

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Cleopatra Creek, Lawrence County
09-0055-00
1996

Table 1. Population and Biomass Estimates for Cleopatra Creek

Site Number: 4	Date Sampled: 09/18/1996	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.39921369, -103.89223587	Site Length (m): 100	pH:
Survey Completed by: OEA Research Inc.	Mean Width (m): 0.0	Water Temperature (C): 9.0
Stream Classification: BK3	Number of Pass: 3	Voltage: 300

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	233	249	262	236	0	0	2490	0	0.00	4006	95.2	15.8
Brook Trout	>=200mm	21	21	23	21	0	0	210	0	0.00	338	210.2	104.4
Brook Trout	All	254	271	284	258	0	0	2710	0	0.00	4360	104.7	23.1

Site Number: 6	Date Sampled: 09/18/1996	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.39833343, -103.89181119	Site Length (m): 100	pH:
Survey Completed by: OEA Research Inc.	Mean Width (m): 0.0	Water Temperature (C):
Stream Classification: BK3	Number of Pass: 3	Voltage: 300

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	232	244	254	234	0	0	2440	0	0.00	3926	77.6	5.1
Brook Trout	>=200mm	21	21	22	21	0	0	210	0	0.00	338	232.3	142.8
Brook Trout	All	253	264	274	254	0	0	2640	0	0.00	4248	90.4	16.5

Site Number: 9	Date Sampled: 09/19/1996	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.39653612, -103.88925370	Site Length (m): 100	pH:

Survey Completed by: OEA Research Inc.

Mean Width (m): 0.0

Water Temperature (C): 8.0

Stream Classification: BK3

Number of Pass: 3

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	164	172	181	164	0	0	1720	0	0.00	2767	80.8	5.1
Brook Trout	>=200mm	10	10	12	10	0	0	100	0	0.00	161	227.7	129.1
Brook Trout	All	174	184	194	174	0	0	1840	0	0.00	2961	89.2	12.3

Site Number: 45

Date Sampled: 09/19/1996

Conductivity (umhos/cm):

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

Site Length (m): 100

pH:

Survey Completed by: OEA Research Inc.

Mean Width (m): 0.0

Water Temperature (C): 9.0

Stream Classification: BK3

Number of Pass: 3

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	32	35	42	32	0	0	350	0	0.00	563	96.0	11.7
Brook Trout	>=200mm	2	2	3	2	0	0	20	0	0.00	32	257.0	220.0
Brook Trout	All	34	37	44	34	0	0	370	0	0.00	595	105.5	23.9

Site Number: 53

Date Sampled: 09/20/1996

Conductivity (umhos/cm):

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

Site Length (m): 100

pH:

Survey Completed by: OEA Research Inc.

Mean Width (m): 0.0

Water Temperature (C): 8.0

Stream Classification: BK0

Number of Pass: 3

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	91	93	97	91	0	0	930	0	0.00	1496	81.1	5.1
Brook Trout	All	91	93	97	91	0	0	930	0	0.00	1496	81.1	5.1

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, 1986-1996

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	
	Sep 17, 1994	361	347-375	
	Sep 19, 1994	140	140-140	
	Oct 11, 1994	136	136-136	
	Sep 18, 1996	249	236-262	
Brook Trout >=200mm	Sep 11, 1993	2	2-3	BK3

Brook Trout >=200mm	Sep 13, 1993	3	3-3	BK3
	Sep 17, 1994	1	1-1	BK3
	Sep 19, 1994	3	3-3	BK3
	Oct 11, 1994	1	1-1	BK3
	Sep 18, 1996	21	21-23	BK3

Site 6

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 11, 1993	130	124-138	
	Sep 18, 1994	417	393-441	
	Oct 11, 1994	32	32-32	
	Sep 18, 1996	244	234-254	
Brook Trout >=200mm	Sep 11, 1993	14	14-16	BK3
	Sep 18, 1994	24	7-190	BK3
	Sep 18, 1996	21	21-22	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 19, 1994	201	188-214	
	Sep 19, 1996	172	164-181	
Brook Trout >=200mm	Sep 12, 1993	1	1-1	BK3
	Sep 19, 1994	2	2-2	BK3
	Sep 19, 1996	10	10-12	BK3

Site 45

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 12, 1993	2	2-4	
	Sep 16, 1994	20	20-22	
	Sep 19, 1996	35	32-42	
Brook Trout >=200mm	Sep 16, 1994	5	5-6	BK3
	Sep 19, 1996	2	2-3	BK3

Site 53

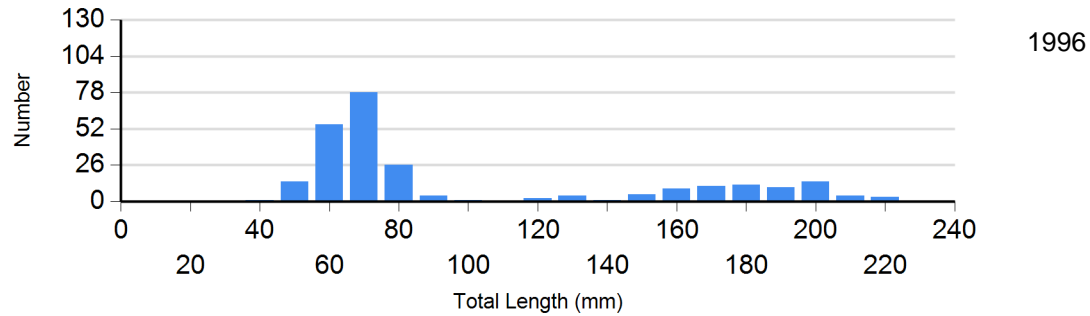
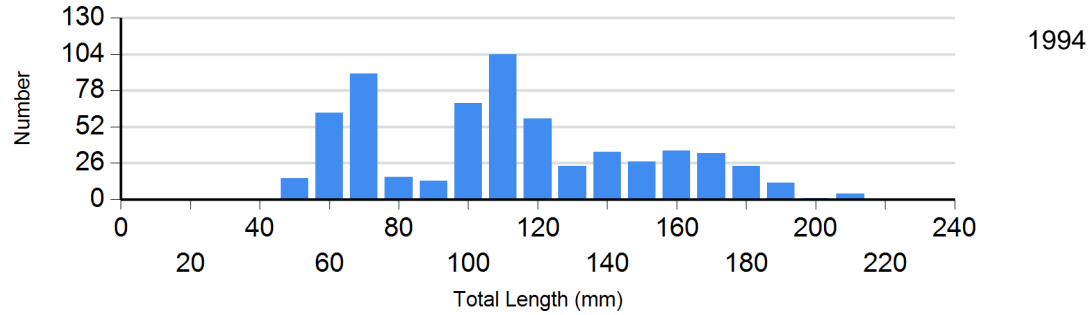
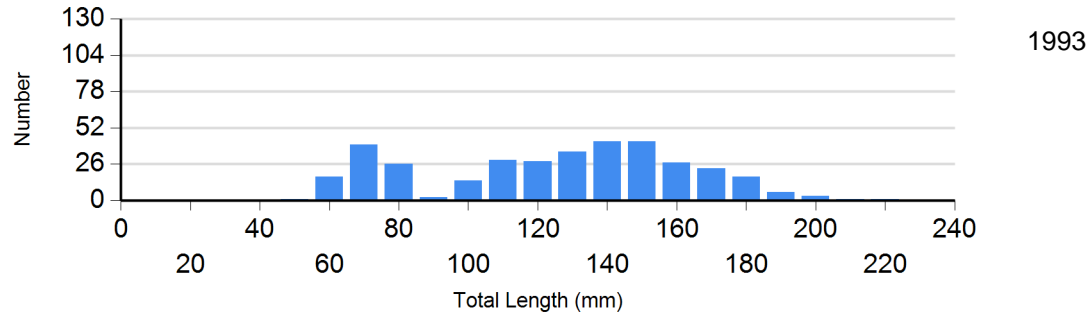
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 13, 1993	8	7-14	
	Sep 15, 1994	158	131-185	
	Sep 20, 1996	93	91-97	

Length Frequency Distribution

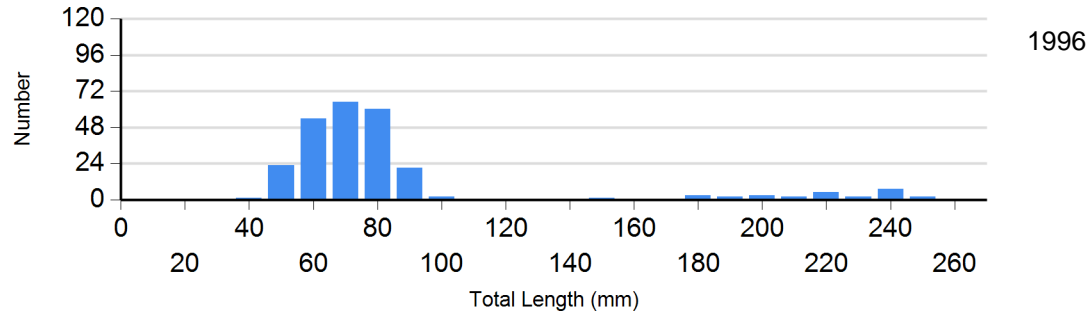
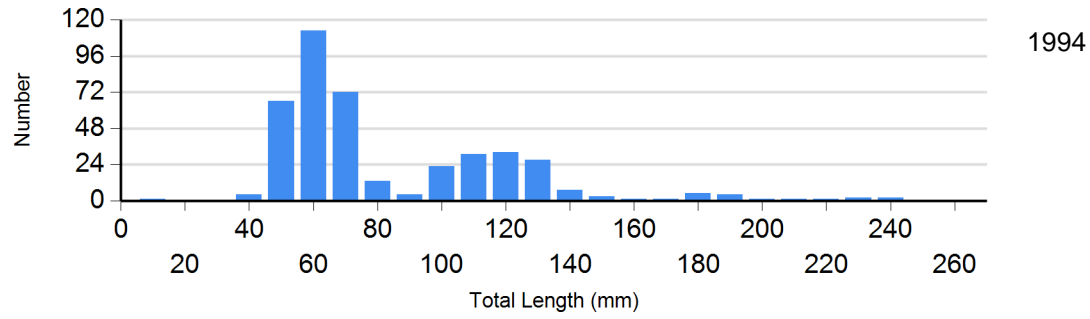
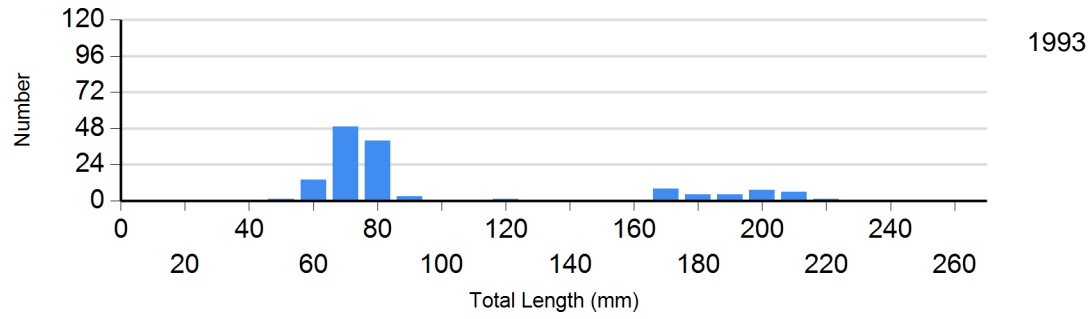
Length frequency histogram of species sampled by year.

Site: 4

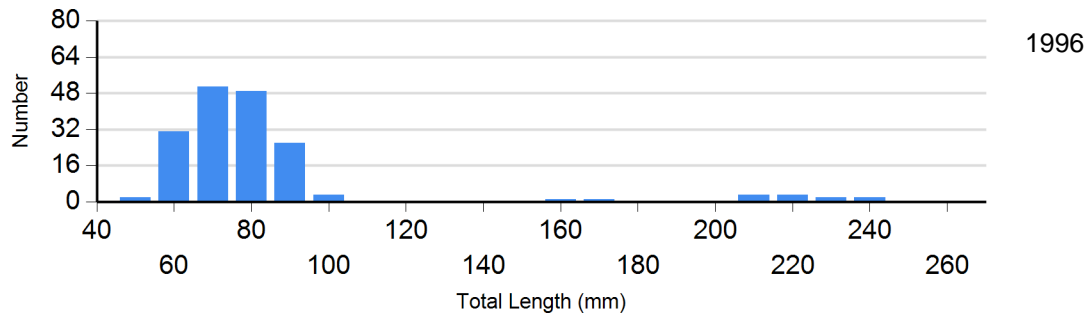
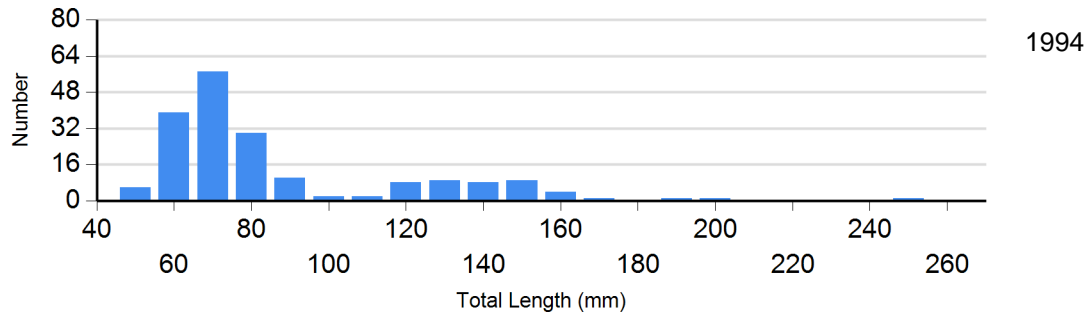
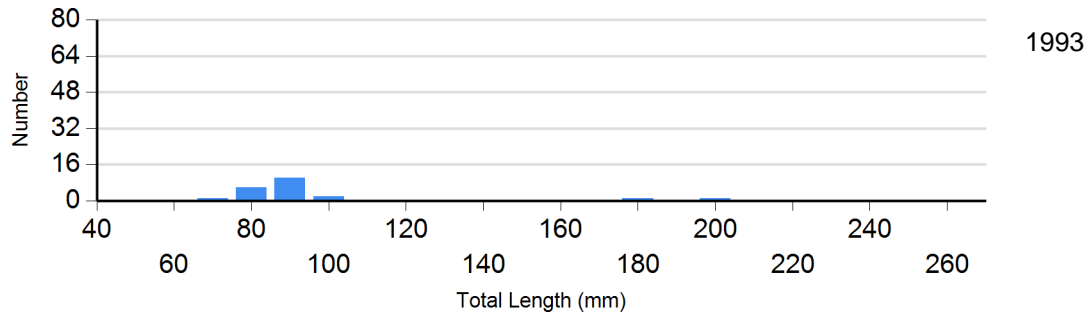
Species: Brook Trout



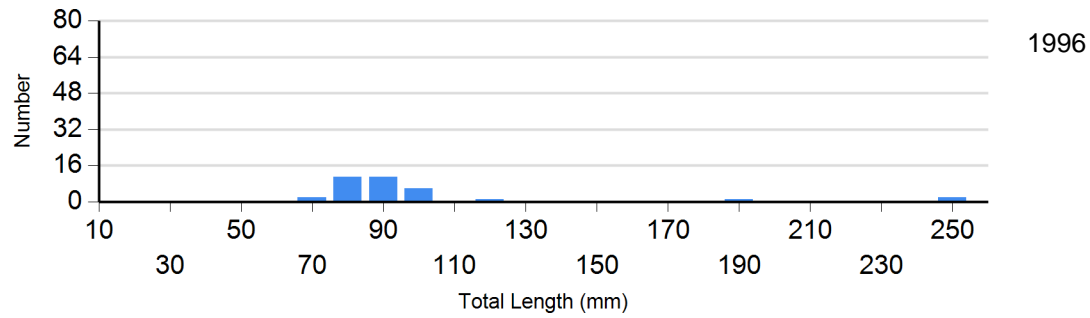
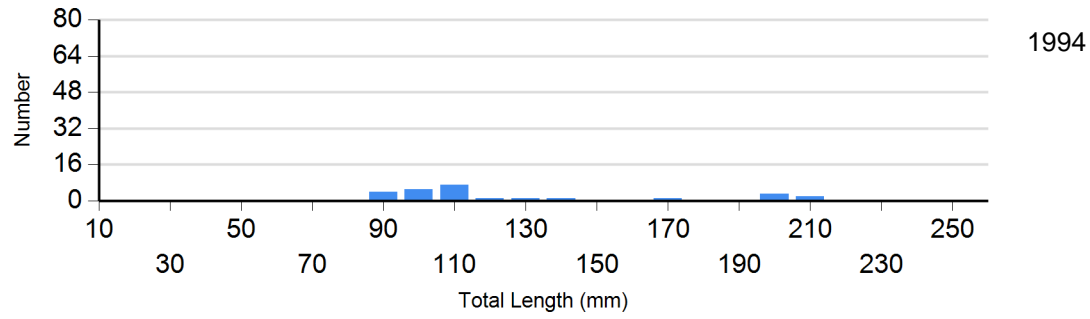
Site: 6
Species: Brook Trout



Site: 9
Species: Brook Trout



Site: 45
Species: Brook Trout



Site: 53
Species: Brook Trout

