

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2004

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 190	Date Sampled: 10/07/2004	Conductivity (umhos/cm): 290
Site Midpoint (Latitude, Longitude): 44.48929462, -103.86435821	Site Length (m): 100	pH: 9.0
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 6.6	Water Temperature (C): 8.0
Stream Classification: BR1	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	15	15	16	15	228	7	150	92	6.64	241	134.3	32.7
Brown Trout	>=200mm	129	130	133	129	1972	498	1300	799	444.46	2092	290.6	252.4
Brown Trout	All	144	145	148	144	2200	505	1450	891	450.78	2333	274.3	229.5

Site Number: 340	Date Sampled: 10/05/2004	Conductivity (umhos/cm): 260
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328	Site Length (m): 100	pH: 8.9
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 9.3	Water Temperature (C): 10.0
Stream Classification: BR2, RB1	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	67	102	153	67	1095	27	1020	444	24.17	1641	115.8	24.7
Brown Trout	>=200mm	34	34	35	34	365	74	340	148	66.05	547	263.7	202.6
Brown Trout	All	101	116	132	101	1246	105	1160	504	94.09	1866	165.6	84.6
Rainbow Trout	<200mm	226	265	293	237	2846	34	2650	1152	30.20	4264	83.3	11.9
Rainbow Trout	>=200mm	36	36	37	36	387	92	360	157	82.49	579	273.0	239.0
Rainbow Trout	All	262	295	318	272	3168	143	2950	1283	127.62	4747	109.4	45.1

Site Number: 363
Site Midpoint (Latitude, Longitude): 44.39413080, -103.90849151
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1, RB1

Date Sampled: 10/06/2004 **Conductivity (umhos/cm):** 290
Site Length (m): 100 **pH:** 9.0
Mean Width (m): 8.2 **Water Temperature (C):** 8.0
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	79	81	85	79	986	30	810	399	26.55	1303	129.0	30.2
Brown Trout	>=200mm	283	292	300	284	3553	784	2920	1439	699.63	4698	269.3	220.5
Brown Trout	All	362	373	382	364	4539	812	3730	1838	725.35	6002	238.6	179.0
Rainbow Trout	>=200mm	21	21	22	21	256	70	210	103	62.80	338	299.8	275.2
Rainbow Trout	All	21	21	22	21	256	70	210	103	62.80	338	299.8	275.2

Site Number: 418
Site Midpoint (Latitude, Longitude): 44.36357703, -103.92915307
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 10/06/2004 **Conductivity (umhos/cm):** 280
Site Length (m): 100 **pH:** 8.9
Mean Width (m): 7.0 **Water Temperature (C):** 6.0
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	64	73	86	64	1039	26	730	421	23.16	1175	118.9	25.0
Brown Trout	>=200mm	114	117	122	114	1665	260	1170	674	231.89	1883	248.2	156.0
Brown Trout	All	178	189	200	178	2690	293	1890	1089	261.47	3041	201.7	108.9

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 Spearfish Creek, 1994-2004

Site 190

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 09, 1996	190	176-204	
	Oct 14, 1998	92	83-103	
	Oct 26, 1999	31	30-34	
	Oct 07, 2004	15	15-16	
Brown Trout >=200mm	Oct 09, 1996	58	53-66	BR1
	Oct 14, 1998	219	207-231	BR1
	Oct 26, 1999	144	129-159	BR1

Brown Trout >=200mm

Oct 07, 2004

130

129-133

BR1

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 12, 1994	49	44-58	
	Oct 17, 1995	30	29-34	
	Oct 08, 1996	165	130-200	
	Oct 25, 1999	116	76-171	
	Oct 23, 2000	162	140-184	
	Oct 22, 2001	78	72-87	
	Oct 31, 2002	142	90-209	
	Sep 22, 2003	57	50-68	
	Oct 05, 2004	102	67-153	
Brown Trout >=200mm	Oct 12, 1994	40	39-43	BR1
	Oct 17, 1995	51	51-52	BR1
	Oct 08, 1996	48	48-49	BR1
	Oct 25, 1999	98	85-113	BR1

Brown Trout >=200mm	Oct 23, 2000	114	105-125	BR1
	Oct 22, 2001	127	126-130	BR1
	Oct 31, 2002	107	104-112	BR1
	Sep 22, 2003	77	77-79	BR1
	Oct 05, 2004	34	34-35	BR2
Rainbow Trout <200mm	Oct 12, 1994	137	88-200	
	Oct 17, 1995	33	34-41	
	Oct 08, 1996	27	25-33	
	Oct 25, 1999	22	15-44	
	Oct 23, 2000	37	35-42	
	Oct 22, 2001	43	41-48	
	Oct 31, 2002	18	13-35	
	Sep 22, 2003	220	215-226	
	Oct 05, 2004	265	237-293	
Rainbow Trout >=200mm	Oct 12, 1994	38	37-42	RB1
	Oct 17, 1995	27	27-29	RB1

Rainbow Trout >=200mm	Oct 08, 1996	34	31-41	RB1
	Oct 25, 1999	39	37-44	RB1
	Oct 23, 2000	46	40-57	RB1
	Oct 22, 2001	53	46-65	RB1
	Oct 31, 2002	63	61-67	RB1
	Sep 22, 2003	45	45-46	RB1
	Oct 05, 2004	36	36-37	RB1

Site 363

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 06, 2004	81	79-85	
Brown Trout >=200mm	Oct 06, 2004	292	284-300	BR1
Rainbow Trout >=200mm	Oct 06, 2004	21	21-22	RB1

Site 418

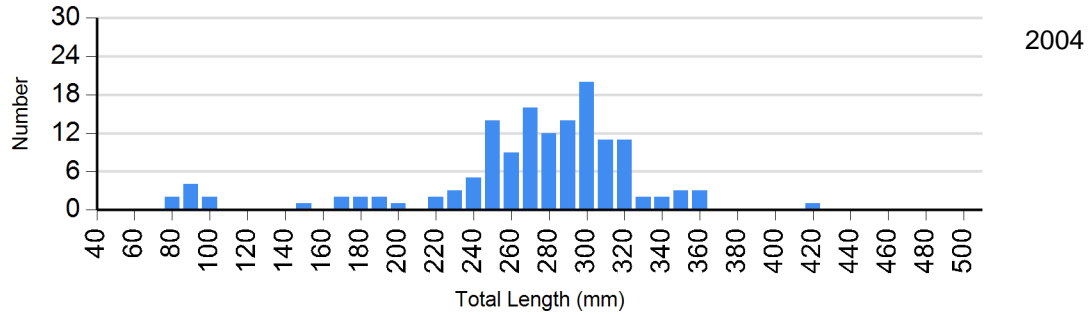
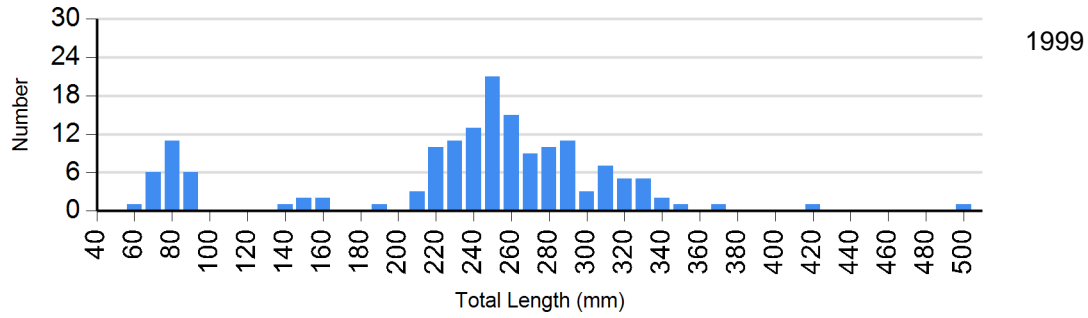
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 17, 1998	137	111-164	
	Oct 06, 2004	73	64-86	
Brown Trout >=200mm	Jun 17, 1998	70	60-84	BR1

Length Frequency Distribution

Length frequency histogram of species sampled by year.

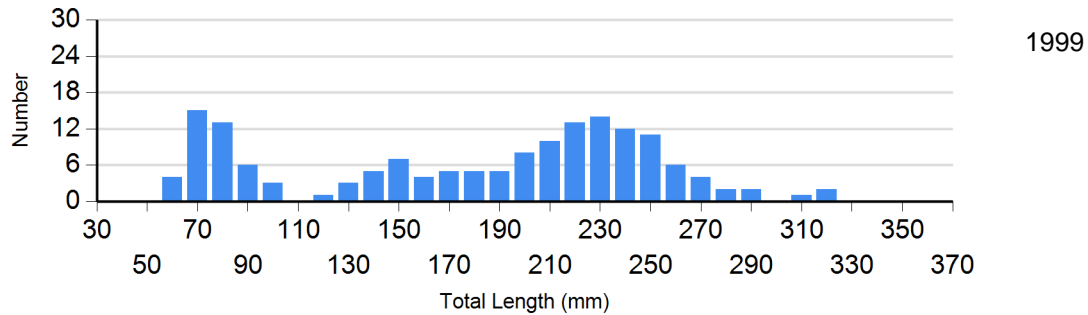
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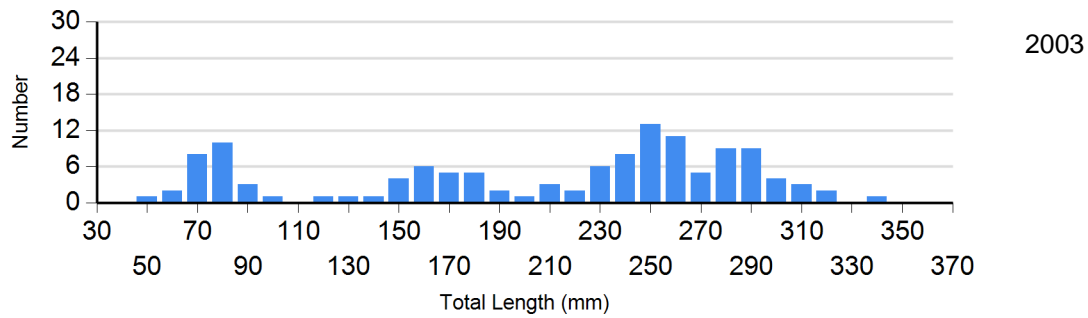
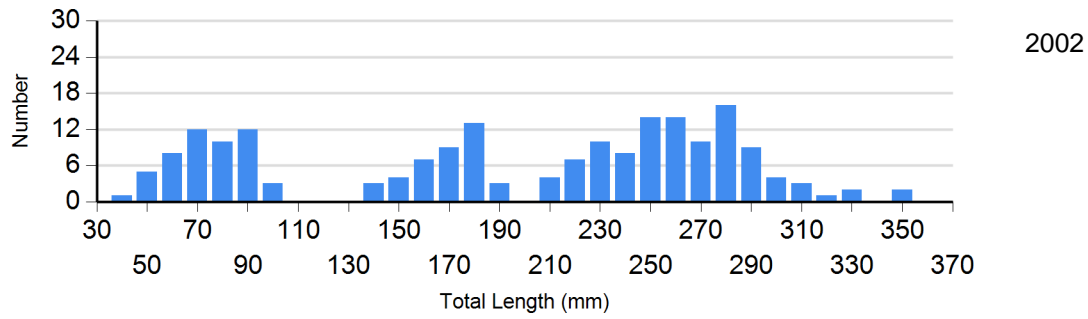
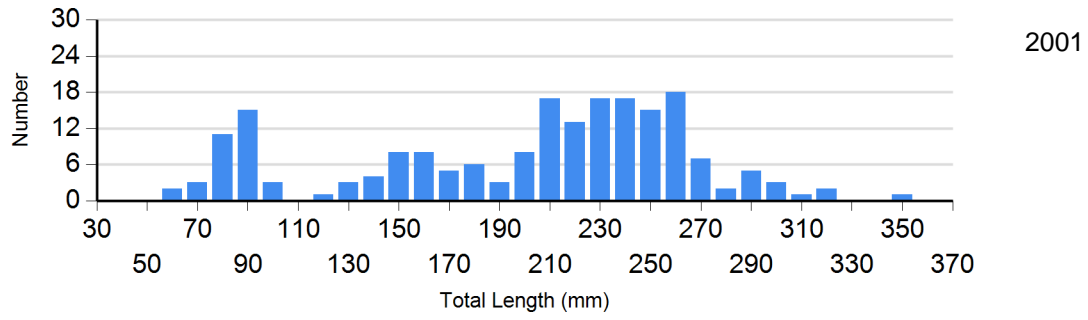
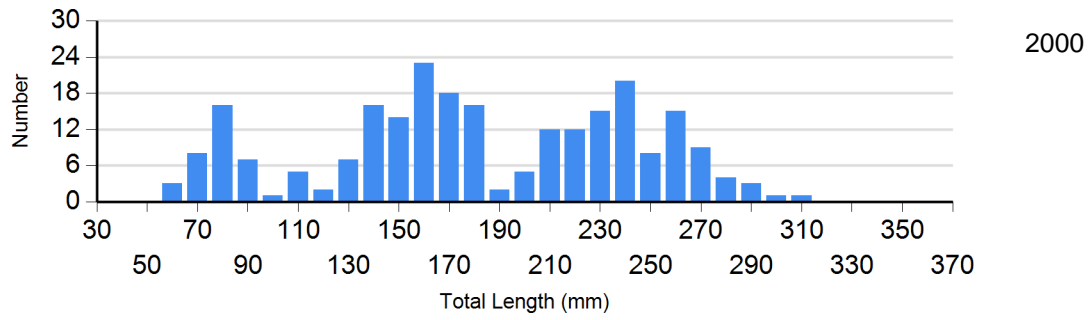
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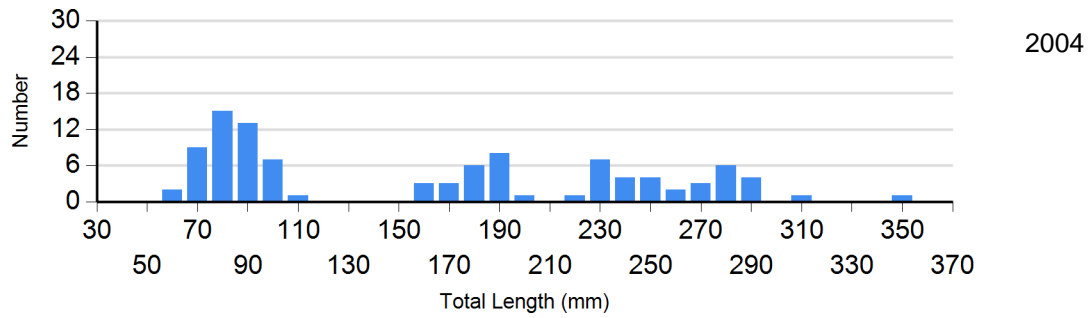


Site: 340

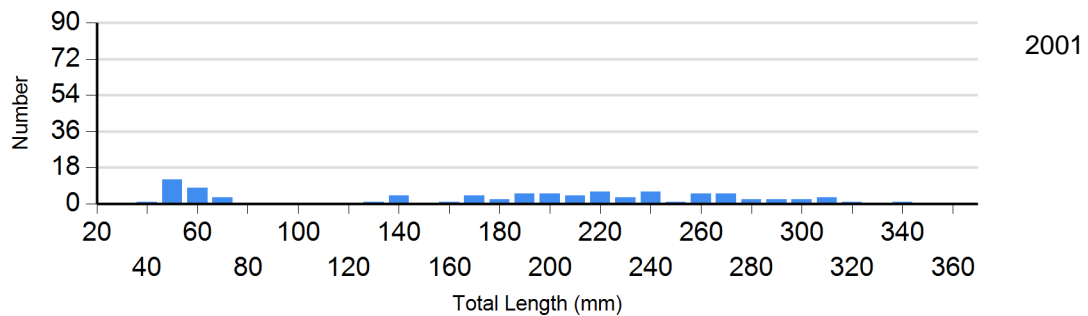
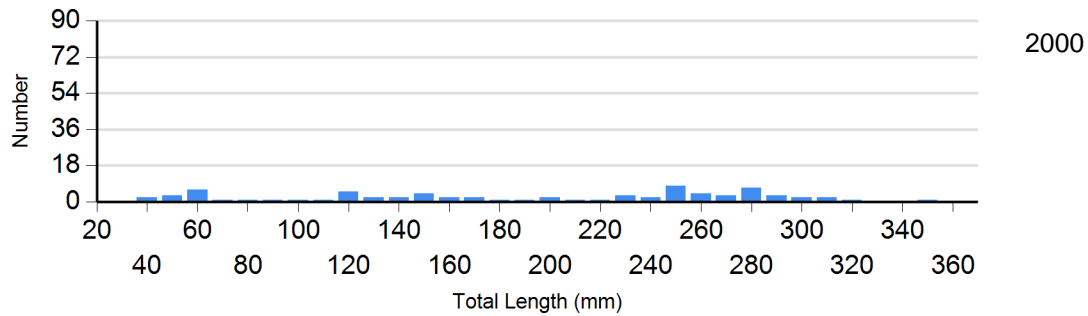
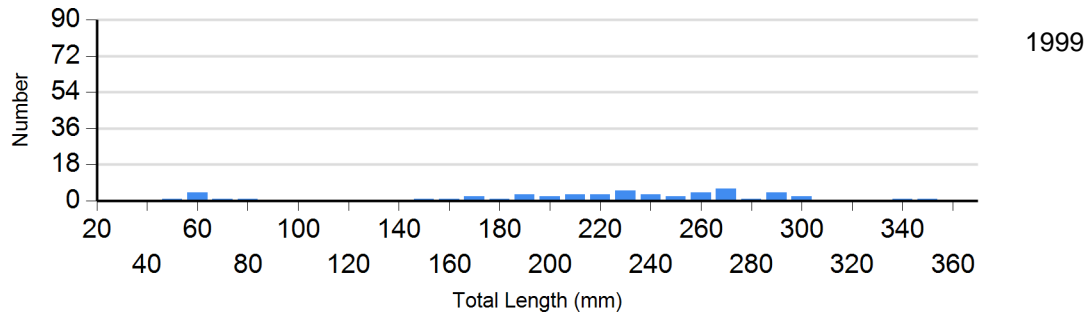
Species: Brown Trout

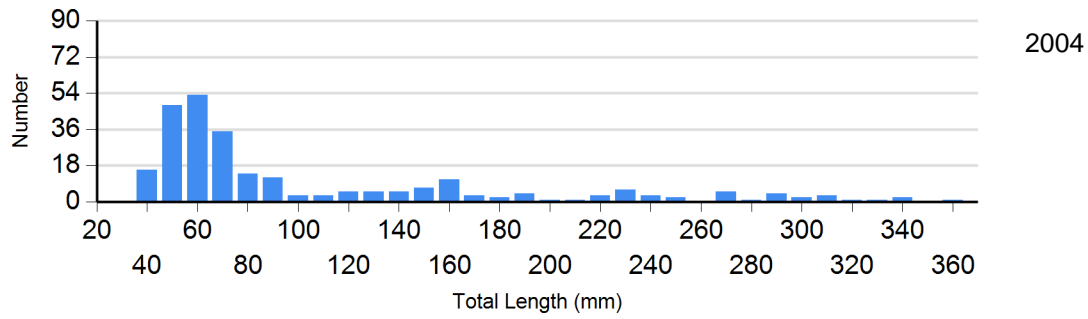
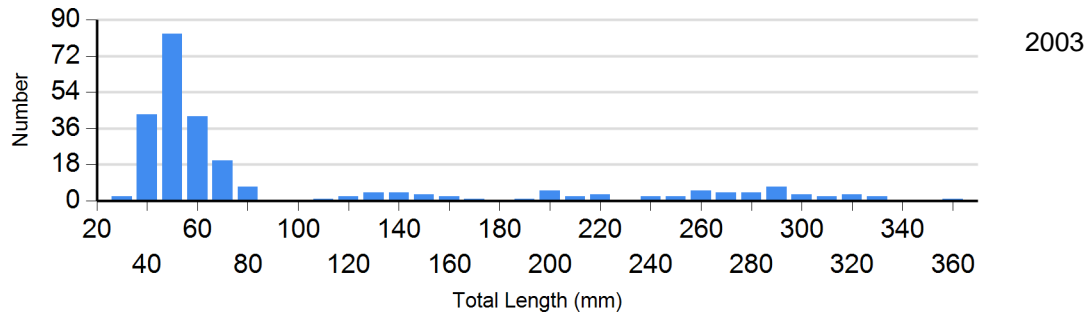
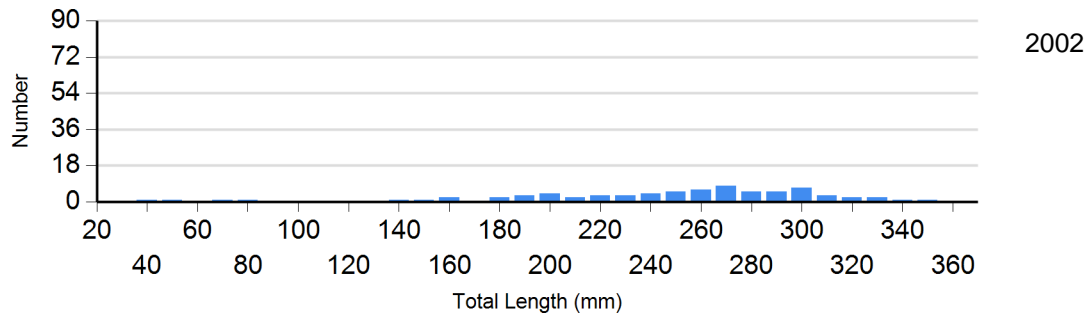




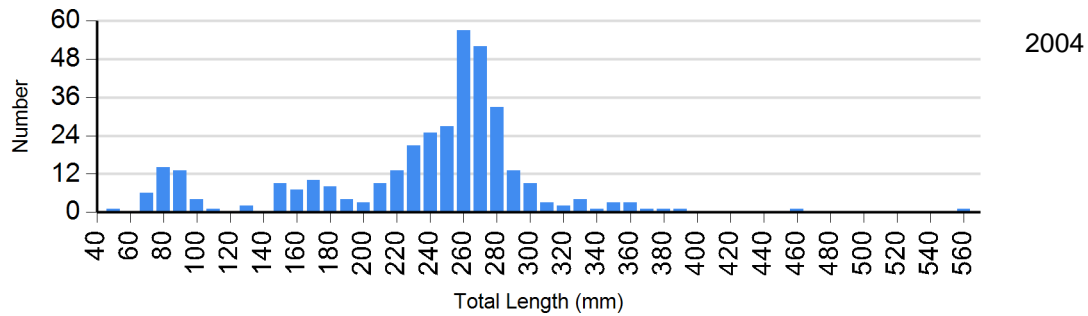


Site: 340
Species: Rainbow Trout

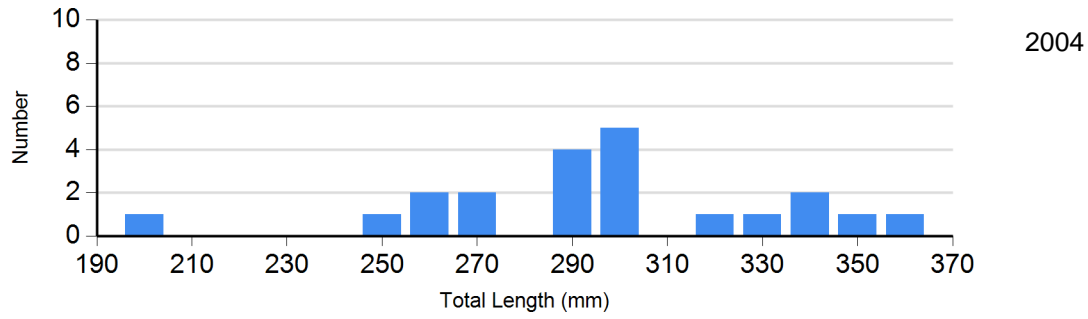




Site: 363
Species: Brown Trout



Site: 363
Species: Rainbow Trout



Site: 418
Species: Brown Trout

