APPENDIX D

PRELIMINARY RECREATION ASSESSMENT FOR THE FLOW PROPOSAL

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Prepared for:

SONOMA COUNTY WATER AGENCY

Santa Rosa, California

Prepared by:

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Project No. 3064703

January 16, 2004

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Term	*Definition*
ASR	aquifer storage and recovery
BA	Biological Assessment
CDFG	California Department of Fish and Game
cfs	cubic feet per second
D1610	Decision 1610
DWR	Department of Water Resources
ESA	Federal Endangered Species Act of 1973
Estuary	Russian River Estuary
MCRRFCD	Mendocino County Russian River Flood Control and Water Conservation Improvement District
NEA	Northwest Economic Associates
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries (formerly NMFS)
PG&E	Pacific Gas and Electric Company
PPFC	Public Policy Facilitation Committee
RREITF	Russian River Estuary Interagency Task Force
RV	Recreational Vehicle
SCWA	Sonoma County Water Agency
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
WSTSP	Water Supply and Transmission System Project

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1.1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), the Sonoma County Water Agency (SCWA), and the Mendocino County Russian River Flood Control and Water Conservation Improvement District (MCRRFCD) are undertaking a Section 7 Consultation under the federal Endangered Species Act (ESA) with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries, formerly National Marine Fisheries Service [NMFS]) to evaluate the effects of their operations and maintenance activities on listed species and their critical habitat.

This consultation addresses the effects of project operations on coho salmon, steelhead, and Chinook salmon in the Russian River watershed in Sonoma and Mendocino counties. USACE, SCWA, and MCRRFCD operate and maintain facilities and conduct activities related to flood control, hydroelectric power generation, water supply and diversion, instream flow, estuary management, channel maintenance, restoration, and fish production. In addition, these agencies are participants in a number of institutional agreements related to fulfilling their respective responsibilities.

As a part of the Section 7 Consultation, the USACE has developed a Biological Assessment (BA) that provides a project description identifying ongoing actions and describing the proposed changes to facilities, operation, and maintenance activities. Under the proposed project, USACE, SCWA, and MCRRFCD would continue to implement many activities that occur under baseline conditions. Modifications to existing operations would be made to benefit protected anadromous fish species. One of the changes proposed in the BA is a new water management proposal called the “Flow Proposal.” The Flow Proposal would lower flows in Dry Creek and the Russian River to provide better rearing conditions for young salmon and steelhead. Proposed changes to summer flows in the Lower Reach of the Russian River (“Lower Reach”) could affect recreational uses.

This document is a preliminary assessment of river-based recreation opportunities under the Flow Proposal presented in the BA. It includes a description of the existing conditions pertaining to swimming and paddling use on the Lower Reach. It also describes, on a larger scale, the variety of recreation opportunities that exist in the Russian River region (within several miles on either side of the river) from Healdsburg to Jenner. Finally, this document discusses changes in canoeing use and other recreation uses that may occur under the proposed project. Economic effects associated with changes in canoeing use are described in the *Economic Analysis for the Russian River Biological Assessment* (Appendix E), prepared by Northwest Economic Associates (NEA).

1.2 OBJECTIVES OF RECREATION STUDY

Social and economic aspects related to the Flow Proposal were discussed at two Public Policy Facilitating Committee (PPFC) meetings in 2002. The Flow Proposal could have both positive and negative impacts on the regional economy. A positive economic impact could result from construction of a pipeline from Warm Springs Dam to Dry Creek, the Wohler diversion facility, or a treatment plant. Construction of the pipeline would create jobs in construction and related economic sectors. A negative economic impact could result from decreased use of commercial facilities that rent canoes and watercraft. This recreation study, focused on the Lower Reach of the Russian River, examines existing recreation use for a variety of water-related and non-water-related recreation activities.

The recreation study objectives are to:

- Identify recreation opportunities in the study area from Healdsburg to Jenner, which represents a distinctive destination for outdoor recreation within the larger project area for which the BA was written.
- Examine current recreation use in the Lower Reach and, as a secondary objective, provide recreation use data as input to the economics study.
- Discuss how recreation opportunities might change as a result of changes in the Flow Proposal.

The recreation study provides recreation use data for the economic study. The economic study has two purposes: 1) to examine the effects of changes in the Russian River Flow Proposal on recreation trip-related spending and hydropower generation revenue for Sonoma and Mendocino counties; and 2) to examine secondary economic impacts. Independent of the recreation study, the economic study examines effects of the flow on reservoir levels at Warm Springs and Coyote Valley dams and pool-level variations on recreation attendance at those locations. This attendance information is modeled to estimate economic impacts to Sonoma and Mendocino counties. The complete report of the economic study is found in the aforementioned Appendix E of the 2004 Russian River BA prepared by NEA for SCWA.

1.3 RECREATION STUDY AREA

The recreation study area encompasses the Russian River corridor beginning at Healdsburg and ending at Jenner. The recreation area is smaller than both the study area described in the 2004 Russian River BA and the study area for the economic impact study.

The Russian River drains a watershed of nearly 1,500 square miles centered 60 miles northwest of San Francisco, and empties into the Pacific Ocean near Jenner. The Russian River flows southward from its headwaters through small valleys and past the cities of Ukiah, Hopland, and Healdsburg before turning west at Mirabel Park. Joining the river near that point are flows from Mark West Creek and Laguna de Santa Rosa, which drain

much of the southern portion of the basin. From Mirabel to the Pacific Ocean, low mountains along both banks confine the river for 22 miles. Major tributaries of the Russian River include the East Fork, Big Sulphur Creek, Maacama Creek, Dry Creek, and Mark West Creek/Laguna de Santa Rosa.

1.3.1 LOWER REACH RUSSIAN RIVER

Downstream of the Wohler Bridge, the Russian River flows westerly through a narrow valley bounded by mountains. The channel is straight and deep with a low floodplain in the area of Guerneville, which is situated on the north side of the river. Guerneville is subject to frequent flooding, averaging a flood once every 5 years (EIP 1993). Gravel and sandbars are common along the channel. Below Guerneville, the Lower Reach flows into the Russian River Estuary (Estuary) near the confluence with Willow Creek.

1.3.2 ESTUARY

The Russian River Estuary (Estuary) near Jenner extends approximately 6 to 7 miles from the river's mouth at the Pacific Ocean, upstream to Duncans Mills and Austin Creek in western Sonoma County. Tidal influence has occurred as far as 10 miles upstream to Monte Rio (Russian River Estuary Interagency Task Force [RREITF] 1994). A barrier beach (sandbar) forms naturally across the mouth of the river periodically during the dry season, impounding water and forming a lagoon. The sandbar opens naturally when hydraulic conditions in the Russian River and Pacific Ocean change, or when it is artificially breached. When the sandbar is open, the Estuary is open to tidal mixing.

1.4 FLOW MANAGEMENT

Analyses reported in Chapter 5 of the 2004 Russian River BA indicate that the habitat for listed fish species could be improved by decreasing summer flows. Under the proposed project, releases from Warm Springs and Coyote Valley dams would be modified to:

- Reduce summer water velocities in Dry Creek and the Upper Russian River.
- Conserve the coldwater pool in Lake Mendocino through the late summer.
- Provide for the exercise of existing water rights in the Russian River and Dry Creek.
- Enable SCWA to meet future transmission system demands arising from approved developments in SCWA's water contractor's service areas.
- Allow the sandbar at the mouth of the Russian River to be closed in the summer.

The most substantial changes to flow would occur in summer (June to September). During that period, the Flow Proposal would meet water supply needs, improve summer rearing habitat in the Upper Russian River and Dry Creek for listed fish species, and allow the mouth of the river to close, thereby providing more consistent estuarine rearing conditions. To implement the Flow Proposal, minimum instream flows during the

summer in the Russian River downstream of Coyote Valley Dam, and in Dry Creek downstream of Warm Springs Dam would be lower than those currently in effect under State Water Resources Control Board (SWRCB) Decision 1610 [D1610 (SWRCB 1986)]. Monthly median flows in the Russian River under D1610 and the proposed project are summarized in Table 1-1 below.

Table 1-1 Monthly Median Flow Exceedance Levels under D1610 Scenario and the Flow Proposal under All Water Supply Conditions and Existing Demand

Gage	June		July		August		September		October	
	D1610	Flow Proposal	D1610	Flow Proposal	D1610	Flow Proposal	D1610	Flow Proposal	D1610	Flow Proposal
Healdsburg	237	181	208	119	200	128	164	126	169	141
Hacienda Bridge	279	188	197	78	174	68	148	78	163	119

The water supply "condition" is determined each year based on cumulative inflow to Lake Pillsbury on the first of each month between January and June, and is represented as *critically dry*, *dry*, or *normal* (SWRBC 1986).

Under D1610 requirements, the median flows at Healdsburg range from 237 cfs in June to 164 cfs in September. Under the Flow Proposal, the median flows range from 181 cfs in June to 126 cfs in September. Flows show the same pattern for Hacienda Bridge; the highest flows occur in June, flows decline through September, and flows increase in October.

SCWA would develop additional measures to meet future water supply demands while limiting releases to maintain suitable rearing habitat for young fish. The primary measures under consideration are: an aquifer storage and recovery (ASR) program; a pipeline from Warm Springs Dam to the mouth of Dry Creek, the Wohler diversion facility, or a treatment plant; and/or additional storage facilities (ENTRIX, Inc. 2004). Reduced flow to the Estuary would reduce the need to artificially breach the sandbar during the summer (ENTRIX, Inc. 2004). This action is expected to improve salmonid summer rearing habitat in the Estuary. Artificial breaching would still be required to manage storm flow and prevent flooding to private property and roads during the rainy season.

2.1 OVERVIEW

A combination of existing recreation use information and user surveys were used to assess recreation opportunities in the Lower Reach.

The process of data collection consisted of several key tasks. The first task involved a literature review of recreation studies in California pertinent to the Lower Reach. The second task involved personal interviews, asking respondents about the typical visitor on the Lower Reach, use levels on the river, and users' flow preferences. These topics were asked of three groups: 1) public recreation agency personnel, including Chamber of Commerce staff, 2) individual, regular paddlers of the Lower Reach; 3) business owners or operators, and. Surveys were tailored for each of the three groups (see Attachments 1 through 3). A third task consisted of a site visit to assess current paddling and swimming conditions.

2.2 DATA COLLECTION

2.2.1 LITERATURE SEARCH

A literature review was conducted to: 1) characterize the existing recreation setting in the study area; and 2) understand the types of recreation opportunities available in the recreation study area. Characterizing the recreation setting involved Internet searches, consulting guidebooks and trade publications, and surveying local business owners/operators and regular paddlers of the Lower Reach.

Several published resources were identified and consulted by researchers (California Department of Water Resources 2002; PG&E 2001; Dwyer 2000; Stienstra 2000; California Department of Parks and Recreation 1998; Shelby et al. 1997; California State Coastal Conservancy 1996; Whittaker et al. 1993; Shelby et al. 1992; Brown et al. 1991; Moore et al. 1990).

These published documents included a statewide study of California's recreation preferences and unmet demand, and a study of recreation use on another Northern California river used for recreation, as well as numerous peer-reviewed studies describing aspects of river recreation pertinent to those of concern in this study.

Literature reviews of recent recreation use, guidebooks, Internet searches, trade publications, and other peer-reviewed recreation studies were evaluated to develop an understanding of existing conditions in the Lower Reach.

Existing and estimated recreation use levels were provided by Sonoma County Regional Parks and the Russian River Chamber of Commerce.

The survey respondent information (interviews) and the site visit were conducted to supplement the published resources.

2.2.2 Data From Local Agencies

Several agencies collect data pertinent to the recreation use in the Lower Russian River. Agencies contacted included representatives from the Monte Rio Parks and Recreation District, Sonoma County Regional Parks, and the Russian River Chamber of Commerce. Other agencies such as U. S. Army Corps of Engineers, California Department of Fish and Game (CDFG, and California Department of Parks and Recreation were also contacted for regional recreation use information. The interviews conducted with local agencies utilized a series of scripted questions. The survey form is provided in Attachment 1.

Agency staff provided information included the Monte Rio Parks and Recreation District, Sonoma County Regional Parks, CDFG, and the Russian River Chamber of Commerce. Specific to the agency staff survey, agency staff were asked about the level of day versus overnight users who boat on the Lower Reach, to ascertain any differences in users' activity, and if there was a specific measure of individual visits. CDFG agency staff were specifically asked about the level of demand for salmonid and bass fishing.

2.3 Supplemental Recreation Survey of Individuals and businesses

To supplement the information collected from state and local agencies and that found in published sources, ENTRIX surveyed recreational users and local businesses. The primary purpose of the surveys was to generally characterize the existing recreation environment. The surveys were designed as a qualitative data set providing researchers with information characterizing the general recreation patterns in the Lower Reach area. They were not intended to produce a statistically complete sample of survey respondents.

The surveys were conducted by phone and the surveyor asked a series of scripted questions. The questions focused on recreational use of the Lower Reach. Content for the three surveys was developed based on other surveys used for water projects throughout Northern California, and from several discussions between SCWA, ENTRIX, and NEA staff.

2.3.1 Survey Design

An initial list of potential contacts was developed by ENTRIX, NEA, and SCWA. Additional participants were identified through a "snowball" technique, commonly utilized by ethnographic researchers. This focus group research method builds on community networks and knowledge, beginning with the identification of one person (or persons) who represent a particular interest (PG&E 2001, Babbie 2001). Attachment 5 provides the list of individuals and businesses contacted as a part of this survey. The goal was to survey 10 recreational paddlers and: 10 business owners/operators. If the survey could not be competed by phone, the survey participants had the opportunity to complete the interview form by mail. The survey forms used for the recreation users and the local

businesses are provided in attachments 2 and 3 respectively. All of the recreation users completed the survey and of the 10 businesses contacted, 9 completed the survey.

Specific to the recreation user survey, regular paddlers were asked about their place of residence, level of boating experience, number of times they have boated on the Lower Reach, and use of shuttle services.

Businesses surveyed included owners/operators of boat rental companies, sporting good stores and lodging establishments. During the survey, business owners/operators were asked why their customers visit the Lower Reach, and whether their customers would still visit the Lower Reach if flows were low. Business owners/operators were then asked if any of the following would encourage their customers' use of the Lower Reach during low flows: portage services, inflatable watercraft, special timing of releases, or other activities or services. Business owner/operators were asked about their canoe fleet size, if applicable, or the number of beds/campsites offered by their establishment. Also, business owners were asked to voice any other concerns they may have had about the flow proposal.

In addition to this effort, ENTRIX conducted several open-ended interviews with resort lodging owners/operators to obtain additional information on what attracts visitors to the recreation study area, and to ensure that a wide range of possible recreation activities were identified. Finally, an email survey was prepared as requested by the Russian River Chamber of Commerce. The interview form was reformatted so that it was easy for those completing the surveys to do so without assistance from an interviewer. These reformatted surveys were provided to Russian River Chamber of Commerce for distribution to the approximately 200 members and ENTRIX is looking forward to receiving the results. Copies of the email surveys are provided in Attachment 4.

2.3.2 Data Analysis

Current swimming use was estimated based on beach attendance data provided by Sonoma County Regional Parks. No estimates were available for paddling use. A preliminary estimate of paddling use was developed based on information provided by the regular users of the Russian River (see Attachment 6). Because there was high variation in the estimates provided by regular river users, medians are reported rather than means.

Total paddling use and swimming use for a typical recreation season were then estimated for D1610 flows and for the Flow Proposal flows. Paddling opportunity was restricted to days when flows in the Russian River were greater than 140 cfs (see attachment 6).

Frequency distributions generated for the survey questions are reported in Attachment 7.

2.4 Site Visit

ENTRIX staff conducted a site visit of the recreation study area from Guerneville to Jenner. The objective of the site visit was to evaluate the recreational experience for the

perspective of a first time visitor to the Russian River who came with the express purpose of canoeing the Lower Russian River. Recreation planners unfamiliar with the Russian River conducted the site survey. The site visit evaluated the ease of finding put-in and take-out sites and river conditions affecting a typical canoeing experience on the Lower Russian River.

The following section describes study results, including the supply of existing recreation opportunities in the study area, the existing uses for paddling, swimming, beach use, and sportfishing, and finally, recreation opportunities that could occur under the Flow Proposal.

3.1 EXISTING OPPORTUNITIES (SUPPLY)

The Lower Reach is characterized by coastal forests, private resorts, and public access to the river. The available recreational opportunities are categorized as river-related and non-river-related opportunities. This information was obtained through Internet research and personal communication with local entities such as the Russian River and Healdsburg Chambers of Commerce, and rental businesses, lodges and resorts in the area. The topics included the peak tourist season, recreational activities in the Lower Reach area including boating and swimming, and the origin of visitors. Boat rental businesses were consulted about the total number of boats available for rent and possible river access points for launching and taking out boats. On-site information was also obtained from the June 2, 2003 site visit and canoe trip.

3.1.1 RIVER-RELATED OPPORTUNITIES

Major river-related recreational activities include boating (canoeing and kayaking), swimming, and sport fishing.

3.1.1.1 Boating

Approximately 380 boats are available in the project area at various rental businesses including Trowbridge Canoe Trips, SOAR Inflatables, and Kings Coast and Kayak. Although not confirmed with staff at Burke's Canoes, anecdotal evidence suggests that another 300 canoes may be available at Burke's, increasing the total number of commercial watercraft to 680 for the project area. Kayak and canoe trips typically travel from town to town along the Lower Reach; for example, from Healdsburg to Guerneville, Healdsburg to Forestville, or Forestville to Jenner.

According to Bob Clemens of Trowbridge Canoe Trips (pers. comm. June 2003), a typical put-in location for the Lower Reach is at Healdsburg. The estimated high level of flow obtained from the Healdsburg gage was 800 cubic feet per second (cfs); the lowest level was 90 cfs. Ideally, the lowest flow for boating is 150 cfs, to avoid scraping and dragging the watercraft (Bob Clemens, pers. comm. 2003). Recently, Sonoma County has developed parks and put-in and take-out sites that provide for additional river access and trip length options. Dwyer (2000) lists two reaches; Healdsburg to Guerneville, and Guerneville to Jenner Beach. For the first reach, Dwyer indicates a put-in location at Healdsburg Veterans Memorial Park, and a take-out location at Johnson's Beach. For the second reach, Dwyer lists the put-in location as Johnson's Beach, and take-out locations at the public boat ramp at Jenner.

In addition to paddling opportunities on the Lower Reach, there are numerous regional opportunities in Sonoma and Mendocino counties (Dwyer 2000). Two examples of regional paddling opportunities include:

- Austin Creek, traversing for 7.5 miles and rated as Class 1+. Although not available in summer, the best recreational seasons are winter and spring, and the advantageous flow rate ranges from 300 to 1,000 cfs (Dwyer, 2000). Austin Creek is rain fed and has a tendency to experience high-water levels. Fallen trees and other natural debris are common in the water and on the banks. There is also a high population of camps along the shore during the summer.

- The Wheatfield Branch of the Gualala River, spanning approximately 27 miles, and rated as Class 1 to 1+. The most advantageous boating and recreation seasons are spring and early summer, and the best flows range from 250 to 600 cfs. The river is close to the ocean, and cold weather is common. This weather, combined with a redwood forest in the vicinity, creates foggy conditions. Conditions are generally uncrowded, and there are good opportunities to observe wildlife. Fallen trees and other natural debris are commonly found in the water. The majority of the river flows through private land with limited access.

3.1.1.2 Swimming

Swimming is common in beach areas such as Healdsburg Veterans Memorial Beach, Monte Rio Beach, and Johnson's Beach at Guerneville. Camping and recreational vehicle (RV) park sites in close proximity to the river (e.g., at Monte Rio Beach and Johnson's Beach in Guerneville) provide easy access to swimming and beach activities. Reservoir-related swimming activity is described in the Appendix E economics report.

3.1.1.3 Camping and Lodging

Several campsites and RV park sites along the Russian River facilitate recreational activities such as canoe and kayak rentals. These include Casini's Campground near Jenner and Mirabel RV Park in Forestville, as well as facilities at Monte Rio Beach and Johnson's Beach in Guerneville.

Bob Clemens of Trowbridge Canoe Trips (pers. comm. June 2003) stated that at least 90 percent of the visitors are from outside the Lower Reach area, and that 40 percent of the Lower Reach area visitors stay overnight.

The Lower Reach area has a large number of lodges and resorts that cater to overnight visitors. Steve Fogle of the Russian River Chamber of Commerce (pers. comm. 2003) estimates the total occupancy (i.e., the total number of rooms or beds in the local hotels, resorts, retreats, and cottages) at approximately 880 per night. In addition, approximately 230 campsites are available (Russian River and Healdsburg Chamber of Commerce websites, 2003).

3.1.2 NON-RIVER-RELATED OPPORTUNITIES

In addition to river-related recreational activities, the project area offers various non-river-related activities such as coastal exploration, farmer's markets, festivals, parades, and other public events in several towns near the Lower Reach. Activities such as camping and hiking occur in the Armstrong Redwoods State Reserve. Golfing, visiting galleries and shops, and wine tasting attract visitors throughout the year. In the local region, more than 150 festivals and events occur annually (Russian River Chamber of Commerce 2003).

Proprietors of local resorts and lodges were interviewed for information on non-river-related recreational opportunities. According to Rick Reese at the Willows in Guerneville (pers. comm. June 4, 2003), most of the tourists come to the Lower Reach area from the Bay Area, with the peak season spanning from May through October.

According to Karina Ramirez at Creekside Inn and Resorts (pers. comm. June 16, 2003), most tourists come to the Inn from Bay Area locations such as San Francisco, Oakland, and Alameda. The principal destination for river use is from Guerneville to Jenner. According to Ms. Ramirez, one of the main reasons for visiting the Lower Reach area is the peace and quiet.

Sandy Brown of the Russian River Chamber of Commerce (pers. comm. June 17, 2003) and Carla Martinez (pers. comm. June 17, 2003) said that the height of the tourist season is from May through October.

Russ Pugh (pers. comm. 2003), an event organizer in the Russian River area, provided information on annual public events that attract thousands of visitors to the area. The events include two triathlons, the Vine Man Event (early August), and the Half Vine Man Event (mid-August). These events draw approximately 10,000 visitors that arrive from various locations throughout California and the United States. Most visitors stay overnight at local resorts and lodges and add to the local economy. The swimming portion of this event takes place at the Johnson's Beach and is river-dependent.

3.2 EXISTING USE LEVELS (DEMAND)

The following section describes the existing use levels (public demand) for the Lower Reach.

3.2.1 PADDLING

Recreational paddlers with the most experience paddling on the Lower Reach originate from Guerneville and Healdsburg. Several portions of the Lower Reach are popular paddling locales—for example, Healdsburg to Guerneville, Forestville area, Healdsburg to Steelhead Beach, and Duncans Mills to Jenner.

Several sources including published literature, guidebooks, professional judgement, and supplemental interview data indicate that watercraft use on the Lower Reach is based on several factors: warm weather encourages a greater number of visitors and greater river

use, the availability of public access or put-in and take-out points for canoes and kayaks, and proximity to the river (frequency is greater when the proximity to the river is closer). There are a greater number of visitors during the summer and fewer during the winter months. The number of visitors/watercraft increases in late spring and summer.

Watercraft or beach use varies with the river location. For example, the town of Jenner is located at the southern tip of the Russian River near the ocean. The weather at this location is foggier and generally cooler than other towns along the river. Watercraft and beach use near Jenner is generally lower than at other Lower Reach locations. The overall watercraft use levels) indicate significant increases from weekdays to weekends to holidays.

3.2.2 Beach Use and Swimming

Verifiable beach use and swimming data were provided by Bert Whitaker of Sonoma County Regional Parks. Although anecdotal data were obtained on beach and swimming use, these data are not presented in this report because: 1) they appear to grossly underestimate use; and 2) they were not obtained in a verifiable, systematic manner.

Table 3-1 displays beach attendance for four beaches. Data were collected by automatic traffic counters, assuming an average of three persons per vehicle (Bert Whitaker, pers. comm. May 30, 2003). With the exception of Healdsburg, all beaches show steady increases in annual attendance. Steelhead Beach shows the largest percentage increase in use and the highest total number of visitors reported during the 2001-2002 season. The beach at Healdsburg has recently restricted use. It does not open until late June as a result of an agreement made with California Department of Fish and Game.

Table 3-1 Annual Beach Attendance, 1994 to 2002

Beaches	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	Totals
Steelhead	0	0	19,108	50,847	39,657	81,258	87,077	88,000	365,945
Healdsburg	81,853	94,268	73,612	58,060	75,028	70,171	56,437	34,000	543,249
Forestville Access	18,600	11,300	12,500	11,355	16,998	22,539	17,889	25,900	137,081
Wohler Bridge	14,643	21,803	32,389	26,695	41,354	30,092	36,785	39,500	243,261
Totals	115,096	127,371	137,609	146,957	173,037	204,060	198,188	187,400	1,289,718

Source: Sonoma County Regional Parks. (2003)

3.2.3 Sport Fishing

Sport fishing is another river-related recreational activity popular throughout most of the year. The Lower Reach accounted for 7.5 percent of state steelhead fishing trips between 1993 and 1995, based on steelhead restoration program cards that were completed for fishing trips along the Russian River (Terry Jackson, pers. comm. May 16, 2003). In 1999, there were 454 steelhead-fishing trips on the Russian River and its tributaries out of 7,883 statewide steelhead-fishing trips, again based on steelhead restoration program

cards (Terry Jackson, pers. comm. May 16, 2003). This number represents 5.76 percent of all 1999 state of California steelhead fishing trips, for which steelhead restoration program cards exist.

Due to uncertainties regarding the proportion of total steelhead anglers that actually complete the cards, it is not possible to accurately estimate the total steelhead fishing trips taken on the Russian River during 1999.

Summer fishing on the Lower Reach occurs for smallmouth bass and catfish including small numbers of shad and striped bass (J. Emig, pers. comm. May 16, 2003). Fishing for steelhead accounts for 95 percent of the fish sought, with the remaining 5 percent being "other" fish species. The peak fishing season is from October through March, although fishing trips may occur throughout the year.

According to information obtained from Mike Swaney of the Fishing Guide Service (pers. comm. May 21, 2003), in the area from Healdsburg to Monte Rio, approximately 80 percent of the fishing enthusiasts using guide services (non locals) stay overnight; the remaining 20 percent are day-use anglers using guide services. Fishing for steelhead accounts for 95 percent of the fish sought, with the remaining 5 percent being other fish species. The peak fishing season is from October through March, although fishing trips may occur throughout the year (M. Swaney, pers. comm. May 21, 2003).

Regarding locals, Sean White of SCWA stated that the vast majority of anglers in the Lower Reach reside nearby and that a small percentage come to the area for day use and overnight angling experiences (S. White, pers. comm. December 23, 2003).

3.2.4 General Visitor Use Levels

The Russian River Chamber of Commerce and Korbel Winery collect data on the number of visitors that come to their establishments. These data are reported below (Table 3-2) to provide an indication of the overall visitation that the project area receives. Data on total visitor use for the study area were not obtained due to the difficulty in breaking apart data from larger geographic regions to fit with the recreation study area.

Table 3-2 Visitor Use Estimates

	2001	2002	2003 until June
Chamber of Commerce — Walk-Ins	20,751	16,291	5,104
Korbel Winery — Walk-Ins	33,766	27,521	8,559

Source: Russian River Chamber of Commerce (2003). Personal communication.

3.2.5 Lower Reach Survey Respondent Profile

Interviews were conducted to supplement literature reviews and use data to assess recreation opportunities (existing conditions) in the Lower Reach. The personal interview process included asking respondents about the typical visitor on the Lower Reach, use

levels on the river, and users' flow preferences. These topics were asked of three groups: 1) individual, regular paddlers of the Lower Reach; 2) business owners or operators, including Chamber of Commerce staff; and 3) public recreation agency personnel. Surveys were tailored for each of the three groups (see Attachments 1 through 3).

3.2.5.1 Recreational Paddlers Survey

Ten recreational paddling users were interviewed to determine such attributes as the number of years of experience, the number of times they used watercraft on the Lower Reach, the days of the week they used watercraft, etc. Half (five) of the respondents live locally; three in Healdsburg, one in Jenner, and one in Guerneville. The remaining five respondents live outside the immediate locale but within the general project vicinity.

The average number of years of experience among the ten paddlers was approximately 31. The fewest number of years involved with watercraft on the Russian River was 20, and the greatest number was 45. The paddlers that reported the fewest and the greatest number of years involved with watercraft on the Russian River live in close proximity—Guerneville and Healdsburg, respectively. Of the five paddlers who live in the general area but not directly adjacent to the Russian River (Santa Rosa and Sebastopol), the average number of years of experience was 28.6 years.

The average number of times the ten paddlers canoed or used watercraft on the Lower Reach during their total period of use (average = 28.6 years) was 700 times; however, the median use was only 135 times. The fewest number of times canoeing or using watercraft on the Russian River was 12 times in 33 years. The greatest number of times canoeing or using watercraft on the River was 2,080 (approximately 2 days a week for 20 years). Paddlers who reported the fewest and greatest number of times using watercraft on the Lower Reach live nearby in Santa Rosa and Guerneville. Proximity to the river is strongly related to the amount of river use.

Of the ten paddlers, eight use non-fee shuttle services that consist of driving themselves or obtaining a ride with friends to put-in and take-out points. None of the survey respondents use a fee-based shuttle service for transport along the Lower Reach. Table 3-3 illustrates survey responses to the shuttle use question.

Table 3-3 Shuttle Use

Following are responses to the survey question, *"Please estimate the percent of your customers who use shuttle services [and] of those, what percent are paid?"*

Non-Fee Shuttle	Frequency	Percent
Yes	8	80
No	2	20
Friends/Drive Self	10	100
Fee-based Shuttle	0	0

The most popular places for watercraft use included Healdsburg to Jenner, Monte Rio to Jenner, Healdsburg to Forestville, Healdsburg to Steelhead Beach, Duncans Mills to Jenner, and the Mirabel area. The ten paddlers were asked to state the number of watercraft they observed on a typical weekday, weekend day, and holiday day during the summer, which was defined as May through October. Table 3-4 provides a summary of the number of site visits for watercraft use.

Table 3-4 Number of Individual Site Visits for Watercraft

Following are responses to the survey question, *"Approximately how much use by canoes and other watercraft is there on the section [of the river] you know best?"*

	Weekday	Weekend	Holiday
Mean	52.06	158.29	283.75
Standard Deviation	31.24	91.56	185.21
Median	49.00	200	280

The numbers were based on the number of kayaks and canoes that the individuals observed during different times and the average occupancy of the boats. The number of site visits roughly corresponds to the total number of people boating in the river, according to the responses given by the ten respondents surveyed. The mean weekend use is almost 3 times that of the weekday use, and the overall holiday use appears to be double the weekend use.

The average response for weekday watercraft use levels was slightly more than 52, with a standard deviation of approximately 31 and a median response of 49. The average response for weekend day-use levels was slightly more than 158, with a standard deviation of approximately 91 and a median response of 200. The average response for holiday-use levels was slightly more than 283, with a standard deviation of approximately 185 and a median response of 280.

3.2.5.2 Individual Paddlers' Responses to Specific Survey Inquiries

The ten respondents were asked specific questions; following is a summary of their responses.

Why did you choose this destination?

Responses to this inquiry were divided into six categories to facilitate analysis and categorization of the participant's open responses. The categories include Aesthetics, Distance from Home, Good Flow, Nostalgia, No Crowds, and Other. Some of the responses were relevant to more than one of the categories, which explains why the percentages do not equal 100 percent. The most often cited reason for choosing the Lower Reach was aesthetics (30 percent), followed by the lack of crowds (20 percent), and good river flow (20 percent). Two paddlers stated that their reasons for choosing the Lower Reach were close proximity to home (10 percent) and nostalgic reasons (10 percent). Four of the responses fall within the other category: easy access (10 percent); play spots for recreational use (10 percent); convenient to local park (10 percent); and friends who live locally (10 percent).

What do you think are the most important attributes of the Lower Reach area?

The same six categories (Aesthetics, Distance from Home, Good Flow, Nostalgia, No Crowds, and Other) were used to categorize the respondents' answers to this inquiry. As mentioned above, many of the paddlers offered more than one response; thus, the percentages do not equal 100 percent. Half (five) of the ten paddlers stated that they used the recreational attributes of the Lower Reach because it was close to home. Three of the ten paddlers offered aesthetics as the most important attribute, and two stated that no crowd was the most important attribute. In the Other category, there was one response each for winter fishing, cooling off, swimming, sunbathing, fishing, and getting away from the city.

What is the main destination for watercraft users between Healdsburg and Jenner?

There was no single common reply among the ten paddlers. Several paddlers that completed an interview indicated that river flow and weather conditions are the primary factors in determining a destination. Responses to this query encompassed a relatively large geographical area between Jenner and north of Healdsburg. Following is a list of destinations, in no particular order. The paddlers often gave more than one destination, which may reflect how preferences for destinations are commonly based on flow and weather conditions for the particular day.

- Hacienda Bridge to Guerneville; Guerneville to Monte Rio.
- North of Healdsburg.
- Monte Rio to Jenner.
- Jenner to Duncans Mills.
- Jenner at high flow; Healdsburg to Walnut Bridge-Sunset Beach; as well as Sunset Beach, Guerneville, Monte Rio, Corbell, and Summer Bridge.

- Healdsburg to Jenner.
- A launch site near Memorial Beach; Steelhead Beach to the dam at Wohler; Duncans Mills to Jenner.
- Between Duncans Mills and Jenner.
- Steelhead Beach.

3.2.5.3 Watercraft and Recreation-Related Business Owners/Operators Survey

The following is a summary of nine local watercraft and recreational business owners/operators interviewed for this survey. The businesses are at various locales, with two each in Jenner and Healdsburg and one each in Santa Rosa, Duncans Mills, Windsor, Forestville, and Guerneville. The total number of years involved with recreation or watercraft in the area averaged 21 years; the lowest number of years was 3 and the highest was 46. The locales that correlated to greatest number of years of operation were Forestville (45) and Jenner (46). The business operations can be broken down into three basic categories: three offer guided watercraft tours, three manage beaches or campgrounds, and three rent watercraft such as kayaks and canoes. Seven of the nine business owner/operators said that none of their customers use the fee-based shuttle service. One respondent stated that 100 percent of the customers use the shuttle-based service but do not pay for it, and another respondent replied that approximately 90 percent of the customers use the fee-based service. The locations that the business respondents were most familiar with included, Healdsburg to Wohler Bridge, Healdsburg to Guerneville, Monte Rio, and Jenner and the surrounding area.

In addition to conducting surveys, several businesses were interviewed including two lodges and four rental businesses. The business owners/operators estimated that commercial river use was 50 to 80 percent, and that the majority of their business users were from the San Francisco Bay Area. The responses mentioned above can be divided into individual responses from each business surveyed. There was one response for 50, 70, and 75 percent, and one response for 75 to 80 percent. Five of the businesses surveyed could not answer.

3.2.5.4 Business Owner/Operator Responses to Specific Survey Inquiries

The nine business owner/operators depicted above were asked specific questions; following is a summary of their responses.

Why do you think people chose this destination?

Three of the nine owners/operators stated that their businesses included a campground, a beach, and a RV campground, which place them in a “destination park” category for multiple types of visits and visitors. The remaining responses were divided into four categories including Aesthetics, Weather, Convenience, and Other. Some of the responses were in more than one category; thus, the numbers do not total 100 percent.

Three of nine respondents (33 percent) stated that aesthetics was the main reason for choosing this destination; two respondents (22 percent) mentioned the weather; and two stated conveniences as the main reason for choosing the Lower Reach destination. In the other category, three (33 percent) of the business respondents stated that the presence of canoe and kayak rental businesses as well as businesses that offered trips on the Lower Reach were the main destination criteria.

What do you think are the most important attributes to watercraft users when they come to the Lower Reach area?

The responses to this query from the nine business owners/operators were divided into four primary categories: Less Crowded, Wildlife, the River itself, and Other. Once again, some of the responses were in multiple categories, and therefore the total is not 100 percent. Four (44 percent) of the respondents mentioned less crowded as the most important attribute; 44 percent also stated that the Lower Reach itself was the most important attribute; and two (22 percent) mentioned wildlife as the most important. In the other category, the responses included attributes such as privacy, close to San Francisco, easy access, quiet, a great place for families, and a good place for inexperienced (watercraft) people.

What percent of your customers are day-use participants compared to overnight users?

In response to this query, five of the nine business owners/operators reported that 100 percent of their customers were day users. One respondent stated that 75 percent of the customers were day users, and another said 90 percent. One respondent replied that 100 percent of the customers were overnight users, and one did not respond to this question.

What is the main destination for watercraft users between Healdsburg and Jenner?

Of the nine business owners/operators queried, two stated that Guerneville was the main destination, two mentioned Healdsburg, and two could not answer. The remainder of the respondents (three) stated that Jenner, Monte Rio to Jenner, and east of Monte Rio were the main destinations between Healdsburg and Jenner.

3.3 SUMMARY OF SITE VISIT

Although river recreation does occur in other areas of the Russian River, such as Geyserville to Healdsburg, the study area included the Lower Reach and Estuary where many river-related businesses are found. Therefore, the site visit on June 2, 2003 focused on conditions pertaining to swimming and paddling (existing conditions) in those areas (Guerneville to Jenner). The canoe trip began at Guerneville and ended at Jenner and lasted approximately 6 hours. Researchers used a canoe with two paddlers and one note-taker. The river flow was approximately 240 cfs at put-in (11:00 a.m.) and approximately 234 cfs at take-out (6:00 p.m.) (California Data Exchange Center). The objective of the

site visit was to identify boating attributes, including visitor information sources, use constraints, and safety.

One finding was that there was no signage along the Lower Reach identifying access sites (put-in and take-out), public and private facilities, boat rental locations and business information, nor suggested trips for various experience levels.

It would improve user experiences if a systematic information source for boat trip planning and use once on site were developed. Systematic information could be available in the form of maps, driving directions, driving length and estimated times, river lengths (boat trips), identified access sites (put-in and take-out), public and private facilities, boat rental locations and business information, and suggested trips for various experience levels. Standardized recreation and directional signs would also improve trip experiences. This would be useful for visitors accessing, and boats navigating, the Lower Reach of the Russian River.

For example, Vacation Beach and Steelhead Beach had no posted identification signs for boaters. Even the developed sites with significant recreation facilities were unidentified from the river. Regarding use constraints, shallow water sections of the river were encountered between Guerneville and Monte Rio. Specifically, shallow sections of the river were located near the summer crossing access, adjacent to Vacation Beach and just upriver from where Smith Creek enters the Lower Reach near Monte Rio.

There were no take-out sites within close proximity of Jenner. Thus, if a take-out site up-river from Jenner was missed, for example, at the Sonoma Coast Environmental Camp, boaters would have to take-out at the Jenner site approximately 3 miles down-river and that would involve paddling on water with little or no current. The take-out facility at Jenner was not well identified from the highway (e.g., no standardized, brown recreation-site informational sign).

Regarding safety, trees and brush on the shore had protruded into the path of the river in various places where boating occurs that could contact or entrap an approaching boater. Trees were also lying on the bottom of the river projecting out of the water. Built features that appeared to present potential problems to boaters included old posts, planks, docks, and other structures that were partially or entirely abandoned. For example, the area below Monte Rio is identified on angler's maps as "pilings." When navigating this feature, several partially submerged posts protrude above the water.

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This section lists and describes recreation opportunities that might continue and those that may develop under the Flow Proposal.

4.1 PADDLING USE

Under the current flow requirements (D1610), under *all* water conditions, an estimated average of 14,732 paddlers use the Lower Reach on an annual basis (Table 4-1). This number does not change under *dry* conditions for the D1610 flow requirements, and is based on weekday, weekend day, and holiday median-use figures given by the respondents in the private paddler sample. Additional details about assumptions (such as typical season length) used to estimate the above number are found in Attachment 6. It is assumed that paddlers who rent canoes or other watercraft from commercial establishments represent 50 percent of the above number, or 7,366 paddlers (Table 4-2). This assumption is based on information collected in the business survey from private business survey participants that rent canoes or kayaks. The 50 percent commercial canoeing-use figure represents the lowest figure (range was 50 to 75 percent) provided by the three business owner/operators that responded specifically to the question about commercial versus private use. Another assumption used in this estimate is that the Lower Reach will not be used by paddlers when the daily flow measured at Hacienda Bridge is below 140 cfs. This figure is not a rigid standard. It is based on literature on optimal flows for canoeing (Whittaker et al. 1993) interviews with regular paddlers of the Lower Reach, an interview with a business owner/operator, and an interview with a recreation boating study consultant. The 140-cfs figure should be thought of as a "worst-case" scenario. It is possible that highly experienced paddlers may continue to use the Lower Reach when daily flows fall below 140 cfs.

Under the Flow Proposal, for *all* water conditions, an estimated average of 4,697 paddlers would use the Lower Reach on an annual basis. Compared to current flow conditions, this represents a 68-percent reduction in average annual use.

Whether or not the loss of paddling on the Lower Reach would equate with a loss of recreation use in the study area is uncertain. It may be that recreational boating activity will shift seasonally in use, for example from summer to spring, rather than simply decrease. Interviews with resort owners and Chamber of Commerce staff indicate that visitors come to the study area to engage in a wide variety of activities, one of which is canoeing the Lower Reach. Additionally, other surveys of outdoor recreationists in California (DWR 2002, PG&E 2001) indicate that visitors who come to a particular recreation area often visit multiple recreation sites, and a majority engage in multiple recreation activities. As a result, it is likely that some portion of expenditures associated with visiting the Lower Reach for canoeing would still be "captured" by local businesses because canoeists participate in other activities such as dining, lodging, or wine tasting.

Table 4-1 Estimated Number of Existing Total Seasonal Paddling Use, Lower Russian River

Month	Number Weekdays	Number of Weekend Days	Number of Holidays	Total Number of Days
May	12	5	1	18
June	21	9		30
July	22	8	1	31
August	21	10		31
September	21	8	1	30
October	11	3		14
Total Days	108	43	3	154
Total Paddlers	**Paddlers per Day = 5,292** **(49 x 108 = 5,292)** [1]	**Paddlers per Day = 8,600** **(43 x 200 = 8,600)** [2]	**Paddlers per Day = 840** **(3 x 280 = 840)** [3]	**14,732 Paddlers per Season**

[1] Median number of paddlers per weekday.
[2] Median number of paddlers per weekend day.
[3] Median number of paddlers per holiday.

Table 4-2 Estimated Changes in Number of Annual Paddlers on the Lower Reach

	Commercial Use, *All* Water Conditions	Private Use, *All* Water Conditions	Subtotals	Commercial Use, *Dry* Conditions	Private Use, *Dry* Conditions	Subtotals
			D1610 Scenario			
Local use[1]	1,473	5,893	7,366	1,473	5,893	7,366
Regional use[2]	5,893	1,473	7,366	5,893	1,473	7,366
Subtotals	**7,366**	**7,366**	**14,732**	**7,366**	**7,366**	**14,732**
			Flow Proposal			
Local use	469	1,874	2,343	192	740	932
Regional use	1,875	469	2,343	740	192	932
Subtotals	**2,344**	**2,343**	**4,697**	**932**	**932**	**1,864**

Notes:
[1] Local use refers to paddlers that reside in Sonoma or Mendocino County.
[2] Regional use refers to paddlers that reside outside of Sonoma or Mendocino County.

4.1.1 SWIMMING

Estimating swimming use as a result of the Flow Proposal involved three steps, summarized as follows. The first step involved using beach-use data for Healdsburg Veterans Memorial Beach (Table 4-3) to determine the average proportion of beach users that swim. This was the only available source of information that contained both beach and swimming use data. For other beach use data, swimming use was not reported. The proportion of beach users that were swimming at Veterans Beach varied from approximately 26 to 40 percent, while the ten-year average proportion was 32 percent. The second step involved examining historic beach-use data for three beaches to determine the average daily swimming use (Table 4-4). There were no data available on how swimming might vary by weekday, weekend day, or holiday. This 10-year average proportion was used to estimate the proportion of beach users that would swim under the Flow Proposal. No changes were made in this proportion. Step three involved determining the total average seasonal swimming use under D1610 requirements (Table 4-5) for "*dry*" and "*all* water" conditions. This step required that an assumption be made regarding the total average swimming season (100 days). Based on a review of county health standards, it is unlikely that any of the beaches in the study area would be closed for reasons related to poor water quality. As a result, the number of swimmers that would occur under the Flow Proposal is estimated at 37,100 swimmers (Table 4-5). This does not represent a change from the level of swimming use under D1610 requirements.

Table 4-3 Annual Statistics at Healdsburg Veterans Memorial Beach, 1992 to 2002

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
2 pm Water Count	8,923	7,086	7,720	4,112	4,890	4,022	5,018	4,781	4,388	Beach Closed	3,218
2 pm Shore Count	22,262	17,833	17,935	11,614	10,918	8,488	9,317	7,225	6,736	Beach Closed	5,471
2 pm Totals	31,185	21,919	25,655	15,726	19,060	12,510	14,335	12,006	11,074	Beach Closed	8,689
% Swimming	28.6	32.3	30	26.1	25.7	32.1	35	40	39.6	N/A	37

Source: Sonoma County Regional Parks (2003). Personal communication with Bert Whitaker.

Table 4-4 Average Daily Swimmers for Beaches along the Lower Russian River

Beach	Total Historic Use[1]	Average Daily Beach User[2]	Average Daily Swimmers
Steelhead	366,000	610	226
Forestville Access	107,200	134	50
Wohler Bridge	206,400	258	95

[1] Total swimmer figures per season for each beach are based on data obtained via manual counts for 6 years for Steelhead Beach, and for 8 years for Forestville and Wohler Bridge beaches.

[2] Averages were computed by dividing total seasonal use by a season of 100 days.

Table 4-5 Estimated Average Number of Swimmers per Month for Beaches on the Lower Russian River under Existing Conditions and Flow Proposal Conditions

May		June		July		August		September		Totals	
All Water Conditions	*Dry* Conditions	*All* Water Conditions	*Dry* Conditions	*All* Water Conditions	*Dry* Conditions	*All* Water Conditions	*Dry* Conditions	*All* Water Conditions	*Dry* Conditions	*All* Water Conditions	*Dry* Conditions
D1610 Scenario											
0	0	7,047	7,047	11,498	11,498	11,498	11,498	7,047	7,047	37,100	37,100
Flow Proposal											
0	0	7,047	7,047	11,498	11,498	11,498	11,498	7,047	7,047	33,380	37,100

4.1.2 INCREASED SHORELINE USE

Three other activities for which recreation participation may increase in the Lower Reach of the Russian River include:

- Beach use.
- Improved flyfishing opportunities.
- Improved opportunities to observe wildlife.

4.1.2.1 Increased Beach Use

Use of beach areas may increase. The 1997 California survey of recreation participation (California Department of Parks and Recreation 1998) showed high unmet demand for this activity throughout the state. Beach use, including sunning and games, showed the tenth highest unmet demand among 43 outdoor recreation activities.

4.1.2.2 Improved Flyfishing

As D1610 flows decrease in the Lower Reach under the Flow Proposal, certain types of fishing may improve. Literature supports the idea that certain flow rates, measured in cfs, are preferred for fishing. In a recent study conducted by PG&E (2001) on fishability in the Upper North Fork of the Feather River, study findings may provide insight to issues anglers and resource managers would face regarding the Lower Reach under the Flow Proposal. In the PG&E study, anglers were invited to provide information about the relationship between flows and fishability.

There appear to be significant preference differences between fly angling and spin/bait anglers. Study discussions suggested that fly anglers require lower flows because they provide better wading access to the river as well as slower velocities in rapids. Spin/bait anglers do less wading (as a general rule, they do not need as much clearance from riparian vegetation to cast). As flows in the Lower Reach decrease, the river may become better suited for fly anglers rather than spin/bait anglers as wading access increases and velocities decrease. This may improve opportunities for fly anglers interested in pursuing warmwater fish species such as smallmouth bass. However, it is likely that pools for

warmwater fish habitat would be sporadically distributed. This effect on fishing use is unknown because numerous variables affect angling use.

4.2 SUMMARY

Under the current flow requirements (D1610), under *all* water conditions, an estimated 14,732 paddlers use the Lower Reach on an annual basis. Under the Flow Proposal, for *all* water conditions, an estimated 4,697 paddlers would use the Lower Reach on an annual basis. Compared to current flow conditions, this represents a 68-percent reduction in use. Whether or not the loss of paddling on the Lower Reach would equate with a loss of recreation use in the study area is uncertain.

Sport fishing is another river-related recreational activity popular throughout most of the year. Summer fishing on the Lower Reach occurs for smallmouth bass and catfish including small numbers of shad and striped bass. Fishing for steelhead accounts for the majority of the fish sought. The peak fishing season is from October through March, although fishing trips may occur throughout the year.

Regarding swimming and beach use, with the exception of Healdsburg, all beaches show steady increases in annual attendance. Steelhead Beach shows the largest percentage increase in use and the highest total number of visitors reported during the 2001-2002 season.

It may be that recreational boating activity would shift seasonally in use; for example from summer to spring, rather than simply decrease. Boating opportunities would probably not disappear on the Lower Reach. It is likely that they would decrease, but watercraft use should continue regularly through June 30. Spring and fall boating may become more popular as late or early rainfall provides flows greater than those found during summer under the Flow Proposal. Fall use of the Lower Reach was mentioned by several survey respondents and professional fishing guides as a good opportunity to view wildlife on the Lower Reach, an activity that many recreationists seek. Several other recreation studies in the region demonstrate that recreationists participate in several activities at a site (PG&E 2001, DWR 2002). While summer canoeing may decrease in the Lower Reach, recreation users may shift their activities to other secondary pursuits such as sunning, wading, hiking, or wildlife watching.

Interviews with resort owners and Chamber of Commerce staff indicate that visitors come to the study area to engage in a wide variety of activities, one of which is canoeing on the Lower Reach. Additionally, other surveys of outdoor recreationists in California (PG&E 2001) indicate that visitors who come to a particular recreation area often visit multiple recreation sites, and that a majority engage in multiple recreation activities. As a result, it seems possible that some portion of expenditures associated with visiting the Lower Reach for the purpose of canoeing would still be “captured” by local businesses because canoeists participate in other activities such as dining, lodging, or wine tasting (NEA 2003).

If the proposed flow reduction occurs, it is likely that recreation opportunities will shift from watercraft-dominant to shoreline-based. Changes to current recreation supply and demand of opportunities may occur in the following areas:

- Increased shoreline use.
- Improved flyfishing opportunities.

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Stone, Karen. 2003. Fifes Resort. Personal communication to Asavari Devadiga, ENTRIX, Inc. June 23.

Thomas Park Jr., Patrick. 2003. Gold Coast Russian River Outfitters, Previous Partner. Personal communication to Asavari Devadiga, ENTRIX, Inc. April 28.

Wilson, Laura. 2003. Johnson's Beach. Personal communication to Asavari Devadiga, ENTRIX, Inc. May 1.

Wright, Phil. 2003. Trowbridge Canoe Trips. Personal communication to Asavari Devadiga, ENTRIX, Inc. May 23.

Agency Surveys

Brown, Sandy. 2003. Russian River Chamber of Commerce. Personal communication to Asavari Devadiga, ENTRIX, Inc. June 17.

Clemens, Bob. 2003. Trowbridge Canoes and Kayaks. Personal communication with Miriam Hammer, Northwest Economic Associates. June 2 and June 5.

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Nelson, Margaret. 2003. Russian River Chamber of Commerce and Visitor Center. Personal communication to Asavari Devadiga, ENTRIX, Inc. April 30.

Swaney, Mike. 2003. California Department of Fish and Game. Personal communication with Miriam Hammer, Northwest Economic Associates. May 21.

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5.3 WEBSITES

California Data Exchange Center. 2003. http://cdec.water.ca.gov

Healdsburg Chamber of Commerce. 2003. http://www.healdsburg.org

Russian River Chamber of Commerce. 2003. http://www.russianriver.com

Sonoma County Regional Parks. 2003. http://www.sonomacounty.com

ATTACHMENT 1

AGENCY SURVEY FORM

Agency Survey **Russian River BA: Recreation**

Survey No. _____Date _____ Time _____ Researcher _____

Hello, my name is _____ and I'm working on a recreation survey for a study being conducted by the Sonoma County Water Agency. I'd like to take a few minutes to ask you a number of questions about canoeing and swimming on the Russian River. I'm particularly interested in the stretch of the Russian River between Healdsburg and the ocean near Jenner. The information you provide will be used by the Sonoma County Water Agency to understand the relationship between flows and recreation use patterns in the Russian River area. These questions will only take a few minutes, would you be willing to help?

[*If yes, proceed. If no, thank them anyway and say goodbye*]

What is your full name? _____

What agency do you work for and where are you based? _____

What is the agency's full location address?

_____

_____

Where and how does the _____ agency interact with watercraft, swimmers, and tubers on the Russian River between Healdsburg and Jenner?

_____

_____

_____

What percent of river boaters are day users versus overnight users? Day ____% Overnight ____%

Aside from boating, are there differences in day use vs. overnight user activities? Yes ____ ➠ If yes, what

_____

Regarding canoeing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

Do you have a sense of total use, in the measure of individual visits? No ____ Yes ____ ➠ If yes, # _____

How did you arrive at this estimate? _____

Approximately how much use by canoes and other watercraft is there on the section you know best:
*[*a reasonable estimate is appropriate*]*

Specify reach from _____ to _____ (individual visits ↘)	canoes	other watercraft
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Regarding swimming and tubing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

Approximately how much use by swimmers and tubers is there on the section you know best:
[*a reasonable estimate is appropriate*]

Specify reach from _____ to _____ (individual visits ↘)	swimmers	tubers
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Do you know of any records of watercraft or swimming use? Yes ____ No ____

If yes, may we look at them? Yes ____

How was use calculated? _____

[*Arrange to obtain then ASAP email preferred; fax and snail mail okay; summary okay also*]

If yes, do the records contain zip code information? Yes ____ No ____

If no records can be obtained, can you estimate the places of origin of visitors No ____ Yes ____

If yes, areas include

_____

_____

Do you know of any use estimates for the entire stretch between Healdsburg and Jenner? Yes ____ No ____

If yes, can we obtain it? Yes ____ No ____ ➠ [If yes, arrange]

What would you say is the main destination for watercraft users on the Russian River between Healdsburg and Jenner? _____ *Why?*

_____

Why do you think people choose this destination? _____

What do you think are the most important attributes to watercraft users when they come to the Russian River area?

_____

_____

Can you detect a difference in use levels during drought years? Yes ____ No ____

Is this based on a feeling, or something you can pinpoint? Feeling ____ Pinpoint _____

If yes, during what year(s) was boating/swimming/tubing use unusually low? _____ years

About how much of a percentage decrease in use was there? ____ % decrease compared to non-drought years.

Would watercraft users still come to the river during low flow conditions? Yes ____ No ____

Would any of the following encourage your use during low flow conditions?

❒ Portage services? ➠ If yes, where?_____

❒ The use of inflatable kayaks, or some other vessel that can better tolerate low flow conditions?

❒ Special timing of releases from Lake Sonoma/ Lake Mendocino? ➠ If yes, what times _____

❒ Other activities or services? What would they be? _____

Would you have any other concerns related to continuing your recreation use during periods of lower flows?

_____

_____

_____

One question related to fishing on the Russian River, what is the demand for salmonid and bass fishing? (i.e. high, low) Salmonid: high ❒ low ❒ Bass: high ❒ low ❒

Is there anyone you think we should contact and speak with about watercraft use and swimming on the Russian River?
Yes ____ No ____ ➠ If yes, who

_____

_____

That's it for my questions, do you have any other questions or comments?

_____

_____

Thanks for your time and knowledge. Goodbye.

ATTACHMENT 2

REGULAR RECREATION USER SURVEY FORM

Recreation User Survey Russian River BA: Recreation

Survey No. _____Date _____ Time _____ Researcher _____

Hello, my name is _____ and I'm working on a recreation survey for a study being conducted by the Sonoma County Water Agency. I'd like to take a few minutes to ask you a number of questions about canoeing and swimming on the Russian River. I'm particularly interested in the stretch of the Russian River between Healdsburg and the ocean near Jenner. The information you provide will be used by the Sonoma County Water Agency to understand the relationship between flows and recreation use patterns in the Russian River area. These questions will only take a few minutes, would you be willing to help?

[*If yes, proceed. If no, thank them anyway and say goodbye*]

Confirm contact's full name _____

Do you have knowledge about watercraft use or swimming at the Russian River between Healdsburg and Jenner?

Yes ____ *No* ____

[*If no, skip to another survey or thank them and terminate if they are completely unknowledgeable*]

What's your zip code so we can tell where you're from? _____ [*we won't use it for other reasons*]

How long have you been involved with watercraft use or swimming in this area? _____ (years)

Please estimate how many times you have canoed or used watercraft on the Russian River ____ (times).

Do you use shuttle services? Yes ____ No ____ ➠ If yes, paid or friends _____ ➠ If paid, $ ____ average.

Regarding canoeing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

What part(s) of the Russian River between Healdsburg and Jenner are you most knowledgeable about?

_____

Approximately how much use by canoes and other watercraft is there on the section you know best:
*[*a reasonable estimate is appropriate*]*

Specify reach from _____ to _____ (individual visits ↘)	canoes	other watercraft
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Regarding swimming and tubing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

Approximately how much use by swimmers and tubers is there on the section you know best:
[*a reasonable estimate is appropriate*]

Specify reach from _____ to _____ (individual visits ↘)	swimmers	tubers
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Do you know of any records of use? Yes ____ No ____

If yes, may we look at them? Yes ____

[*Arrange to obtain then ASAP email preferred; fax and snail mail okay; summary okay also*]

What would you say is your main destination for recreation on the Russian River between Healdsburg and Jenner?

_____

Why? _____

Why do you like this area(s)? _____

What are the most important attributes that motivate you to come to the Russian River rather than some other place?

_____

_____

Can you detect a difference in use levels during drought years? Yes ____ No ____

Is this based on a feeling, or something you can pinpoint? Feeling ____ Pinpoint _____

If yes, during what year(s) was boating/swimming/tubing use unusually low? _____ years

About how much of a percentage decrease in use was there? ____ % decrease compared to non-drought years.

Would you still come to the river during low flow conditions? Yes ____ No ____

Would any of the following encourage your use during low flow conditions?

❒ Portage services? ➠ If yes, where?_____

❒ The use of inflatable kayaks, or some other vessel that can better tolerate low flow conditions?

❒ Special timing of releases from Lake Sonoma/ Lake Mendocino? ➠ If yes, what times _____

❒ Other activities or services? What would they be? _____

Would you have any other concerns related to continuing your recreation use during periods of lower flows?

_____

_____

_____

Is there anyone you think we should contact and speak with about watercraft use and swimming on the Russian River?

Yes ____ No ____

If yes, who

_____

_____

_____

That's it for my questions, do you have any other questions or comments?

_____

_____

Thanks for your time and knowledge. Goodbye.

ATTACHMENT 3

BUSINESS SURVEY FORM

Business Owner/Operator Survey — Russian River BA: Recreation

Survey No. _____ Date _____ Time _____ Researcher _____

Hello, my name is _____ and I'm working on a recreation survey for a study being conducted by the Sonoma County Water Agency. I'd like to take a few minutes to ask you a number of questions about canoeing and swimming on the Russian River. I'm particularly interested in the stretch of the Russian River between Healdsburg and the ocean near Jenner. The information you provide will be used by the Sonoma County Water Agency to understand the relationship between flows and recreation use patterns in the Russian River area. These questions will only take a few minutes, would you be willing to help?

[*If yes, proceed. If no, thank them anyway and say goodbye*]

Confirm contact's full name _____

Do you have a business in the Russian River area that deals with watercraft, beach use, or swimming? Yes ____ No ____

[*If no, skip to another survey or thank them and terminate if they are completely unknowledgeable*]

If yes, name business and full location address

_____

_____

How long have you been in business _____ years?

What do you do at _____ business? _____

Regarding canoeing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

What part (s) of the Russian River between Healdsburg and Jenner are you most knowledgeable about?

_____

What percent of your customers are day users versus overnight users? Day ____% Overnight ____%

ATTACHMENT 4

SELF-ADMINISTER E-MAIL SURVEY
FOR CHAMBER OF COMMERCE MEMBERS

Please estimate the percent of your customers who use shuttle services ____% ➠ of those, what percent are paid? ____%

What percent of river use do you estimate is commercial (guided trips)? ____%

Approximately how much use by canoes and other watercraft is there on the section you know best:

*[*a reasonable estimate is appropriate*]*

Specify reach from _____ to _____ (individual visits ↘)	canoes	other watercraft
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Regarding swimming and tubing on the Russian River from Healdsburg to Jenner, let's talk about use levels.

Approximately how much use by swimmers and tubers is there on the section you know best:

[*a reasonable estimate is appropriate*]

Specify reach from _____ to _____ (individual visits ↘)	swimmers	tubers
Summer weekday?		
Summer weekend day?		
Summer holiday weekend day?		

Do you have actual records of use? Yes ____ No ____

[*NOTE: we're not interested in your personal finances, we just want to know accurately how much river boat use there is in the lower reach of the Russian River*]

If yes, may we look at them? Yes ____

[*Arrange to obtain then ASAP email preferred; fax and snail mail okay; summary okay also*]

[If no records of use exist ➘]

Can you estimate where the majority of your business' users originate?

_____

_____

What would you say is the main destination for watercraft users on the Russian River between Healdsburg and Jenner?

_____

Why? _____

Why do you think people choose your business? _____

What do you think are the most important attributes for customers in the Russian River area?_____

Can you detect a difference in use levels during drought years? Yes ____ No ____

Is this based on a feeling, or something you can pinpoint? Feeling ____ Pinpoint _____

If yes, during what year(s) was boating/swimming/tubing use unusually low? _____ years

About how much of a percentage decrease in use was there? ____ % decrease compared to non-drought years.

Would watercraft users still come to the river during low flow conditions? Yes ____ No ____

Would any of the following encourage your use during low flow conditions?

❒ Portage services? ➠ If yes, where?_____

❒ The use of inflatable kayaks, or some other vessel that can better tolerate low flow conditions?

❒ Special timing of releases from Lake Sonoma/ Lake Mendocino? ➠ If yes, what times _____

❒ Other activities or services? What would they be? _____

Would you have any other concerns related to continuing your recreation use during periods of lower flows?

_____

_____

Is there anyone you think we should contact and speak with about boating and swimming on the Russian River?

Yes ____ No ____

If yes, who _____

That's it for my questions, do you have any other questions or comments?

_____

_____

Thanks for your time and knowledge. Goodbye.

ATTACHMENT 5

LIST OF CONTACTS

Recreation User Contacts						
Contacted	**Date**	**Person's name**	**Agency or Group**	**Related to…**	**Phone**	**Further Info**
✓	4-30 6-17 7-3	Margaret Nelson Sandy Brown Steve Fogle	The Russian River Chamber of Commerce	Canoeing	707-869-9000	web
✓	4-24	George Zastrow	Sequoia Paddling Club (Pres.)	Canoeing	707-869-0700	Web (George knows a lot of contacts)
✓	4-25	Tom Meldau	Sequoia Paddling Club (Vice. Pres.)	Canoeing	707-887-7416	web
✓	4-28	Suki Gitchell	Sequoia Paddling Club (Conservation Chair)	Canoeing	c) 707-477-2299 h)707-865-2248	web
✓	4-28	Michelle Luna	Stewards of Slavianca	Canoeing	707-869-9177	http://www.sonomapicnic.com/05/slaviank.htm
✓		Tom Roth, Peter Vilms✓, Joan Vilms✓	Friends of the Russian River	Canoeing and Swimming	707-865-1305	http://www.envirocentersoco.org/forr/
✓	4-30	Don McEnhill	River Keeper	Canoeing and Swimming	707-433-1958	gbtc@aol.com
✓	4-30	Ann Dwyer	Kiwi Kayak Club	Boating	707-433-6707	
✓	5-2	Gina Cassini	Cassini's Campground	Camping	800-451-8400	
✓	4-30	Mike Swaney	Trout Unlimited		707-829-3580	
✓	5-27	Bryan Hines	Friends of RR	N. Coast Solar Resources	707-575-3999	
✓	5-1	Laura Wilson	Johnson's Beach Resort	Swimming	707-869-2022	http://www.johnsonsbeach.com/ho

						me.htm
Recreation User Contacts						
Contacted	**Date**	**Person's name**	**Agency or Group**	**Related to…**	**Phone**	**Further Info**
✓	5-13	Niki Rubin	West Coast Kayak		707-869-9716, 707-869-9717	private river tours
	5-27, left msgs	Bob/ Linda Burke	Burke's Canoe Trips		707-887-1222, fax: 707-887-2000	private river tours
	?	Ann Dwyer	California Kayak Academy		707-838-0141	
✓	4-25	John Condon	California Rivers Wine tours & Kayaks		707.579.2209	
✓	4-28	Patrick	Gold Coast Kayaks/ The Russian River Outfitters		707-865-1441	web
	Left msg	Tom Meldau	Mr. Canoe's Paddlesports		707.887.7416	
✓	5-23	Phil Wright	Trowbridge Canoe Trips	Phil Wright 707-838-3200 Chris Wright 707-473-4374	800-640-1386	Said to be worthy of a lot of information about RR boating
✓	6-19	Steve Jackson/Erik Laughmiller	King's Fishing & Kayak		707-869-2156	
✓	5-12	Larry Laba	SOAR Manufacturing		707-433-5599	web
✓	5-27	Mirabel Park Campground	Campground, rent canoes/kayaks		707-887-2383	
		Nate Rangal	CA Outdoors	Coloma, CA- not relevant	530-626-7385	Ref: John Gangemi- American Whitewater

Recreation User Contacts						
Contacted	**Date**	**Person's name**	**Agency or Group**	**Related to…**	**Phone**	**Further Info**
✓	7-2	Alby Kass Mailed business survey				
✓	6-4	Rick	The Willows Resort		707-869-2824	
✓	6-23	Karen	Fifes		707.869.0656	
✓	6-23	Meena	Northwood Lodge		707-865-1655	
✓		Referred to their website when called	Sonoma County Tourism Program		800-5-sonoma, 707-565-5383	http://www.sonoma-county.org/edb/Reports.htm : Tourism info.
✓	5-30	Bert Whitaker	Sonoma County Aquatics		707-565-2824	
Left msgs, recent 7/2		Allan Darrimon	Sonoma County Regional Parks Dept		707-565-2041	
			Forestville River Access			http://www.sonoma-county.org/parks/pk_forst.htm
	Left msg	Robert Baba	Forestville Chamber of Commerce		707-887-1111	
✓	4-28	Richard Edwards	Monte Rio Parks and Recreation District		707.865.2487	
	Left msgs recent 7/2		Monte Rio Chamber of Commerce		707-865-1533	
X	X		Armstrong State Park and Recreation Area		707-869-2015 or 865-2391	
✓	6/17	Carla	Healdsburg Chamber of Commerce		707-433-6935	

Recreation User Contacts						
Contacted	**Date**	**Person's name**	**Agency or Group**	**Related to…**	**Phone**	**Further Info**
X	X		Sonoma County Health Department-- Community Health Services Communicable Disease Control	Swimming	707-565-4567	http://www.sonoma-county.org/health/ph/contact.htm

X indicates : Attempted contacting and No relevant feedback (river recreational use) obtained.

Site or doc. name	Agency or Group	Related to…	Phone	Further Info
Rein's Sandy Beach	Private Called. Call again 5-29 (new business-no data)	Beach and long-term RV rental sites.	707-865-2102	Directions: Take Route 116, towards the ocean (west). Go several miles on 116 and take a left at the sign for Rein's Sandy Beach, take a right at the end of the road. Cost: $2.00 per person.
Vacation Beach		Residential area		
Steelhead Beach	Sonoma County	Day use area	(707) 565-2041	May have use #s based on fee collections
Beach, Robert, F.	Document	Min. in-stream flow study	Possibly, contact Sonoma County for doc.	The Russian River: An assessment of its condition and government oversight. August 1996. Beach, Robert, F.

ATTACHMENT 6

ASSUMPTIONS FOR RECREATION:
RIVER RECREATION USE ESTIMATES

Assumptions for Russian River recreation use estimates

1. The typical canoeing/boating season begins in mid-May and ends in mid October, for a total season length of about 5 months (154 days). This assumption is based on conversations with local canoe rental establishments and recognition that decreasing daylight and temperature will mark the end of the recreation use period in the Fall.

2. The typical swimming season is 100 days. The season begins in late June and ends by September 30.

3. The lower reach of the Russian River is not boatable when the daily flow is less than 140 cfs, as measured by the gaging station near Hacienda Bridge (Whittaker et al., 1993).

4. There will be 5 days per month from July 1 through August 31 when swimming conditions at beaches along the lower reach of the Russian River are unattractive to the extent that recreationists will not swim on those days.

5. The following tables estimates the number of boatable and swimmable days under "all" water supply conditions and dry water supply conditions. Recreational canoeing estimates provided by the members of the business community represent a subset of total canoeing use. As a result, estimates of canoeing use provided by recreational users will be used as a basis for calculating total seasonal canoeing use. Median values for weekends, weekdays, and holidays will be used to estimate the amount of canoeing/other watercraft use on the days when the lower reach is boatable.

ALL	**May**		**June**		**July**		**August**		**September**		**October**	
Activity	D1610 All	ENFP NM – All water conds.	D1610 All	ENFP NM- All water conds.	D1610 All	ENFP NM- All water conds.	D1610 All	ENFP NM All Water conds	D1610 All	ENFP NM All water conds	D1610 All	ENFP NM All Water conds
Paddling	15	15	25	14	31	8	31	0	30	0	10	0
Swim	0	0	19	19	31	0	31	0	19	0	0	0
DRY	**May**		**June**		**July**		**August**		**September**		**October**	
Activity	D1610 Dry	ENFP NM Dry water conds.	D1610 Dry	ENFP NM Dry water conds.	D1610 Dry	ENFP NM Dry water conds.	D1610 Dry	ENFP NM Dry	D1610 Dry	ENFP NM Dry	D1610 Dry	ENFP NM Dry
Paddling	14	13	25	8	31	0	31	0	0	0	3	0
Swim	0	0	19	9	31	0	31	0	0	0	0	0

6. Recreational swimming represents 37% of total beach use (NOTE: this is based on 10 years of observational data collected at Veteran's Beach near Healdsburg).

7. Each canoe/watercraft has an average party size of two persons.

8. The percentage of canoeing/watercraft use that is commercial is 50%. This represents the lowest estimate provided by the three businesses that answered this question.

9. The percentage of commercial canoe/watercraft users from outside Sonoma and Mendocino counties is 80%. This percentage is based on survey results from five businesses that answered this question, indicating the majority were from the San Francisco Bay area. The percentage of private canoe/watercraft users from outside Sonoma and Mendocino counties is 20%. This is based on survey results from private boaters.

D1610 Scenario-Canoeing Estimate

	Comm'l use D1610 All water	Private use D1610 All water	Comm'l use D1610 Dry	Private use D1610 Dry
Local (Mendocino and Sonoma counties)	1473	5893	1473	5893
Regional	5893	1473	5893	1473
Subtotals	7366	7366	7366	7366

ENFPnm Scenario-Canoeing Estimate

	Comm'l use ENFPnm All Water	Private use D1610 All Water	Comm'l use ENFPnm Dry	Private Use Dry
Local (Mendocino and Sonoma counties)	469	1875	192	740
Regional	1875	469	740	192
Subtotals	2344	2344	932	932

ATTACHMENT 7

SURVEY RESULTS

INTRODUCTION

The following pages present the results of the three surveys regarding recreation use on the Lower Reach. The results are presented in a matrix format, and include responses from nine business owners/operators, three agency staff, and ten recreational paddlers (see page 2-2 of this appendix for more detailed information).

Responses from business owners/operators are presented on pages 1 through 4 of this attachment. The respondents (B1 through B9) are listed vertically in the first column on page 1, and the answers provided by each of those respondents are presented horizontally across four pages. Likewise, responses from agency staff (respondents A1 through A3) are presented on pages 5 through 8, and responses from recreational paddlers (respondents R1 through R10) are presented on pages 9 through 12.

The Survey results are in the process of being formatted at this time.