

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Battle Creek (Trib of Cheyenne River), Pennington County**  
**21-0023-00**  
**2015**

Table 1. Population and Biomass Estimates for Battle Creek (Trib of Cheyenne River)

**Site Number:** 208 **Date Sampled:** 08/11/2015 **Conductivity (umhos/cm):**  
**Site Midpoint (Latitude, Longitude):** 43.89679666, -103.36819041 **Site Length (m):** 100 **pH:**  
**Survey Completed by:** South Dakota Game, Fish and Parks **Mean Width (m):** 6.7 **Water Temperature (C):**  
**Stream Classification:** BK2, BR3 **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	10	10	10	10	148	8	100	60	7.48	161	125.9	56.5
Brook Trout	>=200mm	5	5	6	5	74	9	50	30	8.01	80	221.6	121.0
Brook Trout	All	15	15	15	15	222	21	150	90	18.33	241	157.8	92.3
Brown Trout	>=200mm	1	1	1	1	15	2	10	6	1.36	16	216.0	103.0
Brown Trout	All	1	1	1	1	15	2	10	6	1.36	16	216.0	103.0
Creek Chub	All	166	174	183	166	2580	48	1740	1045	43.12	2800	102.2	18.7
Longnose Dace	All	69	69	70	69	1023	12	690	414	10.96	1110	80.3	12.0
White Sucker	All	81	85	91	81	1260	76	850	510	67.44	1368	148.1	59.9

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**Site Number:** 222 **Date Sampled:** 08/11/2015 **Conductivity (umhos/cm):**  
**Site Midpoint (Latitude, Longitude):** 43.88862350, -103.35988972 **Site Length (m):** 100 **pH:**  
**Survey Completed by:** South Dakota Game, Fish and Parks **Mean Width (m):** 10.7 **Water Temperature (C):**  
**Stream Classification:** BK3, BR3 **Number of Pass:** 2 **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	1	1	1	1	9	1	10	4	0.63	16	157.0	76.0
Brook Trout	>=200mm	4	4	4	4	37	6	40	15	5.11	64	231.0	153.8
Brook Trout	All	5	5	5	5	47	6	50	19	5.74	80	216.2	138.2
Brown Trout	>=200mm	4	4	4	4	37	6	40	15	5.77	64	246.5	173.5
Brown Trout	All	4	4	4	4	37	6	40	15	5.77	64	246.5	173.5
Creek Chub	All	53	53	54	53	493	16	530	200	14.06	853	125.2	31.9
Longnose Dace	All	5	5	6	5	47	1	50	19	0.68	80	106.2	16.3
Rock Bass	All	10	10	12	10	93	5	100	38	4.79	161	123.0	57.6
White Sucker	All	21	21	21	21	195	35	210	79	30.86	338	231.0	176.9

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 Battle Creek (Trib of Cheyenne River), 2005-2015

**Site 208**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 11, 2015	10	10-10	
Brook Trout >=200mm	Aug 11, 2015	5	5-6	BK2
Brown Trout >=200mm	Aug 11, 2015	1	1-1	BR3
Creek Chub	Aug 11, 2015	174	166-183	
Longnose Dace	Aug 11, 2015	69	69-70	
White Sucker	Aug 11, 2015	85	81-91	

**Site 222**

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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 11, 2015	1	1-1	
Brook Trout >=200mm	Aug 11, 2015	4	4-4	BK3
Brown Trout >=200mm	Aug 11, 2015	4	4-4	BR3
Creek Chub	Aug 11, 2015	53	53-54	
Longnose Dace	Aug 11, 2015	5	5-6	
Rock Bass	Aug 11, 2015	10	10-12	
White Sucker	Aug 11, 2015	21	21-21	

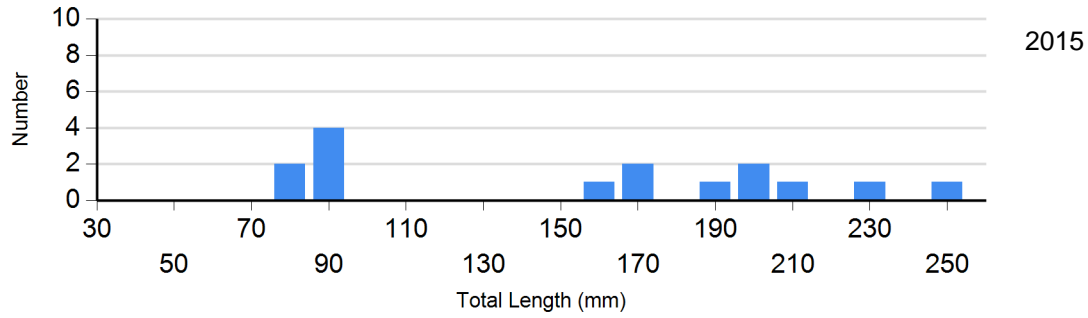
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## Length Frequency Distribution

Length frequency histogram of species sampled by year.

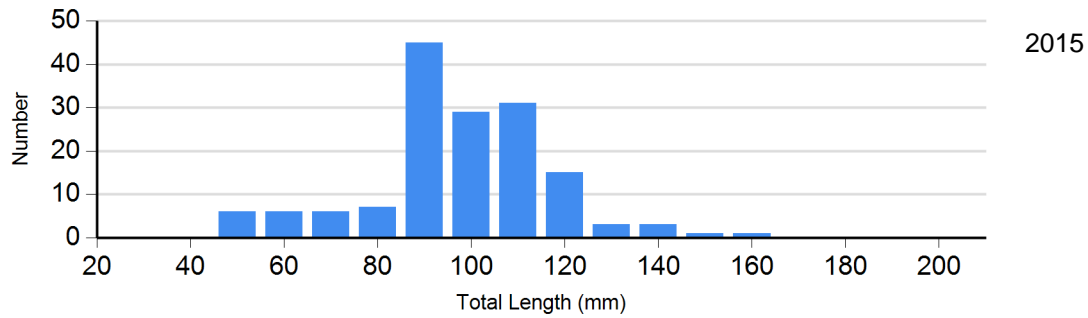
**Site:** 208

**Species:** Brook Trout



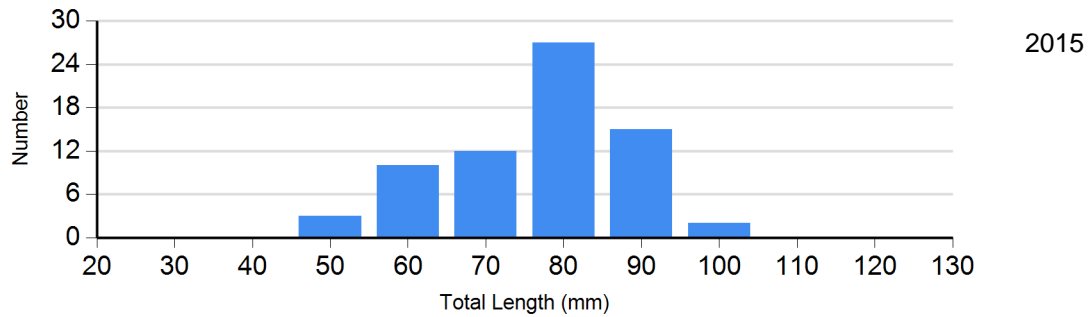
**Site:** 208

**Species:** Creek Chub

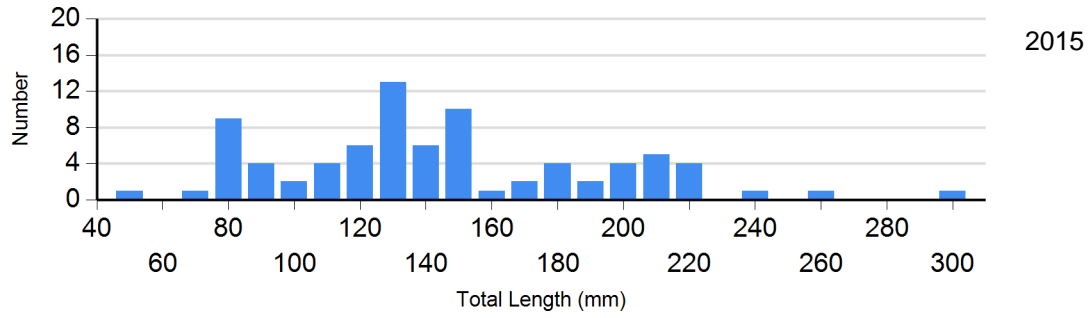


**Site:** 208

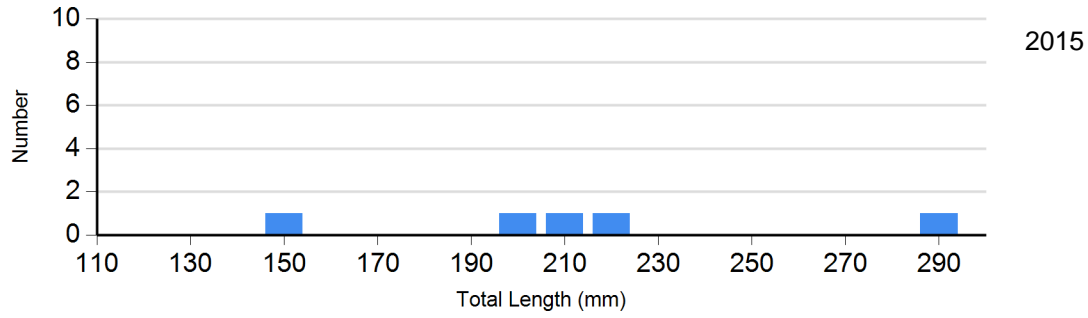
**Species:** Longnose Dace



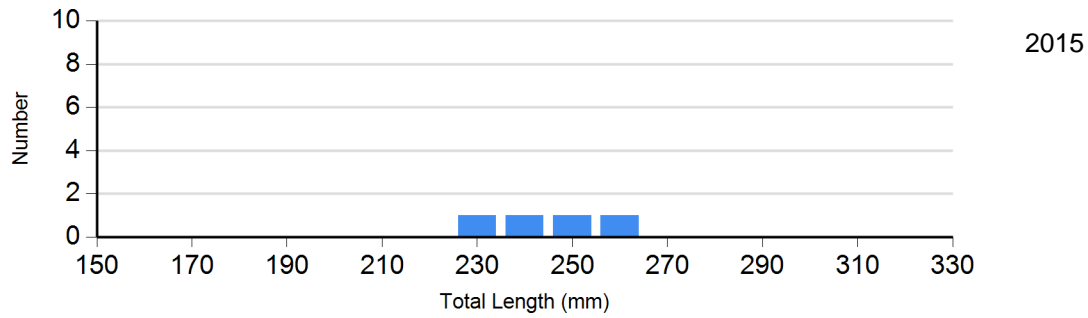
**Site:** 208  
**Species:** White Sucker



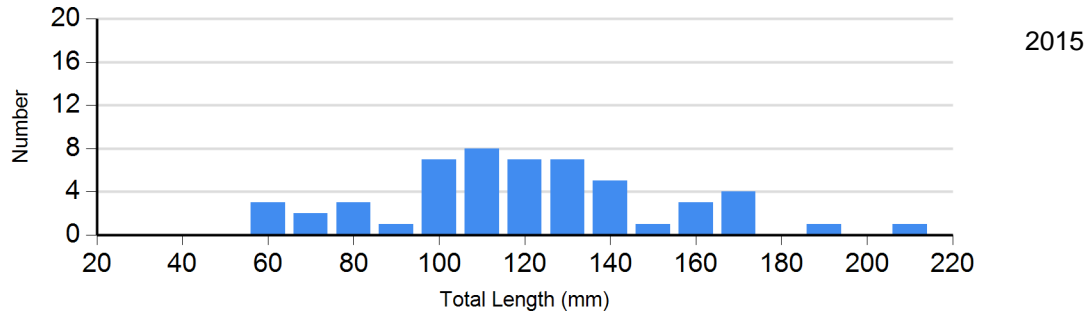
**Site:** 222  
**Species:** Brook Trout



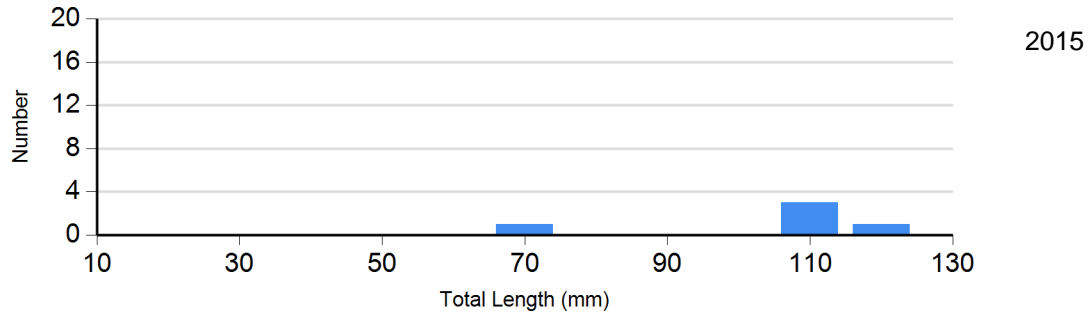
**Site:** 222  
**Species:** Brown Trout



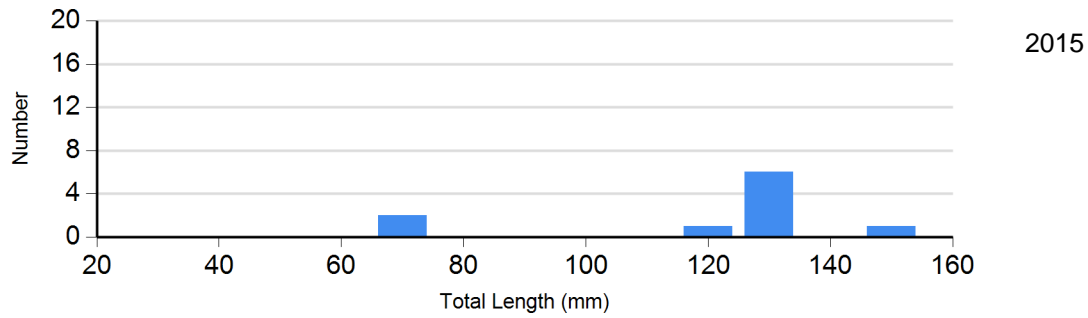
Site: 222  
Species: Creek Chub



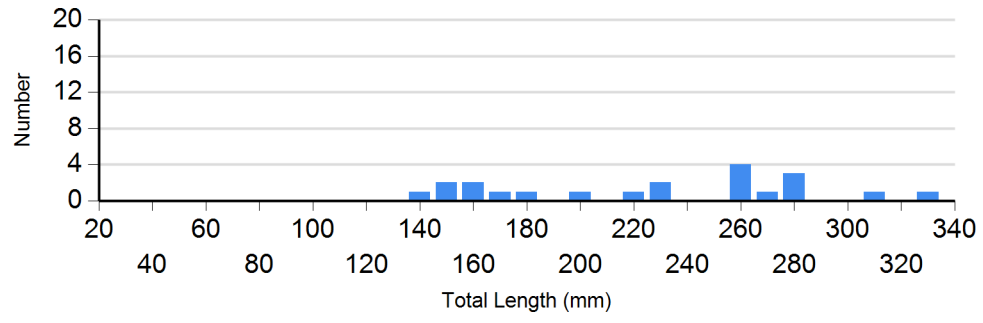
Site: 222  
Species: Longnose Dace



Site: 222  
Species: Rock Bass



Site: 222  
Species: White Sucker



2015