

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2018

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 392	Date Sampled: 08/31/2018	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.37690503, -103.91378843	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.5	Water Temperature (C): 13.5
Stream Classification: BR1, RB2	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)
Brown Trout	<200mm	54	57	63	54	671	33	570	272	29.16	917	146.1	48.7
Brown Trout	>=200mm	106	129	153	106	1518	234	1290	615	208.50	2076	263.5	153.9
Brown Trout	All	160	185	207	163	2176	266	1850	881	237.16	2977	223.8	122.0
Rainbow Trout	<200mm	1	1	5	1	12	1	10	5	0.50	16	159.0	48.0
Rainbow Trout	>=200mm	4	4	4	4	47	15	40	19	13.74	64	317.3	327.0
Rainbow Trout	All	5	5	7	5	59	16	50	24	14.24	80	285.6	271.2

Site Number: 442	Date Sampled: 08/02/2018	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.35001039, -103.92326936	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 6.9	Water Temperature (C):
Stream Classification: BR1	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)
Brown Trout	<200mm	137	142	149	137	2061	85	1420	835	75.94	2285	148.5	41.3
Brown Trout	>=200mm	59	59	61	59	856	149	590	347	132.80	949	250.7	173.7
Brown Trout	All	196	201	207	196	2917	240	2010	1181	214.04	3234	179.3	82.2

Site Number: 621

Site Midpoint (Latitude, Longitude): 44.25495945, -103.92257741

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK3, BR3

Date Sampled: 06/07/2018

Site Length (m): 100

Mean Width (m): 0.0

Number of Pass: 3

Conductivity
(umhos/cm):

pH:

Water Temperature (C): 8.0

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	6	6	7	6	0	0	60	0	0.00	97	149.5	36.8
Brook Trout	>=200mm	2	2	2	2	0	0	20	0	0.00	32	213.0	94.0
Brook Trout	All	8	8	9	8	0	0	80	0	0.00	129	165.4	51.1
Brown Trout	<200mm	70	71	74	70	0	0	710	0	0.00	1142	130.4	38.3
Brown Trout	>=200mm	24	24	24	24	0	0	240	0	0.00	386	231.5	137.7
Brown Trout	All	94	95	98	94	0	0	950	0	0.00	1529	156.2	72.4

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 Spearfish Creek, 2008-2018

Site 392

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 27, 2011	71	72-82	
	Jul 30, 2012	135	102-171	
	Jul 25, 2013	146	105-191	
	Jun 14, 2016	57	56-60	
	Aug 31, 2018	57	54-63	
Brown Trout >=200mm	Jul 27, 2011	60	58-64	BR1
	Jul 30, 2012	85	78-95	BR1

Brown Trout >=200mm	Jul 25, 2013	54	50-61	BR1
	Jun 14, 2016	44	41-50	BR1
	Aug 31, 2018	129	106-153	BR1
Rainbow Trout <200mm	Jul 27, 2011	2	2-2	
	Jun 14, 2016	1	1-1	
	Aug 31, 2018	1	1-5	
Rainbow Trout >=200mm	Aug 31, 2018	4	4-4	RB2

Site 442

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 01, 2011	255	183-327	
	Aug 02, 2018	142	137-149	
Brown Trout >=200mm	Aug 01, 2011	42	36-53	BR1
	Aug 02, 2018	59	59-61	BR1

Site 621

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 21, 2008	88	77-102	
	Aug 11, 2011	76	76-78	

Brook Trout <200mm	Aug 02, 2012	132	127-139	
	Jul 23, 2013	114	72-175	
	Jun 25, 2014	33	25-51	
	Jun 13, 2016	16	16-17	
	Jun 07, 2018	6	6-7	
Brook Trout >=200mm	Aug 21, 2008	1	1-5	BK3
	Aug 11, 2011	7	7-7	BK2
	Aug 02, 2012	16	16-18	BK1
	Jul 23, 2013	12	12-14	BK2
	Jun 25, 2014	8	8-9	BK2
	Jun 13, 2016	1	1-2	BK3
	Jun 07, 2018	2	2-2	BK3
Brown Trout <200mm	Aug 21, 2008	28	28-30	
	Aug 11, 2011	19	16-28	
	Aug 02, 2012	66	55-82	
	Jul 23, 2013	400	85-1566	

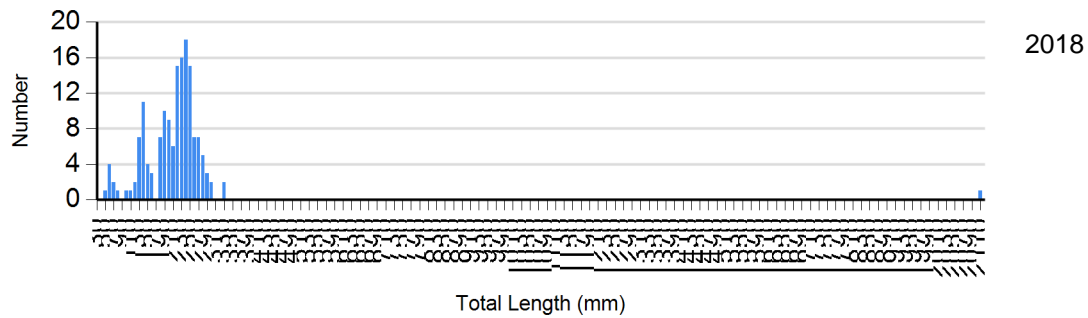
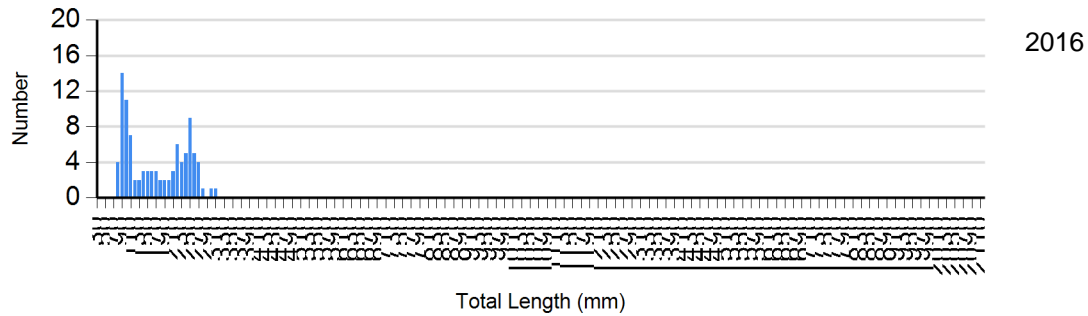
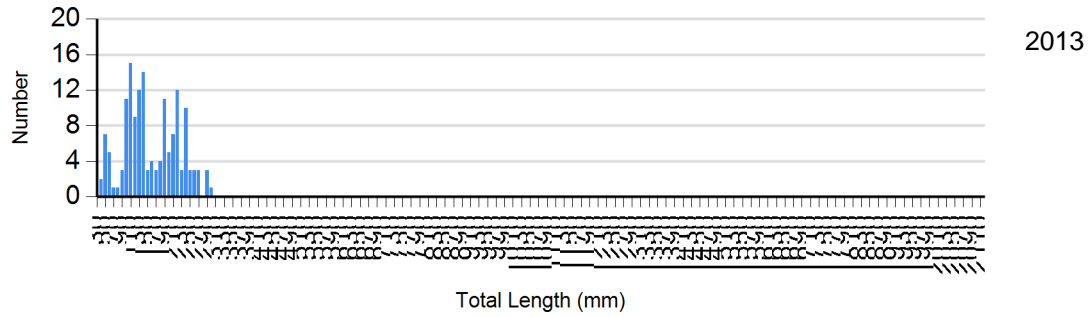
Brown Trout <200mm	Jun 25, 2014	64	61-70	
	Jun 13, 2016	89	87-93	
	Jun 07, 2018	71	70-74	
Brown Trout >=200mm	Aug 21, 2008	6	6-9	BR2
	Aug 11, 2011	14	14-16	BR1
	Aug 02, 2012	28	28-30	BR1
	Jul 23, 2013	38	31-52	BR1
	Jun 25, 2014	37	37-39	BR1
	Jun 13, 2016	36	34-41	BR1
	Jun 07, 2018	24	24-24	BR3

Length Frequency Distribution

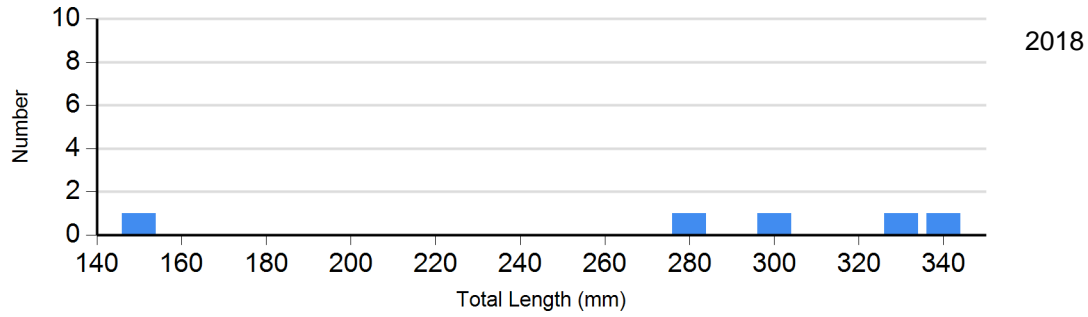
Length frequency histogram of species sampled by year.

Site: 392

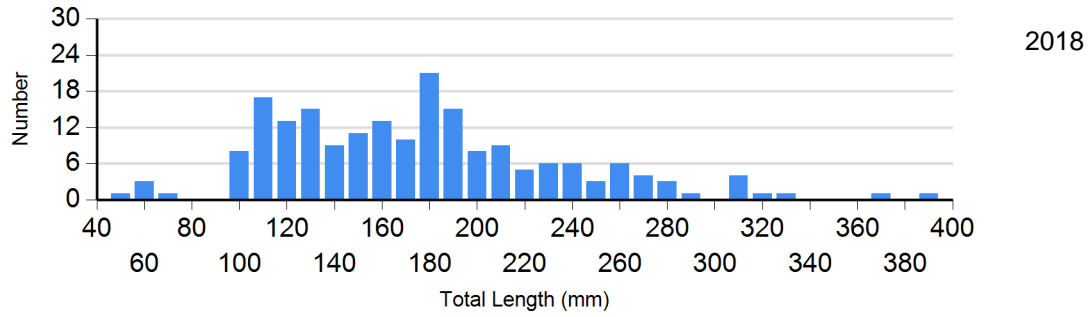
Species: Brown Trout



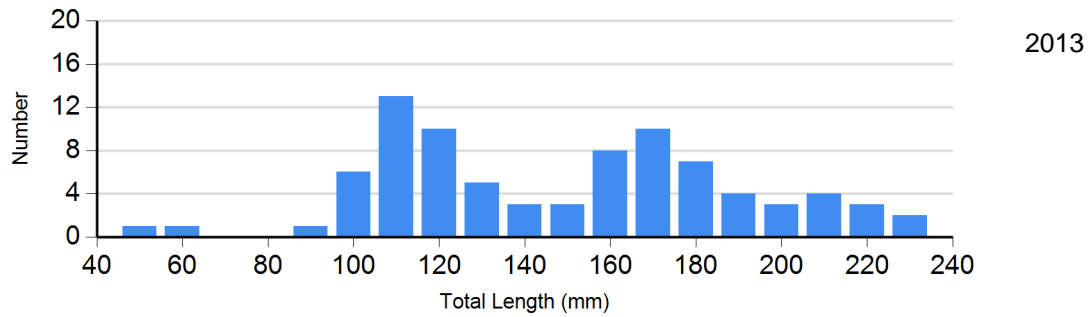
Site: 392
Species: Rainbow Trout

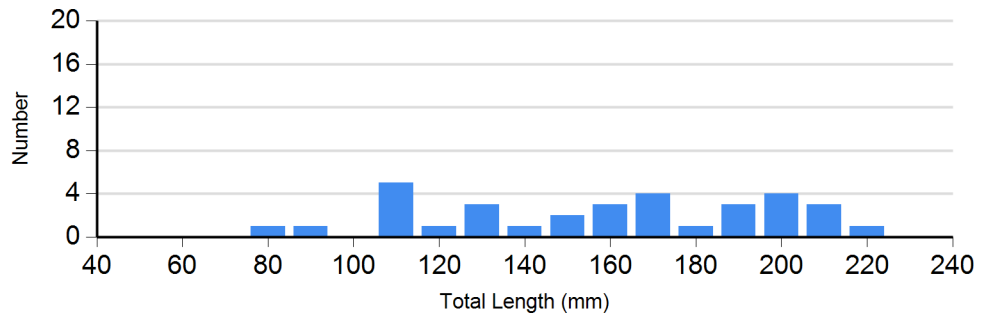


Site: 442
Species: Brown Trout

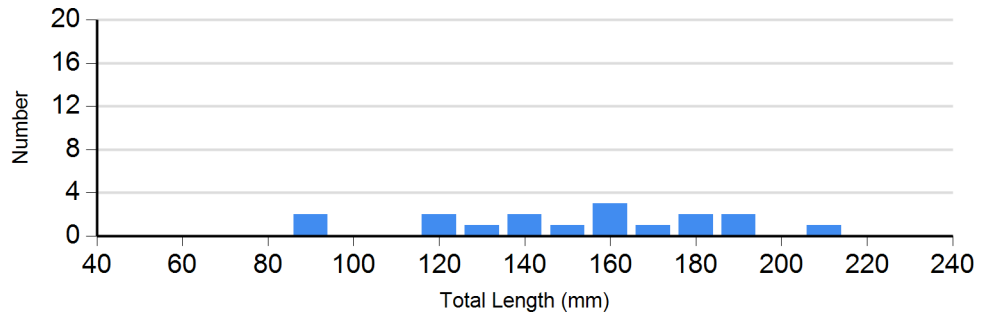


Site: 621
Species: Brook Trout

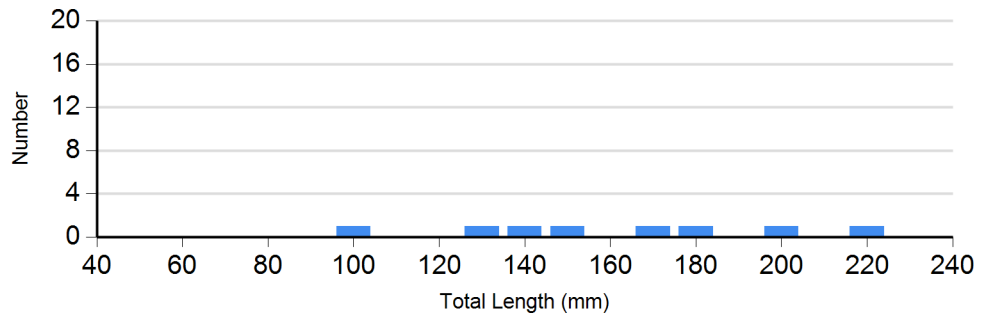




2014

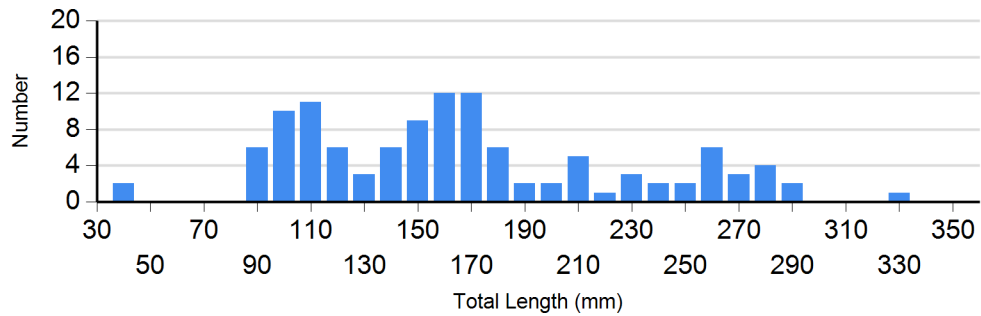


2016



2018

Site: 621
Species: Brown Trout



2013

