

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2003

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 334	Date Sampled: 09/22/2003	Conductivity (umhos/cm): 280
Site Midpoint (Latitude, Longitude): 44.40606069, -103.89803263	Site Length (m): 100	pH: 8.7
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.3	Water Temperature (C): 10.0
Stream Classification: BK0, BR1, 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)
Brook Trout	<200mm	1	1	5	1	12	0	10	5	0.05	16	88.0	5.0
Brook Trout	All	1	1	5	1	12	0	10	5	0.05	16	88.0	5.0
Brown Trout	<200mm	61	64	69	61	772	22	640	313	19.82	1030	124.4	28.8
Brown Trout	>=200mm	80	81	84	80	977	188	810	396	167.55	1303	264.4	192.1
Brown Trout	All	141	145	150	141	1749	214	1450	708	190.63	2333	203.8	122.1
Rainbow Trout	<200mm	84	89	96	84	1073	10	890	435	8.89	1432	81.7	9.3
Rainbow Trout	>=200mm	43	50	62	43	603	147	500	244	131.46	805	283.8	244.1
Rainbow Trout	All	127	139	152	127	1677	149	1390	679	132.92	2237	150.2	88.8

Site Number: 340	Date Sampled: 09/22/2003	Conductivity (umhos/cm): 300
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328	Site Length (m): 100	pH: 9.1
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 9.2	Water Temperature (C): 10.0
Stream Classification: BR1, 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	50	57	68	50	617	18	570	250	15.94	917	123.5	29.0

Brown Trout	>=200mm	77	77	79	77	833	175	770	337	156.51	1239	267.9	210.5
Brown Trout	All	127	132	138	127	1428	198	1320	578	177.20	2124	211.1	139.0
Rainbow Trout	<200mm	215	220	226	215	2380	12	2200	964	10.41	3540	64.4	4.9
Rainbow Trout	>=200mm	45	45	46	45	487	110	450	197	97.77	724	272.5	225.0
Rainbow Trout	All	260	265	271	260	2866	123	2650	1161	110.02	4264	100.5	43.0

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 Spearfish Creek, 1993-2003

Site 334

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 06, 1993	1	1-1	
	Oct 12, 1994	6	6-9	
	Oct 17, 1995	3	3-5	
	Oct 08, 1996	4	4-6	
	Oct 23, 2000	2	2-4	
	Oct 22, 2001	3	3-4	
	Sep 22, 2003	1	1-5	

Brook Trout >=200mm	Oct 06, 1993	1	1-2	BK3
	Oct 17, 1995	1	1-1	BK3
Brown Trout <200mm	Oct 06, 1993	64	61-69	
	Oct 12, 1994	96	89-105	
	Oct 17, 1995	26	24-32	
	Oct 08, 1996	462	109-1501	
	Oct 23, 2000	178	167-189	
	Oct 22, 2001	102	90-116	
	Oct 21, 2002	153	94-229	
	Sep 22, 2003	64	61-69	
Brown Trout >=200mm	Oct 06, 1993	94	92-98	BR1
	Oct 12, 1994	85	81-91	BR1
	Oct 17, 1995	36	33-43	BR1
	Oct 08, 1996	24	24-24	BR2
	Oct 23, 2000	78	69-90	BR1
	Oct 22, 2001	119	116-124	BR1

Brown Trout >=200mm	Oct 21, 2002	116	100-134	BR1
	Sep 22, 2003	81	80-84	BR1
Rainbow Trout <200mm	Oct 06, 1993	25	25-27	
	Oct 12, 1994	78	66-94	
	Oct 17, 1995	16	16-18	
	Oct 08, 1996	93	60-145	
	Oct 23, 2000	69	67-74	
	Oct 22, 2001	64	60-71	
	Oct 21, 2002	62	63-73	
	Sep 22, 2003	89	84-96	
Rainbow Trout >=200mm	Oct 06, 1993	55	54-59	RB1
	Oct 12, 1994	56	56-58	RB1
	Oct 17, 1995	15	15-17	RB1
	Oct 08, 1996	19	19-19	RB1
	Oct 23, 2000	36	35-39	RB1
	Oct 22, 2001	25	25-26	RB1

Rainbow Trout >=200mm	Oct 21, 2002	25	25-27	RB1
	Sep 22, 2003	50	43-62	RB1

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 07, 1993	6	6-8	
	Oct 12, 1994	7	7-9	
	Oct 17, 1995	3	3-5	
	Oct 08, 1996	5	5-7	
	Oct 22, 2001	2	2-4	
Brook Trout >=200mm	Oct 07, 1993	3	3-4	BK3
	Oct 17, 1995	1	1-2	BK3
	Oct 08, 1996	2	2-3	BK3
Brown Trout <200mm	Oct 07, 1993	77	47-133	
	Oct 12, 1994	49	44-58	
	Oct 17, 1995	30	29-34	
	Oct 08, 1996	165	130-200	

Brown Trout <200mm	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	
Brown Trout >=200mm	Oct 07, 1993	73	73-74	BR1
	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
	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
Rainbow Trout <200mm	Oct 07, 1993	52	50-56	
	Oct 12, 1994	137	88-200	

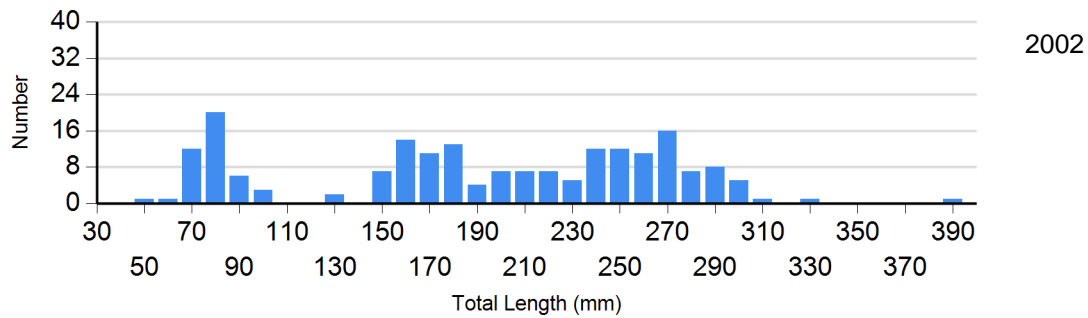
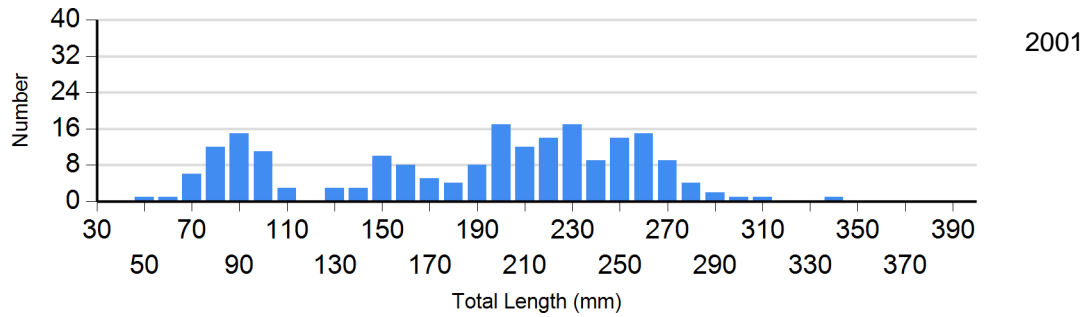
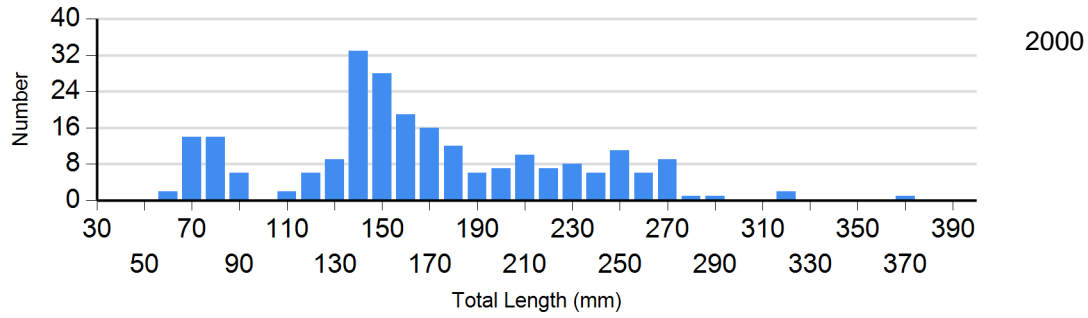
Rainbow Trout <200mm	Oct 17, 1995	33	34-41	
	Oct 08, 1996	27	25-33	
	Oct 25, 1999	22	15-44	
	Oct 23, 2000	37	35-42	
	Oct 22, 2001	43	41-48	
	Oct 31, 2002	18	13-35	
	Sep 22, 2003	220	215-226	
Rainbow Trout >=200mm	Oct 07, 1993	48	48-49	RB1
	Oct 12, 1994	38	37-42	RB1
	Oct 17, 1995	27	27-29	RB1
	Oct 08, 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

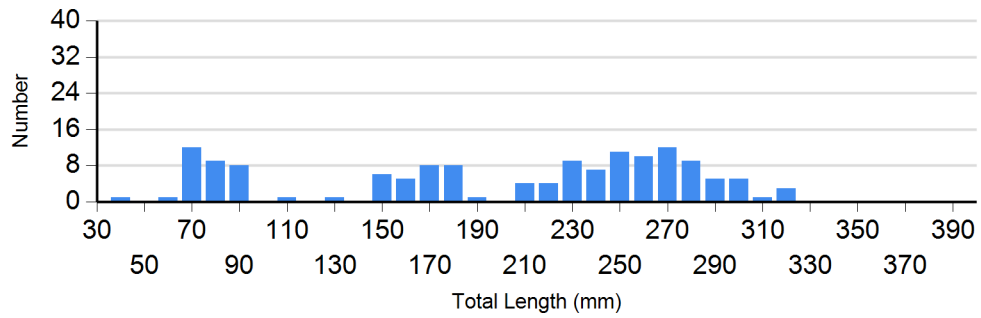
Length Frequency Distribution

Length frequency histogram of species sampled by year.

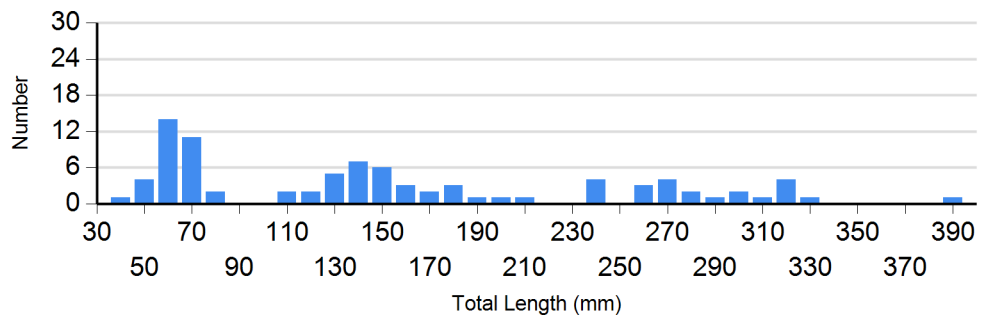
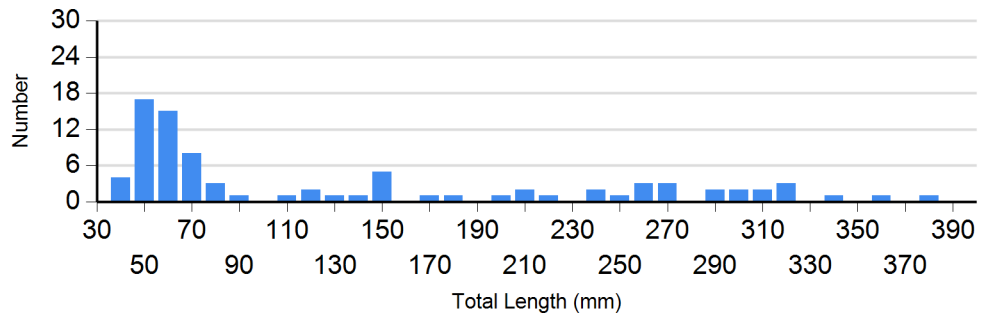
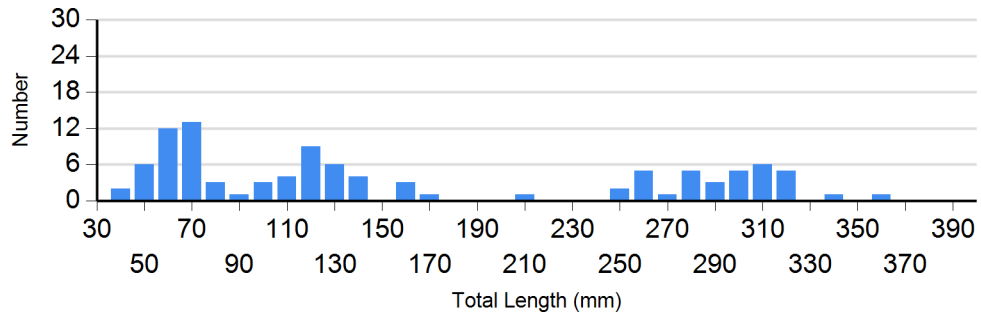
Site: 334

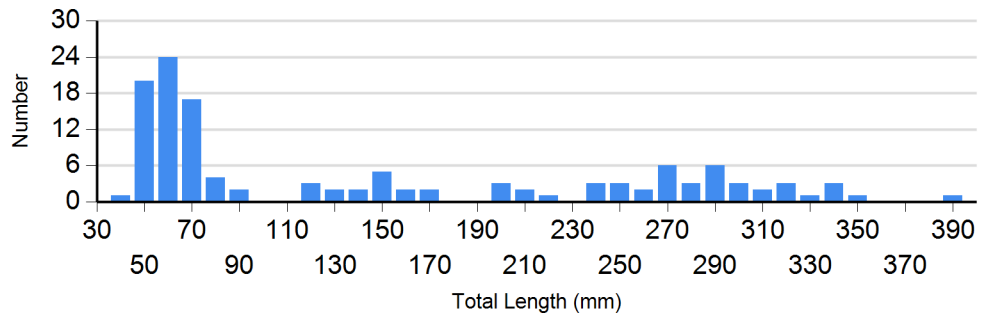
Species: Brown Trout



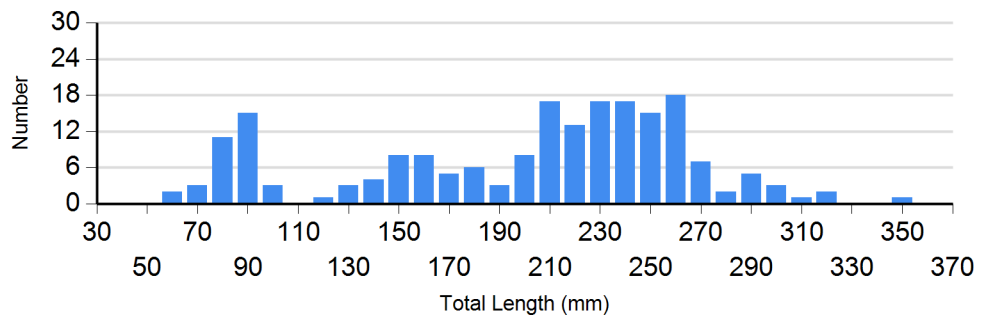
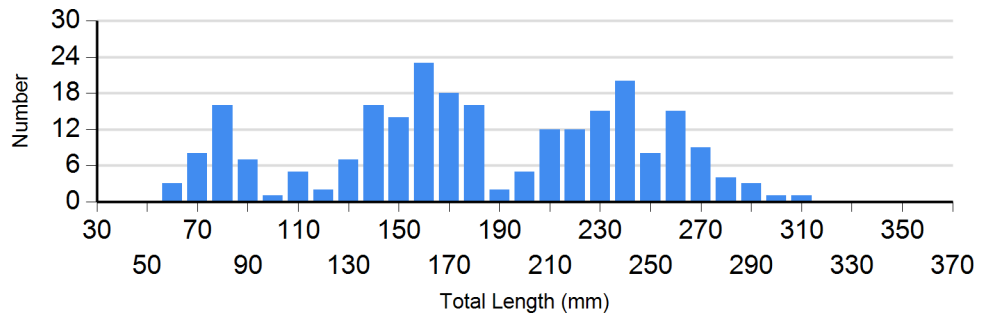
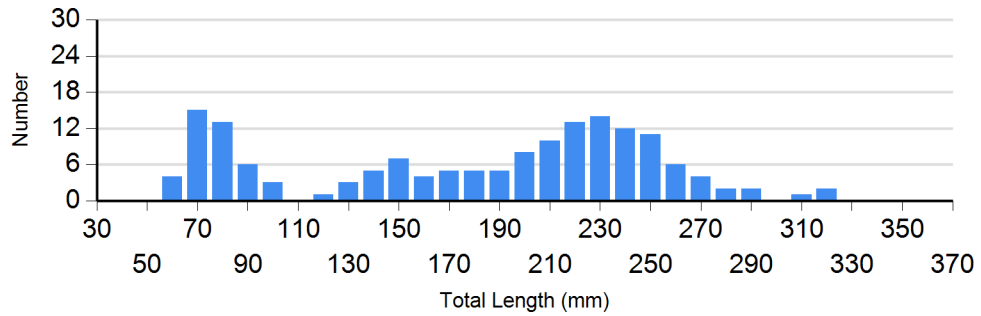


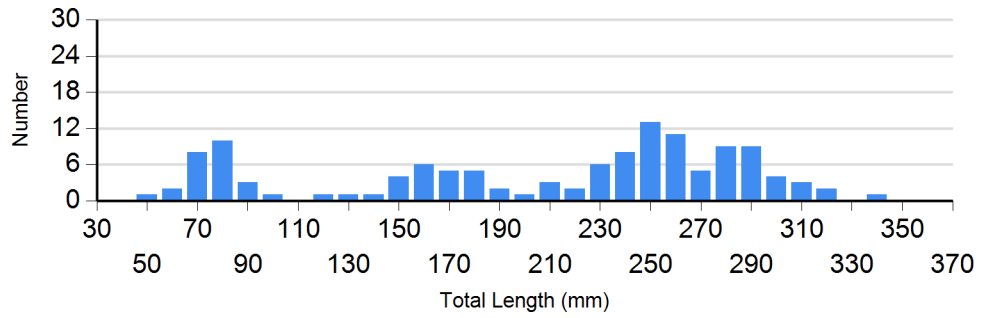
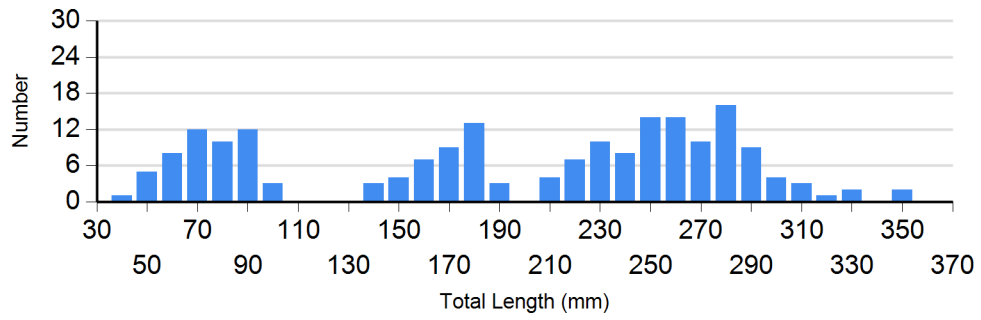
Site: 334
Species: Rainbow Trout





Site: 340
Species: Brown Trout





Site: 340
Species: Rainbow Trout

