

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**East Spearfish Creek (Hanna), Lawrence County**  
**09-0016-00**  
**2008**

Table 1. Population and Biomass Estimates for East Spearfish Creek (Hanna)

<b>Site Number:</b> 37	<b>Date Sampled:</b> 07/07/2008	<b>Conductivity (umhos/cm):</b> 399
<b>Site Midpoint (Latitude, Longitude):</b> 44.27474914, -103.85439849	<b>Site Length (m):</b> 100	<b>pH:</b> 8.6
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 4.2	<b>Water Temperature (C):</b> 12.3
<b>Stream Classification:</b> BR1	<b>Number of Pass:</b> 1	<b>Voltage:</b> 340

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)
Brown Trout	<200mm	143	143	143	143	3376	84	1430	1367	75.35	2301	124.3	25.0
Brown Trout	>=200mm	23	23	23	23	543	85	230	220	75.60	370	242.5	156.0
Brown Trout	All	166	166	166	166	3918	169	1660	1587	150.95	2671	140.7	43.1

<b>Site Number:</b> 54	<b>Date Sampled:</b> 07/03/2008	<b>Conductivity (umhos/cm):</b> 451
<b>Site Midpoint (Latitude, Longitude):</b> 44.26528884, -103.84758730	<b>Site Length (m):</b> 100	<b>pH:</b> 8.5
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 4.7	<b>Water Temperature (C):</b> 9.3
<b>Stream Classification:</b> BR2	<b>Number of Pass:</b> 1	<b>Voltage:</b> 350

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)
Brown Trout	<200mm	65	65	65	65	1396	56	650	566	49.84	1046	145.5	40.0
Brown Trout	>=200mm	10	10	10	10	215	27	100	87	23.86	161	227.7	124.4
Brown Trout	All	75	75	75	75	1611	83	750	653	73.70	1207	156.5	51.2

<b>Site Number:</b> 77	<b>Date Sampled:</b> 07/03/2008	<b>Conductivity (umhos/cm):</b> 439
<b>Site Midpoint (Latitude, Longitude):</b> 44.24880580, -103.84493296	<b>Site Length (m):</b> 100	<b>pH:</b> 8.5

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 2.0

Water Temperature (C): 8.0

Stream Classification: BK0

Number of Pass: 1

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	80	80	80	80	4018	62	800	1627	55.75	1287	102.8	15.5
Brook Trout	All	80	80	80	80	4018	62	800	1627	55.75	1287	102.8	15.5

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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 East Spearfish Creek (Hanna), 1998-2008

**Site 37**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 01, 1998	5	5-6	
	Aug 30, 2006	1	1-1	
Brown Trout <200mm	Jun 01, 1998	318	290-346	
	Aug 30, 2006	105	105-105	
	Jul 07, 2008	143	143-143	
Brown Trout >=200mm	Jun 01, 1998	87	82-95	BR1
	Aug 30, 2006	7	7-7	BR2

Brown Trout >=200mm

Jul 07, 2008

23

23-23

BR1

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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 30, 2006	1	1-1	
Brown Trout <200mm	Jun 12, 1998	115	110-122	
	Aug 30, 2006	100	100-100	
	Jul 03, 2008	65	65-65	
Brown Trout >=200mm	Jun 12, 1998	30	30-31	BR1
	Aug 30, 2006	10	10-10	BR2
	Jul 03, 2008	10	10-10	BR2

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**Site 77**

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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	Jul 03, 2008	80	80-80	

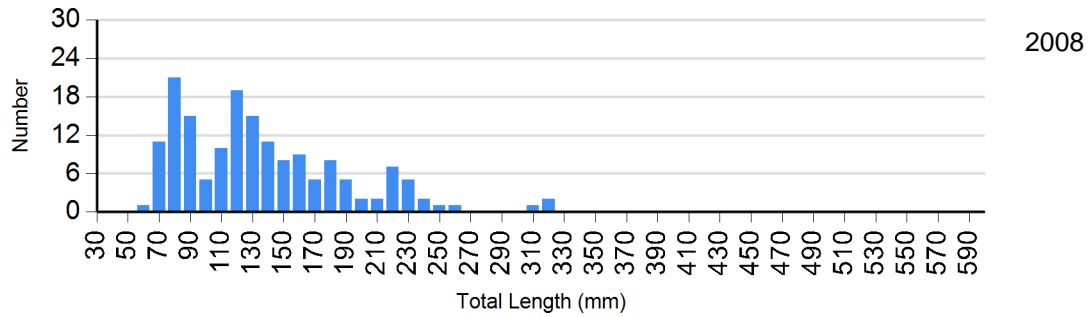
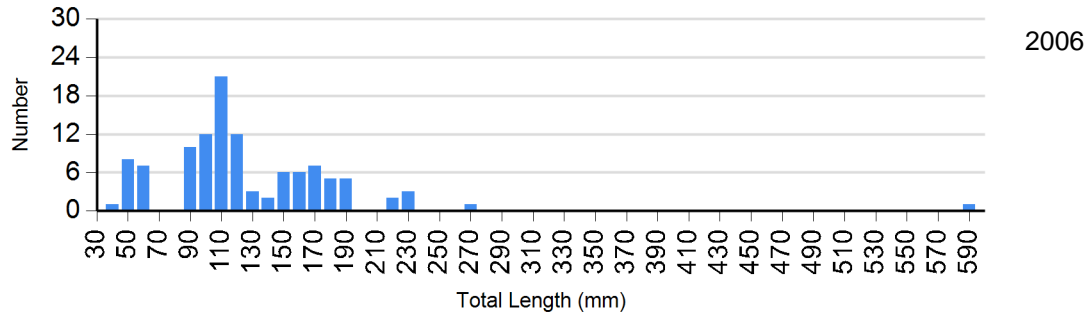
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## Length Frequency Distribution

Length frequency histogram of species sampled by year.

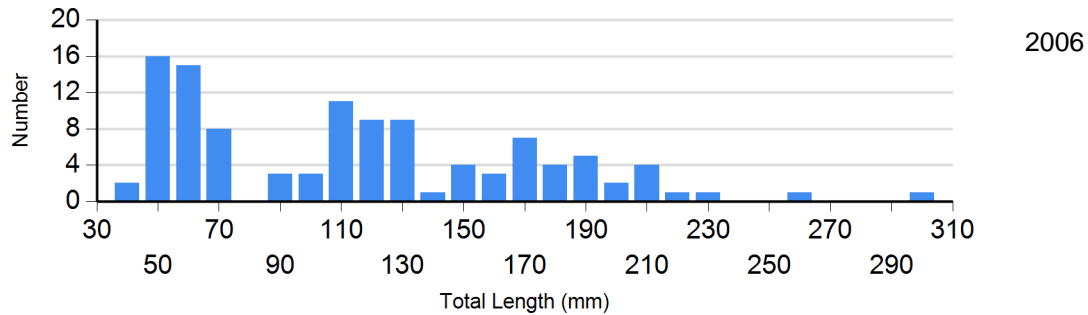
**Site:** 37

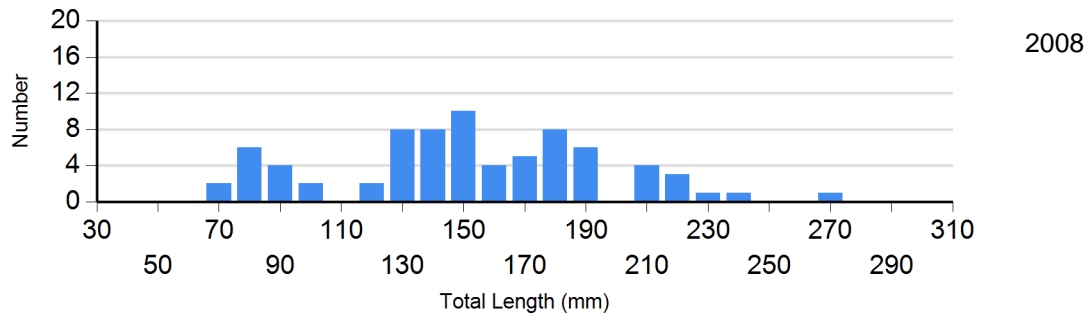
**Species:** Brown Trout



**Site:** 54

**Species:** Brown Trout





**Site: 77**  
**Species: Brook Trout**

