

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Whitewood Creek, Lawrence County
09-0056-00
1994

Table 1. Population and Biomass Estimates for Whitewood Creek

Site Number: 515	Date Sampled: 10/05/1994	Conductivity (umhos/cm): 880
Site Midpoint (Latitude, Longitude): 44.41178603, -103.69411585	Site Length (m): 100	pH: 8.4
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 6.4	Water Temperature (C): 10.0
Stream Classification: BR3	Number of Pass: 3	Voltage: 200

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	101	112	125	101	1745	59	1120	707	52.62	1802	144.8	33.8
Brown Trout	>=200mm	1	1	1	1	16	3	10	6	2.42	16	258.0	174.0
Brown Trout	All	102	113	126	102	1760	62	1130	713	55.25	1818	145.9	35.2
Longnose Dace	All	989	988	1043	989	15389	64	9880	6233	57.34	15897	65.4	4.2
Mountain Sucker	All	186	259	319	199	4034	57	2590	1634	50.76	4167	79.3	14.1
White Sucker	All	1	1	1	1	16	0	10	6	0.03	16	67.0	2.0

Site Number: 558	Date Sampled: 09/27/1994	Conductivity (umhos/cm): 925
Site Midpoint (Latitude, Longitude): 44.38550441, -103.71870274	Site Length (m): 103	pH: 8.7
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 5.2	Water Temperature (C): 12.0
Stream Classification: BK0, BR1	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)
Brook Trout	<200mm	1	1	2	1	19	0	10	8	0.12	16	89.0	7.0
Brook Trout	All	1	1	2	1	19	0	10	8	0.12	16	89.0	7.0

Brown Trout	<200mm	52	60	72	52	1163	25	583	471	22.06	937	121.6	21.3
Brown Trout	>=200mm	44	44	46	44	853	131	427	345	117.11	687	248.2	153.8
Brown Trout	All	96	102	110	96	1977	162	990	801	144.75	1593	179.6	82.0
Hatchery Brown Trout	>=200mm	17	17	18	17	329	58	165	133	51.43	266	260.6	174.8
Hatchery Brown Trout	All	17	17	18	17	329	58	165	133	51.43	266	260.6	174.8
Longnose Dace	All	19	33	77	19	640	4	320	259	3.17	516	78.6	5.6
Mountain Sucker	All	22	23	27	22	446	25	223	181	22.02	359	143.3	55.3
White Sucker	All	1	1	2	1	19	0	10	8	0.10	16	77.0	6.0

Site Number: 588

Site Midpoint (Latitude, Longitude): 44.36654564, -103.73424434

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2, BR1

Date Sampled: 09/27/1994

Site Length (m): 98

Mean Width (m): 5.2

Number of Pass: 3

Conductivity (umhos/cm): 600

pH: 8.4

Water Temperature (C): 11.0

Voltage: 200

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)
Brook Trout	<200mm	2	2	3	2	38	3	20	16	2.40	33	192.0	70.0
Brook Trout	>=200mm	5	5	6	5	96	10	51	39	9.31	82	219.8	108.4
Brook Trout	All	7	7	8	7	135	13	71	55	11.71	115	211.9	97.4
Brown Trout	<200mm	42	43	46	42	827	20	439	335	18.27	706	128.8	24.7
Brown Trout	>=200mm	26	26	27	26	500	77	265	203	68.94	427	253.1	154.4
Brown Trout	All	68	69	72	68	1327	99	704	537	88.06	1133	176.3	74.3
Hatchery Brown Trout	>=200mm	22	22	23	22	423	68	224	171	60.73	361	251.7	160.8
Hatchery Brown Trout	All	22	22	23	22	423	68	224	171	60.73	361	251.7	160.8
Mountain Sucker	All	4	4	4	4	77	4	41	31	3.59	66	152.8	52.3

Site Number: 599
Site Midpoint (Latitude, Longitude): 44.36363265, -103.73830179
Survey Completed by: OEA Research Inc.
Stream Classification: BK0, BR1

Date Sampled: 10/12/1994
Site Length (m): 100
Mean Width (m): 3.9
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)
Brook Trout	<200mm	1	1	1	1	26	1	10	10	0.64	16	124.0	28.0
Brook Trout	All	1	1	1	1	26	1	10	10	0.64	16	124.0	28.0
Brown Trout	<200mm	22	26	36	22	667	12	260	270	10.96	418	113.8	18.4
Brown Trout	>=200mm	37	37	38	37	949	169	370	384	150.71	595	252.4	177.9
Brown Trout	All	59	61	65	59	1564	185	610	633	165.41	981	200.7	118.4
Longnose Dace	All	1	1	2	1	26	0	10	10	0.02	16	38.0	1.0
Mountain Sucker	All	4	4	5	4	103	11	40	42	9.66	64	191.8	105.5

Site Number: 612
Site Midpoint (Latitude, Longitude): 44.35478049, -103.73811696
Survey Completed by: OEA Research Inc.
Stream Classification: BK3, BR2, RB2

Date Sampled: 10/12/1994
Site Length (m): 100
Mean Width (m): 4.8
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)
Brook Trout	<200mm	11	11	12	11	229	7	110	93	5.99	177	132.1	29.3
Brook Trout	>=200mm	2	2	2	2	42	4	20	17	3.61	32	221.0	97.0
Brook Trout	All	13	13	14	13	271	11	130	110	9.60	209	145.8	39.7
Brown Trout	<200mm	4	4	4	4	83	4	40	34	3.31	64	148.3	44.5
Brown Trout	>=200mm	11	11	11	11	229	38	110	93	33.50	177	248.5	163.7

Brown Trout	All	15	15	15	15	313	41	150	127	36.81	241	221.7	131.9
Longnose Dace	All	5	5	7	5	104	1	50	42	0.99	80	103.0	10.6
Rainbow Trout	>=200mm	1	1	1	1	21	3	10	8	2.51	16	228.0	135.0
Rainbow Trout	All	1	1	1	1	21	3	10	8	2.51	16	228.0	135.0

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 Whitewood Creek, 1984-1994

Site 515

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 05, 1994	112	101-125	
Brown Trout >=200mm	Oct 05, 1994	1	1-1	BR3
Longnose Dace	Oct 05, 1994	988	989-1043	
Mountain Sucker	Oct 05, 1994	259	199-319	
White Sucker	Oct 05, 1994	1	1-1	

Site 558

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 27, 1994	1	1-2	

Brown Trout <200mm	Oct 03, 1992	102	60-173	
	Sep 14, 1993	43	41-48	
	Sep 27, 1994	60	52-72	
Brown Trout >=200mm	Oct 03, 1992	24	24-25	BR1
	Sep 14, 1993	50	50-51	BR1
	Sep 27, 1994	44	44-46	BR1
Hatchery Brown Trout >=200mm	Oct 03, 1992	68	68-69	
	Sep 14, 1993	19	19-20	
	Sep 27, 1994	17	17-18	
Longnose Dace	Oct 03, 1992	36	14-150	
	Sep 14, 1993	14	14-15	
	Sep 27, 1994	33	19-77	
Mountain Sucker	Oct 03, 1992	44	36-59	
	Sep 14, 1993	15	14-19	
	Sep 27, 1994	23	22-27	
White Sucker	Oct 03, 1992	1	1-1	

White Sucker

Sep 27, 1994

1

1-2

Site 588

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 27, 1994	2	2-3	
Brook Trout >=200mm	Sep 27, 1994	5	5-6	BK2
Brown Trout <200mm	Feb 02, 1993	6	6-7	
	Sep 27, 1994	43	42-46	
Brown Trout >=200mm	Feb 02, 1993	9	9-11	BR2
	Sep 27, 1994	26	26-27	BR1
Hatchery Brown Trout <200mm	Feb 02, 1993	2	2-2	
Hatchery Brown Trout >=200mm	Feb 02, 1993	28	28-30	
	Sep 27, 1994	22	22-23	
Longnose Dace	Feb 02, 1993	3	3-4	
Mountain Sucker	Feb 02, 1993	1	1-1	
	Sep 27, 1994	4	4-4	

Site 599

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 12, 1994	1	1-1	
Brown Trout <200mm	Oct 12, 1994	26	22-36	
Brown Trout >=200mm	Oct 12, 1994	37	37-38	BR1
Longnose Dace	Oct 12, 1994	1	1-2	
Mountain Sucker	Oct 12, 1994	4	4-5	

Site 612

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 27, 1993	3	3-4	
	Oct 12, 1994	11	11-12	
Brook Trout >=200mm	Oct 12, 1994	2	2-2	BK3
Brown Trout <200mm	Oct 27, 1993	2	2-4	
	Oct 12, 1994	4	4-4	
Brown Trout >=200mm	Oct 27, 1993	30	30-31	BR3
	Oct 12, 1994	11	11-11	BR2
Longnose Dace	Oct 27, 1993	1	1-2	

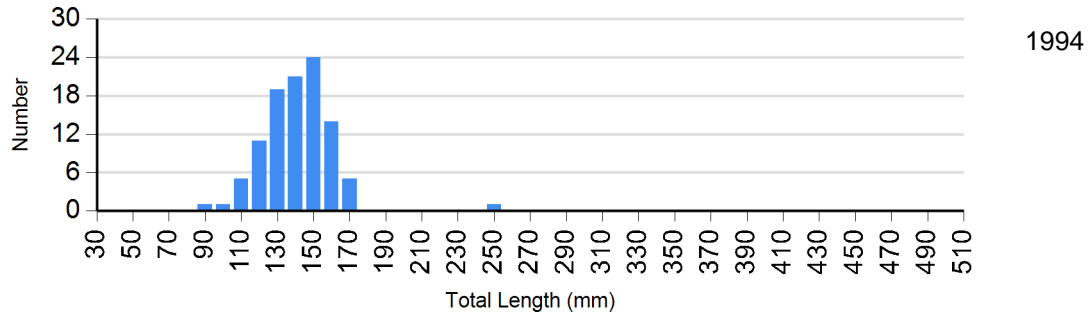
Longnose Dace	Oct 12, 1994	5	5-7	
Mountain Sucker	Oct 27, 1993	8	8-10	
Rainbow Trout >=200mm	Oct 12, 1994	1	1-1	RB2

Length Frequency Distribution

Length frequency histogram of species sampled by year.

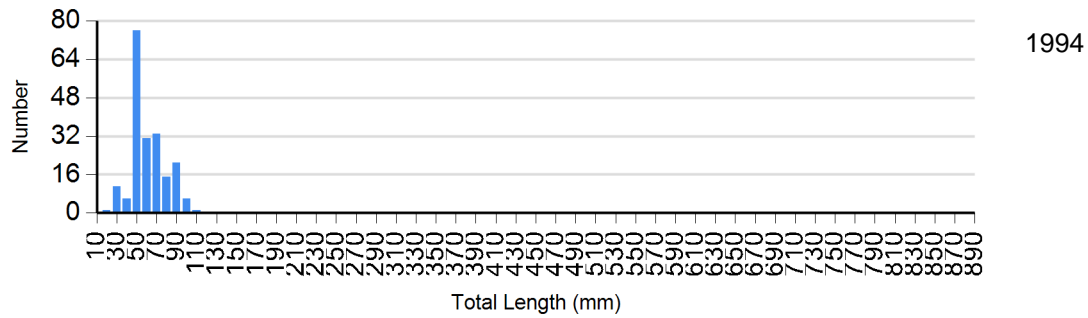
Site: 515

Species: Brown Trout



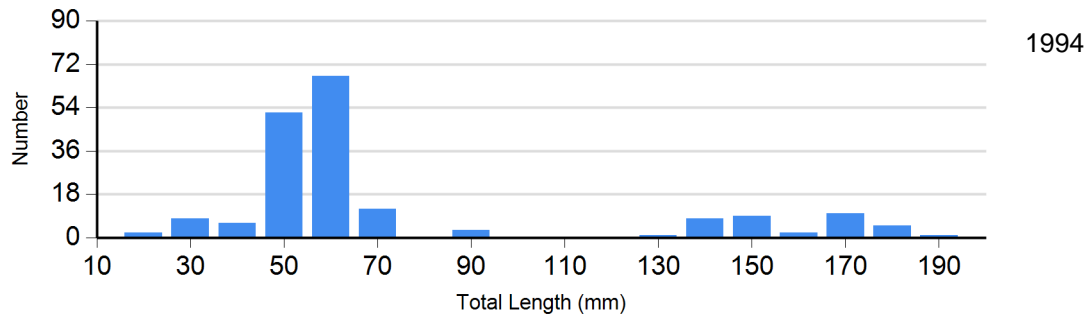
Site: 515

Species: Longnose Dace

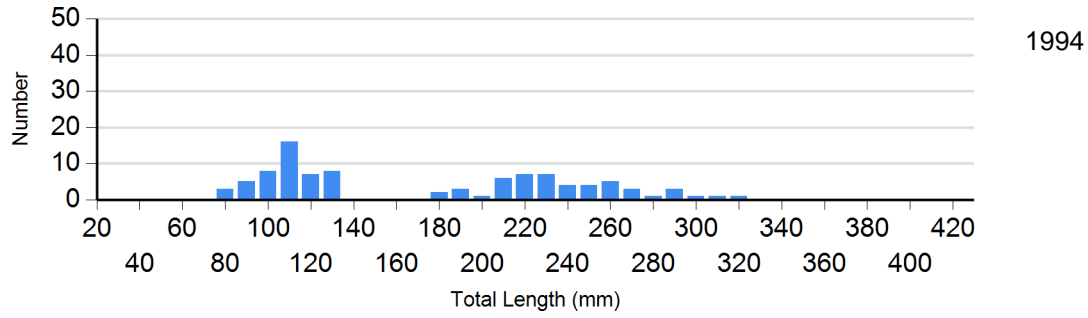
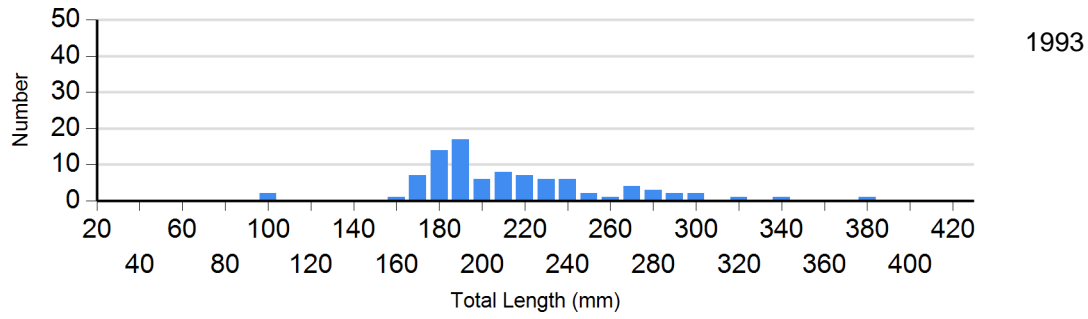
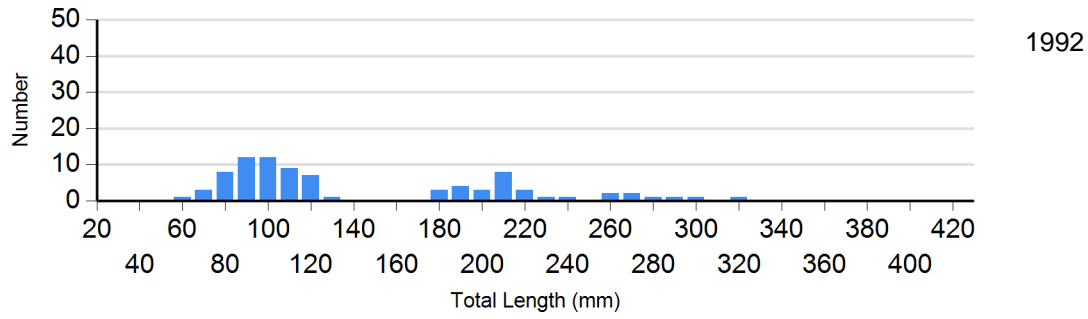


Site: 515

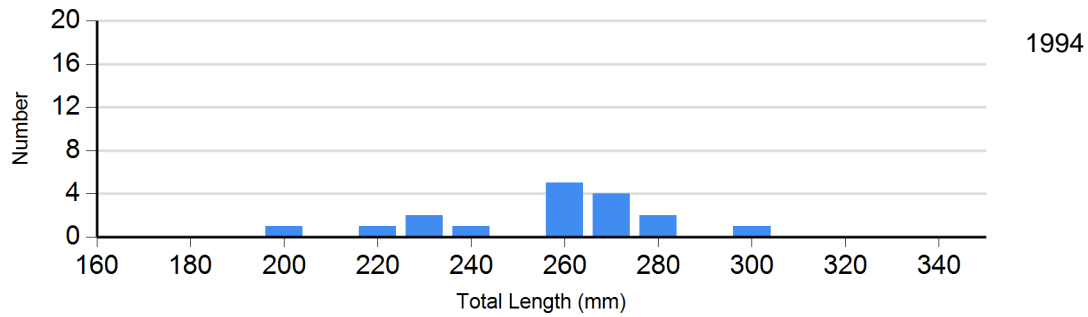
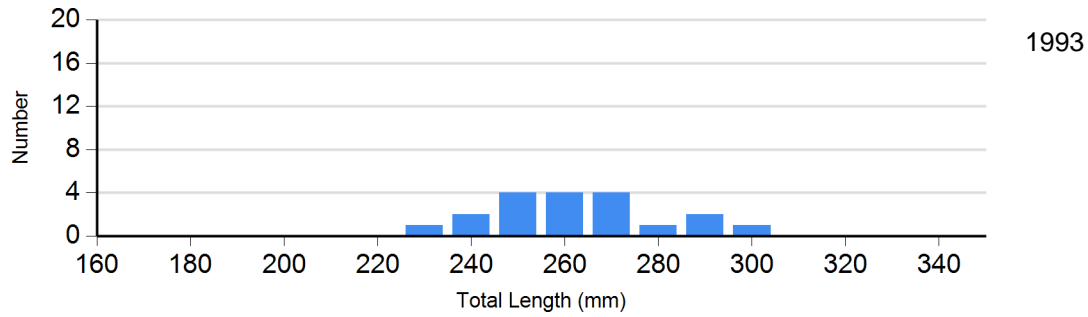
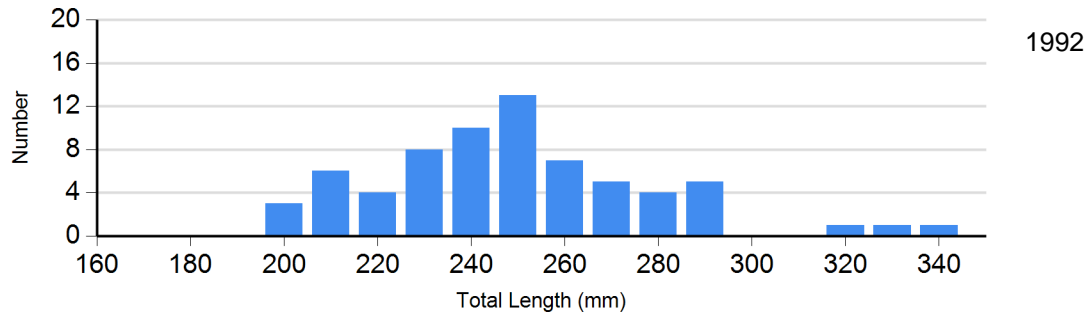
Species: Mountain Sucker



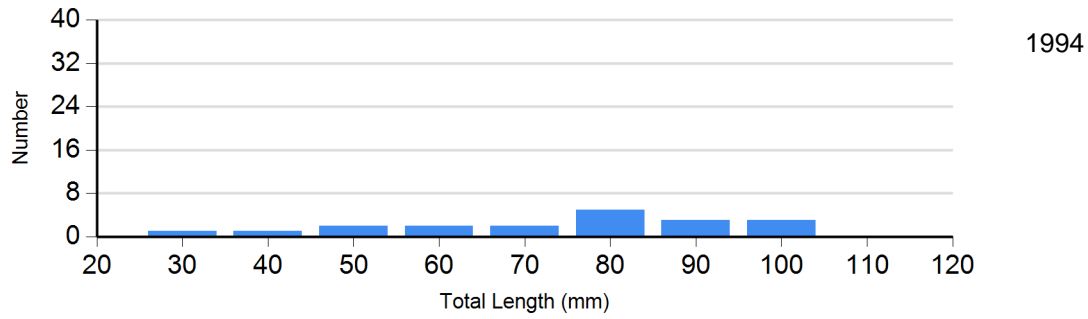
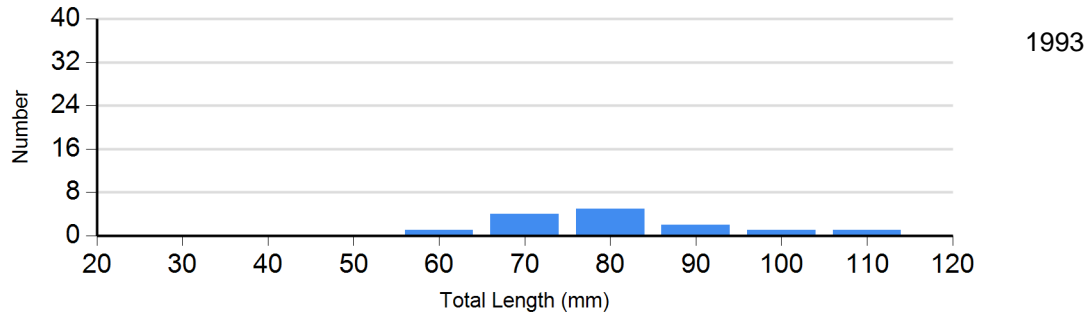
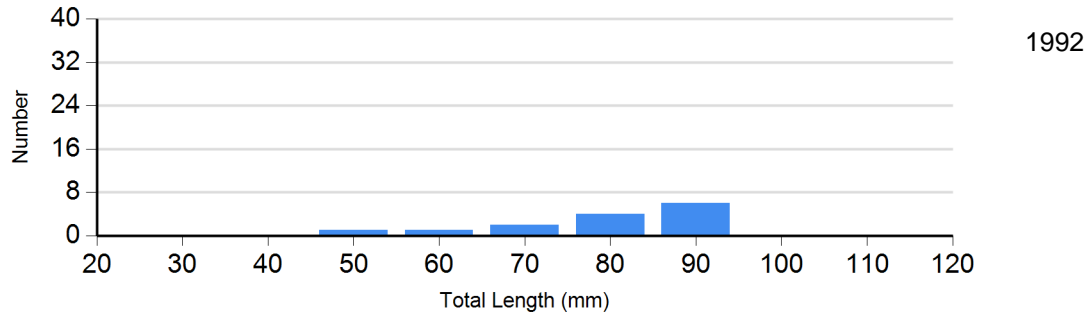
Site: 558
Species: Brown Trout



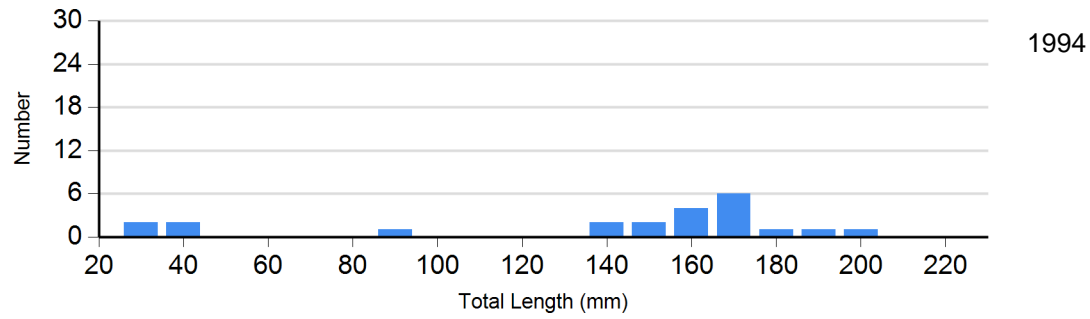
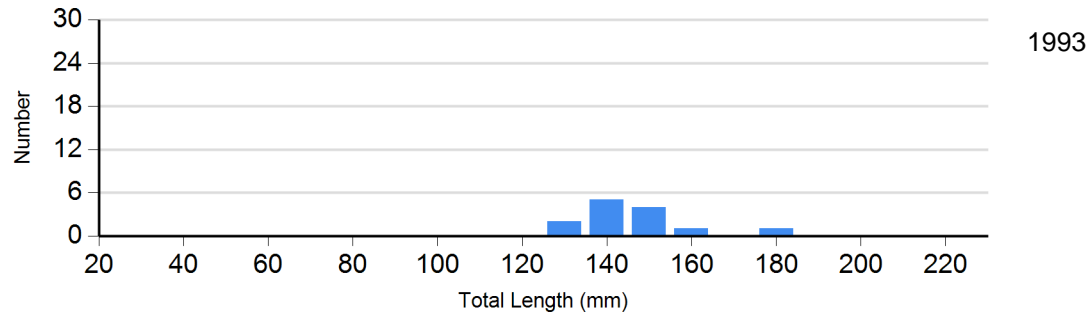
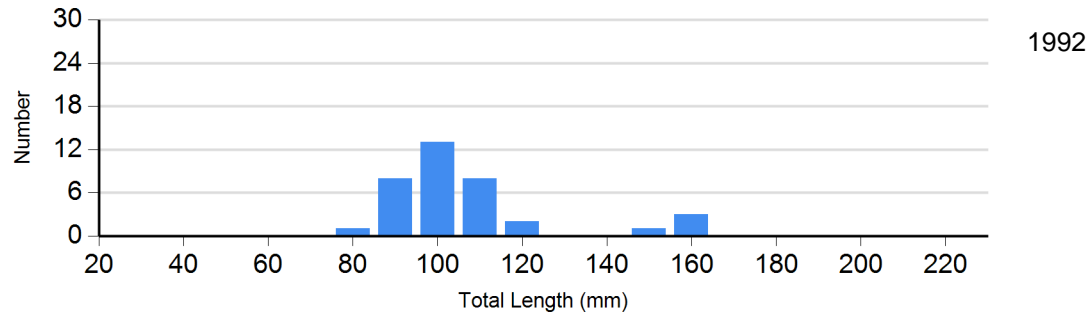
Site: 558
Species: Hatchery Brown Trout



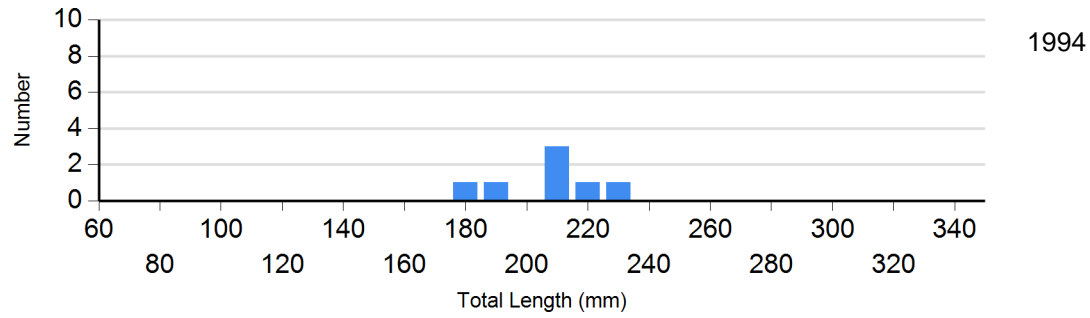
Site: 558
Species: Longnose Dace



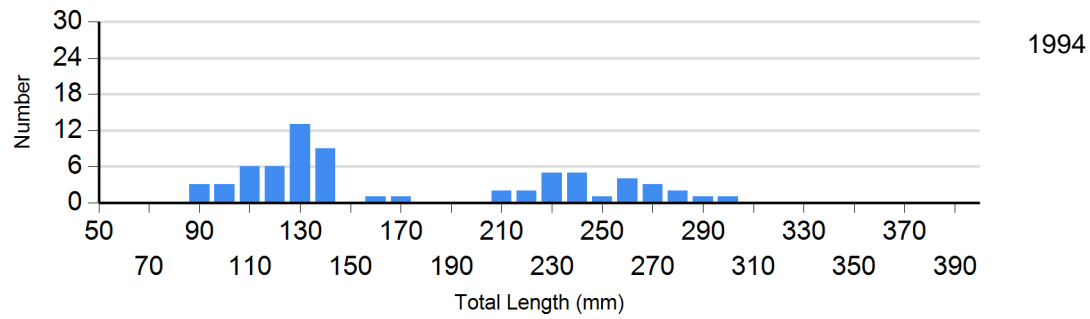
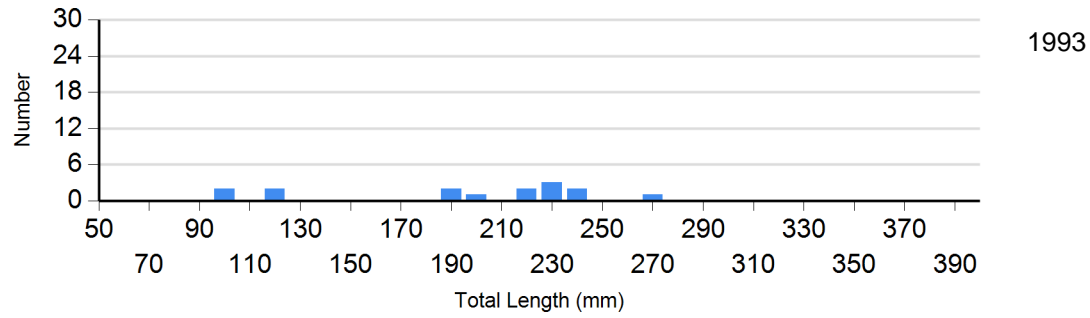
Site: 558
Species: Mountain Sucker



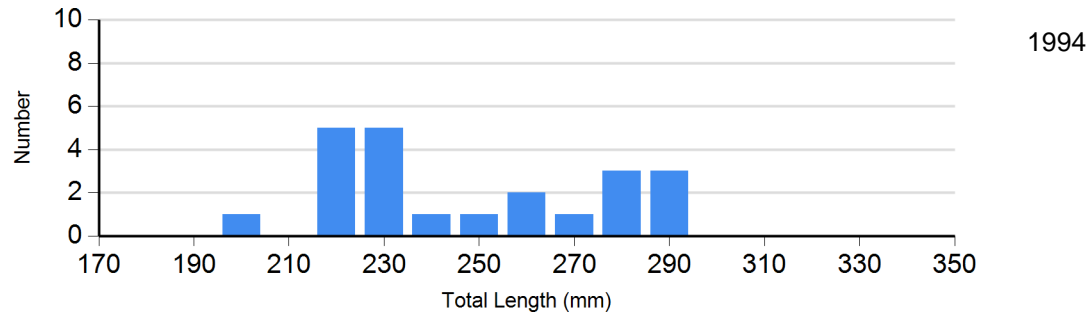
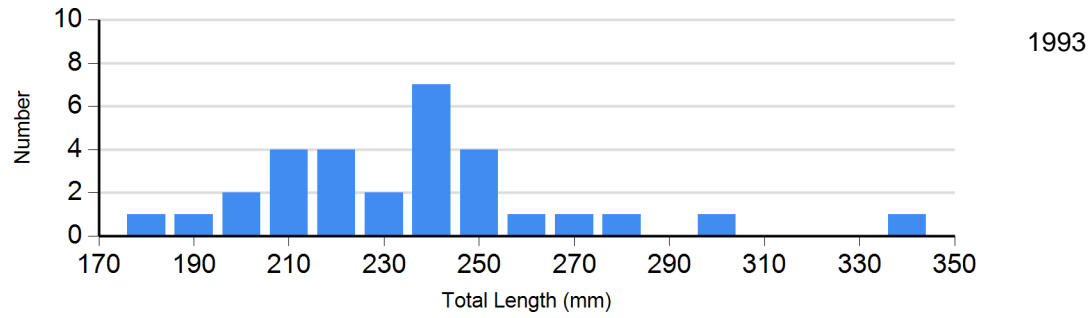
Site: 588
Species: Brook Trout



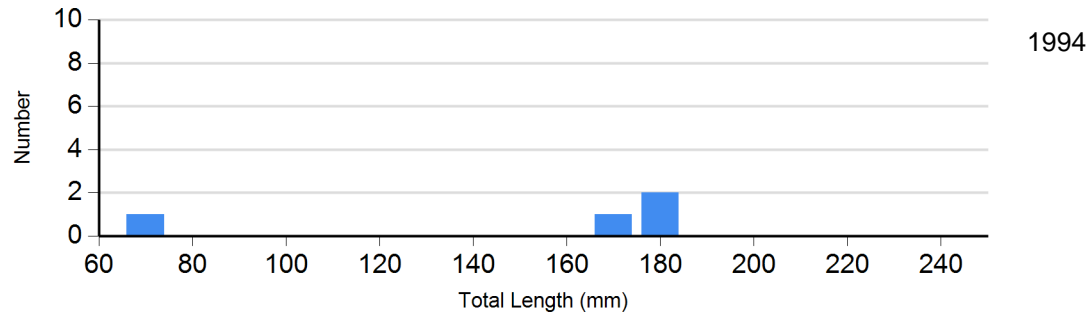
Site: 588
Species: Brown Trout



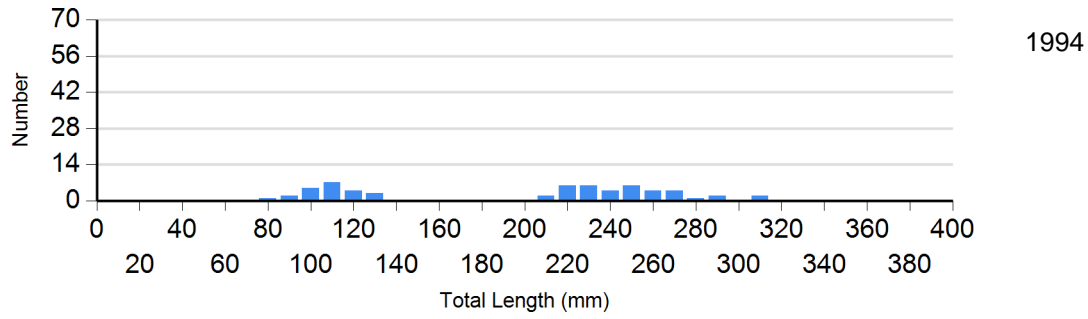
Site: 588
Species: Hatchery Brown Trout



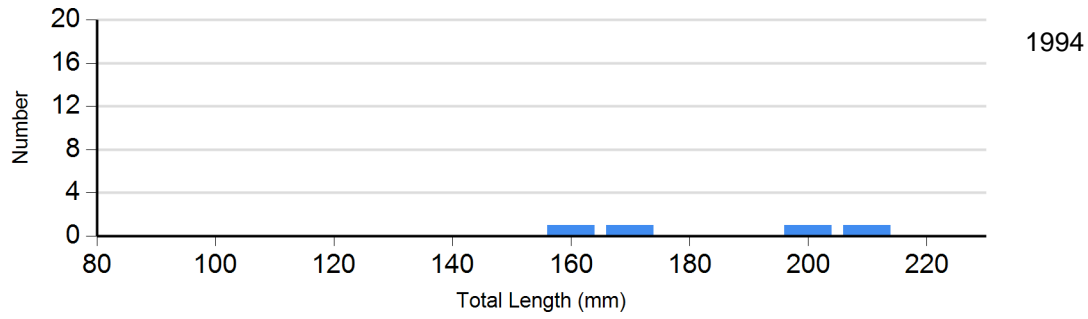
Site: 588
Species: Mountain Sucker



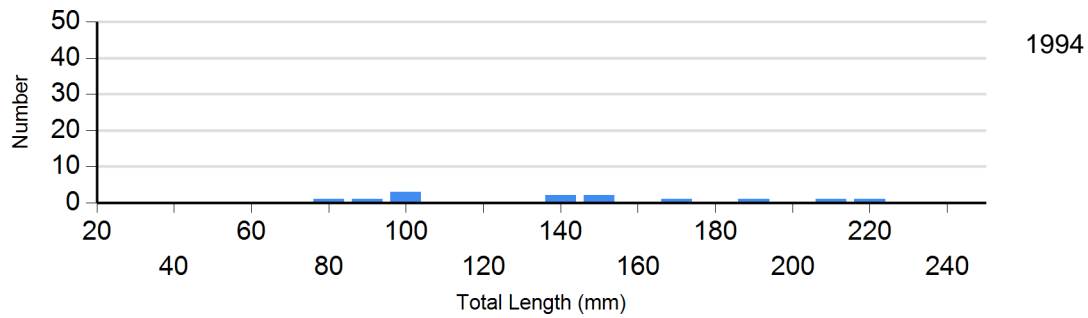
Site: 599
Species: Brown Trout



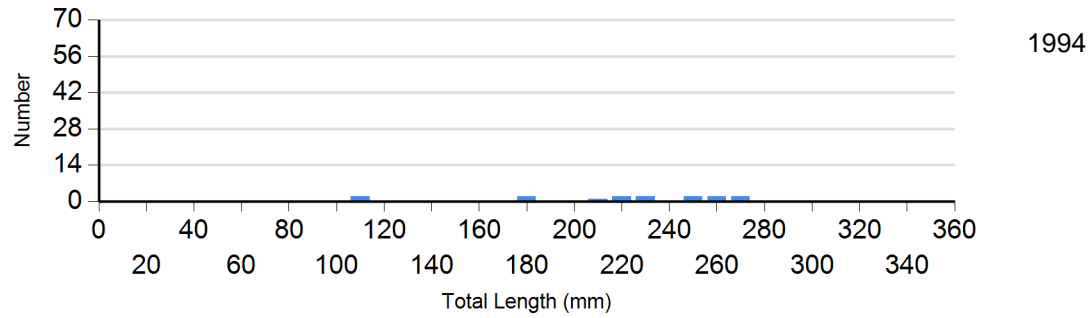
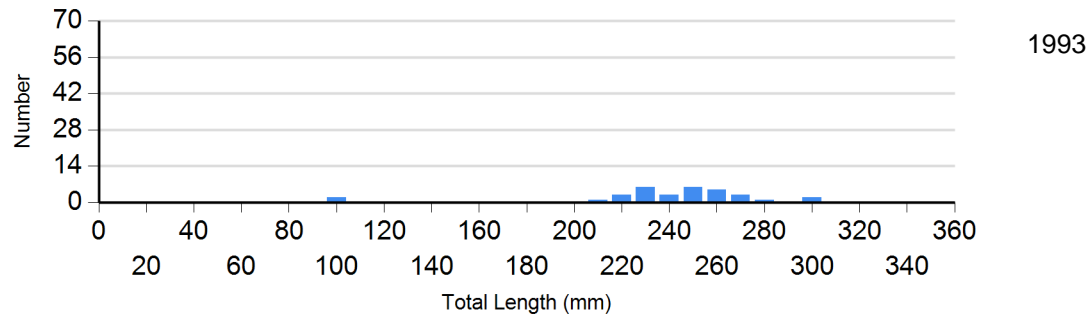
Site: 599
Species: Mountain Sucker



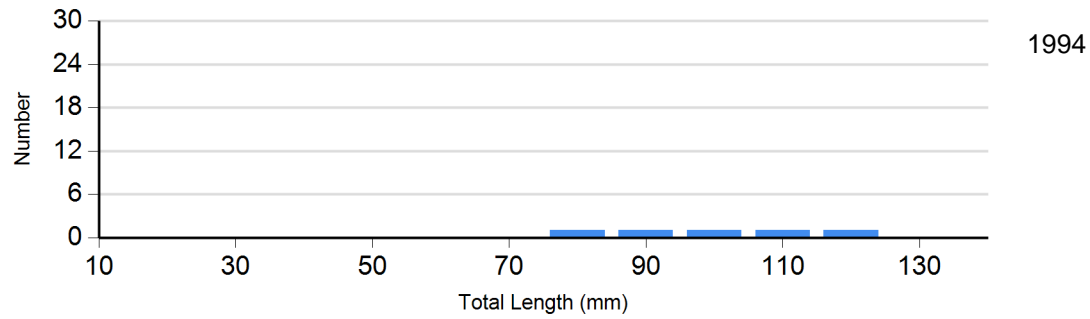
Site: 612
Species: Brook Trout



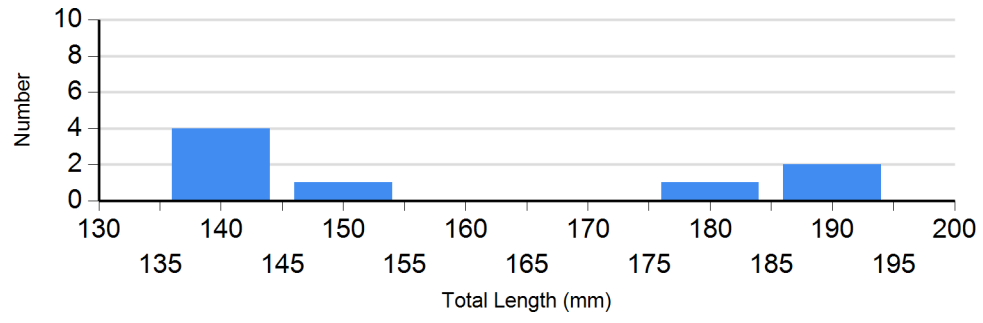
Site: 612
Species: Brown Trout



Site: 612
Species: Longnose Dace



Site: 612
Species: Mountain Sucker



1993