

2014 Monitoring Report
North Umpqua Wild & Scenic River



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

Table of Contents

North Umpqua Wild & Scenic River	1
<i>Cooperative Effort Between</i>	1
Umpqua National Forest	1
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	10
D. Craft and Boat Launch Use	14
E. Boating Summary	15
F. Observed Fishing Use	16
G. Congestion at Parking Areas and Launch Sites	18
III. Outstanding Remarkable Values	20
A. Fisheries	20
B. Water Quality	22
C. Cultural Resources	25
D. Scenery	25
IV. 2014 Staff	25

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.....	10
Graph 2: Annual Comparison of Reported Commercial, Adjusted Use.....	11
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.....	14
Table 8: Observed Angler Use	16
Table 9: Daily Comparison of Anglers Observed and Reported Commercial Use	167
Table 10: Annual comparison of Observed Angler Use.....	17
Table 11: Number of Occasions Parking Capacity Exceeded Limit.....	18
Table 12: Comments, Hazards, & Violations.....	189
Table 13: Annual Fish Counts.....	21
Table 14: Annual Water Quality Statistics	22
Graph 3: North Umpqua Annual pH.....	23
Graph 4: North Umpqua Annual Temperature (C).....	23
Graph 5: North Umpqua Dissolved Oxygen (mg/l).....	24
Graph 6: North Umpqua Annual Specific Conductance (uS/cm).....	24

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.

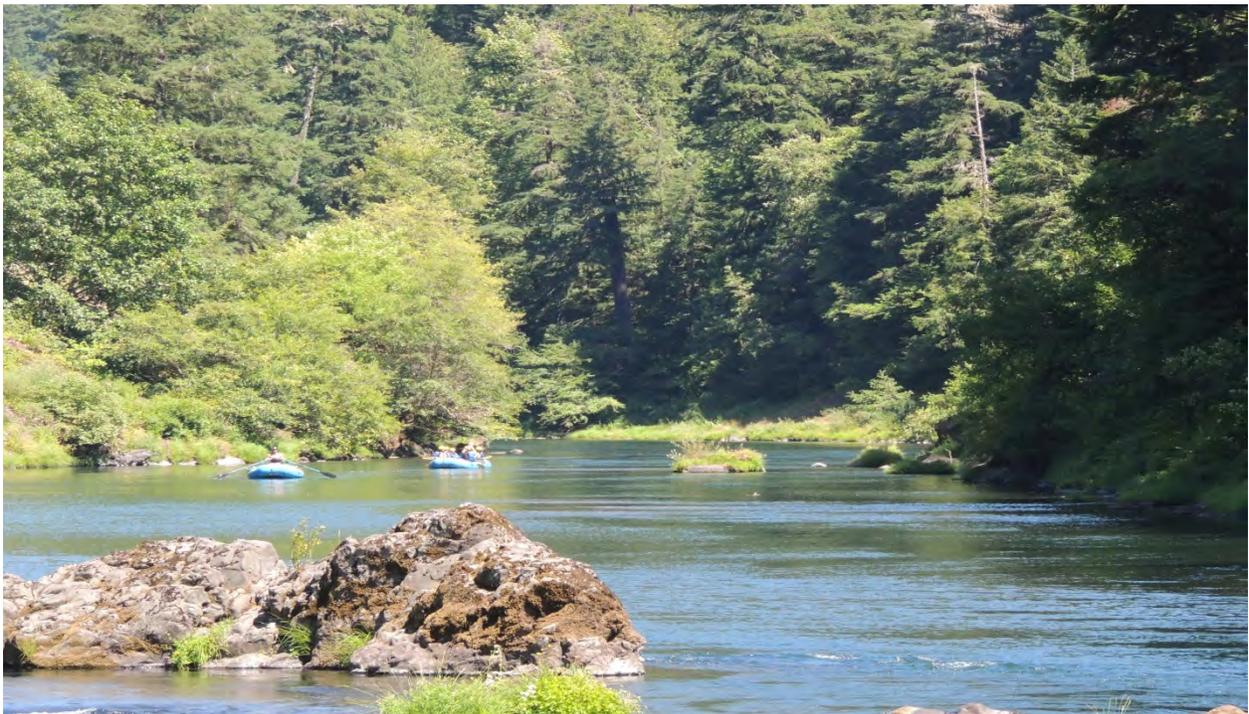
Ten commercial fly-fishing guides are permitted to conduct trips on the river between January 1st and November 14th. Trips are not authorized between November 15th and December 31st in order to protect spawning Coho salmon.

E. Methods of Collecting Information

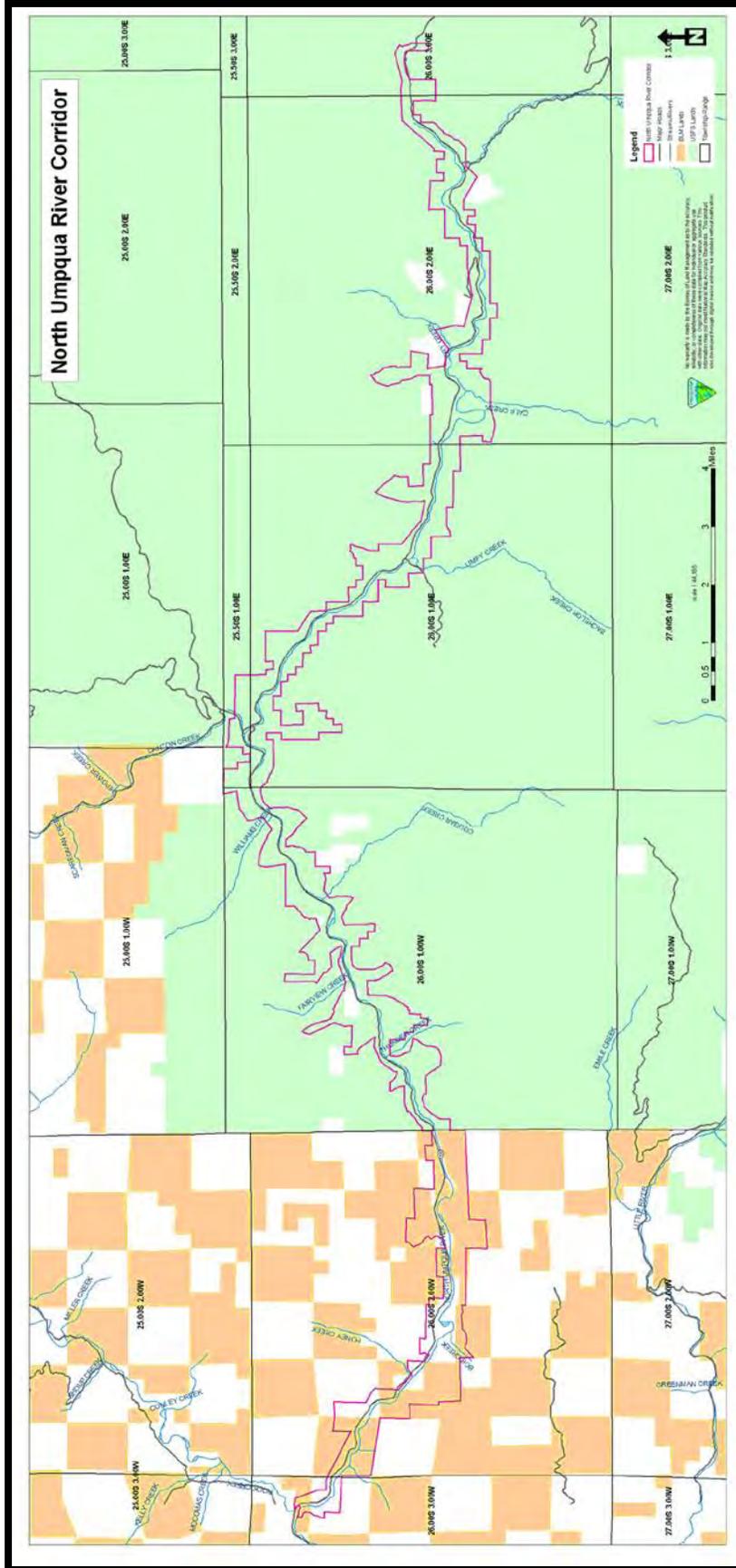
In the winter of 1991, the Roseburg District BLM funded a river manager position to manage and document use of the North Umpqua River. Since then, visual counting by river monitors has varied between two and four BLM and USFS employees per year. In 2014, one USFS and one BLM seasonal employee were in 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.



Map 1: North Umpqua Wild & Scenic River Corridor



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 2014 (Table 1 & Graph 1). Non-commercial users accounted for 59% of the observed use and commercial users accounted for 41% of the observed use. (Note: This compares to 62% non-commercial observed use and 38% commercial observed use in 2013.)

In 2013, with permission from the USFS, commercial anglers, and commercial boaters the BLM implemented a new monitoring technique using time lapse cameras. In 2014, two cameras were again used and placed in Segment 2 near Apple Creek and Segment 4 near Fall Creek. Camera monitoring was reduced to taking pictures every 30 seconds from 11AM - 4PM to help extend battery life. (Note: The camera took pictures every 15 seconds from 10AM - 5PM in 2013.) The extended battery life improved camera monitoring by reducing down time compared to 2013. 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 32% of non-commercial observed use and 32% of commercial observed use.

1. Non-commercial Observed Use: (59% of all use)	
Visual counts observed by BLM/USFS employees.....	1,197
Visual counts observed by monitoring cameras (segments 1 & 2).....	553
Guides observed.....	358
Total observed.....	2,108
2. Commercial Observed Use: (41% of all use)	
Visual counts observed by BLM/USFS employees.....	971
Visual counts observed by monitoring cameras (segments 1 & 4).....	467
Total observed.....	1,438

River monitors were present on the river 99 out of a possible 119 days (83%), while one or both monitoring cameras observed use for 117 of the 119 days (98%) during the season (May 20 – September 15). An average of 5 hours was spent monitoring; typically between 10:00am and 3:00pm. On Sunday, two monitors were usually present.



Table 1: Annual Comparison of Observed Boating Use

Year	*Non-commercial Observed	Commercial Observed	Total Observed Use
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
2014	2,108	1,438	3,546

*Includes guides (358)

Graph 1: Annual Comparison of Observed Boating Use

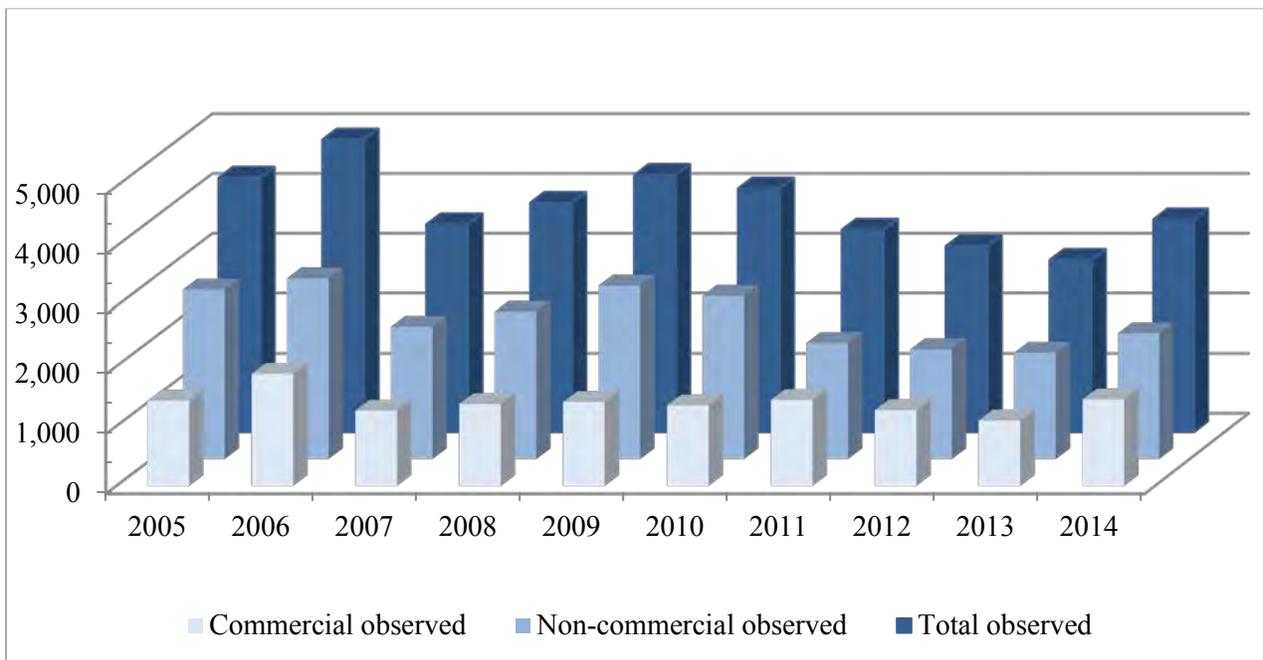


Table 2 shows observed non-commercial and commercial use by day of the week. During the week, most boaters were observed on Saturday followed by Sunday. The majority of non-commercial use took place on the weekends, while commercial use took place fairly evenly throughout the week, although Friday-Sunday was the high point. Commercial use was highest on Friday and non-commercial use was highest on Saturday. Wednesday was the only day which relied solely on camera monitoring, and Thursday continues to be the slowest day historically.

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

Day	Non-Commercial	Commercial	Total
Monday	84	156	240
Tuesday	86	138	224
Wednesday	165	216	381
Thursday	107	79	186
Friday	165	304	469
Saturday	644	289	933
Sunday	499	256	755
Total	1,750	1,438	3,188

*Does not include guides (358)

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.
- The river was not monitored on Wednesdays by a USFS or BLM employee.
- Camera monitoring can make it difficult to distinguish between commercial users and non-commercial users.

Table 3: Observed Use and Reported Commercial UseData from May 20th to September 15th, 2014

Outfitter	People Observed by BLM/USFS*						People Reported by Commercial Outfitters
	May	June	July	Aug	Sep	Total	
High County Expeditions	0	4	0	0	0	4	192
North Umpqua Outfitters	12	42	148	191	19	412	483
Orange Torpedo Tours	0	57	105	46	8	216	217
Oregon River Experiences	0	0	14	9	0	23	38
Oregon Whitewater Adventures	17	57	139	106	0	319	407
Ouzel Outfitters	6	40	153	47	0	246	242
Sun Country Tours	0	24	90	104	0	218	353
Total	35	224	649	503	27	1,438	1,932

*Figure excludes the 358 observed guides

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 26%. This compares to 37% in 2013 and 25% in 2012. In other words, it is estimated that 26% of all boaters were not observed by river monitors or monitoring cameras.

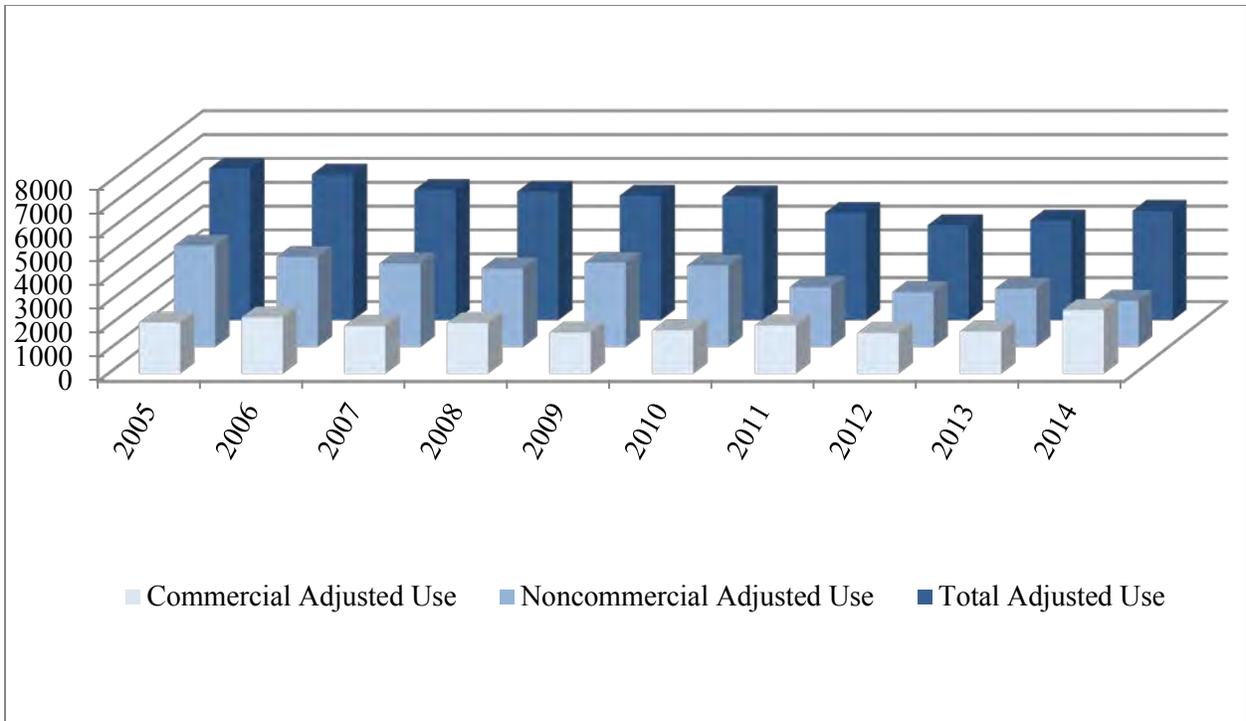
Total Adjusted Use is calculated by summing the non-commercial adjusted use with the commercial reported as shown below.

Table 4: Annual Comparison of Observed Watercraft Use

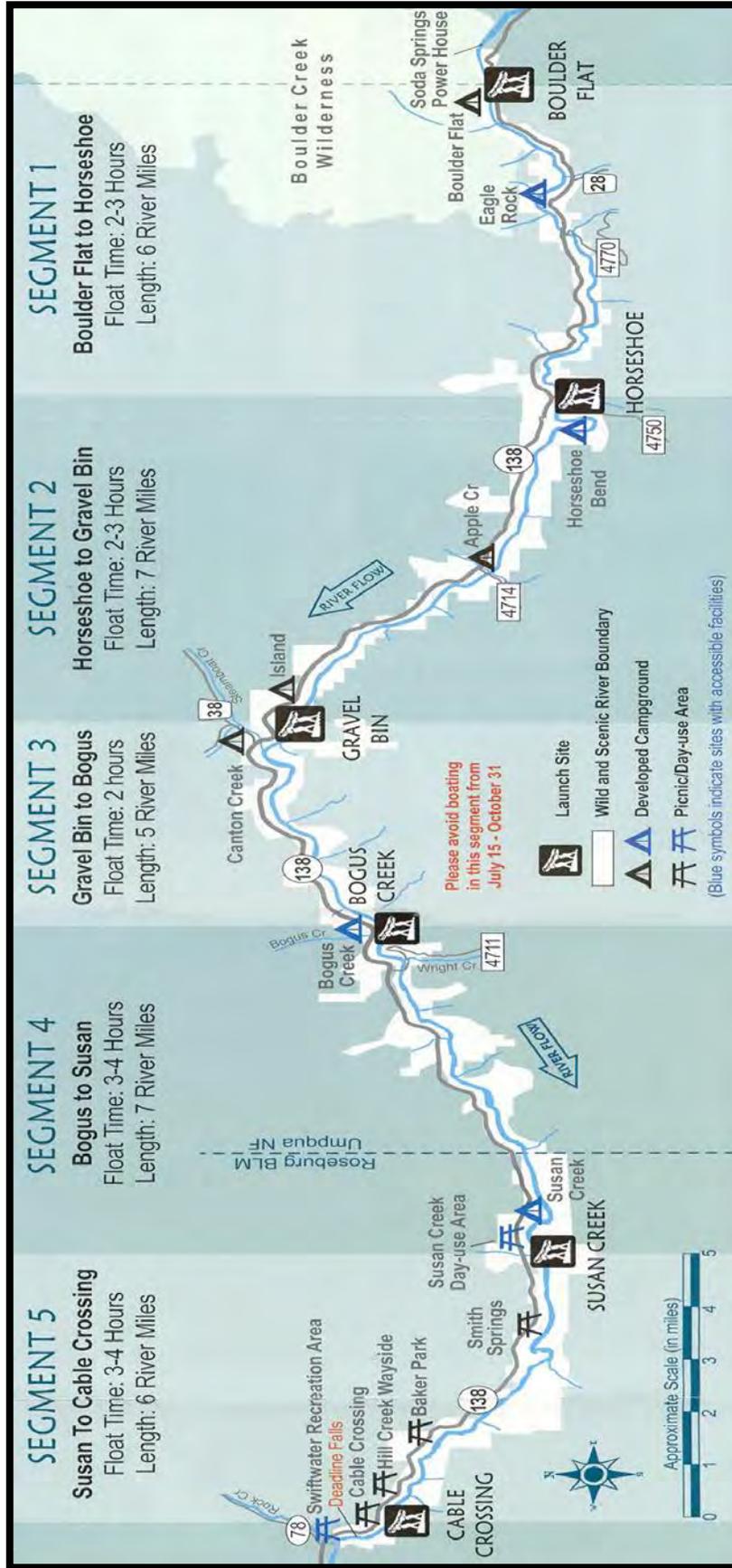
Year	Non-commercial Adjusted Use	Commercial Reported Use	Total Adjusted Use
2005	4,229	2,130	6,359
2006	3,766	2,344	6,110
2007	3,484	1,982	5,466
2008	3,288	2,104	5,392
2009	3,518	1,706	5,224
2010	3,400	1,802	5,202
2011	2,501	2,005	4,506
2012	2,291	1,688	3,979
2013	2,433	1,750	4,183
2014	2,656	1,932	4,588



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 2014 boating season, rafts outnumbered other crafts on the river (table 5), accounting for 51% of all crafts used. Inflatable kayaks were second with 32% and hard kayaks third with 17%. Canoe use has varied through the years, but overall has shown a decline, with 2014 being the lowest on record. (See table 6)

Table 5: Comparison of Watercraft Observed Per Month

Month	Rafts	Inflatable Kayaks	Hard Kayaks	Canoes	Monthly
					Total
May	71	15	39	0	125
June	148	87	62	0	297
July	259	159	65	1	484
August	142	122	43	0	307
Sep.	22	24	1	0	47
Total	642	407	210	1	1260

Table 6: Annual Comparison of Observed Watercraft Use

Year	Rafts	I. Kayaks	H. Kayaks	Canoes	Total Crafts
2005	661	693	357	56	1,767
2006	901	608	364	32	1,905
2007	593	417	307	19	1,336
2008	659	549	360	7	1,575
2009	781	531	380	35	1,727
2010	771	342	427	68	1,608
2011	625	302	260	8	1,195
2012	557	327	241	17	1,142
2013	464	389	166	3	1,052
2014	642	407	210	1	1,260

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.

Table 7: Launch Utilization

Site	Put-In	Take-Out
	Users	Users
Boulder Flat Boat Launch	2,515	0
Marsters Bridge	88	0
Horseshoe Bend	341	115
Gravel Bin	51	2,827
Bogus Creek	156	53
Susan Creek	37	156
Cable Crossing	0	37
Total	3,188	3,188

E. Boating Summary

- a) Non-commercial Use – 58% of all use
 - 1) Visual counts observed by BLM/USFS employees.....1,197
 - 2) Visual counts observed by monitoring camera.....553
 - 3) Number of guides observed by BLM/USFS employees.....358
 - 4) Total visual counts observed.....2,108
 - 5) Number missed (factored using 26% of users missed).....657
 - 6) Adjusted non-commercial use.....2,656

- b) Commercial Use – 42% of all use
 - 1) Visual counts observed by BLM/USFS employees.....971
 - 2) Visual counts observed by monitoring camera.....467
 - 3) Total visual counts observed.....1,438
 - 4) Reported Counts by Outfitter/Guides.....1,932

- c) Total Adjusted Use - Commercial and Non-commercial.....4,588

- d) Observed Watercraft
 - 1) Rafts.....642
 - 2) Hard Kayaks.....210
 - 3) Inflatable Kayaks.....407
 - 4) Canoes.....1
 - 5) Total Watercrafts.....1,260

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	3	3	0	
	2	6	6	0	
	3	5	5	0	
	4	4	4	0	
	5	3	3	0	
June	1	32	32	0	
	2	12	10	2	
	3	58	58	0	
	4	54	54	0	
	5	36	32	4	
July	1	44	44	0	
	2	28	26	2	
	3	164	153	11	
	4	139	134	5	
	5	77	71	6	
Aug.	1	44	42	2	
	2	50	48	2	
	3	247	239	8	
	4	168	160	8	
	5	111	109	2	
Sep.	1	9	9	0	
	2	11	11	0	
	3	40	37	3	
	4	40	36	4	
	5	20	16	4	
Total	1	132	130	2	Boulder Flat - Horseshoe Bend
	2	107	101	6	Horseshoe Bend - Gravel Bin
	3	514	492	22	Gravel Bin - Bogus Creek
	4	405	388	17	Bogus Creek-Susan Creek
	5	247	231	16	Susan Creek - Cable Crossing

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

Day	Non-commercial	Commercial	Total
Monday	44	9	53
Tuesday	114	14	128
Wednesday	15	7	22
Thursday	38	5	43
Friday	177	8	185
Saturday	426	10	436
Sunday	528	10	538
Total	1,342	63	1,405

Table 10: Annual Comparison of Observed Angler Use and Reported Commercial Use

Year	Observed Non-commercial	Observed Commercial	Total	Reported Commercial
2011	N/A	N/A	1,341	Not Available
2012	1,506	163	1,669	Not Available
2013	1,077	64	1,141	Not Available
2014	1,342	63	1,405	341



G. Congestion at Parking Areas and Launch Sites

When parking capacity was exceeded, vehicles parked in unused campsites, overflow parking, staging areas, as well as double parking with party members.

Table 11: 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
5/24	1	0	0
5/25	0	2	0
5/31	10*	0	0
6/1	0	1	0
6/21	0	3	0
6/22	3	0	0
7/4	4	0	0
7/5	1	0	0
7/12	1	0	0
7/19	1	0	0
7/20	0	2	0
7/27	0	1	0
8/9	0	4	0

*North West Rafters Association (NWRA) held a float on 05/31/2014, going from Boulder Flat to Gravel Bin. They accounted for 56 people, 20 rafts, 10 inflatable kayaks, and 4 hard kayaks. This caused Boulder Flat to be over capacity by 10 vehicles. BLM/USFS employees worked with the NWRA leaders to park vehicles appropriately. Vehicles were allowed to double park, park in the staging area, and were directed to the overflow parking a quarter mile away from the Boulder Flat raft launch.

Table 12: 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. Soda Springs was closed for rafting use in 2014. It will not be removed and instead be left in place for fish habitat. <div data-bbox="643 842 1224 1251" style="text-align: center;"> </div> <ul style="list-style-type: none"> A log blocked the right side of Cardiac Arrest Rapid in early summer. It is believed the same log broke loose and blocked the left side of the same rapid further downstream. <p>An incident occurred with this log involving a 13 year old girl and her parents. The girl fell out of her Kayak at the beginning of the rapid. Her parents while trying to get her in their raft unintentionally directed them river left towards the log. The girl and her kayak went under the log. The parents and their raft also got pulled under the log. No one was hurt in the incident.</p> <p>The log will not be removed. It is believed anyone with basic skills should be able to avoid the log, and it is thought that the log will wash down river this coming winter.</p>

	<ul style="list-style-type: none"> A dead log fell by Apple Creek campground. It is not in the main channel and should be pushed down river this winter. 
User Conflicts	<ul style="list-style-type: none"> A written complaint was sent in about one of the commercial guides; however none of the information could be substantiated.
Weather	<ul style="list-style-type: none"> The 2014 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.

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

ODFW, BLM, and the Partnership for the Umpqua Rivers (PUR) conducted an in-stream restoration project in Rock Creek, a major fish rearing North Umpqua tributary in 2014. Over 200 logs and 1500 boulders were added to the main stem Rock Creek over a 1.5 mile stretch. In addition, eight side channels were reconnected to the main creek in this reach. This project will provide much improved habitat for juvenile salmonids in summer and winter and will provide some improved spawning areas for adult salmon and steelhead. Species benefiting from the restoration project include: Spring Chinook salmon, Oregon Coast coho salmon, Steelhead, Cutthroat trout, and the Pacific lamprey.

Additionally ODFW monitored fish populations in Rock Creek and the North Umpqua. They conducted spawning surveys for adult Spring Chinook in September and October and Coho in November and December. They also conducted snorkel surveys in Rock Creek to count juvenile

salmonids. These snorkel surveys were conducted in both summer and winter. Monitoring indicated significant increases in spawning adult salmon and steelhead in restored reaches, and increased numbers of juvenile salmonids near stream structures and in newly opened side channels.

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

Table 13: Annual Fish Counts

Year	Fall Chinook	Spring Chinook	Coho Salmon	Sea Run Cutthroat	**Winter Steelhead	Summer Steelhead
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	12,479	3,885
2014	0	14,611	0	0	10,605	0

* Data is incomplete due to month long 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.

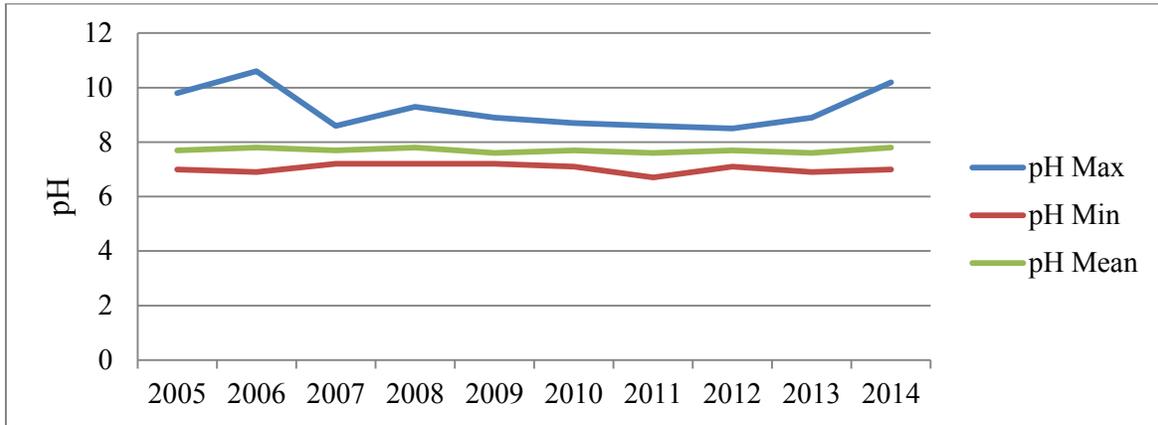
B. Water Quality

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 14: Annual Water Quality Statistics

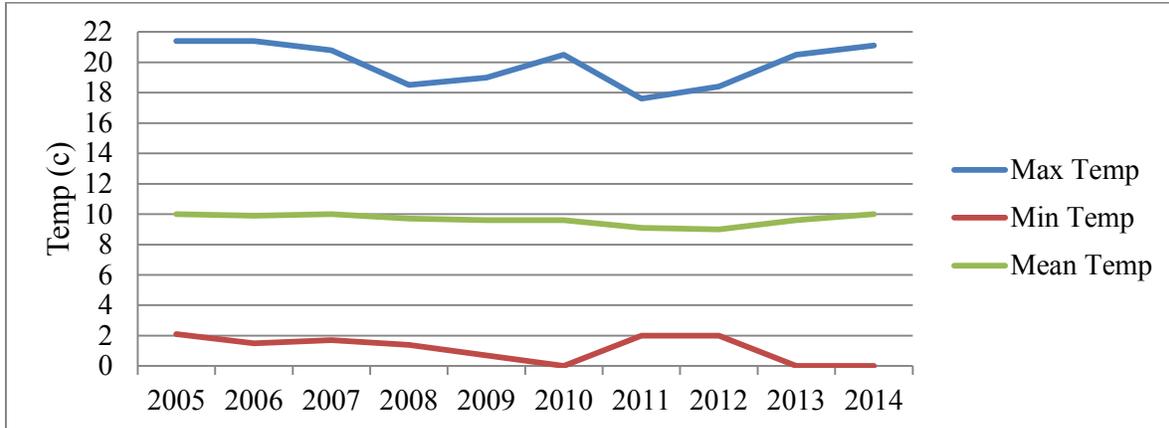
Year	Measurement	pH (units)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (us/cm)
Desired Conditions		6.5-8.5	< 17.8	> 6.5	maintain
2005	Maximum	8.6	21.4	14.2	70
	Minimum	7.2	1.5	8.7	26
	Mean	7.7	9.9	11.5	52
2006	Maximum	9.3	20.8	14.0	71
	Minimum	7.2	1.7	8.9	32
	Mean	7.8	10.0	11.5	54
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
2014	Maximum	10.2	21.1	15.0	70
	Minimum	7.0	0.0	8.8	32
	Mean	7.8	10.0	11.5	57

Graph 3: North Umpqua Annual pH



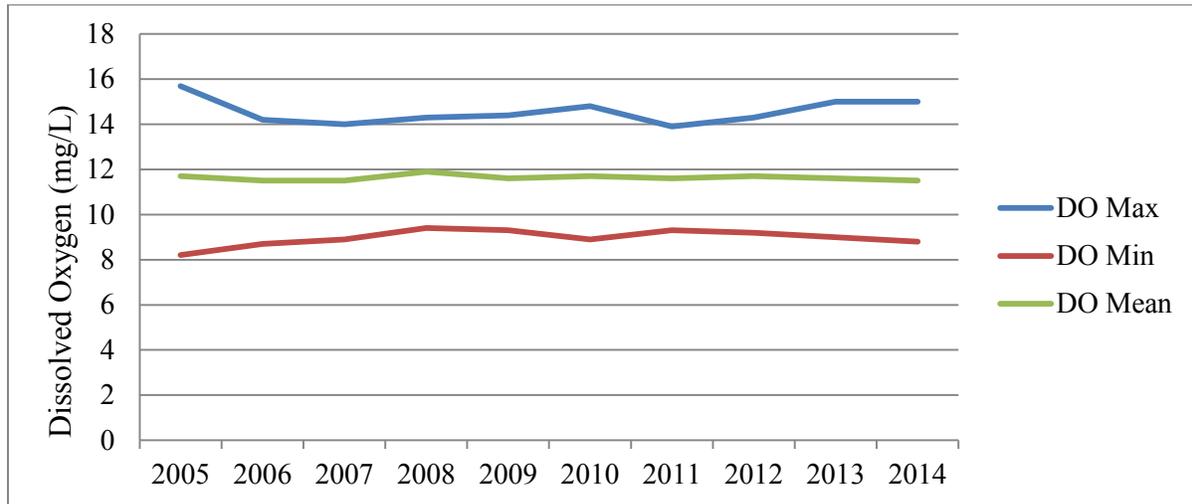
An acceptable pH range for the Umpqua Basin is between 6.5 and 8.5. It would be considered 'water quality limited' if greater than 10% of the samples exceeded this standard (fall outside the acceptable range), and a minimum of at least two samples exceeded the standard during a season of interest. An acceptable pH range was maintained during 2014.

Graph 4: North Umpqua Annual Temperature (C)



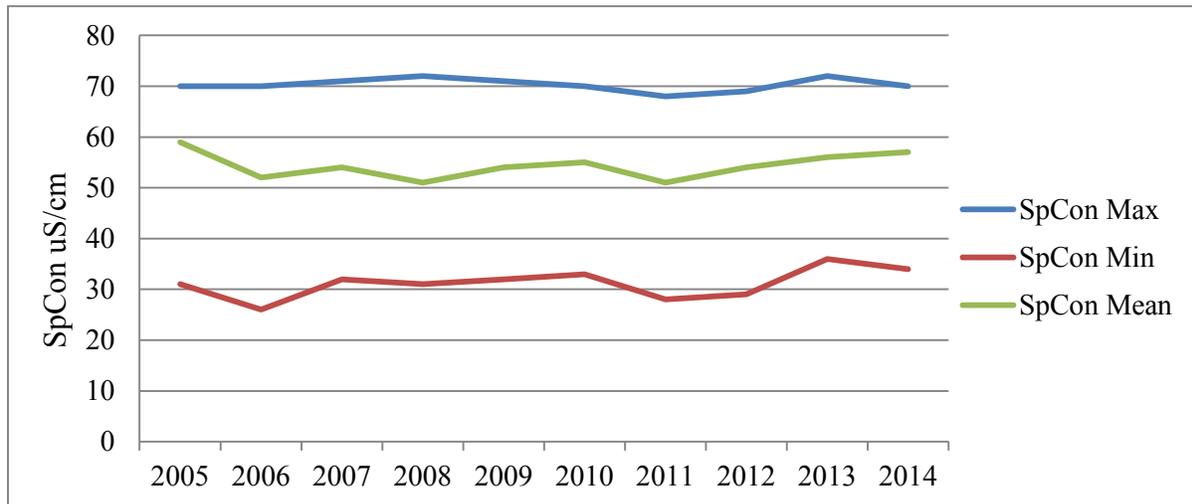
Maximum temperature standard reflects a 7-day average maximum. For good spawning conditions, the 7-day maximum average temperature of the river should not exceed 17.8°C between June 1 and September 14, and the 7-day maximum average temperature should not exceed 12.8°C at other times of the year. There were two instances of a 7-day period where the river temperature thresholds were exceeded; once in July and once in August.

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 2014.

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 - 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.

Ten archaeological sites were monitored during the year, including seven sites that are eligible to be listed and one that is listed in the National Register of Historic Places. One of the sites was partially excavated as part of a Passport in Time public archaeology project. Three members of the public participated in the excavation and volunteered 120 person hours. Other than the excavation, site conditions remain unchanged. No Archaeological Resource Protection Act violations were documented during the year.

USFS Section - In fiscal year 2014, 18 cultural sites located within the wild and scenic corridor on Umpqua National Forest were monitored. One of the sites had a memorial set up on it, which is scheduled to be removed when the campground closes for the season. Another site had archaeological testing done by a contract archaeologist.

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.

There were no projects in 2014 that interfered with visual quality objectives within the corridor.

IV. 2014 Staff

- BLM Monitors – John Clevenger, 3rd year seasonal, Recreation Technician
- USFS Monitor – Lindsey Mann, 2nd year seasonal, Recreation Technician
- BLM Swiftwater Field Manager – Max Yager
- USFS North Umpqua District Ranger – Bill Mulholland
- USFS Recreation Staff – Janie Pardo, Jennifer Taylor
- BLM Recreation Staff – Erik Taylor, Phil Zumstein
- Report Preparers – Erik Taylor, John Clevenger