

2013 Monitoring Report
North Umpqua Wild & Scenic River



Cooperative Effort Between
**Bureau of Land Management, Roseburg District
&
Umpqua National Forest**

Table of Contents

I. Background Information	4
A. Designation of the North Umpqua River	4
B. North Umpqua River Management Plan.....	4
C. Boating Management Area	4
D. Management Guidelines	4
E. Methods of Collecting Information.....	5
F. Objectives of River Monitoring	5
II. Methodology and River-Use Statistics	7
A. Observed Boating Use	7
B. Reported Boating Use	9
C. Adjusted Boating Use	11
D. Craft and Boat Launch Use.....	14
E. Boating Summary	15
F. Observed Fishing Use	16
G. Congestion at Parking Areas and Launch Sites	17
III. Outstanding Remarkable Values	19
A. Fisheries	19
B. Water Quality.....	21
C. Cultural Resources	24
D. Scenery.....	24
IV. 2013 Staff	24

Tables, Graphs, & Maps

Map 1: North Umpqua Wild & Scenic River Corridor.....	6
Table 1: Annual Comparison of Observed Boating Use.....	8
Graph 1: Annual Comparison of Observed Boating Use.....	8
Table 2: Daily Comparisons of Boaters Observed by USFS and BLM	9
Table 3: Observed Use and Reported Commercial Use	10
Table 4: Annual Comparison of Observed Watercraft Use.....	11
Graph 2: Annual Comparison of Reported Commercial, Adjusted Use.....	12
Map 2: North Umpqua Wild & Scenic Rafting Segments.....	13
Table 5: Comparison of Watercraft Observed Per Month.....	14
Table 6: Annual Comparison of Observed Watercraft Use	14
Table 7: Launch Utilization.....	15
Table 8: Observed Angler Use	16
Table 9: Daily Comparison of Anglers Observed By USFS & BLM.....	16
Table 10: Number of Occasions Parking Capacity Exceeded Limit.....	17
Table 11: Comments, Hazards, & Violations.....	18
Table 12: Annual Fish Counts	20
Table 13: Annual Water Quality Statistics	21
Graph 3: North Umpqua Annual pH.....	22
Graph 4: North Umpqua Annual Temperature (C).....	22
Graph 5: North Umpqua Dissolved Oxygen (mg/l).....	23
Graph 6: North Umpqua Annual Specific Conductance (uS/cm).....	23

I. Background Information

A. Designation of the North Umpqua River

The North Umpqua River was designated a recreational river in the National Wild and Scenic River System in the Omnibus Oregon Wild and Scenic River Act of 1988.

B. North Umpqua River Management Plan

In 1992, The US Forest Service (USFS), Bureau of Land Management (BLM), and Oregon Parks and Recreation Department cooperated with local, state, and federal agencies to complete the North Umpqua River Management Plan. The plan details a specific management direction and resource monitoring plan for each section of the river. The plan notes fisheries, water, recreation, scenery, and cultural resources as Outstandingly Remarkable Values (ORV's).

C. Boating Management Area

Boundaries include the North Umpqua River from Soda Springs Dam to its confluence with Rock Creek. Management of the lower section of the North Umpqua River (between mile markers 22 and 30 of Highway 138, 8.4 river miles) is the responsibility of the Roseburg BLM and management of the upper section (between mile marker 30 and Soda Springs Dam, 25.4 river miles) is the responsibility of the USFS. The two agencies work closely to jointly manage the North Umpqua Wild and Scenic River; the USFS administers special use permits for commercial fishing and rafting guides for the entire 33.8 miles and BLM is responsible for monitoring use.

D. Management Guidelines

Commercial rafters, anglers, and agency personnel have discussed user conflicts that can occur on the North Umpqua River. The various user groups agreed that conflicts could be reduced by using the river at different times. Anglers noted that they used the Steamboat area more extensively than other segments and boaters noted that they did not generally use the river during the early morning hours and late evening hours. As a result, certain segments have been placed under voluntary boater restrictions for both non-commercial and commercial boaters during certain hours of the day and certain seasons of the year. Since implementation in 1992, the number of conflicts between boaters and anglers has been reduced. Voluntary guidelines for each segment are as follows:

Soda Springs to Gravel Bin

Open to boating year-round

Voluntary boating closures - 6 p.m. to 10 a.m. from 7/1 through 10/31

Gravel Bin to Bogus Creek

Open to boating 11/1 through 6/30

Boating closure - 6 p.m. to 10 a.m. from 7/1 through 7/14

Voluntary boating closure – All times, 7/15 through 10/31

Bogus Creek to Susan Creek

Open to boating year-around

Voluntary boating closure - 6 p.m. to 10 a.m. from 7/1 through 10/31

Susan Creek to Rock Creek

Open to boating year-round

Voluntary boating closure - 6 p.m. to 10 a.m. from 7/1 through 10/31

Seven commercial whitewater guide/outfitters have a Special Use Permit which authorizes them to conduct trips on the river between May 20th and September 15th. Stipulations for commercial users exist: commercial trips are not allowed to use Apple Creek campground as a lunch stop; they are restricted from launching from the undeveloped campsites at Eagle Rock campground prior to July 15th; and they may not run trips between September 15th and December 31st to protect spawning fish and their habitat; however, they are authorized to run trips between January 1st and May 20th without using any of their permit allotted days. Non-commercial users (not for profit) are not required to obtain permits to float the river.

Ten commercial fly-fishing guides are permitted to conduct trips on the river between January 1st and November 14th. Trips are not authorized between November 15th and December 31st in order to protect spawning Coho salmon.

E. Methods of Collecting Information

In the winter of 1991, the Roseburg District BLM funded a river manager position to manage and document use of the North Umpqua River. Since then, visual counting by river monitors has varied between two and four BLM and USFS employees per year. In 2013, one USFS and two BLM seasonal employees were in charge of the river monitoring.

F. Objectives of River Monitoring

1. Identify types of recreation use occurring on the river.
2. Document visitor use statistics on the river, including commercial and non-commercial use.
3. Provide a BLM/USFS presence on the river to contact, inform, and educate the public.
4. Coordinate river management issues between the BLM and the USFS.
5. Identify and mitigate safety hazards and minimize user conflicts.
6. Promote preservation of the five ORVs identified in the river management plan.
7. Provide recreational users a quality recreation experience.



II. Methodology and River-Use Statistics

A. Observed Boating Use

The use recorded by the USFS and BLM monitors is referred to as “observed use”. The documented observed use indicates that non-commercial use exceeded commercial use in 2013 (Table 1 & Graph 1). Non-commercial users accounted for 62% of the observed use and commercial users accounted for 38% of the observed use. (Note: This compares to 59% non-commercial observed use and 41% commercial observed use in 2012.) Continuing decline in observed use going into 2013 can be accounted to below average flow rates throughout the summer, national trends for rafting and whitewater kayaking are either flat or slightly declining, and it is becoming increasingly difficult for river monitors to observe floaters from the highway due to increasing vegetation density.

In 2013, with permission from the USFS, commercial anglers, and commercial boaters the BLM implemented a new monitoring technique using time lapse cameras. The original camera was placed in segment 1 near “Dog Wave” rapid. The camera took pictures every 15 seconds from 10AM to 5PM. Midway through the season a second camera was added in segment 4, near “Dry Creek”. The cameras were able to observe use when no BLM or USFS monitors were present, as well as pick up boaters BLM and USFS monitors may have missed. The monitoring cameras accounted for 25% of non-commercial observed use and 16% of commercial observed use.

1. Non-commercial Observed Use: (62% of all use)	
Visual counts observed by BLM/USFS employees.....	1,059
Visual counts observed by monitoring cameras (segments 1 & 4).....	439
Guides observed.....	278
Total observed.....	1,776
2. Commercial Observed Use: (38% of all use)	
Visual counts observed by BLM/USFS employees.....	917
Visual counts observed by monitoring cameras (segments 1 & 4).....	176
Total observed.....	1,093

River monitors were present on the river 79 out of a possible 119 days (66%), while one or both monitoring cameras observed use for 105 of the 119 days (88%) in the season (May 20 – September 15). An average of 5 hours was spent monitoring; typically between 10:00am and 3:00pm. On Saturday and Sunday, two monitors were usually present.



Table 1: Annual Comparison of Observed Boating Use

Year	*Non-commercial Observed	Commercial Observed	Total Observed Use
2004	2,976	1,402	4,378
2005	2,823	1,422	4,245
2006	3,009	1,873	4,882
2007	2,208	1,256	3,464
2008	2,458	1,367	3,825
2009	2,889	1,401	4,290
2010	2,720	1,345	4,065
2011	1,939	1,436	3,375
2012	1,833	1,266	3,099
2013	1,776	1,093	2,869

*Includes guides

Graph 1: Annual Comparison of Observed Boating Use

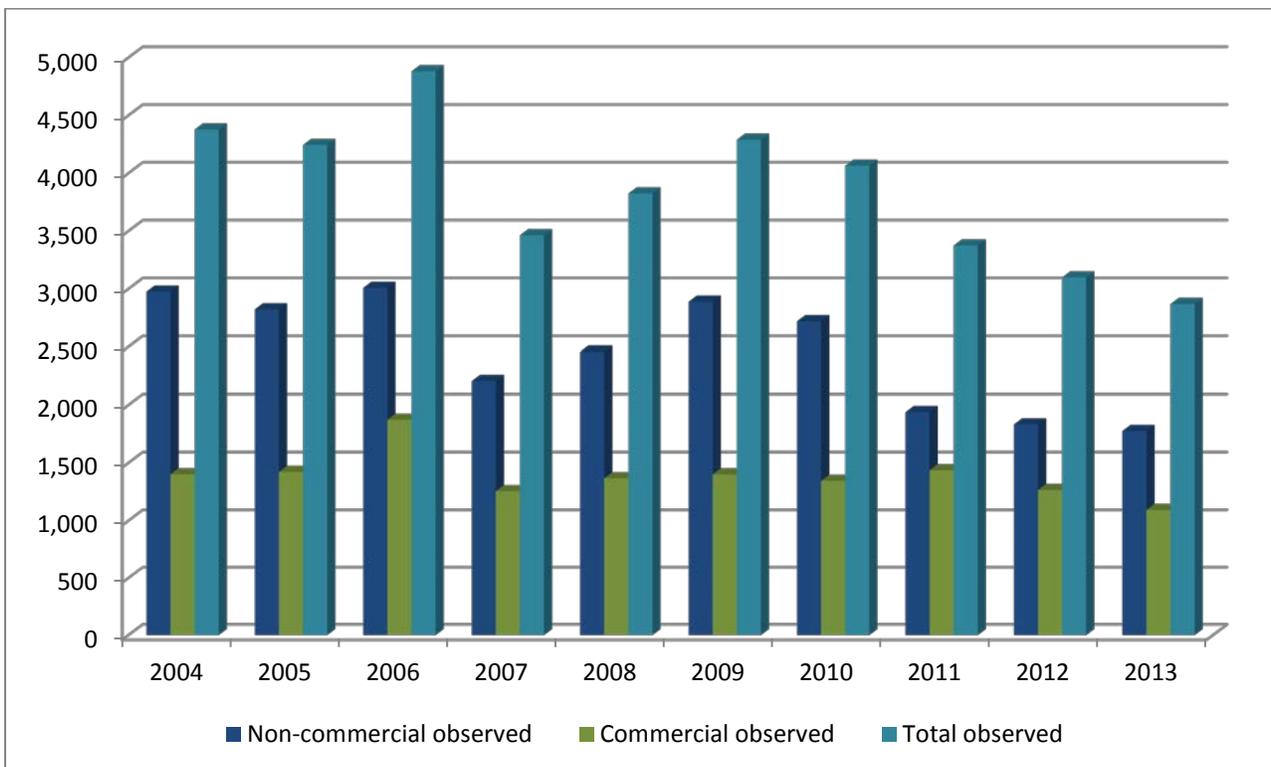


Table 2 shows observed non-commercial and commercial use by day of the week. During the week, most boaters were observed on Saturday followed closely by Sunday. The majority of non-commercial use took place on the weekends, while commercial use took place fairly evenly throughout the week. Commercial use was highest on Wednesday and non-commercial use was highest on Saturday. Thursday was the only day that relied solely on camera monitoring, which was also the lowest observed day for both commercial and non-commercial users.

Table 2: Daily Comparisons of Boaters Observed by USFS and BLM

Day	NonCommercial	Commercial	Total
Monday	85	148	233
Tuesday	87	101	188
Wednesday	98	250	348
Thursday	29	32	61
Friday	140	166	306
Saturday	561	190	751
Sunday	498	206	704
Total	1498	1093	2591

B. Reported Boating Use

Reported use is the use that commercial outfitters reported to the USFS at the end of the use season. There is a difference between the number of visitors reported by commercial outfitters and the number observed in the field by the USFS and BLM monitors. Reasons for this discrepancy are:

- Evergreen trees and shrubs along the river continue to reduce the opportunity for observing boaters. Commercial trips were not seen and some commercial trips may have been mistaken for non-commercial boaters.
- Observed use with monitoring cameras may have mistaken outfitters as non-commercial users.
- Monitoring cameras covered just 2 of the 5 segments leaving the possibility of missing commercial trips.
- The river was monitored fewer times on Mondays, Wednesdays, and Thursdays, thereby creating a discrepancy between reported and observed use.
- Monitoring cameras would frequently run out of space on the memory card or the batteries would die. These problems became less frequent as the season progressed but the probability of missing groups at the beginning of the season was greater than later on.

Table 3 shows the observed monthly use as well as the total observed use of each outfitter and compares it to the total reported use by each outfitter. While figures in 2013 were higher in the early months, numbers were lower in August and September than in 2012.

Table 3: Observed Use and Reported Commercial Use

Data from May 20th to September 15th, 2013

OUTFITTERS	People Observed by BLM/USFS*						Total Reported Use of Commercial Outfitters
	May	June	July	Aug	Sept	Total	
North Umpqua Outfitters	0	8	122	112	0	242	414
High Country Expeditions	0	24	28	0	0	52	93
Orange Torpedo Tours	0	6	42	151	0	199	315
Oregon River Experiences	0	0	6	0	4	10	10
Oregon Whitewater Adventures	10	16	68	47	22	163	274
Ouzel Outfitters	0	62	96	32	0	190	312
Sun Country Tours	0	24	139	74	0	237	332
Total	10	140	501	416	26	1,093	1,750

*Figure excludes the 278 guides that used the river

C. Adjusted Boating Use

Adjusted boating use is a method used to estimate total boating use based on what is seen and reported. To determine adjusted boating use, observed commercial use is first compared to reported commercial use. Once this ratio is determined, the same ratio is used to determine the non-commercial adjusted use based on observation.

$$\frac{\text{Commercial observed}}{\text{Commercial reported}} = \frac{\text{Non-commercial observed}}{\text{Non-commercial adjusted}}$$

The difference between commercial observed and commercial reported is 37%. This compares to 25% in 2012 and 28% in 2011. In other words, it is estimated that 37% of all boaters were not observed by river monitors or monitoring cameras.

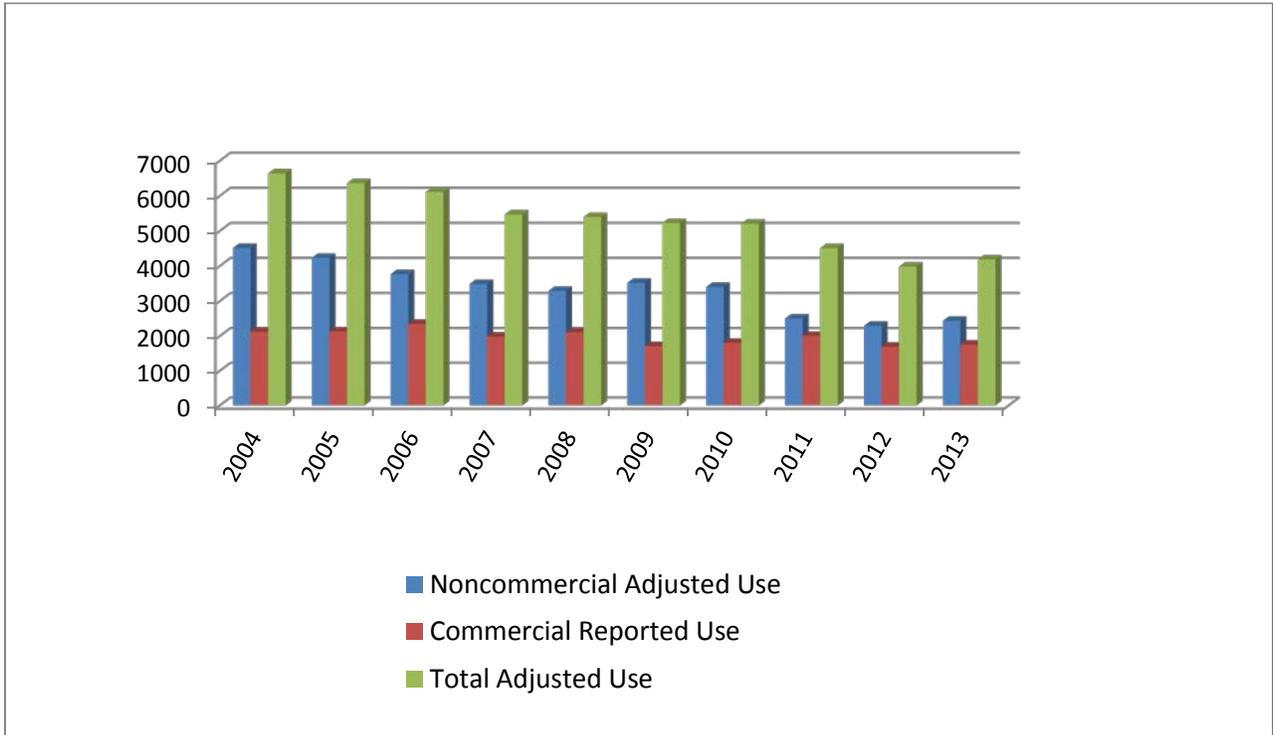
Total Adjusted Use is calculated by summing the non-commercial adjusted use with the commercial reported as shown below.

Table 4: Annual Comparison of Observed Watercraft Use

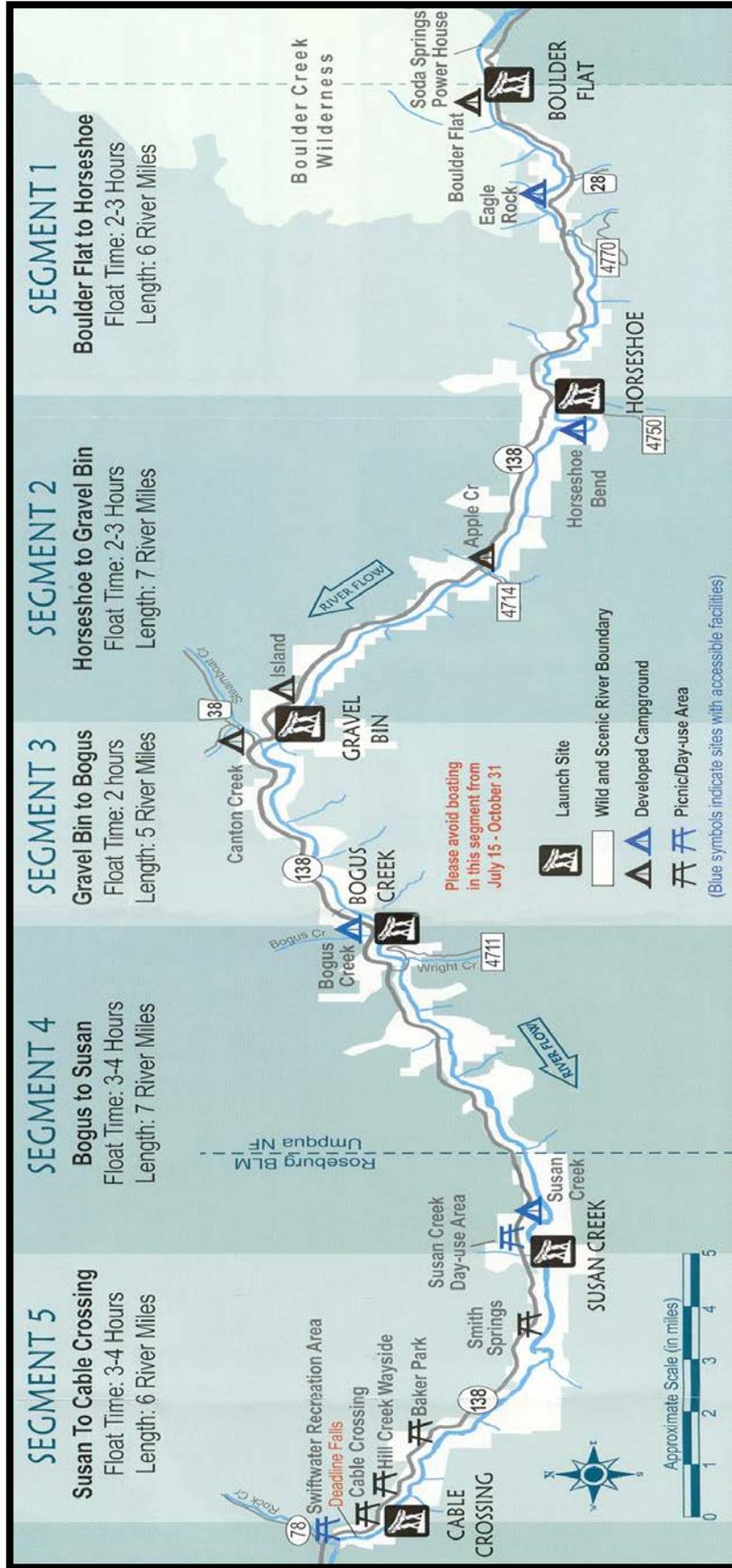
	Non-commercial Adjusted Use	Commercial Reported Use	Total Adjusted Use
2004	4,511	2,125	6,636
2005	4,229	2,130	6,359
2006	3,766	2,344	6,110
2007	3,484	1,982	5,466
2008	3,288	2,104	5,392
2009	3,518	1,706	5,224
2010	3,400	1,802	5,202
2011	2,501	2,005	4,506
2012	2,291	1,688	3,979
2013	2,433	1,750	4,183



Graph 2: Annual Comparison of Reported Commercial, Adjusted Use



Map 2: North Umpqua Wild & Scenic Rafting Segments



Map from: North Umpqua Wild and Scenic River Users Guide

D. Craft and Boat Launch Use

Data was queried to show the types of watercraft used to float the river. During the 2013 boating season, rafts outnumbered other crafts on the river (tables 5 & 6).

The data queried shows a breakdown of the put-in and take-out locations (see table 7). Boulder Flat was the most heavily used put-in location with 2,001 users and Gravel Bin was the most heavily used take-out location with 1,925 users.

Every year starting on July 15th, use between Gravel Bin and Bogus Creek (segment 3) is voluntarily restricted for commercial outfitters and for non-commercial users to help prevent conflict between boaters and anglers (for more information, see the Wild and Scenic River Management Plan, pg. 3 under Management Guidelines).

Table 5: Comparison of Watercraft Observed Per Month

Month	Rafts	Hard Kayaks	Inflatable Kayaks	Canoes	Monthly Total
May	20	13	6	0	39
June	117	49	87	1	254
July	207	55	90	0	352
August	138	42	182	2	364
September	12	7	24	0	43
Total	494	166	389	3	1,052

Table 6: Annual Comparison of Observed Watercraft Use

Year	Rafts	Hard Kayaks	Inflatable Kayaks	Canoes	Total Crafts
2004	657	525	846	36	2,064
2005	661	357	693	56	1,767
2006	901	364	608	32	1,905
2007	593	307	417	19	1,336
2008	659	360	549	7	1,575
2009	781	380	531	35	1,727
2010	771	427	342	68	1,608
2011	625	260	302	8	1,195
2012	557	241	327	17	1,142
2013	464	166	389	3	1,052

Table 7: Launch Utilization

Observed, Commercial and Non-Commercial

Site	Put-In	Take-Out
	Users	Users
Boulder Flat Boat Launch	2,001	0
Marsters Bridge	46	0
Horseshoe Bend	270	359
Gravel Bin	55	1,925
Bogus Creek	171	27
Susan Creek	48	213
Cable Crossing	0	52
Total	2,591	2,576

*Put-in and take-out numbers may vary, as not everyone uses the launch ramps.

E. Boating Summary

- a) Non-Commercial Use – 62% of all use
 - 1) Visual counts observed by BLM/USFS employees.....1,059
 - 2) Visual counts observed by monitoring camera.....439
 - 3) Number of guides observed by BLM/USFS employees.....278
 - 4) Total visual counts observed.....1,776
 - 5) Number missed (factored using 37% of users missed).....657
 - 6) Adjusted non-commercial use.....2,433

- b) Commercial Use – 38% of all use
 - 1) Visual counts observed by BLM/USFS employees.....917
 - 2) Visual counts observed by monitoring camera.....176
 - 3) Total visual counts observed.....1,093
 - 4) Reported Counts by Outfitter/Guides.....1,750

- c) Total Adjusted Use - Commercial and Non-Commercial.....4,183

- d) Observed Watercraft
 - 1) Rafts.....464
 - 2) Hard Kayaks.....166
 - 3) Inflatable Kayaks.....389
 - 4) Canoes.....3
 - 5) Total Watercrafts.....1,052

F. Observed Fishing Use

Anglers were counted by drive-by observation, with very little contact being made. Angler outfitters were spotted mainly by vehicle type, color, and license plate. Outfitters are required to display a tag in their vehicles identifying they are presently guiding. If an outfitter was spotted, monitors would stop and confirm if the tag was present. If anglers were not visible from the highway, parked vehicles that were not obviously involved in other activities (picture-taking, picnicking) were counted as having transported two anglers. Table 8 shows the number of non-commercial and commercial anglers observed, the month observed, and the segment of river where observed.

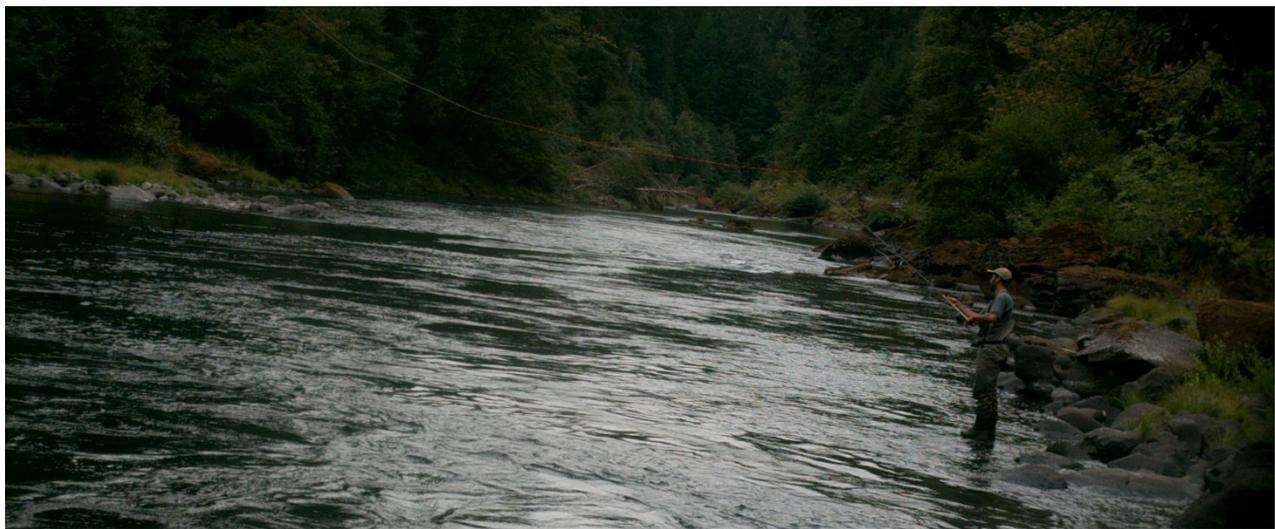
Table 8: Observed Angler Use

Month	Segment	Total	Non-Commercial	Commercial	
May	1	6	6	0	
	2	0	0	0	
	3	3	3	0	
	4	8	8	0	
	5	0	0	0	
June	1	8	8	0	
	2	13	13	0	
	3	32	26	6	
	4	9	9	0	
	5	17	17	0	
July	1	41	41	0	
	2	22	19	3	
	3	163	161	2	
	4	124	122	2	
	5	70	63	7	
Aug.	1	24	24	0	
	2	21	19	2	
	3	188	181	7	
	4	160	141	19	
	5	79	68	11	
Sep.	1	6	6	0	
	2	6	6	0	
	3	56	54	2	
	4	58	56	2	
	5	27	26	1	
Total	1	85	85	0	Boulder Flat - Horseshoe Bend
	2	62	57	5	Horseshoe Bend - Gravel Bin
	3	442	425	17	Gravel Bin - Bogus Creek
	4	359	336	23	Bogus Creek-Susan Creek
	5	193	174	19	Susan Creek - Cable Crossing

Grand Total: 1141

Table 9: Daily Comparison of Anglers Observed By USFS & BLM

Day	Non-Commercial	Commercial	Total
Monday	146	6	152
Tuesday	82	8	90
Wednesday	143	15	158
Thursday	31	5	36
Friday	91	2	93
Saturday	278	8	286
Sunday	306	20	326
Total	1077	64	1141



G. Congestion at Parking Areas and Launch Sites

When parking capacity was exceeded, vehicles parked in the grass, in campsites, or blocked a portion of the roadway. During peak usage times, vehicles parked in areas designated as staging zones. Occasions noted this year are much lower than in past years.

Table 10: Number of Occasions Parking Capacity Exceeded Limit

	Boulder Flat - 6 Cars Max	Horseshoe Bend - 5 Cars Max	Gravel Bin - 30 Cars Max
Date	Vehicles Exceeding Capacity	Vehicles Exceeding Capacity	Vehicles Exceeding Capacity
6/21	0	8	0
7/12	0	1	0
8/4	0	1	0
9/1	0	1	0

Table 11: Comments, Hazards, & Violations

	Issue
Comments	<ul style="list-style-type: none"> Throughout the summer common inquiries were made about possible river hazards, regulations/restrictions, directions, brochure requests and campsite info/questions.
Compliments	<ul style="list-style-type: none"> Many visitors were appreciative of the greater presence of Forest Service and BLM at the boat ramps. The public appreciated the information boards, brochures, up-to-date weather and flow information, and river hazard postings.
Logs in the River	<ul style="list-style-type: none"> A large log is spanning the river below Soda Springs Dam. The log is still there. <div data-bbox="643 844 1224 1251" data-label="Image"> </div> <ul style="list-style-type: none"> A mid-sized log spanned the entire river near Eagle Rock and was removed in June. <div data-bbox="621 1388 1245 1747" data-label="Image"> </div> <ul style="list-style-type: none"> A log in hung up in Pinball Rapid was removed in October.

User Conflicts	<ul style="list-style-type: none"> • One documented incident occurred during the 2013 season. Parking issues caused slight confusion and congestion between a commercial rafting guide and non-commercial user in the Boulder Flat launch area. A BLM & USFS employee were present and diffused the situation.
Weather	<ul style="list-style-type: none"> • The 2013 season started warm and dry and continued that way through mid-September with long periods of drought. With the addition of below average winter precipitation, lower than average flow-rates maintained throughout the season.
Survey	<ul style="list-style-type: none"> • The Forest Service commissioned a recreation use survey through West Virginia University. Two surveyors spent the summer interviewing boaters and anglers on the river. This was completed in 2012 and the final report was recently released.

III. Outstanding Remarkable Values

The North Umpqua River Management Plan notes that there are several components that make the North Umpqua Wild and Scenic River. These components are Outstandingly Remarkable Values (ORV's) and the plan recognizes fish, water quality, recreation, scenery and cultural resources as the ORV's within the North Umpqua Wild and Scenic Corridor. The plan also emphasizes the importance of protecting these resources through monitoring programs.

The monitoring being done for recreation is addressed in the first section of this report. The following information documents monitoring for fisheries, water quality, scenic value, and cultural resources.

A. Fisheries

Additionally ODFW monitored fish populations in Rock Creek and the North Umpqua. They conducted spawning surveys for adult Coho in the North Umpqua in November and December and conducted snorkel surveys in Rock Creek to count juvenile salmonids. These snorkel surveys were conducted in both summer and winter.

The Forest Service conducted restoration work below Soda Springs Dam and spawning surveys from Calf Creek to Soda Springs Dam.

Table 12: Annual Fish Counts

Year	Fall Chinook	Spring Chinook	Coho Salmon	Sea Run Cutthroat	**Winter Steelhead	Summer Steelhead
2003	174	20,156	13,809	34	14,507	7,997
2004	129	15,433	16,160	62	7,547	9,157
2005	108	9,013	13,398	62	7,419	6,987
2006	76	*6,081	*11,250	*81	9,891	*6,989
2007	163	6,634	4,680	93	9,511	4,552
2008	171	10,328	4,274	178	7,831	6,674
2009	200	14,261	8,907	102	10,608	4,993
2010	169	13,887	10,878	153	9,589	5,415
2011	137	16,603	6,667	428	13,788	6,597
2012	369	16,868	3,858	204	12,479	6,098
2013	*313	*15,157	*3,619	*210		*3,885

* Data is incomplete due to monthlong closure of fish counting station.

**Winter Steelhead counts are taken from December 1st – April 30th the following year

Spring Chinook counts are through September 30th. Sea Run Cutthroat, Coho Salmon, Summer Steelhead and Fall Chinook counts are through December 31st.



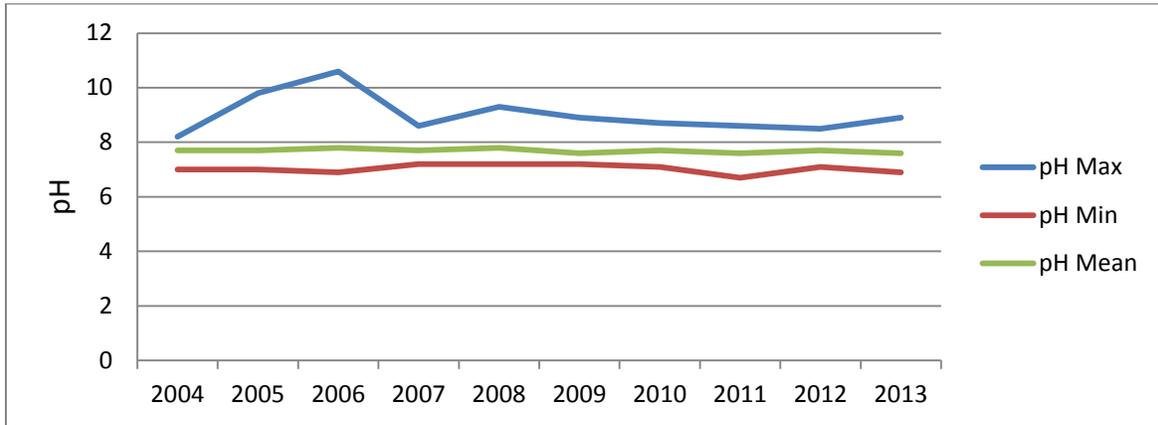
B. Water Quality

Water quality affects most of the other Outstandingly Remarkable Values. Table 10 shows some of the water quality parameters that have been consistently monitored over the past several years. The water samples were taken between Idleld Park and Rock Creek at a USGS gaging station. Data is taken for the water year (October 1 – September 30).

Table 13: Annual Water Quality Statistics

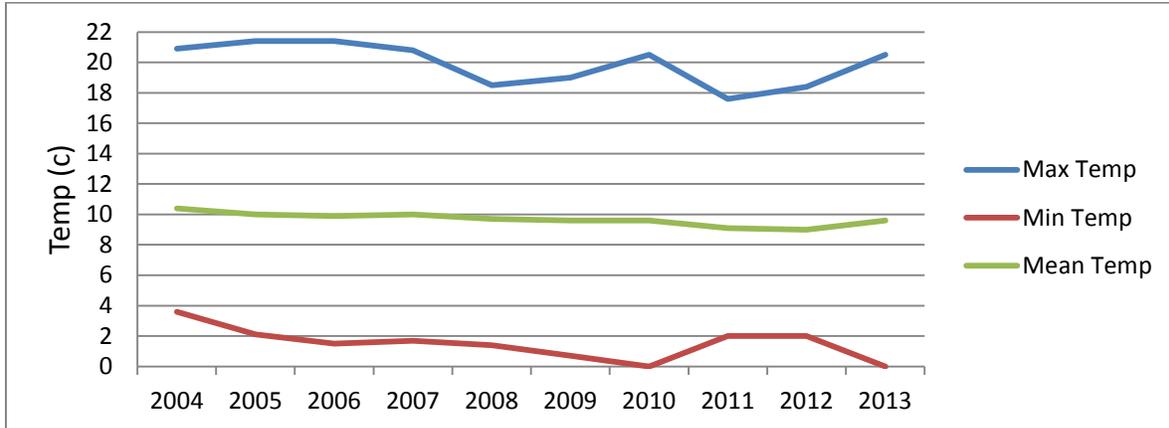
Year	Measurement	pH (units)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (us/cm)
Desired Conditions		6.5-8.5	< 17.8	> 6.5	maintain
2004	Maximum	10.6	21.4	15.7	70
	Minimum	6.9	2.1	8.2	31
	Mean	7.8	10.0	11.7	59
2005	Maximum	8.6	21.4	14.2	70
	Minimum	7.2	1.5	8.7	26
	Mean	7.7	9.9	11.5	52
2006	Maximum	9.3	20.8	14.0	71
	Minimum	7.2	1.7	8.9	32
	Mean	7.8	10.0	11.5	54
2007	Maximum	8.9	18.5	14.3	72
	Minimum	7.2	1.4	9.4	31
	Mean	7.6	9.7	11.9	51
2008	Maximum	8.7	19.0	14.4	71
	Minimum	7.1	0.7	9.3	32
	Mean	7.7	9.6	11.6	54
2009	Maximum	8.6	20.5	14.8	70
	Minimum	7.2	0.0	8.9	33
	Mean	7.7	9.6	11.7	55
2010	Maximum	8.6	17.6	13.9	68
	Minimum	6.7	2.1	9.3	28
	Mean	7.6	9.1	11.6	51
2012	Maximum	8.5	18.4	14.3	69
	Minimum	7.1	2.0	9.2	29
	Mean	7.7	9.0	11.7	54
2013	Maximum	8.9	20.5	15.0	72
	Minimum	6.9	0.0	9.0	36
	Mean	7.6	9.6	11.6	56

Graph 3: North Umpqua Annual pH



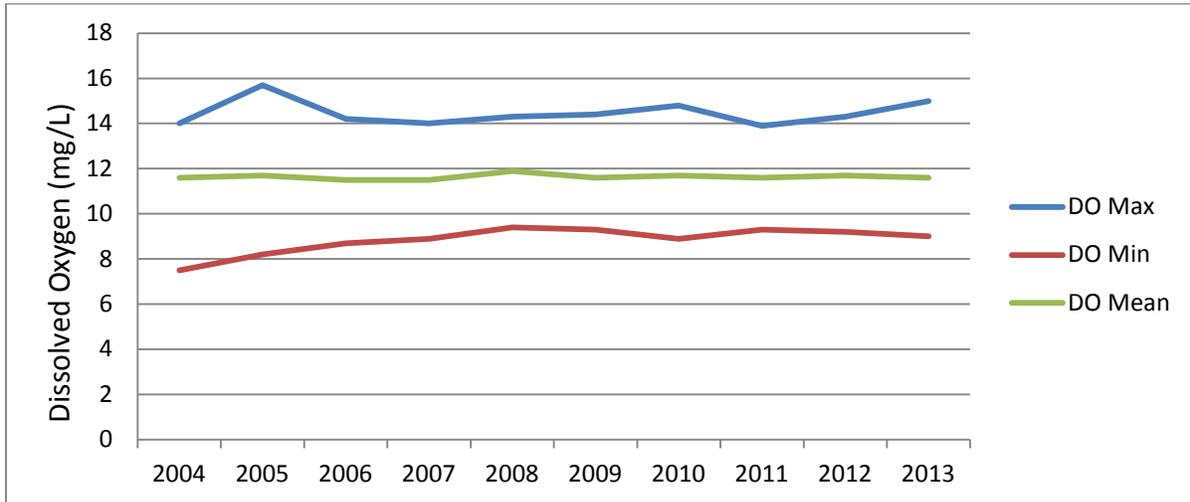
An acceptable pH range for the Umpqua Basin is between 6.5 and 8.5. It would be considered 'water quality limited' if greater than 10% of the samples exceeded this standard (fall outside the acceptable range), and a minimum of at least two samples exceeded the standard during a season of interest. An acceptable pH range was maintained during 2013.

Graph 4: North Umpqua Annual Temperature (C)



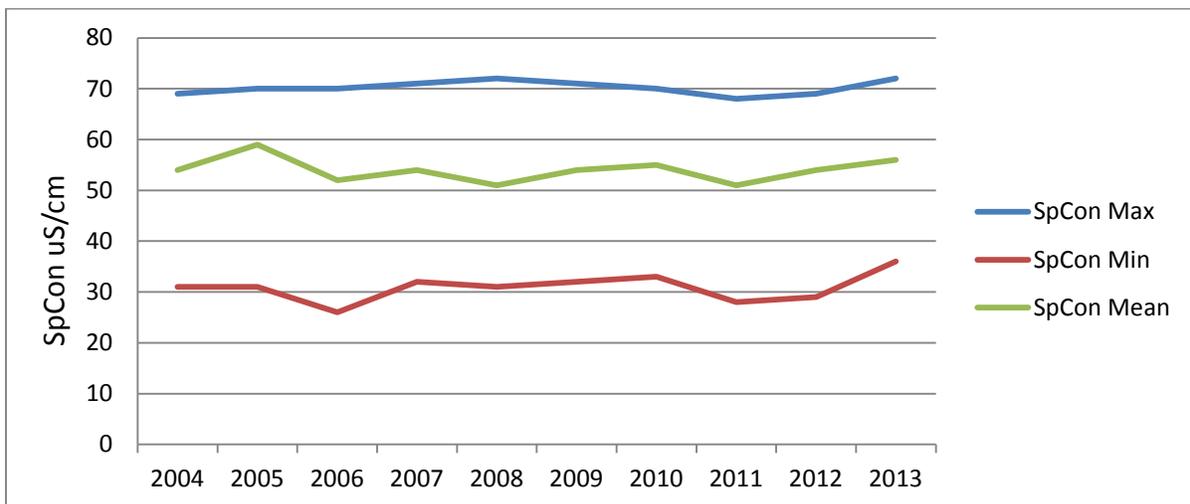
Maximum temperature standard reflects a 7-day average maximum. For good spawning conditions, the 7-day maximum average temperature of the river should not exceed 17.8°C between June 1 and September 14, and the 7-day maximum average temperature should not exceed 12.8°C at other times of the year. There were no instances of a 7-day period where the river temperature thresholds were exceeded.

Graph 5: North Umpqua Dissolved Oxygen (mg/l)



Dissolved Oxygen (DO) is found in microscopic bubbles of oxygen that are mixed in the water and occur between water molecules. DO is a very important indicator of a water body's ability to support aquatic life. Fish "breathe" by absorbing dissolved oxygen through their gills. DO should have no less than 6.5mg/l or 90% saturation. If the 7 day minimum average for DO is less than this standard, water quality is considered limited. Dissolved oxygen levels were within acceptable levels during 2013.

Graph 6: North Umpqua Annual Specific Conductance (uS/cm)



Specific Conductance (SC) is a measure of how well water can conduct an electrical current and is an indirect measure of the presence of dissolved solids such as chloride, nitrate, sulfate, phosphate, sodium, magnesium, calcium, and iron that can be used as an indicator of water pollution. Although specific conductance has no standard, it is noted because SC for the North Umpqua River is uniquely low.

C. Cultural Resources

The North Umpqua River has attracted people for thousands of years. Because of this long-standing attraction, cultural resources are considered an outstandingly remarkable value of the river.

BLM Section - Five archaeological sites were monitored during the year, including four sites that are eligible to be listed and one that is listed on the National Register of Historic Places. One of the sites was partially excavated as part of a Passport in Time public archaeology project that resulted in the recovery of Early, Middle, and Late Archaic cultural materials. Sixteen members of the public participated and volunteered for a total of 680 hours. Other than the excavation, site conditions remain unchanged. No Archaeological Resource Protection Act violations were documented during the year.

USFS Section - Thirteen cultural sites located within the Wild and Scenic River Corridor were monitored. One of the sites had digging, which was assigned to law enforcement. Another of the sites had a memorial erected and was removed shortly after it was discovered.

D. Scenery

The lands within the Wild and Scenic River Corridor will be managed to retain the visual quality objectives (VQO) as defined in the North Umpqua Management Plan. Retention is defined as “management activities that should not be evident to the casual visitor.” The exception to this rule as written in the North Umpqua River Management Plan (pages 31-32) includes:

- a. The vegetation poses a safety hazard along the highway, the river, a trail, a power-line, or in a developed recreation area.
- b. The vegetation is located within an easement or right-of-way area, and a suitable alternate route cannot be found.
- c. The vegetation is in the way of a planned facility development or improvement project.
- d. The vegetation needs to be cut to enhance a significant or outstandingly remarkable value.
- e. A catastrophic natural event (such as wildfire, insect infestation, or blow down from a wind event) has left large numbers of dead, salvageable trees in the corridor.
- f. An insect infestation threatens adjacent timberlands outside the corridor.

2013 projects meeting visual quality objectives within the WSR Corridor included: Susan Creek Day-Use Area septic system upgrades, improvements to the boat ramp at Boulder Creek Campground, and the replacement of the Panther Creek Bridge. Twenty-eight hazard trees were cut and removed from Apple Creek Campground due to a laminated root rot infestation. This action did not meet visual quality objectives but was allowed under exceptions to the rules listed above.

IV. 2013 Staff

- BLM Monitors – Dodge DiVall, 2nd year seasonal, Recreation Technician; John Clevenger, 2nd year seasonal, Recreation Technician
- USFS Monitor – Lindsey Mann, 1st year seasonal, Recreation Technician
- BLM Swiftwater Field Manager – Max Yager
- USFS North Umpqua District Ranger – Carol Cushing
- USFS Recreation Staff – Janie Pardo, Robin Duarte, Bill Blackwell
- BLM Recreation Staff – Erik Taylor, Ariel Hiller
- Report Preparers – Erik Taylor, Dodge DiVall, John Clevenger