

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Cleopatra Creek, Lawrence County
09-0055-00
1993

Table 1. Population and Biomass Estimates for Cleopatra Creek

Site Number: 4
Site Midpoint (Latitude, Longitude): 44.39921369, -103.89223587
Survey Completed by: OEA Research Inc.
Stream Classification: BK3

Date Sampled: 09/11/1993
Site Length (m): 100
Mean Width (m): 0.0
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	249	440	602	278	0	0	4400	0	0.00	7080	123.5	25.5
Brook Trout	>=200mm	2	2	3	2	0	0	20	0	0.00	32	202.5	95.5
Brook Trout	All	251	440	598	282	0	0	4400	0	0.00	7080	124.2	26.0

Site Number: 4
Site Midpoint (Latitude, Longitude): 44.39921369, -103.89223587
Survey Completed by: OEA Research Inc.
Stream Classification: BK3, BR0, RB0

Date Sampled: 09/13/1993
Site Length (m): 100
Mean Width (m): 0.0
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	100	121	144	100	0	0	1210	0	0.00	1947	141.7	31.6
Brook Trout	>=200mm	3	3	3	3	0	0	30	0	0.00	48	213.7	116.7
Brook Trout	All	103	122	142	103	0	0	1220	0	0.00	1963	143.8	34.1
Brown Trout	<200mm	74	102	139	74	0	0	1020	0	0.00	1641	77.8	5.1
Brown Trout	All	74	102	139	74	0	0	1020	0	0.00	1641	77.8	5.1
Rainbow Trout	<200mm	166	230	285	175	0	0	2300	0	0.00	3701	71.2	5.6

Rainbow Trout All 166 230 285 175 0 0 2300 0 0.00 3701 71.2 5.6

Site Number: 6

Site Midpoint (Latitude, Longitude): 44.39833343, -103.89181119

Survey Completed by: OEA Research Inc.

Stream Classification: BK3

Date Sampled: 09/11/1993

Site Length (m): 100

Mean Width (m): 0.0

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	124	130	138	124	0	0	1300	0	0.00	2092	91.3	13.2
Brook Trout	>=200mm	14	14	16	14	0	0	140	0	0.00	225	209.9	104.3
Brook Trout	All	138	145	153	138	0	0	1450	0	0.00	2333	103.4	22.5

Site Number: 9

Site Midpoint (Latitude, Longitude): 44.39653612, -103.88925370

Survey Completed by: OEA Research Inc.

Stream Classification: BK3

Date Sampled: 09/12/1993

Site Length (m): 100

Mean Width (m): 0.0

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	20	20	21	20	0	0	200	0	0.00	322	96.0	11.0
Brook Trout	>=200mm	1	1	1	1	0	0	10	0	0.00	16	201.0	99.0
Brook Trout	All	21	21	22	21	0	0	210	0	0.00	338	101.0	15.1

Site Number: 45

Site Midpoint (Latitude, Longitude): 44.37686389, -103.86595601

Survey Completed by: OEA Research Inc.

Stream Classification: BK0

Date Sampled: 09/12/1993

Site Length (m): 100

Mean Width (m): 0.0

Number of Pass: 2

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	2	2	4	2	0	0	20	0	0.00	32	96.5	11.5
Brook Trout	All	2	2	4	2	0	0	20	0	0.00	32	96.5	11.5

Site Number: 53

Site Midpoint (Latitude, Longitude): 44.37406394, -103.85831780

Survey Completed by: OEA Research Inc.

Stream Classification: BK0

Date Sampled: 09/13/1993

Site Length (m): 100

Mean Width (m): 0.0

Number of Pass: 2

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	7	8	14	7	0	0	80	0	0.00	129	82.0	6.6
Brook Trout	All	7	8	14	7	0	0	80	0	0.00	129	82.0	6.6

Site Number: 57

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

Survey Completed by: OEA Research Inc.

Stream Classification: BK3

Date Sampled: 09/10/1993

Site Length (m): 100

Mean Width (m): 0.0

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	114	130	147	114	0	0	1300	0	0.00	2092	128.6	30.8
Brook Trout	>=200mm	2	2	3	2	0	0	20	0	0.00	32	213.0	116.0
Brook Trout	All	116	132	149	116	0	0	1320	0	0.00	2124	130.1	32.3

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, 1983-1993

Site 4

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 11, 1993	440	278-602	
	Sep 13, 1993	121	100-144	
Brook Trout >=200mm	Sep 11, 1993	2	2-3	BK3
	Sep 13, 1993	3	3-3	BK3
Brown Trout <200mm	Sep 13, 1993	102	74-139	
Rainbow Trout <200mm	Sep 13, 1993	230	175-285	

Site 6

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 11, 1993	130	124-138	
Brook Trout >=200mm	Sep 11, 1993	14	14-16	BK3

Site 9

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 12, 1993	20	20-21	
Brook Trout >=200mm	Sep 12, 1993	1	1-1	BK3

Site 45

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 12, 1993	2	2-4	

Site 53

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 13, 1993	8	7-14	

Site 57

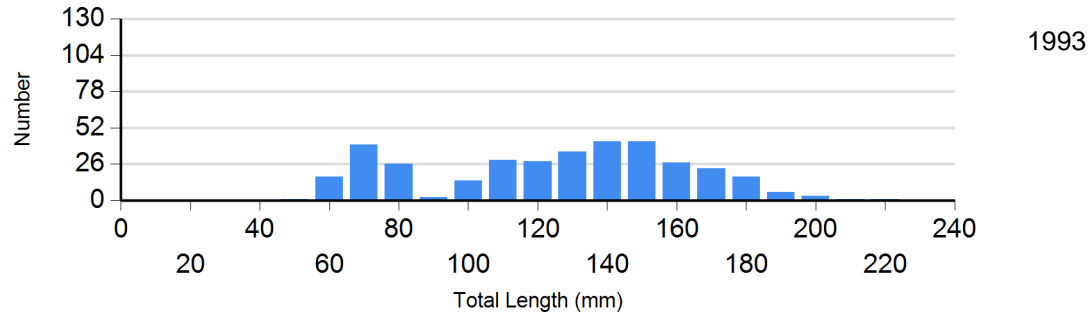
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 10, 1993	130	114-147	
Brook Trout >=200mm	Sep 10, 1993	2	2-3	BK3

Length Frequency Distribution

Length frequency histogram of species sampled by year.

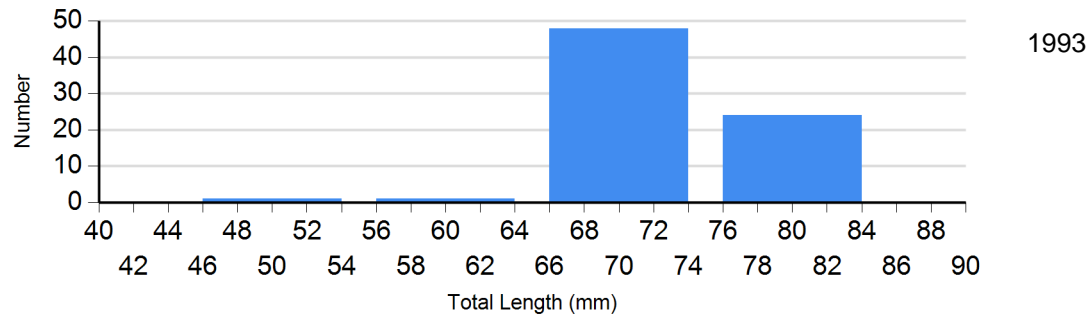
Site: 4

Species: Brook Trout



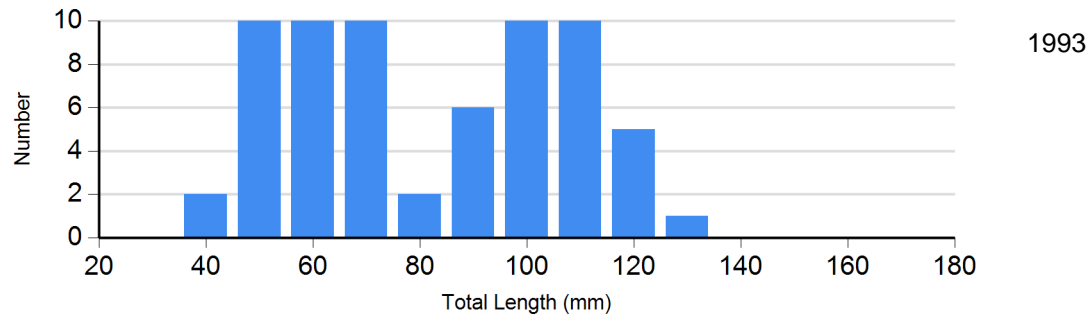
Site: 4

Species: Brown Trout

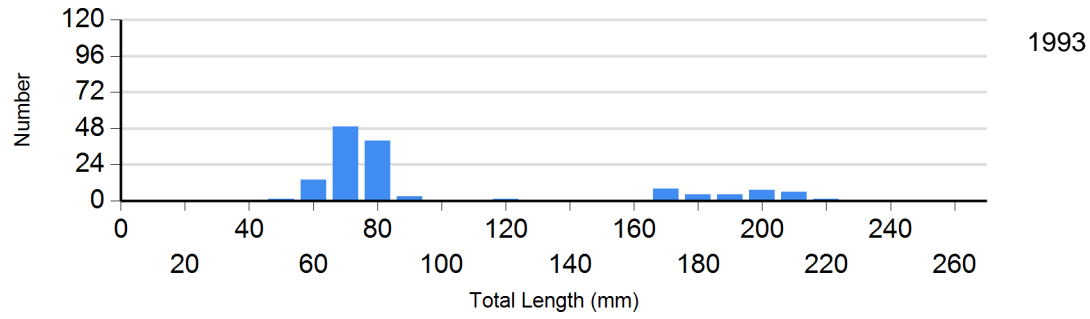


Site: 4

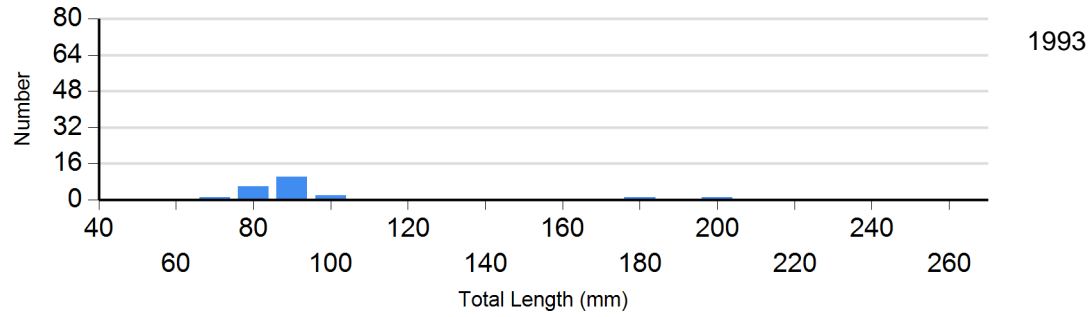
Species: Rainbow Trout



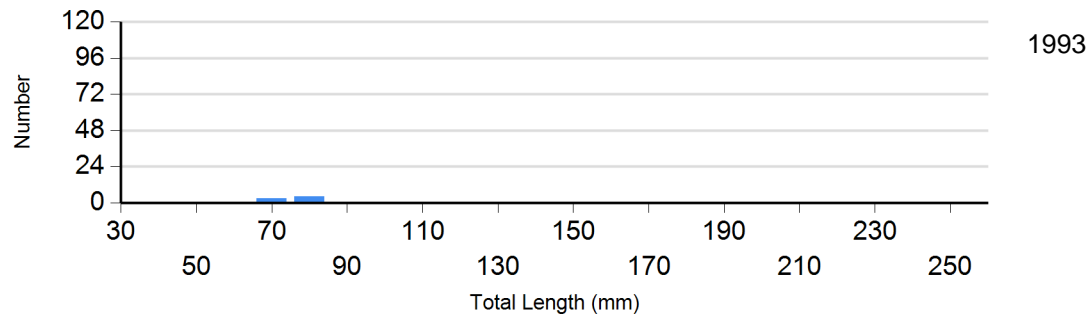
Site: 6
Species: Brook Trout



Site: 9
Species: Brook Trout



Site: 53
Species: Brook Trout



Site: 57
Species: Brook Trout

