

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2001

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 334	Date Sampled: 10/22/2001	Conductivity (umhos/cm): 444
Site Midpoint (Latitude, Longitude): 44.40606069, -103.89803263	Site Length (m): 100	pH: 9.3
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.7	Water Temperature (C): 6.2
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	3	3	4	3	39	1	30	16	0.58	48	117.3	16.7
Brook Trout	All	3	3	4	3	39	1	30	16	0.58	48	117.3	16.7
Brown Trout	<200mm	90	102	116	90	1325	35	1020	536	31.38	1641	125.4	26.5
Brown Trout	>=200mm	116	119	124	116	1545	234	1190	626	208.51	1915	241.2	151.1
Brown Trout	All	206	219	230	208	2844	275	2190	1152	245.51	3524	190.6	96.7
Rainbow Trout	<200mm	60	64	71	60	831	7	640	337	6.46	1030	78.9	8.7
Rainbow Trout	>=200mm	25	25	26	25	325	79	250	131	70.27	402	283.0	242.4
Rainbow Trout	All	85	88	93	85	1143	88	880	463	79.02	1416	138.9	77.4

Site Number: 340	Date Sampled: 10/22/2001	Conductivity (umhos/cm): 437
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328	Site Length (m): 100	pH: 9.3
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.3	Water Temperature (C): 6.9
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	2	2	4	2	27	0	20	11	0.05	32	62.5	2.0

Brook Trout	All	2	2	4	2	27	0	20	11	0.05	32	62.5	2.0
Brown Trout	<200mm	72	78	87	72	1063	29	780	431	26.01	1255	127.9	27.4
Brown Trout	>=200mm	126	127	130	126	1731	279	1270	701	248.76	2043	247.4	160.9
Brown Trout	All	198	204	211	198	2781	313	2040	1126	279.02	3282	204.0	112.4
Rainbow Trout	<200mm	41	43	48	41	586	15	430	237	13.40	692	105.7	25.6
Rainbow Trout	>=200mm	46	53	65	46	722	129	530	293	115.45	853	254.5	179.0
Rainbow Trout	All	87	97	109	87	1322	141	970	535	125.96	1561	184.4	106.7

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, 1991-2001

Site 334

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 30, 1992	1	1-1	
	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	

Brook Trout >=200mm	Oct 06, 1993	1	1-2	BK3
	Oct 17, 1995	1	1-1	BK3
Brown Trout <200mm	Sep 25, 1991	135	79-224	
	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	Sep 25, 1991	123	116-132	BR3
	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

Brown Trout >=200mm	Oct 23, 2000	78	69-90	BR1
	Oct 22, 2001	119	116-124	BR1
Rainbow Trout <200mm	Sep 25, 1991	24	19-38	
	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	Sep 25, 1991	60	47-83	RB2
	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

Rainbow Trout >=200mm	Oct 23, 2000	36	35-39	RB1
	Oct 22, 2001	25	25-26	RB1

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 02, 1992	10	10-12	
	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 02, 1992	6	6-9	BK2
	Oct 07, 1993	3	3-4	BK3
	Oct 17, 1995	1	1-2	BK3
	Oct 08, 1996	2	2-3	BK3
Brown Trout <200mm	Sep 26, 1991	67	66-70	
	Oct 02, 1992	84	66-108	

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	
	Oct 25, 1999	116	76-171	
	Oct 23, 2000	162	140-184	
	Oct 22, 2001	78	72-87	
Brown Trout >=200mm	Sep 26, 1991	23	21-29	BR3
	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

Rainbow Trout <200mm	Sep 26, 1991	75	39-166	
	Oct 02, 1992	135	104-168	
	Oct 07, 1993	52	50-56	
	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	
Rainbow Trout >=200mm	Sep 26, 1991	26	23-34	RB2
	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

Rainbow Trout >=200mm

Oct 23, 2000

46

40-57

RB1

Oct 22, 2001

53

46-65

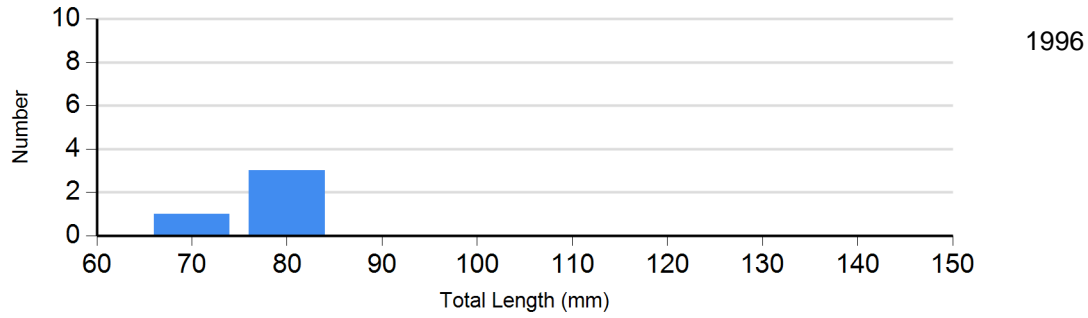
RB1

Length Frequency Distribution

Length frequency histogram of species sampled by year.

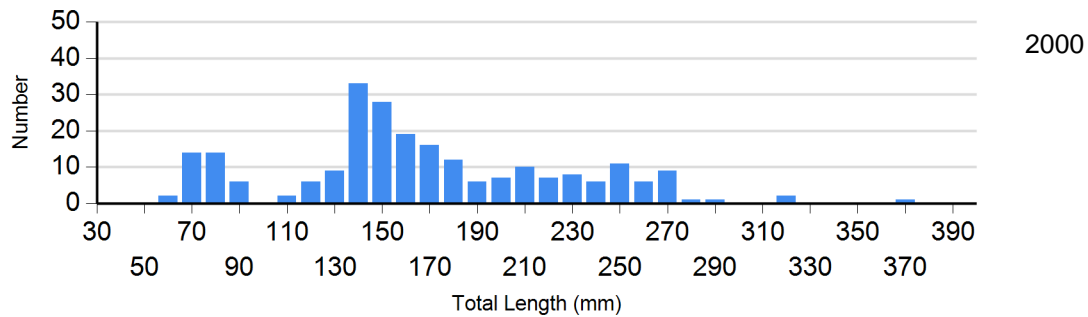
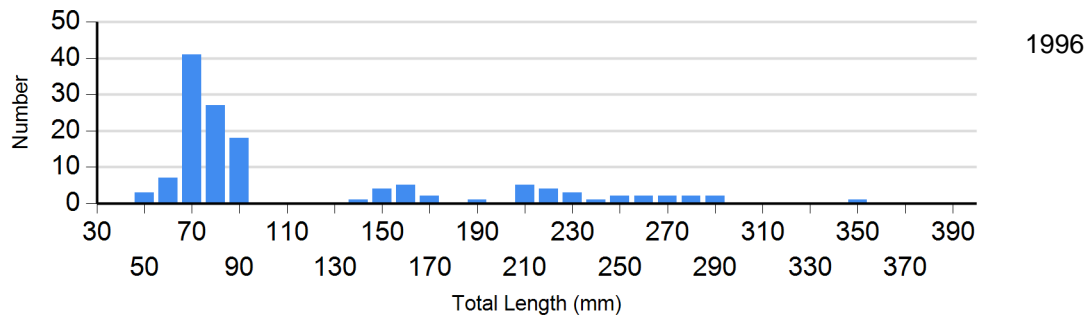
Site: 334

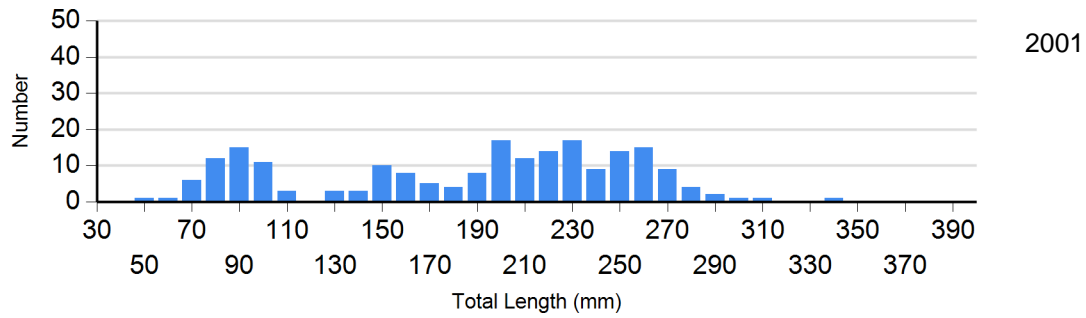
Species: Brook Trout



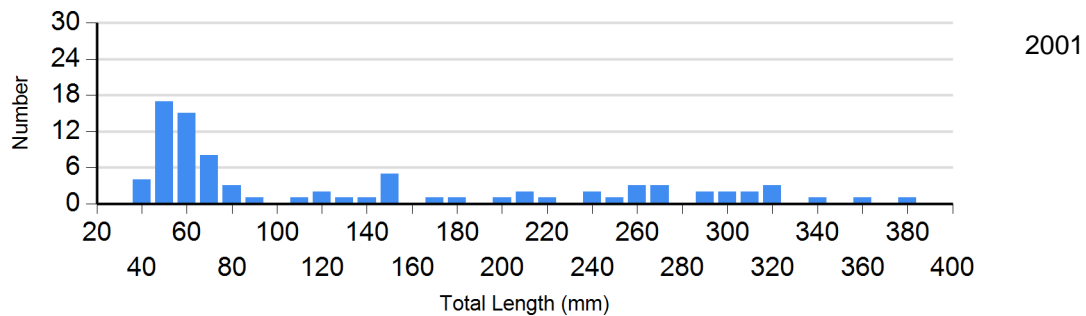
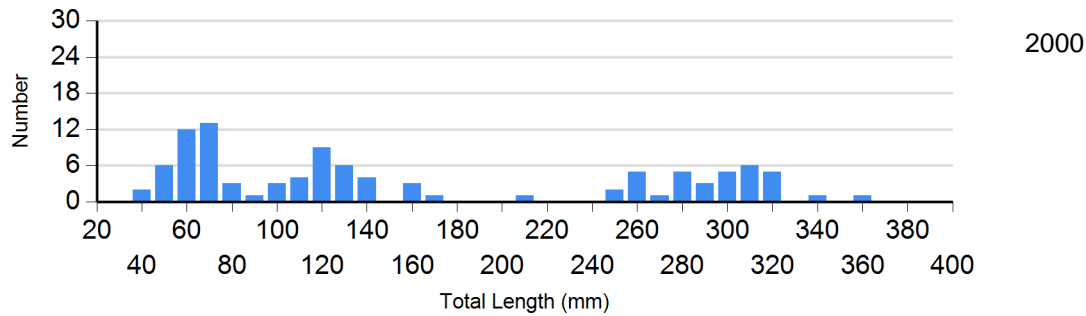
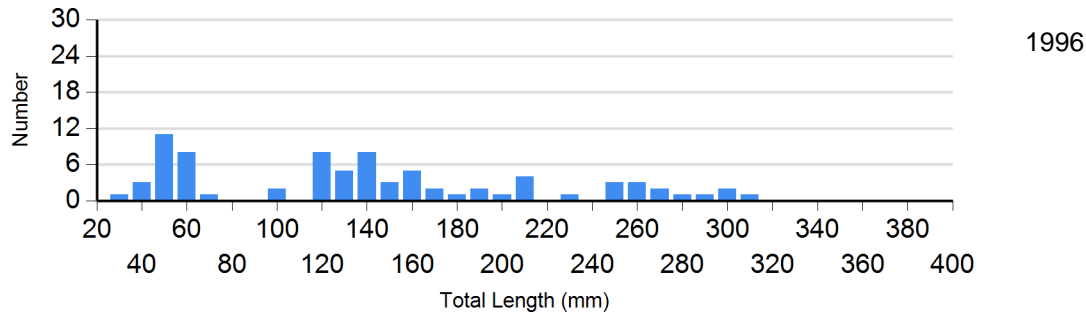
Site: 334

Species: Brown Trout

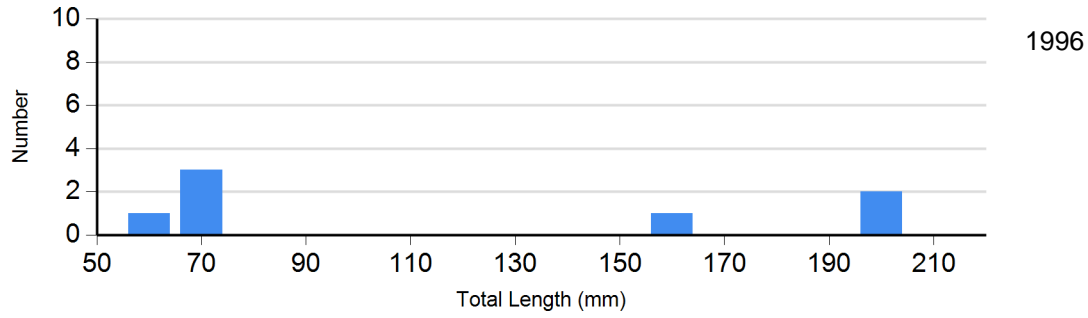




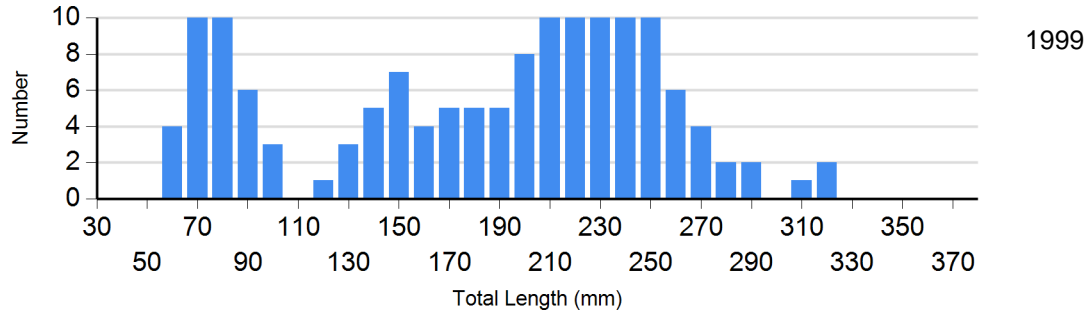
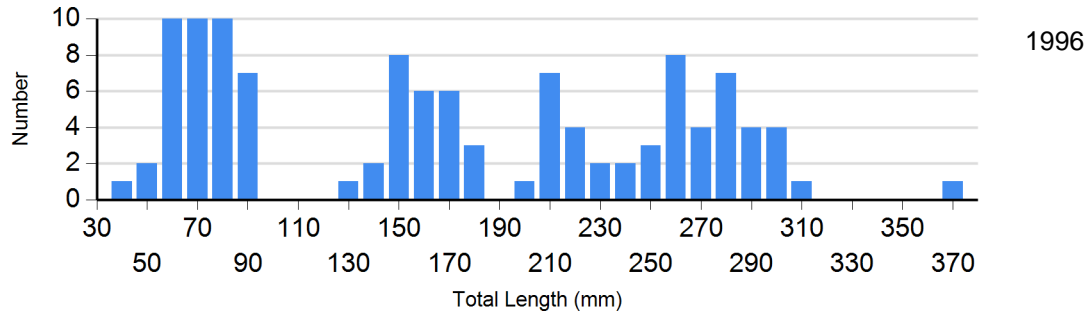
Site: 334
Species: Rainbow Trout

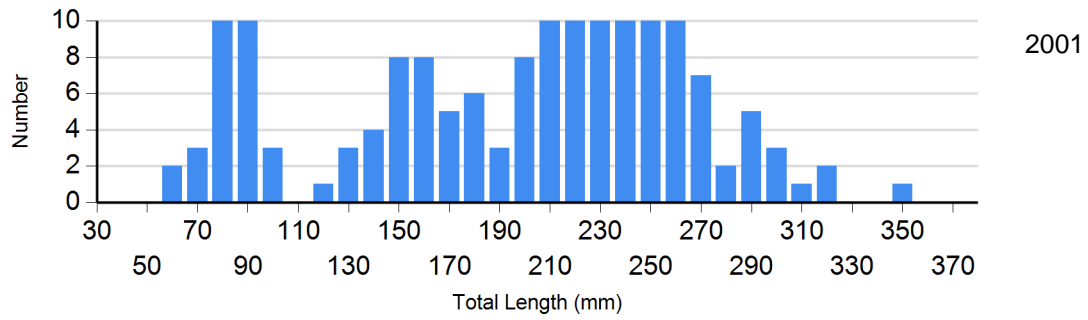
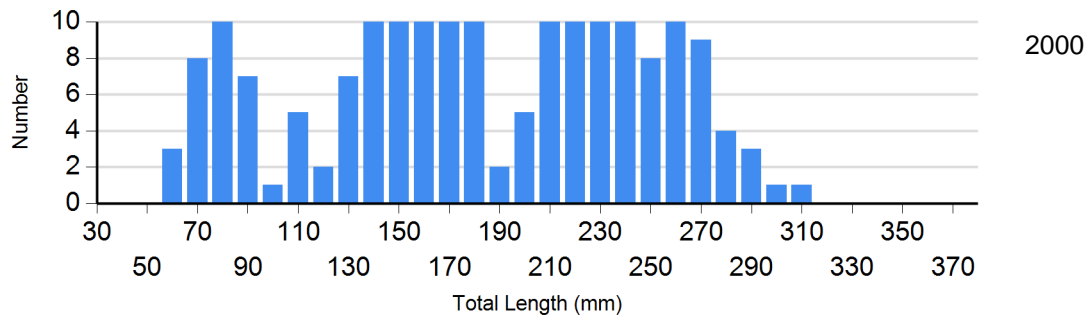


Site: 340
Species: Brook Trout



Site: 340
Species: Brown Trout





Site: 340
Species: Rainbow Trout

