

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Whitewood Creek, Lawrence County**  
**09-0056-00**  
**2002**

Table 1. Population and Biomass Estimates for Whitewood Creek

**Site Number:** 43  
**Site Midpoint (Latitude, Longitude):** 44.62164896, -103.47136669  
**Survey Completed by:** Chadwick Ecological Services  
**Stream Classification:** BR3

**Date Sampled:** 10/09/2002  
**Site Length (m):** 85  
**Mean Width (m):** 3.7  
**Number of Pass:** 3  
**Conductivity (umhos/cm):**  
**pH:**  
**Water Temperature (C):**  
**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	1	1	2	1	27	0	12	11	0.38	19	118.0	16.0
Brown Trout	>=200mm	2	2	2	2	54	7	24	22	6.52	38	239.0	136.0
Brown Trout	All	3	3	4	3	81	8	35	33	6.90	57	198.7	96.0
Creek Chub	All	48	49	52	48	1315	4	576	533	3.86	928	59.6	3.3
Longnose Dace	All	135	158	179	137	4242	12	1859	1718	10.30	2991	63.5	2.7
Mountain Sucker	All	3	3	3	3	81	1	35	33	1.29	57	112.7	17.9
Stone Cat	All	2	2	3	2	54	1	24	22	1.12	38	129.0	23.3
White Sucker	All	26	26	28	26	698	15	306	283	13.17	492	117.5	21.1

**Site Number:** 44  
**Site Midpoint (Latitude, Longitude):** 44.62092026, -103.47188053  
**Survey Completed by:** Chadwick Ecological Services  
**Stream Classification:** None

**Date Sampled:** 10/10/2002  
**Site Length (m):** 107  
**Mean Width (m):** 6.2  
**Number of Pass:** 3  
**Conductivity (umhos/cm):** 1256  
**pH:**  
**Water Temperature (C):** 11.0  
**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)
Longnose Dace	All	7	7	8	7	113	0	65	46	0.33	105	67.0	3.3
Plains Killifish	All	13	13	13	13	211	0	121	85	0.18	195	47.5	1.0
Sand Shiner	All	248	253	259	248	4097	8	2364	1659	6.80	3804	57.6	1.9
Stone Cat	All	2	2	3	2	32	0	19	13	0.41	30	105.0	14.2
White Sucker	All	6	6	6	6	97	0	56	39	0.41	90	77.2	4.7

Site Number: 131

Site Midpoint (Latitude, Longitude): 44.58943150, -103.52027768

Survey Completed by: Chadwick Ecological Services

Stream Classification: None

Date Sampled: 10/10/2002

Site Length (m): 104

Mean Width (m): 7.0

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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)
Creek Chub	All	147	149	153	147	2129	11	1433	862	9.60	2305	73.9	5.1
Fathead Minnow	All	1	1	1	1	14	0	10	6	0.07	15	79.0	5.8
Green Sunfish	All	1	1	1	1	14	0	10	6	0.19	15	95.0	14.6
Longnose Dace	All	62	64	68	62	914	3	615	370	2.51	990	64.2	3.1
Stone Cat	All	3	3	4	3	43	1	29	17	0.77	46	128.7	20.2
White Sucker	All	7	7	7	7	100	2	67	41	1.43	108	107.1	16.0

Site Number: 295

Site Midpoint (Latitude, Longitude): 44.51740810, -103.60458517

Survey Completed by: Chadwick Ecological Services

Stream Classification: BR3

Date Sampled: 10/09/2002

Site Length (m): 103

Mean Width (m): 5.8

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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	14	14	16	14	241	3	136	98	2.78	219	107.6	12.9
Brown Trout	>=200mm	2	2	2	2	34	9	19	14	8.11	31	290.5	263.5
Brown Trout	All	16	16	17	16	276	12	155	112	10.89	250	130.5	44.2
Creek Chub	All	15	22	44	15	379	1	214	154	0.67	344	56.7	2.0
Longnose Dace	All	317	397	445	349	6845	22	3854	2772	19.72	6202	65.6	3.2
Mountain Sucker	All	6	6	7	6	103	1	58	42	0.67	94	84.8	7.2
White Sucker	All	83	85	89	83	1466	41	825	594	36.73	1328	120.2	28.1

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	
<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 Whitewood Creek, 1992-2002

**Site 43**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 11, 1996	1	1-1	
	Sep 28, 2000	22	21-26	
	Sep 27, 2001	1	1-1	
	Oct 09, 2002	1	1-2	
Brown Trout >=200mm	Oct 11, 1996	2	2-2	BR3
	Sep 28, 2000	11	11-11	BR2
	Oct 09, 2002	2	2-2	BR3

Creek Chub	Sep 27, 2001	170	165-176
	Oct 09, 2002	49	48-52
Longnose Dace	Oct 11, 1996	3	3-3
	Sep 28, 2000	1113	1114-1157
	Sep 27, 2001	411	402-420
	Oct 09, 2002	158	137-179
Mountain Sucker	Sep 27, 2001	1	1-1
	Oct 09, 2002	3	3-3
Stone Cat	Oct 09, 2002	2	2-3
White Sucker	Oct 11, 1996	3	3-3
	Sep 28, 2000	9	9-9
	Sep 27, 2001	43	43-44
	Oct 09, 2002	26	26-28

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**Site 44**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Creek Chub	Oct 09, 1996	1	1-5	

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Creek Chub	Sep 26, 2001	3	3-3
Fathead Minnow	Sep 27, 2000	1	1-5
Green Sunfish	Oct 09, 1996	5	5-7
Longnose Dace	Oct 09, 1996	3	3-3
	Sep 27, 2000	109	102-118
	Sep 26, 2001	54	54-56
	Oct 10, 2002	7	7-8
Plains Killifish	Sep 26, 2001	1	1-1
	Oct 10, 2002	13	13-13
Sand Shiner	Sep 27, 2000	2	2-2
	Sep 26, 2001	93	93-94
	Oct 10, 2002	253	248-259
Stone Cat	Oct 09, 1996	65	49-91
	Sep 27, 2000	27	21-42
	Sep 26, 2001	13	13-15
	Oct 10, 2002	2	2-3

White Sucker	Oct 09, 1996	1	1-2
	Sep 27, 2000	27	25-32
	Sep 26, 2001	5	5-5
	Oct 10, 2002	6	6-6

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**Site 131**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brown Trout <200mm	Oct 10, 1996	1	1-1	
	Sep 27, 2000	1	1-1	
Creek Chub	Oct 10, 1996	1	1-1	
	Sep 27, 2000	6	6-8	
	Sep 26, 2001	50	47-56	
	Oct 10, 2002	149	147-153	
Fathead Minnow	Oct 10, 2002	1	1-1	
Green Sunfish	Oct 10, 2002	1	1-1	
Longnose Dace	Oct 10, 1996	3	3-3	
	Sep 27, 2000	1088	1024-1152	

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Longnose Dace	Sep 26, 2001	138	124-152
	Oct 10, 2002	64	62-68
Mountain Sucker	Sep 27, 2000	1	1-1
Stone Cat	Sep 27, 2000	57	39-91
	Sep 26, 2001	19	18-23
	Oct 10, 2002	3	3-4
White Sucker	Oct 10, 1996	22	21-26
	Sep 27, 2000	32	32-34
	Sep 26, 2001	40	40-42
	Oct 10, 2002	7	7-7

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**Site 295**

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<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brown Trout <200mm	Oct 11, 1996	5	5-6	
	Nov 04, 1999	27	24-34	
	Sep 28, 2000	34	34-35	
	Sep 25, 2001	23	23-25	

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Brown Trout <200mm	Oct 09, 2002	14	14-16	
Brown Trout >=200mm	Nov 04, 1999	10	10-12	BR3
	Sep 28, 2000	2	2-3	BR3
	Sep 25, 2001	2	2-2	BR3
	Oct 09, 2002	2	2-2	BR3
Creek Chub	Oct 09, 2002	22	15-44	
Longnose Dace	Oct 11, 1996	2	3-4	
	Nov 04, 1999	357	358-390	
	Sep 28, 2000	1776	1777-1827	
	Sep 25, 2001	1131	801-1461	
	Oct 09, 2002	397	349-445	
Mountain Sucker	Oct 11, 1996	8	8-9	
	Sep 28, 2000	16	12-30	
	Sep 25, 2001	16	16-18	
	Oct 09, 2002	6	6-7	
Stone Cat	Sep 25, 2001	1	1-1	

White Sucker	Oct 11, 1996	1	1-1
	Nov 04, 1999	1	1-1
	Sep 28, 2000	2	2-4
	Sep 25, 2001	186	185-189
	Oct 09, 2002	85	83-89

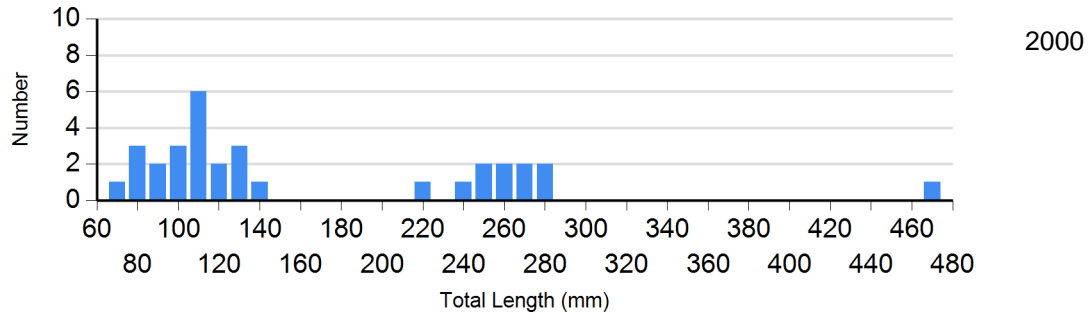
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## Length Frequency Distribution

Length frequency histogram of species sampled by year.

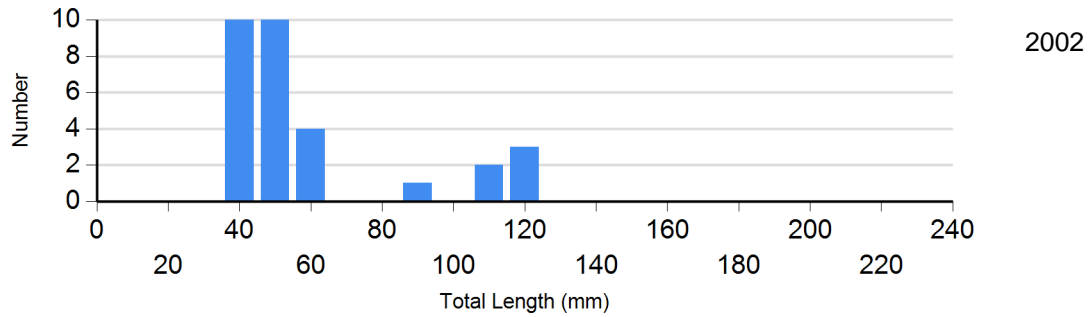
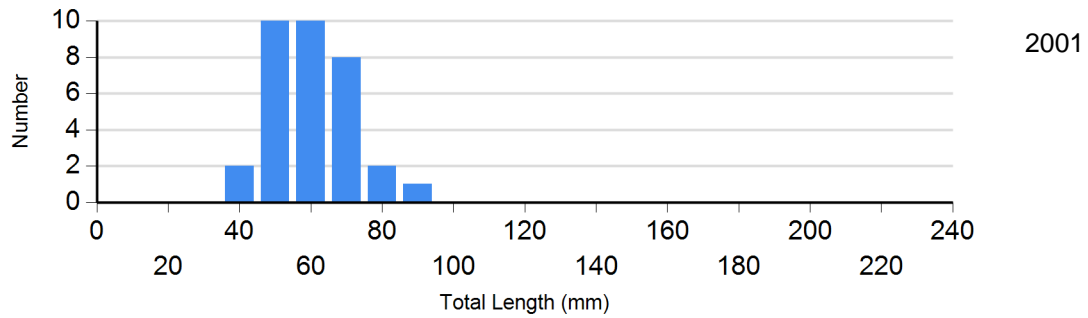
**Site:** 43

**Species:** Brown Trout

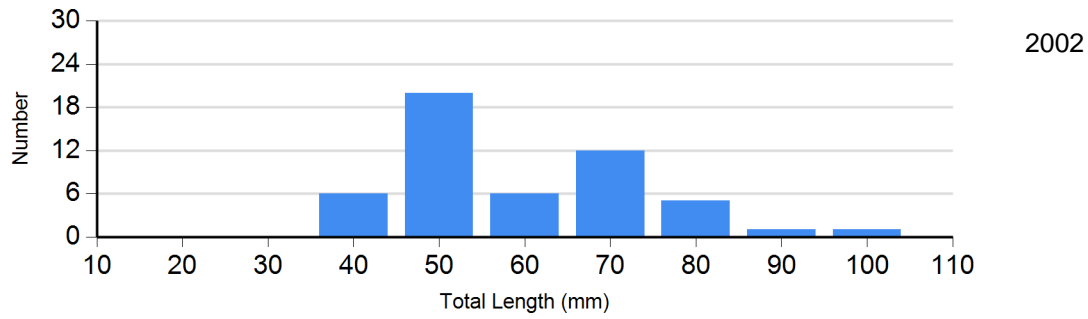
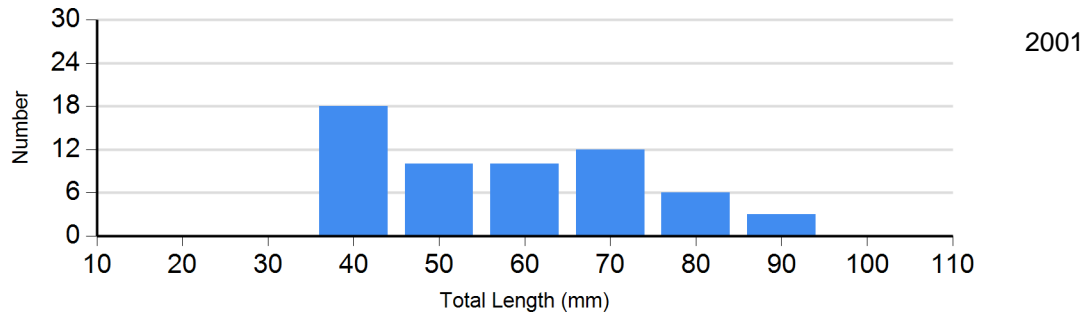
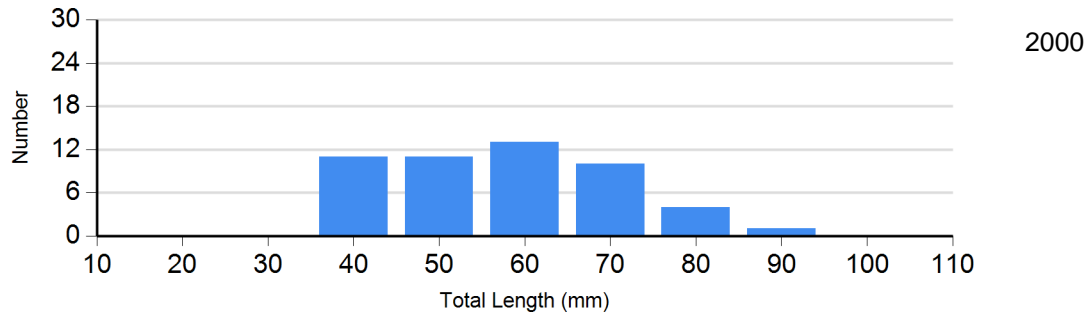


**Site:** 43

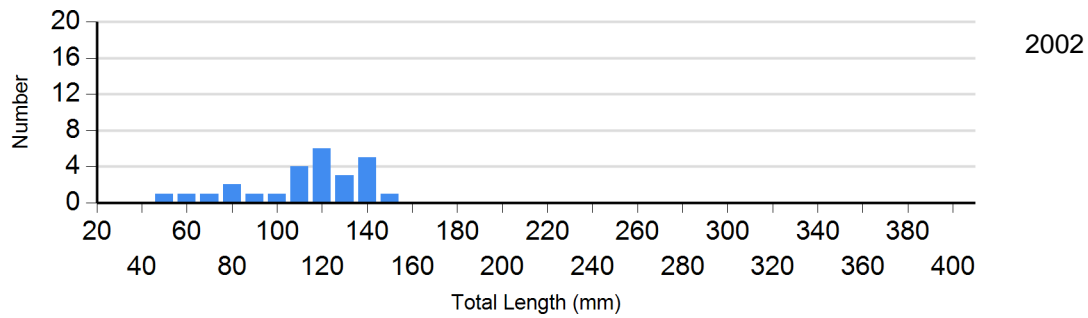
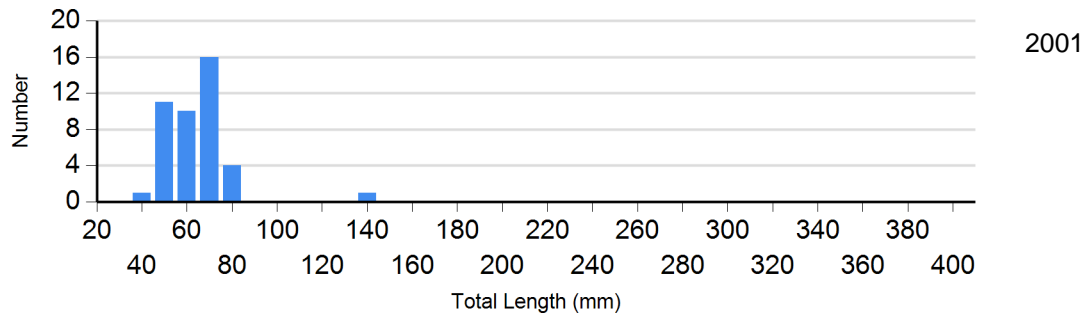
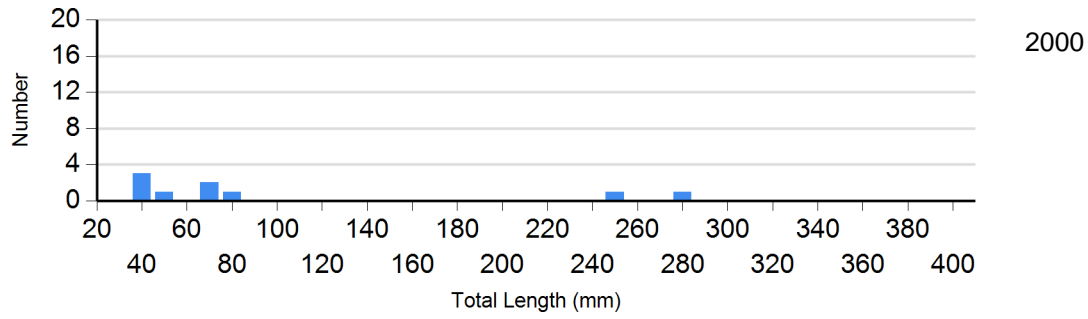
**Species:** Creek Chub



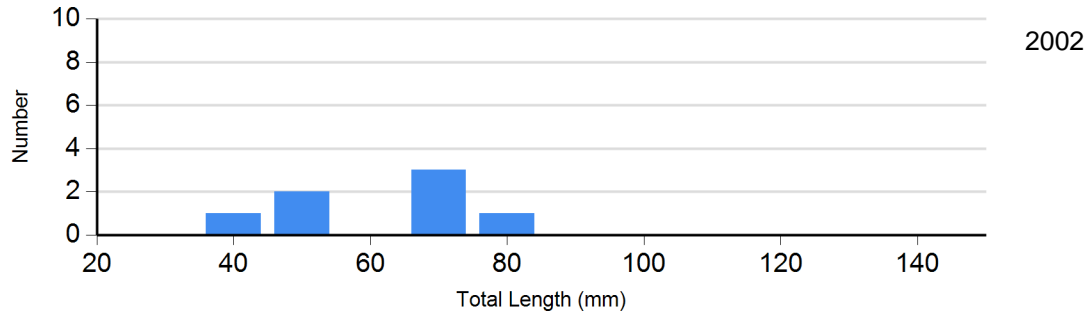
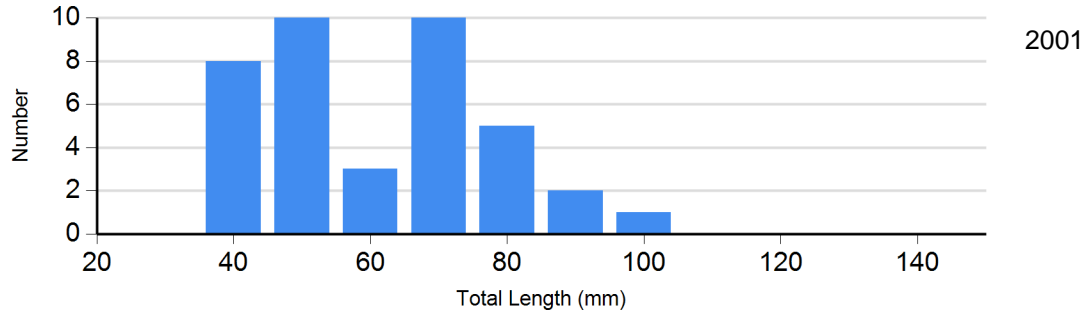
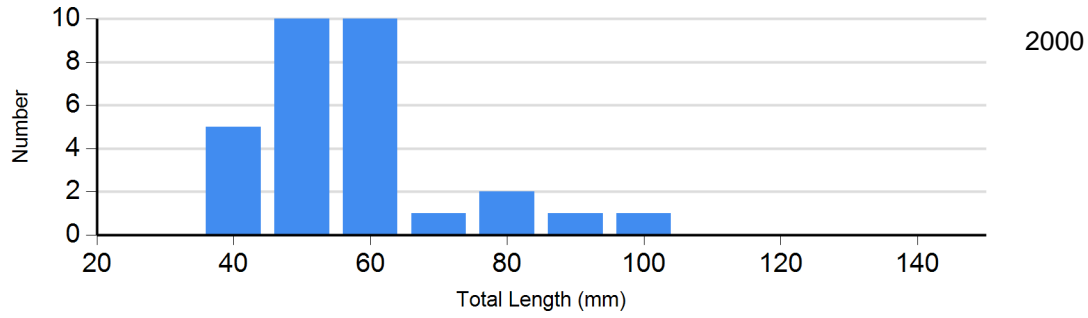
Site: 43  
Species: Longnose Dace



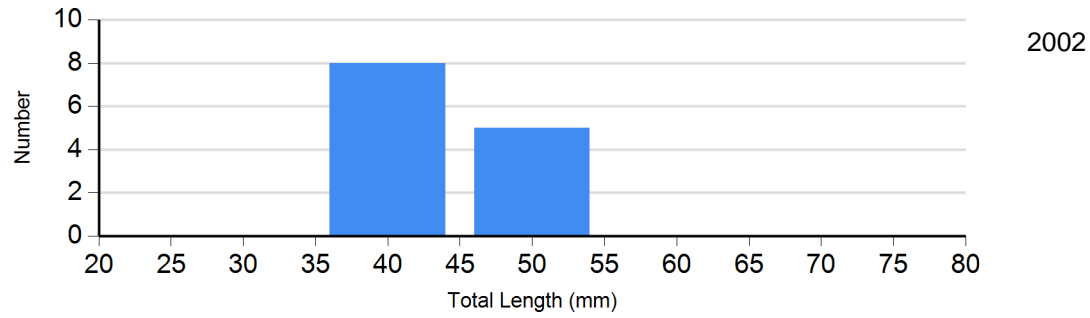
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Species: White Sucker



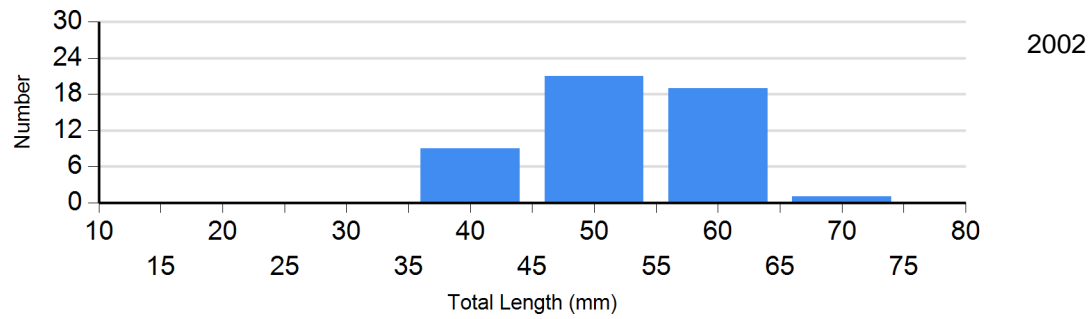
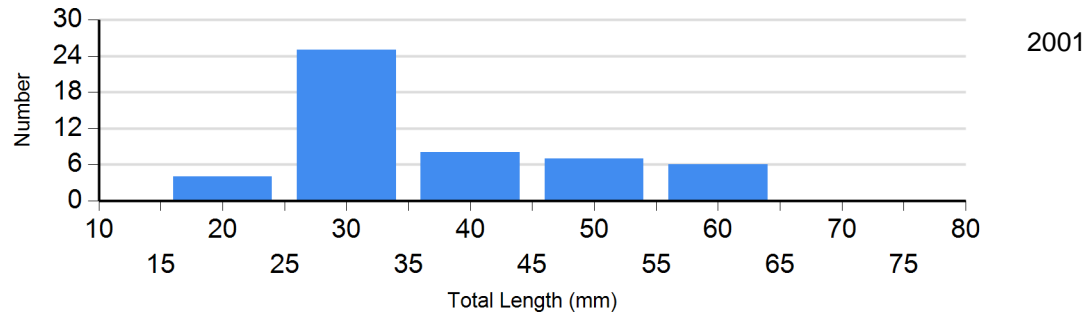
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Species: Longnose Dace



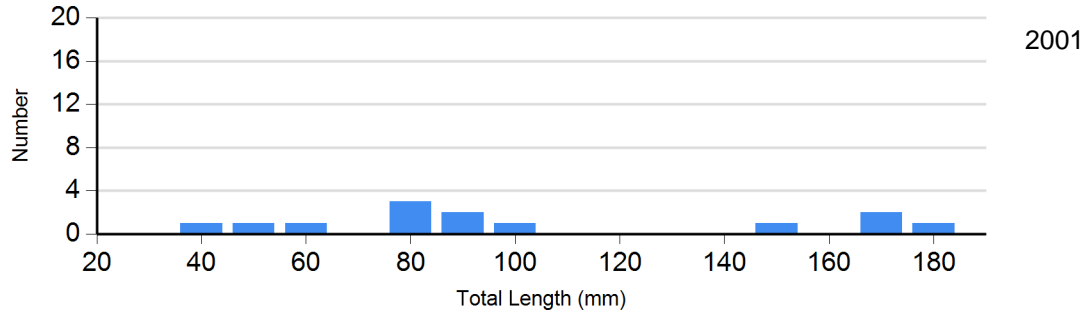
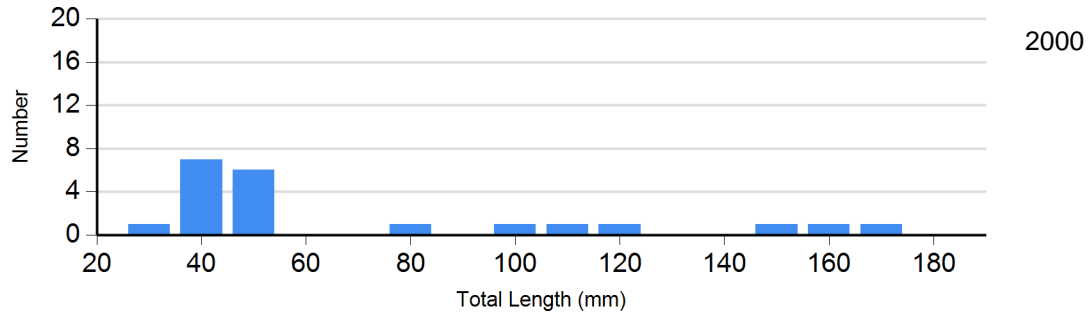
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**Species: Plains Killifish**



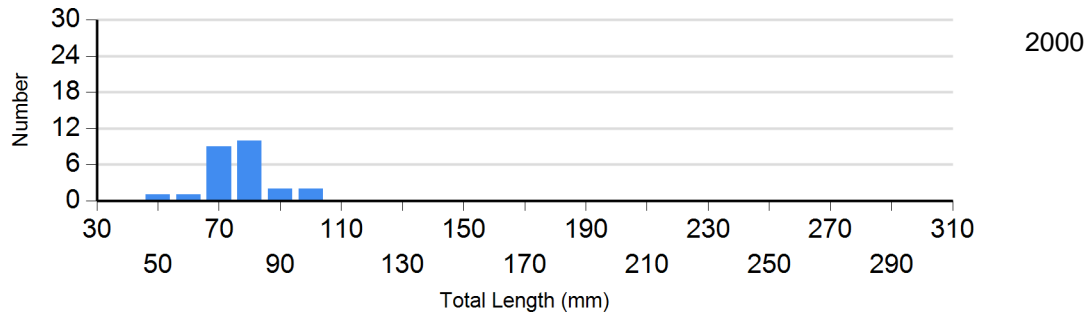
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**Species: Sand Shiner**



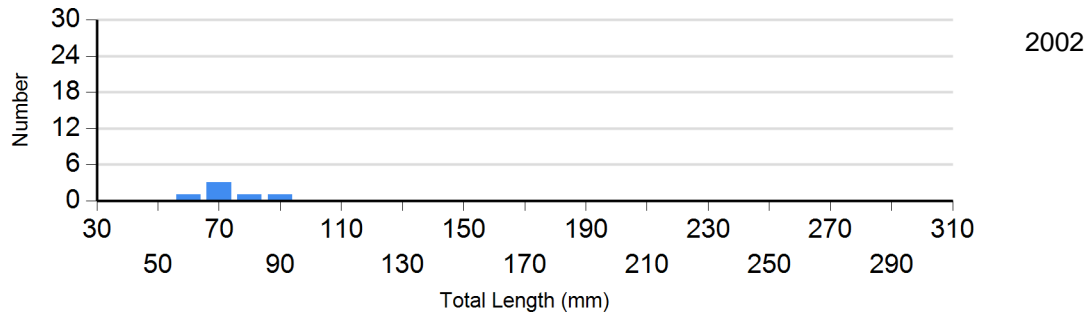
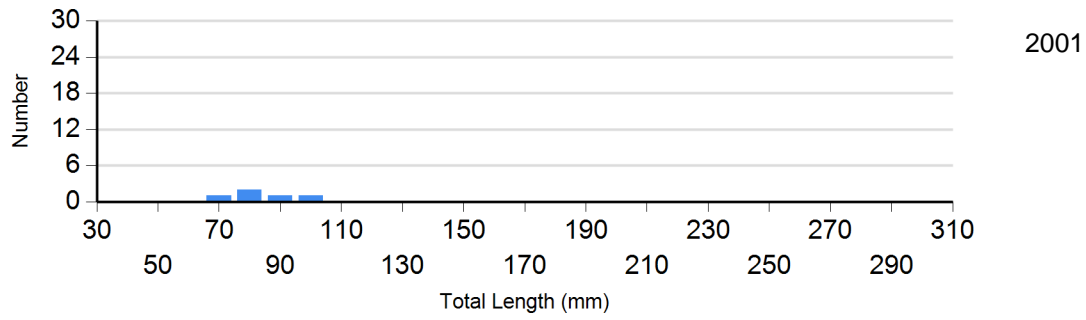
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Species: Stone Cat



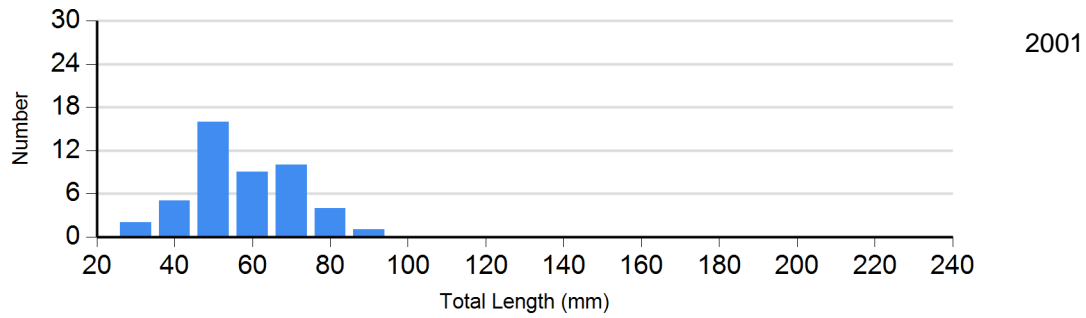
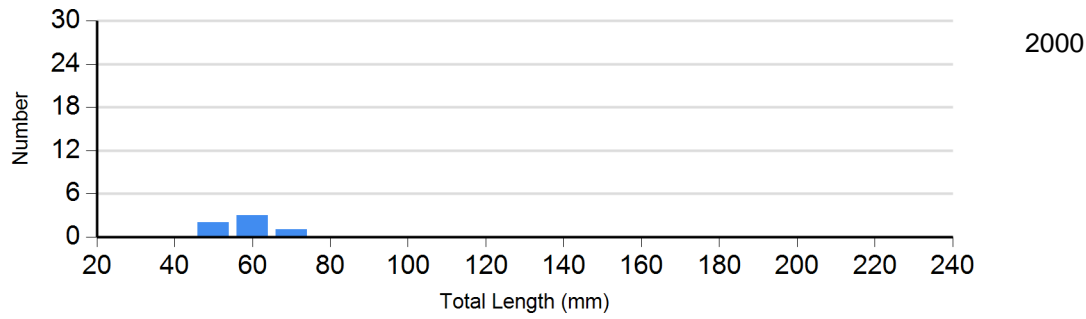
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Species: White Sucker

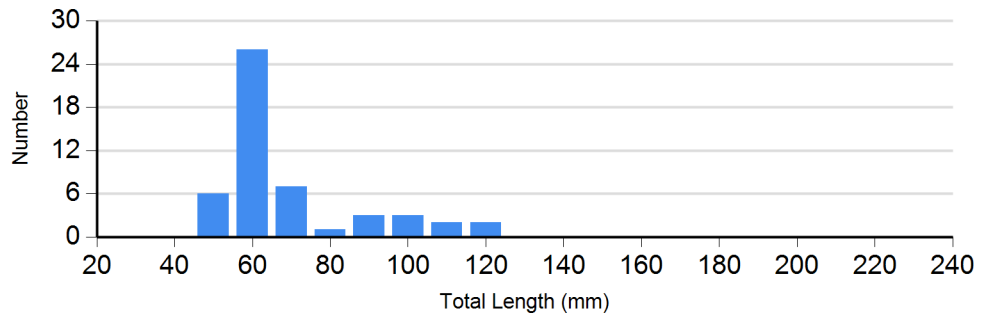




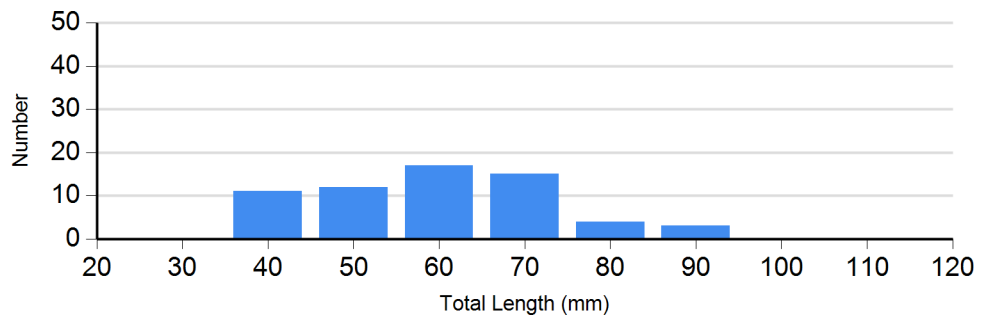
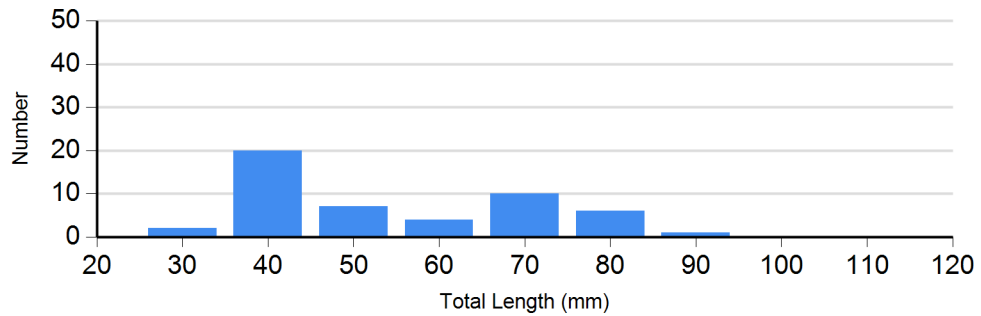
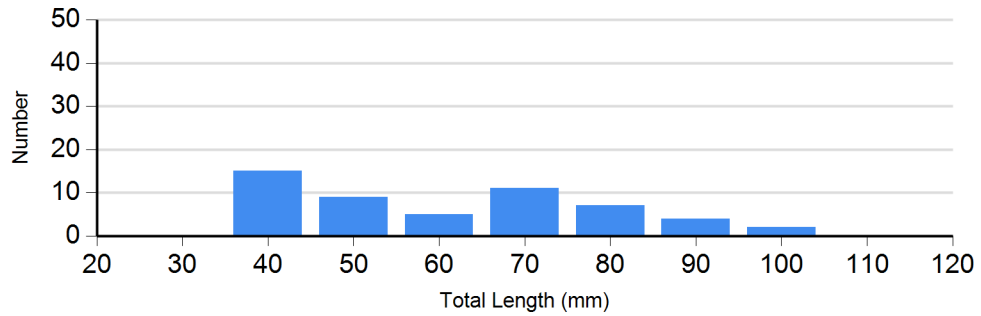


**Site:** 131  
**Species:** Creek Chub

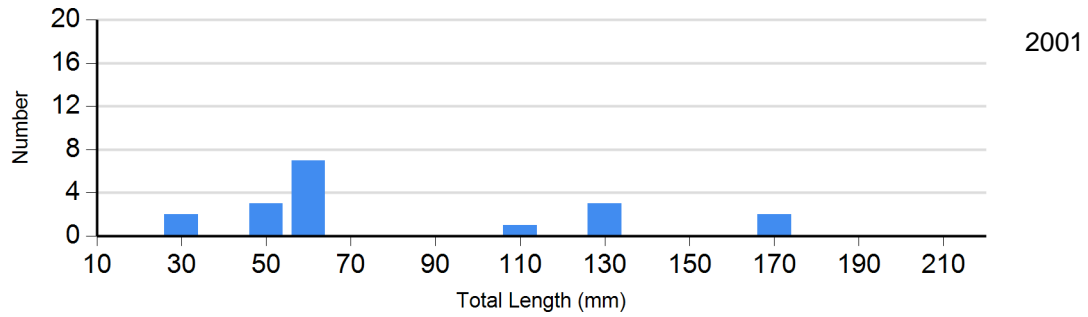
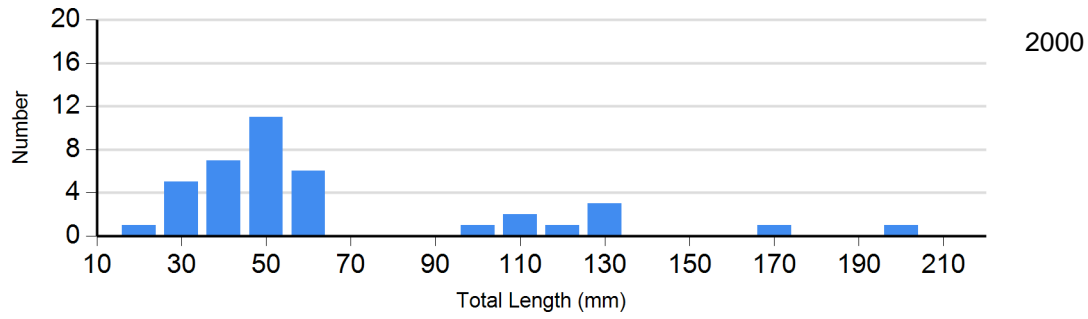




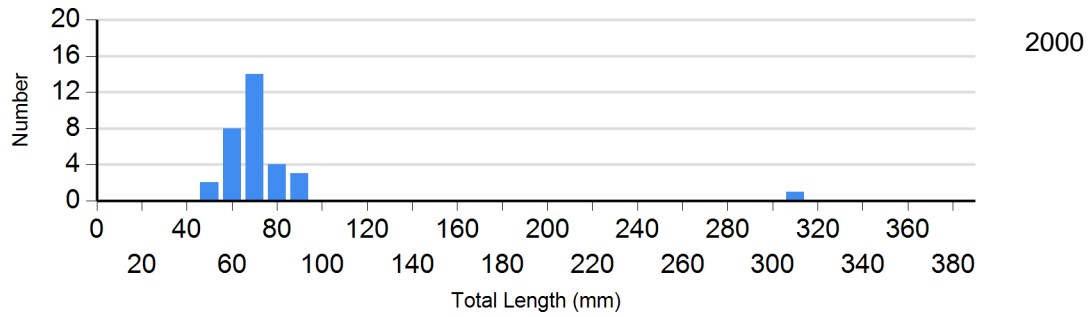
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**Species:** Longnose Dace

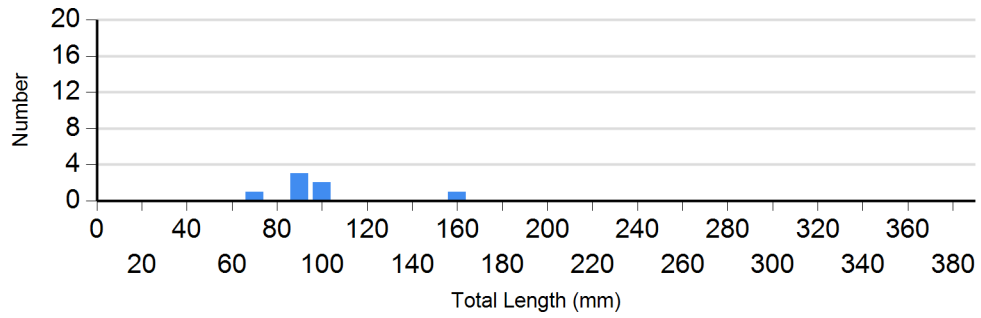
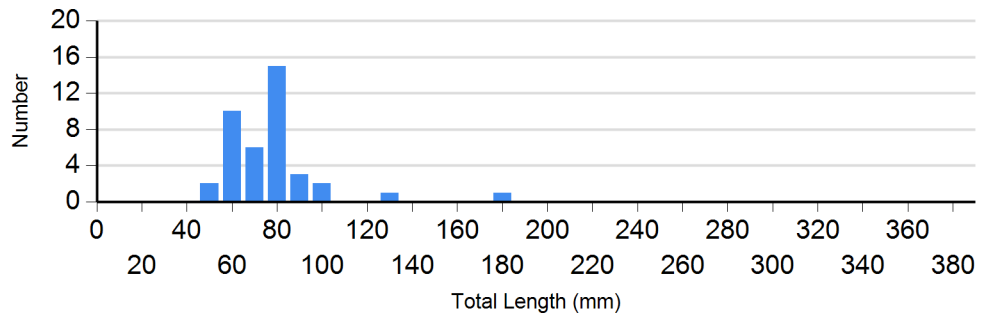


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**Species: Stone Cat**

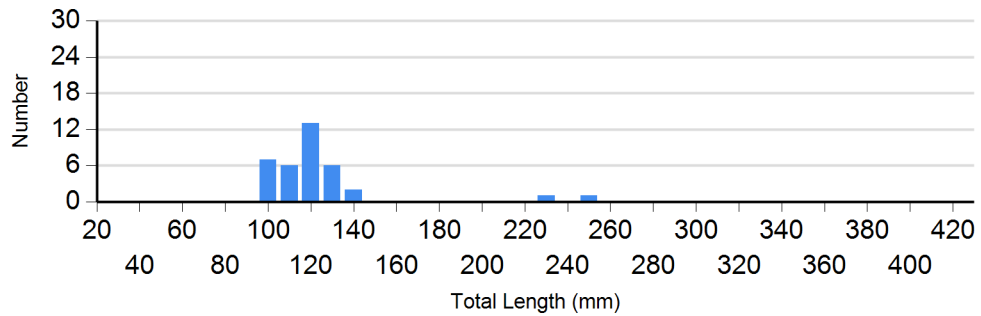
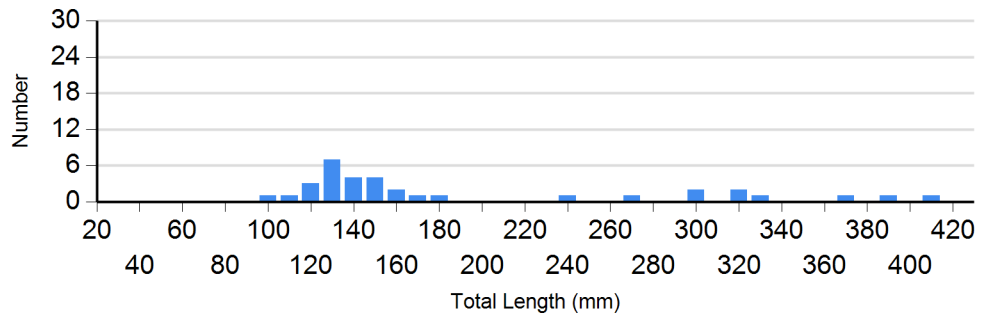


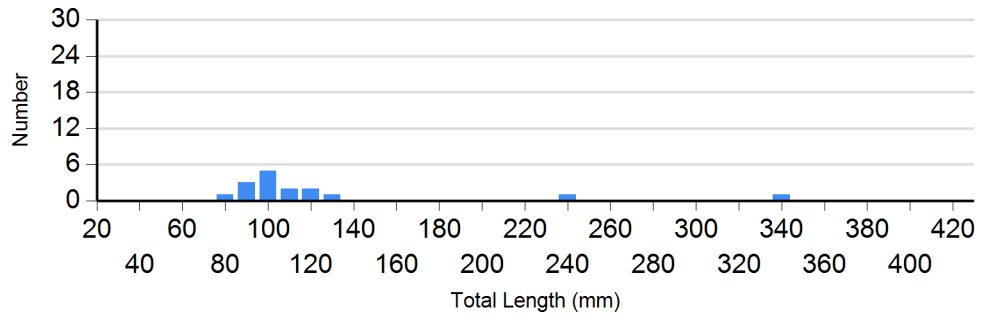
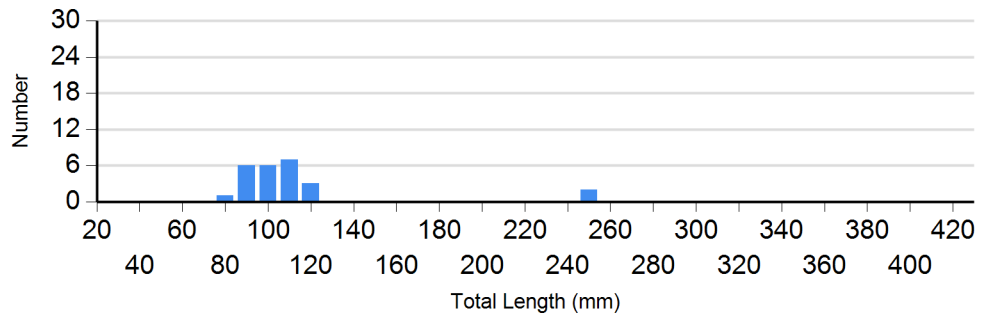
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**Species: White Sucker**



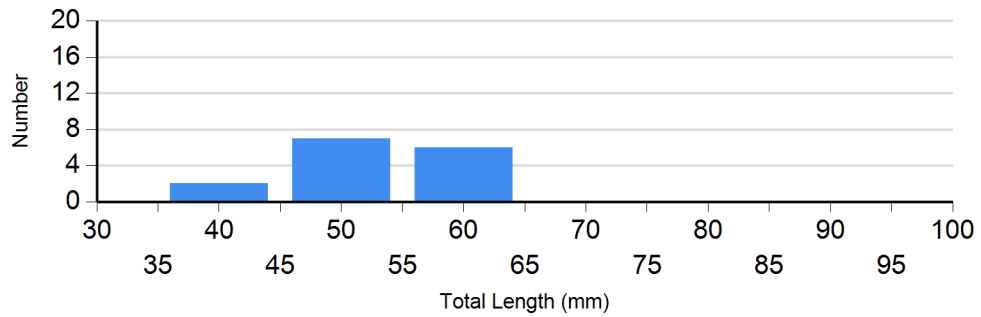


**Site:** 295  
**Species:** Brown Trout

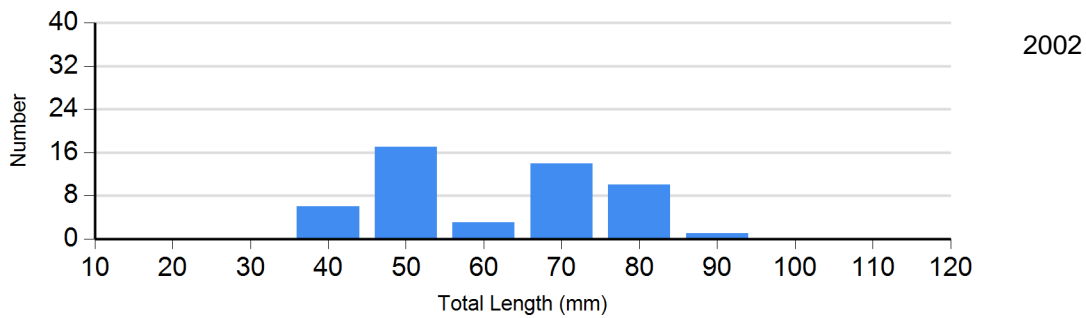
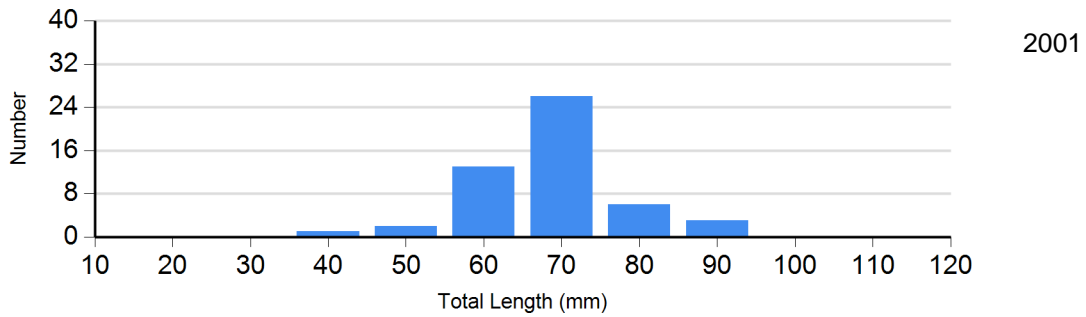
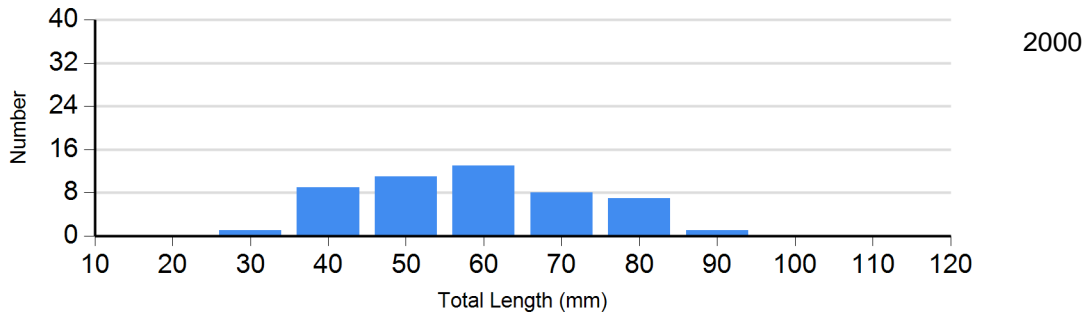
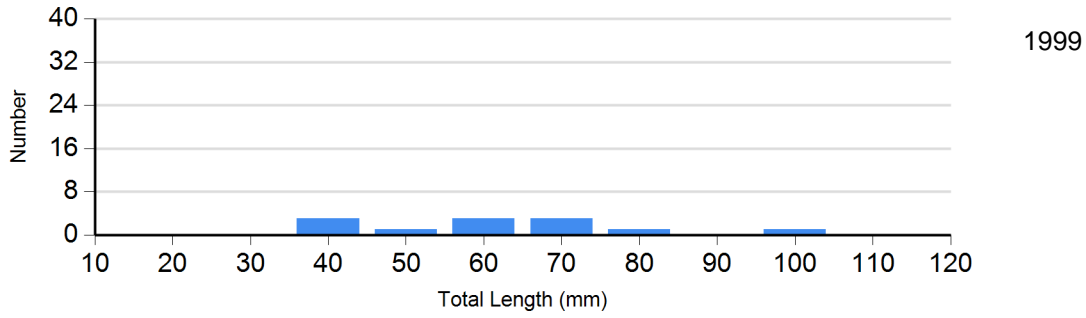




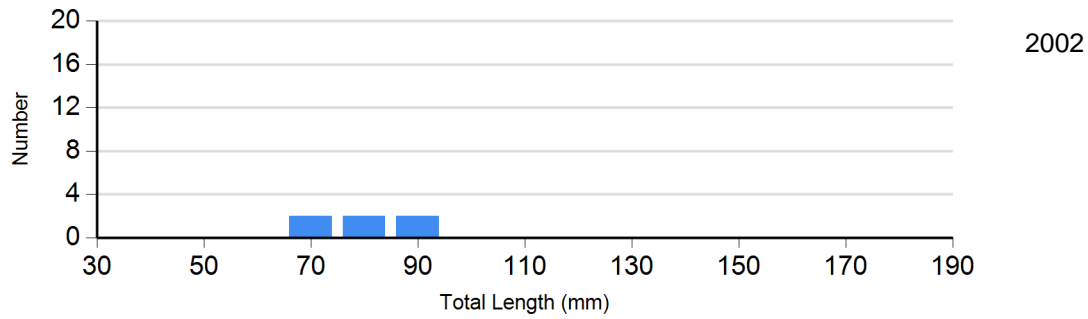
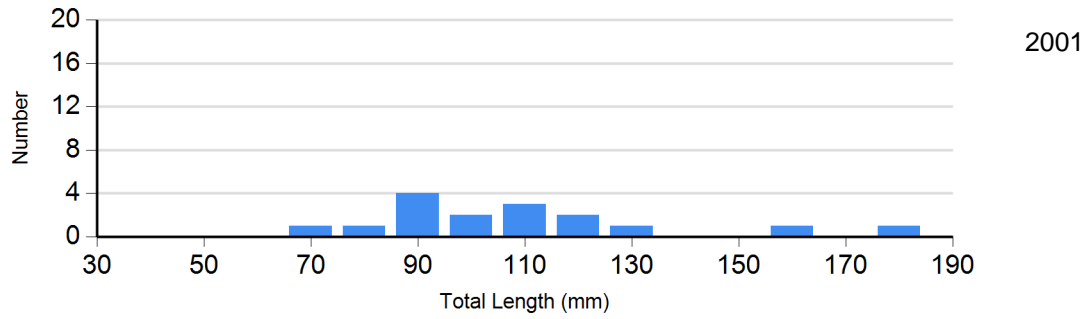
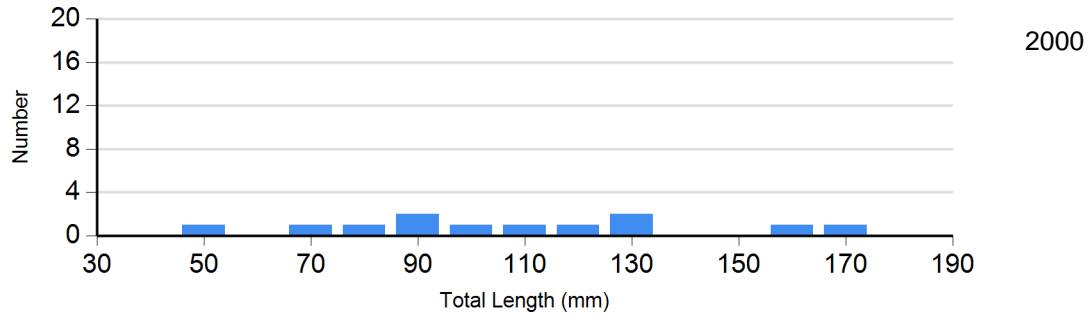
**Site:** 295  
**Species:** Creek Chub



Site: 295  
Species: Longnose Dace



Site: 295  
Species: Mountain Sucker



Site: 295  
Species: White Sucker

