

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
French Creek, Custer County
21-0017-00
2013

Table 1. Population and Biomass Estimates for French Creek

Site Number: 875	Date Sampled: 07/02/2013	Conductivity (umhos/cm): 342
Site Midpoint (Latitude, Longitude): 43.71839672, -103.36797411	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.0	Water Temperature (C):
Stream Classification: BR2, RB0	Number of Pass: 3	Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	49	49	51	49	701	23	490	284	20.55	788	125.6	32.8
Brown Trout	>=200mm	11	11	12	11	157	16	110	64	14.42	177	218.4	102.6
Brown Trout	All	60	60	62	60	858	42	600	348	37.42	965	142.6	48.8
Rainbow Trout	<200mm	1	1	1	1	14	1	10	6	0.49	16	155.0	38.0
Rainbow Trout	All	1	1	1	1	14	1	10	6	0.49	16	155.0	38.0
White Sucker	All	11	11	11	11	157	3	110	64	2.34	177	101.5	16.7

Site Number: 955	Date Sampled: 07/08/2013	Conductivity (umhos/cm): 331
Site Midpoint (Latitude, Longitude): 43.72435888, -103.41488194	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 6.3	Water Temperature (C): 21.2
Stream Classification: BR2	Number of Pass: 3	Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	22	23	27	22	365	9	230	148	8.23	370	125.5	25.3
Brown Trout	>=200mm	20	20	20	20	317	45	200	128	40.27	322	242.3	142.3
Brown Trout	All	43	43	45	43	682	59	430	276	52.96	692	181.1	87.0

Creek Chub	All	56	60	67	56	951	39	600	385	34.39	965	102.9	40.5
Smallmouth Bass	All	3	3	3	3	48	1	30	19	0.83	48	111.0	19.7
White Sucker	All	137	143	151	137	2267	197	1430	918	176.07	2301	109.5	87.0

Site Number: 996

Site Midpoint (Latitude, Longitude): 43.72794426, -103.43937761

Survey Completed by:

Stream Classification: BR2

Date Sampled: 06/26/2013

Site Length (m): 100

Mean Width (m): 5.0

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

Voltage:

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	2	2	4	2	40	1	20	16	0.83	32	163.5	23.0
Brown Trout	>=200mm	5	5	5	5	101	16	50	41	14.33	80	263.8	159.6
Brown Trout	All	7	7	8	7	141	17	70	57	15.15	113	235.1	120.6
Creek Chub	All	77	79	83	77	1589	16	790	643	14.30	1271	99.9	10.1
White Sucker	All	38	70	143	38	1408	83	700	570	73.66	1126	123.9	58.6

Site Number: 1026

Site Midpoint (Latitude, Longitude): 43.72253848, -103.45027980

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2

Date Sampled: 07/03/2013

Site Length (m): 100

Mean Width (m): 5.5

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

Voltage: 60

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	>=200mm	8	8	8	8	146	32	80	59	28.31	129	277.1	217.3
Brown Trout	All	8	8	8	8	146	32	80	59	28.31	129	277.1	217.3
Smallmouth Bass	All	3	3	3	3	55	2	30	22	2.07	48	140.0	42.3

Site Number: 1081
Site Midpoint (Latitude, Longitude): 43.71877710, -103.46408567
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3

Date Sampled: 07/09/2013 **Conductivity (umhos/cm):** 305
Site Length (m): 100
Mean Width (m): 5.1 **pH:**
Number of Pass: 3 **Water Temperature (C):** 24.0
Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	2	2	6	2	39	1	20	16	0.88	32	93.5	25.0
Brown Trout	>=200mm	2	2	2	2	39	5	20	16	4.23	32	241.0	120.0
Brown Trout	All	4	4	6	4	79	7	40	32	6.23	64	167.3	88.3
Creek Chub	All	110	118	128	110	2330	168	1180	944	150.07	1899	101.1	72.1

Site Number: 1094
Site Midpoint (Latitude, Longitude): 43.72191882, -103.47418981
Survey Completed by:
Stream Classification: BR3

Date Sampled: 06/24/2013 **Conductivity (umhos/cm):** 365
Site Length (m): 93
Mean Width (m): 5.0 **pH:**
Number of Pass: 3 **Water Temperature (C):** 24.5
Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	7	7	8	7	139	5	75	56	4.34	121	140.0	35.0
Brown Trout	>=200mm	1	1	1	1	20	4	11	8	3.90	17	287.0	220.0
Brown Trout	All	8	8	9	8	159	9	86	64	8.24	138	158.4	58.1

Site Number: 1129
Site Midpoint (Latitude, Longitude): 43.71790044, -103.48904117
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 07/09/2013 **Conductivity (umhos/cm):** 322
Site Length (m): 100
Mean Width (m): 5.2 **pH:**
Number of Pass: 3 **Water Temperature (C):** 23.8
Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	<200mm	2	2	4	2	39	1	20	16	0.64	32	122.5	18.5
Brown Trout	>=200mm	5	5	6	5	97	24	50	39	21.83	80	295.2	252.0
Brown Trout	All	7	7	9	7	136	25	70	55	22.47	113	245.9	185.3
Creek Chub	All	89	92	97	89	1785	203	920	723	181.67	1480	72.3	114.0
Mountain Sucker	All	5	5	6	5	97	5	50	39	4.16	80	145.2	48.0

Site Number: 1155

Site Midpoint (Latitude, Longitude): 43.71597047, -103.50675917

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2, BR2, RB2

Date Sampled: 07/10/2013

Site Length (m): 100

Mean Width (m): 6.3

Number of Pass: 3

Conductivity (umhos/cm): 400

pH:

Water Temperature (C): 19.5

Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Black Crappie	All	1	1	2	1	16	1	10	6	0.70	16	142.0	50.0
Brook Trout	<200mm	3	3	3	3	47	2	30	19	2.20	48	159.7	52.0
Brook Trout	>=200mm	5	5	5	5	79	8	50	32	7.35	80	215.0	104.4
Brook Trout	All	8	8	8	8	126	11	80	51	9.54	129	194.3	84.8
Brown Trout	>=200mm	5	5	7	5	79	35	50	32	31.53	80	351.4	448.2
Brown Trout	All	7	8	14	7	126	57	80	51	50.45	129	265.9	448.2
Mountain Sucker	All	1	1	1	1	16	0	10	6	0.44	16	150.0	31.0
Northern Pike	All	1	1	1	1	16	0	10	6	0.21	16	125.0	15.0
Rainbow Trout	<200mm	1	1	1	1	16	0	10	6	0.34	16	126.0	24.0
Rainbow Trout	>=200mm	2	2	3	2	32	6	20	13	5.42	32	274.5	192.5
Rainbow Trout	All	3	3	4	3	47	6	30	19	5.76	48	225.0	136.3

Site Number: 1184
Site Midpoint (Latitude, Longitude): 43.73293880, -103.51089571
Survey Completed by:
Stream Classification: BK2, BR2, RB2

Date Sampled: 06/25/2013
Site Length (m): 100
Mean Width (m): 5.5
Number of Pass: 3

Conductivity (umhos/cm):
pH:
Water Temperature (C):
Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Black Crappie	All	1	1	1	1	18	1	10	7	1.01	16	152.0	63.0
Brook Trout	<200mm	2	2	2	2	36	2	20	15	2.09	32	183.0	65.0
Brook Trout	>=200mm	10	10	10	10	180	23	100	73	20.22	161	225.0	125.6
Brook Trout	All	12	12	12	12	216	25	120	88	22.32	193	218.0	115.5
Brown Trout	<200mm	2	2	3	2	36	1	20	15	0.61	32	78.5	19.0
Brown Trout	>=200mm	6	6	7	6	108	30	60	44	26.81	97	299.5	277.5
Brown Trout	All	8	8	10	8	144	35	80	58	30.99	129	244.3	240.6
Rainbow Trout	>=200mm	1	1	1	1	18	9	10	7	7.79	16	393.0	484.0
Rainbow Trout	All	1	1	1	1	18	9	10	7	7.79	16	393.0	484.0
Yellow Perch	All	4	4	4	4	72	3	40	29	2.27	64	140.5	35.3

Site Number: 1194
Site Midpoint (Latitude, Longitude): 43.74014484, -103.50644352
Survey Completed by:
Stream Classification: BR3

Date Sampled: 07/01/2013
Site Length (m): 100
Mean Width (m): 5.2
Number of Pass: 3

Conductivity (umhos/cm): 373
pH:
Water Temperature (C): 21.7
Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Brown Trout	>=200mm	1	1	1	1	19	3	10	8	2.93	16	252.0	172.0
Brown Trout	All	1	1	1	1	19	3	10	8	2.93	16	252.0	172.0

Creek Chub All 168 179 190 168 3418 492 1790 1384 439.52 2880 69.2 144.0

Site Number: 1247

Date Sampled: 07/10/2013

Conductivity (umhos/cm): 423

Site Midpoint (Latitude, Longitude): 43.76160744, -103.51613538

Site Length (m): 100

pH:

Survey Completed by:

Mean Width (m): 3.9

Water Temperature (C): 25.8

Stream Classification: None

Number of Pass: 3

Voltage: 250

Species	Size Class	Total Number Captured	Est. # in site	Upper 95% CI	Lower 95% CI	# per Hectacre	Kg per Hectacre	# per Km	# per Acre	lb. per Acre	# per Mile	Mean Length (mm)	Mean Weight (grams)
Largemouth Bass	All	1	1	1	1	26	0	10	10	0.21	16	85.0	9.0

Stream sites are classified based on the estimates of adult trout over eight inches that exist within the site. Estimates are derived from 3-pass backpack electrofishing surveys at 100-meter sites within streams. While all fish in the site are collected and measured, only trout species are used for classifications. Sites are numbered in accordance for the distance (m) from the stream confluence of a higher order stream/river.

Based on number of trout in excess of eight inches	
Class BR1	Number of wild Brown Trout exceeds 150 per acre
Class BR2	Number of wild Brook Trout ranges from 25 to 150 per acre
Class BR3	Number of wild Brown Trout is less than 25 per acre
Class BK1	Number of wild Brook Trout exceeds 150 per acre
Class BK2	Number of wild Brook Trout ranges from 25 to 150 per acre
Class BK3	Number of wild Brook Trout is less than 25 per acre
Class RB1	Number of wild Rainbow Trout exceeds 25 per acre
Class RB2	Number of wild Rainbow Trout is less than 25 per acre

Table 2. Species composition and population estimates on French Creek, 2003-2013

Site 875

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	May 28, 2009	12	12-12	
	Jul 02, 2013	49	49-51	
Brown Trout >=200mm	May 28, 2009	2	2-2	BR3
	Jul 02, 2013	11	11-12	BR2
Rainbow Trout <200mm	Jul 02, 2013	1	1-1	
Rainbow Trout >=200mm	May 28, 2009	1	1-1	RB2
Smallmouth Bass	May 28, 2009	1	1-1	

White Sucker	May 28, 2009	2	2-2
	Jul 02, 2013	11	11-11

Site 955

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 08, 2013	23	22-27	
Brown Trout >=200mm	Jul 08, 2013	20	20-20	BR2
Creek Chub	Jul 08, 2013	60	56-67	
Smallmouth Bass	Jul 08, 2013	3	3-3	
White Sucker	Jul 08, 2013	143	137-151	

Site 996

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 26, 2013	2	2-4	
Brown Trout >=200mm	Jun 26, 2013	5	5-5	BR2
Creek Chub	Jun 26, 2013	79	77-83	
White Sucker	Jun 26, 2013	70	38-143	

Site 1026

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout >=200mm	Jul 03, 2013	8	8-8	BR2
Smallmouth Bass	Jul 03, 2013	3	3-3	

Site 1081

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 09, 2013	2	2-6	
Brown Trout >=200mm	Jul 09, 2013	2	2-2	BR3
Creek Chub	Jul 09, 2013	118	110-128	

Site 1094

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 24, 2013	7	7-8	
Brown Trout >=200mm	Jun 24, 2013	1	1-1	BR3

Site 1129

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 09, 2013	2	2-4	
Brown Trout >=200mm	Jul 09, 2013	5	5-6	BR2
Creek Chub	Jul 09, 2013	92	89-97	

Mountain Sucker

Jul 09, 2013

5

5-6

Site 1155

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Crappie	Jul 10, 2013	1	1-2	
Brook Trout <200mm	Jul 10, 2013	3	3-3	
Brook Trout >=200mm	Jul 10, 2013	5	5-5	BK2
Brown Trout >=200mm	Jul 10, 2013	5	5-7	BR2
Mountain Sucker	Jul 10, 2013	1	1-1	
Northern Pike	Jul 10, 2013	1	1-1	
Rainbow Trout <200mm	Jul 10, 2013	1	1-1	
Rainbow Trout >=200mm	Jul 10, 2013	2	2-3	RB2

Site 1184

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Crappie	Jun 25, 2013	1	1-1	
Brook Trout <200mm	Jun 25, 2013	2	2-2	
Brook Trout >=200mm	Jun 25, 2013	10	10-10	BK2
Brown Trout <200mm	Jun 25, 2013	2	2-3	

Brown Trout >=200mm	Jun 25, 2013	6	6-7	BR2
Rainbow Trout >=200mm	Jun 25, 2013	1	1-1	RB2
Yellow Perch	Jun 25, 2013	4	4-4	

Site 1194

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout >=200mm	Jul 01, 2013	1	1-1	BR3
Creek Chub	Jul 01, 2013	179	168-190	

Site 1225

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Creek Chub	Jun 03, 2009	139	139-139	
White Sucker	Jun 03, 2009	21	21-21	

Site 1247

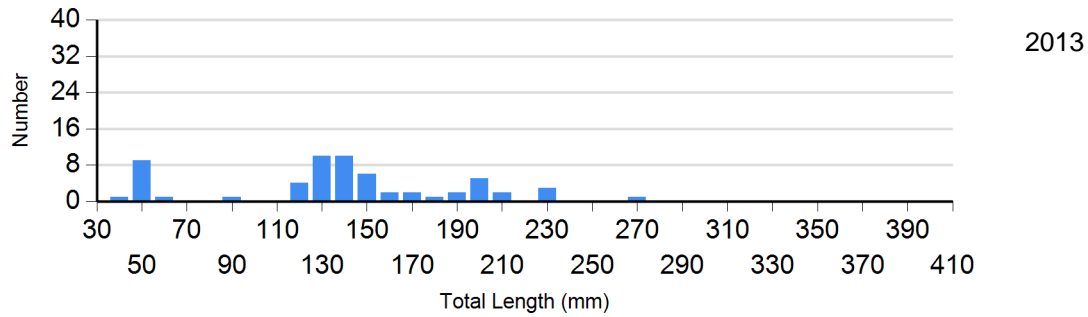
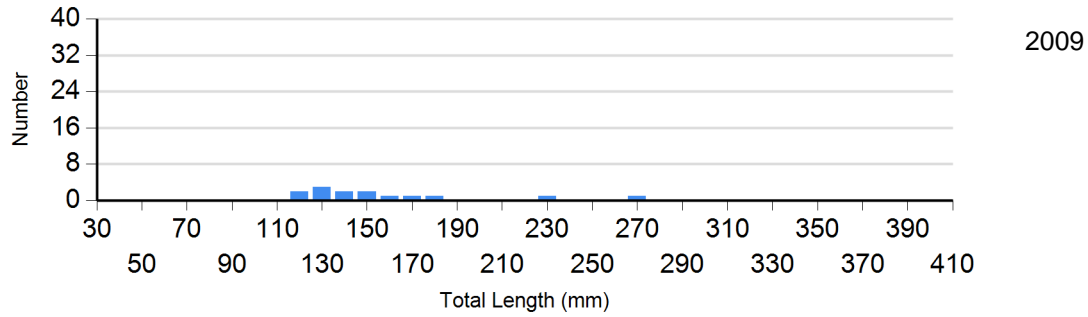
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Largemouth Bass	Jul 10, 2013	1	1-1	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

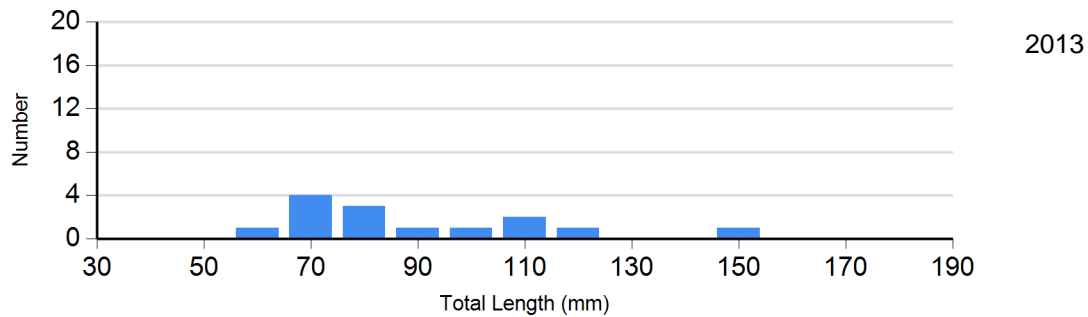
Site: 875

Species: Brown Trout

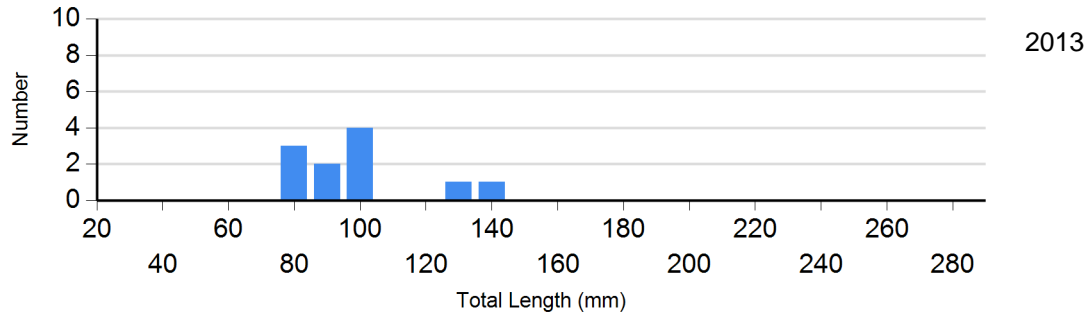


Site: 875

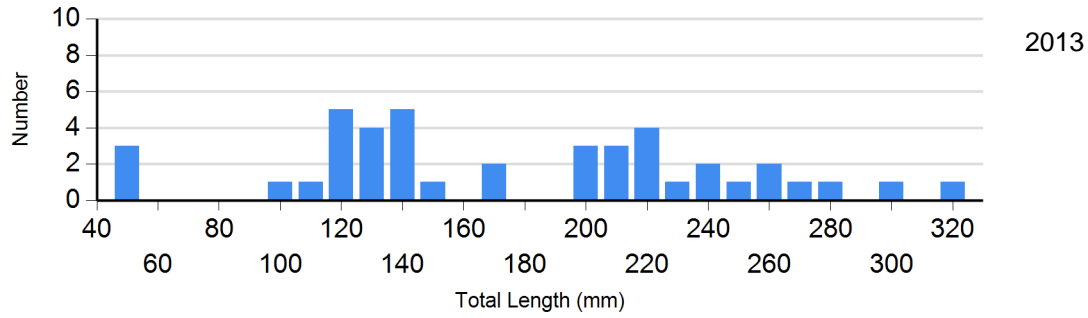
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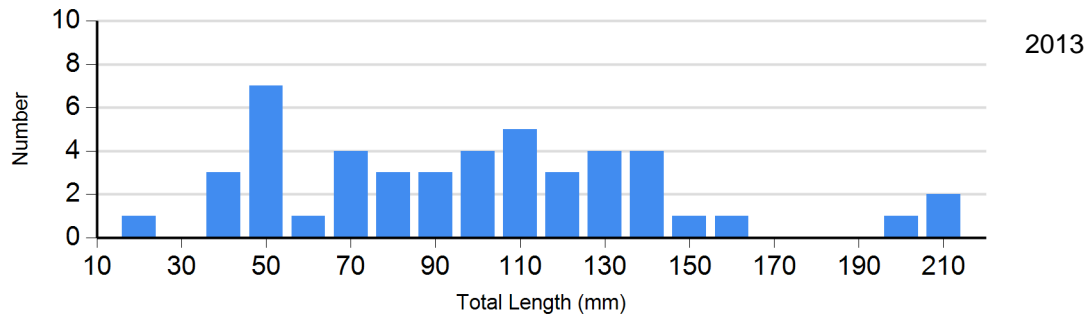
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Species: White Sucker



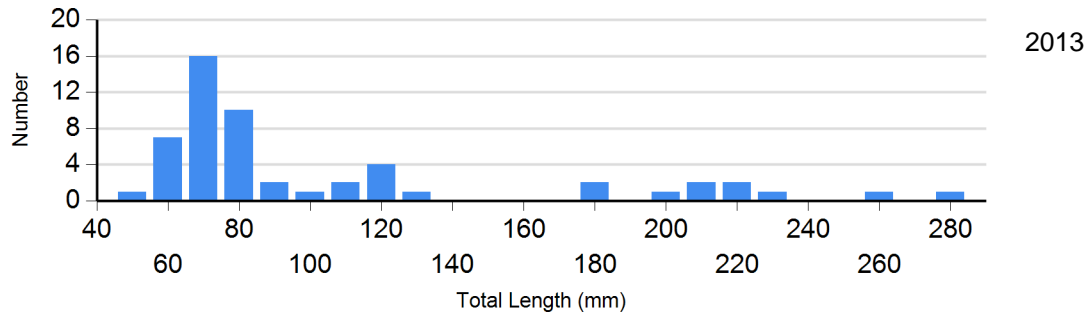
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Species: Brown Trout



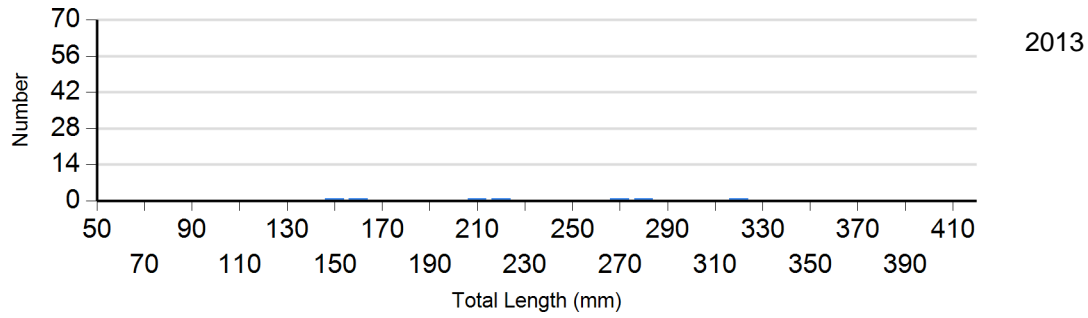
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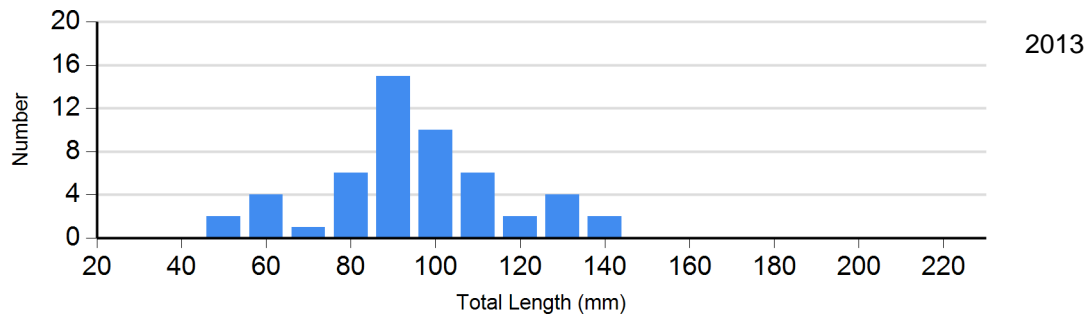
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Species: White Sucker



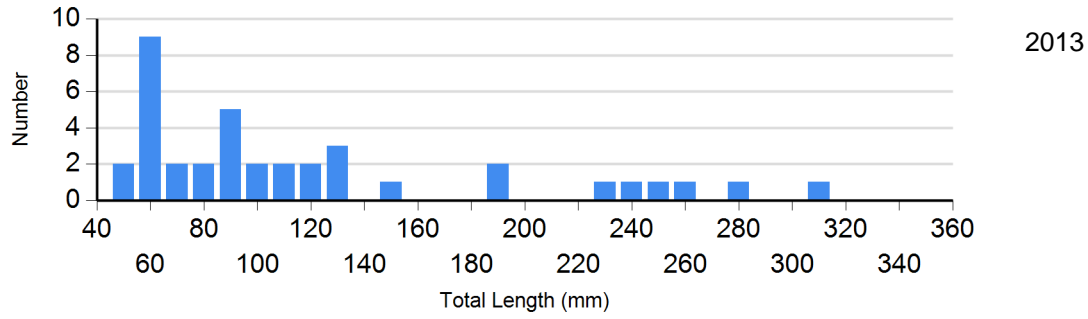
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Species: Brown Trout



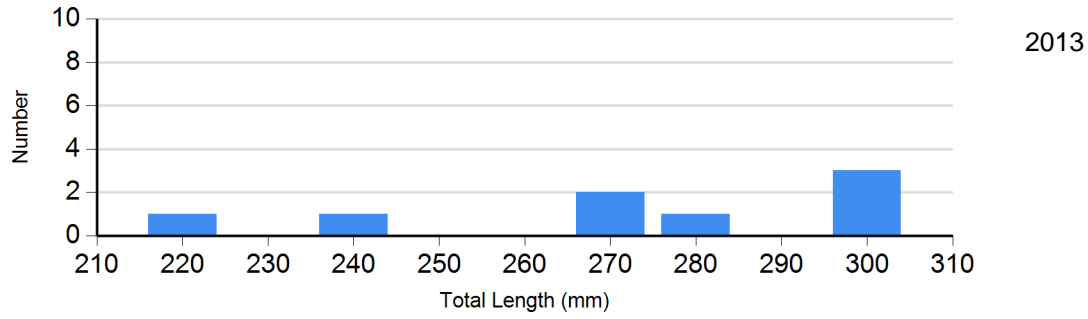
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Species: Creek Chub



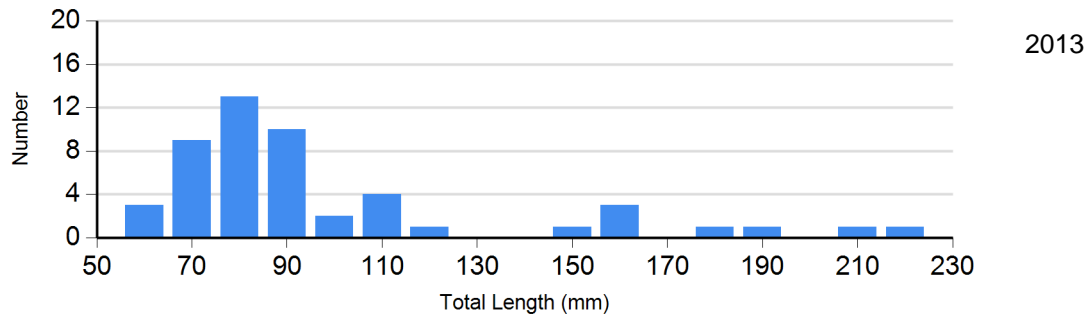
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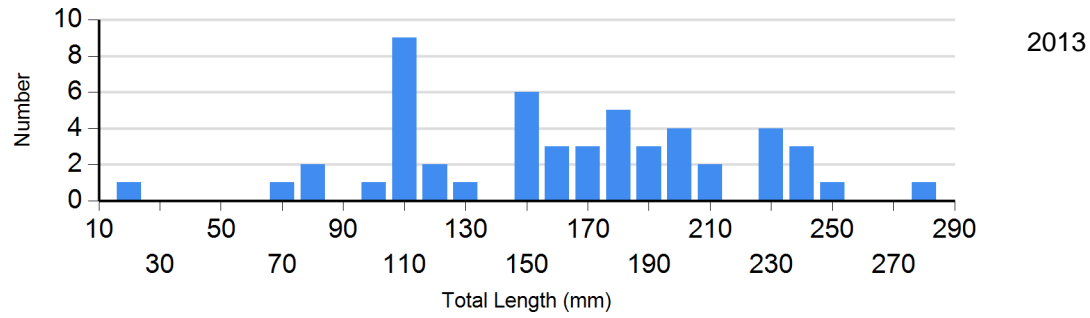
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Species: Brown Trout



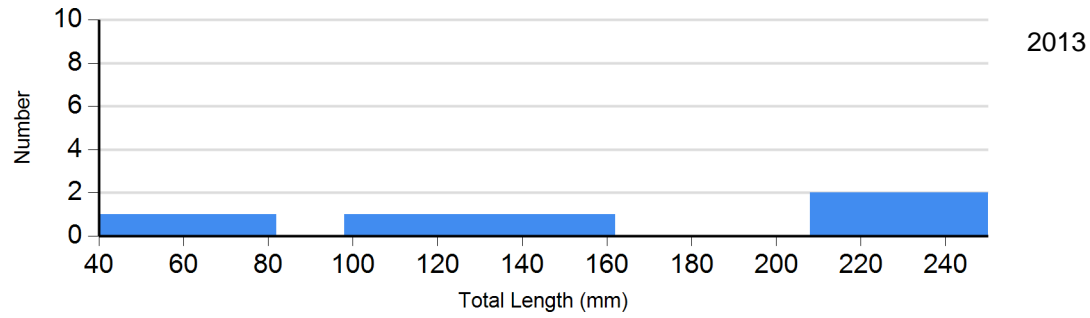
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Species: Creek Chub



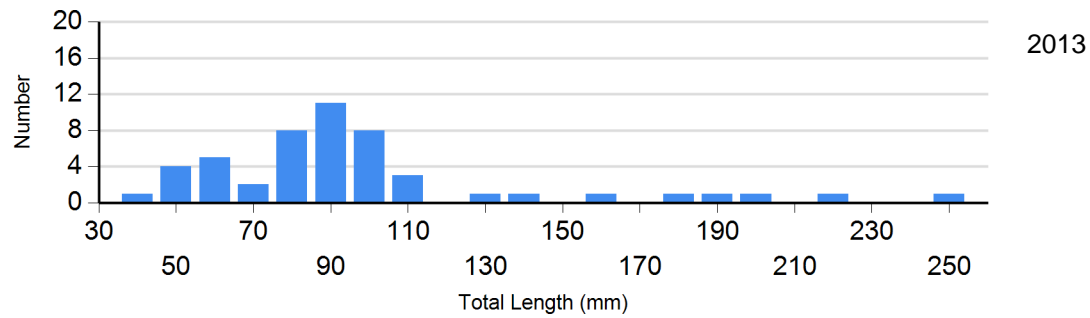
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Species: White Sucker



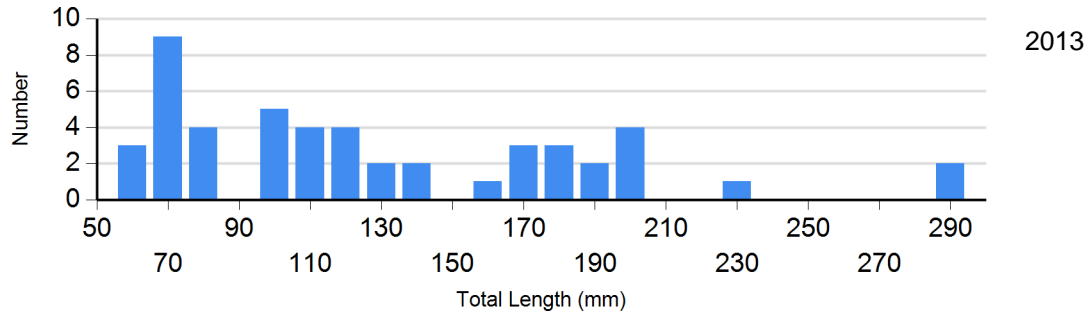
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Species: Brown Trout



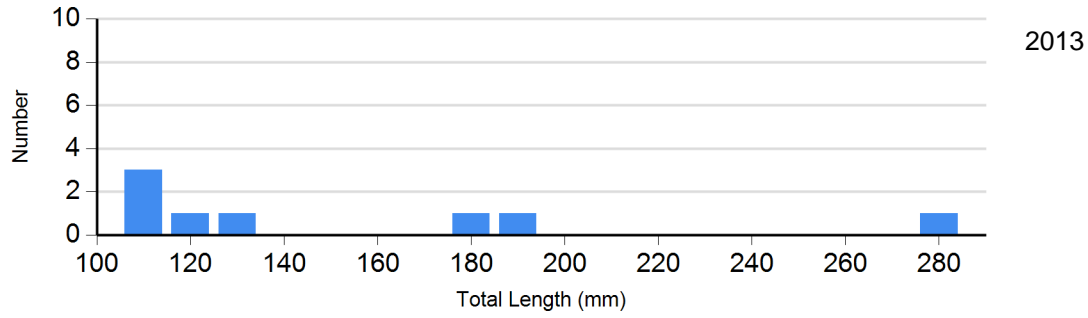
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Species: Creek Chub



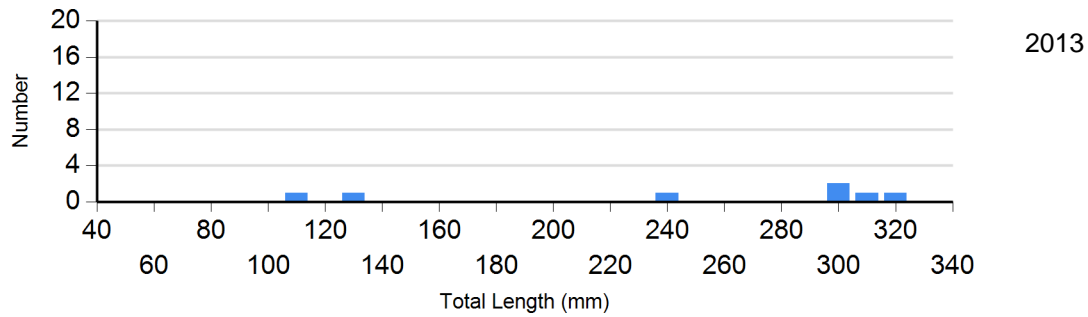
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Species: White Sucker



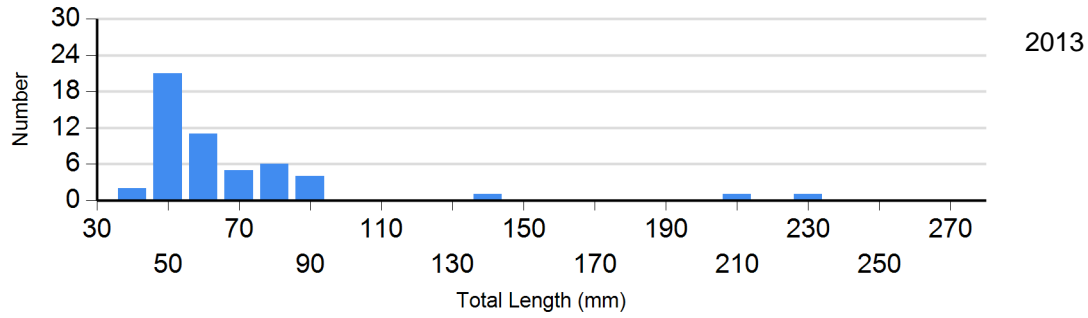
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Species: Brown Trout



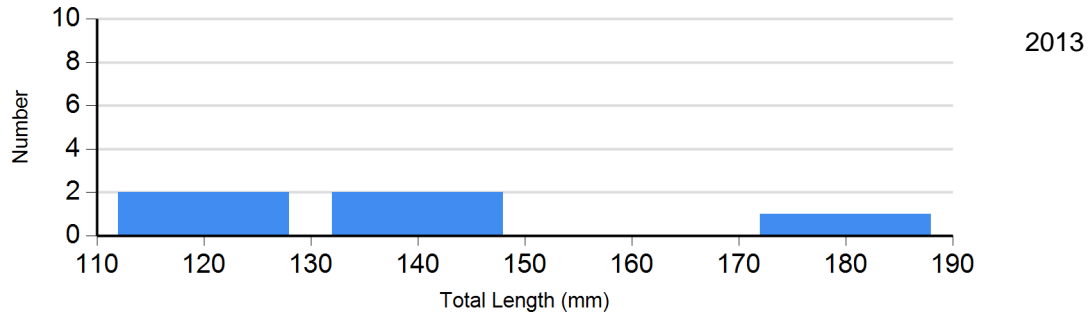
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Species: Brown Trout



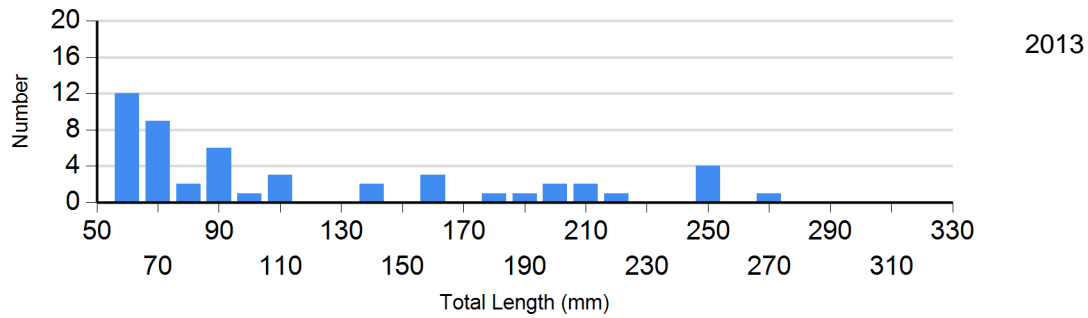
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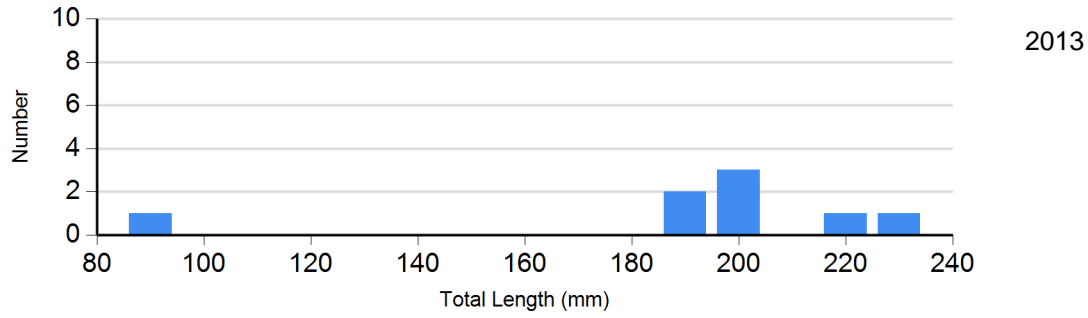
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Species: Mountain Sucker



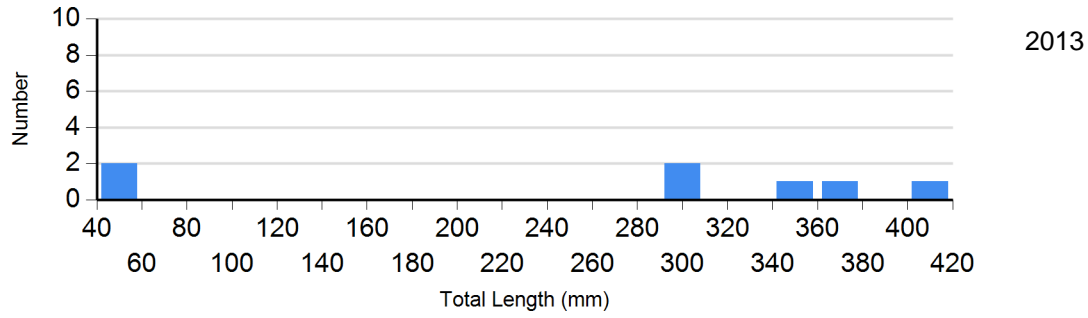
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Species: White Sucker



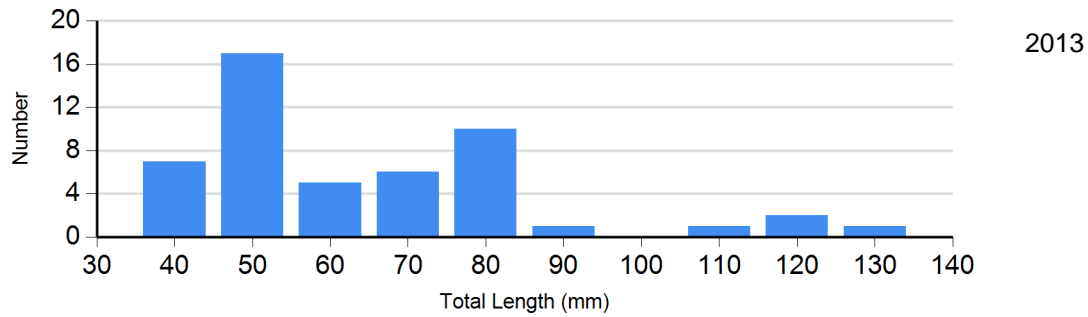
Site: 1155
Species: Brook Trout



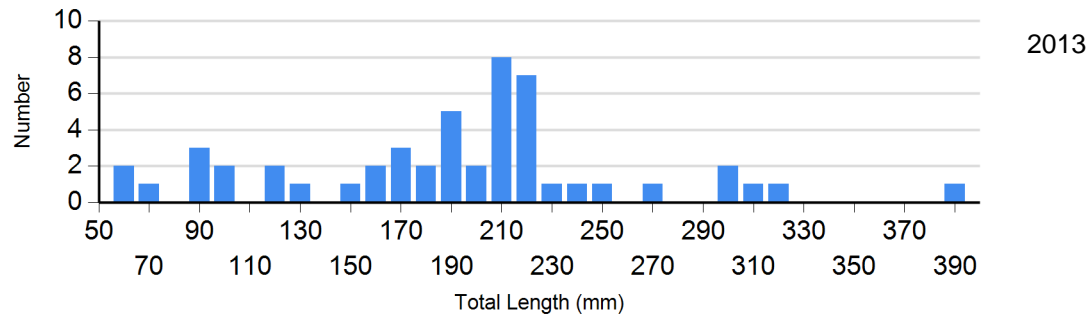
Site: 1155
Species: Brown Trout



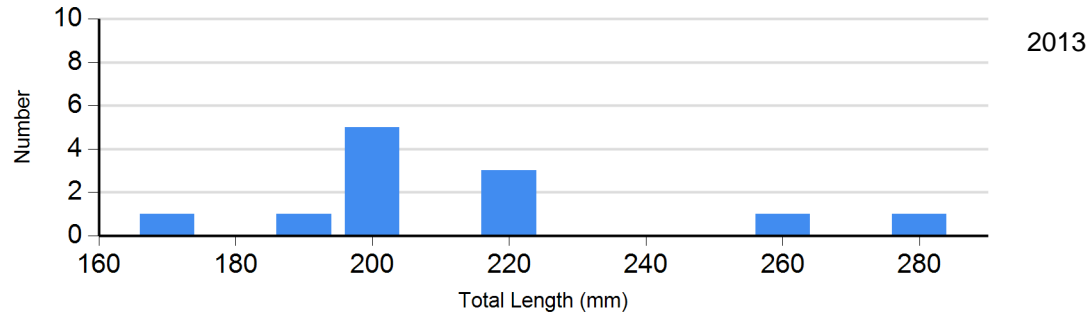
Site: 1155
Species: Creek Chub



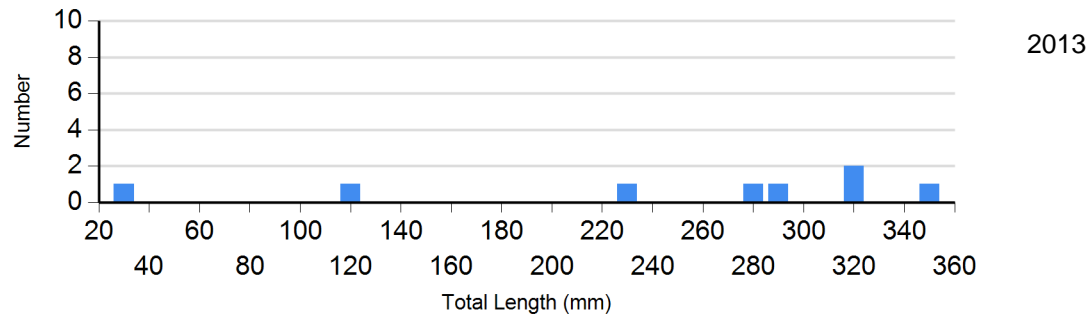
Site: 1155
Species: White Sucker



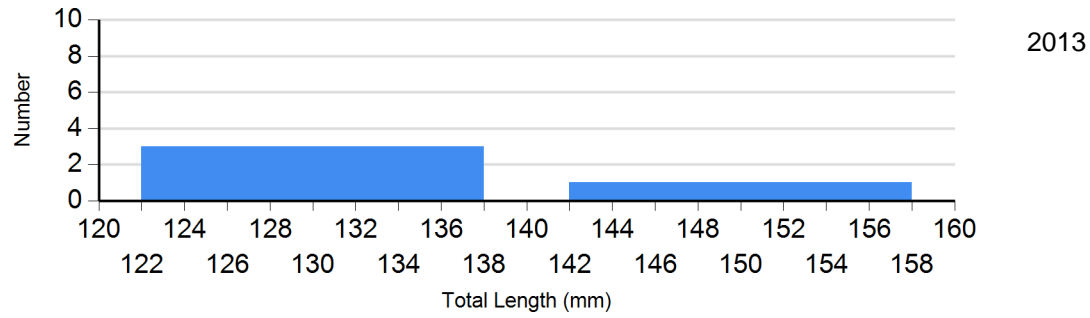
Site: 1184
Species: Brook Trout



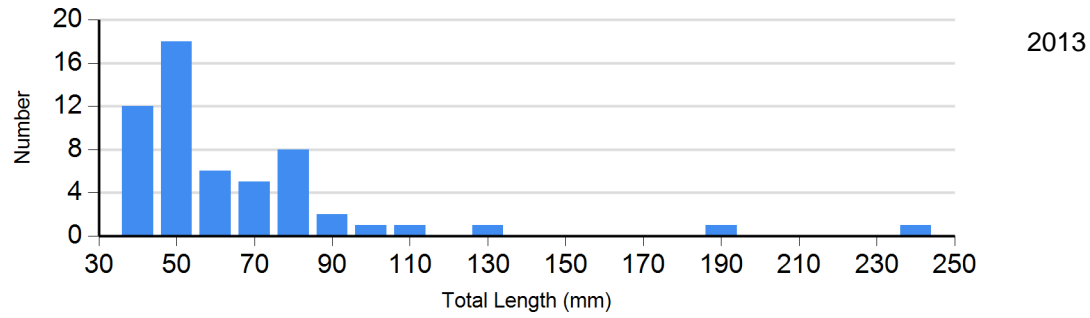
Site: 1184
Species: Brown Trout



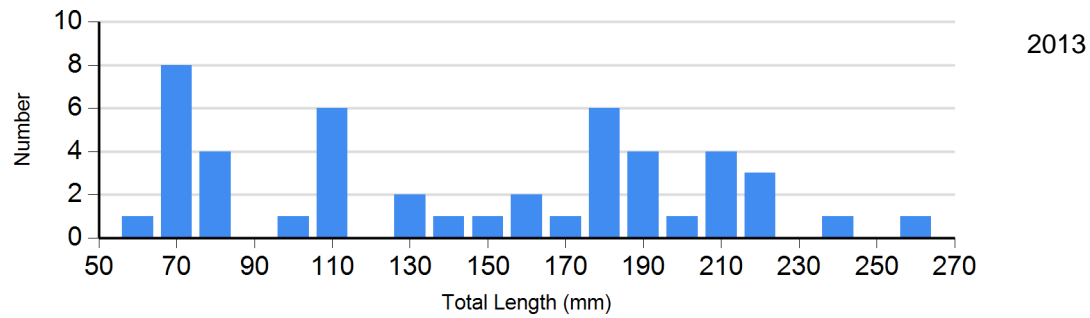
Site: 1184
Species: Yellow Perch



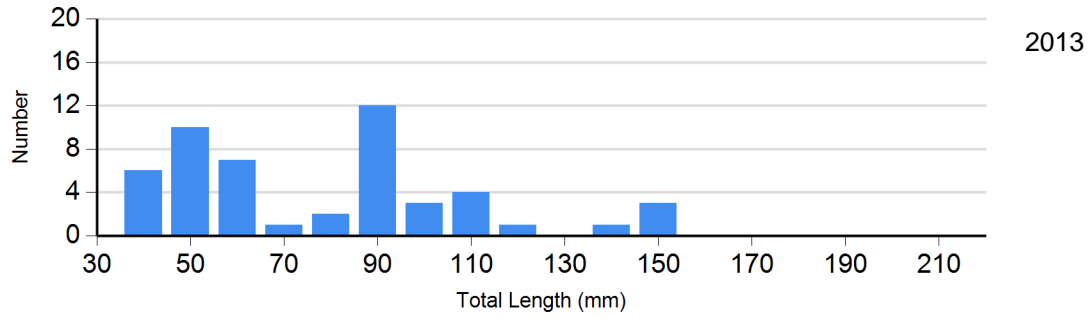
Site: 1194
Species: Creek Chub



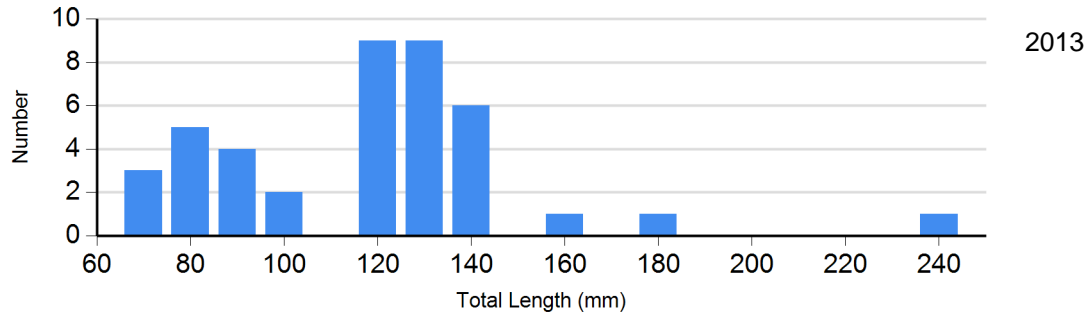
Site: 1194
Species: White Sucker



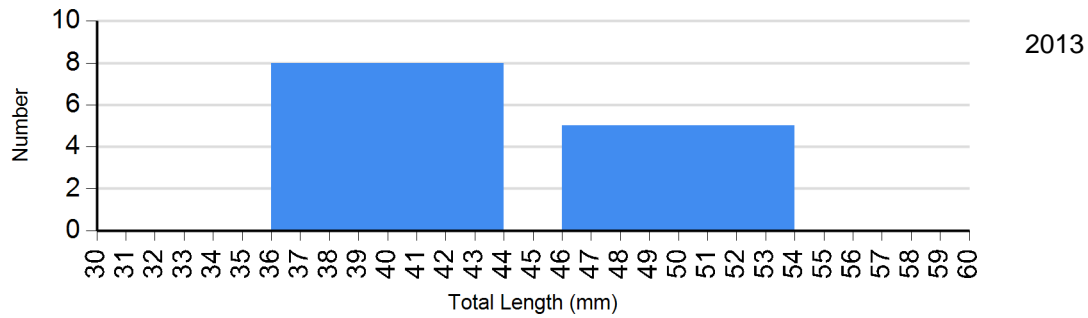
Site: 1225
Species: Creek Chub



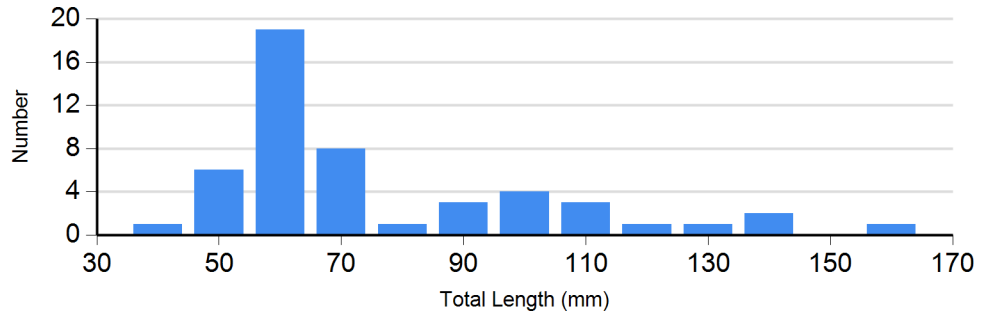
Site: 1225
Species: White Sucker



Site: 1247
Species: Bluegill

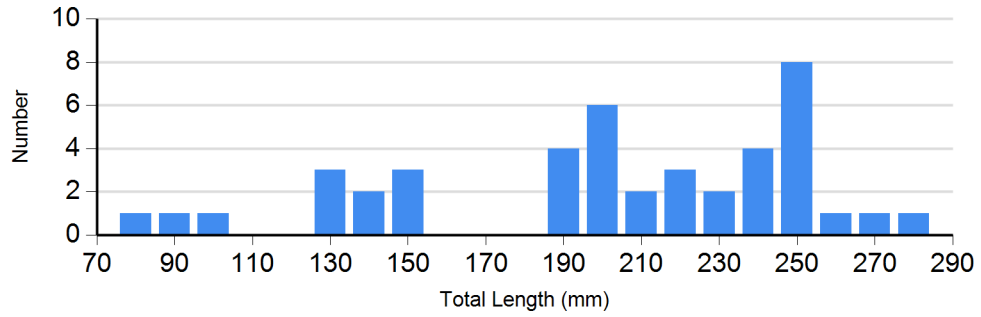


Site: 1247
Species: Creek Chub



2013

Site: 1247
Species: White Sucker



2013