

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spring Creek (Trib. of Cheyenne), Pennington County
02-0061-00
2009

Table 1. Population and Biomass Estimates for Spring Creek (Trib. of Cheyenne)

Site Number: 1717	Date Sampled: 08/03/2009	Conductivity (umhos/cm): 341
Site Midpoint (Latitude, Longitude): 43.98161836, -103.34838306	Site Length (m): 100	pH: 8.6
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.5	Water Temperature (C): 20.6
Stream Classification: RB2	Number of Pass: 1	Voltage: 350

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)
Rainbow Trout	>=200mm	1	1	1	1	13	7	10	5	6.68	16	369.0	558.0
Rainbow Trout	All	1	1	1	1	13	7	10	5	6.68	16	369.0	558.0

Site Number: 1774	Date Sampled: 08/03/2009	Conductivity (umhos/cm): 350
Site Midpoint (Latitude, Longitude): 43.96901962, -103.37758658	Site Length (m): 100	pH: 8.6
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.0	Water Temperature (C): 20.6
Stream Classification: RB2	Number of Pass: 1	Voltage: 350

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)
Black Bullhead	All	1	1	1	1	12	2	10	5	1.84	16	200.0	165.0
Northern Pike	All	3	3	3	3	37	3	30	15	2.45	48	201.7	73.3
Rainbow Trout	>=200mm	1	1	1	1	12	13	10	5	11.55	16	468.0	1038.0
Rainbow Trout	All	1	1	1	1	12	13	10	5	11.55	16	468.0	1038.0

Site Number: 1864	Date Sampled: 08/13/2009	Conductivity (umhos/cm): 336
Site Midpoint (Latitude, Longitude): 43.98424529, -103.42856922	Site Length (m): 100	pH: 8.7

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 9.7

Water Temperature (C): 19.0

Stream Classification: BR3

Number of Pass: 1

Voltage: 250

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	2	2	2	2	21	4	20	8	3.98	32	266.0	216.0
Brown Trout	All	2	2	2	2	21	4	20	8	3.98	32	266.0	216.0
White Sucker	All	8	8	8	8	83	10	80	33	8.85	129	192.9	120.0

Site Number: 1885

Date Sampled: 07/24/2009

Conductivity (umhos/cm): 332

Site Midpoint (Latitude, Longitude): 43.98085728, -103.44241913

Site Length (m): 100

pH: 8.5

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 10.6

Water Temperature (C): 22.0

Stream Classification: RB2

Number of Pass: 1

Voltage: 350

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)
Creek Chub	All	35	35	35	35	330	12	350	134	10.85	563	124.2	36.8
Golden Shiner	All	2	2	2	2	19	1	20	8	0.46	32	140.5	27.0
Rainbow Trout	>=200mm	3	3	3	3	28	7	30	11	6.62	48	295.7	261.7
Rainbow Trout	All	3	3	3	3	28	7	30	11	6.62	48	295.7	261.7
Rock Bass	All	1	1	1	1	9	1	10	4	0.68	16	155.0	81.0
White Sucker	All	30	30	30	30	283	62	300	115	55.11	483	256.4	217.9
Yellow Perch	All	1	1	1	1	9	0	10	4	0.09	16	97.0	11.0

Site Number: 2259

Date Sampled: 07/23/2009

Conductivity (umhos/cm): 348

Site Midpoint (Latitude, Longitude): 43.86330374, -103.62719243

Site Length (m): 100

pH: 348.0

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 2.0

Water Temperature (C): 17.4

Stream Classification: BK3, BR2, RB2

Number of Pass: 1

Voltage: 350

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	31	31	31	31	1571	55	310	636	48.86	499	127.1	34.8
Brook Trout	>=200mm	1	1	1	1	51	6	10	21	4.98	16	215.0	110.0
Brook Trout	All	32	32	32	32	1622	62	320	657	54.98	515	129.8	38.0
Brown Trout	>=200mm	3	3	3	3	152	39	30	62	34.72	48	288.7	255.7
Brown Trout	All	3	3	3	3	152	39	30	62	34.72	48	288.7	255.7
Rainbow Trout	>=200mm	1	1	1	1	51	13	10	21	11.59	16	302.0	256.0
Rainbow Trout	All	1	1	1	1	51	13	10	21	11.59	16	302.0	256.0

Site Number: 2439

Site Midpoint (Latitude, Longitude): 43.90537261, -103.74603404

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0

Date Sampled: 07/27/2009

Site Length (m): 100

Mean Width (m): 0.8

Number of Pass: 1

Conductivity (umhos/cm): 503

pH: 8.6

Water Temperature (C): 11.4

Voltage: 350

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	7	7	7	7	865	28	70	350	24.87	113	114.4	32.2
Brook Trout	All	7	7	7	7	865	28	70	350	24.87	113	114.4	32.2

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 Spring Creek (Trib. of Cheyenne), 1999-2009

Site 1717

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 19, 2000	116	109-125	
Brown Trout >=200mm	Sep 19, 2000	35	35-35	BR1
Creek Chub	Sep 19, 2000	7	7-9	
Longnose Dace	Sep 19, 2000	16	14-23	
Rainbow Trout <200mm	Sep 19, 2000	4	4-5	
Rainbow Trout >=200mm	Sep 19, 2000	3	3-3	RB2
	Aug 03, 2009	1	1-1	RB2

Rock Bass	Sep 19, 2000	22	23-28
White Sucker	Sep 19, 2000	20	18-26

Site 1774

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Bullhead	Aug 03, 2009	1	1-1	
Northern Pike	Aug 03, 2009	3	3-3	
Rainbow Trout >=200mm	Aug 03, 2009	1	1-1	RB2

Site 1840

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 18, 2000	1	1-2	
Brown Trout <200mm	Sep 18, 2000	226	208-244	
	Sep 16, 2002	2	2-3	
Brown Trout >=200mm	Sep 18, 2000	21	21-21	BR2
	Sep 16, 2002	7	7-8	BR2
Creek Chub	Sep 16, 2002	581	290-872	
Longnose Dace	Sep 18, 2000	32	33-46	
Rainbow Trout <200mm	Sep 16, 2002	1	1-1	

Rock Bass	Sep 18, 2000	45	32-72
	Sep 16, 2002	25	20-38
White Sucker	Sep 18, 2000	34	35-43
	Sep 16, 2002	142	103-185

Site 1864

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Black Bullhead	Sep 16, 2002	1	1-1	
Brown Trout <200mm	Sep 26, 2000	463	463-463	
	Sep 16, 2002	1	1-1	
Brown Trout >=200mm	Sep 26, 2000	43	43-43	BR1
	Sep 16, 2002	1	1-1	BR3
	Aug 13, 2009	2	2-2	BR3
Creek Chub	Sep 16, 2002	60	54-70	
Longnose Dace	Sep 26, 2000	5	5-6	
	Sep 16, 2002	40	41-49	
Rock Bass	Sep 26, 2000	19	15-31	

Rock Bass	Sep 16, 2002	5	6-7
White Sucker	Sep 26, 2000	92	67-126
	Sep 16, 2002	589	483-695
	Aug 13, 2009	8	8-8

Site 1885

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 19, 2000	92	88-98	
Brown Trout >=200mm	Sep 19, 2000	41	41-43	BR1
Creek Chub	Jul 24, 2009	35	35-35	
Golden Shiner	Sep 19, 2000	1	1-2	
	Jul 24, 2009	2	2-2	
Longnose Dace	Sep 19, 2000	1	1-1	
Northern Pike	Sep 19, 2000	2	2-6	
Rainbow Trout >=200mm	Jul 24, 2009	3	3-3	RB2
Rock Bass	Sep 19, 2000	95	39-257	
	Jul 24, 2009	1	1-1	

White Sucker	Sep 19, 2000	62	45-91
	Jul 24, 2009	30	30-30
Yellow Perch	Jul 24, 2009	1	1-1

Site 2259

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 23, 2009	31	31-31	
Brook Trout >=200mm	Jul 23, 2009	1	1-1	BK3
Brown Trout >=200mm	Jul 23, 2009	3	3-3	BR2
Rainbow Trout >=200mm	Jul 23, 2009	1	1-1	RB2

Site 2439

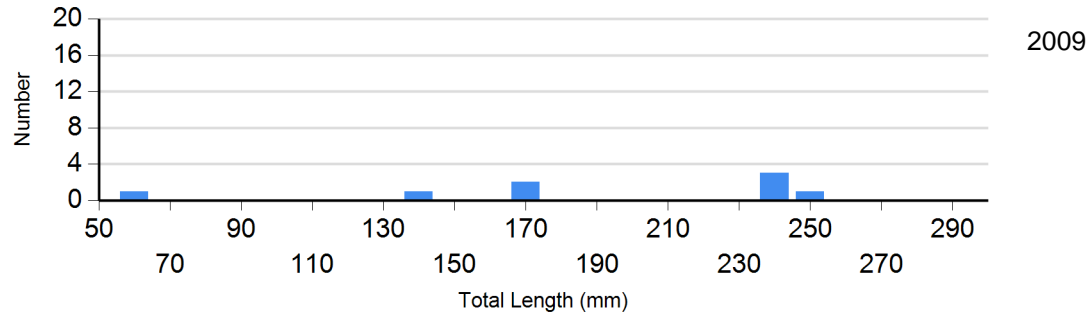
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 31, 2006	9	9-9	
	Jul 27, 2009	7	7-7	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

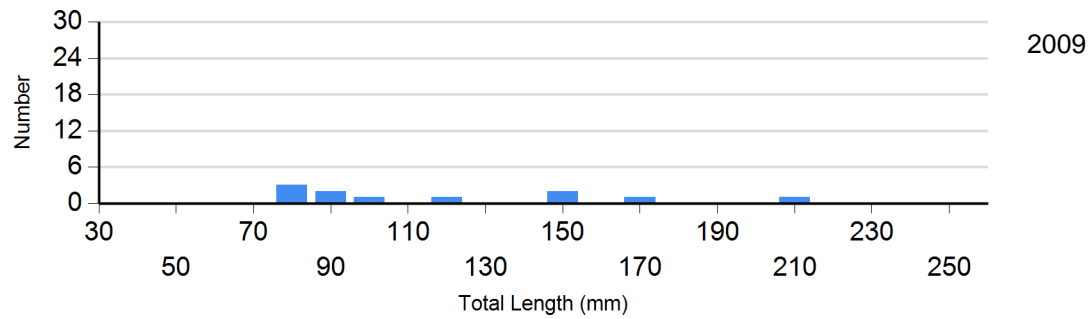
Site: 1864

Species: White Sucker



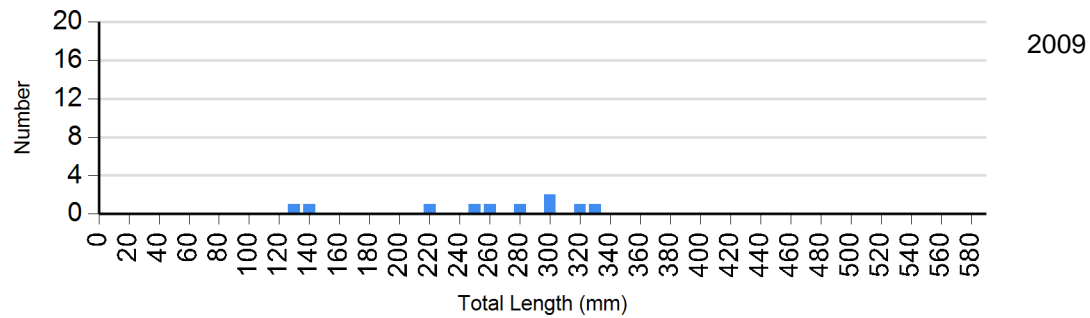
Site: 1885

Species: Creek Chub

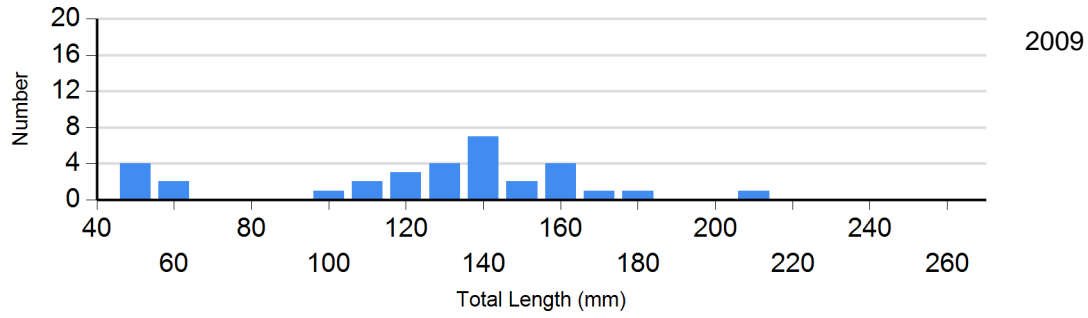


Site: 1885

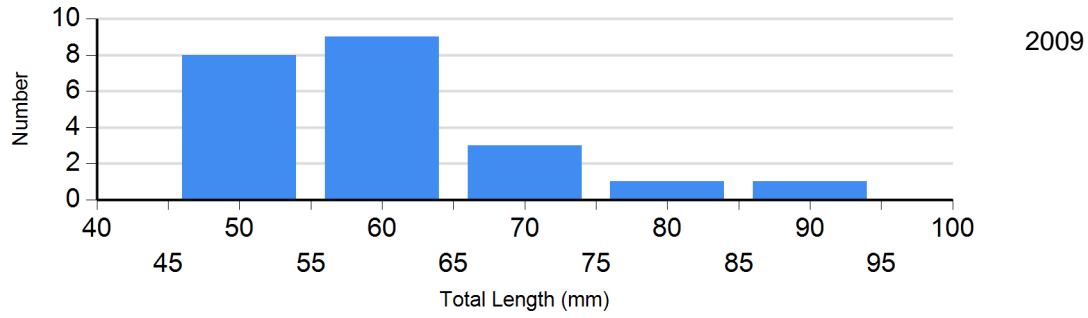
Species: White Sucker



Site: 2259
Species: Brook Trout



Site: 2259
Species: Longnose Dace



Site: 2439
Species: Brook Trout

