State of California
Department of Fish and Wildlife

M e m o r a n d u m

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To: Kevin Thomas
Senior Environmental Scientist (Supervisor)
Department of Fish and Wildlife

From: Kenneth N. Kundargi
Environmental Scientist

Subject: Prosser Creek Electrofishing 2013 and 2014

Prosser Creek, located in Nevada County, is a tributary of the Truckee River which originates in Carpenter Valley (North Fork Prosser Creek) and Euer Valley (South Fork Prosser Creek) and is dammed to form Prosser Creek Reservoir before its confluence with the Truckee River. The focus of this memo is the approximately 1.5 mile reach below Prosser Reservoir to the confluence with the Truckee River. Flows in this reach are highly regulated and fall under the Truckee River Operating Agreement (TROA) which seeks to improve flow conditions for aquatic resources in the Truckee River basin.

The California Department of Fish and Wildlife (Department) has not actively managed or sampled the Prosser Dam to Truckee River reach in recent years. However, there is a special regulation allowing a daily bag limit of two fish over 14 inches total length and only artificial lures with barbless hooks may be used. In order to obtain fisheries data to guide the TROA process, single pass electrofishing surveys were conducted on September 4, 2013 in two sections approximately 400 (Section 1) and 350 (Section 2) meters long (Figure 1). A second effort was conducted on April 17, 2014 on the approximately 350 meters long Section 3 (Figures 2).

Five species of fish were collected during the surveys with brown trout (*Salmo trutta*) dominating the salmonid catch over rainbow trout (*Oncorhynchus mykiss*). Native Lahontan cutthroat trout (*Oncorhynchus mykiss henshawi*) were not detected (Table 1). Native Paiute sculpin were abundant but the numbers collected were not representative of the total number of sculpin observed during surveys as many eluded capture. The remainder of the Prosser Creek native fish species complex is depauperate with single

specimens of Tahoe sucker (*Catostomus tahoensis*) and mountain whitefish (*Prosopium williamsoni*) collected. No specimens of Lahontan redside (*Richardsonius egregious*), speckled dace (*Rhinichthys osculus*) or Tui chub (*Gila bicolor*) were collected (Table 1).

Care must be given in comparison of 2013 and 2014 data as the data are not directly comparable for the following reasons:

- Seasonal Timing – September 2013 versus April 2014,
- Method – one electrofishing unit in 2013 versus two electrofishing units in 2014,
- Survey Area – two sections in 2013 versus one in 2014,
- Sections electrofished where not surveyed in both years
- Single pass electrofishing is not a robust population estimation method.

However, basic conclusions can be drawn about the fisheries populations especially in terms of age class structure and species composition. Based on the salmonid length frequency data it is apparent that while Prosser Creek harbors a trophy trout fishery and an abundant Paiute sculpin population the presence of these trophy salmonids masks deeper issues with the overall health of the aquatic ecosystem in Prosser Creek (Table 1, Figures 3-8). These histograms also indicate poor recruitment from the juvenile salmonid life stages to the size classes from approximately 150 mm to 350 mm as these size classes are sparsely represented in the distribution data. More alarming is the poor native fish species composition with normally commonly occurring fish species (Lahontan redside, tui chub, speckled dace) undetected during surveys and only a single specimen detected for Tahoe sucker and mountain whitefish (Table 1).

In the 1996 report *Instream Flow Requirements Truckee River Basin Lake Tahoe to Nevada*[1] three existing problems with Prosser Creek conditions are identified. They are:

1. Below minimum low flow conditions

2. Severely degraded channel/habitat conditions

3. Extremely variable flow fluctuations

These problems still persist. During the course of surveys it is readily apparent that the channel conditions are degraded and that channel restoration combined with improved flow conditions is necessary to benefit the native fish populations and sport fisheries. Opportunities to improve native and sport fisheries populations cannot be maximized without both elements, channel restoration and improved flow, being implemented in conjunction. The pending implementation of TROA (expected 2015-2016) offers opportunities to address flow conditions if Prosser Creek is prioritized in that process.

[1] Instream Flow Requirements Truckee River Basin Lake Tahoe to Nevada, Stream Flow and Habitat Evaluation Program, Environmental Services Division, California Department of Fish and Game, Technical Report No. 96-6 August 1996.

Opportunities do exist to improve habitat conditions but are limited to mechanical and instream habitat improvement projects as it is unlikely channel modifying high flow events can be achieved naturally or through the TROA process.

The management recommendations for this fishery are to:

1. Prioritize Prosser Creek in the TROA process to improve low flow conditions and reduce the extreme variability of flow fluctuations

2. Seek opportunities to improve habitat conditions to create instream habitat and reduce stranding of juvenile fish

3. Implement rigorous repeatable fisheries studies which are adequate to assess species composition and population pre and post TROA implementation in order to adaptively manage flow regimes to benefit fisheries resources.

4. Consider this stretch of Prosser Creek for inclusion in the Department's Heritage and Wild Trout Program as an extension of the Heritage and Wild Trout Program designation for the Truckee River.

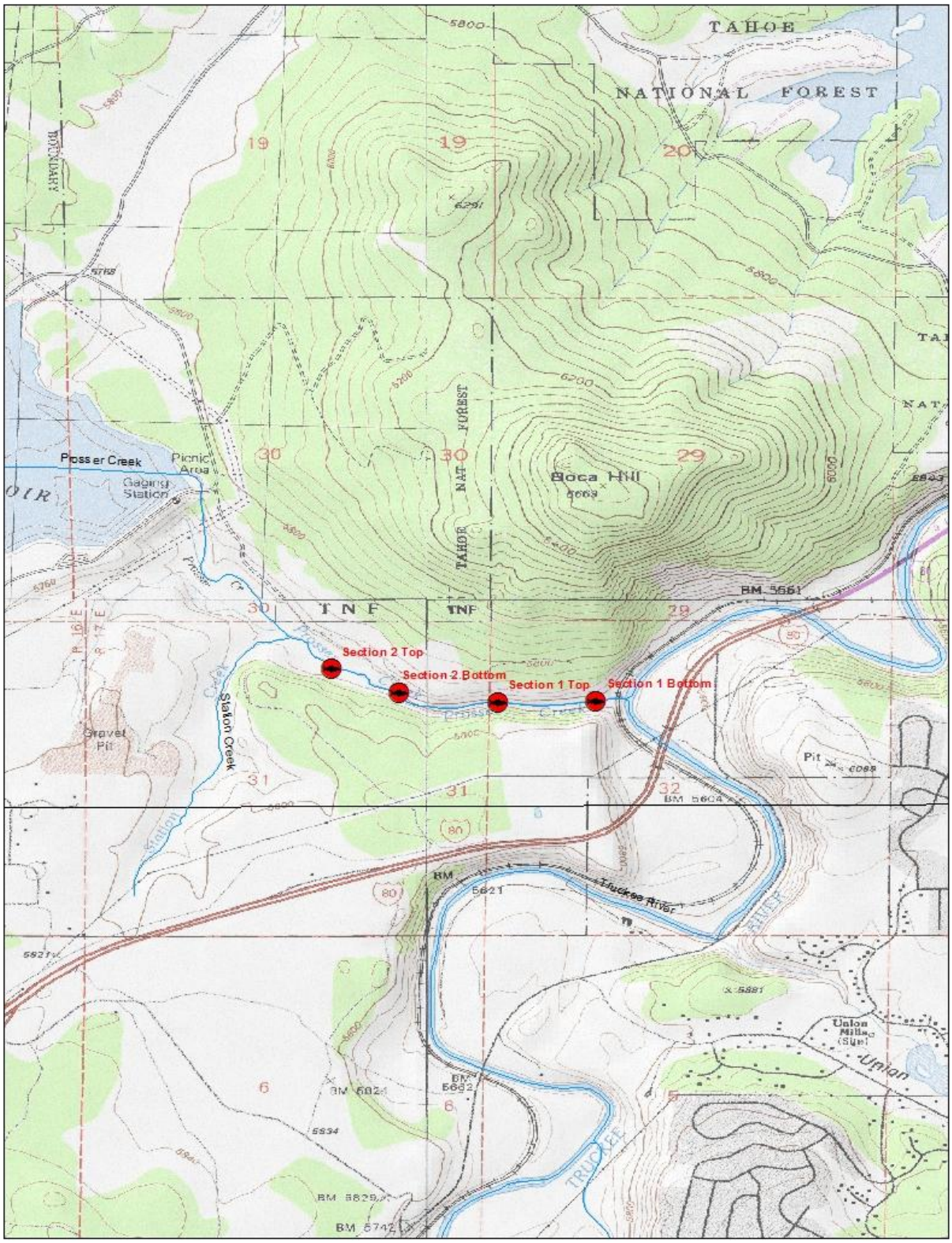

Figure 1 Prosser Creek and location of single pass electrofishing sections September 4, 2013.

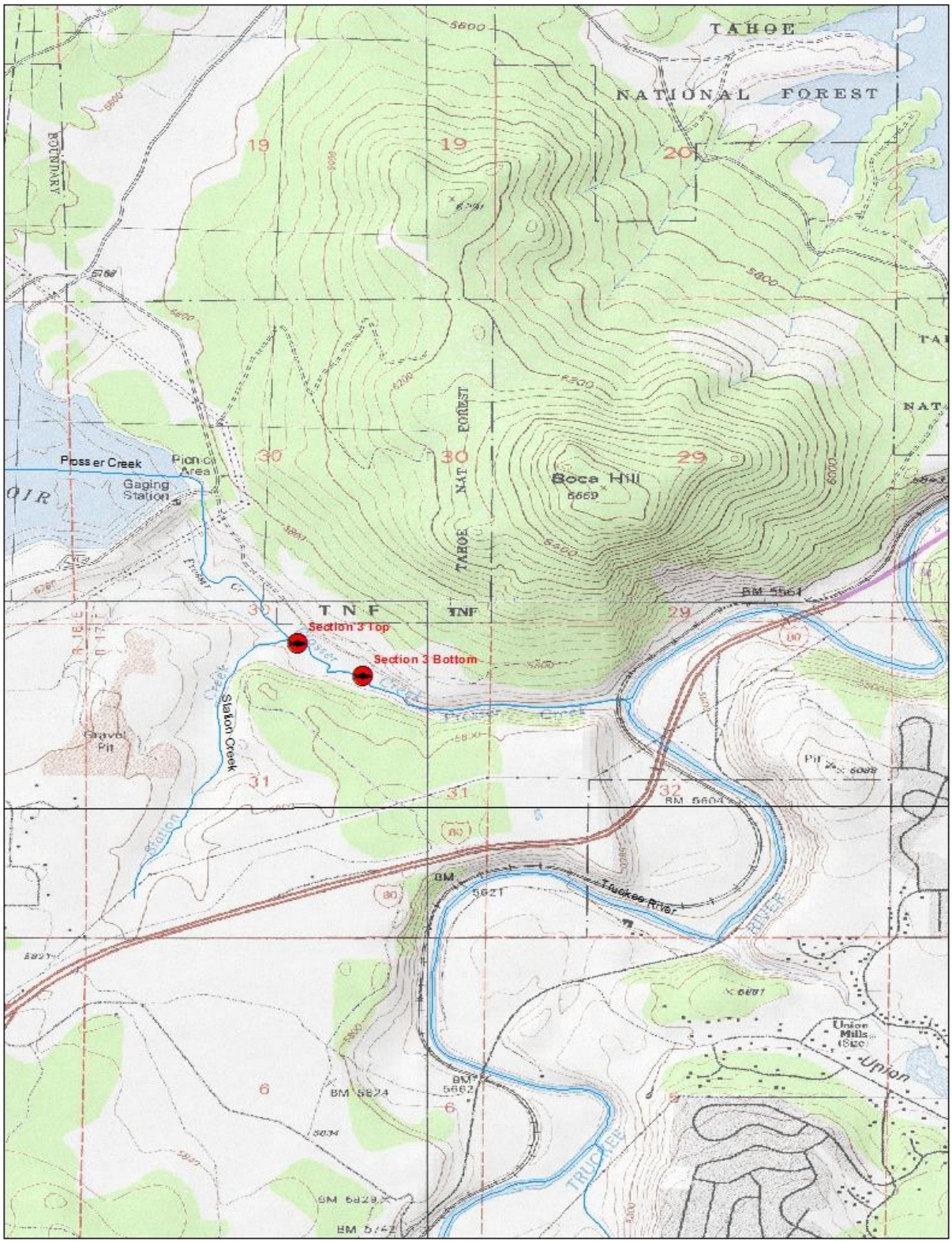

Figure 2 Prosser Creek and location of single pass electrofishing sections April 17, 2014.

Table 1 Number of fish captured by species and mean total length (mm) at 95% Confidence Interval for Prosser Creek single pass electrofishing surveys September 4, 2013 and April 17, 2014.

Section	Species	Number	Mean total length (mm)
1	Brown trout	11	157±54
1	Rainbow trout	7	66±7
1	Paiute sculpin	38	76±5
2	Brown trout	43	124±31
2	Rainbow trout	17	148±73
2	Paiute sculpin	4	83±21
3	Brown trout	42	308 ± 56
3	Rainbow trout	13	326 ± 85
3	Paiute sculpin	34	83 ± 5
3	Tahoe sucker	1	61
3	Mountain whitefish	1	235

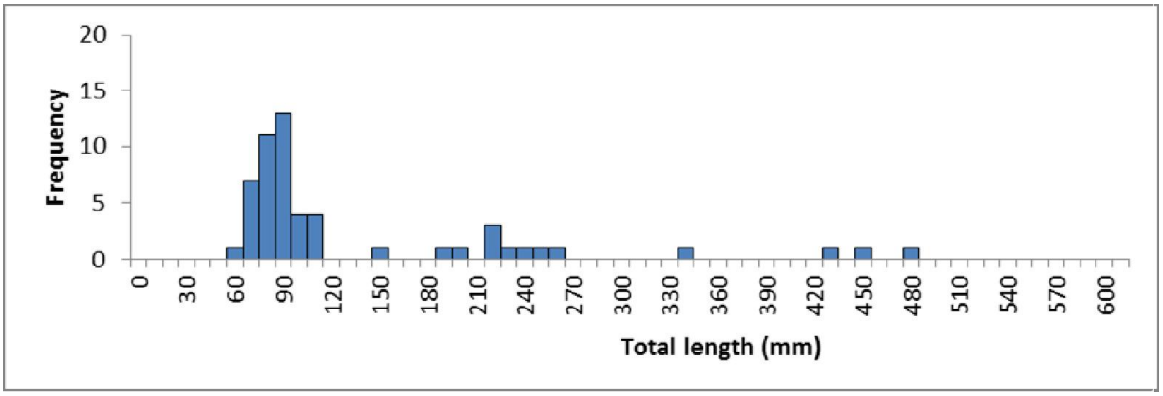

Figure 3 Brown trout length frequency Prosser Creek single pass electrofishing survey September 4, 2013.

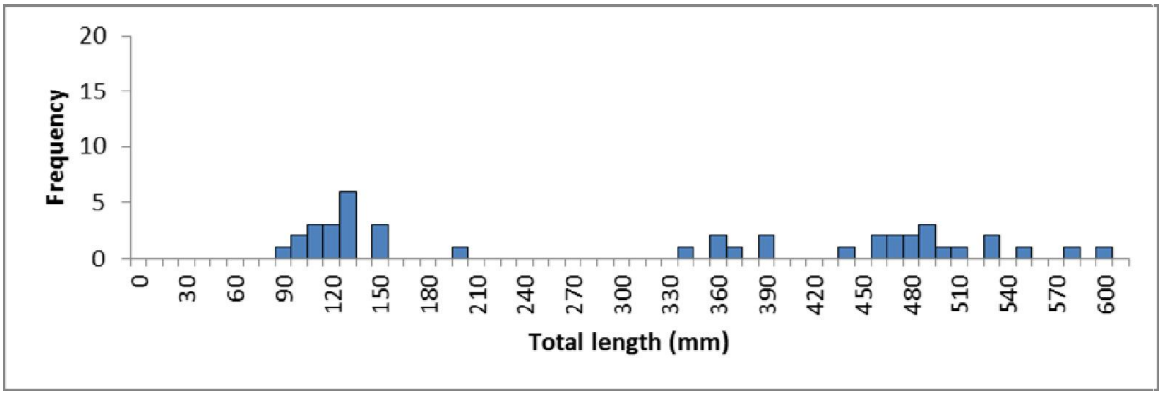

Figure 4 Brown trout length frequency Prosser Creek single pass electrofishing survey April 17, 2014.

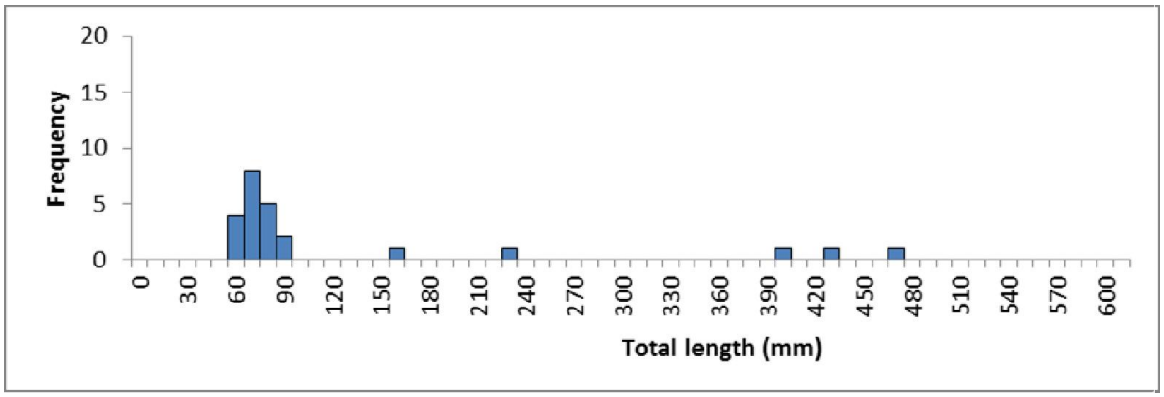

Figure 5 Rainbow trout length frequency Prosser Creek single pass electrofishing survey September 4, 2013.

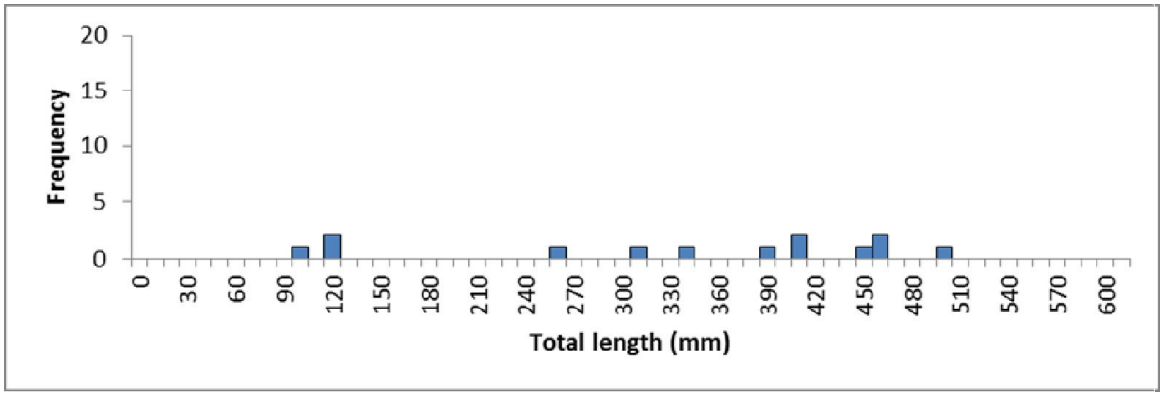

Figure 6 Rainbow trout length frequency Prosser Creek single pass electrofishing survey April 17, 2014.

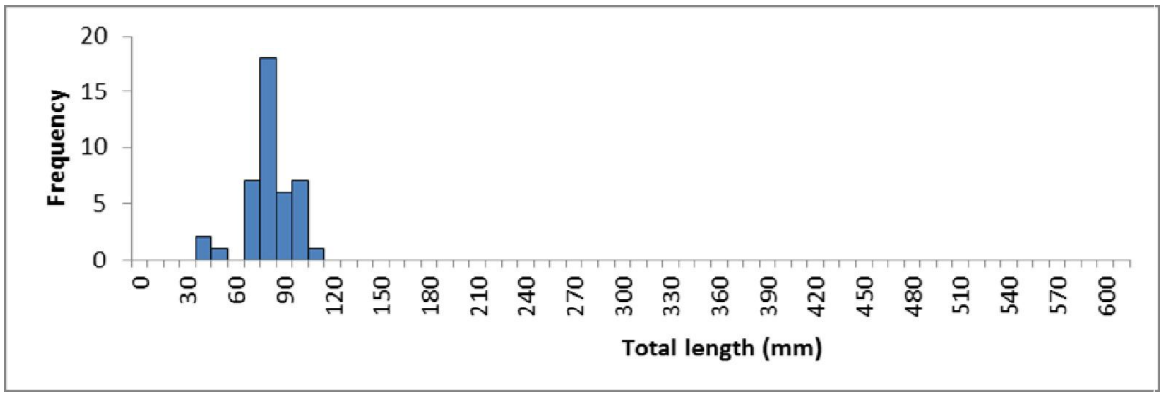

Figure 7 Paiute Sculpin length frequency Prosser Creek single pass electrofishing survey September 4, 2013.

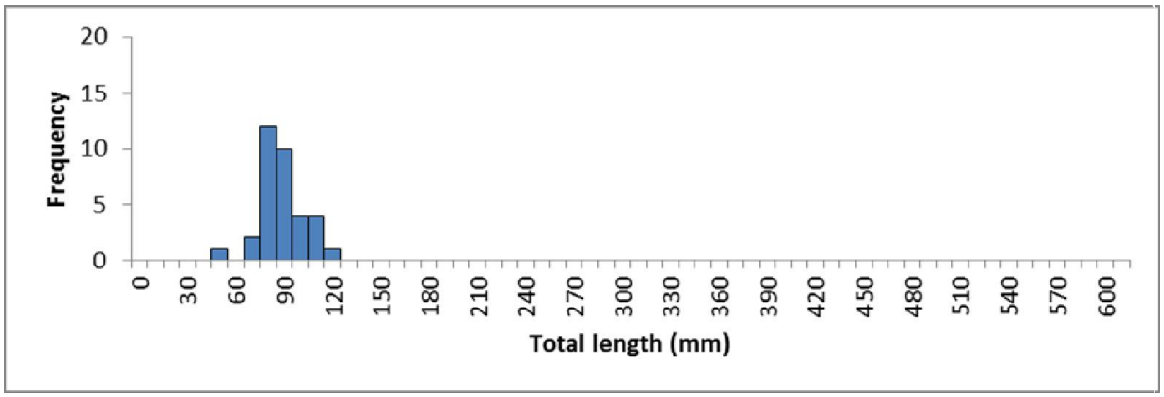

Figure 8 Paiute Sculpin length frequency Prosser Creek single pass electrofishing survey April 17 2017.