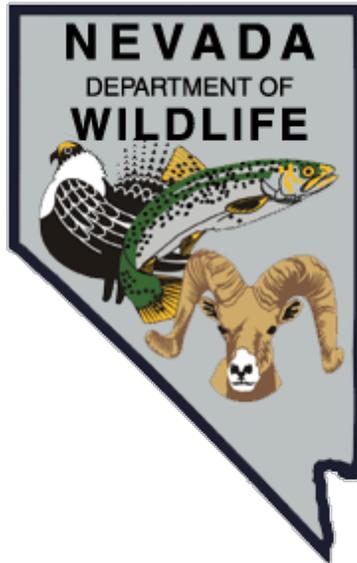


NEVADA DEPARTMENT OF WILDLIFE  
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-54  
2018

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, 2018 through December 31, 2018*

**SUMMARY**

The snow-water equivalent for the Carson Basin was 86% for average snowpack according to the Natural Resource Conservation Service SNOTEL site, suggesting the drought has subsided.

In the summer and fall, rainbow trout were stocked into the main stem Carson River and upper East Carson River. Stocking in the Carson River was done on schedule and flows observed throughout most of the year were fishable, except for a couple high runoff events during spring.

The 2017 mail-in angler questionnaire results for the Carson River estimated an average angler catch rate of 0.78 fish per angler day. It was estimated that 285 anglers spent 953 days to catch 748 fish. For the East Carson River, anglers showed an average catch rate of 1.96 fish per angler day. It was estimated that 665 anglers spent 3,871 days to catch 7,581 fish. Under current management as put-and-take fisheries, success rates along the east fork and main stem fell close or within the objective of 1.0 and 2.0 fish per angler day.

There were thirteen anglers interviewed that spent 26 hrs to catch 21 fish for a catch rate of 0.80 fish per hour. Of the fish observed, eight were rainbow trout that averaged 227 mm (8.9 in) and four were brown trout that averaged 244 mm (9.6 in). This appears to be the fourth year angler use and success, and size and number of fish have been low.

**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 occurs 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 for the 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 also consume to the river.

The Carson River is relatively wide, shallow, and lacks a riparian canopy. The river experiences high spring runoff with increased suspended solids, and low summer flows resulting in high water temperatures. Limiting factors for the trout fishery include warm summer water temperatures, lack of riparian vegetative shade, lack of high quality pools, and lack of spawning habitat.

NDOW manages the fisheries in the East Carson River and the main stem Carson River as put-and-take, where trout stocking is directed toward creating angling opportunities when it normally is limiting. Fishing regulations are consistent along the entire length of the east fork and main stem and anglers are allowed five trout, 10 mountain whitefish, and 15 warmwater game fish of which not more than five may be walleye and five may be black bass.

Trout stocking plays a vital role in maintaining this fishery, as carryover trout are only observed during years having average or above average winter snowpack. Stocking usually occurs in spring and fall. During the summer, temperatures are generally too high for trout to survive, particularly in the reaches from Carson City and downstream. In these areas, warmwater species including smallmouth bass, green sunfish, and carp provide the best angling opportunity.

## **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.
- Stock approximately 500 largemouth bass, 500 bluegill, 500 white bass, and 1,000 channel catfish into each of the regulating reservoirs in the lower Carson River including Indian Lakes (Likes Lake and Papoose Lake), Harmon Reservoir, and Carson Lake.

## **PROCEDURES**

**Conduct a general fishery assessment through opportunistic angler contacts and mail in, angler questionnaire data.** Roving creel surveys were conducted one day during May, June, July. Information collected included number of fish caught, hours spent fishing, size of fish caught, and location of angler.

Mail-in angler questionnaires were sent out at the end of 2017 to 30,000 anglers purchasing a Nevada fishing license. That data was summarized to estimate the number of anglers, days spent fishing, and number of fish caught. Since the Carson River flows through four counties, data reported for a specific county were entered into the database for that county. However, if no county was specified by the angler, a general Carson River water code was assigned. All data from the different counties were then combined and used in calculating the total for the Carson River.

**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, clarity, and temperature) examined if stocking was appropriate from May through July.

**Stock approximately 500 largemouth bass, 500 bluegill, 500 white bass, and 1,000 channel catfish into each of the regulating reservoirs in the lower Carson River including Indian Lakes (Likes Lake and Papoose Lake), Harmon Reservoir, and Carson Lake.** On July 19, 707 bluegill averaging 4.0 in and 52 largemouth bass averaging 10.0 in were planted into Harmon reservoir, this was the first time since 1995 is has been planted.

## FINDINGS

**Conduct a general fishery assessment through opportunistic angler contacts and mail in, angler questionnaire data.** During 2018, 13 anglers interviewed spent 26 hrs catching 21 fish for a catch rate of 0.80 fish per hour. Of the fish observed, eight were rainbow trout that averaged 227 mm (8.9 in) and four were brown trout that averaged 244 mm (9.6 in). By comparison, seven anglers in 2016 spent 21 hrs to catch 13 fish for a catch rate of 0.65 fish per hour. Nine were rainbow trout that averaged 241 mm (9.49 in) and two were brown trout that averaged 321 mm (12.65 in). Creel survey results suggest this is the fourth year that angler use, success, and fish size and number have been low. The decline in angler use and success is most likely due to persistent drought conditions in the Carson Basin (2014 to 2016) followed by a 208% snowpack year resulting in very high summer flows making for difficult to fish for much of 2017. During the winter of 2018/19, snowpack conditions were near average so it is anticipated that fishing conditions and fish populations should continue to recover in 2019.

Table 1 shows results from the 2017 mail-in angler questionnaire, estimating the average catch rate at 0.78 fish per angler day. It was estimated that 285 anglers spent 953 days to catch 748 fish. For the East Carson River, 665 anglers spent 3,871 days to catch 7,581 fish and showed an average catch rate of 1.96 fish per angler day. Angler use was consistently down, with a few exceptions (Table 1). From 2013 through 2017, an overall reduction in angling pressure has been observed and is likely due to persistent drought conditions followed by a year of high flow. However, catch results suggest that the angling objective for a put-and-take fishery were generally met.

**Conduct a pre-stocking evaluation of road conditions, water flows, and turbidity.** A pre-stocking evaluation of flows and turbidity was conducted on the East Fork Carson River in May, June, and July (Table 2). Conditions were suitable and brown trout could be stocked in the upper sections of the East Carson River.

**Table 1. 2017 Carson River Angler Questionnaire Summary.**

County		Anglers	Fishing Days	Fish Caught	Days/Angler	Fish/Angler	Fish/Day
Lyon	2014	77	305	305	3.97	4.0	1.00
	2015	80	571	1425	7.17	17.9	2.50
	2016	212	1126	4196	5.31	19.8	3.72
	2017	148	1149	1007	7.75	6.79	0.88
Douglas	2014	316	2023	4320	6.38	13.6	2.14
	2015	96	317	444	3.32	4.6	1.40
	2016	3	51	154	20.01	60.0	3.00
	2017	60	589	2143	9.76	35.46	3.63
Churchill	2014	34	65	73	1.88	2.1	1.12
	2015	50	666	6492	13.18	128.53	9.75
	2016	23	53	41	2.34	1.78	0.76
	2017	39	113	0	2.9	0	0
Carson	2014	316	2076	7666	6.57	24.26	3.69
	2015	163	556	3309	3.41	20.3	5.95
	2016	201	684	2356	3.41	11.73	3.44
	2017	227	801	637	3.53	2.81	0.8
<b>Totals</b>							
Main stem	2014	365	2178	7773	5.97	21.30	3.57
	2015	221	1255	9834	5.68	44.50	7.84
	2016	328	1035	2884	3.16	8.79	2.79
	2017	285	953	748	3.34	2.62	0.78
East fork	2014	814	3745	7282	4.60	8.95	1.94
	2015	682	3186	7635	4.67	11.20	2.40
	2016	1107	4066	21617	3.67	19.53	5.32
	2017	665	3871	7581	5.82	11.40	1.96

**Table 2. Pre-stocking evaluations at sites for the east Carson River.**

Date	Location	Temp	Flow	Turbidity	Access
5/11/2018	West carson	52	300	clear	good
6/20/2018	Lutheran bridge	60	395	moderate	good
6/20/2018	Broken Dam	59	395	moderate	good
7/12/2018	Bryant creek	68	142	clear	poor
7/12/2018	Horseshoe	71	142	moderate	poor

The lower East Carson River near Ruhestroth Dam and the mainstream near Carson City were stocked with catchable trout from midsummer through early winter. Table 3 summarizes fish stocking in the Carson River during 2018 and Table 3 summarizes historical stocking results.

Flows during 2018 were near the 96-year median with a couple exceptions during spring when flows spiked above 3,000 cfs (Figure 1). Flows never exceeded 1,000 cfs during 2013 through 2015, with the highest of 969 cfs during May 2013. During 2016, flows were more representative of normal conditions, rising above 1,000 cfs in early May and peaking mid-May at about 1,500 cfs. When flow years are average, the river remains above 1,000 cfs for several weeks during the spring. Flows in 2017, however, remained well above average and peaked near 6,000 cfs during February. During 2014, a low flow

of 29 cfs occurred on September 25 and, in 2015, a low flow of 25 cfs occurred on September 13. Low flows (anything less than 80 cfs) were observed during 2014 through 2016 beginning in July and lasting through December with only occasional daily spikes reaching above 80 cfs in response to storm events. During 2017 and 2018, the lowest flow observed occurred during November. High flows are necessary to scour the bottom of fine sediments accumulated during years of low flow.

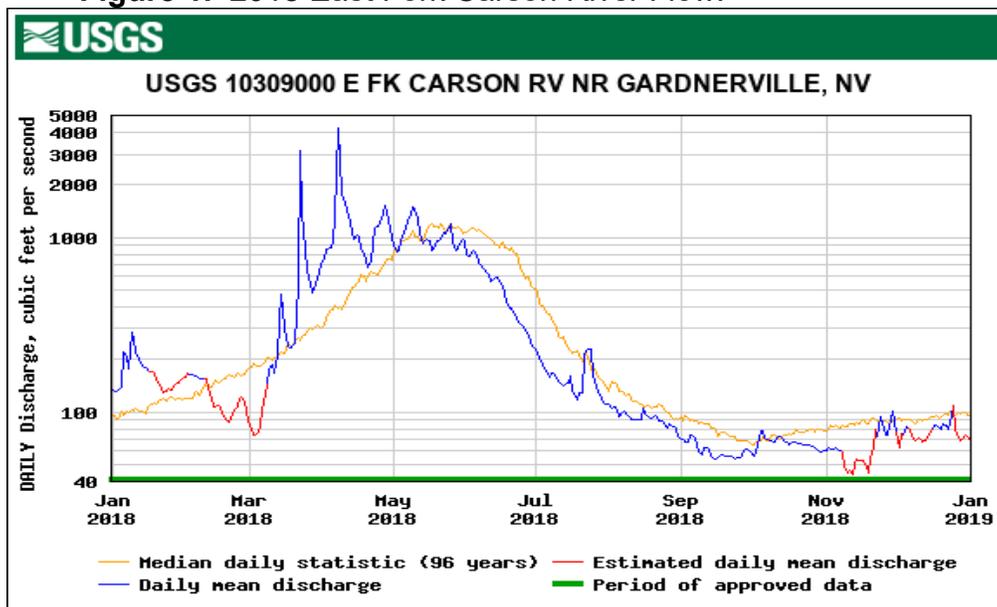
**Table 3. 2018 Carson River Stocking Summary.**

		<b>Main Stem</b>		
Date	Species	Strain	Number	Size
10/5/2018	Rainbow	Trout Lodge (triploid)	3003	9.6
6/11/2018	Brown	Sheep Creek	4170	8.4
		<b>East Fork</b>		
Date	Species	Strain	Number	Size
10/12/2018	Rainbow	Trout Lodge (triploid)	1499	9.8
10/12/2018	Rainbow	Trout Lodge (triploid)	1499	9.8
7/10/2018	Rainbow	Trout Lodge (triploid)	3912	9.2
6/11/2018	Brown	Sheep Creek	720	8.4
Rainbow Total			6,910	9.6
Brown Total			720	8.4

**Table 4. Historical Carson River Stocking Summary.**

	<b>Main Stem</b>			<b>East Fork</b>		
		Number	Size (in)		Number	Size
<b>2017</b>	Rainbow	4,399	9.90	Brown	1,712	9.70
	Brown	-	-	Rainbow	5,191	9.9
<b>2016</b>	Brown	2,139	9.70	Brown	754	9.10
	Rainbow	-	-	Brown	3,514	2.90
				Rainbow	8,262	9.2
<b>2015</b>	Rainbow	2,035	9.10	Rainbow	7,528	9.00
<b>2014</b>	Brown	3,993	9.20	Brown	2,415	9.70
	Rainbow	-	-	Brown	7,105	2.20
				Rainbow	12,730	9.6
<b>2013</b>	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

**Figure 1. 2018 East Fork Carson River Flow.**



Stock approximately 500 largemouth bass, 500 bluegill, 500 white bass, and 1,000 channel catfish into each of the regulating reservoirs in the lower Carson River including Indian Lakes (Likes Lake and Papoose Lake), Harmon Reservoir, and Carson Lake. On July 19, 707 bluegills from Andorno Pond (Humboldt Co.) averaging 4.0 in and 52 largemouth bass from Bilk Creek Reservoir (Humboldt Co.) averaging 10.0 in were planted into Harmon Reservoir. This was the first time since 1995 that Harmon Reservoir was planted. White bass and channel catfish were not stocked due to limited availability.

### RECOMMENDATIONS

- 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.

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