

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Battle Creek (Trib of Cheyenne River), Pennington County**  
**21-0023-00**  
**2017**

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

**Site Number:** 208 **Date Sampled:** 06/08/2017 **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):** 8.0 **Water Temperature (C):**  
**Stream Classification:** BK2, BR2 **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	15	15	16	15	188	7	150	76	6.64	241	137.5	39.5
Brook Trout	>=200mm	13	13	14	13	163	19	130	66	16.99	209	225.5	116.7
Brook Trout	All	28	28	30	28	351	27	280	142	24.49	451	178.4	78.1
Brown Trout	<200mm	1	1	1	1	13	1	10	5	1.05	16	198.0	94.0
Brown Trout	>=200mm	5	5	6	5	63	12	50	25	11.00	80	262.4	196.4
Brown Trout	All	6	6	7	6	75	13	60	30	12.05	97	251.7	179.3
Creek Chub	All	51	51	53	51	640	16	510	259	14.31	821	94.6	25.1
White Sucker	All	16	16	18	16	201	24	160	81	21.37	257	158.9	119.3

**Site Number:** 222 **Date Sampled:** 06/08/2017 **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):** 6.6 **Water Temperature (C):**  
**Stream Classification:** BK3, BR2 **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	1	1	1	1	15	1	10	6	1.29	16	195.0	95.0

Brook Trout	>=200mm	3	3	4	3	46	7	30	19	6.43	48	241.3	157.3
Brook Trout	All	4	4	4	4	61	9	40	25	7.72	64	229.8	141.8
Brown Trout	<200mm	6	6	7	6	92	7	60	37	5.87	97	181.0	71.8
Brown Trout	>=200mm	8	8	8	8	122	23	80	49	20.27	129	256.8	186.0
Brown Trout	All	14	14	14	14	214	29	140	87	26.14	225	224.3	137.1
Creek Chub	All	103	133	165	103	2029	54	1330	822	48.35	2140	87.8	26.7
Rock Bass	All	23	23	24	23	351	23	230	142	20.81	370	75.0	66.4
White Sucker	All	70	76	85	70	1160	185	760	470	165.44	1223	166.4	159.8

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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 Battle Creek (Trib of Cheyenne River), 2007-2017

**Site 208**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 11, 2015	10	10-10	
	May 17, 2016	5	5-7	
	Jun 08, 2017	15	15-16	
Brook Trout >=200mm	Aug 11, 2015	5	5-6	BK2
	May 17, 2016	7	7-9	BK2
	Jun 08, 2017	13	13-14	BK2
Brown Trout <200mm	May 17, 2016	2	2-4	

Brown Trout <200mm	Jun 08, 2017	1	1-1	
Brown Trout >=200mm	Aug 11, 2015	1	1-1	BR3
	May 17, 2016	3	3-4	BR3
	Jun 08, 2017	5	5-6	BR2
Creek Chub	Aug 11, 2015	174	166-183	
	May 17, 2016	222	199-245	
	Jun 08, 2017	51	51-53	
Longnose Dace	Aug 11, 2015	69	69-70	
	May 17, 2016	20	14-40	
Rock Bass	May 17, 2016	14	10-30	
White Sucker	Aug 11, 2015	85	81-91	
	May 17, 2016	56	41-83	
	Jun 08, 2017	16	16-18	

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**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	

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Brook Trout <200mm	May 17, 2016	19	19-20	
	Jun 08, 2017	1	1-1	
Brook Trout >=200mm	Aug 11, 2015	4	4-4	BK3
	May 17, 2016	7	7-7	BK2
	Jun 08, 2017	3	3-4	BK3
Brown Trout <200mm	May 17, 2016	7	7-7	
	Jun 08, 2017	6	6-7	
Brown Trout >=200mm	Aug 11, 2015	4	4-4	BR3
	May 17, 2016	3	3-4	BR3
	Jun 08, 2017	8	8-8	BR2
Creek Chub	Aug 11, 2015	53	53-54	
	May 17, 2016	383	354-412	
	Jun 08, 2017	133	103-165	
Longnose Dace	Aug 11, 2015	5	5-6	
	May 17, 2016	244	116-430	
Rock Bass	Aug 11, 2015	10	10-12	

Rock Bass	Jun 08, 2017	23	23-24
White Sucker	Aug 11, 2015	21	21-21
	May 17, 2016	70	46-113
	Jun 08, 2017	76	70-85

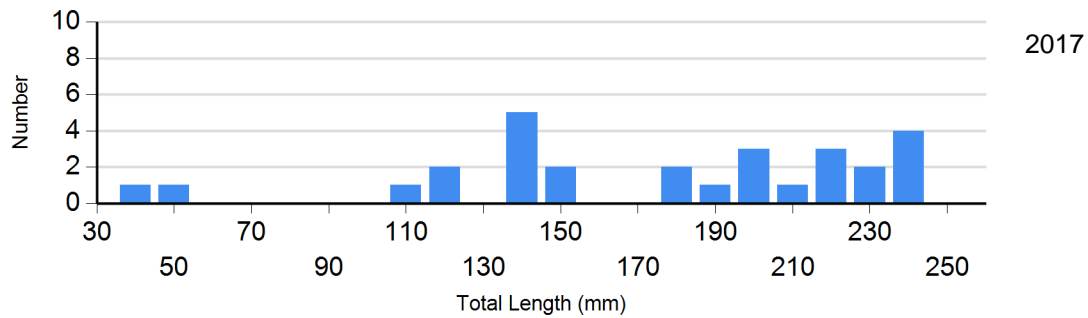
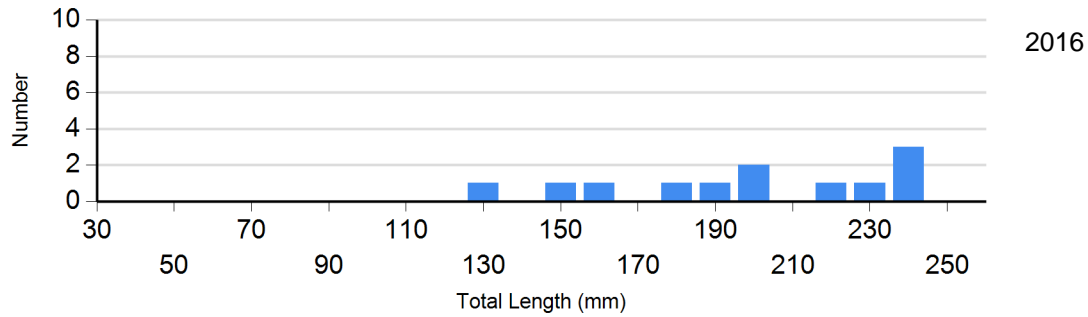
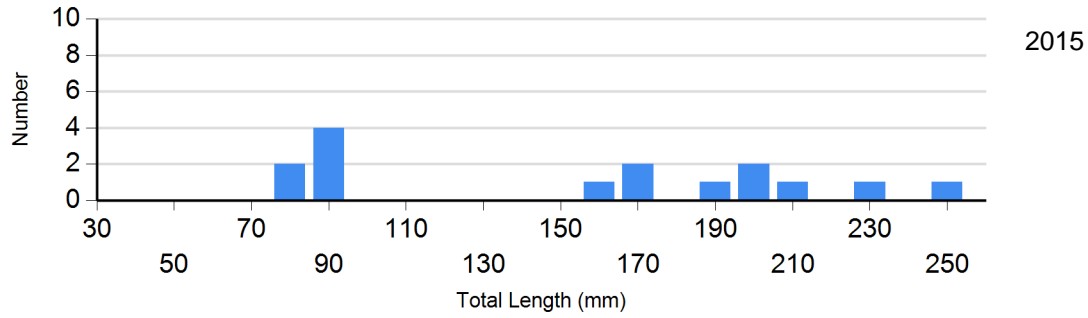
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## Length Frequency Distribution

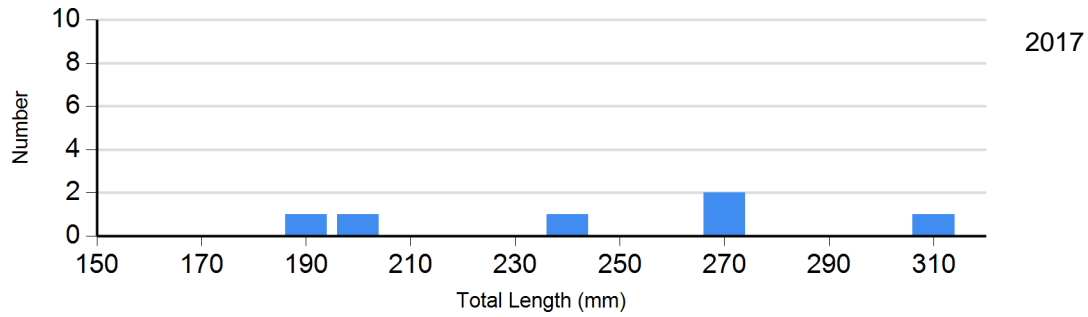
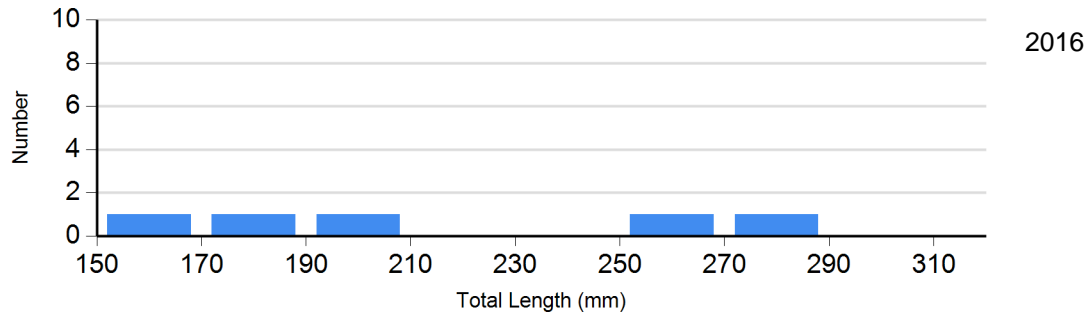
Length frequency histogram of species sampled by year.

**Site:** 208

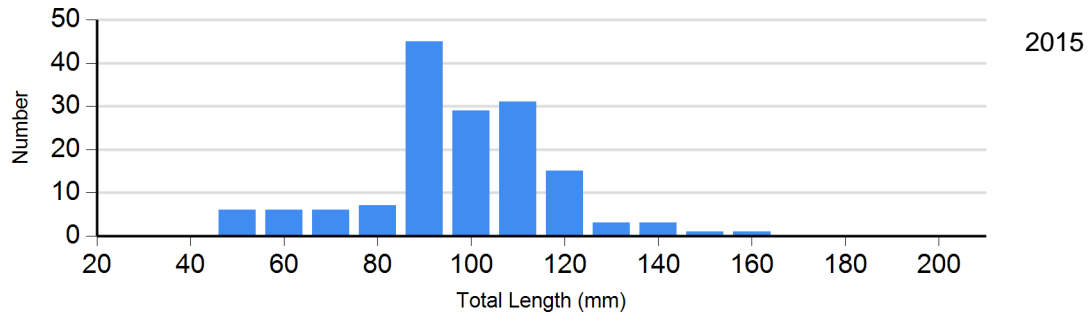
**Species:** Brook Trout



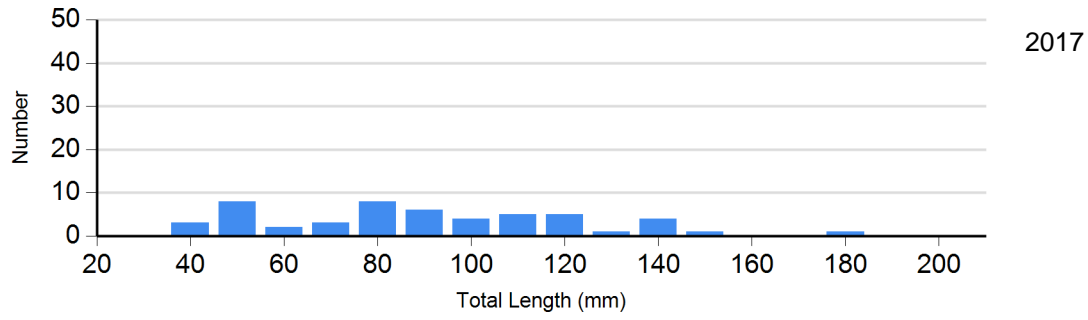
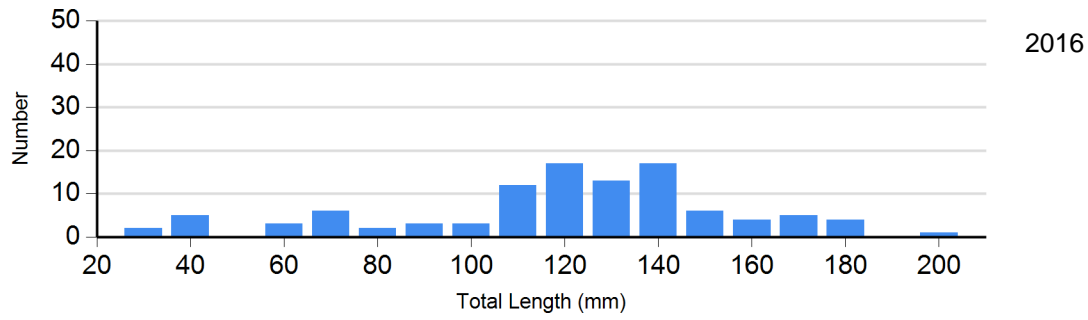
**Site:** 208  
**Species:** Brown Trout



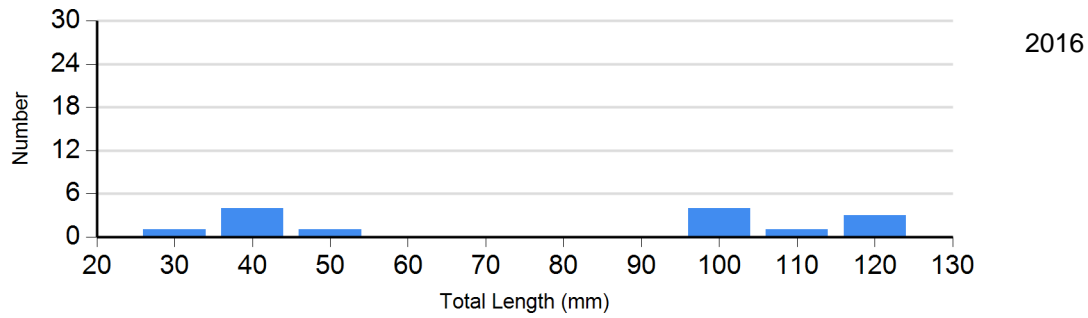
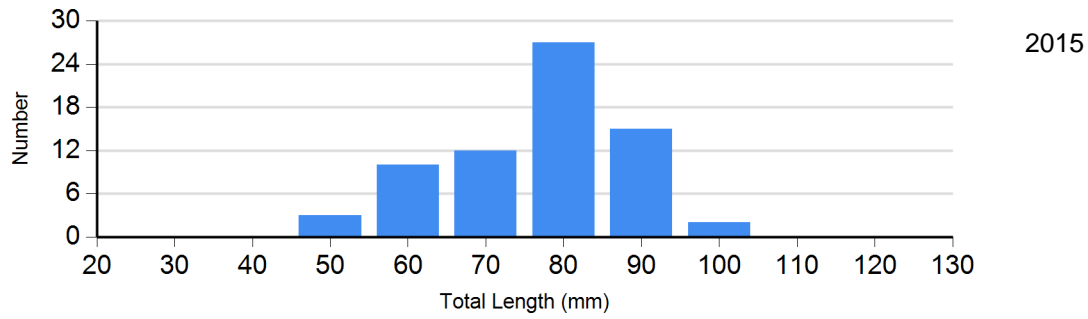
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**Species:** Creek Chub

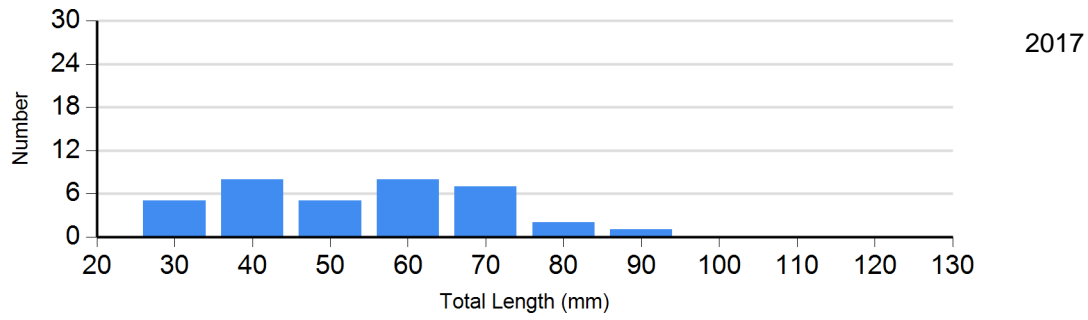




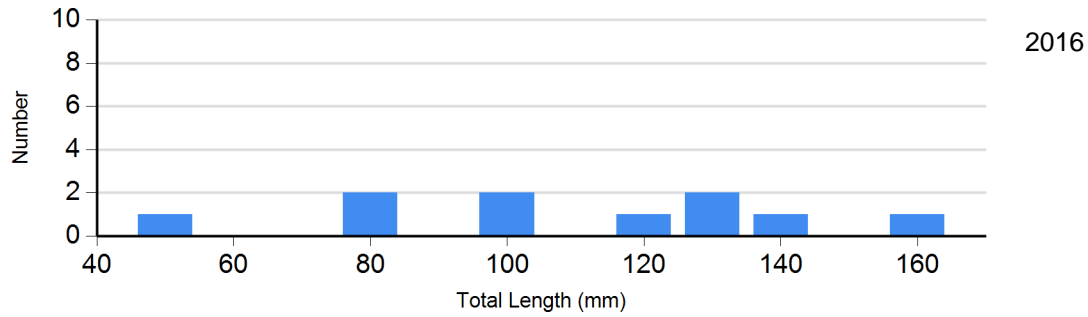


**Site:** 208  
**Species:** Longnose Dace

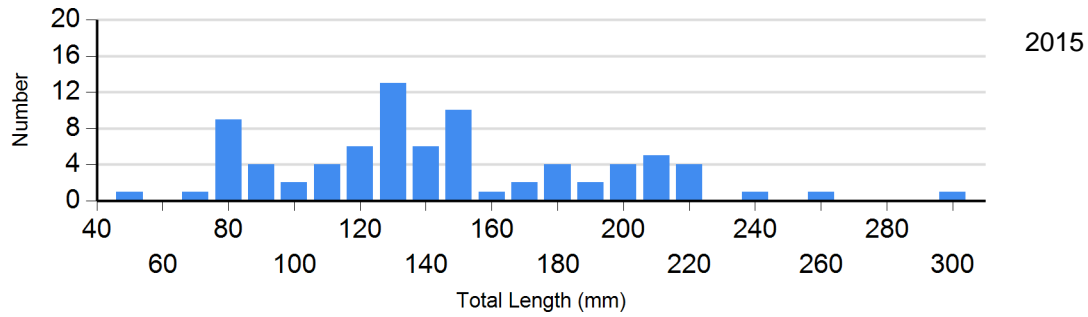


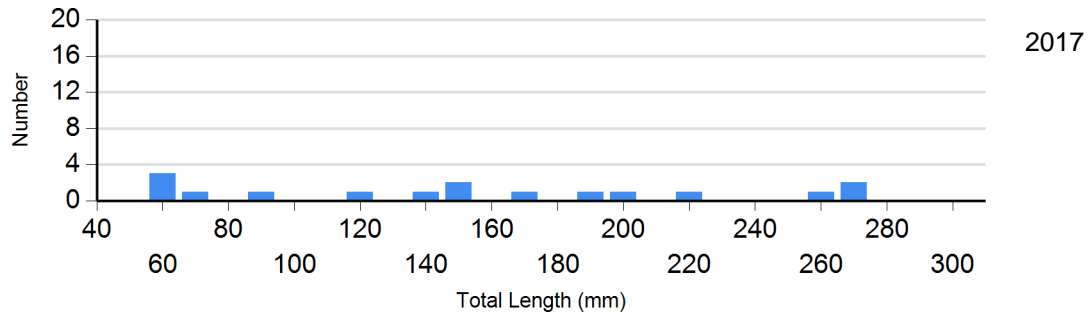
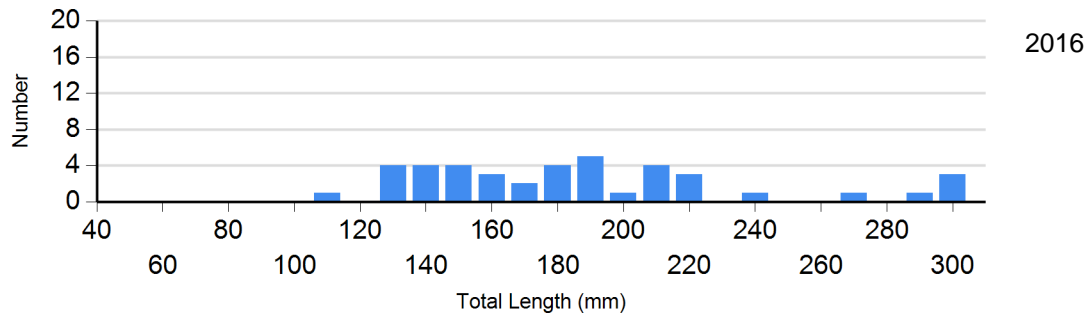


**Site:** 208  
**Species:** Rock Bass

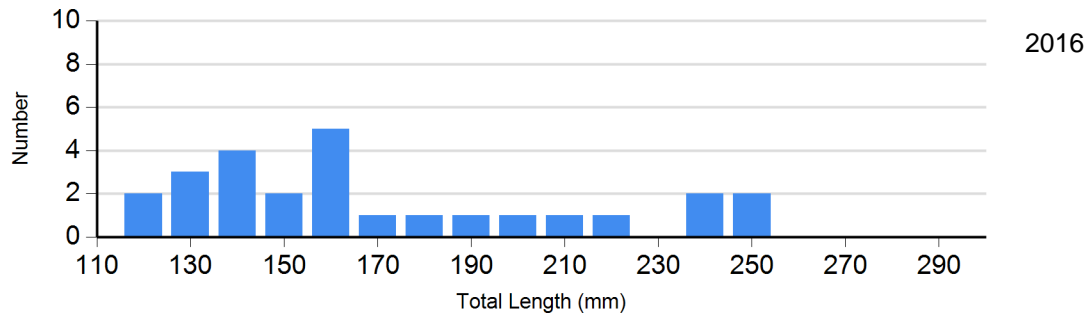
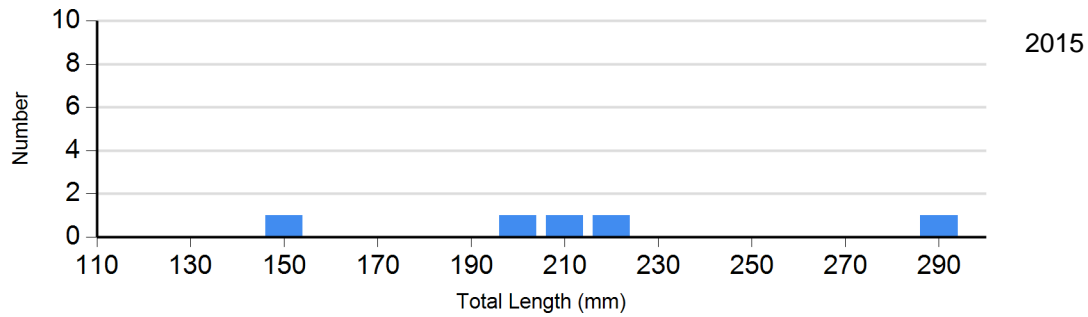


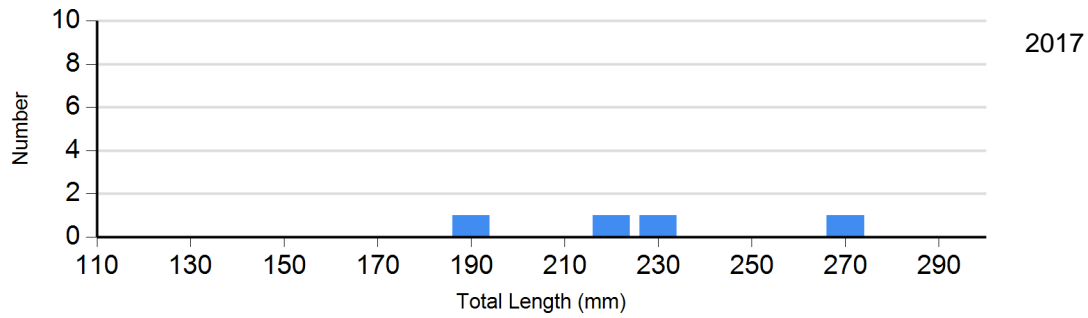
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**Species:** White Sucker



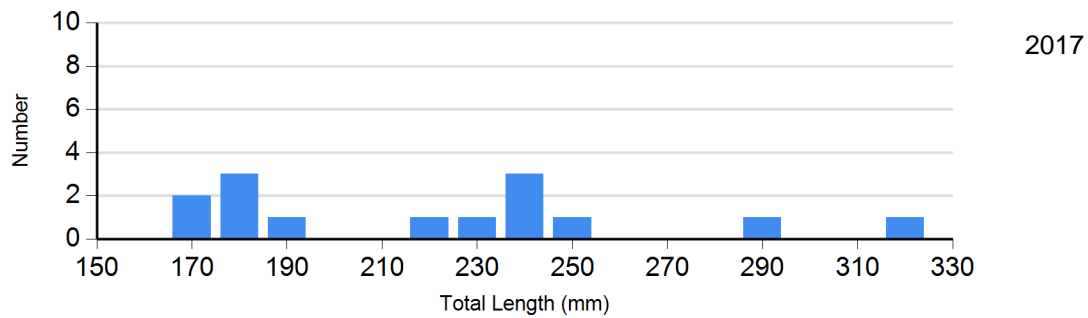
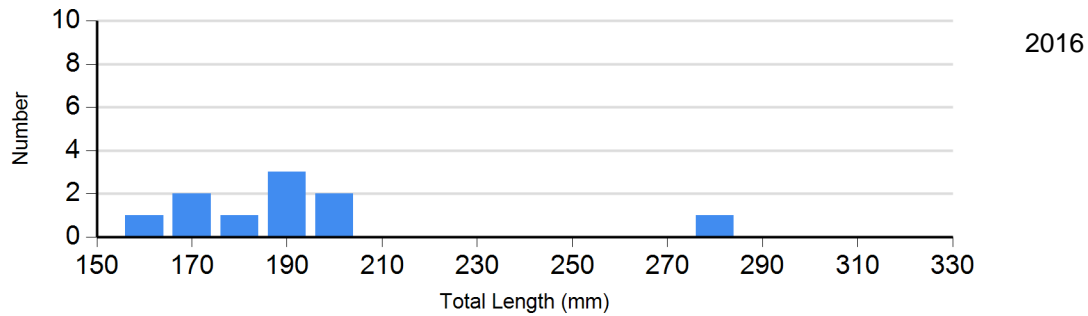
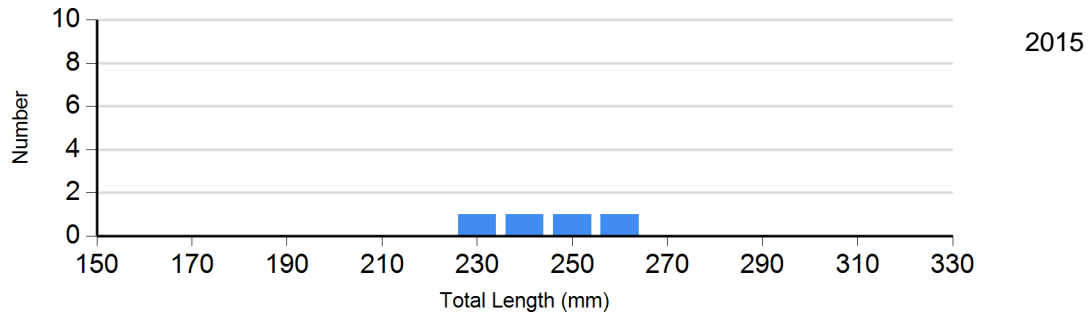


**Site:** 222  
**Species:** Brook Trout

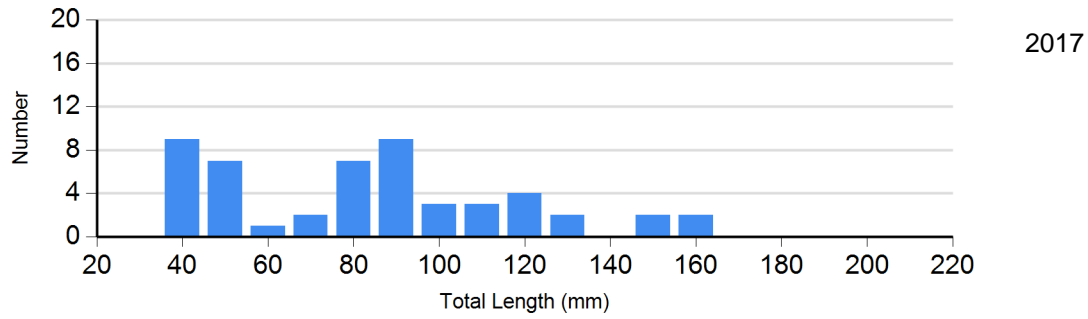
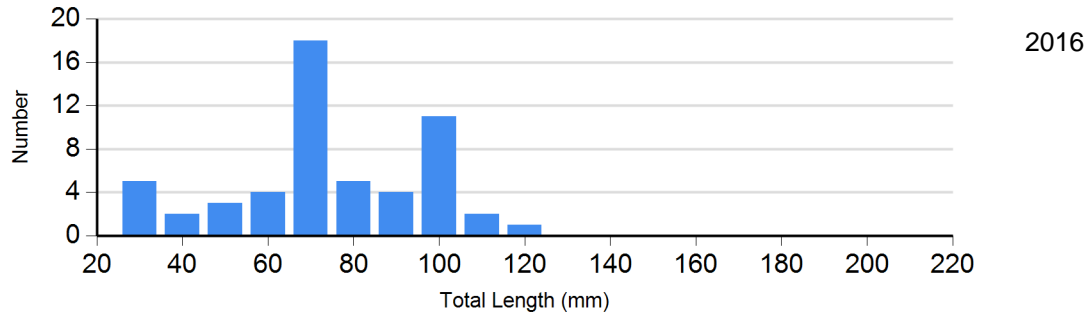
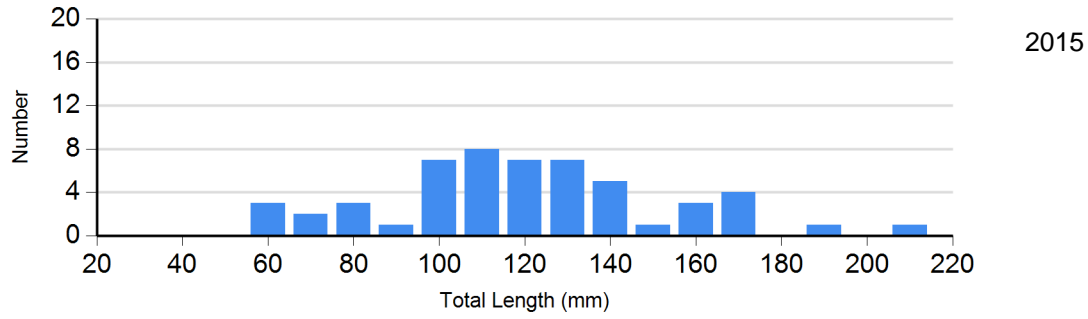




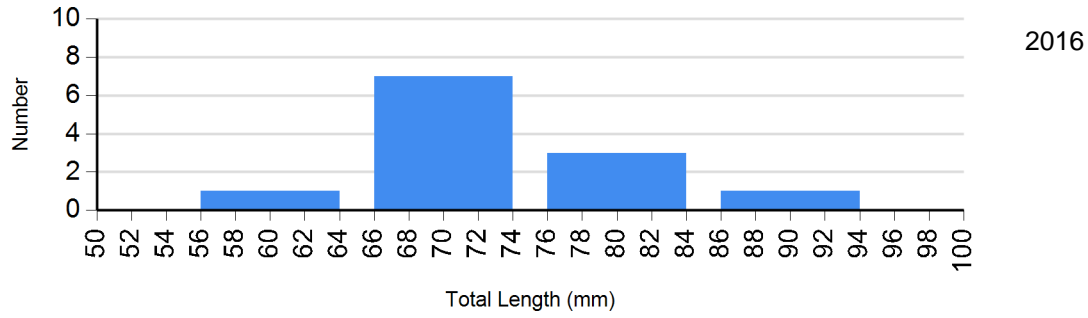
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Species: Brown Trout



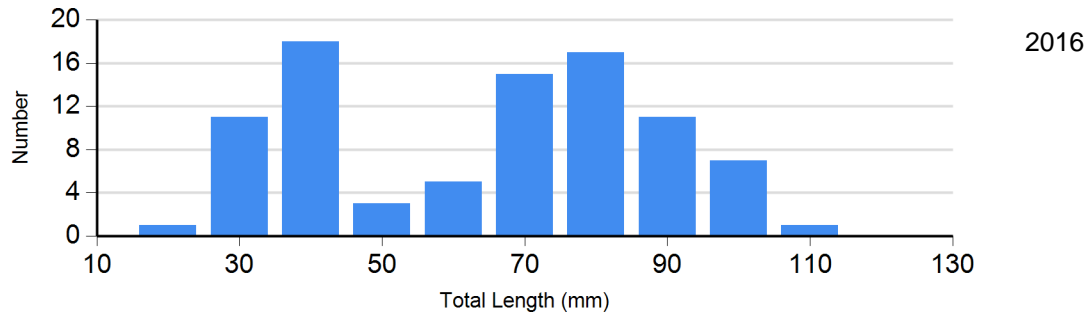
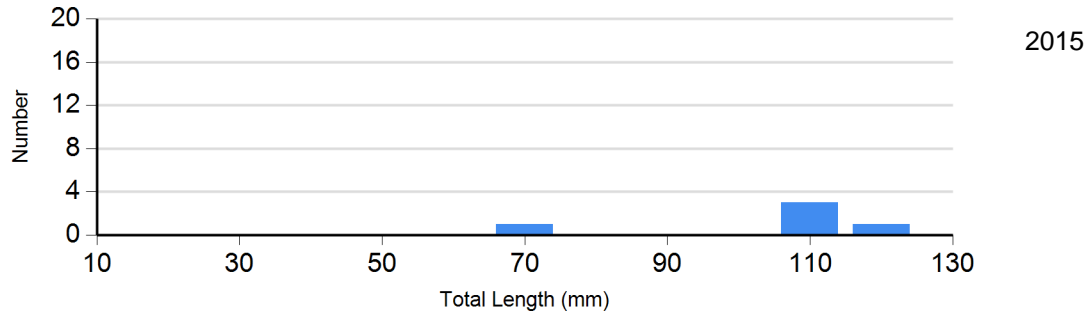
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Species: Creek Chub

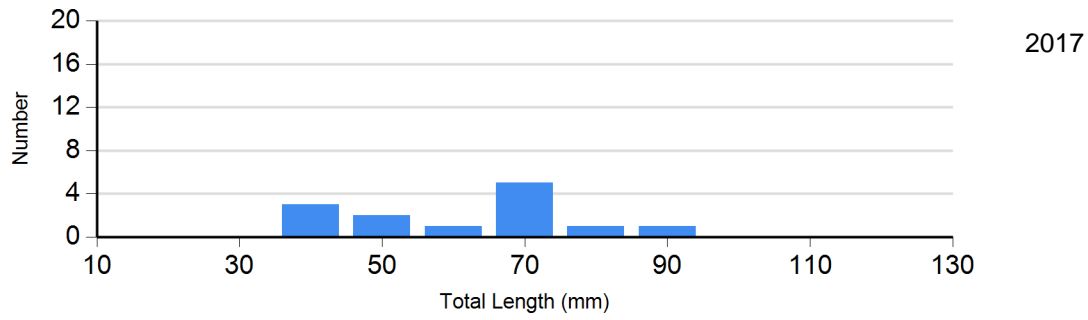


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Species: Fathead Minnow

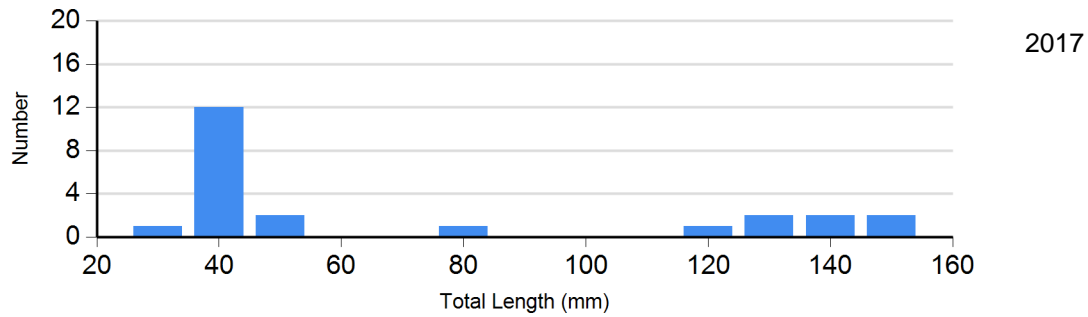
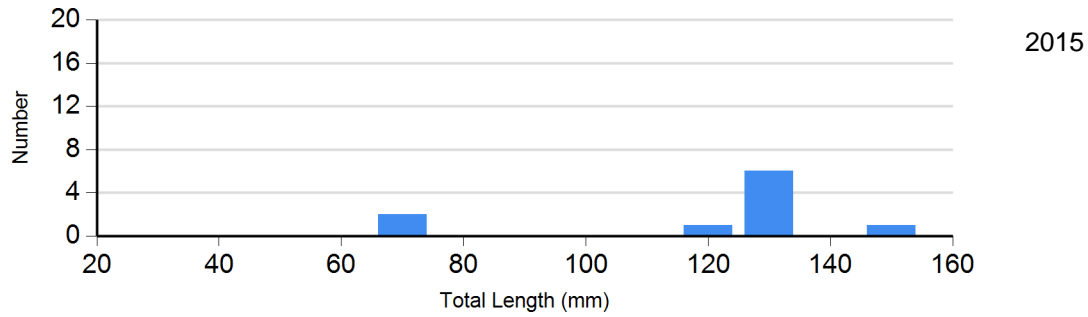


Site: 222  
Species: Longnose Dace





Site: 222  
Species: Rock Bass



Site: 222  
Species: White Sucker

