Fisheries Division

Federal Aid Job Progress Report

Montana Statewide Fisheries Management

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Project Title: Montana Statewide Fisheries Management

Job Title: Upper Clark Fork Drainage Fisheries Management

Abstract: This report summarizes fish sampling conducted in streams of the Upper Clark Fork River Basin (not including the Clark Fork River) during the 2013 and 2014 field seasons. Sampling was carried out as part of the fisheries management duties of the Upper Clark Fork fisheries responsibility area located in administrative region 2.

Upper Clark Fork River Basin

Stream Fish Sampling

2013 & 2014

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* Histograms are organized by drainage same as above, then by stream, then by sample year starting with the earliest sample year first.

PURPOSE

This report summarizes fish sampling conducted in streams of the Upper Clark Fork River Basin during the field seasons of 2013 and 2014. Sampling was carried out as part of the fisheries management duties of the Upper Clark Fork fisheries responsibility area located in administrative region 2.

METHODS

Fish Sampling

Electrofishing was used to collect fish at all sites. The focus of electrofishing was primarily to assess species composition and general abundance at a broad scale. Population estimates were usually made at sites that had been previously sampled or where established population monitoring sections were located. Estimates consisted of multiple-pass (typically 2 or 3) depletion estimates on small streams (i.e. streams less than approximately 15' in width), or mark-recapture estimates on larger streams (i.e. streams greater than approximately 15' in width). Single-pass, catch-per-unit-effort (CPUE) electrofishing was used at a number of sites where little or no prior survey information was available, or where survey conditions made obtaining a population estimate difficult.

For small streams, a backpack electrofishing unit (Smith-Root LR-24) was used to sample fish in 100 m reaches (typically). At these sites, a block net was placed at the lower end of the reach to increase capture efficiency. Electrofishing was completed in a downstream direction towards the block net except at sites where high turbidity created poor visibility. In these instances, electrofishing was completed in an upstream direction, with the block net placed at the top of the reach. In larger streams, an electrofishing tote barge system (Smith-Root SR-6 w/ 2.5 GPP) was typically used for fish sampling. This system was more efficient at capturing fish due to its increased power output. Reaches where the tote barge system was used were longer than the standard 100 m reaches sampled in smaller streams, and were typically around 1 km in length. No block nets were utilized at sites where mark-recapture estimates were made.

At each sample reach, all captured fish were identified to species (based on phenotypic characteristics), weighed, measured and released. At depletion estimate sites, fish were held in live cages outside the section until all passes were completed. At sites were a mark-recapture estimate was made, fish captured during the marking run were given a unique fin clip before being released to allow identification during the recapture event.

Data Summary

All data collected during these sampling efforts were summarized for each sampled stream reach and were organized by drainage and stream. Each sample section was identified by a river mile (RM) that was nearest the top of the survey site. River miles

were measured beginning at the mouth of each stream and were obtained using a geographic information system (GIS) with layers obtained from the Montana Natural Resource Information System (NRIS).

Fishery data was summarized by species and included the number of fish captured at each site (first pass only for sites where multiple passes were made), catch-per-unit-effort (standardized to number of fish per 100 m of channel), mean and range of fish lengths, and percent of species composition. Tables displaying this information were created for each sampled stream. Species abbreviations used in these tables are as follows: BULL = bull trout, EB = brook trout, EBxBULL = brook trout/bull trout hybrid, LL = brown trout, RB = rainbow trout, WCT = westslope cutthroat trout, RBxWCT = rainbow trout / westslope cutthroat trout hybrid. At sites where population estimates were made, an estimate value with a 95% confidence interval was reported. Population estimates were calculated using Montana Fish, Wildlife and Parks' Fisheries Information System. For depletion surveys, estimates were produced using Zippin's removal method for fish 75 mm in total length and larger. Values were reported in the number of fish per 100 m of channel length. For mark-recapture estimates, population values were generated using a modified Peterson estimator (Chapman estimator) for fish 175 mm and longer, and reported as the number of fish per mile of channel length. Length-frequency histograms were produced for each sample reach where three or more fish of a given species were present. In reaches where multiple passes were made, fish of a given species were combined from all passes to produce the chart. These data are provided as an appendix (Appendix A). Only trout were considered in these data summary efforts although observations of others species were sometimes noted in the write-ups.

RESULTS

Little Blackfoot River Drainage

Little Blackfoot River

Fish surveys were completed at several locations on the Little Blackfoot River in 2013 and 2014. In 2013, two established mark and recapture population estimate sections were sampled in mid September. These sections were located at RM 9.6 and RM 21.3. In 2014, five sites were surveyed in the upper reaches of the river in early to mid August. The sections sampled were at RM 26.7, 31.1, 34.9, 39.9, and 42.0. All of the sections had been previously sampled one or more times except the section at RM 39.9. This was a section established to replace a site previously sampled at RM 41.1 that was inundated by beaver ponds. Tables 1 and 2, as well as Appendix A contain summaries of data collected on the Little Blackfoot River in 2013 and 2014.

At RM 9.6, brown trout dominated the trout community with westslope cutthroat trout present but very rare (Table 1). The population estimate for brown trout (≥ 175 mm) was 1,190 per mile (95% confidence interval: +/- 107). This estimate was the highest on record, but was similar to what was observed in 2011 (Figure 1). There were not enough westslope cutthroat trout captured at RM 9.6 in 2013 to calculate a population estimate.

At RM 21.3, brown trout continued to dominate the trout community with westslope cutthroat trout and brook trout also present, but in much lower numbers (Table 1). The estimate for brown trout (≥ 175 mm) was 868 per mile (95% confidence interval: +/- 57). This estimate was slightly lower than estimates made in 2009 and 2011, but was within the period of record range of variability (Figure 2). The estimate for westslope cutthroat trout (≥ 175 mm) was 35 per mile (95% confidence interval: +/- 18:). Similar to brown trout, this estimate was slightly lower than estimates made in 2009 and 2011, but was also within the period of record range of variability (Figure 2). No estimate was made for brook trout (similar to previous years) due to low numbers and relatively poor capture efficiency.

Table 1. Electrofishing data collected at two sections on the Little Blackfoot River in 2013. Data presented is from the first electrofishing pass (marking run).

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 9.6	LL	416	35	274	78-430	≥99
	WCT	2	<1	331	274-387	<1
RM 21.3	LL	473	47	223	65-403	97
	WCT	9	<1	256	220-285	2
	EB	6	<1	216	184-250	1

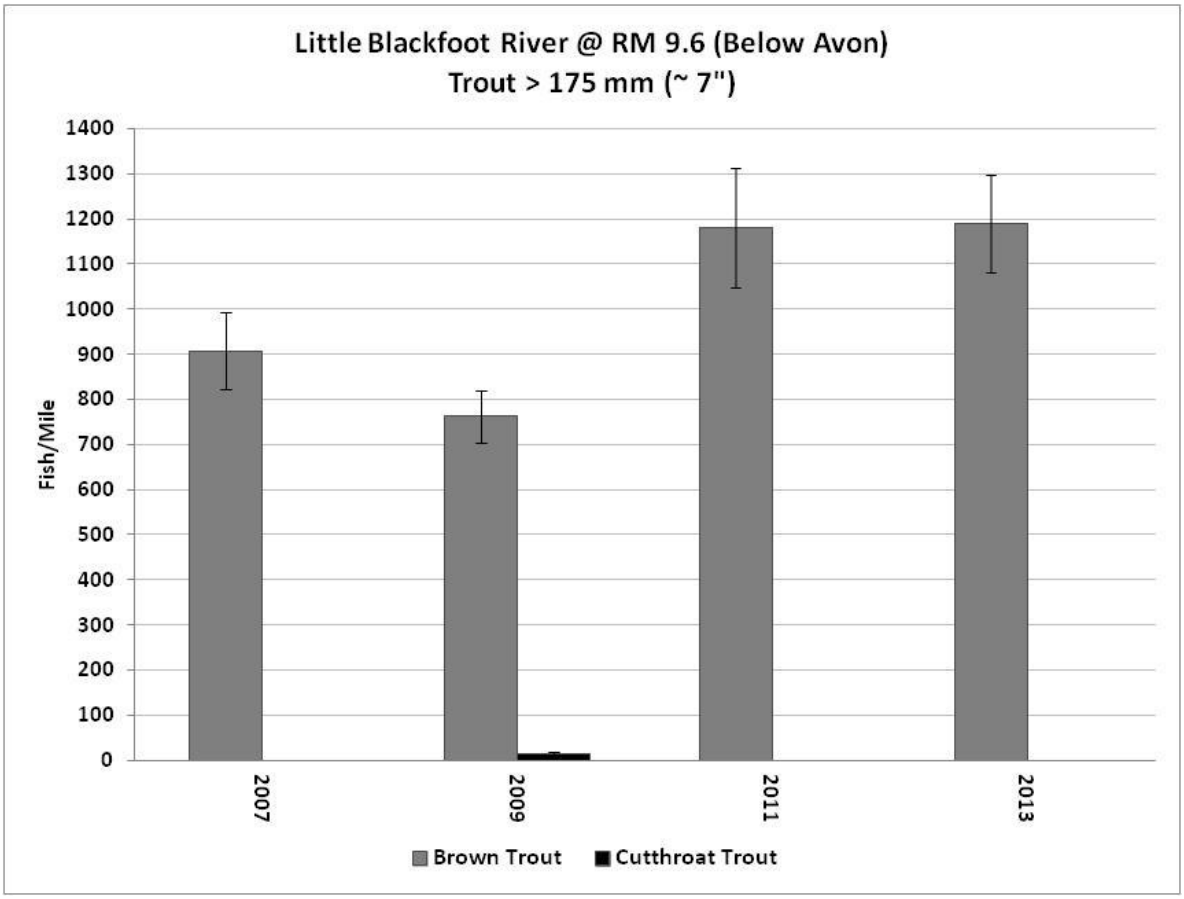


Figure1. Trout population estimates by species for fish 175 mm and larger for the Little Blackfoot River at RM 9.6 for the period of record. If no bars are present for a species in a given year, either no fish of that species were captured, or there were not enough captured to obtain a population estimate.

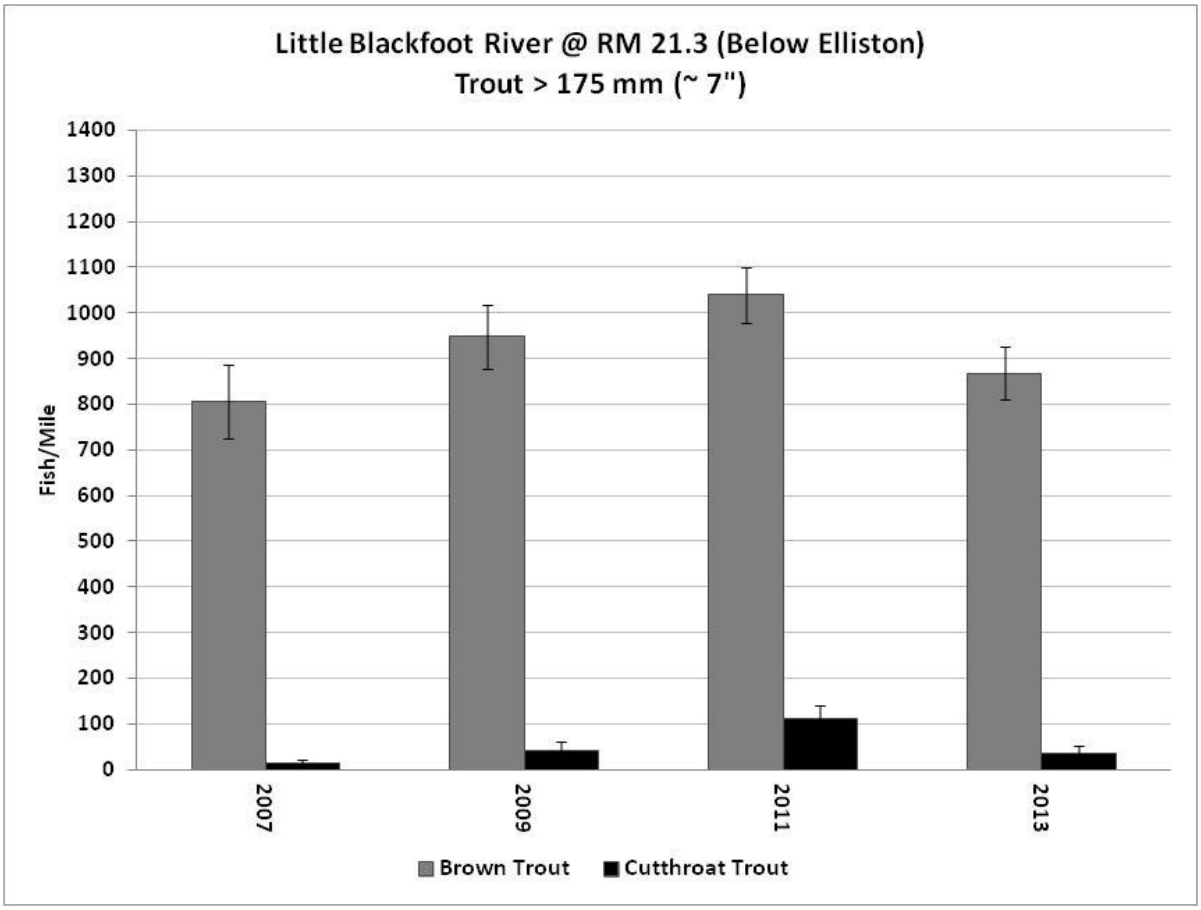


Figure2. Trout population estimates by species for fish 175 mm and larger for the Little Blackfoot River at RM 21.3 for the period of record. If no bars are present for a species in a given year, either no fish of that species were captured, or there were not enough captured to obtain a population estimate.

At RM 26.7, two electrofishing passes were made through a 300 m sample reach in an attempt to obtain population estimates for trout species present. Sample conditions proved challenging for a 3 person crew with a single backpack electrofisher. Brown trout dominated the trout community in the reach, followed by westslope cutthroat trout and brook trout, respectively (Table 2). The estimate for brown trout ($\geq$ 75 mm) was 23 per 100 m (95% confidence interval: +/- 7.4). For westslope cutthroat trout it was 6.3 per 100 m (95% confidence interval: +/- 1.2), and for brook trout it was 1.7 per 100 m (95% confidence interval: +/- 0.4). This site on the Little Blackfoot River was first sampled in 2007 with a single electrofishing pass through a 100 m section (Lindstrom et al 2008). Findings in 2014 were similar to what was observed earlier, although overall fish density appeared slightly lower in 2014 based on first pass statistics.

At RM 31.1, three electrofishing passes were made through the 100 m section in an attempt to obtain population estimates for trout species present in the reach. Sample conditions proved challenging for a 3 person crew with a single backpack electrofisher. A large, deep pool in the middle of the section was very difficult to sample. Capture

efficiency was assumed to be poor in this habitat unit. Brown trout comprised much of the trout community at RM 31.1 with west slope cutthroat trout also present, but in fewer numbers (Table 2). The estimate for brown trout (≥ 75 mm) was 34 per 100 m (95% confidence interval: +/- 4.9). No estimate was made for westslope cutthroat due to a poor removal pattern. A total of 13 were captured during the three electrofishing passes. This reach was first sampled in 2007 and then again in 2009 (Lindstrom et al. 2008, Lindstrom 2011). Each sampling event consisted of a single electrofishing pass through the 100 m reach. In both of these years, westslope cutthroat trout were the most common species in the reach. However, the species appeared not as common in 2014. Instead, brown trout were the dominant species. Oddly, the number of brown trout captured each of the three sample years was similar. Westslope cutthroat trout density seemed to drop, however. It is not well understood why this may have occurred. Given the poor removal pattern of cutthroat trout during the 2014 sample, it is possible that many fish were using the large, deep pool in the middle of the reach that was very difficult to sample effectively.

At RM 34.9, three electrofishing passes were made through the 100 m section to obtain population estimates for trout species present in the reach. Westslope cutthroat trout were the most abundant species followed by brown trout and brook trout (Table 2). The estimate for westslope cutthroat trout (≥ 75 mm) was 55 per 100 m (95% confidence interval: +/- 5.3). For brown trout it was 35 per 100 m (95% confidence interval: +/- 10.2), and for brook trout it was 6 per 100 m (95% confidence interval: +/- 0). This reach was first sampled in 2007 and then again in 2010 (Lindstrom et al. 2008, Lindstrom 2013). Each sampling event consisted of a single electrofishing pass through the 100 m reach. Results from the 2014 depletion survey appeared similar to what was observed at the prior one-pass sampling events.

At RM 39.9, two electrofishing passes were made through the 100 m section to obtain population estimates for trout species present. Cutthroat trout were the most common species at the site, with brook trout becoming more abundant than at RM 34.9, and brown trout becoming less so. The estimate for westslope cutthroat trout (≥ 75 mm) was 41 per 100 m (95% confidence interval: +/- 1.7). For brook trout it was 34 per 100 m (95% confidence interval: +/- 0.7), and for brown trout it was 7 per 100 m (95% confidence interval: +/- 0). This was a new section that was sampled because the previously established reach at RM 40.1 was inundated by beaver ponds. The inundated reach had been sampled in 2007 with a one-pass survey, and in 2010 with a depletion survey (Lindstrom et al. 2008, Lindstrom 2013). The findings from RM 39.9 were similar and seemed comparable to what was observed in prior surveys at RM 40.1.

At RM 42.0, two electrofishing passes were made through the 100 m section. Westslope cutthroat trout and brook trout were present in roughly equal numbers, with brown trout also present but rare (Table 2). The estimate for westslope cutthroat trout (≥ 75 mm) was 58 per 100 m (95% confidence interval: +/- 7.3), and for brook trout it was 69 per 100 m (95% confidence interval: +/- 14). Only a single adult brown trout was captured in the reach. This reach was first sampled in 2010 with a one-pass survey (Lindstrom 2013). Results from the 2014 depletion survey were relatively similar to what was observed at the prior sampling event.

Table 2. Electrofishing data collected at several sections on the Little Blackfoot River in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 26.7	WCT	14	5	268	102-340	67
	LL	37	12	237	95-402	26
	EB	4	1	117	75-165	7
RM 31.1	WCT	3	3	252	215-285	88
	LL	21	21	166	105-336	12
RM 34.9	WCT	33	33	144	83-268	59
	LL	16	16	146	88-291	29
	EB	7	7	101	60-127	12
RM 39.9	WCT	38	38	133	68-230	47
	LL	7	7	129	78-257	9
	EB	35	35	118	44-218	44
RM 42.0	WCT	45	45	127	69-225	49
	LL	1	1	340	na	1
	EB	46	46	118	70-207	50

Spotted Dog Creek

Fish surveys were completed at four locations on Spotted Dog Creek in late August of 2014. The sites were located at RM 1.2, 2.5, 4.6 and 11.3. Table 3 and Appendix A contain a summary of results from each section.

At RM 1.2, two electrofishing passes were made through the 200 m sample reach to obtain population estimates for trout species present. Brown trout dominated the trout community, with westslope cutthroat trout and brook trout present, but rare (Table 3). The estimate for brown trout ($\geq$ 75 mm) was 36 per 100 m (95% confidence interval: +/- 1.3). No estimates were made for westslope cutthroat trout or brook trout due to extremely low numbers. This site was first sampled with a 100 m, one-pass survey in 2007. While the results of the 2014 survey were similar, cutthroat trout appeared less common than in 2007.

At RM 2.5, four electrofishing passes were made through a 200 m section to obtain population estimates for trout species present. Brown trout were the only trout species observed in the reach (Table 3). The estimate for fish 75 mm and longer was 11.5 per 100 m (95% confidence interval: +/- 1.6). This was a new sample section that had not been previously surveyed.

At RM 4.6, three electrofishing passes were made through the 200 m sample reach. Brown trout were the most common trout species in the section, with westslope cutthroat trout and brook trout also present, but rarer (Table 3). The estimate for brown trout (≥ 75 mm) was 13.5 per 100 m (95% confidence interval: +/- 0.7). For westslope cutthroat trout it was 4 per 100 m (95% confidence interval: +/- 0), and for brook trout it was 4.5 per 100 m (95% confidence interval: +/- 0.1). This site was first sampled with a 100 m, one-pass survey in 2007. While the results of the 2014 survey were relatively similar, CPUE values showed a decline in abundance of all three species, especially cutthroat trout and brook trout.

At RM 11.3, two electrofishing passes were made through the 100 m section to obtain population estimates for trout species present. Westslope cutthroat trout dominated the trout community, with brook trout also present and relatively common (Table 3). The estimate for westslope cutthroat trout (≥ 75 mm) was 38 per 100 m (95% confidence interval: +/- 0.7), and for brook trout it was 22 per 100 m (95% confidence interval: +/- 4). This site was first sampled with a 100 m, one-pass survey in 2007. At that time, brook trout appeared to be a little less common than they were in 2014. Future monitoring will be necessary to determine if brook trout are becoming increasingly more abundant in this portion of the stream.

Table 3. Electrofishing data collected at three sections on Spotted Dog Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.2	WCT	1	<1	266	na	1.5
	LL	63	32	132	131-396	97
	EB	1	<1	226	na	1.5
RM 2.5	LL	14	7	197	66-368	100
RM 4.6	WCT	8	4	224	141-280	22
	LL	20	10	231	129-370	56
	EB	8	4	165	77-284	22
RM 11.3	WCT	48	48	95	32-155	75
	EB	16	16	112	82-172	25

Elliston Creek

One fish survey was completed on Elliston Creek in mid August of 2014. The site was located at RM 1.0. Sampling consisted of three electrofishing passes through the 100 m section. Westslope cutthroat trout comprised much of the fish community at the site; however, a single brown trout was also captured on the second pass through the section. The estimate for westslope cutthroat trout (≥ 75 mm) was 23 per 100 m (95% confidence interval: +/- 3.6). No population estimate was generated for brown trout given the very low density. Table 4 and Appendix A contain summaries of data collected at the site. This section was first sampled in 2008 with a one-pass survey (Liermann et al 2009). CPUE results were relatively similar, minus the discovery of a brown trout in 2014. The collection of a brown trout was not overly surprising since past sampling by the Forest Service had yielded similar findings in this portion of Elliston Creek.

Table 4. Electrofishing data collected at one section on Elliston Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.0	WCT	20	20	112	45-206	100
	LL	1*	-	155	na	-

** The single brown trout observed in the section was captured on the 2nd electrofishing pass. It was included in the table since it was the first documented presence of the species in Elliston Creek in sampling conducted by FWP.*

Slate Creek

One fish survey was completed on Slate Creek in mid August of 2014. The site was located at RM 0.7. Sampling consisted of two electrofishing passes through a 100 m section. The only species observed at the site was westslope cutthroat trout. While the number of fish captured was relatively high for a 100 m section, many of the fish captured were young-of-the-year. The estimate for westslope cutthroat trout (≥ 75 mm) was 29 per 100 m (95% confidence interval: +/- 1.6). Table 5 and Appendix A contain summaries of data collected at the site. This segment of Slate Creek was first sampled in 2008 with a one-pass survey in a 60 m reach (Liermann et al 2009). Results of that survey were relatively similar to those from 2014.

Table 5. Electrofishing data collected at one section on Slate Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.7	WCT	60	60	78	39-170	100

Taylor Creek Drainage

La Marche Creek

Fish surveys were completed at two locations on La Marche Creek in early August of 2014. The sites were located at RM 2.1 and 2.9. Table 6 and Appendix A contain summaries of data collected at the sites. At RM 2.1, three electrofishing passes were made through the 100 m section in an effort to obtain a population estimate. Westslope cutthroat trout comprised the entire fish community at the site. The estimate was very low at 3 per 100 m (95% confidence interval: +/- 0). No fish were found in the 100 m section at RM 2.9. Sampling of best habitat upstream of the section did document a single individual just above the top of the section. Aquatic and riparian habitat along much of La Marche Creek was in poor condition at the time of the survey. Heavy livestock use of the area was noted. Both of the sites sampled in 2014 were first surveyed in 2009 with one-pass surveys. The results of the 2009 sampling showed the presence of low densities of cutthroat trout at both sections, but densities were notably higher than what was observed in 2014. Habitat and connectivity issues could be leading to the potential extirpation of this small cutthroat trout population.

Table 6. Electrofishing data collected at two sections on La Marche Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 2.1	WCT	2	2	122	117-127	100
RM 2.9	NO FISH	-	-	-	-	-

Orofino Creek Drainage

Orofino Creek

One fish survey was completed on Orofino Creek in late July of 2014. The site was located at RM 7.3. Sampling consisted of three electrofishing passes through a 100 m section. The only species observed at the site was westslope cutthroat trout. The number of fish captured was relatively low, and consisted mostly of younger age classes. The estimate for fish 75 mm and longer was 7 per 100 m (95% confidence interval: +/- 1.1). Table 7 and Appendix A contain summaries of data collected at the site.

Additional spot electrofishing between RM 7.7 and 8.1 documented the presence of the occasional westslope cutthroat trout downstream of the forest road crossing near RM 7.9. Densities appeared to be very low in this headwater reach of the stream.

Table 7. Electrofishing data collected at one section on Orofino Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 7.3	WCT	8	8	78	55-108	100

Sand Hollow Drainage

Sand Hollow Creek

In 2014, one section was sampled in Sand Hollow to determine the presence or absence of fish. This survey was completed in late July of 2014 near RM 2.1. No fish were captured or observed in the section.

Lost Creek Drainage

Lost Creek

One fish survey was completed on Lost Creek in late July of 2014. The site was located at RM 16.2 near the entrance to Lost Creek State Park. Sampling consisted of a single electrofishing pass through the 100 m section. Brook trout comprised much of the fish community at the site, with westslope cutthroat trout and brown trout also present, but in fewer numbers. Table 8 and Appendix A contain summaries of data collected at the site. This section of Lost Creek was first sampled in 2008 with a one-pass survey through the 100 m section (Liermann et al. 2009). Results of the 2014 survey were very similar to what was observed in 2008.

Table 8. Electrofishing data collected at one section of Lost Creek in 2014.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 16.2	WCT	7	7	136	100-208	8
	LL	3	3	192	72-269	17
	EB	30	30	112	73-160	75

Perkins Gulch Drainage

Perkins Gulch

Fish surveys were completed at three locations on Perkins Gulch in early July of 2014. The sites were located at RM 1.7, 4.7, and 5.1. Single electrofishing passes were made through each of the 100 m sections. Low numbers of westslope cutthroat trout were observed at all three sites. Table 9 and Appendix A contain a summary of results from each section. The section at RM 5.1 was first surveyed in 2008, as was a section near the one at RM 1.7 (Liermann et al. 2009). The results of the 2008 sampling were very similar to what was observed in 2014.

Table 9. Electrofishing data collected at three sections on Perkins Gulch in 2014.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.7	WCT	6	6	97	84-134	100
RM 4.7	WCT	6	6	84	61-101	100
RM 5.1	WCT	3	3	109	97-130	100

Warm Springs Creek Drainage

Warm Springs Creek

Fish surveys were completed at six locations on Warm Springs Creek in 2013. Sections sampled were at RM 1.8, 16.4, 23.3, 23.8, 27.4, and 29.1. Mark and recapture estimates were performed at RM 1.8 and 16.4, whereas multiple-pass, depletion estimates were made at the remaining sites. Table 10 and Appendix A contain a summary of results from each section.

At RM 1.8, brown trout dominated the trout community similar to what was observed at prior sampling events in 2007, 2008, and 2011 (Lindstrom et al. 2008, Liermann et al. 2009, Lindstrom 2013). While rainbow trout were also observed, the species was very rare. The population estimate for brown trout ($\geq$ 175 mm) was 940 per mile (95% confidence interval: +/- 62). This estimate was higher than what what was observed in 2011, but was within the range of variability for the period of record (Figure 3). There were not enough rainbow trout captured at RM 1.8 in 2013 to calculate a population estimate.

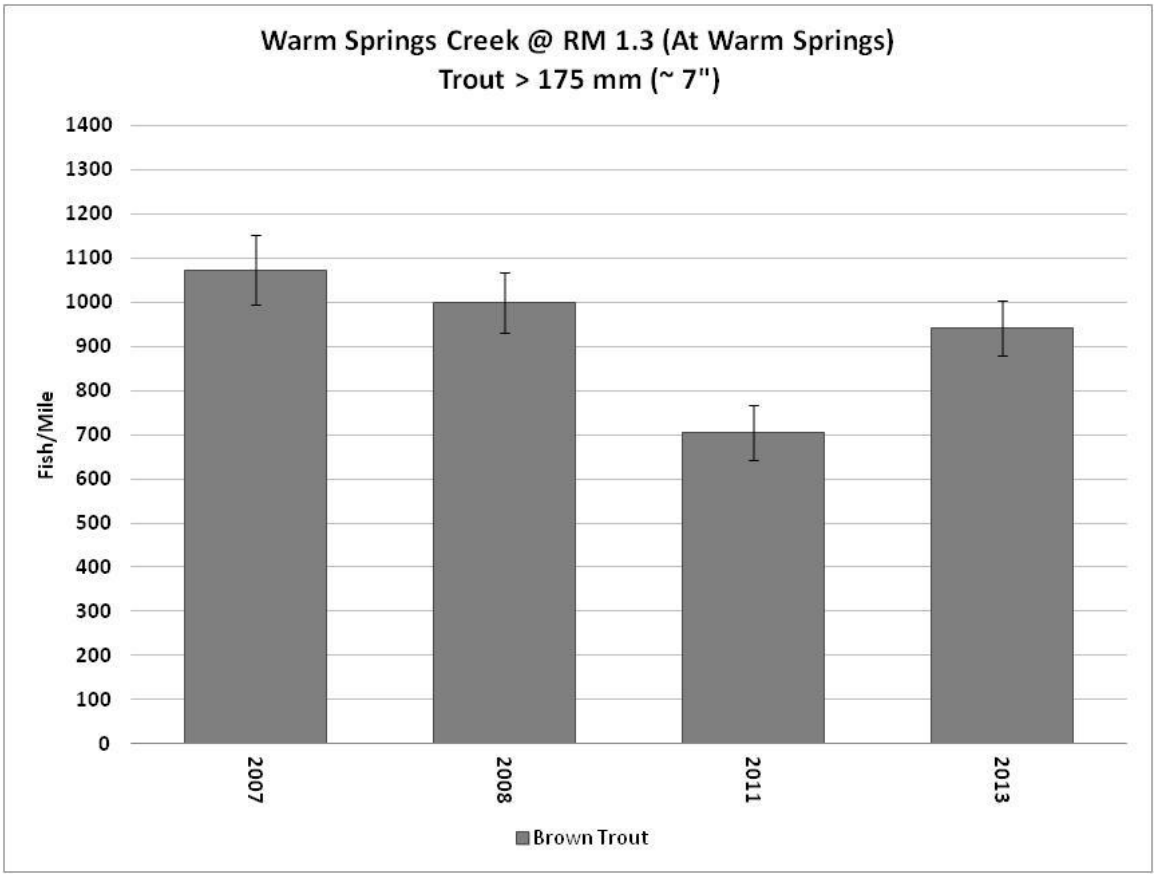


Figure3. Trout population estimates by species for fish 175 mm and larger for Warm Springs Creek at RM 1.8 for the period of record. If no bars are present for a species in a given year, either no fish of that species were captured, or there were not enough captured to obtain a population estimate.

At RM 16.4, brown trout continued to be the most numerous trout present. The species represented roughly 80% of the trout community. Westslope cutthroat trout, rainbow trout and their hybrids were also present, as were bull trout, brook trout and their hybrids. All of these species occurred in relatively low numbers. The population estimate for brown trout (≥ 175 mm) was 965 per mile (95% confidence interval: +/- 154). A combined population estimate for Oncorhynchus sp. (westslope cutthroat trout, rainbow trout, and their hybrids) was 145 per mile (95% confidence interval: +/- 73). Oncorhynchus species were combined because the population is considered a hybrid swarm. There were not enough bull trout or brook trout captured at RM 16.4 to calculate a quality population estimate for either species. The site at RM 16.4 was first sampled with a single-pass survey in 2007 (Lindstrom et al. 2008). Results of that survey were very similar to what was observed in 2013. The one notable difference was the presence of bull trout in the 2013 sample. It should also be noted that bull trout were observed spawning in this section of Warm Springs Creek in 2013.

Table 10. Electrofishing data collected at six sections on Warm Springs Creek in 2013. Data presented is from the first electrofishing pass or the marking run.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.8	RB	2	<1	91	83-99	<1
	LL	404	45	215	67-446	≥99
RM 16.4	WCT	16	2	274	142-334	5
	RBxWCT	7	1	246	137-339	2
	RB	19	2	207	120-390	6
	LL	258	26	259	75-407	81
	BULL	9	1	283	197-391	3
	EBxBULL	1	<1	337	na	<1
	EB	10	1	167	130-239	3
RM 23.3	WCT	15	15	129	70-340	50
	RBxWCT	4	4	164	95-205	13
	BULL	3	3	195	131-247	10
	EBxBULL	6	6	168	142-223	20
	EB	2	2	247	155-339	7
RM 23.8	WCT	16	16	205	93-398	62
	BULL	5	5	164	125-195	19
	EBxBULL	4	4	349	250-434	15
	EB	1	1	201	na	4
RM 27.4	WCT	8	8	157	46-290	38
	BULL	8	8	194	100-253	38
	EB	5	5	119	85-170	24
RM 29.1	WCT	6	6	190	174-234	100

At RM 23.3, two electrofishing passes were made through the 100 m section to obtain population estimates for trout species present. At this site, species composition was noticeably different than at the lower sample reaches. At this site, brown trout were absent and Oncorhynchus species consisting primarily of westslope cutthroat trout and a few hybrids became the most numerous trout in the reach. Bull trout, brook trout and their hybrids were also present in the section, but in lower densities. The population estimate for westslope cutthroat trout (≥ 75 mm) was 17 per 100 m (95% confidence interval: +/- 1.7). For hybrid cutthroat trout it was 4 per 100 m (95% confidence interval: +/- 0), for bull trout it was 3 per 100 m (95% confidence interval: +/- 0), for brook trout it was 2 per 100 m (95% confidence interval: +/- 0), and for bull trout/brook trout hybrids it was 6 per 100 m (95% confidence interval: +/- 0). This section was first sampled in 2007 with a single pass survey (Lindstrom et al. 2008). The results of that survey were

relatively similar to what was observed in 2013. The one notable difference was the presence of bull trout in the 2013 sample.

The reach at RM 23.8 was sampled to see how it compared to the one at RM 23.3. At RM 23.3, the stream is relatively high gradient and habitat is dominated by riffles and pocket water. In contrast, the stream at RM 23.8 is lower gradient, and more meandering in nature. Despite the habitat differences, overall species composition and abundance was similar among the two sites. Sampling effort consisted of two electrofishing passes through the 100 m section. Westslope cutthroat trout were again the most common species in the reach. Bull trout, brook trout and their hybrids were also present, but in relatively low numbers. The population estimate for westslope cutthroat trout ($\geq$ 75 mm) was 22 per 100 m (95% confidence interval: +/- 4.0). For bull trout it was 6 per 100 m (95% confidence interval: +/- 0.9), for brook trout it was 2 per 100 m (95% confidence interval: +/- 2), and for bull trout/brook trout hybrids it was 4 per 100 m (95% confidence interval: +/- 0).

At RM 27.4, sampling effort consisted of two electrofishing passes through the 100 m section. Bull trout, westslope cutthroat trout and brook trout were all present in similar densities. However, none were very abundant. The estimate for bull trout ($\geq$ 75 mm) was 8 per 100 m (95% confidence interval: +/- 0). For westslope cutthroat trout it was 11 per 100 m (95% confidence interval: +/- 4.6), and for brook trout it was 5 per 100 m (95% confidence interval: +/- 0). This section of Warm Springs Creek was first sampled in 2007 with a one-pass survey, and then again in 2010 with a depletion survey (Lindstrom et al. 2008, Lindstrom 2013). Findings from the 2013 survey were relatively similar to what was observed in the prior sample years.

At RM 29.1, two electrofishing passes were made through the 100 m section. The entire fish community was comprised of westslope cutthroat trout. Fish density was rather low, however. The estimate for fish 75 mm and longer was 7 per 100 m (95% confidence interval: +/- 0.8). While fish densities have typically been relatively low in this sample reach, previous surveys had always observed bull trout in the section (Lindstrom et al. 2008, Lindstrom 2013). It is unknown why the species was apparently absent in 2013.

West Fork Warm Springs Creek

One fish survey was completed on West Fork Warm Springs Creek at RM 1.0 in mid-July of 2013. The sampling effort consisted of three electrofishing passes through the 100 m section. Westslope cutthroat trout and bull trout comprised the entire trout community, although bull trout were fairly uncommon. Table 11 and Appendix A contain summaries of data collected at the site. The estimate for bull trout ($\geq$ 75 mm) was 3 per 100 m (95% confidence interval: +/- 1.4), and for westslope cutthroat trout it was 23 per 100 m (95% confidence interval: +/- 1.4). This reach was first sampled with a single-pass survey in 2007 (Lindstrom et al. 2008), and then again in 2010 with a depletion survey. In 2007, bull trout appeared to be more common than cutthroat trout whereas in 2010, the opposite was true. When compared to first pass data from 2007, about half as many bull trout were

captured in 2010, while cutthroat numbers were very similar. When average size of bull trout captured were compared between the sample periods it suggests that recruitment may not be very consistent or good in West Fork Warm Springs Creek. In 2007 most of the bull trout captured were relatively young juveniles. However, in 2010, few of these size fish were captured. Instead, almost all of the fish were approximately 150 mm or greater in size. The average size of the all of the bull trout captured in 2013 was 160 mm. It is possible that we have been monitoring one main year class of bull trout since 2007, and as of 2013 most had either migrated out of the section to seek better habitat, or had perished.

Table 11. Electrofishing data collected at one section on West Fork Warm Springs Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.0	WCT	27	27	97	50-177	93
	BULL	2	2	175	164-186	7

Middle Fork Warm Springs Creek

One fish survey was completed on Middle Fork Warm Springs Creek in Mid-July of 2013. The site was located at RM 0.1 below the main Forest Service road crossing. Westslope cutthroat trout comprised the entire trout community at this site. Table 12 and Appendix A contain summaries of data collected in the survey section. The estimate for fish 75 mm and longer was 25 per 100 m (95% confidence interval: +/- 5.8). In 2007, a different location was sampled in Middle Fork Warm Springs Creek just upstream of the 2013 site. The location sampled was at RM 0.4 (Lindstrom et al. 2008). While results were somewhat similar, CPUE at the 2007 site showed approximately three times the number of cutthroat trout present than in the 2014 section. This may have been related to habitat differences between the two sites. The 2007 site had a lower gradient and more quality habitat than the 2013 site.

Table 12. Electrofishing data collected at one section on Middle Fork Warm Springs Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.1	WCT	19	19	120	45-175	100

Ice House Gulch

Fish surveys were completed at three locations on Ice House Gulch in early June of 2014. The sites were located at RM 1.0, 1.4, and 1.7. A small reservoir was situated near RM 1.2. This reservoir appeared to be located in the Gray's Gulch drainage, although all the

water flowing into it was from Ice House Gulch. Gray's gulch did not appear to have a defined channel above the reservoir. A stream-like ditch flowing out of the reservoir was also sampled downstream of the dike. All samples consisted of single-pass electrofishing surveys. Brook trout were found at all of the sample locations, and were the only fish species observed. Table 13 and Appendix A contain summaries of data collected at the sites.

At RM 1.0, flow was extremely limited, and the dense riparian community along the channel made accessing the stream difficult in many places. Flow in the ditch coming out of the reservoir near this site was quite good, and the channel offered some moderate quality fish habitat.

Upstream of the reservoir at RM 1.4, the channel had good flow, but appeared to have been historically channelized and straightened. Near this location, the channel was also found to be completely diverted into the reservoir. Flow in Ice House Gulch downstream of the reservoir appeared to be coming only from groundwater recharge.

A small pond with a perched culvert at the outlet was noted just below the sample site at RM 1.7. Stream habitat above this pond was rather limited.

Table 13. Electrofishing data collected on Ice House Gulch in 2014.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.0	EB	24	na	89	65-128	100
RM 1.4	EB	27	27	95	23-135	100
RM 1.7	EB	8	na	86	73-114	100
RM 1.1 DITCH	EB	37	37	112	33-166	100

Barker Creek

Fish surveys were completed at three locations on Barker Creek in late July and early August of 2013. The sites were located at RM 0.5, 1.6, and 2.9. All of the sites were previously sampled in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013). Table 14 and Appendix A contain summaries of data collected at each of the sites in 2013. Bull trout and westslope cutthroat trout were the only species observed at all of the sections, with bull trout tending to be slightly-to-notably more common depending on location.

At RM 0.5, sampling consisted of a one-pass survey similar to previous years. This section traditionally has a lot of flow and complex habitat making a depletion estimate

difficult with a small crew. Results from the 2013 survey were similar to those from previous years.

At RM 1.6, three electrofishing passes were made through the 100 m section to obtain population estimates for trout present in the reach. The estimate for bull trout (≥ 75 mm) was 34 per 100 m (95% confidence interval: +/- 1.9), and for westslope cutthroat trout (≥ 75 mm) it was 1 per 100 m (95% confidence interval: +/- 0). These findings were very similar to what was observed in previous years.

At RM 2.9, two electrofishing passes were made though the 100 m section. The estimate for bull trout (≥ 75 mm) was 17 per 100 m (95% confidence interval: +/- 4.0), and for westslope cutthroat trout it was 8 per 100 m (95% confidence interval: +/- 1.7). These numbers were relatively similar to previous sample years.

Table 14. Electrofishing data collected at three sections on Barker Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.5	WCT	8	8	93	65-182	40
	BULL	12	12	173	42-286	60
RM 1.6	WCT	4	4	82	59-124	15
	BULL	23	23	158	85-266	85
RM 2.9	WCT	10	10	87	50-123	45
	BULL	12	12	193	76-265	55

Nelson Gulch

One fish survey was completed on Nelson Gulch in late July of 2013. The site was located just upstream of the confluence with Barker Creek at RM 0.1. Two electrofishing passes were made through the 100 m sample section to obtain population estimates for trout present in the reach. Bull trout and westslope cutthroat trout were the only species captured at this location. The estimate for bull trout (≥ 75 mm) was 8 per 100 m (95% confidence interval: +/- 1.7), and for westslope cutthroat trout it was 2 per 100 m (95% confidence interval: +/- 0). Table 15 and Appendix A contain summaries of data collected at the site.

Table 15. Electrofishing data collected at one section on Nelson Gulch in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.1	WCT	2	2	123	115-130	25
	BULL	6	6	166	142-263	75

Foster Creek

Fish surveys were completed at three locations on Foster Creek in late July of 2013. The sites were located at RM 1.1, 2.3, and 3.9. Two electrofishing passes were made through each of the 100 m sections to obtain population estimates for trout species present. All of the sites were previously sampled in 2007 (Lindstrom et al. 2008) with one-pass surveys. Table 16 and Appendix A contain summaries of data collected at the three sample locations in 2013.

At RM 1.1, westslope cutthroat trout dominated the trout community, with bull trout and bull trout-brook trout hybrids also present, but less common. Additionally a single phenotypic westslope cutthroat trout/rainbow trout hybrid was also observed in the reach. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 53 per 100 m (95% confidence interval: +/- 7.8), for bull trout it was 6 per 100 m (95% confidence interval: +/- 0), and for bull trout-brook trout hybrids it was 4 per 100 m (95% confidence interval: +/- 0). When compared to the 2007 one-pass survey, the 2013 results appear to show a noticeable decrease in brook trout abundance. In 2007 the species was somewhat common in the reach with 18 individuals observed; whereas in 2013 none were captured. Additionally, the 2013 survey found several bull trout present at RM 1.1, where the species was not observed in 2007 (only a single hybrid was captured). Westslope cutthroat trout density appeared similar between the two sample years (Lindstrom et al. 2008).

At RM 2.3, westslope cutthroat trout continued to be the most abundant trout species in Foster Creek. Brook trout were also somewhat common, and a single bull trout was observed in the reach as well. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 46 per 100 m (95% confidence interval: +/- 5.0), and for brook trout it was 13 per 100 m (95% confidence interval: +/- 1.2). The results of the 2013 survey were nearly identical to what was found in 2007 (Lindstrom et al. 2008).

At RM 3.9, westslope cutthroat trout were the only species observed in the sample reach. The estimate for fish 75 mm and longer was 44 per 100 m (95% confidence interval: +/- 1.6). The only notable difference between the 2013 survey and the one in 2007 was that two brook trout were captured in the 2007 survey. It appears the species persists at low densities in this reach of Foster Creek, so it not surprising that none were captured during the 2013 survey.

Table 16. Electrofishing data collected at three sections on Foster Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.1	WCT	38	38	130	68-292	78
	RBxWCT	1	1	141	na	2
	BULL	6	6	154	110-197	12
	EBxBULL	4	4	184	163-220	8
RM 2.3	WCT	40	40	90	62-182	71
	BULL	1	1	131	na	2
	EB	15	15	112	50-160	27
RM 3.9	WCT	51	51	113	53-214	100

Twin Lakes Creek

Fish surveys were completed at five locations on Twin Lakes Creek in early to mid August of 2013. The sites were located at RM 1.4, 2.8, 4.7, 7.2, and 8.5. All but the site at RM 8.5 were previously sampled in 2007 with one-pass surveys (Lindstrom et al. 2008). Additionally, depletion estimates were also made at RM 2.8 and 4.7 in 2010 (Lindstrom 2013). Table 17 and Appendix A contain summaries of data collected on Twin Lakes Creek in 2013.

At RM 1.4, two electrofishing passes were made through the 100 m section in an effort to obtain population estimates for trout present in the reach. This section is located approximately one mile below the Silver Lake diversion dam, which is presumed to be an upstream barrier to fish movement in the drainage. The trout community at this site in 2013 was comprised mostly of westslope cutthroat trout, with bull trout and brook trout also present, but in far fewer numbers. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 62 per 100 m (95% confidence interval: +/- 5.6), and for brook trout it was 4 per 100 m (95% confidence interval: +/- 0). No estimate was made for bull trout given the low numbers and poor removal pattern (a total of three bull trout were captured). Compared to one-pass results from 2007, it appeared that cutthroat trout density was notably higher at RM 1.4 in 2013 (Lindstrom et al. 2008). The CPUE in 2013 was approximately 5 times that of what was observed in 2007. There is no clear reason for this apparent change. Brook trout and bull trout densities were similarly low during both sample years.

At RM 2.8, two electrofishing passes were made through the 100 m section. Westslope cutthroat trout and brook trout were present in relatively similar numbers. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 26 per 100 m (95% confidence interval: +/- 1.8), and for brook trout it was 36 per 100 m (95% confidence interval: +/- 3.2). These

results were comparable to those of earlier sample periods in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013).

At RM 4.7, three electrofishing passes were made through the 100 m section. The trout community was comprised of relatively low numbers of westslope cutthroat trout and brook trout. The results were very similar to what was observed in the section in 2007 as well as 2010 (Lindstrom et al. 2008, Lindstrom 2013). In 2013, the estimate for westslope cutthroat trout (≥ 75 mm) was 21 per 100 m (95% confidence interval: +/- 5.6), and for brook trout it was 11 per 100 m (95% confidence interval: +/- 4.8).

At RM 7.2, a single electrofishing pass was made through the 100 m section. The site is located just downstream of the outlet of Lower Twin Lake. The trout community was similar to what was observed at RM 4.7 and was comprised of low densities of westslope cutthroat trout and brook trout. No population estimates were made since only a single pass was made through the section. Results of the survey were similar to what was observed in 2007 when the section was first sampled (Lindstrom et al. 2008).

At RM 8.5, three electrofishing passes were made through the 100 m section. This was a new sample site established upstream of the inlet of Upper Twin Lake. This is a known bull trout spawning area for fish inhabiting Twin Lakes. Fall redd counts are performed in this area on an annual basis. The trout community at this location was comprised of bull trout and westslope cutthroat trout. Both species were present in roughly equal densities. The estimate for westslope cutthroat trout (≥ 75 mm) was 22 per 100 m (95% confidence interval: +/- 3.8), and for bull trout it was 29 per 100 m (95% confidence interval: +/- 5.0). One large bull trout, which was likely an adfluvial adult from Upper Twin Lake, was captured in the reach. This fish appeared to be staging to spawn.

Table 17. Electrofishing data collected at five sections on Twin Lakes Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.4	WCT	52	52	138	63-261	91
	BULL	1	1	92	na	2
	EB	4	4	154	85-267	7
RM 2.8	WCT	27	27	122	58-218	47
	EB	31	31	112	48-209	53
RM 4.7	WCT	12	12	111	61-201	71
	EB	5	5	148	126-187	29
RM 7.2	WCT	5	5	109	39-146	63
	EB	3	3	173	115-221	37
RM 8.5	WCT	14	14	149	55-324	42
	BULL	19	19	148	67-475	58

Cable Creek

Fish surveys were completed at two locations on Cable Creek in mid July of 2013. The sites were located at RM 0.8 and 2.2. Sampling consisted of a single electrofishing pass through each of the sections. A similar effort was completed in 2007 when each of the sites was first surveyed (Lindstrom et al. 2008). Table 18 and Appendix A contain summaries of data collected in 2013. At RM 0.8, the trout community was comprised of low numbers of rainbow trout, brook trout, and bull trout. Compared to CPUE from the 2007 survey, rainbow trout numbers were only 1/5 of what they had been, and brook trout numbers were about half. Additionally, while no bull trout were observed in the 2007 survey, three were captured in 2013. At RM 2.2, brook trout comprised the entire fish community, and fish density was very high. These findings were virtually the same as what was observed at this location in 2007.

Table 18. Electrofishing data collected at two sections on Cable Creek in 2013.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.8	RB	9	9	166	82-270	41
	BULL	3	3	249	231-260	14
	EB	10	10	198	59-271	45
RM 2.2	EB	143	143	139	50-267	100

Storm Lake Creek

Fish surveys were completed at several locations on Storm Lake Creek in early-to-mid July of 2013. The sites were located at RM 0.6, 1.4, 3.0, 4.2, and 6.3. All of the sites were previously sampled in 2007 (Lindstrom et al. 2008), and 2010 (Lindstrom 2013). In addition to the regular sampling sections, an additional site was also surveyed at RM 6.4. Table 19 and Appendix A contain summaries of data collected on Storm Lake Creek in 2013.

At RM 0.6, two electrofishing passes were made through the 100 m section to obtain population estimates for trout species present in the reach. This survey site was situated in a channelized/ditched portion of the stream where habitat was relatively shallow and simple. Westslope cutthroat trout were the most numerous species in the section, with bull trout and brook trout also present in lower numbers. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 19 per 100 m (95% confidence interval: +/- 1.5), for bull trout it was 9 per 100 m (95% confidence interval: +/- 0.7), and for brook trout it was 8 per 100 m (95% confidence interval: +/- 0). The most notable difference between the 2013 survey and earlier sample periods was the presence of bull trout in the section. This species had not been documented in this reach in either the 2007 or the 2010 survey (Lindstrom et al. 2008, Lindstrom 2013).

At RM 1.4, two electrofishing passes were made through the 100 m section. Westslope cutthroat trout and brook trout were the only trout species captured in the reach. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 20 per 100 m (95% confidence interval: +/- 1.5), and for brook trout it was 21 per 100 m (95% confidence interval: +/- 4.1). These results were relatively similar to prior sampling events in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013).

At RM 3.0, two electrofishing passes were made through the 100 m section. Westslope cutthroat trout were the most common species in the reach, with bull trout and brook trout also present, but in lesser numbers. A single phenotypic westslope cutthroat trout/rainbow trout hybrid was also observed in the section. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 18 per 100 m (95% confidence interval: +/- 0.5), for bull trout it was 5 per 100 m (95% confidence interval: +/- 1.0), and for brook trout it was 6 per 100 m (95% confidence interval: +/- 0.9). These results were relatively similar to prior sampling events in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013), although bull trout appeared to be a little more common in 2013 than in previous years.

At RM 4.2, two electrofishing passes were made through the 100 m section. Westslope cutthroat trout were the most common species in the reach, with bull trout and brook trout also present, but rare. A single phenotypic bull trout/brook trout hybrid was also observed in the section. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 35 per 100 m (95% confidence interval: +/- 2.8). No population estimates were generated for bull trout or brook trout due to the low number present. When compared to earlier sampling events in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013), the 2013 survey results were very similar.

At RM 6.3, only a single electrofishing pass was made through the 100 meter sample section. Westslope cutthroat trout were the most abundant species present, with bull trout also somewhat common. Additionally, a single westslope cutthroat trout/rainbow trout hybrid was also collected during the sample event. No population estimates were made for trout species present in the reach since multiple electrofishing passes were not made. The CPUE of the 2013 sample was relatively similar to that from previous sample years in 2007 and 2010 (Lindstrom et al. 2008, Lindstrom 2013).

The site at RM 6.4 was located not far upstream from the site at RM 6.3. However, in the short channel distance between the two survey sections, stream habitat changed considerably. The section at RM 6.4 was within a lower gradient reach that contained more abundant pool habitat. This segment of the stream had an increased meander pattern, and bed sediment was much finer grained than what was found at the higher gradient reach at RM 6.3. Three electrofishing passes were made through the new section at RM 6.4. Westslope cutthroat trout were the most abundant species in the reach, with bull trout, rainbow trout, and westslope cutthroat trout/rainbow trout hybrids also observed, but much less common. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 17 per 100 m (95% confidence interval: +/- 1.3), and for bull trout it was 3 per 100 m (95% confidence interval: +/- 0). No population estimates were generated for rainbow trout or westslope cutthroat trout/rainbow trout hybrids due to the low number present.

Table 19. Electrofishing data collected at six sections on Storm Lake Creek in 2013. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.6	WCT	19	19	141	62-240	54
	BULL	8	8	125	81-157	23
	EB	8	8	111	76-148	23
RM 1.4	WCT	21	21	123	50-258	57
	EB	16	16	137	68-220	43
RM 3.0	WCT	18	18	128	59-196	51
	RBxWCT	1	1	170	na	3
	BULL	9	9	103	70-198	26
	EB	7	7	105	70-165	20
RM 4.2	WCT	30	30	125	72-187	88
	BULL	1	1	144	na	3
	EBxBULL	1	1	295	na	3
	EB	2	2	152	122-182	6
RM 6.3	WCT	21	21	128	75-310	64
	RBxWCT	1	1	125	na	3
	BULL	11	11	119	75-141	33
RM 6.4	WCT	12	12	129	63-182	75
	RB	1	1	115	na	6
	BULL	3	3	107	98-121	19

Willow Creek Drainage

Willow Creek

Fish surveys were completed at two locations on Willow Creek in mid July of 2014. The sites were located at RM 5.1 and 8.4. Each of these sites was originally sampled in 2008 with a one-pass electrofishing survey (Liermann et al. 2009). Table 20 and Appendix A contain summaries of data collected in 2014.

At RM 5.1, two electrofishing passes were made through the 100 m section to obtain population estimates for trout species present in the reach. Brook trout comprised much of the trout community, with brown trout also present, but rare. Longnose suckers and sculpin were also observed during the survey. The estimate for brook trout ($\geq$ 75 mm) was 25 per 100 m (95% confidence interval: +/- 0.4). No estimate was generated for brown trout due to the rarity of the species in the section. No population estimates were made during the 2008 survey; however, a comparison of CPUE data between the two sample periods showed considerable similarities (Liermann et al. 2009). The main difference was the apparent absence of westslope cutthroat trout in the 2014 sample. This species was observed in low densities at RM 5.1 during the 2008 survey.

At RM 8.4, three electrofishing passes were made through the 100 m section. Westslope cutthroat trout were the most abundant species present, with brook trout also relatively common in the reach. Electrofishing conditions in most of the pools proved challenging due to the complexity of the habitat. This made for a marginal removal pattern among electrofishing passes. The estimate generated for westslope cutthroat trout ($\geq$ 75 mm) was 69 per 100 m (95% confidence interval: +/- 19), and for brook trout it was 24 per 100 m (95% confidence interval: +/- 5.7). No population estimates were made during the 2008 survey, but a comparison of CPUE data between the two sample periods showed nearly identical results (Liermann et al. 2009).

Table 20. Electrofishing data collected at two sections on Willow Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 5.1	LL	2	2	93	85-100	5
	EB	38	38	106	51-205	95
RM 8.4	WCT	35	35	136	55-222	70
	EB	15	15	112	47-175	30

German Gulch Drainage

German Gulch

Fish surveys were completed at two locations on German Gulch in mid August of 2014. The sites were located at RM 2.6 and 6.0. A single electrofishing pass was made through each of the 100 m sections. The primary purpose of the sampling was to obtain whole fish samples for selenium analysis (related to Beal Mountain Mine monitoring) with the secondary purpose of obtaining basic population information. The selenium analysis data are summarized in a report by Selch 2015. The site at RM 2.6 was slightly downstream of the regular monitoring section located near RM 3.0, but was at the site where past selenium samples were collected. The site at RM 6.0 was a previously established population monitoring section that was sampled in 2008 and 2012 (Liermann et al. 2009, Lindstrom 2013). Table 21 and Appendix A contain summaries of data collected on German Gulch in 2014.

At RM 2.6, westslope cutthroat trout were the most abundant species present, with brook trout also relatively common. Additionally, a single phenotypic westslope cutthroat trout/rainbow trout hybrid was observed in the section. The presence of rainbow trout or hybrids is a concern from a cutthroat trout genetic security standpoint in the German Gulch drainage and because of this, this fish was removed from the population.

At RM 6.0, westslope cutthroat trout were the only species observed, although fish density was relatively low. These results were nearly identical to what was observed during prior samples in 2008 and 2012 in this section (Liermann et al. 2009, Lindstrom 2013). The stream is relatively small in this segment of German Gulch, and habitat is limited.

Table 21. Electrofishing data collected at two sections on German Gulch in 2014.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 2.6	WCT	31	31	181	70-270	67
	RBxWCT	1	1	164	na	2
	EB	14	14	149	111-200	31
RM 6.0	WCT	13	13	158	118-216	100

Norton Creek

Electrofishing was completed throughout a rather extensive area of Norton Creek in both 2013 and 2014. The primary purpose for this sampling was to remove brook trout from the stream. This suppression effort was initiated in 2003 to benefit westslope cutthroat trout that were in jeopardy of extirpation from competition with brook trout. At that time,

brook trout comprised over 90% of the fish community in Norton Creek. The removal effort was completed annually from 2003 through 2009, and then again in 2011, 2013 (partial effort), and 2014. This ongoing suppression project has occurred within a 4.4 km reach stretching from approximately RM 0.5 to RM 3.0. Within this segment of the stream, 44 continuous 100 m sections have been delineated. Sampling since 2003 has consisted of single pass electrofishing through each sample section (when possible). This sampling has typically been conducted in early September. All fish collected were measured and either returned to the stream (westslope cutthroat trout) or humanely dispatched and removed (brook trout). Westslope cutthroat trout less than 75 mm in total length were not targeted in most of the surveys, although sometimes a count was made when crews observed them.

In 2013, only 16 of the 44 sections were sampled due to time and crew constraints. Sections surveyed included 1-14 and 24-25. In this partial effort, westslope cutthroat trout were the dominant species comprising 73% of the trout community for fish 75 mm and greater. A total of 644 brook trout were removed. Table 22 and Appendix A contain summaries of data collected in 2013.

Table 22. Electrofishing data collected on Norton Creek in 2013.

Section	Species	Total Number of Fish Captured	Number of Fish > 75mm Captured	Mean Length (mm) All Fish	Length Range (mm) All Fish	Species Composition for Fish > 75 mm (%)
1-14	WCT	810*	757	116	30-365	73
& 24-25	EB	644	274	91	32-245	27

**This value only includes fish actually captured and measured. It does not include WCT fry that were purposely not collected.*

In 2014 all 44 100 m sample sections were electrofished. Among all the reaches, westslope cutthroat trout were the dominant species comprising 63% of the trout community for fish 75 mm and greater. A total of 1,419 brook trout were removed. Table 23 and Appendix A contain summaries of data collected in 2014, and Figure 4 contains catch data for fish 75 mm and longer for the period of record. In addition to the brook trout removal work, a separate population survey was also conducted at RM 0.7 in Section 4 of Norton Creek in 2014 (prior to the removal work). The primary purpose of this sample was to obtain whole fish for selenium analysis (related to Beal Mountain Mine monitoring) with the secondary purpose of obtaining basic population information. The selenium analysis data are summarized in a report by Selch 2015. In the sample reach, westslope cutthroat trout and brook trout were present in similar numbers, with brook trout tending to be slightly more common. Fish density was relatively high overall. The estimate for westslope cutthroat trout 75 mm and longer was 77 per 100 m (95% confidence interval: +/- 5.0), and for brook trout it was 92 per 100 m (95% confidence interval: +/- 5.9).

Table 23. Electrofishing data collected on Norton Creek in 2014. Data presented is from the first electrofishing pass in sections where multiple passes were made (RM 0.7-Sect. 4).

Section	Species	Total Number of Fish Captured	Number of Fish > 75mm Captured	Mean Length (mm) All Fish	Length Range (mm) All Fish	Species Composition for Fish > 75 mm (%)
RM 0.7	WCT	58	51	124	32-202	46
Sect. 4	EB	68	59	115	55-193	54
1-44	WCT	2138*	1893	116	30-236	63
	EB	1419	1105	111	36-303	37

**This value only includes fish actually captured and measured. It does not include 570 WCT fry that were counted but purposely not collected. With the fry count the total number of WCT in sections 1-44 would be 2708. This changes the species composition to approximately 66% WCT and 34% EB.*

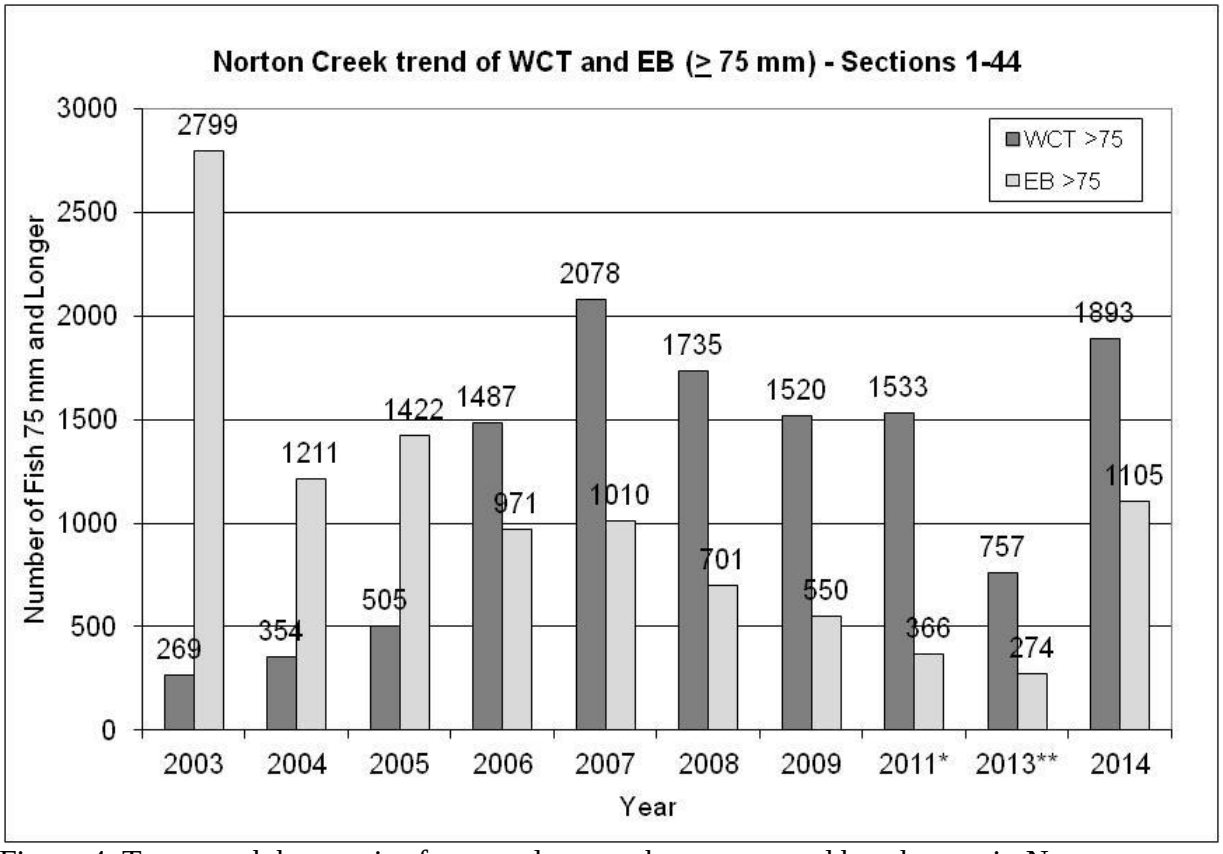


Figure 4. Trout catch by species for westslope cutthroat trout and brook trout in Norton Creek brook trout suppression reaches 1 through 44 for the period of record. (* Only includes sections 4-44. 1-3 were inundated by beaver ponds. ** Only includes sections 1-14 and 24 & 25.)

Beefstraight Creek

Fish surveys were completed at two locations on Beefstraight Creek in mid August and early October of 2014. The sites were located at RM 1.3 (sampled in August) and 4.5 (sampled in October). The site at RM 1.3 was sampled to obtain whole fish for selenium analysis (related to Beal Mountain Mine monitoring) with the secondary purpose of obtaining population information. The selenium analysis data are summarized in a report by Selch 2015. Both of the 2014 sample sites were previously established monitoring locations first surveyed in 2008 and again in 2012 (Liermann et al. 2009, Lindstrom 2013). Table 24 and Appendix A contain summaries of data collected on Beefstraight Creek in 2014.

At RM 1.3, three electrofishing passes were made through the 100 m section to obtain population estimates for trout species present in the reach. Westslope cutthroat trout comprised much of the trout community, with brook trout also present to a lesser extent. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 61 per 100 m (95% confidence interval: +/- 2.9), and for brook trout it was 18 per 100 m (95% confidence interval: +/- 1). The results of this survey were very similar to what was observed in 2008 and 2012 (Liermann et al. 2009, Lindstrom 2013).

At RM 4.5, three electrofishing passes were made through the 100 m section. Similar to RM 1.3, westslope cutthroat trout continued to be the most common species in the reach, with brook trout occurring in lower densities. The estimate for westslope cutthroat trout ($\geq$ 75 mm) was 54 per 100 m (95% confidence interval: +/- 4.3), and for brook trout it was 14 per 100 m (95% confidence interval: +/- 0.6). These results were very similar to what was observed at this reach in 2008 and 2012 (Liermann et al. 2009, Lindstrom 2013).

Table 24. Electrofishing data collected at two sections on Beefstraight Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 1.3	WCT	52	52	135	64-248	78
	EB	15	15	118	55-170	22
RM 4.5	WCT	36	36	119	64-194	75
	EB	12	12	152	93-215	25

Browns Gulch Drainage

Browns Gulch

Fish sampling was conducted at three sites on Browns Gulch in late May of 2014. The sites were located at RM 3.1, 4.3, and 4.6. All sample locations were situated immediately below irrigation diversions. The sample sections ranged from approximately 50 to 100 m in length. The intent was to determine if westslope cutthroat trout were present below the diversions, and whether they were possibly being blocked or delayed during their spring spawning migration. Currently it is unknown whether Browns Gulch has any migratory westslope cutthroat trout still utilizing the stream. Unfortunately during the limited 2014 spring sampling, no westslope cutthroat trout were collected or observed. Table 25 and Appendix A contain summaries of trout collected at the various sites.

Very few brook trout as well as several longnose suckers were the only fish captured during sampling events below the three diversions. At the time our sampling events occurred, it appeared that the diversion near RM 3.1 was passable to adult trout. However, the diversion at RM 4.3 appeared to be impassable. The diversion at RM 4.6 appeared to be passable by larger, adult fish.

Table 25. Electrofishing data collected below three irrigation diversions on lower Browns Gulch in 2014. Data presented is only for trout and is combined from all sample dates.

Diversion Location	Species	Number of Fish Captured	No. of Sampling Events	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 3.1	EB	2*	2	208	207-208	100
RM 4.3	EB	4	2	138	104-207	100
RM 4.6	EB	3	1	222	159-307	100

**Likely just one fish that was caught on both sampling events.*

Basin Creek Drainage

Basin Creek

Fish surveys were completed at three locations on upper Basin Creek in late September of 2014. The sites were located at RM 13.1, 14.0 and 14.5, and were situated near the headwaters of the drainage upstream of Basin Creek Reservoir. The sites at RM 14.0 and 14.5 were previously established locations (Lindstrom 2013), while the site at RM 13.1 was a new section. Sampling at these sites was conducted to monitor the success of a westslope cutthroat trout restoration project that occurred between 2005 and 2007, which

consisted of the movement of genetically pure fish from downstream of a natural barrier into unoccupied habitat located above it. The goal of the project was to expand the range of the species in upper Basin Creek thereby increasing the chance of long-term persistence.

As expected, westslope cutthroat trout were the only fish observed at all of the survey locations. Table 26 and Appendix A contain summaries of data collected on upper Basin Creek in 2014. Sampling at the upper two sites showed that westslope cutthroat trout were persisting as well as successfully reproducing in the relocation area. However, similar to previous sampling events, fish density tended to be fairly low. At RM 14.0, the estimate for fish 75 mm and larger was 16 per 100 m (95% confidence interval: +/- 1.0). At RM 14.5, it was 21 per 100 m (95% confidence interval: +/- 6.1). Fish density at the new section at RM 13.1 was similar to the upper sites. The estimate for fish 75 mm and larger at this site was 14 per 100 m (95% confidence interval: +/- 1.2).

Table 26. Electrofishing data collected at three sections on upper Basin Creek in 2014. Data presented is from the first electrofishing pass.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 13.1	WCT	12	12	112	68-169	100
RM 14.0	WCT	12	12	113	61-186	100
RM 14.5	WCT	10	10	102	82-120	100

Blacktail Creek Drainage

Blacktail Creek

Fish surveys were completed at five locations on Blacktail Creek in September and October, 2014. The sites were located at RM 0.4, 1.2, 9.7, 9.9, and 10.6. The sites at RM 0.4 and 1.2 were located on the Butte Country Club golf course. The remaining sites were situated above and below culvert crossings along Roosevelt Drive in the upper end of the drainage. Table 27 and Appendix A contain summaries of data collected on Blacktail Creek in 2014.

At RM 0.4 and 1.2, multiple electrofishing passes were made through each of the sections to obtain population estimates for trout species present. Section lengths differed between the two sites, with the site at RM 0.4 being 50 m in length, while the site at RM 1.2 was 100 m long. At both sites, brook trout were the only trout species observed. Densities were high. At RM 0.4 the estimate for fish 75 mm and larger was 98 per 100 m (95% confidence interval: +/- 8.6). At RM 1.2, it was 205 per 100 m (95% confidence interval: +/- 10.1).

Sampling at the three sites along Roosevelt Drive (RM 9.7, 9.9, and 10.6), was done to examine if there were marked differences in species composition and abundance associated with several likely culvert barriers. All of the sections were approximately 100 m in length. Westslope cutthroat trout and brook trout were present at all sites. Species composition and abundance was variable among the sites, but in general both species were found to be relatively common in the three sample sections. There was no evidence to indicate the likely culvert barriers along Roosevelt Drive were controlling the upstream extent of either species. However, this is not evidence to indicate the current culvert crossings are not partial or full barriers to upstream fish moment.

Table 27. Electrofishing data collected at five sections on Blacktail Creek in 2014. Data presented is from the first electrofishing pass where multiple passes were made.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.4	EB	33	66	147	87-243	100
RM 1.2	EB	129	129	133	72-352	100
RM 9.7	WCT	7	7	98	46-142	44
	EB	9	9	133	63-205	56
RM 9.9	WCT	9	9	111	50-184	50
	EB	9	9	129	102-172	50
RM 10.6	WCT	22	22	129	70-223	31
	EB	50	50	139	69-237	69

Yankee Doodle Creek Drainage

Yankee Doodle Creek

Fish surveys were completed at two locations on Yankee Doodle Creek in July of 2014. Table 28 and Appendix A contain summaries of data collected on the stream. The sites sampled were situated approximately 1 km below, and 0.25 km above Moulton Reservoir. At the lower site, a single electrofishing pass was made through the 100 m section. Brook trout were the only species observed. Multiple age classes were present, but overall density appeared relatively low in the sample reach.

At the site above the reservoir, a two pass depletion estimate was completed in the 100 m section. Westslope cutthroat trout were the only species observed in the reach. The estimate for fish 75 mm and longer was 17 per 100 m (95% confidence interval: +/- 4.0). Genetic samples were collected from 25 westslope cutthroat trout in Moulton Reservoir

that were captured with gillnets on July 28, 2015. Genetic testing of these fish was performed by the University of Montana Conservation Genetics Laboratory. Results showed that the fish were rather hybridized with Yellowstone cutthroat trout as well as rainbow trout.

Table 28. Electrofishing data collected at two sections on Yankee Doodle Creek in 2014. Data presented is from the first electrofishing pass where multiple passes were made.

Section Name	Species	Number of Fish Captured	Fish per 100 m (CPUE)	Mean Length (mm)	Length Range (mm)	Species Composition (%)
Below Reservoir	EB	13	13	159	37-232	100
Above Reservoir	WCT	23	23	83	26-160	100

LITERTURE CITED

Lindstrom, J. 2013. Upper Clark Fork River Basin Stream Fish Sampling 2010-2012. Montana Fish, Wildlife & Parks Report.

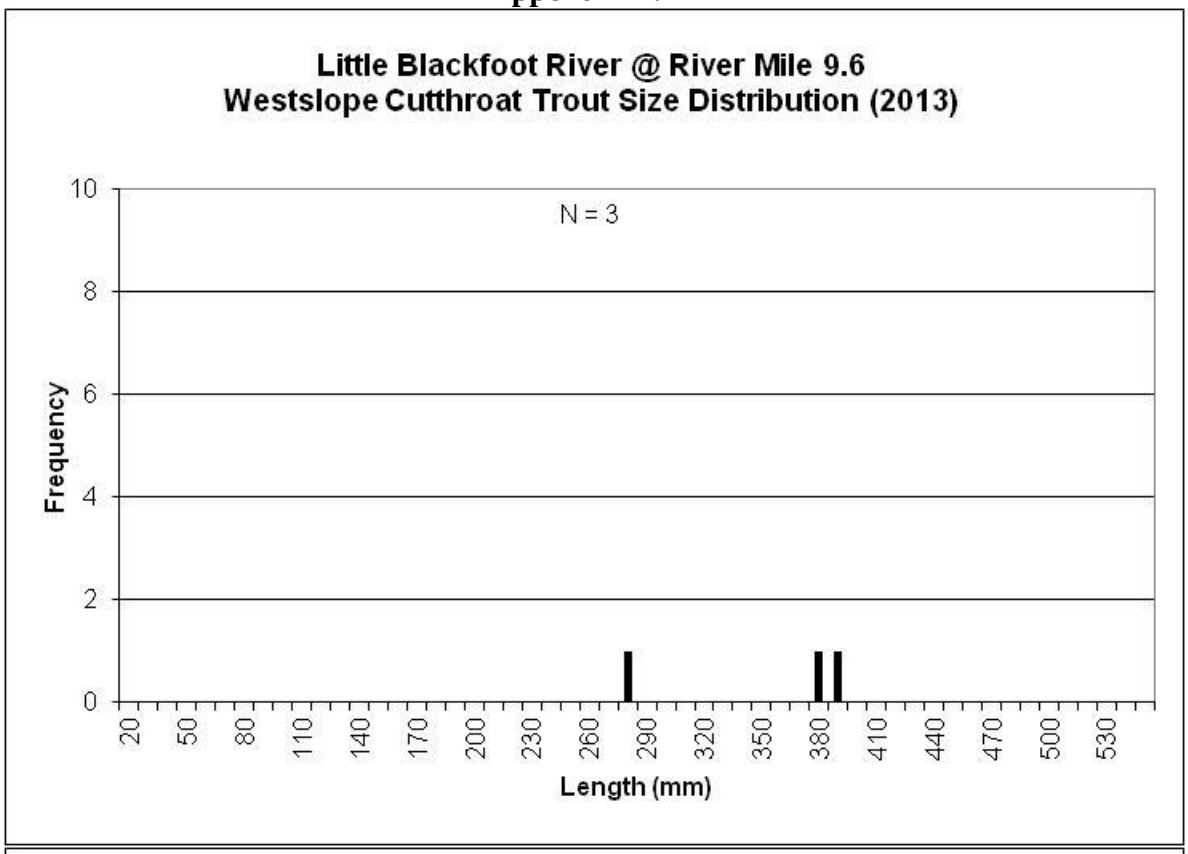
Lindstrom, J. 2011. An assessment of fish populations and riparian habitat in tributaries of the Upper Clark Fork River Basin: 2009 Report. Montana Fish, Wildlife & Parks Report.

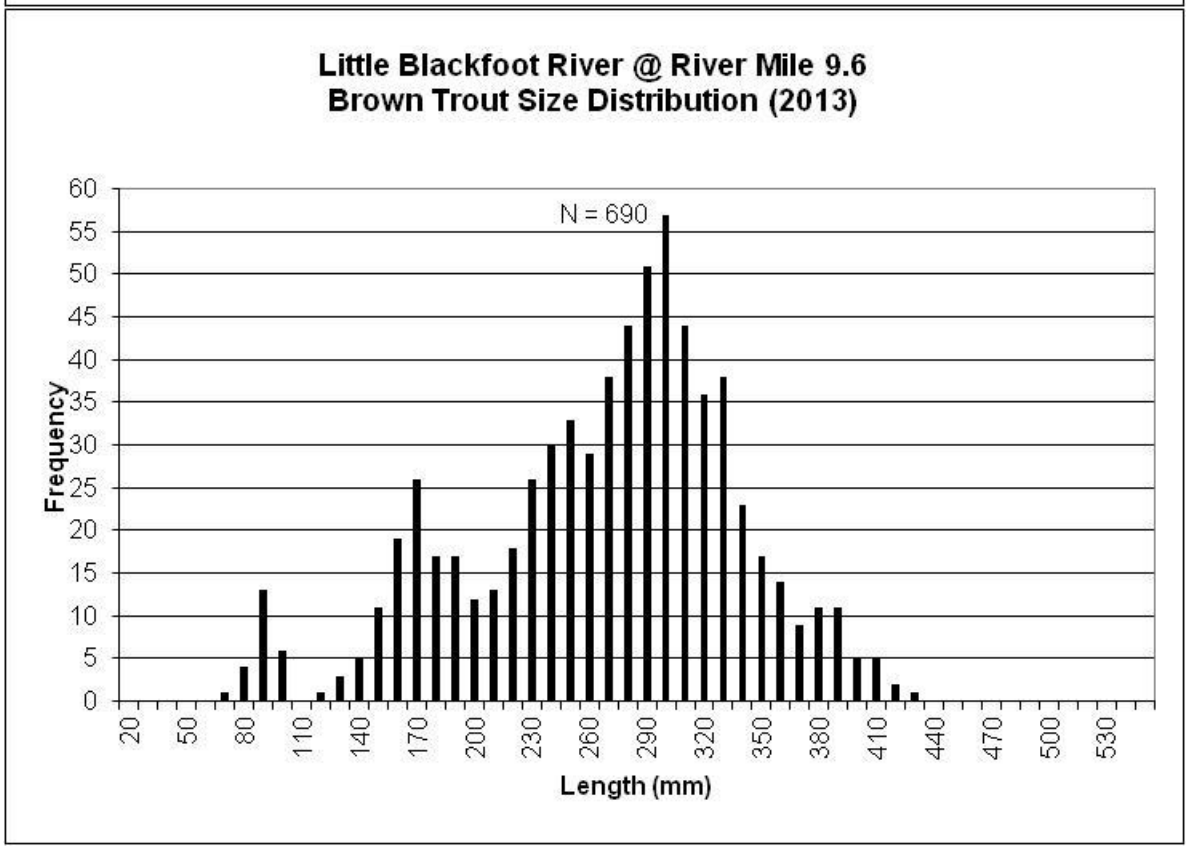
Liermann, B., J. Lindstrom and R. Kreiner. 2009. An assessment of fish populations and riparian habitat in tributaries of the Upper Clark Fork River Basin: Phase II. Montana Fish, Wildlife & Parks Report.

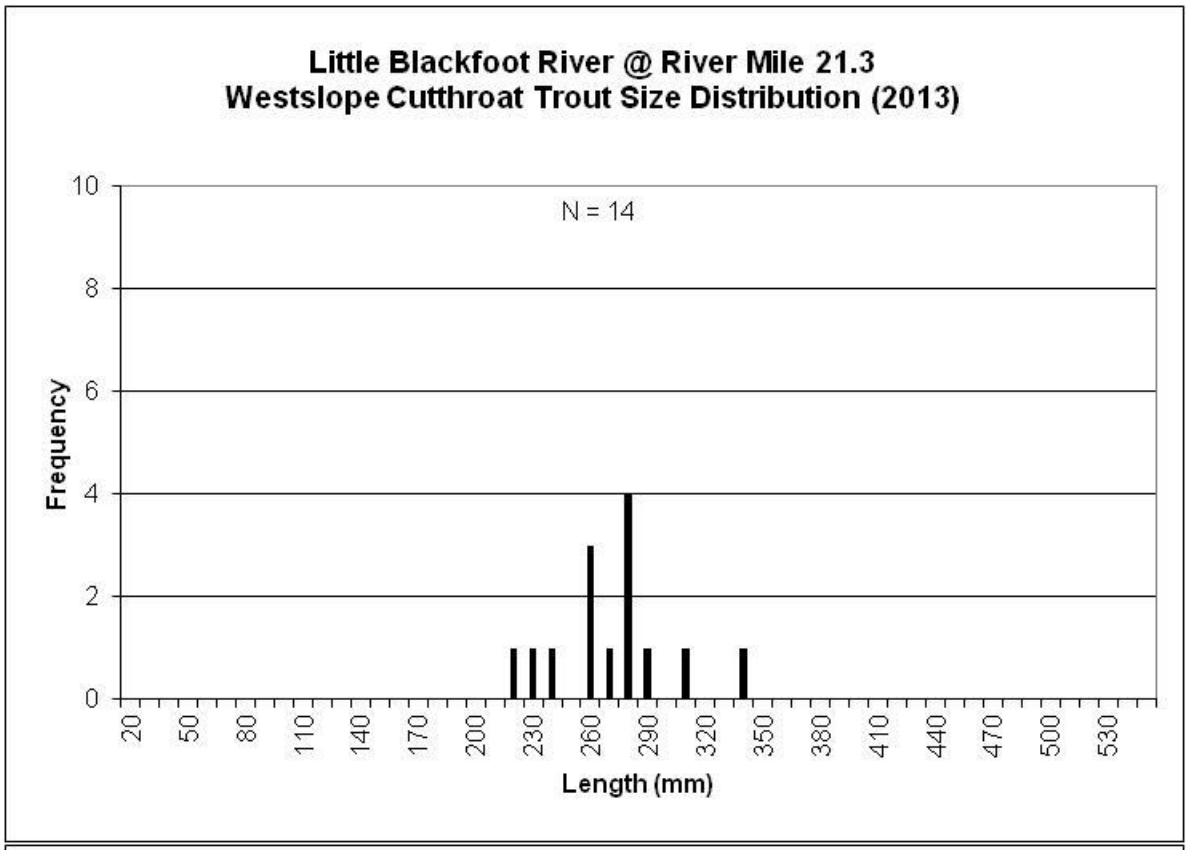
Lindstrom, J., B. Liermann, and R. Kreiner. 2008. An assessment of fish populations and riparian habitat in tributaries of the Upper Clark Fork River Basin. Montana Fish, Wildlife & Parks Report.

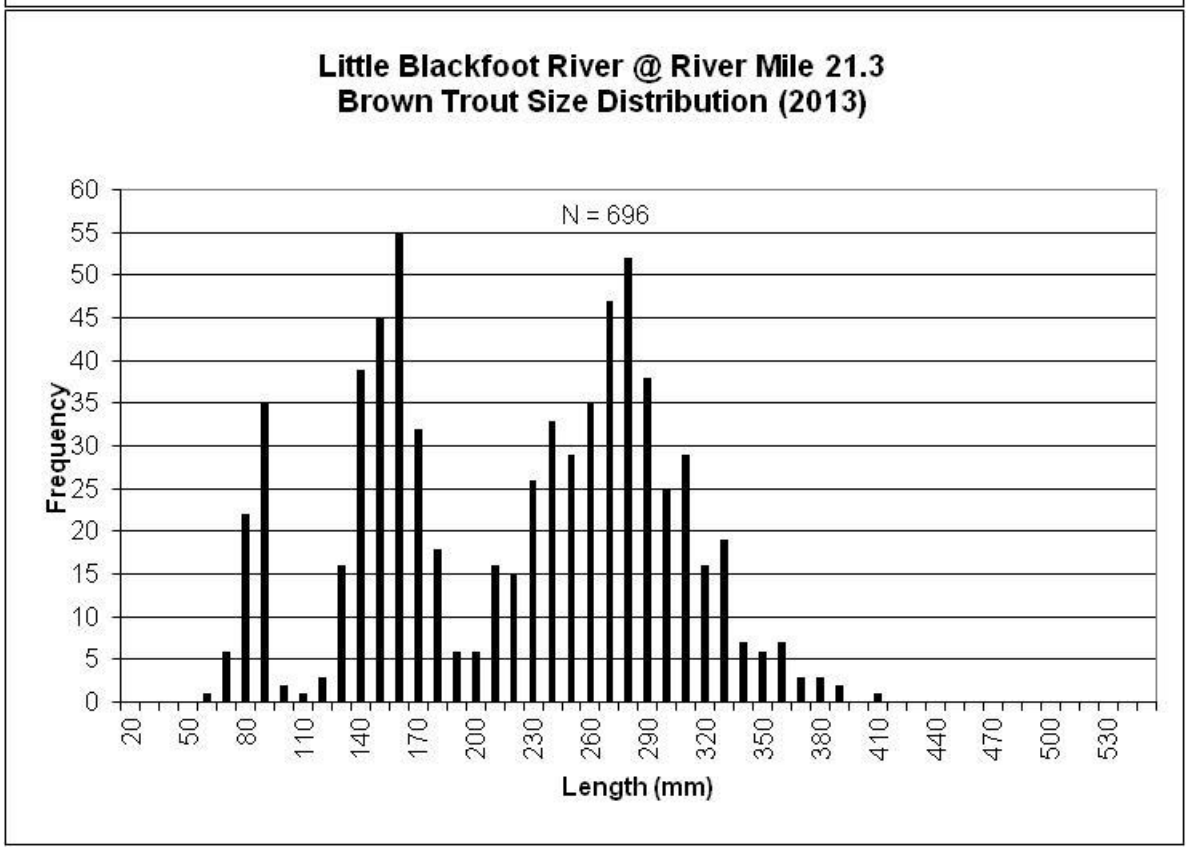
Selch, T. 2015. Selenium concentrations in fish and benthic macroinvertebrates in German Gulch 2015. Montana Fish, Wildlife & Parks Report.

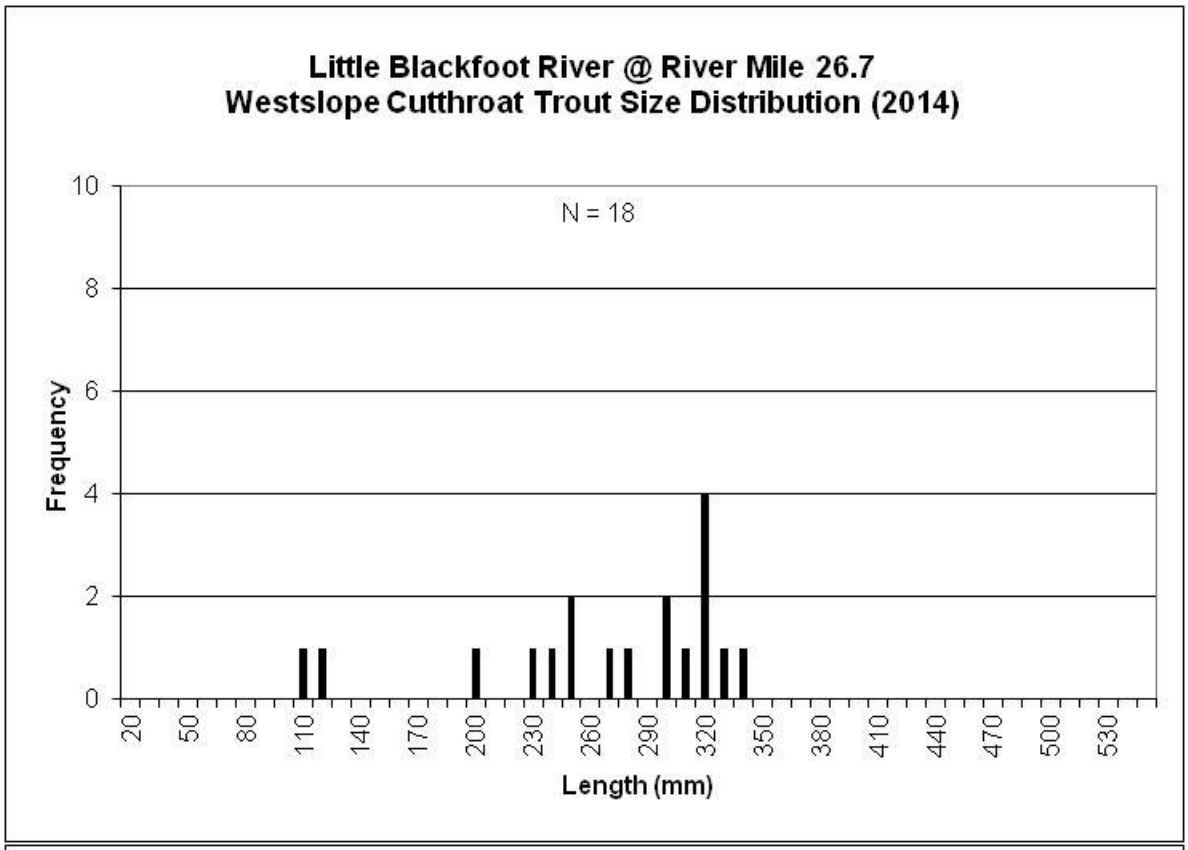
Appendix A.


Little Blackfoot River @ River Mile 9.6
Westslope Cutthroat Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 9.6
Brown Trout Size Distribution (2013)
N = 690
Frequency
0
5
10
15
20
25
30
35
40
45
50
55
60
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 21.3
Westslope Cutthroat Trout Size Distribution (2013)
N = 14
Frequency
Length (mm)


Little Blackfoot River @ River Mile 21.3
Brown Trout Size Distribution (2013)
N = 696
Frequency
Length (mm)


Little Blackfoot River @ River Mile 26.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 18
Frequency
0
2
4
6
8
10
20
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350
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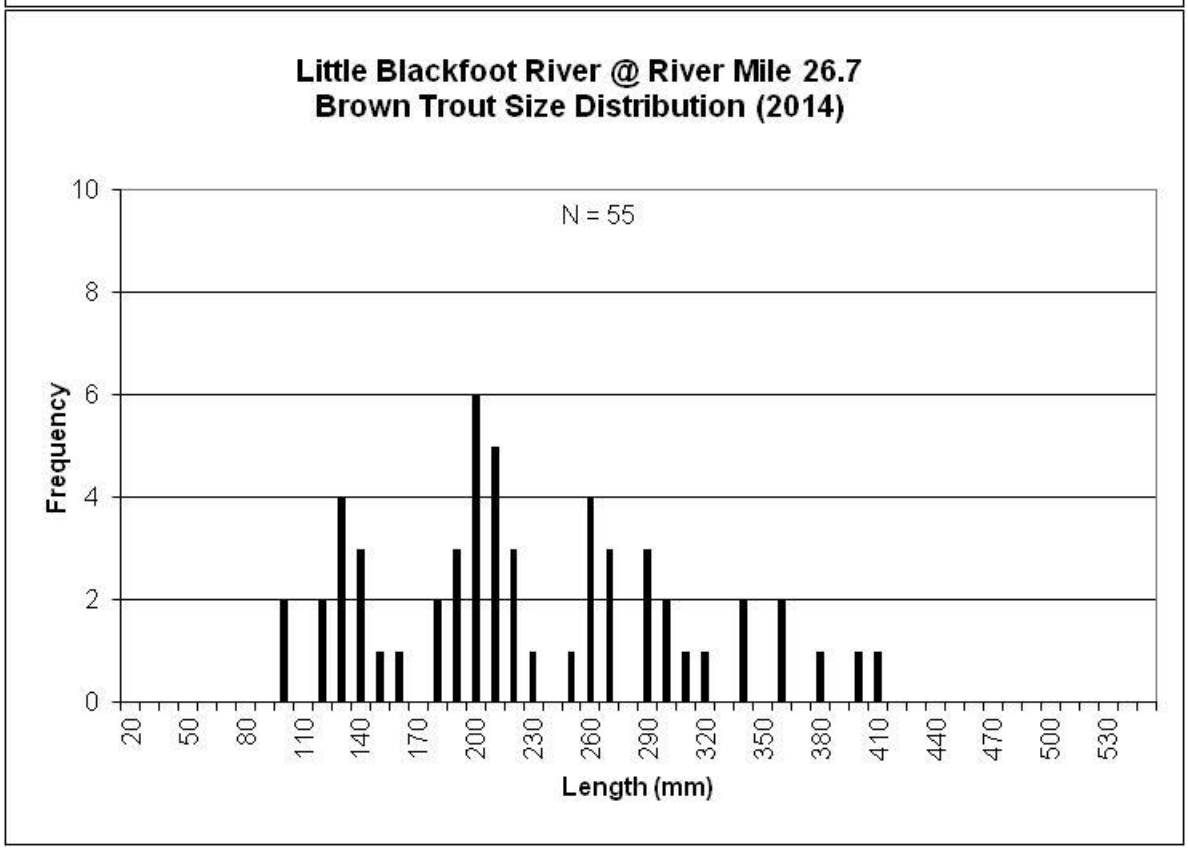
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 26.7
Brown Trout Size Distribution (2014)
N = 55
Frequency
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2
4
6
8
10
20
50
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140
170
200
230
260
290
320
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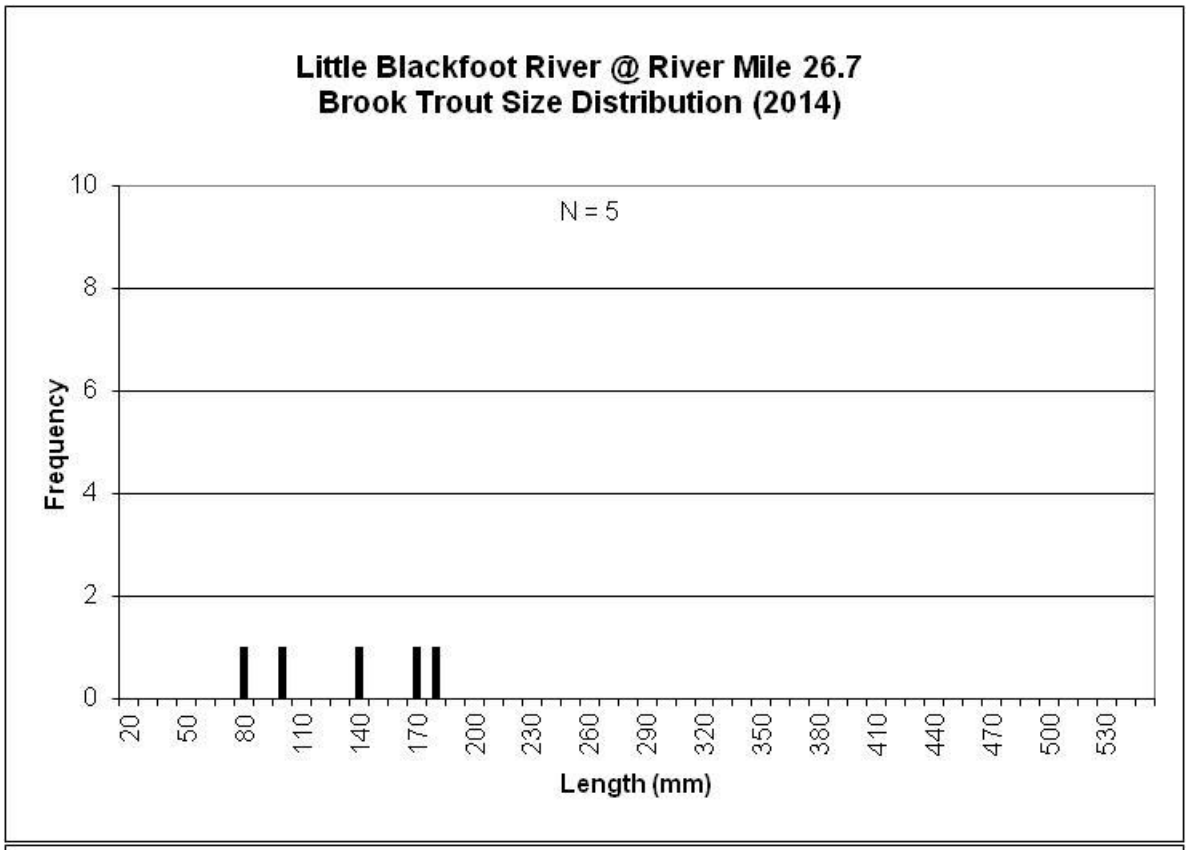
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 26.7
Brook Trout Size Distribution (2014)
N = 5
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
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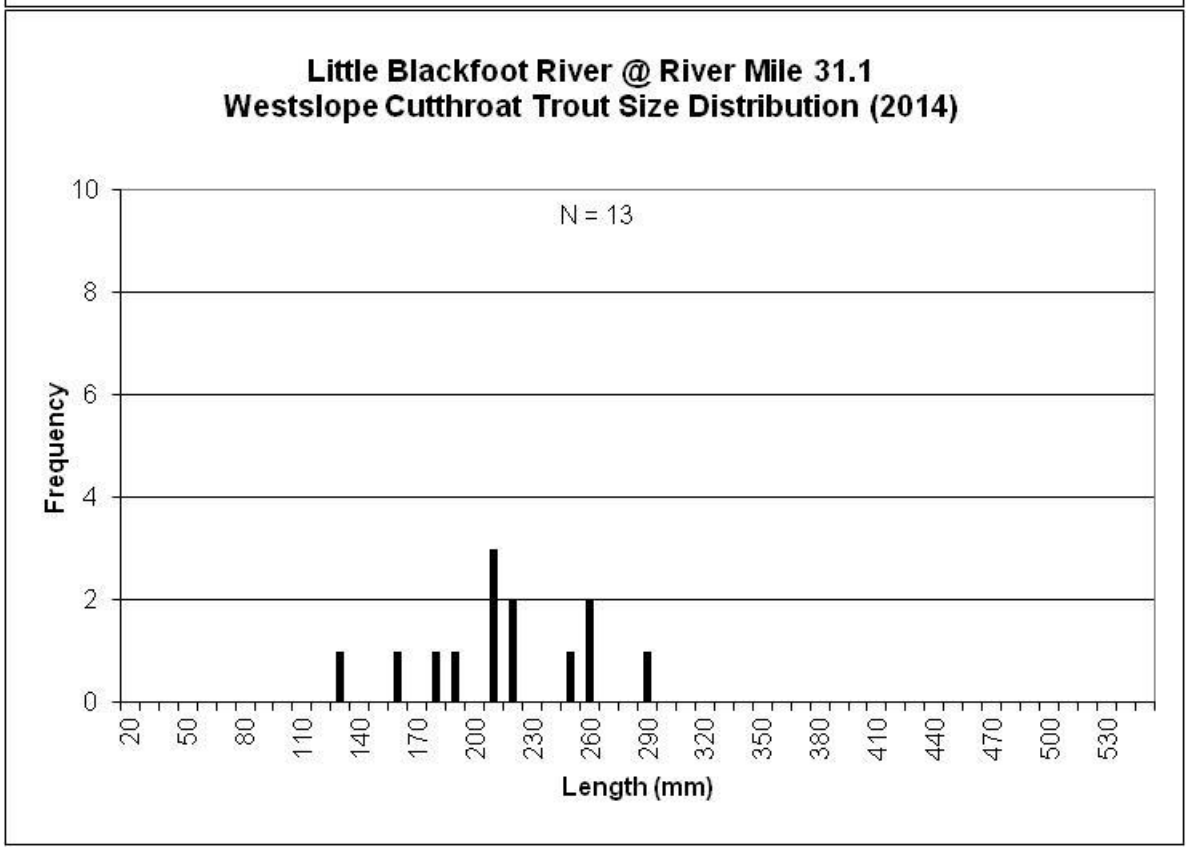
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 31.1
Westslope Cutthroat Trout Size Distribution (2014)
N = 13
Frequency
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2
4
6
8
10
20
50
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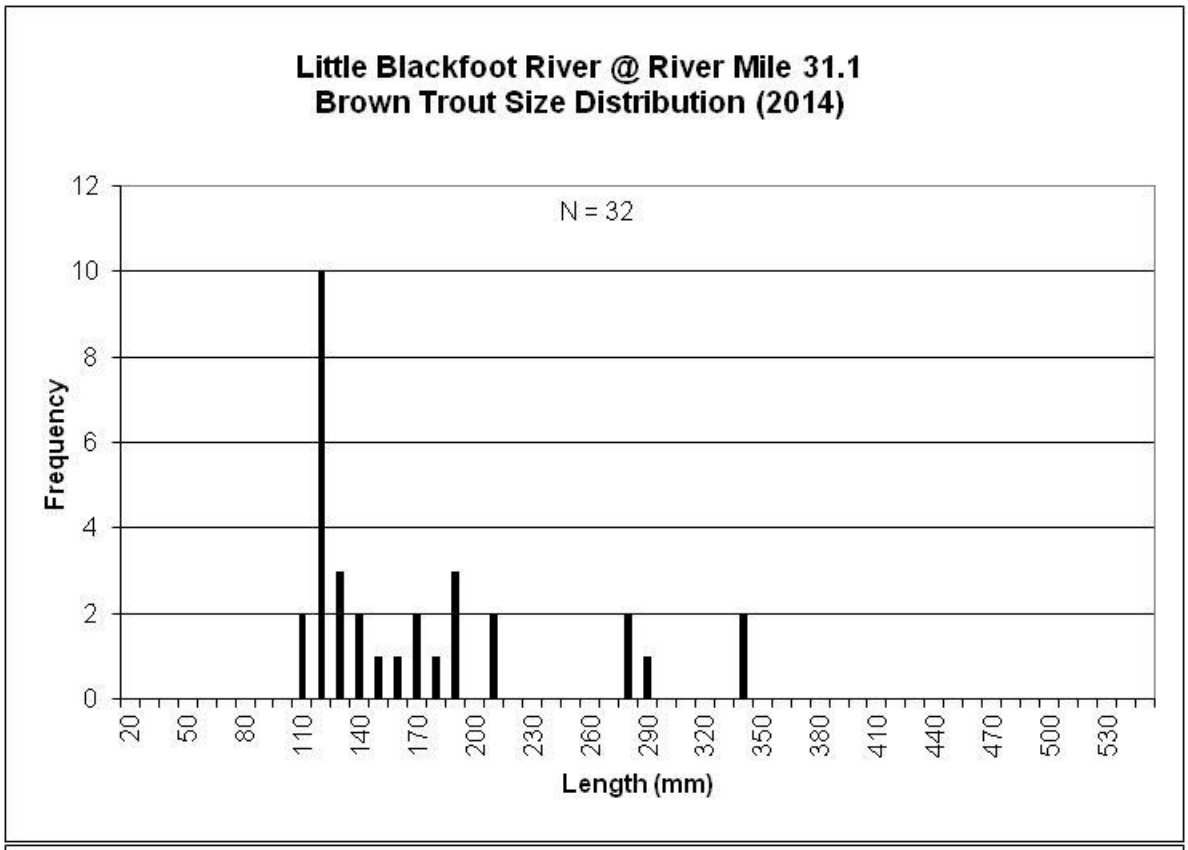
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 31.1
Brown Trout Size Distribution (2014)
N = 32
Frequency
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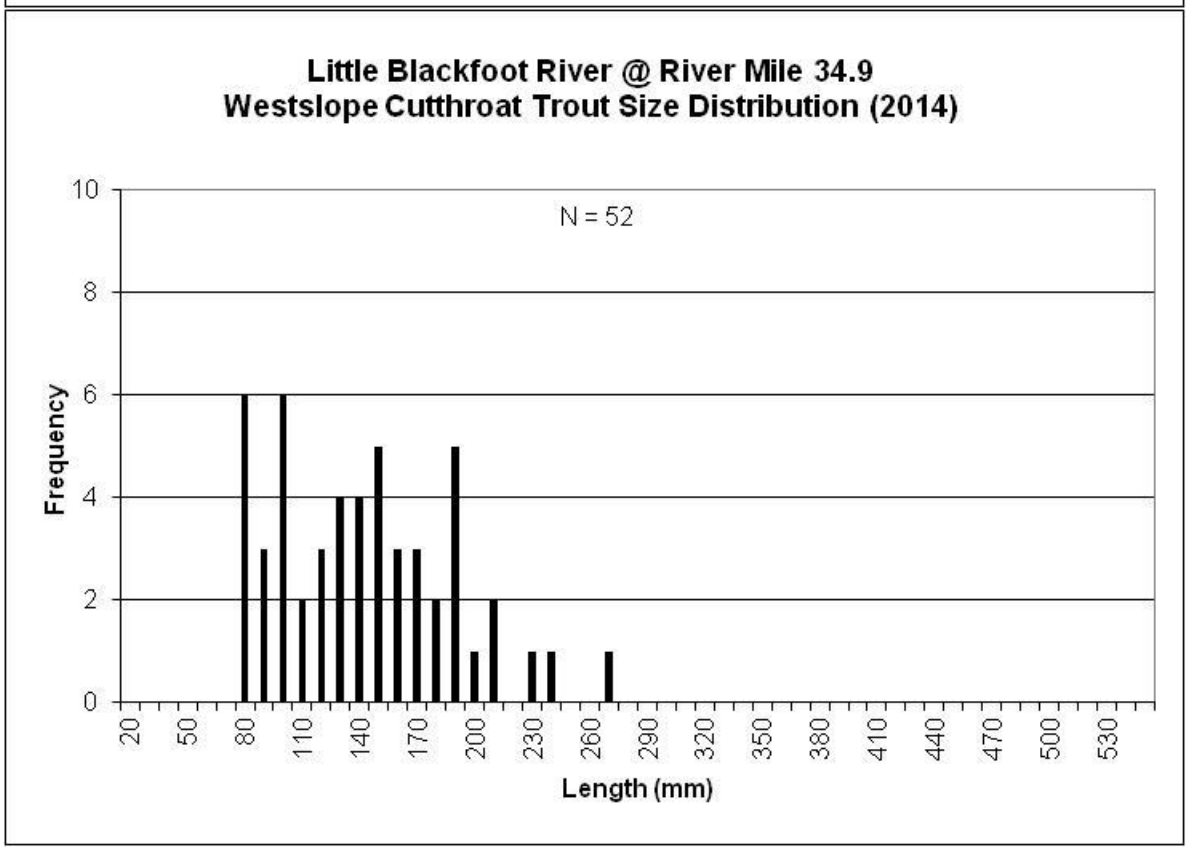
2
4
6
8
10
12
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 34.9
Westslope Cutthroat Trout Size Distribution (2014)
N = 52
Frequency
0
2
4
6
8
10
20
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230
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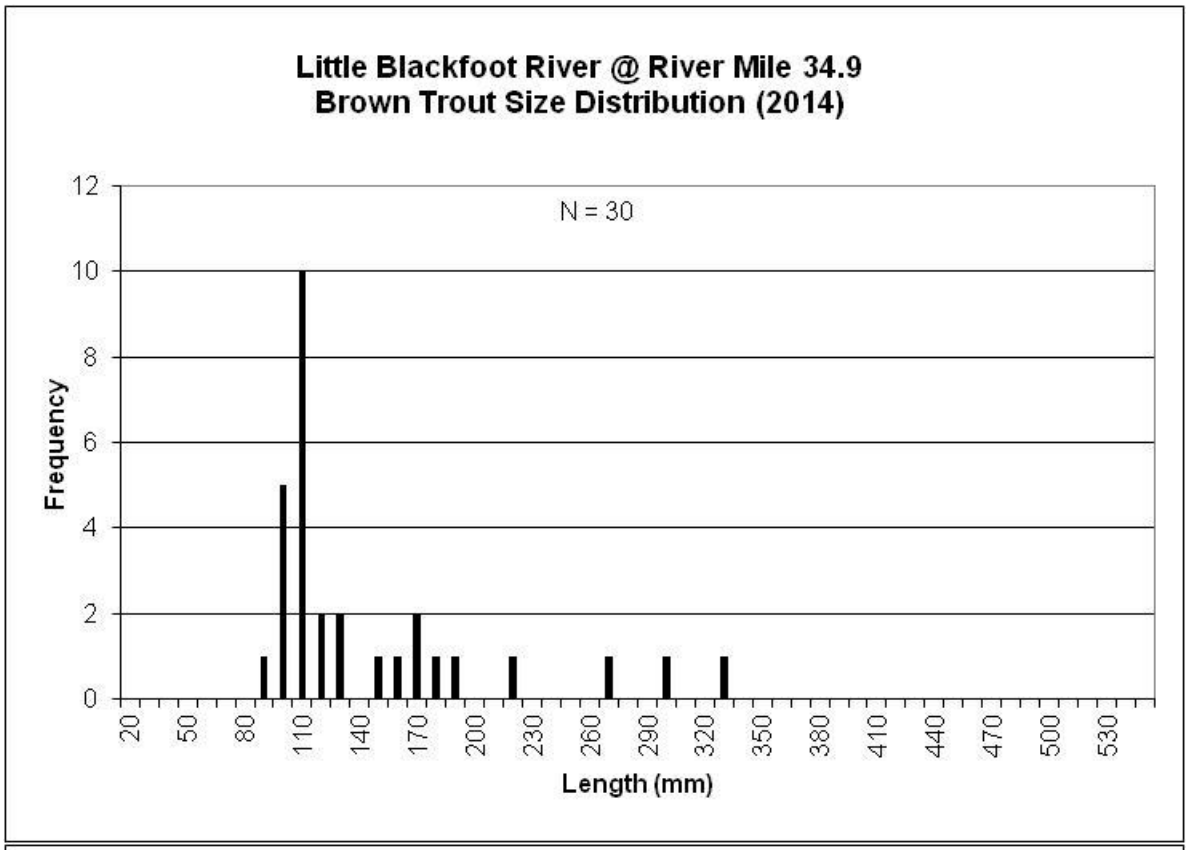
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 34.9
Brown Trout Size Distribution (2014)
N = 30
Frequency
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2
4
6
8
10
12
20
50
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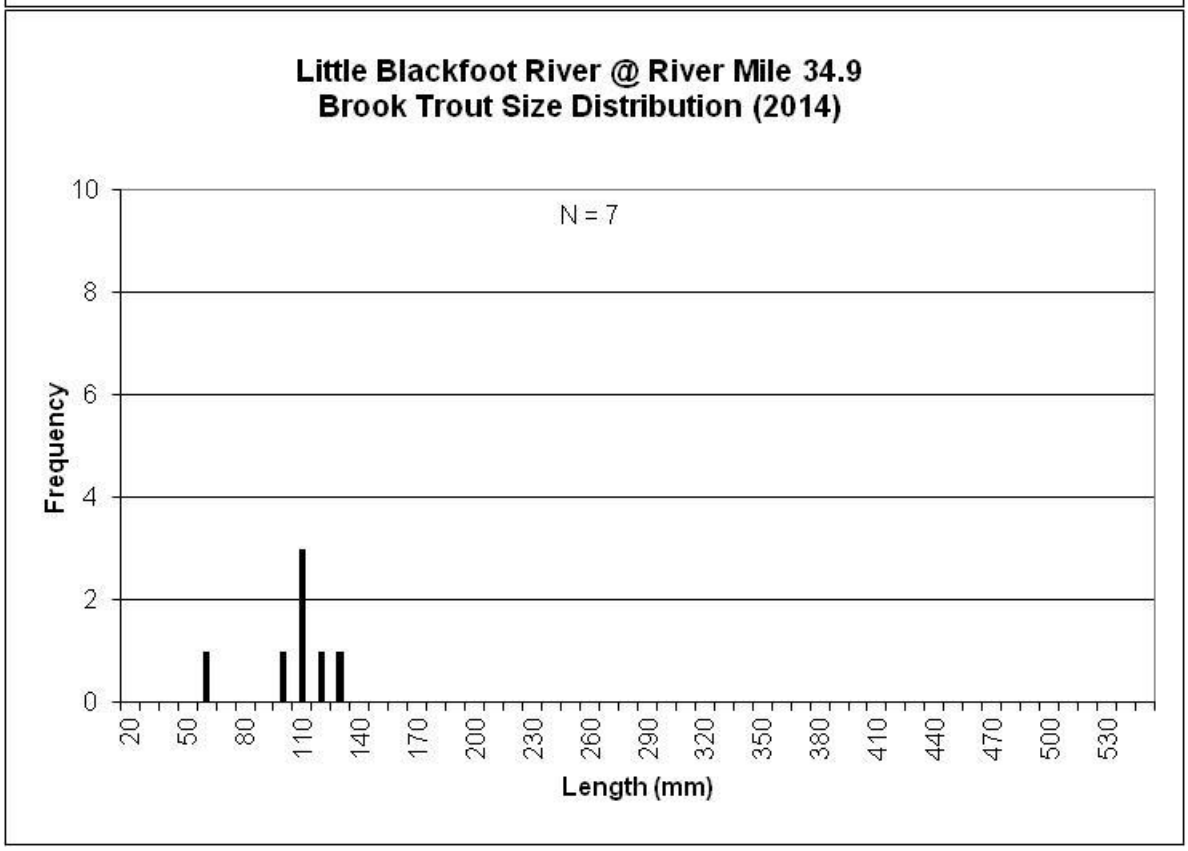
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 34.9
Brook Trout Size Distribution (2014)
N = 7
Frequency
0
2
4
6
8
10
20
50
80
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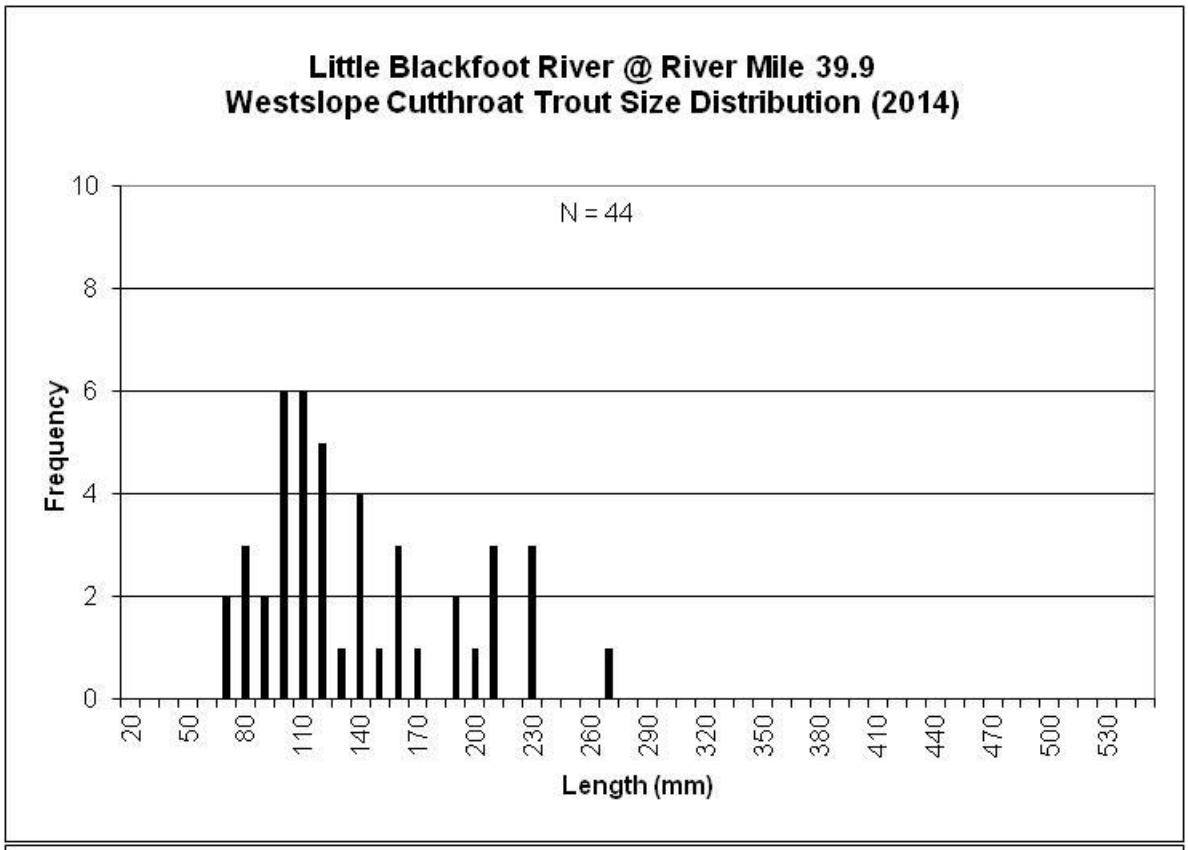
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 39.9
Westslope Cutthroat Trout Size Distribution (2014)
N = 44
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
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320
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380
410
440
470
500
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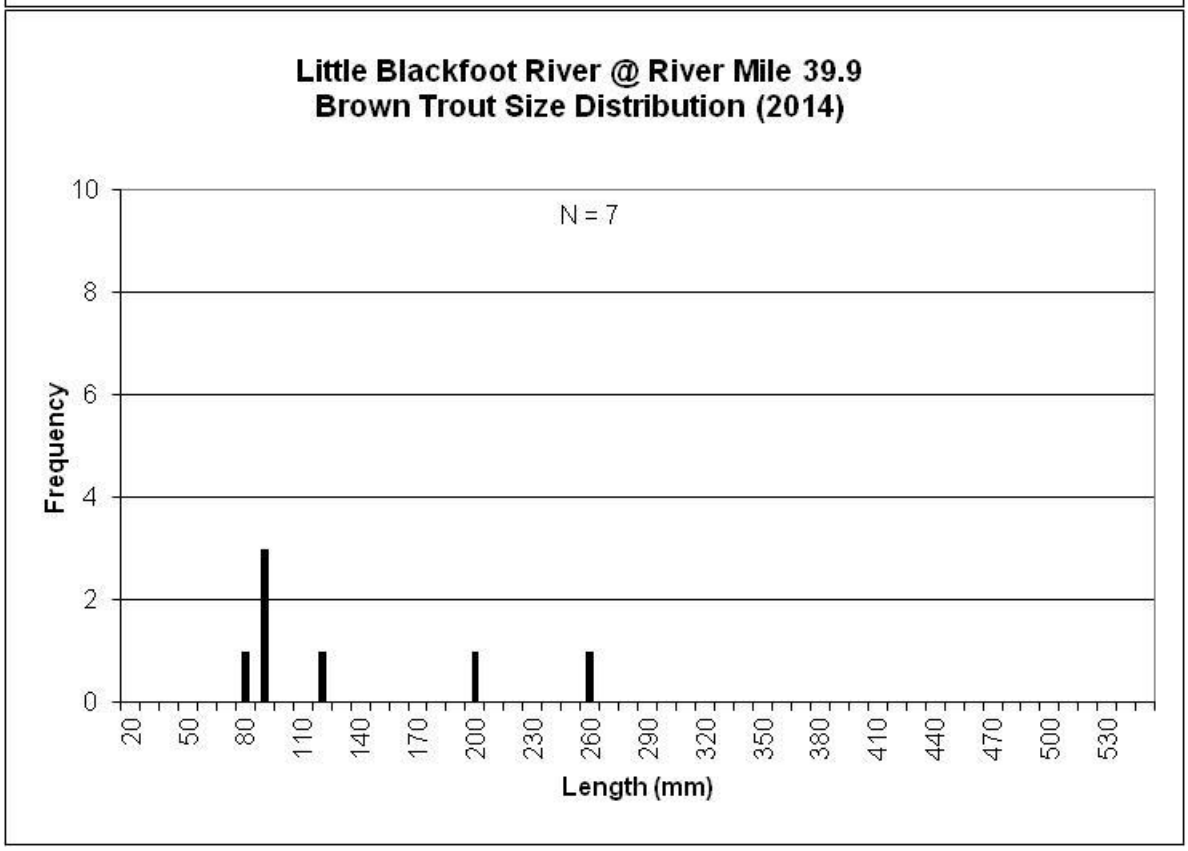
Little Blackfoot River @ River Mile 39.9
Brown Trout Size Distribution (2014)
N = 7
Frequency
Length (mm)
0
2
4
6
8
10
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260
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350
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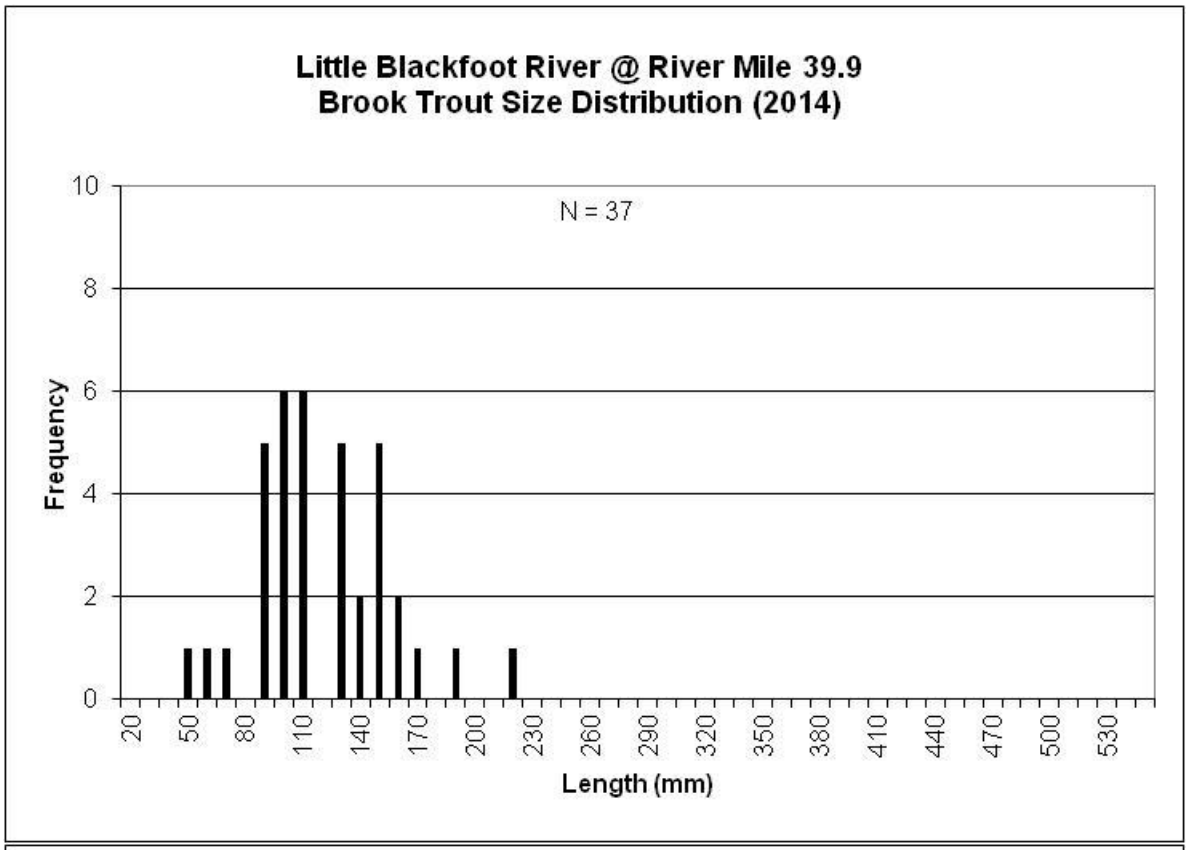
Little Blackfoot River @ River Mile 39.9
Brook Trout Size Distribution (2014)
N = 37
Frequency
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2
4
6
8
10
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320
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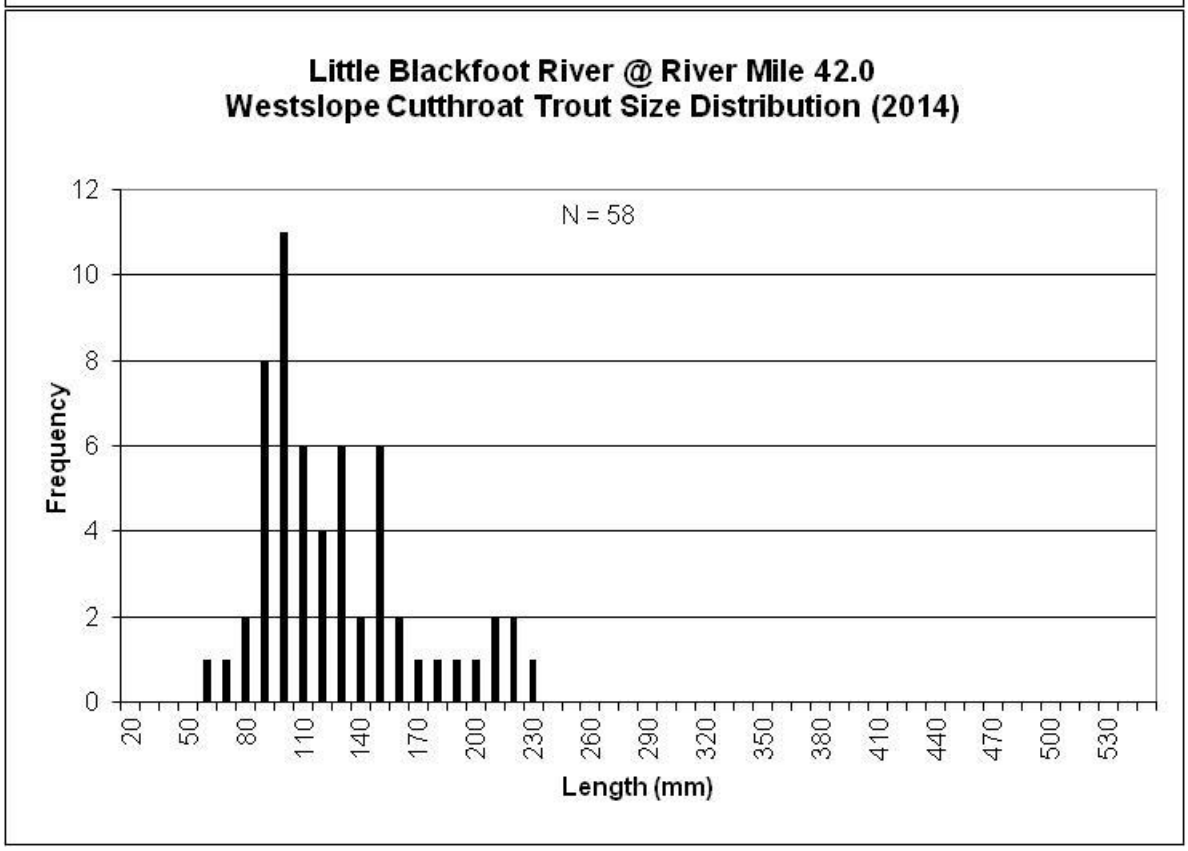
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 42.0
Westslope Cutthroat Trout Size Distribution (2014)
N = 58
Frequency
0
2
4
6
8
10
12
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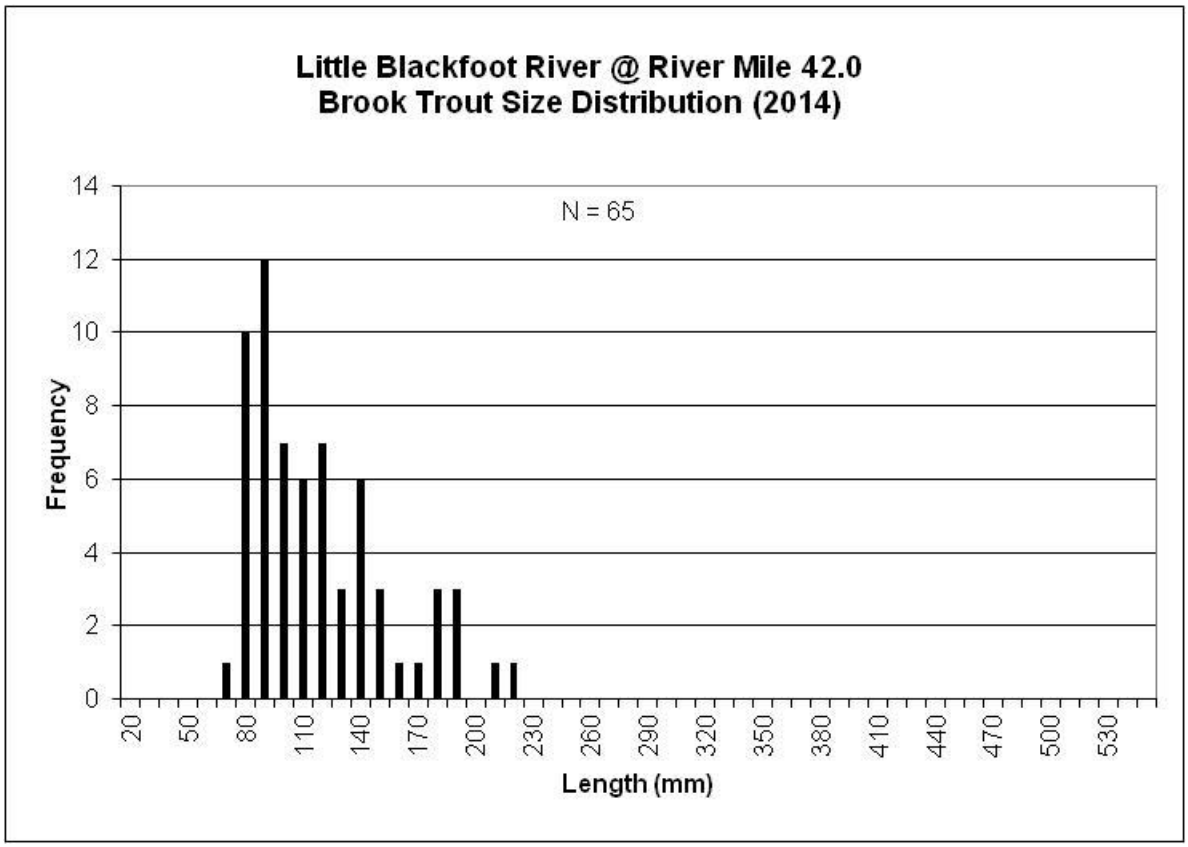
320
350
380
410
440
470
500
530
Length (mm)


Little Blackfoot River @ River Mile 42.0
Brook Trout Size Distribution (2014)
N = 65
Frequency
0
2
4
6
8
10
12
14
20
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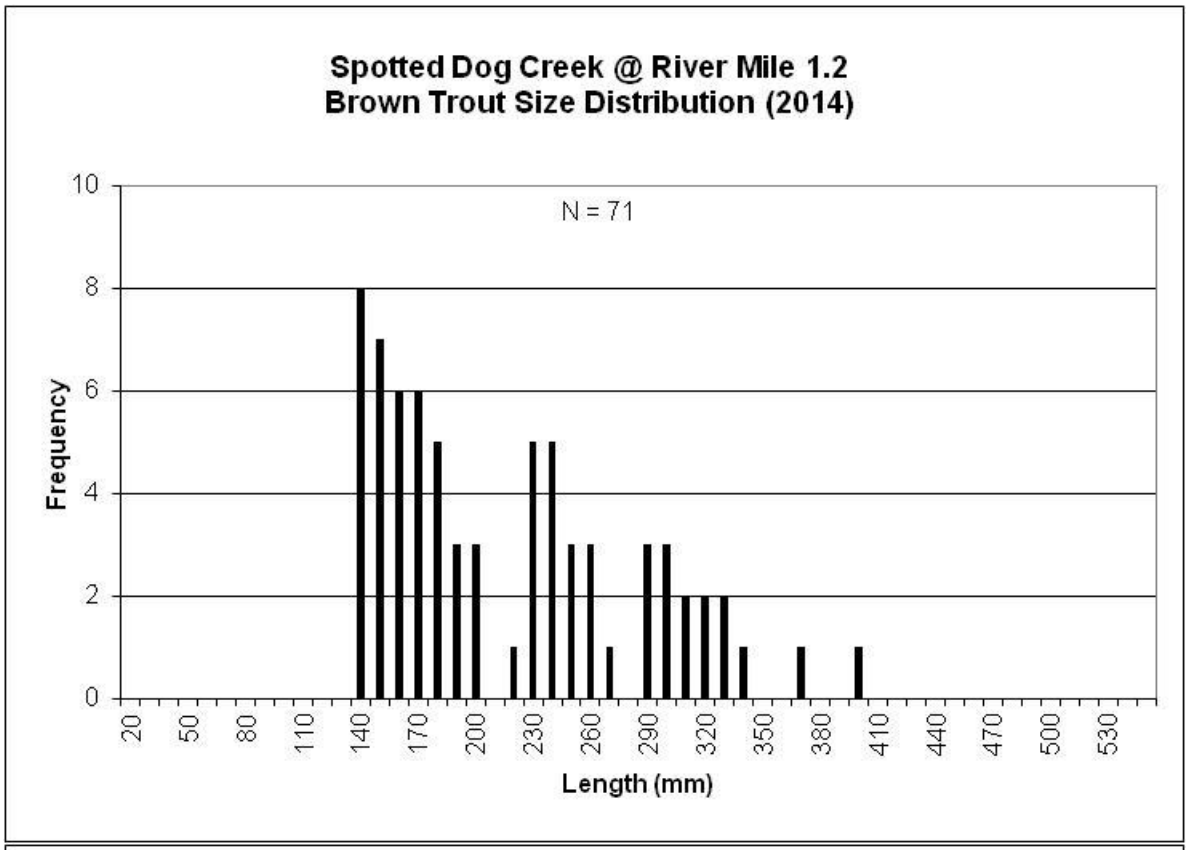
350
380
410
440
470
500
530
Length (mm)


Spotted Dog Creek @ River Mile 1.2
Brown Trout Size Distribution (2014)
N = 71
Frequency
0
2
4
6
8
10
20
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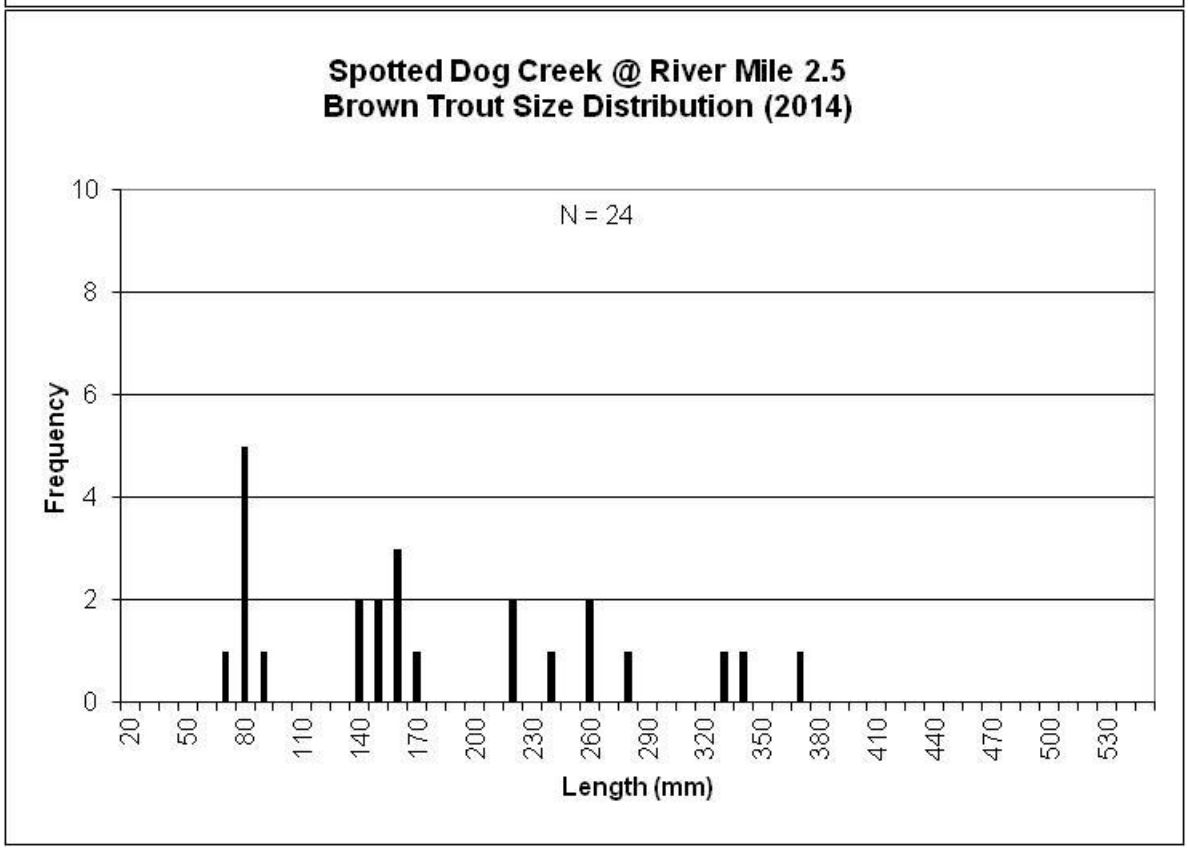
320
350
380
410
440
470
500
530
Length (mm)


Spotted Dog Creek @ River Mile 2.5
Brown Trout Size Distribution (2014)
N = 24
Frequency
0
2
4
6
8
10
20
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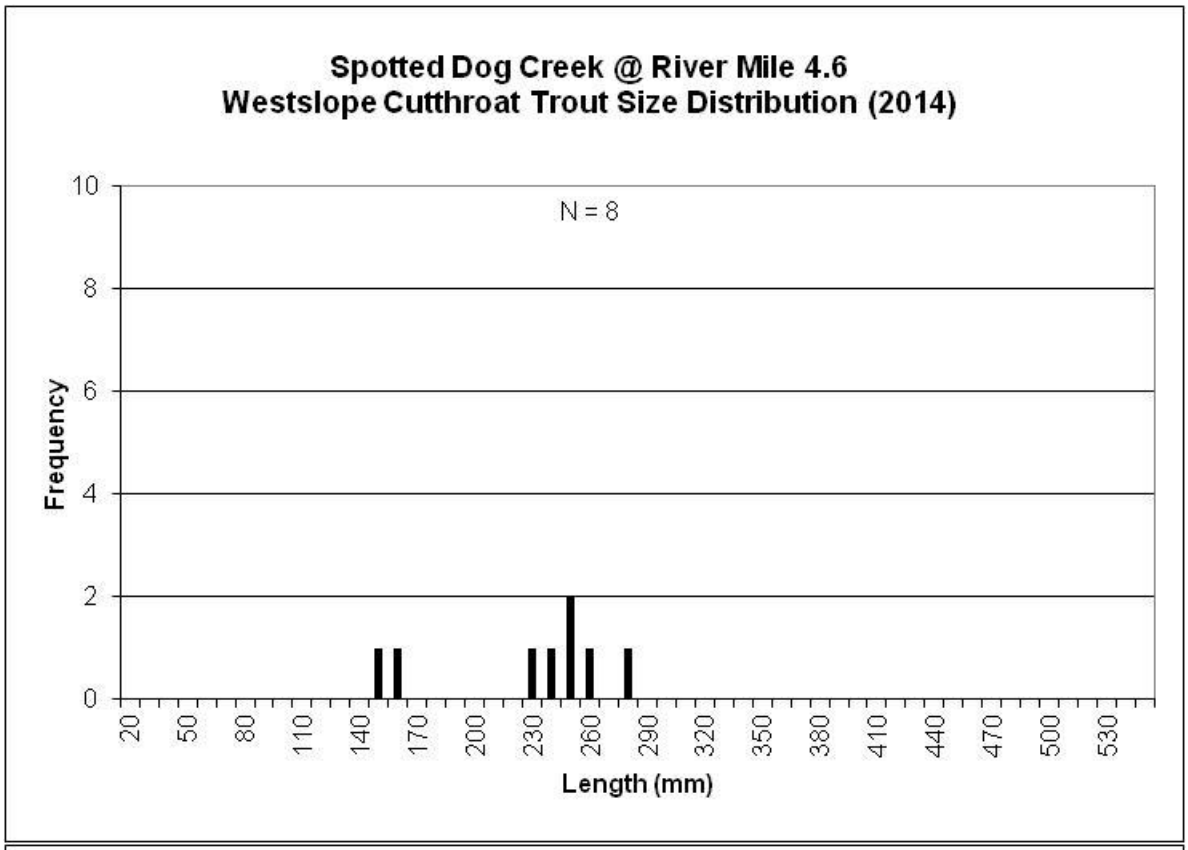
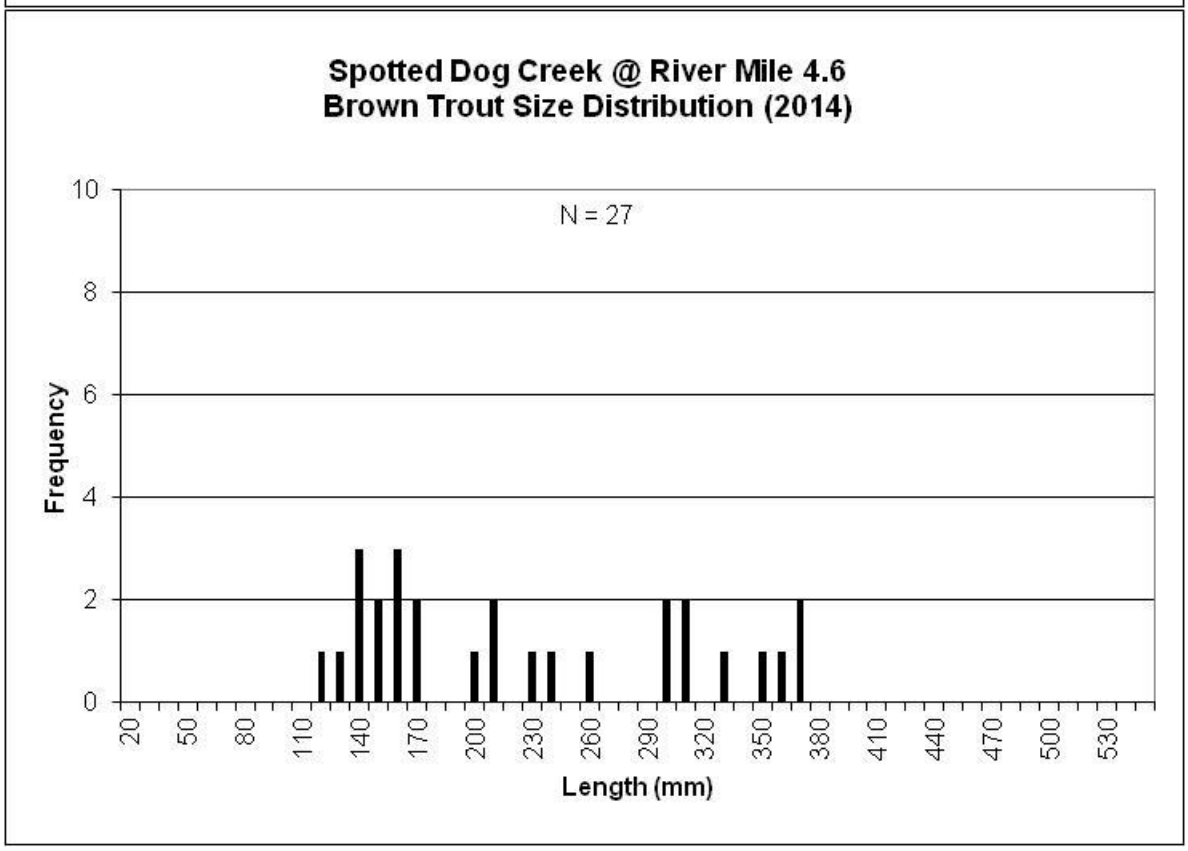
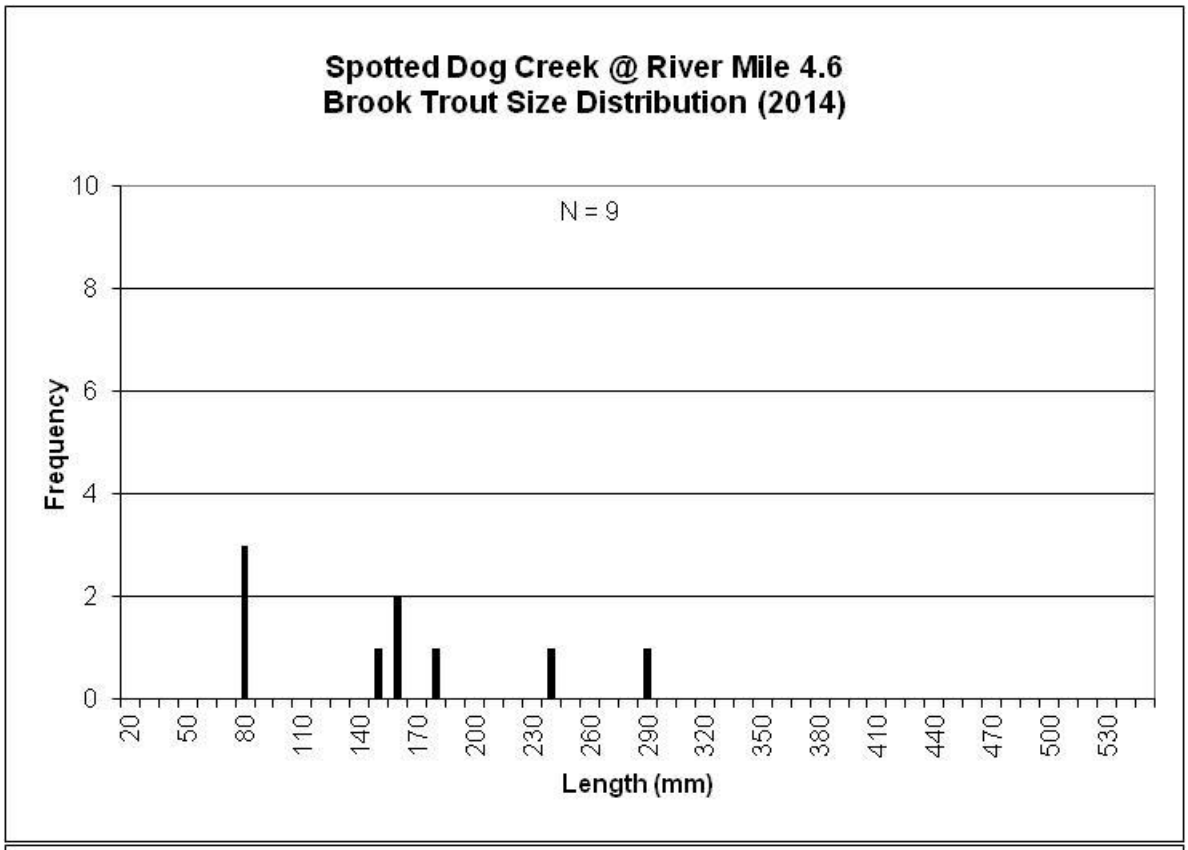
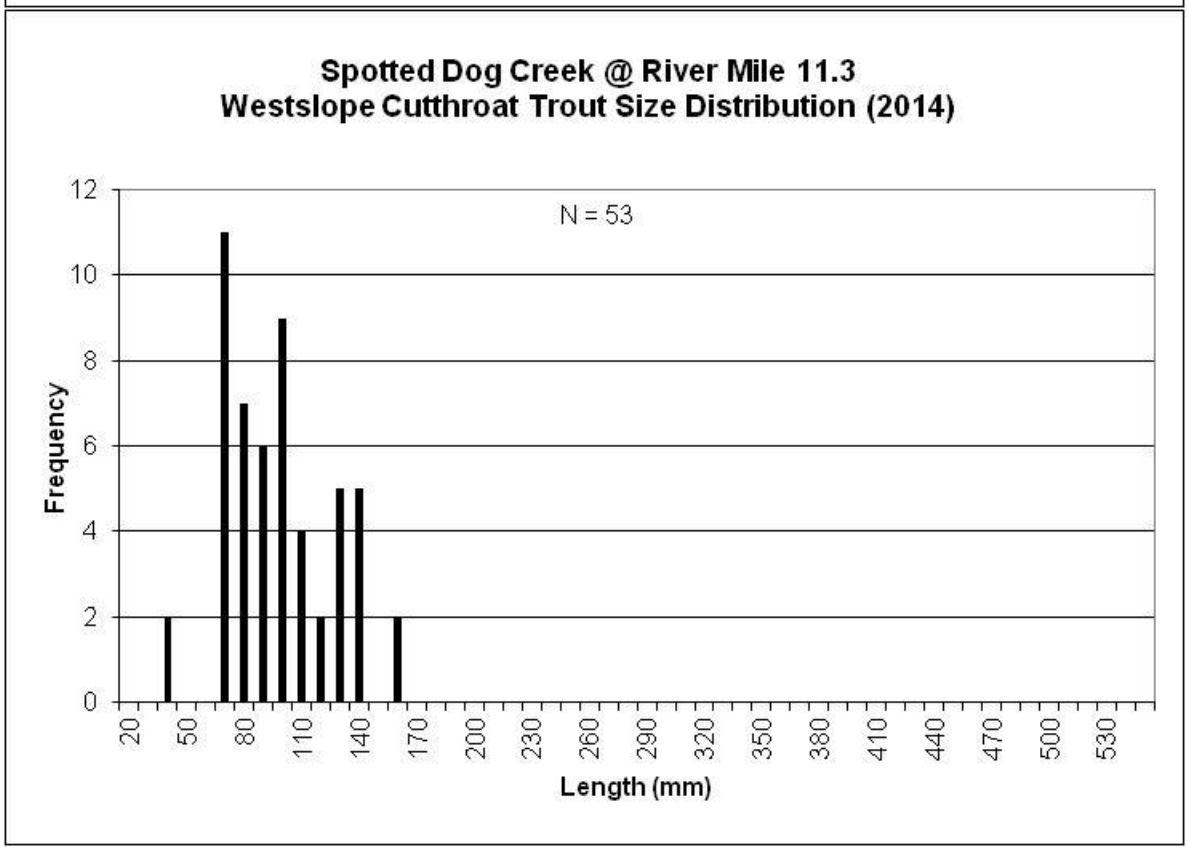
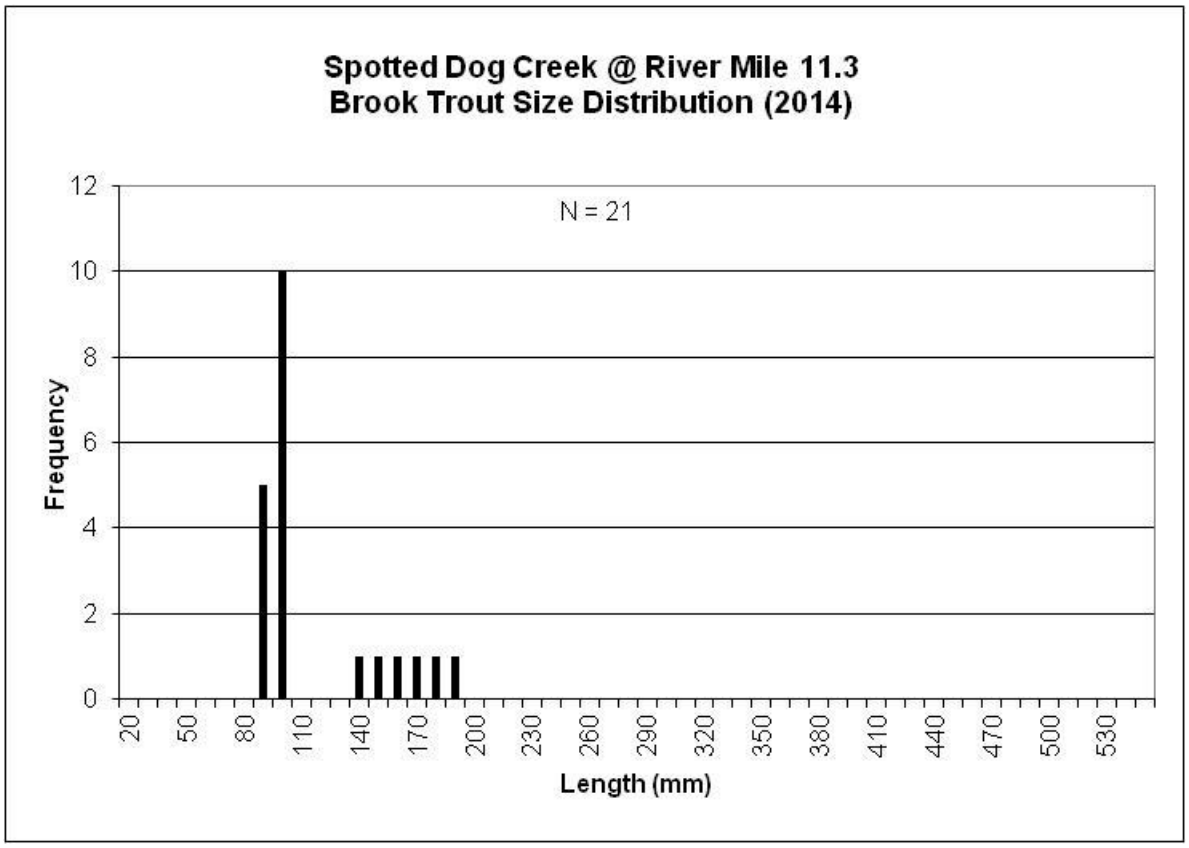
320
350
380
410
440
470
500
530
Length (mm)

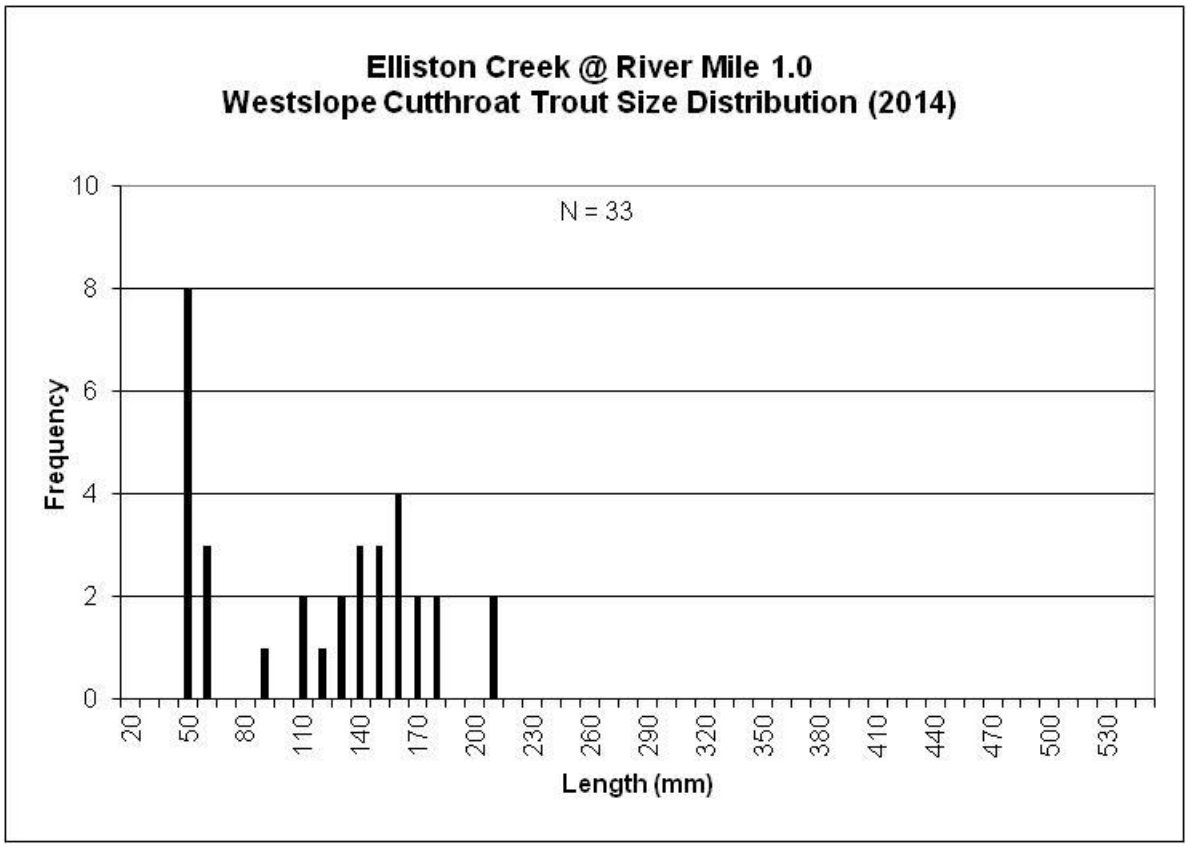

Spotted Dog Creek @ River Mile 4.6
Westslope Cutthroat Trout Size Distribution (2014)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

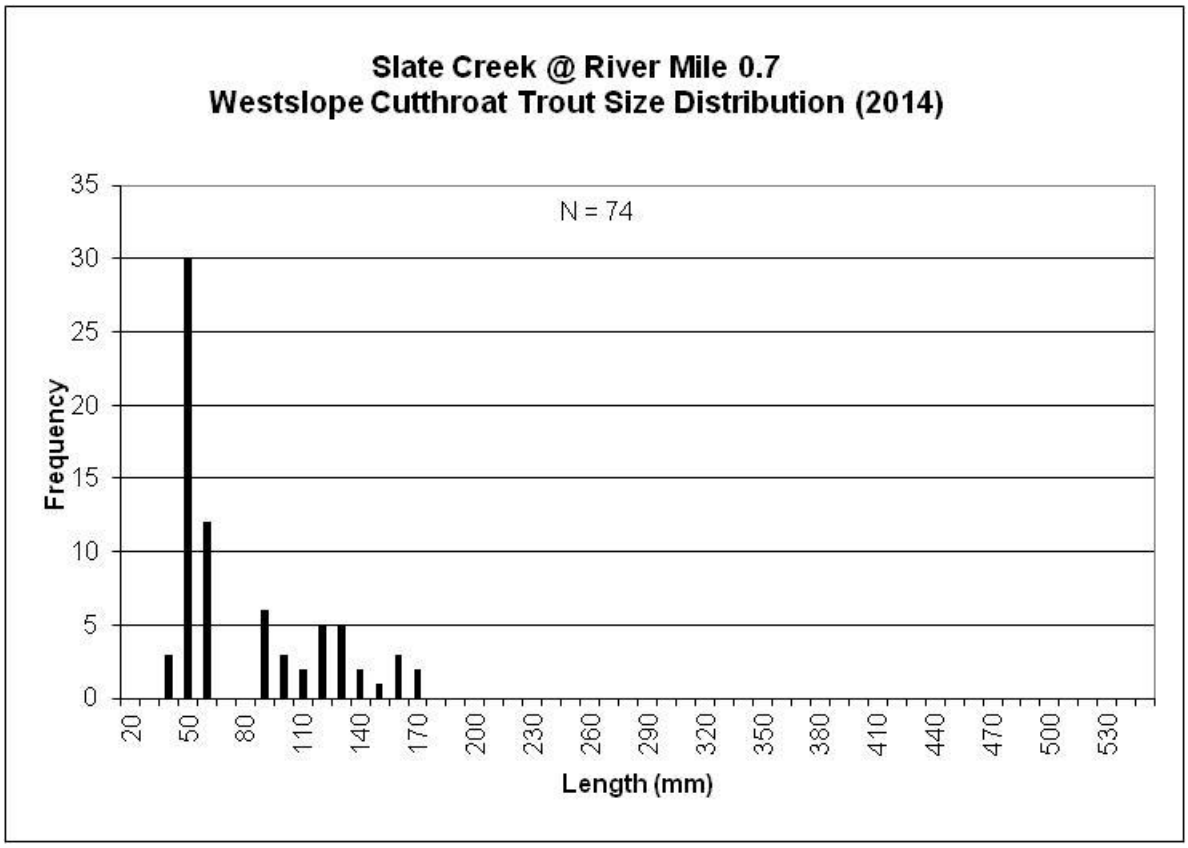

Spotted Dog Creek @ River Mile 4.6
Brown Trout Size Distribution (2014)
N = 27
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

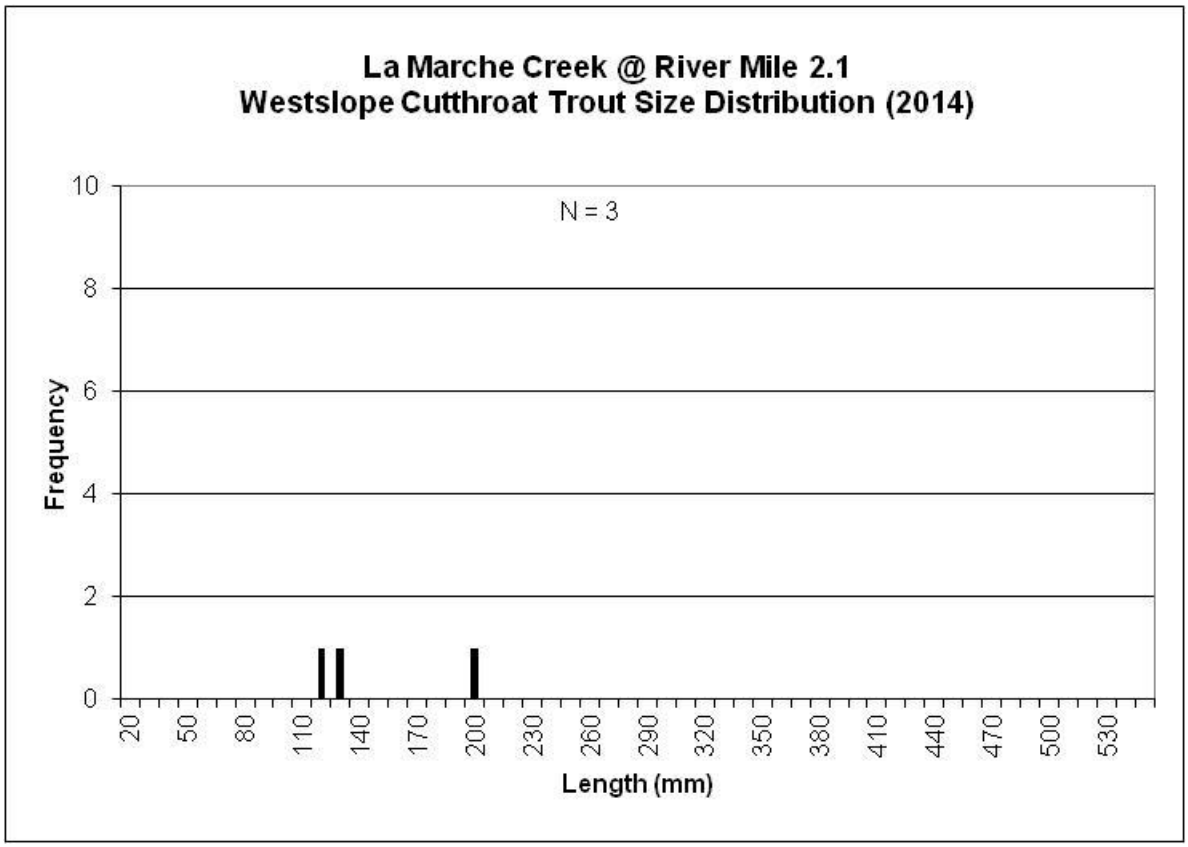

Spotted Dog Creek @ River Mile 4.6
Brook Trout Size Distribution (2014)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

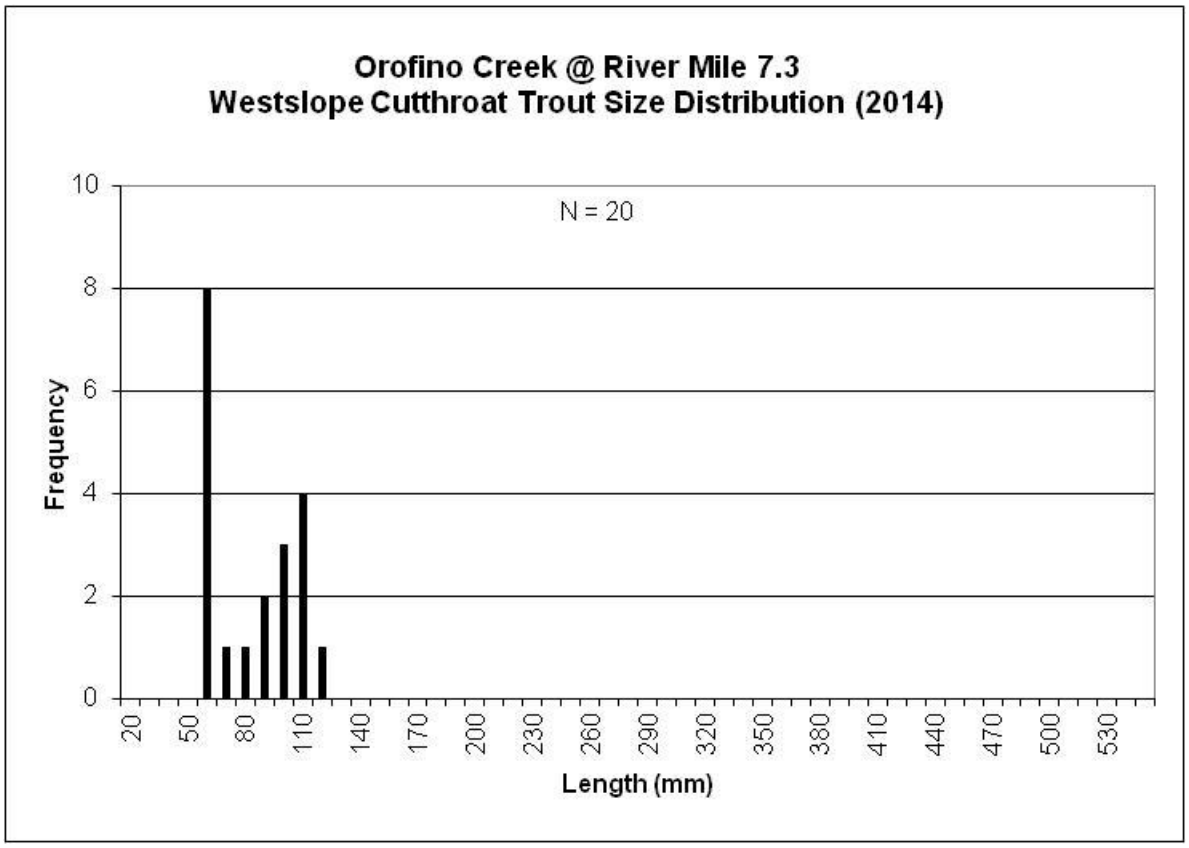

Spotted Dog Creek @ River Mile 11.3
Westslope Cutthroat Trout Size Distribution (2014)
N = 53
Frequency
0
2
4
6
8
10
12
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

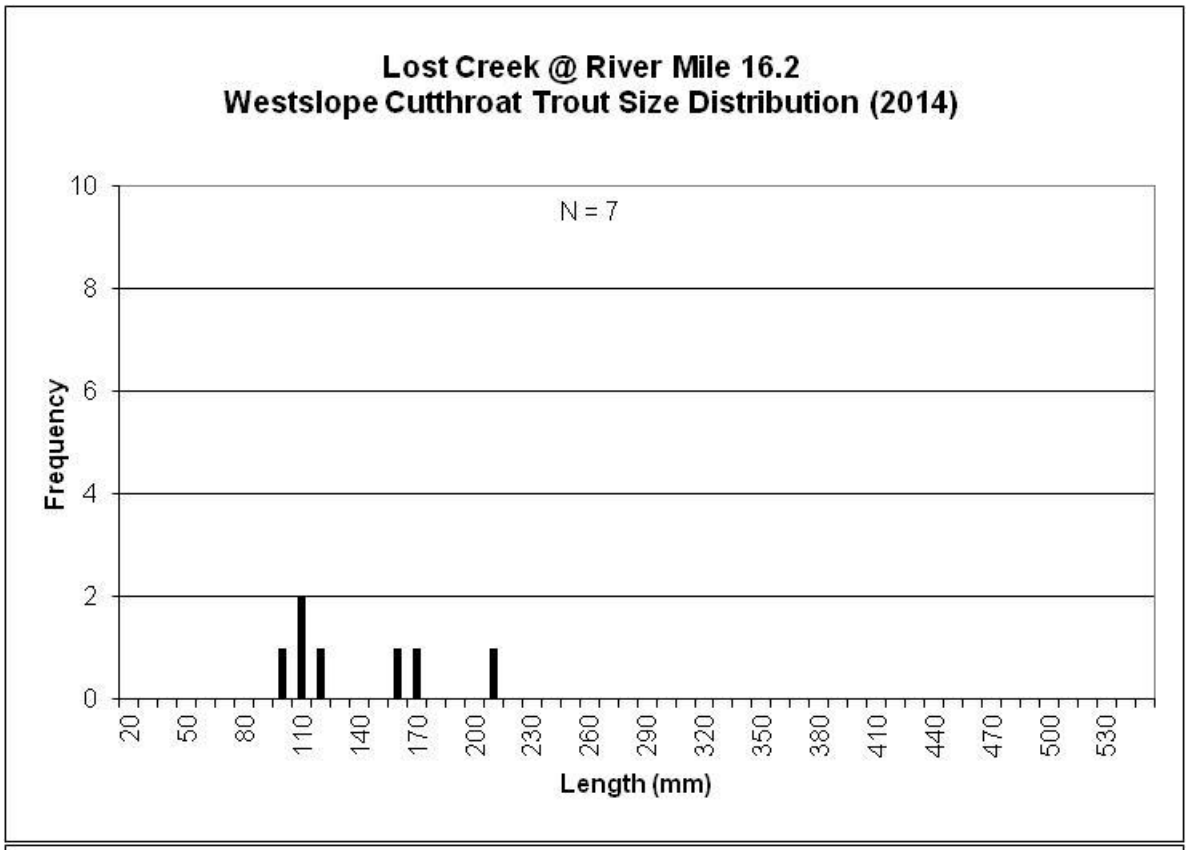

Spotted Dog Creek @ River Mile 11.3
Brook Trout Size Distribution (2014)
N = 21
Frequency
0
2
4
6
8
10
12
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

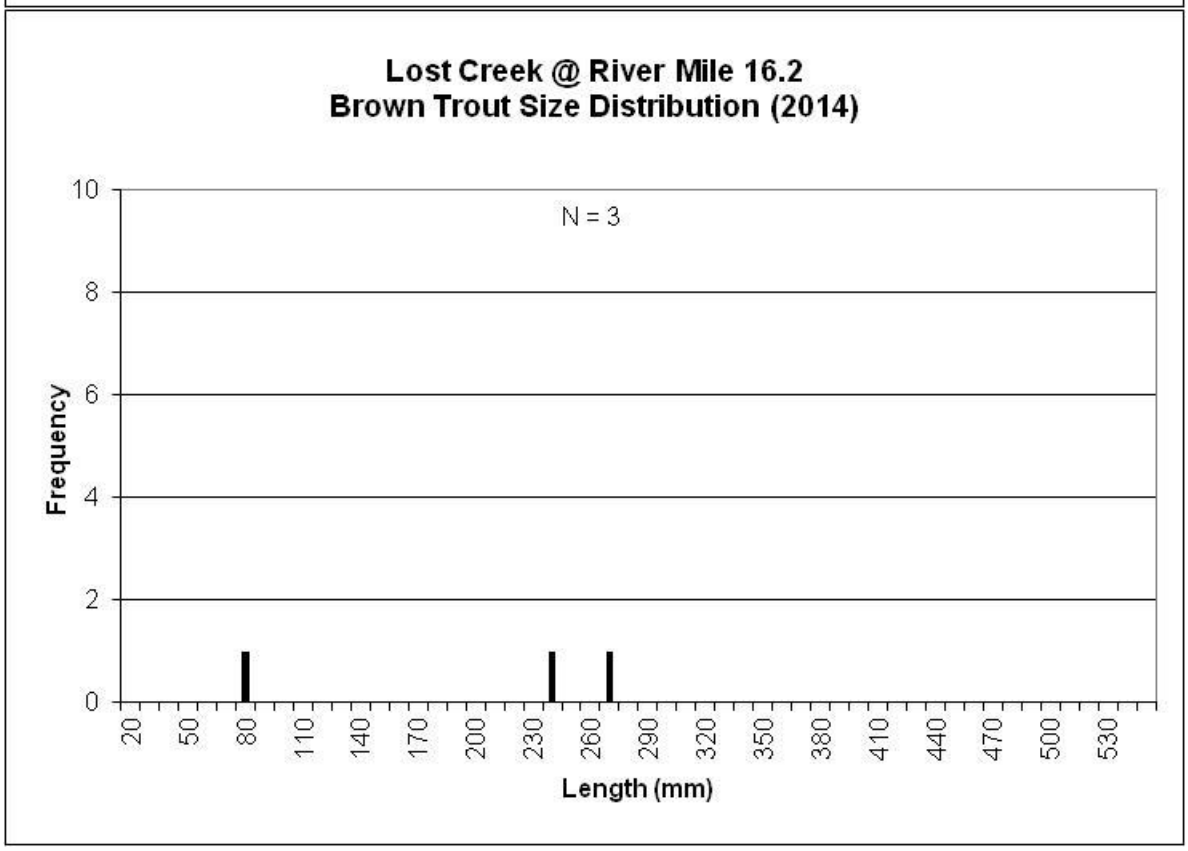

Elliston Creek @ River Mile 1.0
Westslope Cutthroat Trout Size Distribution (2014)
N = 33
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

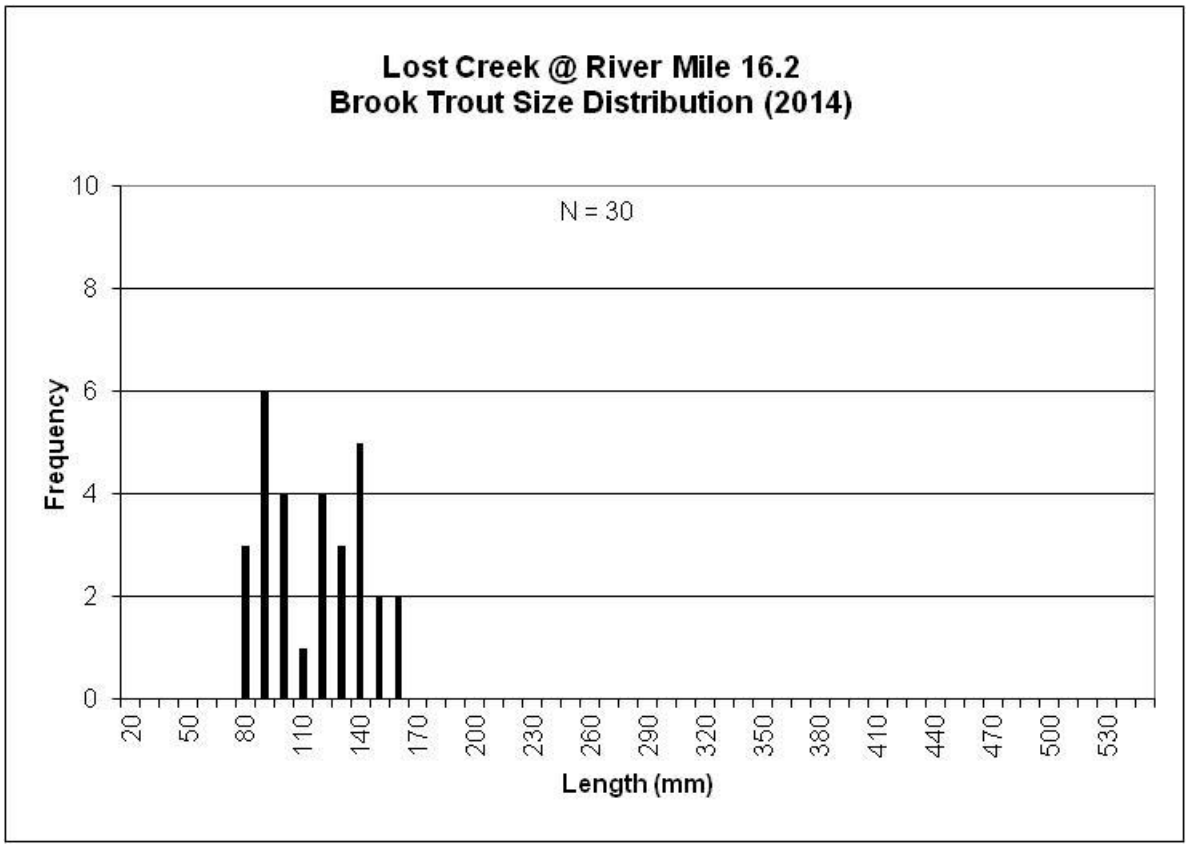

Slate Creek @ River Mile 0.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 74
Frequency
0
5
10
15
20
25
30
35
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

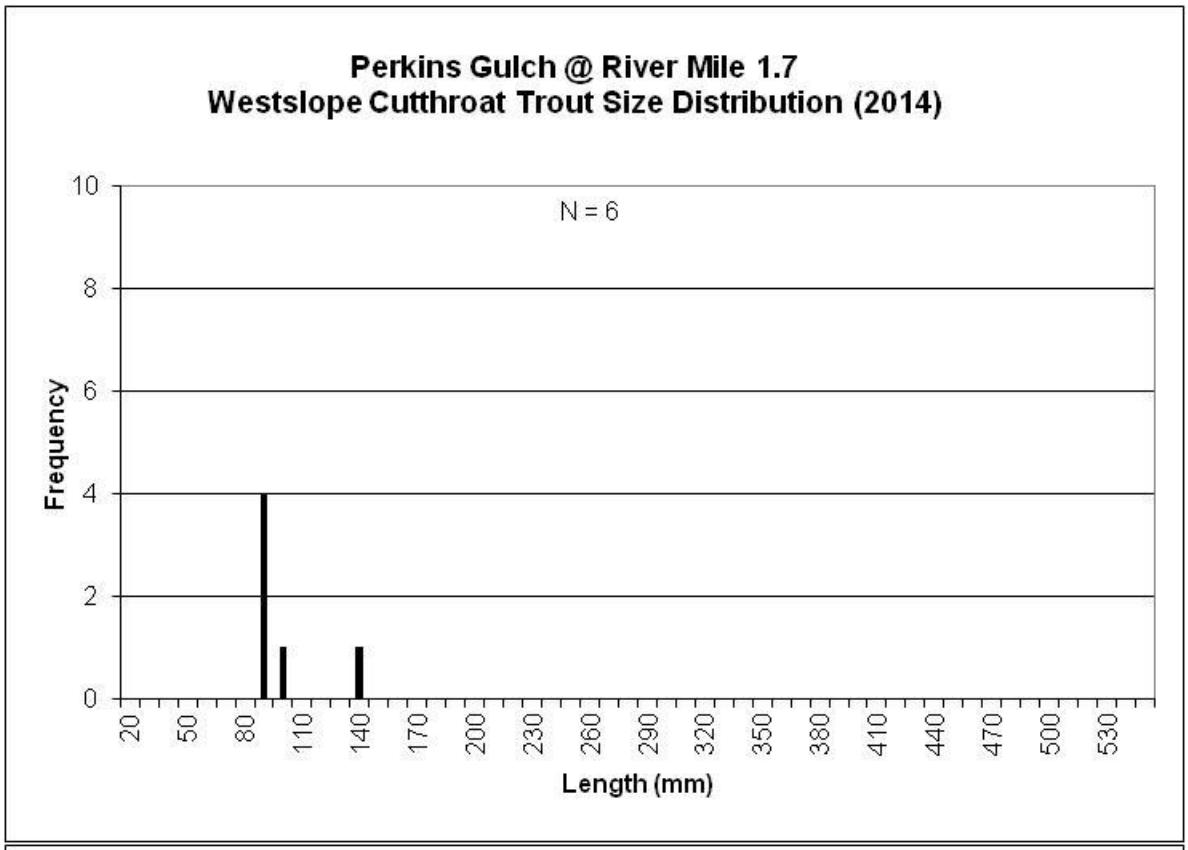

La Marche Creek @ River Mile 2.1
Westslope Cutthroat Trout Size Distribution (2014)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

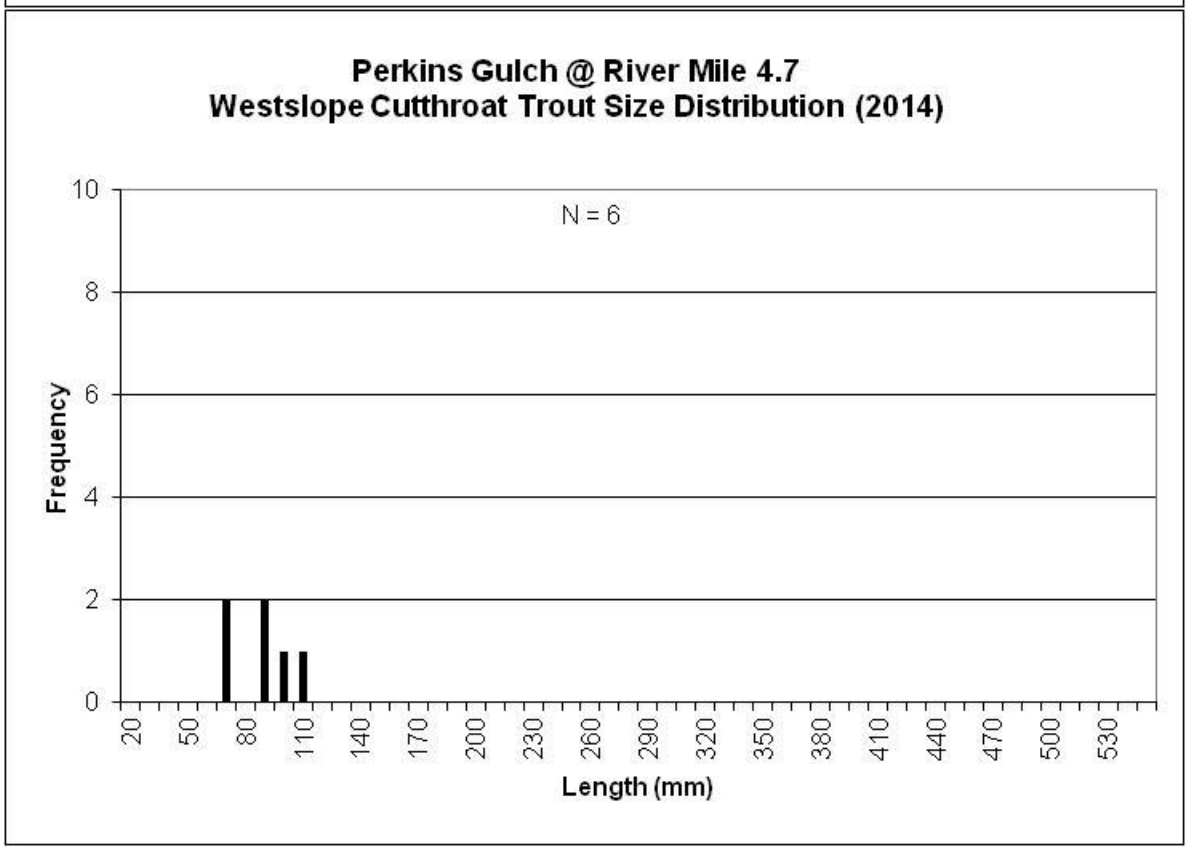

Orofino Creek @ River Mile 7.3
Westslope Cutthroat Trout Size Distribution (2014)
N = 20
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

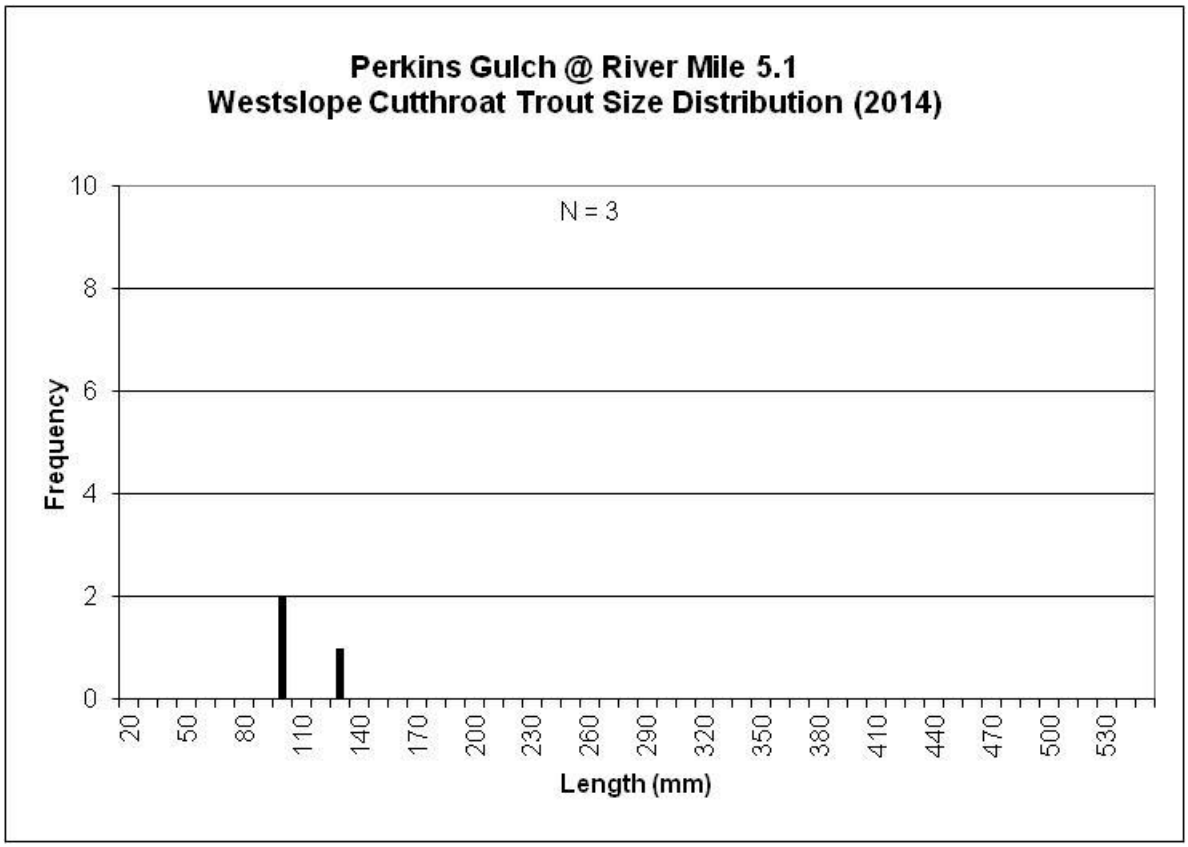

Lost Creek @ River Mile 16.2
Westslope Cutthroat Trout Size Distribution (2014)
N = 7
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

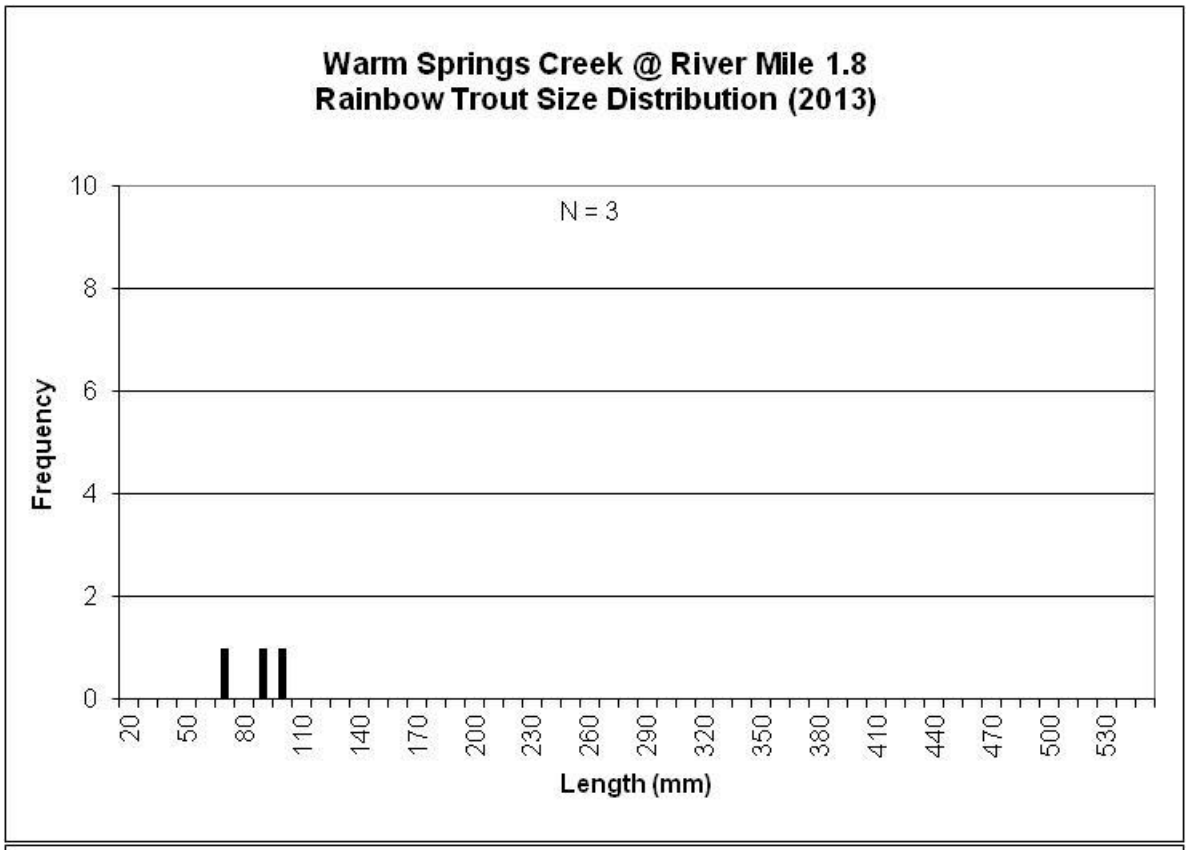

Lost Creek @ River Mile 16.2
Brown Trout Size Distribution (2014)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

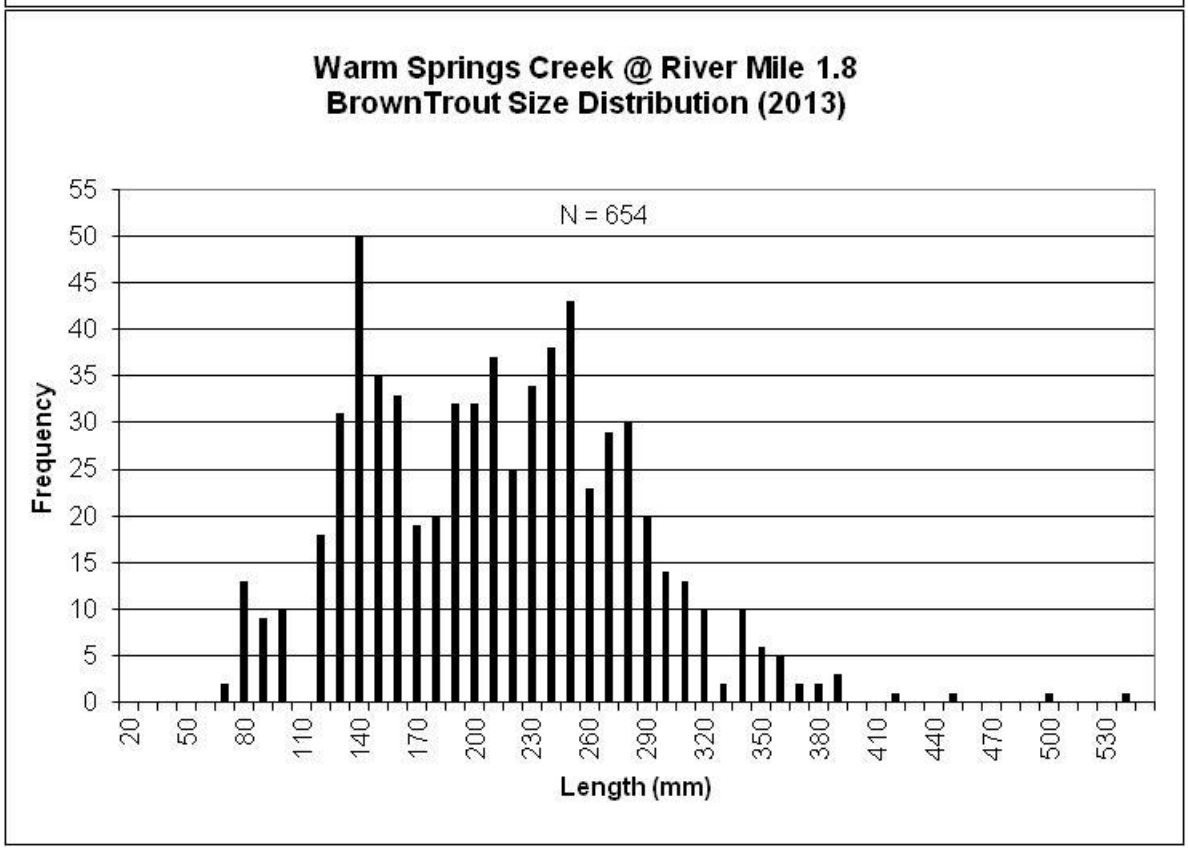

Lost Creek @ River Mile 16.2
Brook Trout Size Distribution (2014)
N = 30
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

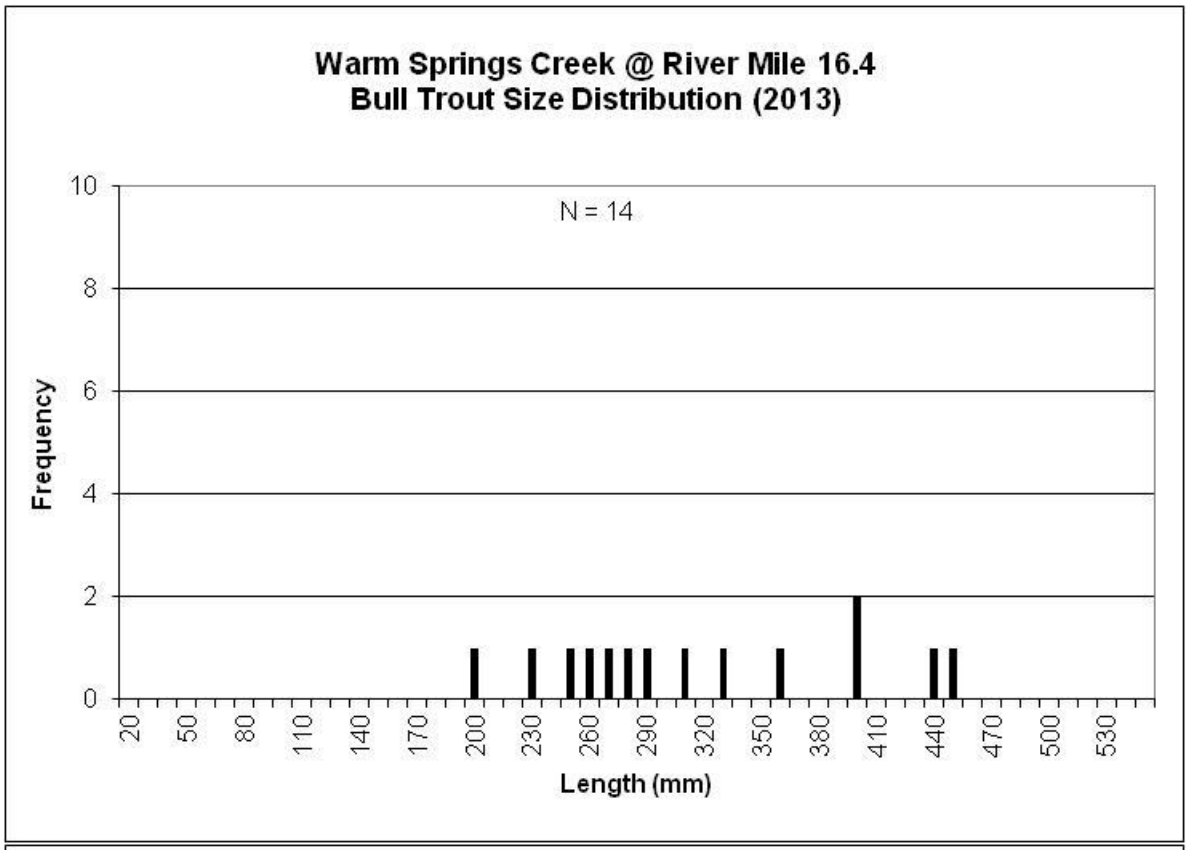

Perkins Gulch @ River Mile 1.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 6
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

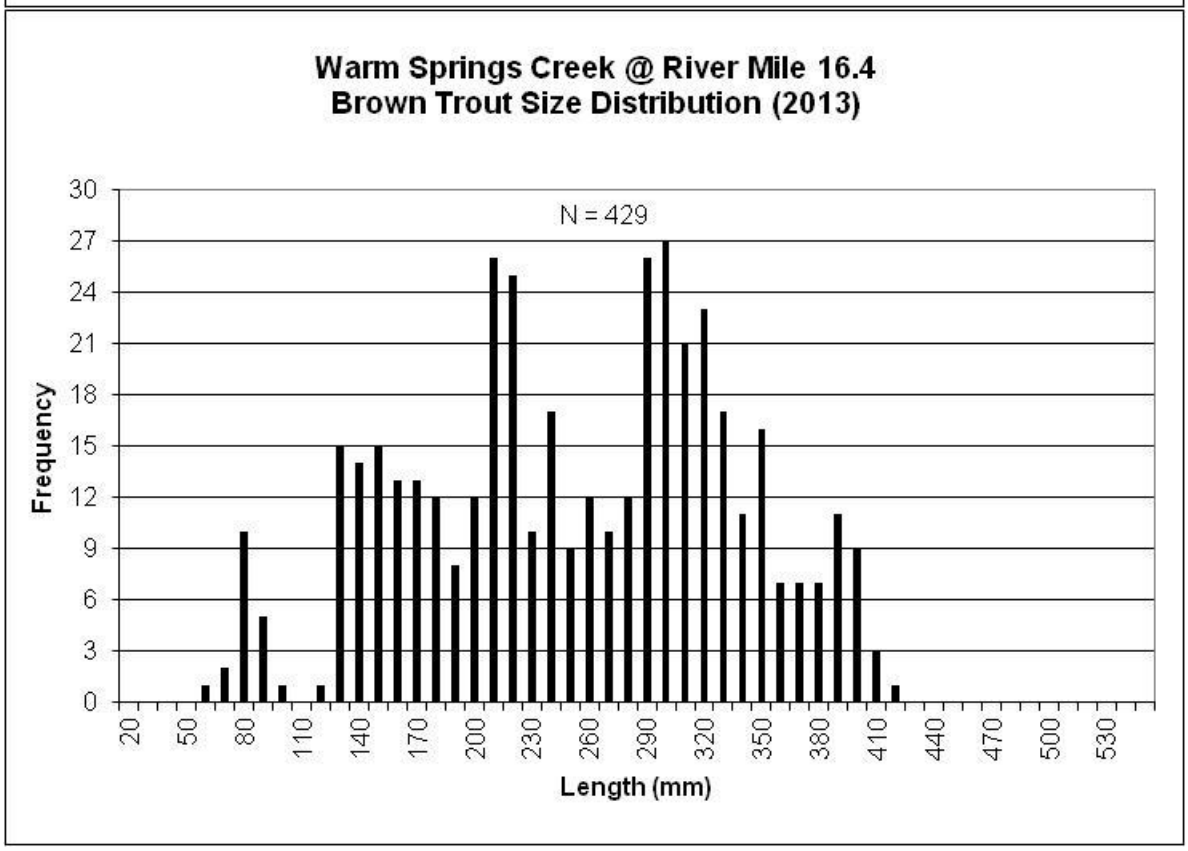

Perkins Gulch @ River Mile 4.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 6
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

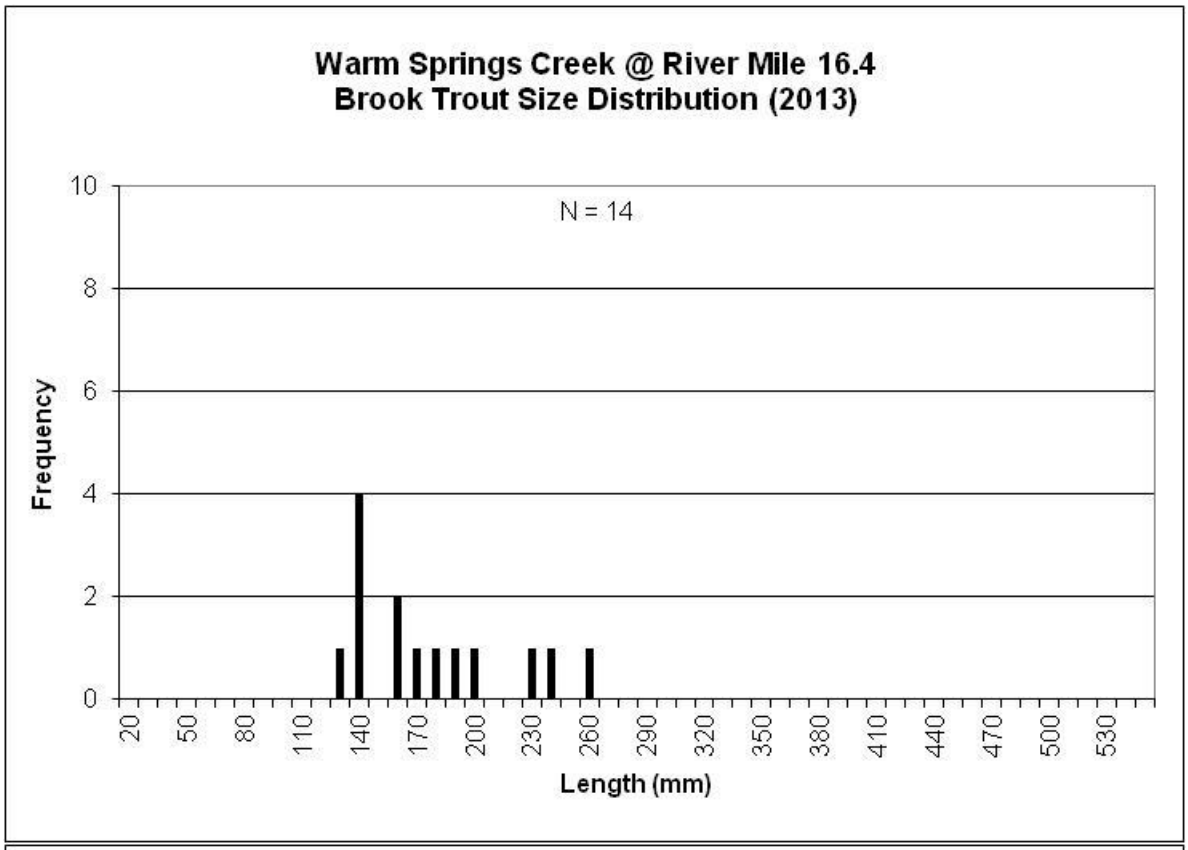

Perkins Gulch @ River Mile 5.1
Westslope Cutthroat Trout Size Distribution (2014)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

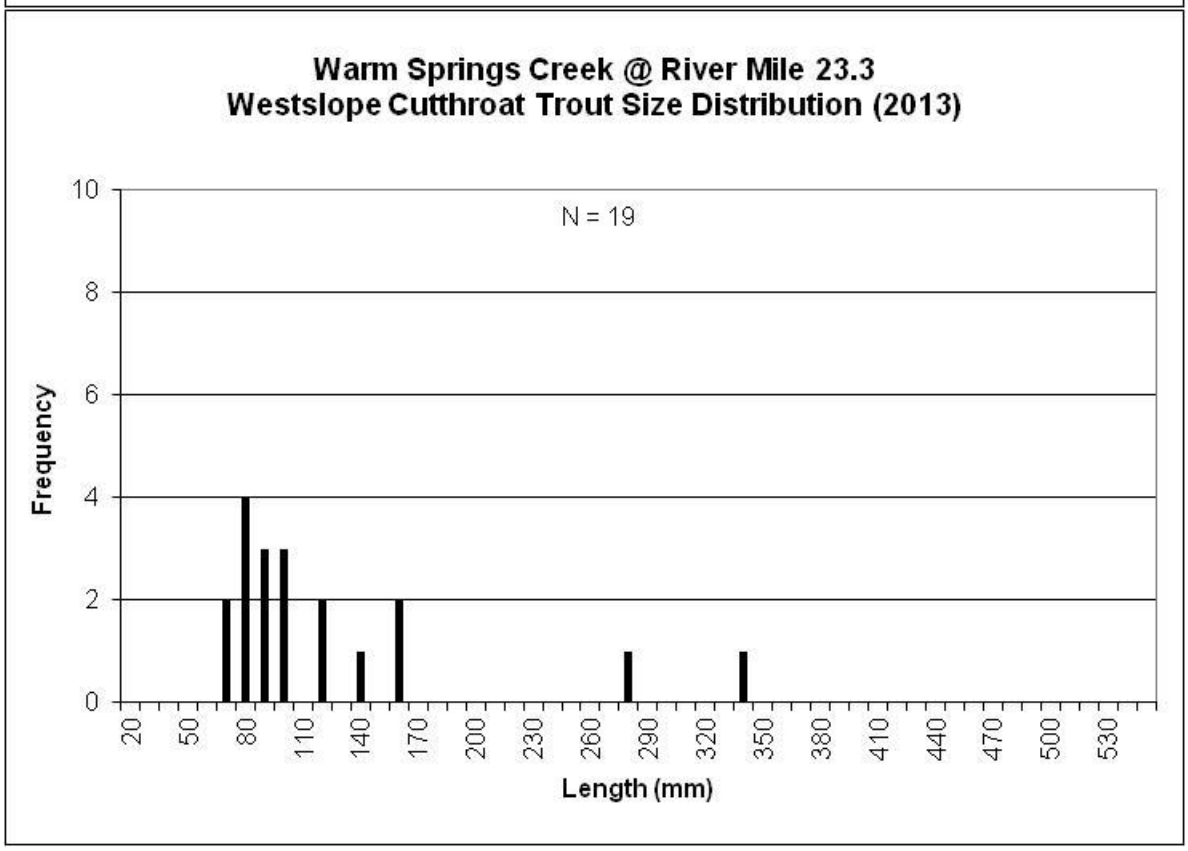

Warm Springs Creek @ River Mile 1.8
Rainbow Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

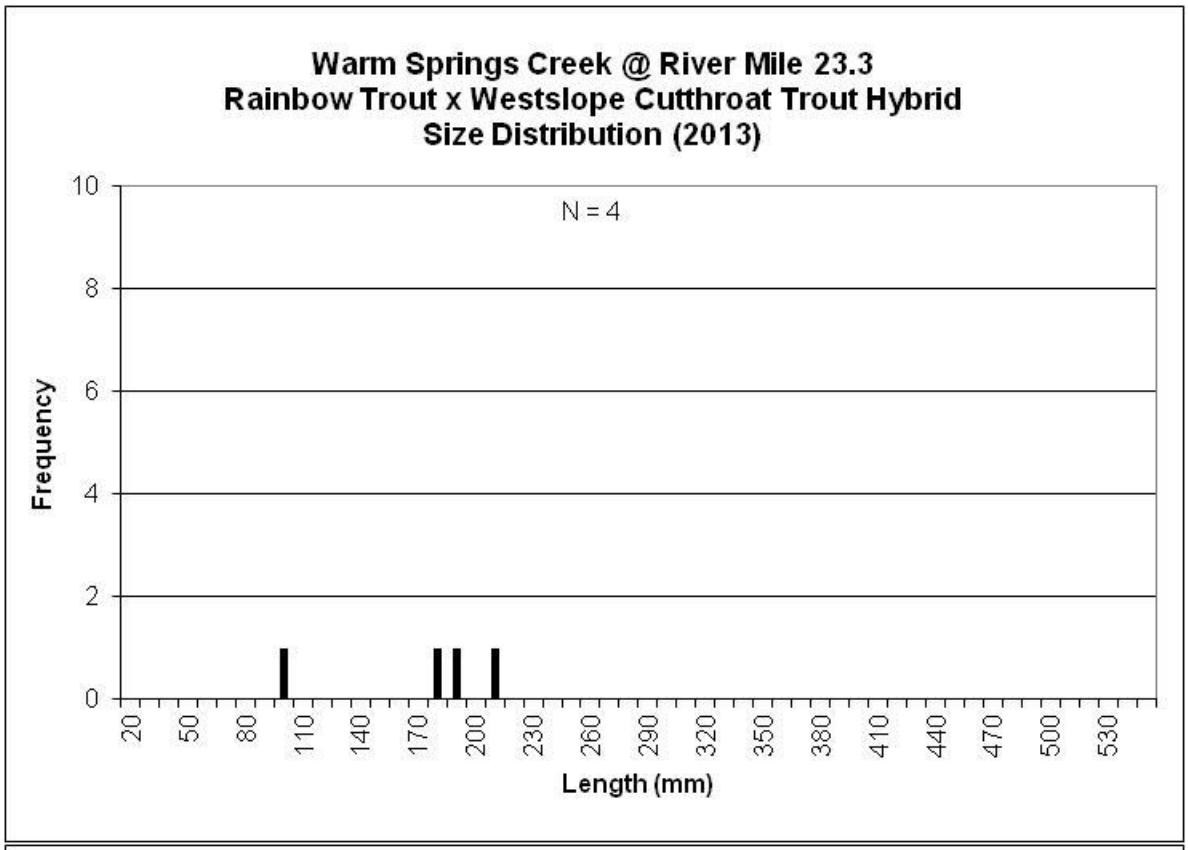

Warm Springs Creek @ River Mile 1.8
BrownTrout Size Distribution (2013)
N = 654
Frequency
0
5
10
15
20
25
30
35
40
45
50
55
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

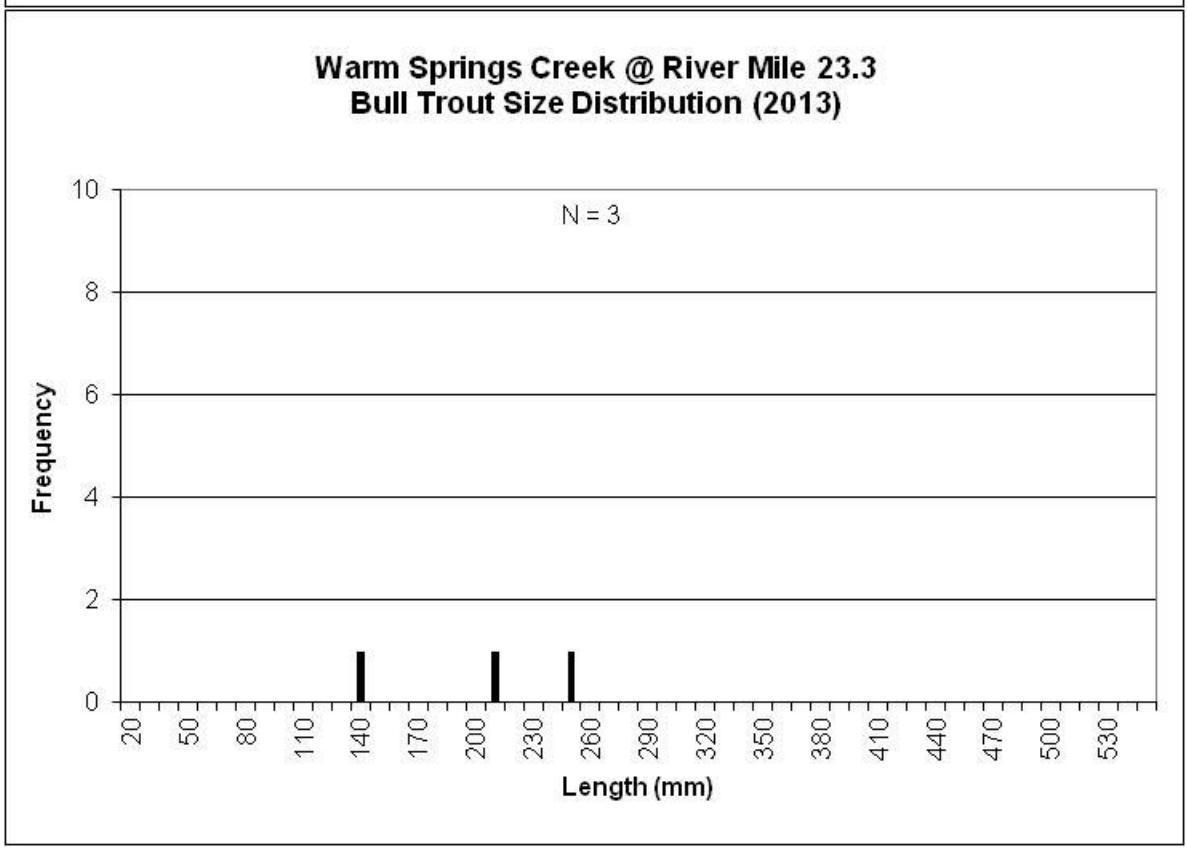

Warm Springs Creek @ River Mile 16.4
Bull Trout Size Distribution (2013)
N = 14
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

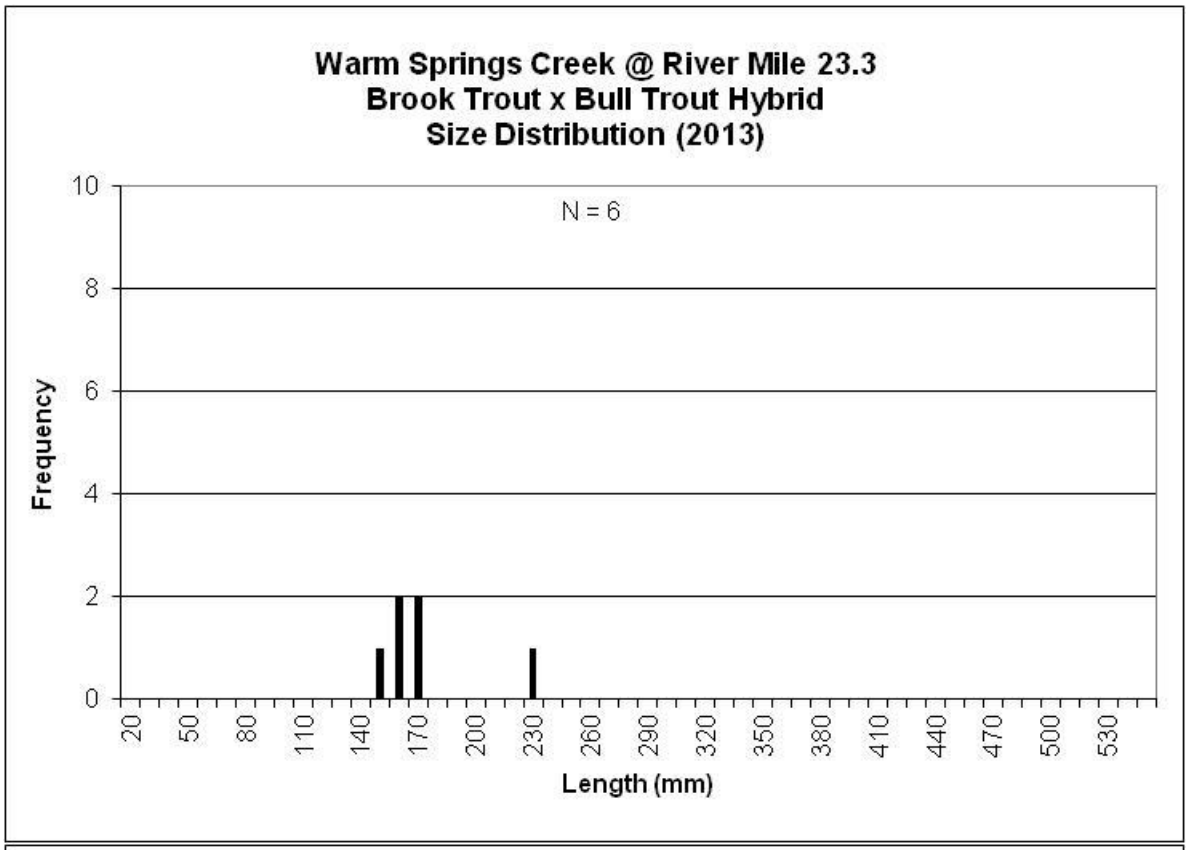

Warm Springs Creek @ River Mile 16.4
Brown Trout Size Distribution (2013)
N = 429
Frequency
0
3
6
9
12
15
18
21
24
27
30
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

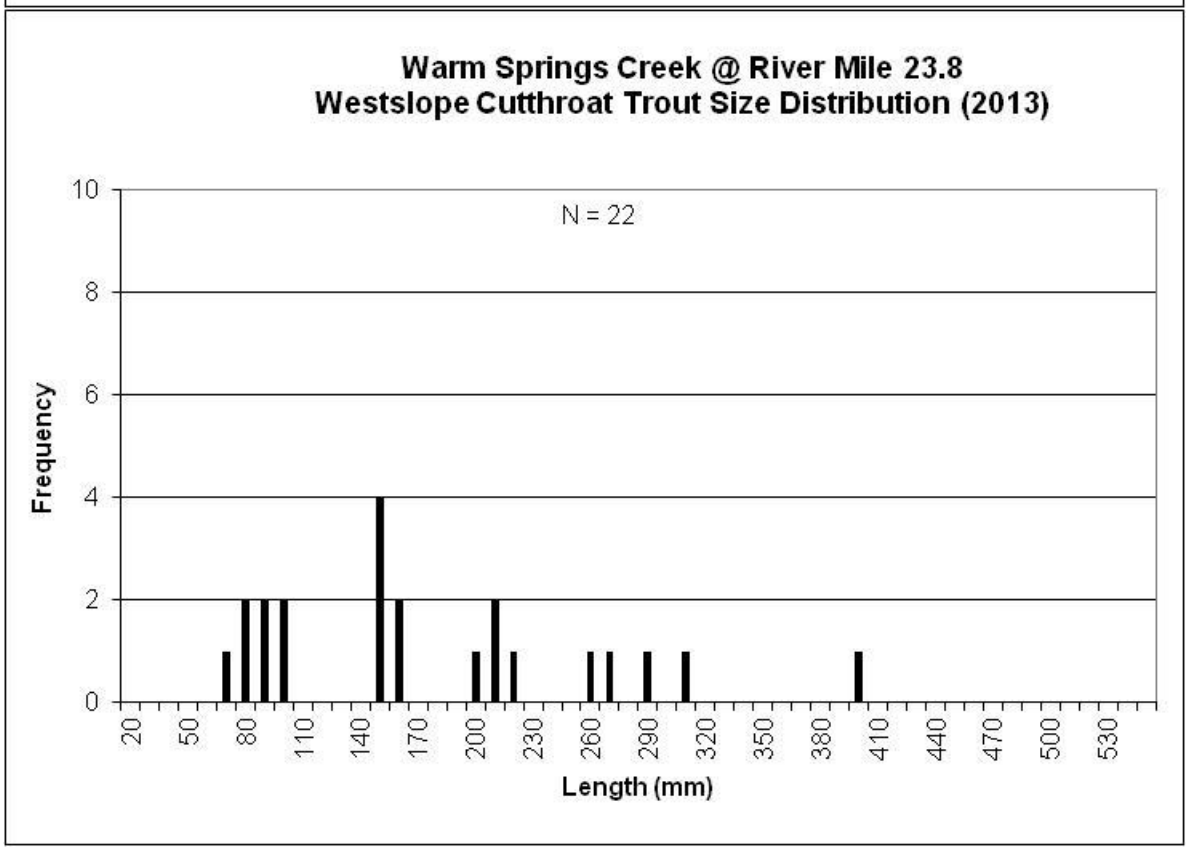

Warm Springs Creek @ River Mile 16.4
Brook Trout Size Distribution (2013)
N = 14
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

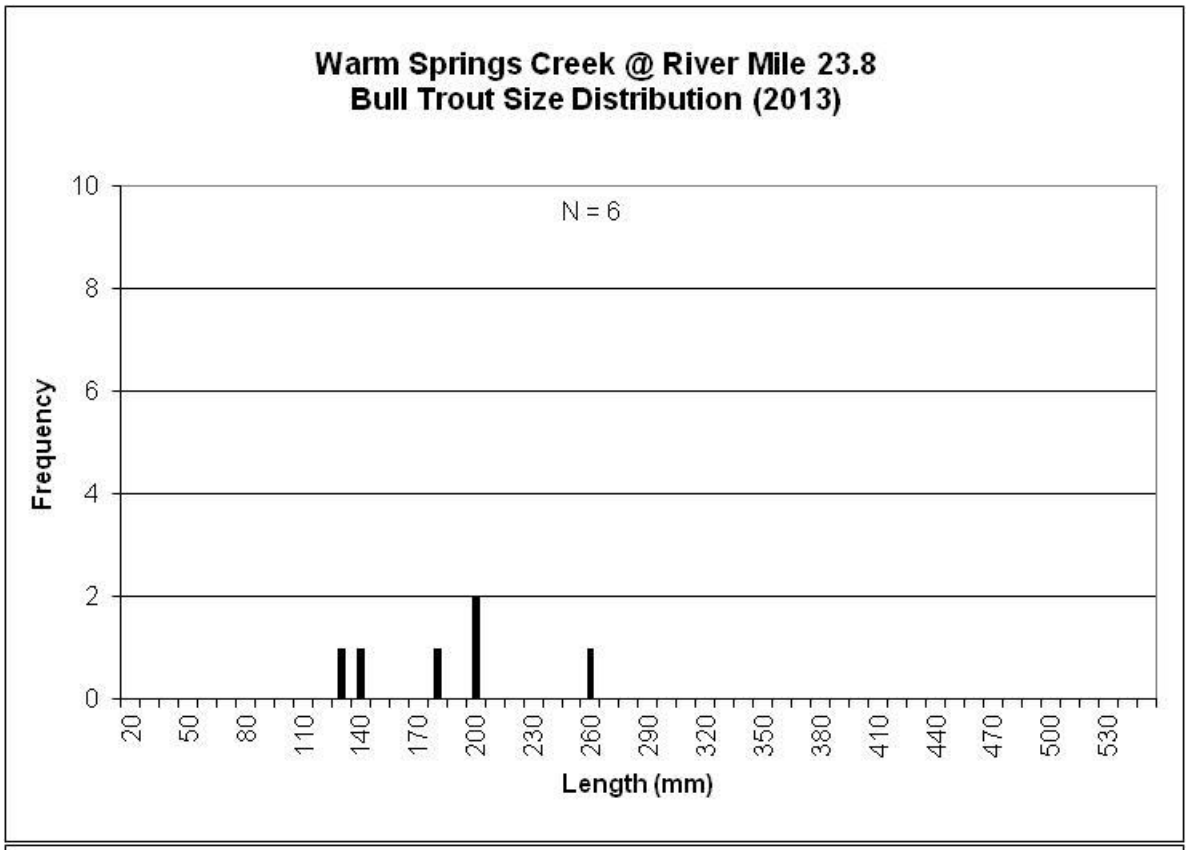

Warm Springs Creek @ River Mile 23.3
Westslope Cutthroat Trout Size Distribution (2013)
N = 19
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

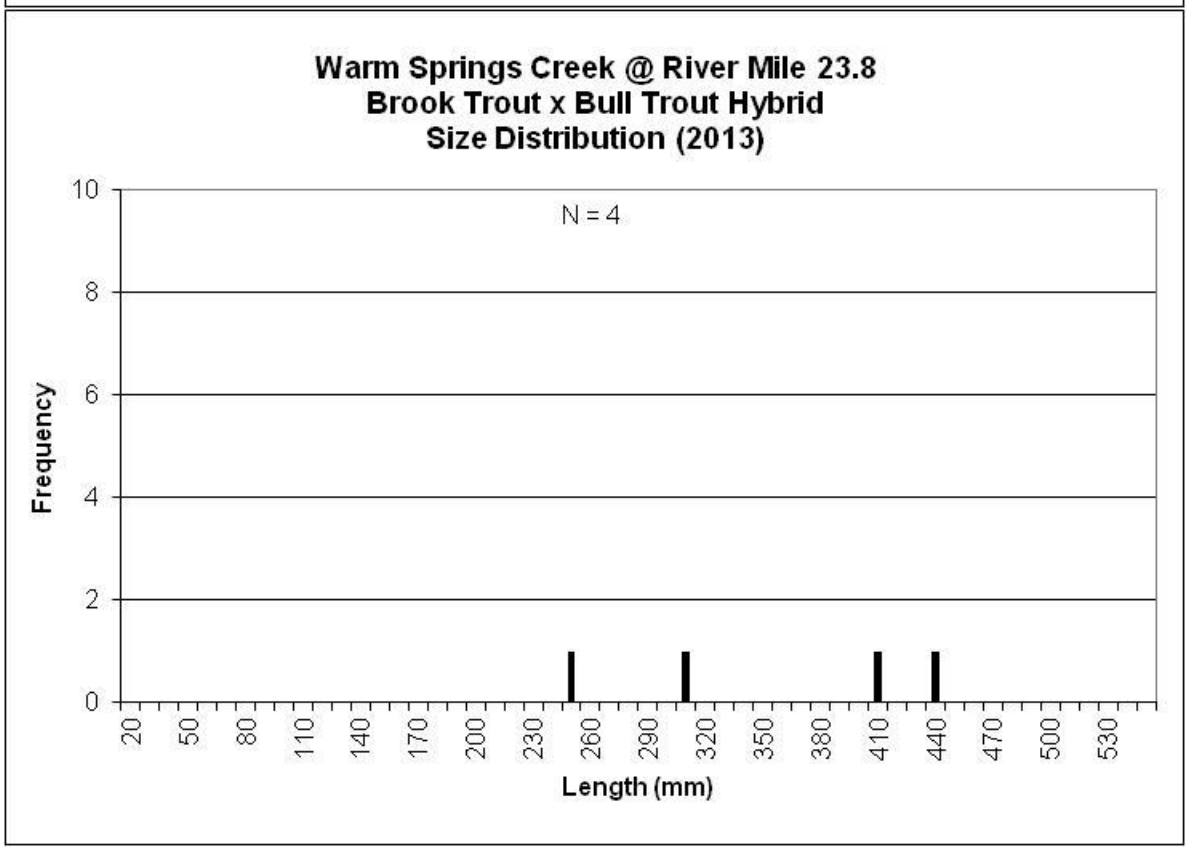

Warm Springs Creek @ River Mile 23.3
Rainbow Trout x Westslope Cutthroat Trout Hybrid
Size Distribution (2013)
N = 4
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

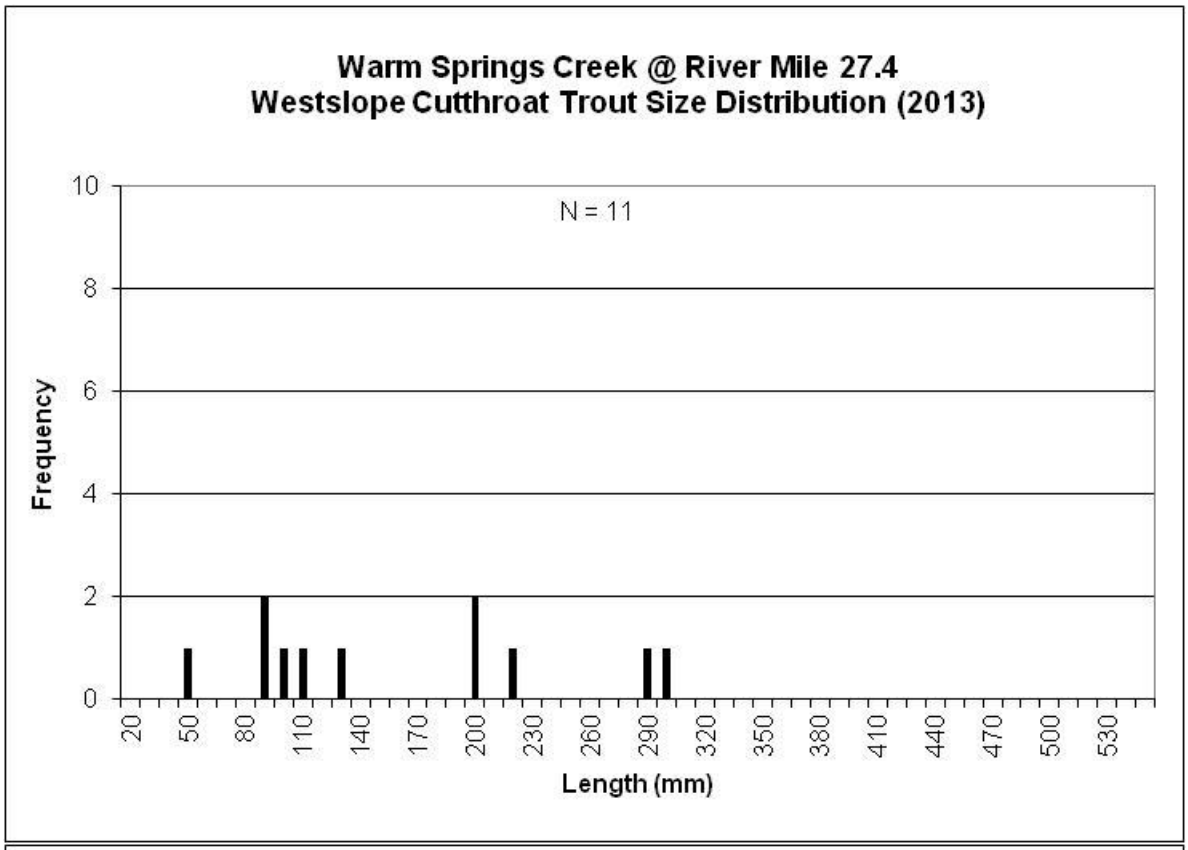

Warm Springs Creek @ River Mile 23.3
Bull Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

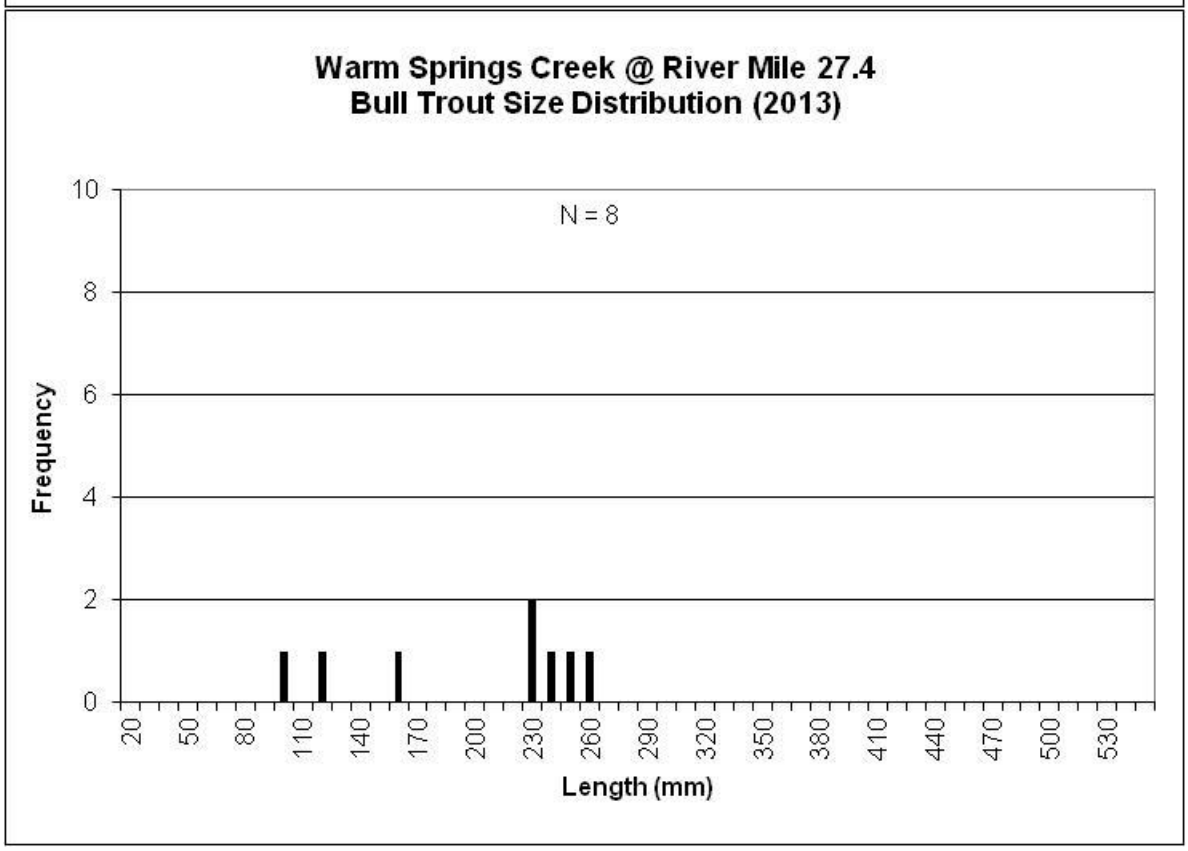

Warm Springs Creek @ River Mile 23.3
Brook Trout x Bull Trout Hybrid
Size Distribution (2013)
N = 6
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

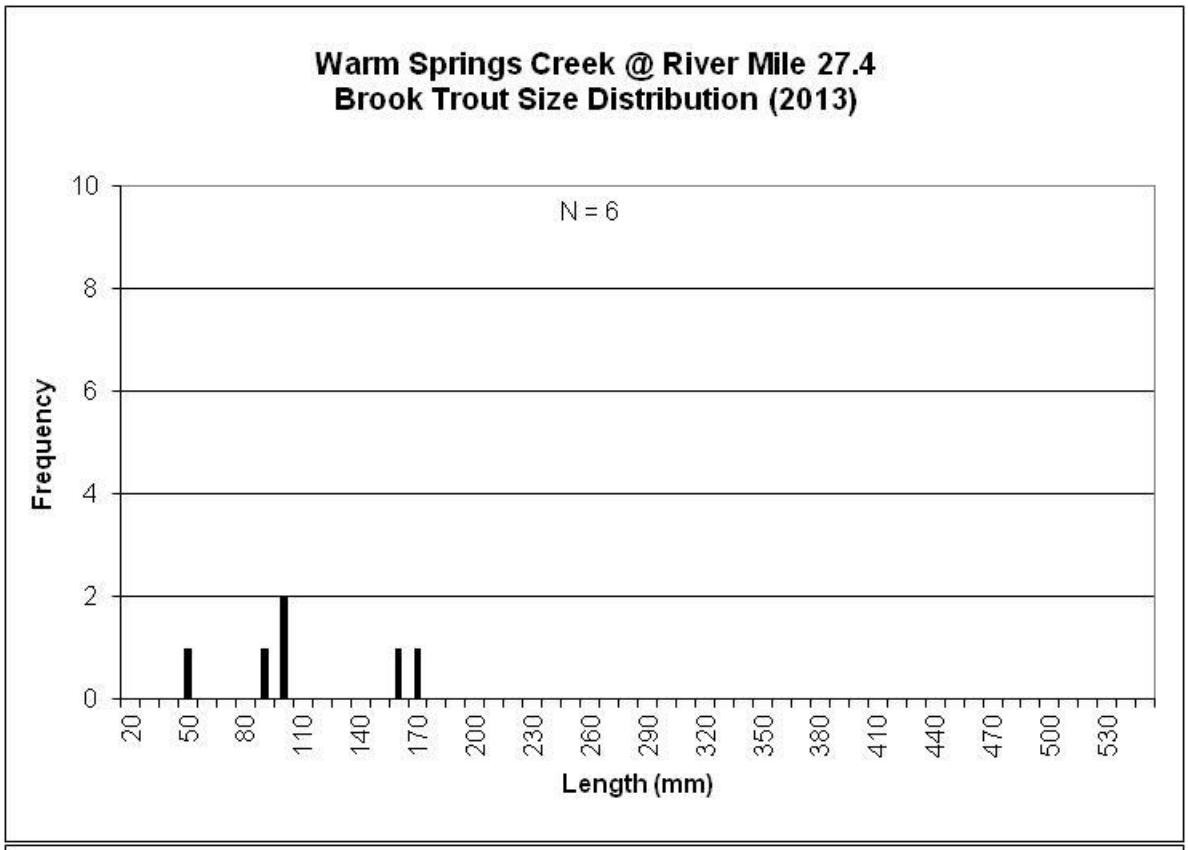

Warm Springs Creek @ River Mile 23.8
Westslope Cutthroat Trout Size Distribution (2013)
N = 22
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

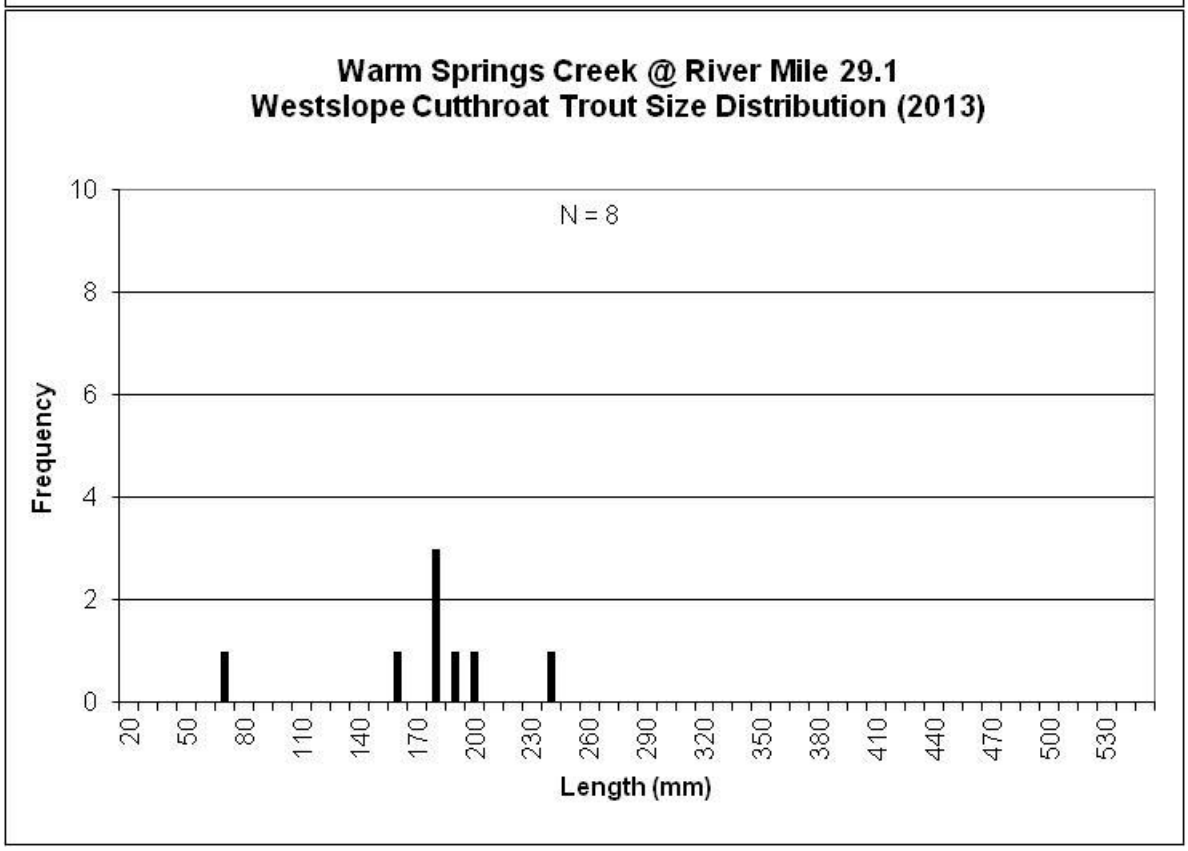

Warm Springs Creek @ River Mile 23.8
Bull Trout Size Distribution (2013)
N = 6
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

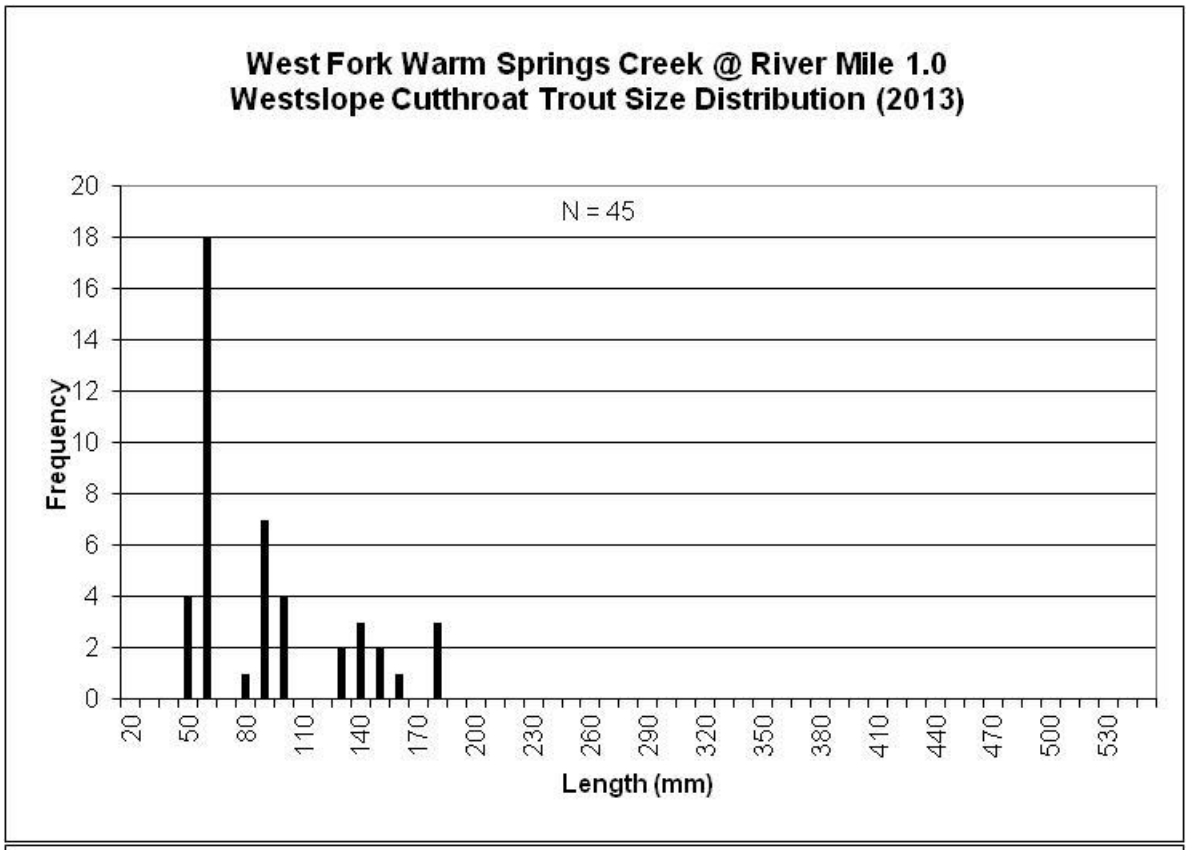

Warm Springs Creek @ River Mile 23.8
Brook Trout x Bull Trout Hybrid
Size Distribution (2013)
N = 4
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

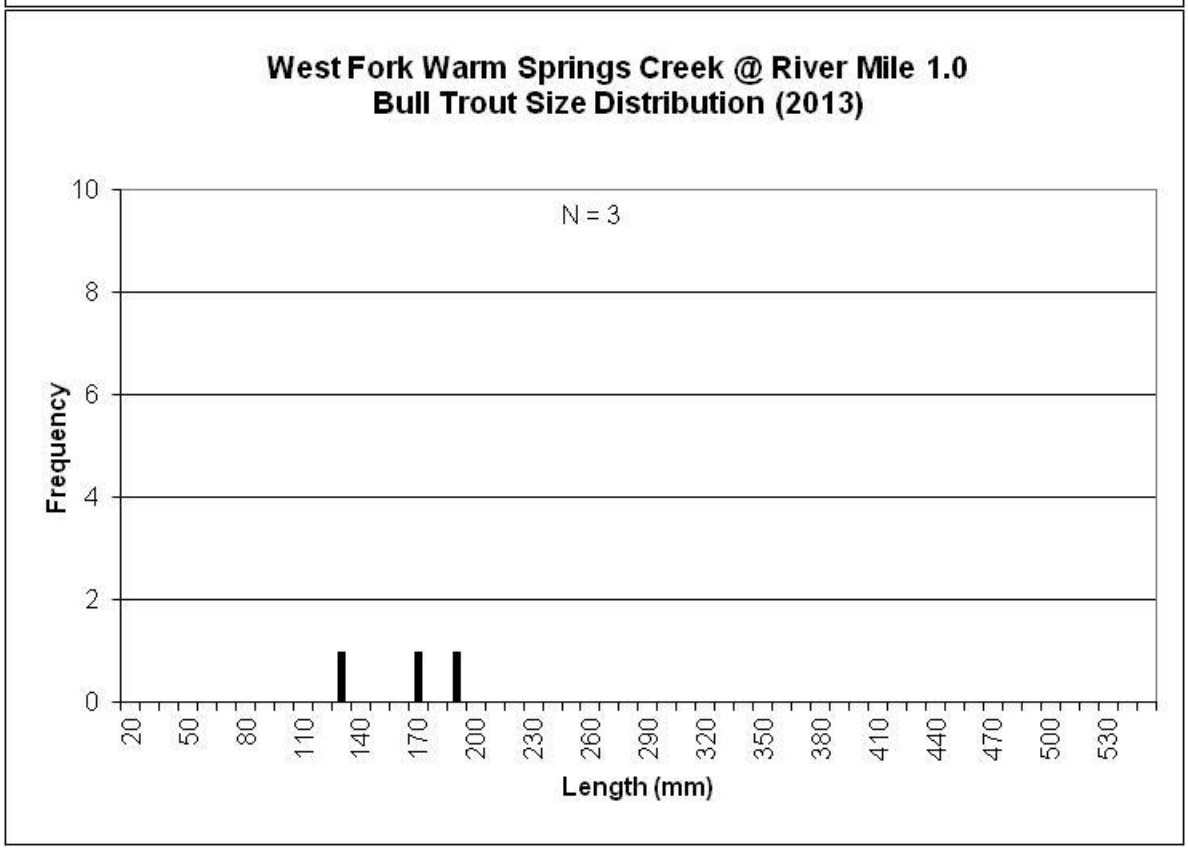

Warm Springs Creek @ River Mile 27.4
Westslope Cutthroat Trout Size Distribution (2013)
N = 11
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

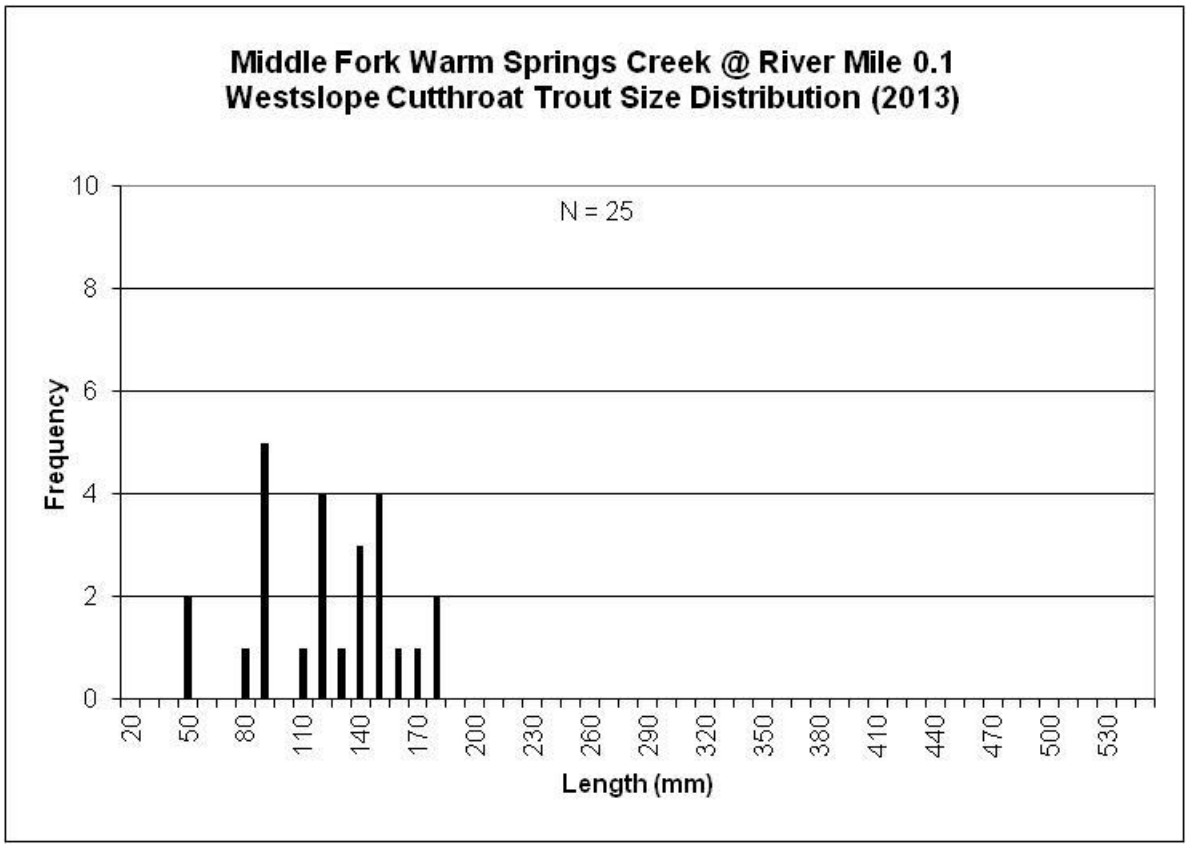

Warm Springs Creek @ River Mile 27.4
Bull Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

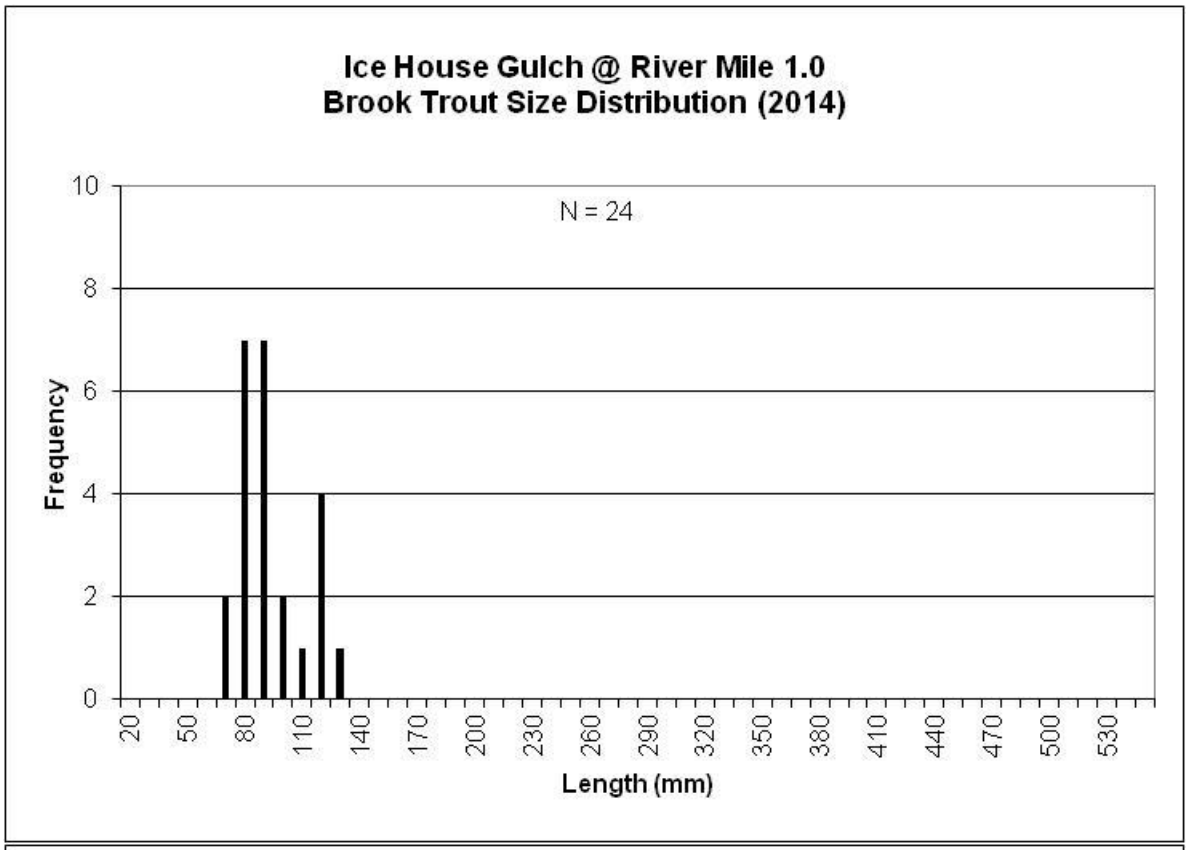

Warm Springs Creek @ River Mile 27.4
Brook Trout Size Distribution (2013)
N = 6
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

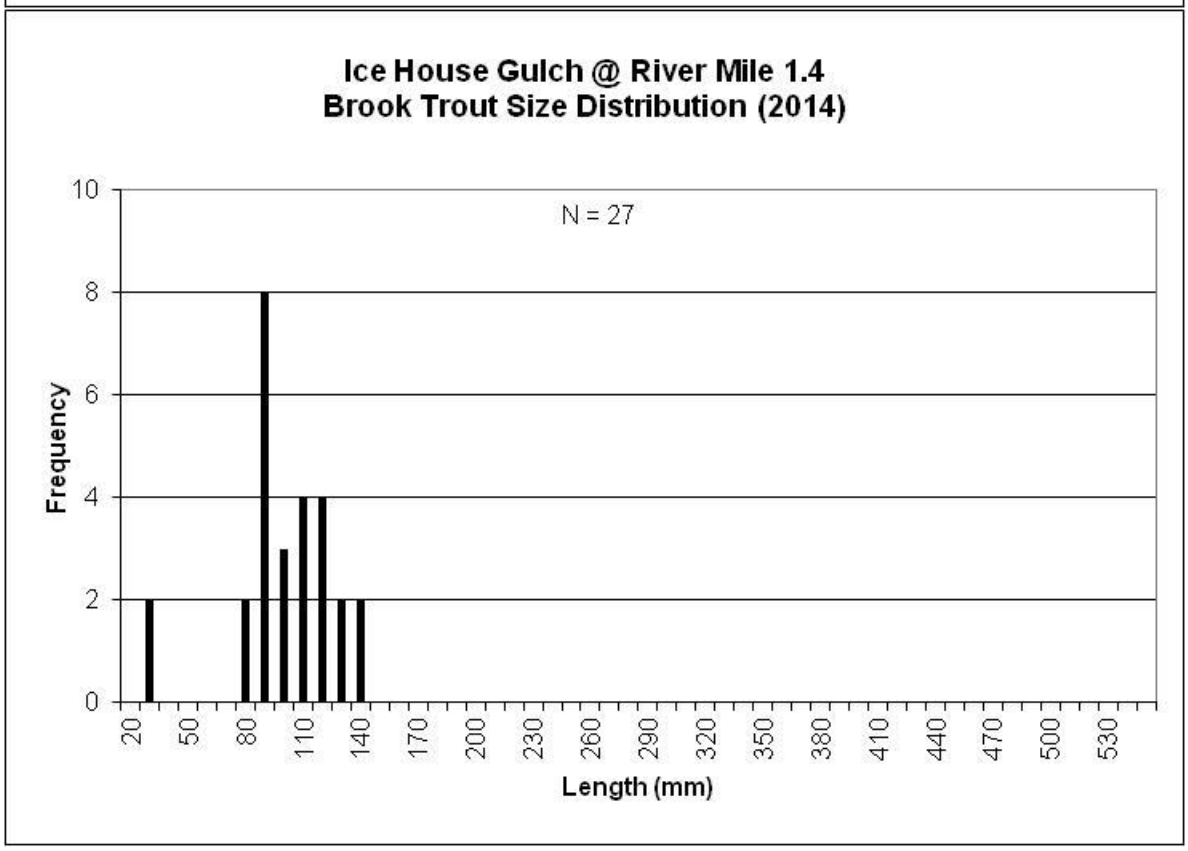

Warm Springs Creek @ River Mile 29.1
Westslope Cutthroat Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

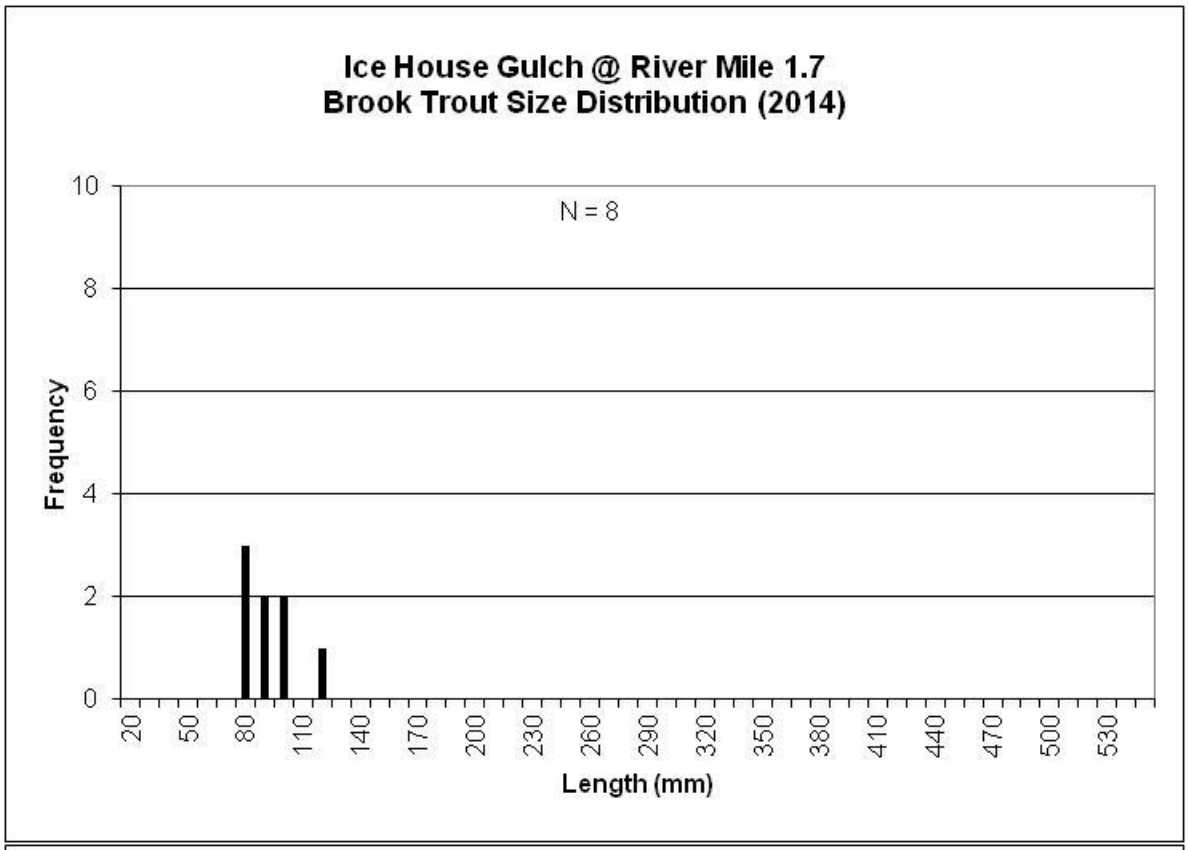

West Fork Warm Springs Creek @ River Mile 1.0
Westslope Cutthroat Trout Size Distribution (2013)
N = 45
Frequency
0
2
4
6
8
10
12
14
16
18
20
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

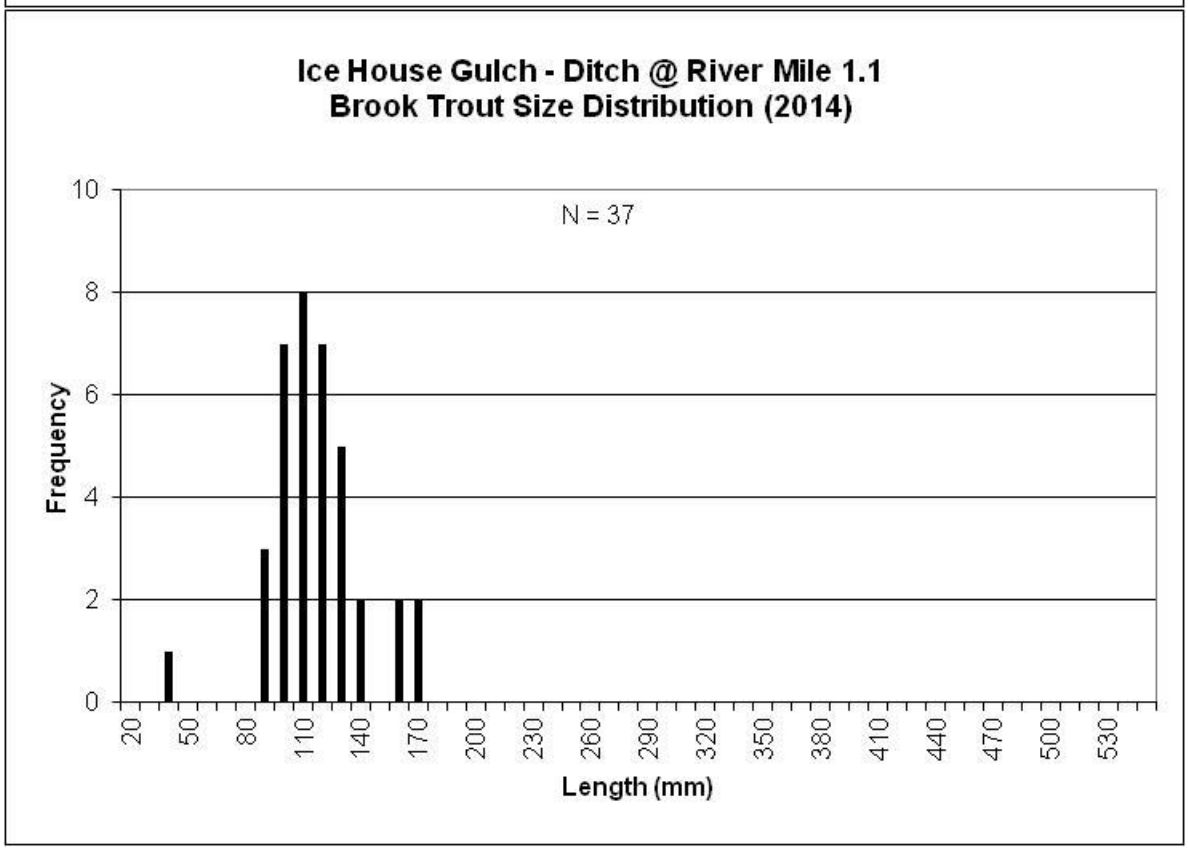

West Fork Warm Springs Creek @ River Mile 1.0
Bull Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

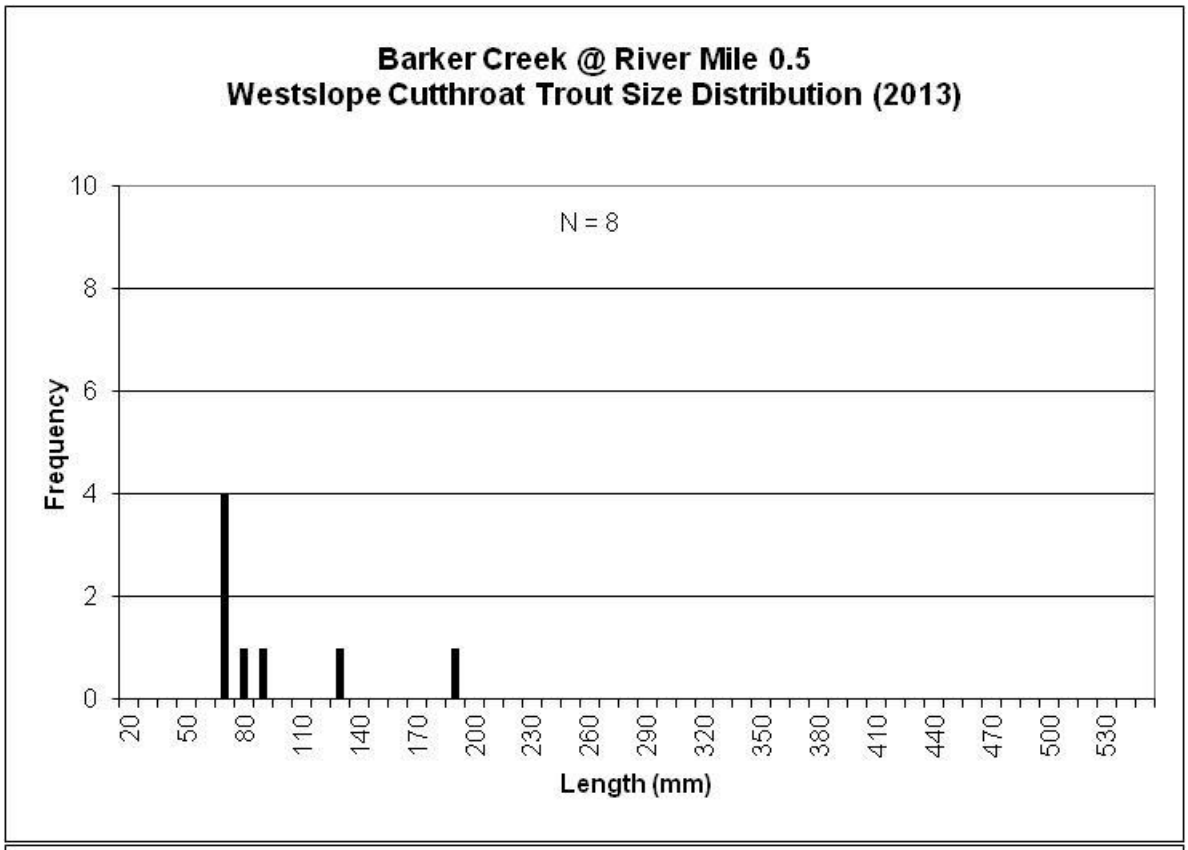

Middle Fork Warm Springs Creek @ River Mile 0.1
Westslope Cutthroat Trout Size Distribution (2013)
N = 25
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

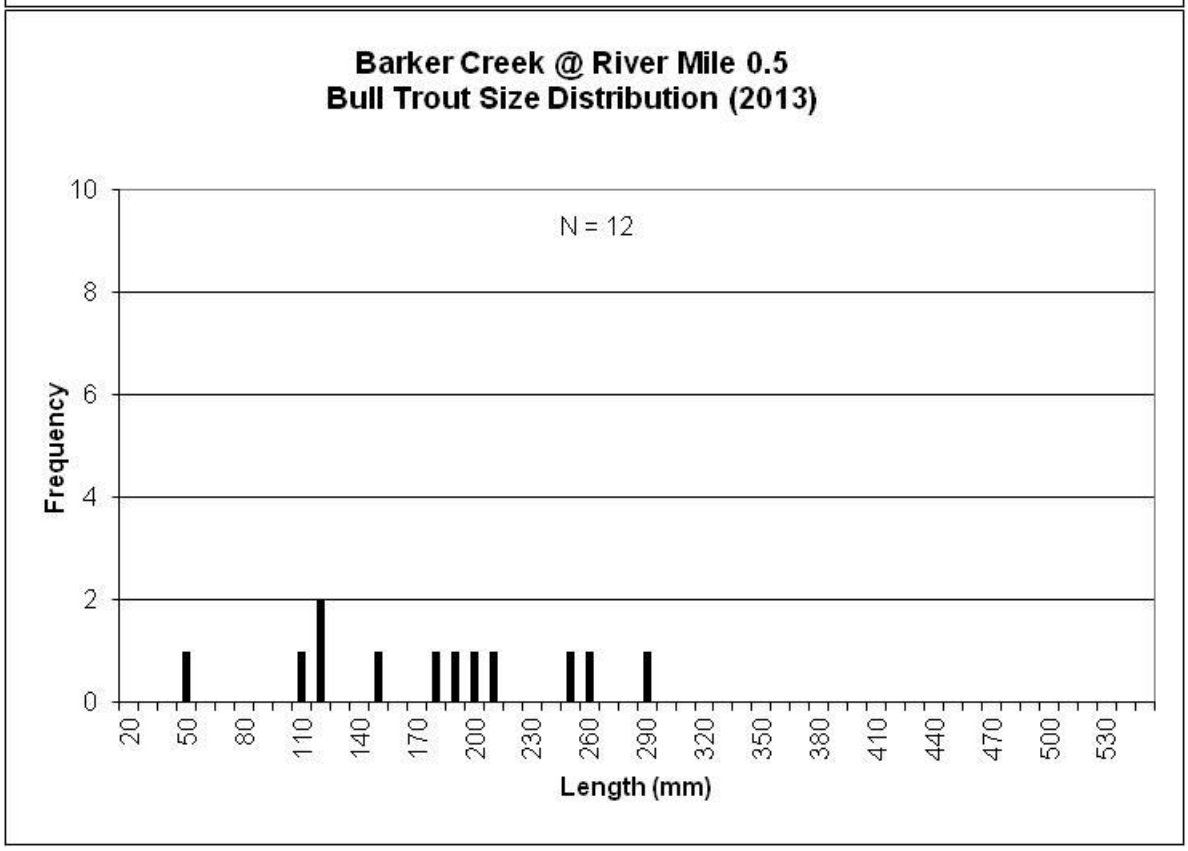

Ice House Gulch @ River Mile 1.0
Brook Trout Size Distribution (2014)
N = 24
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

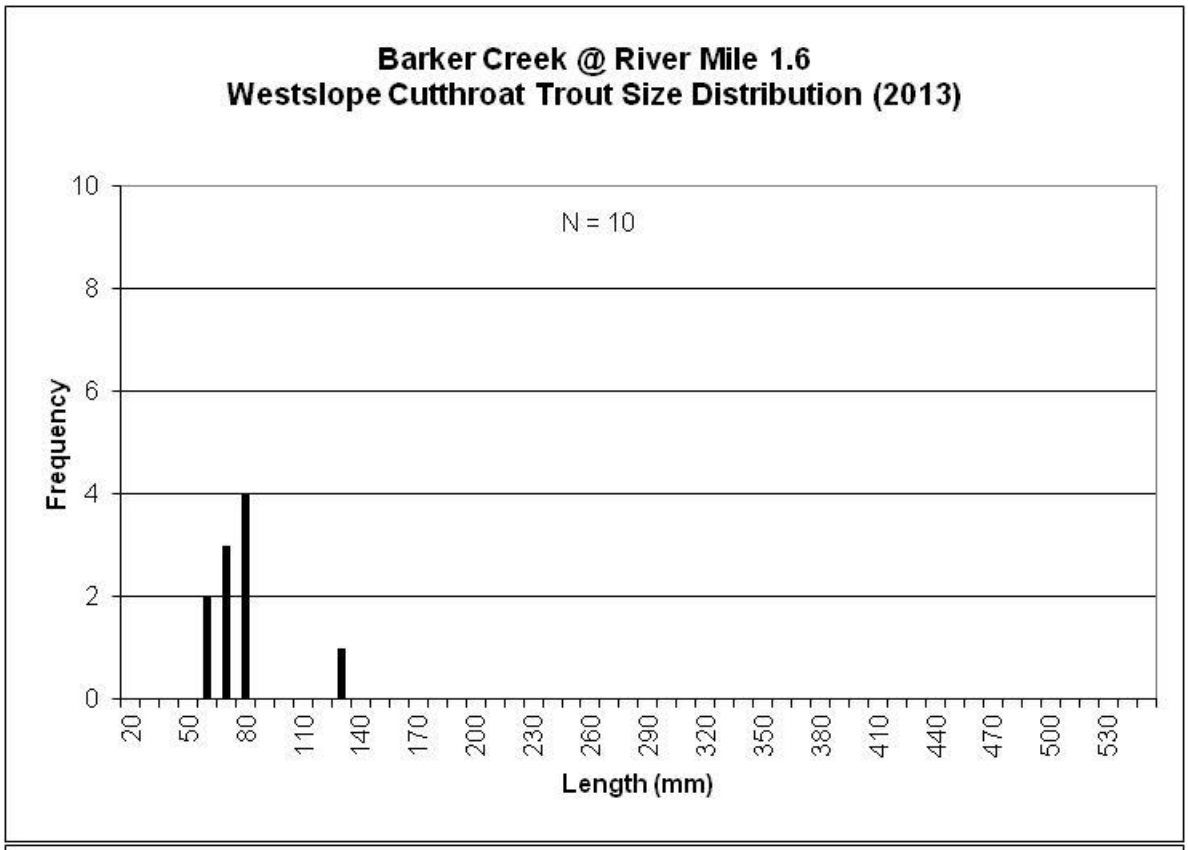

Ice House Gulch @ River Mile 1.4
Brook Trout Size Distribution (2014)
N = 27
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

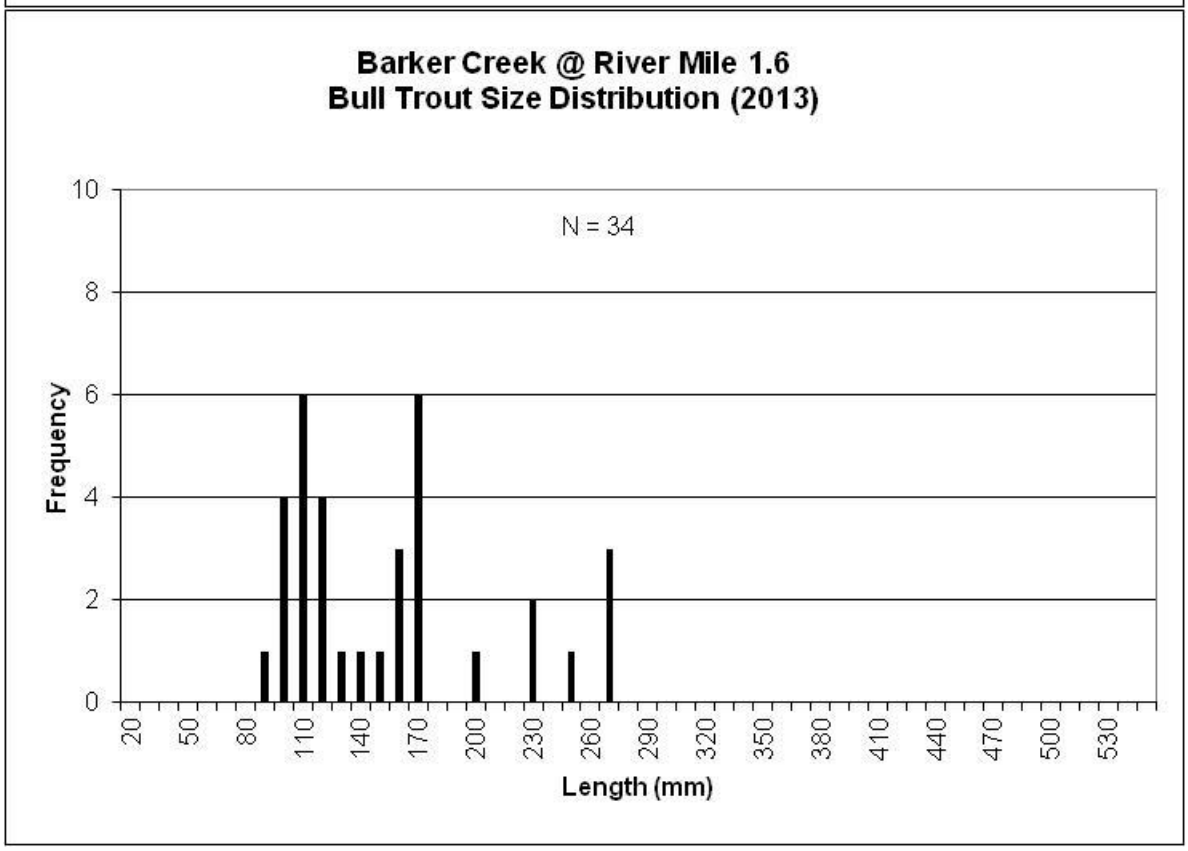

Ice House Gulch @ River Mile 1.7
Brook Trout Size Distribution (2014)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

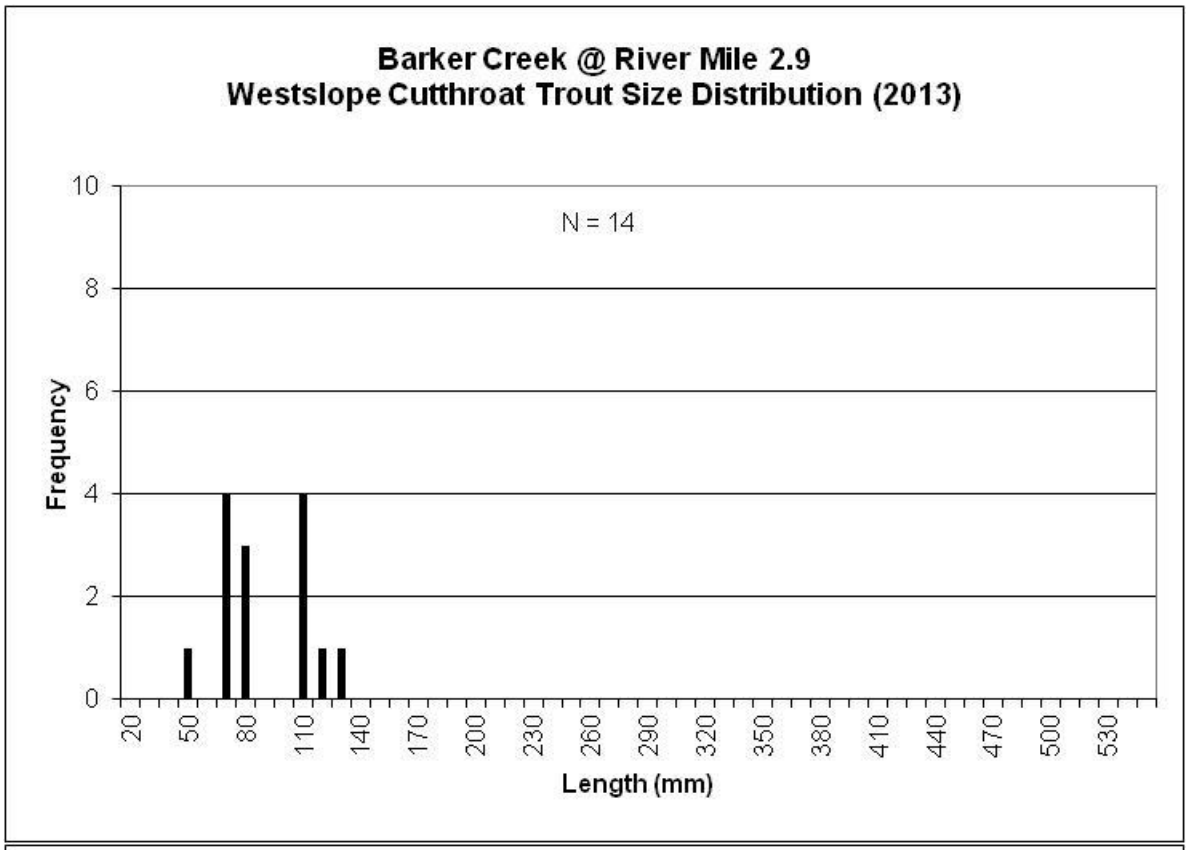

Ice House Gulch - Ditch @ River Mile 1.1
Brook Trout Size Distribution (2014)
N = 37
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

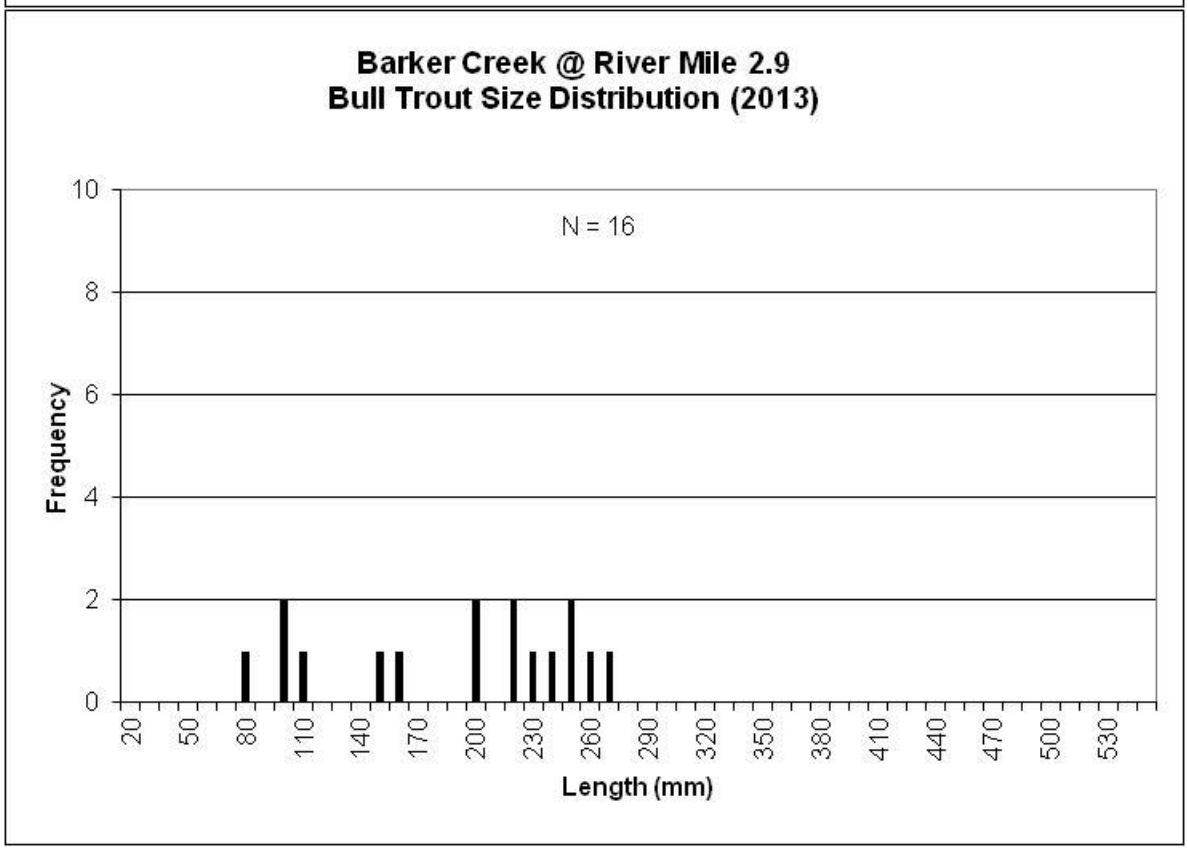

Barker Creek @ River Mile 0.5
Westslope Cutthroat Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

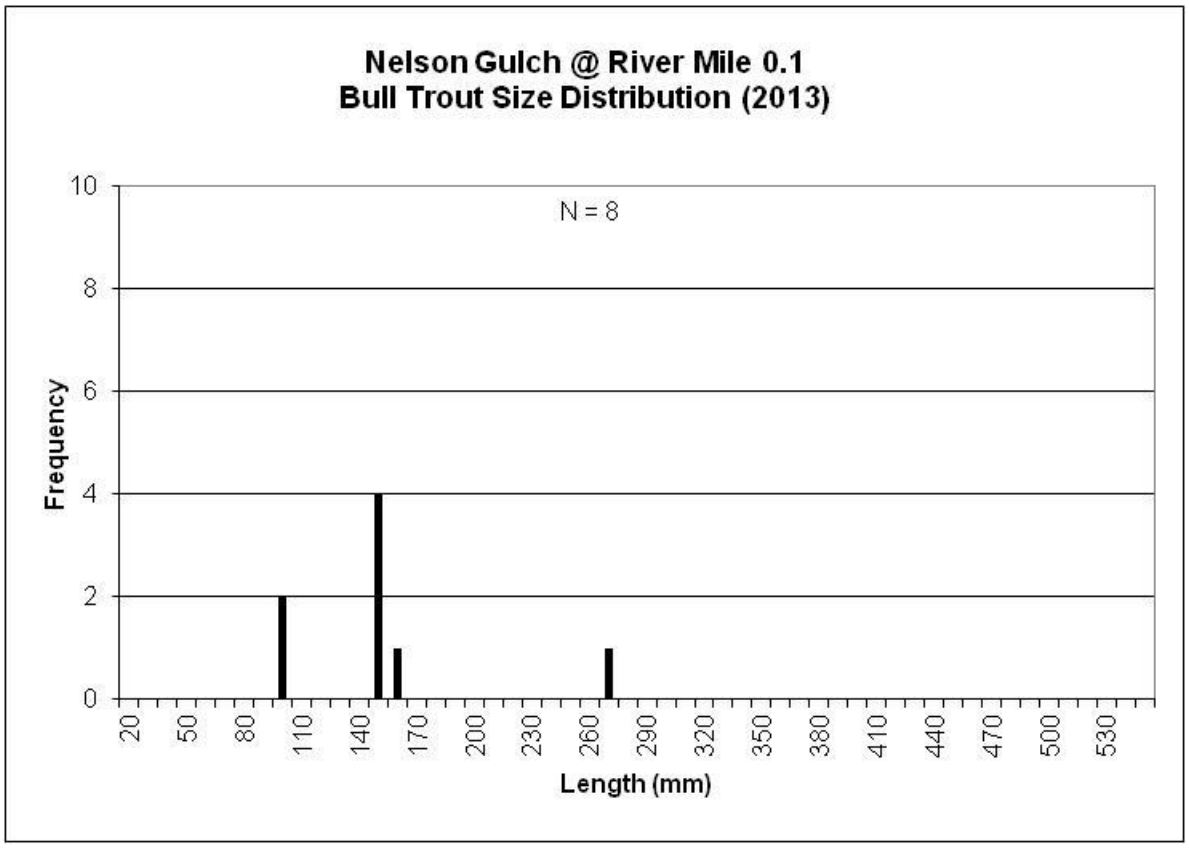

Barker Creek @ River Mile 0.5
Bull Trout Size Distribution (2013)
N = 12
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

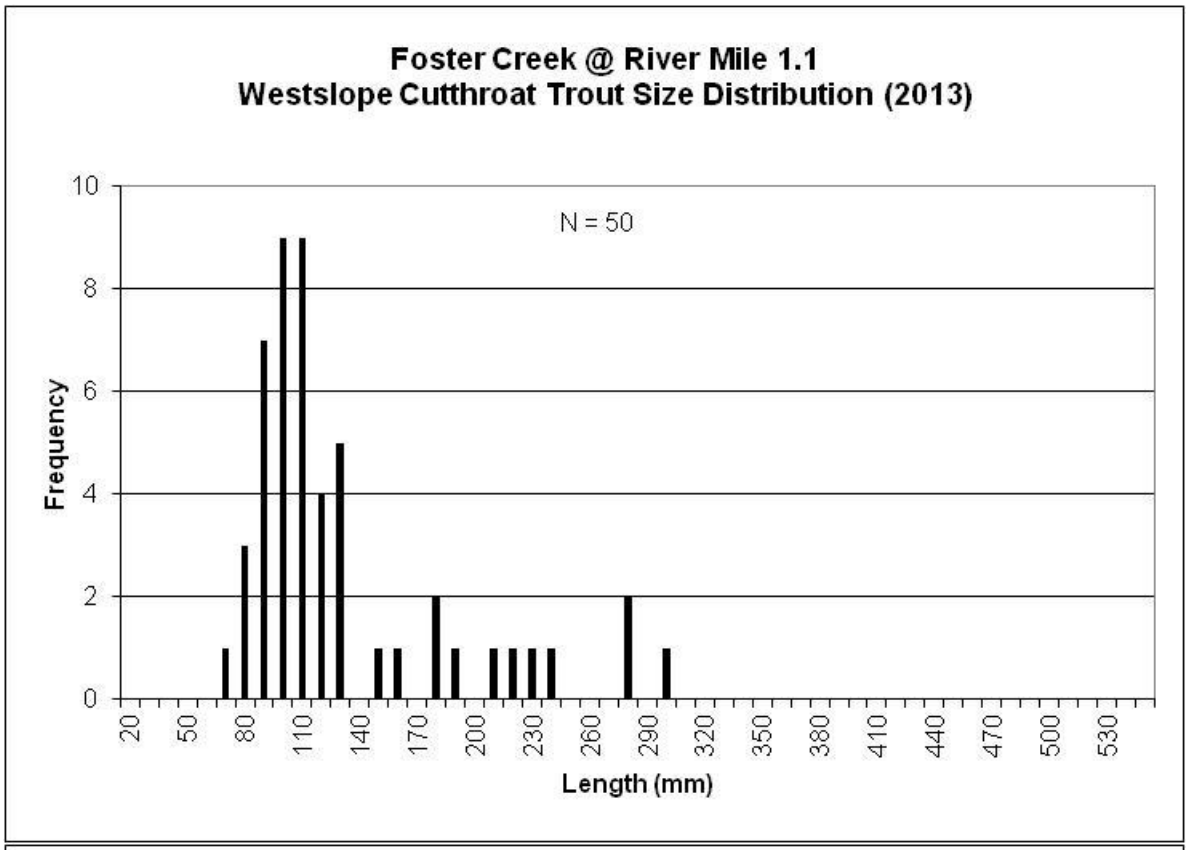

Barker Creek @ River Mile 1.6
Westslope Cutthroat Trout Size Distribution (2013)
N = 10
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

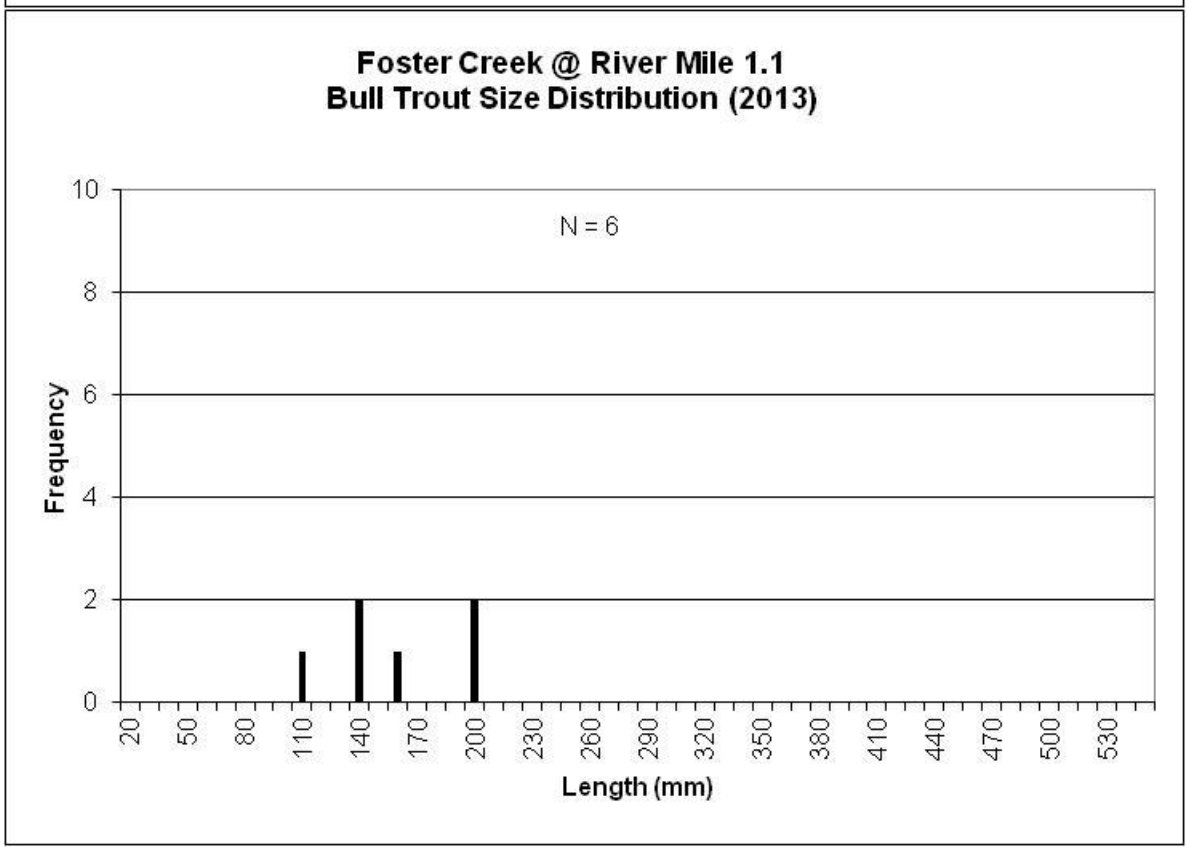

Barker Creek @ River Mile 1.6
Bull Trout Size Distribution (2013)
N = 34
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

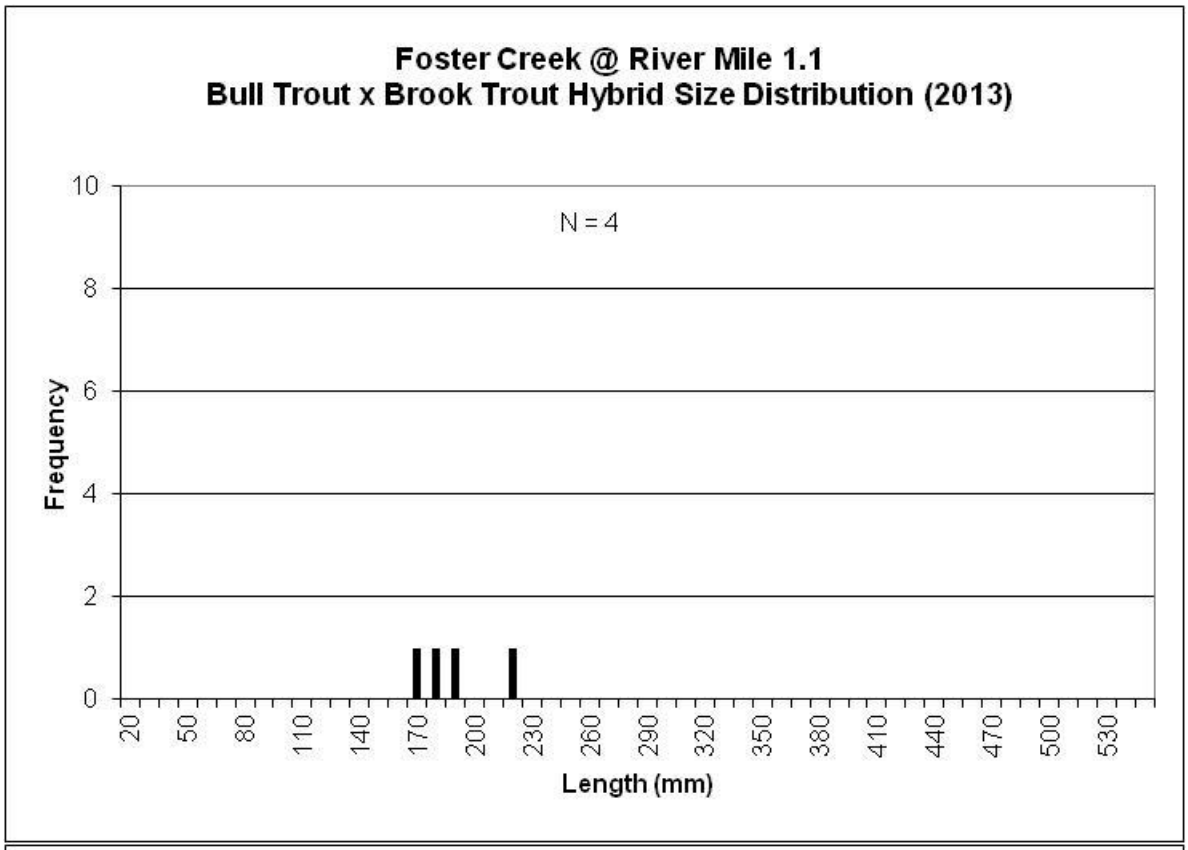

Barker Creek @ River Mile 2.9
Westslope Cutthroat Trout Size Distribution (2013)
N = 14
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

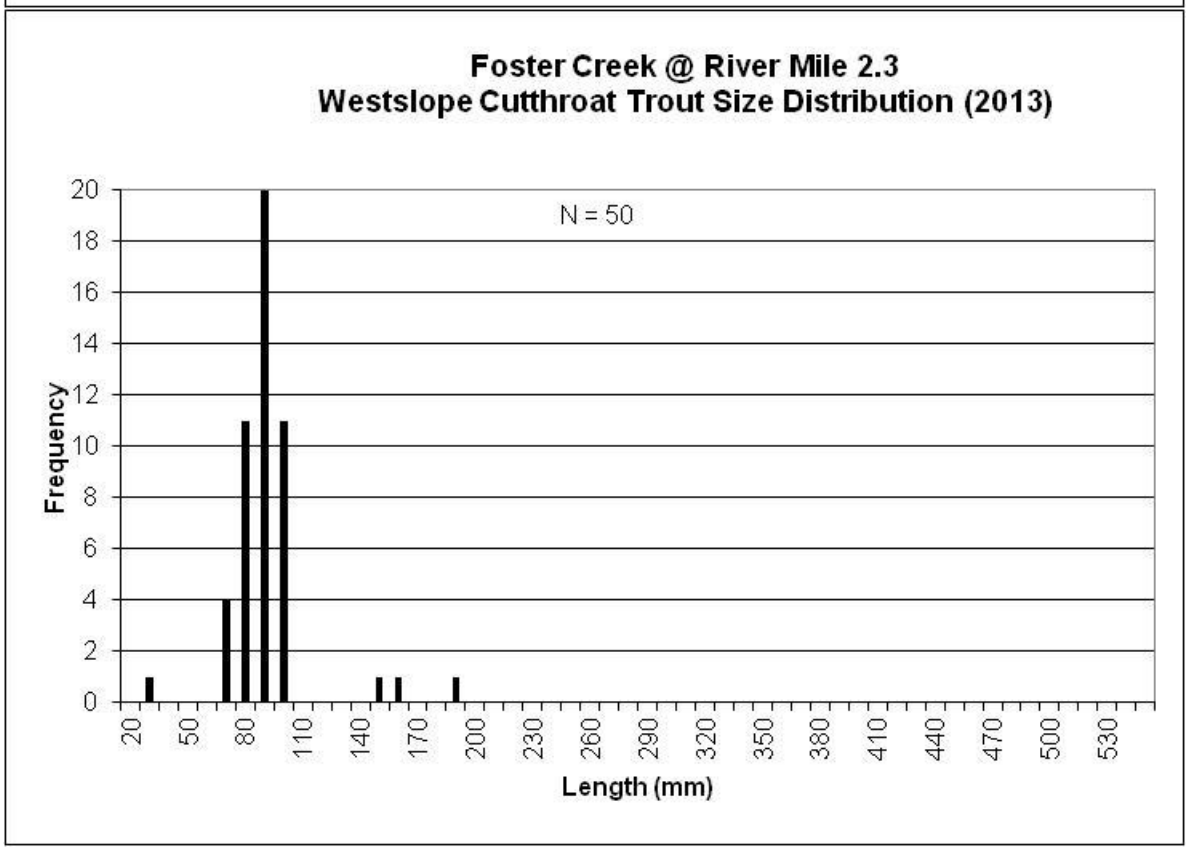

Barker Creek @ River Mile 2.9
Bull Trout Size Distribution (2013)
N = 16
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

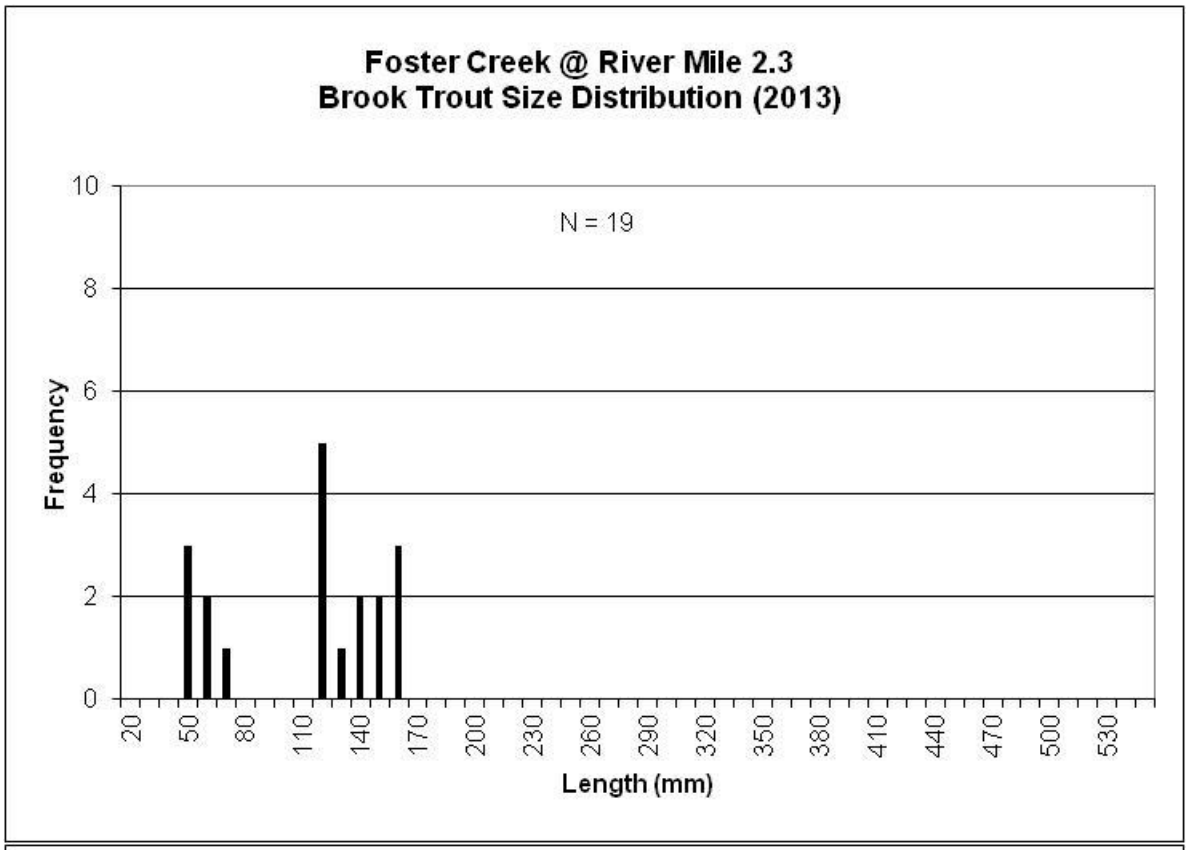

Nelson Gulch @ River Mile 0.1
Bull Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

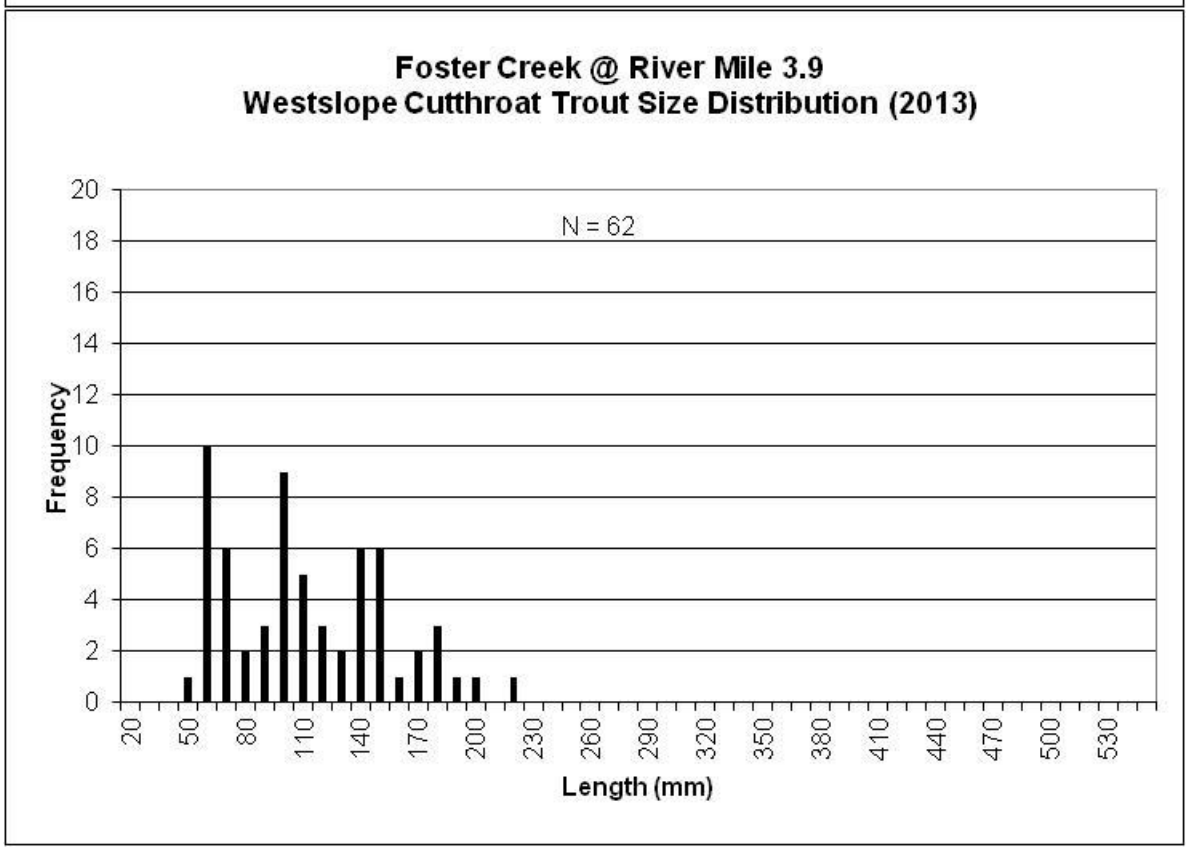

Foster Creek @ River Mile 1.1
Westslope Cutthroat Trout Size Distribution (2013)
N = 50
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

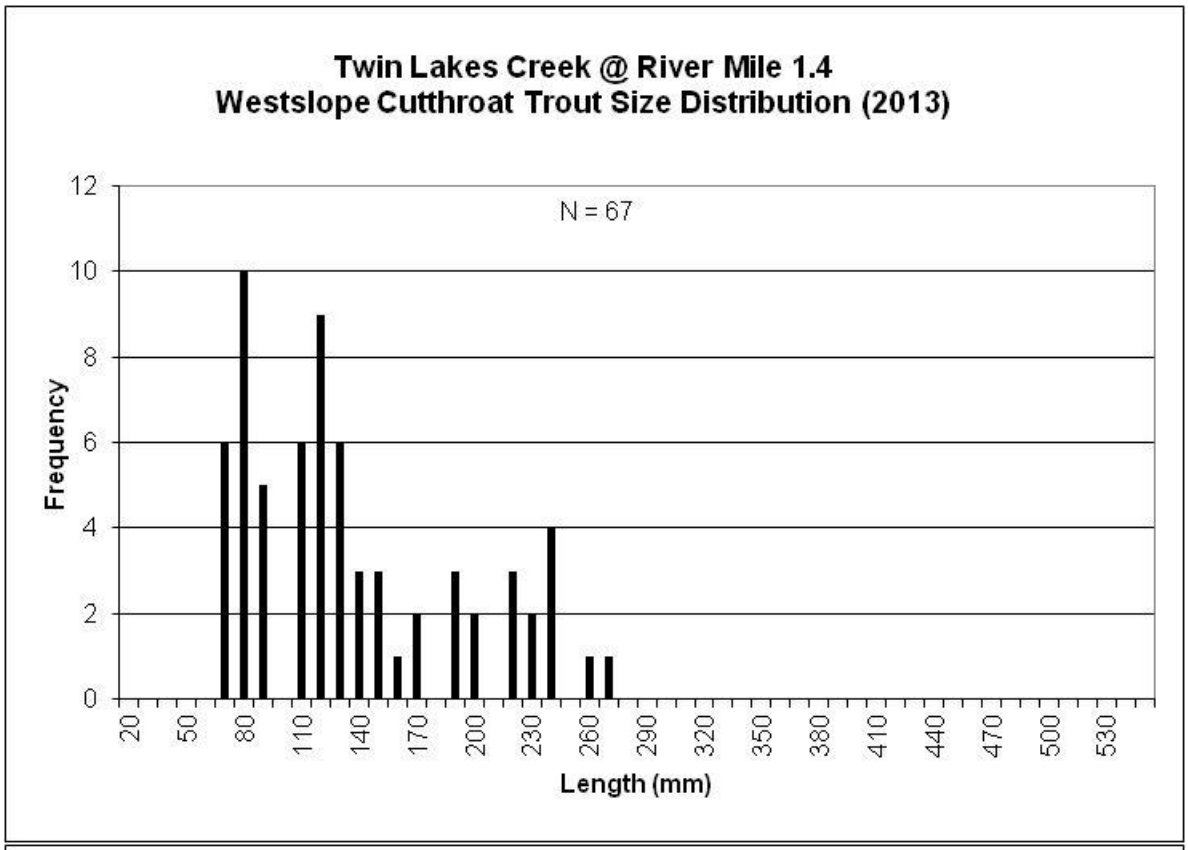

Foster Creek @ River Mile 1.1
Bull Trout Size Distribution (2013)
N = 6
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

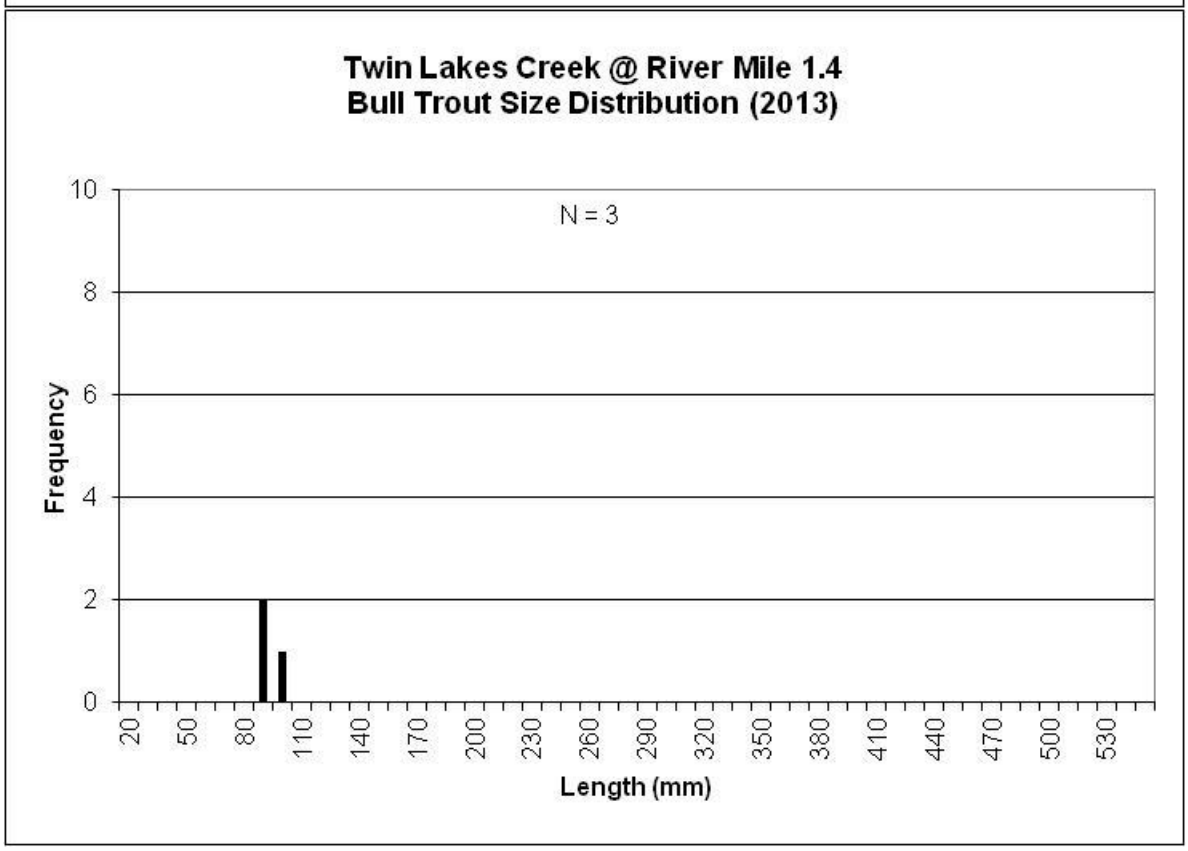

Foster Creek @ River Mile 1.1
Bull Trout x Brook Trout Hybrid Size Distribution (2013)
N = 4
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

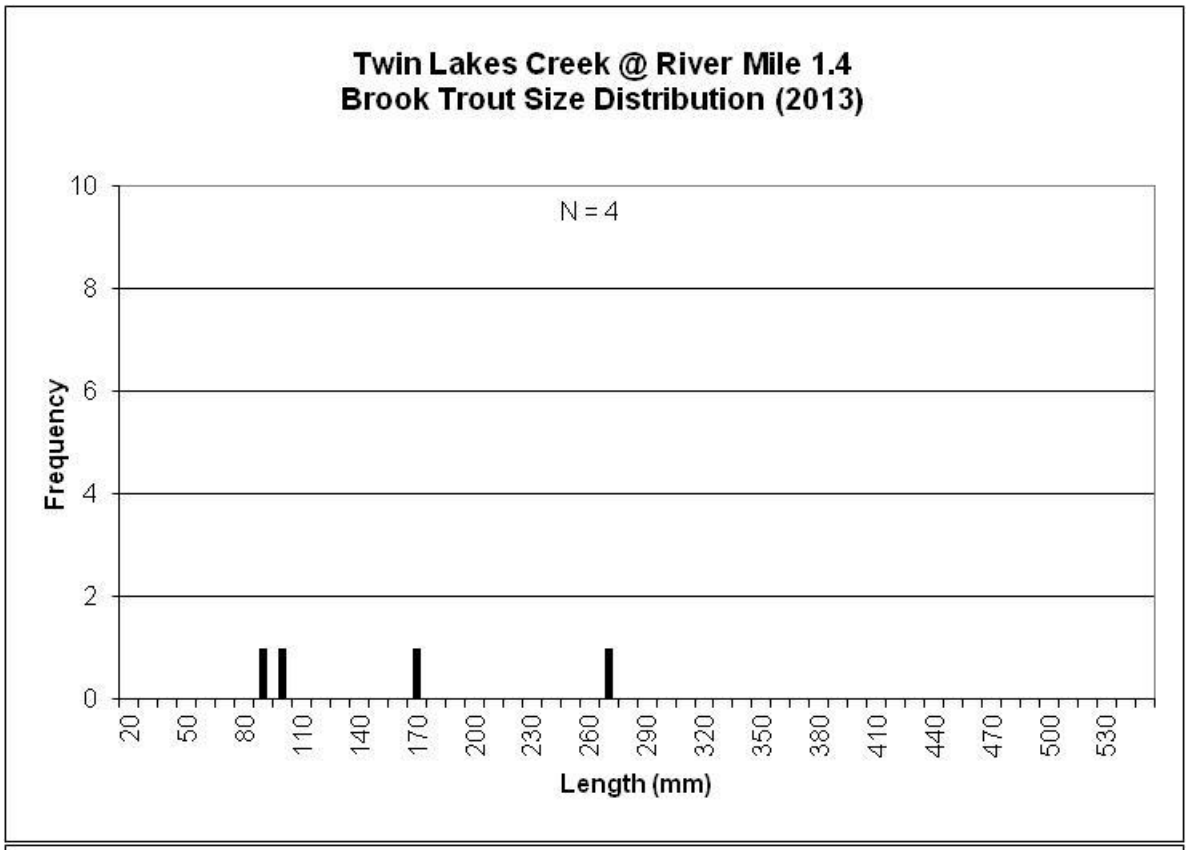

Foster Creek @ River Mile 2.3
Westslope Cutthroat Trout Size Distribution (2013)
N = 50
Frequency
Length (mm)
0
2
4
6
8
10
12
14
16
18
20
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

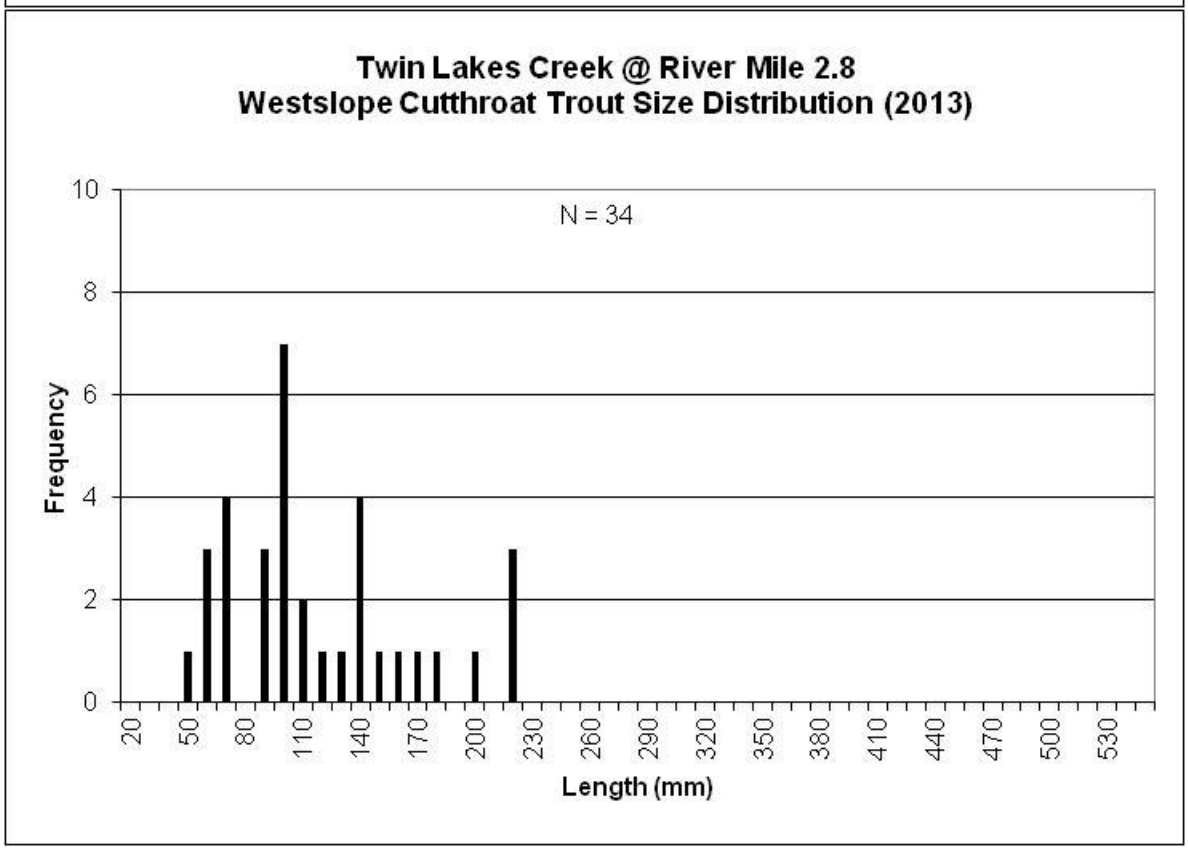

Foster Creek @ River Mile 2.3
Brook Trout Size Distribution (2013)
N = 19
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

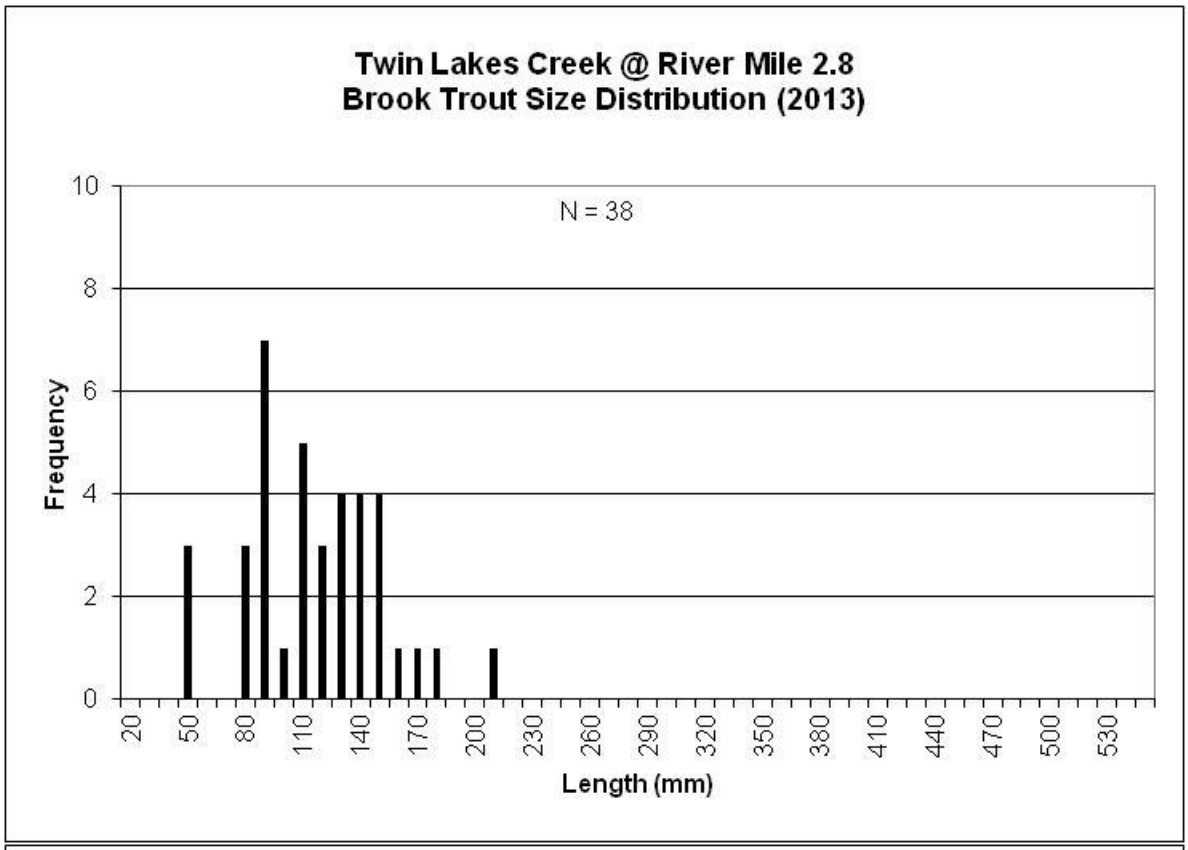

Foster Creek @ River Mile 3.9
Westslope Cutthroat Trout Size Distribution (2013)
N = 62
Frequency
0
2
4
6
8
10
12
14
16
18
20
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

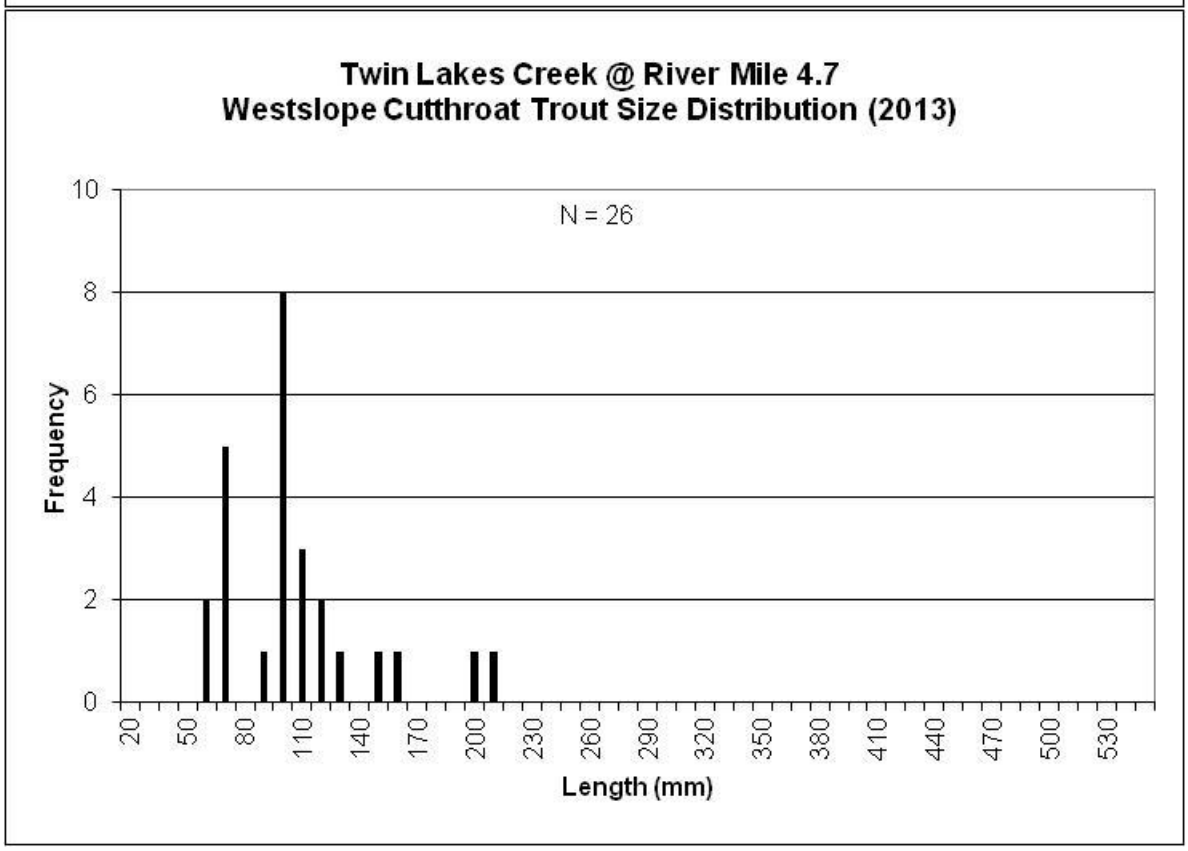

Twin Lakes Creek @ River Mile 1.4
Westslope Cutthroat Trout Size Distribution (2013)
N = 67
Frequency
Length (mm)
0
2
4
6
8
10
12
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

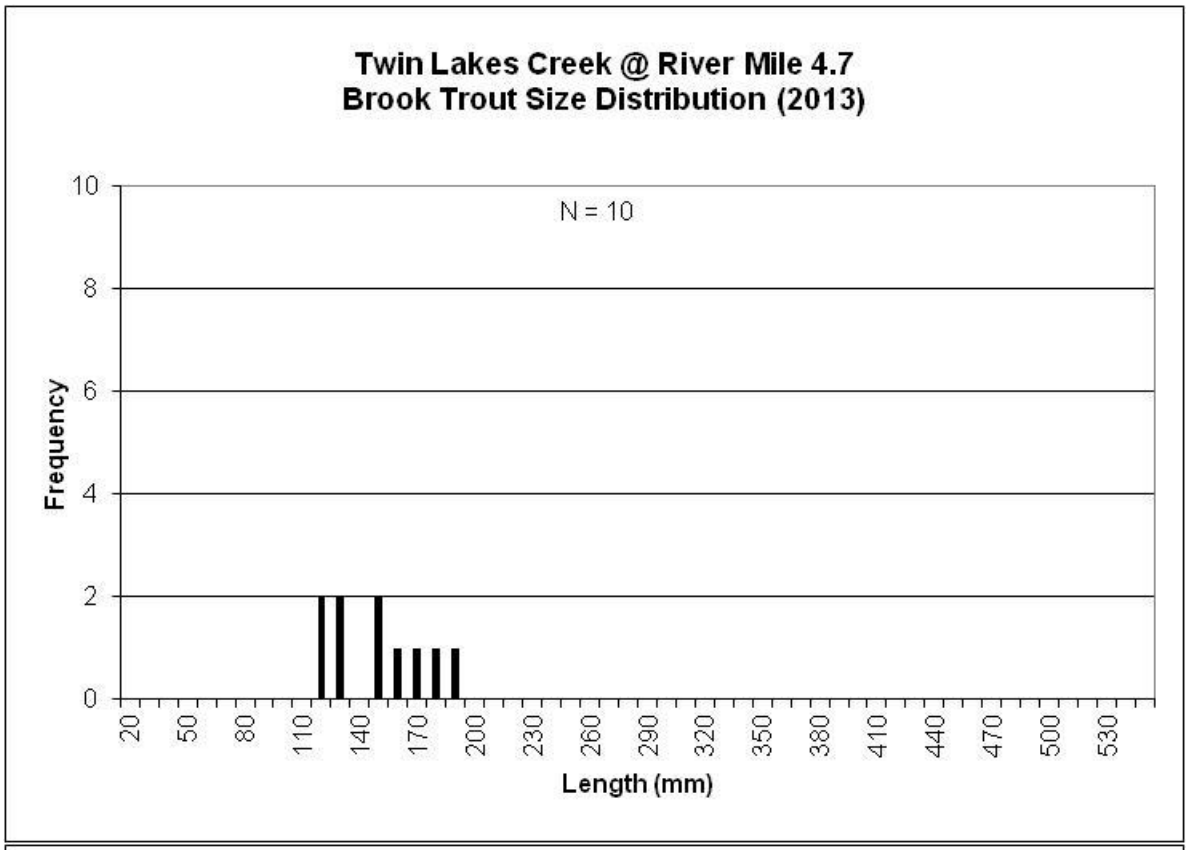

Twin Lakes Creek @ River Mile 1.4
Bull Trout Size Distribution (2013)
N = 3
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

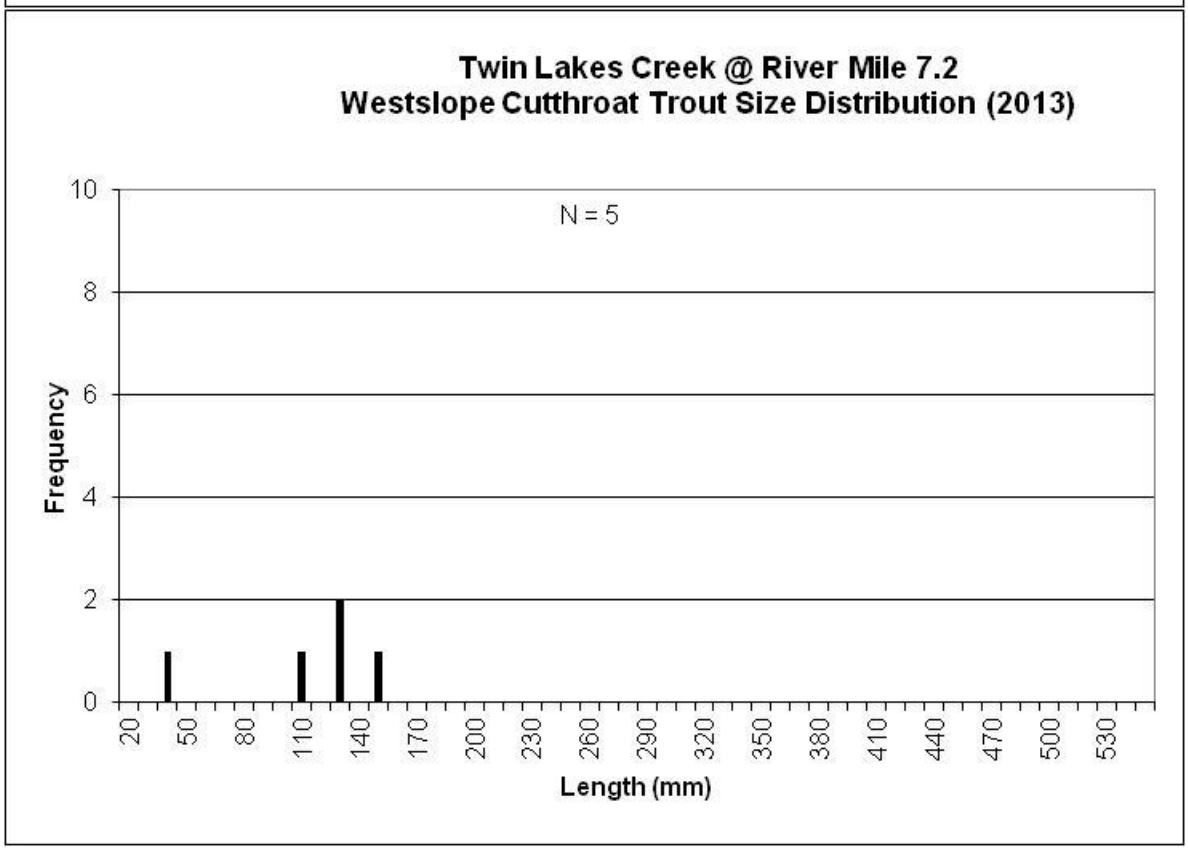

Twin Lakes Creek @ River Mile 1.4
Brook Trout Size Distribution (2013)
N = 4
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

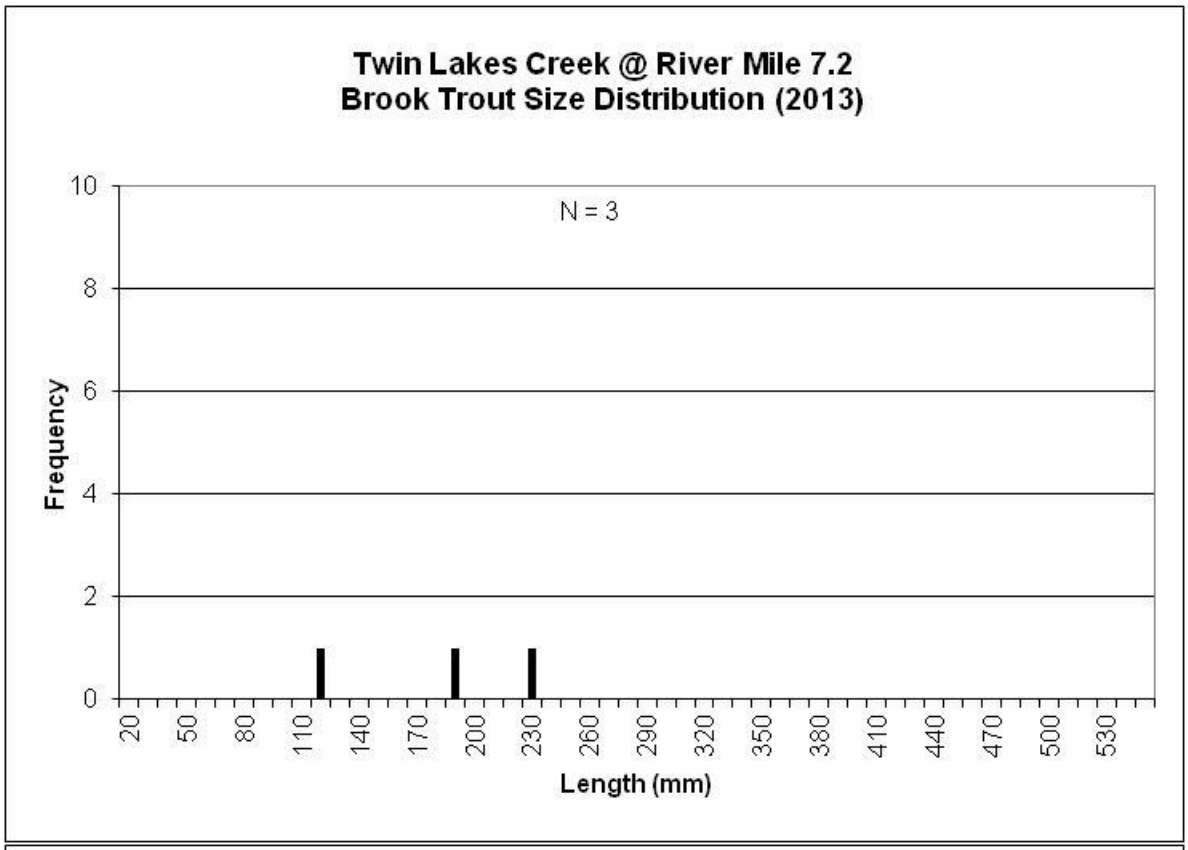

Twin Lakes Creek @ River Mile 2.8
Westslope Cutthroat Trout Size Distribution (2013)
N = 34
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

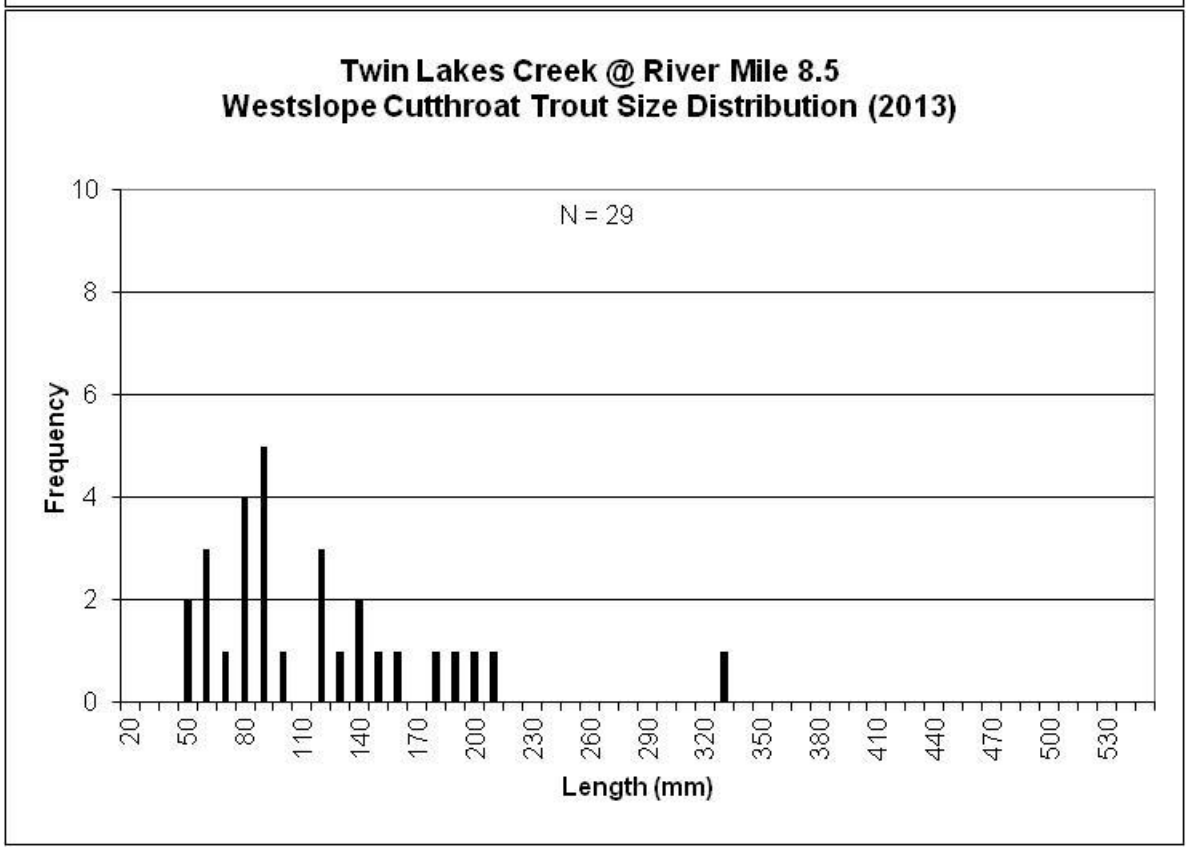

Twin Lakes Creek @ River Mile 2.8
Brook Trout Size Distribution (2013)
N = 38
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

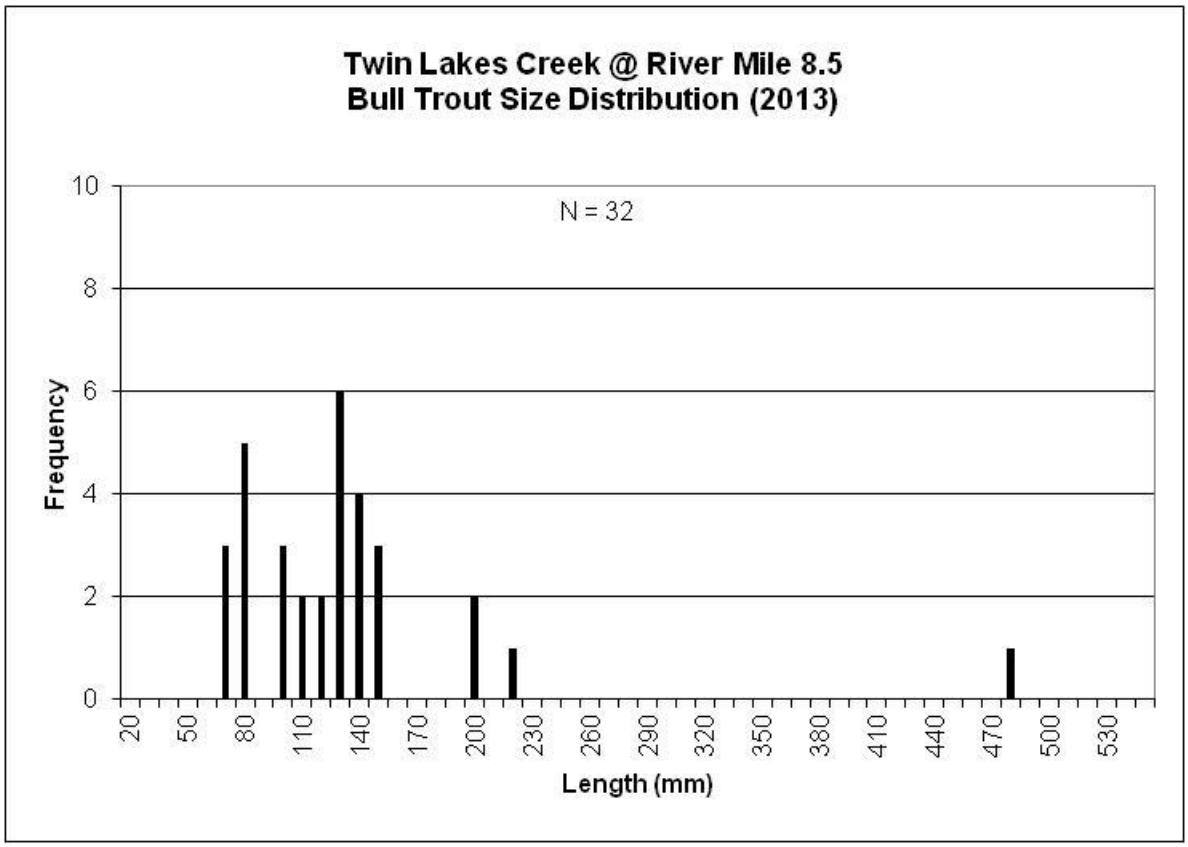

Twin Lakes Creek @ River Mile 4.7
Westslope Cutthroat Trout Size Distribution (2013)
N = 26
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

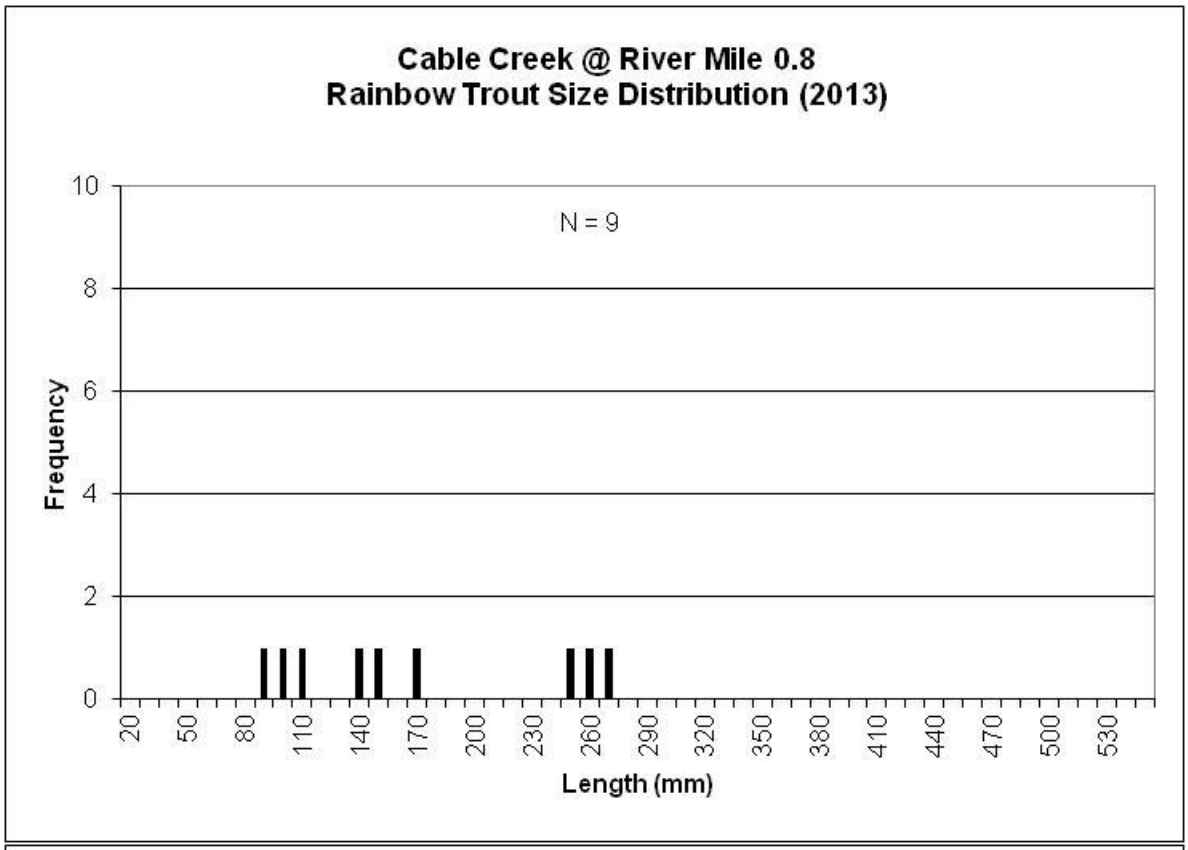

Twin Lakes Creek @ River Mile 4.7
Brook Trout Size Distribution (2013)
N = 10
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

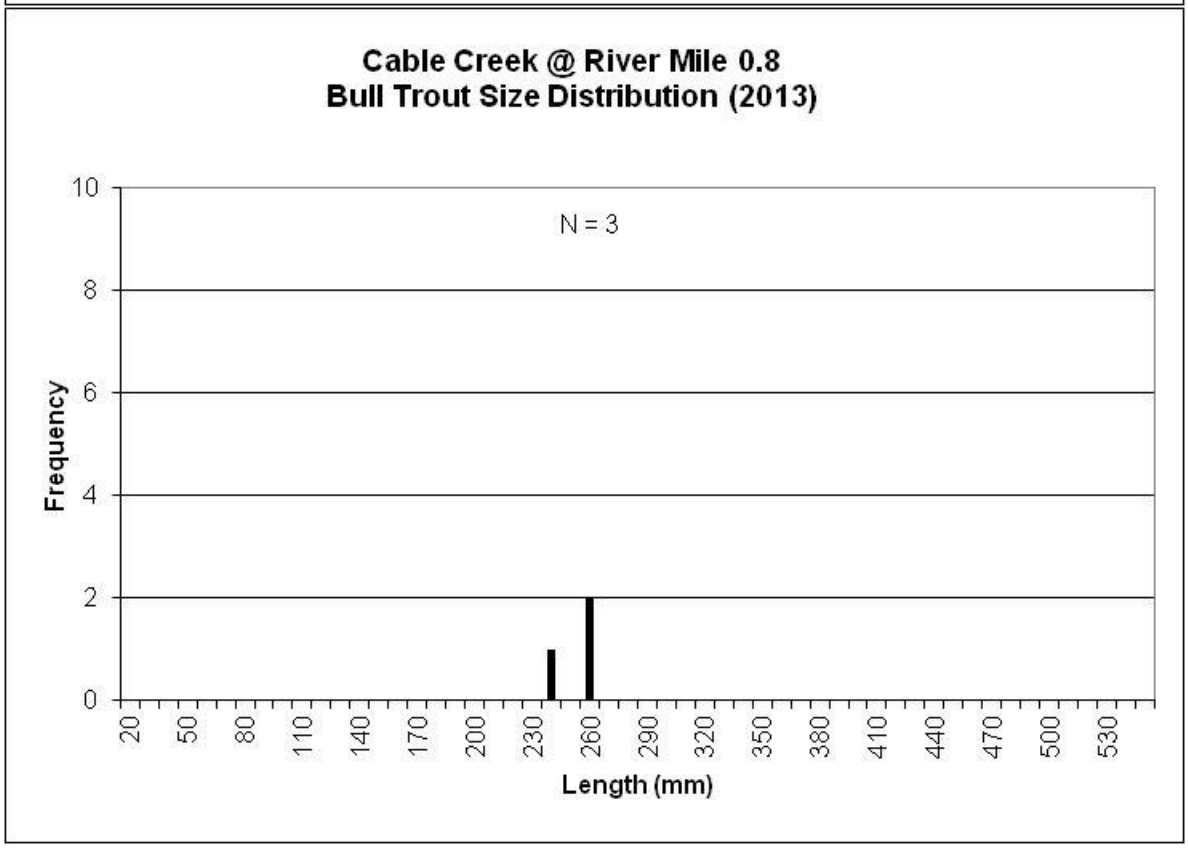

Twin Lakes Creek @ River Mile 7.2
Westslope Cutthroat Trout Size Distribution (2013)
N = 5
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

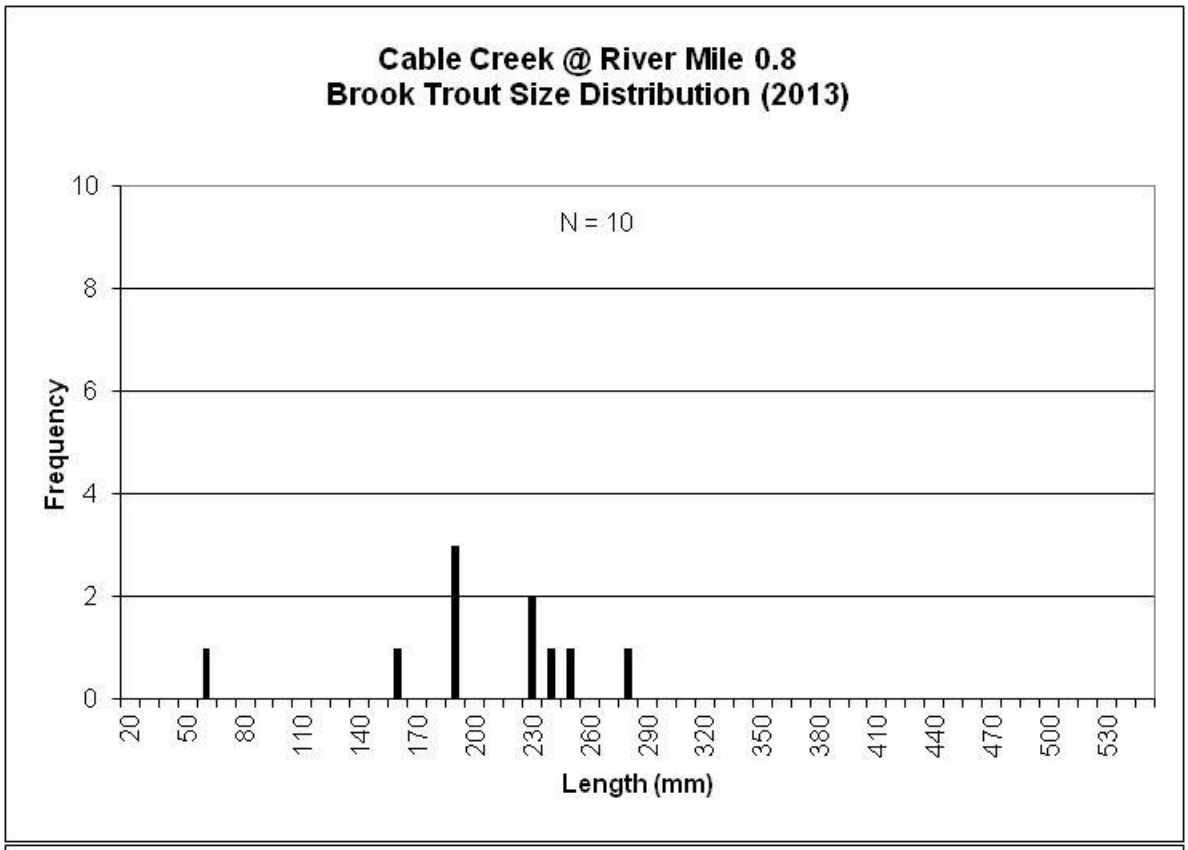

Twin Lakes Creek @ River Mile 7.2
Brook Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

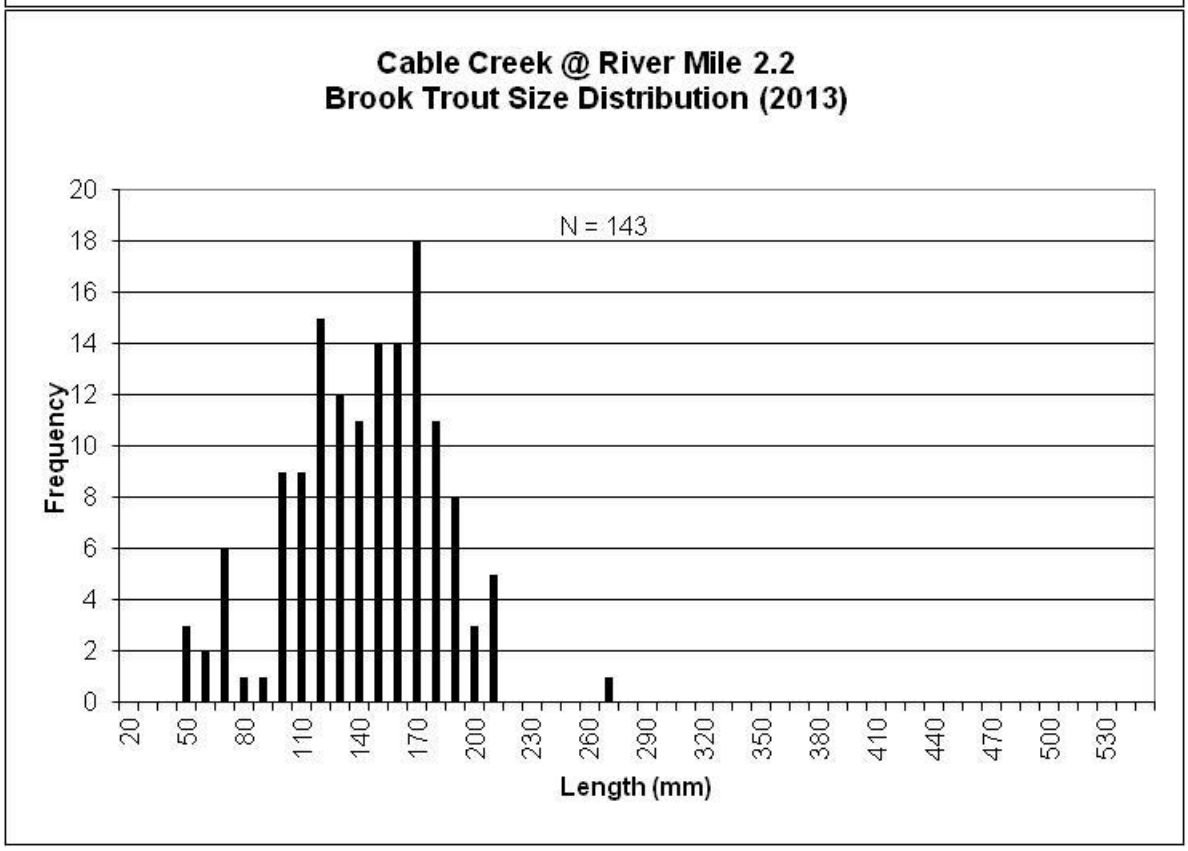

Twin Lakes Creek @ River Mile 8.5
Westslope Cutthroat Trout Size Distribution (2013)
N = 29
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

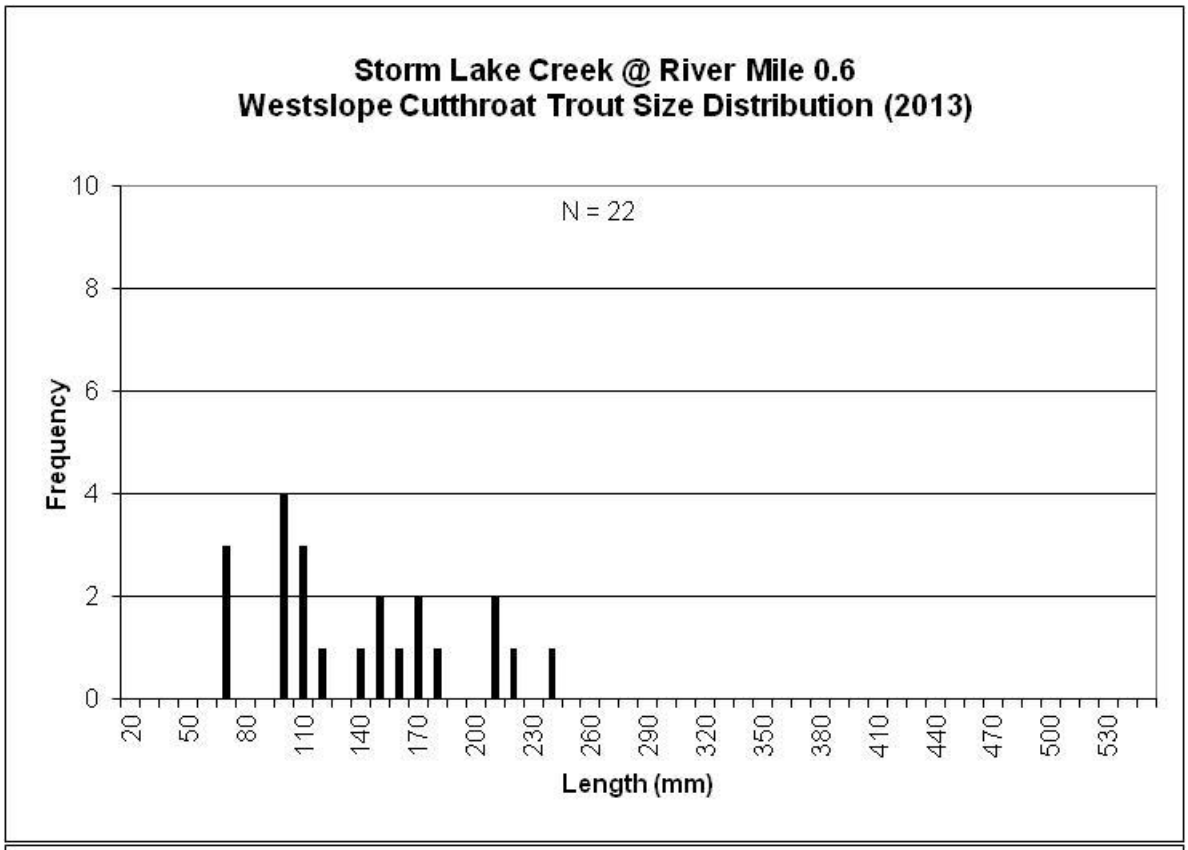

Twin Lakes Creek @ River Mile 8.5
Bull Trout Size Distribution (2013)
N = 32
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

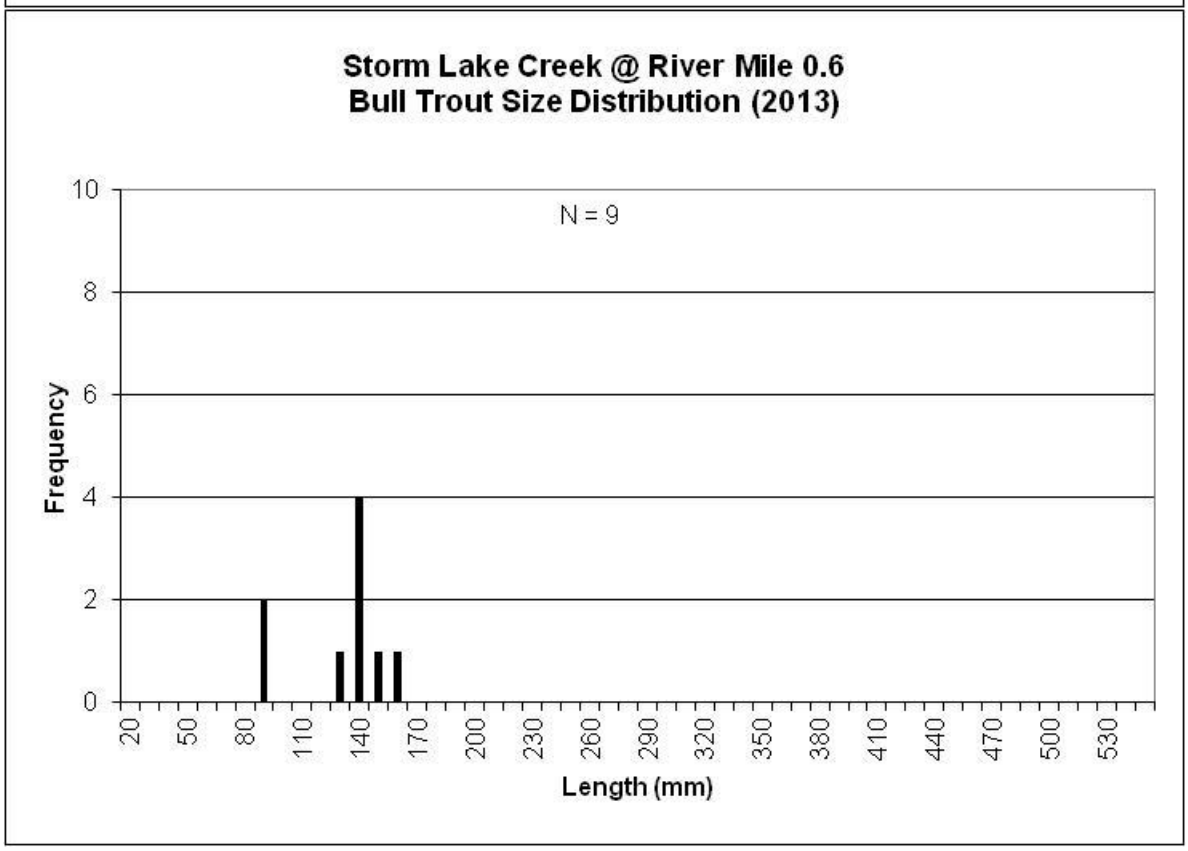

Cable Creek @ River Mile 0.8
Rainbow Trout Size Distribution (2013)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

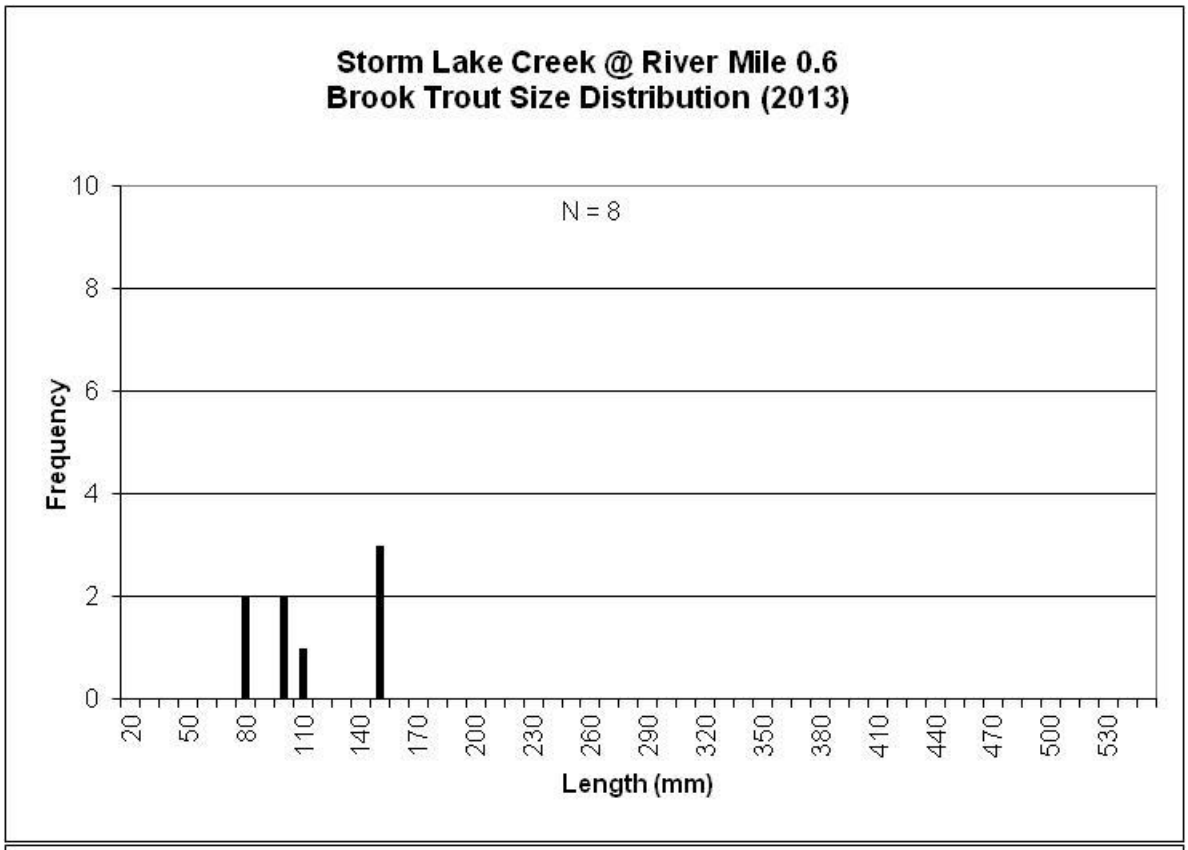

Cable Creek @ River Mile 0.8
Bull Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

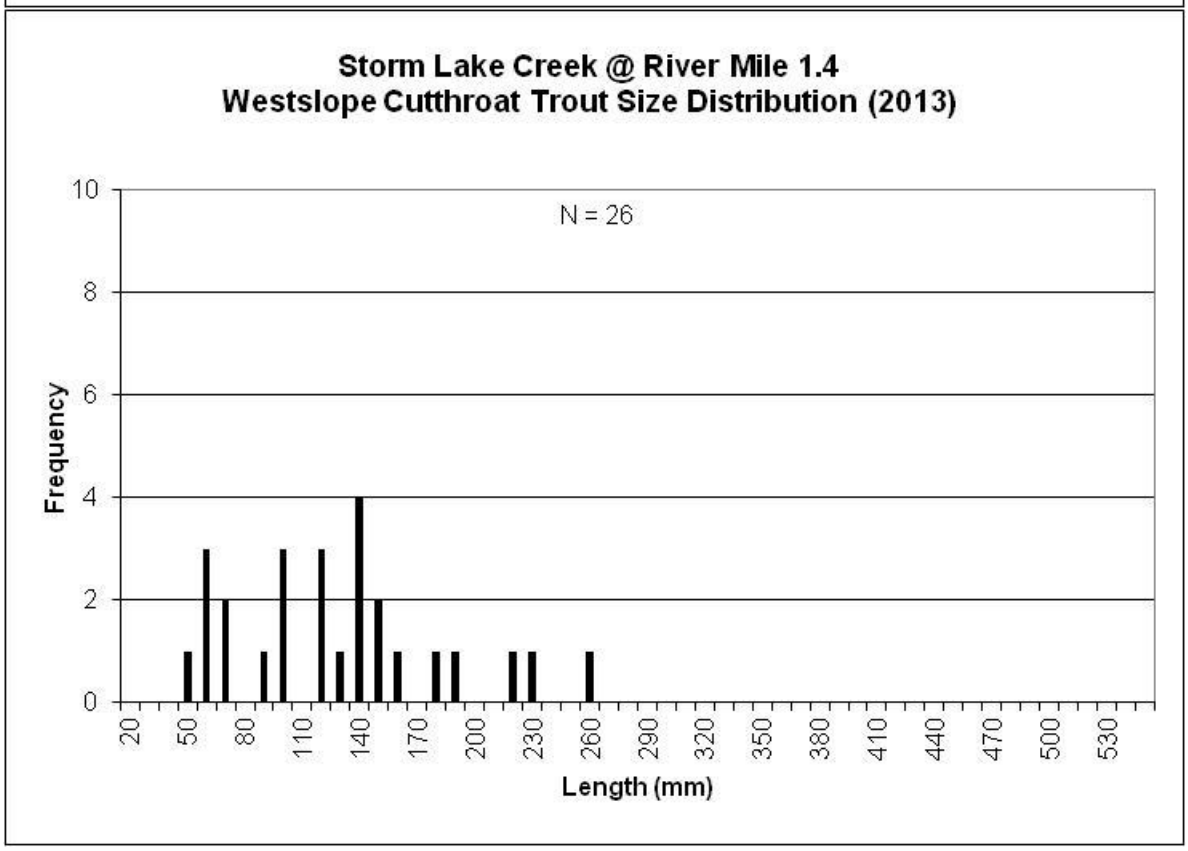

Cable Creek @ River Mile 0.8
Brook Trout Size Distribution (2013)
N = 10
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

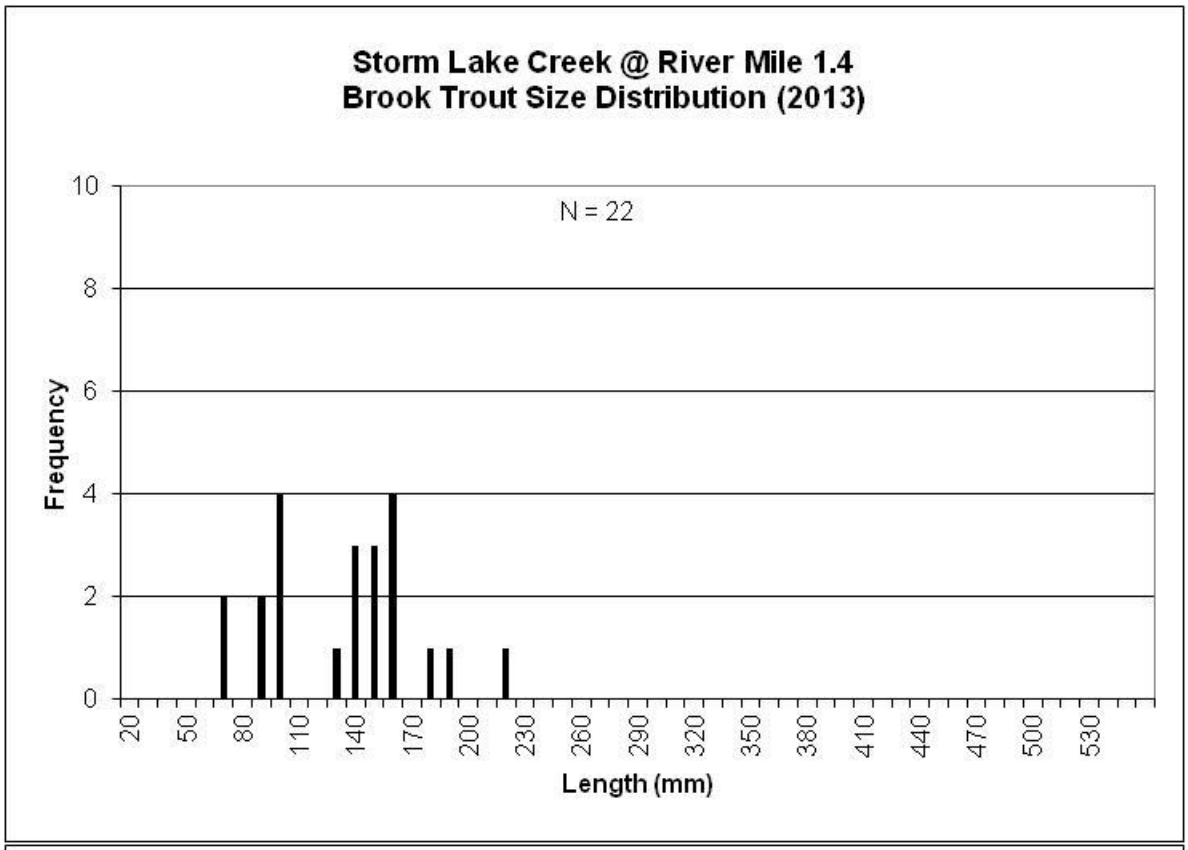

Cable Creek @ River Mile 2.2
Brook Trout Size Distribution (2013)
N = 143
Frequency
Length (mm)
0
2
4
6
8
10
12
14
16
18
20
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

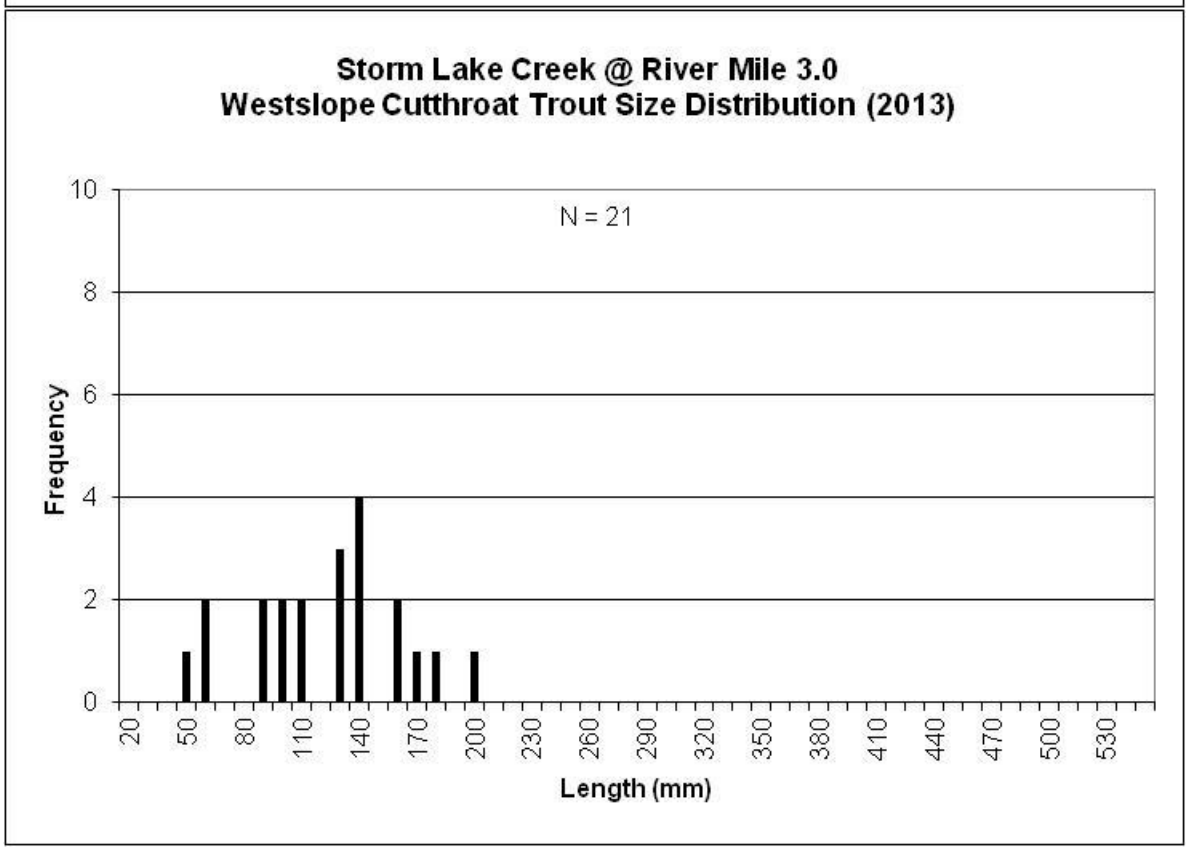

Storm Lake Creek @ River Mile 0.6
Westslope Cutthroat Trout Size Distribution (2013)
N = 22
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

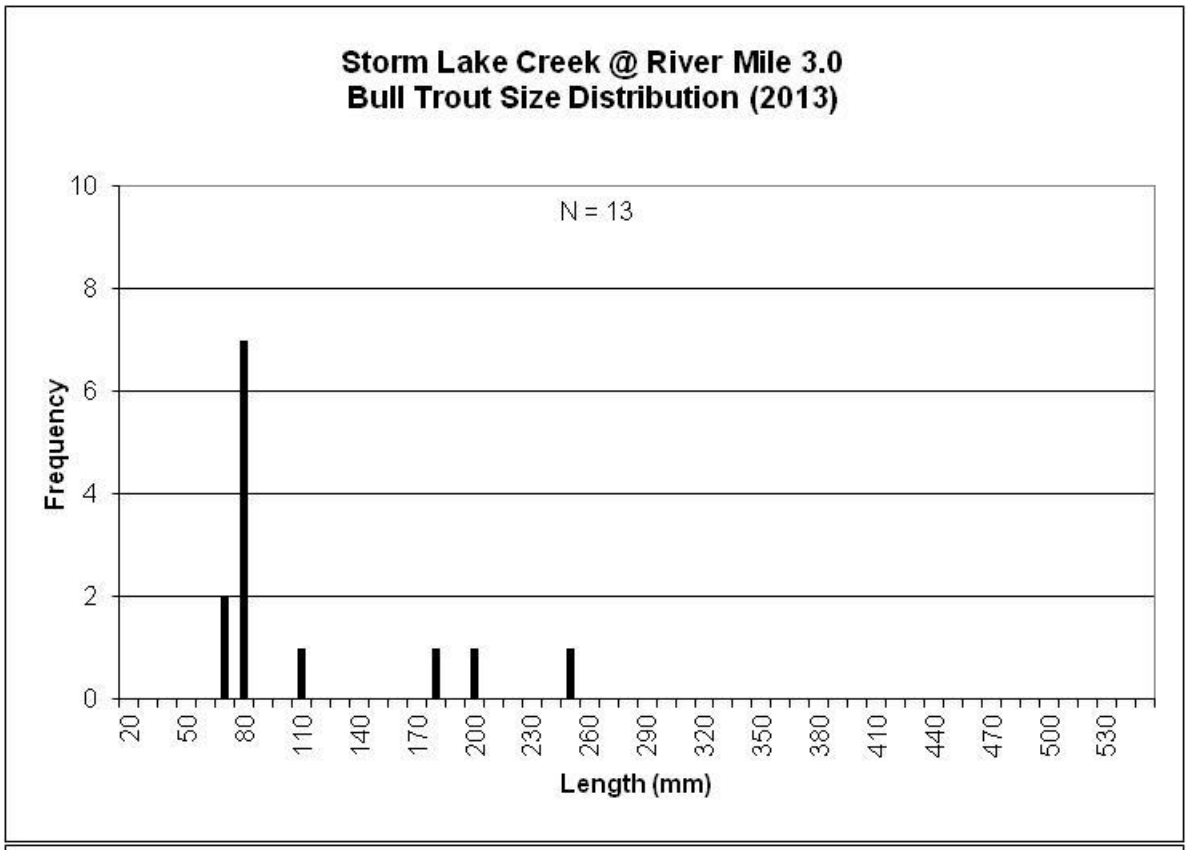

Storm Lake Creek @ River Mile 0.6
Bull Trout Size Distribution (2013)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

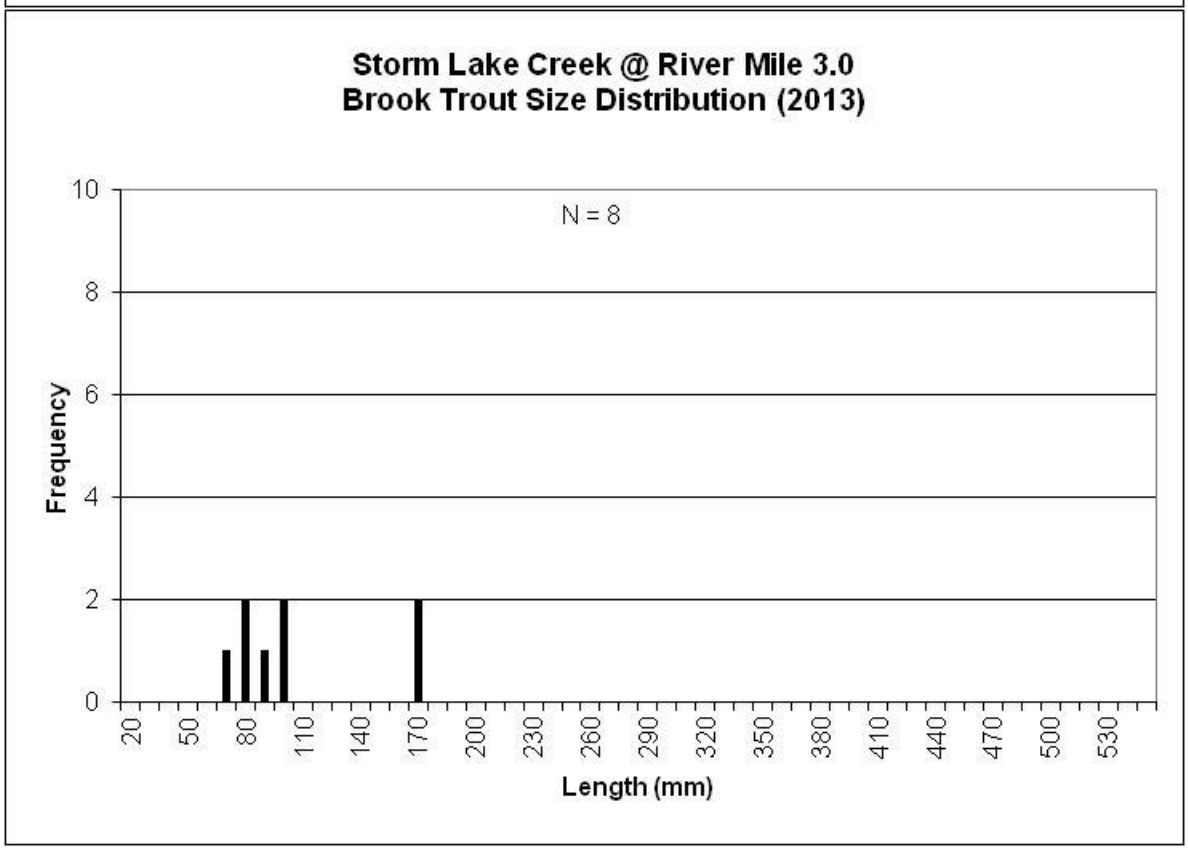

Storm Lake Creek @ River Mile 0.6
Brook Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

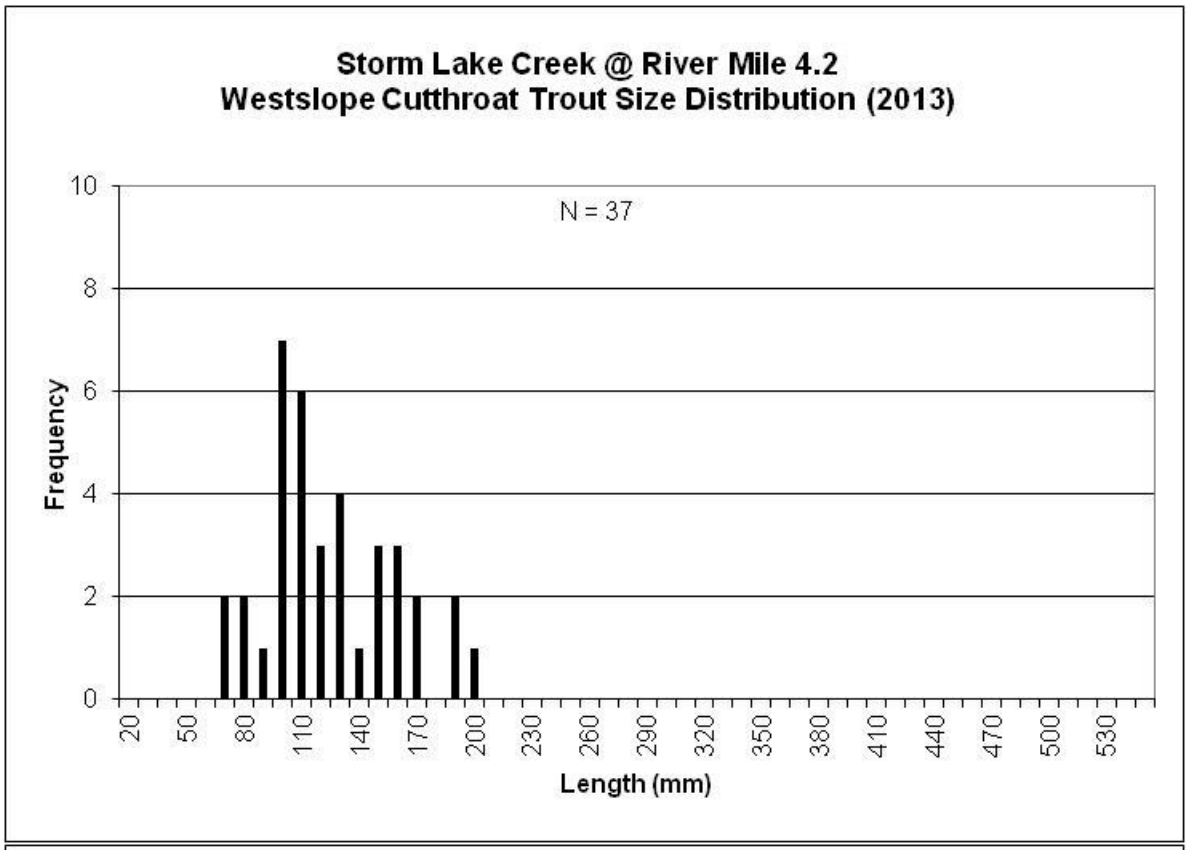

Storm Lake Creek @ River Mile 1.4
Westslope Cutthroat Trout Size Distribution (2013)
N = 26
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

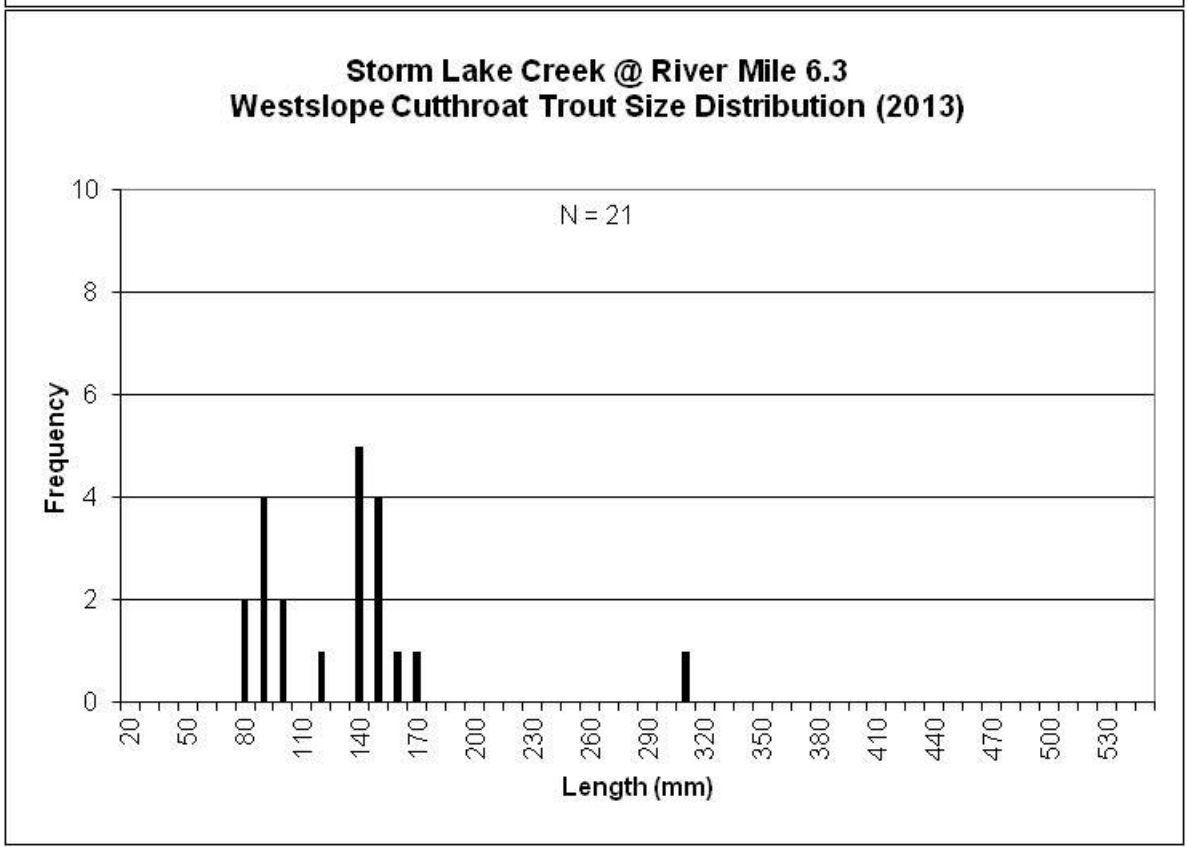

Storm Lake Creek @ River Mile 1.4
Brook Trout Size Distribution (2013)
N = 22
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

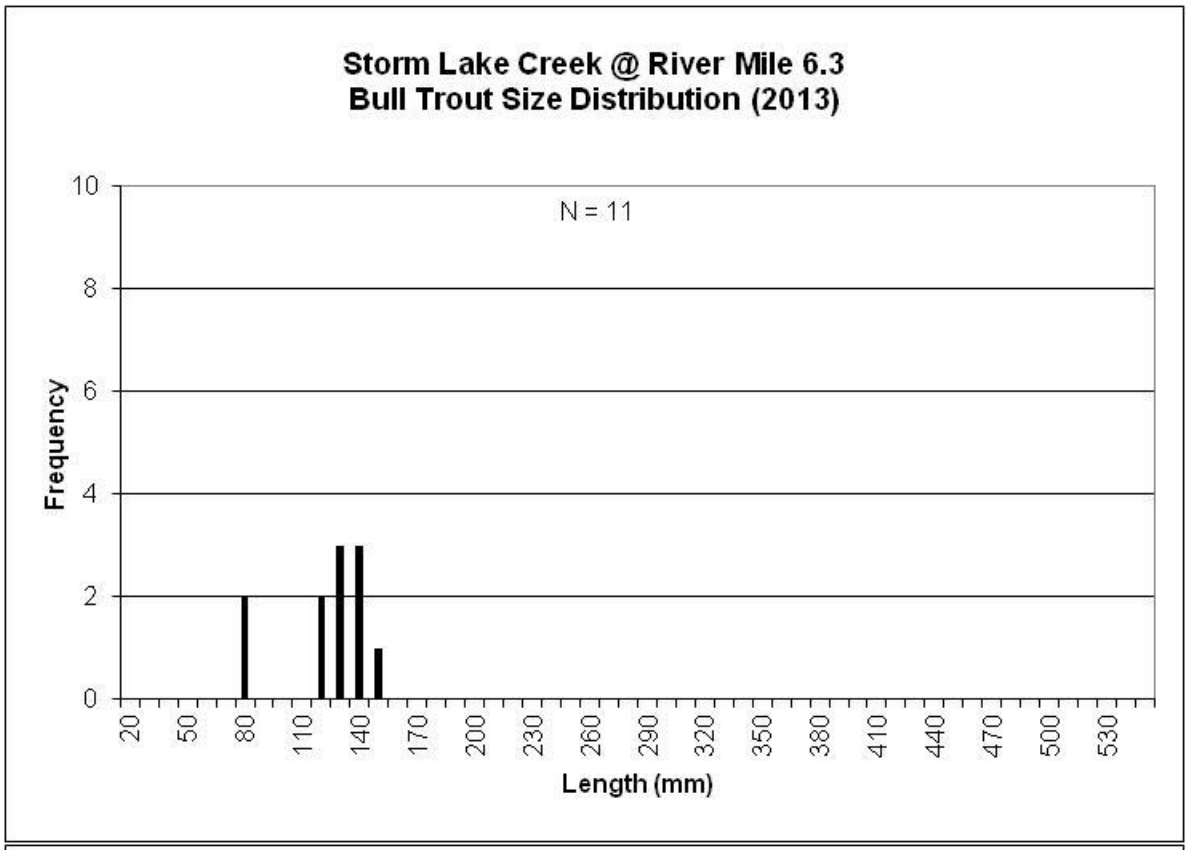

Storm Lake Creek @ River Mile 3.0
Westslope Cutthroat Trout Size Distribution (2013)
N = 21
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

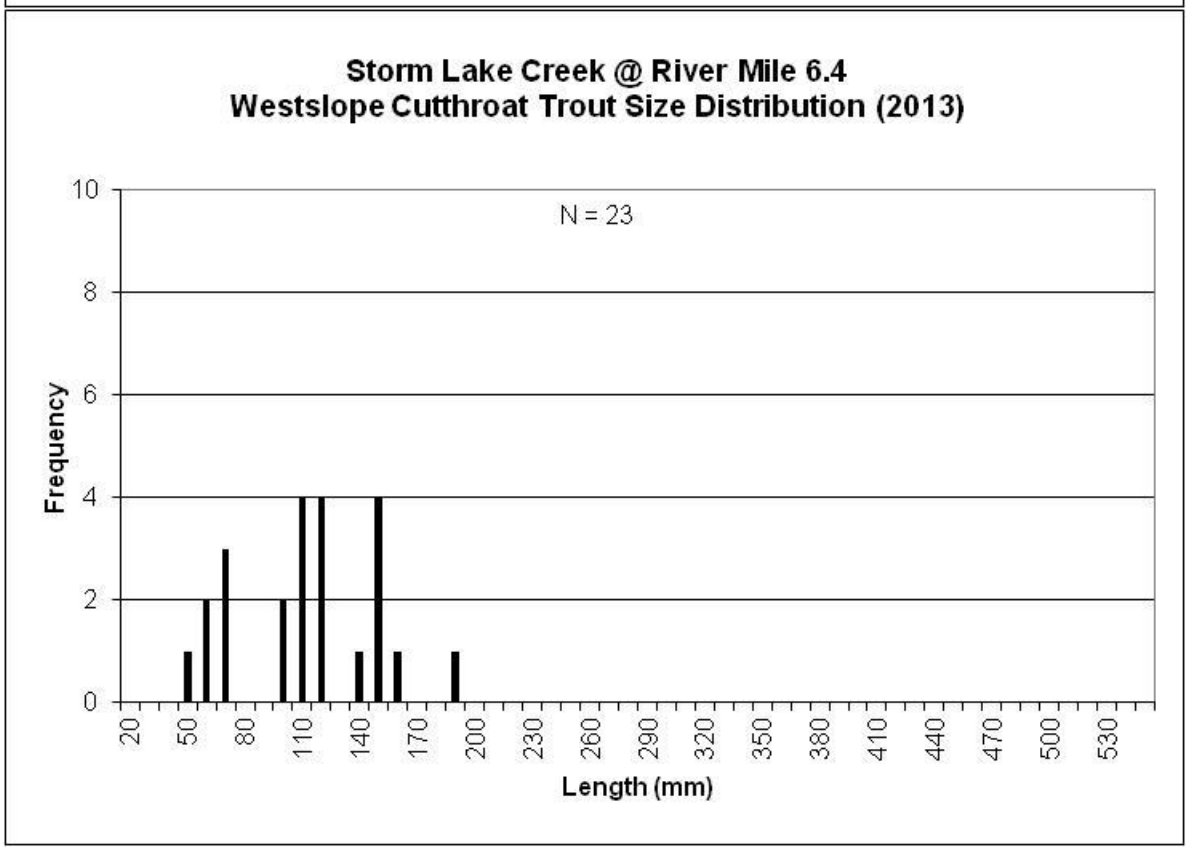

Storm Lake Creek @ River Mile 3.0
Bull Trout Size Distribution (2013)
N = 13
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

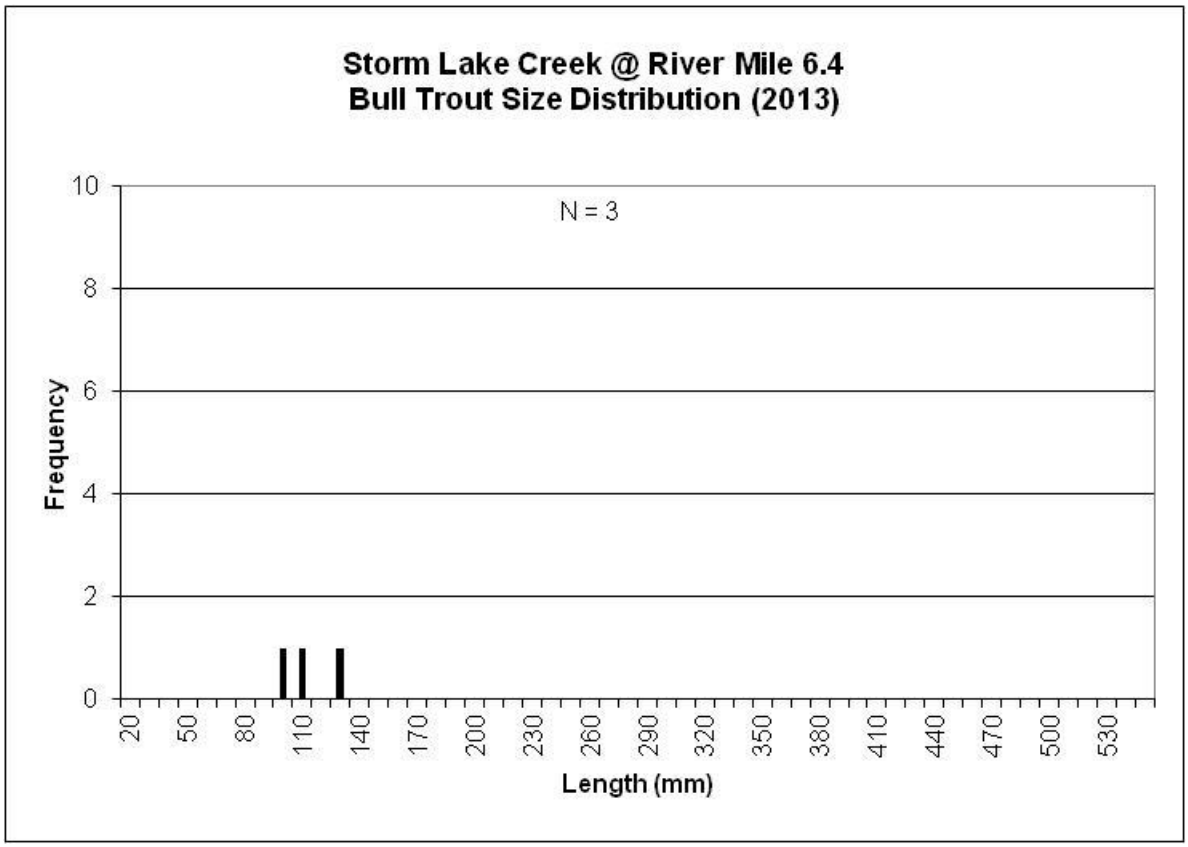

Storm Lake Creek @ River Mile 3.0
Brook Trout Size Distribution (2013)
N = 8
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

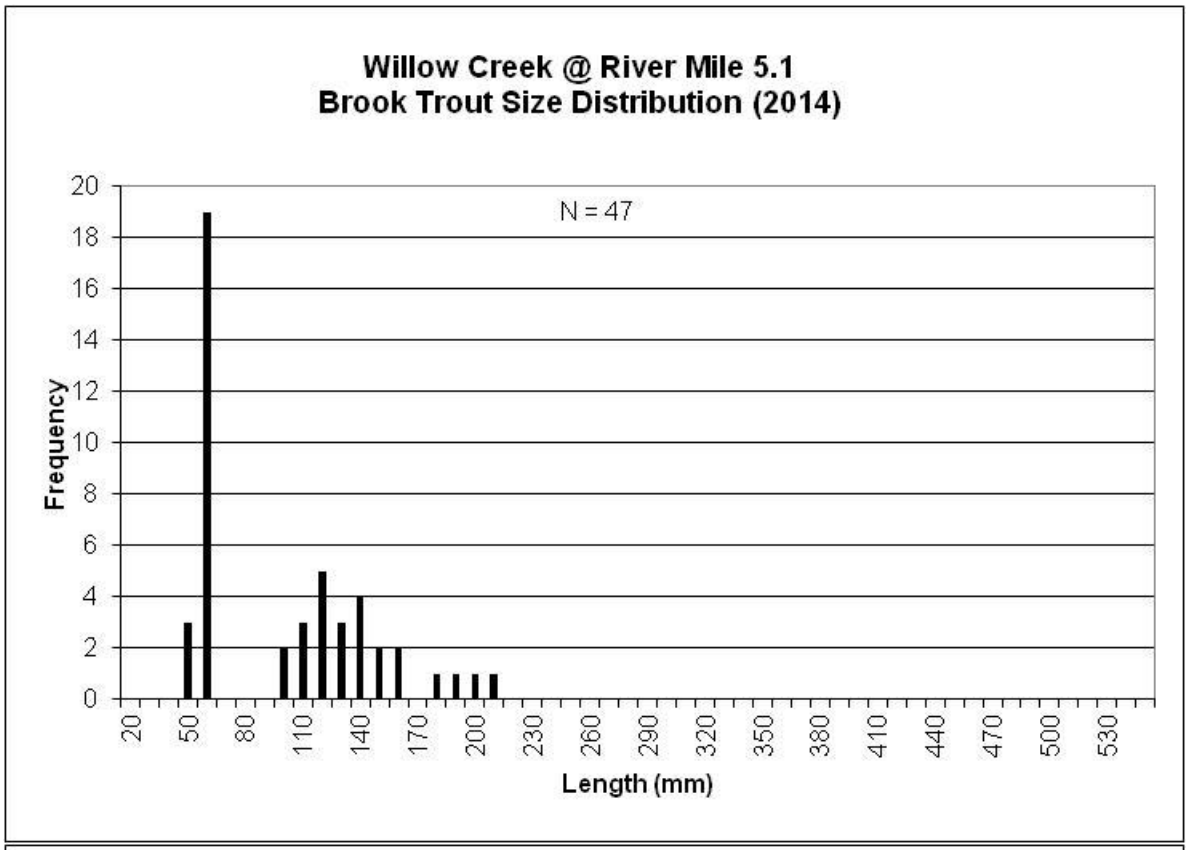

Storm Lake Creek @ River Mile 4.2
Westslope Cutthroat Trout Size Distribution (2013)
N = 37
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

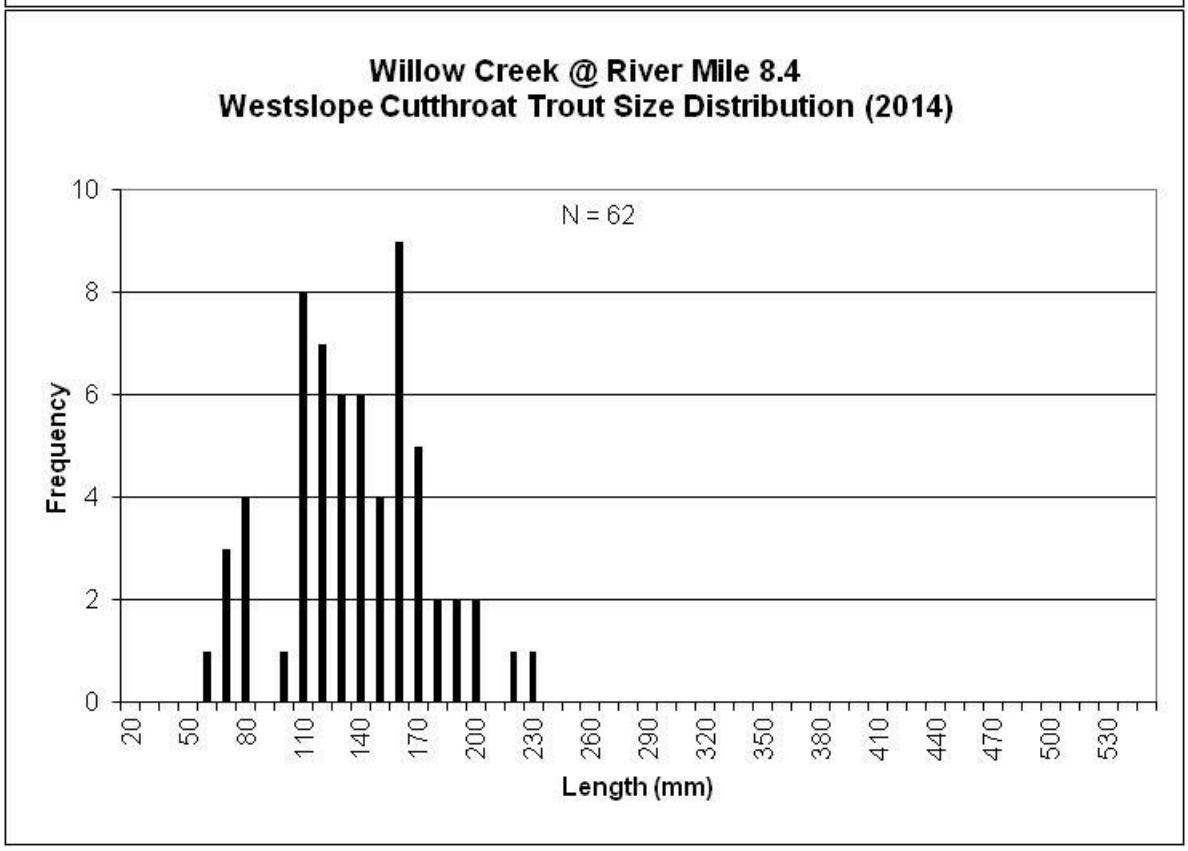

Storm Lake Creek @ River Mile 6.3
Westslope Cutthroat Trout Size Distribution (2013)
N = 21
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

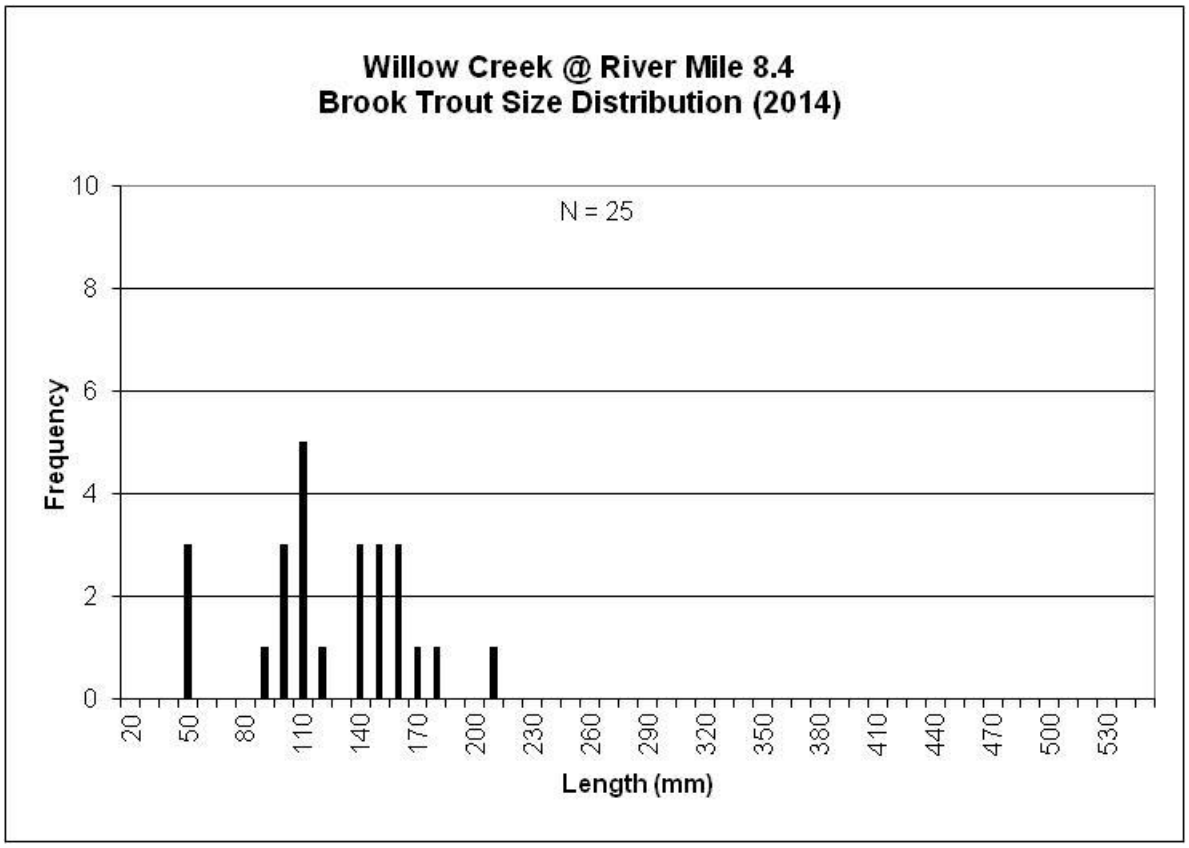

Storm Lake Creek @ River Mile 6.3
Bull Trout Size Distribution (2013)
N = 11
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

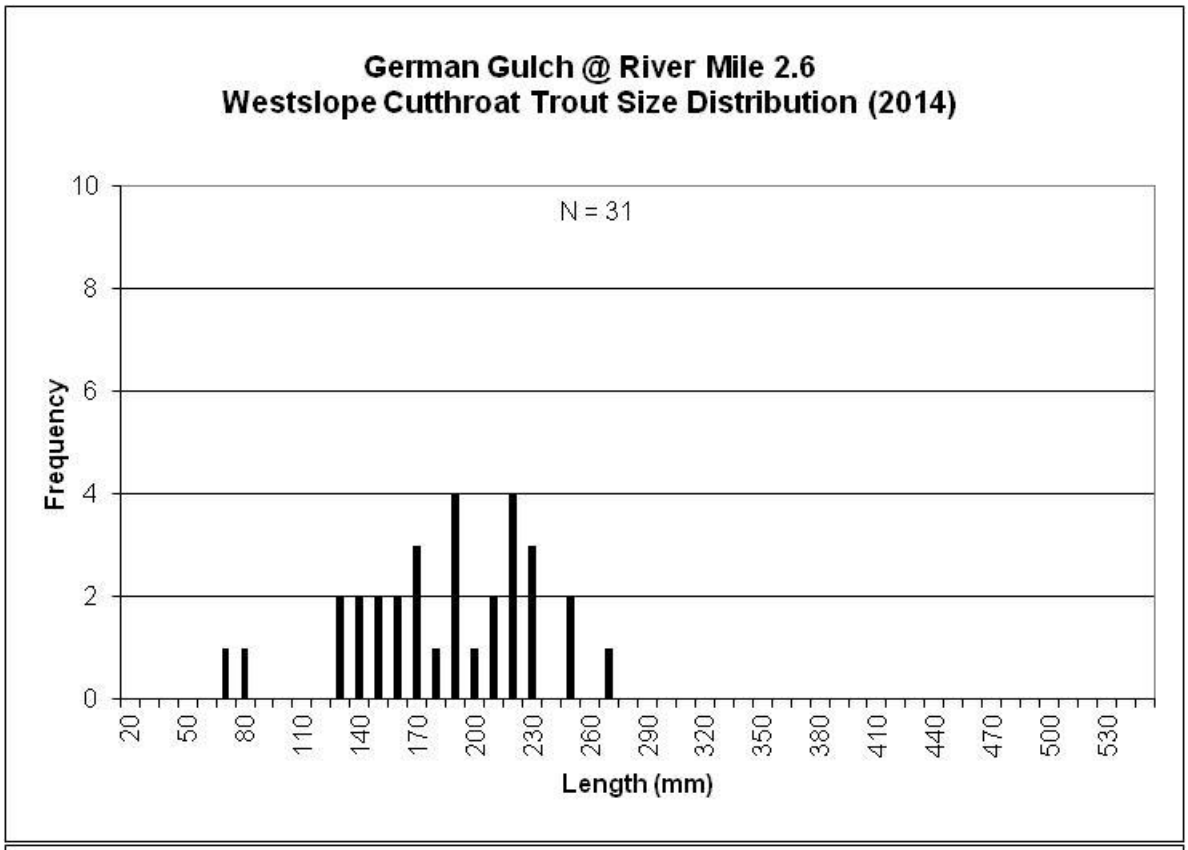

Storm Lake Creek @ River Mile 6.4
Westslope Cutthroat Trout Size Distribution (2013)
N = 23
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

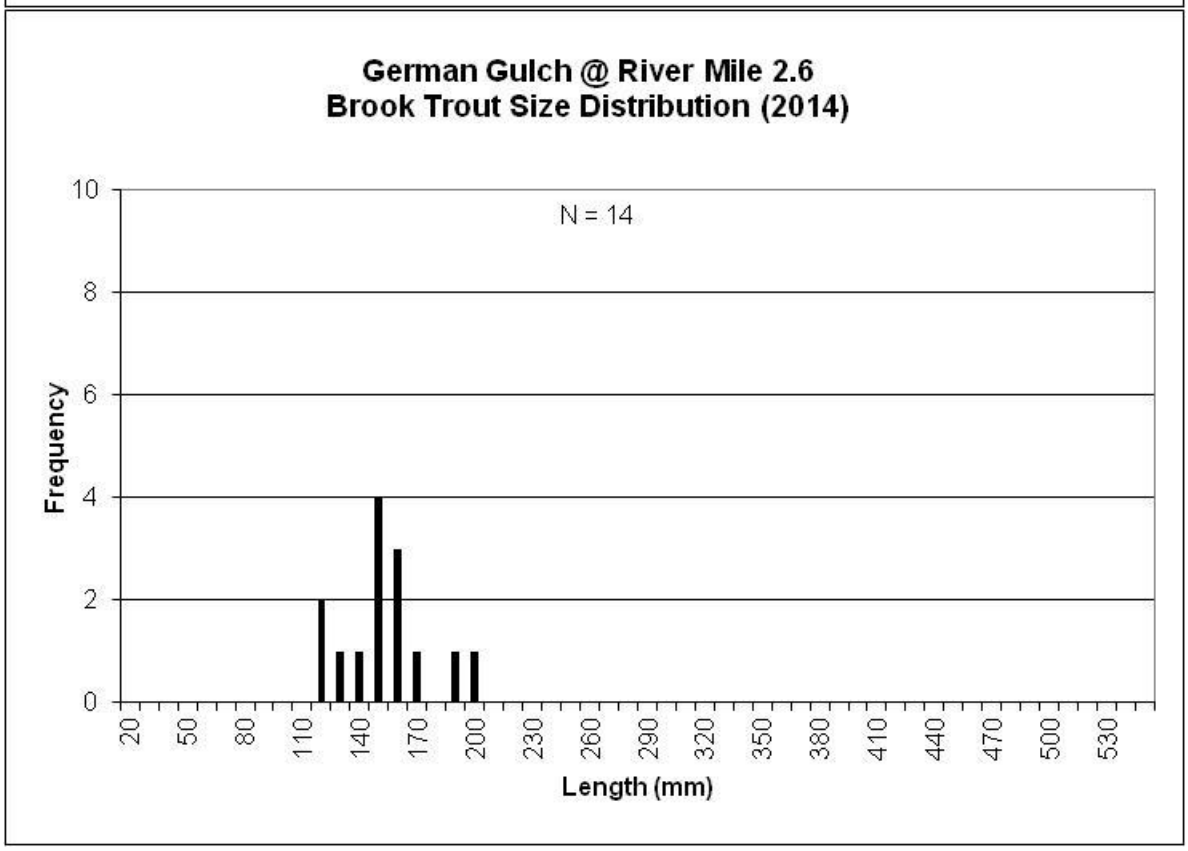

Storm Lake Creek @ River Mile 6.4
Bull Trout Size Distribution (2013)
N = 3
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

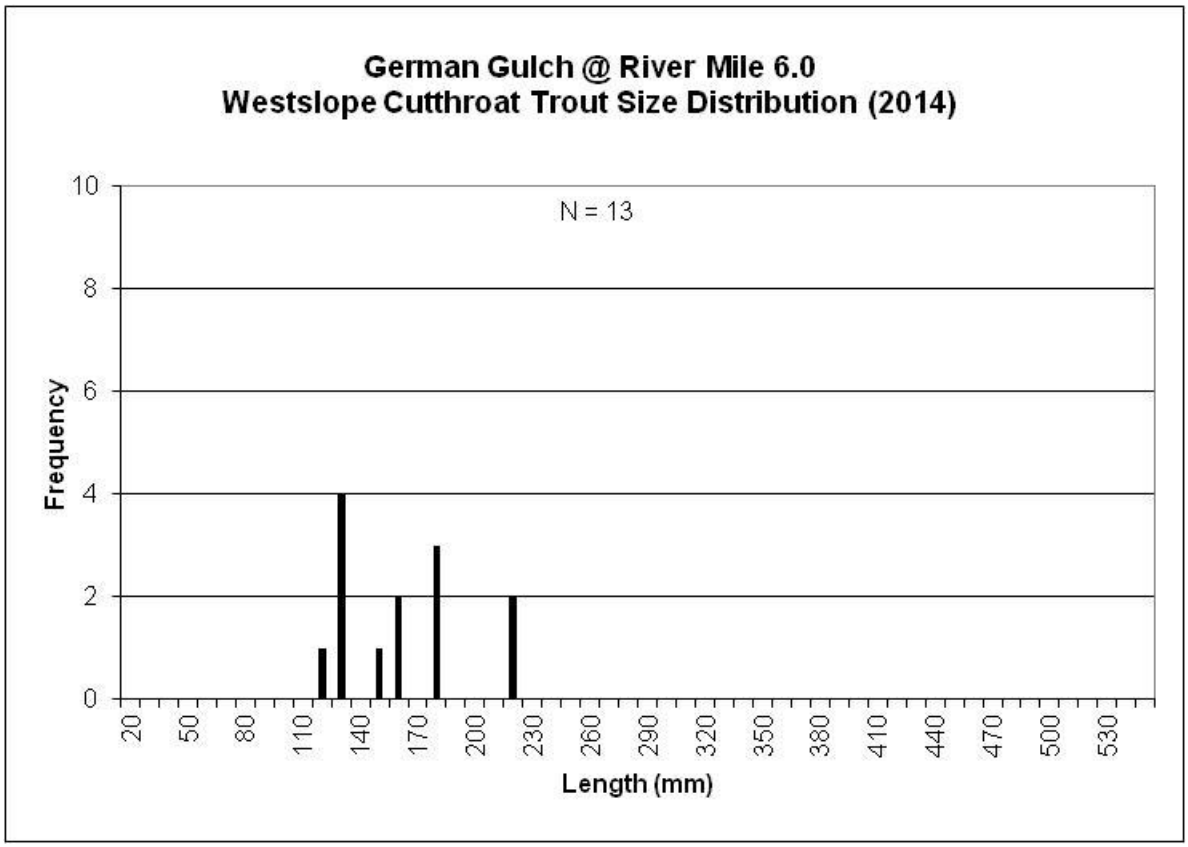

Willow Creek @ River Mile 5.1
Brook Trout Size Distribution (2014)
N = 47
Frequency
0
2
4
6
8
10
12
14
16
18
20
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

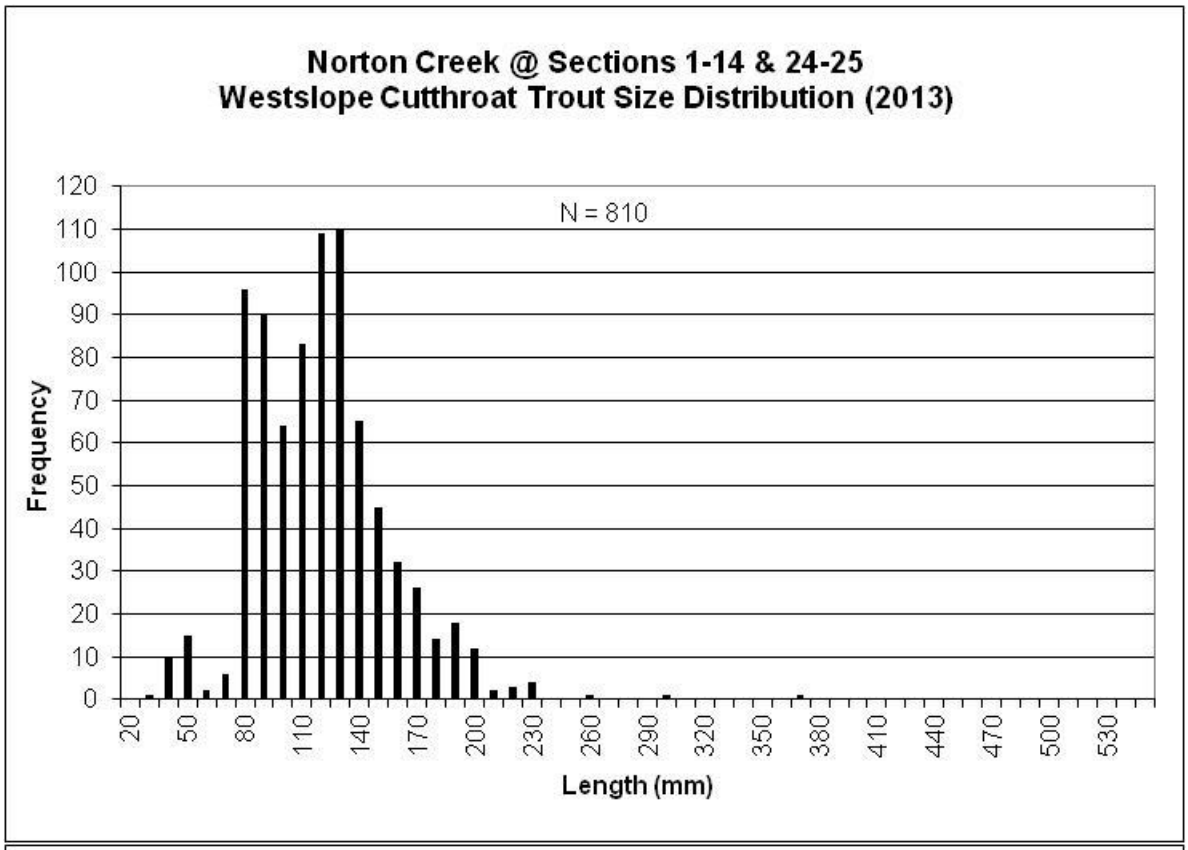

Willow Creek @ River Mile 8.4
Westslope Cutthroat Trout Size Distribution (2014)
N = 62
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

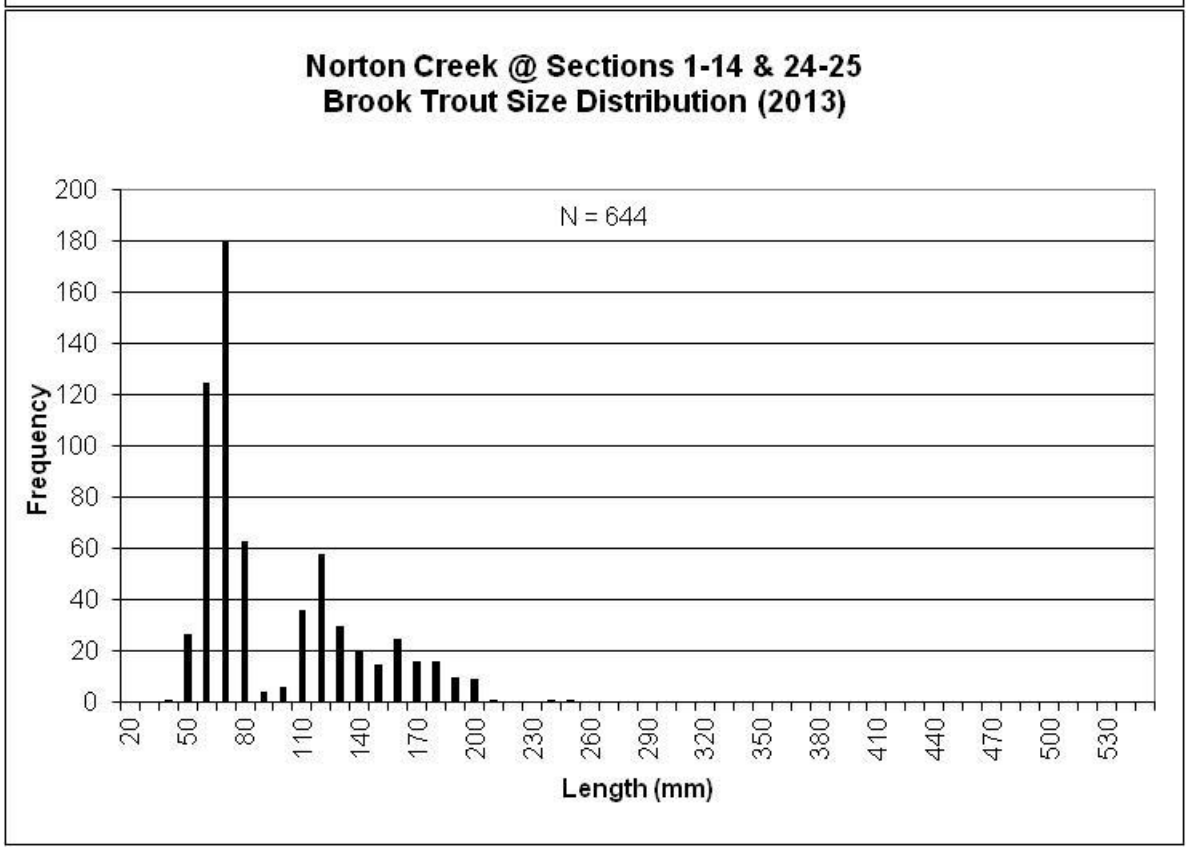

Willow Creek @ River Mile 8.4
Brook Trout Size Distribution (2014)
N = 25
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

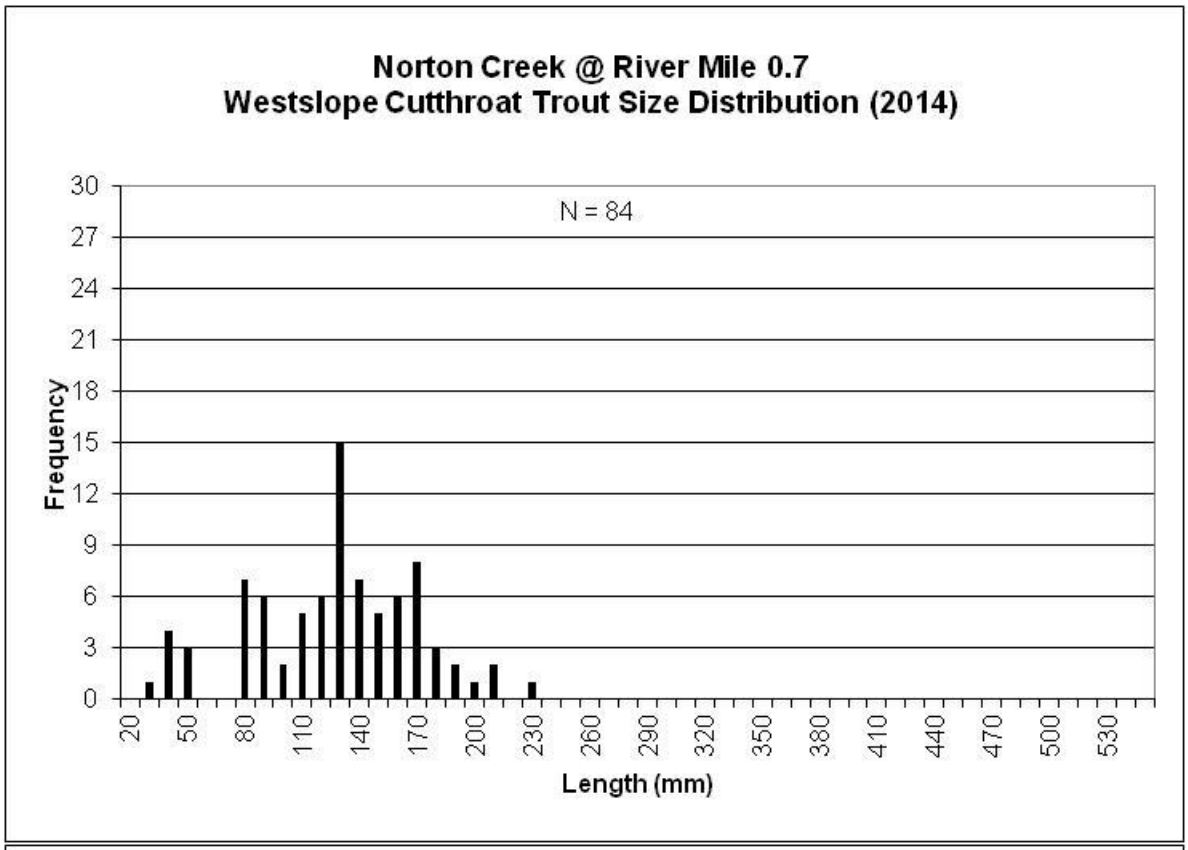

German Gulch @ River Mile 2.6
Westslope Cutthroat Trout Size Distribution (2014)
N = 31
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

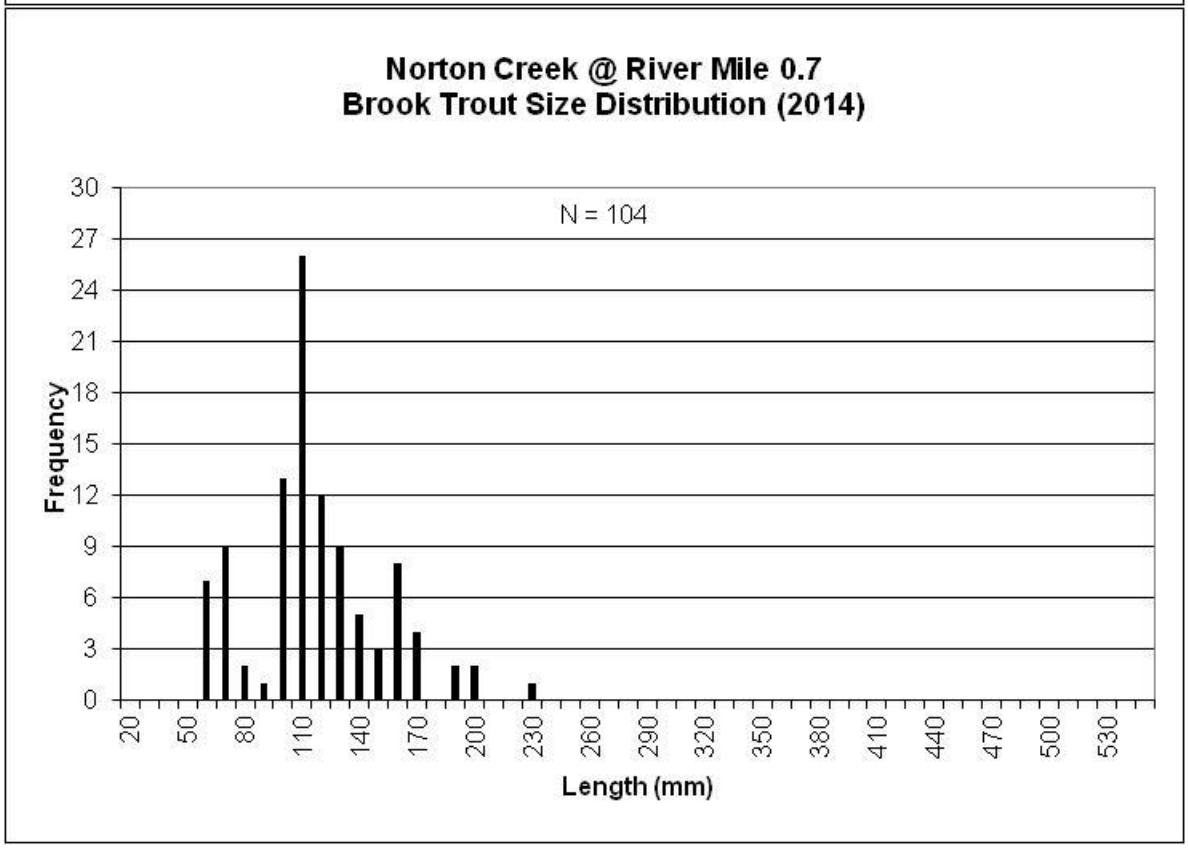

German Gulch @ River Mile 2.6
Brook Trout Size Distribution (2014)
N = 14
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

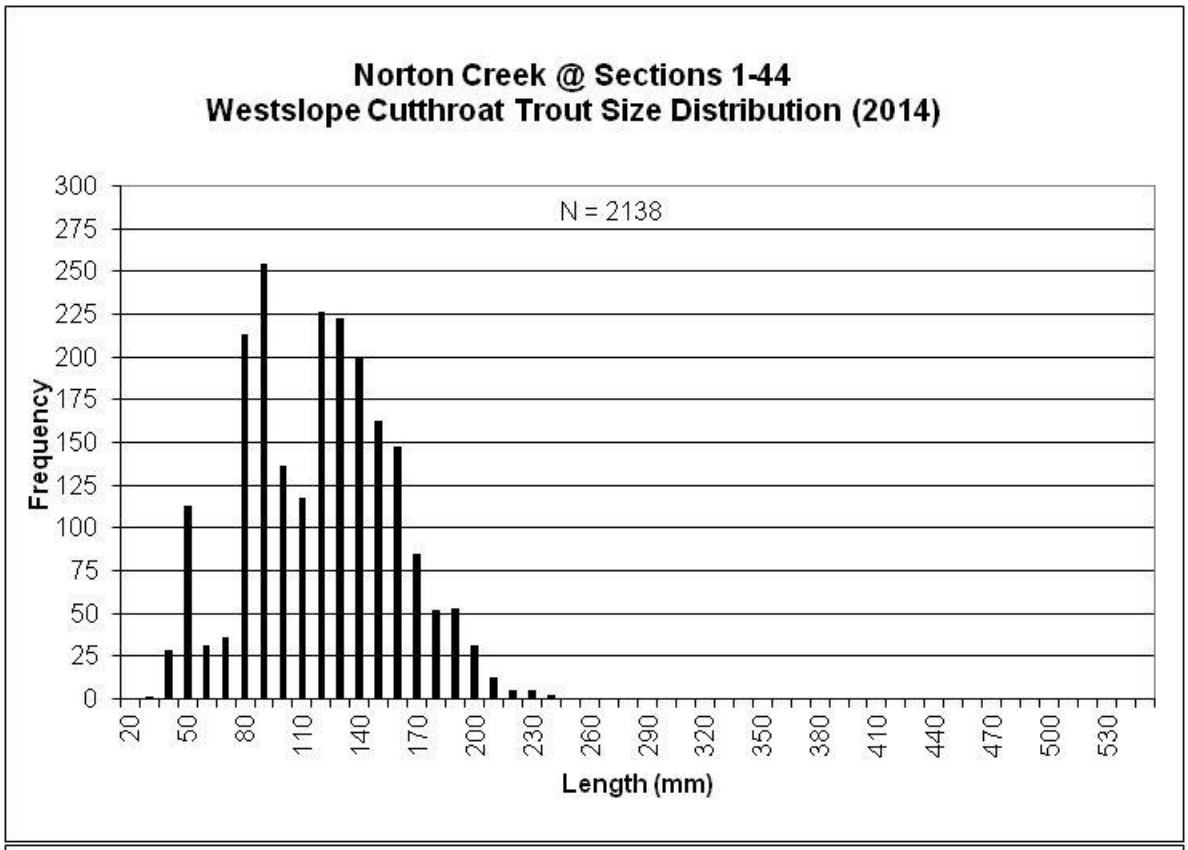

German Gulch @ River Mile 6.0
Westslope Cutthroat Trout Size Distribution (2014)
N = 13
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

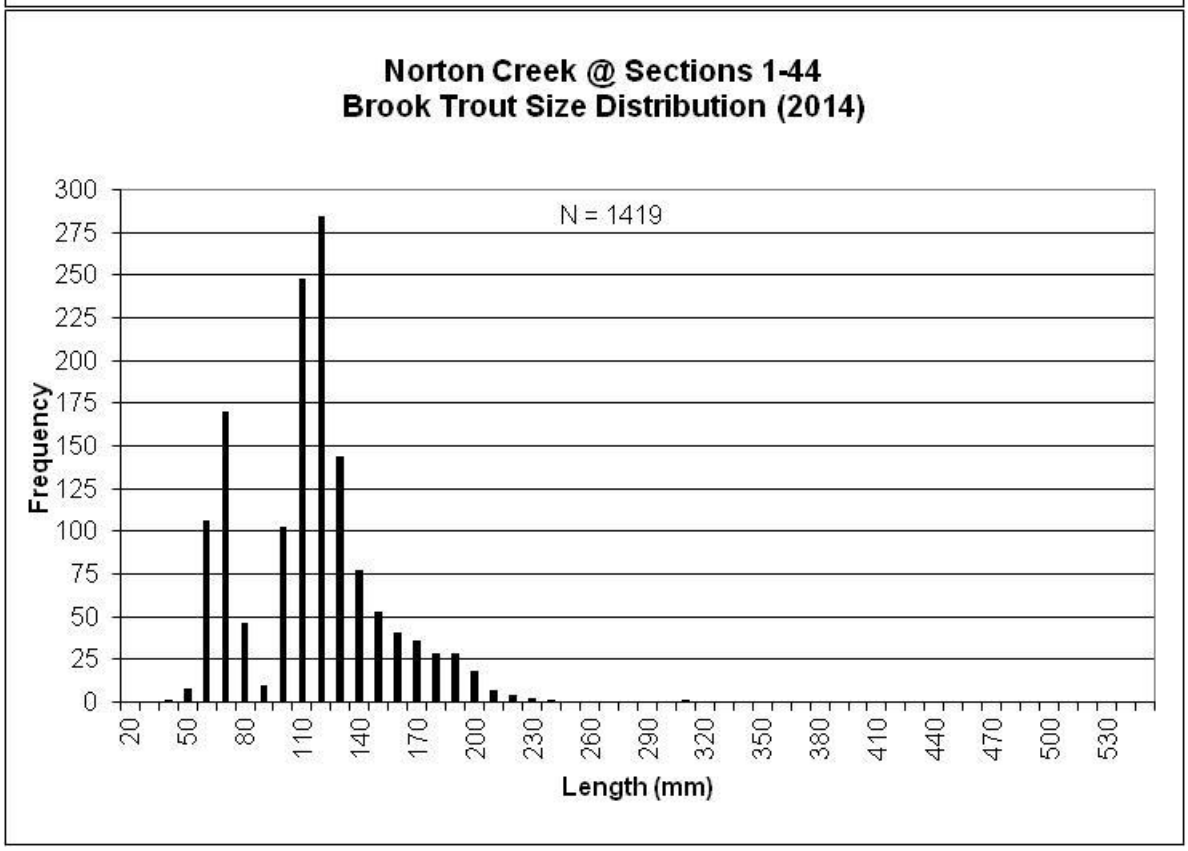

Norton Creek @ Sections 1-14 & 24-25
Westslope Cutthroat Trout Size Distribution (2013)
N = 810
Frequency
Length (mm)

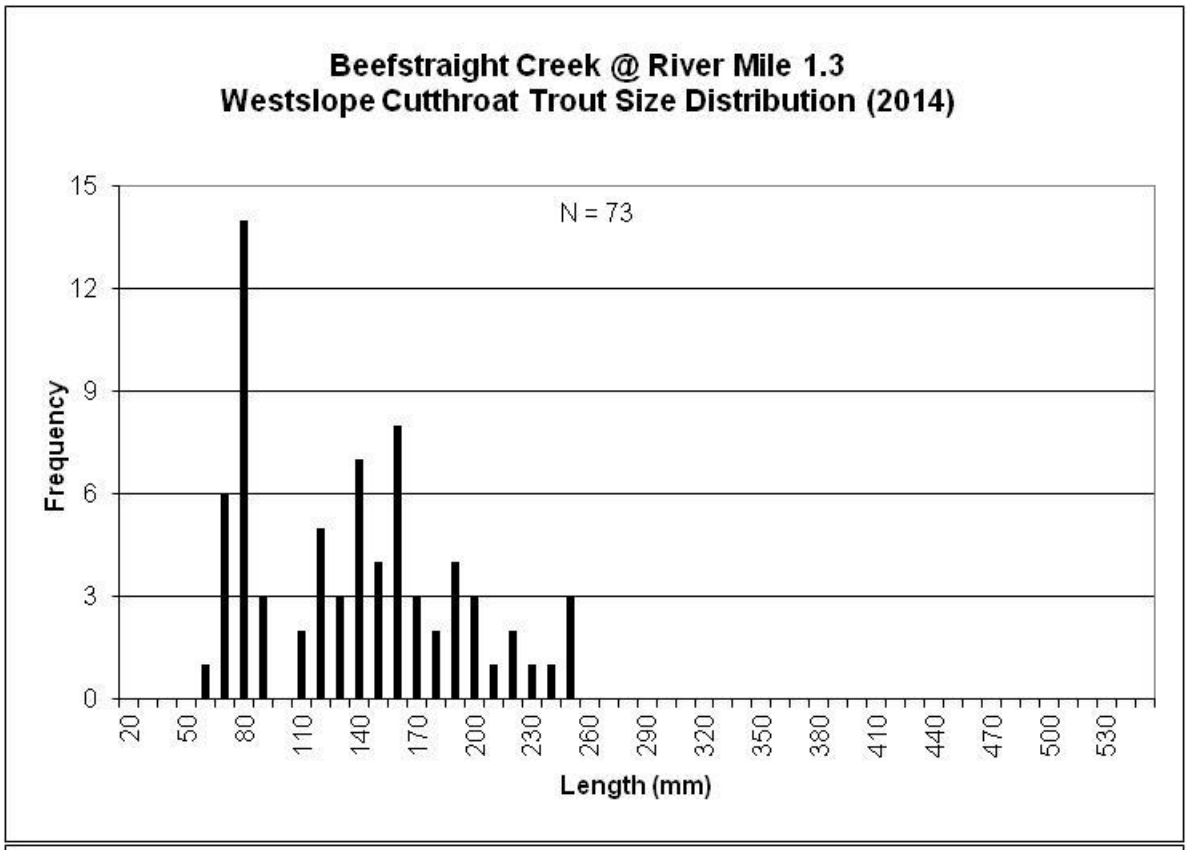

Norton Creek @ Sections 1-14 & 24-25
Brook Trout Size Distribution (2013)
N = 644
Frequency
Length (mm)

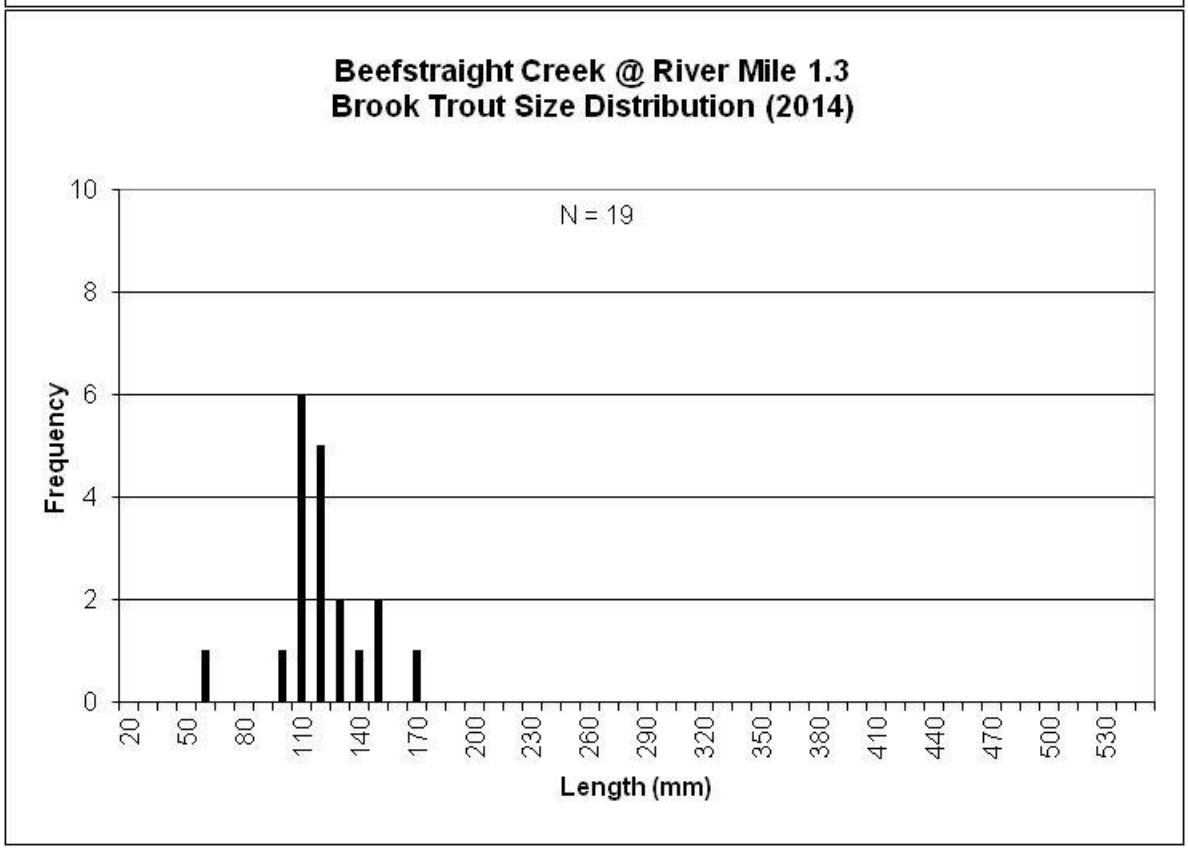

Norton Creek @ River Mile 0.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 84
Frequency
0
3
6
9
12
15
18
21
24
27
30
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

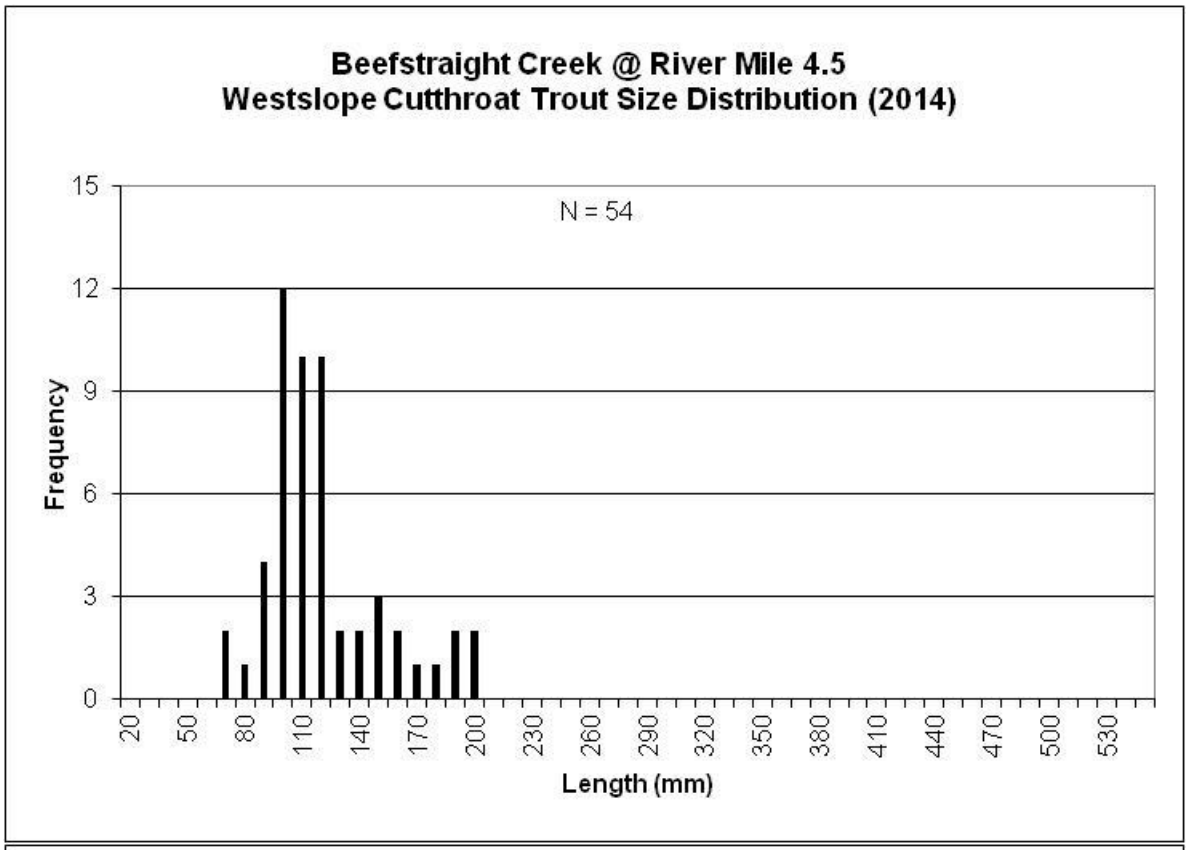

Norton Creek @ River Mile 0.7
Brook Trout Size Distribution (2014)
N = 104
Frequency
0
3
6
9
12
15
18
21
24
27
30
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

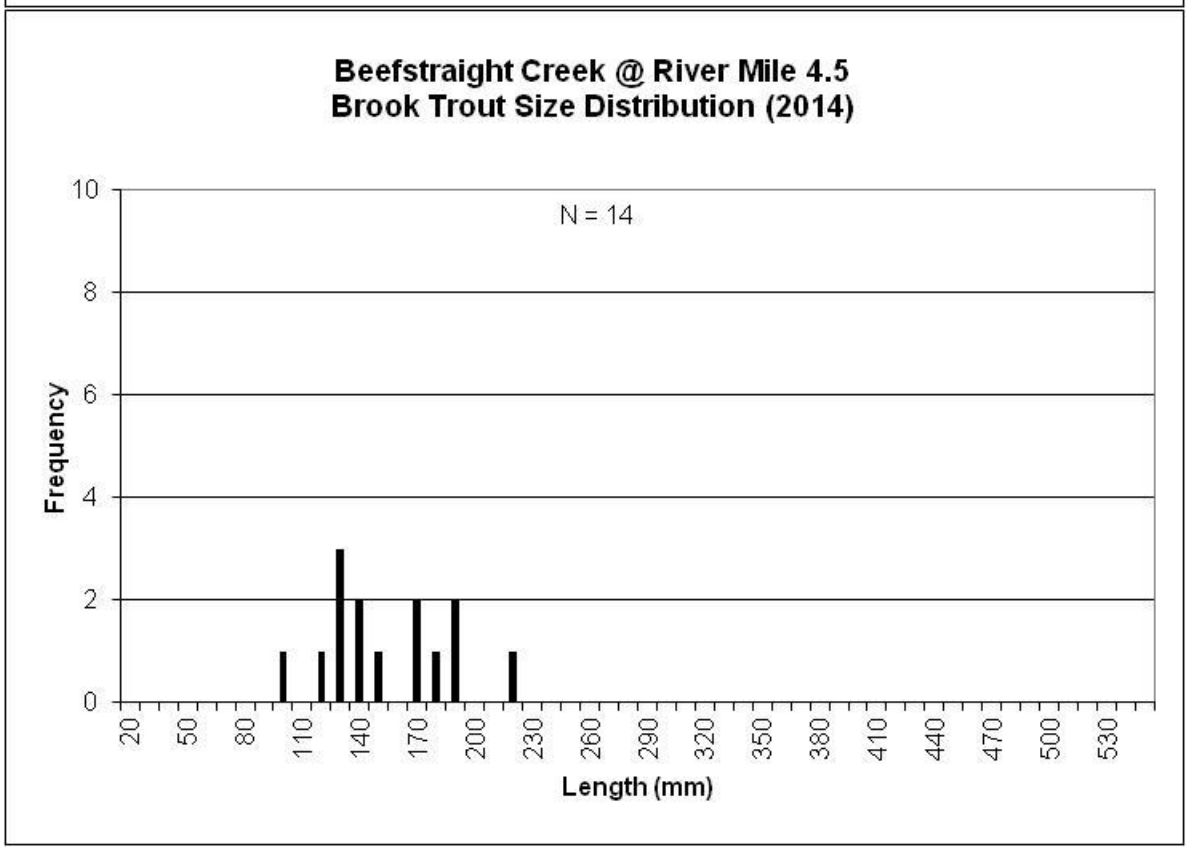

Norton Creek @ Sections 1-44
Westslope Cutthroat Trout Size Distribution (2014)
N = 2138
Frequency
Length (mm)

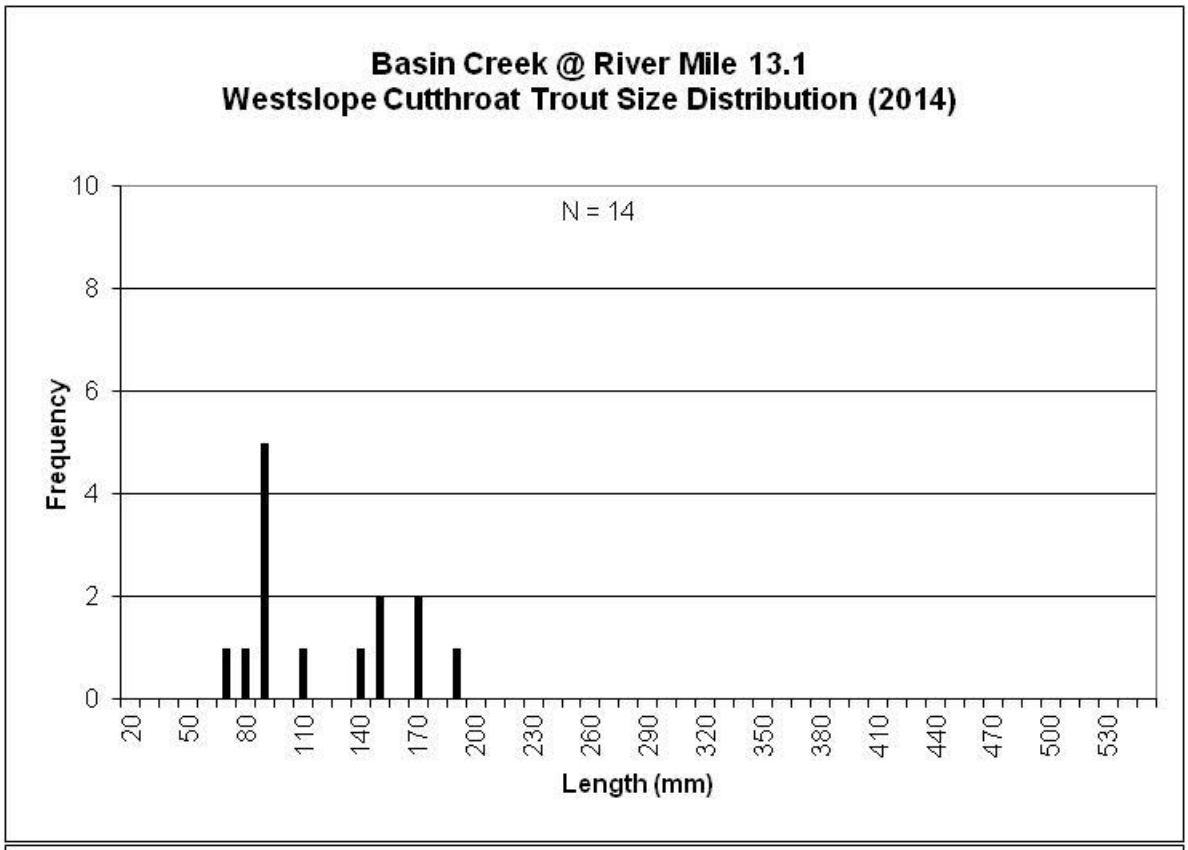

Norton Creek @ Sections 1-44
Brook Trout Size Distribution (2014)
N = 1419
Frequency
Length (mm)

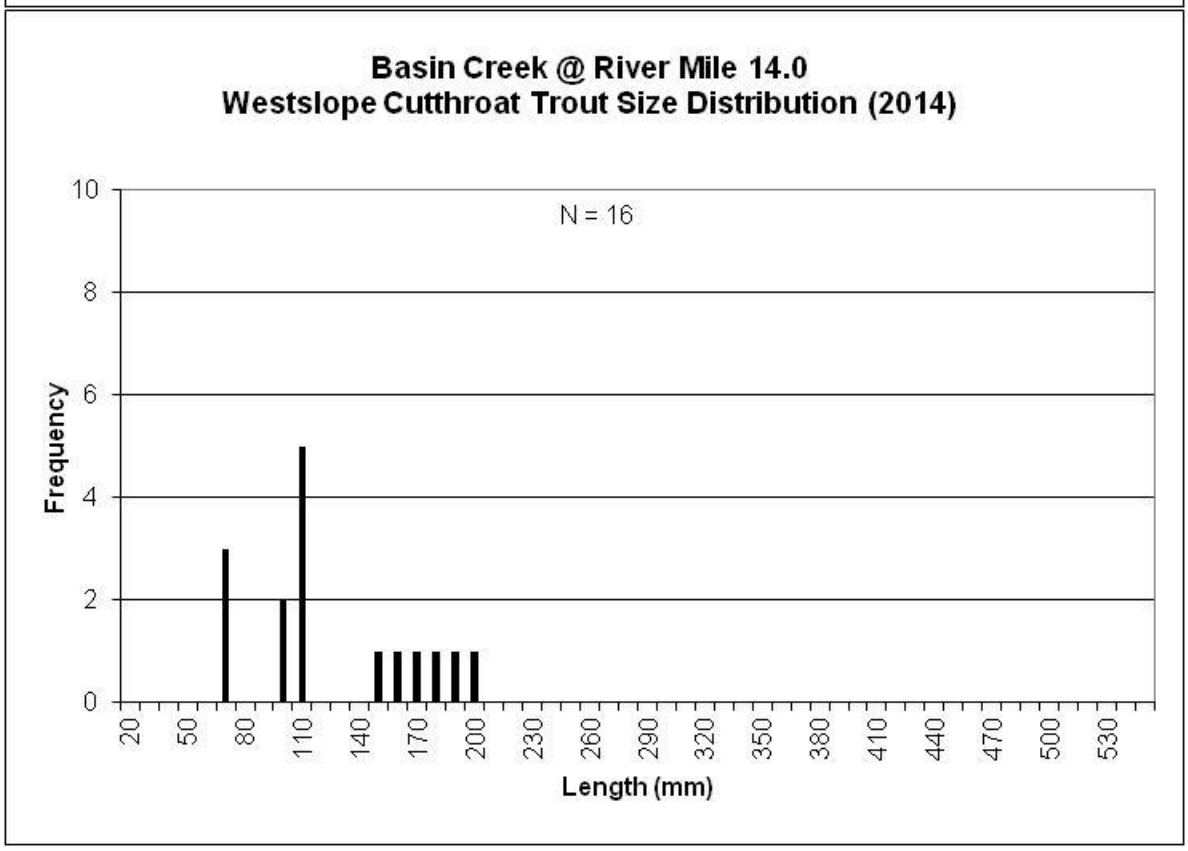

Beefstraight Creek @ River Mile 1.3
Westslope Cutthroat Trout Size Distribution (2014)
N = 73
Frequency
Length (mm)
0
3
6
9
12
15
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

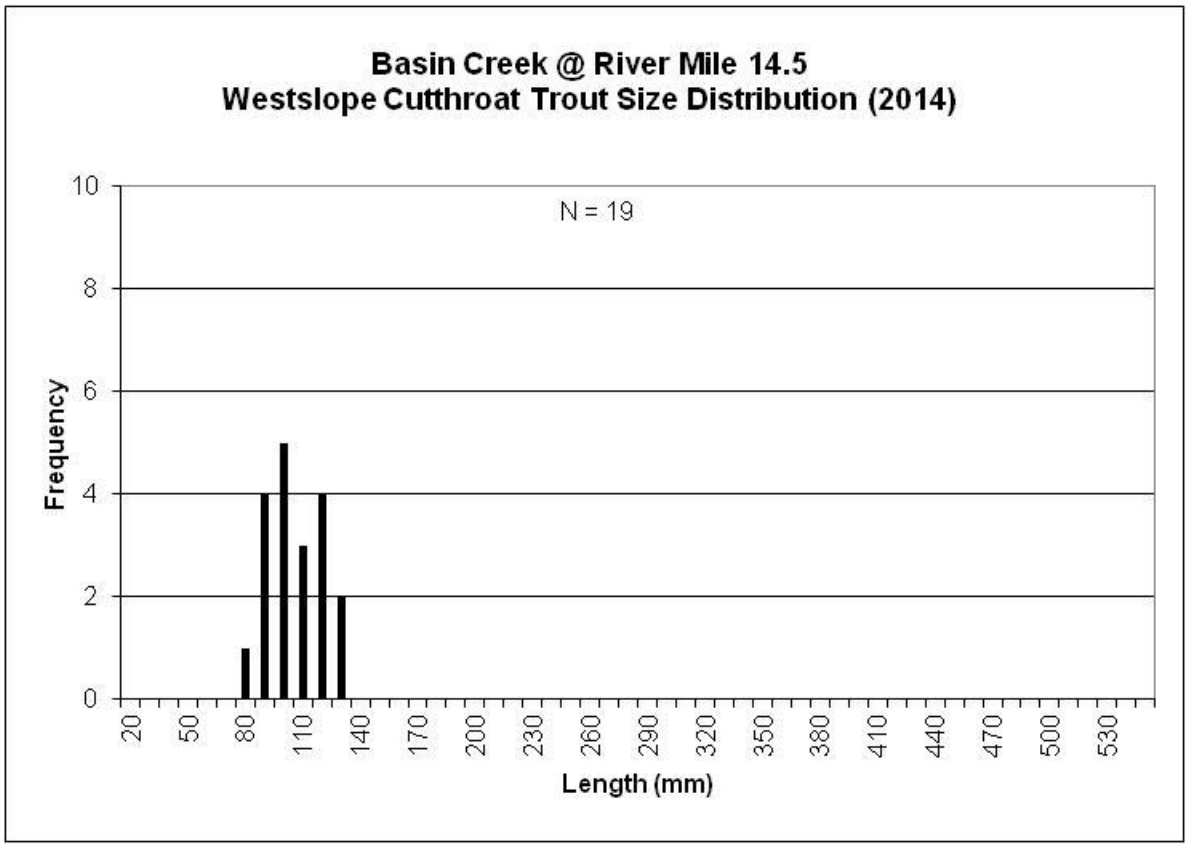

Beefstraight Creek @ River Mile 1.3
Brook Trout Size Distribution (2014)
N = 19
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

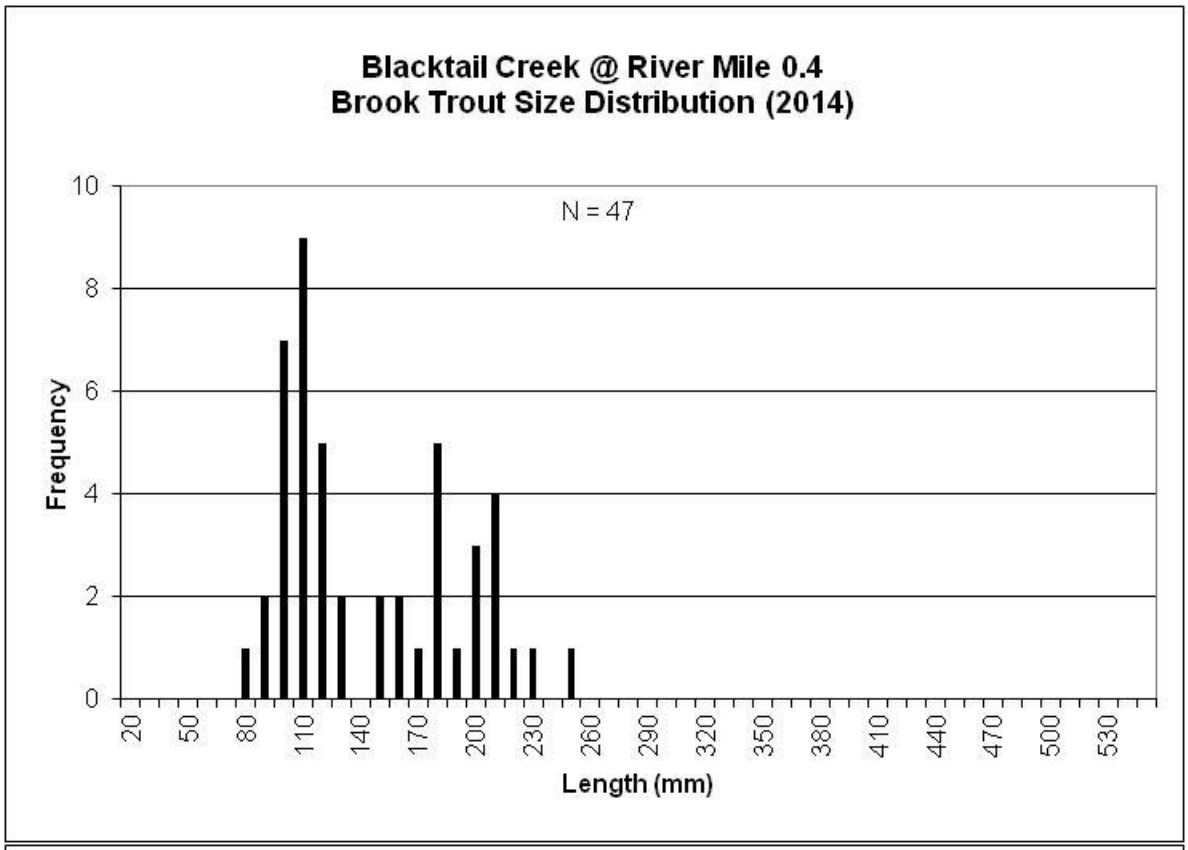

Beefstraight Creek @ River Mile 4.5
Westslope Cutthroat Trout Size Distribution (2014)
N = 54
Frequency
Length (mm)
0
3
6
9
12
15
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

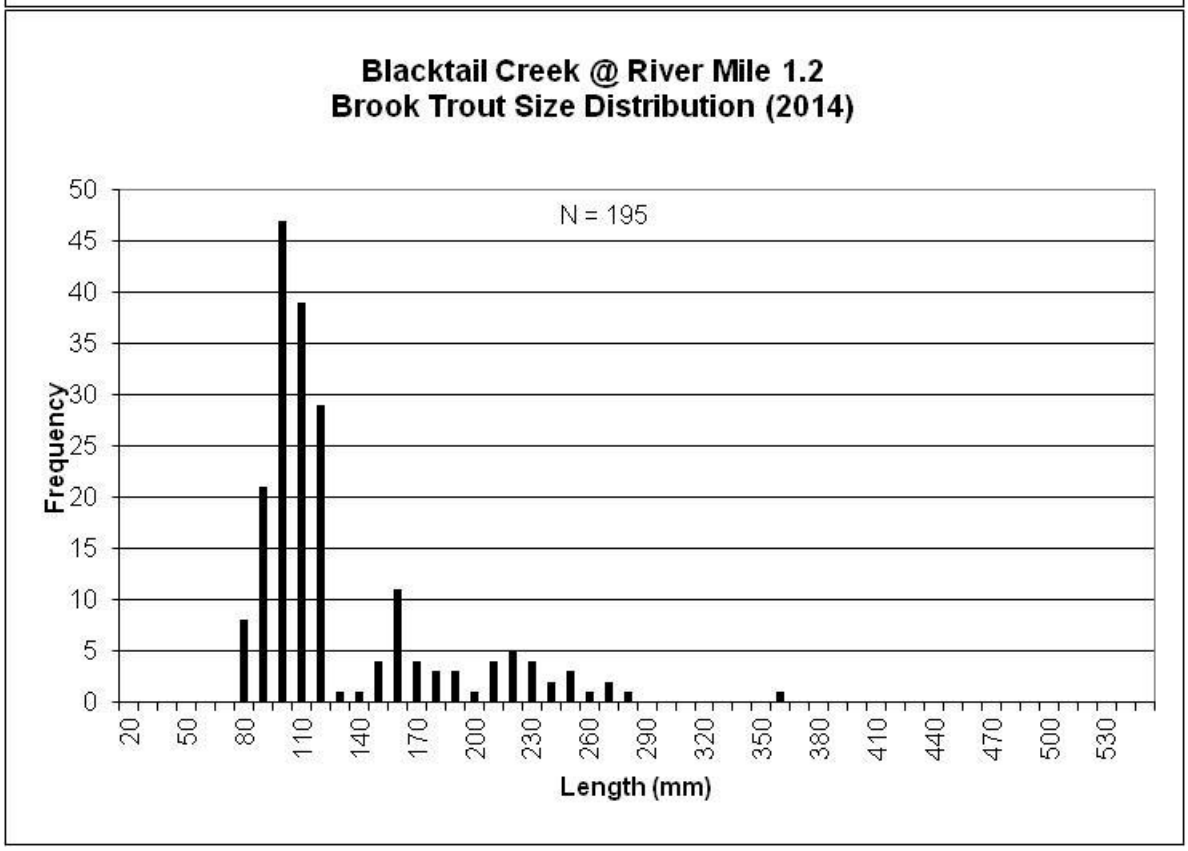

Beefstraight Creek @ River Mile 4.5
Brook Trout Size Distribution (2014)
N = 14
Frequency
Length (mm)
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530

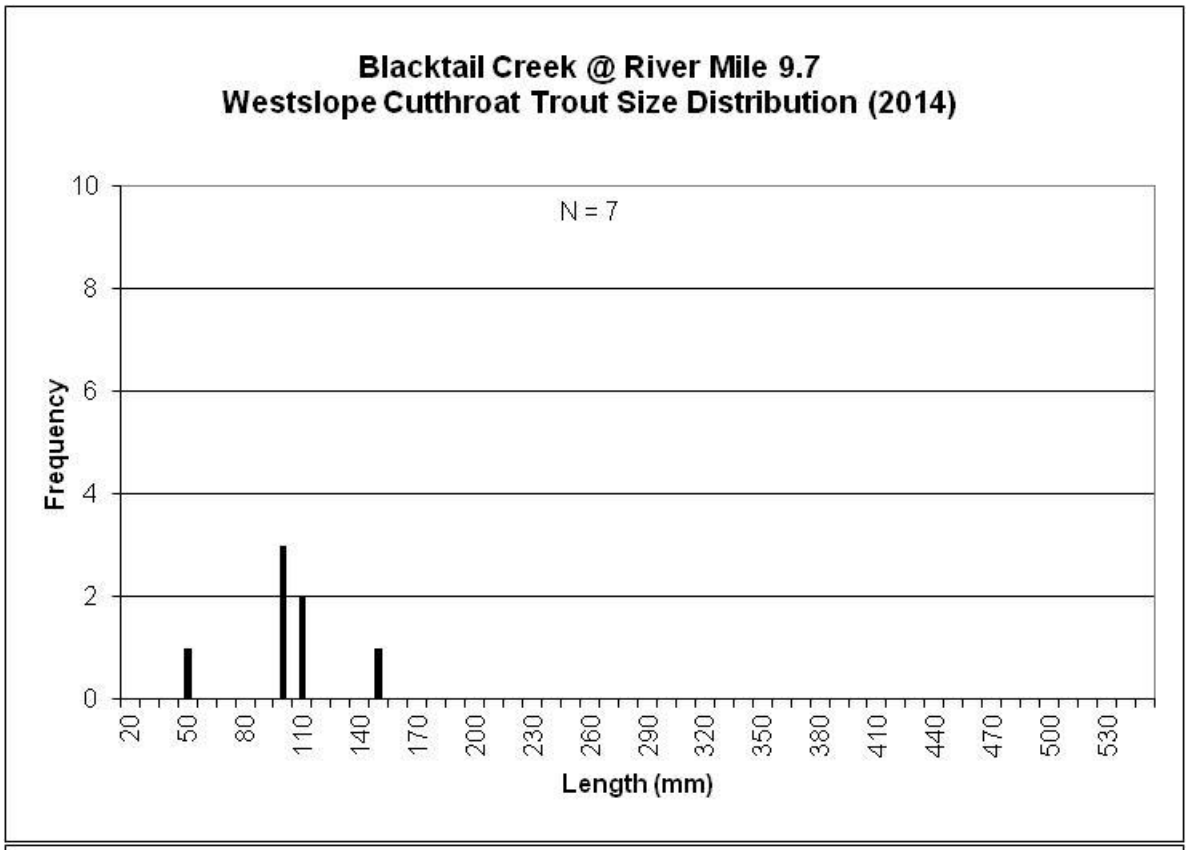

Basin Creek @ River Mile 13.1
Westslope Cutthroat Trout Size Distribution (2014)
N = 14
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

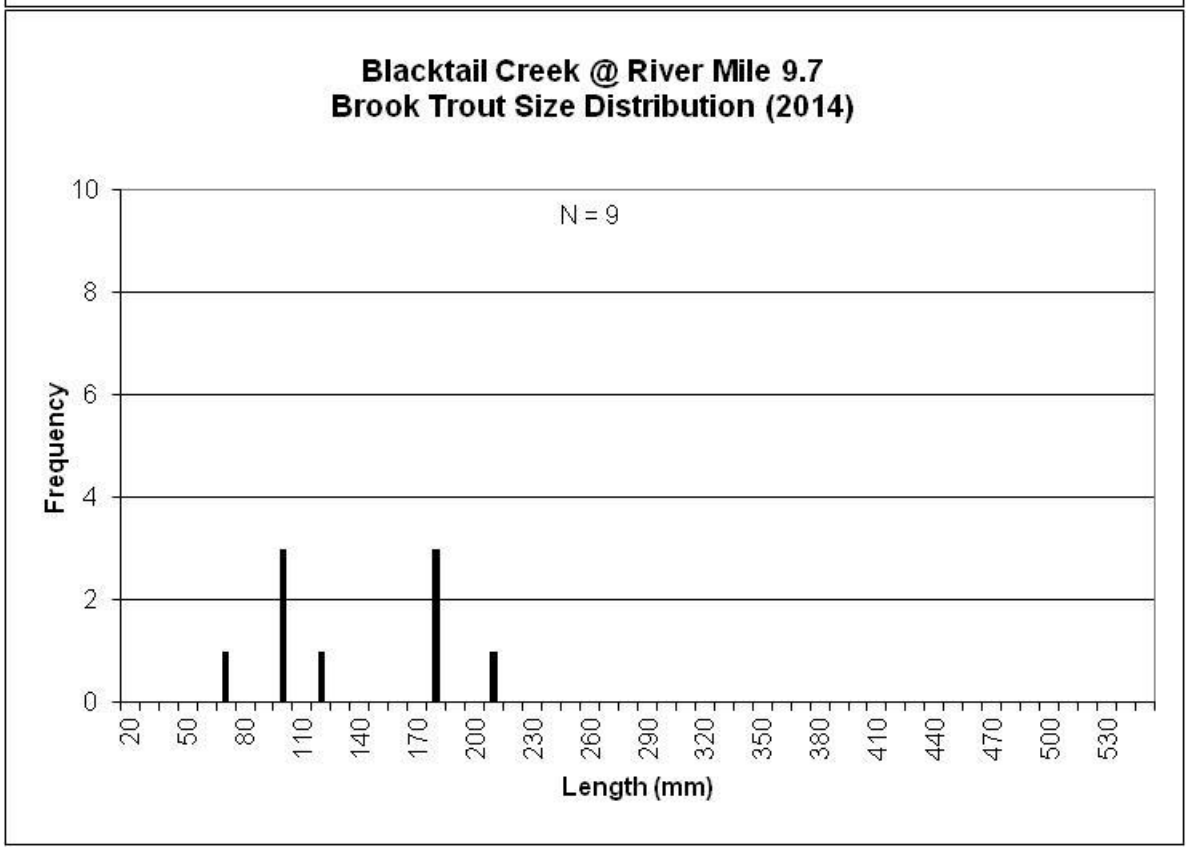

Basin Creek @ River Mile 14.0
Westslope Cutthroat Trout Size Distribution (2014)
N = 16
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

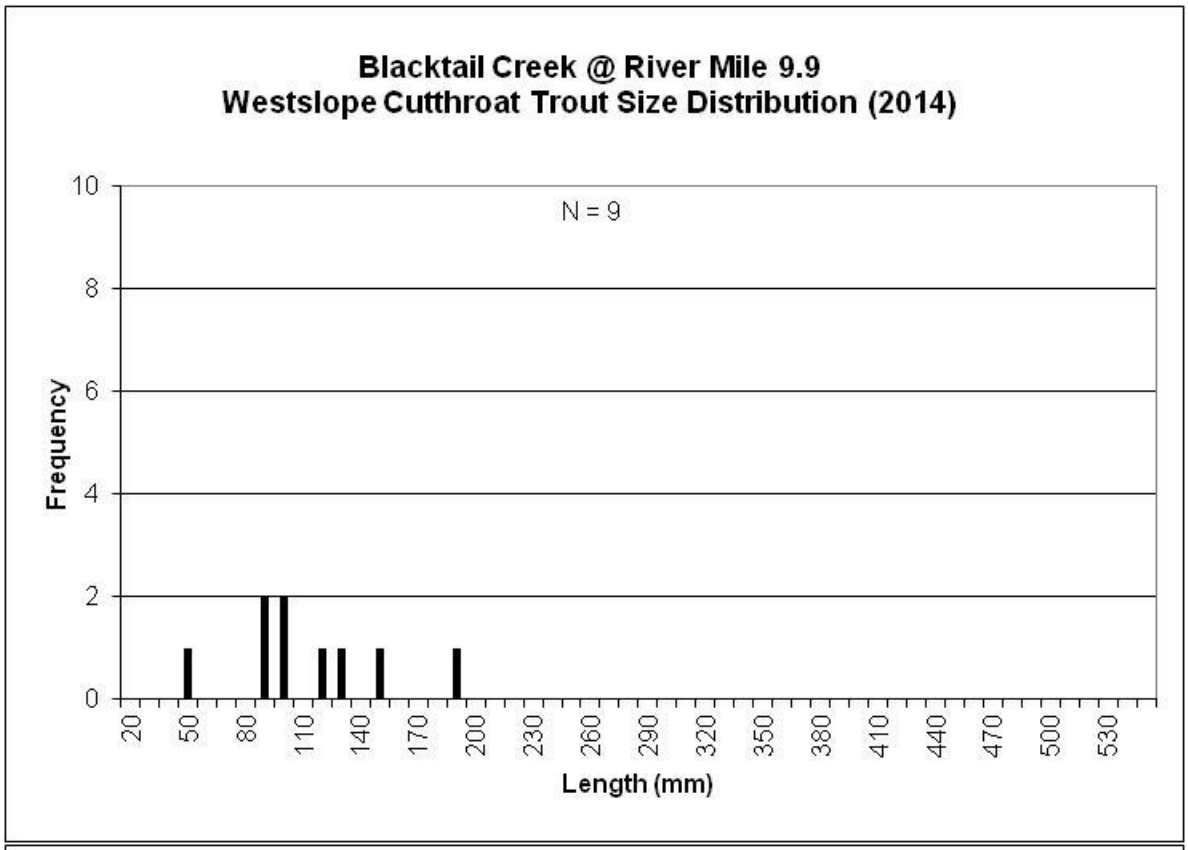

Basin Creek @ River Mile 14.5
Westslope Cutthroat Trout Size Distribution (2014)
N = 19
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

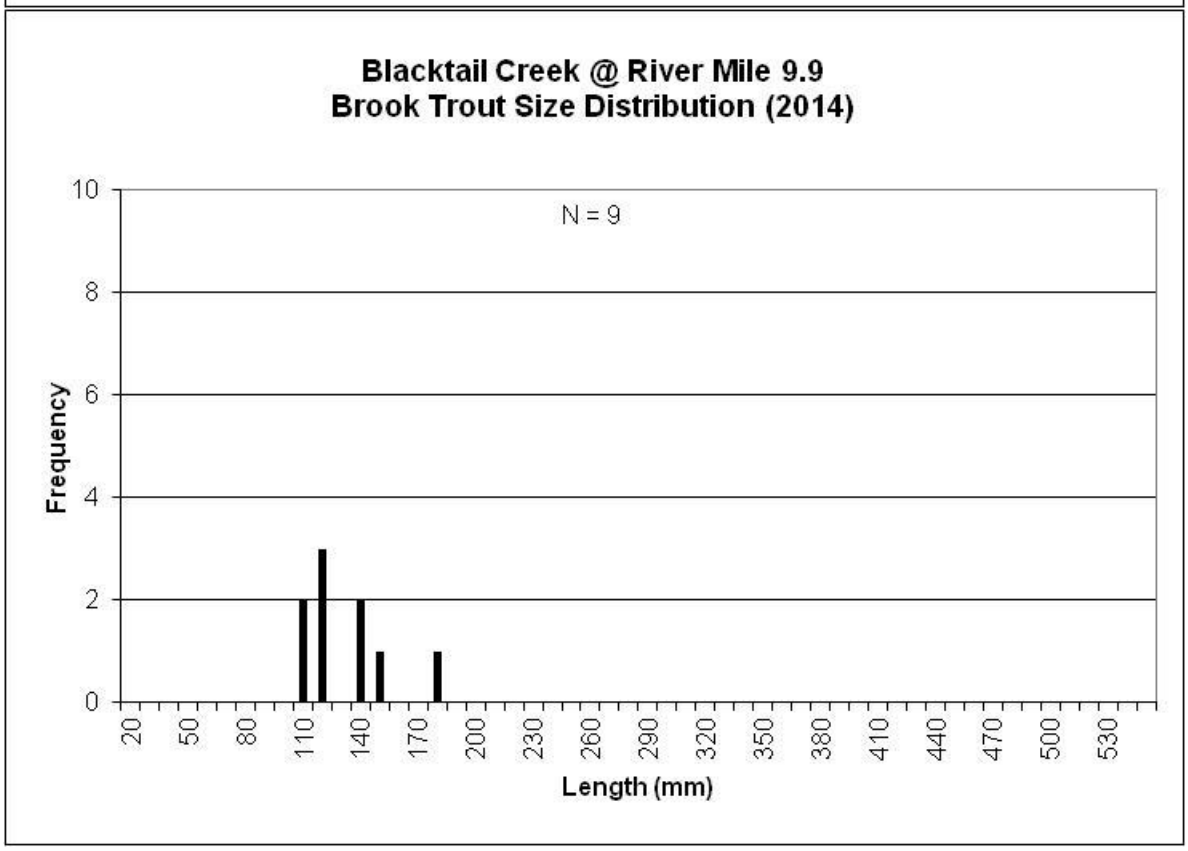

Blacktail Creek @ River Mile 0.4
Brook Trout Size Distribution (2014)
N = 47
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

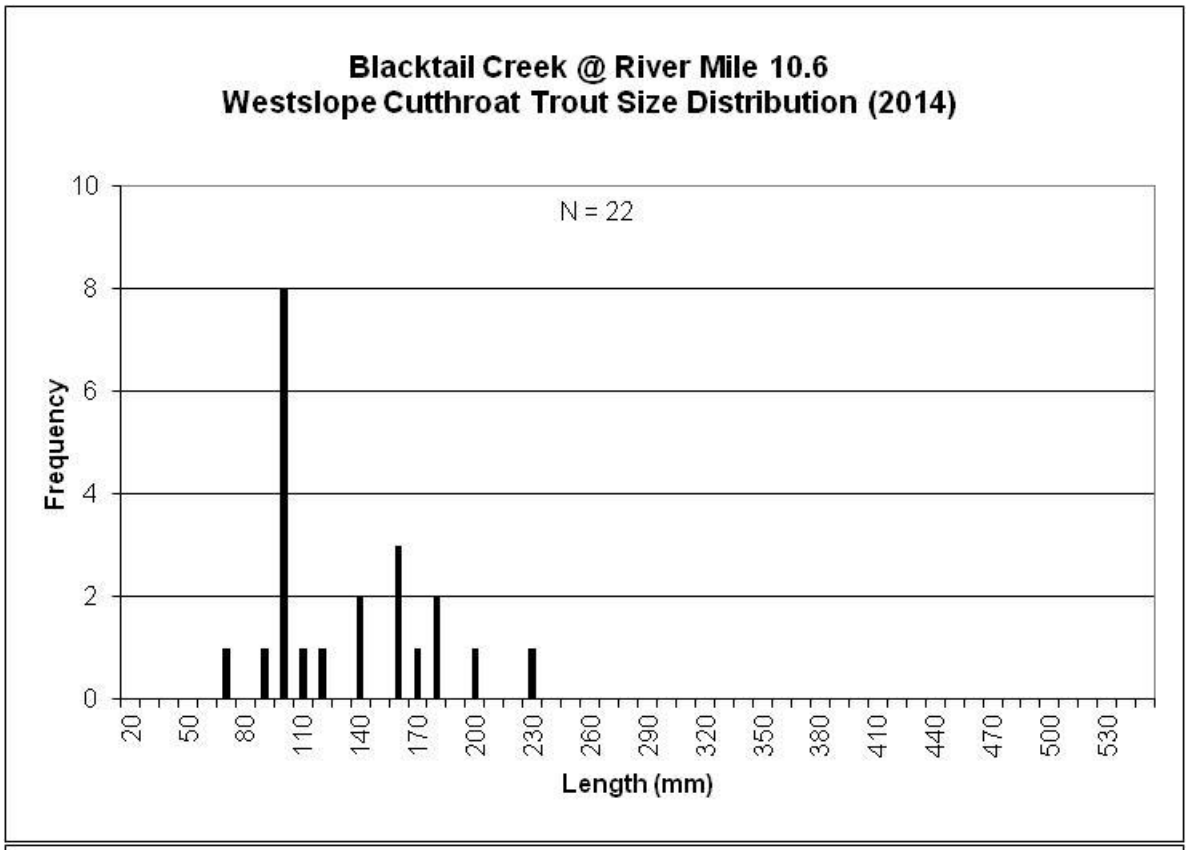

Blacktail Creek @ River Mile 1.2
Brook Trout Size Distribution (2014)
N = 195
Frequency
0
5
10
15
20
25
30
35
40
45
50
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

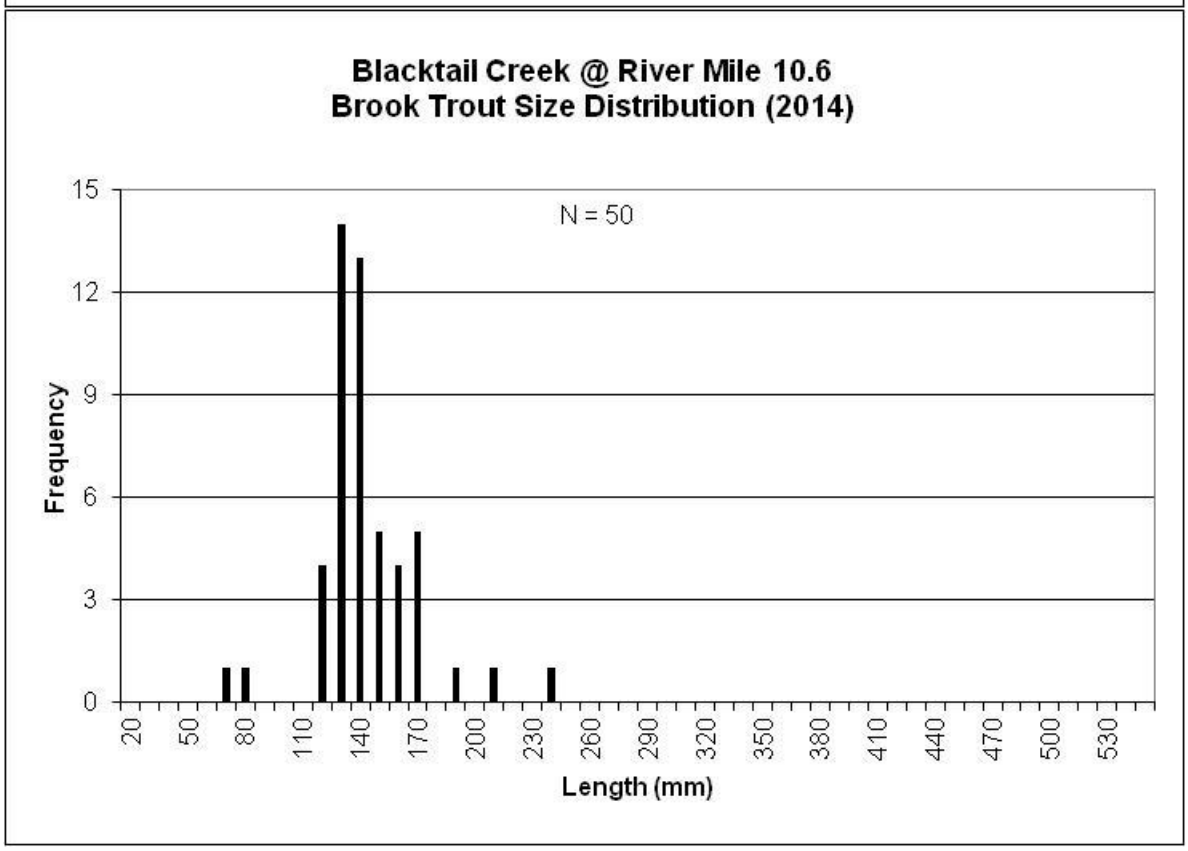

Blacktail Creek @ River Mile 9.7
Westslope Cutthroat Trout Size Distribution (2014)
N = 7
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

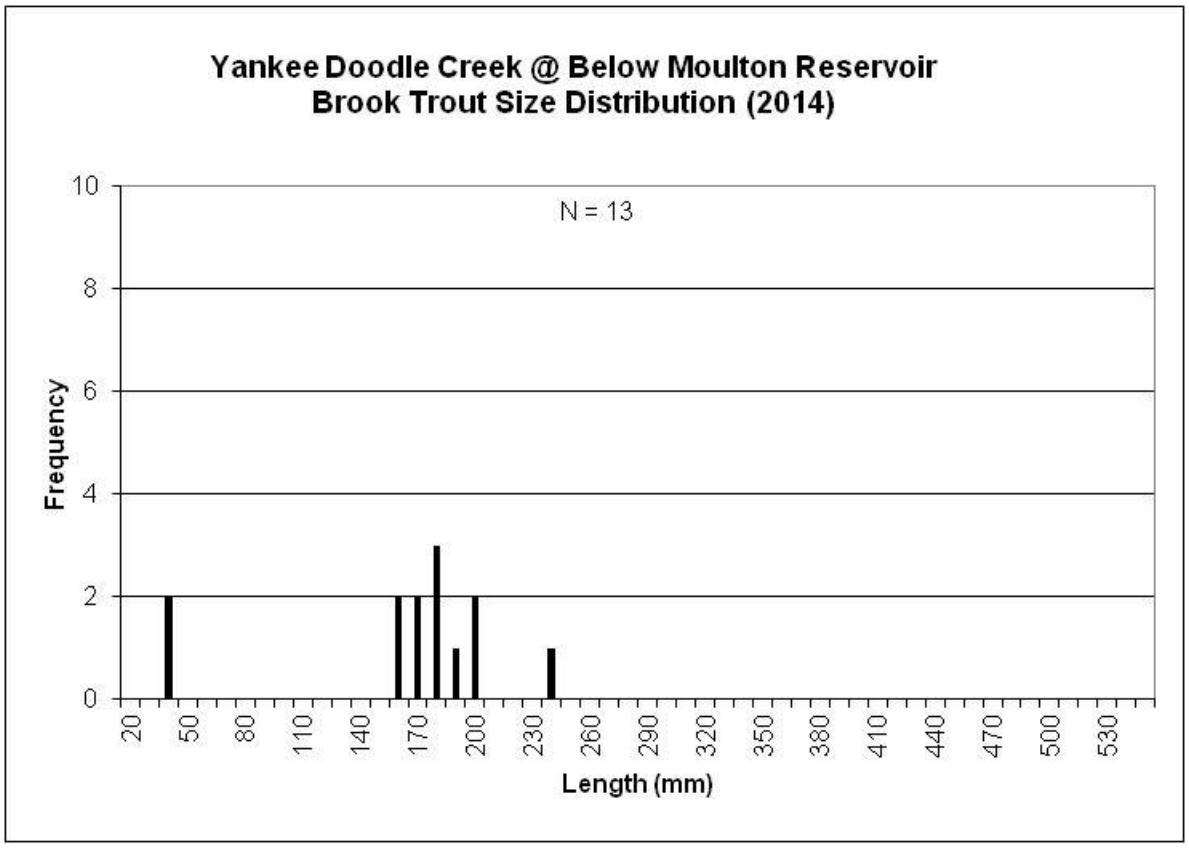

Blacktail Creek @ River Mile 9.7
Brook Trout Size Distribution (2014)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)

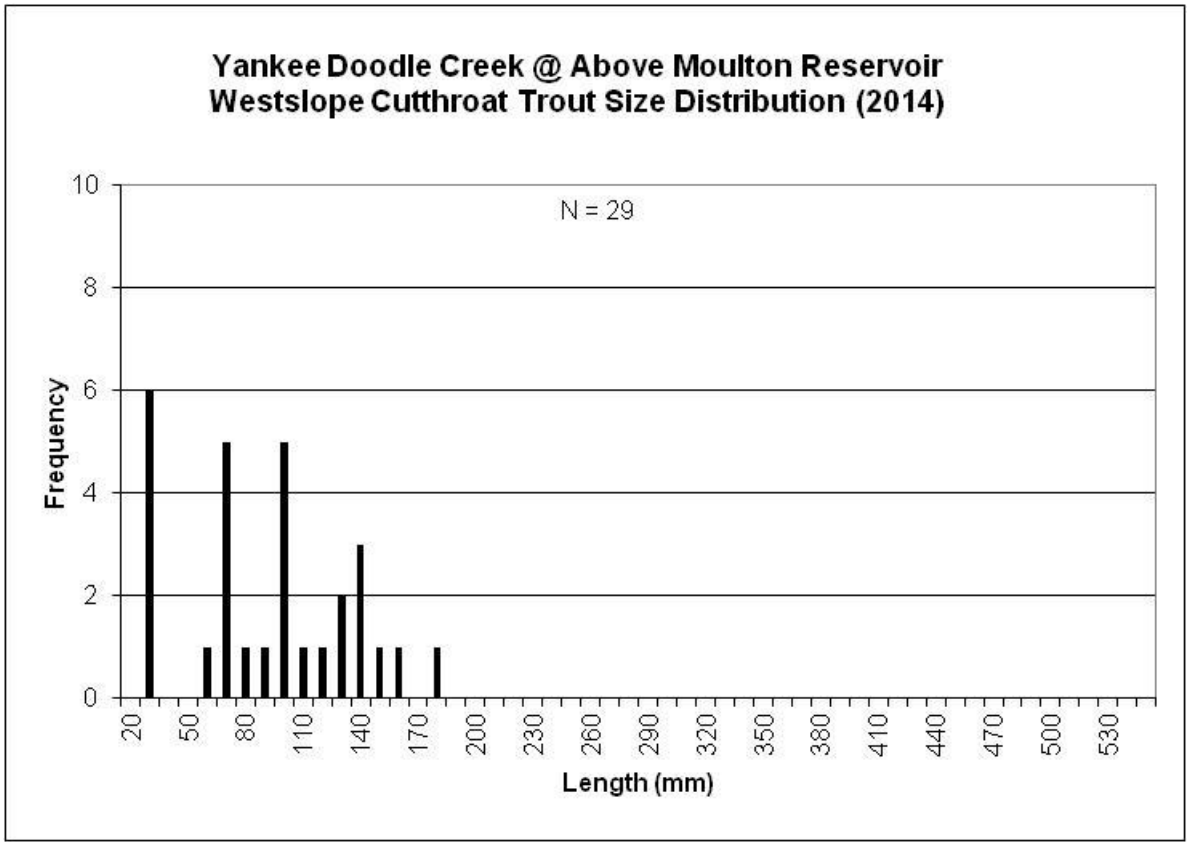

Blacktail Creek @ River Mile 9.9
Westslope Cutthroat Trout Size Distribution (2014)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Blacktail Creek @ River Mile 9.9
Brook Trout Size Distribution (2014)
N = 9
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Blacktail Creek @ River Mile 10.6
Westslope Cutthroat Trout Size Distribution (2014)
N = 22
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Blacktail Creek @ River Mile 10.6
Brook Trout Size Distribution (2014)
N = 50
Frequency
0
3
6
9
12
15
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Yankee Doodle Creek @ Below Moulton Reservoir
Brook Trout Size Distribution (2014)
N = 13
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)


Yankee Doodle Creek @ Above Moulton Reservoir
Westslope Cutthroat Trout Size Distribution (2014)
N = 29
Frequency
0
2
4
6
8
10
20
50
80
110
140
170
200
230
260
290
320
350
380
410
440
470
500
530
Length (mm)