

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Whitewood Creek, Lawrence County
09-0056-00
2005

Table 1. Population and Biomass Estimates for Whitewood Creek

Site Number: 515	Date Sampled: 05/03/2005	Conductivity (umhos/cm): 470
Site Midpoint (Latitude, Longitude): 44.41178603, -103.69411585	Site Length (m): 100	pH: 9.3
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 5.4	Water Temperature (C): 8.0
Stream Classification: None	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)
Longnose Dace	All	366	365	396	366	6782	75	3650	2747	66.61	5873	65.4	11.0
Mountain Sucker	All	5	4	7	5	74	1	40	30	0.93	64	115.2	14.0

Site Number: 539	Date Sampled: 05/03/2005	Conductivity (umhos/cm): 500
Site Midpoint (Latitude, Longitude): 44.39558878, -103.70337461	Site Length (m): 100	pH: 9.3
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 5.6	Water Temperature (C): 10.0
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	3	3	4	3	53	3	30	22	3.01	48	182.0	63.3
Brown Trout	>=200mm	16	16	16	16	284	83	160	115	73.89	257	287.3	291.1
Brown Trout	All	19	19	19	19	338	86	190	137	76.91	306	270.7	255.1
Longnose Dace	All	284	283	305	284	5029	29	2830	2037	25.62	4553	68.8	5.7
Mountain Sucker	All	47	59	78	47	1048	9	590	425	8.27	949	95.4	8.8

Site Number: 539
Site Midpoint (Latitude, Longitude): 44.39558878, -103.70337461
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 09/27/2005
Site Length (m): 100
Mean Width (m): 5.2
Number of Pass: 3
Conductivity (umhos/cm): 650
pH: 9.3
Water Temperature (C): 14.5
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	31	31	32	31	599	14	310	243	12.69	499	128.5	23.7
Brown Trout	>=200mm	13	13	14	13	251	123	130	102	109.99	209	337.8	490.2
Brown Trout	All	44	44	45	44	851	137	440	344	122.68	708	190.3	161.5
Hatchery Rainbow Trout	<200mm	4	3	6	4	58	1	30	23	0.96	48	116.0	18.5
Hatchery Rainbow Trout	>=200mm	4	4	7	4	77	40	40	31	35.35	64	349.5	512.0
Hatchery Rainbow Trout	All	8	7	12	8	135	36	70	55	32.05	113	232.8	265.3
Longnose Dace	All	51	51	51	51	986	5	510	399	4.25	821	71.1	4.8
Mountain Sucker	All	45	45	46	45	870	9	450	352	8.09	724	96.8	10.4

Site Number: 558
Site Midpoint (Latitude, Longitude): 44.38550441, -103.71870274
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 05/04/2005
Site Length (m): 100
Mean Width (m): 5.7
Number of Pass: 3
Conductivity (umhos/cm): 390
pH: 9.1
Water Temperature (C): 11.2
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	5	5	5	5	88	2	50	36	1.39	80	120.6	17.6
Brown Trout	>=200mm	15	15	15	15	264	50	150	107	44.28	241	259.7	187.5
Brown Trout	All	20	20	20	20	353	51	200	143	45.66	322	224.9	145.1

Longnose Dace	All	40	39	50	40	688	2	390	278	1.65	628	64.7	2.7
Mountain Sucker	All	16	15	20	16	264	1	150	107	1.27	241	80.1	5.4

Site Number: 558

Site Midpoint (Latitude, Longitude): 44.38550441, -103.71870274

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0, BR1

Date Sampled: 09/27/2005

Site Length (m): 100

Mean Width (m): 5.5

Number of Pass: 3

Conductivity (umhos/cm): 550

pH: 9.0

Water Temperature (C): 8.0

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)
Brook Trout	<200mm	1	1	1	1	18	0	10	7	0.10	16	84.0	6.0
Brook Trout	All	1	1	1	1	18	0	10	7	0.10	16	84.0	6.0
Brown Trout	<200mm	168	174	181	168	3169	35	1740	1283	31.38	2800	95.8	11.1
Brown Trout	>=200mm	21	21	21	21	382	90	210	155	79.95	338	275.6	234.1
Brown Trout	All	189	194	200	189	3533	127	1940	1431	113.17	3121	115.8	35.9
Hatchery Rainbow Trout	>=200mm	11	11	11	11	200	49	110	81	43.66	177	290.9	244.1
Hatchery Rainbow Trout	All	11	11	11	11	200	49	110	81	43.66	177	290.9	244.1
Longnose Dace	All	38	41	48	38	747	3	410	302	2.67	660	72.6	4.0
Mountain Sucker	All	19	19	20	19	346	6	190	140	5.51	306	112.5	17.8

Site Number: 595

Site Midpoint (Latitude, Longitude): 44.36440718, -103.73466807

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 05/04/2005

Site Length (m): 100

Mean Width (m): 4.4

Number of Pass: 3

Conductivity (umhos/cm): 300

pH: 9.0

Water Temperature (C): 9.0

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	30	30	32	30	690	24	300	279	21.49	483	142.0	34.9
Brown Trout	>=200mm	41	41	42	41	942	120	410	382	107.16	660	234.7	127.4
Brown Trout	All	71	72	75	71	1655	146	720	670	130.46	1158	195.5	88.3
Longnose Dace	All	1	1	2	1	23	0	10	9	0.06	16	70.0	3.0

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, 1995-2005

Site 515

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 21, 1995	1	1-1	
Brown Trout >=200mm	Sep 21, 1995	28	28-28	BR2
Longnose Dace	May 03, 2005	365	366-396	
Mountain Sucker	Sep 21, 1995	140	140-142	
	May 03, 2005	4	5-7	

Site 539

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 03, 1998	1	1-1	

Brook Trout >=200mm	Jun 03, 1998	3	3-3	BK3
Brown Trout <200mm	Sep 20, 1995	1	1-1	
	Jun 03, 1998	11	11-13	
	Sep 11, 1998	40	33-54	
	May 03, 2005	3	3-4	
	Sep 27, 2005	31	31-32	
Brown Trout >=200mm	Sep 20, 1995	20	20-21	BR2
	Jun 03, 1998	31	31-32	BR1
	Sep 11, 1998	45	32-72	BR1
	May 03, 2005	16	16-16	BR2
	Sep 27, 2005	13	13-14	BR2
Hatchery Rainbow Trout <200mm	Sep 27, 2005	3	4-6	
Hatchery Rainbow Trout >=200mm	Sep 27, 2005	4	4-7	
Longnose Dace	Jun 03, 1998	184	185-206	
	Sep 11, 1998	182	154-210	
	May 03, 2005	283	284-305	

Longnose Dace	Sep 27, 2005	51	51-51
Mountain Sucker	Sep 20, 1995	154	146-163
	Jun 03, 1998	287	109-616
	Sep 11, 1998	89	57-141
	May 03, 2005	59	47-78
	Sep 27, 2005	45	45-46

Site 558

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 23, 1996	1	1-2	
	Oct 10, 1997	1	1-1	
	Jun 03, 1998	3	3-3	
	Sep 10, 1998	1	1-2	
	Sep 19, 2000	10	9-15	
	Sep 27, 2005	1	1-1	
Brook Trout >=200mm	Jun 03, 1998	3	3-3	BK3
	Sep 10, 1998	1	1-1	BK3

Brook Trout >=200mm	Jun 22, 1999	2	2-2	BK3
Brown Trout <200mm	Sep 07, 1995	27	25-32	
	Sep 23, 1996	101	83-122	
	Oct 10, 1997	77	73-83	
	Jun 03, 1998	14	14-14	
	Sep 10, 1998	67	53-88	
	Jun 22, 1999	28	28-30	
	Sep 16, 1999	122	110-135	
	Jun 28, 2000	58	57-61	
	Sep 19, 2000	98	87-111	
	May 04, 2005	5	5-5	
	Sep 27, 2005	174	168-181	
Brown Trout >=200mm	Sep 07, 1995	28	28-29	BR1
	Sep 23, 1996	38	38-39	BR1
	Oct 10, 1997	58	57-61	BR1
	Jun 03, 1998	39	37-44	BR1

Brown Trout >=200mm	Sep 10, 1998	66	65-69	BR1
	Jun 22, 1999	31	30-35	BR2
	Sep 16, 1999	41	41-42	BR1
	Jun 28, 2000	50	49-53	BR1
	Sep 19, 2000	84	78-93	BR1
	May 04, 2005	15	15-15	BR2
	Sep 27, 2005	21	21-21	BR1
Hatchery Rainbow Trout >=200mm	Sep 27, 2005	11	11-11	
Longnose Dace	Sep 07, 1995	8	7-14	
	Sep 23, 1996	8	8-9	
	Oct 10, 1997	10	11-13	
	Jun 03, 1998	20	10-70	
	Sep 10, 1998	61	37-112	
	Sep 19, 2000	8	8-8	
	May 04, 2005	39	40-50	
	Sep 27, 2005	41	38-48	

Mountain Sucker	Sep 07, 1995	20	17-29
	Sep 23, 1996	19	16-28
	Oct 10, 1997	20	14-40
	Jun 03, 1998	90	23-490
	Sep 10, 1998	51	47-59
	Jun 22, 1999	28	13-95
	Sep 16, 1999	16	15-20
	Jun 28, 2000	7	7-8
	Sep 19, 2000	6	6-7
	May 04, 2005	15	16-20
	Sep 27, 2005	19	19-20

Site 595

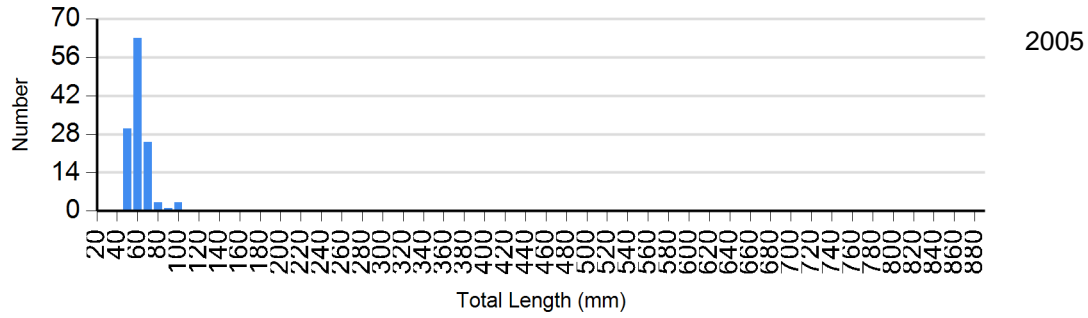
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	May 04, 2005	30	30-32	
Brown Trout >=200mm	May 04, 2005	41	41-42	BR1
Longnose Dace	May 04, 2005	1	1-2	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

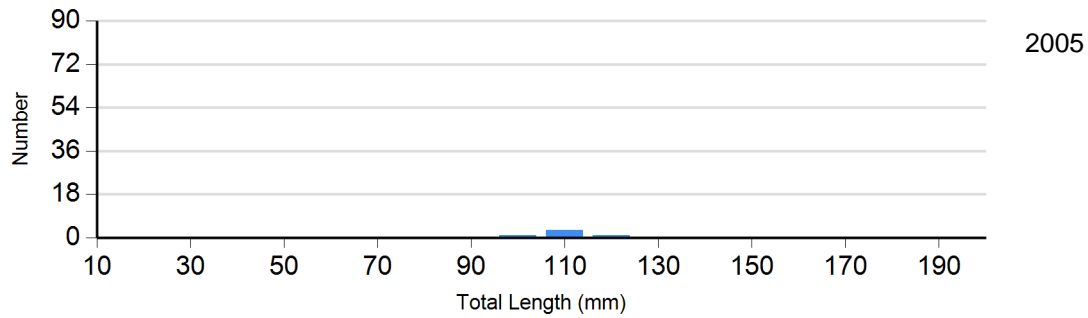
Site: 515

Species: Longnose Dace



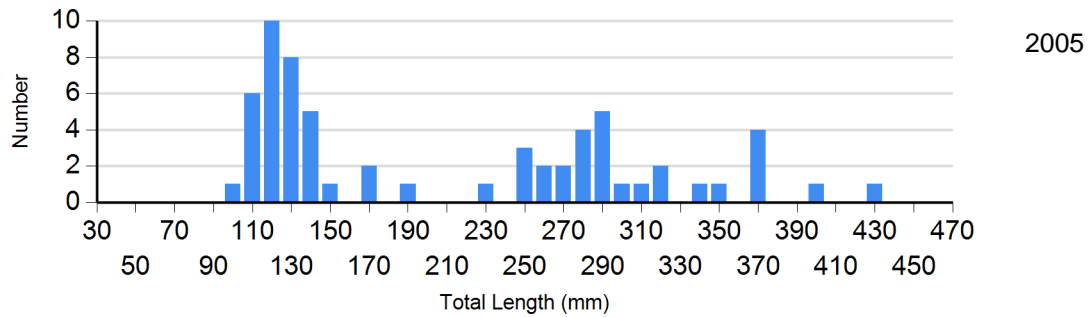
Site: 515

Species: Mountain Sucker

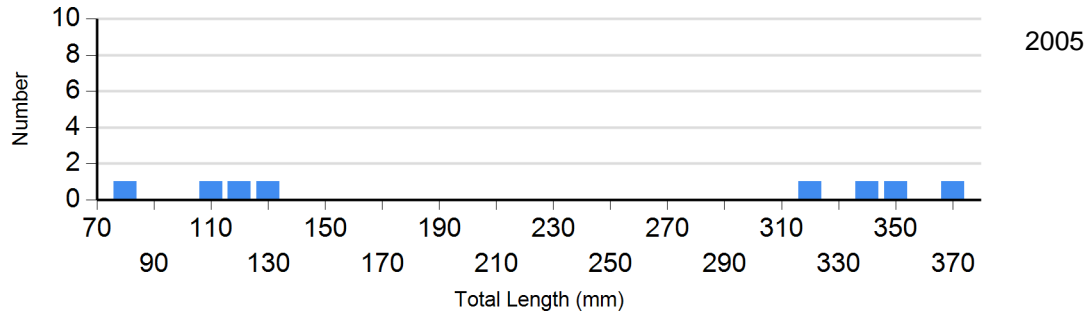


Site: 539

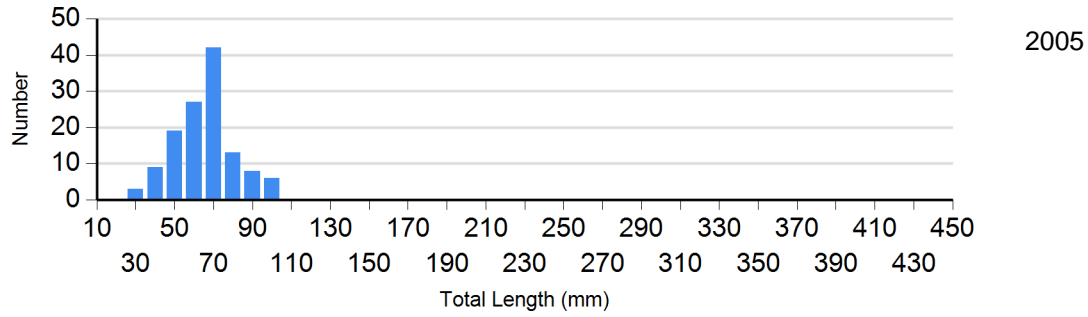
Species: Brown Trout



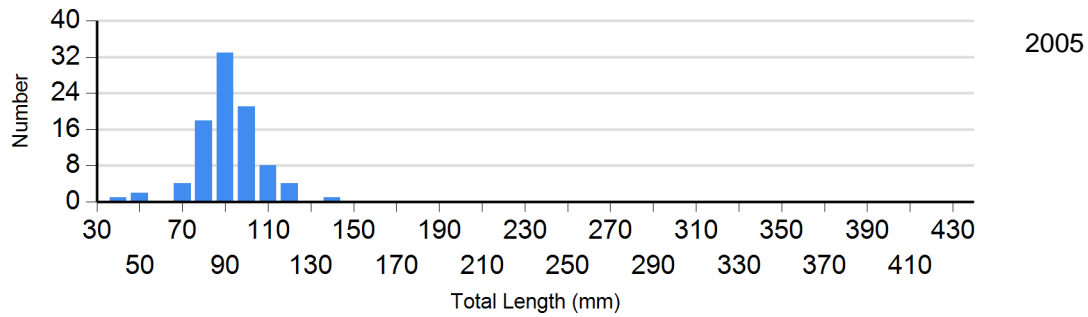
Site: 539
Species: Hatchery Rainbow Trout



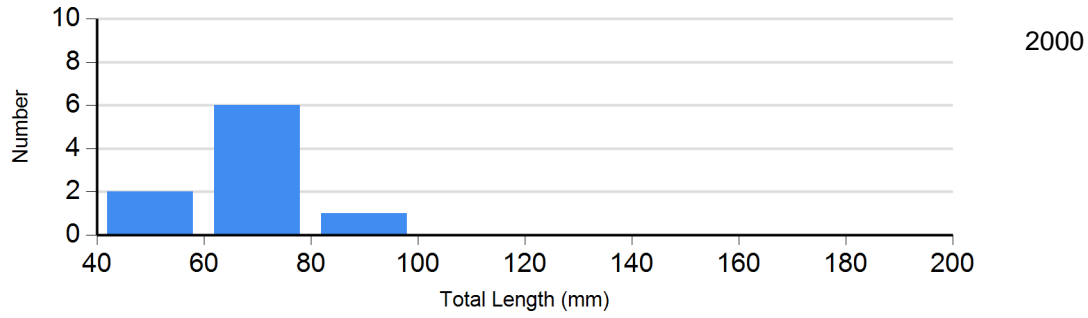
Site: 539
Species: Longnose Dace



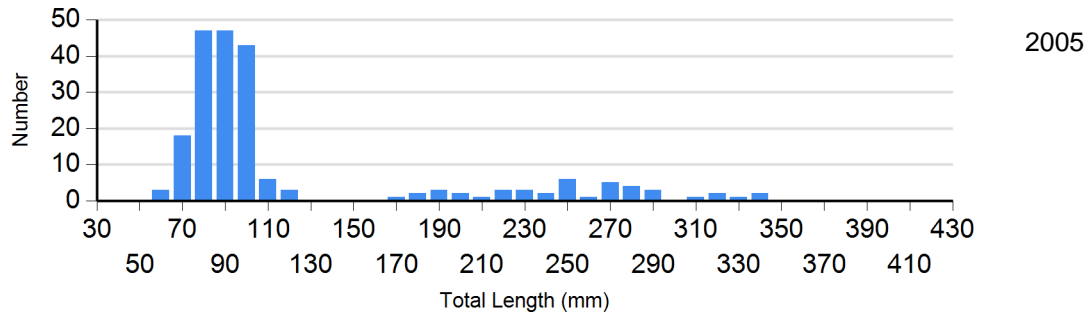
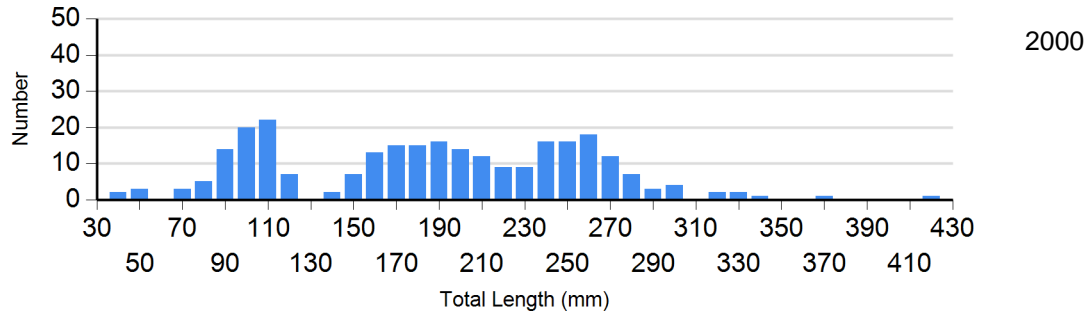
Site: 539
Species: Mountain Sucker



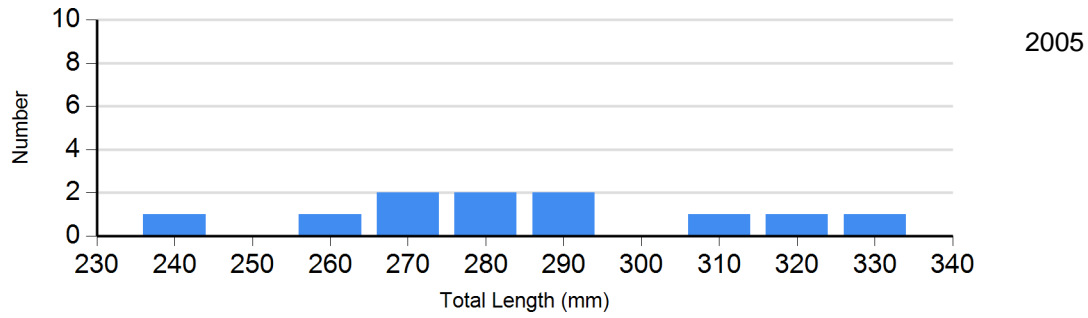
Site: 558
Species: Brook Trout



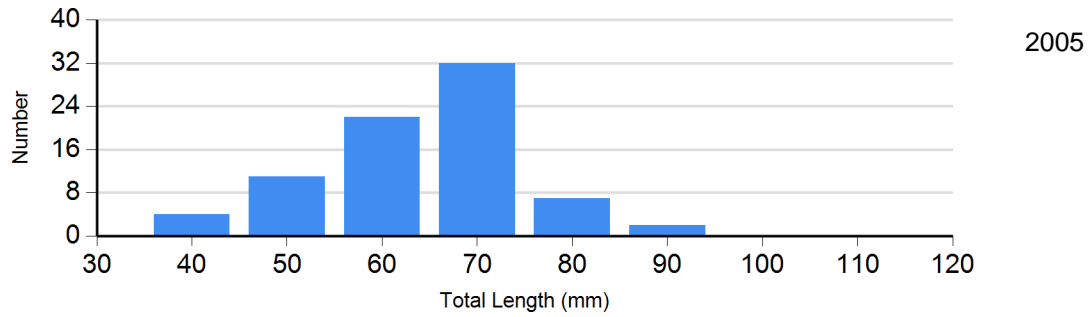
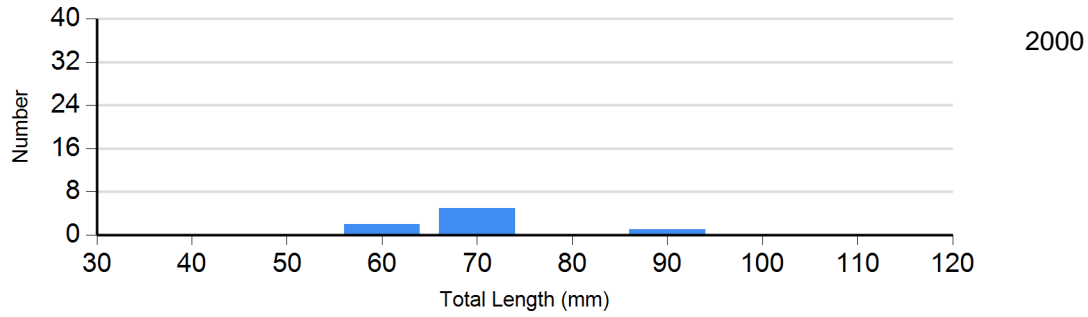
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Species: Brown Trout



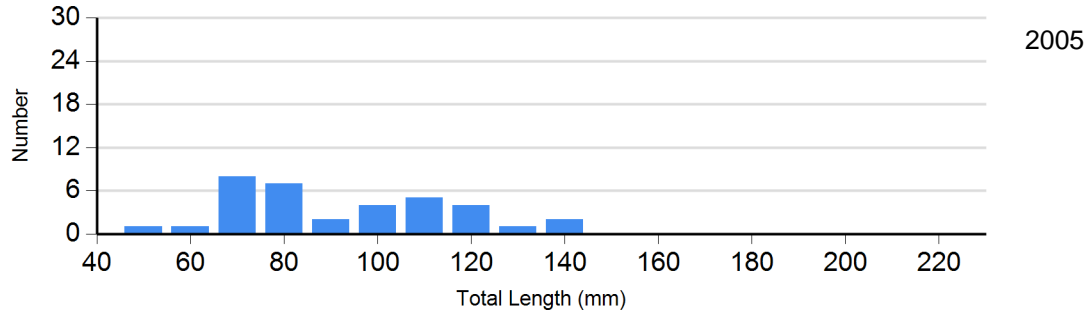
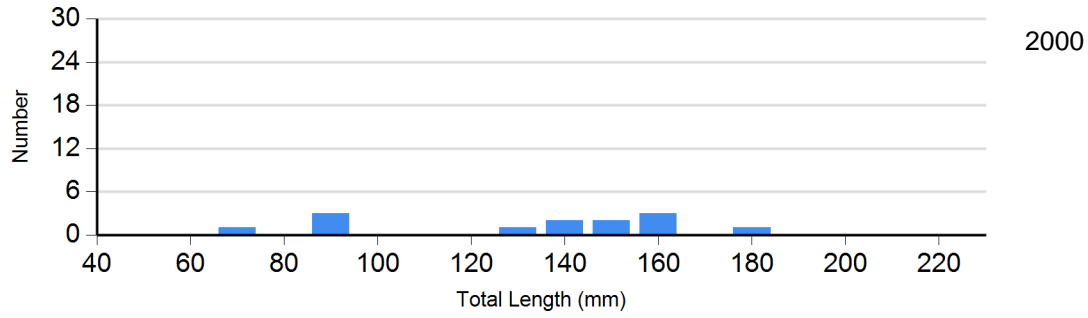
Site: 558
Species: Hatchery Rainbow Trout



Site: 558
Species: Longnose Dace



Site: 558
Species: Mountain Sucker



Site: 595
Species: Brown Trout

