

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Rapid Creek, Pennington County
02-0062-00
1988

Table 1. Population and Biomass Estimates for Rapid Creek

Site Number: 1383
Site Midpoint (Latitude, Longitude): 44.08487597, -103.22694435
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3

Date Sampled: 09/29/1988
Site Length (m): 100
Mean Width (m): 0.0
Number of Pass: 2
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)
Black Bullhead	All	2	1	1	2	0	0	10	0	0.00	16	220.0	194.5
Brown Trout	<200mm	100	114	131	100	0	0	1140	0	0.00	1834	157.9	52.8
Brown Trout	>=200mm	128	142	157	128	0	0	1420	0	0.00	2285	240.0	153.2
Brown Trout	All	228	258	281	235	0	0	2580	0	0.00	4151	204.0	110.7
Green Sunfish	All	4	3	4	4	0	0	30	0	0.00	48	102.5	24.5
Largemouth Bass	All	2	2	4	2	0	0	20	0	0.00	32	195.0	115.0
Mountain Sucker	All	76	81	89	76	0	0	810	0	0.00	1303	159.1	55.7
Rock Bass	All	2	2	2	2	0	0	20	0	0.00	32	135.0	48.5
White Sucker	All	107	140	178	107	0	0	1400	0	0.00	2253	254.2	225.4
Yellow Perch	All	1	1	4	1	0	0	10	0	0.00	16	150.0	62.0

Site Number: 1393
Site Midpoint (Latitude, Longitude): 44.08551436, -103.23872222
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3, RB0

Date Sampled: 10/06/1988
Site Length (m): 100
Mean Width (m): 0.0
Number of Pass: 2
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	92	97	105	92	0	0	970	0	0.00	1561	156.5	56.8
Brown Trout	>=200mm	175	180	187	175	0	0	1800	0	0.00	2896	227.5	132.2
Brown Trout	All	267	278	288	268	0	0	2780	0	0.00	4473	203.0	106.2
Hatchery Brown Trout	>=200mm	3	3	3	3	0	0	30	0	0.00	48	280.0	229.7
Hatchery Brown Trout	All	3	3	3	3	0	0	30	0	0.00	48	280.0	229.7
Mountain Sucker	All	32	49	89	32	0	0	490	0	0.00	788	156.9	52.0
Rainbow Trout	<200mm	1	1	1	1	0	0	10	0	0.00	16	120.0	43.0
Rainbow Trout	All	1	1	1	1	0	0	10	0	0.00	16	120.0	43.0
White Sucker	All	34	34	35	34	0	0	340	0	0.00	547	280.9	291.8

Site Number: 1412
Site Midpoint (Latitude, Longitude): 44.07907606, -103.25491933
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3, RB0

Date Sampled: 10/06/1988
Site Length (m): 100
Mean Width (m): 0.0
Number of Pass: 2
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	170	195	218	172	0	0	1950	0	0.00	3138	122.5	29.0
Brown Trout	>=200mm	136	140	146	136	0	0	1400	0	0.00	2253	226.5	137.0
Brown Trout	All	306	332	351	313	0	0	3320	0	0.00	5342	168.7	77.0
Mountain Sucker	All	18	19	23	18	0	0	190	0	0.00	306	173.3	75.4
Rainbow Trout	<200mm	2	2	4	2	0	0	20	0	0.00	32	170.0	92.5
Rainbow Trout	All	2	2	4	2	0	0	20	0	0.00	32	170.0	92.5
White Sucker	All	36	36	37	36	0	0	360	0	0.00	579	278.1	317.4

Site Number: 1833
Site Midpoint (Latitude, Longitude): 44.07611720, -103.47551527
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR3

Date Sampled: 10/07/1988
Site Length (m): 100
Mean Width (m): 0.0
Number of Pass: 2
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	7	8	14	7	0	0	80	0	0.00	129	68.6	3.7
Brook Trout	All	7	8	14	7	0	0	80	0	0.00	129	68.6	3.7
Brown Trout	<200mm	86	116	155	86	0	0	1160	0	0.00	1866	125.8	31.6
Brown Trout	>=200mm	56	59	65	56	0	0	590	0	0.00	949	243.0	179.4
Brown Trout	All	142	170	197	143	0	0	1700	0	0.00	2735	172.0	89.9
Hatchery Brown Trout	>=200mm	2	2	2	2	0	0	20	0	0.00	32	315.0	316.5
Hatchery Brown Trout	All	2	2	2	2	0	0	20	0	0.00	32	315.0	316.5

Site Number: 1843
Site Midpoint (Latitude, Longitude): 44.07203156, -103.47488319
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK3, BR3

Date Sampled: 10/07/1988
Site Length (m): 100
Mean Width (m): 0.0
Number of Pass: 2
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	12	12	12	12	0	0	120	0	0.00	193	145.0	32.1
Brook Trout	>=200mm	9	9	9	9	0	0	90	0	0.00	145	233.3	154.1
Brook Trout	All	21	21	21	21	0	0	210	0	0.00	338	182.9	87.0
Brown Trout	<200mm	28	28	28	28	0	0	280	0	0.00	451	138.9	36.9

Brown Trout	>=200mm	28	28	28	28	0	0	280	0	0.00	451	243.6	179.8
Brown Trout	All	56	56	56	56	0	0	560	0	0.00	901	191.3	108.3
Hatchery Brown Trout	>=200mm	19	19	19	19	0	0	190	0	0.00	306	278.9	262.0
Hatchery Brown Trout	All	19	19	19	19	0	0	190	0	0.00	306	278.9	262.0

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 Rapid Creek, 1978-1988

Site 1383

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Bullhead	Sep 29, 1988	1	2-1	
Brown Trout <200mm	Sep 29, 1988	114	100-131	
Brown Trout >=200mm	Sep 29, 1988	142	128-157	BR3
Green Sunfish	Sep 29, 1988	3	4-4	
Largemouth Bass	Sep 29, 1988	2	2-4	
Mountain Sucker	Sep 29, 1988	81	76-89	
Rock Bass	Sep 29, 1988	2	2-2	

White Sucker	Sep 29, 1988	140	107-178
Yellow Perch	Sep 29, 1988	1	1-4

Site 1393

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 06, 1988	97	92-105	
Brown Trout >=200mm	Oct 06, 1988	180	175-187	BR3
Hatchery Brown Trout >=200mm	Oct 06, 1988	3	3-3	
Mountain Sucker	Oct 06, 1988	49	32-89	
Rainbow Trout <200mm	Oct 06, 1988	1	1-1	
White Sucker	Oct 06, 1988	34	34-35	

Site 1412

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 06, 1988	195	172-218	
Brown Trout >=200mm	Oct 06, 1988	140	136-146	BR3
Mountain Sucker	Oct 06, 1988	19	18-23	
Rainbow Trout <200mm	Oct 06, 1988	2	2-4	
White Sucker	Oct 06, 1988	36	36-37	

Site 1833

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 07, 1988	8	7-14	
Brown Trout <200mm	Oct 07, 1988	116	86-155	
Brown Trout >=200mm	Oct 07, 1988	59	56-65	BR3
Hatchery Brown Trout >=200mm	Oct 07, 1988	2	2-2	

Site 1843

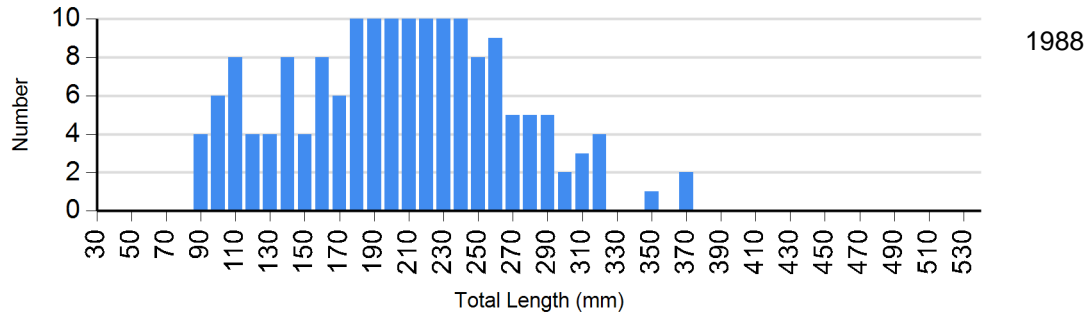
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 07, 1988	12	12-12	
Brook Trout >=200mm	Oct 07, 1988	9	9-9	BK3
Brown Trout <200mm	Oct 07, 1988	28	28-28	
Brown Trout >=200mm	Oct 07, 1988	28	28-28	BR3
Hatchery Brown Trout >=200mm	Oct 07, 1988	19	19-19	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

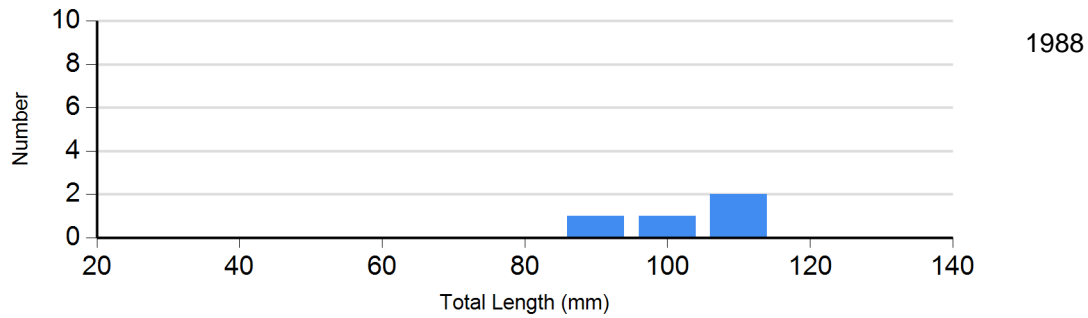
Site: 1383

Species: Brown Trout



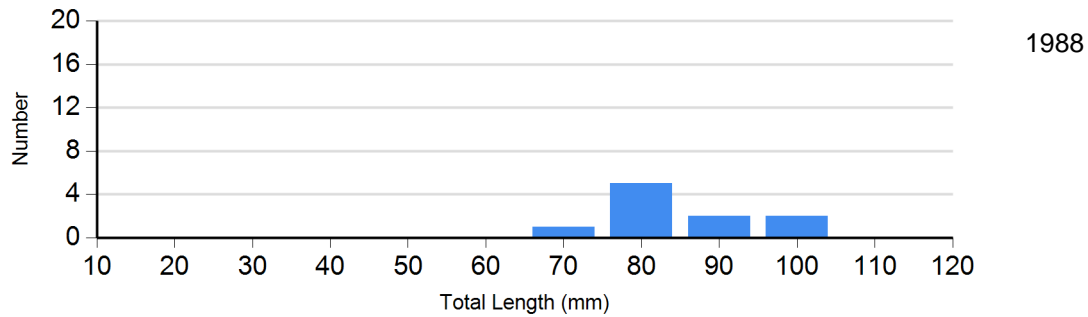
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Species: Green Sunfish

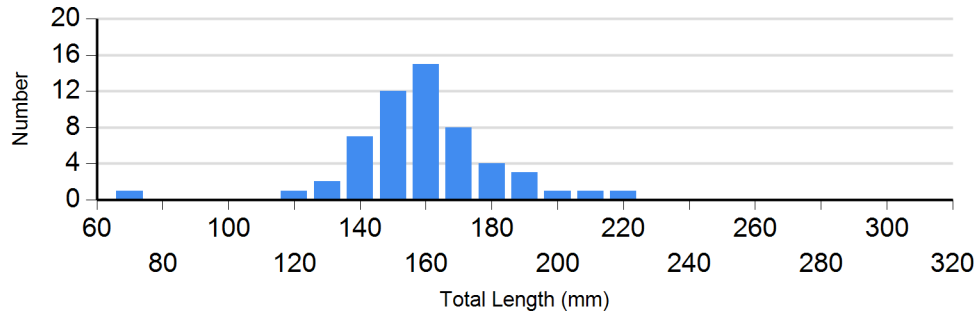


Site: 1383

Species: Longnose Dace

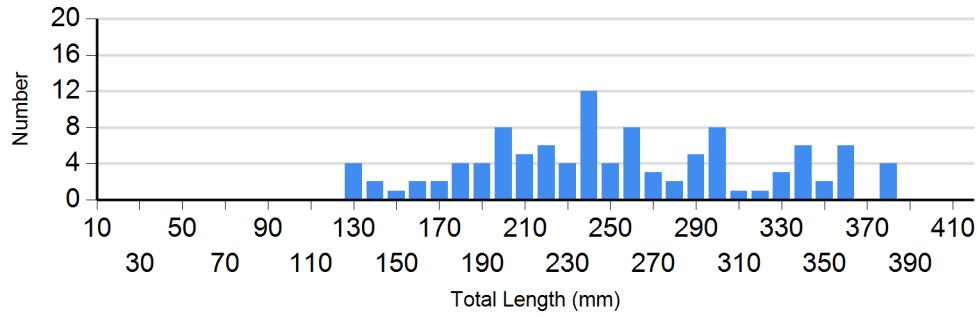


Site: 1383
Species: Mountain Sucker



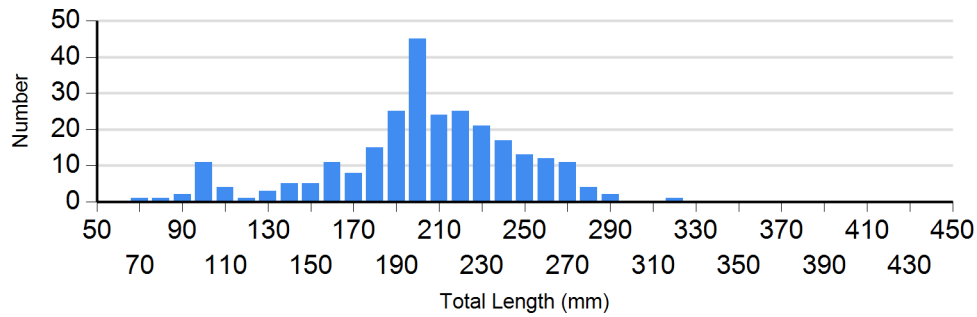
1988

Site: 1383
Species: White Sucker



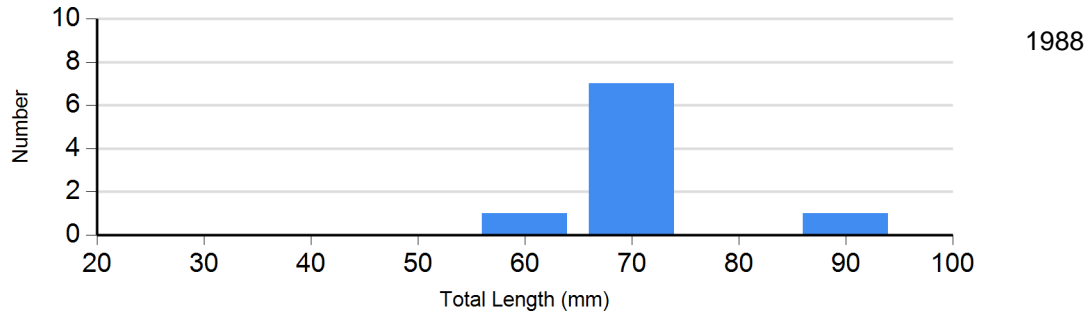
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Site: 1393
Species: Brown Trout

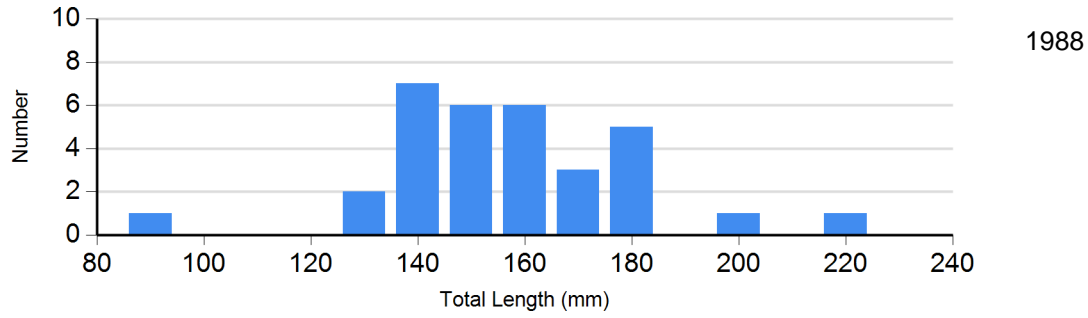


1988

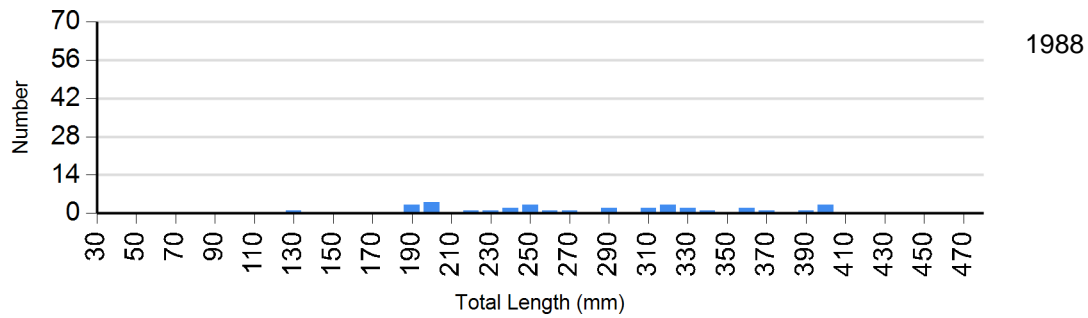
Site: 1393
Species: Longnose Dace



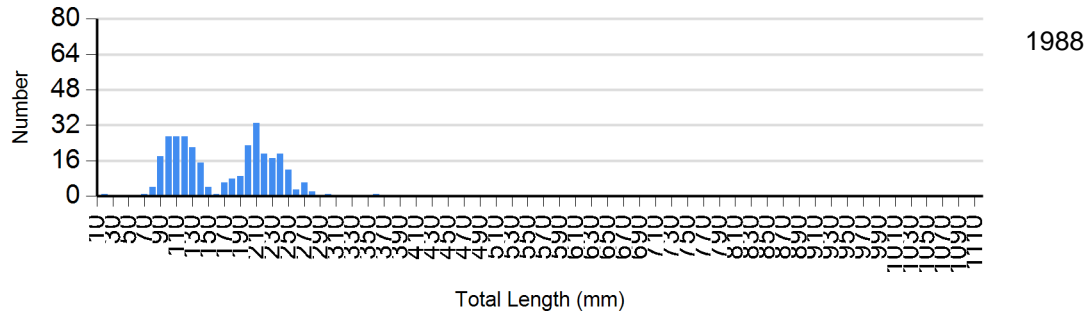
Site: 1393
Species: Mountain Sucker



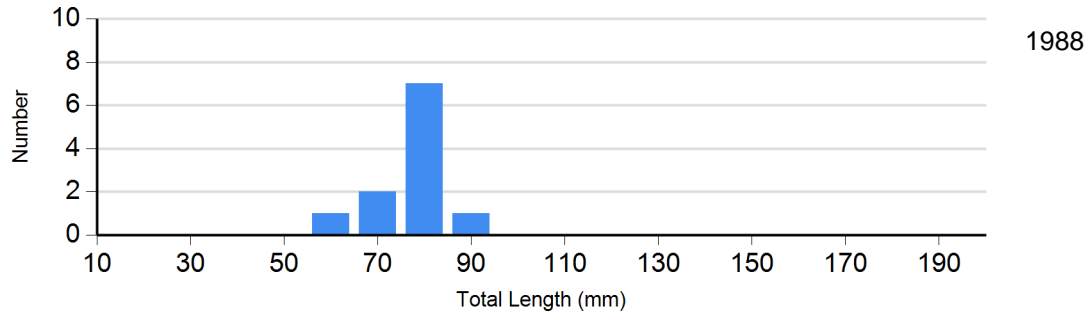
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Species: White Sucker



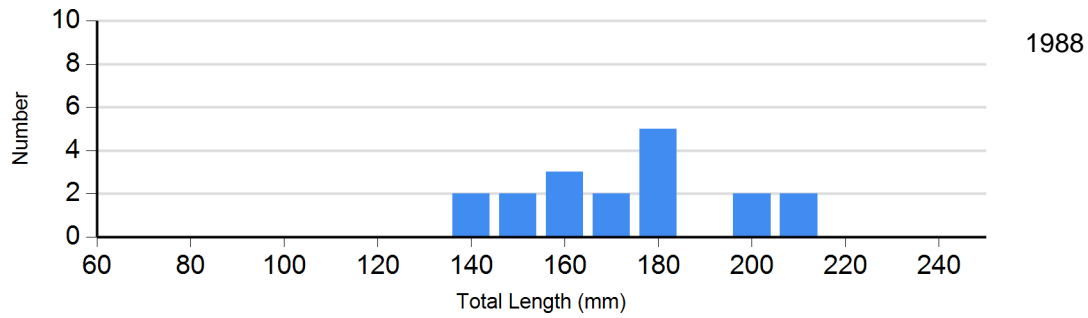
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Species: Brown Trout



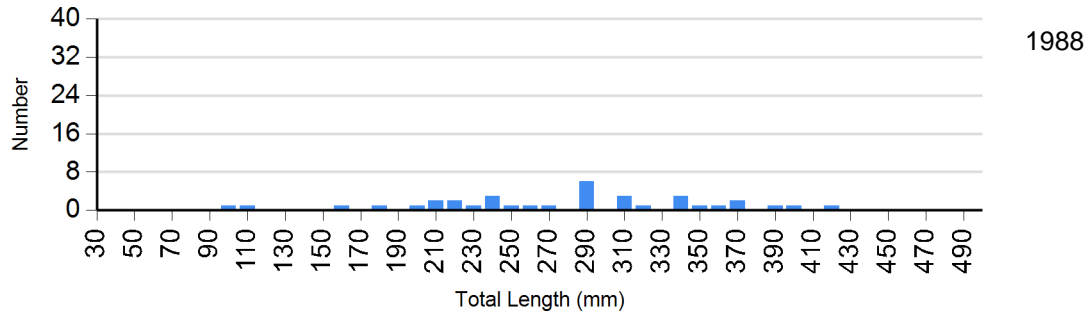
Site: 1412
Species: Longnose Dace



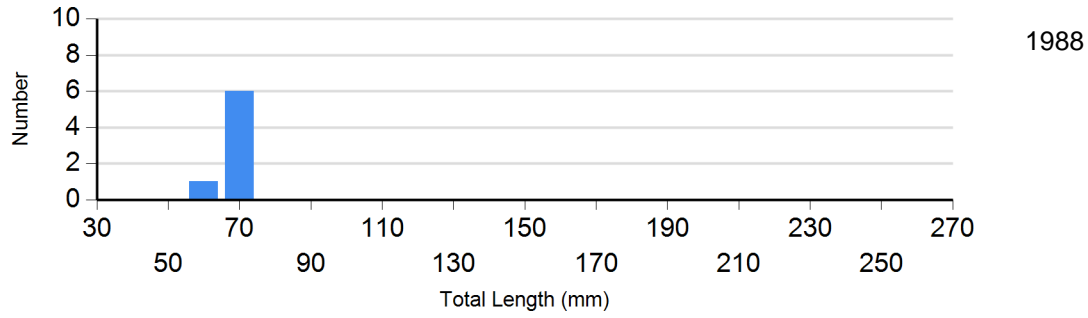
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Species: Mountain Sucker



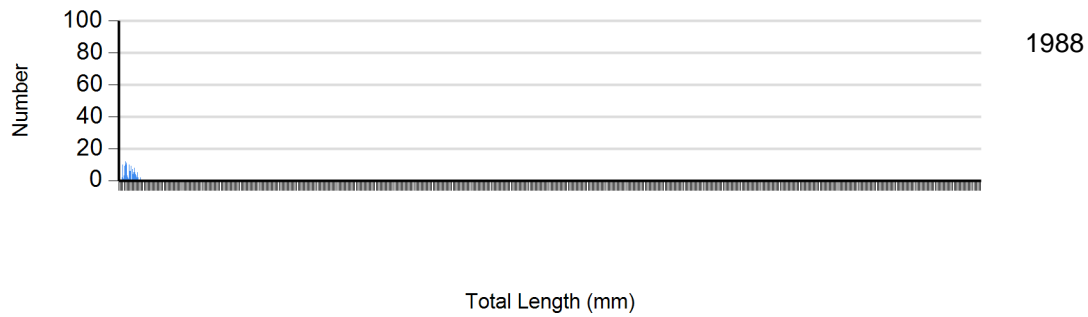
Site: 1412
Species: White Sucker



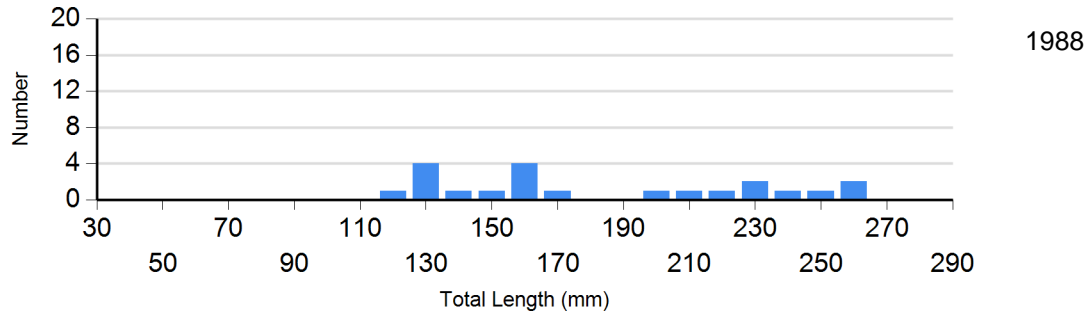
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Species: Brook Trout



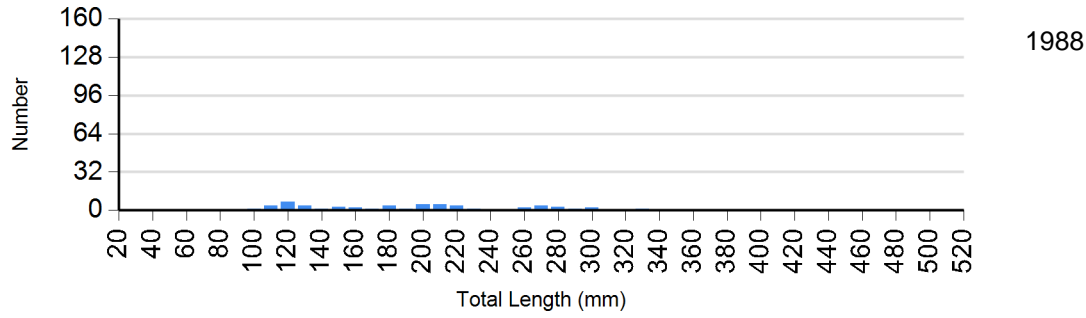
Site: 1833
Species: Brown Trout



Site: 1843
Species: Brook Trout



Site: 1843
Species: Brown Trout



Site: 1843
Species: Hatchery Brown Trout

