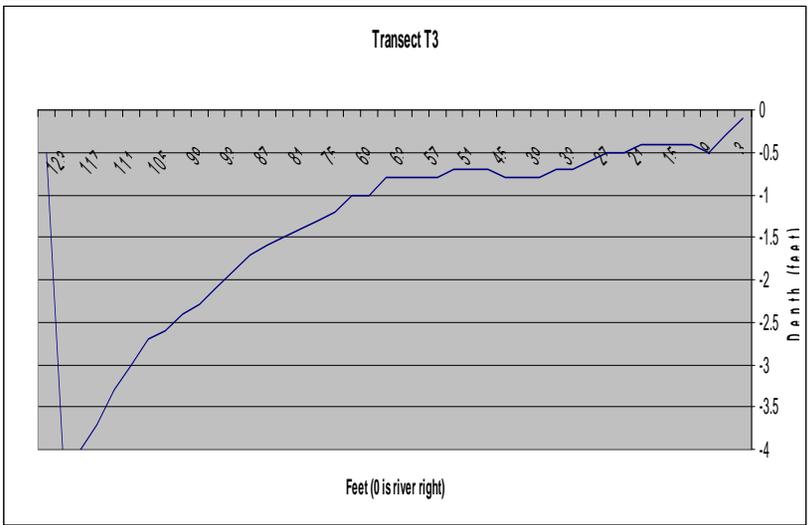
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RioLinda to Healdsburg Memorial Beach – Riffle 2

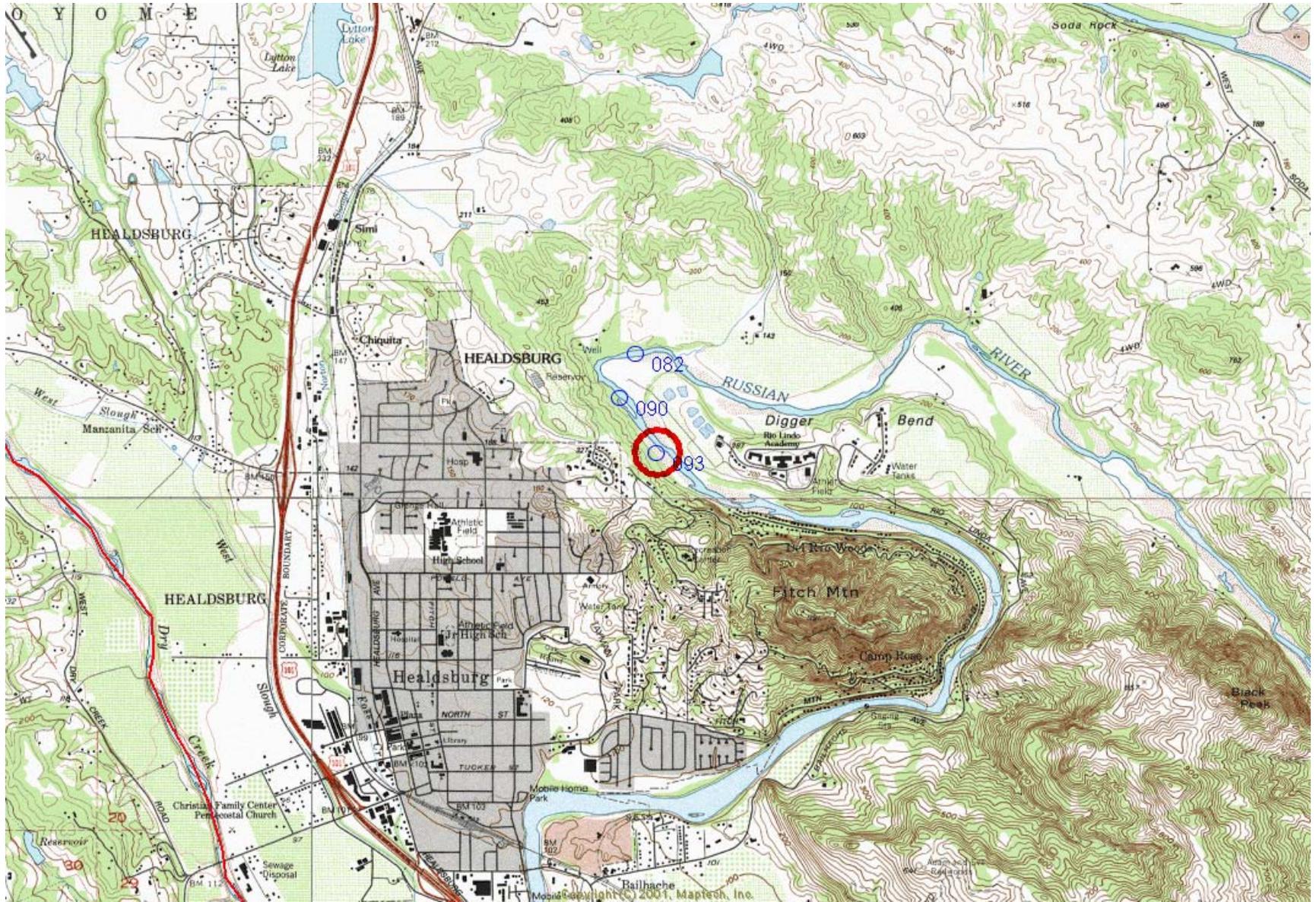
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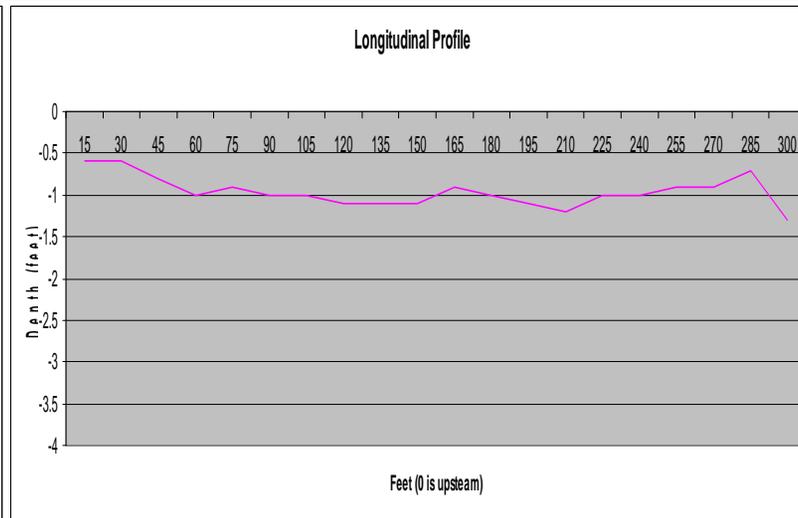
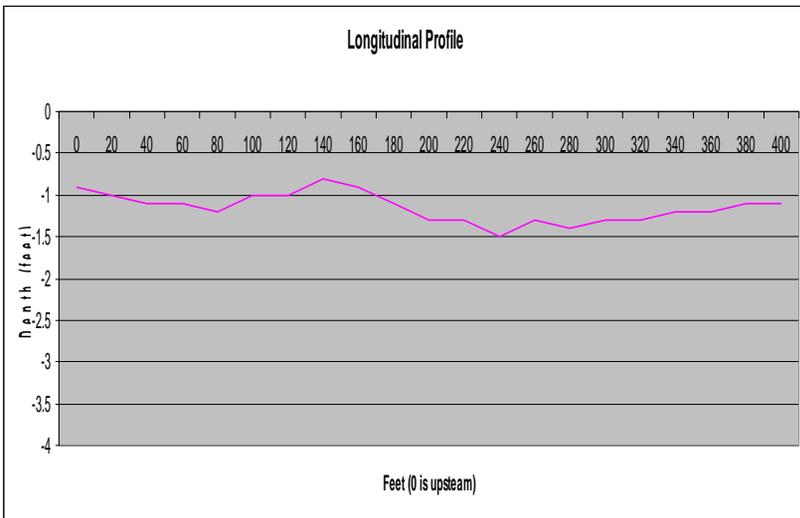
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RioLinda to Healdsburg Memorial Beach – Riffle 3

June 16, 2009

August 4, 2009



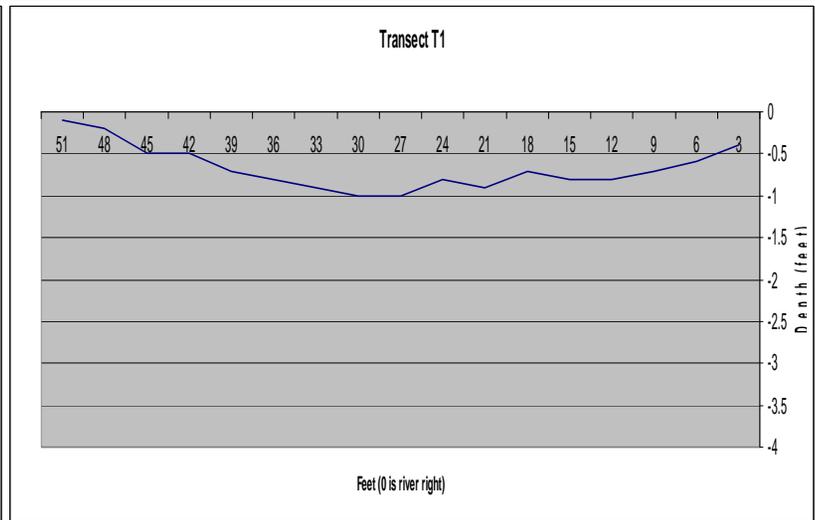
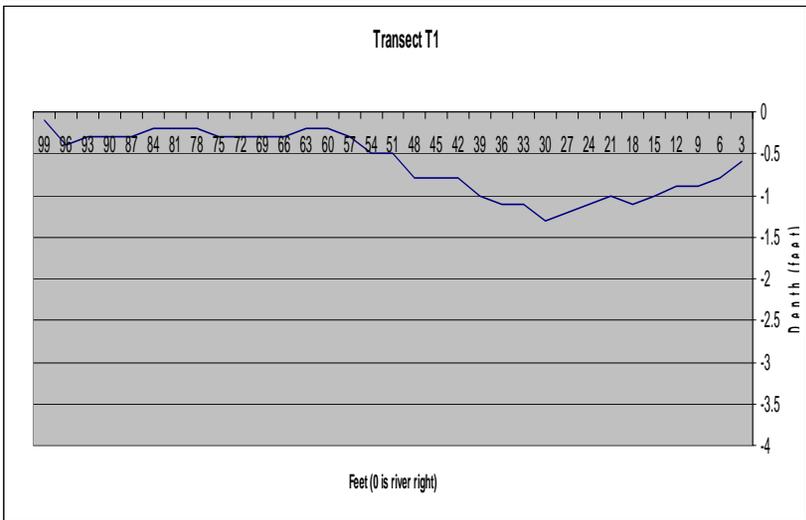
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 71cfs

RioLinda to Healdsburg Memorial Beach – Riffle 3

June 16, 2009

August 4, 2009



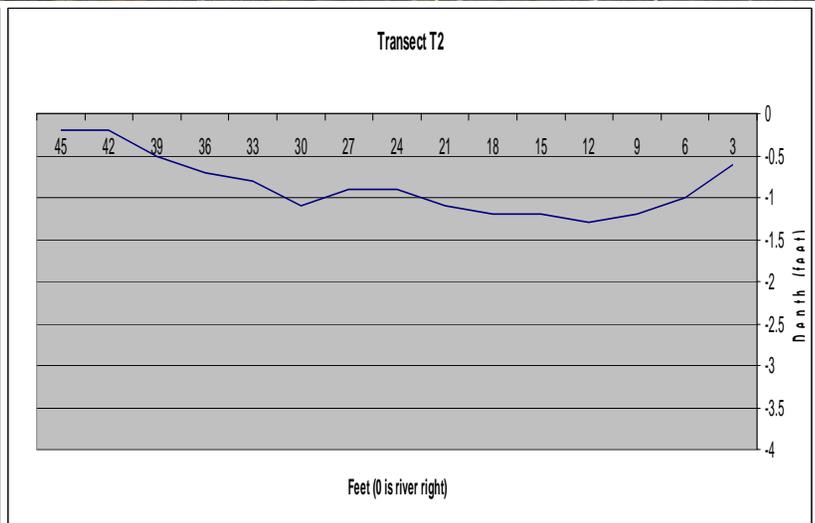
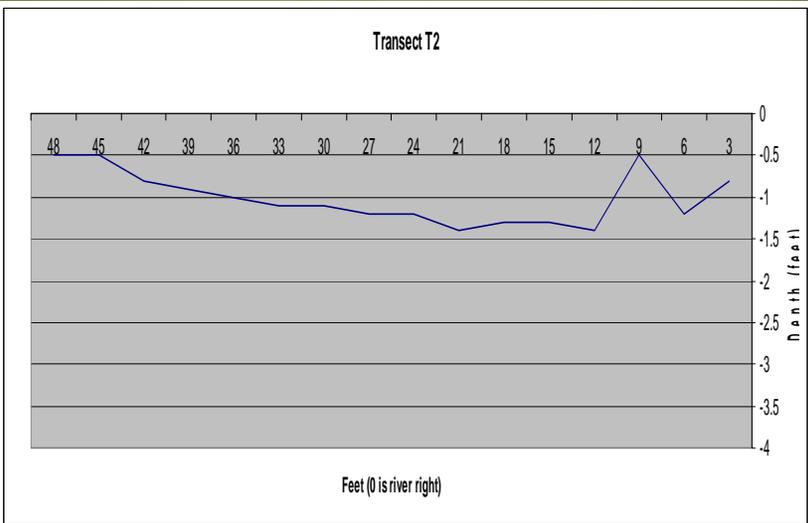
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RioLinda to Healdsburg Memorial Beach – Riffle 3

June 16, 2009

August 4, 2009



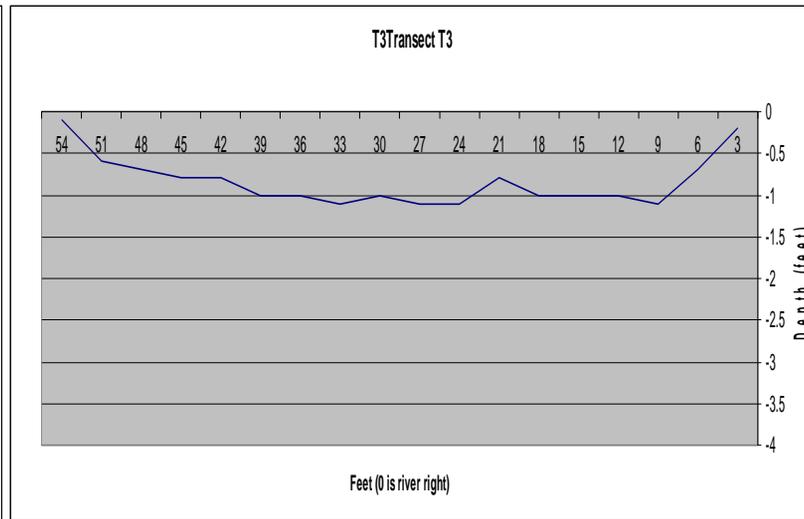
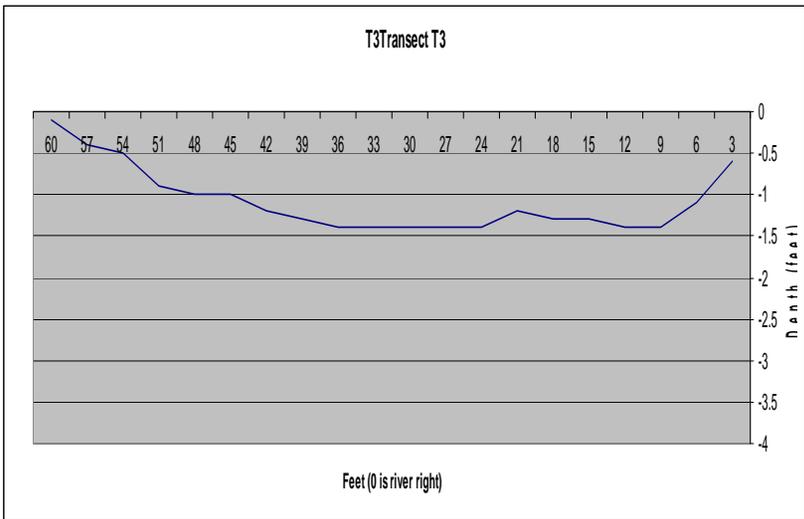
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RioLinda to Healdsburg Memorial Beach – Riffle 3

June 16, 2009

August 4, 2009



RR at Digger Bend 142cfs
 RR at Healdsburg 145cf
 RR near Guerneville 196cfs

76cfs
 69cfs
 71cfs

Healdsburg Memorial Beach to Wohler

Location:

R1	waypoint 97 ³	N 38° 35.883'	W 122°51.487'
R2	waypoint 100	N 38° 35.578'	W 122°51.500'
R3	waypoint 107	N 38°35.398'	W 122°51.530'
R4	waypoint 111	N 38°34.716'	W 122°51.441'

Date of Float:

June 17, 2009

August 3, 2009

Russian River Flows:⁴

RR at Digger Bend (Station No. 11463980)	139	74
RR at Healdsburg (Station No. 11464000)	142	69
RR near Guerneville (Station No. 11467000)	185	75

Crew:

David Cuneo	David Cuneo
Justin Smith	Justin Smith
Nathan Goddard	Andrew Moratto
Larry Laba	

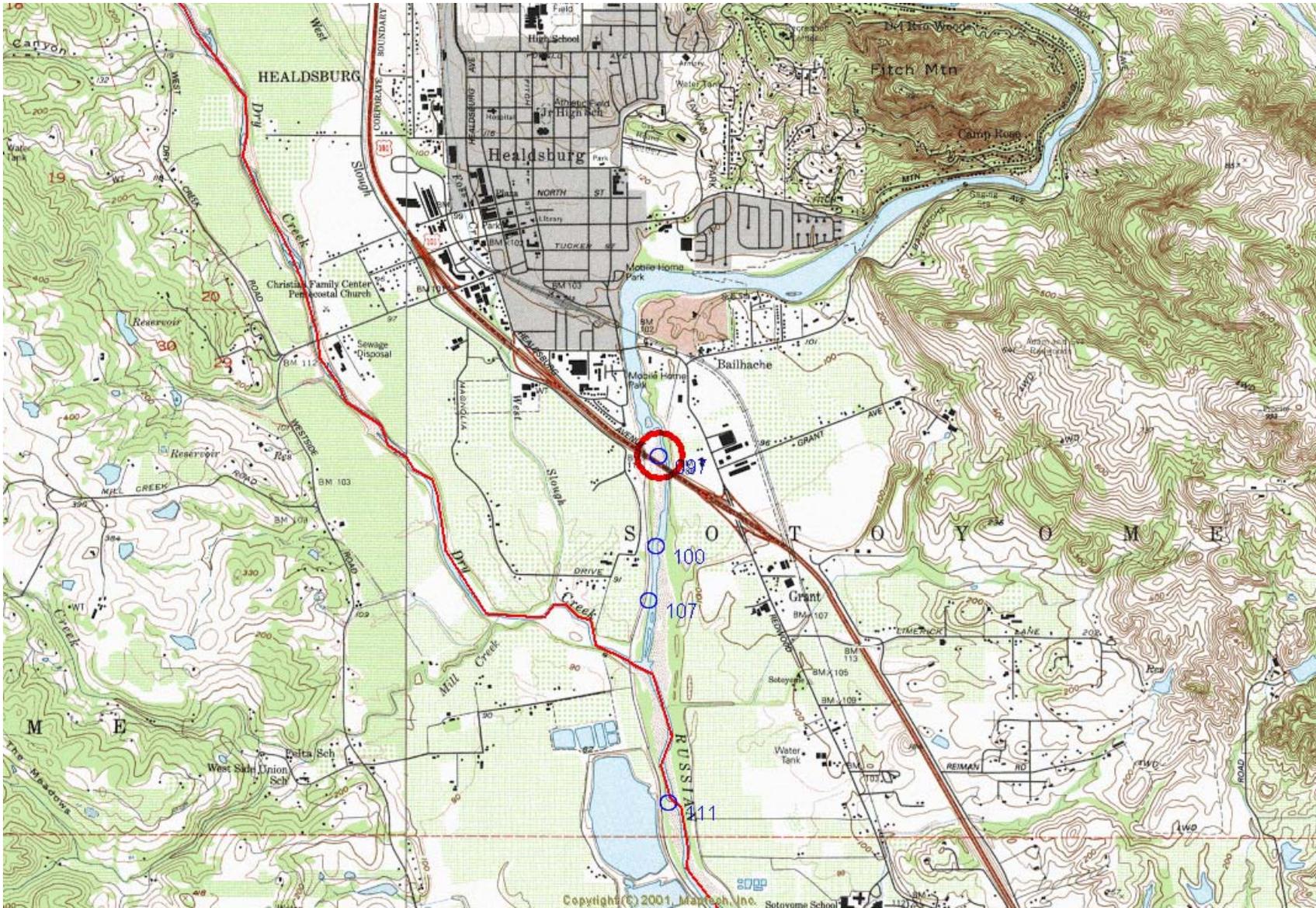
Boats:

Canoe	Canoe
Kayak	Kayak
SOAR Inflatable	

³ Garmin GPS 12 handheld GPS unit used. All coordinates using WGS 84 Datum.

⁴ Flow is in cubic feet per second (cfs). All flow data is the noontime reading for the day of the float obtained from the U.S. Geologic Survey :

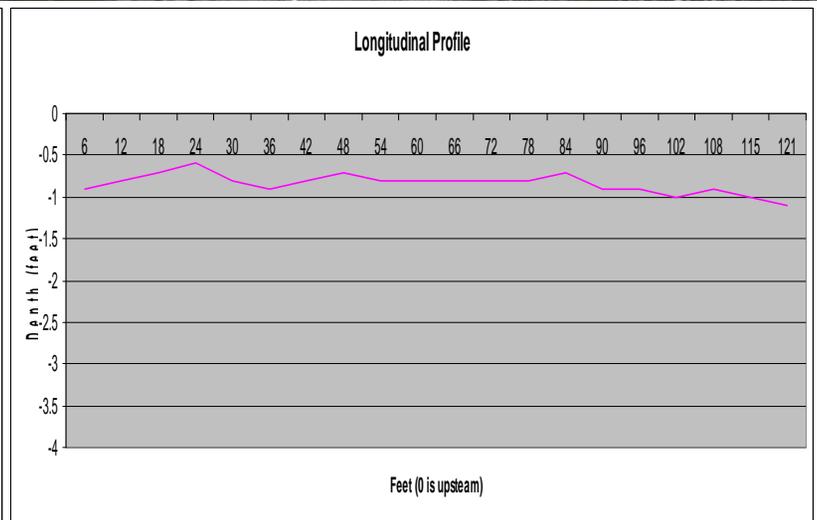
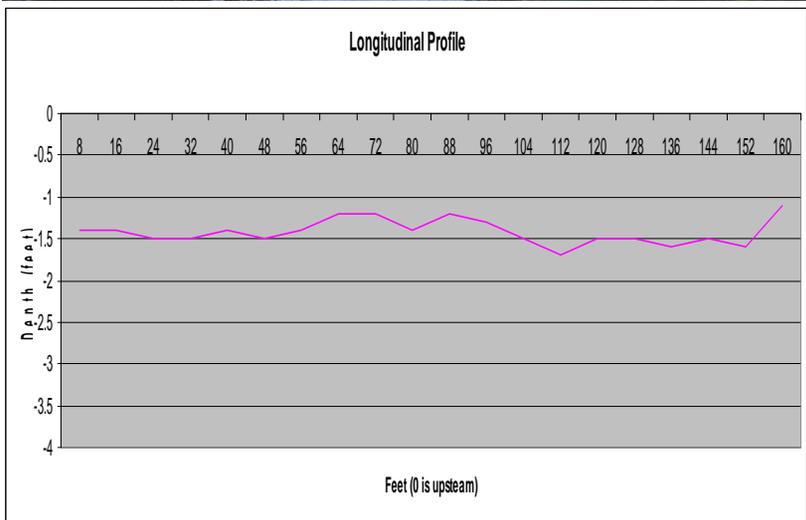
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Healdsburg Memorial Beach to Wohler – Riffle 1

June 17, 2009

August 3, 2009



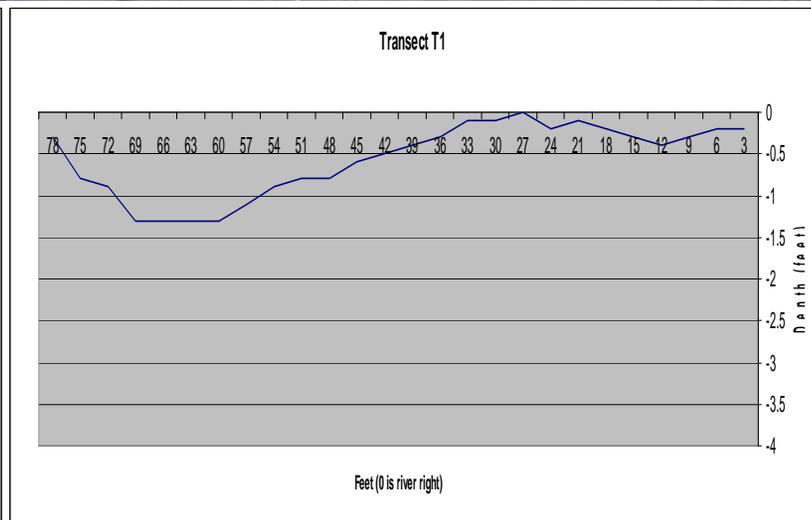
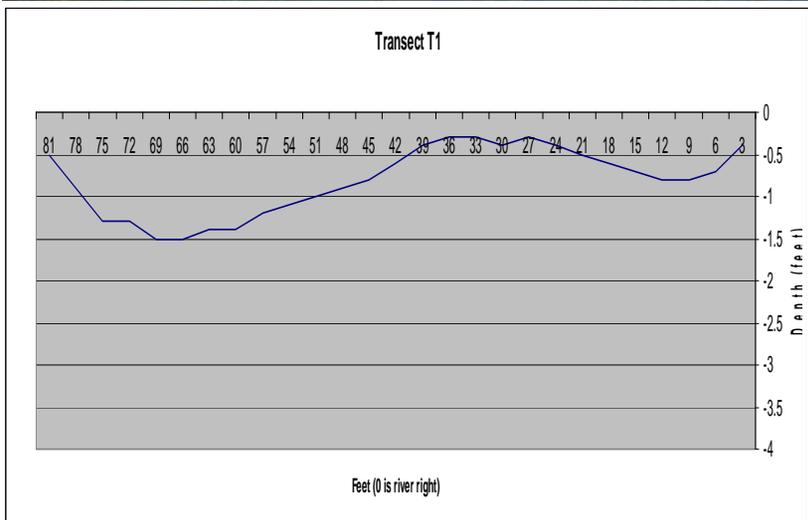
RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 1

June 17, 2009

August 3, 2009



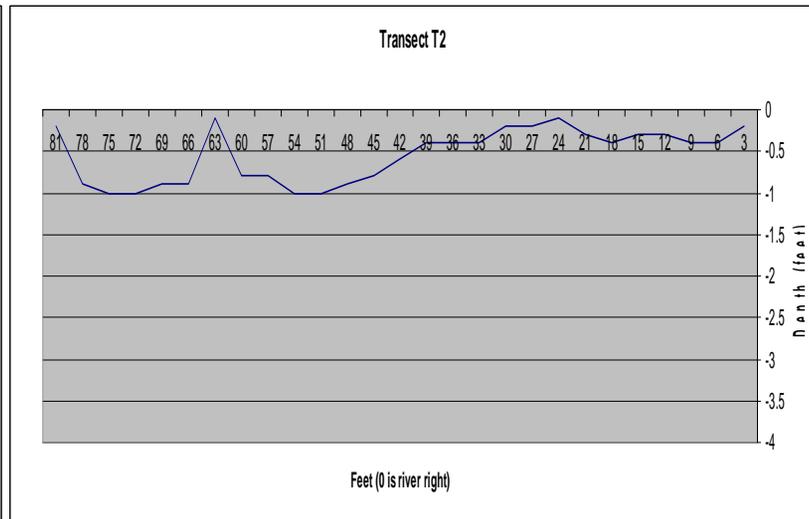
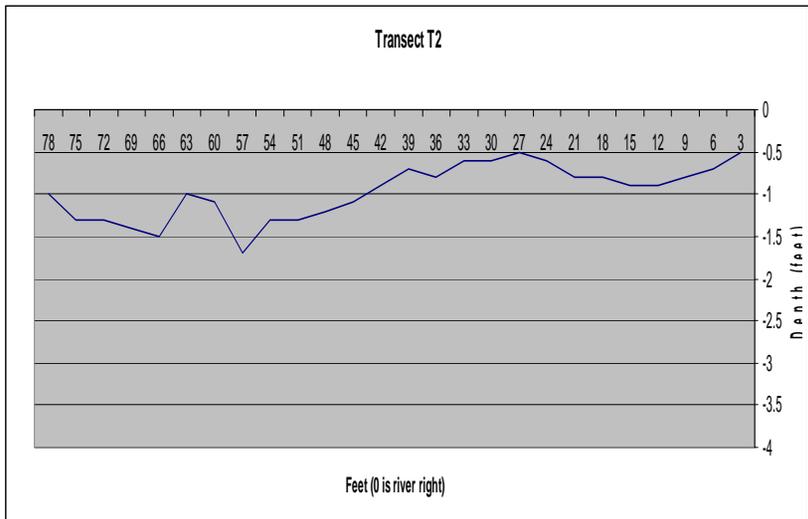
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Healdsburg Memorial Beach to Wohler – Riffle 1

June 17, 2009

August 3, 2009



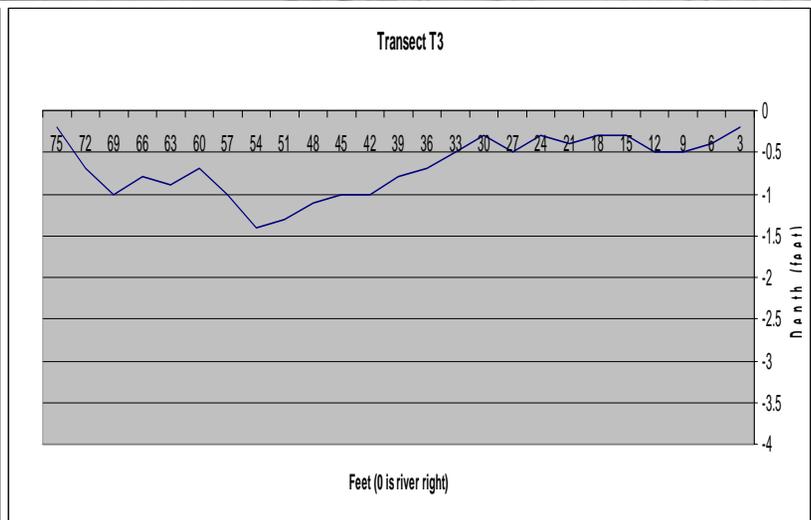
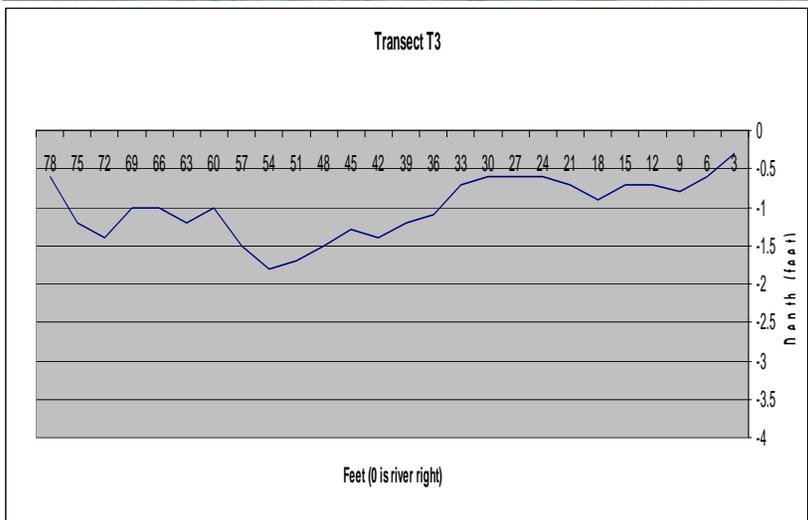
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Healdsburg Memorial Beach to Wohler – Riffle 1

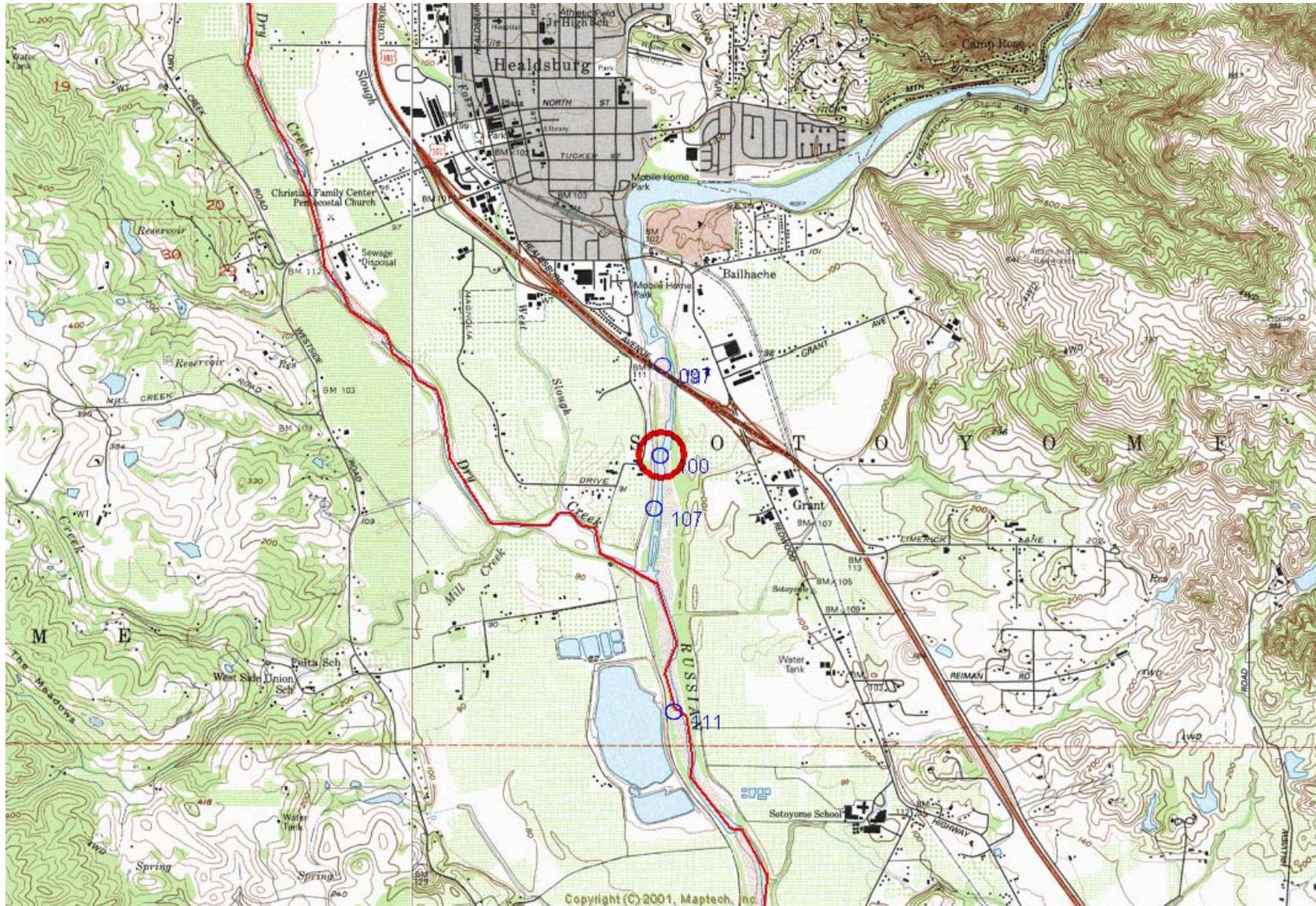
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August 3, 2009



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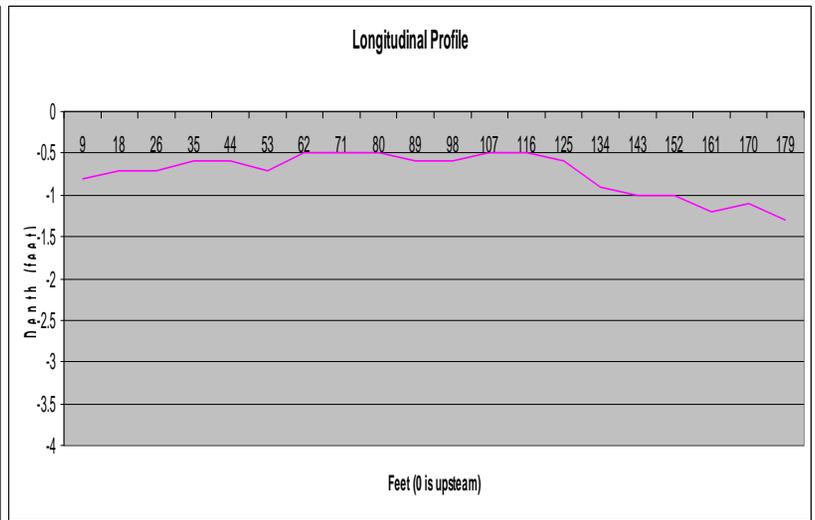
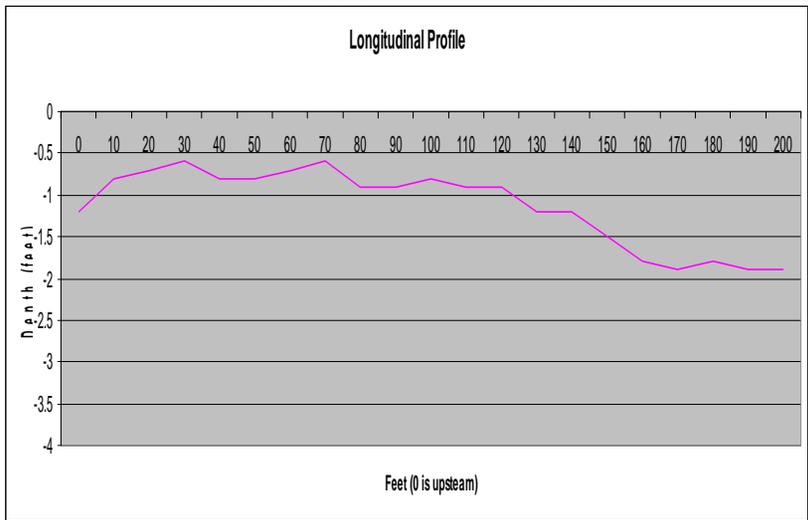
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 75cfs



Healdsburg Memorial Beach to Wohler – Riffle 2

June 17, 2009

August 3, 2009



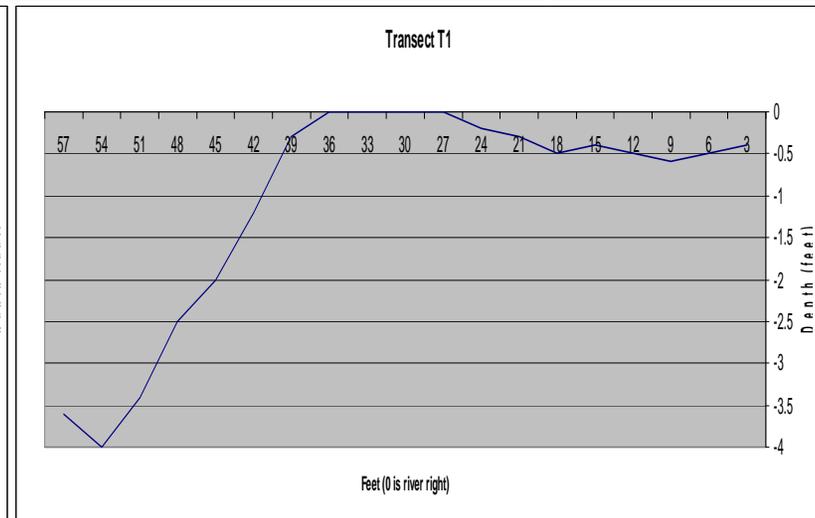
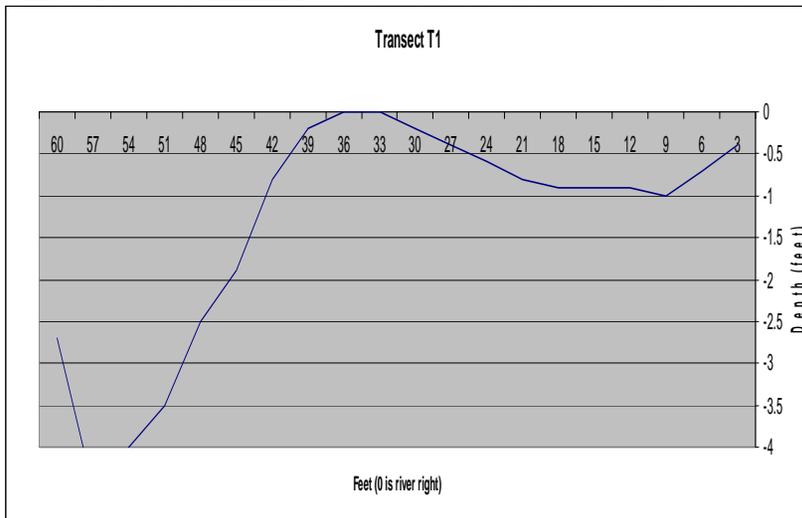
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 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 2

June 17, 2009

August 3, 2009



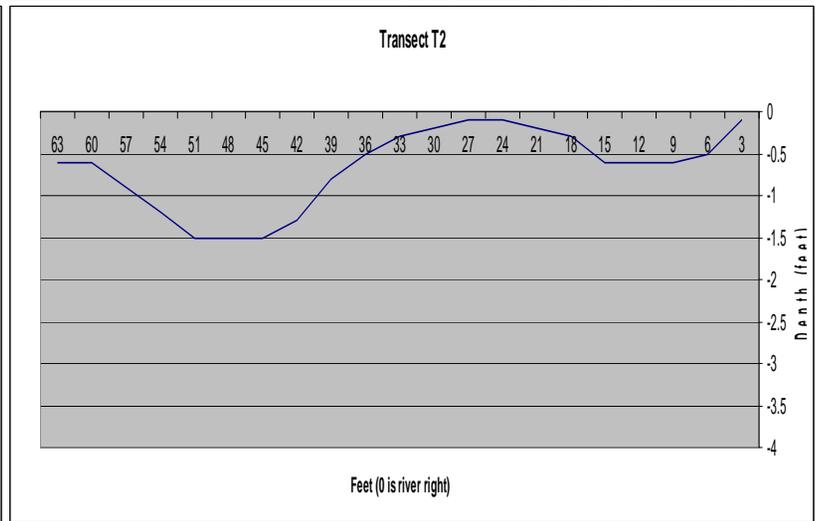
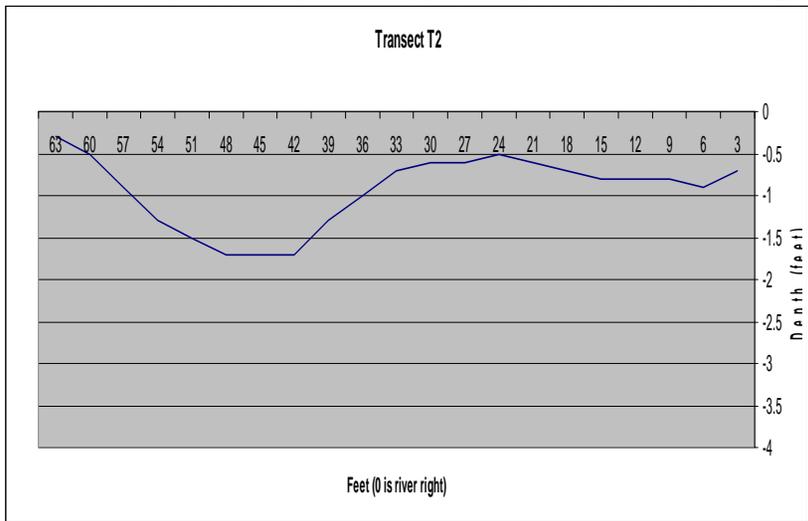
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 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 2

June 17, 2009

August 3, 2009



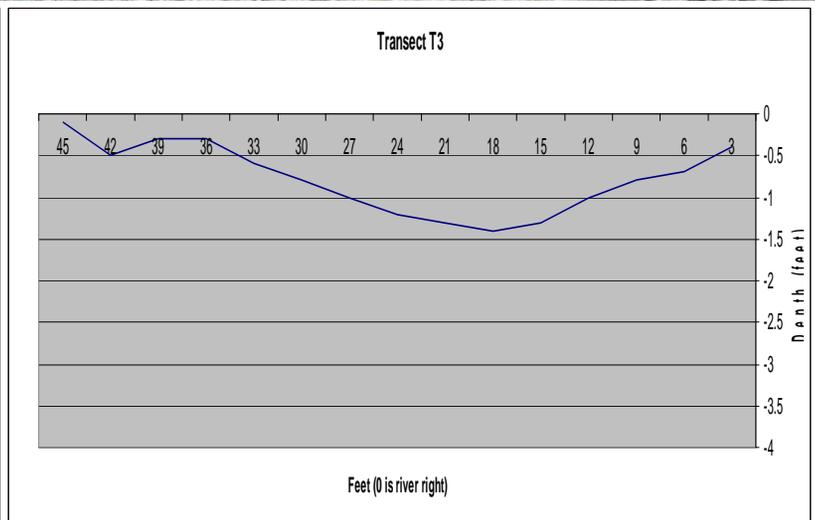
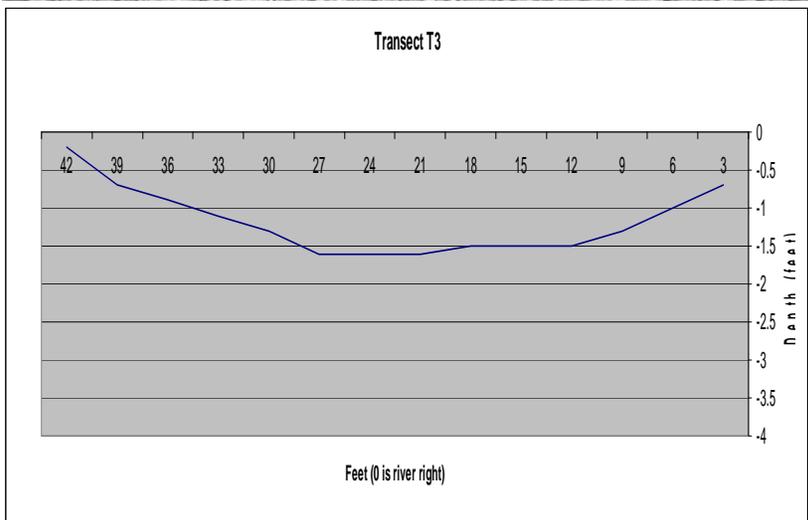
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 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 2

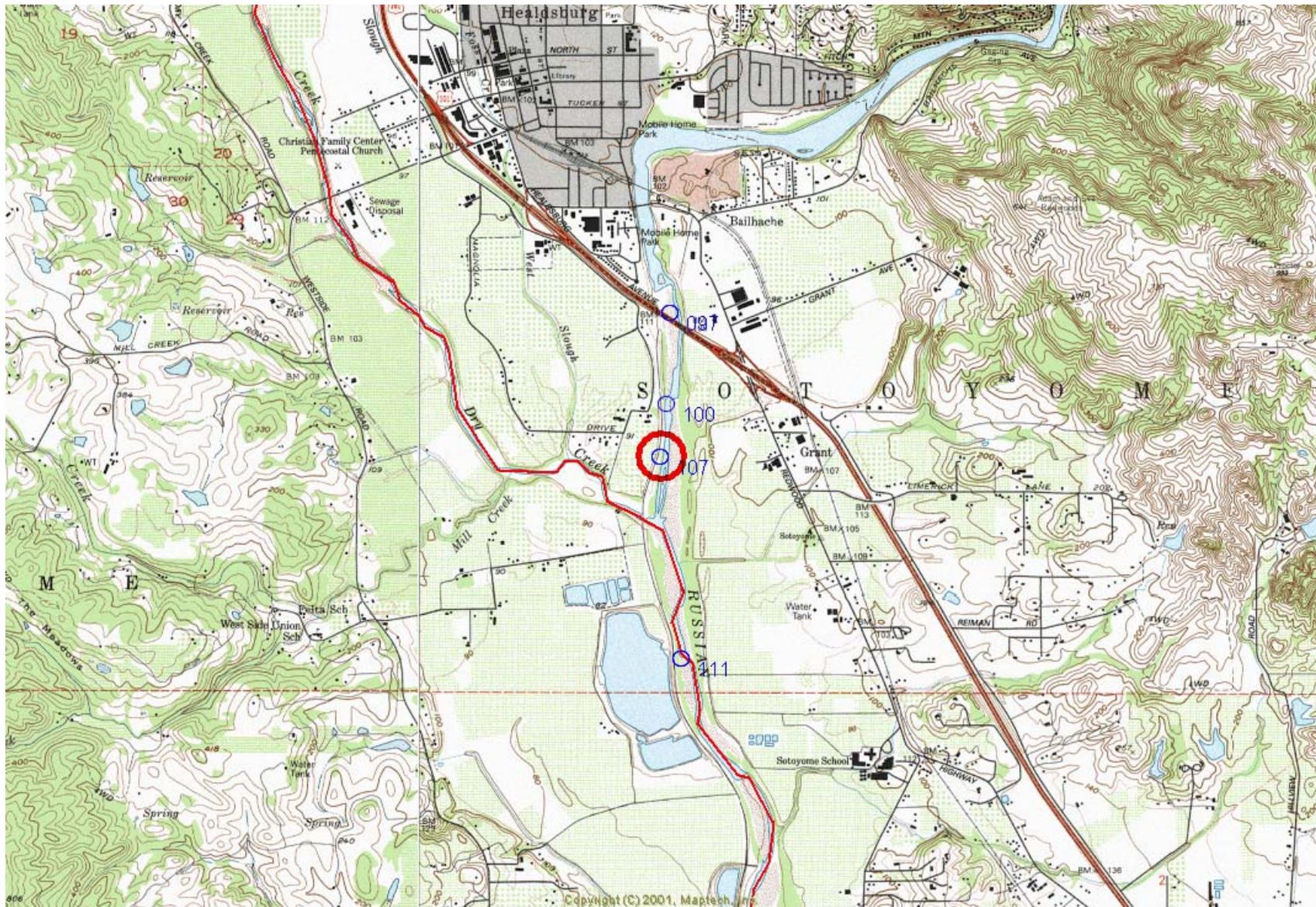
June 17, 2009

August 3, 2009



RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

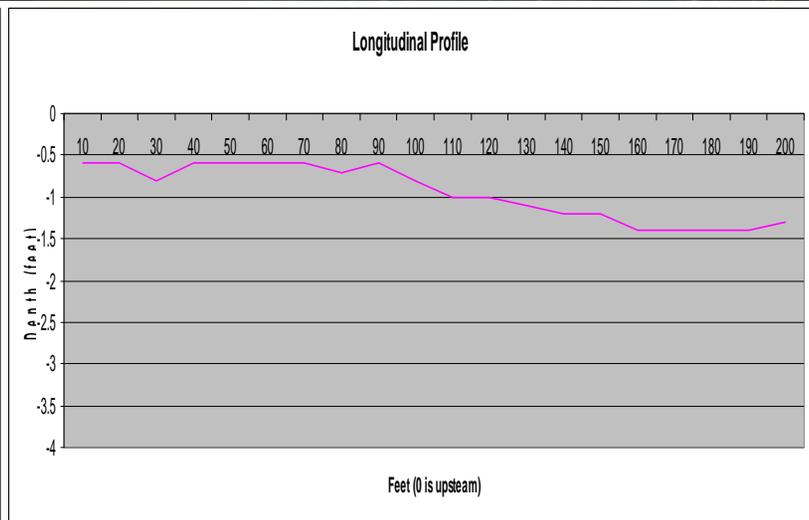
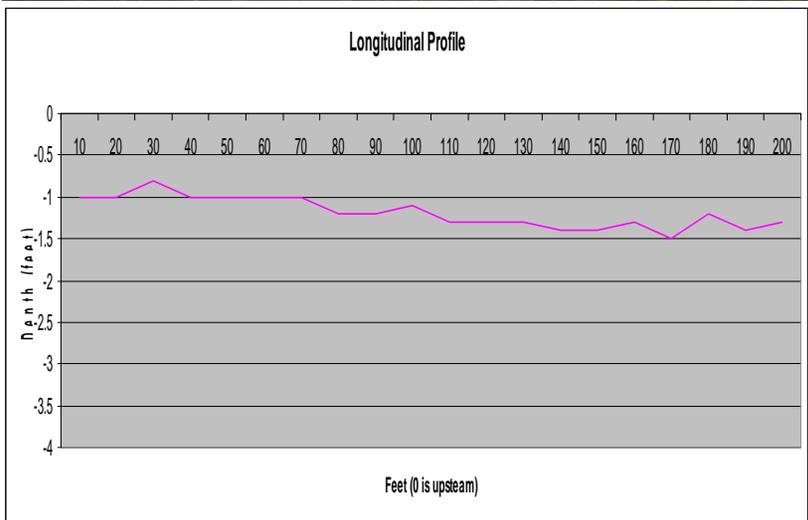
74cfs
 69cfs
 75cfs



Healdsburg Memorial Beach to Wohler – Riffle 3

June 17, 2009

August 3, 2009



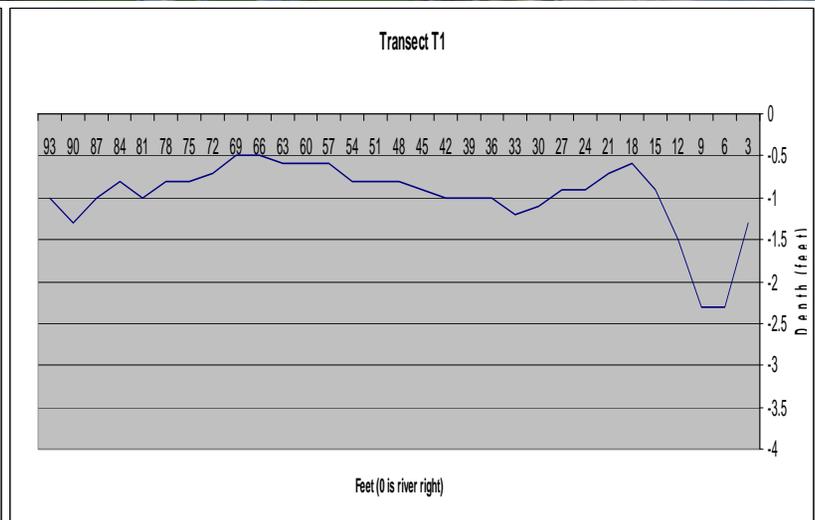
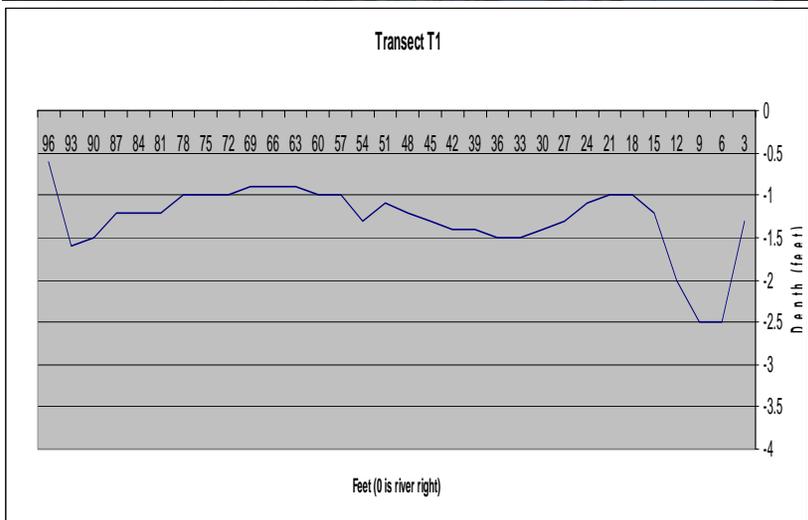
RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 3

June 17, 2009

August 3, 2009



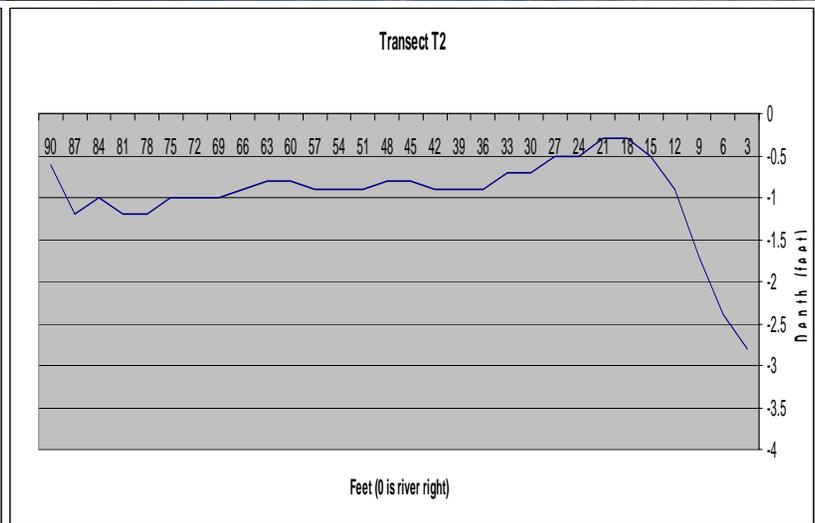
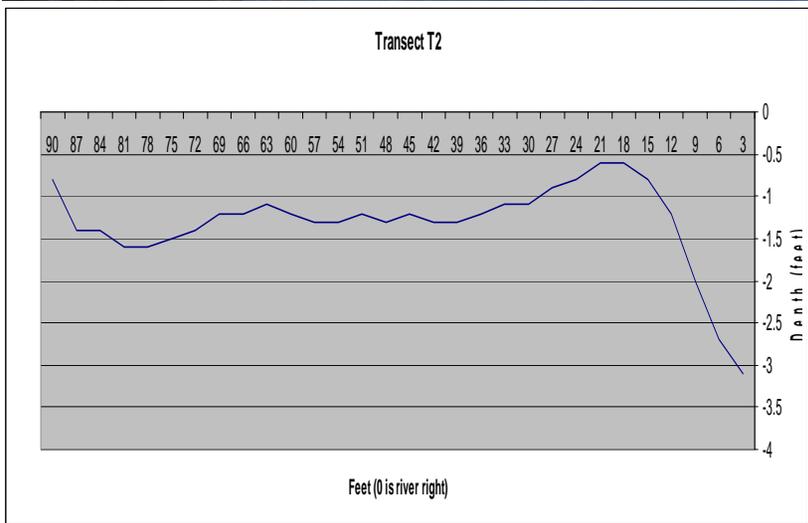
RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 3

June 17, 2009

August 3, 2009



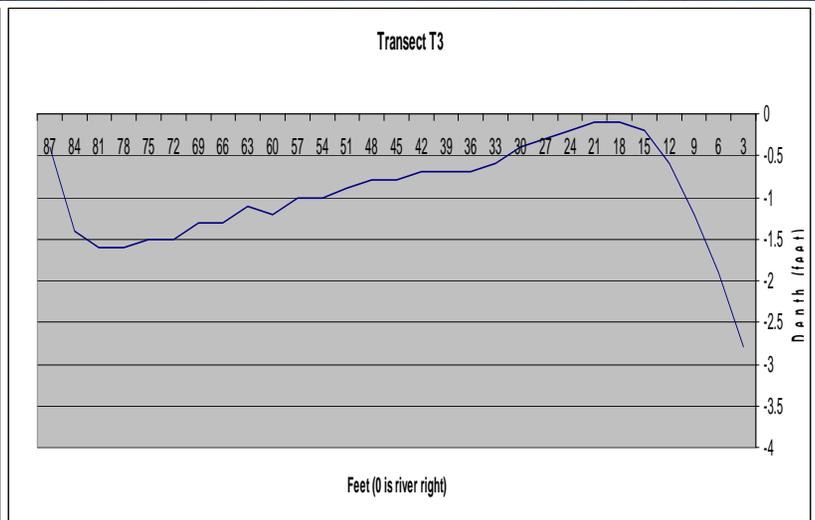
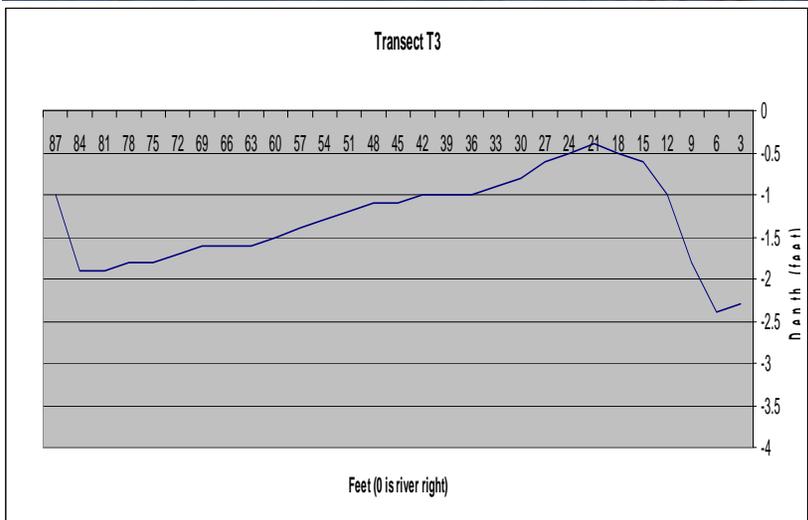
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 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 3

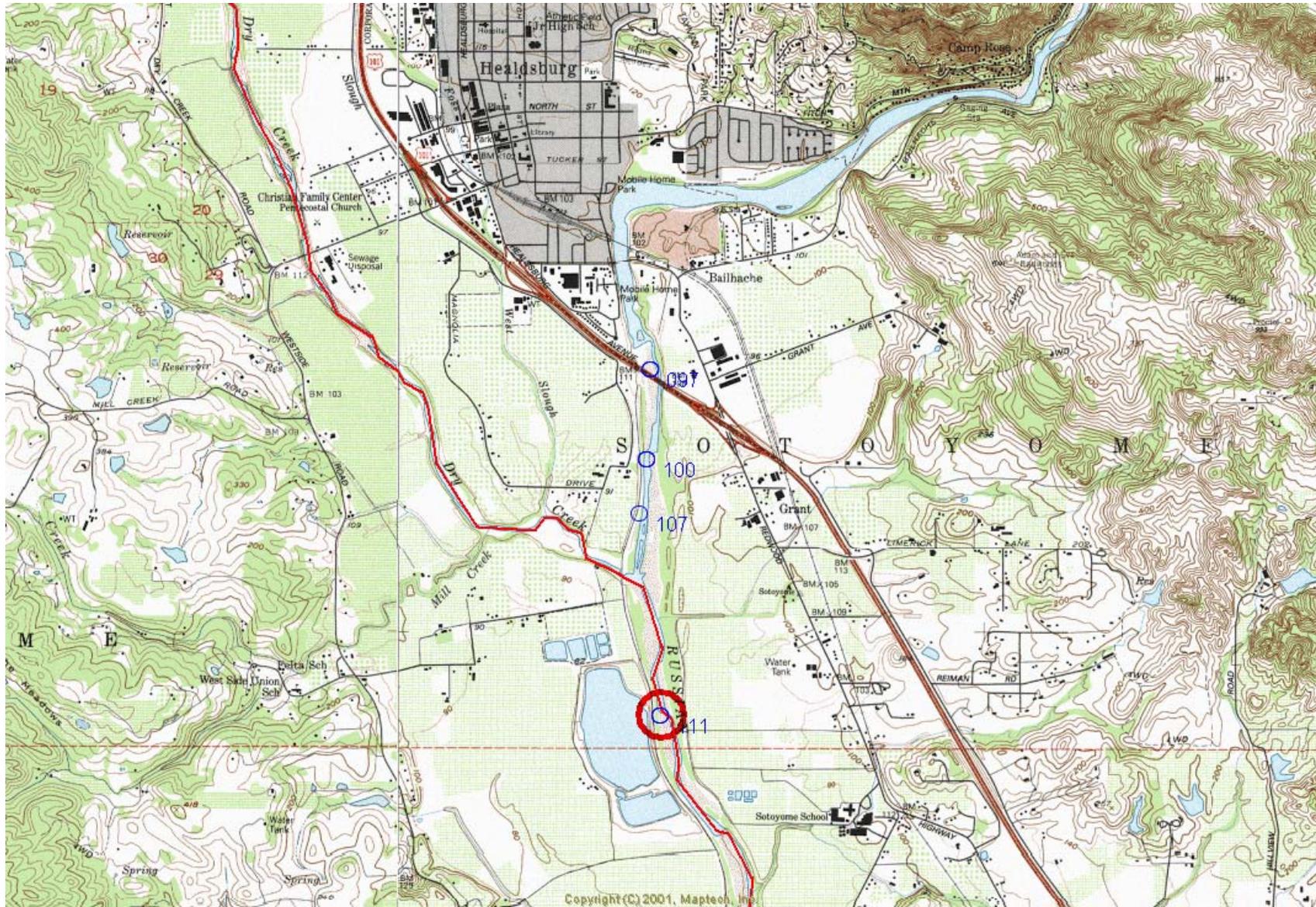
June 17, 2009

August 3, 2009



RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
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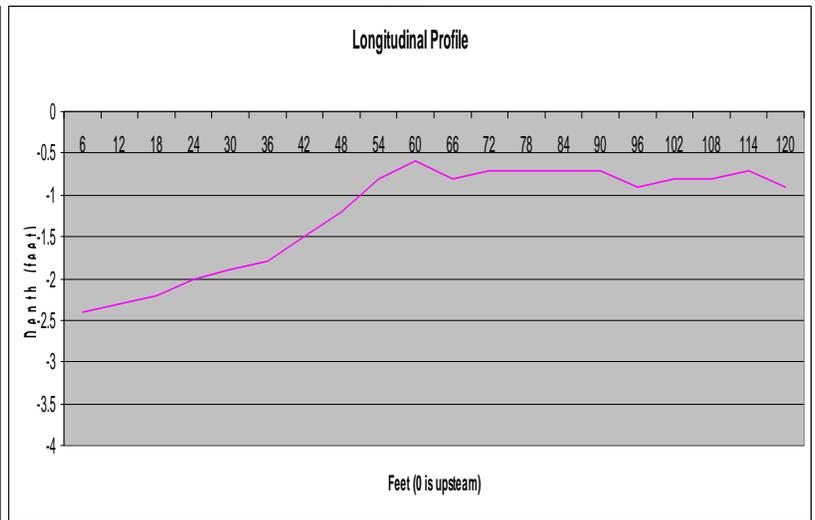
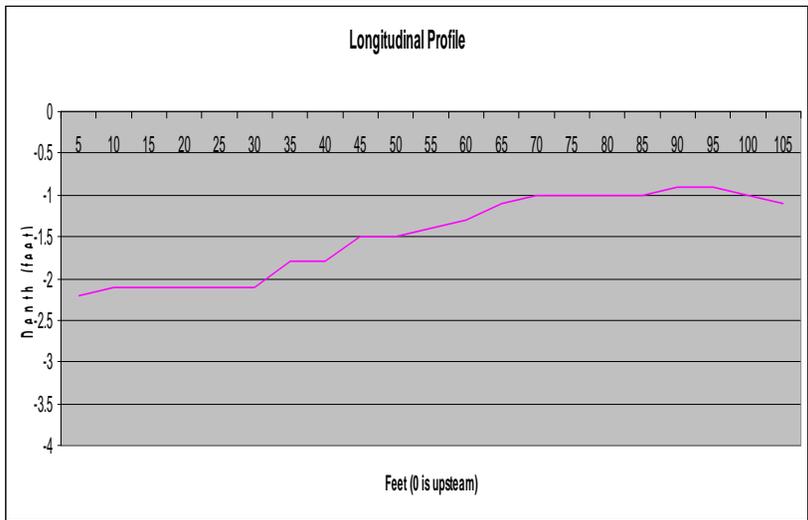
74cfs
 69cfs
 75cfs



Healdsburg Memorial Beach to Wohler – Riffle 4

June 17, 2009

August 3, 2009



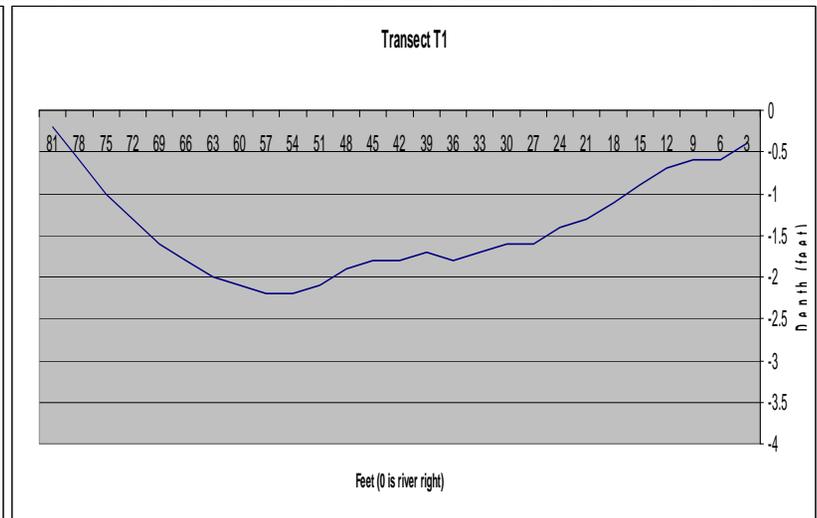
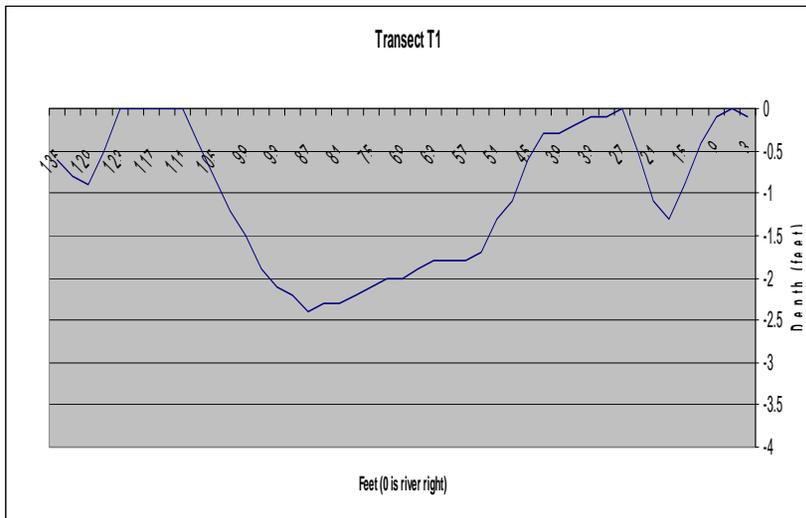
RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 4

June 17, 2009

August 3, 2009



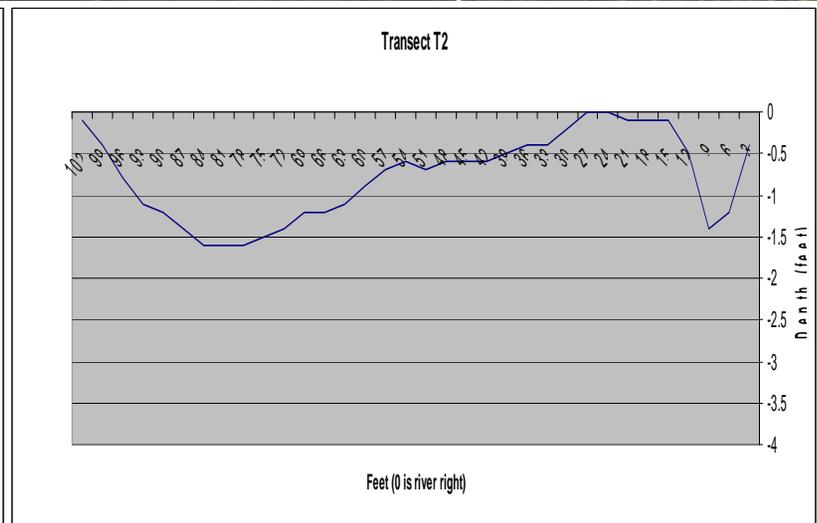
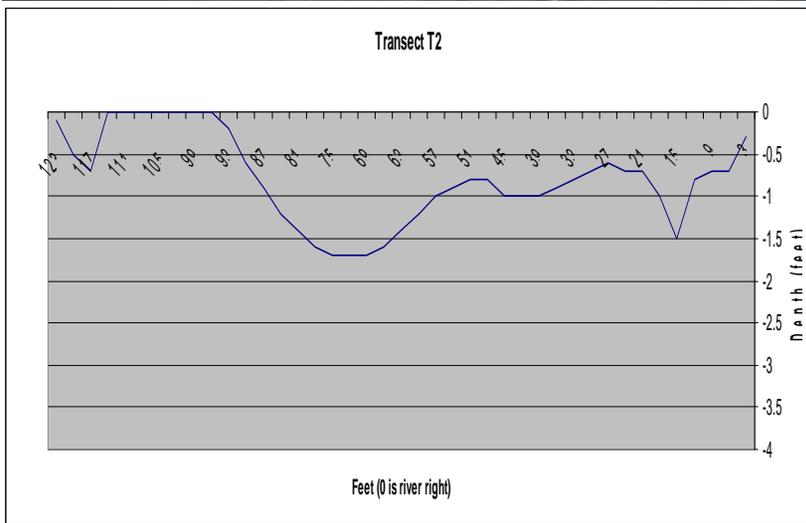
RR at Digger Bend 139cfs
 RR at Healdsburg 142cfs
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 4

June 17, 2009

August 3, 2009



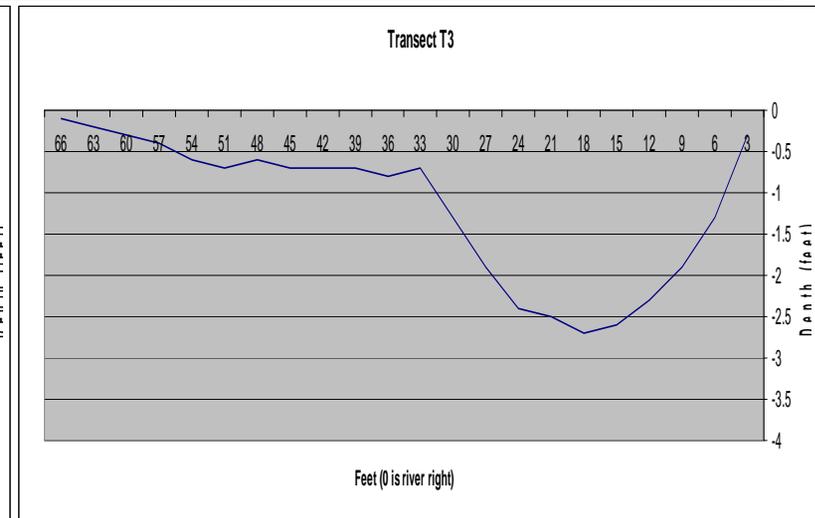
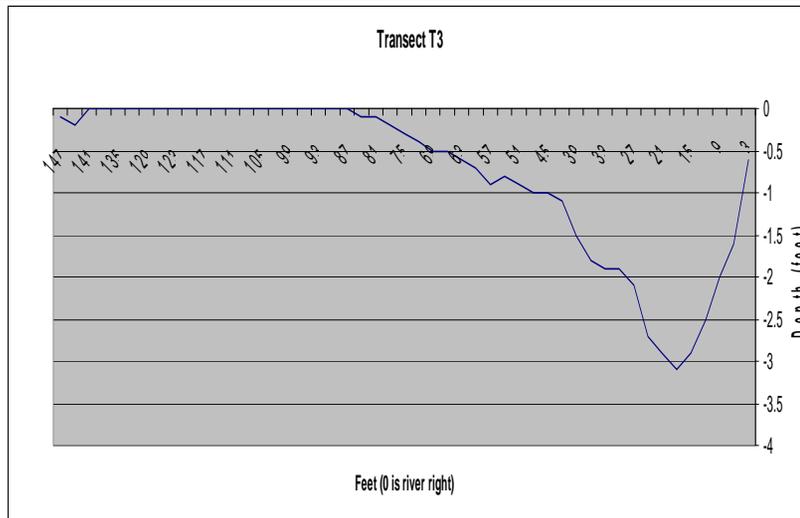
RR at Digger Bend 139cfs
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74cfs
 69cfs
 75cfs

Healdsburg Memorial Beach to Wohler – Riffle 4

June 17, 2009

August 3, 2009



RR at Digger Bend 139cfs
 RR at Healdsburg 142cf
 RR near Guerneville 185cfs

74cfs
 69cfs
 75cfs

Wohler to Johnson's Beach (Guerneville)

Location:

R1	waypoint 115 ⁵	N 38°29.757'	W 122°53.348'
R2	waypoint 119	N 38°29.753'	W 122°53.863'
R3	waypoint 124	N 38°30.483'	W 122°54.897'

Date of Float:

June 18, 2009

Jul 29, 2009

Russian River Flows:⁶

RR at Digger Bend (Station No. 11463980)	131	73
RR at Healdsburg (Station No. 11464000)	138	65
RR near Guerneville (Station No. 11467000)	176	81

Crew:

David Cuneo	David Cuneo
Justin Smith	Justin Smith
Nathan Goddard	Andrew Moratto

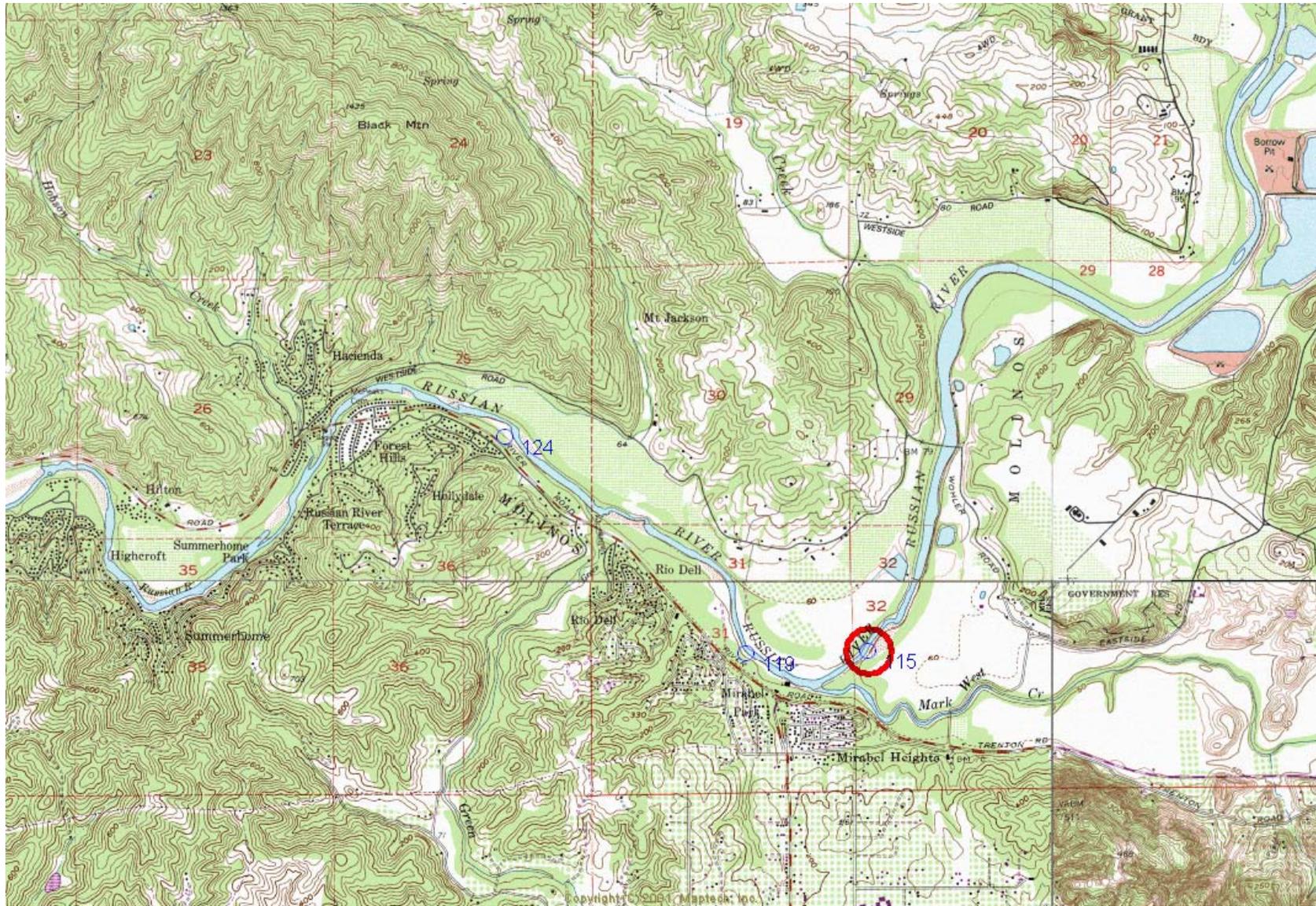
Boats:

Canoe	Canoe
Kayak	Kayak

⁵ Garmin GPS 12 handheld GPS unit used. All coordinates using WGS 84 Datum.

⁶ Flow is in cubic feet per second (cfs). All flow data is the noontime reading for the day of the float obtained from the U.S. Geologic Survey :

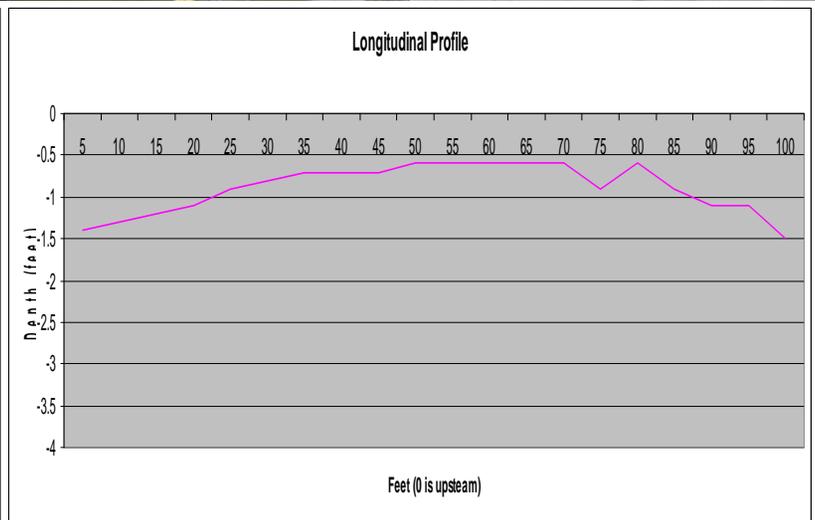
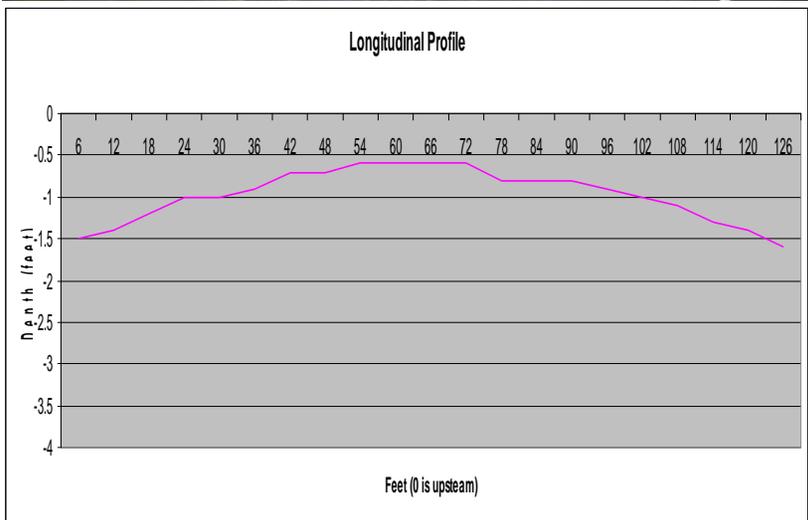
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Wohler to Johnson's Beach (Guerneville) – Riffle 1

June 18, 2009

July 29, 2009



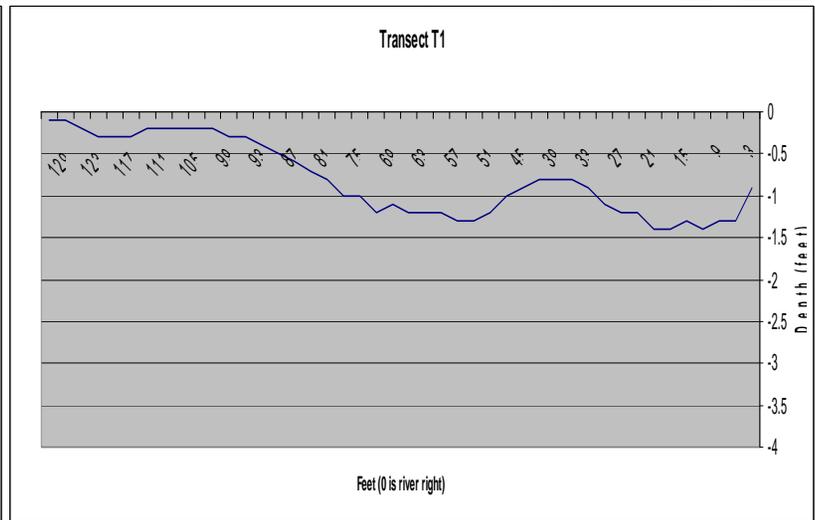
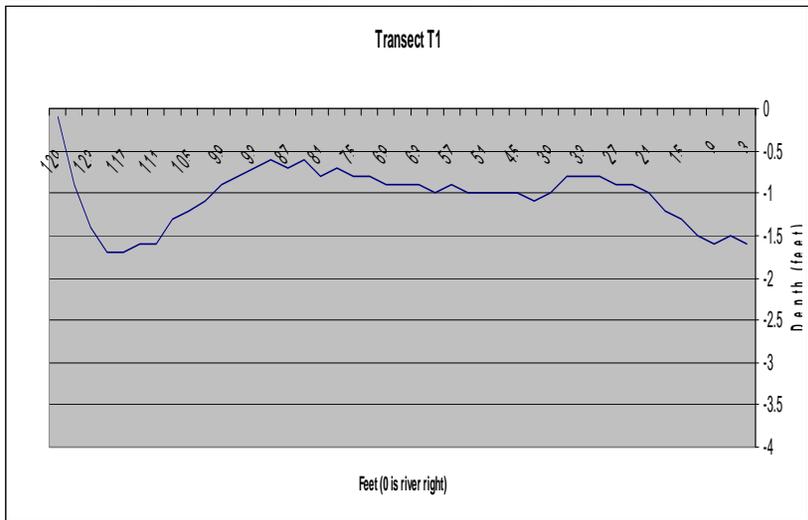
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 1

June 18, 2009

July 29, 2009



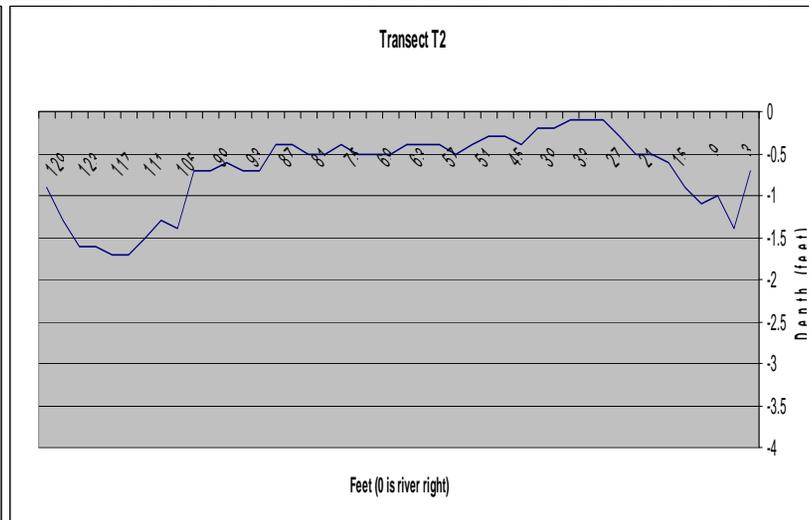
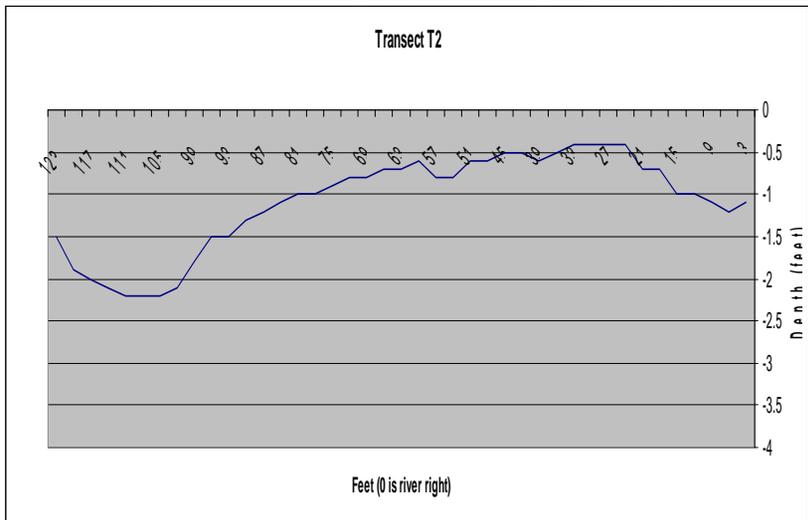
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 1

June 18, 2009

July 29, 2009



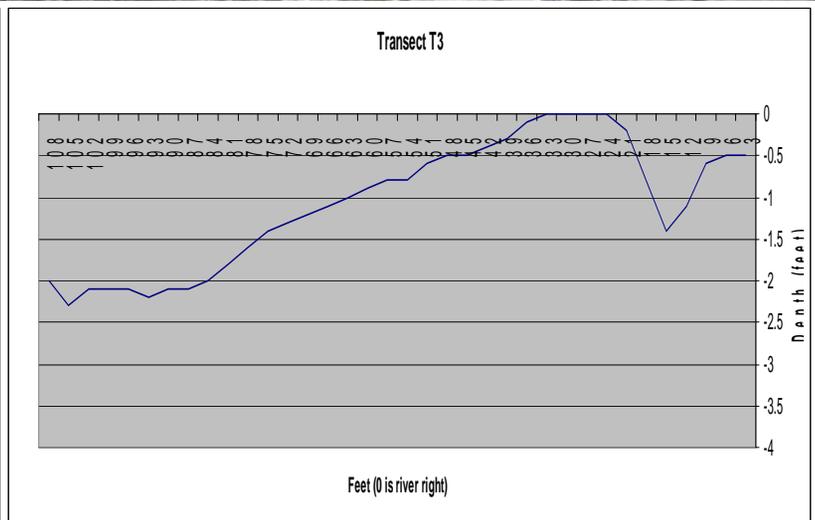
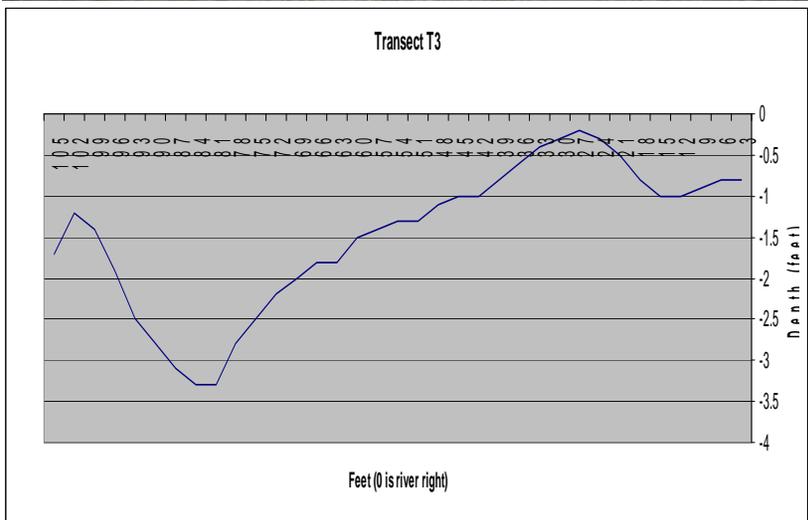
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
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73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 1

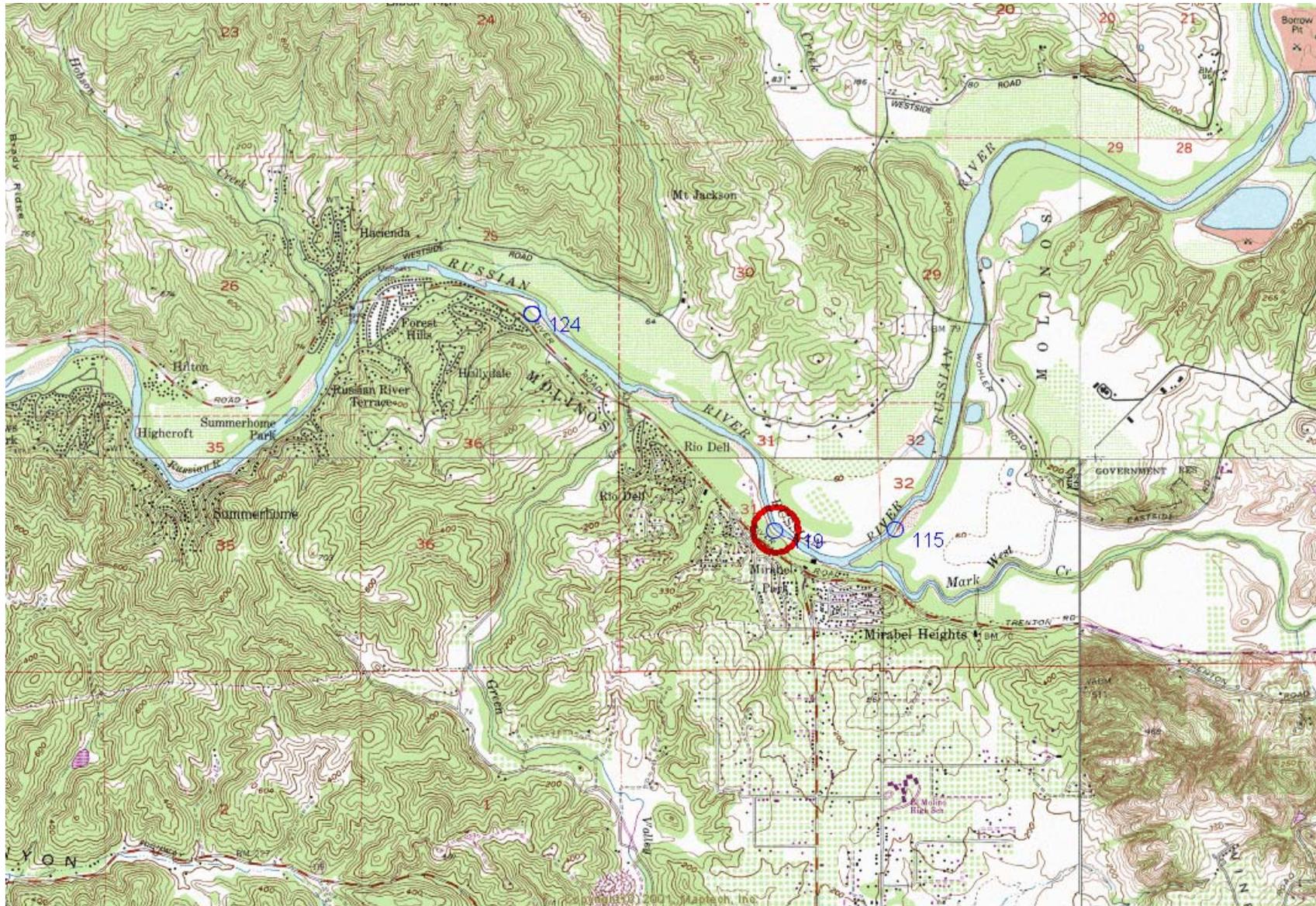
June 18, 2009

July 29, 2009



RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

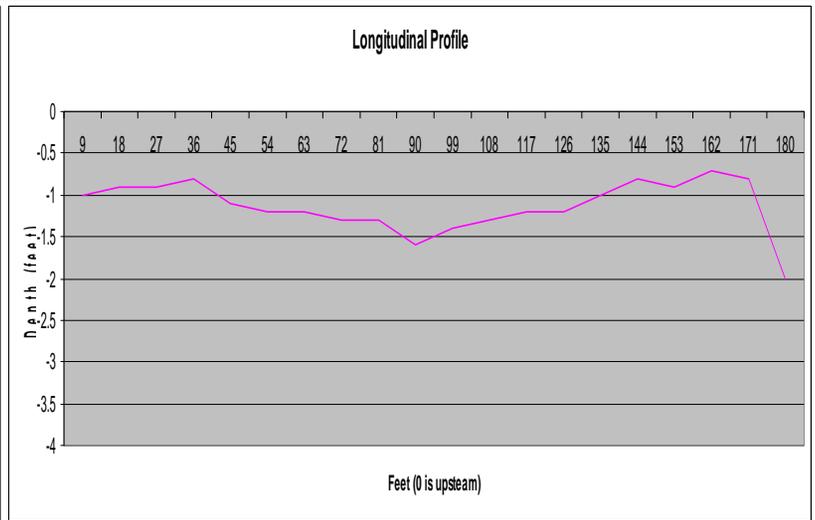
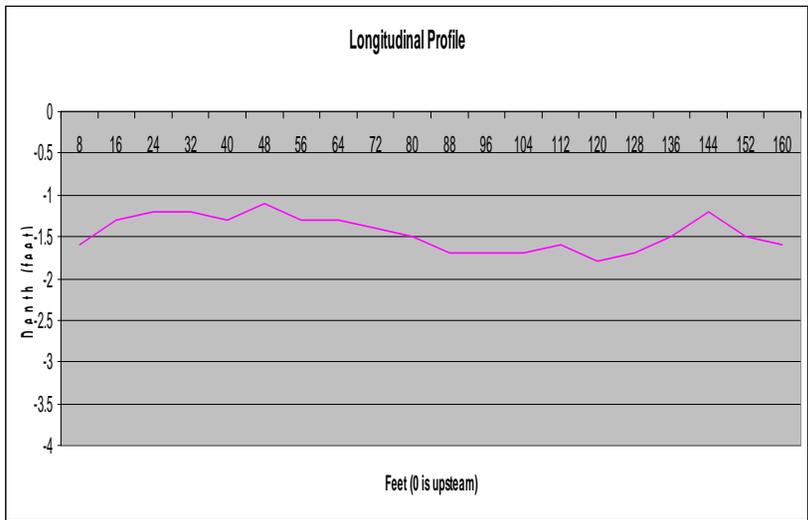
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Wohler to Johnson's Beach (Guerneville) – Riffle 2

June 18, 2009

July 29, 2009



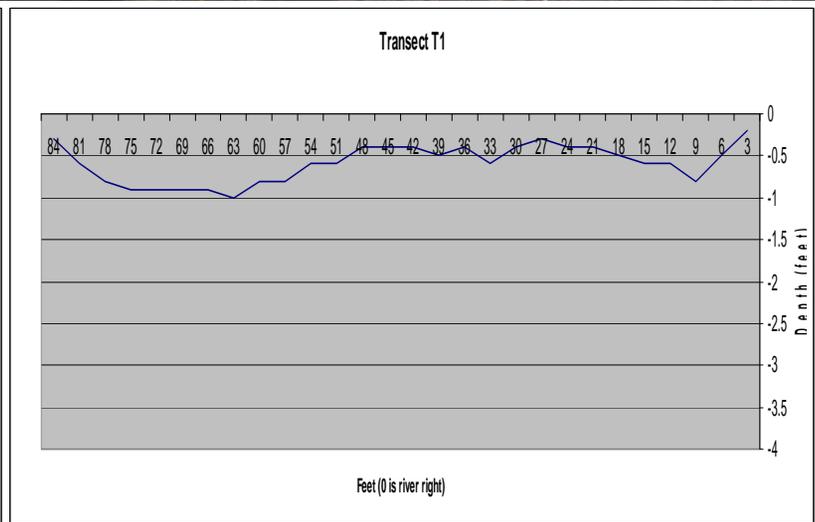
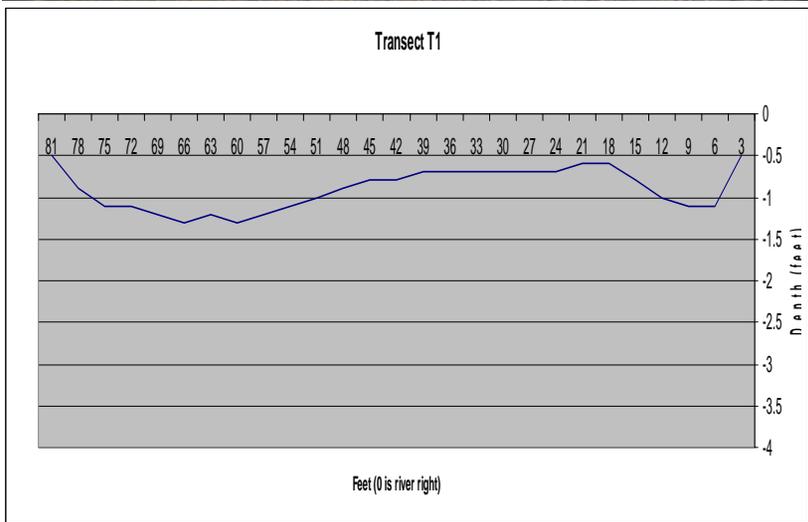
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
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Wohler to Johnson's Beach (Guerneville) – Riffle 2

June 18, 2009

July 29, 2009



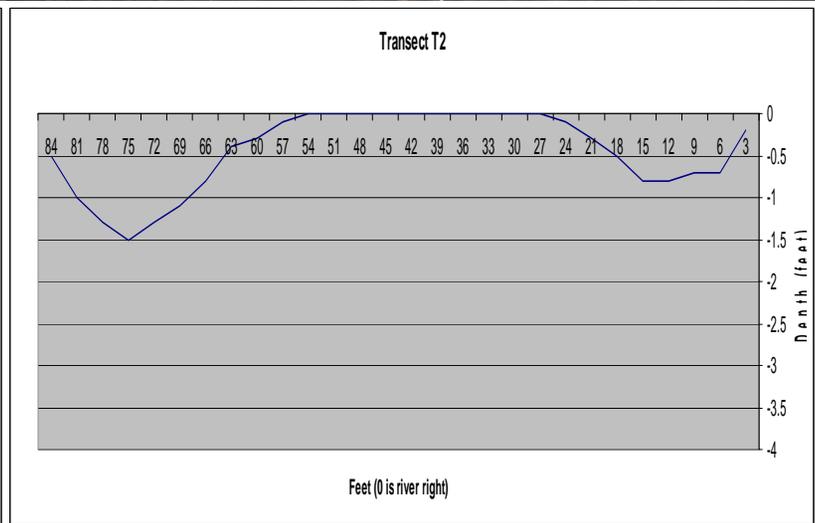
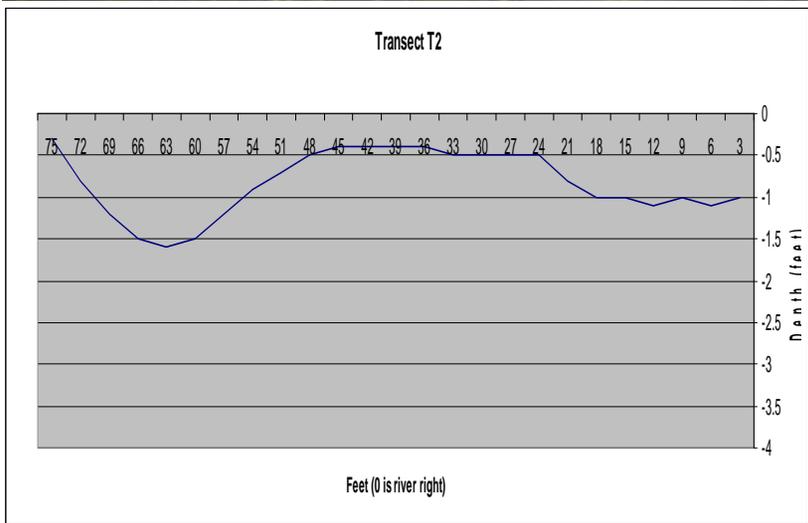
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 2

June 18, 2009

July 29, 2009



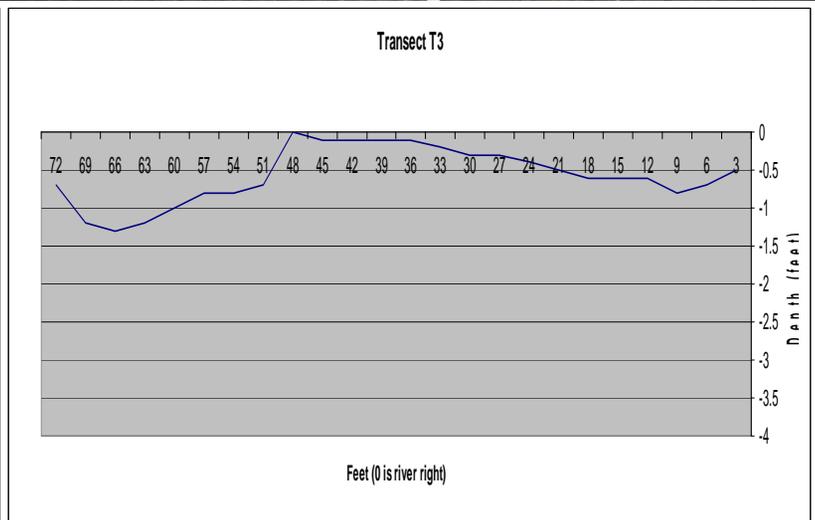
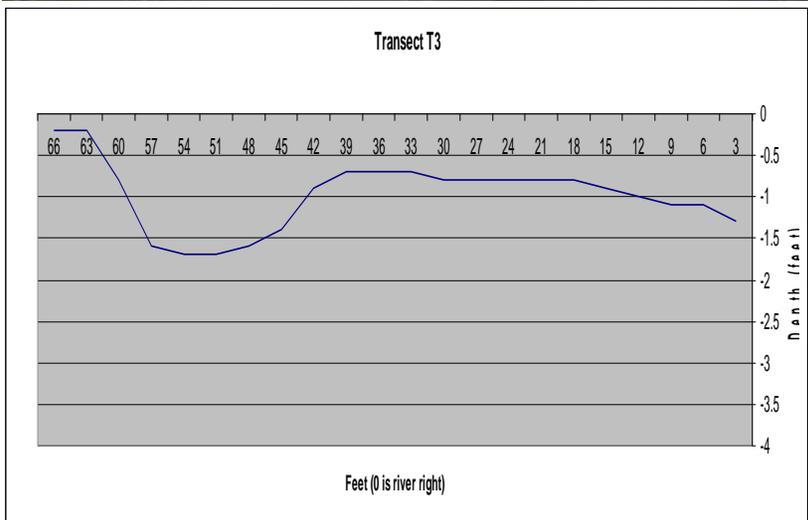
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 2

June 18, 2009

July 29, 2009



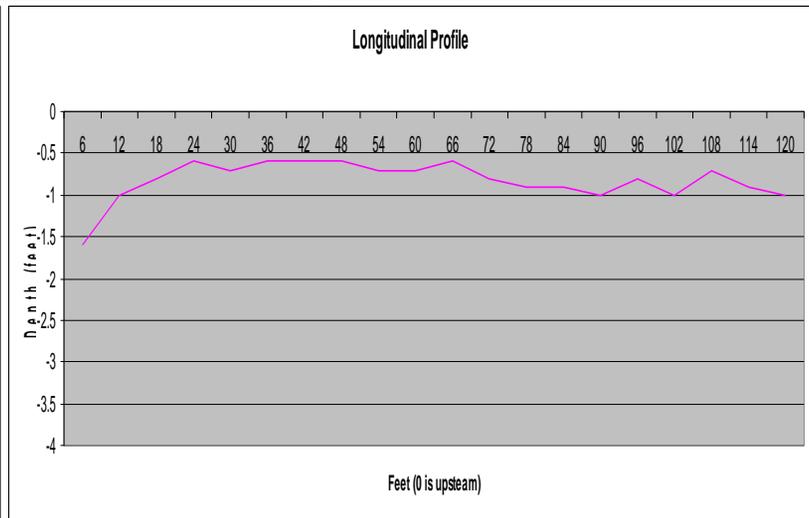
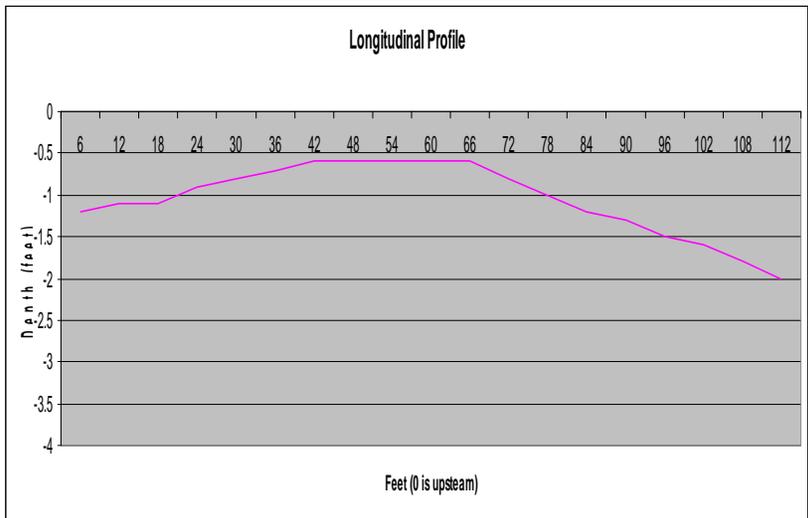
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Wohler to Johnson's Beach (Guerneville) – Riffle 3

June 18, 2009

July 29, 2009



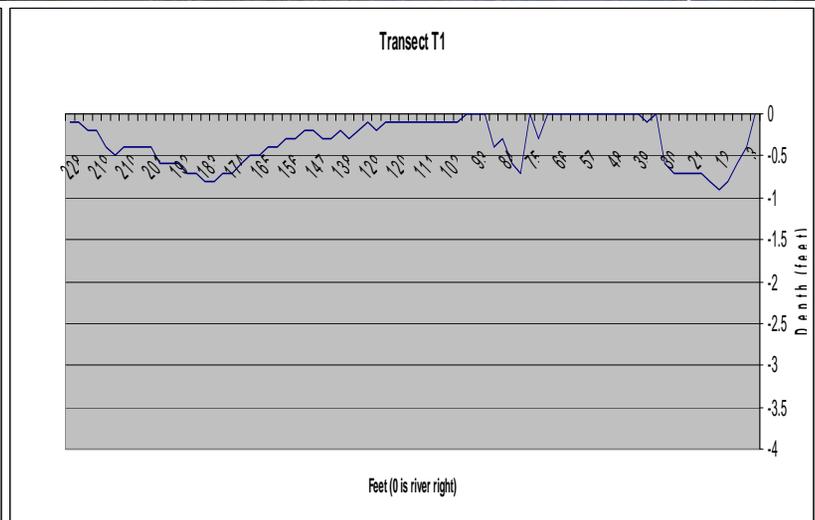
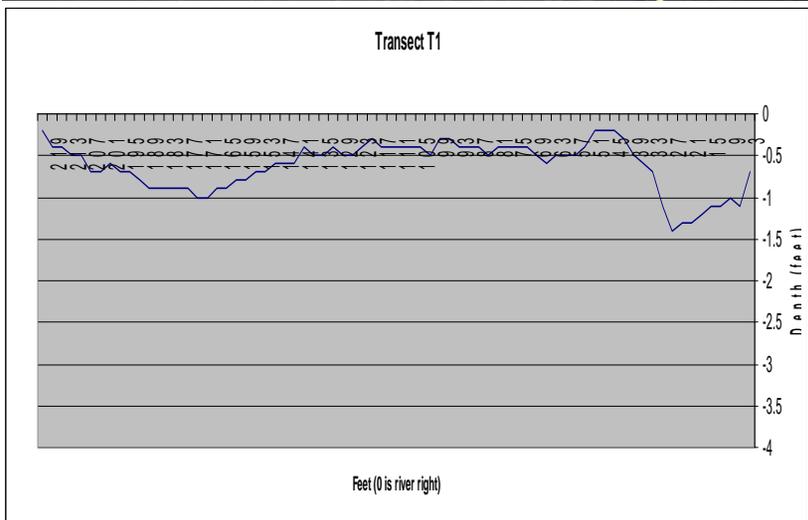
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73cfs
 65cfs
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Wohler to Johnson's Beach (Guerneville) – Riffle 3

June 18, 2009

July 29, 2009



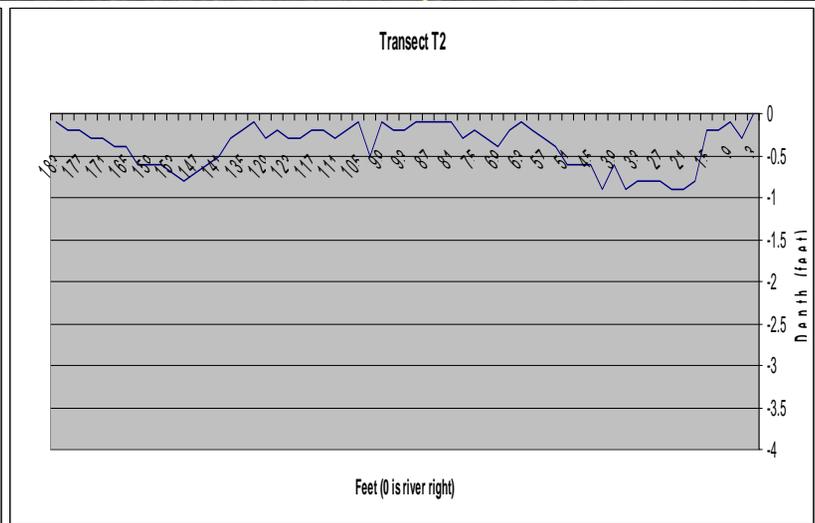
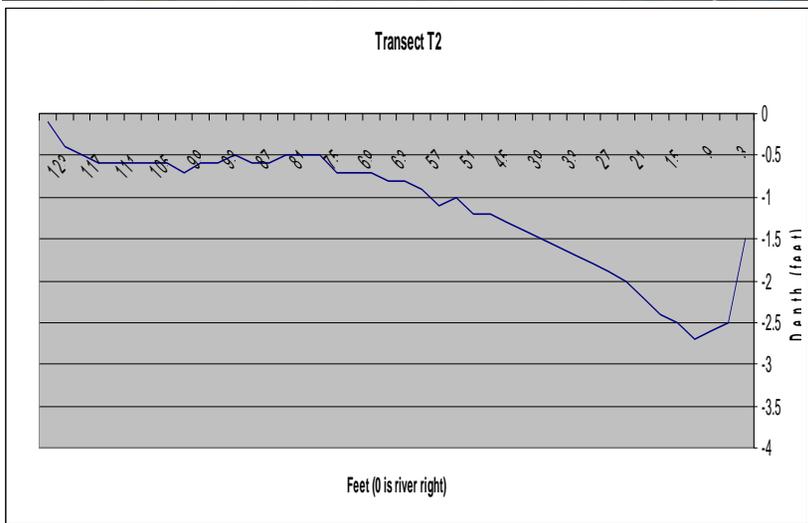
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 RR at Healdsburg 138cf
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73cfs
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Wohler to Johnson's Beach (Guerneville) – Riffle 3

June 18, 2009

July 29, 2009



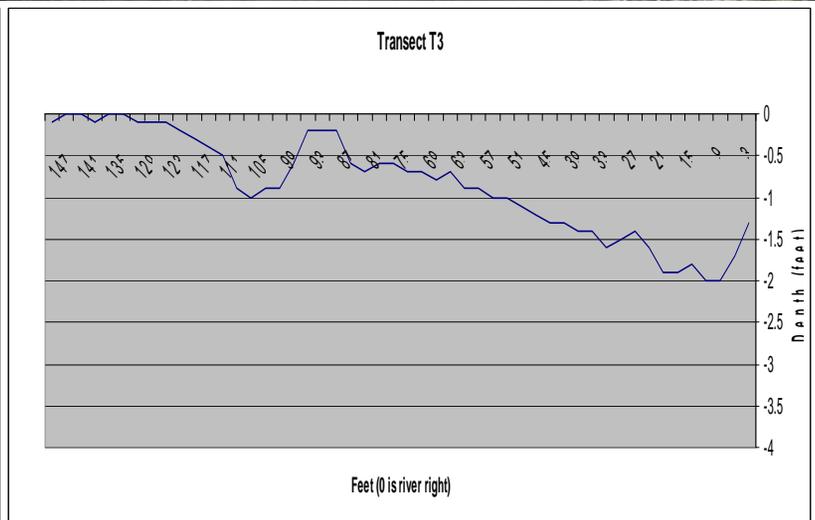
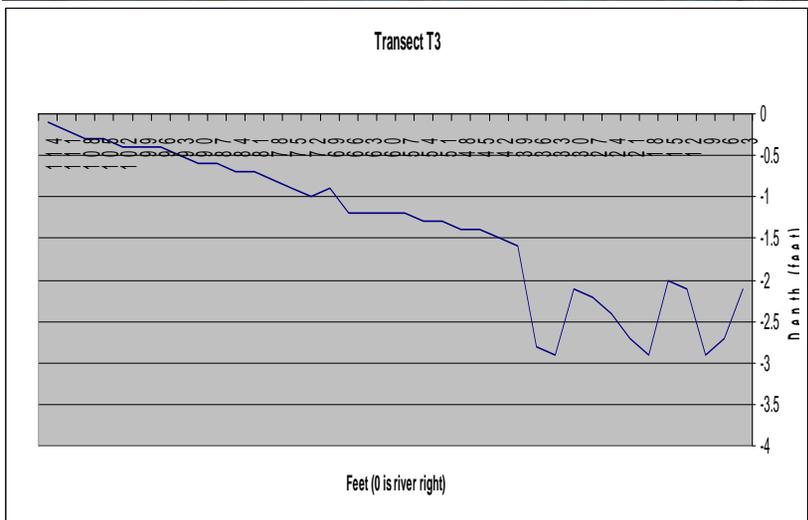
RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
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73cfs
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Wohler to Johnson's Beach (Guerneville) – Riffle 3

June 18, 2009

July 29, 2009



RR at Digger Bend 131cfs
 RR at Healdsburg 138cf
 RR near Guerneville 176cfs

73cfs
 65cfs
 81cfs

Johnson's Beach (Guerneville) to Casini Ranch

Location:

R1	waypoint 155 ⁷	N 38°28.983'	W 123°00.623'
R2	waypoint 160	N 38°28.908'	W 123°00.042'

Date of Float:

June 19, 2009

Jul 28, 2009

Russian River Flows:⁸

RR at Digger Bend (Station No. 11463980)	123	77
RR at Healdsburg (Station No. 11464000)	133	69
RR near Guerneville (Station No. 11467000)	172	78

Crew:

David Cuneo	David Cuneo
Justin Smith	Justin Smith
Nathan Goddard	Andrew Moratto

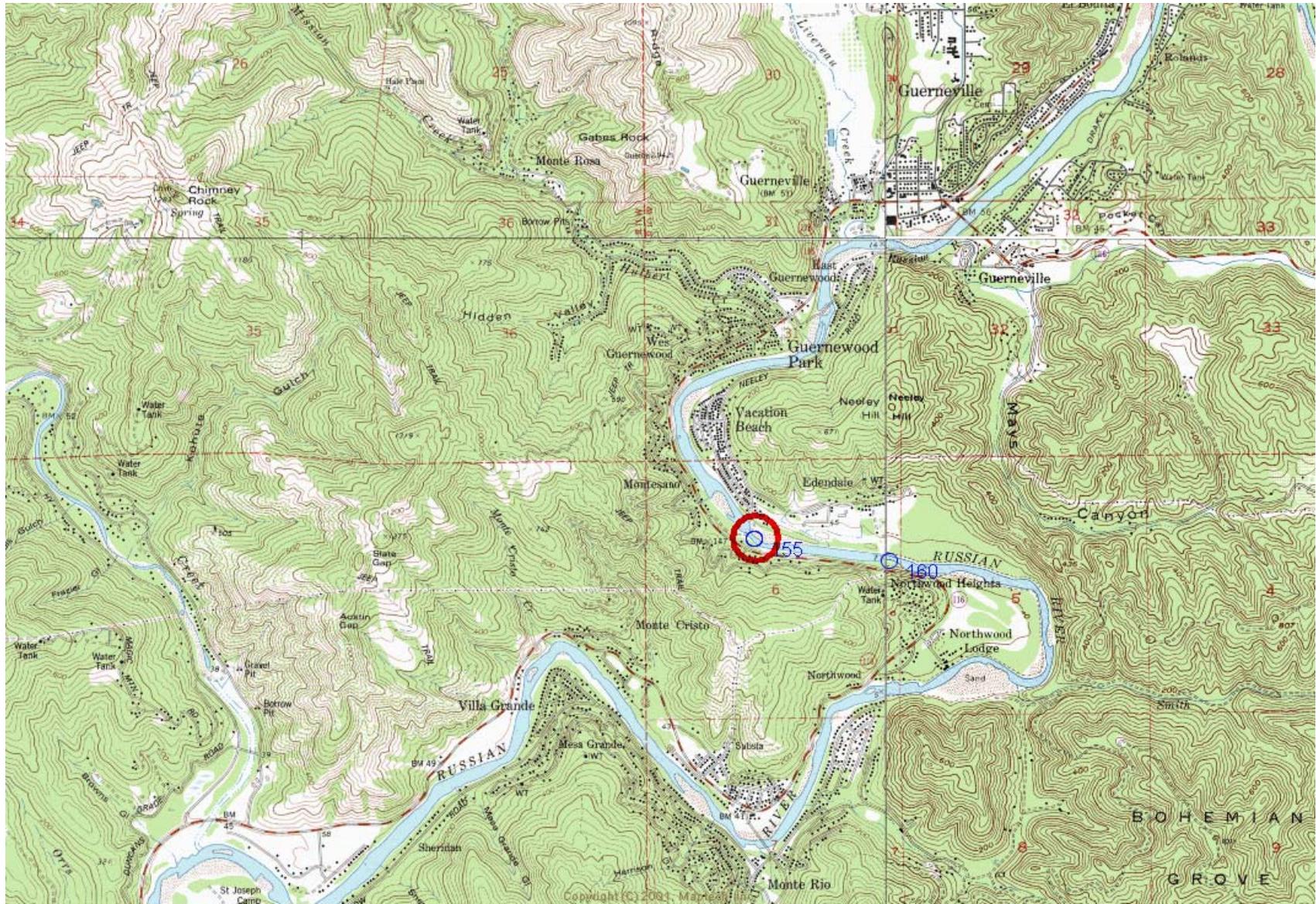
Boats:

Canoe	Canoe
Kayak	Kayak

⁷ Garmin GPS 12 handheld GPS unit used. All coordinates using WGS 84 Datum.

⁸ Flow is in cubic feet per second (cfs). All flow data is the noontime reading for the day of the float obtained from the U.S. Geologic Survey :

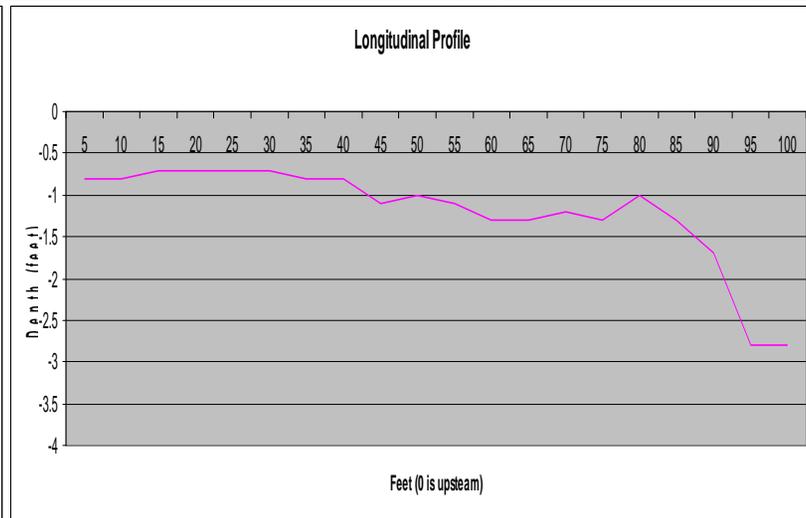
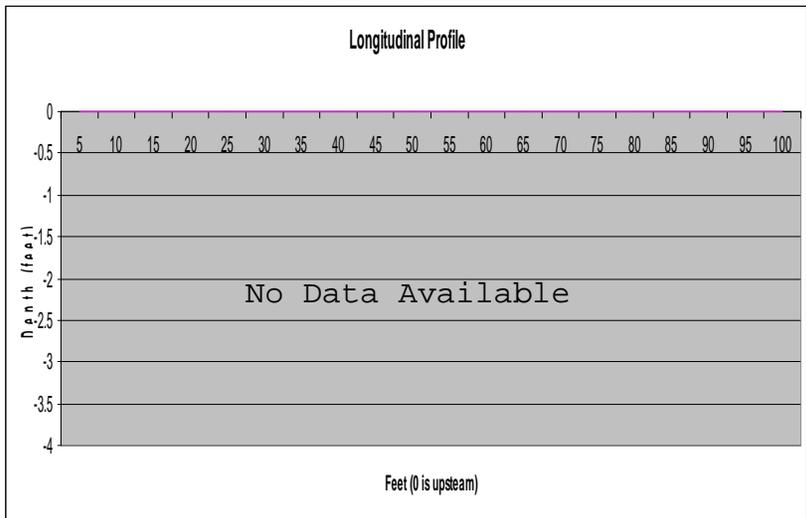
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Johnson's Beach (Guerneville) to Casini Ranch – Riffle 1

June 19, 2009

July 28, 2009



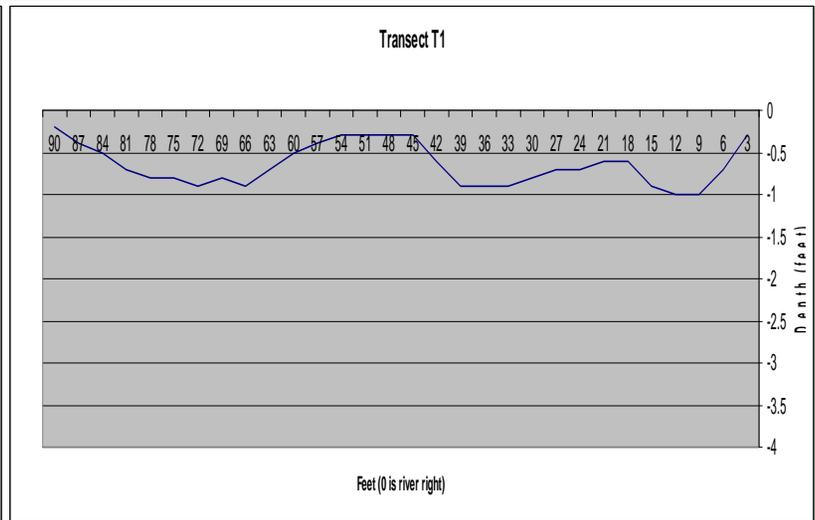
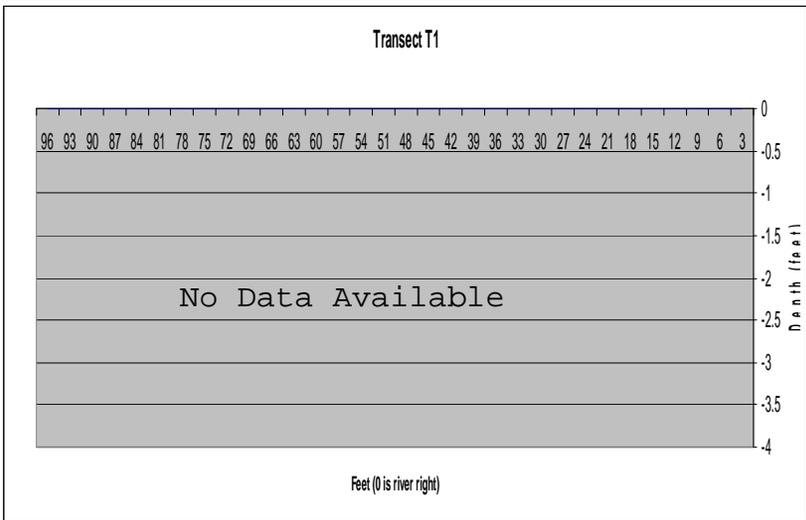
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 1

June 19, 2009

July 28, 2009



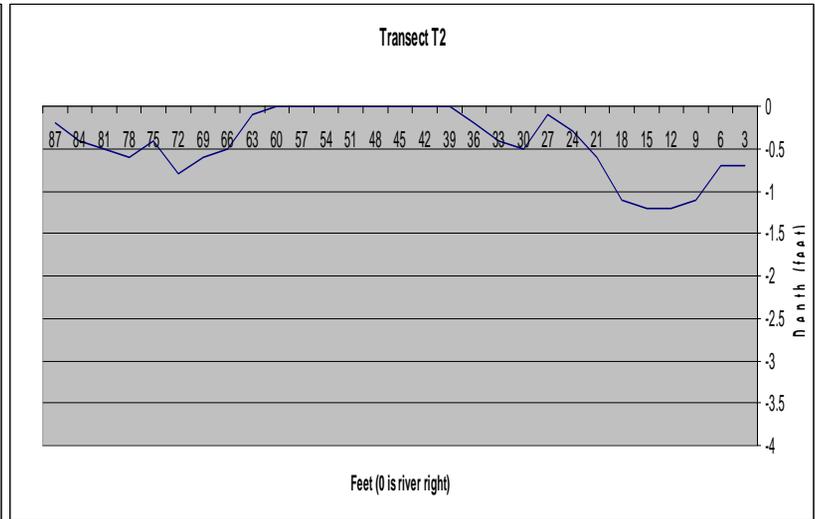
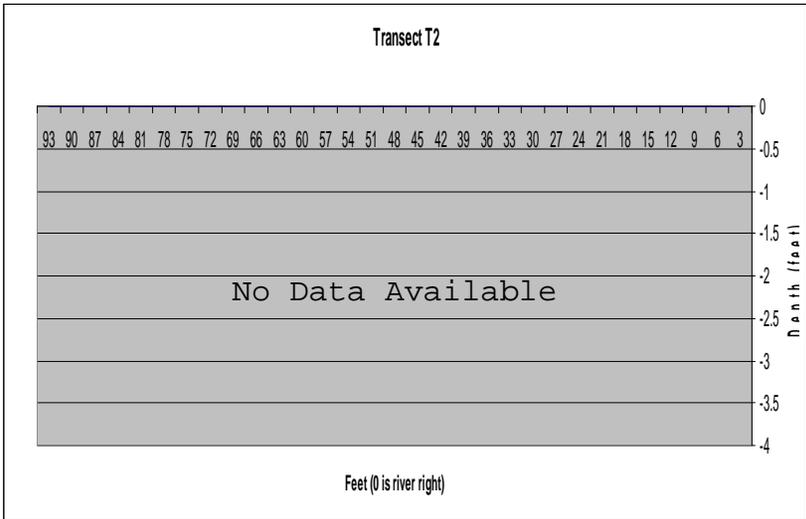
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 1

June 19, 2009

July 28, 2009



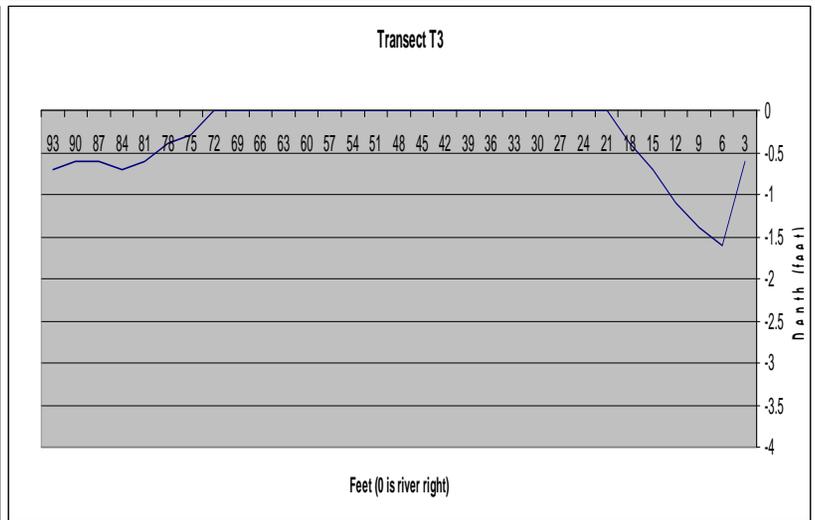
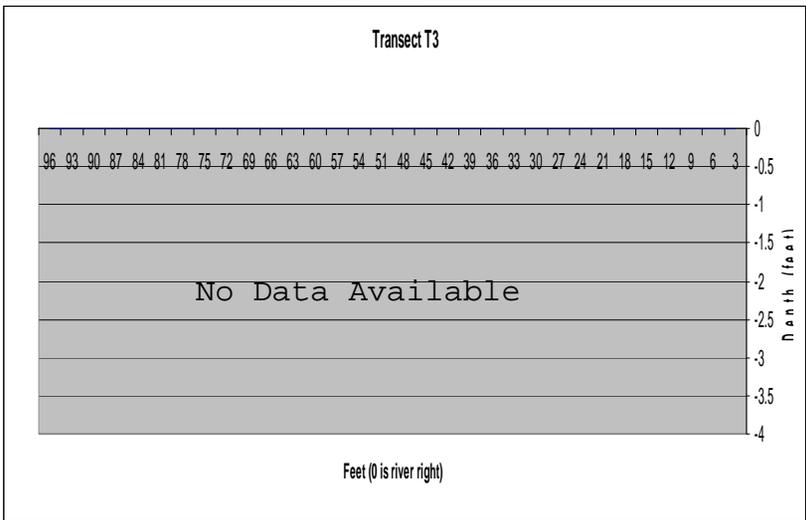
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 1

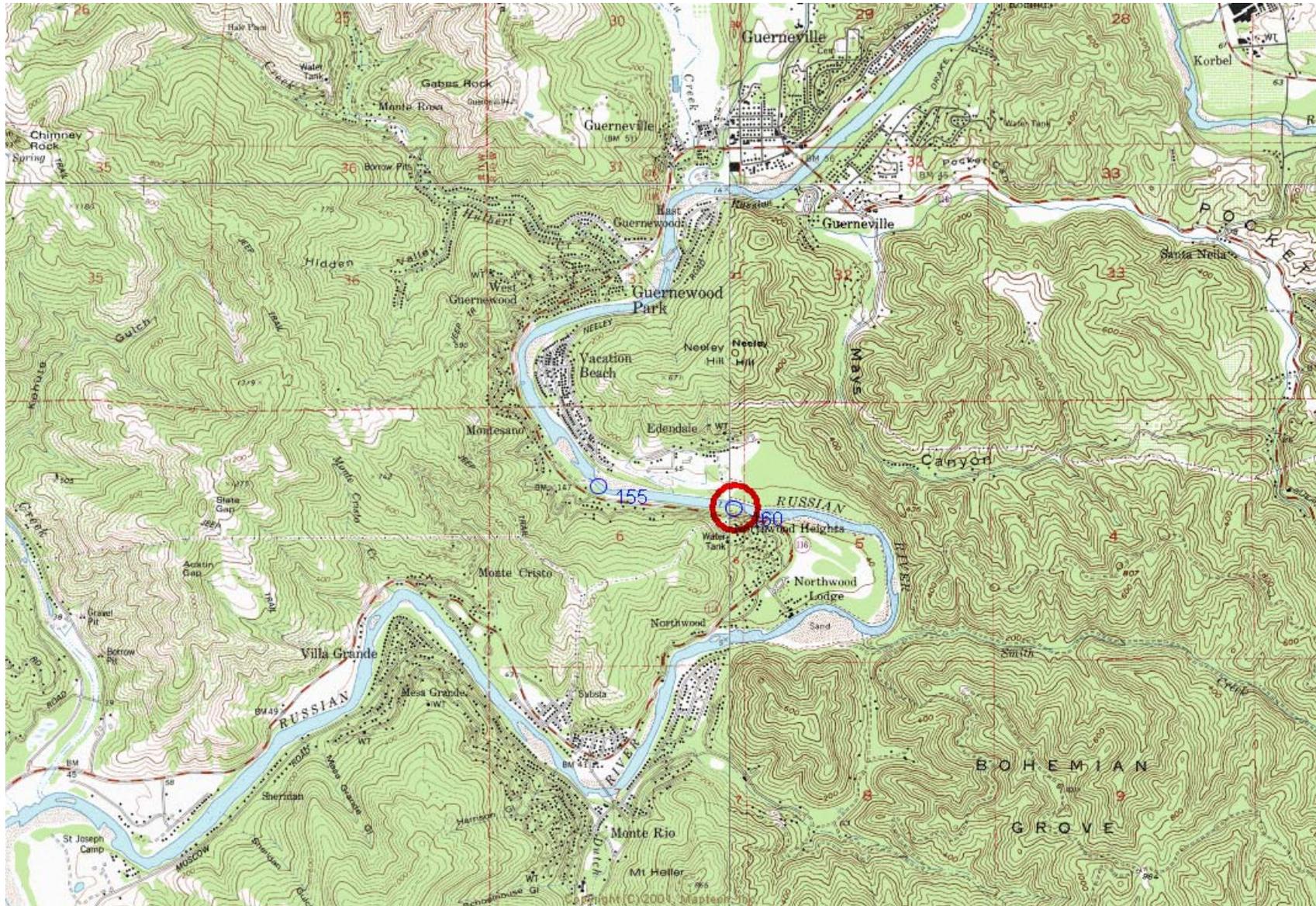
June 19, 2009

July 28, 2009



RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

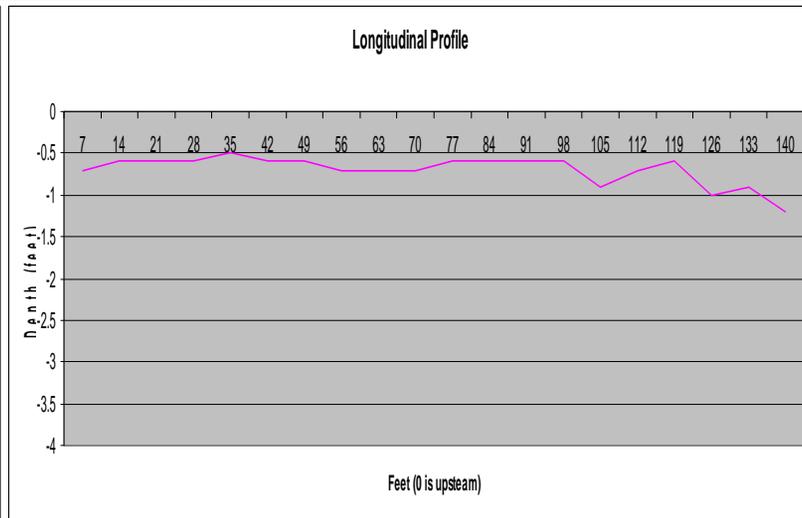
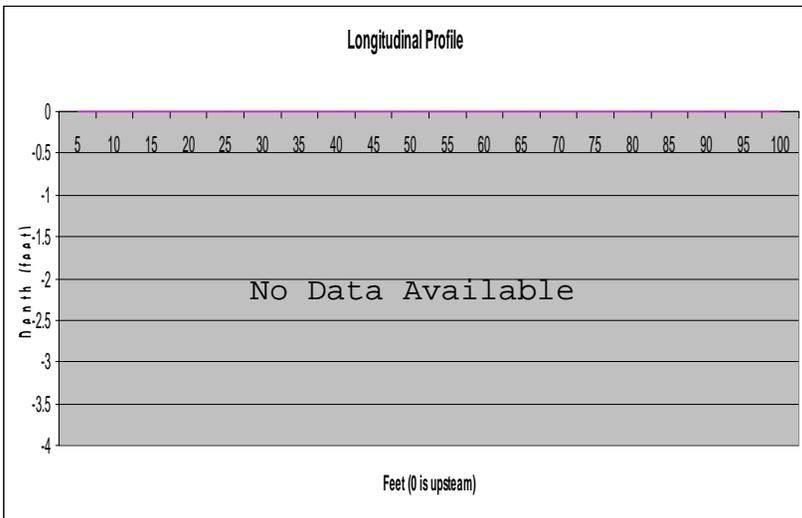
77cfs
 69cfs
 78cfs



Johnson's Beach (Guerneville) to Casini Ranch – Riffle 2

June 19, 2009

July 28, 2009



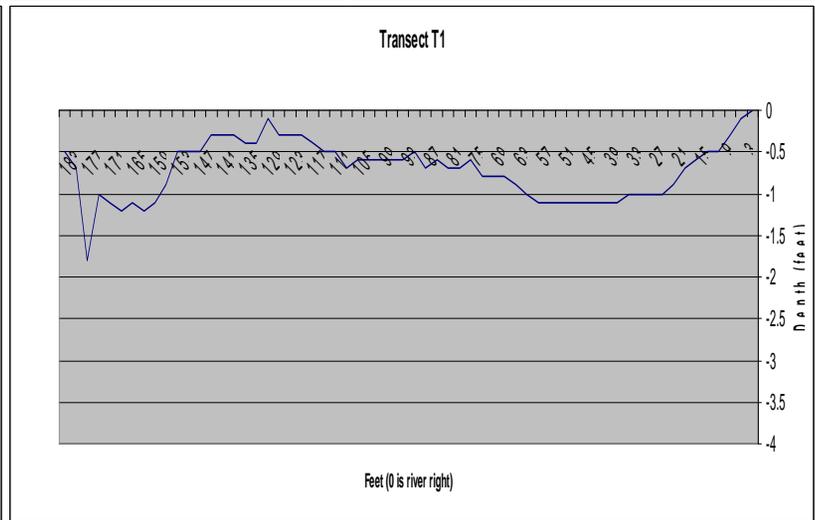
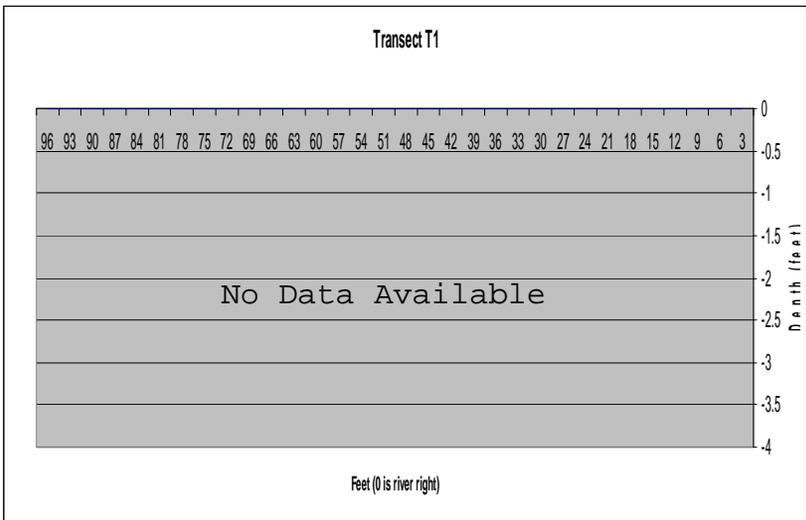
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 2

June 19, 2009

July 28, 2009



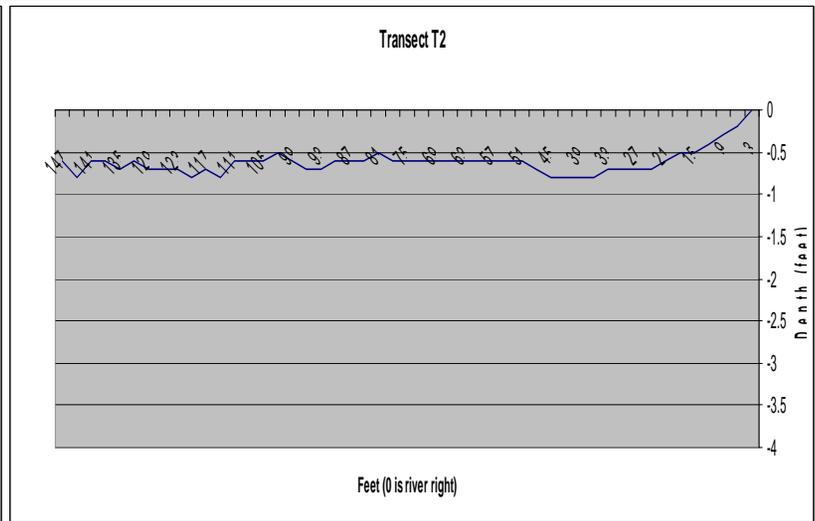
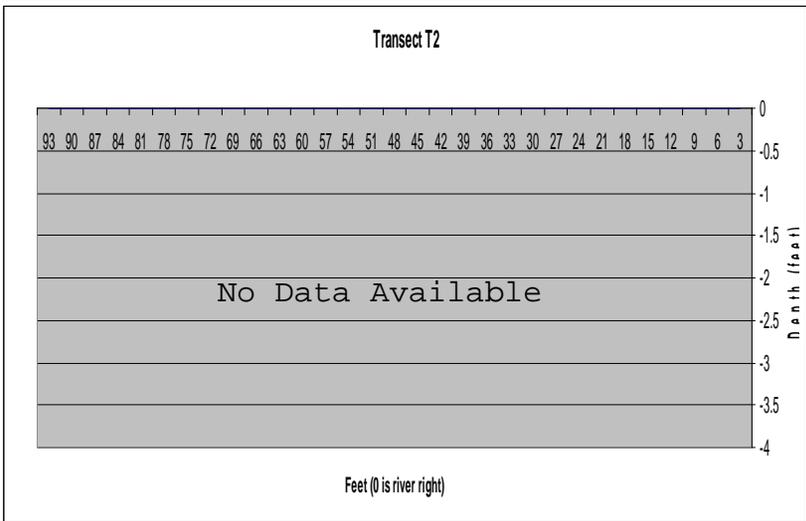
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 2

June 19, 2009

July 28, 2009



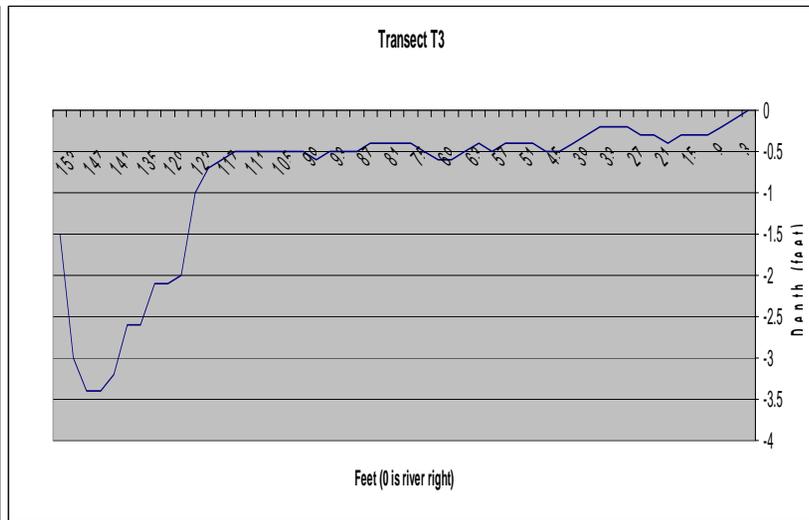
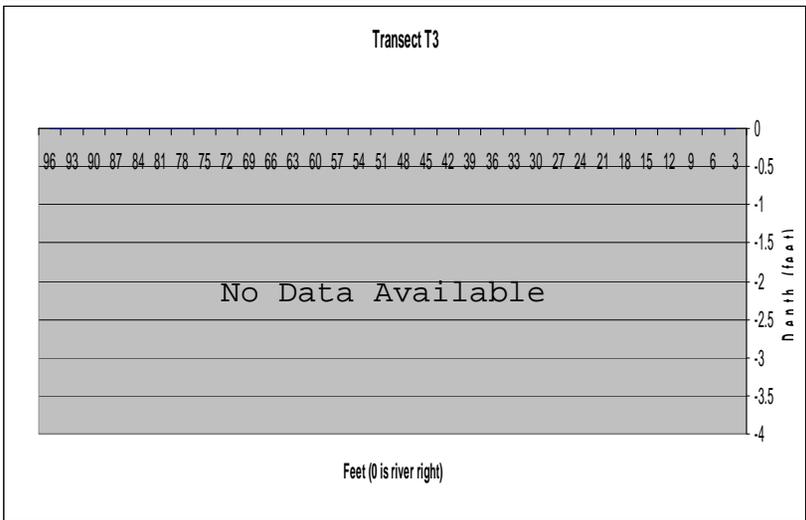
RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Johnson's Beach (Guerneville) to Casini Ranch – Riffle 2

June 19, 2009

July 28, 2009



RR at Digger Bend 123cfs
 RR at Healdsburg 133cf
 RR near Guerneville 172cfs

77cfs
 69cfs
 78cfs

Appendix B

Data Sheets

W6584 datum

START 11:50
end 12:30

70

Date: 6/16/09							Crew: Luno, Smith, Goddard						Riffle Number: 1				
Location: WPS 82 RR, downstream of Rio Linda Acad							Pictures:						Length: 140 ft				
Longitudinal profile							N: 38° 37.985						W: 122° 51.178				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
					T-1					T-2					T-3		
Length:	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119
Depth:	2.0	1.8	1.6	1.6	1.5	1.4	1.5	1.6	1.5	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	126	133	140														
Depth:	1.7	1.8	1.8														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	

Cross section 1 (25%)							Wetted width: 85 FT						N: WAY PT 84						W:			
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	*LP 51	54					
0.9	1.0	1.0	0.9	0.9	0.7	0.6	0.7	0.5	0.6	0.6	0.6	0.7	0.9	1.0	1.3	1.5	1.5					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
1.6	1.6	1.6	1.6	1.4	1.2	1.0	0.9	0.7	0.4													
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

* LPC
LOCATION
OR
LONGITUDINAL
PROFILE

WPT 85

Cross section 2 (50%)			Wetted width: 89'					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
1.1	1.6	1.5	1.3	1.1	0.9	0.7	0.6	0.4	0.4	0.6	0.6	0.8	0.9	1.2	1.4	1.5	1.5
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.6	1.7	1.8	1.8	1.8	1.8	1.6	1.6	1.8	1.9	1.7							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT 86

12:30

Cross section 3 (75%)			Wetted width: 87					N: 38° 37.983'					W: 122° 51.168'				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
3.4	3.2	2.9	2.4	2.1	1.8	1.7	1.7	1.6	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.6	1.7	1.7	1.7	1.6	1.5	1.3	1.2	1.1	0.8	0.4							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Date: 6/16/09							Crew: Cuneo, Smith, Gallard							Rifle Number: 2			
Location:							Pictures:							Length: 160			
Longitudinal profile							N: 38° 37. 856'							W: 122° 51.237'			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128
Depth:	1.6	1.6	1.3	1.5	1.1	1.2	1.0	1.2	1.1	1.3	1.1	1.3	1.4	1.6	1.8	1.6	1.9
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	136	144	152	160													
Depth:	2.2	2.4	2.7	2.7													
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
Observed River's Edge 2 person KAYAK pass - just slight scrape 0.6" depth - river right River's Edge canoe pass - no scrape 1.1 - river left																	
Cross section 1 (25%) wpt. 90			Wetted width: 177				N: 38° 37.839'						W: 122° 51.245'				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
.4	.7	1.0	1.0	1.0	1.0	1.1	1.2	1.3	1.2	1.3	1.4	1.3	1.3	1.4	1.3	1.3	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.5	0.5	0.4	0.4	0.4
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.6	0.6	0.7	0.9	1.0	1.1	1.2	1.4	1.7	1.8	1.8
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
2.0	1.7	1.4	1.2	0.3													
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

NOTE:
 THWG is not actual but best path for boaters to take - willows overhang left bank



Equipment: River's edge aluminum canoe, Otter KAYAK

WPT 91

Cross section 2 (50%)			Wetted width: 148					N: 38° 37.838'					W: 122° 51.237				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.1	0.3	0.3	0.3	0.5	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.7	0.7	0.6	0.6	0.4	0.4	0.3	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
111	114	117	120	123	126	LP 129	132	135	138	141	144	147	150	153	156	159	162
1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.6	1.3	1.1	0.7	0.3					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT 92

observed multiple canoes/kayaks cross → none struck, few scrapes

Cross section 3 (75%)			Wetted width: 127					N: 38° 37.849					W: 122° 51.226				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.1	0.3	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.8	0.8	0.8	0.8	1.0	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.9	2.1	2.3	2.4	2.6	2.7
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
3.0	3.3	3.7	4.0	4.2	0.5												
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WGS 84

Date: 6/16/09							Crew: Smith, Curcio, Goddard						Rifle Number: 3				
Location: WPT 93							Pictures:						Length: 400'				
Longitudinal profile							N: 38° 37.650'						W: 122° 51.082°				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
Depth:	.9	1.0	1.1	1.1	1.2	1.0	1.0	.8	0.9	1.1	1.3	1.3	1.5	1.3	1.4	1.3	1.3
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	340	360	380	400													
Depth:	1.2	1.2	1.1	1.1													
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	

rifle area
continued
≈ 300'
upstream
and
100'
downstream

40'

WPT 96 - saw 2 boats capsized

Cross section 1 (25%)							Wetted width: 99						N:				W:			
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
0.6	0.8	0.9	0.9	1.0	1.1	1.0	1.1	1.2	1.3	1.1	1.1	1.0	0.8	0.8	0.8	0.5	0.5			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108			
0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.1						
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162			
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216			
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270			

WPT 95

Cross section 2 (50%)			Wetted width: 51 FT					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.8	1.2	0.5	1.4	1.3	1.3	1.4	1.2	1.2	1.1	1.1	1.0	0.9	0.8	0.5	0.5		
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT 94

Cross section 3 (75%)			Wetted width: 61					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.6	1.1	1.4	1.4	1.3	1.3	1.2	1.4	1.4	1.4	1.4	1.4	1.3	1.2	1.0	1.0	0.9	0.5
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.4	0.1																
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Date: 6/17/09							Crew: Cuneo, Smith, Goddard, Laba						Riffle Number: 1							
Location: HEADSBUIG TO WOHLER							Pictures: 90% = 86-89 75% = 90-92						Length: 166							
Longitudinal profile							N:						W:							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
Length:	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136			
Depth:	1.4	1.4	1.5	1.5	1.4	1.5	1.4	1.2	1.2	1.4	1.2	1.3	1.5	1.7	1.5	1.5	1.6			
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
Length:	144	152	160																	
Depth:	1.5	1.6	1.1																	
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				
Length:																				
Depth:																				
Cross section 1 (25%)							Wetted width: 84						N:				W:			
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
.4	.7	.8	.8	.7	.6	.5	.4	.3	.4	.3	.3	.4	.6	.8	.9	1.0	1.1			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108			
1.2	1.4	1.4	1.5	1.5	1.3	1.3	.9	.5	0											
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162			
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216			
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270			



all low
40
80
120

WP# 97

W6584

Date: 6/17/09							Crew: Smith, GODDARD, Luba, Luno						Riffle Number: 2				
Location:							Pictures:						Length: 200				
Longitudinal profile							N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	0	10	20	30	40	50	60	50*	80	90	100	110	120	130	140	150	160
Depth:	1.2	.8	.7	.6	.8	.8	.7	.6	.9	.9	.8	.9	.9	1.2	1.2	1.5	1.8
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	170	180	190	200													
Depth:	1.9	1.8	1.9	1.9													
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	

Photo 98
down stream

Trailway under the willows on river left.

Cross section 1 (25%)							Wetted width: 61						N:				W:			
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
0.4	0.7	1.0	0.9	0.9	0.9	0.8	0.6	0.4	0.2	0.0	0.0	0.2	0.8	1.9	2.5	3.5	4.0			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108			
4.5	2.7																			
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162			
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216			
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270			

WPT 100
Photo 96
across transect

WPT 101
PHOTO 99

Cross section 2 (50%)			Wetted width: 64				N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.7	0.9	0.8	0.8	0.8	0.7	0.6	0.5	0.6	0.6	0.7	1.0	1.3	1.7	1.7	1.7	1.5	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.9	0.5	0.3															
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Cross section 3 (75%)			Wetted width: 45				N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.7	1.0	1.3	1.5	1.5	1.5	1.6	1.6	1.6	1.3	1.1	0.9	0.7	0.2	0.0			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT 102
PHOTO 100

WGS 84

Date: 6/17/09							Crew: Curcio, Smith, Gollard, Leba						Riffle Number: 3				
Location: WPT 107 - shallow uniform area - long in length							Pictures:						Length: 200				
Longitudinal profile							N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
Depth:	1.0	1.0	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.1	1.3	1.3	1.3	1.4	1.4	1.3	1.5
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	180	190	200														
Depth:	1.2	1.4	1.3														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
<p>photo 102 I already subtracted for lost tape</p>																	
Cross section 1 (25%)			Wetted width: 96				N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
1.3	2.5	2.5	2.0	1.2	1.0	1.0	1.1	1.3	1.4	1.5	1.5	1.4	1.4	1.3	1.2	1.1	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.0	1.0	0.9	0.9	0.9	1.0	1.0	1.0	1.2	1.2	1.2	1.5	1.6	0.6				
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

TOTAL length
WPT 106
TO WPT 104
0.11 miles
selected
200'
representative
section

PIC #
101 DS

50
100
150

WPT #
108

Tape broke
- lost 1' off
end of tape

Cross section 2 (50%)																	
Wetted width: $93-1 = 92$												N:			W:		
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
3.1	2.7	2.0	1.2	0.8	0.6	0.6	0.8	0.9	1.1	1.1	1.2	1.3	1.3	1.2	1.3	1.2	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.3	1.2	1.1	1.2	1.2	1.4	1.5	1.6	1.6	1.4	1.4	0.8	0.0					
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WP#
109
Photo
103

Cross section 3 (75%)																	
Wetted width: $89-1 = 88$												N:			W:		
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
2.3	2.4	1.8	1.0	0.6	0.5	0.4	0.5	0.6	0.8	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.4	1.5	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	1.0							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WP#
110
105
Photo

WGS 84

Date: 6/17/09							Crew: Cuneo, Smith, Gardner, Laba						Riffle Number: 4									
Location: WPT 111							Pictures:						Length: 100									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85					
Depth:	2.2	2.1	2.1	2.1	2.1	2.1	1.8	1.8	1.5	1.5	1.4	1.3	1.1	1.0	1.0	1.0	1.0					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	90	95	100	105	110	115	120	125														
Depth:	.9	.9	1.0	1.1	1.8	1.6	1.8	2.0														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
Cross section 1 (25%)							Wetted width: 137						N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
.1	0	.1	.4	.9	1.3	1.1	.5	0	.1	.1	.2	.3	.3	.6	1.1	1.3	1.7					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.2	2.1	1.9	1.5	1.2	.8	.4					
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
0	0	0	0	0	.5	.9	.8	.6	0													
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

25
50
75
WP# 112

Cross section 2 (50%)			Wetted width: 128				N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
.3	.7	.7	.8	1.5	1.0	.7	.7	.6	.7	.8	.9	1.0	1.0	1.0	.8	.8	.9
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.0	1.2	1.4	1.6	1.7	1.7	1.7	1.6	1.4	1.2	.9	.6	.2	0	0	0	0	0
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0	0	.7	.5	.1													
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WP#
113

Cross section 3 (75%)			Wetted width: 149				N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
.6	1.6	2.0	2.5	2.9	3.1	2.9	2.7	2.1	1.9	1.9	1.8	1.5	1.1	1.0	1.0	.9	.8
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
.9	.7	.6	.5	.5	.4	.3	.2	.1	.1	0	0	0	0	0	0	0	0
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0	0	0	0	0	0	0	0	0	0	0	.2	.1					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WP#
114

W65 89

Date: 6/18/09					Crew: Cuneo, Smith, Goddard					Riffle Number: 1									
Location: WPT 115 downstream of Mirabel					Pictures: LP=131, T1=132, T2=137					Length: 1246									
Longitudinal profile					WPT 116, 117					N:					W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Length:	6.1	12.2	18	24	30	36	42	48	54	60	66	52	58	64	70	76	82		
Depth:	1.5	1.4	1.2	1.0	1.0	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.9	1.0		
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
Length:	88	94	100	106	112	118	124												
Depth:	1.1	1.3	1.4	1.6	1.5	1.8	1.7												
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50			
Length:																			
Depth:																			
BOTH BOATS WERE STOPPED BY THIS RIFFLE																			
Cross section 1 (25%)			Wetted width: 131			N:			W:										
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54		
1.6	1.5	1.6	1.5	1.3	1.2	1.0	0.9	0.9	0.8	0.8	0.8	1.0	1.1	1.0	1.0	1.0	1.0		
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108		
0.9	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.8	0.6	0.7	0.6	0.7	0.8	0.9	1.1	1.2	1.3		
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162		
1.6	1.6	1.7	1.7	1.4	0.9	0.1													
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270		

30
60
90

PICTURE 1

Cross section 2 (50%)			Wetted width: 128					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
1.1	1.2	1.1	1.0	1.0	0.7	0.7	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.6	0.6	0.8
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.8	0.6	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.5	1.5	1.8	2.1	2.2	2.2
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
2.2	2.1	2.0	1.9	1.5													
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

THAWEG RUNS UNDER TREES SO WE PICKED "BEST LINE A BOAT COULD RUN FOR OUR LONG PRO"

Cross section 3 (75%)			Wetted width: 107					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.8	0.8	0.9	1.0	1.0	0.8	0.5	0.3	0.2	0.3	0.4	0.6	0.8	1.0	1.0	1.1	1.3	1.3
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.4	1.5	1.8	1.8	2.0	2.2	2.5	2.8	3.3	3.3	3.1	2.8	2.5	1.9	1.4	1.2	1.7	
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

FEET
138
139
140
141
4
WAYT
118

W65 84

Date: 6-18-09							Crew: JS, DC, NG						Rifle Number: #2									
Location: WOHLER TO JOHNSONS							Pictures: 153						Length: 150									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	78	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136					
Depth:	1.6	1.3	1.2	1.2	1.3	1.1	1.3	1.3	1.4	1.5	1.7	1.7	1.7	1.6	1.8	1.7	1.5					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	144	152	160																			
Depth:	1.2	1.5	1.6																			
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
Cross section 1 (25%)							Wetted width: 85						N:					W:				
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54				
0.5	1.1	1.1	1.0	0.8	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.1				
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
1.2	1.3	1.2	1.3	1.2	1.1	1.1	0.9	0.5	0													
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

WP# 129

WP# 120

Pic# 154

Cross section 2 (50%)			Wetted width: 79				N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	
1.0	1.1	1.0	1.1	1.0	1.0	.8	.5	0.5	0.5	0.5	.4	.4	.4	.4	.5	.7	.9	
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	
1.2	1.5	1.6	1.5	1.2	.8	.3	0											
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162	
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216	
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270	

WP#
121
Pic#
155

Cross section 3 (75%)			Wetted width: 70				N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	
1.3	1.1	1.1	1.0	0.9	0.8	.8	.8	.8	.8	.7	.7	.7	.9	1.4	1.6	1.7	1.7	
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	
1.6	.8	.2	.2	0														
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162	
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216	
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270	

WP#
122
Pic#
156

WGS 84

Date: 6/18/09						Crew: Cuneo, Smith, Colbard						Rifle Number: 3					
Location: WPT 124						Pictures: LP=159						Length: 112					
Longitudinal profile						N: 38°30.485'						W: 122°54.901					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102
Depth:	1.2	1.1	1.1	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.8	1.0	1.2	1.3	1.5	1.6
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	108	112															
Depth:	1.8	2.0															
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	

observed numerous canoes, going downstream, all got stuck at top of this riffle
lots of public use @ Seelhard beach observed.

Cross section 1 (25%)						Wetted width: 225						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54						
0.7	1.1	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.1	0.7	0.6	0.5	0.3	0.2	0.2	0.2	0.4						
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108						
0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.5	0.4	0.4						
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162						
0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.6	0.6	0.6	0.7	0.7	0.8	0.8						
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216						
0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.7	0.7	0.5	0.5	0.4						
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270						
0.4	0.2																						

THALWEG ON RIVER RT SIDE. IT GOES UNDER THE TREES

28
56
84

WAY 77
126

Cross section 2 (50%)			Wetted width: 130						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
1.5	2.5	2.6	2.7	2.5	2.4	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.0			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108			
1.1	0.9	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.6	0.7	0.6	0.6			
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162			
0.6	0.6	0.6	0.5	0.4	0.1															
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216			
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270			

WAY PT
127
PICS
161, 162, 163

Cross section 3 (75%)			Wetted width: 117						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
2.1	2.7	2.9	2.1	2.0	2.9	2.7	2.4	2.2	2.1	2.9	2.8	2.6	1.5	1.4	1.4	1.3	1.3			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108			
1.2	1.2	1.2	1.2	0.9	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.3			
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162			
0.2	0.1	0.0																		
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216			
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270			

WAY PT
128
PICS
164

Date: 7/28/09							Crew:						Rifle Number: 21				
Location: WPT 155, downstream Vacation beach							Pictures:						Length: 100				
Longitudinal profile							N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
Depth:	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.8	1.1	1.0	1.1	1.3	1.3	1.2	1.3	1.0	1.3
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	90	95	100														
Depth:	1.7	2.8	2.8														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	

Waypoint 156 photo-365

Cross section 1 (25%)							Wetted width: 93						N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
0.3	0.7	1.0	1.0	0.9	0.6	0.6	0.7	0.7	0.8	0.9	0.9	0.9	0.6	0.3	0.3	0.3	0.3					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
0.4	0.5	0.7	0.9	0.8	0.9	0.4	0.6	0.7	0.5	0.4	0.2	0.0										
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

3 people stuck going river left
 2 people walked kayaks going river Right

Waypoint 157 photo 367

Cross section 2 (50%)			Wetted width: 89					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.7	0.7	1.1	1.2	1.2	1.1	0.6	0.3	0.1	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.0	0.0	0.1	0.5	0.6	0.8	0.4	0.6	0.5	0.4	0.2							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Way point 158 371, 372

Cross section 3 (75%)			Wetted width: 93					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.6	1.6	1.4	1.1	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.0	0.0	0.0	0.0	0.6	0.0	0.3	0.4	0.6	0.7	0.6	0.6	0.7	0.0				
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Date: 7/28/09						Crew: Cuneo, Smith, Moravcs						Rifle Number: 2											
Location: Guerneville - Cassini						Pictures: 385						Length: 140											
Longitudinal profile						160 waypt						N:						W:					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17						
Length:	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119						
Depth:	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.9	0.7	0.6						
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34						
Length:	126	133	140																				
Depth:	1.0	0.9	1.2																				
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							
Length:																							
Depth:																							
WE FOUND 3 FRESHLY KILLED WINGED FLOATERS HERE + ABOUT 10 SMELLS THAT HAD NO MEAT IN THEM																							
Cross section 1 (25%)						Wetted width: 184						N:						W:					
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
	0	0.1	0.3	0.5	0.5	0.6	0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1					
	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
	1.1	1.1	1.0	0.9	0.8	0.8	0.8	0.6	0.7	0.7	0.6	0.7	0.5	0.6	0.6	0.6	0.6	0.6					
	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.1	0.4	0.4	0.3	0.3	0.3	0.5	0.5	0.5	0.9	1.1					
	165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
	1.2	1.1	1.2	1.1	1.0	1.8	0.7	0.5	0.0														
	219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

~~Photo 385~~

Photo 386
waypt 161

WE ALSO FOUND ABOUT 20 LIVE WINGED

FLOATERS

NEAR
SIDE

ROOTED
IN ABOUT

ON RIVER
0.5 FT OF WATER

Photo
387

Cross section 2 (50%)							Wetted width: 149							N:							W:														
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
.0	.2	.3	.4	.5	.5	.6	.7	.7	.7	.7	.8	.8	.8	.8	.7	.6	.6	.6	.6	.6	.6	.6	.6	.6	.5	.6	.6	.6	.6	.7	.7	.6	.5	.6	.6
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162																		
.6	.6	.6	.6	.6	.6	.6	.6	.5	.6	.6	.6	.7	.7	.6	.5	.6	.6	.6	.8	.7	.8	.7	.7	.7	.6	.7	.6	.6	.8	.6	0				
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216																		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270																		

WPT
162

Cross section 3 (75%)							Wetted width: 159							N:							W:														
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0	.1	.2	.3	.3	.3	.4	.3	.3	.2	.2	.2	.3	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.5	.6	.5	.5	.5	.5	.5
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162																		
.5	.5	.5	.6	.7	1.0	2.0	2.1	2.1	2.6	2.6	3.2	3.4	3.4	3.4	3.0	1.5	0																		
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216																		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270																		

Photo
388

WPT
163

@ edge of large Ludwigia mass

Date: 7/29/09							Crew: Cuneo, Smith, Morretto						Rifle Number: R1						
Location: WPT 115 (+downstream of rubber dam)							Pictures:						Length: 100						
Longitudinal profile							N:						W:						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Length:	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85		
Depth:	1.4	1.3	1.2	1.1	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.9	0.6	0.9		
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
Length:	90	95	100																
Depth:	1.1	1.1	1.5																
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50			
Length:																			
Depth:																			
NO DISTINCT THALWEG, WE TOOK THE LONG PRO @ THE CENTER OF THE WETTED WIDTH.																			
Cross section 1 (25%)			Wetted width: 133 FT						N:						W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54		
0.9	1.3	1.3	1.4	1.3	1.4	1.4	1.2	1.2	1.1	0.9	0.8	0.8	0.8	0.9	1.0	1.2	1.3		
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108		
1.3	1.2	1.2	1.2	1.1	1.2	1.0	1.0	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2		
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162		
0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0											
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270		

Photo 430

WE USED ALL THE SAMES & TRANSSECT THIS AS LAST TIME, THIS FAC WAS STILL HERE

Photo 431

Cross section 2 (50%)																	
Wetted width: 133						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.7	1.4	1.0	1.1	0.9	0.6	0.5	0.5	0.3	0.1	0.1	0.1	0.2	0.2	0.4	0.3	0.3	0.4
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.7	0.7	0.6	0.7	0.7	1.4
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
1.3	1.5	1.7	1.7	1.6	1.6	1.3	0.9										
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
432

Cross section 3 (75%)																	
Wetted width: 114						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.5	0.5	0.6	1.1	1.4	0.8	0.2	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.5	0.5	0.6	0.8
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.6	1.8	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.3	2.0
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
433

Date: 7/29/09							Crew: Cuneo, Smith, Morsicato						Rifle Number: R2				
Location: WPT 119, just downstream of Burke's							Pictures:						Length: 180				
Longitudinal profile photo 439							N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153
Depth:	1.0	0.9	0.9	0.8	1.1	1.2	1.2	1.3	1.3	1.6	1.4	1.3	1.2	1.2	1.0	0.8	0.9
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	162	171	180														
Depth:	0.7	0.8	2.0														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
Found all three flays from June cross sections - used all three of the same transects																	
Cross section 1 (25%)			Wetted width: 87						N:						W:		
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
.2	.5	0.8	0.6	0.6	0.5	0.4	0.4	0.3	0.4	0.6	0.4	0.5	0.4	0.4	0.4	0.6	0.6
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.8	0.8	1.0	0.9	0.9	0.9	0.9	0.8	0.6	0.3	0							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Channel visibly narrower than previous pass in June, however, flow also appears deeper, observed canoes passing without scraping (photo 438)

photo 440
441

Cross section 2 (50%)			Wetted width: 34					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.2	0.7	0.7	0.8	0.8	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.1	0.3	0.4	0.8	1.1	1.3	1.5	1.3	1.0	0.5								
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
442

Cross section 3 (75%)			Wetted width: 23					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.5	0.7	0.8	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.7	0.8
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.8	1.0	1.2	1.3	1.2	0.7												
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
443

Date: 7/29/09							Crew: Cuneo, Smith, Moratto						Rifle Number: R3									
Location: WPT 124							Pictures:						Length: 120									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102					
Depth:	1.6	1.0	0.8	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.6	0.8	0.9	0.9	1.0	0.8	1.0					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	108	114	120																			
Depth:	0.7	0.9	1.0	0.5																		
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
Cross section 1 (25%)							Wetted width: 237						N:					W:				
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54				
	0.0	0.4	0.6	0.8	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0				
	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108				
	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.6	0.3	0.4	0.0	0.0	0.0	0.1	0.1	0.1				
	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162				
	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.4				
	165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216				
	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.5				
	219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270				
	0.4	0.2	0.2	0.1	0.1																	

Photo

Photo 449

Photo 450

Cross section 2 (50%)			Wetted width: 188-y					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0	0.3	0.1	0.2	0.2	0.8	0.9	0.9	0.8	0.8	0.8	0.9	0.6	0.9	0.6	0.6	0.6	0.4
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.3	0.2	0.1	0.2	0.4	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.5	0.1	0.2
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.6	0.6
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
0.4	0.4	0.3	0.3	0.2	0.2	0.1											
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
454

Cross section 3 (75%)			Wetted width: 150					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
1.3	1.7	2.0	2.0	1.8	1.9	1.9	1.6	1.4	1.5	1.6	1.4	1.4	1.3	1.3	1.2	1.1	1.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.0	0.9	0.9	0.7	0.8	0.7	0.7	0.6	0.6	0.7	0.6	0.2	0.2	0.2	0.6	0.9	0.9	1.0
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0.9	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1				
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
455

Date: 8-3-09							Crew: JS, AM, DC						Rifle Number: #1 (101 BRIDGE)									
Location: HENRYSBURG TO WOODLOR							Pictures: #6, 7, 8						Length: 120									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102					
Depth:	0.9	0.8	0.7	0.6	0.8	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.9	0.9	1.0					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	108	115	121																			
Depth:	0.9	1.0	1.1																			
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
EXPOSED ROCKS. OUR BOAT HIT BOTTOM. WE SAW A SOAK RAFT THAT GOT STUCK HERE. OTHER RAFTS WENT THROUGH BEFORE WE GOT TO THIS RIFFLE																						
Cross section 1 (25%)							Wetted width: 80						N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
0.2	0.2	0.3	0.4	0.3	0.2	0.1	0.2	0.0	0.1	0.1	0.3	0.4	0.5	0.6	0.8	0.8	0.9					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
1.1	1.3	1.3	1.3	1.3	0.9	0.8	0.3															
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

WPT,
97

BEFORE
WE GOT
TO THIS
RIFFLE

Date: 8-3-09							Crew: JS, AM, DC							Riffle Number: 2			
Location: HEADSTARTS TO WATER							Pictures: # 10, 11, 12							Length:			
Longitudinal profile			180				N:							W:			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	9	18	26	35	44	53	62	71	80	89	98	107	116	125	134	143	152
Depth:	0.8	0.7	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.9	1.0	1.0
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	161	170	179														
Depth:	1.2	1.1	1.3														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
WE DID THE LAPID ON THE RIVER RT CHANNEL. THE RIVER RT. CHANNEL IS SHALLOWER BUT THE OTHER CHANNEL HAS A STRAIGHT ACCROSS IT.																	
Cross section 1 (25%)			Wetted width: 59				N:							W:			
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.4	0.5	0.6	0.5	0.4	0.5	0.3	0.2	0	0	0	0	0.3	1.2	2.0	2.5	3.4	4.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
3.6																	
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT
100

Found flags for T1 + T3, estimated T2 location (halfway between T1 + T3)

Cross section 2 (50%)																	
Wetted width: 65						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
-1	.5	.6	.6	.6	.3	.2	.1	.1	.2	.3	.5	.8	1.3	1.5	1.5	1.5	1.2
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.9	0.6	0.6															
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
12

Cross section 3 (75%)																	
Wetted width: 45						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.4	0.7	0.8	1.0	1.3	1.4	1.3	1.2	1.0	0.8	0.6	0.3	0.3	0.5	0.1			
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
13

Date: 8/3/09							Crew: Cuneo, Smith, Moscatto					Rifle Number: R3											
Location:							Pictures: #14					Length: 200											
Longitudinal profile							N:					W:											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17						
Length:	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170						
Depth:	0.6	0.6	0.8	0.6	0.6	0.6	0.6	0.7	0.6	0.8	1.0	1.0	1.1	1.2	1.2	1.4	1.4						
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34						
Length:	180	140	200																				
Depth:	1.4	1.4	1.3																				
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							
Length:																							
Depth:																							
Cross section 1 (25%)							Wetted width: 95					N:						W:					
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
	1.3	2.3	2.3	1.5	0.9	0.6	0.7	0.9	0.9	1.1	1.2	1.0	1.0	1.0	0.9	0.8	0.8	0.8					
	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
	0.6	0.6	0.6	0.5	0.5	0.7	0.8	0.8	1.0	0.8	1.0	1.3	1.0										
	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
	165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
	219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

wps 107

Photo 15

Found all 3 transect flags - used all 3 same from June survey

Photo
16

Cross section 2 (50%)			Wetted width: 92					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
2.8	2.4	1.7	0.9	0.5	0.3	0.3	0.5	0.5	0.7	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.9
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.9	0.8	0.8	0.9	1.0	1.0	1.0	1.2	1.2	1.0	1.2	0.6						
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Cross section 3 (75%)			Wetted width: 88					N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
2.8	1.9	1.2	0.6	0.2	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.7	0.8	0.8	0.9	1.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.0	1.2	1.1	1.3	1.3	1.5	1.5	1.6	1.6	1.4	0.4							
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
17

deep channel on river right not floatable - too short, too much debris / overhanging limbs
 river left much better access for boats

Date: 8/3/09							Crew: Cuneo, Smith, Marcotto						Riffle Number: R4									
Location:							Pictures:						Length: 120									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102					
Depth:	2.4	2.3	2.2	2.0	1.9	1.8	1.5	1.2	0.8	0.6	0.8	0.7	0.7	0.7	0.7	0.9	0.8					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	108	114	120																			
Depth:	0.8	0.7	0.9																			
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
Cross section 1 (25%)							Wetted width: 83						N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
0.4	0.6	0.6	0.7	0.9	1.1	1.3	1.4	1.6	1.6	1.7	1.8	1.7	1.8	1.8	1.9	2.1	2.2					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
2.2	2.1	2.0	1.8	1.6	1.3	1.0	0.6	0.2														
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

wpt 111
Photo 18

Photos 19+20

Side channel measured in transects in June is now disconnected from river, did not measure
Found all 3 transect flows from June transects → used all same flow locations for transects

Cross section 2 (50%)																	
Wetted width: 102						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.4	1.2	1.4	0.5	0.1	0.1	0.1	0.0	0.0	0.2	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.6
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.7	0.9	1.1	1.2	1.2	1.4	1.5	1.6	1.6	1.6	1.4	1.2	1.1	0.8	0.4	0.1		
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
21

Cross section 3 (75%)																	
Wetted width: 69						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.3	1.3	1.9	2.3	2.6	2.7	2.5	2.4	1.9	1.3	0.7	0.8	.7	0.7	0.7	0.6	0.7	0.6
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.4	0.3	0.2	0.1	0.0													
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
22

Date: 8/4/09							Crew: Cuneo, Smith, Moratto						Riffle Number: R1				
Location: Rio Lindo - Healdsburg							Pictures: 47=LP, 48=T1, 54=T2, 55=B						Length:				
Longitudinal profile				120			N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102
Depth:	1.5	1.3	1.2	1.3	1.2	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.2	1.2	1.3	1.2	1.3
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	108	114	120														
Depth:	1.4	1.3	1.5														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
BOYS DON'T RUN A GROUND HERE.																	
Cross section 1 (25%)				Wetted width: 84						N:						W:	
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.6	0.6	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.5	0.8	0.7	0.9	1.2
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
1.3	1.2	1.3	1.3	1.1	0.9	0.9	0.7	0.4	0.1								
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

WPT 82

Date: 8/4/09							Crew: Cuneo, Smith, Morasto						Rifle Number: R2				
Location: Riv Linda to Healdsburg wpt 90							Pictures:						Length: 200				
Longitudinal profile							N:						W:				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Length:	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
Depth:	1.4	1.4	1.5	1.5	1.2	1.2	1.2	1.1	1.4	1.6	1.7	1.5	1.7	2.0	2.2	2.2	2.3
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Length:	180	190	200														
Depth:	2.2	2.4	2.5														
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Length:																	
Depth:																	
Cross section 1 (25%)			Wetted width: 166						N:						W:		
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.1	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.7	0.7	0.6
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.6	0.5	0.5	0.6	0.5	0.6	0.5	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
0.0	0.1	0.1	0.1	0.3	0.4	0.4	0.4	0.5	0.7	0.9	1.1	1.3	1.6	1.5	1.2	1.1	0.9
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
0.2																	
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
62

Photo
61

Found flags for T1, T2 from June measurements, estimated T3 location

Cross section 2 (50%)																	
Wetted width: 127						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.1
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
0.1	0.0	0.0	0.1	0.3	0.4	0.4	0.5	0.7	0.8	1.0	1.2	1.3	1.5	1.7	1.6	1.7	1.6
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
1.5	1.6	1.4	1.0	0.8	0.4												
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
63

Cross section 3 (75%)																	
Wetted width: 114						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
0.0	0.1	0.2	0.3	0.5	0.5	0.7	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.4	1.6	1.9	2.0
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108
2.1	2.3	2.5	2.6	2.7	2.8	2.8	3.0	3.2	3.3	3.4	3.5	3.6	3.9	4.0	3.8	3.4	2.9
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
1.5																	
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270

Photo
64

Photo
66
Looking
upstream
@ Kayak

Date: 8/4/09							Crew: Cuneo, Smith, Moratto						Riffle Number: R3									
Location: Rio Lindo to Healdsburg							Pictures:						Length:									
Longitudinal profile							N:						W:									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Length:	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255					
Depth:	0.6	0.6	0.8	1.0	0.9	1.0	1.0	1.1	1.1	1.1	0.9	1.0	1.1	1.2	1.0	1.0	0.9					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Length:	270	285	300																			
Depth:	0.9	0.7	1.3																			
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
Length:																						
Depth:																						
Cross section 1 (25%)							Wetted width: 54						N:					W:				
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54					
0.4	0.6	0.7	0.8	0.8	0.7	0.9	0.8	1.0	1.0	0.9	0.8	0.7	0.5	0.5	0.2	0.1	0.0					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108					
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162					
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216					
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270					

LPT 93

Photo 68

Photo 67

Observed 4 kayakers go through - 1 got stuck (operator error?)

Cross section 2 (50%)		Wetted width: 47						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54		
0.6	1.0	1.2	1.3	1.2	1.2	1.1	0.9	0.9	1.1	0.8	0.7	0.5	0.2	0.2					
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108		
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162		
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270		

Photo
73

Cross section 3 (75%)		Wetted width: 56						N:						W:					
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54		
0.2	0.7	1.1	1.0	1.0	1.0	0.8	1.1	1.1	1.0	1.1	1.0	1.0	0.8	0.8	0.7	0.6	0.1		
57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108		
111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162		
165	168	171	174	177	180	183	186	189	192	195	198	201	204	207	210	213	216		
219	222	225	228	231	234	237	240	243	246	249	252	255	258	261	264	267	270		

Photo
74

Found all 3 transect flags

Appendix C

Photographs

June 1, 2009. Jimtown to Healdsburg Memorial Beach



June 1, 2009. Russian River near Alexander Valley Road Bridge.



June 1, 2009. Russian River upstream of Healdsburg.

June 1, 2009. RR at Digger Bend 172 cfs, RR at Healdsburg 197 cfs, RR near Guerneville 215 cfs

June 1, 2009. Jimtown to Healdsburg Memorial Beach



June 1, 2009. Russian River at Healdsburg. Kayak is stuck (paddle tip is touching bottom)

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg.



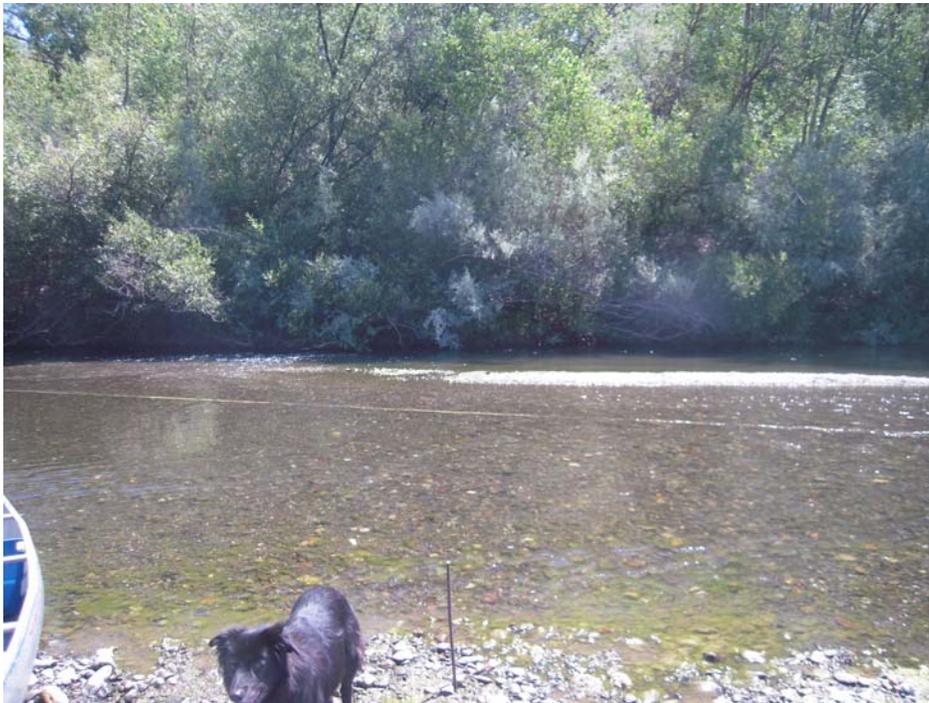
June 17, 2009. Russian River at Highway 101 downstream of Healdsburg.

June 17, 2009. RR at Digger Bend 139 cfs, RR at Healdsburg 142 cfs, RR near Guerneville 185 cfs

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg. Taking cross-section measurements.



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg (upstream of Dry Creek).

June 17, 2009. RR at Digger Bend 139 cfs, RR at Healdsburg 142 cfs, RR near Guerneville 185 cfs

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg (upstream of Dry Creek).



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg (upstream of Dry Creek). Taking cross-section measurements.

June 17, 2009. RR at Digger Bend 139 cfs, RR at Healdsburg 142 cfs, RR near Guerneville 185 cfs

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg (upstream of Dry Creek). Taking longitudinal profile measurements.



June 17, 2009. Russian River at Highway 101 downstream of Healdsburg (upstream of Dry Creek). Green in water is algae.

June 17, 2009. RR at Digger Bend 139 cfs, RR at Healdsburg 142 cfs, RR near Guerneville 185 cfs

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of confluence with Dry Creek.



June 17, 2009. Russian River at Highway 101 downstream of confluence with Dry Creek.

June 17, 2009. RR at Digger Bend 139 cfs, RR at Healdsburg 142 cfs, RR near Guerneville 185 cfs

June 17, 2009. Healdsburg Memorial Beach to Wohler



June 17, 2009. Russian River at Highway 101 downstream of confluence with Dry Creek.

June 18, 2009. Wohler to Johnson's Beach, Guerneville



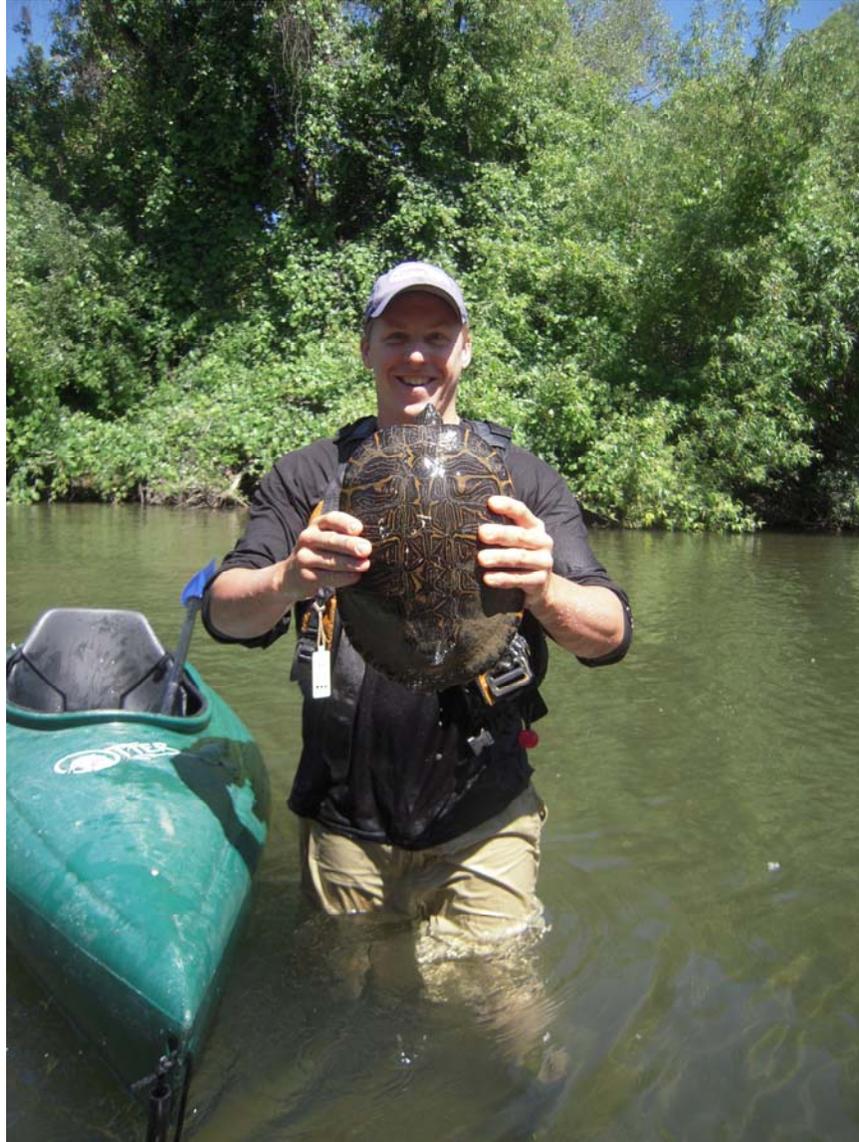
June 18, 2009. Russian River downstream of Wohler.



June 18, 2009. Russian River downstream of Wohler.

June 18, 2009. RR at Digger Bend 131 cfs, RR at Healdsburg 138 cfs, RR near Guerneville 176 cfs

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River downstream of Wohler. One big turtle.

June 18, 2009. RR at Digger Bend 131 cfs, RR at Healdsburg 138 cfs, RR near Guerneville 176 cfs

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River at Burke's Canoes put-in location.



June 18, 2009. Russian River upstream of Hacienda.

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River at Hacienda Bridge.



June 18, 2009. Russian River at Guerneville (Highway 116 Bridge visible).

June 18, 2009. RR at Digger Bend 131 cfs, RR at Healdsburg 138 cfs, RR near Guerneville 176 cfs

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River at Guerneville (Highway 116 Bridge visible).



June 18, 2009. Russian River at Guerneville (Johnson's Beach).

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River at Guerneville (Johnson's Beach).



June 18, 2009. Russian River at Guerneville (Johnson's Beach).

June 18, 2009. Wohler to Johnson's Beach, Guerneville



June 18, 2009. Russian River at Guerneville (Johnson's Beach). County of Sonoma Department of Health Services Bacterial Warning Sign.



June 18, 2009. Russian River at Guerneville (Johnson's Beach). County of Sonoma Department of Health Services Bacterial Warning Sign.

June 18, 2009. RR at Digger Bend 131 cfs, RR at Healdsburg 138 cfs, RR near Guerneville 176 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Johnson's Beach (looking downstream just below the Johnson's Beach summer dam)



June 19, 2009. Russian River at Johnson's Beach (looking upstream at the Johnson's Beach summer dam)

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Vacation Beach (looking upstream at the Vacation Beach summer dam).



June 19, 2009. Russian River at Vacation Beach summer dam.

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River downstream of Vacation Beach.



June 19, 2009. Russian River just upstream of Monte Rio.

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Monte Rio.



June 19, 2009. Russian River at Monte Rio.

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Monte Rio.



June 19, 2009. Russian River at Monte Rio.

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Monte Rio.



June 19, 2009. Russian River at Monte Rio. Green algae in water evident in this photo.

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River at Monte Rio.

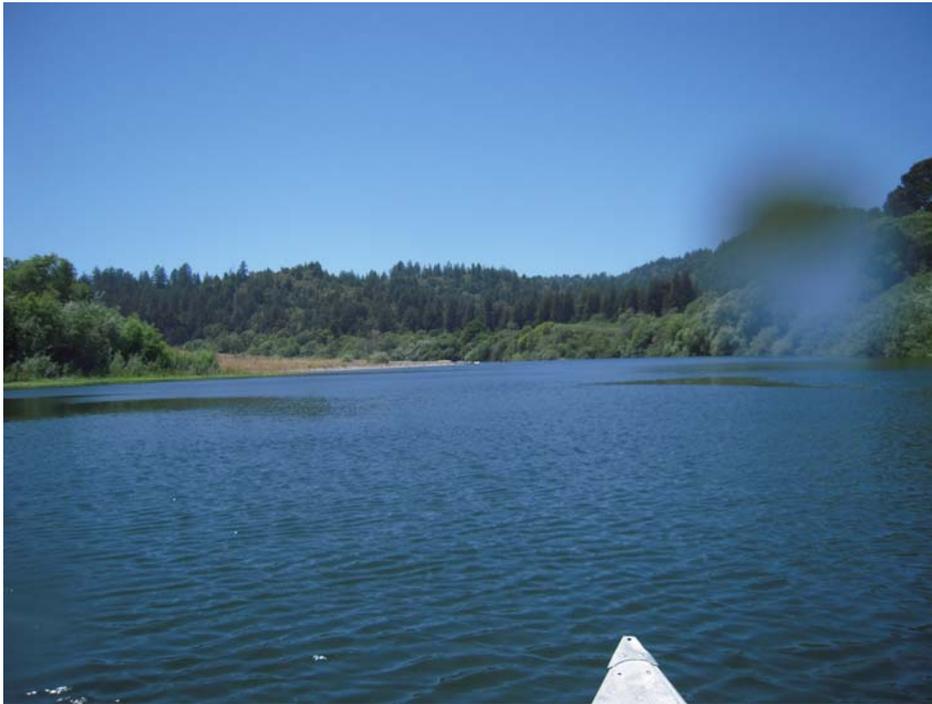


June 19, 2009. Russian River at Monte Rio.

June 19, 2009. Johnson's Beach, Guerneville to Casini Ranch



June 19, 2009. Russian River downstream of Monte Rio.



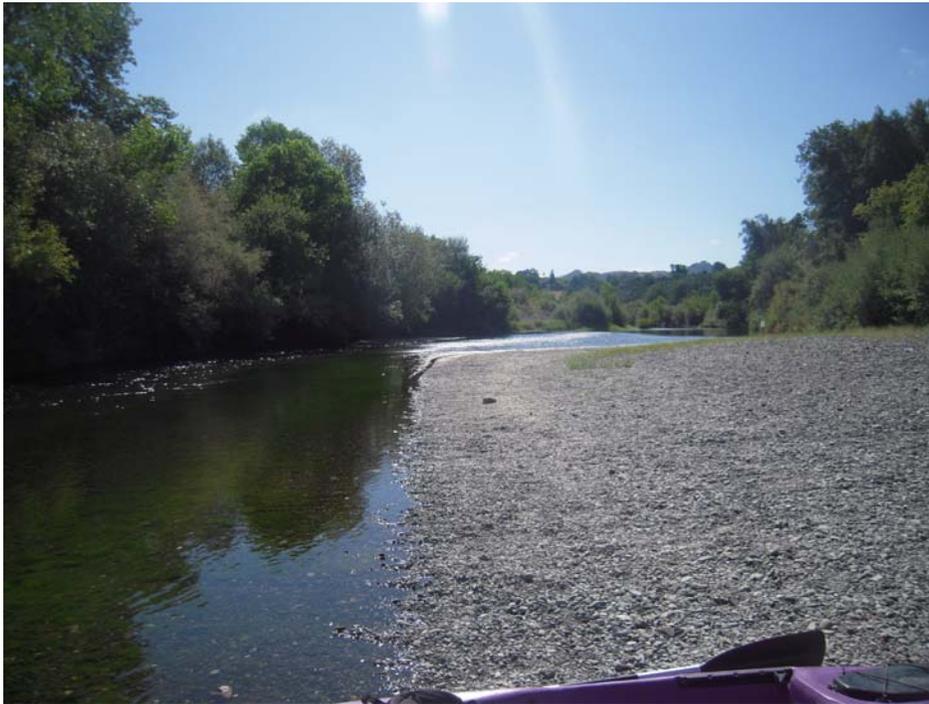
June 19, 2009. Russian River at Casini Ranch.

June 19, 2009. RR at Digger Bend 123 cfs, RR at Healdsburg 133 cfs, RR near Guerneville 172 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at River's Edge Kayak and Canoe Trips put-in at Rio Linda.



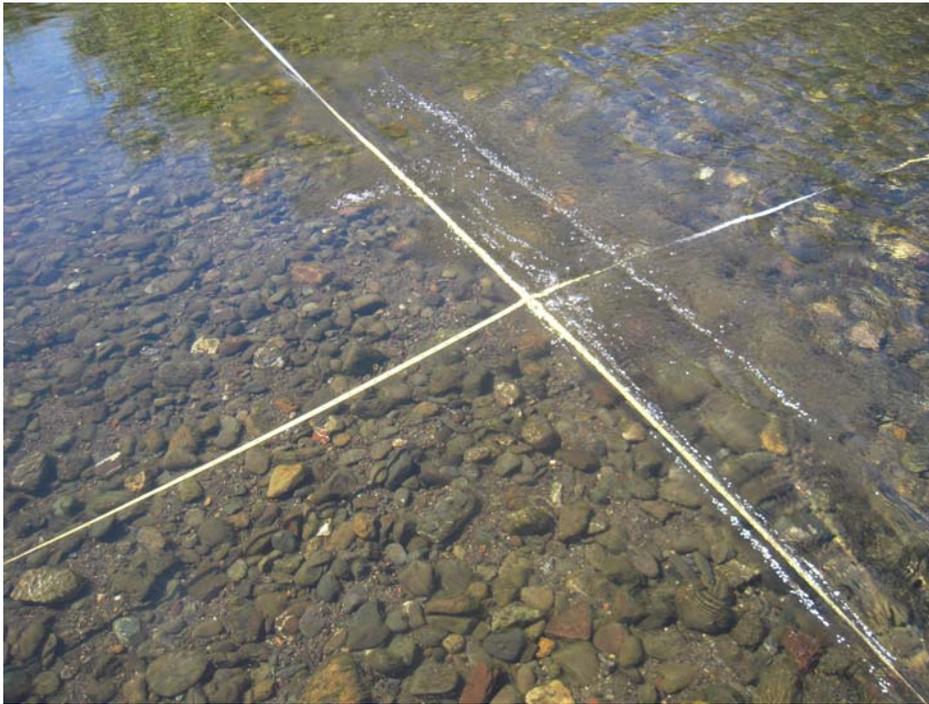
August 4, 2009. Russian River at River's Edge Kayak and Canoe Trips put-in at Rio Linda.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Rio Linda.



August 4, 2009. Russian River at Rio Linda. Good water clarity was observed

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Rio Linda. Good water clarity was observed.



August 4, 2009. Russian River downstream of Rio Linda.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River downstream of Rio Linda.



August 4, 2009. Russian River downstream of Rio Linda (near Fitch Mountain).

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).



August 4, 2009. Russian River at Healdsburg (near Fitch Mountain).

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg.



August 4, 2009. Russian River at Healdsburg.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg.



August 4, 2009. Russian River at Healdsburg.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg.



August 4, 2009. Russian River at Healdsburg.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 4, 2009. Rio Linda to Healdsburg Memorial Beach



August 4, 2009. Russian River at Healdsburg.



August 4, 2009. Russian River at Healdsburg.

August 4, 2009. RR at Digger Bend 76 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 71 cfs

August 3, 2009. Healdsburg Memorial Beach to Wohler



August 3, 2009. Russian River downstream of Healdsburg Memorial Beach summer dam.



August 3, 2009. Russian River looking upstream at Healdsburg Memorial Beach summer dam.

August 3, 2009. RR at Digger Bend 74 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 75 cfs

August 3, 2009. Healdsburg Memorial Beach to Wohler



August 3, 2009. Russian River downstream of Healdsburg at Highway 101 bridge crossing.



August 3, 2009. Russian River downstream of Healdsburg.

August 3, 2009. RR at Digger Bend 74 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 75 cfs

August 3, 2009. Healdsburg Memorial Beach to Wohler



August 3, 2009. Russian River downstream of Healdsburg.



August 3, 2009. Russian River downstream of Healdsburg.

August 3, 2009. RR at Digger Bend 74 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 75 cfs

August 3, 2009. Healdsburg Memorial Beach to Wohler



August 3, 2009. Russian River downstream of Healdsburg. *Ludwigia* sp. seen at edge of river on left.



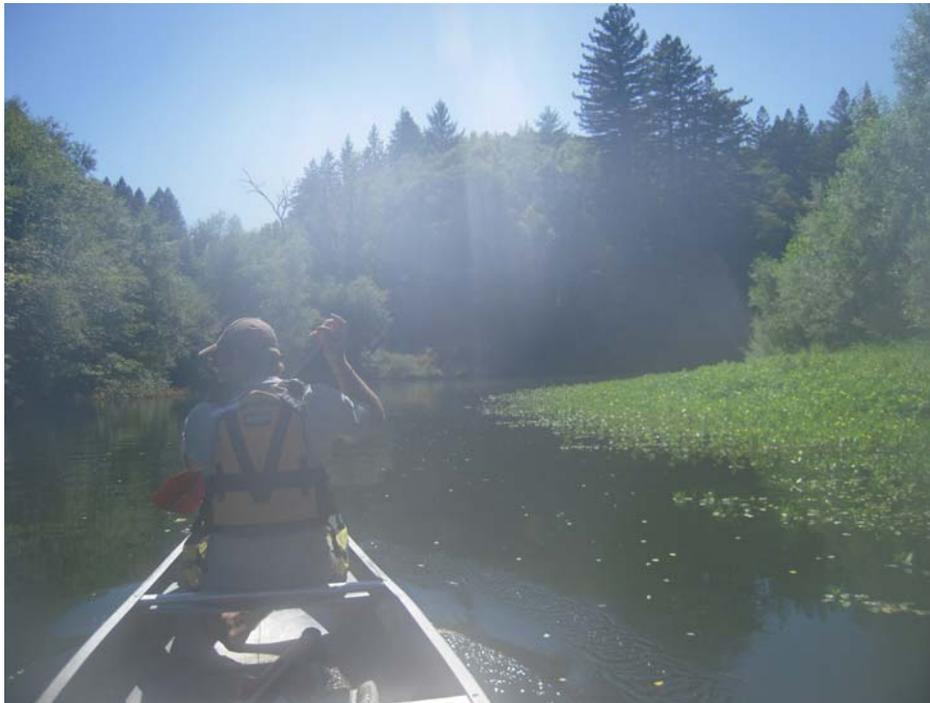
August 3, 2009. Russian River downstream of Healdsburg.

August 3, 2009. RR at Digger Bend 74 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 75 cfs

August 3, 2009. Healdsburg Memorial Beach to Wohler



August 3, 2009. Russian River downstream of Healdsburg.



August 3, 2009. Russian River at River Front Park. *Ludwigia* sp. seen at edge of river on right.

August 3, 2009. RR at Digger Bend 74 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 75 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River inflatable dam at Mirabel.



July 29, 2009. Russian River at Mirabel.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River at Mirabel. Taking cross-section measurements.



July 29, 2009. Russian River at Mirabel near Burke's Canoes put-in.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River at Mirabel near Burke's Canoes put-in.



July 29, 2009. Russian River at Burke's Canoes put-in.

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River just downstream of Burke's Canoes put-in.



July 29, 2009. Russian River upstream of Hacienda.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River upstream of Hacienda.



July 29, 2009. Russian River near Hacienda.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River near Hacienda.



July 29, 2009. Russian River at Summerhome Park.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River near Odd Fellows Park.



July 29, 2009. Russian River near Korbel.

July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River at Johnson's Beach, Guerneville.



July 29, 2009. Russian River at Johnson's Beach, Guerneville.

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River at Johnson's Beach, Guerneville.



July 29, 2009. RR at Digger Bend 73 cfs, RR at Healdsburg 65 cfs, RR near Guerneville 81 cfs

July 29, 2009. Wohler to Johnson's Beach, Guerneville



July 29, 2009. Russian River at Johnson's Beach, Guerneville.

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Summer dam at Johnson's Beach, Guerneville.



July 28, 2009. Russian River downstream of summer dam at Johnson's Beach, Guerneville.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River upstream of Vacation Beach.



July 28, 2009. Russian River looking upstream of Vacation Beach summer dam.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River downstream of Vacation Beach summer dam.



July 28, 2009. Russian River downstream of Vacation Beach.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River upstream of Monte Rio.



July 28, 2009. Russian River at Monte Rio.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River at Monte Rio.



July 28, 2009. Russian River at Monte Rio.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River at Monte Rio.



July 28, 2009. Russian River at Monte Rio.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River at Monte Rio.



July 28, 2009. Russian River at Monte Rio.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River at Monte Rio.



July 28, 2009. Russian River at Monte Rio.

July 28, 2009. RR at Digger Bend 77 cfs, RR at Healdsburg 69 cfs, RR near Guerneville 78 cfs

July 28, 2009. Johnson's Beach, Guerneville to Casini Ranch



July 28, 2009. Russian River downstream of Monte Rio.

Appendix D

Newspaper Articles

SONOMA WEST
Times & News
THE WINDSOR TIMES
The Healdsburg Tribune
LIVING
River boaters stay afloat

Published: Wednesday, August 5, 2009 3:28 PM PDT

 Story and photos by Frank Robertson
 Staff Writer

The Russian River's anticipated Big Dry Up this summer hasn't happened yet, much to the relief of summertime fun vendors like Larry Laba of Russian River Adventures in Healdsburg.

"So far so good," said Laba who rents SOAR (Somewhere On A River) inflatable kayaks to paddlers voyaging downriver below the Healdsburg Memorial Beach summer dam.

"We're hanging in there," said Linda Burke, of Burke's Canoe Rentals in Forestville, where paddlers navigate the River to Guerneville and take the Burke's Canoes school bus back to their cars. "We'll see how it goes in the long run."

At Guerneville's Johnson's Beach, "Business has been huge," owner Clare Harris said last Sunday as beachgoers lined up at the concession stand to rent canoes, kayaks and peddle boats and scarf hamburgers and beer.

Harris said the recession may be helping the River's recreation-dependent economy.

"It's because people aren't traveling," said Harris. "They're staying home and coming here."

A drastic cut in River flows that had been expected after the Fourth of July weekend never materialized owing to factors such as an aggressive water conservation effort by the Sonoma County Water Agency and its 600,000 customers in Marin and Sonoma counties.

SCWA is under temporary state orders to cut its water deliveries by 25 percent through Oct. 2. Without the cut Lake Mendocino was projected to run dry in September when lake water behind Coyote Dam is needed for release to aid the fall salmon migration.

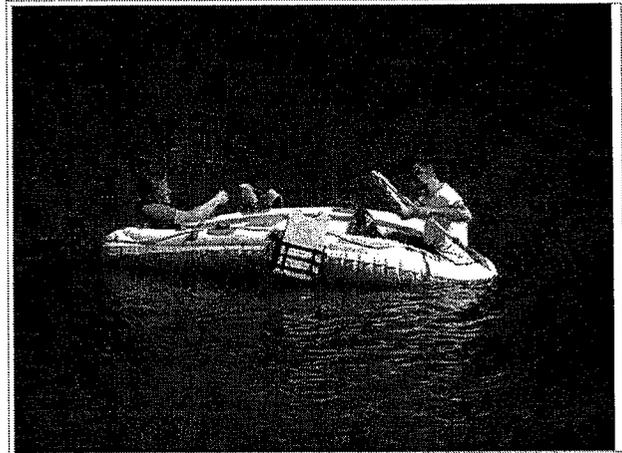
County officials as well as beach vendors now have their fingers crossed the remainder of the season will not require the flow to be cut to a "critical dry year" level of 35 cfs below Healdsburg.

"We don't expect it to be lower than 80 or 85 cubic feet per second," said 5th District Supervisor Efen Carrillo two weeks ago at a dedication ceremony for Sunset Beach, the county's newest River access park just west of the Hacienda Bridge.

The River flow at Hacienda was about 80 cfs last week, according to the gauge on the Hacienda Bridge. That's about half the minimum flow of 125 cfs the Water Agency must maintain under its state River diversion permits.

Last weekend it was hard to find much evidence that low-flow has done any harm to this summer's Russian River recreation economy.

In Guerneville the installation of two summer dams means boaters and bathers don't see much



Floaters

difference anyway when they're out on the lakes that fill up behind dams at Vacation Beach and Johnson's Beach, arguably the most popular beach on the River.

Healdsburg's Memorial Beach dam also backs water up about a mile and a half for swimming and boating.

With school about to start (Windsor High School starts next week, and Healdsburg, Analy and El Molino High Schools the following week) some say that summer is basically over and it's been a pretty good year, maybe even great compared with the economic hit the recreational community feared last April when the state's low-flow order came down.

The River was flowing at about 80 cubic feet per second (cfs) at the Hacienda Bridge this weekend, below the historic normal year minimum level of 125 cfs but still well above the "critical dry year" 35 cfs that no one in recent history has really ever experienced.

River flow at "critical dry" was projected to look like a trickle and had veteran River watchers like Don McEnhill of the Russian Riverkeeper environmental watchdog project predicting canoe renters would be out of business.

Healdsburg's venerable canoe man W.C. "Bob" Trowbridge used to say the Russian River is the most canoed river in the world, and it looked like it last Saturday.

Burke's Canoes on River Road was overflowing with cars and Guerneville was wall-to-wall with visitors on account of the Vineman triathlon and Lazy Bear Weekend coincidentally merging into one big carnival of swimming, running, biking and growling.

At Sunset Beach where the River was the lowest it's been all summer, canoeists poked their paddles in the river bottom and pushed off, in effect poling their boats past a narrow stretch of river where a tree partly blocked passage.

All paddlers made it through without anyone having to get out to push or pull a canoe — but what if they did? It's not as though getting your feet wet on a sunny day in August is the end of the world. The River looked resplendent, a deep clear green mirror reflecting sunlight bouncing off the ripples of a breeze.

People in canoes and kayaks paddled past in droves. Where's the hardship in this picture? I wondered. We could all use more suffering like this.

Coming to terms with River germs

Beachgoers were told not to swim at three popular Russian River beaches again last weekend owing to higher than normal bacteria counts.

Johnson's Beach, Camp Rose Beach and Cloverdale River Park Beach were listed on Sunday for health warnings "Until further notice ... due to levels of bacteria that exceed state guidelines," said a county health advisory hotline.

The latest warnings pushed the total number of Russian River beach bacteria advisories this summer to more than 40, the most ever recorded since the sampling began in the 1990s.

Last year Sonoma County Environmental Health Division samplings showed a total of 18 high River readings, compared with two in 2007 and one in 2006.

Some say lower Russian River flows are a contributing factor, concentrating potential bacterial pollution that would be diluted if more water was flowing.

"The trouble is that water isn't moving fast enough to flush it out," said Monte Rio Recreation and Park District Director Steve Baxman. Guerneville's Johnson's Beach and the Monte Rio beach have seen the highest number of advisories with nine this summer, mostly in designated shallow "kiddie beach" areas close to shore.

Although River flow levels have remained at or near normal for much of the summer, more frequent

incidents of higher bacteria counts have been showing along the River's entire reach in Sonoma County, from Cloverdale to the estuary at Jenner.

The enterococcus bacteria count measured 148 organisms per 100 milliliters of river water sampled last Thursday at Healdsburg's Camp Rose Beach, according to the Sonoma County Department of Health Services. The state advisory safe level is 61 per 100 ml.

The Health Department's Environmental Health Division has a beach sampling hotline this summer which the public can call to find out whether any beaches have been posted with warnings. The number is 565-6552.

Samples are tested for levels of total coliform, E. coli (*Escherichia coli*), and enterococcus bacteria as indicators of water quality. Though these are not considered disease-causing agents, "their presence above certain numeric levels is suggestive of the presence of other, difficult to detect and quantify pathogenic microorganisms that can cause health effects," says the Health Department's guidance information. "The use of these indicators is an effective way of monitoring the overall well-being of recreational waters."

—F.R.

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<http://www.sonomawest.com/articles/2009/08/05/living/sonomawest.com>

<http://www.sonomawest.com/articles/2009/08/05/living/stats.townnews.com>

◦ [DELICIOUS](#)

Wine Country tourism feels recession's pinch



KENT PORTER / The Press Democrat

Visitors still come to Healdsburg's enticing plaza to shop and eat but even in that bastion of Wine Country cachet, hotel bookings are not being made as far in advance, fewer visitors are staying overnight and room rates are often reduced.

By [CLARK MASON](#)
THE PRESS DEMOCRAT

Published: Sunday, August 16, 2009 at 5:28 p.m.

Last Modified: Sunday, August 16, 2009 at 5:28 p.m.

At a Healdsburg bed-and-breakfast on a recent morning, a half-dozen guests were rhapsodizing about the town's charms, comparing notes on the restaurant and wineries they'd visited the day before.

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BED TAXES COLLECTED

Sonoma County's cities collect anywhere from 9 to 12 percent tax on hotel and inn room rates. Windsor's rise in collections is attributable to a significant increase in the number of hotel rooms in the most recent fiscal year, when the 116-room Hampton Inn opened. The town's bed tax rate also increased this year from 8 to 12 percent.

SANTA ROSA

2007-08: \$3,972,538

2008-09: \$3,246,508

Decrease: 18 percent

SONOMA

2007-08: \$2,615,474

2008-09: \$2,220,692

Decrease: 15 percent

HEALDSBURG

2007-08: \$1,861,555

2008-09: \$1,735,637

Decrease: 7 percent

ROHNERT PARK

2007-08: \$1,899,362

2008-09: \$1,693,217

Decrease: 11 percent

PETALUMA

2007-08: \$1,482,114

2008-09: \$1,290,914

Decrease: 13 percent

WINDSOR

2007-08: \$742,500

2008-09: \$873,000

Increase: 18 percent

SEBASTOPOL

2007-08: \$318,635

2008-09: \$204,354

Decrease: 36 percent

CLOVERDALE

2007-08: \$164,233

2008-09: \$159,980

Decrease: 3 percent

Related Links:

- [Sonoma County Tourism Bureau broadens target audience](#)

Robert Dansby, an arts college professor from Newhall, voiced his enthusiasm for Sonoma County, but also acknowledged the drop-off in his wife's interior design business was keeping them closer to home this summer.

"The revenue stream isn't quite as big as it used to be," he said. "Spending \$5,000 or \$6,000 on an Asian trip is not something we're going to do this year."

Besides, he said, "Healdsburg is more fun than Singapore. We're crazy about this place."

Situated in the heart of Wine Country with pedestrian-friendly charm and world-class restaurants, Healdsburg has fared better than most areas when it comes to retaining tourists and overnight visitors.

One of the best barometers of the industry, bed taxes — the fees that cities and the county collect on hotel rooms and inns — are down virtually everywhere.

For the 12 months that ended in June, those declines included a 36 percent plunge in Sebastopol, an 18 percent drop in Santa Rosa and somewhat smaller double-digit decreases in Sonoma, Petaluma and Rohnert Park.

Healdsburg's 7 percent dip isn't as bad as most, but city officials are projecting it will accelerate — to 14 percent in the city's current budget year.

Tourism, an estimated \$1.3 billion bulwark of Sonoma County's economy, is continuing to struggle and the prognosis is that it will dip more.

"We will probably see a continued decline, flattening out over time," said Ben Stone, Sonoma County's economic development director.

But it's also a mixed picture, Stone said, "partly cloudy with some blue sky in time," because of recent upticks in business confidence. "As people feel more confident, they will do more travel."

For now, hotel bookings are not being made as far in advance, fewer visitors are staying overnight and room rates are often reduced.

One industry survey of the hotel business in Sonoma County showed the average room rate in June was \$118, compared to \$139 a year ago, representing a 15 percent drop.

Hotel occupancy had gone from 60 percent in the first half of 2008 to 51 percent for the same period in 2009.

The situation was worse in Napa County and San Francisco.

"We are doing better than our competitive set," said Tim Zahner, director of public relations and marketing for the Sonoma County Tourism Bureau.

Even the historical town of Sonoma, also a mecca for tourists, is feeling the pain. It's bed tax revenues, which like most other cities go into the general fund to help pay for core municipal services such as police, fire and public works, are down 15 percent.

"This is the first year we've seen a drop," said Sonoma Assistant City Manager Carol Giovanatto. "We had seen a gain overall the last several years upwards of 8, 9, 10 percent."

Sonoma hotel occupancy rates, she said, declined from 66 percent at the end of June 2008 to 64 percent at the end of June this year.

Giovanatto said business travel probably accounts for the biggest drop. "Businesses aren't doing conferences, retreats or getaways."

The drop in overnight visitors is seen as a contributor to a 10 percent drop in sales tax revenues, although she said it's hard to separate how much of that is part of the general downturn in the economy that affects the purchasing power of local residents.

There still seem to be plenty of day-trippers in Sonoma, drawn to wineries and the town square.

"It's good to still see a lot of activity out there," she said.

In Healdsburg, things aren't all doom and gloom in the wine tasting rooms, restaurants and hotels that ring the historic plaza.

At the ultra swank, 16-room Les Mars Hotel, where room rates start at \$575 a night, guests are staying for less time and bookings are down about 15 percent compared to last year, said manager Katie Ciocca.

But the hotel isn't about to lower its rates to attract more clientele. "We take care of people when they're here," said Ciocca. "You can't ever cheapen your brand."

She said that in the tourism slump that followed 9/11 many hotels cut rates too much and it's taken years for them to recover.

The Les Mars is in an elite category with rooms that feature antique furniture and high-ceilings, fireplaces and sheets that are made by the same Italian linen maker that provides bedding for the pope.

"We're seeing a lot more last-minute (bookings)," Ciocca said. "People aren't able to plan as much."

Sometimes, she said, guests who might have gone to Europe decide to stay instead for five nights at the Les Mars.

At the nearby Hotel Healdsburg, rooms have been discounted from 12 to 15 percent this year. On weekends at the moment, rates start at \$360 per night.

"Yes, we're down. Yes, we're doing more promotions," said Circe Sher, marketing director for the Hotel Healdsburg.

After a slow season earlier this year, she said, things picked up in July. "It's getting better. We're feeling optimistic. We're still holding our breath for the winter."

Weekends have filled up much later than in the past, she said, but midweek has been doing well with a lot of Bay Area residents. There has been an upswing of day visitors taking advantage of spa and restaurant packages that include use of the pool, according to Sher.

Herb Liberman, the city's economic development director, said that B&B operators have lowered their rates to remain attractive.

"My rate is down a little bit," said Lucy Lewand, the owner of the Camellia Inn, a two-story pink Victorian mansion that she has operated as a bed-and-breakfast for almost three decades.

"My revenues are down around 12 percent for the year to date," said Lewand, who also serves as president of the Healdsburg Chamber of Commerce. "In terms of a B&B, I'm typical, or faring a little better."

Liberman said that even though many visitors come for the day, "like everywhere else, people have slowed down on purchasing."

The merchants around the plaza report some struggles.

"We're doing OK. We're down from last year, as everyone is," said Jazz Fabry, a consultant at Capture Fine Art.

The gallery features eye-catching photo montages by Thomas Barbey described as "tongue-in-cheek surrealism" and limited edition photos selling for \$500 to \$3,000.

Fabry said he offers deep discounts to keep business going as well as more affordable \$95 "open editions."

Next door at Electric Rose Gallery, owners are doing more than selling art. Co-owner Shiloh Sophia McCloud said the goal is to create a "destination experience" by holding workshops, classes and offering conversations with well-known authors like Alice Walker.

"We've brought thousands of people to Healdsburg. They pay to come," said McCloud, who said most come from the Bay Area, but "we have people flying from Portland, Washington, New York and Denver that are on our list."

It's still the allure of Wine Country that is the big draw. "People come here for the wine; it still drives the economy," said Alan Emery, an employee at the Ferrari-Carano tasting room on the plaza.

There are a lot of visitors from the Midwest and East, including Chicago and Florida, Emery said. "Yesterday there were a lot from Ohio. We get the day-trippers, too. It revs up Thursday when tourists start coming in, through Sunday. It's still quite a destination."

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1. [b335494](#) says...
August 16, 2009 7:57:25 pm

I really don't want the industries and businesses to shut down. I hope they can keep it together. I wonder about places in the article like LeMars who say they're not lowering their boutique hotel prices from \$575 a night - yet they have been feeling the pinch.

I know that a 5 star hotel in SF originally said they'd never lower their prices but they are now. They also said they'd never be on priceline, etc, but they are now. They also fired tons of staff people there.

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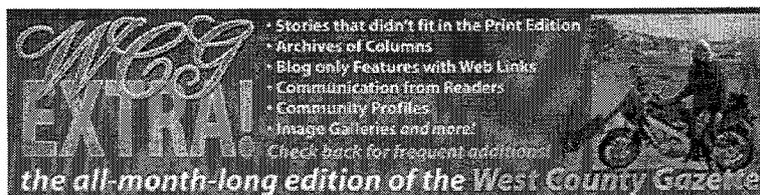
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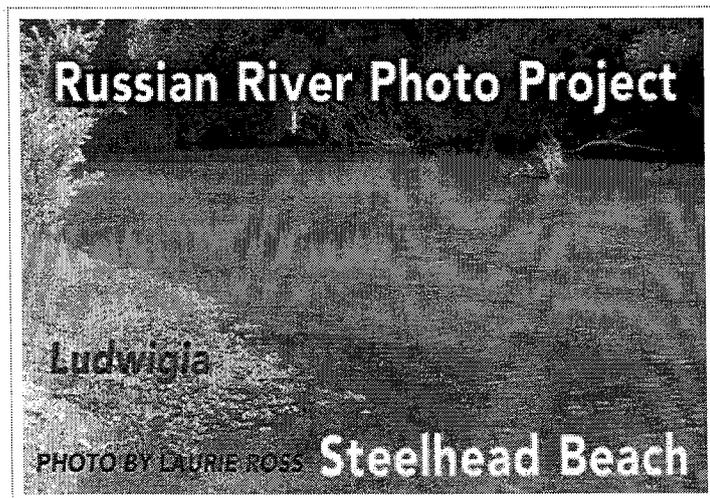


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Welcome to the West County Gazette EXTRA! Blog. Your contributions are always welcome...all-month-long. Just [e-mail me](#). Thanks for keeping the lines of communication open for our neighbors of Sonoma County home towns.

Saturday, July 18, 2009

Russian River Flows and Photo Documentation Project



Update of River Flows & Photo Project

By Brenda Adelman

Memorial Day Weekend, Russian River Watershed Protection Committee and friends began clicking away at popular Russian River locations. Our photo project had begun and will continue weekly through the first weekend in October. We are committed to photographing Hacienda, Guerneville (Johnson's and Dubrava beaches), and Monte Rio beaches every weekend, when recreation use is high. Several people have volunteered to photograph other popular beaches, and we will report their results in August.

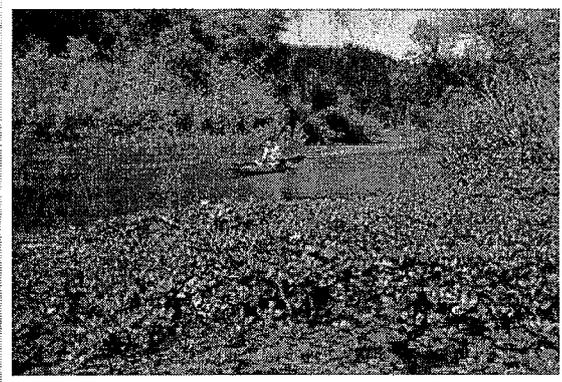
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Flows can get much lower...

As you recall, the State Water Board granted the Sonoma County Water Agency the authority to lower flows down to 35 cubic feet per second (cfs) measured at the Hacienda Bridge. The goal was to save water in Lake Mendocino for the fall Chinook migration. Because we have had a relatively cool summer so far, they have not needed to do that and flows have stayed between 125 cfs and 175 cfs for the last month. 125 cfs is the minimum for a normal year, but we expect flows to go quite a bit lower when the weather heats up. We want to have a photo record over the entire summer so we can document the effects. (This is being written on July 10th.)

We want to identify flow levels, impacts on recreation, and visible water quality impairments such as invasive Ludwegia growths and large algae clumps. Most of



the pictures we've taken so far, are from the major bridges and give a panorama view. At the same time we are keeping track of flow levels as measured at Hacienda and temperatures on the day we shoot. We found that there was very high river use during the hot weather. Over July 4th weekend, when it was fairly cool (about low 70's and windy), recreationist numbers were much lower than the week before, when it was in the '90's.

Water quality needs watching...

Water quality tests for bacteria have caused concern at times at Johnson's and Monte Rio Beaches. Signs went up a few times telling people to swim at their own risk. We heard of one dog getting sick last weekend after swimming in the river. But bacteria data is finicky. It can be high one day and back to normal the next. One kid or pet that "goes" in the water right before a sample is taken, can skew the results that can disappear an hour later.

Also, stirring up the river bottom muck can also muddy the water and cause bacteria counts to rise. Tests are usually taken weekly, but if they get positive results, they go back again. Our advice: if you have health issues, it might be better to stay out of the water or find a remote beach somewhere where contamination is less likely to occur. If you are pretty healthy, you probably don't have to worry much.

We are also very concerned about the large mats of algae in the river and the bright green Ludwegia growing from the bank. We are especially concerned about what will happen if the weather heats

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up and the river goes down. The nutrients and invasive plants are likely to proliferate.

There have been several reports of large clumps of dark green algae from Rio Nido to Monte Rio. In some cases, it has come up suddenly and actually coated the rocks on the riverbanks with muck. We were told that the Monte Rio beach concession had to rake out large amounts of algae right where they rent their canoes. We could use help photographing these conditions. Please send us dated digital photos and locations noted if you are able to help us document these conditions. So far the water quality data being collected has not really indicated problems with nutrients in spite of these conditions, so it is extremely important that we document them visually.

RRWPC has been trying to take the same photos in the same locations from week to week so we can see how the lowering of the flow affects recreational use. This is proving more challenging than we thought,



since getting the exact same angle and magnification each time is difficult. Also, there are dams at Johnson's and Vacation Beaches (about a mile downstream from Johnson's) and they have a major affect on water levels at those locations. Nevertheless, we can still demonstrate some of the differences over the course of time, especially when flows go very low.

Noticing the impacts....

What we have noticed is that if you look at the body of the water each week between 125 cfs and 200 cfs you don't notice a huge difference in the amount of water. But then if you notice permanent fixtures, like signs, you can see the water levels gradually going down. You can also watch people cross the river at Monte Rio beach and for most, it doesn't even come up to their knees. In some places, large dogs can run across and not even have to swim.

So far, kayaks and canoes can still maneuver pretty well. We have been told that they start having major problems at 85 cfs. If the weather stays cool, maybe we can get through most of the summer without losing the canoe season. We saw hundreds of boats all up and down the river in the hot weather especially. It is an extremely popular past time for visitors and local residents alike.

Would you like to help?

If any of you like to photograph and have a digital camera, please

send us pictures. We would like to have the photos dated and we would appreciate a description of where they were taken. You can email them to: rrwpc@comcast.net

PHOTOS by Larry Hanson, Shula Zuckerman, Laurie Ross

Labels: [ENVIRONMENT](#), [TOP STORIES - SONOMA COUNTY NEWS](#), [Water News](#)

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SONOMA WEST
TIMES & NEWS**THE WINDSOR TIMES****The Healdsburg Tribune****THE HEALDSBURG TRIBUNE > NEWS****Bacteria counts continue to exceed safe guidelines**[Print Page](#)**By Frank Robertson**
Staff Writer

Published: Monday, July 20, 2009 2:26 PM PDT

Russian River bacteria levels exceeded state health guidelines again last week at two crowded beaches where warnings were posted saying "swimming not advised."

Official warning signs went up at Healdsburg's Veterans Memorial Beach and at Guerneville's Johnson's Beach after water samples last Thursday showed bacteria levels exceeded state health guidelines for recreational contact.

Subsequent samples have shown bacteria levels were back to safe levels at both beaches this week, said Walt Kruse, director of environmental health for the Sonoma County Health Department.

A warning sign remained up at Johnson's Beach on Tuesday but Kruse said Johnson's owner Clare Harris would be advised that the most recent bacteria tests show safe levels.

In Healdsburg in the river below Memorial Beach dam, "We've had absolutely no problem at all," said Larry Laba of Russian River Adventures, whose clients typically canoe and kayak the river from Healdsburg down to the Wohler Bridge.

Laba said the Sonoma County Water Agency will be installing its rubber dam at Wohler this week which could result in anticipated lower flows when the water Agency is expected to cut releases from Lake Mendocino to preserve water to release this fall for migrating salmon.

"In our section of the River Dry Creek brings in pretty fresh clean water," said Laba. "It's pretty darn clear and clean. So far so good."

River samples are being taken twice a week on Tuesdays and Thursdays at a dozen points in the river from Cloverdale to the estuary at Jenner this summer as part of a state-mandated monitoring program.

The Johnson's warning advisory Tuesday didn't seem to faze sunbathers at the popular Guerneville beach where dozens of people splashed in deep green water behind the Russian River Recreation and Park District's summer dam.

The water sample taken at Johnson's last Thursday showed a high reading for enterococcus, an "indicator bacteria" that could signal the presence of pathogens that if contacted "could result in symptoms such as diarrhea, cramps and nausea," according to a North Coast Regional Water Quality Control Board (NCRWQCB) information sheet on the bacterial water sampling program.

The river sample taken at Healdsburg on July 9 contained a total coliform bacteria count of more than 17,000 per 100 milliliters of water, according to the results posted jointly by the Sonoma County Water Agency, the Sonoma County of Environmental Health division and the North Coast Regional Water Quality Control Board.

Coliform bacteria are present in the digestive tracks of warm-blooded animals and humans and in soil. State health guidelines for freshwater recreation say a health hazard exists when total coliform bacteria counts measure greater than 10,000 organisms per 100 milliliters of water.

Enterococcus was measured at more than 200 per 100 ml. at Healdsburg last week. State guidelines

say a reading above 31 per 100 ml should trigger a health advisory.

The enterococcus bacteria count was 203, more than three times higher than the state draft guideline.

The river is tested for levels of total coliform, E. coli (*Escherichia coli*), and enterococcus bacteria as indicators of water quality. Though these are not considered disease-causing agents, "their presence above certain numeric levels is suggestive of the presence of other, difficult to detect and quantify pathogenic microorganisms that can cause health effects," say state guidelines. "The use of these indicators is an effective way of monitoring the overall well-being of recreational waters."

So far this year there have been more than 30 instances of high bacteria counts at river beaches from Cloverdale to the estuary. Health officials have not linked the high counts this summer to any particular source.

"Potential sources of contamination include surface water runoff, animal waste, leachate from sewage disposal systems and improperly disposed of human waste from visitors to the river," say state guidelines.

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SONOMA WEST TIMES & NEWS > NEWS

River bacteria counts up again

Print Page

After brief holiday respite, levels exceeding state guidelinesby Frank Robertson
Sonoma West Staff Writer

Published: Wednesday, July 15, 2009 4:19 PM PDT

GUERNEVILLE - Russian River bacteria levels exceeded state health guidelines again last week at two crowded beaches where warnings were posted saying "swimming not advised."

Official warning signs went up at Healdsburg's Veterans Memorial Beach and at Guerneville's Johnson's Beach after water samples last Thursday showed bacteria levels exceeded state health guidelines for recreational contact.

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SONOMA WEST
TIMES & NEWS**THE WINDSOR TIMES****The Healdsburg Tribune****SONOMA WEST TIMES & NEWS > NEWS****Russian River bacteria levels return to 'acceptable'**[Print Page](#)by **David Abbott**
Sonoma West Editor

Published: Thursday, July 9, 2009 1:03 PM PDT

Concerns over bacteria levels in the Russian River that led to warnings being posted on popular local beaches mere days from the Fourth of July weekend subsided just in time for the festivities on some beaches.

Warning signs were posted by the Sonoma County Department of Health Services at Johnson's Beach in Guerneville, Monte Rio Beach, Sunset Beach, and Veteran's Memorial Beach in Healdsburg.

On Friday, July 3, the warnings were removed from the Guerneville and Monte Rio Beaches, and by Sunday the signs at Memorial and Sunset were down as well.

"It takes about 24 hours for the test results to come in, (which led to) advisory signs being posted on the beaches on Wednesday," Sonoma County Environmental Health Director Walter Kruse said. "On Thursday, the Sonoma County Water Agency did samples again leading to Friday's removal of the signs."

During the summer several agencies — including the North Coast Regional Water Quality Control Board, SCWA and even the Permit and Resource Management Department — take routine weekly tests at six public beaches from Healdsburg to Monte Rio, including Camp Rose Beach, Healdsburg Memorial Beach, Steelhead Beach and Forestville Access Beach, known as Mom's Beach.

State health guidelines recommend warning signs be posted when "indicator organisms" exceed 10,000 per 100 milliliters (ml) for total coliform; 235 per 100 ml for e. coli, and 61 per 100 ml for enterococcus.

Bacteria tests for the month of June showed enterococcus counts at Johnson's Beach at a peak of 139.6 per 100 ml on June 19, but by July 2, the count had dropped back to what is considered a safe level of 20. Memorial Beach saw a peak of 84 on July 2 that measured at 52 the following day.

Kruse said it is difficult to determine what causes the fluctuations and one purpose the monitoring serves, is to alert health officials to such things as illegal discharges or spills. It also serves to gather data on water quality in order to monitor the overall health of the water and to assure that it is up to EPA standards for bacteria content.

The various agencies want to reduce the probability of users getting gastrointestinal problems.

"We post advisories so people know," Kruse said. "When those levels hit the upper limit we put up the signs so people can make the choice" to stay out of the water.

But the warnings did take a toll on at least one business on the river.

Lollie Mercer who owns River's Edge Kayak and Canoe Trips said the warnings definitely affected her business, leading to a loss of "a couple of" bookings.

Mercer was frustrated because the agency doesn't give any warning when the signs go up.

"We had to be honest and disclose it to (our customers)," she said. "And tell them it's up to them (whether to take the trips)."

Mercer is also frustrated by what she sees as mismanagement by various agencies, although she doesn't blame individuals who are doing as good a job as possible given the complexity of a water management system that is often at odds with itself.

The competing needs of environmental management, public use, agriculture, and businesses that depend on the river are pieces of the problems Mercer sees.

But further downstream, last week's warnings came down just in time to ease concerns about holiday celebration disruptions.

"They called us Friday to take the advisory notice down," said Roberta Pollard of the Monte Rio Recreation and Park District. "It was really nice on the Fourth and everyone had a good time."

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SONOMA WEST
TIMES & NEWS**THE WINDSOR TIMES****The Healdsburg Tribune****WINDSOR > NEWS****Supervisors dual role questioned**[Print Page](#)***River low-flow order ignites Water Agency governance debate*****By Frank Robertson**
Staff Writer

Published: Wednesday, June 24, 2009 3:46 PM PDT

With the Russian River's flow set to be cut again this summer River advocates are wondering whether county supervisors are really doing all they can to insure that sufficient water flows down river for swimmers, boaters and endangered fish.

The perception has been around for years that Russian River water is being sold off to cities to fill swimming pools and sprinkle suburban lawns at the expense of the River's ecology, and the Sonoma County Board of Supervisors, which also serves as the Sonoma County Water Agency's Board of Directors, has gleefully let it happen

"Do you represent us first or the Water Agency first?" Healdsburg canoe and kayak operator Larry Laba asked 5th District Supervisor Efen Carrillo last month at a Guerneville low-flow workshop to air out potential damage lower flows may impose this summer on River recreational uses.

Carrillo found himself in a tough spot as a county supervisor representing a district with a huge stake in the River's recreational economy while he's also a Sonoma County Water Agency director, one of the many special-district hats that county supervisors wear.

If this summer's worst-case scenario materializes River flows may drop to 35 cubic feet per second (cfs) below Healdsburg, a more than 300 percent reduction compared with normal years. If that happens, "I believe there's going to be a social effect you haven't looked at," Laba told the May 28 workshop led by Carrillo and a panel of state and county officials who said candidly the low-flow conditions looming this summer are uncharted territory.

"We need 85 cubic feet per second" in the lower River for summer recreational use, said Laba. "If that water has to come from other places ... you need to represent us," said Laba, who operates Russian River Adventures. "You haven't done it. I don't believe you have served us well," said Laba, whose 4th District Supervisor, Paul Kelley, did not attend the workshop.

Reduced Russian River summer flows may now be permanent owing to a number of factors including greater urban water demands, a reduction in the amount of water historically diverted from the Eel River into the Russian, and federally mandated flow cuts to improve habitat for endangered native salmon.

"We're never going to see normal year flows again," Sweetwater Springs Water District General Manager Steve Mack told the low-flow workshop.

"The mission of the Water Agency is to serve its customers," said Mack, whose Sweetwater District serves Guerneville and Monte Rio with water pumped from wells supplied by the River. "For the rest of us in Sonoma County, who's looking out for us?"

Criticism of the Sonoma County Water Agency's governance structure is not new, but drought conditions and competing demands for scarce River water have amplified the issue of whether Russian River recreational needs are aligned with the Water Agency's mission to supply its urban contractors and their growing populations.

The impending departure of Water Agency chief Randy Poole, who has indicated he plans to retire, has also renewed interest in a possible change in Water Agency governance.

Poole, who was in a closed session discussion with supervisors Tuesday, could not be reached for comment.

Carrillo and former 5th District Supervisor Mike Reilly both confirmed Poole has submitted a long-term notice of resignation.

Poole's likely successor is Water Agency Assistant General Manager Grant Davis.

At May's workshop Davis said the Water Agency will ramp up efforts this summer to closely monitor River recreational conditions and water quality.

He's also a River enthusiast and a regular visitor to Johnson's Beach in Guerneville, said Davis.

"I recreate there," said Davis. "I come to Johnson's Beach. I love this spot. I canoe and kayak."

Former 5th District Supervisor Mike Reilly said there is no question the 5th District representative is in a complicated position trying to do what's right for the River and at the same time make sure the Water Agency can meet its contractual obligations to supply a growing population of 600,000 people in Marin and Sonoma counties.

But to change the Water Agency's governance would require action by the state legislature, not the county.

"It's a state charter," said Reilly. "It would take an action of the state legislature to alter the charter.

"There's been talk over time about doing some kind of joint powers agreement like the Sonoma County Transportation Authority," said Reilly, who retired in January after 12 years on the board.

"I haven't heard any support from elected types for a separately elected water board," said Reilly.

"My response is if you can't elect the supervisors you want how are you going to elect the water board you want?"

"If anything development and corporate interests would be much more involved in a water board election than they would be in a Board of Supervisors' election," said Reilly. "People need to be careful what they wish for."

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WINDSOR > NEWS**Lower Russian River flows in 'uncharted waters' say water officials**[Print Page](#)**By Frank Robertson**
Staff Writer

Published: Thursday, June 4, 2009 11:34 AM PDT

No one's really sure what will happen this summer when the Russian River may flow at levels lower than anything seen in recent history, Sonoma County Water Agency officials conceded last week.

"We haven't been in conditions like this before," said Sonoma County Water Agency Assistant General Manager Grant Davis at a River low-flow workshop held in Guerneville last week to talk about what to expect from low flows this summer.

River flow reductions that were formally spelled out in a state Water Resources Control Board order this week could result in far less water than usual in the River, especially above Healdsburg, but whether a worst-case scenario materializes will depend on factors including conservation efforts now being sought from everyone who depends on Russian River water, including grape growers.

The Water Agency's conservation outreach includes "a very aggressive effort" to help winegrowers conserve water this summer, said Davis. But all water users are now being urged to conserve and learn to live with less water.

"We're hearing angst from the lower River, from the agricultural community and from the water contractors," said Davis. "The Water Board hasn't made anybody happy."

The cuts are needed to insure adequate water supplies to keep the River flowing in late summer and early fall when native salmon migrations take place. After three dry years in a row Lake Mendocino is projected to run dry in September if conservation goals are not met.

The Water Agency is now under the gun to reduce River diversions by 25 percent through Oct. 2, and is asking its 600,000 residential, commercial and municipal water customers in Marin and Sonoma Counties to cut their usage by at least that much too.

But whether River flows will have to be cut down to "critical dry year" levels starting on July 6 may not be necessary if the amount of water in Lake Mendocino is at an adequate level on July 1.

"These are kind of uncharted waters," said Water Agency spokesman Brad Sherwood at last week's workshop attended by about 100 people in the Guerneville Veterans Hall.

Dealing with the low flow's uncertainties, such as the potential recreational impacts of algae blooms and a River too shallow to paddle a canoe, are now the focus of state and county agencies with Russian River jurisdiction.

"We've never seen the River in the state we'll find it this summer," said Water Agency fisheries biologist David Manning.

A fisheries monitoring plan is also part of the effort this summer. The Water Agency is planning weekly meetings with other governmental agencies this summer "to lay out what we've found and ask for their guidance," said Manning.

"We really don't have any model to follow," if the River level drops drastically below historic levels.

This week's order calls for added monitoring of river water quality for human health as well as

fisheries, with 16 monitoring sites from Cloverdale to Monte Rio. The information is publicly available online

The Sonoma County Health Department monitoring will include posted warnings if bacteria levels exceed the state threshold.

Health department monitoring staff will be looking for statistical trends "to see if something is going on," said Walt Kruse of the Sonoma County Health Services Environmental Health division.

The final order this week postpones lowering River flows any further (if necessary) until after the July 4 weekend when some of the summer's heaviest recreational use is expected.

An early May storm also helped to postpone River flow reductions that had been anticipated in April.

The modified order still requires a 25 percent reduction in the amount of water SCWA diverts from the Russian River, but responds to public concerns regarding reducing river flows prior to the July 4 weekend. Lower flows in the river won't take effect until July 6, instead of the July 1 date in the original order.

"I'm pleased the state board listened to Russian River businesses and made the sensible decision to reduce flows after the July 4 weekend, when the river is enjoyed by thousands of local and out-of-town visitors," said 5th District Sonoma County Supervisor and Water Agency (SCWA) Director Efren Carrillo. "The state board also spelled out a process for addressing any problems that might arise if flows have to be significantly reduced."

If minimum instream flow requirements are reduced to "critical dry year" criteria, the state order requires SCWA to coordinate weekly conference calls with staff from the SWRCB water rights division, National Marine Fisheries Service, California Department of Fish and Game and North Coast Regional Water Board to discuss water quality, temperature and fisheries monitoring. If problems are detected, agency personnel can recommend to the state Deputy Director for Water Rights actions to "alleviate concerns" regarding water quality, public health or fishery conditions.

The revised order also changes the measurement used to determine the level of flows in the river. The April 10 order based river flows on the amount of water flowing into Lake Mendocino. The new order bases river flows on the amount of water stored in the lake. If storage levels are at or above 65,630 acre feet on July 1, minimum flows in the Russian River starting on July 6 will be equivalent to "dry year" flows of 75 cubic feet per second (cfs) in Healdsburg and 85 cfs at Hacienda Bridge. There is approximately 57,000 acre feet in Lake Mendocino currently.

"We caught a lucky break with the weather in May. We believe that residents and farmers responded by turning down their irrigation and turning off their sprinklers. As a result, the water levels in Lake Mendocino actually increased a little," said 3rd District Supervisor and SCWA director Shirlee Zane. "Yet even with this increase, we should all continue our efforts to significantly cut back on water use."

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