

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spring Creek (Trib. of Cheyenne), Pennington County
02-0061-00
1996

Table 1. Population and Biomass Estimates for Spring Creek (Trib. of Cheyenne)

Site Number: 1840	Date Sampled: 09/13/1996	Conductivity (umhos/cm): 350
Site Midpoint (Latitude, Longitude): 43.99009910, -103.40772820	Site Length (m): 100	pH: 9.1
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.7	Water Temperature (C): 12.0
Stream Classification: BR2	Number of Pass: 3	Voltage: 300

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	28	35	50	28	404	6	350	164	5.48	563	110.8	15.2
Brown Trout	>=200mm	20	20	20	20	231	62	200	94	55.05	322	291.8	267.0
Brown Trout	All	48	50	55	48	577	71	500	234	63.06	805	186.2	122.3
Creek Chub	All	92	337	1017	92	3891	34	3370	1576	30.07	5422	91.4	8.7
Hatchery Brown Trout	>=200mm	15	15	15	15	173	40	150	70	35.84	241	267.2	231.7
Hatchery Brown Trout	All	15	15	15	15	173	40	150	70	35.84	241	267.2	231.7
Longnose Dace	All	8	7	10	8	81	0	70	33	0.19	113	63.5	2.7
Rock Bass	All	2	2	2	2	23	1	20	9	0.71	32	113.0	34.5
White Sucker	All	14	13	18	14	150	12	130	61	10.28	209	106.6	76.7

Site Number: 1864	Date Sampled: 09/04/1996	Conductivity (umhos/cm): 200
Site Midpoint (Latitude, Longitude): 43.98424529, -103.42856922	Site Length (m): 96	pH: 9.0
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.2	Water Temperature (C): 15.0
Stream Classification: BR2	Number of Pass: 3	Voltage: 300

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	183	200	215	185	2451	30	2083	993	26.49	3352	100.4	12.1
Brown Trout	>=200mm	24	24	25	24	294	67	250	119	59.77	402	271.7	227.6
Brown Trout	All	207	223	236	210	2733	101	2323	1107	90.50	3738	120.2	37.1
Creek Chub	All	94	96	100	94	1176	17	1000	476	15.26	1609	112.4	14.5
Hatchery Brown Trout	>=200mm	10	10	11	10	123	22	104	50	19.78	168	257.0	180.8
Hatchery Brown Trout	All	10	10	11	10	123	22	104	50	19.78	168	257.0	180.8
Longnose Dace	All	16	18	25	16	221	1	188	89	1.12	302	86.4	5.7
Rock Bass	All	2	2	4	2	25	0	21	10	0.33	34	90.5	15.0
White Sucker	All	6	6	8	6	74	6	63	30	5.35	101	192.3	81.5

Site Number: 1896
Site Midpoint (Latitude, Longitude): 43.97676244, -103.44819609
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 09/11/1996
Site Length (m): 100
Mean Width (m): 11.2
Number of Pass: 3
Conductivity (umhos/cm): 210
pH: 8.6
Water Temperature (C): 18.0
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)
Black Crappie	All	1	1	5	1	9	0	10	4	0.02	16	55.0	2.0
Brown Trout	<200mm	4	4	6	4	36	0	40	15	0.28	64	97.5	8.8
Brown Trout	>=200mm	21	21	22	21	188	40	210	76	36.15	338	276.7	215.2
Brown Trout	All	25	25	27	25	224	41	250	91	36.43	402	248.0	182.2
Creek Chub	All	11	14	25	11	125	3	140	51	2.74	225	127.6	24.5
Hatchery Rainbow Trout	<200mm	4	4	4	4	36	2	40	15	1.78	64	171.5	55.5

Hatchery Rainbow Trout	>=200mm	27	28	31	27	251	39	280	102	34.96	451	254.7	156.1
Hatchery Rainbow Trout	All	31	31	33	31	278	40	310	113	35.49	499	244.0	143.1
Largemouth Bass	All	2	2	2	2	18	1	20	7	1.07	32	163.5	67.0
Rock Bass	All	45	52	64	45	466	30	520	189	26.74	837	143.4	64.3
White Sucker	All	5	5	6	5	45	4	50	18	3.45	80	198.0	86.2
Yellow Perch	All	5	13	87	5	116	5	130	47	4.22	209	146.8	40.6

Site Number: 1900

Site Midpoint (Latitude, Longitude): 43.97545209, -103.44554934

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2

Date Sampled: 09/09/1996

Site Length (m): 103

Mean Width (m): 7.9

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

Voltage: 300

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 Bullhead	All	1	1	1	1	13	0	10	5	0.26	16	113.0	23.0
Brown Trout	<200mm	8	8	8	8	102	3	78	41	3.07	125	132.0	33.8
Brown Trout	>=200mm	14	16	23	14	204	40	155	82	36.14	250	270.6	198.9
Brown Trout	All	22	23	27	22	293	41	223	119	36.27	359	220.2	138.8
Creek Chub	All	9	9	11	9	115	4	87	46	3.25	141	147.0	31.8
Hatchery Rainbow Trout	<200mm	1	1	1	1	13	1	10	5	0.45	16	155.0	40.0
Hatchery Rainbow Trout	>=200mm	100	104	110	100	1323	198	1010	536	176.82	1625	250.1	149.7
Hatchery Rainbow Trout	All	101	105	111	101	1336	198	1019	541	177.23	1640	249.2	148.6
Largemouth Bass	All	1	1	1	1	13	1	10	5	0.53	16	146.0	47.0
Rock Bass	All	10	20	70	10	254	18	194	103	15.90	312	141.8	70.0
White Sucker	All	12	27	102	12	344	47	262	139	41.64	422	225.1	135.8

Yellow Perch	All	2	2	3	2	25	1	19	10	0.99	31	151.0	43.5
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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 Spring Creek (Trib. of Cheyenne), 1986-1996

Site 1840

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 13, 1996	35	28-50	
Brown Trout >=200mm	Sep 13, 1996	20	20-20	BR2
Creek Chub	Sep 13, 1996	337	92-1017	
Hatchery Brown Trout >=200mm	Sep 13, 1996	15	15-15	
Longnose Dace	Sep 13, 1996	7	8-10	
Rock Bass	Sep 13, 1996	2	2-2	
White Sucker	Sep 13, 1996	13	14-18	

Site 1864

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 28, 1993	23	11-82	
	Sep 04, 1996	200	185-215	
Brown Trout >=200mm	Jul 28, 1993	17	16-21	BR2
	Sep 04, 1996	24	24-25	BR2
Creek Chub	Jul 28, 1993	385	342-428	
	Sep 04, 1996	96	94-100	
Hatchery Brown Trout >=200mm	Jul 28, 1993	19	19-21	
	Sep 04, 1996	10	10-11	
Longnose Dace	Jul 28, 1993	3	3-3	
	Sep 04, 1996	18	16-25	
Rock Bass	Jul 28, 1993	4	4-4	
	Sep 04, 1996	2	2-4	
White Sucker	Jul 28, 1993	7	7-8	
	Sep 04, 1996	6	6-8	

Site 1896

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Crappie	Sep 11, 1996	1	1-5	
Brown Trout <200mm	Sep 11, 1996	4	4-6	
Brown Trout >=200mm	Sep 11, 1996	21	21-22	BR2
Creek Chub	Sep 11, 1996	14	11-25	
Hatchery Rainbow Trout <200mm	Sep 11, 1996	4	4-4	
Hatchery Rainbow Trout >=200mm	Sep 11, 1996	28	27-31	
Largemouth Bass	Sep 11, 1996	2	2-2	
Rock Bass	Sep 11, 1996	52	45-64	
White Sucker	Sep 11, 1996	5	5-6	
Yellow Perch	Sep 11, 1996	13	5-87	

Site 1900

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Bullhead	Sep 09, 1996	1	1-1	
Brown Trout <200mm	Sep 02, 1993	2	2-2	
	Sep 09, 1996	8	8-8	

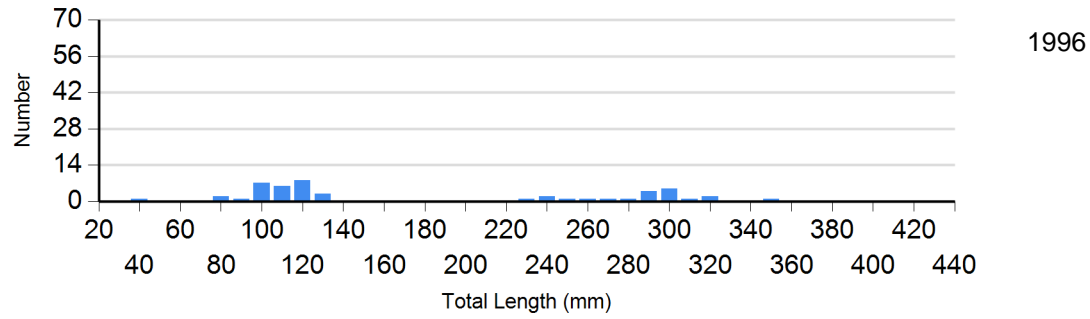
Brown Trout >=200mm	Sep 02, 1993	9	9-9	BR2
	Sep 09, 1996	16	14-23	BR2
Creek Chub	Sep 02, 1993	373	271-475	
	Sep 09, 1996	9	9-11	
Hatchery Rainbow Trout <200mm	Sep 02, 1993	1	1-2	
	Sep 09, 1996	1	1-1	
Hatchery Rainbow Trout >=200mm	Sep 02, 1993	9	9-10	
	Sep 09, 1996	104	100-110	
Largemouth Bass	Sep 09, 1996	1	1-1	
Rock Bass	Sep 02, 1993	23	11-82	
	Sep 09, 1996	20	10-70	
White Sucker	Sep 02, 1993	8	8-10	
	Sep 09, 1996	27	12-102	
Yellow Perch	Sep 02, 1993	6	6-7	
	Sep 09, 1996	2	2-3	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

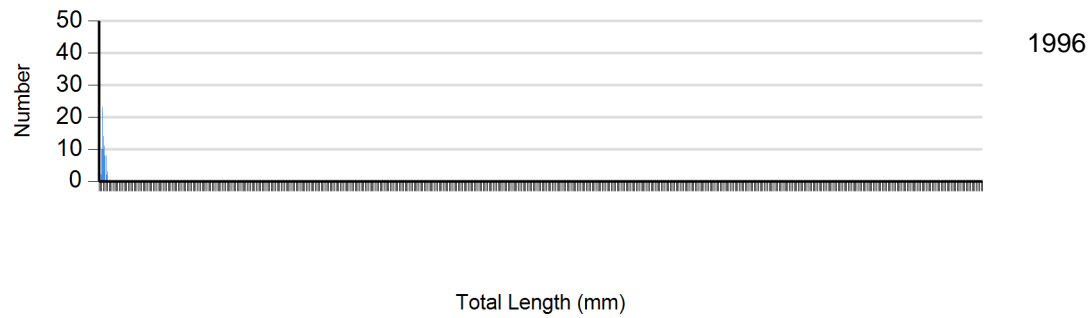
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Species: Brown Trout



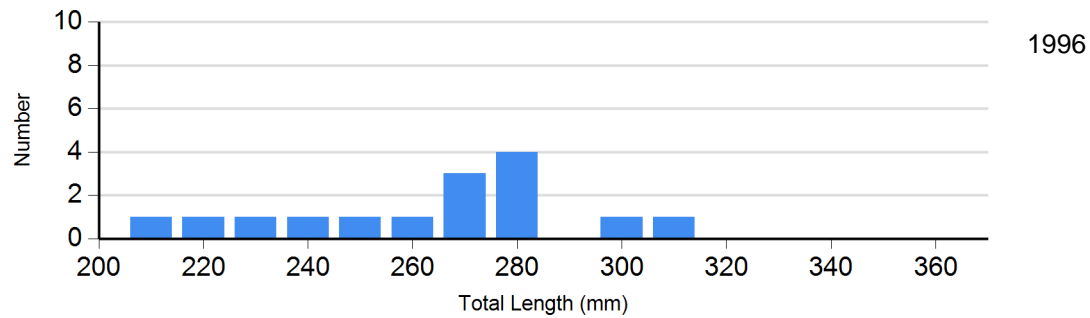
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Species: Creek Chub

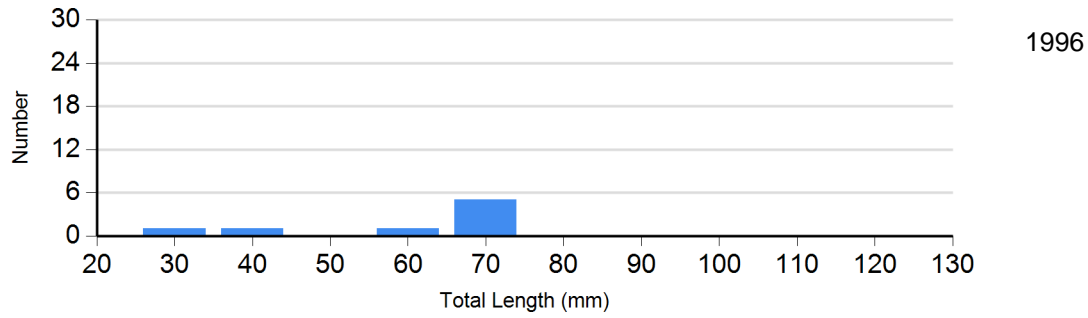


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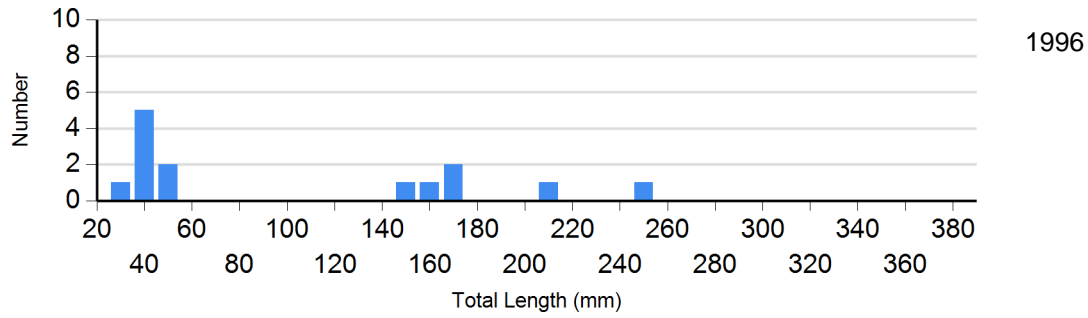
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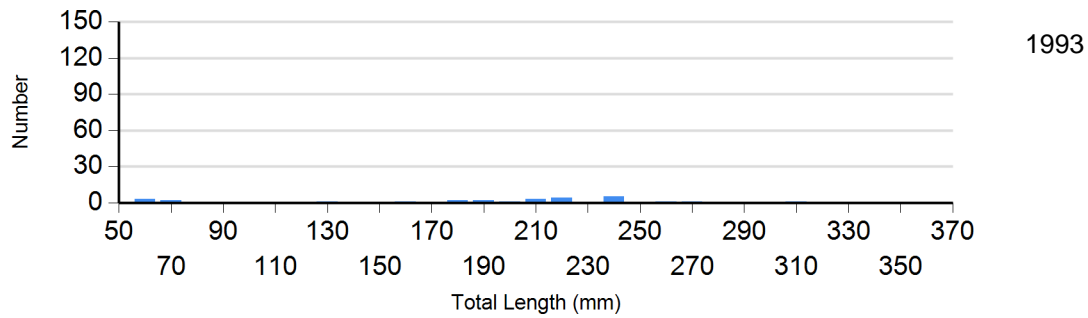
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Species: Longnose Dace

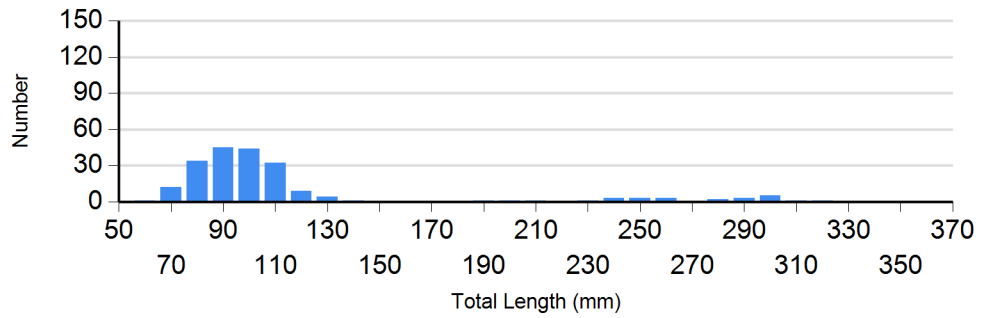


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Species: White Sucker

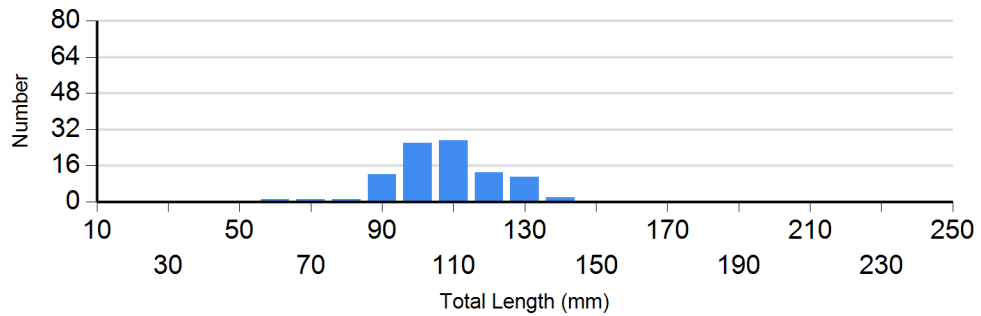
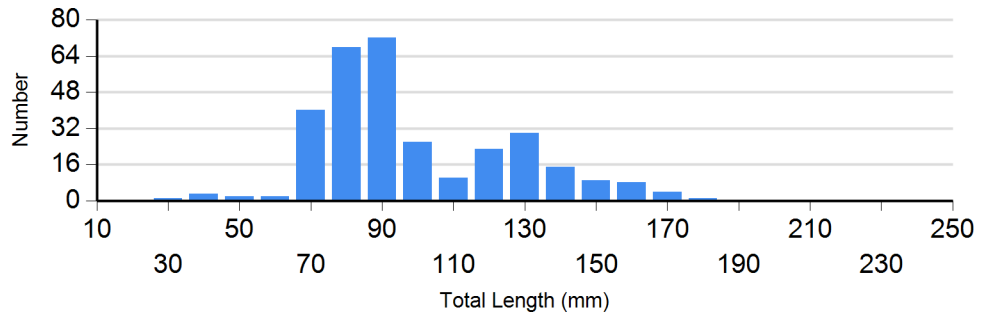


Site: 1864
Species: Brown Trout

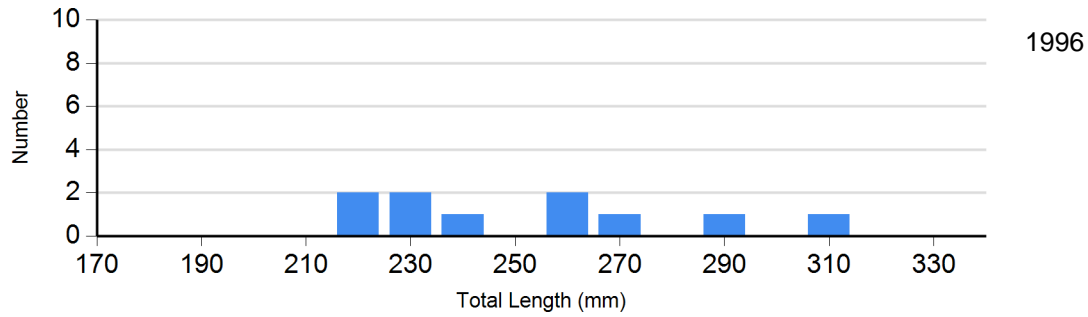
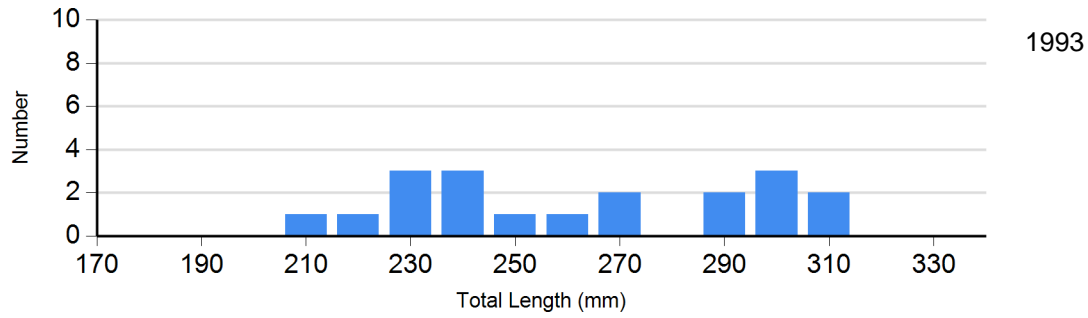




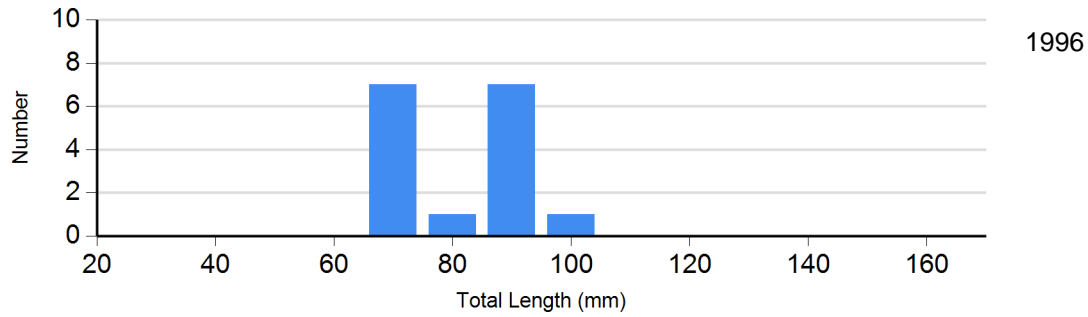
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Species: Creek Chub



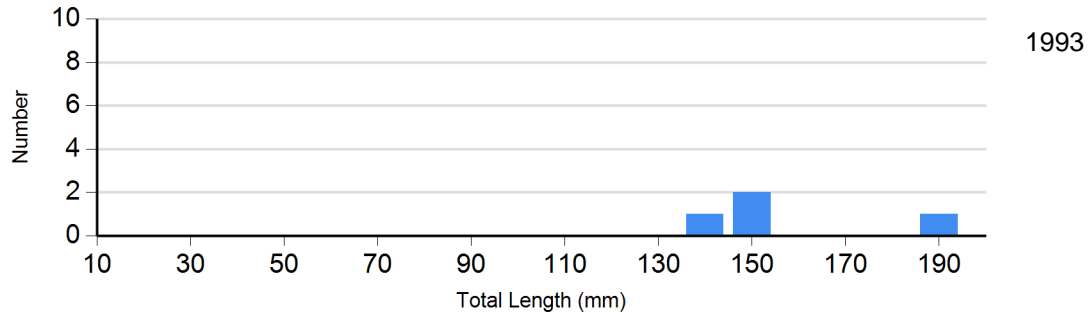
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Species: Hatchery Brown Trout



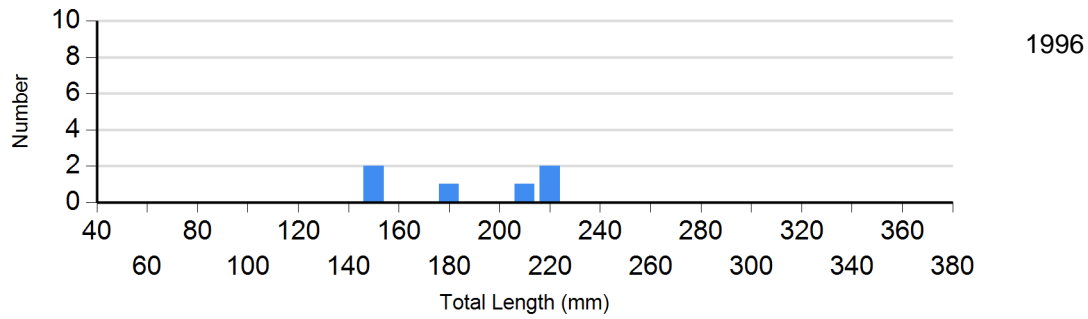
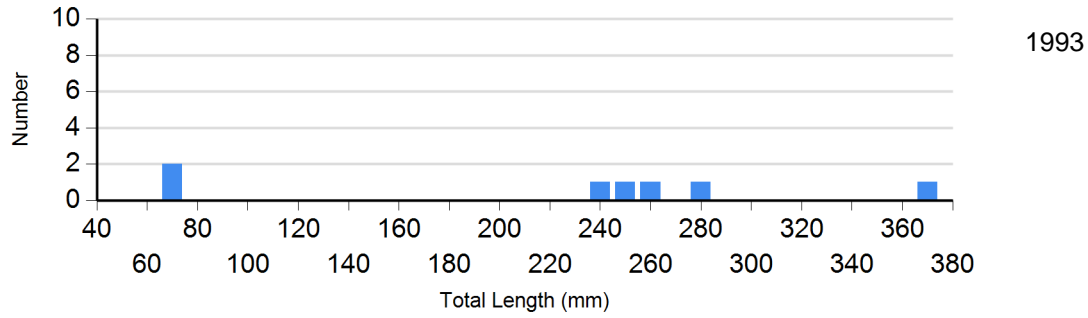
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Species: Longnose Dace



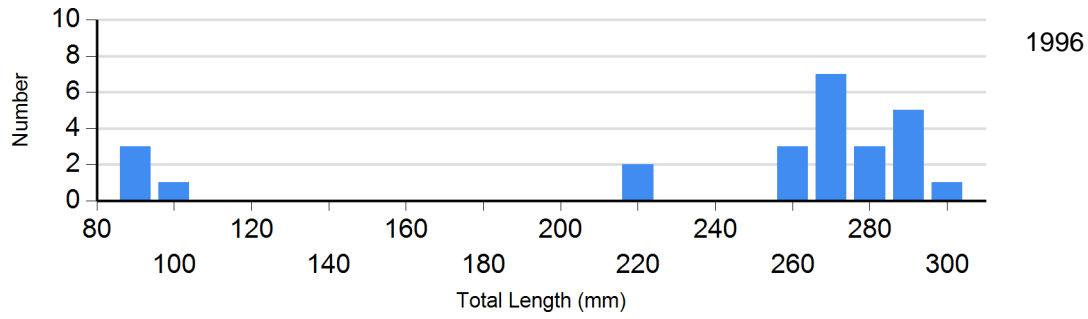
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Species: Rock Bass



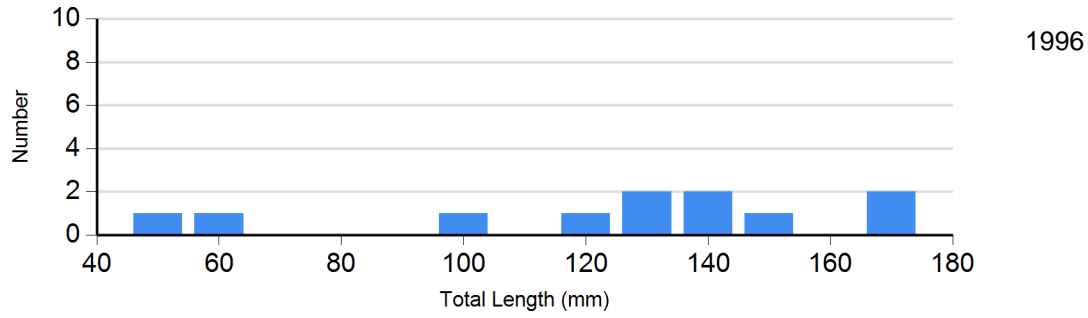
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Species: White Sucker



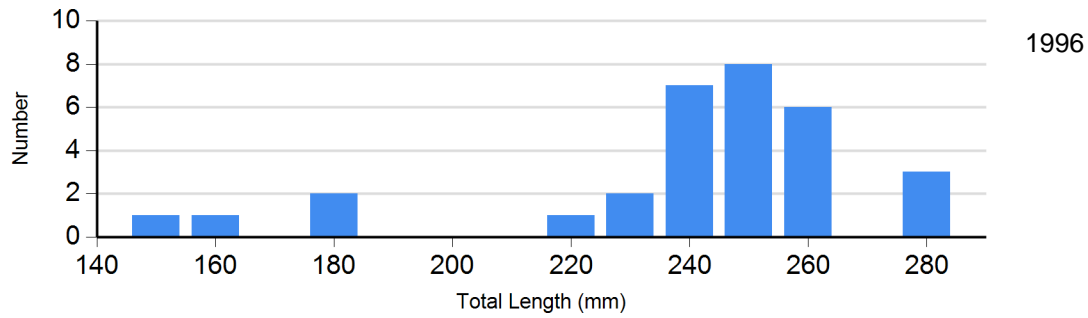
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Species: Brown Trout



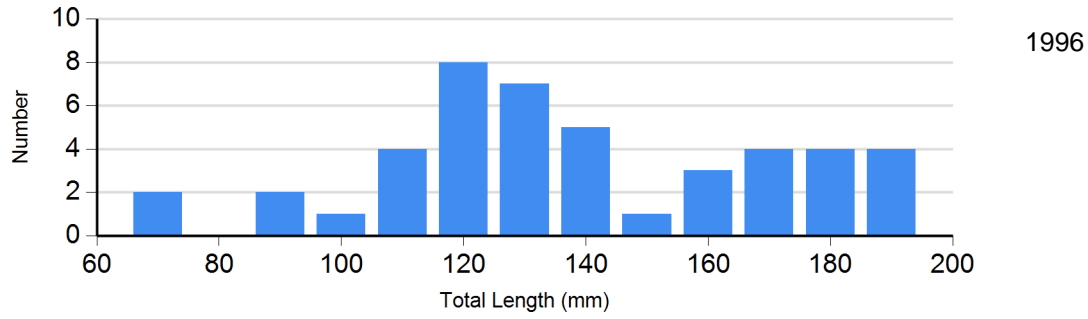
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Species: Creek Chub



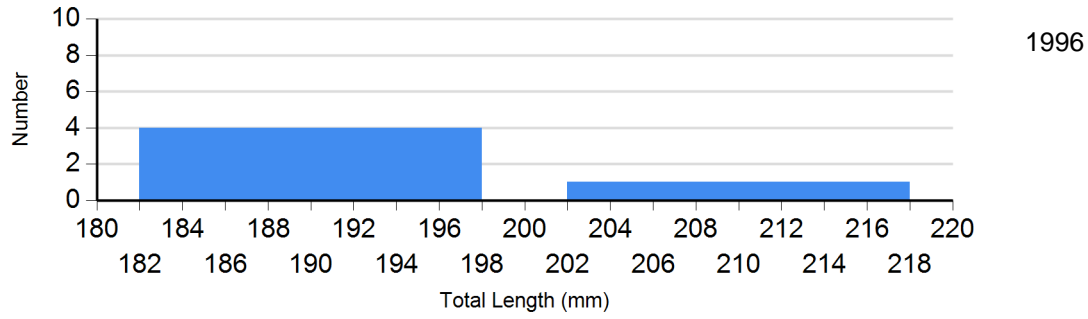
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Species: Hatchery Rainbow Trout



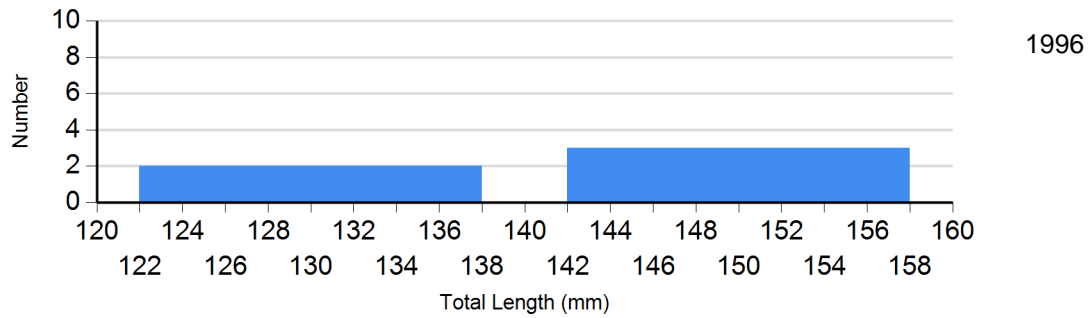
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Species: Rock Bass



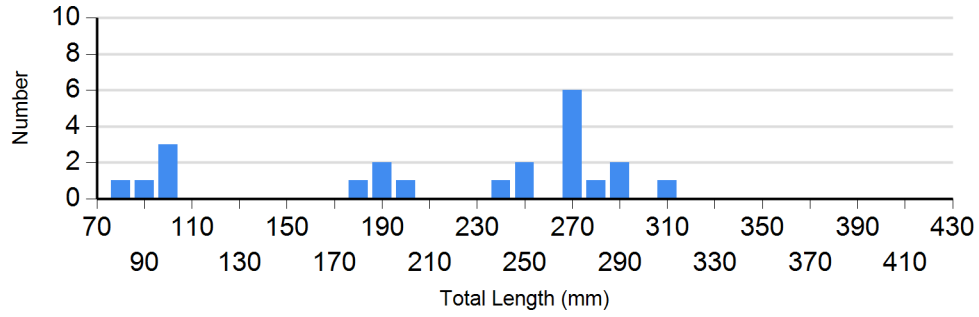
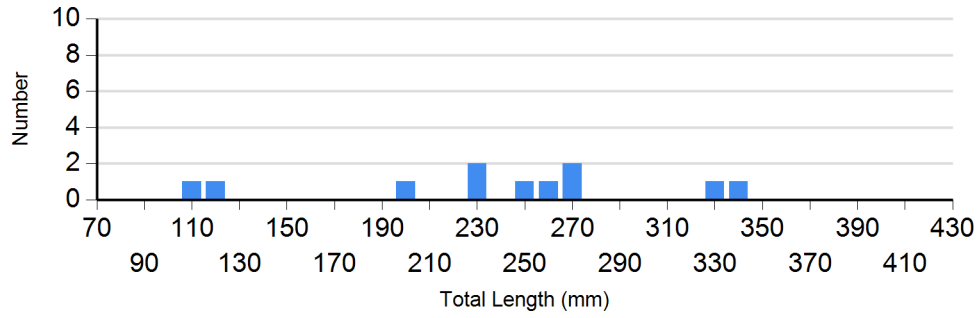
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Species: White Sucker



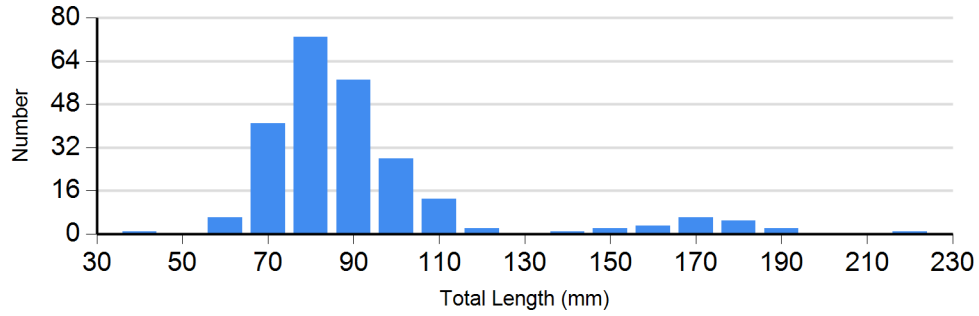
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Species: Yellow Perch

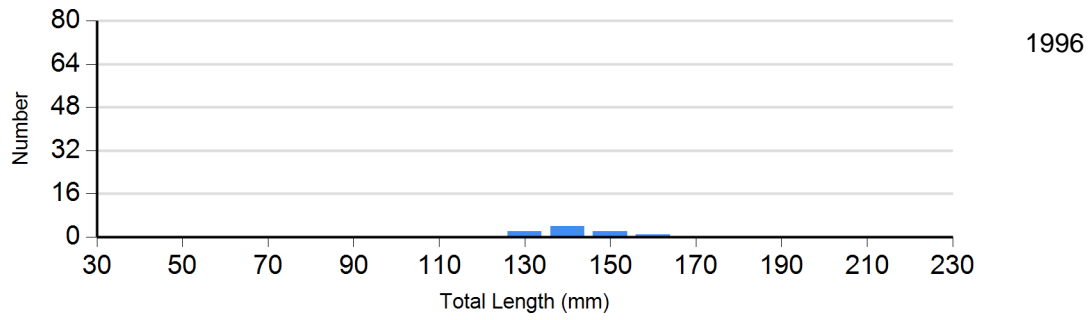


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Species: Brown Trout

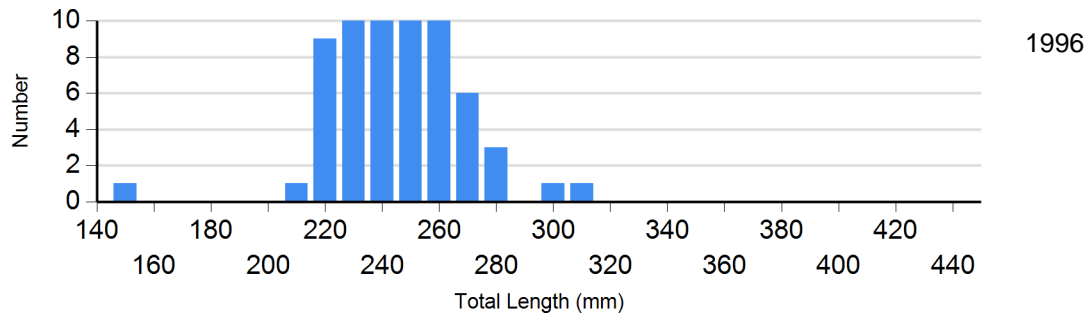
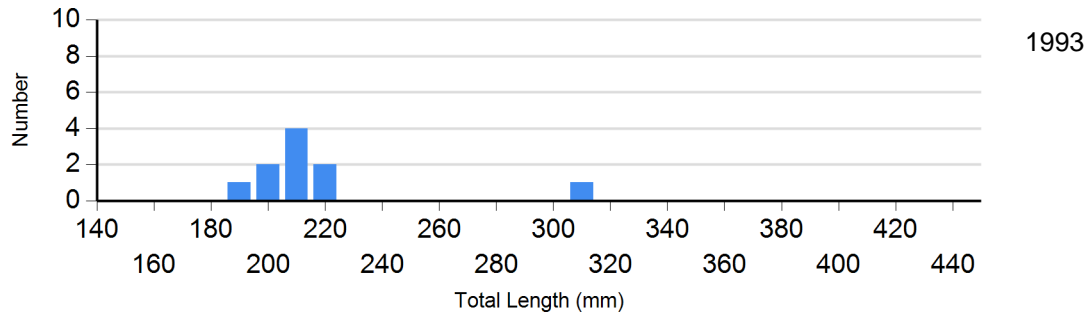


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Species: Creek Chub

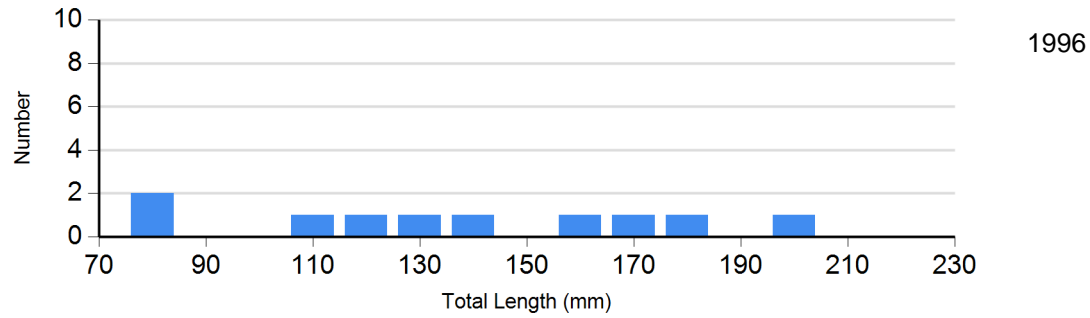
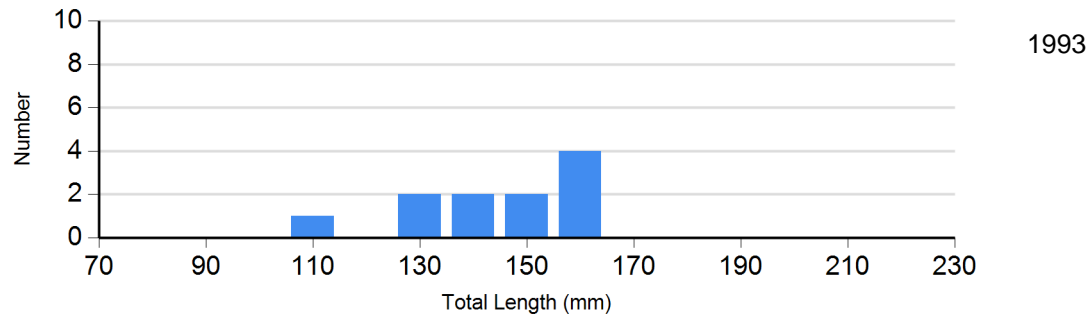




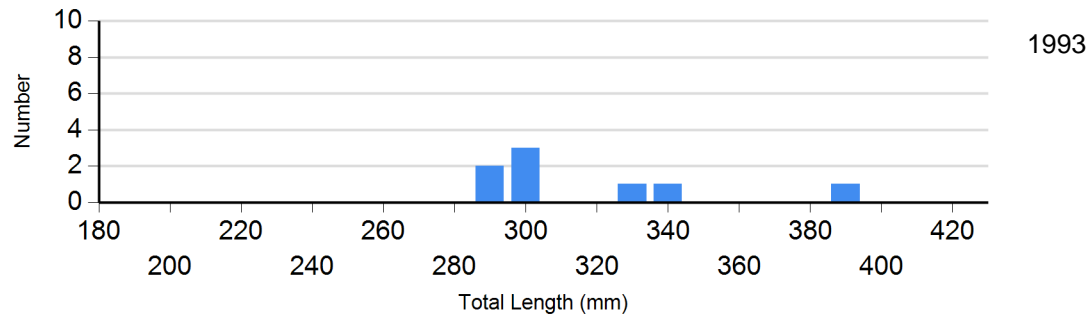
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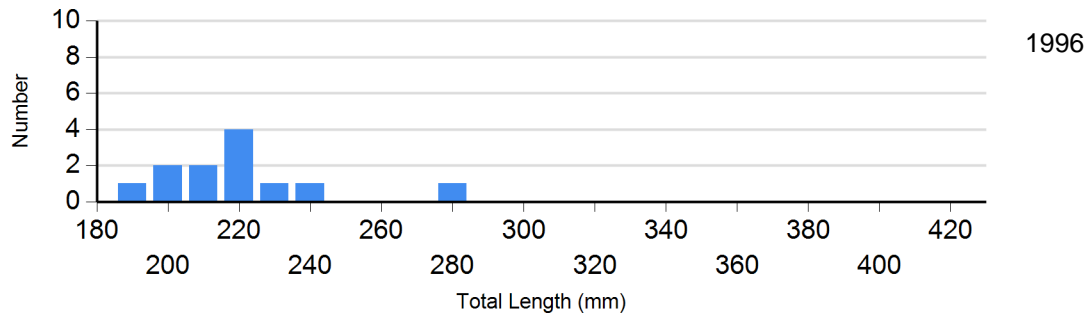


Site: 1900
Species: Rock Bass



Site: 1900
Species: White Sucker





Site: 1900
Species: Yellow Perch

