

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Cleopatra Creek, Lawrence County**  
**09-0055-00**  
**2005**

Table 1. Population and Biomass Estimates for Cleopatra Creek

<b>Site Number:</b> 4	<b>Date Sampled:</b> 08/26/2005	<b>Conductivity (umhos/cm):</b>
<b>Site Midpoint (Latitude, Longitude):</b> 44.39921369, -103.89223587	<b>Site Length (m):</b> 50	<b>pH:</b>
<b>Survey Completed by:</b> KNK Aquatic Ecology	<b>Mean Width (m):</b> 3.8	<b>Water Temperature (C):</b> 15.0
<b>Stream Classification:</b> BK3	<b>Number of Pass:</b> 3	<b>Voltage:</b>

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	230	234	239	230	6202	67	4680	2512	60.05	7530	94.9	10.8
Brook Trout	>=200mm	1	1	1	1	27	3	20	11	2.25	32	208.0	95.0
Brook Trout	All	231	235	240	231	6229	70	4700	2523	62.33	7562	95.4	11.2

<b>Site Number:</b> 45	<b>Date Sampled:</b> 08/27/2005	<b>Conductivity (umhos/cm):</b>
<b>Site Midpoint (Latitude, Longitude):</b> 44.37686389, -103.86595601	<b>Site Length (m):</b> 50	<b>pH:</b>
<b>Survey Completed by:</b> KNK Aquatic Ecology	<b>Mean Width (m):</b> 2.9	<b>Water Temperature (C):</b> 11.7
<b>Stream Classification:</b> BK2	<b>Number of Pass:</b> 3	<b>Voltage:</b>

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	235	242	249	235	8451	91	4840	3423	80.85	7788	94.0	10.7
Brook Trout	>=200mm	3	3	4	3	105	11	60	42	10.04	97	220.3	107.3
Brook Trout	All	238	245	252	238	8556	102	4900	3465	91.15	7884	95.6	11.9

<b>Site Number:</b> 54	<b>Date Sampled:</b> 08/25/2005	<b>Conductivity (umhos/cm):</b>
<b>Site Midpoint (Latitude, Longitude):</b> 44.37332730, -103.85743196	<b>Site Length (m):</b> 119	<b>pH:</b>

Survey Completed by: Chadwick Ecological Services

Mean Width (m): 0.0

Water Temperature (C):

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	255	261	267	255	0	0	2193	0	0.00	3529	112.7	15.4
Brook Trout	All	255	261	267	255	0	0	2193	0	0.00	3529	112.7	15.4

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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	
<b>Class BR1</b>	Number of wild Brown Trout exceeds 150 per acre
<b>Class BR2</b>	Number of wild Brook Trout ranges from 25 to 150 per acre
<b>Class BR3</b>	Number of wild Brown Trout is less than 25 per acre
<b>Class BK1</b>	Number of wild Brook Trout exceeds 150 per acre
<b>Class BK2</b>	Number of wild Brook Trout ranges from 25 to 150 per acre
<b>Class BK3</b>	Number of wild Brook Trout is less than 25 per acre
<b>Class RB1</b>	Number of wild Rainbow Trout exceeds 25 per acre
<b>Class RB2</b>	Number of wild Rainbow Trout is less than 25 per acre

Table 2. Species composition and population estimates on Cleopatra Creek, 1995-2005

**Site 4**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 18, 1996	249	236-262	
	Sep 04, 1997	592	577-607	
	Sep 16, 1998	448	446-451	
	Sep 20, 2000	602	565-639	
	Sep 30, 2002	457	439-475	
	Sep 23, 2004	212	204-220	
	Aug 26, 2005	234	230-239	

Brook Trout >=200mm	Sep 18, 1996	21	21-23	BK3
	Sep 04, 1997	14	13-18	BK2
	Sep 16, 1998	4	4-4	BK2
	Sep 20, 2000	9	9-10	BK2
	Aug 26, 2005	1	1-1	BK3

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**Site 45**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Sep 19, 1996	35	32-42	
	Sep 06, 1997	200	196-205	
	Sep 15, 1998	314	314-316	
	Sep 15, 2000	441	430-452	
	Oct 02, 2002	230	222-238	
	Sep 24, 2004	248	238-258	
	Aug 27, 2005	242	235-249	
Brook Trout >=200mm	Sep 19, 1996	2	2-3	BK3
	Sep 06, 1997	4	4-4	BK2

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Brook Trout >=200mm	Sep 15, 1998	6	6-6	BK2
	Sep 15, 2000	10	10-11	BK1
	Oct 02, 2002	4	4-4	BK2
	Aug 27, 2005	3	3-4	BK2

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**Site 54**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Aug 31, 2004	205	199-212	
	Aug 25, 2005	261	255-267	

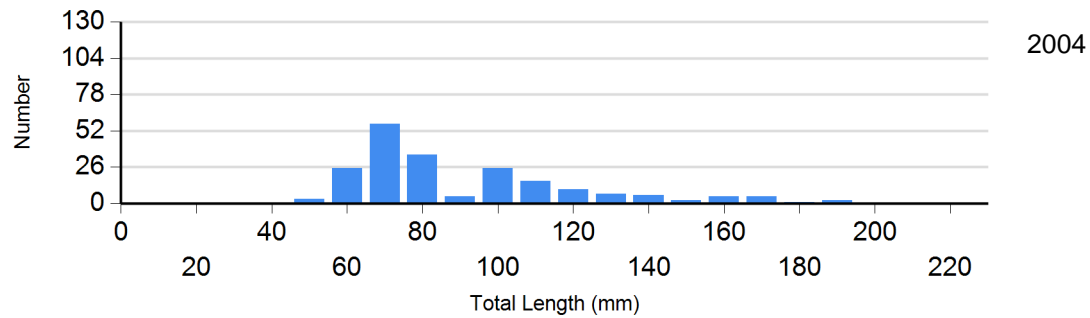
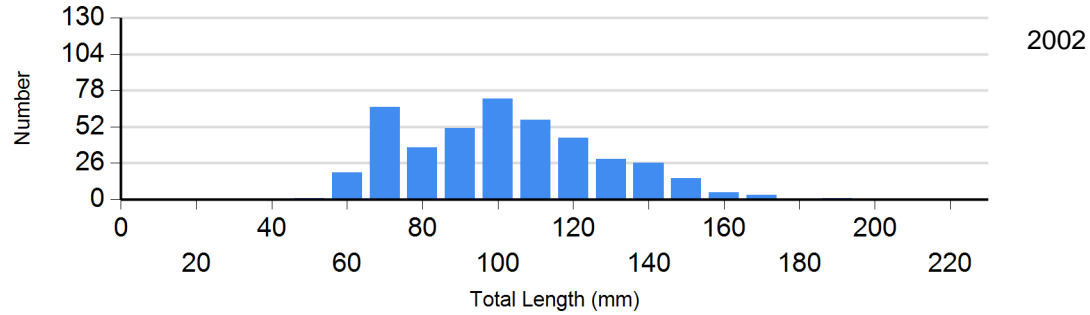
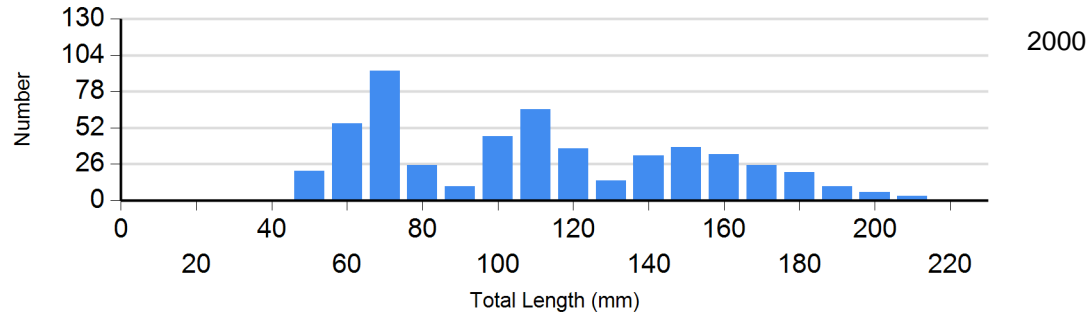
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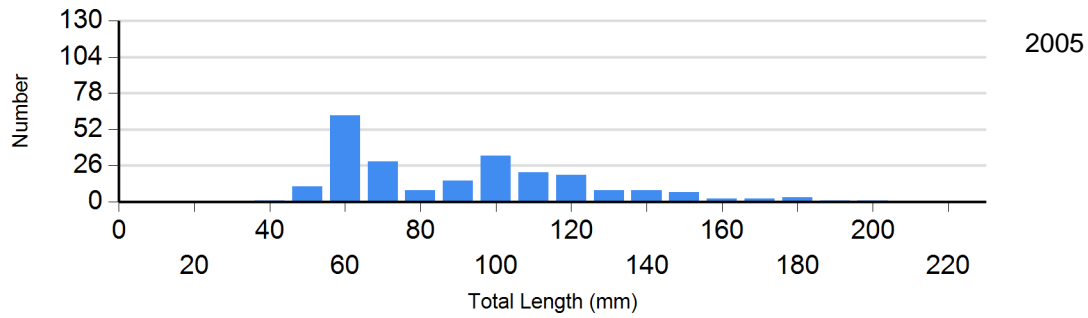
## Length Frequency Distribution

Length frequency histogram of species sampled by year.

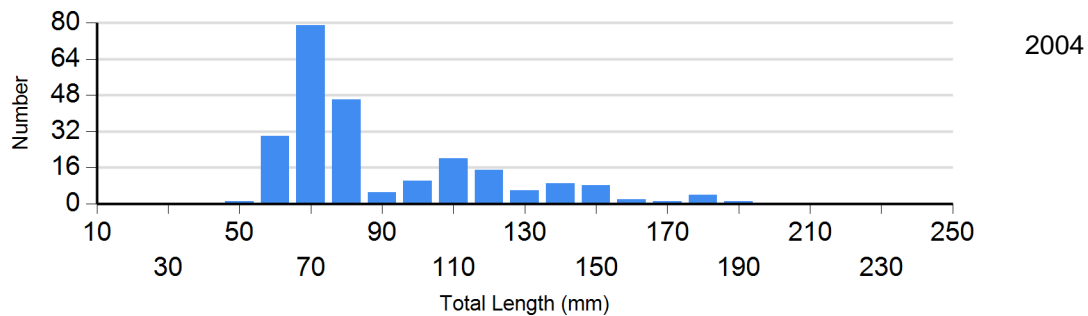
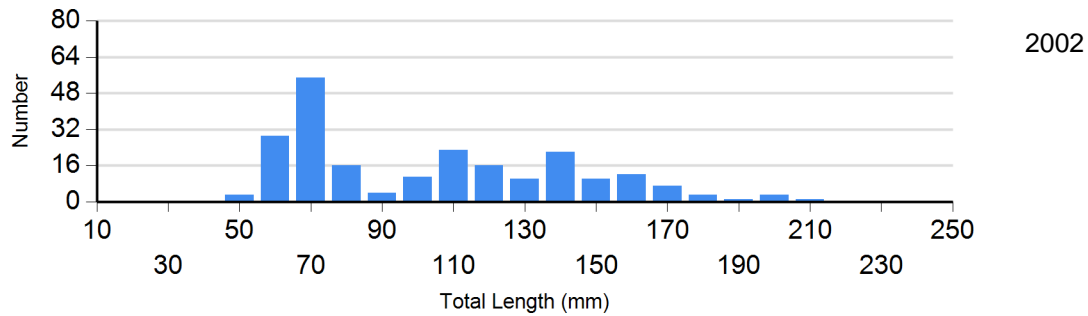
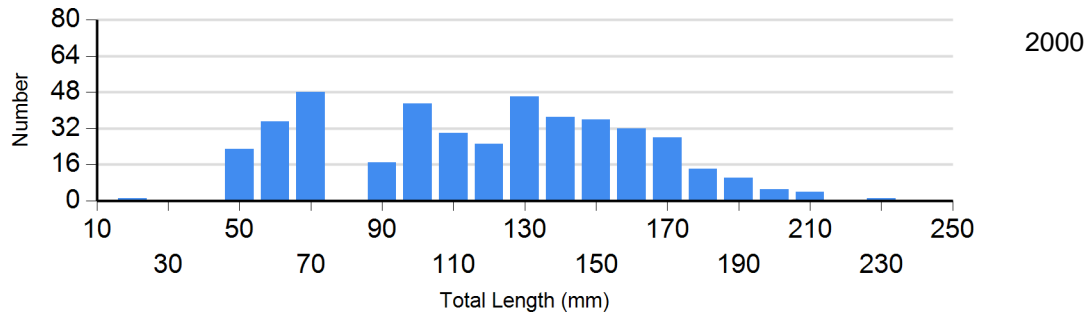
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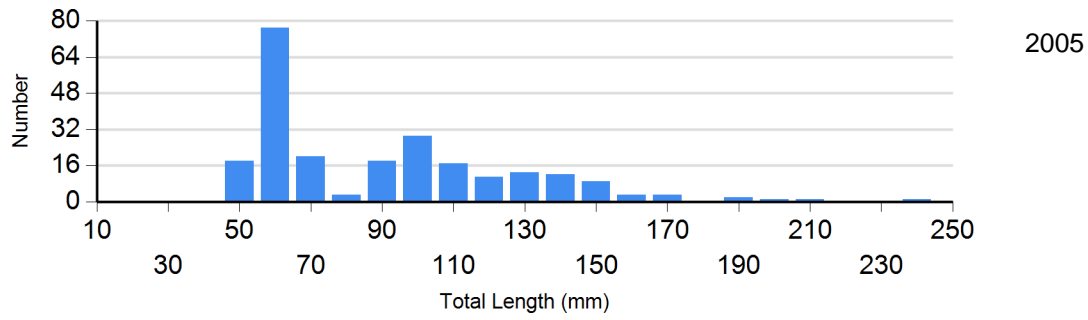
Species: Brook Trout





Site: 45  
Species: Brook Trout





Site: 54  
Species: Brook Trout

