

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Crow Creek (Trib. of Redwater), Lawrence County
09-0037-00
1998

Table 1. Population and Biomass Estimates for Crow Creek (Trib. of Redwater)

Site Number: 5	Date Sampled: 08/18/1998	Conductivity (umhos/cm): 1050
Site Midpoint (Latitude, Longitude): 44.57184802, -104.00721701	Site Length (m): 100	pH: 8.2
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 0.0	Water Temperature (C): 16.0
Stream Classification: BR3	Number of Pass: 1	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	15	15	15	15	0	0	150	0	0.00	241	102.0	10.1
Brown Trout	>=200mm	8	8	8	8	0	0	80	0	0.00	129	259.4	186.5
Brown Trout	All	23	23	23	23	0	0	230	0	0.00	370	156.7	71.5
Green Sunfish	All	1	1	1	1	0	0	10	0	0.00	16	81.0	6.0
Longnose Sucker	All	60	60	60	60	0	0	600	0	0.00	965	212.1	156.3
White Sucker	All	74	74	74	74	0	0	740	0	0.00	1191	223.3	168.0

Site Number: 14	Date Sampled: 08/24/1998	Conductivity (umhos/cm): 1036
Site Midpoint (Latitude, Longitude): 44.56875580, -104.00662422	Site Length (m): 68	pH: 8.0
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 17.0	Water Temperature (C): 14.7
Stream Classification: BR2	Number of Pass: 3	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	32	32	34	32	188	3	471	76	2.45	757	111.4	14.6
Brown Trout	>=200mm	12	12	12	12	71	13	176	29	11.95	284	269.8	189.6

Brown Trout	All	44	44	45	44	259	16	647	105	14.40	1041	154.6	62.3
Hatchery Rainbow Trout	<200mm	1	1	1	1	6	0	15	2	0.25	24	163.0	48.0
Hatchery Rainbow Trout	All	1	1	1	1	6	0	15	2	0.25	24	163.0	48.0
Longnose Sucker	All	46	47	50	46	276	62	691	112	55.29	1112	257.7	224.0
White Sucker	All	53	53	54	53	312	88	779	126	78.35	1254	266.4	281.5

Site Number: 21
Site Midpoint (Latitude, Longitude): 44.56633159, -104.00688164
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 08/18/1998
Site Length (m): 100
Mean Width (m): 12.6
Number of Pass: 3
Conductivity (umhos/cm): 1288
pH: 7.8
Water Temperature (C): 13.7
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	23	23	24	23	183	2	230	74	1.38	370	96.3	8.4
Brown Trout	>=200mm	16	16	18	16	127	23	160	52	20.40	257	260.1	179.6
Brown Trout	All	39	39	41	39	310	24	390	126	21.78	628	163.5	78.7
Hatchery Rainbow Trout	>=200mm	2	2	3	2	16	7	20	6	6.16	32	357.5	434.0
Hatchery Rainbow Trout	All	2	2	3	2	16	7	20	6	6.16	32	357.5	434.0
Longnose Dace	All	1	1	1	1	8	0	10	3	0.08	16	117.0	11.0
Longnose Sucker	All	29	29	30	29	231	138	290	93	123.26	467	393.1	598.9
White Sucker	All	24	24	25	24	191	93	240	77	82.59	386	325.5	484.9

Site Number: 31
Site Midpoint (Latitude, Longitude): 44.56201742, -104.00884914
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/17/1998
Site Length (m): 106
Mean Width (m): 6.5
Number of Pass: 3
Conductivity (umhos/cm): 1015
pH: 8.2
Water Temperature (C): 16.0

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)
Brown Trout	<200mm	93	115	140	93	1769	23	1085	717	20.47	1746	100.1	13.0
Brown Trout	>=200mm	60	62	66	60	954	260	585	386	231.95	941	277.7	272.4
Brown Trout	All	153	173	191	155	2662	305	1632	1078	272.53	2626	169.8	114.7
Green Sunfish	All	3	2	4	3	31	0	19	12	0.20	30	75.0	7.3
Hatchery Brown Trout	>=200mm	1	1	1	1	15	4	9	6	3.79	15	314.0	276.0
Hatchery Brown Trout	All	1	1	1	1	15	4	9	6	3.79	15	314.0	276.0
Hatchery Rainbow Trout	<200mm	1	1	5	1	15	0	9	6	0.33	15	123.0	24.0
Hatchery Rainbow Trout	>=200mm	1	1	2	1	15	4	9	6	3.54	15	308.0	258.0
Hatchery Rainbow Trout	All	2	2	6	2	31	4	19	12	3.87	30	215.5	141.0
Longnose Dace	All	5	5	5	5	77	0	47	31	0.29	76	72.8	4.3
Longnose Sucker	All	9	9	9	9	138	74	85	56	66.32	137	377.8	536.4
White Sucker	All	16	16	17	16	246	107	151	100	95.77	243	342.5	435.8

Site Number: 35

Site Midpoint (Latitude, Longitude): 44.56066453, -104.01129520

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 08/17/1998

Site Length (m): 100

Mean Width (m): 4.1

Number of Pass: 3

Conductivity (umhos/cm): 1000

pH: 8.2

Water Temperature (C): 16.2

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	167	202	231	173	4879	65	2020	1976	58.33	3250	102.8	13.4
Brown Trout	>=200mm	43	43	44	43	1039	202	430	421	179.95	692	263.9	194.0

Brown Trout	All	210	233	251	215	5628	284	2330	2279	253.17	3749	135.8	50.4
Green Sunfish	All	4	8	42	4	193	2	80	78	2.03	129	86.8	11.8
Hatchery Rainbow Trout	<200mm	1	1	2	1	24	0	10	10	0.15	16	83.0	7.0
Hatchery Rainbow Trout	>=200mm	1	1	2	1	24	8	10	10	6.79	16	328.0	315.0
Hatchery Rainbow Trout	All	2	2	4	2	48	8	20	20	6.94	32	205.5	161.0
Largemouth Bass	All	2	1	2	2	24	0	10	10	0.03	16	52.0	1.5
Longnose Dace	All	23	22	30	23	531	2	220	215	1.66	354	69.4	3.5
Longnose Sucker	All	8	8	9	8	193	32	80	78	28.81	129	204.0	167.0
White Sucker	All	10	10	11	10	242	55	100	98	49.03	161	220.8	227.3

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 Crow Creek (Trib. of Redwater), 1988-1998

Site 5

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 18, 1998	15	15-15	
Brown Trout >=200mm	Aug 18, 1998	8	8-8	BR3
Green Sunfish	Aug 18, 1998	1	1-1	
Longnose Sucker	Aug 18, 1998	60	60-60	
White Sucker	Aug 18, 1998	74	74-74	

Site 14

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 24, 1998	32	32-34	

Brown Trout >=200mm	Aug 24, 1998	12	12-12	BR2
Hatchery Rainbow Trout <200mm	Aug 24, 1998	1	1-1	
Longnose Sucker	Aug 24, 1998	47	46-50	
White Sucker	Aug 24, 1998	53	53-54	

Site 21

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 18, 1998	23	23-24	
Brown Trout >=200mm	Aug 18, 1998	16	16-18	BR2
Hatchery Rainbow Trout >=200mm	Aug 18, 1998	2	2-3	
Longnose Dace	Aug 18, 1998	1	1-1	
Longnose Sucker	Aug 18, 1998	29	29-30	
White Sucker	Aug 18, 1998	24	24-25	

Site 31

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 17, 1998	115	93-140	
Brown Trout >=200mm	Aug 17, 1998	62	60-66	BR1
Green Sunfish	Aug 17, 1998	2	3-4	

Hatchery Brown Trout ≥200mm	Aug 17, 1998	1	1-1
Hatchery Rainbow Trout <200mm	Aug 17, 1998	1	1-5
Hatchery Rainbow Trout ≥200mm	Aug 17, 1998	1	1-2
Longnose Dace	Aug 17, 1998	5	5-5
Longnose Sucker	Aug 17, 1998	9	9-9
White Sucker	Aug 17, 1998	16	16-17

Site 35

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 25, 1997	35	34-39	
	Aug 17, 1998	202	173-231	
Brown Trout ≥200mm	Sep 25, 1997	36	35-40	BR1
	Aug 17, 1998	43	43-44	BR1
Green Sunfish	Sep 25, 1997	1	1-2	
	Aug 17, 1998	8	4-42	
Hatchery Rainbow Trout <200mm	Aug 17, 1998	1	1-2	
Hatchery Rainbow Trout ≥200mm	Aug 17, 1998	1	1-2	

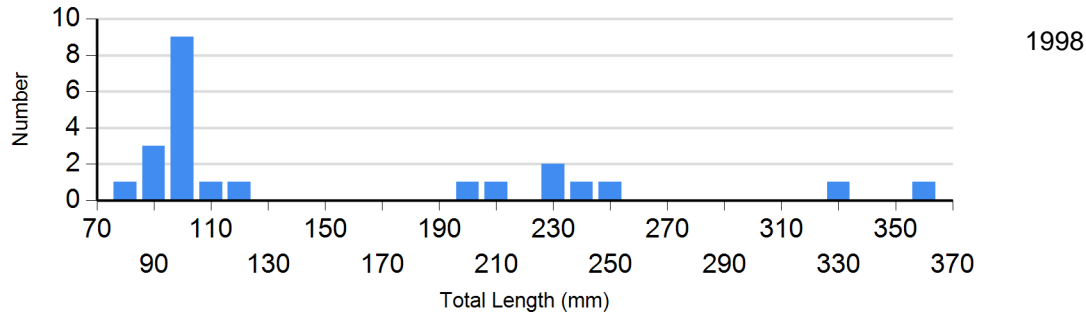
Largemouth Bass	Aug 17, 1998	1	2-2
Longnose Dace	Sep 25, 1997	46	41-55
	Aug 17, 1998	22	23-30
Longnose Sucker	Sep 25, 1997	6	6-6
	Aug 17, 1998	8	8-9
White Sucker	Sep 25, 1997	31	23-50
	Aug 17, 1998	10	10-11

Length Frequency Distribution

Length frequency histogram of species sampled by year.

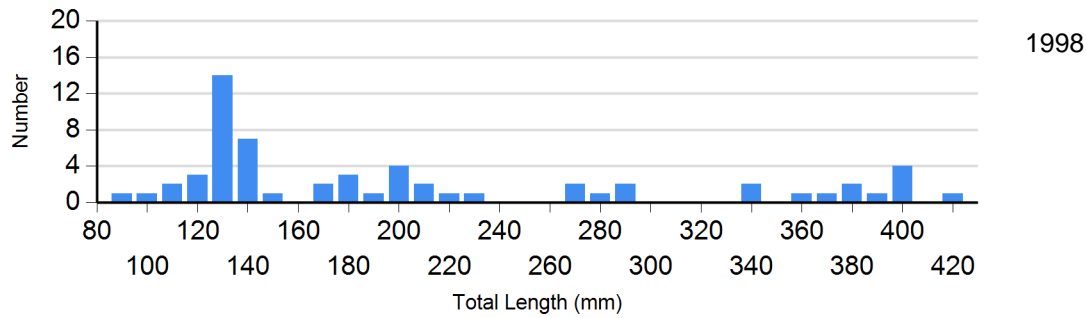
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Species: Brown Trout



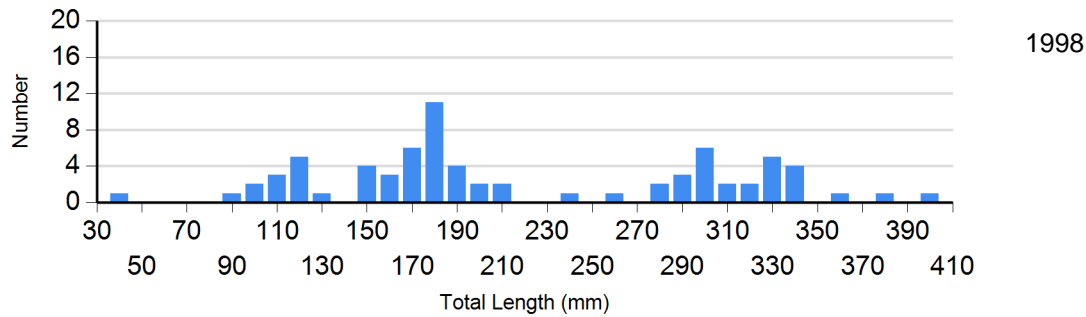
Site: 5

Species: Longnose Sucker

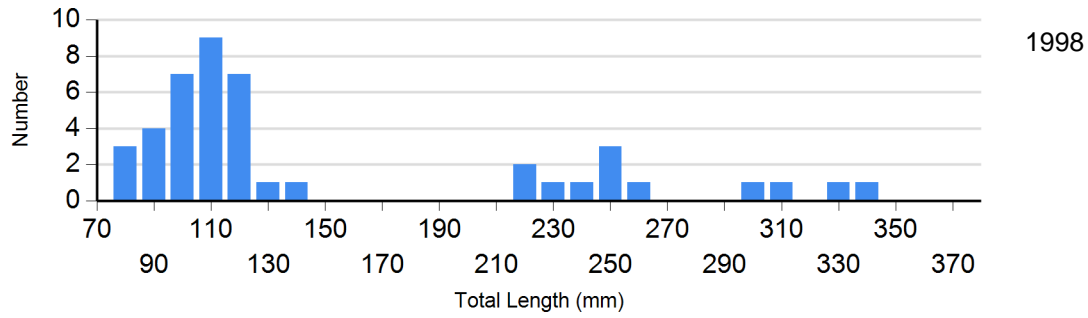


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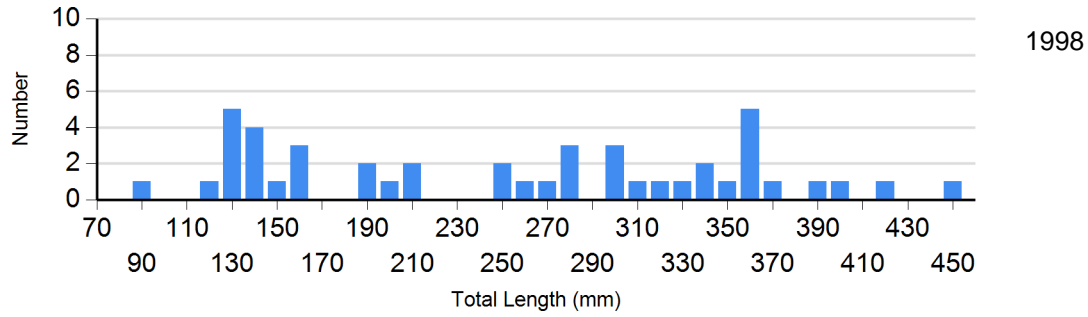
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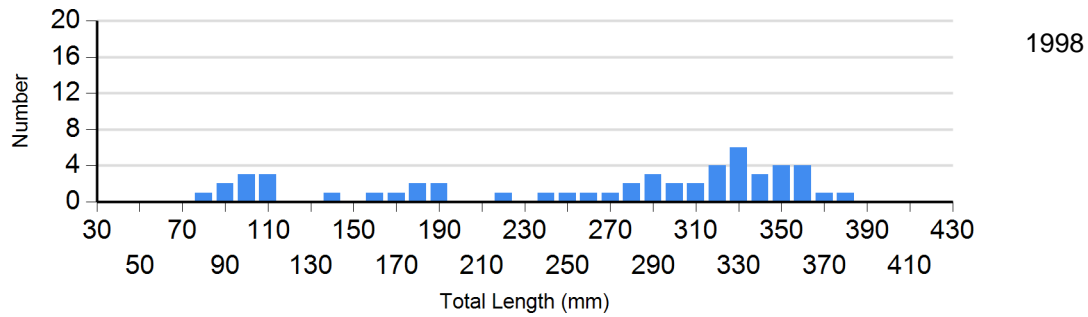
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Species: Brown Trout



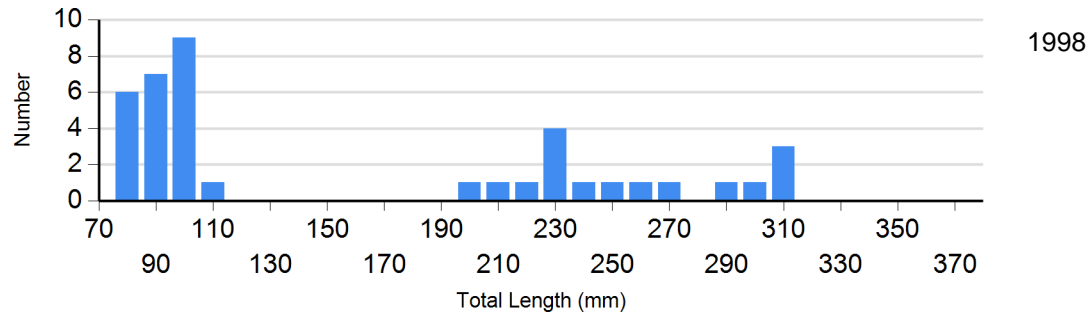
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Species: Longnose Sucker



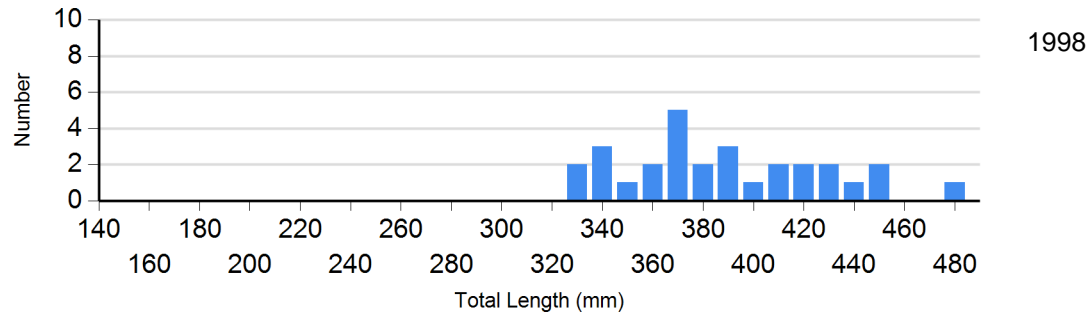
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Species: White Sucker



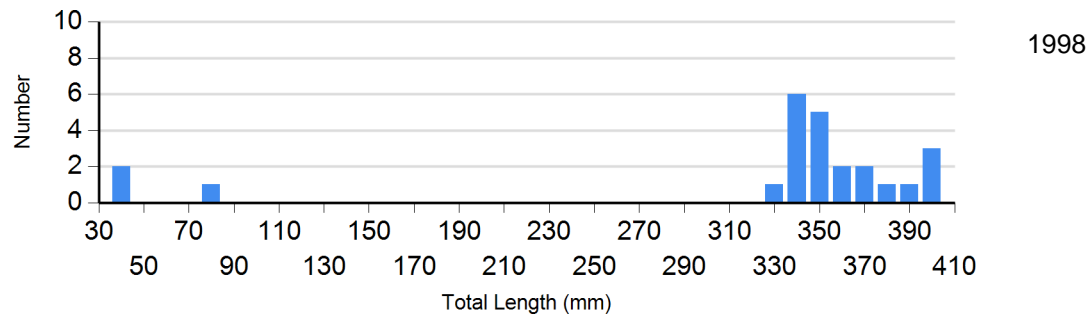
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Species: Brown Trout



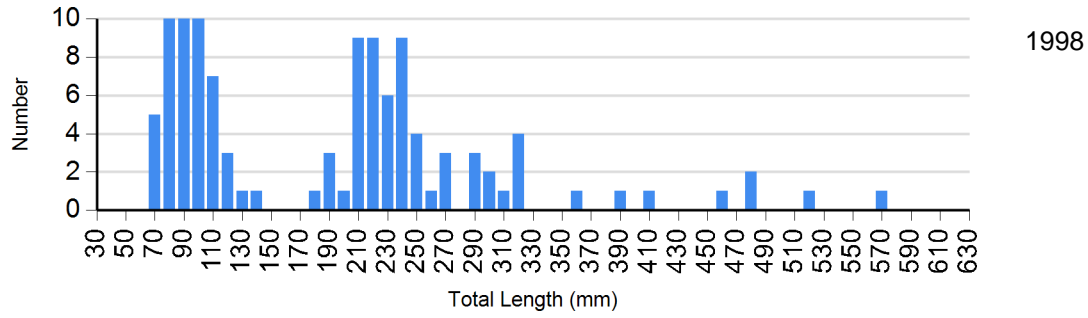
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Species: Longnose Sucker



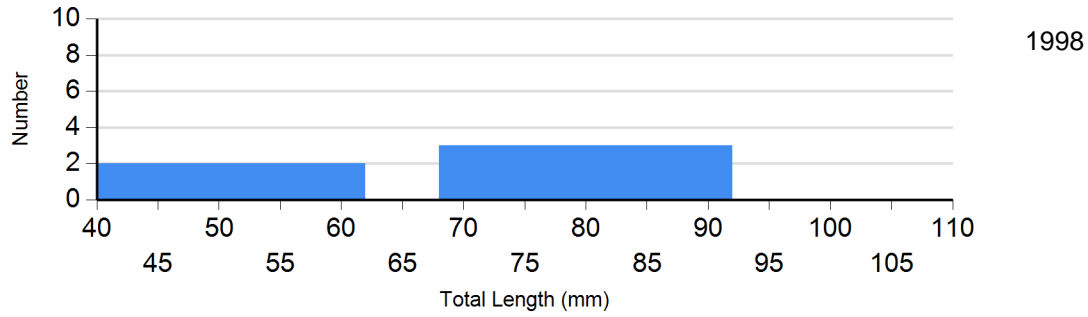
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Species: White Sucker



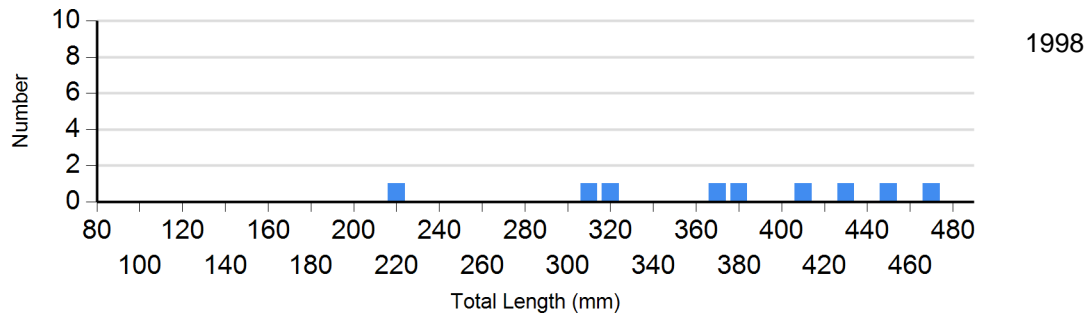
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Species: Brown Trout



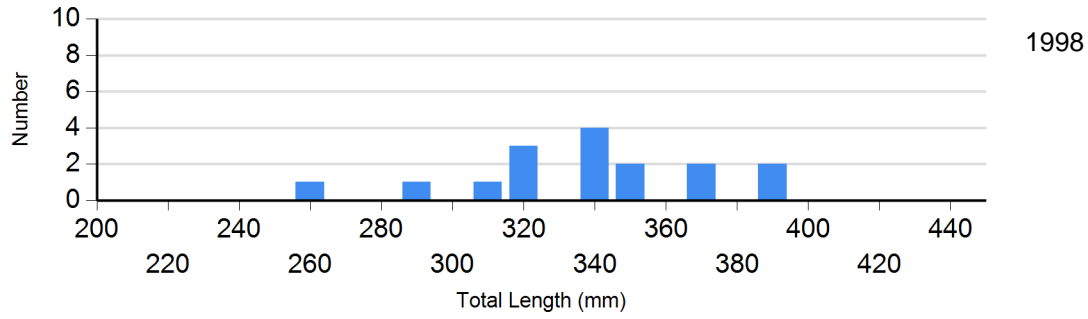
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Species: Longnose Dace



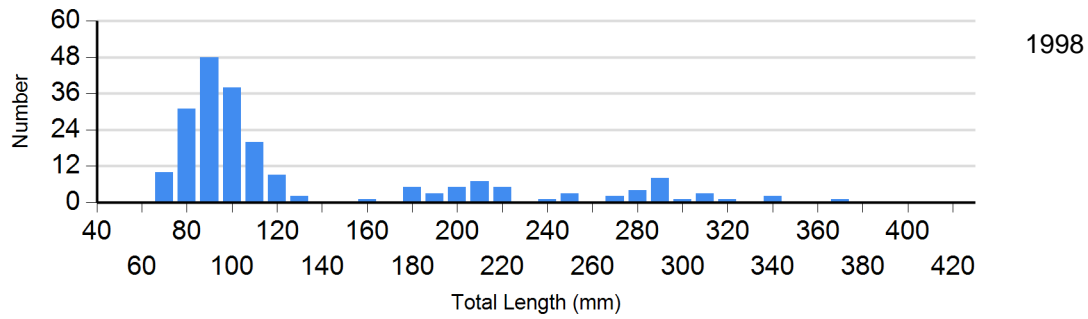
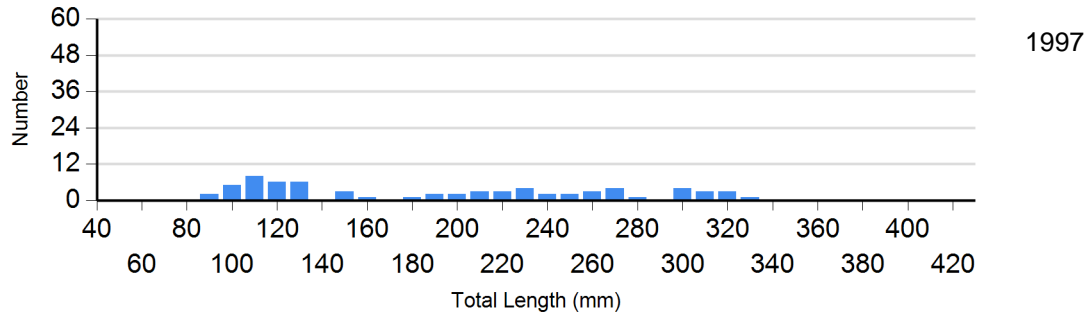
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Species: Longnose Sucker



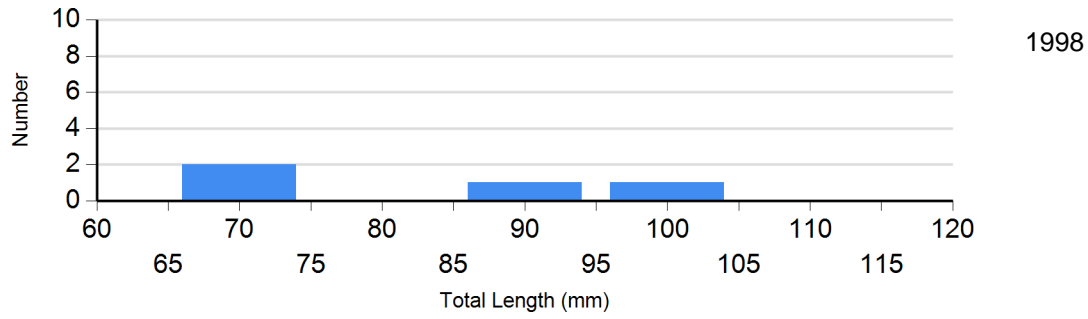
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Species: White Sucker



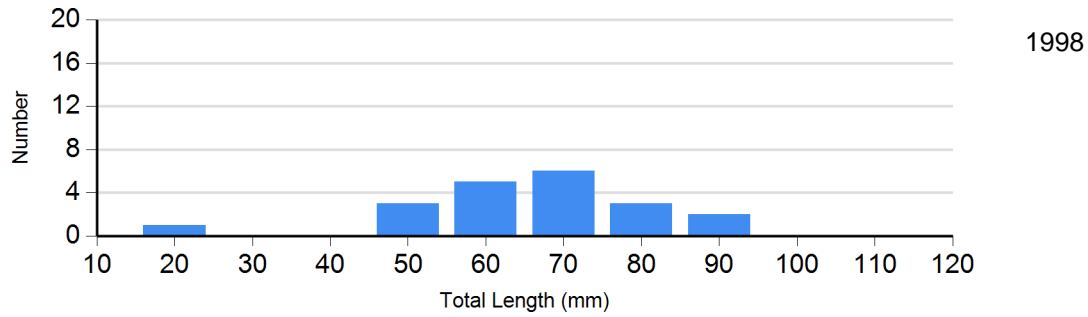
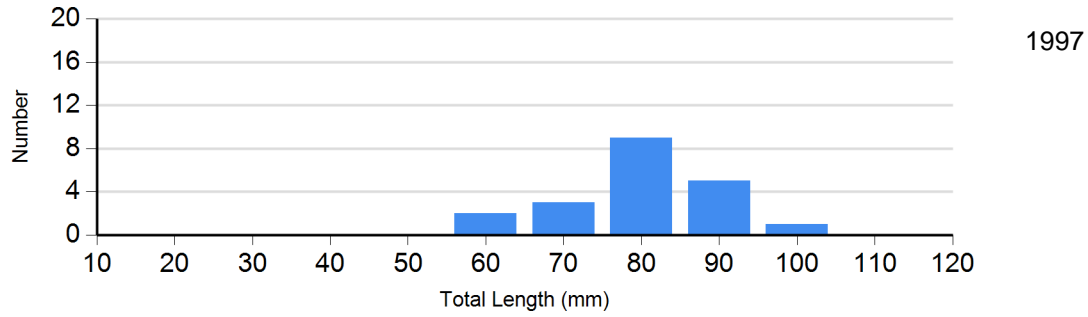
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Species: Brown Trout



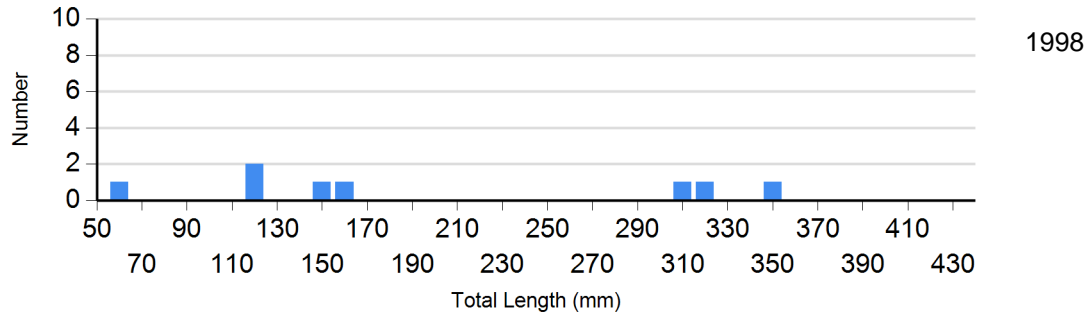
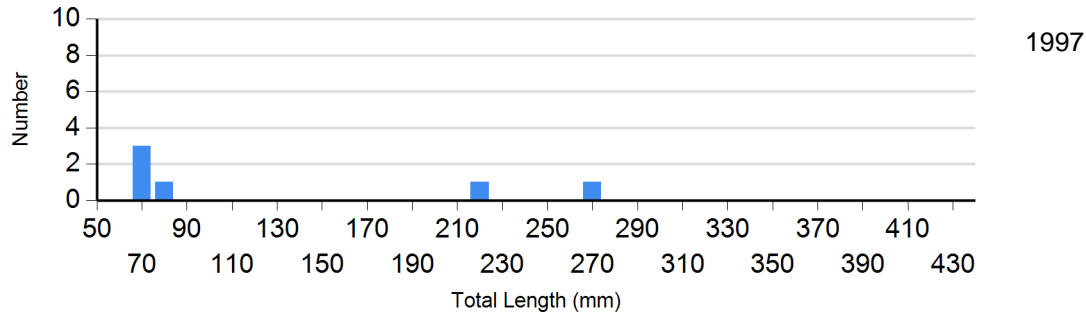
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Species: Green Sunfish



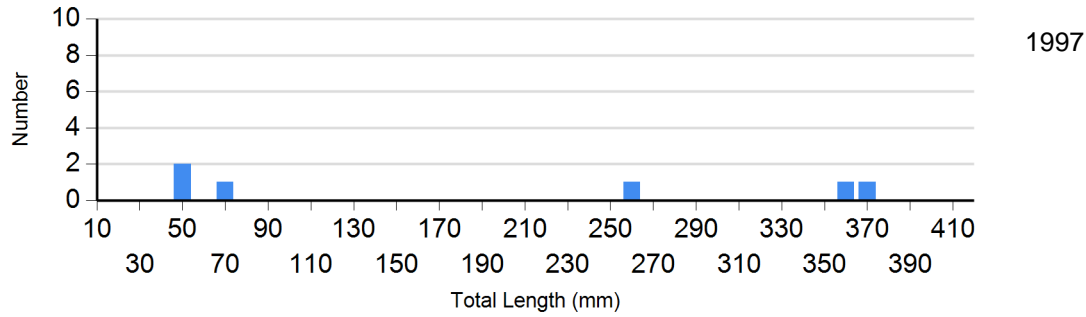
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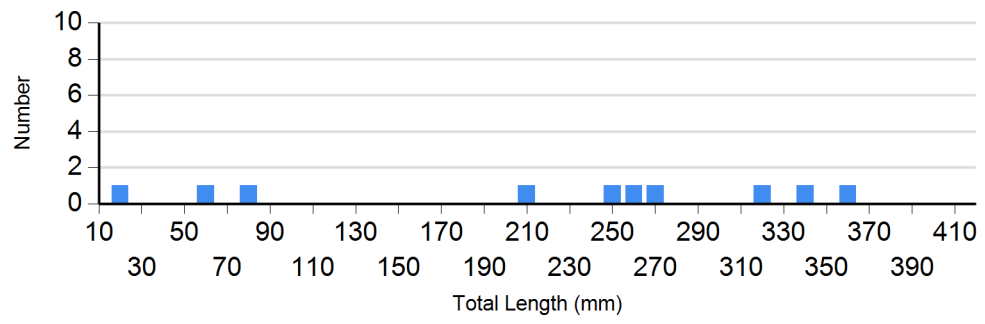


Site: 35
Species: Longnose Sucker



Site: 35
Species: White Sucker





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