

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
East Spearfish Creek (Hanna), Lawrence County
09-0016-00
2019

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

Site Number: 9	Date Sampled: 06/18/2019	Conductivity (umhos/cm):	208
Site Midpoint (Latitude, Longitude): 44.28974193, -103.87033760	Site Length (m): 100	pH:	8.7
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 4.9	Water Temperature (C):	8.6
Stream Classification: BR1	Number of Pass: 3	Voltage:	250

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	53	62	76	53	1277	49	620	517	43.63	998	142.1	38.3
Brown Trout	>=200mm	42	42	44	42	865	123	420	350	109.97	676	233.5	142.4
Brown Trout	All	95	102	111	95	2101	177	1020	851	158.12	1641	182.5	84.3

Site Number: 26	Date Sampled: 06/18/2019	Conductivity (umhos/cm):	210
Site Midpoint (Latitude, Longitude): 44.27701751, -103.86489762	Site Length (m): 100	pH:	8.7
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 3.5	Water Temperature (C):	13.7
Stream Classification: BR1	Number of Pass: 3	Voltage:	0

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	85	98	113	85	2807	87	980	1137	78.12	1577	131.6	31.2
Brown Trout	>=200mm	39	39	40	39	1117	172	390	452	153.67	628	242.4	154.1
Brown Trout	All	124	132	141	124	3781	264	1320	1531	235.71	2124	166.5	69.8

Site Number: 35	Date Sampled: 07/16/2019	Conductivity (umhos/cm):	431
Site Midpoint (Latitude, Longitude): 44.27472137, -103.85641057	Site Length (m): 100	pH:	8.9

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 8.6

Water Temperature (C): 14.1

Stream Classification: BR2

Number of Pass: 3

Voltage: 0

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	73	77	84	73	900	34	770	365	30.54	1239	142.1	38.0
Brown Trout	>=200mm	6	6	7	6	70	8	60	28	7.37	97	228.3	117.7
Brown Trout	All	79	83	90	79	970	43	830	393	38.16	1335	148.6	44.1

Site Number: 47

Date Sampled: 06/18/2019

Conductivity (umhos/cm): 208

Site Midpoint (Latitude, Longitude): 44.27092014, -103.84690090

Site Length (m): 100

pH: 8.7

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 5.4

Water Temperature (C): 9.9

Stream Classification: BK0, BR1

Number of Pass: 3

Voltage: 250

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	1	1	2	1	19	0	10	8	0.35	16	130.0	21.0
Brook Trout	All	1	1	2	1	19	0	10	8	0.35	16	130.0	21.0
Brown Trout	<200mm	108	114	122	108	2111	60	1140	855	53.44	1834	129.3	28.4
Brown Trout	>=200mm	27	27	28	27	500	65	270	203	58.45	434	228.7	130.9
Brown Trout	All	135	140	147	135	2593	127	1400	1050	113.12	2253	149.2	48.9

Site Number: 69

Date Sampled: 07/16/2019

Conductivity (umhos/cm): 432

Site Midpoint (Latitude, Longitude): 44.25505869, -103.84249391

Site Length (m): 100

pH: 8.7

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 2.0

Water Temperature (C): 15.3

Stream Classification: BK0, BR3

Number of Pass: 3

Voltage: 250

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	39	45	56	39	2271	62	450	920	55.62	724	130.1	27.4
Brook Trout	All	39	45	56	39	2271	62	450	920	55.62	724	130.1	27.4
Brown Trout	<200mm	40	41	44	40	2069	37	410	838	33.06	660	112.4	17.9
Brown Trout	>=200mm	1	1	1	1	50	6	10	20	4.96	16	212.0	110.0
Brown Trout	All	41	42	45	41	2119	43	420	858	38.12	676	114.9	20.1

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 East Spearfish Creek (Hanna), 2009-2019

Site 9

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 18, 2019	62	53-76	
Brown Trout >=200mm	Jun 18, 2019	42	42-44	BR1

Site 26

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 18, 2019	98	85-113	
Brown Trout >=200mm	Jun 18, 2019	39	39-40	BR1

Site 35

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 16, 2019	77	73-84	
Brown Trout >=200mm	Jul 16, 2019	6	6-7	BR2

Site 47

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 18, 2019	1	1-2	
Brown Trout <200mm	Jun 18, 2019	114	108-122	
Brown Trout >=200mm	Jun 18, 2019	27	27-28	BR1

Site 69

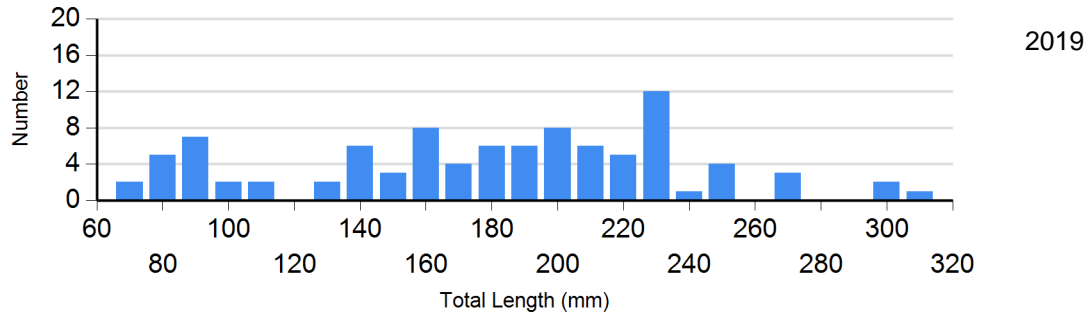
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 16, 2019	45	39-56	
Brown Trout <200mm	Jul 16, 2019	41	40-44	
Brown Trout >=200mm	Jul 16, 2019	1	1-1	BR3

Length Frequency Distribution

Length frequency histogram of species sampled by year.

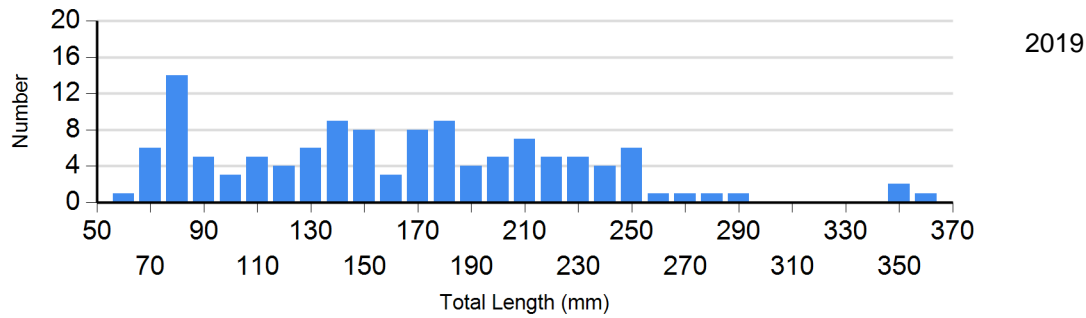
Site: 9

Species: Brown Trout



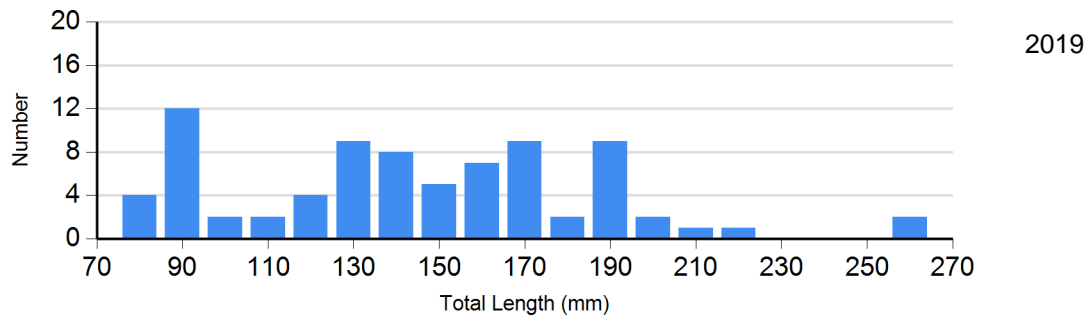
Site: 26

Species: Brown Trout

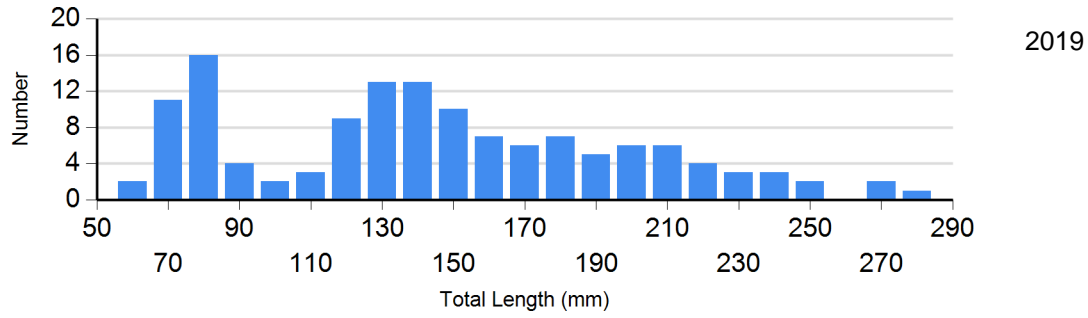


Site: 35

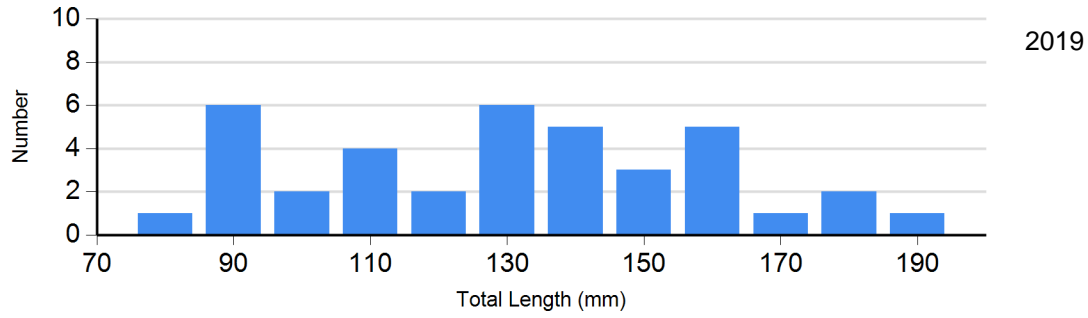
Species: Brown Trout



Site: 47
Species: Brown Trout



Site: 69
Species: Brook Trout



Site: 69
Species: Brown Trout

