

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Bear Butte Creek, Meade County**  
**49-0023-00**  
**2010**

Table 1. Population and Biomass Estimates for Bear Butte Creek

<b>Site Number:</b> 951	<b>Date Sampled:</b> 07/12/2010	<b>Conductivity (umhos/cm):</b> 590
<b>Site Midpoint (Latitude, Longitude):</b> 44.33467177, -103.62481850	<b>Site Length (m):</b> 100	<b>pH:</b>
<b>Survey Completed by:</b>	<b>Mean Width (m):</b> 4.9	<b>Water Temperature (C):</b> 16.8
<b>Stream Classification:</b> BK2	<b>Number of Pass:</b> 1	<b>Voltage:</b>

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	98	98	98	98	1989	67	980	806	59.62	1577	138.3	33.6
Brook Trout	>=200mm	12	12	12	12	244	33	120	99	29.79	193	228.0	137.0
Brook Trout	All	161	161	161	161	3268	148	1610	1323	132.43	2590	148.1	45.4
Mountain Sucker	All	2	2	2	2	41	2	20	16	1.38	32	150.5	38.0
Rock Bass	All	1	1	1	1	20	0	10	8	0.40	16	110.0	22.0

<b>Site Number:</b> 976	<b>Date Sampled:</b> 07/12/2010	<b>Conductivity (umhos/cm):</b>
<b>Site Midpoint (Latitude, Longitude):</b> 44.32812906, -103.64456485	<b>Site Length (m):</b> 100	<b>pH:</b>
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 4.4	<b>Water Temperature (C):</b> 12.8
<b>Stream Classification:</b> BK1	<b>Number of Pass:</b> 1	<b>Voltage:</b> 175

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	102	102	102	102	2321	97	1020	940	86.85	1641	119.5	41.9
Brook Trout	>=200mm	17	17	17	17	387	62	170	157	55.71	274	236.2	161.3
Brook Trout	All	119	119	119	119	2708	181	1190	1097	161.90	1915	136.2	67.0

Rock Bass All 3 3 3 3 68 3 30 28 2.28 48 120.7 37.3

Site Number: 988

Date Sampled: 07/12/2010

Conductivity (umhos/cm): 240

Site Midpoint (Latitude, Longitude): 44.32359378, -103.65026058

Site Length (m): 100

pH:

Survey Completed by:

Mean Width (m): 3.7

Water Temperature (C): 16.9

Stream Classification: BK2

Number of Pass: 1

Voltage:

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	377	11	140	153	9.58	225	144.5	28.4
Brook Trout	>=200mm	4	4	4	4	108	15	40	44	13.10	64	233.8	136.0
Brook Trout	All	18	18	18	18	485	25	180	197	22.68	290	164.3	52.3
Mountain Sucker	All	5	5	5	5	135	3	50	55	2.98	80	122.8	24.8

Site Number: 1029

Date Sampled: 07/13/2010

Conductivity (umhos/cm): 219

Site Midpoint (Latitude, Longitude): 44.30725097, -103.66899350

Site Length (m): 100

pH:

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 3.6

Water Temperature (C): 14.2

Stream Classification: BK3

Number of Pass: 1

Voltage: 225

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	8	8	8	8	222	14	80	90	12.93	129	159.0	65.3
Brook Trout	>=200mm	2	2	2	2	55	5	20	22	4.75	32	202.5	96.0
Brook Trout	All	10	10	10	10	277	20	100	112	18.06	161	167.7	73.0
Mountain Sucker	All	1	1	1	1	28	0	10	11	0.45	16	115.0	18.0

Site Number: 1048

Date Sampled: 07/13/2010

Site Midpoint (Latitude, Longitude): 44.29859320, -103.67654526

Site Length (m): 100

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2

Mean Width (m): 2.7

Number of Pass: 1

Conductivity  
(umhos/cm):

pH:

Water Temperature (C):

Voltage:

225

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	28	28	28	28	1027	49	280	416	43.93	451	157.9	47.9
Brook Trout	>=200mm	2	2	2	2	73	10	20	30	9.36	32	224.0	143.0
Brook Trout	All	30	30	30	30	1100	60	300	446	53.51	483	162.3	54.5
Mountain Sucker	All	5	5	5	5	183	11	50	74	9.89	80	162.4	60.4
Rock Bass	All	5	5	5	5	183	5	50	74	4.39	80	110.6	26.8

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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	
<b>Class BR1</b>	Number of wild Brown Trout exceeds 150 per acre
<b>Class BR2</b>	Number of wild Brook Trout ranges from 25 to 150 per acre
<b>Class BR3</b>	Number of wild Brown Trout is less than 25 per acre
<b>Class BK1</b>	Number of wild Brook Trout exceeds 150 per acre
<b>Class BK2</b>	Number of wild Brook Trout ranges from 25 to 150 per acre
<b>Class BK3</b>	Number of wild Brook Trout is less than 25 per acre
<b>Class RB1</b>	Number of wild Rainbow Trout exceeds 25 per acre
<b>Class RB2</b>	Number of wild Rainbow Trout is less than 25 per acre

Table 2. Species composition and population estimates on Bear Butte Creek, 2000-2010

**Site 951**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 11, 2000	15	15-15	
	Oct 30, 2001	78	78-79	
	Sep 26, 2002	139	134-145	
	Sep 15, 2003	176	175-178	
	Sep 07, 2004	113	112-116	
	Jul 12, 2010	98	98-98	
Brook Trout >=200mm	Sep 26, 2002	5	5-5	BK2

Brook Trout >=200mm	Sep 15, 2003	1	1-1	BK3
	Sep 07, 2004	1	1-2	BK3
	Jul 12, 2010	12	12-12	BK2
Longnose Dace	Oct 30, 2001	33	27-46	
	Sep 26, 2002	55	37-89	
	Sep 15, 2003	83	82-86	
	Sep 07, 2004	120	116-126	
Mountain Sucker	Sep 11, 2000	9	9-9	
	Oct 30, 2001	2	2-6	
	Sep 26, 2002	22	17-36	
	Sep 15, 2003	41	38-47	
	Sep 07, 2004	24	24-26	
	Jul 12, 2010	2	2-2	
Rock Bass	Jul 12, 2010	1	1-1	

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 12, 2000	42	42-43	
	Sep 12, 2002	103	98-110	
	Sep 16, 2003	149	149-151	
	Sep 07, 2004	175	168-183	
	Sep 11, 2007	120	121-135	
	Jul 12, 2010	102	102-102	
Brook Trout >=200mm	Sep 12, 2000	24	24-24	BK1
	Sep 12, 2002	7	7-7	BK2
	Sep 16, 2003	4	4-5	BK2
	Sep 07, 2004	7	7-7	BK2
	Sep 11, 2007	7	7-9	BK2
	Jul 12, 2010	17	17-17	BK1
Longnose Dace	Sep 12, 2000	288	73-982	
	Sep 12, 2002	239	227-251	
	Sep 16, 2003	250	237-263	

Longnose Dace	Sep 07, 2004	211	171-251
Mountain Sucker	Sep 12, 2000	113	109-119
	Sep 12, 2002	16	16-18
	Sep 16, 2003	22	13-55
	Sep 07, 2004	7	7-8
	Rock Bass	Jul 12, 2010	3

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**Site 988**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Sep 13, 2000	32	32-33	
	Oct 30, 2001	80	79-83	
	Sep 11, 2002	65	65-66	
	Sep 18, 2003	46	46-48	
	Sep 09, 2004	140	140-142	
	Sep 12, 2007	58	57-61	
	Jul 12, 2010	14	14-14	
Brook Trout >=200mm	Oct 30, 2001	4	4-4	BK2

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Brook Trout >=200mm	Sep 11, 2002	2	2-2	BK3
	Sep 18, 2003	2	2-2	BK2
	Sep 12, 2007	2	2-2	BK2
	Jul 12, 2010	4	4-4	BK2
Longnose Dace	Sep 13, 2000	1289	1273-1305	
	Oct 30, 2001	193	194-217	
	Sep 11, 2002	1097	1023-1171	
	Sep 18, 2003	773	726-820	
	Sep 09, 2004	641	626-656	
Mountain Sucker	Sep 13, 2000	119	115-125	
	Oct 30, 2001	27	22-39	
	Sep 11, 2002	35	34-38	
	Sep 18, 2003	30	23-46	
	Sep 09, 2004	6	6-6	
	Jul 12, 2010	5	5-5	



<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Jul 13, 2010	8	8-8	
Brook Trout >=200mm	Jul 13, 2010	2	2-2	BK3
Mountain Sucker	Jul 13, 2010	1	1-1	

**Site 1048**

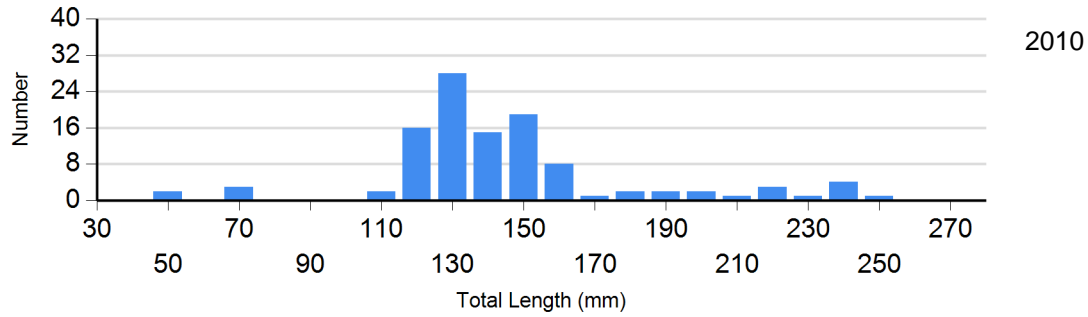
<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Jul 13, 2010	28	28-28	
Brook Trout >=200mm	Jul 13, 2010	2	2-2	BK2
Mountain Sucker	Jul 13, 2010	5	5-5	
Rock Bass	Jul 13, 2010	5	5-5	

## Length Frequency Distribution

Length frequency histogram of species sampled by year.

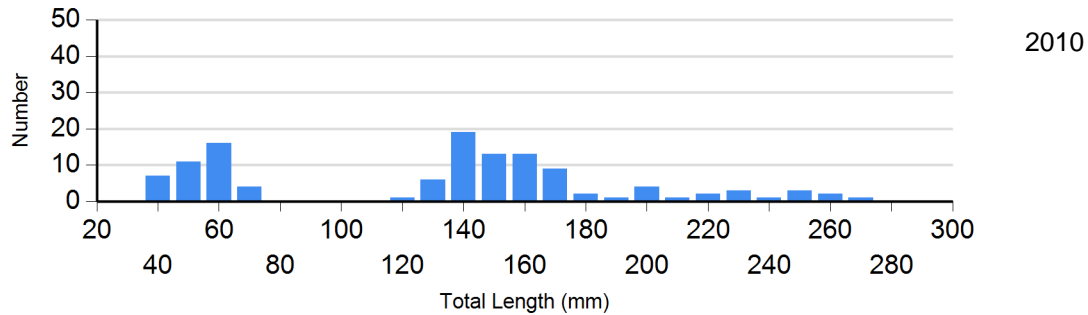
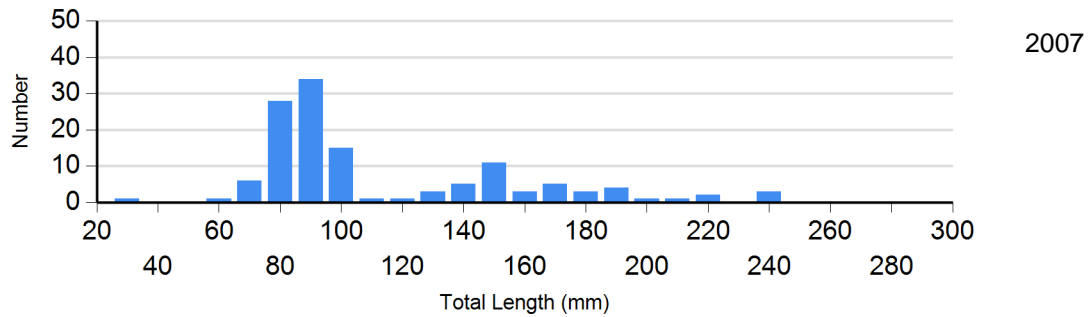
**Site:** 951

**Species:** Brook Trout

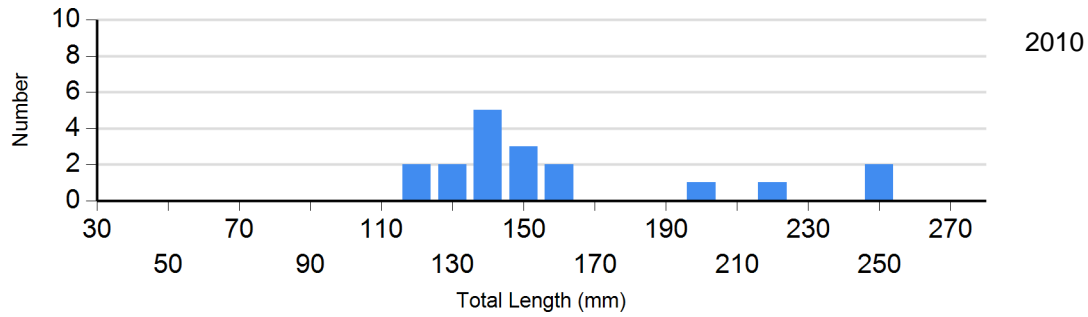
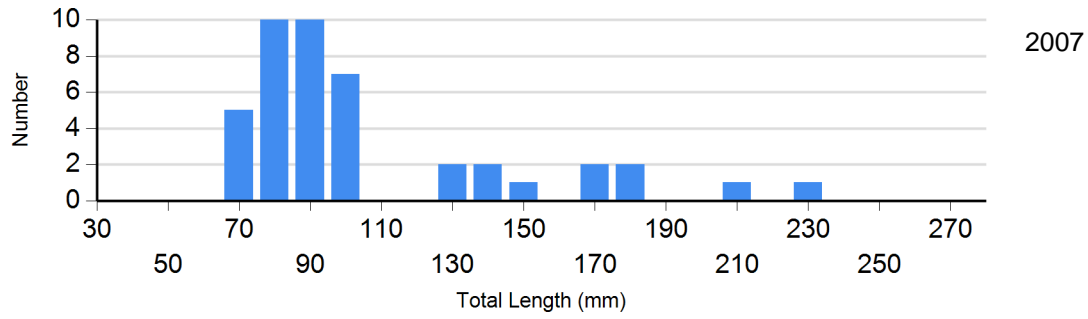


**Site:** 976

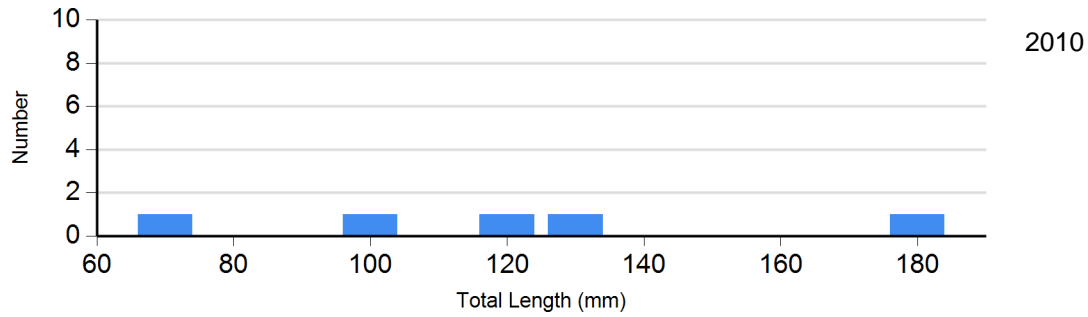
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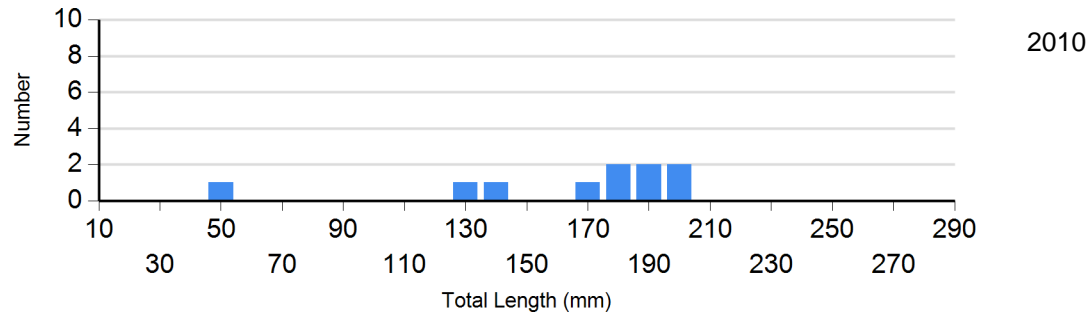
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**Species:** Brook Trout



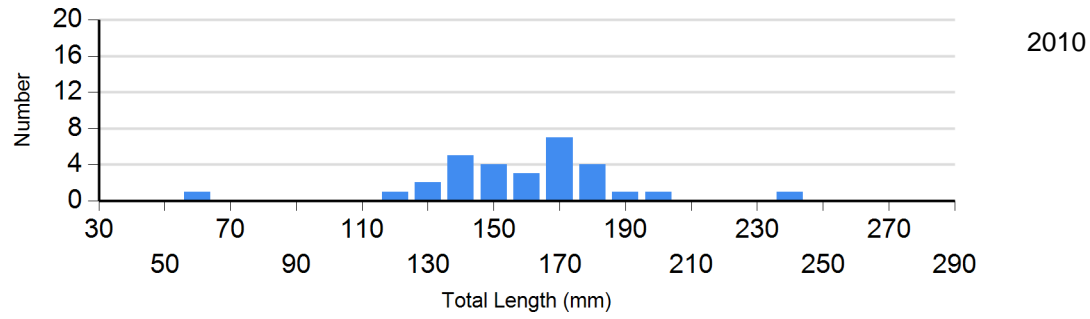
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**Species:** Mountain Sucker



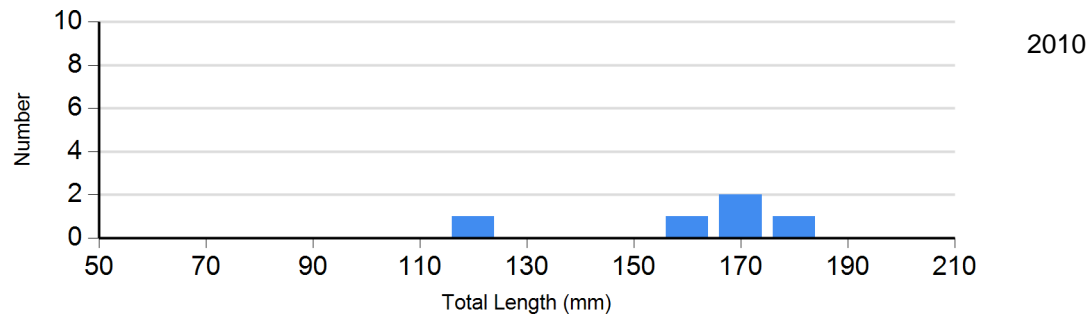
**Site:** 1029  
**Species:** Brook Trout



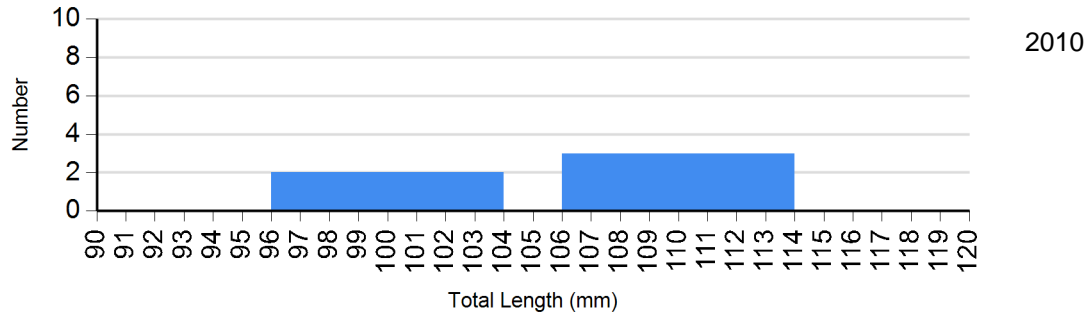
**Site:** 1048  
**Species:** Brook Trout



**Site:** 1048  
**Species:** Mountain Sucker



**Site:** 1048  
**Species:** Rock Bass



**Site:** 1077  
**Species:** Brook Trout

