

NEVADA DEPARTMENT OF WILDLIFE  
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-50  
2014

EAST FORK AND MAIN STEM CARSON RIVER  
WESTERN REGION



**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION  
ANNUAL PROJECT REPORT**

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**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION  
ANNUAL PROGRESS REPORT**

**State:** *Nevada*  
**Project Title:** *Statewide Fisheries Program*  
**Job Title:** *East Fork and Main Stem Carson Rivers*  
**Period Covered:** *January 1, 2014 through December 31, 2014*

**SUMMARY**

The snow-water equivalent for the Carson River Basin was 31% of average for the water year of 2013. The first ten months of the 2014 water year has produced 33% of average according to the Natural Resource Conservation Service SNOTEL sites. Despite a low percentage, moderate and turbid flows were observed briefly in the spring.

In the spring, fingerling brown trout were stocked in the upper East Carson River, and catchable brown and rainbow trout were stocked near Ruhestroth Dam throughout the spring and summer. Stocking the upper East Carson River was conducted during low flow (slightly above 100 cfs) and survivability was expected to be good.

Mail-in angler questionnaire data from 2013 estimated that 251 anglers spent 1,341 days to catch 5,520 fish on the Main Stem Carson River. It was estimated that 387 anglers spent 2,289 days to catch 4,410 fish on the East Fork Carson River. There were 6 anglers interviewed that spent 18 hrs to catch 15 fish for a catch rate of 0.83 fish per hour. Of the fish observed, 4 were rainbow trout and 3 were brown trout; average size for rainbows and browns combined was 250 mm (9.8 in).

**BACKGROUND**

The Carson River headwaters originate in Alpine County, California, however approximately 85% of the watershed lies in Nevada. The East Fork begins near Sonora Pass and the West Fork begins below Carson Pass where several small streams merge. The confluence of the East and West forks is in Carson Valley and from there the main stem travels northeast through Carson City and Dayton Valley until impounded by Lahontan Reservoir. Flows from the reservoir are controlled for downstream irrigation of the Lahontan Valley and water is also diverted into Stillwater Wildlife Management Area. The river terminates in the Carson Sink. The predominant use of water is for agriculture, however, urban development in Minden, Gardnerville, Carson City, and Dayton contributes to the river's use.

The Carson River is relatively wide, shallow, and lacks a riparian canopy. The fishery experiences high spring runoff, high suspended solids during runoff events, and low summer flows resulting in high summer water temperatures. Limiting factors for the trout fishery are warm summer water temperatures, lack of vegetative cover, lack of high quality pools and reproductive habitat.

NDOW manages the East Carson River and the main stem Carson River as a put-and-take fishery and management is directed toward creating fishing opportunities where

limited opportunity would normally exist. Fishing regulations are consistent along the entire length of the east fork and main stem of the Carson River and anglers are allowed five trout, 10 mountain whitefish, and 15 warmwater game of which not more than five may be walleye and five may be black bass.

Stocking plays a vital role in maintaining this fishery as carryover of trout is only observed during years with average or above average precipitation. Stocking usually occurs in spring and fall. During the summer, temperatures are generally too high for trout survival, particularly in the reaches below Carson City. In these areas, warmwater species including smallmouth bass, green sunfish, and carp provide the most angling opportunity.

## OBJECTIVES

General Management Objectives:

- Conduct a general fisheries assessment through opportunistic angler contacts and mail-in, angler questionnaire data.
- Conduct a pre-stocking evaluation of road conditions, water flows, and turbidity.

## PROCEDURES

General Management Objectives:

**Conduct a general fishery assessment through opportunistic angler contacts and mail in, angler questionnaire data.** Roving creel survey was conducted on four days during April, May, June, and August and six anglers were interviewed.

Mail-in angler questionnaires were sent out at the end of 2013 to 30,000 anglers purchasing a Nevada fishing license. That data was summarized and estimated the number of anglers, days spent fishing, and number of fish caught.

**Conduct a pre-stocking evaluation of road conditions, water flows, and turbidity.** A pre-stocking evaluation of road conditions was conducted during the spring to ensure that access would be adequate for fish trucks to reach stocking sites. A general observation of trout habitat suitability (flow, turbidity, and temperature) determined if stocking was appropriate.

## FINDINGS

General Management Objectives

**Conduct a general fishery assessment through opportunistic angler contacts and mail in, angler questionnaire data.** There were six anglers interviewed in 2014 that spent 18 hrs to catch 15 fish for a catch rate of 0.83 fish per hour. Of the fish observed, four were rainbow trout and three were brown trout; average size for rainbows and browns combined was 250 mm (9.8 in). By comparison, during 2013, there were seven anglers interviewed that spent 20 hrs to catch 21 fish for a catch rate of 1.05 fish per hour. Of the fish observed, six were rainbow trout and five were brown trout; average size for rainbows

and browns combined was 243 mm (9.6 in). The drop in angler use and success is most likely due to persistent drought conditions in the Carson basin.

Table 1 shows the 2013 mail-in angler questionnaire data for the Main Stem Carson River estimated anglers had an average catch rate of 4.99 fish per angler day. It was estimated that 251 anglers spent 1,341 days to catch 5,520 fish. For the East Fork Carson River, anglers had an average catch rate of 1.53 fish per angler day. It was estimated that 387 anglers spent 2,289 days to catch 4,140 fish. The 2012 mail-in, angler questionnaire data for the Main Stem Carson River estimated anglers had an average catch rate of 3.04 fish per angler day. It was estimated that 474 anglers spent 2,833 days to catch 8,599 fish. For the East Fork Carson River, anglers had an average catch rate of 2.79 fish per angler day. It was estimated that 1,431 anglers spent 7,534 days to catch 21,049 fish. Under its current management as a put-and-take fishery, the angler success rate should range between 1.0 and 2.0 fish per angler day.

The 2012 and 2013 angler questionnaire data suggests that angling goals were exceeded for the east fork and main stem. Angler success on the main stem was higher than reported in 2011 (2.86 fish per day), however, the number of anglers, days fished, and fish caught were lower than in 2011 for both the main stem and east fork. This reduction in angling pressure is likely due to drought conditions and is expected to continue through 2015.

**Table 1**

**2013 Carson River Angler Questionnaire Summary**

County	Anglers	Fishing Days	Fish Caught	Days/Angler	Fish/Angler	Fish/Day
Lyon	184	1,037	1,927	5.65	10.5	1.86
Douglas	203	1,852	2,213	9.13	10.9	1.19
Churchill	45	177	1,094	3.92	24.2	6.18
Carson	206	1,164	4,426	5.65	21.49	3.8
<b>Totals</b>						
Main Stem	251	1,341	5,520	4.79	22.85	4.99
East Fork	387	2,889	4,140	7.39	10.70	1.53

**Conduct a pre-stocking evaluation of road conditions, water flows, and turbidity; stock hatchery trout.** A pre-stocking evaluation of flows and turbidity was conducted on the East Fork Carson River in March. A total of 7,105 fingerling brown trout were stocked near Ruhestroth Dam.

The lower East Carson River near Ruhestroth Dam and downstream on the mainstream near Carson City was also stocked with catchable trout from spring through August. Table 2 summarizes all fish stocked into the Carson River during 2014.

Table 2

### 2014 Carson River Stocking Summary

		Main Stem		
Date	Species	Strain	Number	Size
3/4/2014	Brown	Sheep Creek	3,268	9.2
3/4/2014	Brown	Sheep Creek	725	9.2
		Brown Total	3,993	9.2

		East Fork		
Date	Species	Strain	Number	Size
2/27/2014	Rainbow	Mt. Shasta	1,999	9.5
3/5/2014	Rainbow	Mt. Shasta	2,498	9.7
3/5/2014	Brown	Sheep Creek	2,415	9.7
3/11/2014	Rainbow	Mt. Shasta	1,500	10.1
3/11/2014	Rainbow	Mt. Shasta	1,500	10.3
3/26/2014	Brown	Sheep Creek	7,105	2.2
3/26/2014	Rainbow	Mt. Shasta	2,030	9.4
8/28/2014	Rainbow	Eagle Lake	2,128	9.0
10/17/2014	Rainbow	Tahoe	1,075	9.3
		Brown Total	2,415	9.7
		Rainbow Total	12,730	9.6
		Brown Total	7,105	2.2

**Monitor water flows via USGS gauge number 10309000 located on the East Fork Carson River near Gardnerville.** Flow never exceeded 1,000 cfs during 2013 or 2014, the highest flows recorded during this time period was 969 cfs during May 2013. Summer flows were meager, especially in 2014 where the lowest recorded flow of 29 cfs was observed on September 25, 2014. Low flows (less than 80 cfs) were observed during 2013 beginning in August and lasting through December and from July through December during 2014 with only two daily spikes reaching above 80 cfs in response to storm events. The 2013 and 2014 flow pattern is shown in Figure 1, along with the 91-yr median daily average.

### RECOMMENDATIONS

#### General Management Objectives:

- Conduct a general fishery assessment through opportunistic angler contacts and mail in, angler questionnaire data.
- Conduct a pre-stocking evaluation of road conditions, water flows, and turbidity.

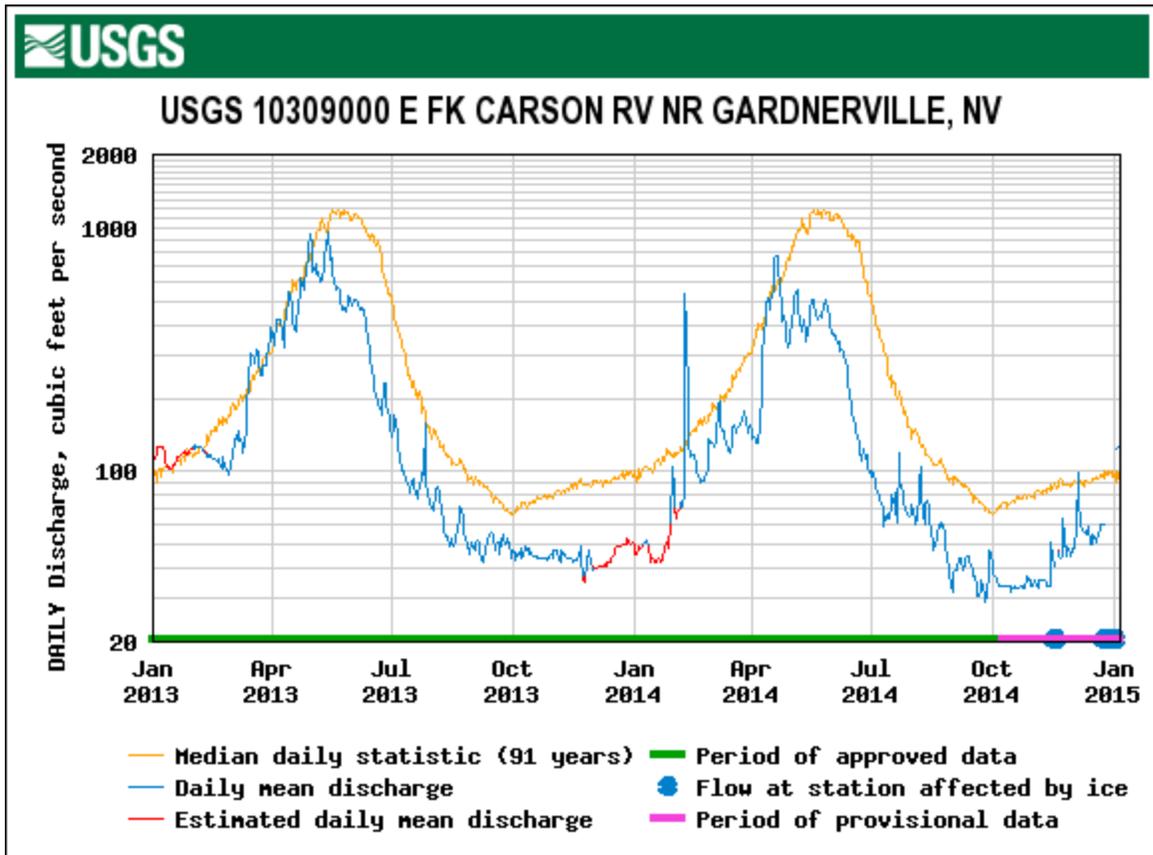
Table 3

### Historical Carson River Stocking Summary

	Main Stem				East Fork		
		Number	Size (in)			Number	Size
2013	Brown	8,123	9.70		Brown	3,006	9.80
	Rainbow	5,503	10.30		Brown	14,170	2.30
					Rainbow	20,631	9.0
2012	Brown	3,499	10.00		Brown	9,141	10.40
	Rainbow	4,896	10.25		Brown	43,137	2.10
					Rainbow	6,429	10.28
2011	Brown	4,498	11.30		Brown	4,550	10.40
	Rainbow	2,501	10.50		Rainbow	10,757	9.80
2010	Brown	5,809	9.80		Brown	9,972	2.70
	Rainbow	4,654	9.20		Brown	2,741	9.90
					Rainbow	8,430	9.8
2009	Bowcutt	2,264	9.50		Brown	9,636	3.20
	Rainbow	8,567	9.70		Rainbow	12,903	9.90
					Bowcutt	472	10.20
2008	Brown	-			Brown	-	
	Rainbow	8,130	8.80		Rainbow	8,248	9.70

Figure 1

2013-2014 East Fork Carson River Flow



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