

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Castle Creek, Pennington County
02-0071-00
2006

Table 1. Population and Biomass Estimates for Castle Creek

Site Number: 384	Date Sampled: 09/20/2006	Conductivity (umhos/cm): 380
Site Midpoint (Latitude, Longitude): 44.04396904, -103.77363060	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 4.7	Water Temperature (C): 9.7
Stream Classification: BK2, 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)
Brook Trout	<200mm	14	14	14	14	301	15	140	122	13.81	225	165.6	51.4
Brook Trout	>=200mm	5	5	7	5	107	13	50	44	11.62	80	220.2	121.2
Brook Trout	All	19	19	20	19	408	28	190	165	25.44	306	179.9	69.8
Brown Trout	<200mm	79	79	80	79	1697	59	790	687	53.08	1271	136.3	35.0
Brown Trout	>=200mm	44	44	46	44	945	187	440	383	166.70	708	257.3	197.5
Brown Trout	All	156	160	165	156	3438	320	1600	1392	285.89	2574	179.6	93.1

Site Number: 417	Date Sampled: 09/20/2006	Conductivity (umhos/cm): 366
Site Midpoint (Latitude, Longitude): 44.03016917, -103.78286708	Site Length (m): 110	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 5.6	Water Temperature (C): 10.3
Stream Classification: BK1, 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)
Brook Trout	<200mm	72	73	76	72	1308	44	664	530	39.51	1068	138.2	33.8
Brook Trout	>=200mm	92	93	96	92	1666	282	845	675	251.41	1360	247.4	169.0
Brook Trout	All	164	166	170	164	2974	325	1509	1204	290.22	2428	199.5	109.3

Brown Trout	<200mm	50	50	52	50	896	49	455	363	43.52	731	168.6	54.4
Brown Trout	>=200mm	39	39	40	39	699	173	355	283	154.03	570	277.9	246.9
Brown Trout	All	89	89	91	89	1594	223	809	646	198.91	1302	216.5	139.7

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 Castle Creek, 1996-2006

Site 384

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 16, 1996	30	30-32	
	Sep 12, 1997	65	49-90	
	Sep 23, 1998	95	77-117	
	Sep 20, 1999	101	76-133	
	Sep 25, 2000	164	159-170	
	Sep 17, 2002	70	59-86	
	Sep 30, 2004	39	39-40	

Brook Trout <200mm	Sep 20, 2006	14	14-14	
Brook Trout >=200mm	Sep 16, 1996	25	25-27	BK1
	Sep 12, 1997	24	23-28	BK1
	Sep 23, 1998	38	34-46	BK1
	Sep 20, 1999	28	26-34	BK1
	Sep 25, 2000	35	34-38	BK1
	Sep 17, 2002	6	6-6	BK2
	Sep 30, 2004	4	4-4	BK2
	Sep 20, 2006	5	5-7	BK2
Brown Trout <200mm	Sep 16, 1996	4	4-5	
	Sep 12, 1997	28	13-95	
	Sep 23, 1998	41	29-67	
	Sep 20, 1999	39	34-49	
	Sep 25, 2000	43	43-45	
	Sep 17, 2002	60	60-62	
	Sep 30, 2004	197	194-202	

Brown Trout <200mm	Sep 20, 2006	79	79-80	
Brown Trout >=200mm	Sep 16, 1996	32	29-39	BR1
	Sep 12, 1997	33	27-46	BR1
	Sep 23, 1998	40	40-41	BR1
	Sep 20, 1999	67	61-76	BR1
	Sep 25, 2000	60	60-62	BR1
	Sep 17, 2002	56	56-58	BR1
	Sep 30, 2004	40	40-41	BR1
	Sep 20, 2006	44	44-46	BR1

Site 417

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 24, 1996	31	31-32	
	Sep 18, 1997	35	27-52	
	Sep 22, 1998	142	90-209	
	Sep 27, 1999	72	72-74	
	Sep 27, 2000	199	185-213	

Brook Trout <200mm	Sep 17, 2002	114	105-125	
	Sep 30, 2004	98	95-103	
	Sep 20, 2006	73	72-76	
Brook Trout >=200mm	Sep 24, 1996	104	104-106	BK1
	Sep 18, 1997	112	96-130	BK1
	Sep 22, 1998	150	131-169	BK1
	Sep 27, 1999	189	188-191	BK1
	Sep 27, 2000	271	266-277	BK1
	Sep 17, 2002	155	155-156	BK1
	Sep 30, 2004	122	122-123	BK1
	Sep 20, 2006	93	92-96	BK1
Brown Trout <200mm	Sep 22, 1998	1	1-1	
	Sep 17, 2002	18	18-19	
	Sep 30, 2004	11	11-11	
	Sep 20, 2006	50	50-52	
Brown Trout >=200mm	Sep 24, 1996	8	8-8	BR2

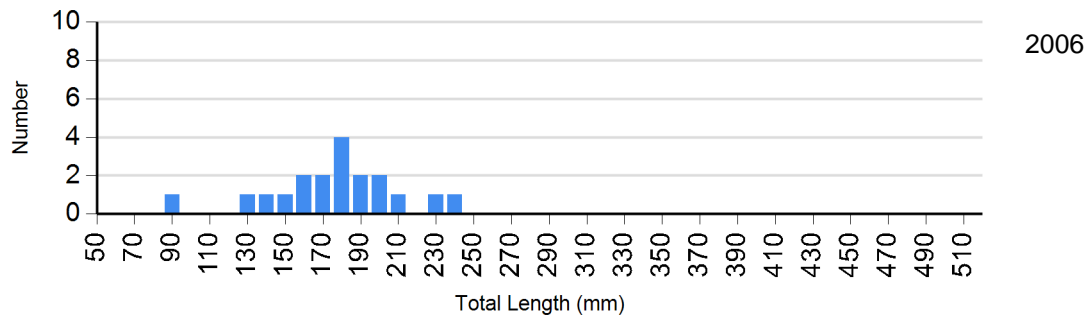
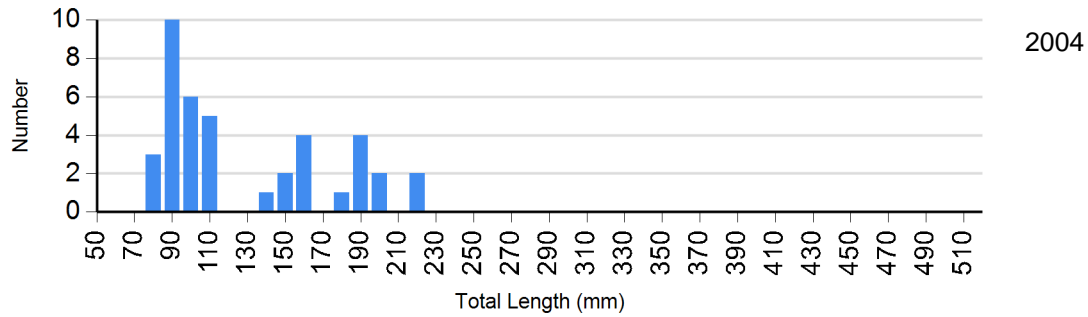
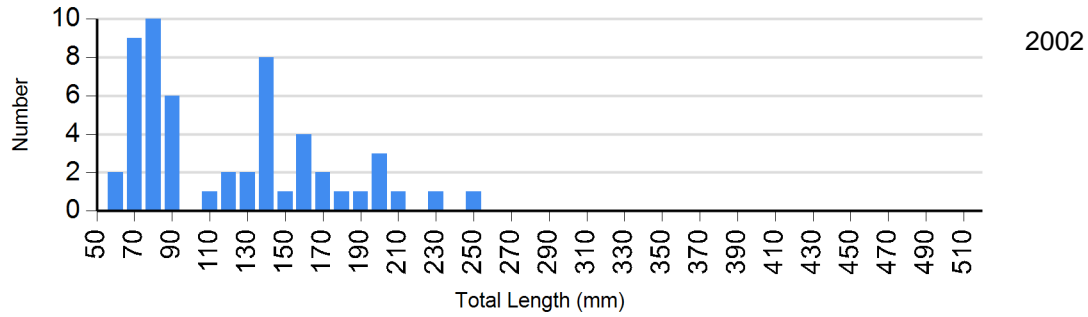
Brown Trout >=200mm	Sep 18, 1997	8	8-10	BR2
	Sep 22, 1998	4	4-6	BR2
	Sep 27, 1999	16	16-16	BR2
	Sep 27, 2000	15	15-17	BR2
	Sep 17, 2002	16	16-17	BR2
	Sep 30, 2004	18	18-19	BR2
	Sep 20, 2006	39	39-40	BR1

Length Frequency Distribution

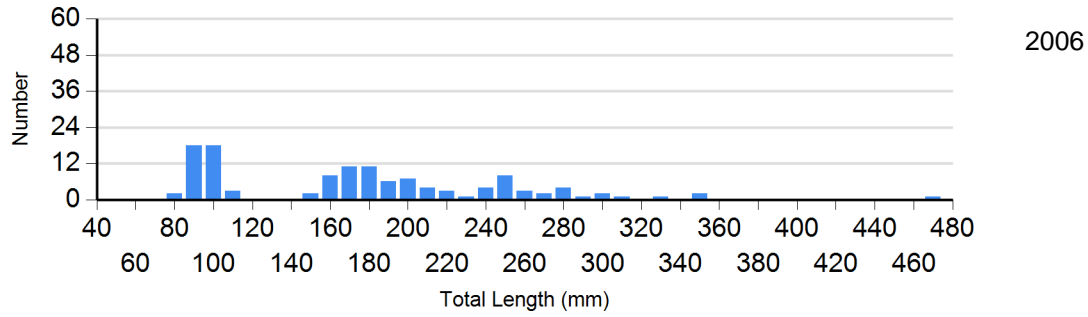
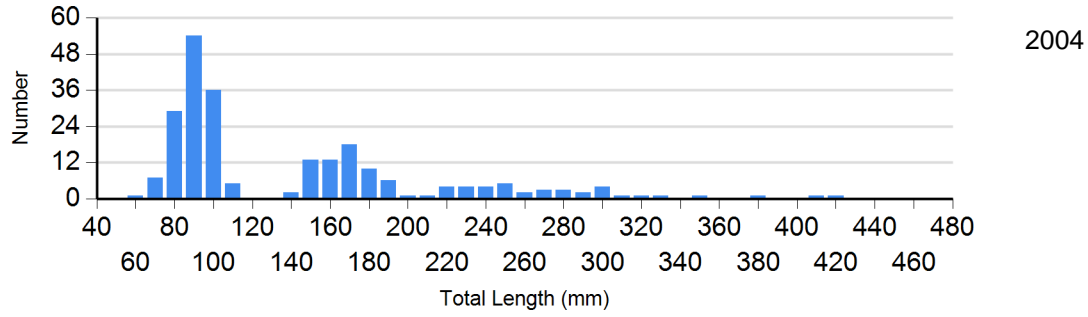
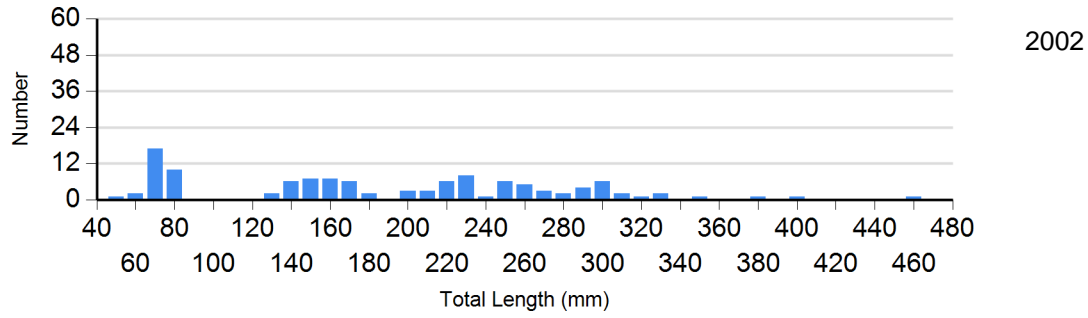
Length frequency histogram of species sampled by year.

Site: 384

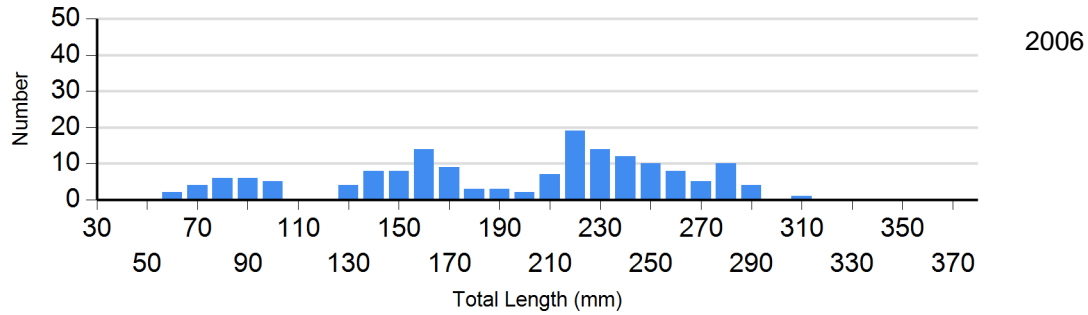
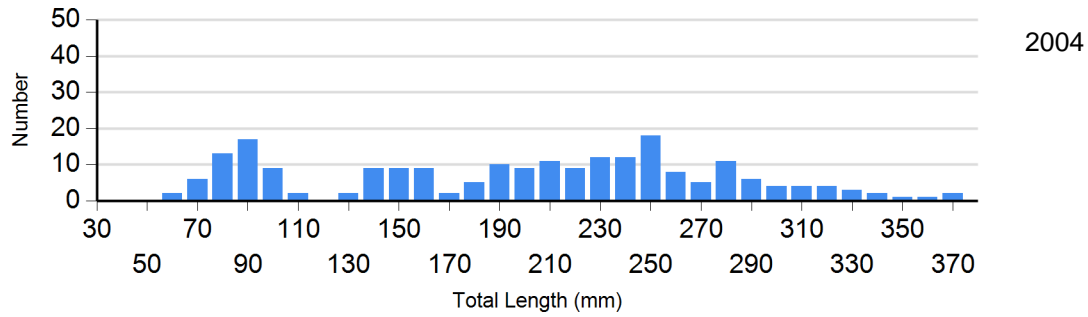
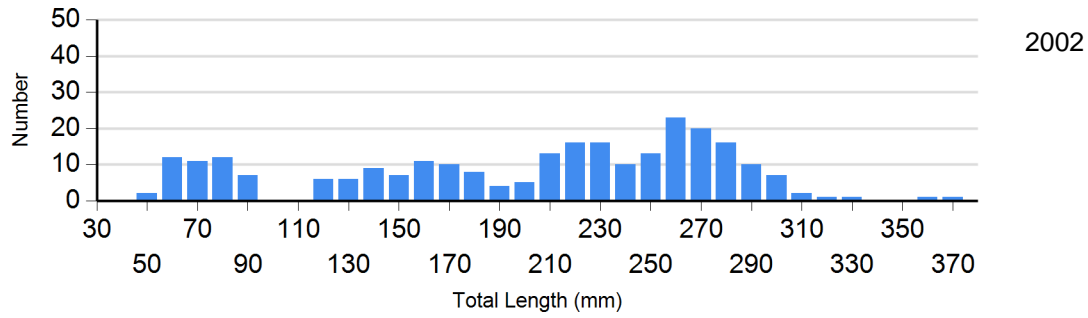
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