

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Cleopatra Creek, Lawrence County
09-0055-00
2014

Table 1. Population and Biomass Estimates for Cleopatra Creek

Site Number: 4
Site Midpoint (Latitude, Longitude): 44.39921369, -103.89223587
Survey Completed by: Unknown Consultant Firm for mining
Stream Classification: BK2

Date Sampled: 08/27/2014
Site Length (m): 70
Mean Width (m): 3.8
Number of Pass: 3

Conductivity (umhos/cm):
pH:
Water Temperature (C):
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	457	471	481	461	12395	217	6729	5020	193.71	10826	107.8	17.5
Brook Trout	>=200mm	3	3	4	3	79	8	43	32	7.33	69	211.7	104.0
Brook Trout	All	460	474	484	464	12474	225	6771	5052	201.22	10895	108.5	18.1

Site Number: 45
Site Midpoint (Latitude, Longitude): 44.37686389, -103.86595601
Survey Completed by: Unknown Consultant Firm for mining
Stream Classification: BK1

Date Sampled: 08/28/2014
Site Length (m): 70
Mean Width (m): 2.4
Number of Pass: 2

Conductivity (umhos/cm):
pH:
Water Temperature (C):
Voltage: 265

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	250	282	306	258	11569	275	4029	4686	245.73	6482	118.9	23.8
Brook Trout	>=200mm	11	12	17	11	492	47	171	199	41.80	276	212.0	95.1
Brook Trout	All	261	296	322	270	12144	325	4229	4918	290.51	6804	122.8	26.8

Site Number: 57
Site Midpoint (Latitude, Longitude): 44.37184360, -103.85453374

Date Sampled: 08/29/2014
Site Length (m): 60

Conductivity (umhos/cm):
pH:

Survey Completed by: Unknown Consultant Firm for mining

Mean Width (m): 2.4

Water Temperature (C):

Stream Classification: BK2

Number of Pass: 3

Voltage:

325

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	165	167	171	165	6917	122	2783	2801	108.74	4478	101.4	17.6
Brook Trout	>=200mm	5	5	6	5	207	19	83	84	16.75	134	204.6	90.6
Brook Trout	All	170	172	176	170	7124	141	2867	2885	125.65	4612	104.4	19.8

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 Cleopatra Creek, 2004-2014

Site 4

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 23, 2004	212	204-220	
	Aug 26, 2005	234	230-239	
	Aug 31, 2011	381	379-385	
	Aug 27, 2014	471	461-481	
Brook Trout >=200mm	Aug 26, 2005	1	1-1	BK3
	Aug 31, 2011	4	4-6	BK3
	Aug 27, 2014	3	3-4	BK2

Site 45

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 24, 2004	248	238-258	
	Aug 27, 2005	242	235-249	
	Sep 01, 2008	231	229-235	
	Aug 31, 2011	312	305-319	
	Aug 28, 2014	282	258-306	
Brook Trout >=200mm	Aug 27, 2005	3	3-4	BK2
	Sep 01, 2008	3	3-4	BK3
	Aug 31, 2011	6	6-7	BK3
	Aug 28, 2014	12	11-17	BK1

Site 57

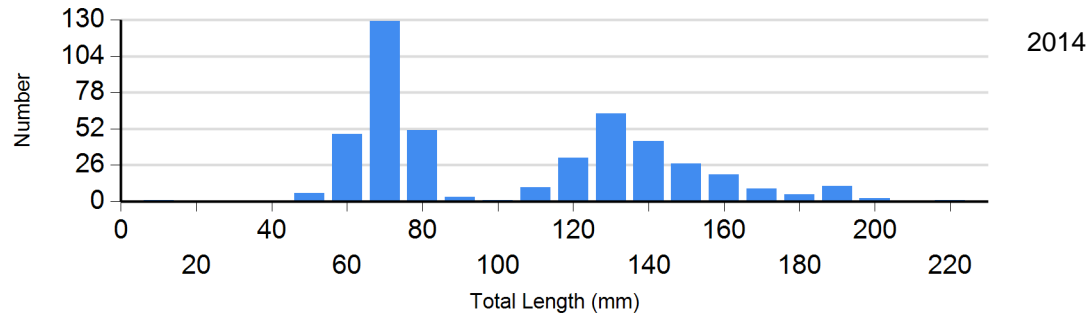
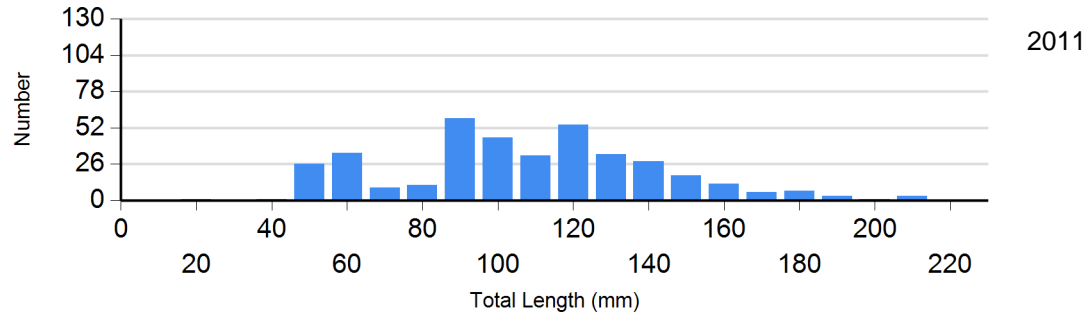
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 25, 2004	199	188-210	
	Sep 01, 2011	238	237-241	
	Aug 29, 2014	167	165-171	
Brook Trout >=200mm	Aug 29, 2014	5	5-6	BK2

Length Frequency Distribution

Length frequency histogram of species sampled by year.

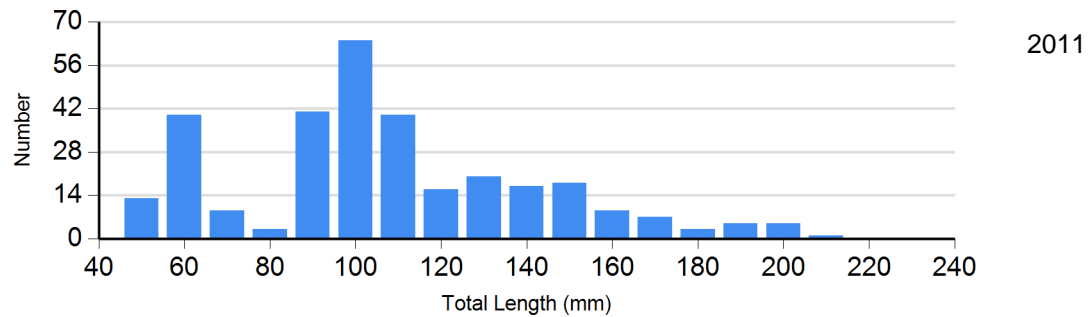
Site: 4

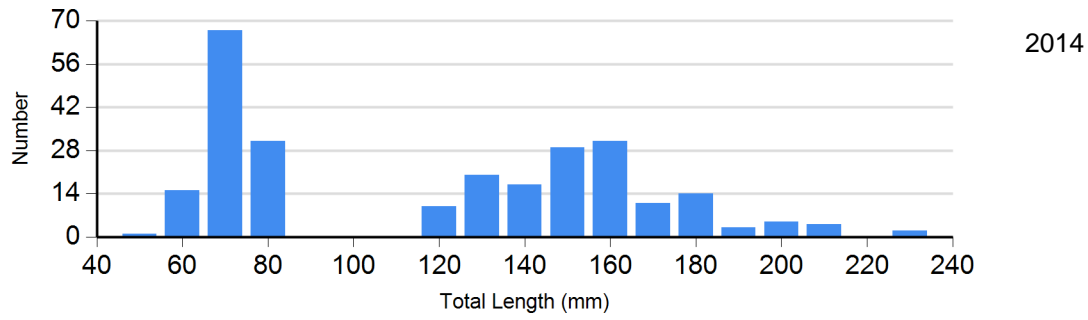
Species: Brook Trout



Site: 45

Species: Brook Trout





Site: 57
Species: Brook Trout

