

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Bear Butte Creek, Meade County**  
**49-0023-00**  
**2007**

Table 1. Population and Biomass Estimates for Bear Butte Creek

<b>Site Number:</b> 976	<b>Date Sampled:</b> 09/11/2007	<b>Conductivity (umhos/cm):</b> 435
<b>Site Midpoint (Latitude, Longitude):</b> 44.32812906, -103.64456485	<b>Site Length (m):</b> 100	<b>pH:</b> 8.7
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 3.8	<b>Water Temperature (C):</b> 10.5
<b>Stream Classification:</b> BK2	<b>Number of Pass:</b> 3	<b>Voltage:</b> 300

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	121	120	135	121	3143	61	1200	1273	54.50	1931	110.3	19.4
Brook Trout	>=200mm	7	7	9	7	183	24	70	74	21.79	113	225.3	133.1
Brook Trout	All	211	244	269	219	6390	164	2440	2588	146.30	3926	116.6	25.6

<b>Site Number:</b> 977	<b>Date Sampled:</b> 09/11/2007	<b>Conductivity (umhos/cm):</b> 435
<b>Site Midpoint (Latitude, Longitude):</b> 44.32765077, -103.64555220	<b>Site Length (m):</b> 100	<b>pH:</b> 8.7
<b>Survey Completed by:</b> South Dakota Game, Fish and Parks	<b>Mean Width (m):</b> 4.2	<b>Water Temperature (C):</b> 10.5
<b>Stream Classification:</b> BK2	<b>Number of Pass:</b> 3	<b>Voltage:</b> 300

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	101	102	105	101	2413	38	1020	977	34.21	1641	107.0	15.9
Brook Trout	>=200mm	9	9	9	9	213	27	90	86	23.68	145	222.9	124.6
Brook Trout	All	110	111	114	110	2626	65	1110	1063	58.08	1786	116.5	24.8
Green Sunfish	All	3	5	24	3	118	1	50	48	0.67	80	85.0	6.3
Mountain Sucker	All	1	1	5	1	24	0	10	10	0.34	16	115.0	16.0

White Sucker All 2 2 3 2 47 2 20 19 1.99 32 150.5 47.0

**Site Number:** 985 **Date Sampled:** 09/12/2007 **Conductivity (umhos/cm):** 966  
**Site Midpoint (Latitude, Longitude):** 44.32564488, -103.65235156 **Site Length (m):** 100 **pH:** 8.2  
**Survey Completed by:** South Dakota Game, Fish and Parks **Mean Width (m):** 2.9 **Water Temperature (C):** 9.5  
**Stream Classification:** BK2 **Number of Pass:** 3 **Voltage:** 300

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	237	242	248	237	8478	118	2420	3433	105.59	3894	105.8	13.9
Brook Trout	>=200mm	6	6	6	6	210	23	60	85	20.11	97	218.3	107.2
Brook Trout	All	243	248	254	243	8688	141	2480	3519	126.06	3990	108.5	16.3

**Site Number:** 988 **Date Sampled:** 09/12/2007 **Conductivity (umhos/cm):** 297  
**Site Midpoint (Latitude, Longitude):** 44.32359378, -103.65026058 **Site Length (m):** 100 **pH:** 8.7  
**Survey Completed by:** South Dakota Game, Fish and Parks **Mean Width (m):** 2.9 **Water Temperature (C):** 12.2  
**Stream Classification:** BK2 **Number of Pass:** 3 **Voltage:** 300

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	57	58	61	57	1981	24	580	802	21.66	933	101.3	12.2
Brook Trout	>=200mm	2	2	2	2	68	9	20	28	7.59	32	225.5	124.5
Brook Trout	All	59	60	63	59	2050	33	600	830	29.37	965	105.5	16.1
Green Sunfish	All	1	1	2	1	34	0	10	14	0.43	16	82.0	14.0

**Site Number:** 992 **Date Sampled:** 09/12/2007 **Conductivity (umhos/cm):** 310  
**Site Midpoint (Latitude, Longitude):** 44.32169898, -103.65235596 **Site Length (m):** 100 **pH:** 8.5  
**Survey Completed by:** **Mean Width (m):** 2.8 **Water Temperature (C):** 17.7  
**Stream Classification:** BK1 **Number of Pass:** 3

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	50	51	54	50	1827	39	510	740	35.14	821	122.5	21.5
Brook Trout	>=200mm	13	13	13	13	466	49	130	189	43.93	209	221.1	105.6
Brook Trout	All	63	63	65	63	2257	88	630	914	78.38	1014	142.8	38.9
Green Sunfish	All	8	8	9	8	287	4	80	116	3.55	129	91.5	13.9
Mountain Sucker	All	31	31	32	31	1111	37	310	450	33.34	499	145.2	33.6
Rock Bass	All	2	2	3	2	72	2	20	29	1.76	32	113.5	27.5
White Sucker	All	6	6	6	6	215	8	60	87	7.45	97	151.8	38.8

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 Bear Butte Creek, 1997-2007

**Site 976**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 09, 1997	1	1-1	
	Sep 13, 1999	6	6-6	
	Sep 12, 2000	42	42-43	
	Sep 12, 2002	103	98-110	
	Sep 16, 2003	149	149-151	
	Sep 07, 2004	175	168-183	
	Sep 11, 2007	120	121-135	

Brook Trout >=200mm	Sep 09, 1997	2	2-3	BK3
	Sep 13, 1999	1	1-1	BK3
	Sep 12, 2000	24	24-24	BK1
	Sep 12, 2002	7	7-7	BK2
	Sep 16, 2003	4	4-5	BK2
	Sep 07, 2004	7	7-7	BK2
	Sep 11, 2007	7	7-9	BK2
Longnose Dace	Sep 09, 1997	106	106-107	
	Sep 12, 2000	288	73-982	
	Sep 12, 2002	239	227-251	
	Sep 16, 2003	250	237-263	
	Sep 07, 2004	211	171-251	
Mountain Sucker	Sep 09, 1997	71	67-78	
	Sep 14, 1998	1	1-3	
	Sep 13, 1999	4	4-5	
	Sep 12, 2000	113	109-119	

Mountain Sucker	Sep 12, 2002	16	16-18
	Sep 16, 2003	22	13-55
	Sep 07, 2004	7	7-8
White Sucker	Sep 09, 1997	11	11-13
	Sep 14, 1998	1	1-3
	Sep 13, 1999	7	7-8
	Sep 12, 2000	42	37-51
	Sep 12, 2002	8	8-9

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**Site 977**

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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	Sep 09, 1997	1	1-2	
	Sep 14, 1999	26	26-28	
	Sep 12, 2000	32	30-37	
	Sep 12, 2002	114	112-118	
	Sep 16, 2003	117	116-120	
	Sep 08, 2004	134	131-139	

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Brook Trout <200mm	Sep 11, 2007	102	101-105	
Brook Trout >=200mm	Sep 09, 1997	5	5-5	BK2
	Sep 12, 2000	8	8-8	BK2
	Sep 12, 2002	10	10-10	BK2
	Sep 16, 2003	3	3-3	BK2
	Sep 08, 2004	1	1-5	BK3
	Sep 11, 2007	9	9-9	BK2
Green Sunfish	Sep 11, 2007	5	3-24	
Longnose Dace	Sep 09, 1997	10	10-11	
	Sep 14, 1999	765	253-1474	
	Sep 12, 2000	56	42-80	
	Sep 12, 2002	267	222-312	
	Sep 16, 2003	319	284-354	
	Sep 08, 2004	268	241-295	
Mountain Sucker	Sep 09, 1997	28	21-45	
	Sep 12, 2000	38	36-43	

Mountain Sucker	Sep 12, 2002	22	21-26
	Sep 16, 2003	18	18-20
	Sep 08, 2004	13	12-17
	Sep 11, 2007	1	1-5
White Sucker	Sep 09, 1997	2	2-4
	Sep 12, 2000	11	11-12
	Sep 12, 2002	11	11-12
	Sep 16, 2003	2	2-2
	Sep 11, 2007	2	2-3

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**Site 985**

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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	Nov 04, 1997	5	5-5	
	Sep 14, 1999	64	64-66	
	Sep 13, 2000	100	100-101	
	Oct 23, 2001	155	155-157	
	Sep 11, 2002	169	169-170	

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Brook Trout <200mm	Sep 18, 2003	108	107-111	
	Sep 08, 2004	353	351-356	
	Sep 12, 2007	242	237-248	
Brook Trout >=200mm	Sep 08, 1997	1	1-1	BK3
	Nov 04, 1997	2	2-6	BK2
	Sep 14, 1999	11	11-11	BK2
	Sep 13, 2000	27	27-27	BK1
	Oct 23, 2001	7	7-7	BK2
	Sep 11, 2002	8	8-8	BK2
	Sep 18, 2003	3	3-3	BK2
	Sep 08, 2004	6	6-6	BK2
	Sep 12, 2007	6	6-6	BK2
Longnose Dace	Sep 08, 1997	33	32-36	
	Nov 04, 1997	10	11-13	
	Sep 14, 1999	32	33-46	
	Sep 13, 2000	334	310-358	

Longnose Dace	Oct 23, 2001	239	89-540
	Sep 11, 2002	172	162-182
	Sep 18, 2003	201	184-218
	Sep 08, 2004	164	160-169
Mountain Sucker	Sep 08, 1997	87	86-90
	Nov 04, 1997	257	143-386
	Sep 14, 1999	3	3-3
	Sep 13, 2000	168	163-174
	Oct 23, 2001	78	70-89
	Sep 11, 2002	17	17-17
	Sep 18, 2003	4	4-5
	Sep 08, 2004	21	19-27
White Sucker	Sep 08, 1997	20	20-21
	Nov 04, 1997	5	3-24
	Sep 16, 1998	2	2-2
	Sep 14, 1999	4	4-7

White Sucker

Sep 18, 2003

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**Site 988**

<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brook Trout <200mm	Jul 14, 1997	18	18-20	
	Sep 09, 1997	19	19-19	
	Nov 04, 1997	9	9-9	
	Sep 14, 1998	31	24-47	
	Sep 16, 1999	104	100-110	
	Sep 13, 2000	32	32-33	
	Oct 30, 2001	80	79-83	
	Sep 11, 2002	65	65-66	
	Sep 18, 2003	46	46-48	
	Sep 09, 2004	140	140-142	
	Sep 12, 2007	58	57-61	
Brook Trout >=200mm	Jul 14, 1997	1	1-1	BK3
	Nov 04, 1997	6	6-6	BK2

Brook Trout >=200mm	Sep 14, 1998	2	2-4	BK3
	Sep 16, 1999	3	3-3	BK2
	Oct 30, 2001	4	4-4	BK2
	Sep 11, 2002	2	2-2	BK3
	Sep 18, 2003	2	2-2	BK2
	Sep 12, 2007	2	2-2	BK2
Green Sunfish	Sep 12, 2007	1	1-2	
Longnose Dace	Jul 14, 1997	695	603-787	
	Sep 09, 1997	483	435-531	
	Nov 04, 1997	360	262-458	
	Sep 14, 1998	710	605-815	
	Sep 16, 1999	352	353-377	
	Sep 13, 2000	1289	1273-1305	
	Oct 30, 2001	193	194-217	
	Sep 11, 2002	1097	1023-1171	
	Sep 18, 2003	773	726-820	

Longnose Dace	Sep 09, 2004	641	626-656
Mountain Sucker	Jul 14, 1997	15	16-21
	Sep 09, 1997	146	125-167
	Nov 04, 1997	12	12-14
	Sep 14, 1998	43	39-51
	Sep 13, 2000	119	115-125
	Oct 30, 2001	27	22-39
	Sep 11, 2002	35	34-38
	Sep 18, 2003	30	23-46
	Sep 09, 2004	6	6-6
White Sucker	Jul 14, 1997	13	12-18
	Sep 09, 1997	13	13-13
	Nov 04, 1997	81	72-93
	Sep 14, 1998	31	23-50
	Sep 16, 1999	22	21-26
	Sep 13, 2000	1	1-1

White Sucker	Oct 30, 2001	11	10-16
	Sep 11, 2002	1	1-2

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**Site 992**

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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	Sep 14, 2000	90	90-91	
	Sep 12, 2007	51	50-54	
Brook Trout >=200mm	Sep 14, 2000	50	50-50	BK1
	Sep 12, 2007	13	13-13	BK1
Green Sunfish	Sep 12, 2007	8	8-9	
Longnose Dace	Sep 14, 2000	1089	929-1249	
Mountain Sucker	Sep 14, 2000	123	120-128	
	Sep 12, 2007	31	31-32	
Rock Bass	Sep 12, 2007	2	2-3	
White Sucker	Sep 14, 2000	15	15-16	
	Sep 12, 2007	6	6-6	

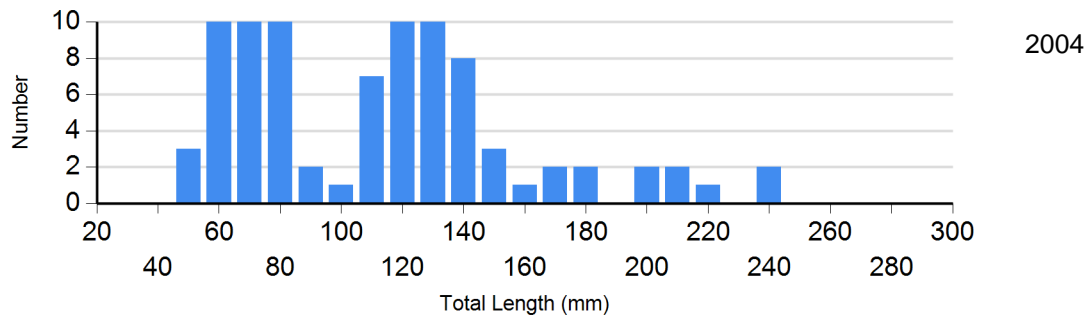
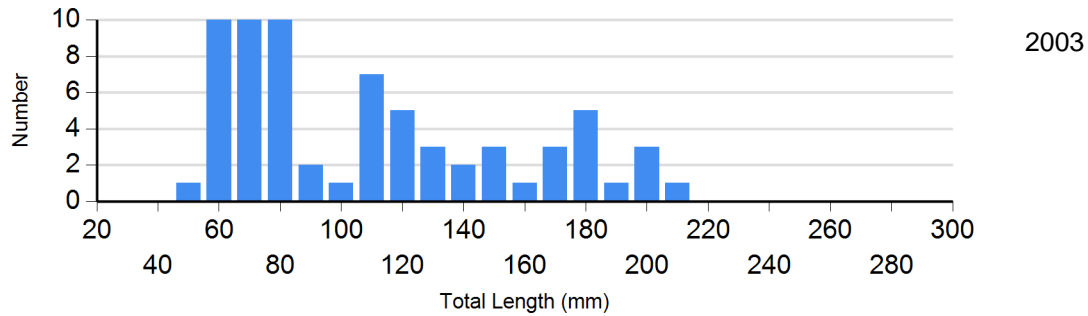
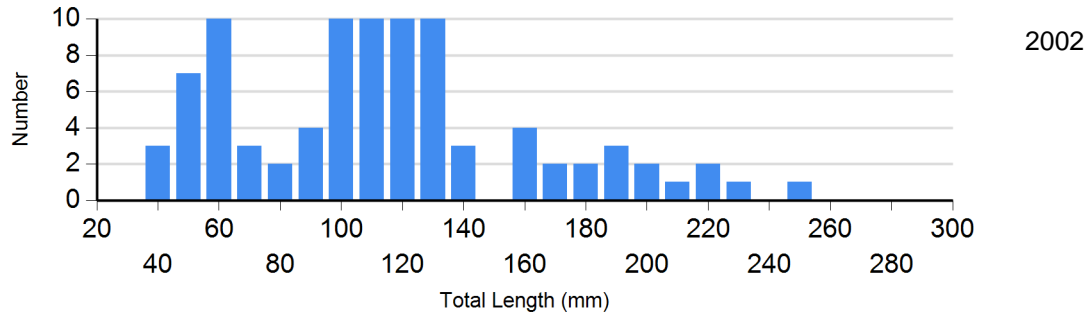
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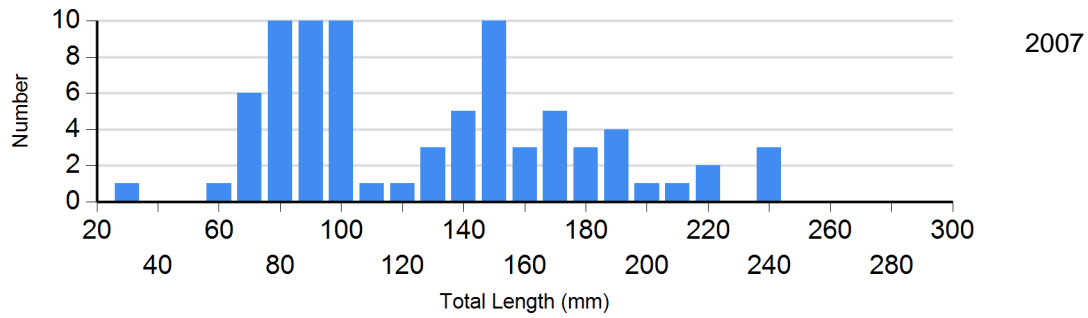
## Length Frequency Distribution

Length frequency histogram of species sampled by year.

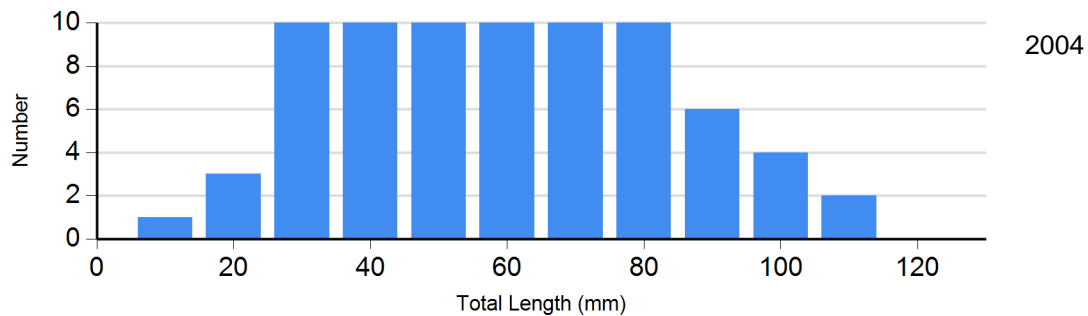
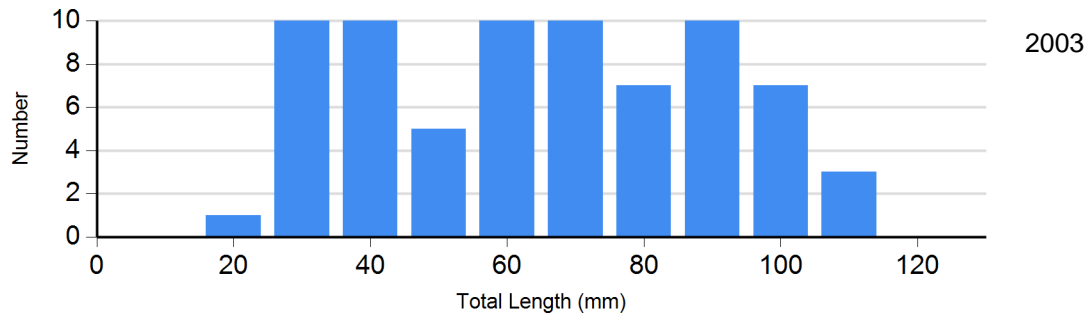
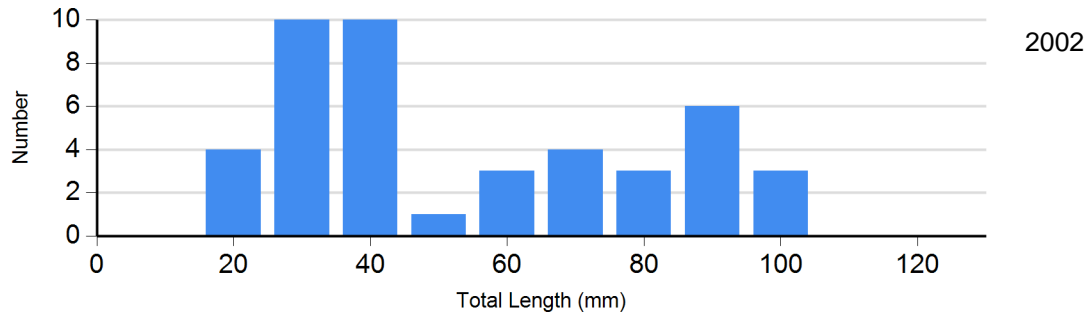
**Site:** 976

**Species:** Brook Trout



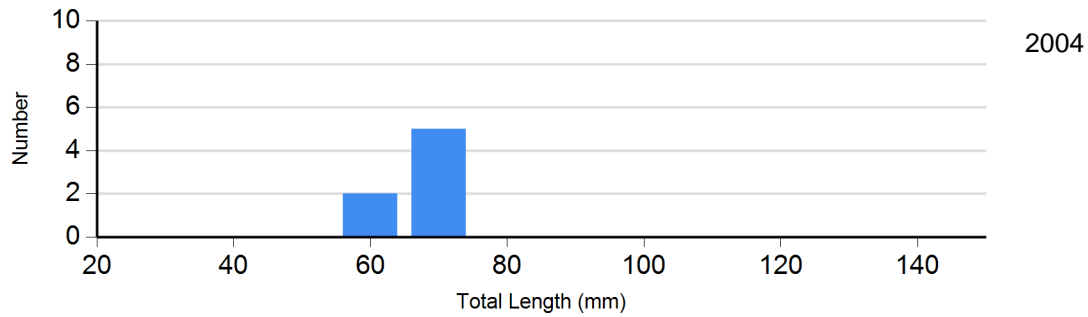
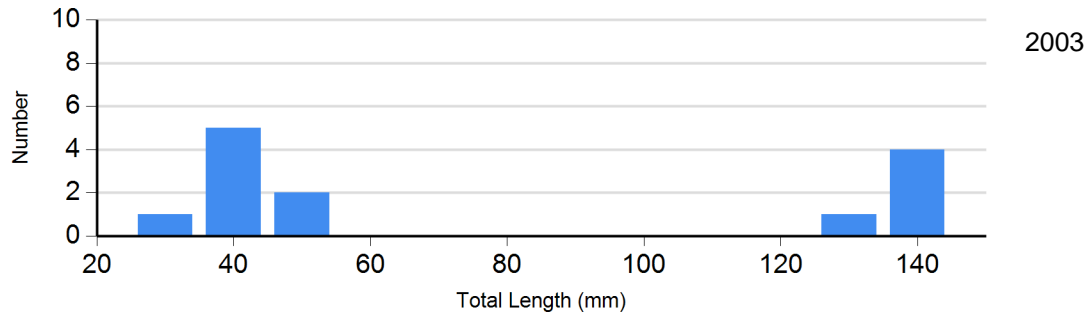
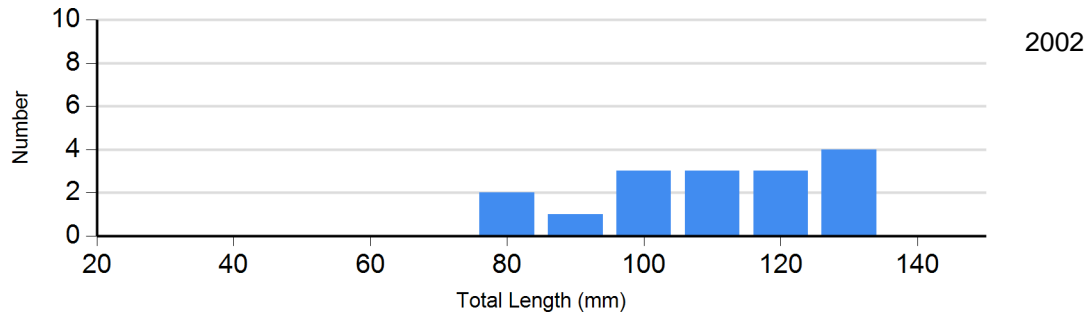


Site: 976  
Species: Longnose Dace

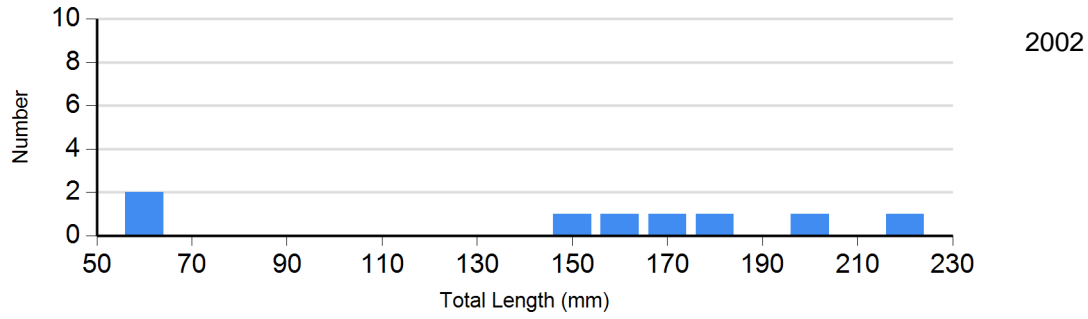




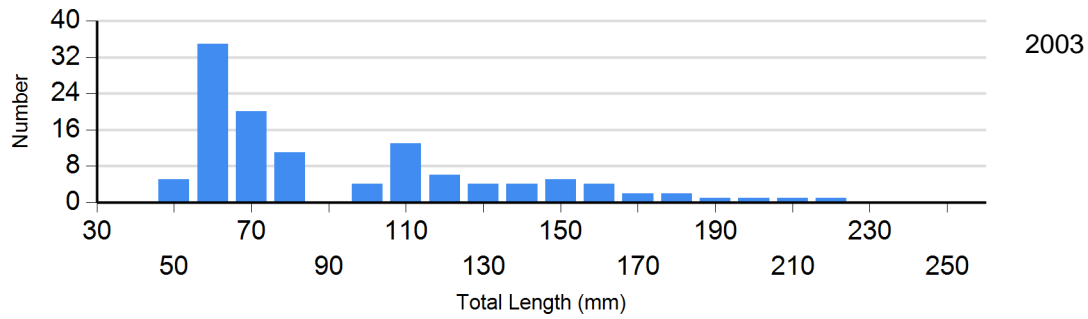
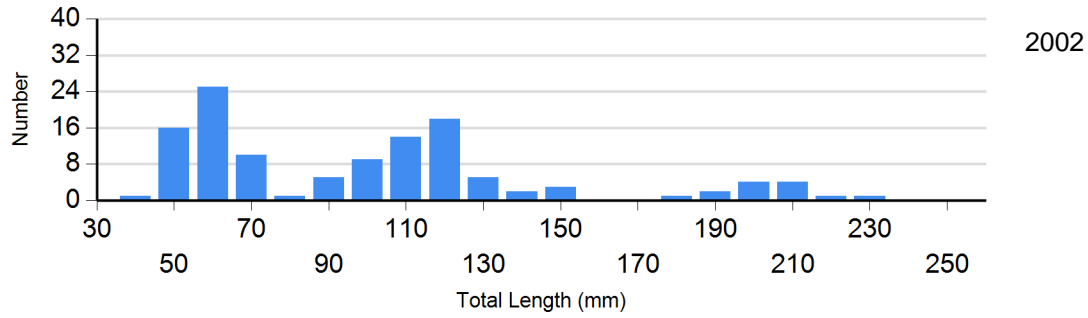
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Species: Mountain Sucker

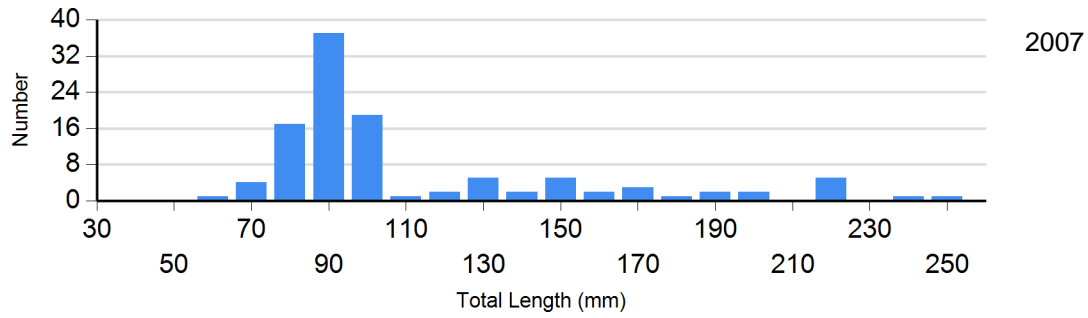
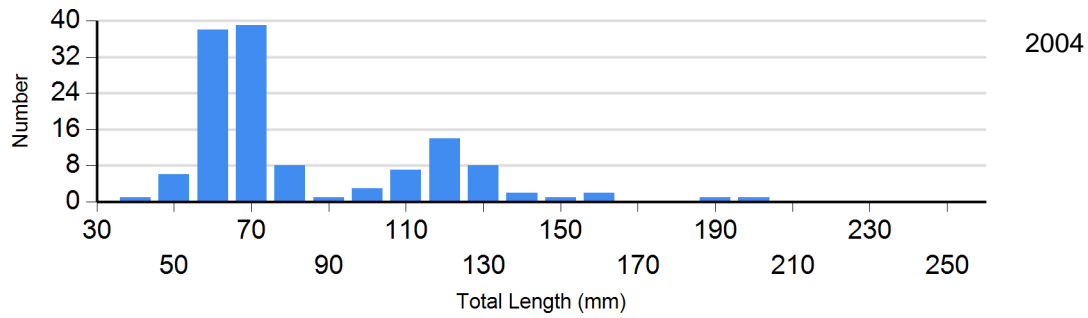


**Site:** 976  
**Species:** White Sucker

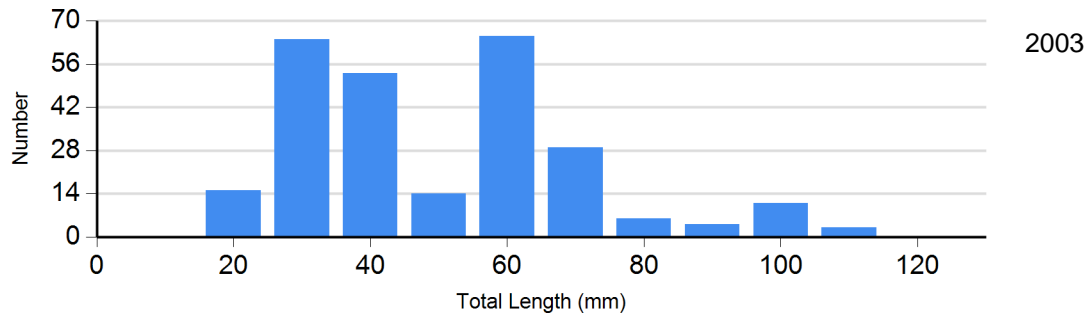
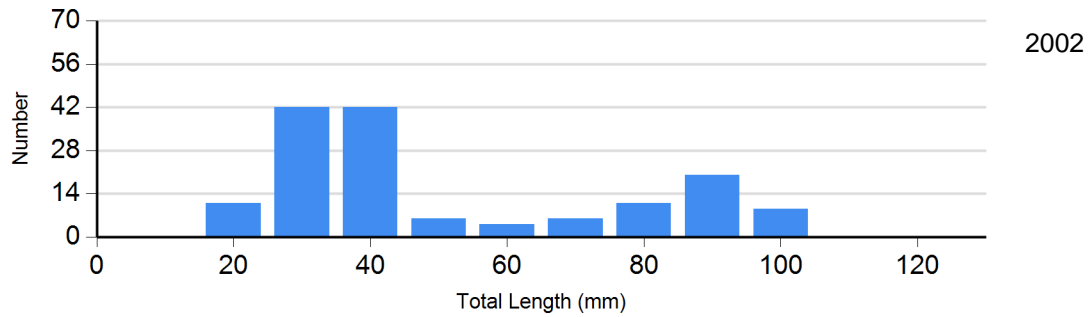


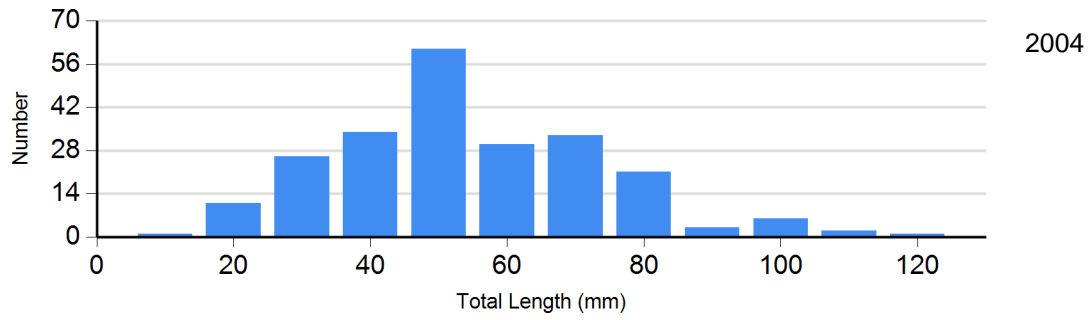
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**Species:** Brook Trout



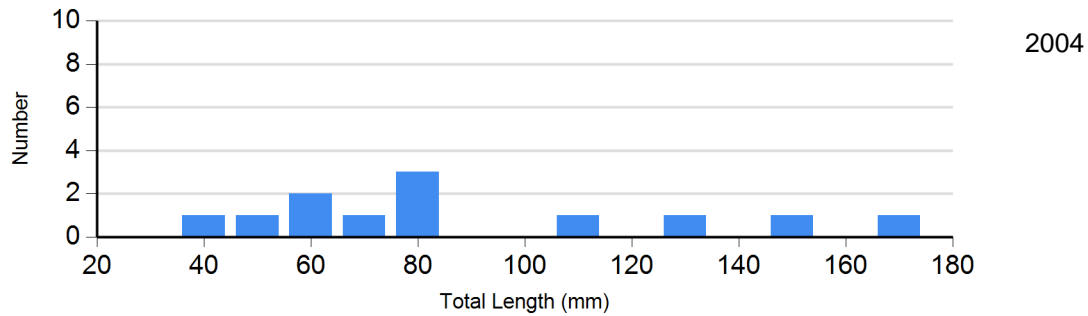
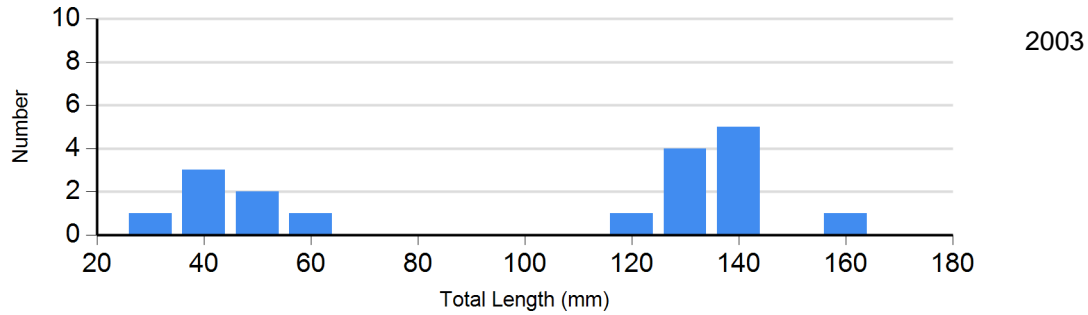
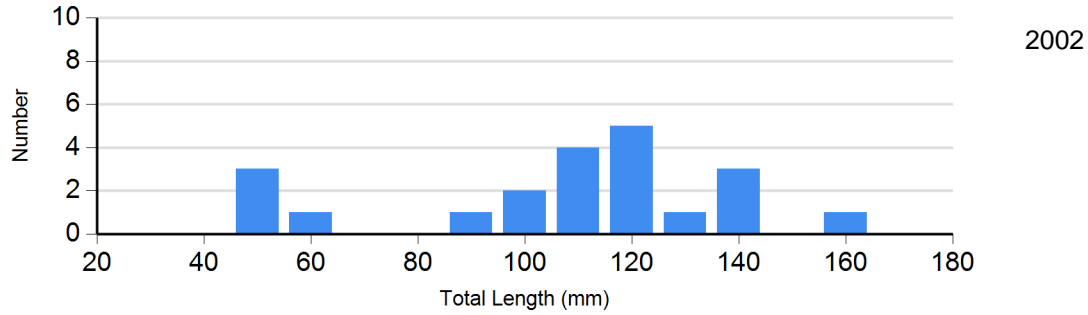


**Site:** 977  
**Species:** Longnose Dace

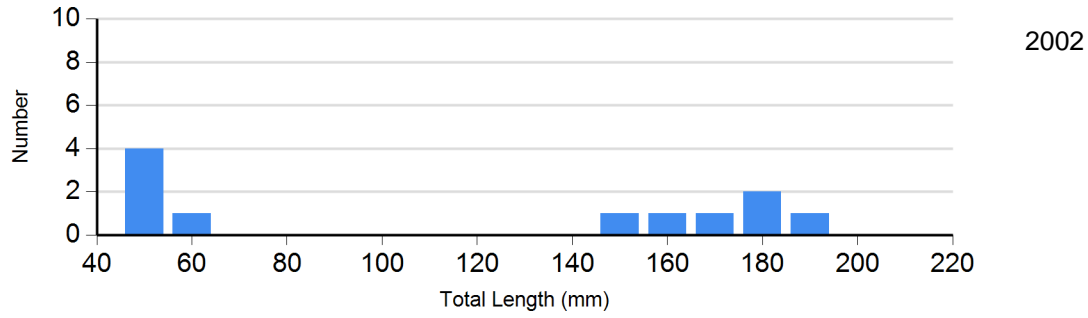




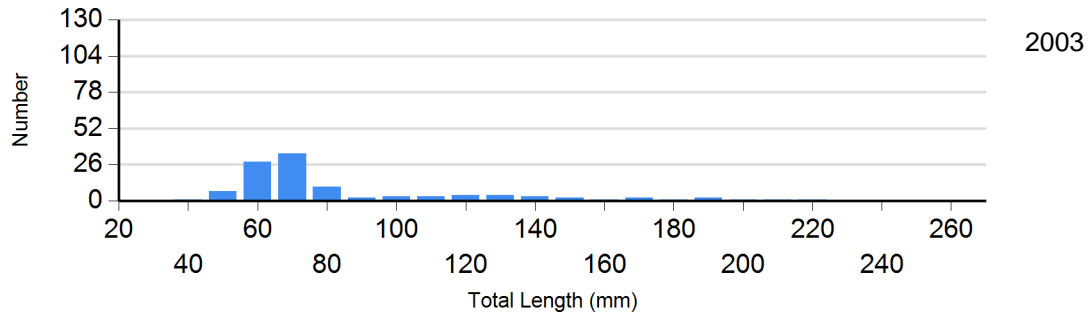
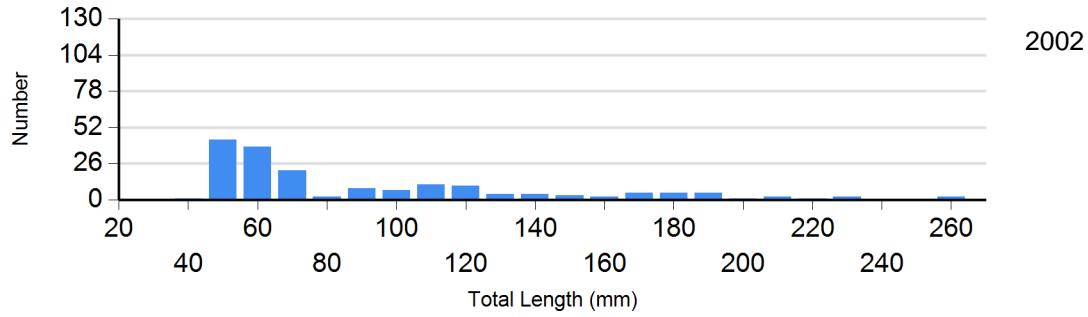
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**Species:** Mountain Sucker

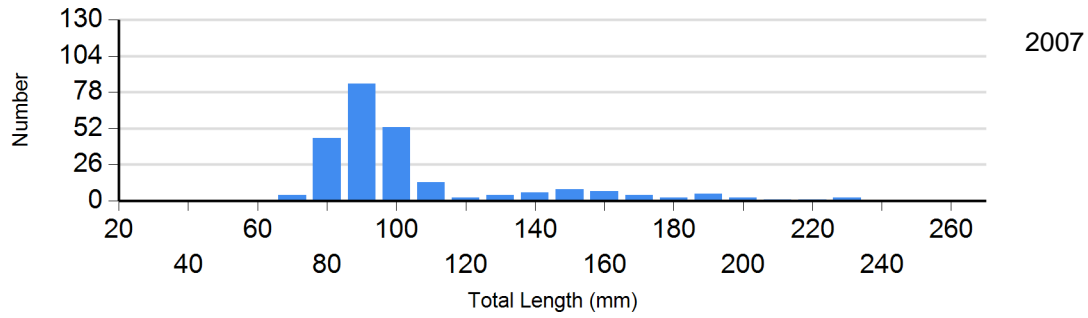
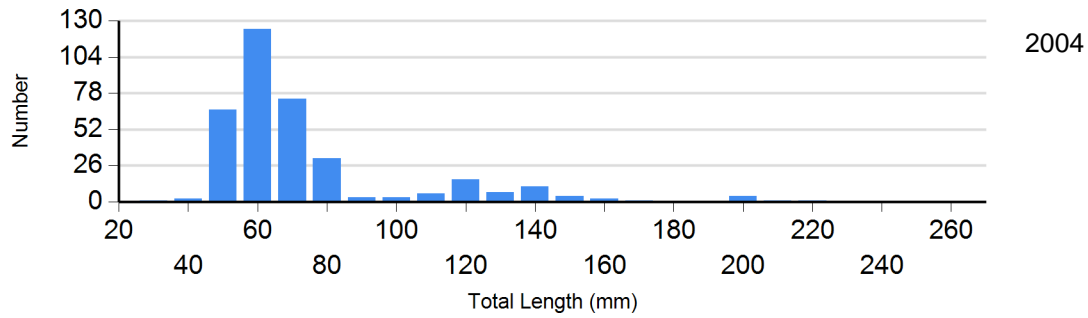


**Site: 977**  
**Species: White Sucker**

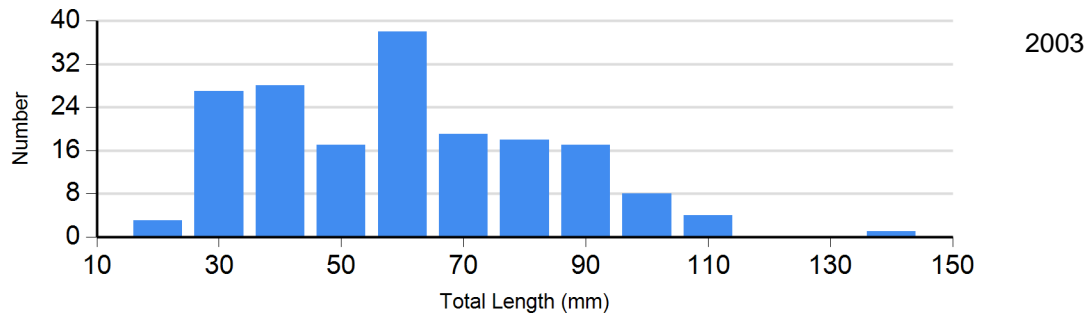
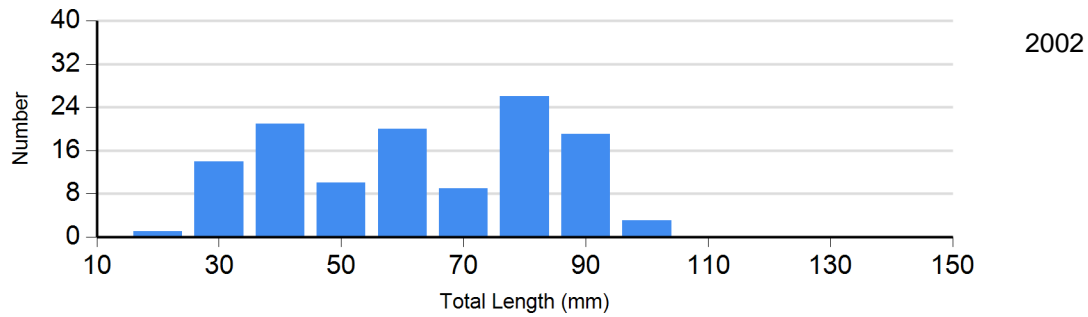


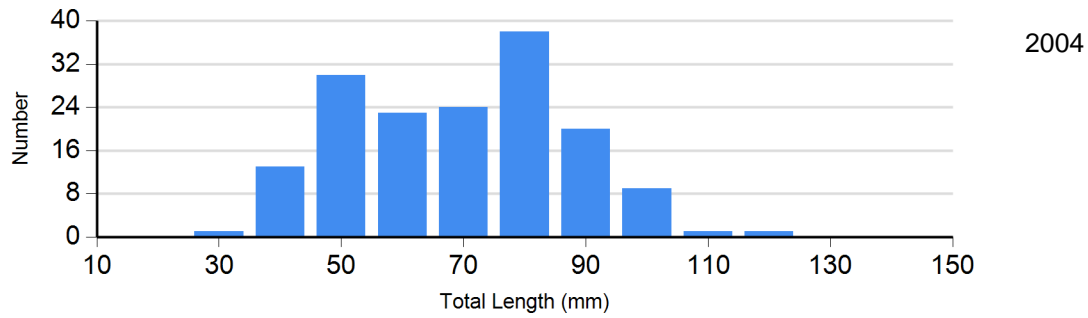
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**Species: Brook Trout**



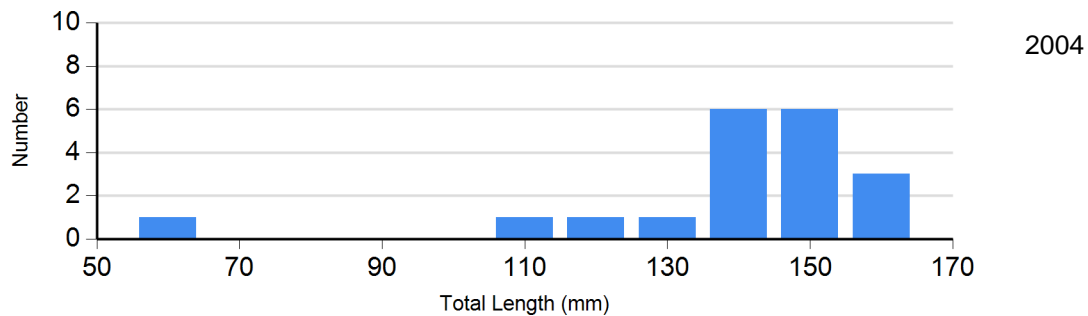
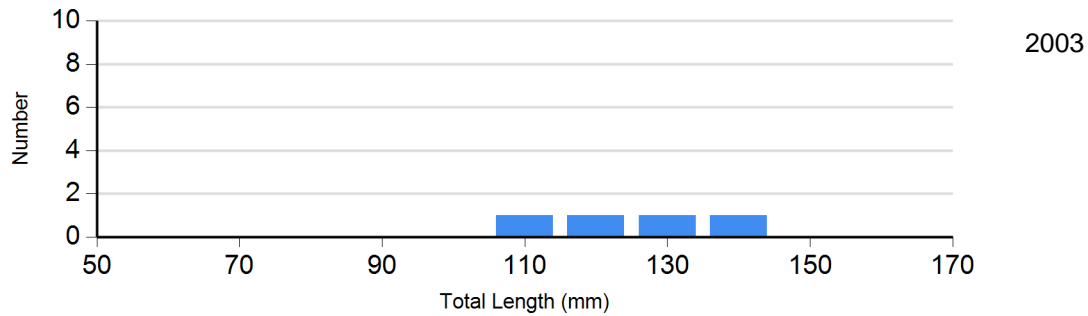
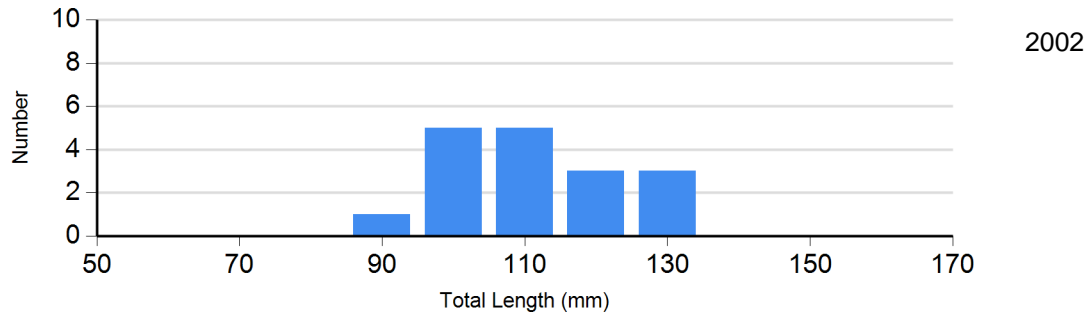


**Site:** 985  
**Species:** Longnose Dace

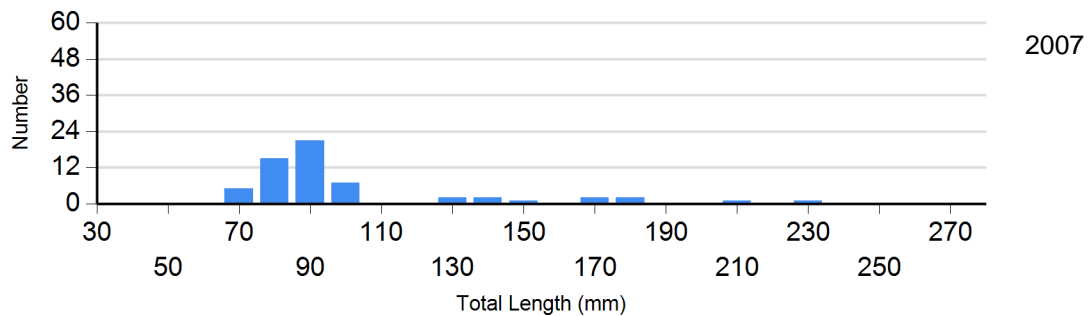
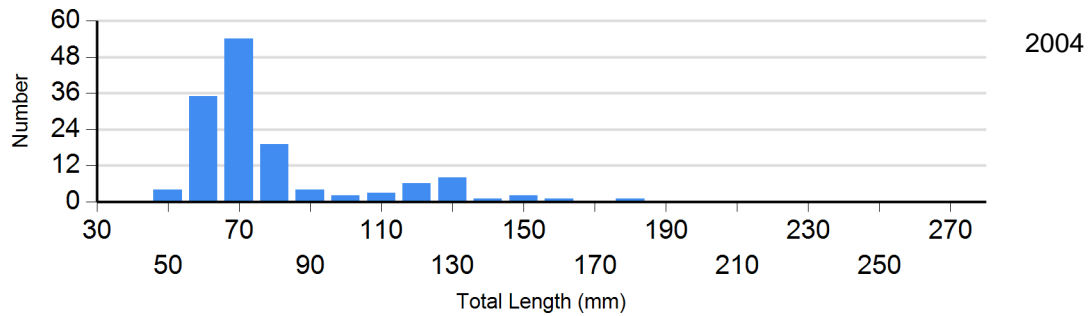
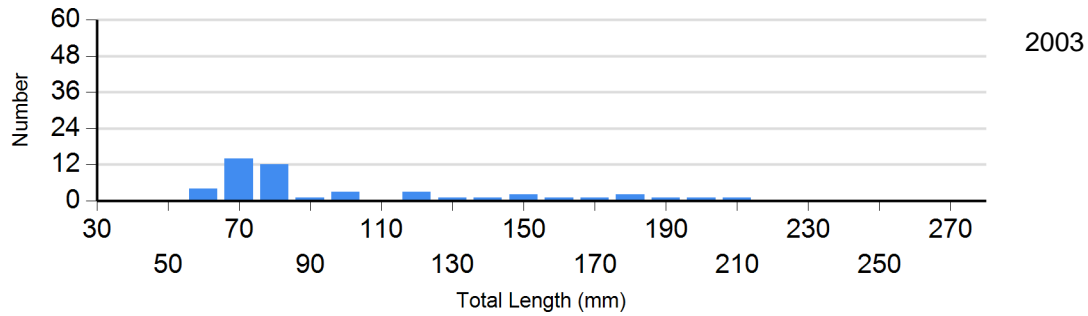
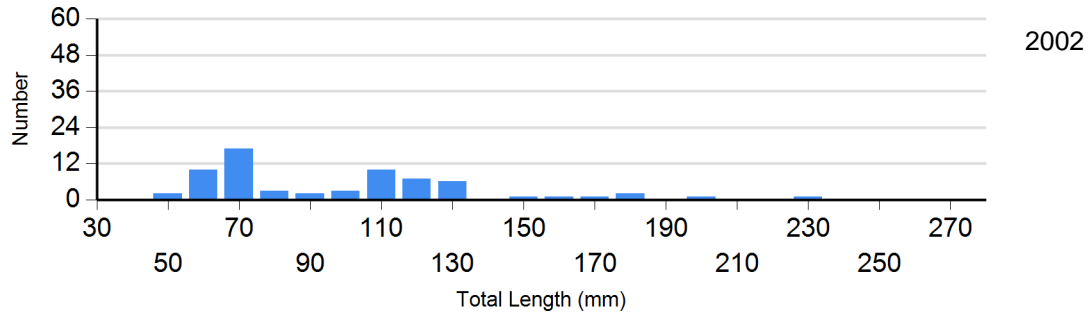




**Site:** 985  
**Species:** Mountain Sucker

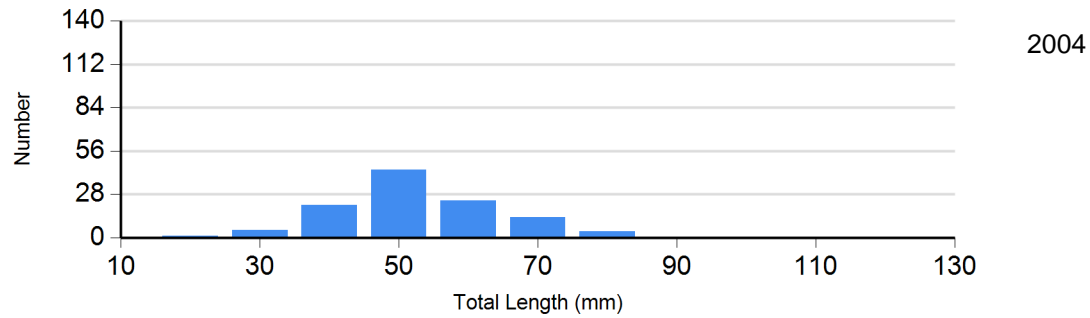
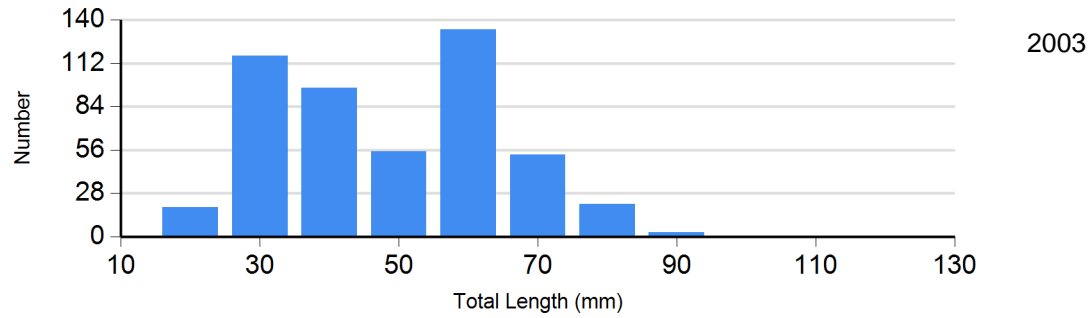
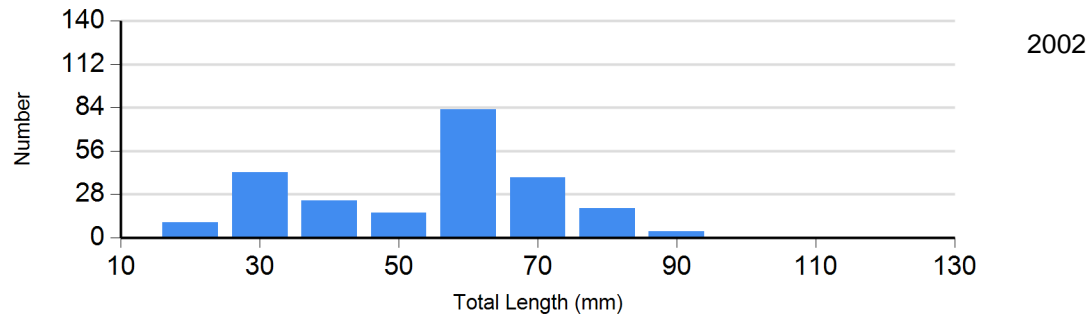


Site: 988  
Species: Brook Trout

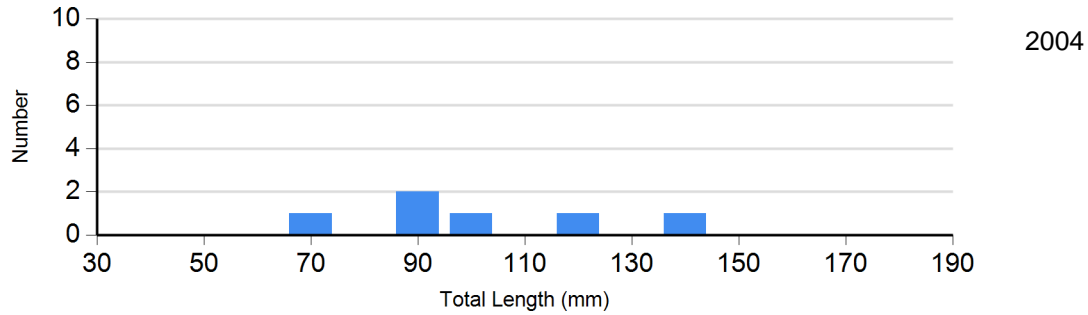
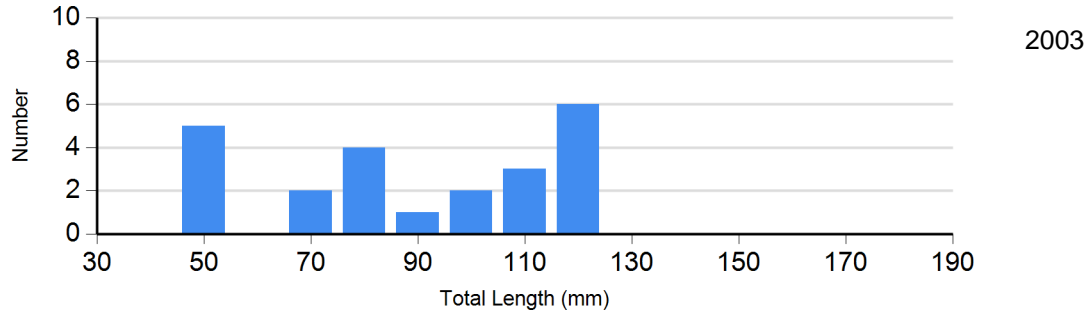
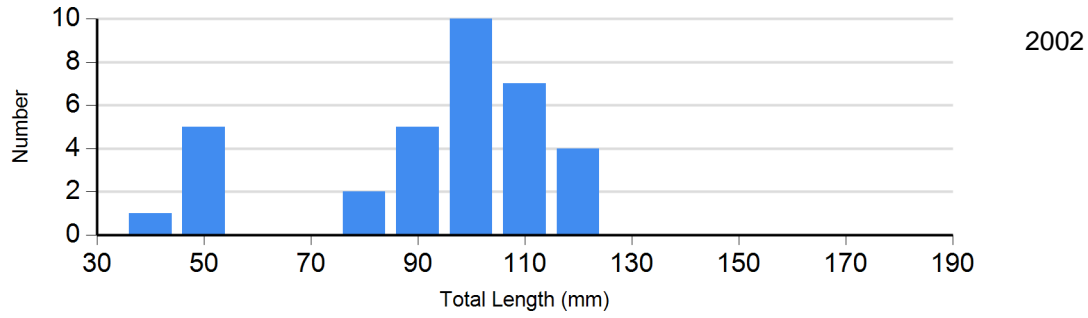




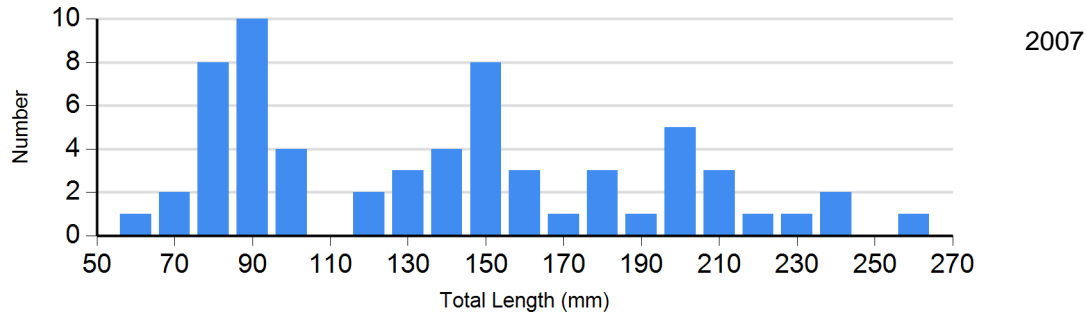
Site: 988  
Species: Longnose Dace



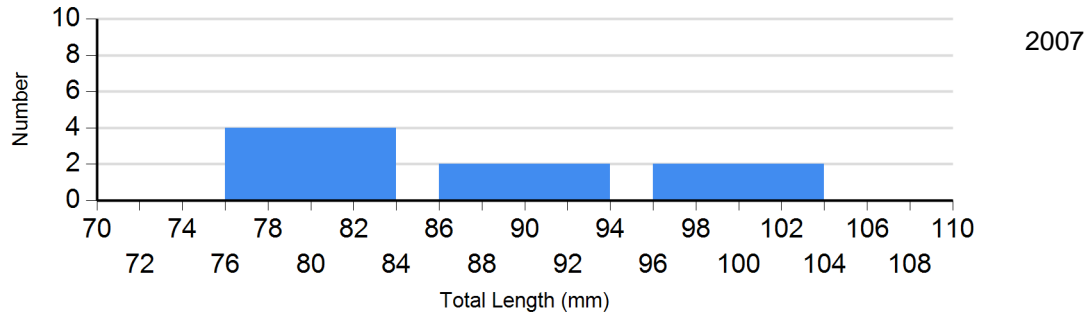
Site: 988  
Species: Mountain Sucker



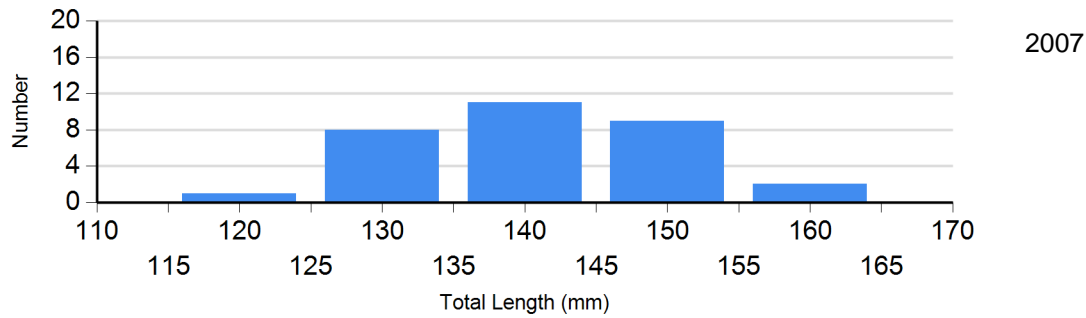
Site: 992  
Species: Brook Trout



Site: 992  
Species: Green Sunfish



Site: 992  
Species: Mountain Sucker



Site: 992  
Species: White Sucker

