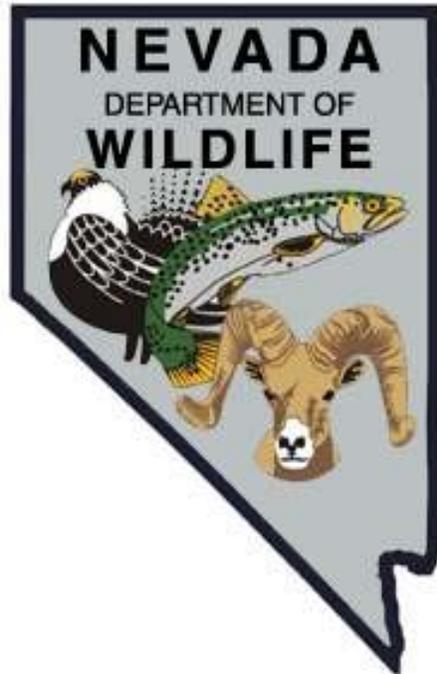


NEVADA DEPARTMENT OF WILDLIFE  
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORT  
F-20-52  
2016

EAST WALKER RIVER  
WESTERN REGION



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

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

**State:** *Nevada*  
**Project Title:** *Statewide Fisheries Program*  
**Job Title:** *East Walker River*  
**Period Covered:** *January 1, 2016 through December 31, 2016*

**SUMMARY**

This was the fourth year of drought for the East Walker River; however, annual discharge (63,269 acre-feet) was near the eleven-year average (81,890 acre-feet). Comparatively, during 2015, annual discharge was 23,159 acre-ft, which was the lowest in the past 15 years. Peak flow during 2016 was recorded during mid-May at 274 cubic feet per second (cfs). Peak flow during 2015 was 135 cfs on June 5, which represented the earliest peak flow in recent history. Peak flow in 2014 was recorded during mid-July at 92 cfs, in 2013 during mid-June at 156 cfs, and in 2012 in late July at 216 cfs.

Based on the latest Mail-in Angler Questionnaire Survey conducted during 2015 for the East Walker River, 461 anglers fished 1,388 days to catch 3,781 fish for a catch rate of 2.27 fish per angler day. During 2014, 1,471 anglers fished 4,620 days and had a success of 3.39 fish per angler day.

The general-fishery area along the east fork (Elbow, Raccoon Beach, and Zanis) has been impacted by drought and flash flooding, resulting in low trout numbers and a corresponding drop in angling pressure. Rosaschi Ranch angler success was below average and was estimated at 0.44 to 0.9 fish per hour based on angler creel and drop-box survey data, respectively. However, anglers caught large fish at Rosaschi Ranch and a few greater than 20 in were recorded from the drop-box survey. Roving creel and angler drop-box data showed brown trout averaged slightly larger than rainbow trout, which was consistent with historical data.

East Walker River electroshocking survey methods this year were consistent with historical methods, however, methods used during 2014 and 2015 were different and results might not be comparable. The historical trend of an increasing trout population occurred from downstream to upstream was again observed during 2016. Fish abundance throughout the river, though, was estimated to be well below average for the third consecutive year. The trout population estimate at Rosaschi Ranch was estimated low at 793 trout per mile, compared to the 10-year average at 2,003 trout per mile.

In 2016, the East Walker River was stocked at the Elbow with 8,224 rainbow trout averaging 9.6 in. California Department of Fish and Wildlife stocked 16,028 fingerling brown trout averaging 11.4 fish per pound upstream of the California/Nevada state line. NDOW stocked the West Walker River with 14,797 rainbow trout averaging 9.3 in. No brown trout have been stocked by NDOW since 2014 due to hatchery availability and concerns over drought conditions.

## **BACKGROUND**

The East Walker River originates along the eastern slope of the Sierra-Nevada in California. Bridgeport Reservoir, CA, located 11.3 km (7.0 mi) upstream from the NV-CA border, supplies irrigation water to farmland in Nevada and has a maximum volume of 40,494 acre-ft. The Walker River Irrigation District (WRID) can divert to storage 39,700 acre-ft per annum (afa) in Bridgeport Reservoir (CA), but can only withdraw 36,000 afa. The irrigation season generally begins April 1 and ends November 1, and summertime flow typically ranges from 200 to 500 cfs below the reservoir.

The California State Water Board maintains a minimum discharge below Bridgeport Reservoir of 20 cfs. When air temperature diminishes below 0°F, the minimum discharge increases to 30 cfs. Flows of 30 cfs or above are mandatory from the beginning of November to the end of February in order to reduce anchor ice and to continue providing riffle and pool habitats for trout survival.

Land management status adjacent to the East Walker River varies from U.S. Forest Service, Bureau of Land Management, and private property. In 1995, the American Land Conservancy purchased the Rosaschi Ranch, approximately 2.2 to 8.2 river miles below the NV-CA border. This land now is under USFS management, while NDOW manages the fishery as a “quality fishery” having a zero-harvest limit. The Flying-M Ranch allows public access at the Elbow, which is the beginning area of the “general fishery” and anglers can harvest 5 trout and 10 mountain whitefish. The East Walker River flows for about 62 mi in Nevada before it reaches the confluence with the West Walker River in Mason Valley. Prior to 2016, approximately 21 mi or 34% was public; however, through additional cooperation with private landowners, 38% of the river was accessible to anglers. During 2016, several large private ranches (Rafter 7, Flying M, etc.) were transferred from private ownership to the State of Nevada, Division of State Parks. The number of river miles, which will become accessible to the public, which were previously closed should add about 28 miles.

## **OBJECTIVES**

- Conduct a general fisheries assessment through opportunistic angler contacts and mail-in, angler questionnaire data.
- Maintain and check for returns of angler drop-box surveys at least once per month.
- Coordinate with land management agencies and private landowners to develop new access and stocking locations where opportunities exist.
- Monitor fish populations along the east fork during three days of tote-barge electroshocking at five established sites during November.

## PROCEDURES

**Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data.** Anglers were contacted primarily at five locations along the East Walker River: Rosaschi Ranch, the Elbow, Zanis, Raccoon Beach, and Rafter 7. Angler creel information was collected throughout the year. Information obtained from anglers includes type of gear used, number and species of fish caught, size of fish caught, location of fish caught, county of residence, and number of hours fished. Angler questionnaires were mailed at the end of 2015 to anglers acquiring a Nevada fishing license. Data was received and summarized for estimated number of anglers, fish caught, days spent fishing, and catch rates.

**Maintain and check for returns of volunteer, angler drop-box surveys at least once per month.** Questionnaires from three streamside drop-boxes located along the East Walker River at Rosaschi Ranch not only collected basic creel information, but also collected angler satisfaction ratings (ranked from +2 [highly satisfied] to -2 [dissatisfied]). Data from all drop-boxes was combined.

**Coordinate with land management agencies and private landowners to develop new access and stocking locations where opportunities exist.** The Walker Basin Conservancy had acquired several ranches (Rafter 7, Flying M, etc.) over the past few years. During the fall of 2016, an agreement between the National Fish and Wildlife Foundation (NFWF), the Walker Basin Conservancy, and Nevada Division of State Parks was finalized and approximately 28 miles of river was transferred from private ownership to the State of Nevada to be managed as a state park. During 2016, NDOW access to the Rafter 7 was granted and a population survey and inspection of the existing access and roads were conducted. A basic stream habitat inventory was also performed.

**Monitor fish populations along the East Fork during three days of tote-barge electroshocking at four established sites during November.** Three of the historical transects established along the East Walker River (Rosaschi Ranch, the Elbow, and Raccoon beach) were sampled during 2016. The fourth historical site (Zanis) was not sampled; instead, a site at Rafter 7 was sampled. An electroshocking tote barge was towed through each transect for one-pass without the use of block nets and in at least two pools and two riffles per site. Approximately 0.20 miles of river were sampled at each site and sampling time varied from 17 min at Rafter 7 to 25 minutes at the Rosaschi Ranch. Twenty minutes were spent electroshocking the Elbow and 22 min were spent at Raccoon Beach. All fish captured were measured to the nearest millimeter and released.

## FINDINGS

**Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data.** Angler contacts were made on six occasions during 2016 and anglers fishing the East Walker River had an average catch

rate of 0.44 fish per hour that was well below the 20-year historical average (Table 1). Seven angler contacts were made at Rosaschi Ranch and anglers fished 46 hrs to catch 23 fish for a catch rate 0.50 fish per hour. The size of brown trout ranged from 10.0 to 12.5 in and averaged 11.4 in. Rainbow trout ranged from 8.0 to 13.0 in and averaged 10.4 in. Rosaschi Ranch section is managed under a Coldwater, Trophy Fishery Management Concept, which states, “A trophy fishery provides a significant portion of the harvest as fish of a size most anglers remember catching, while a trophy fish is one of a size worthy of acknowledgment. Sustained carryover of fish from one season to another for a significant portion of the population and exceptional fish growth potential are generally characteristics of a trophy fishery...Minimum size for trout (rainbow, brown, and cutthroat) should be 16.0 inches or approximately five pounds in weight. Angler success rates should range between 0.5 and 1.7 fish per hour and 0 and 1.0 fish per angler day.” Catch rates derived from creel survey data collected during 2016 found that Rosaschi Ranch did not meet the objectives for a trophy fishery during 2016. The average size of trout and catch rate (fish per hour) were below the trophy fishery standards, however, several large (greater than 20 in) browns were reported by anglers in the Drop-Box Survey and found during population sampling.

**Table 1.** East Walker River Creel Survey Combined. Average covers 20 years.

	2012	2013	2014	2015	2016	Hist. Ave.
No. Days Surveyed	8	10	10	7	6	9
No. Anglers Checked	25	9	22	15	15	45
Total Angler Hours	105	23	85	54	52	135
No. Trout Caught	88	35	75	49	23	98
Rainbow	58	26	26	22	12	76
Avg. Size mm (in)	256 (10.1)	358 (14.1)	317 (12.5)	355 (14.0)	264 (10.4)	284 (11.2)
Brown	30	9	49	30	11	21
Avg. Size mm (in)	342 (13.5)	366 (14.4)	345 (13.6)	274 (10.8)	289 (11.4)	312 (12.3)
Avg. Fish per Hour	0.84	1.52	0.88	0.91	0.44	0.8
Avg. Fish per Angler	3.52	3.89	3.41	3.27	1.53	2.4

The East Walker River downstream of Rosaschi Ranch is managed under a Coldwater, General Fishery Management Concept. This concept states, “Less than 30% of the annual stocking would be carried through from one fishing season to the next and the fish generally show minimal growth from stocked size. Angler success rates should range between 0.25 and 0.75 fish per angler hour and 1.00 and 2.00 fish per angler day.” Five anglers were contacted at the Elbow and three anglers were contacted at the Rafter 7, no fish were caught after an hour of fishing on average. Historically, most fish measured at the Elbow were rainbow trout and the size of fish caught typically averaged 11.5 in, which was expected from a hatchery supported trout fishery.

The annual mail-in, angler questionnaire data for the East Walker River from 2008 through 2015 is summarized in Table 2. All estimates from 2015 were well below average.

**Table 2. Mail-in, Angler Questionnaire Data.**

	2008	2009	2010	2011	2012	2013	2014	2015	Ave
Number of Anglers	1,618	3,096	2,030	1,905	2,488	1,364	1,471	461	1,804
No. Angler Days	7,060	10,137	8,228	6,118	9,150	4,232	4,620	1,388	6,367
Total Fish Caught	25,186	54,005	42,889	34,179	39,139	21,686	15,640	3,781	29,563
Fish per Angler Day	3.57	5.33	5.21	5.59	4.28	5.12	3.39	2.72	4.40

**Maintain and check for returns of angler drop-box surveys at least once per month.** Volunteer, angler drop-box questionnaires, which were collected at Rosaschi Ranch from 2009 through 2016, are summarized in Table 3. Angler catch rates suggest that each year Rosaschi Ranch met objectives of a coldwater trophy fishery. Angler satisfaction was below average for all categories (Table 4). During 2016, the number of anglers participating in the survey, the number of hours anglers fished, and fish caught per hour increased from 2015, but were still below the eight-year average for the third year in a row.

**Table 3. Rosaschi Ranch Drop-Box Survey Results.**

	2009	2010	2011	2012	2013	2014	2015	2016	AVE
No. Anglers	50	34	26	37	65	62	30	38	43
Hrs Fished	203	139.5	131	195	289.5	304	160	172	199
Rainbow	120	142	76	190	319	113	43	95	137
Brown	80	63	53	164	185	139	58	55	100
Whitefish	5	7	7	18	16	19	7	4	10
Fish/Hour	1.01	1.52	1.04	1.91	1.80	0.89	0.68	0.90	1
Fish/Day	4.10	6.24	5.23	10.05	8.00	4.37	3.60	4.05	6

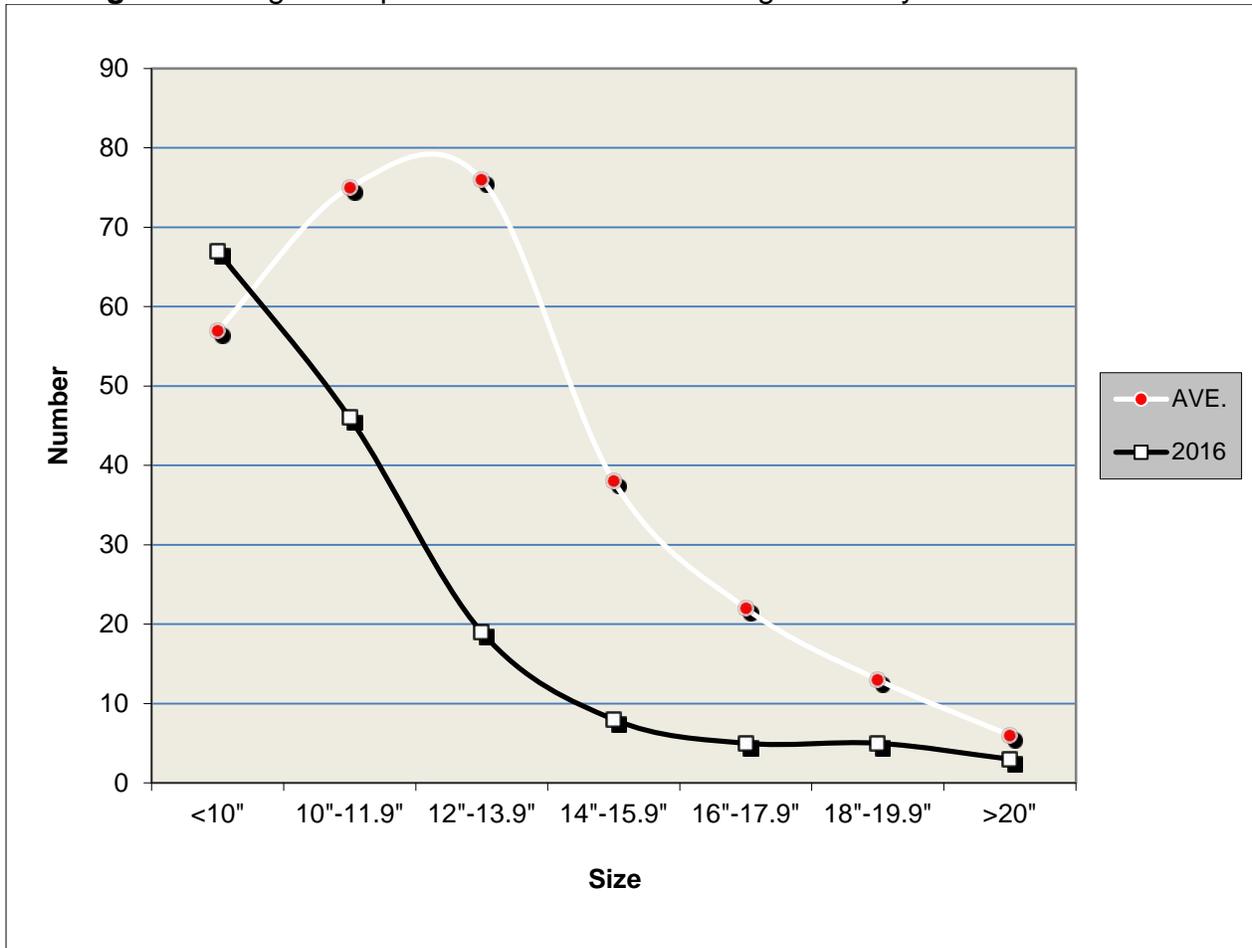
**Table 4. Rosaschi Ranch Drop-Box Satisfaction Survey.**

	Overall Experience	Size of Fish	Number of Fish
2008	1.03	0.61	0.59
2009	0.91	0.81	0.56
2010	1.46	1.20	1.00
2011	1.42	1.12	0.88
2012	1.12	1.19	0.73
2013	1.06	0.75	0.87
2014	0.91	0.58	0.40
2015	0.46	0.22	-0.35
2016	0.49	0.37	0.10
AVE	0.98	0.76	0.53

The size of fish caught was also recorded from angler drop-box surveys, with the eight-year average and results from 2016 represented in Figure 1. Slightly more fish in the “less than 10 in” size range were reported during 2016 than with the eight-year average. Fish ranging from 10 to 20 in showed a notable drop in frequency from the eight-year average. This was likely due to ongoing drought conditions, which limited natural reproduction for the past three years. The population of brown trout greater than 20 in has remained at similar levels throughout the drought (Figure 6), which suggests

that the older, larger brown trout survived the drought. A single brook trout was also found.

**Figure 1.** Angler Drop-Box: Size of Fish. Average over 8-years.

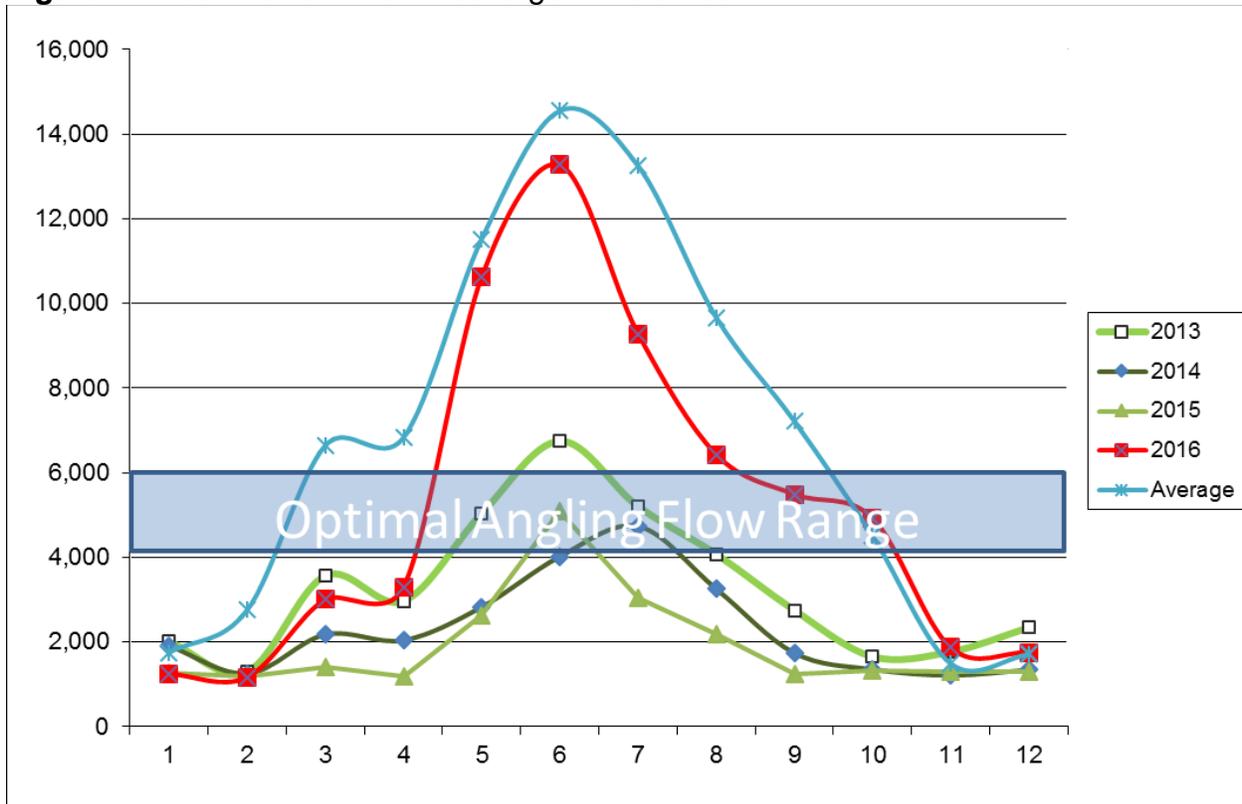


Based on the 2016 drop-box data, most fish were caught during August when flow was near optimal (55% of fish reported) (Figure 2). This represented a typical year when most fish were caught during the fall when flows were similar (discharge is 4,000-6,000 acre-ft per month, 80-140 cfs). Catch rates, number of fish caught, and discharge rebounded slightly during 2016 and anglers reported an increase in satisfaction from the all-time lows observed during 2015 (Table 4). Angler drop-box data and mail in angler questionnaire data from 2006 through 2016 suggest that Rosaschi Ranch met objectives of a coldwater trophy fishery.

**Coordinate with land management agencies and private landowners to develop new access and stocking locations where opportunities exist.** During 2016, access to the Rafter 7 was granted and a population survey and inspection of the existing fishing access and roads were conducted. Several areas were identified as potential stocking locations and hatchery personnel verified the locations as suitable. A basic stream habitat inventory was also taken (Figure 3). Sand/silt was the dominant

substrate; however, the Habitat Condition Index score for pool measure was good. Anticipated flows during 2017, due to higher than average snowpack, should reduce the embeddedness associated with high percentage of sand/silt and improve pool structure. Comparatively, higher quality habitat was observed at Rosaschi Ranch (Figure 4). Stream habitat inventories were also conducted at the Elbow and Raccoon Beach. This data will be used as a starting point in order to evaluate river recovery efforts as well as potential to provide additional recreation potential in areas where access has been limited by private ownership.

**Figure 2.** East Walker River Discharge in Acre Feet.



**Monitor fish populations along the East Fork during three days of tote-barge electroshocking at four established sites during November.** Electroshocking surveys at Rosaschi Ranch show fish populations fluctuated annually (Figure 5). During 2016, an increase in trout per mile estimates was observed for the first time since 2012, however, during 2015, flows were too low to use the tote barge. Therefore, sampling methods were different and data is not comparable to historical estimates. Only Zanis was not surveyed in 2016 due to river conditions (extreme sedimentation of the river channel occurring from flash flooding) and Rafter 7 was substituted as the most downstream transect. During 2010, a study was completed showing the previous year's average monthly discharge corresponded to estimated trout abundance. Estimated trout abundance typically increases from downstream to upstream and, during 2016, trout abundance at the Elbow was estimated at 533 fish per mile and Rosaschi Ranch at 792 fish per mile. Fish per mile estimates at the Elbow included a large majority of

hatchery fish (75% of all trout caught were hatchery rainbows) from a recent stocking event, therefore, the estimate is not indicative of the potential for the wild population. During cycles of normal or above average flows, populations have been estimated above 4,000 trout per mile. For example, during 2007, the trout population at Rosaschi Ranch was estimated at 4,309 fish per mile (previous year average monthly discharge was 17,902 AF).

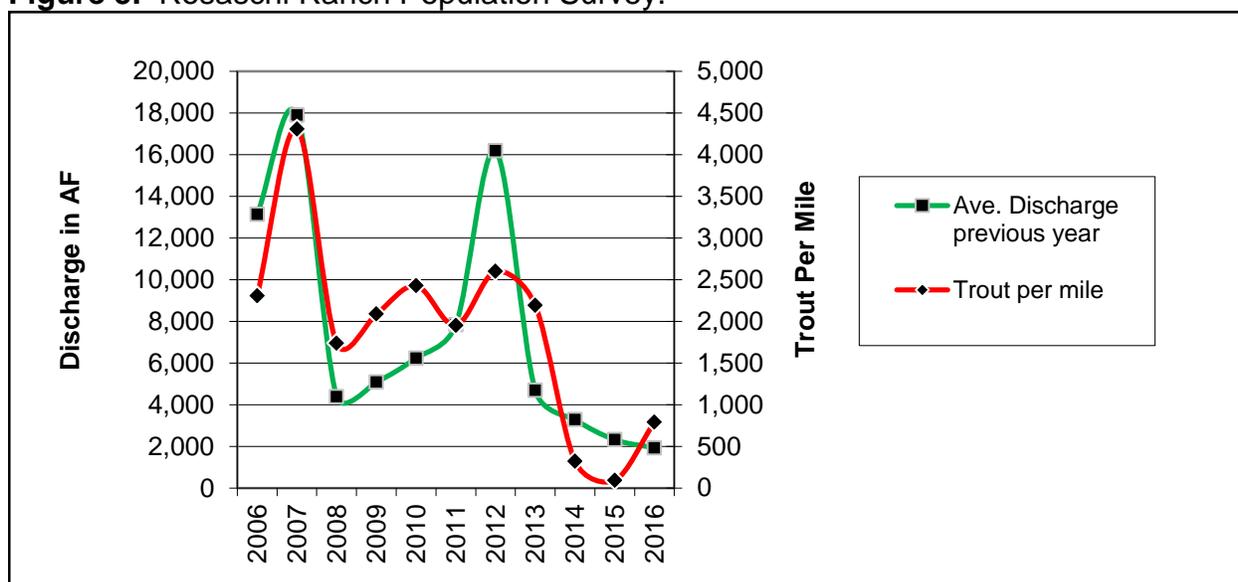
**Figure 3.** Rafter 7 Habitat Inventory Survey Report.

Nevada Department of Wildlife Stream Habitat Inventory Survey Report Station Summary																																			
Date/Time: 11/3/2016	Reach:																																		
Stream Name: 2024 WALKER RIVER, EAST FORK	Station: RAFTER 7 UPPER																																		
Watershed: WALKER RIVER	Datum: UTMEasting: 0.00																																		
County: Lyon	Zone: UTMNorthing 0.00																																		
Field Crew:	Stream Gradient (°): Elevation (m): 0																																		
Survey ID: 1328-2024-2016-460-S																																			
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**Figure 4. Rosaschi Ranch Habitat Inventory Survey Report.**

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Date/Time: 11/2/2016	Reach:																																		
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**Figure 5.** Rosaschi Ranch Population Survey.

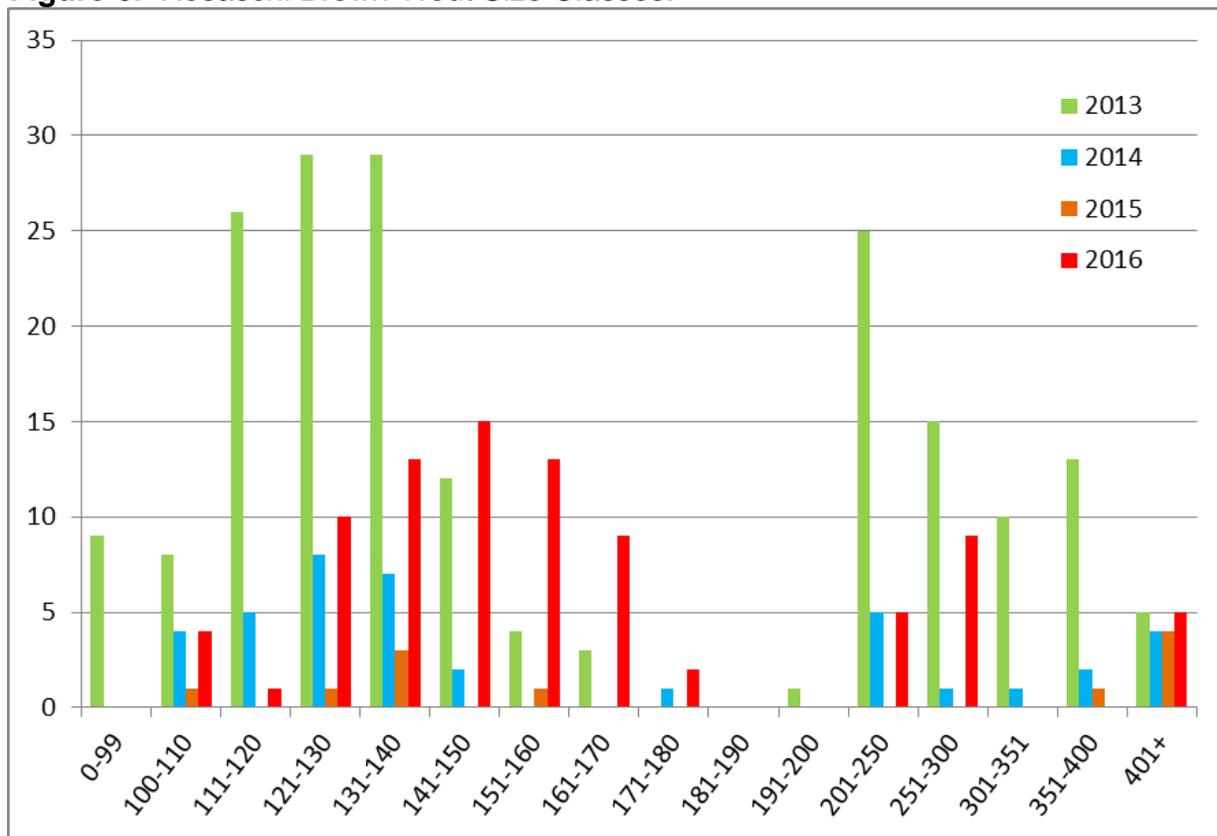


Brown trout age classes were divided into two major groups; adult and juvenile (Figure 6). The majority of juvenile brown trout were from 5.2 to 6.3 in (131-160 mm), however, a few reached 6.8 in (175 mm). The total range of juvenile brown trout was 4.1 in (105 mm) to 6.8 in (175mm); suggesting there was a long spawning season or there were large differences between the sizes of stocked hatchery trout by CDFW and wild-spawned trout. A long spawning period may contribute to the overall success given temporal changes in water conditions. During 2016, flows approached average more than during the previous three years, increasing during April and decreasing during October, which is typical when compared to historical flow regimes controlled by WRID. Comparatively, during 2015, flow spiked from 20 cfs on May 3 to 131 cfs on May 5 only to drop back down to 20 cfs on May 15. Flow once again spiked the first week of June and on June 5, flow reached 135 cfs, and by July 4, flow was below 55 cfs. By the end of August, flow was reduced to the minimum allowable 20 cfs and remained there for the rest of 2015. Flows during the 2015 fall spawning period remained consistent (between August 28 and December 30, flows fluctuated between 20 and 25 cfs). Low flows resulted in limited available spawning habitat and any juvenile production was likely susceptible to predation by adult brown trout over 16 in (400 mm). Typical fall flow regimes are detrimental for brown trout reproduction due to the dramatic drop in flow during egg deposition and fry development.

During the 2015 annual population survey, evidence of a large flash flood event was noted (Figures 7 and 8). It appears a large thunder cell dropped an enormous amount of water in a very short time on the east side of Bald Mountain. Starting near the Elbow and continuing downstream for at least 13 miles (Figure 7), heavy sedimentation occurred in the river channel and erosion of side washes and drainages was evident. This event probably took place during July 2015. High quality pools that were typically included in annual population surveys were filled in with four to six feet of decomposed granite and sand/silt. It is unknown how many native fish and sport fish were able to survive the event. During 2016, all trout caught at the Elbow were of

hatchery size ranging from 175 mm (6.9 in) to 289 mm (11.4 in) and only a small number of native fish were found (seven mountain sucker, one Tahoe sucker, 22 redbreast shiner, and one speckled dace). Some gravel and boulder were observed during 2016 in areas that had been previously covered with sand/silt during 2015. A few of the larger pools appeared to be deeper during 2016 than in 2015, indicating the river bottom is recovering, albeit slowly.

**Figure 6.** Rosaschi Brown Trout Size Classes.

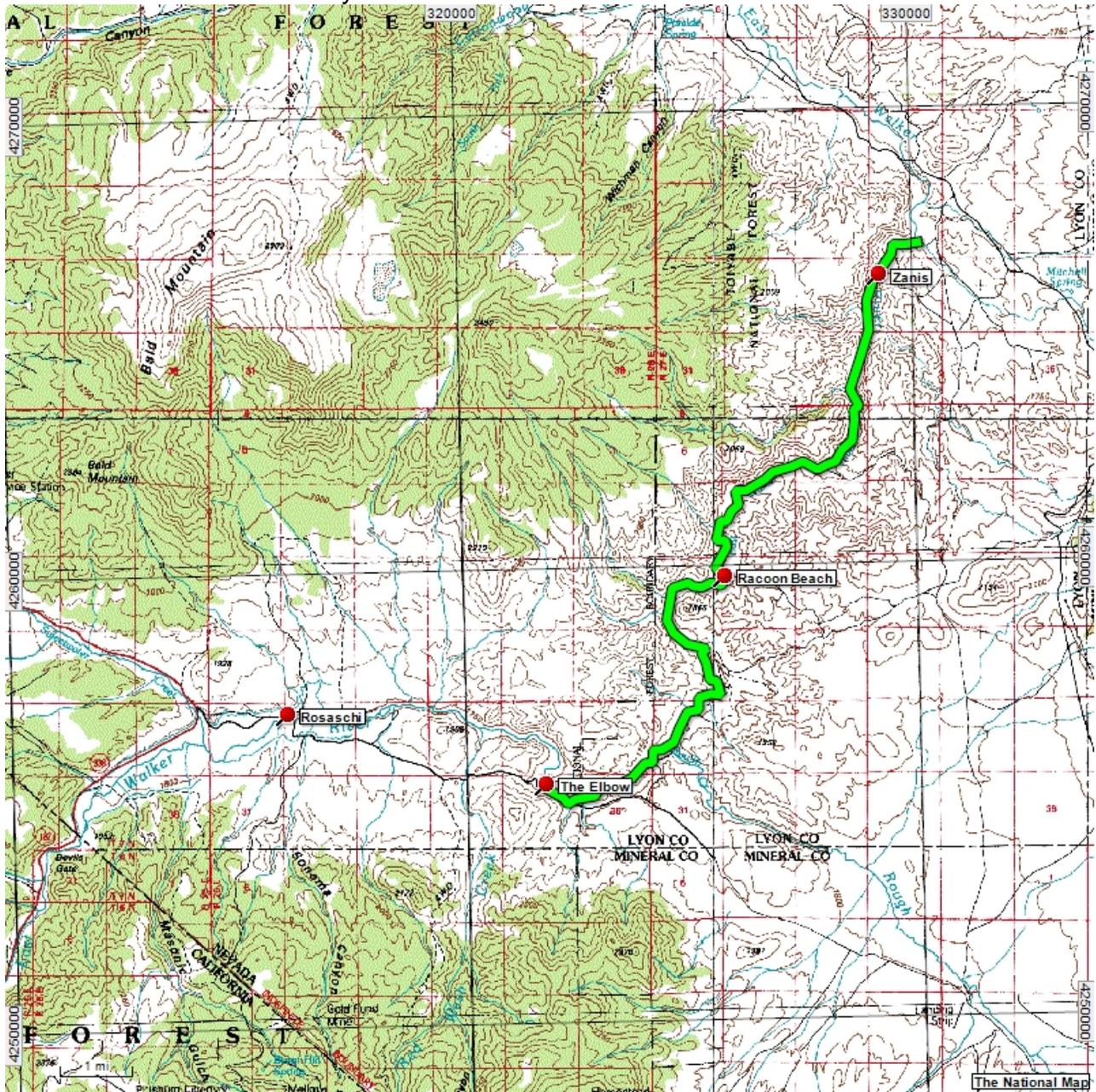


Coordination with California Department of Fish and Wildlife regarding stocking of the walker river was successful. Fish stocking history from 2001 to 2013 for the Walker River (east and west forks) was received upon request. Data for 2014 and 2015 were incomplete; however, full stocking reports were received by CDFW for the calendar year of 2016. Future stocking plans by both California and Nevada were shared between the respective agencies. Stocking continues to provide additional angling opportunity for the lower sections of the East Walker River (Table 5).

No stocking occurs in the Rosaschi Ranch trophy fish section. Fingerling brown trout are stocked (when fish are available) at the Elbow (NDOW) and upstream in California (CDFW, Table 6) to help support the natural brown trout population. Historically, fingerling brown trout, as well as rainbow trout and mountain whitefish, has been able to move freely from the stocking location at the Elbow upstream to Rosaschi Ranch. However, beaver activity observed during 2015 may be limiting upstream movement, coordination with the Walker River Irrigation District regarding removal of

these dams was conducted during 2016. Typical high flows during the spring and summer have limited the beaver's ability to dam across the entire channel; however, flows during the four-year drought have been very low and beavers have taken advantage. California Department of Fish and Wildlife also stocks fish into the west fork, however, that information is not included in Table 6.

**Figure 7.** East Walker River Flash Flood Map. The Green Portion of the River Shows the Area of Heavy Sedimentation.



**Figure 8.** East Walker River Flash Flood, Raccoon Beach.



### **MANAGEMENT REVIEW**

The primary work program objectives for the East Walker River were completed in 2016. The data suggests that the East Walker River is meeting the goals and objectives, providing both a coldwater general fishery and a coldwater trophy fishery. Current regulations for both the general fishery and trophy fishery are adequate and should remain unchanged.

Fall electroshocking results have shown the river may be recovering from the four year drought observed from 2012 through 2015. The typical trend of increasing trout abundance from downstream to upstream was observed again in 2016. A drop in estimated trout abundance throughout the river during 2015 was concerning and several phone calls and angler contacts reported lower than normal catch rates. This was likely due to drought conditions, which resulted in a reduction of flow and could have led to higher than normal temperatures in the river. Either this forced trout to migrate upstream prior to summer and fall or temperatures became lethal for trout inhabiting downstream areas. During 2016, trout abundance for all age classes increased, most likely due to near normal flows. Mountain whitefish were only found at Rosaschi Ranch during 2014 and 2015, however two were found at the Elbow during 2016, which suggests habitat conditions became more favorable this year as flows increased than they have been since 2013.

In addition to habitat related stressors upon trout due to drought conditions, flash flooding degraded much of the river channel and fish habitat downstream of the Elbow. Habitat monitoring was initiated during 2016 and should be continued during 2017. The

habitat monitoring during 2016 should be used as base level to monitor recovery and determine suitability of the different sections of the river. Several agencies as well as the public have expressed interest in evaluating the river for its ability to support a coldwater trophy fishery, specifically the area to become a state park.

**Table 5. Walker River Stocking Summary 2016.**

East Fork	Date	Species	Strain	Number	Size
	3/23/2016	Rainbow	Eagle Lake	1,776	10.4
	4/8/2016	Rainbow	Eagle Lake	1,501	10.1
	6/28/2016	Rainbow	Tahoe	1415	9.1
	6/28/2016	Rainbow	Tahoe	2,030	8.9
	9/8/2016	Rainbow	Triploid	1,502	9.4
			Rainbow Total	8,224	9.6
CDFW	12/21/2016	Brown	BN	16,028	(11.4lb)

West Fork	Date	Species	Strain	Number	Size
	3/23/2016	Rainbow	Eagle Lake	1,687	10.1
	4/4/2016	Rainbow	Eagle Lake	1,614	9.8
	6/7/2016	Rainbow	Erwin-Arlee	2,399	8.8
	6/21/2016	Rainbow	Erwin-Arlee	1,725	9
	6/28/2016	Rainbow	Tahoe	1,765	8.9
	7/12/2016	Rainbow	Tahoe	1,100	8.2
	9/9/2016	Rainbow	Triploid	1,110	9.4
	10/14/2016	Rainbow	Tahoe	1,102	10.2
	9/29/2016	Rainbow	Tahoe	2,295	9.7
			Rainbow Total	14,797	9.3

The East Walker River continues to be popular among anglers in western Nevada. Angler success rates and size of fish caught were within the boundaries of the management objectives and data collected during 2016 suggests conditions are improving and anglers are more satisfied than they were last year.

### RECOMMENDATIONS

- Conduct a general fisheries assessment through opportunistic angler contacts and mail in, angler questionnaire, and drop box data.
- Conduct general fish habitat assessments on lands recently acquired by Nevada State Parks.
- Coordinate with land management agencies and private landowners to develop new public access and stocking locations where opportunities exist.
- Monitor fish populations along the East Fork during three days of tote-barge electroshocking at five established sites during November.

**Table 6. Walker River Stocking History.**

		East Fork			West Fork (NDOW only)		
			Number	Size (in)		Number	Size (in)
2015	NDOW	Brown	-		Brown	-	
		Rainbow	8,710	8.4	Rainbow	7,265	8.5
	CDFW	Brown	3,000	9.8			
2014	NDOW	Brown	-		Brown	6,199	8.2
		Rainbow	11,835	9.3	Rainbow	10,421	9.6
2013	NDOW	Brown	14,756	2.4	Brown	7,845	3
		Rainbow	12,026	10	Rainbow	21,229	9.8
	CDFW	Brown	100,188	3.28			
2012	NDOW	Brown	11,504	2.4	Brown	10,382	1.9
		Rainbow	11,136	11.5	Rainbow	10,978	10.2
		Brown	200	7.0			
	CDFW	Brown	100,036	3.4			
2011	NDOW	Brown	16,116	3.3	Brown	9,943	2.6
		Rainbow	7,968	10.1	Rainbow	10,484	9.9
	CDFW	Brown	106,720	2.31			
2010	NDOW	Brown	5,139	7.6	Brown	0	
		Rainbow	11,936	9.7	Rainbow	10,484	9.9
		Brown	5,513	2.7			
	CDFW	Brown	100,000	2.33			

Prepared by: Kris Urquhart  
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 Western Region

Date: March 2017