

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Castle Creek - South Fork, Pennington County
02-0073-00
2009

Table 1. Population and Biomass Estimates for Castle Creek - South Fork

Site Number: 21	Date Sampled: 09/01/2009	Conductivity (umhos/cm):	458
Site Midpoint (Latitude, Longitude): 43.99808186, -103.83371127	Site Length (m): 100	pH:	8.8
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 5.5	Water Temperature (C):	15.3
Stream Classification: BK1, RB0	Number of Pass: 3	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)
Brook Trout	<200mm	178	184	191	178	3373	108	1840	1366	96.48	2961	130.6	32.0
Brook Trout	>=200mm	32	32	34	32	587	93	320	238	83.24	515	251.6	158.9
Brook Trout	All	210	218	226	210	3997	213	2180	1619	190.16	3508	149.0	53.3
Rainbow Trout	<200mm	11	12	17	11	220	7	120	89	6.02	193	119.7	30.6
Rainbow Trout	All	11	12	17	11	220	7	120	89	6.02	193	119.7	30.6

Site Number: 50	Date Sampled: 09/03/2009	Conductivity (umhos/cm):	475
Site Midpoint (Latitude, Longitude): 43.98174758, -103.84203569	Site Length (m): 80	pH:	8.7
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 2.3	Water Temperature (C):	12.0
Stream Classification: BK1, RB0	Number of Pass: 3	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)
Brook Trout	<200mm	151	328	560	151	14400	493	4100	5832	440.03	6597	104.3	34.2
Brook Trout	>=200mm	14	17	27	14	746	107	213	302	95.82	342	237.6	143.8
Brook Trout	All	165	346	565	165	15190	808	4325	6152	721.01	6959	115.6	53.2
Rainbow Trout	<200mm	7	7	8	7	307	13	88	124	11.41	141	122.3	41.6

Rainbow Trout All 7 7 8 7 307 13 88 124 11.41 141 122.3 41.6

Site Number: 52

Site Midpoint (Latitude, Longitude): 43.98103139, -103.84412679

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0

Date Sampled: 09/03/2009

Site Length (m): 100

Mean Width (m): 3.0

Number of Pass: 3

Conductivity (umhos/cm): 461

pH: 8.8

Water Temperature (C): 11.9

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)
Brook Trout	<200mm	79	82	87	79	2733	61	820	1107	54.39	1319	87.5	22.3
Brook Trout	All	79	82	87	79	2733	61	820	1107	54.39	1319	87.5	22.3

Site Number: 61

Site Midpoint (Latitude, Longitude): 43.98035399, -103.85277272

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0

Date Sampled: 08/31/2009

Site Length (m): 100

Mean Width (m): 2.2

Number of Pass: 3

Conductivity (umhos/cm): 465

pH: 8.6

Water Temperature (C): 9.7

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)
Brook Trout	<200mm	47	47	48	47	2110	58	470	855	51.87	756	114.8	27.5
Brook Trout	All	47	47	48	47	2110	58	470	855	51.87	756	114.8	27.5

Site Number: 68

Site Midpoint (Latitude, Longitude): 43.98005763, -103.86027711

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0

Date Sampled: 08/31/2009

Site Length (m): 100

Mean Width (m): 1.6

Number of Pass: 3

Conductivity (umhos/cm): 421

pH: 8.7

Water Temperature (C): 13.6

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)
Brook Trout	<200mm	70	70	72	70	4451	174	700	1803	154.99	1126	89.1	39.0
Brook Trout	All	70	70	72	70	4451	174	700	1803	154.99	1126	89.1	39.0

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 - South Fork, 1999-2009

Site 21

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 01, 2009	184	178-191	
Brook Trout >=200mm	Sep 01, 2009	32	32-34	BK1
Rainbow Trout <200mm	Sep 01, 2009	12	11-17	

Site 50

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 03, 2009	328	151-560	
Brook Trout >=200mm	Sep 03, 2009	17	14-27	BK1
Rainbow Trout <200mm	Sep 03, 2009	7	7-8	

Site 52

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 03, 2009	82	79-87	

Site 61

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 31, 2009	47	47-48	

Site 68

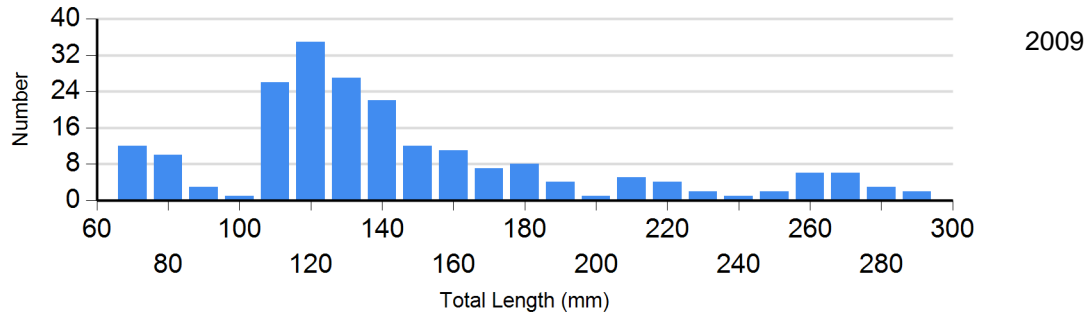
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 31, 2009	70	70-72	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

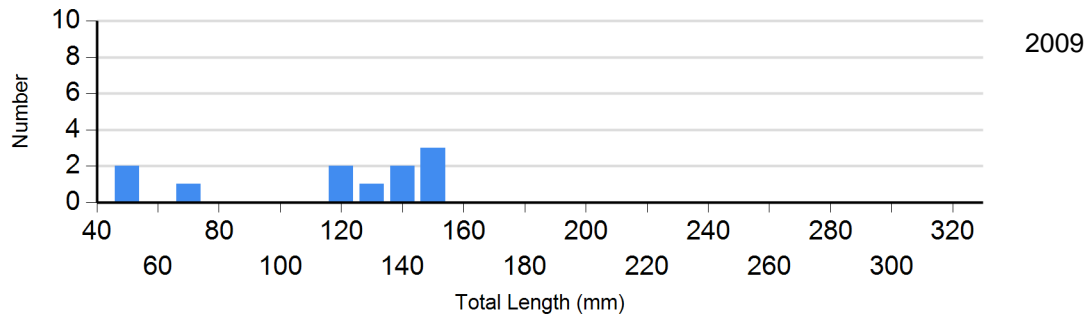
Site: 21

Species: Brook Trout



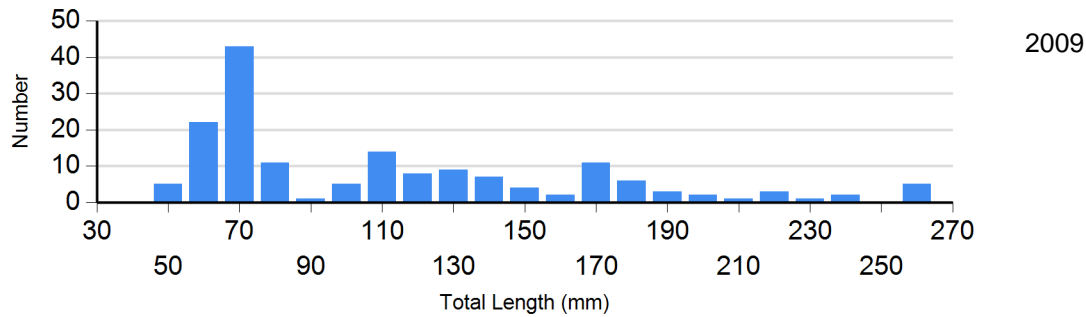
Site: 21

Species: Rainbow Trout

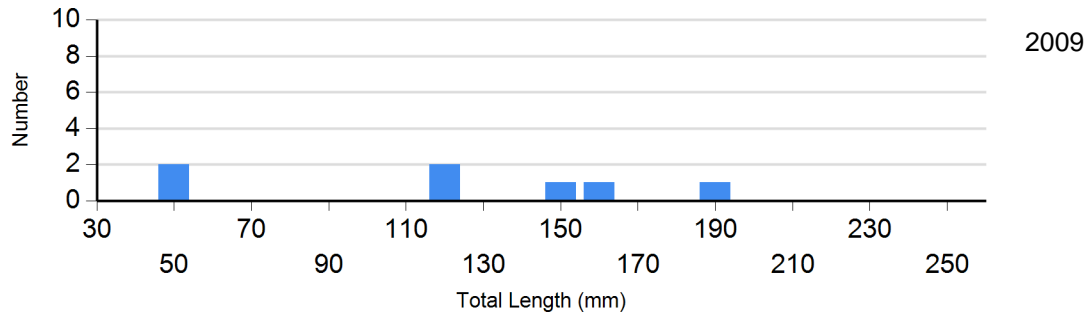


Site: 50

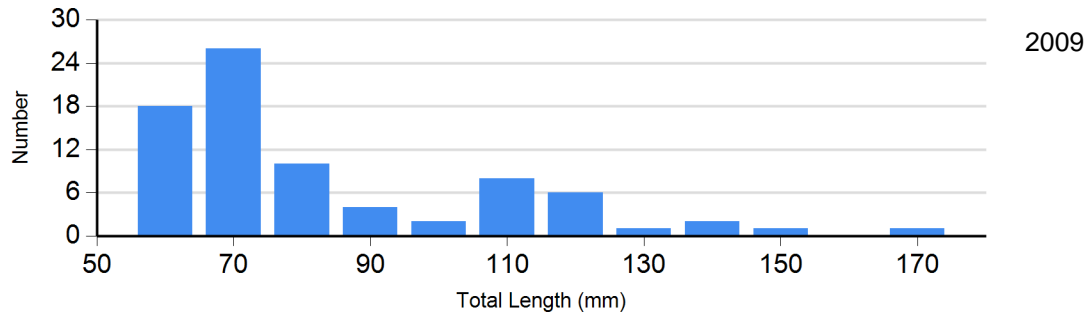
Species: Brook Trout



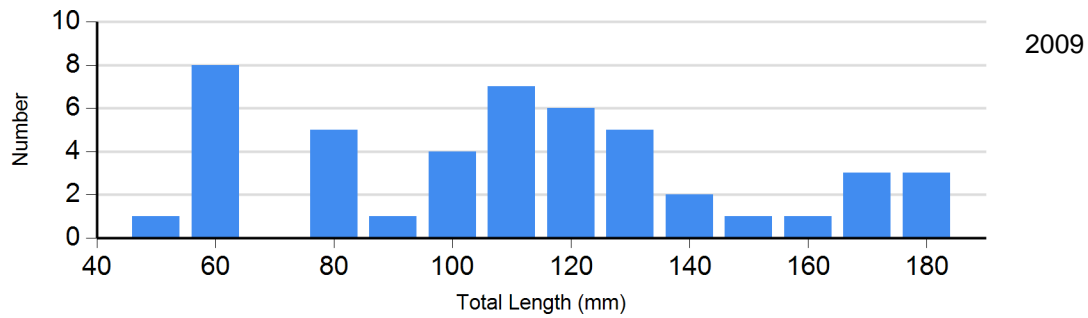
Site: 50
Species: Rainbow Trout



Site: 52
Species: Brook Trout



Site: 61
Species: Brook Trout



Site: 68
Species: Brook Trout

