

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2002

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 334	Date Sampled: 10/21/2002	Conductivity (umhos/cm): 270
Site Midpoint (Latitude, Longitude): 44.40606069, -103.89803263	Site Length (m): 100	pH: 8.6
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.1	Water Temperature (C): 5.0
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	94	153	229	94	1889	61	1530	765	54.75	2462	131.7	32.5
Brown Trout	>=200mm	100	116	134	100	1432	270	1160	580	241.30	1866	258.8	188.7
Brown Trout	All	194	256	304	208	3160	358	2560	1280	320.06	4119	197.2	113.4
Rainbow Trout	<200mm	63	62	73	63	765	17	620	310	14.93	998	108.4	21.9
Rainbow Trout	>=200mm	25	25	27	25	309	79	250	125	70.86	402	284.7	257.1
Rainbow Trout	All	88	159	263	88	1963	179	1590	795	159.58	2558	158.5	91.0

Site Number: 340	Date Sampled: 10/31/2002	Conductivity (umhos/cm): 248
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328	Site Length (m): 100	pH: 8.1
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.9	Water Temperature (C): 1.5
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	90	142	209	90	1596	45	1420	646	40.14	2285	118.7	28.2
Brown Trout	>=200mm	104	107	112	104	1202	252	1070	487	224.87	1722	266.3	209.5
Brown Trout	All	194	221	242	200	2483	313	2210	1006	279.08	3556	197.8	125.9

Rainbow Trout	<200mm	13	18	35	13	202	10	180	82	8.49	290	141.7	47.0
Rainbow Trout	>=200mm	61	63	67	61	708	158	630	287	141.00	1014	271.5	223.1
Rainbow Trout	All	74	78	85	74	876	170	780	355	151.92	1255	248.7	194.1

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, 1992-2002

Site 334

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 30, 1992	74	60-94	
	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	

Brown Trout <200mm	Oct 21, 2002	153	94-229	
Brown Trout >=200mm	Sep 30, 1992	111	104-120	BR1
	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
	Oct 21, 2002	116	100-134	BR1
Rainbow Trout <200mm	Sep 30, 1992	23	18-37	
	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	

Rainbow Trout <200mm	Oct 21, 2002	62	63-73	
Rainbow Trout >=200mm	Sep 30, 1992	44	43-48	RB1
	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
	Oct 21, 2002	25	25-27	RB1

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 02, 1992	84	66-108	
	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	
Brown Trout >=200mm	Oct 02, 1992	67	67-69	BR1
	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
Rainbow Trout <200mm	Oct 02, 1992	135	104-168	
	Oct 07, 1993	52	50-56	
	Oct 12, 1994	137	88-200	

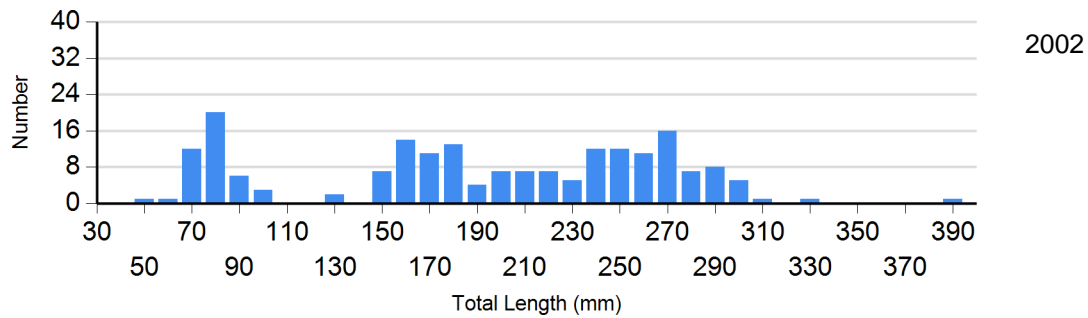
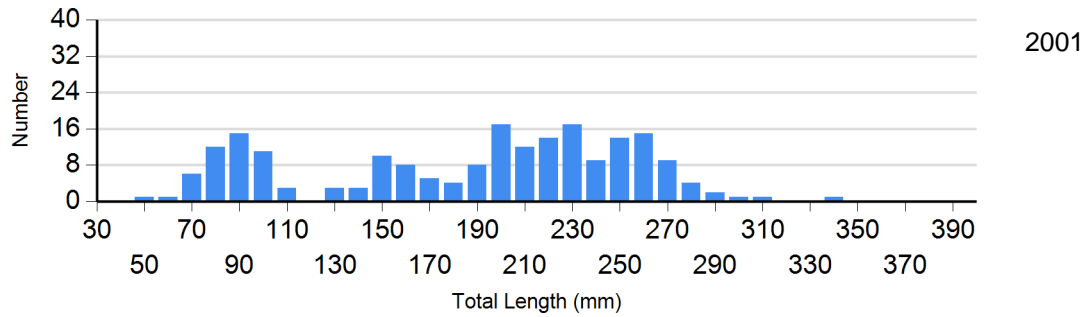
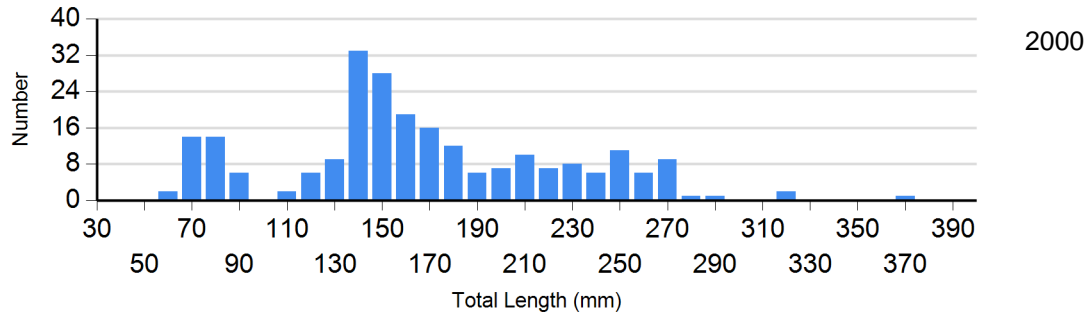
Rainbow Trout <200mm	Oct 17, 1995	33	34-41	
	Oct 08, 1996	27	25-33	
	Oct 25, 1999	22	15-44	
	Oct 23, 2000	37	35-42	
	Oct 22, 2001	43	41-48	
	Oct 31, 2002	18	13-35	
Rainbow Trout >=200mm	Oct 02, 1992	43	41-48	RB1
	Oct 07, 1993	48	48-49	RB1
	Oct 12, 1994	38	37-42	RB1
	Oct 17, 1995	27	27-29	RB1
	Oct 08, 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

Length Frequency Distribution

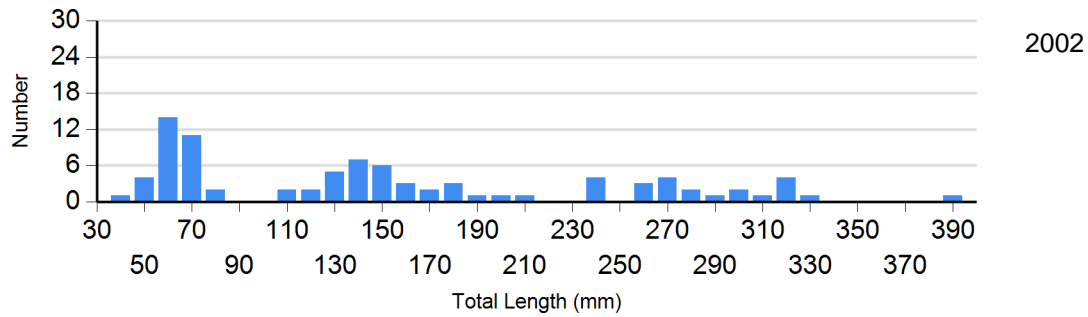
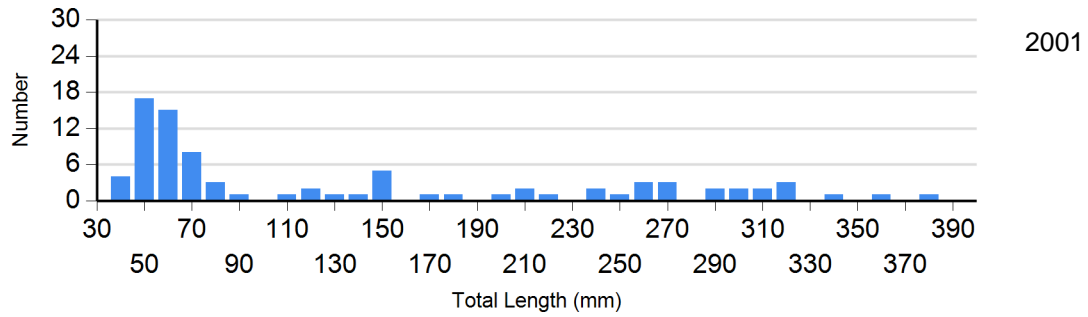
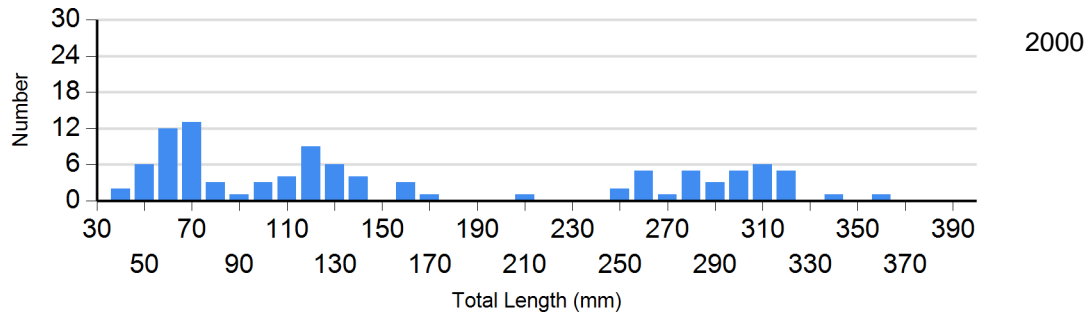
Length frequency histogram of species sampled by year.

Site: 334

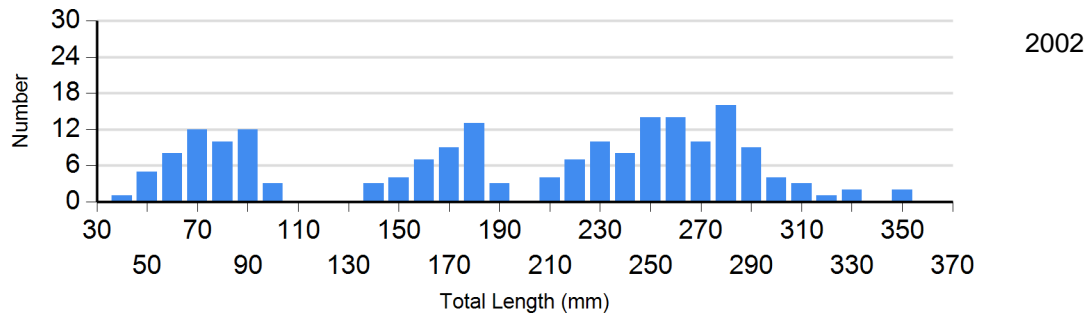
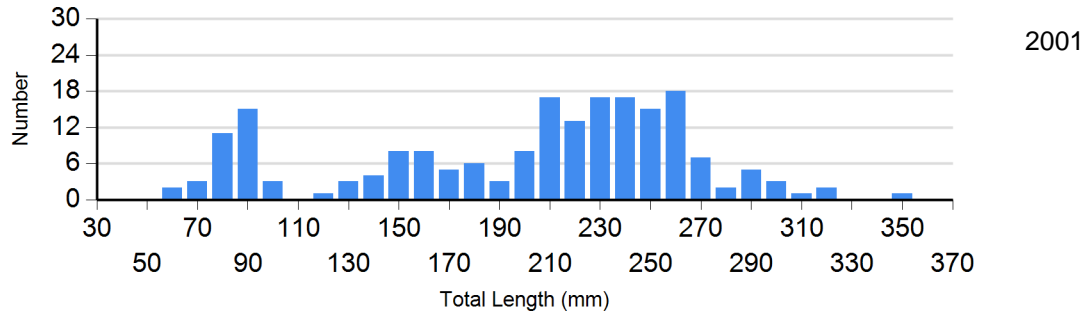
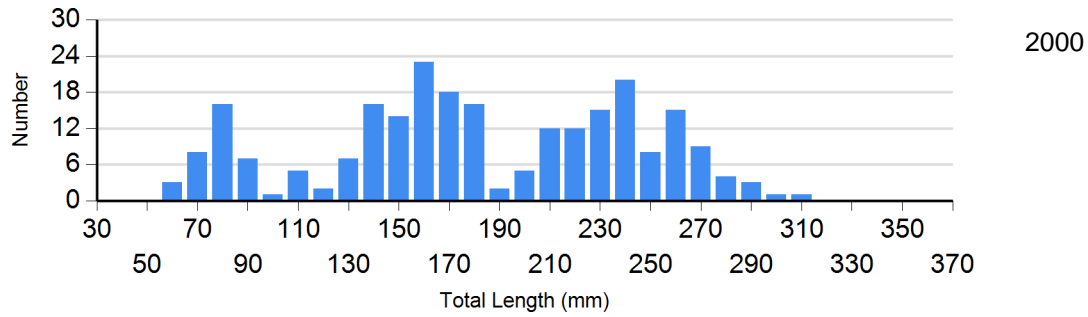
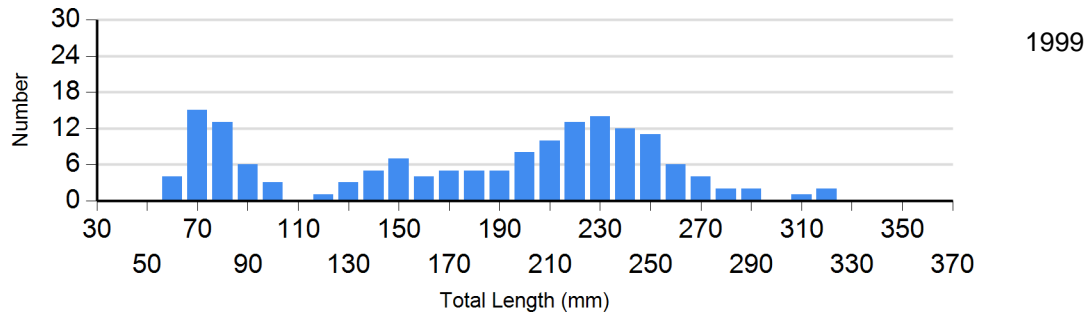
Species: Brown Trout



Site: 334
Species: Rainbow Trout



Site: 340
Species: Brown Trout



Site: 340
Species: Rainbow Trout

