

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Boxelder Creek, Pennington County**  
**09-0065-00**  
**2019**

Table 1. Population and Biomass Estimates for Boxelder Creek

<b>Site Number:</b> 1985	<b>Date Sampled:</b> 07/24/2019	<b>Conductivity (umhos/cm):</b> 294
<b>Site Midpoint (Latitude, Longitude):</b> 44.15743931, -103.46825254	<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> 15.6	<b>Water Temperature (C):</b> 0.0
<b>Stream Classification:</b> BK3, BR3	<b>Number of Pass:</b> 3	<b>Voltage:</b> 275

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	6	0	10	3	0.00	16	84.0	0.0
Brook Trout	>=200mm	2	2	2	2	13	2	20	5	1.51	32	232.0	132.0
Brook Trout	All	3	3	4	3	19	2	30	8	1.51	48	182.7	88.0
Brown Trout	>=200mm	1	1	1	1	6	1	10	3	1.04	16	259.0	182.0
Brown Trout	All	1	1	1	1	6	1	10	3	1.04	16	259.0	182.0
Longnose Dace	All	17	20	29	17	129	0	200	52	0.00	322	68.1	0.0
Rock Bass	All	4	4	4	4	26	0	40	10	0.13	64	71.5	5.5
Stonecat	All	1	1	2	1	6	0	10	3	0.38	16	185.0	66.0
White Sucker	All	28	30	35	28	193	19	300	78	16.89	483	172.9	98.1

<b>Site Number:</b> 2096	<b>Date Sampled:</b> 08/15/2019	<b>Conductivity (umhos/cm):</b> 0
<b>Site Midpoint (Latitude, Longitude):</b> 44.19633557, -103.53282159	<b>Site Length (m):</b> 100	<b>pH:</b> 7.0
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 7.3	<b>Water Temperature (C):</b> 0.0
<b>Stream Classification:</b> BK3, BR2, RB2	<b>Number of Pass:</b> 3	<b>Voltage:</b> 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)
Brook Trout	<200mm	15	15	15	15	206	8	150	83	7.31	241	157.1	39.8
Brook Trout	>=200mm	3	3	4	3	41	4	30	17	3.71	48	215.0	101.0
Brook Trout	All	18	18	18	18	247	12	180	100	11.02	290	166.7	50.0
Brown Trout	<200mm	16	16	18	16	219	10	160	89	9.23	257	159.2	47.1
Brown Trout	>=200mm	8	8	9	8	110	21	80	44	19.07	129	263.5	194.6
Brown Trout	All	24	24	26	24	329	32	240	133	28.30	386	194.0	96.3
Longnose Dace	All	11	23	82	11	315	2	230	128	1.66	370	99.7	5.9
Mountain Sucker	All	6	6	9	6	82	5	60	33	4.45	97	168.5	60.5
Rainbow Trout	>=200mm	1	1	1	1	14	7	10	6	6.38	16	391.0	521.0
Rainbow Trout	All	1	1	1	1	14	7	10	6	6.38	16	391.0	521.0

Site Number: 2098

Site Midpoint (Latitude, Longitude): 44.19765465, -103.53433427

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK3, BR2

Date Sampled: 08/15/2019

Site Length (m): 100

Mean Width (m): 6.8

Number of Pass: 3

Conductivity (umhos/cm): 0

pH: 7.0

Water Temperature (C): 0.0

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)
Brook Trout	<200mm	11	11	11	11	163	9	110	66	7.59	177	164.2	52.3
Brook Trout	>=200mm	1	1	1	1	15	2	10	6	1.57	16	217.0	119.0
Brook Trout	All	12	12	12	12	177	10	120	72	9.16	193	168.6	57.8
Brown Trout	<200mm	14	14	15	14	207	9	140	84	7.89	225	151.0	42.7
Brown Trout	>=200mm	5	5	6	5	74	10	50	30	8.94	80	230.2	135.4
Brown Trout	All	19	19	21	19	281	19	190	114	16.83	306	171.8	67.1

Longnose Dace	All	16	15	20	16	222	2	150	90	2.05	241	97.8	10.4
Mountain Sucker	All	15	16	20	15	237	9	160	96	8.10	257	141.0	38.3

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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 Boxelder Creek, 2009-2019

**Site 1985**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 24, 2019	1	1-2	
Brook Trout >=200mm	Jul 24, 2019	2	2-2	BK3
Brown Trout >=200mm	Jul 24, 2019	1	1-1	BR3
Longnose Dace	Jul 24, 2019	20	17-29	
Rock Bass	Jul 24, 2019	4	4-4	
Stonecat	Jul 24, 2019	1	1-2	
White Sucker	Jul 24, 2019	30	28-35	

**Site 2096**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 15, 2019	15	15-15	
Brook Trout >=200mm	Aug 15, 2019	3	3-4	BK3
Brown Trout <200mm	Aug 15, 2019	16	16-18	
Brown Trout >=200mm	Aug 15, 2019	8	8-9	BR2
Longnose Dace	Aug 15, 2019	23	11-82	
Mountain Sucker	Aug 15, 2019	6	6-9	
Rainbow Trout >=200mm	Aug 15, 2019	1	1-1	RB2

**Site 2098**

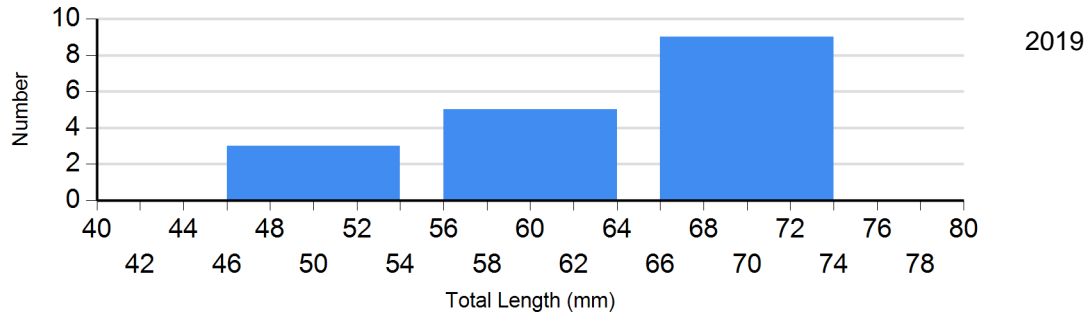
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 15, 2019	11	11-11	
Brook Trout >=200mm	Aug 15, 2019	1	1-1	BK3
Brown Trout <200mm	Aug 15, 2019	14	14-15	
Brown Trout >=200mm	Aug 15, 2019	5	5-6	BR2
Longnose Dace	Aug 15, 2019	15	16-20	
Mountain Sucker	Aug 15, 2019	16	15-20	

## Length Frequency Distribution

Length frequency histogram of species sampled by year.

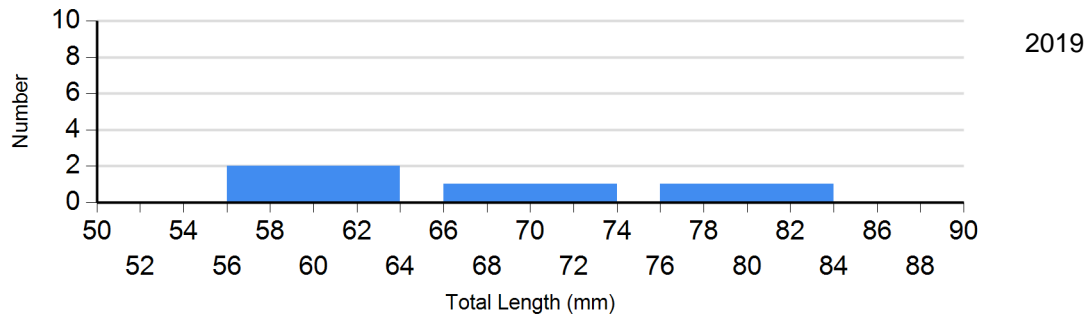
**Site:** 1985

**Species:** Longnose Dace



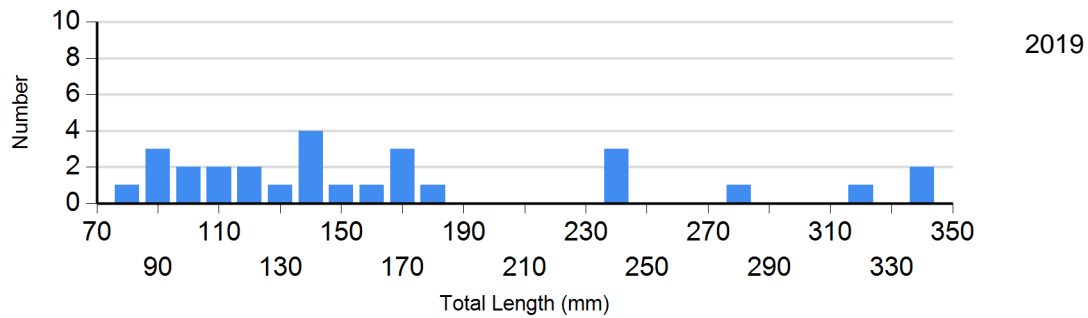
**Site:** 1985

**Species:** Rock Bass

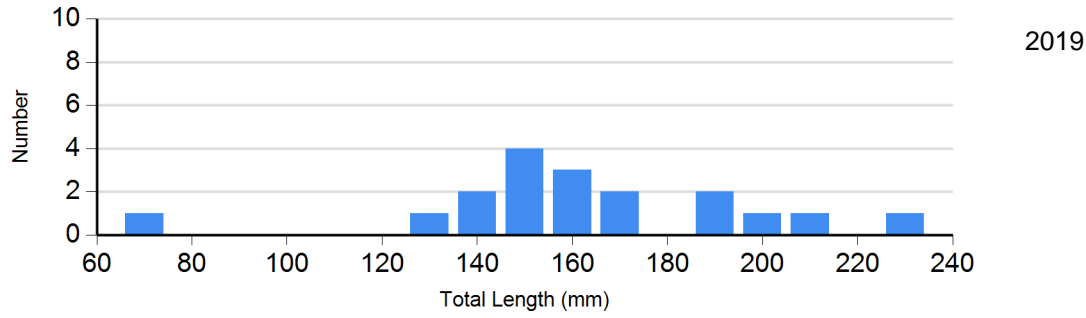


**Site:** 1985

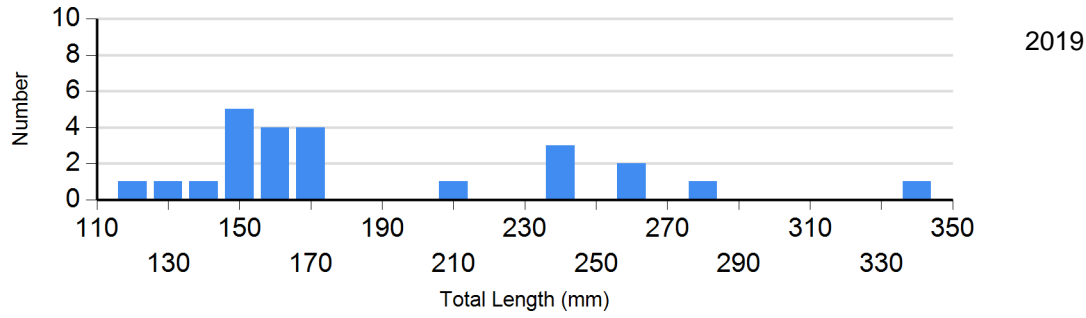
**Species:** White Sucker



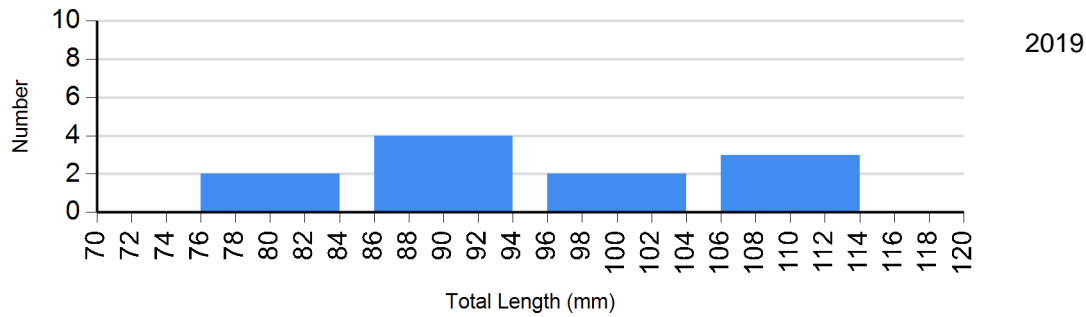
**Site:** 2096  
**Species:** Brook Trout



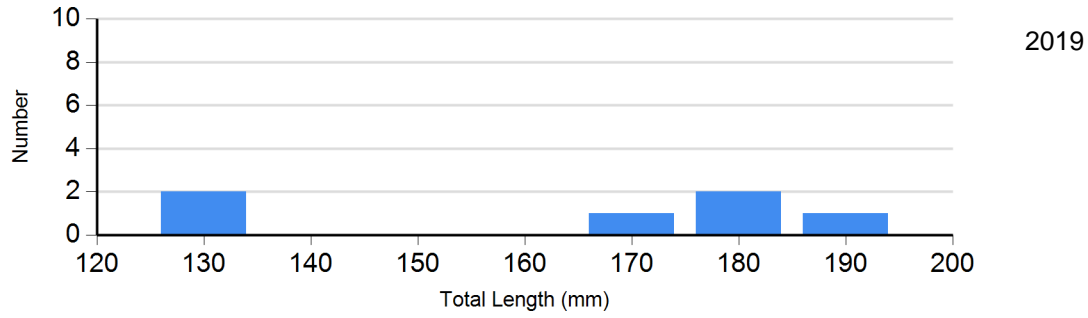
**Site:** 2096  
**Species:** Brown Trout



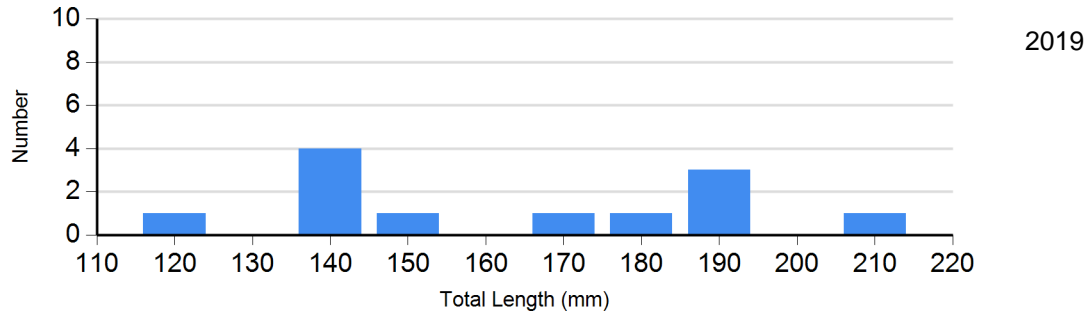
**Site:** 2096  
**Species:** Longnose Dace



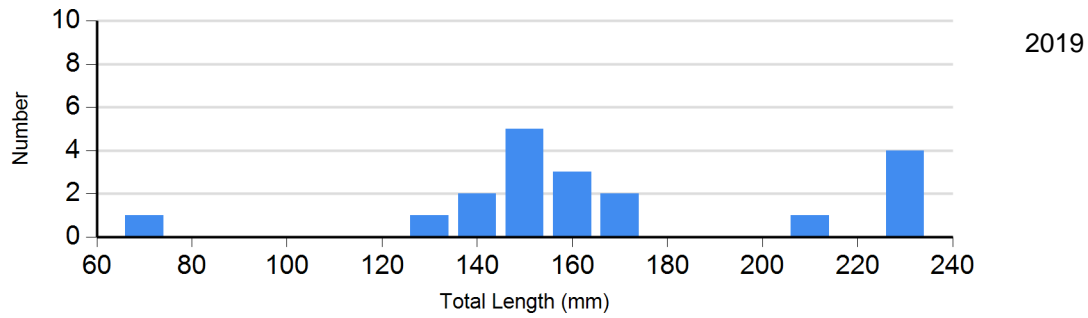
**Site:** 2096  
**Species:** Mountain Sucker



**Site:** 2098  
**Species:** Brook Trout

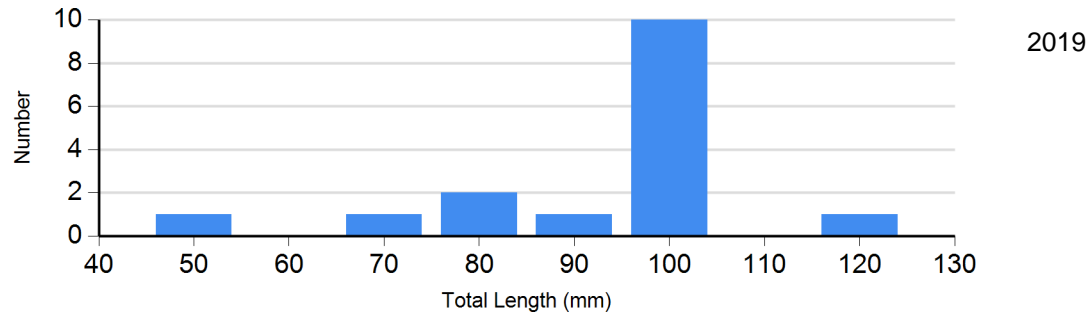


**Site:** 2098  
**Species:** Brown Trout





**Site:** 2098  
**Species:** Longnose Dace



**Site:** 2098  
**Species:** Mountain Sucker

