

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Whitewood Creek, Lawrence County
09-0056-00
2003

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: 10/14/2003
Site Length (m): 79
Mean Width (m): 0.0
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)
Brown Trout	>=200mm	1	1	1	1	0	0	13	0	0.00	20	287.0	214.0
Brown Trout	All	1	1	1	1	0	0	13	0	0.00	20	287.0	214.0
Creek Chub	All	9	9	9	9	0	0	114	0	0.00	183	103.8	12.0
Longnose Dace	All	452	473	486	460	0	0	5987	0	0.00	9634	62.9	2.4
Mountain Sucker	All	1	1	1	1	0	0	13	0	0.00	20	120.0	20.0
White Sucker	All	8	8	8	8	0	0	101	0	0.00	163	215.6	112.3

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

Date Sampled: 10/15/2003
Site Length (m): 87
Mean Width (m): 0.0
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)
Common Carp	All	1	1	1	1	0	0	11	0	0.00	18	85.0	5.7
Creek Chub	All	5	5	5	5	0	0	57	0	0.00	92	69.6	3.4

Fathead Minnow	All	12	12	12	12	0	0	138	0	0.00	222	54.3	1.5
Longnose Dace	All	113	118	125	113	0	0	1356	0	0.00	2182	53.1	1.3
Plains Killifish	All	15	15	17	15	0	0	172	0	0.00	277	49.3	1.1
Sand Shiner	All	71	70	85	71	0	0	805	0	0.00	1295	59.3	1.8
Stone Cat	All	19	22	30	19	0	0	253	0	0.00	407	46.8	0.9
White Sucker	All	8	8	9	8	0	0	92	0	0.00	148	126.3	29.1

Site Number: 131
Site Midpoint (Latitude, Longitude): 44.58943150, -103.52027768
Survey Completed by: Chadwick Ecological Services
Stream Classification: None

Date Sampled: 10/15/2003
Site Length (m): 103
Mean Width (m): 0.0
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	61	61	62	61	0	0	592	0	0.00	953	81.7	7.3
Fathead Minnow	All	8	8	9	8	0	0	78	0	0.00	125	51.3	1.3
Longnose Dace	All	203	206	211	203	0	0	2000	0	0.00	3218	58.9	2.3
Stone Cat	All	17	17	19	17	0	0	165	0	0.00	266	73.6	8.5
White Sucker	All	3	3	3	3	0	0	29	0	0.00	47	120.3	25.5

Site Number: 295
Site Midpoint (Latitude, Longitude): 44.51740810, -103.60458517
Survey Completed by: Chadwick Ecological Services
Stream Classification: BR0

Date Sampled: 10/14/2003
Site Length (m): 116
Mean Width (m): 0.0
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)
Brown Trout	<200mm	3	3	3	3	0	0	26	0	0.00	42	106.0	11.7
Brown Trout	All	3	3	3	3	0	0	26	0	0.00	42	106.0	11.7
Creek Chub	All	2	2	4	2	0	0	17	0	0.00	28	57.5	1.6
Longnose Dace	All	600	695	737	653	0	0	5991	0	0.00	9640	66.0	2.8
Mountain Sucker	All	2	2	2	2	0	0	17	0	0.00	28	167.5	61.5
White Sucker	All	14	14	15	14	0	0	121	0	0.00	194	158.9	48.4

Site Number: 690
Site Midpoint (Latitude, Longitude): 44.31971358, -103.76779760
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR1

Date Sampled: 06/10/2003
Site Length (m): 100
Mean Width (m): 4.6
Number of Pass: 3
Conductivity (umhos/cm): 223
pH:
Water Temperature (C): 21.5
Voltage: 400

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	14	14	14	14	303	6	140	123	5.63	225	121.1	20.8
Brook Trout	All	14	14	14	14	303	6	140	123	5.63	225	121.1	20.8
Brown Trout	<200mm	23	23	24	23	498	18	230	202	15.91	370	135.4	35.8
Brown Trout	>=200mm	29	29	30	29	628	89	290	254	79.15	467	226.7	141.2
Brown Trout	All	52	52	53	52	1126	106	520	456	95.06	837	186.3	94.6

Site Number: 744
Site Midpoint (Latitude, Longitude): 44.28596678, -103.79171078
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK2

Date Sampled: 06/10/2003
Site Length (m): 100
Mean Width (m): 2.0
Number of Pass: 3
Conductivity (umhos/cm): 245
pH:
Water Temperature (C): 11.0
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	29	29	30	29	1463	43	290	593	38.09	467	130.5	29.2
Brook Trout	>=200mm	3	3	3	3	151	17	30	61	15.32	48	210.0	113.3
Brook Trout	All	32	32	33	32	1615	60	320	654	53.41	515	137.9	37.0

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	
Class BR1	Number of wild Brown Trout exceeds 150 per acre
Class BR2	Number of wild Brook Trout ranges from 25 to 150 per acre
Class BR3	Number of wild Brown Trout is less than 25 per acre
Class BK1	Number of wild Brook Trout exceeds 150 per acre
Class BK2	Number of wild Brook Trout ranges from 25 to 150 per acre
Class BK3	Number of wild Brook Trout is less than 25 per acre
Class RB1	Number of wild Rainbow Trout exceeds 25 per acre
Class RB2	Number of wild Rainbow Trout is less than 25 per acre

Table 2. Species composition and population estimates on Whitewood Creek, 1993-2003

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

Brown Trout >=200mm	Oct 14, 2003	1	1-1	BR3
Creek Chub	Sep 27, 2001	170	165-176	
	Oct 09, 2002	49	48-52	
	Oct 14, 2003	9	9-9	
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	
	Oct 14, 2003	473	460-486	
Mountain Sucker	Sep 27, 2001	1	1-1	
	Oct 09, 2002	3	3-3	
	Oct 14, 2003	1	1-1	
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	

White Sucker	Oct 09, 2002	26	26-28
	Oct 14, 2003	8	8-8

Site 44

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Common Carp	Oct 15, 2003	1	1-1	
Creek Chub	Oct 09, 1996	1	1-5	
	Sep 26, 2001	3	3-3	
	Oct 15, 2003	5	5-5	
Fathead Minnow	Sep 27, 2000	1	1-5	
	Oct 15, 2003	12	12-12	
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	
	Oct 15, 2003	118	113-125	
Plains Killifish	Sep 26, 2001	1	1-1	

Plains Killifish	Oct 10, 2002	13	13-13
	Oct 15, 2003	15	15-17
Sand Shiner	Sep 27, 2000	2	2-2
	Sep 26, 2001	93	93-94
	Oct 10, 2002	253	248-259
	Oct 15, 2003	70	71-85
	Oct 09, 1996	65	49-91
Stone Cat	Sep 27, 2000	27	21-42
	Sep 26, 2001	13	13-15
	Oct 10, 2002	2	2-3
	Oct 15, 2003	22	19-30
	Oct 09, 1996	1	1-2
White Sucker	Sep 27, 2000	27	25-32
	Sep 26, 2001	5	5-5
	Oct 10, 2002	6	6-6
	Oct 15, 2003	8	8-9

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
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	
	Oct 15, 2003	61	61-62	
Fathead Minnow	Oct 10, 2002	1	1-1	
	Oct 15, 2003	8	8-9	
Longnose Dace	Oct 10, 1996	3	3-3	
	Sep 27, 2000	1088	1024-1152	
	Sep 26, 2001	138	124-152	
	Oct 10, 2002	64	62-68	
	Oct 15, 2003	206	203-211	

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
	Oct 15, 2003	17	17-19
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
	Oct 15, 2003	3	3-3

Site 295

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
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	

Brown Trout <200mm	Oct 09, 2002	14	14-16	
	Oct 14, 2003	3	3-3	
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	
	Oct 14, 2003	2	2-4	
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	
	Oct 14, 2003	695	653-737	
Mountain Sucker	Oct 11, 1996	8	8-9	
	Sep 28, 2000	16	12-30	

Mountain Sucker	Sep 25, 2001	16	16-18
	Oct 09, 2002	6	6-7
	Oct 14, 2003	2	2-2
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
	Oct 14, 2003	14	14-15

Site 690

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 07, 1995	27	27-27	
	Jun 19, 1995	80	53-124	
	Sep 26, 1996	175	166-184	
	Sep 23, 1997	117	78-169	

Brook Trout <200mm	Sep 18, 1999	125	122-130	
	Jun 10, 2003	14	14-14	
Brook Trout >=200mm	Jun 07, 1995	3	3-3	BK2
	Jun 19, 1995	7	7-8	BK2
	Sep 26, 1996	16	16-17	BK3
	Sep 23, 1997	3	3-5	BK2
	Sep 18, 1999	6	6-6	BK2
Brown Trout <200mm	Jun 07, 1995	2	2-2	
	Sep 26, 1996	27	27-29	
	Sep 23, 1997	13	13-14	
	Sep 18, 1999	275	264-286	
	Jun 10, 2003	23	23-24	
Brown Trout >=200mm	Jun 07, 1995	15	15-15	BR2
	Sep 26, 1996	42	42-43	BR3
	Sep 23, 1997	2	2-2	BR3
	Sep 18, 1999	53	53-54	BR1

Brown Trout >=200mm	Jun 10, 2003	29	29-30	BR1
Longnose Dace	Jun 07, 1995	2	2-2	
	Jun 19, 1995	22	13-56	
	Sep 26, 1996	1	2-2	
	Sep 23, 1997	1	1-5	
	Sep 18, 1999	2	2-4	

Site 744

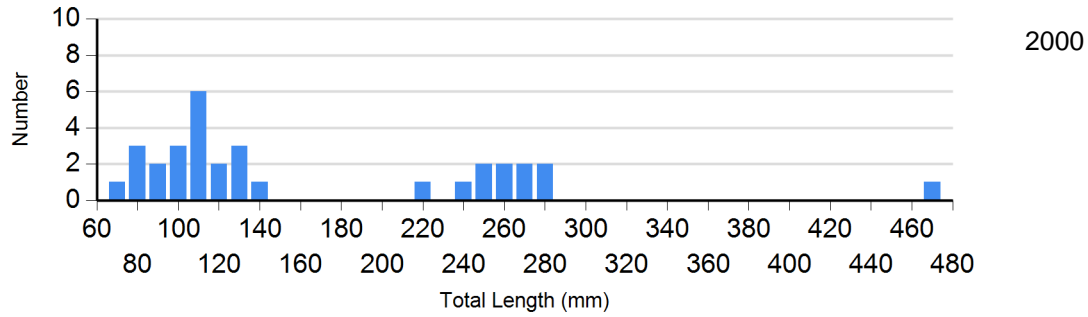
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 10, 2003	29	29-30	
Brook Trout >=200mm	Jun 10, 2003	3	3-3	BK2

Length Frequency Distribution

Length frequency histogram of species sampled by year.

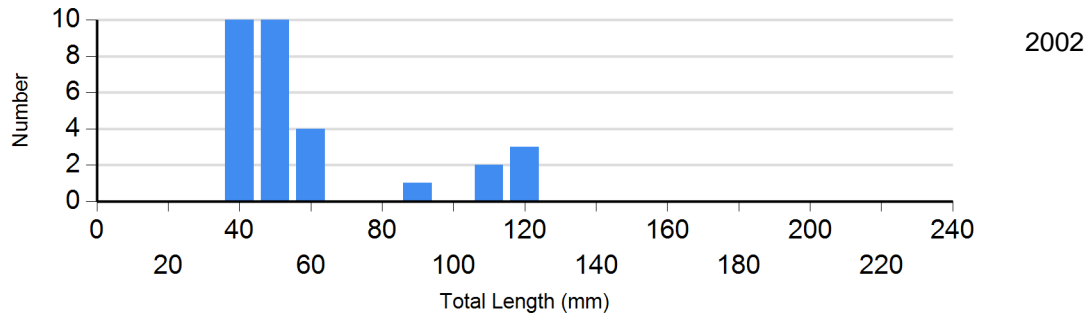
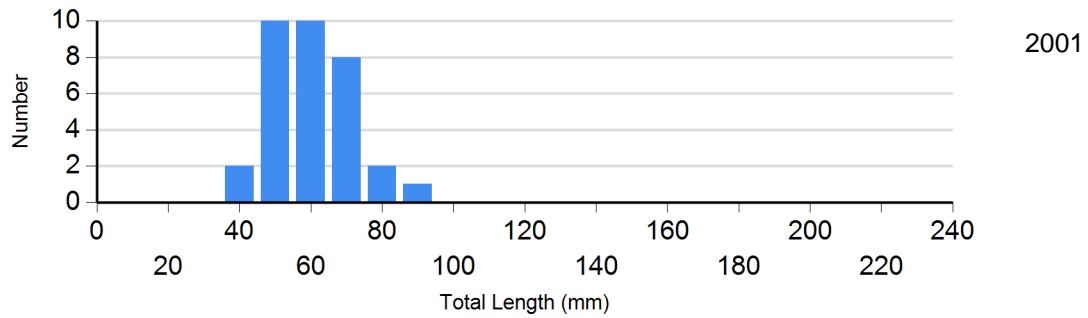
Site: 43

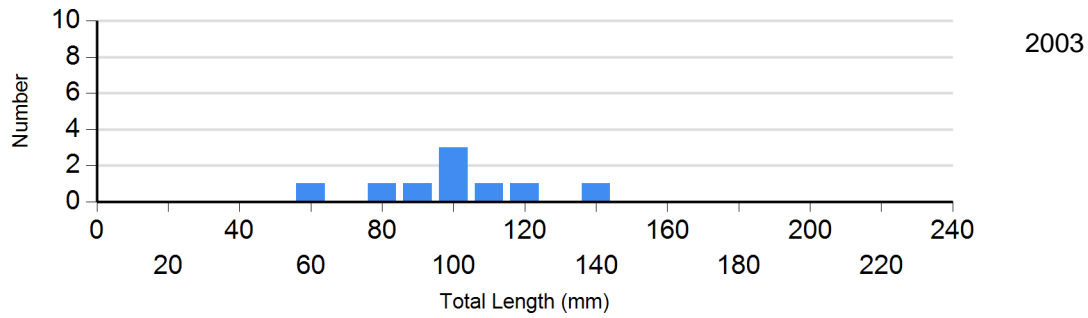
Species: Brown Trout



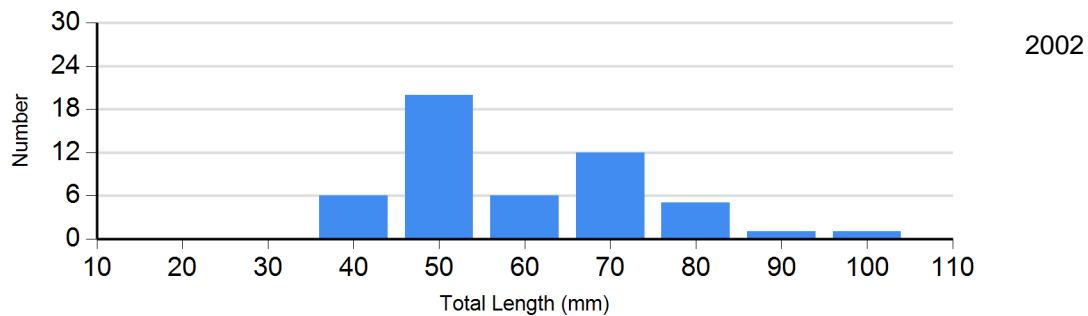
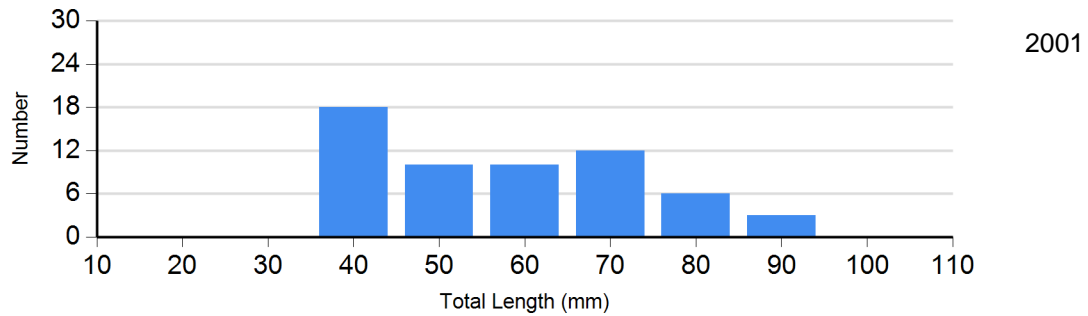
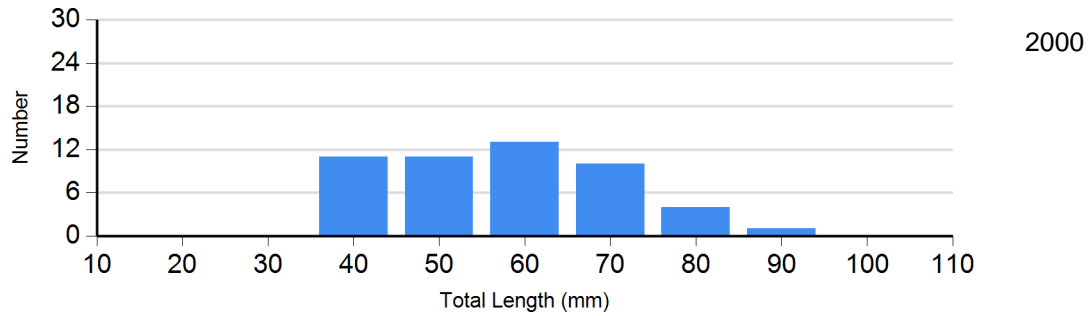
Site: 43

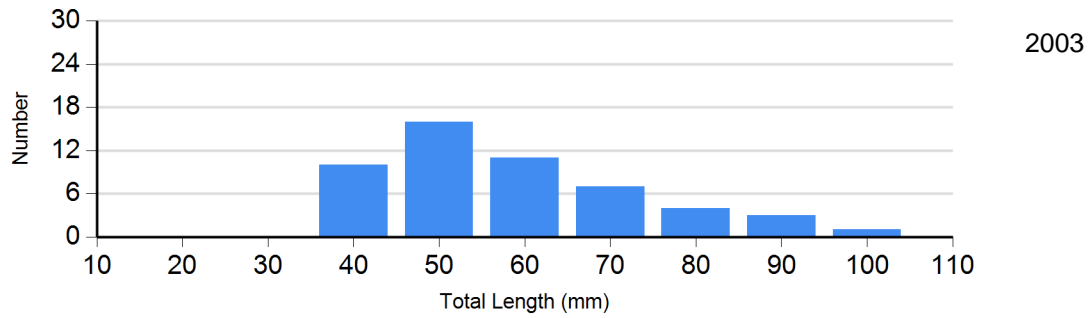
Species: Creek Chub



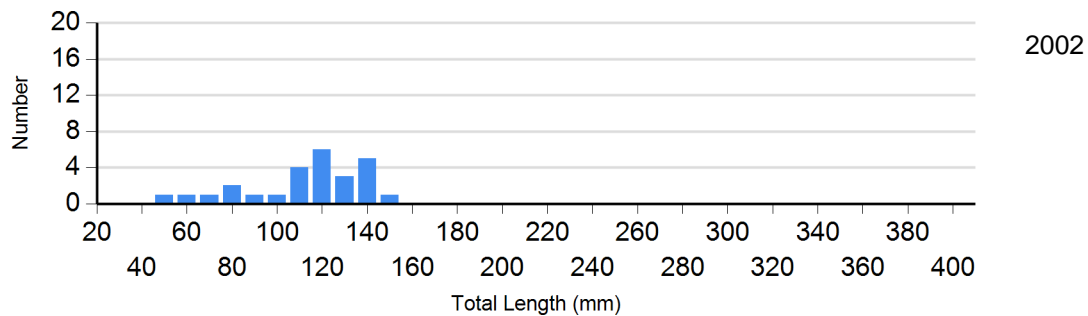
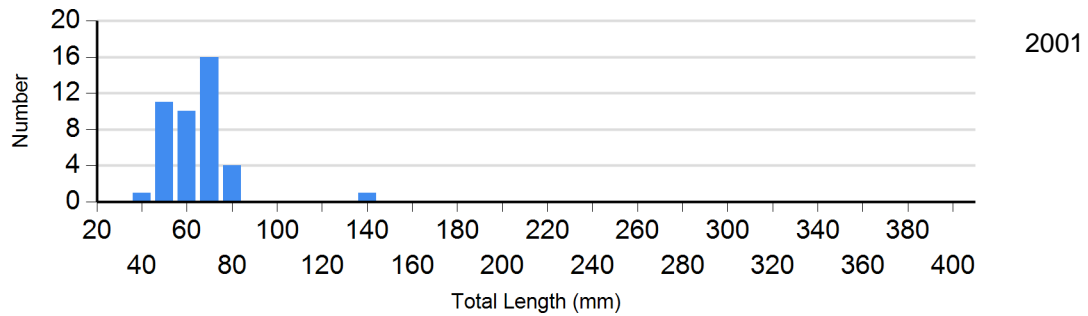
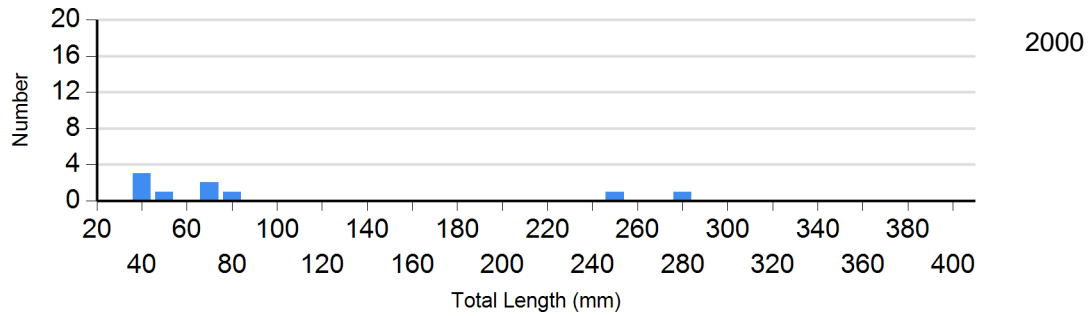


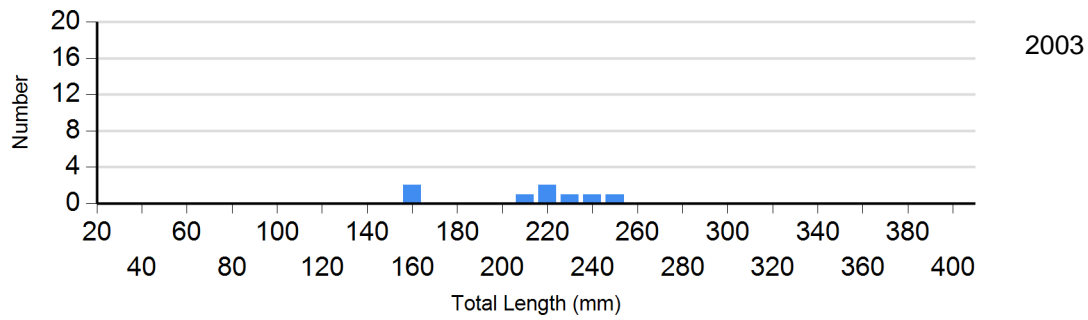
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Species: Longnose Dace



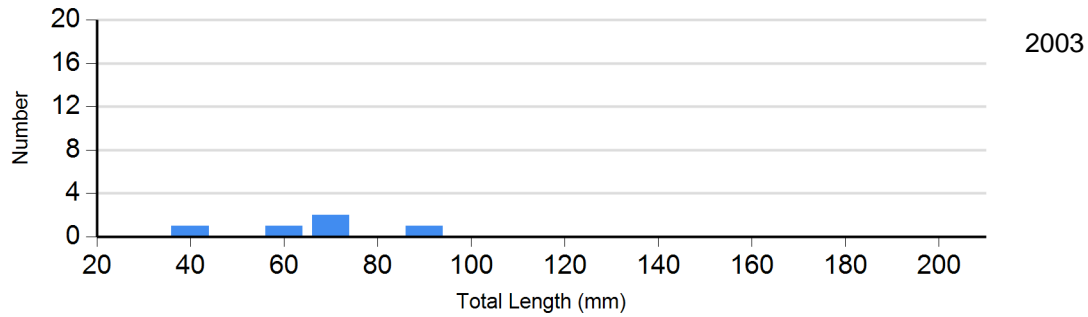


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Species: White Sucker

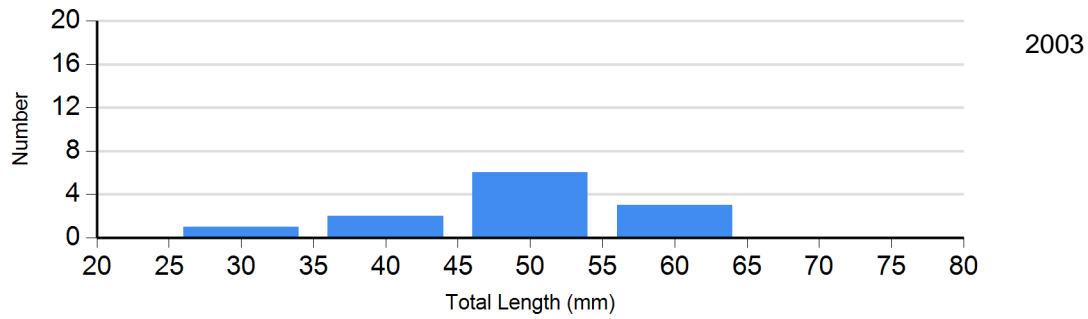




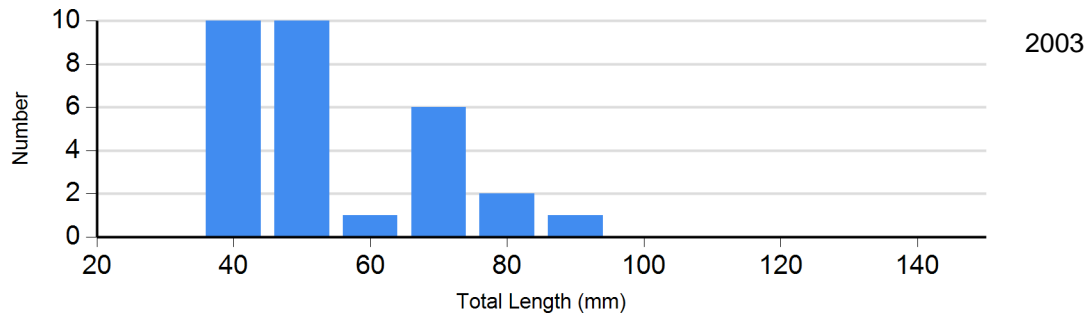
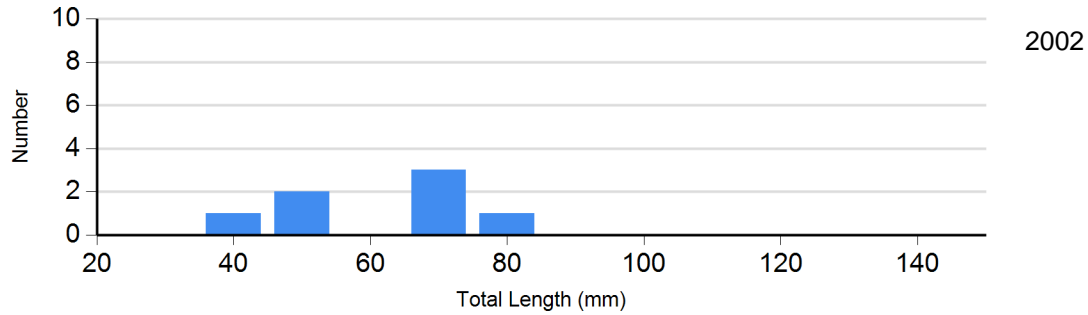
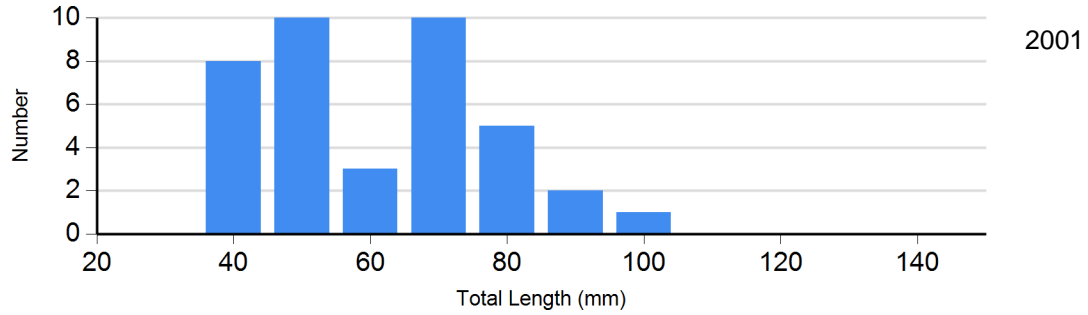
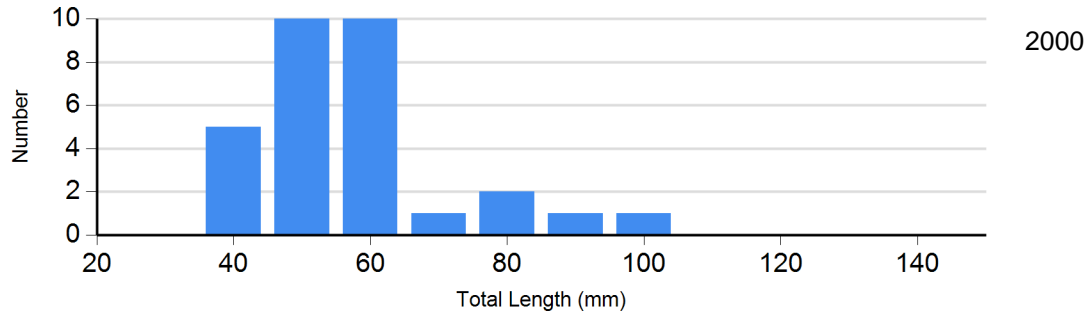
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Species: Creek Chub



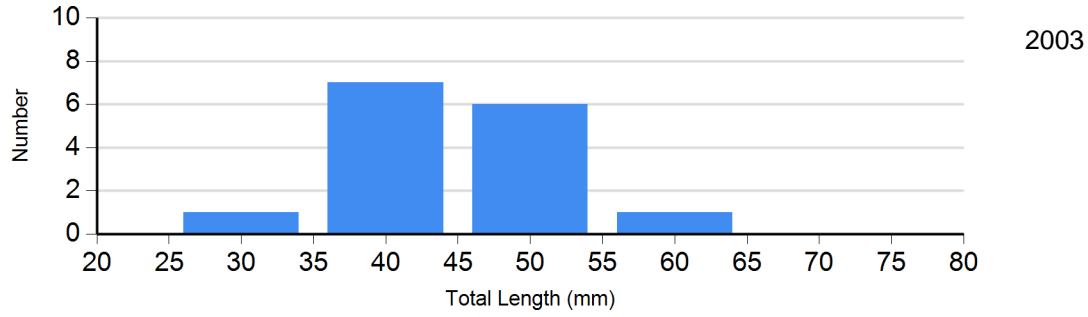
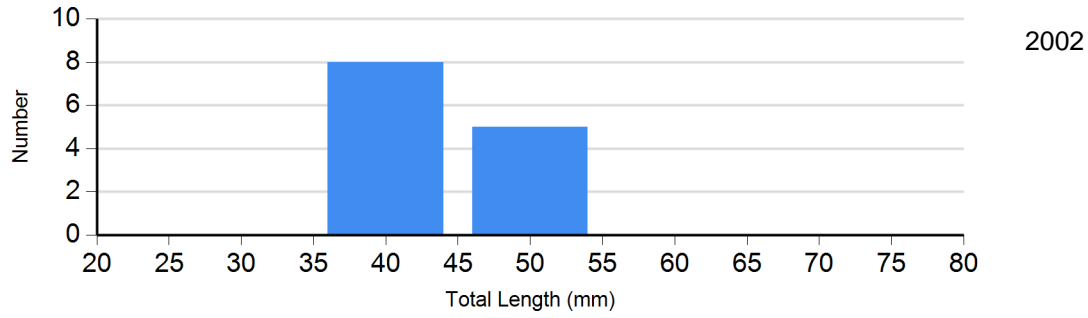
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Species: Fathead Minnow



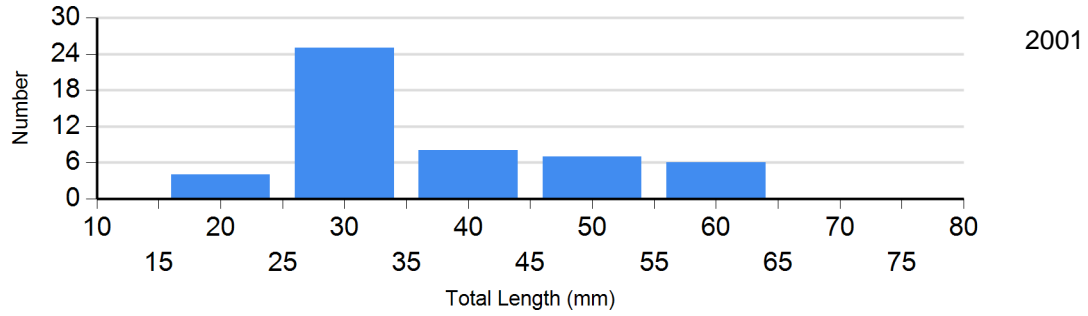
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Species: Longnose Dace

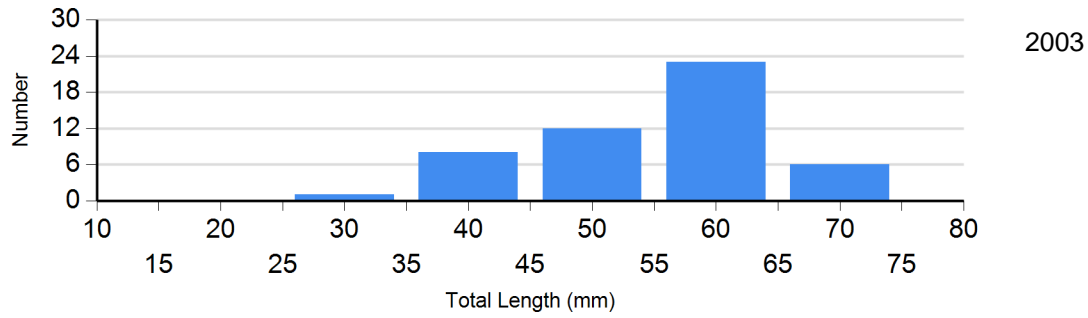
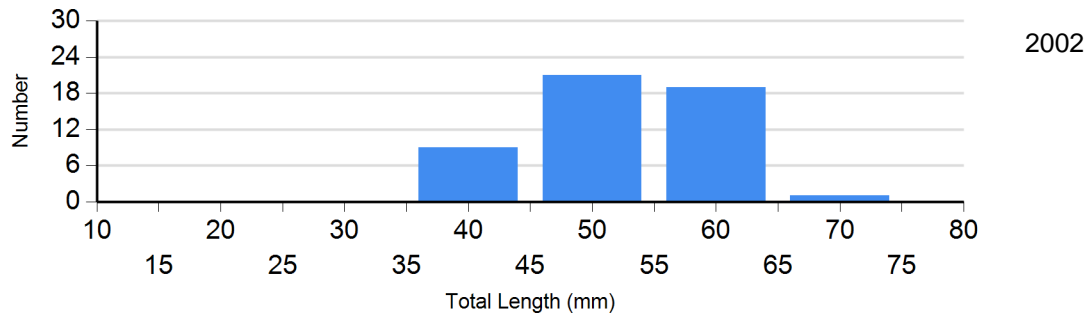


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Species: Plains Killifish

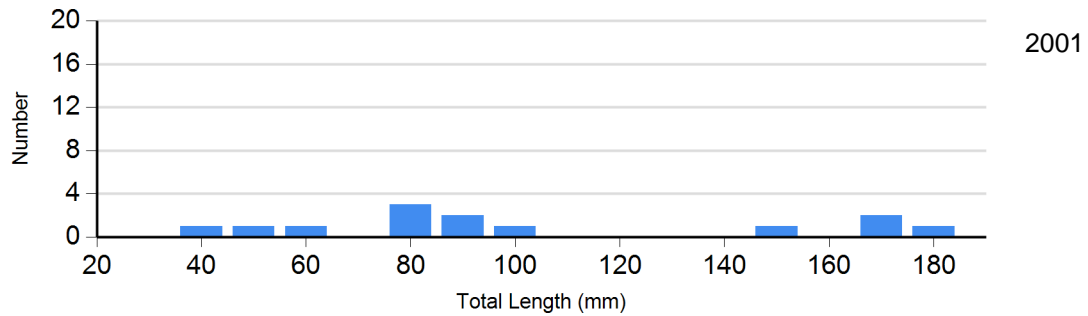
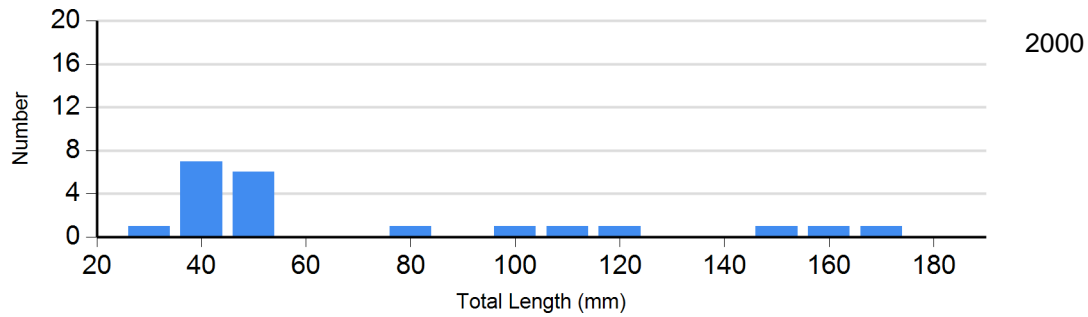


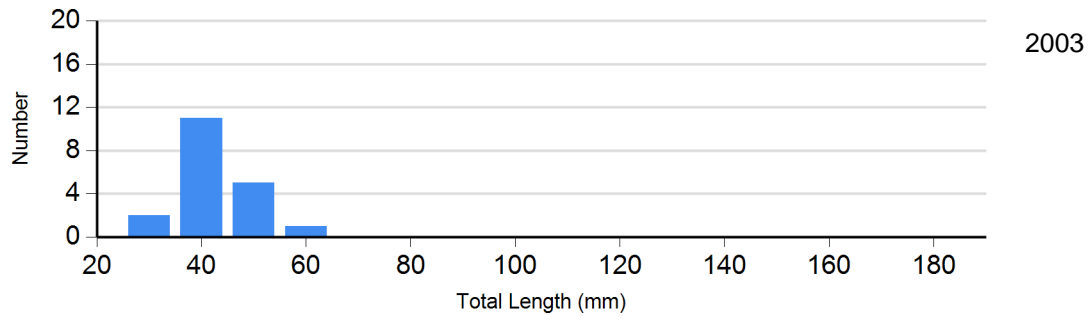
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Species: Sand Shiner



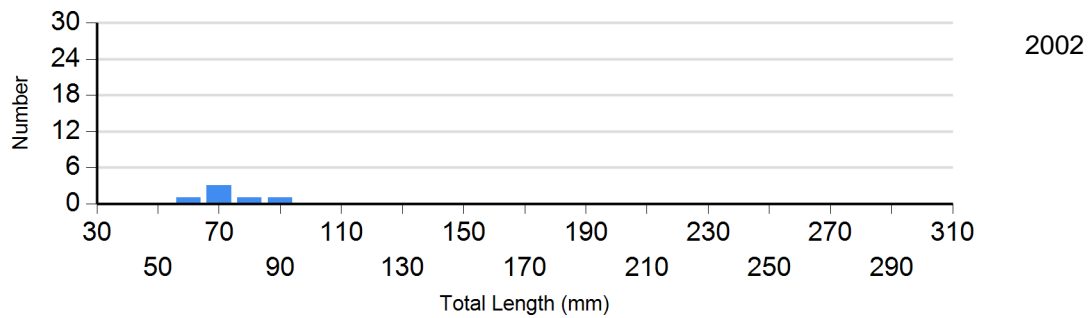
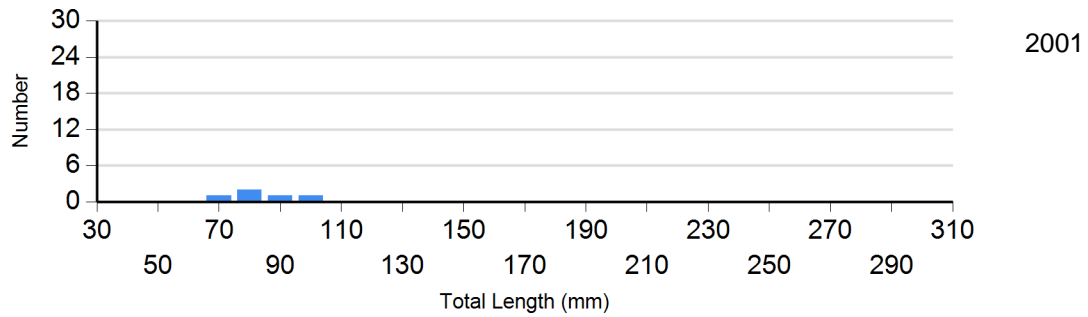
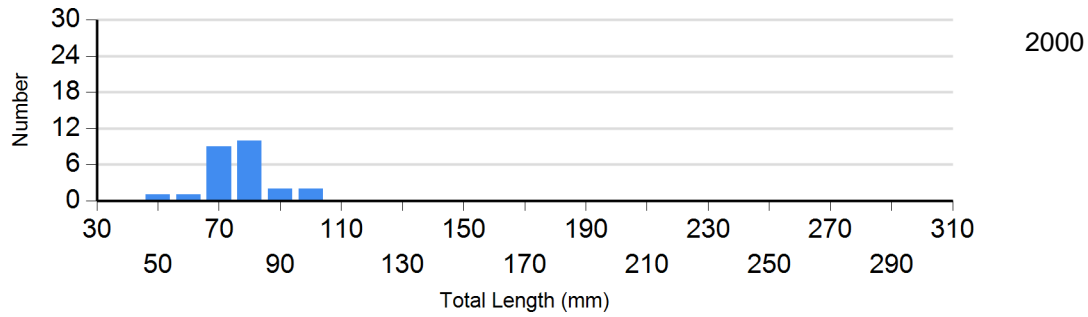


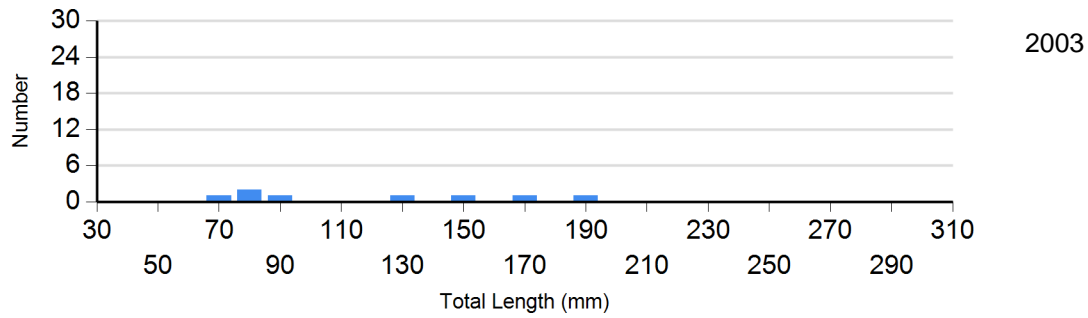
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Species: Stone Cat



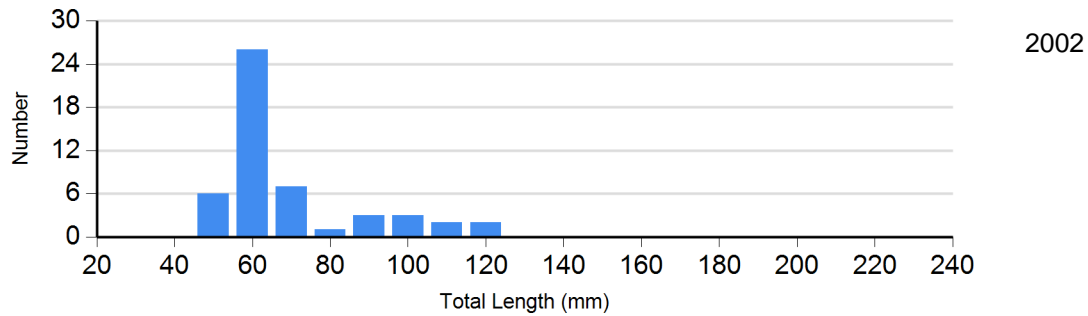
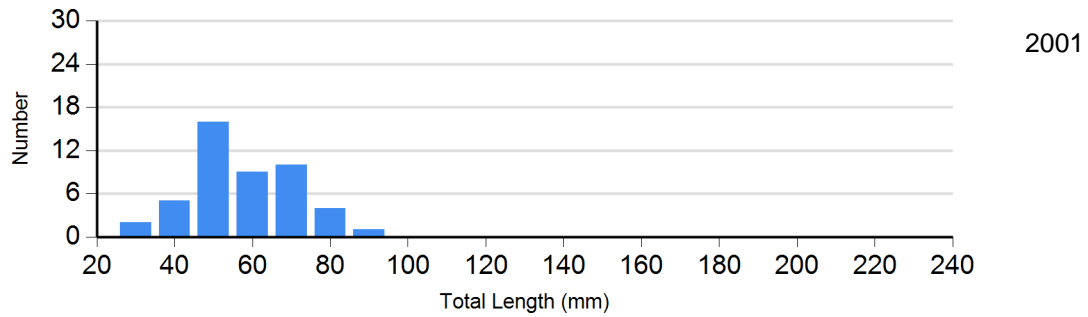
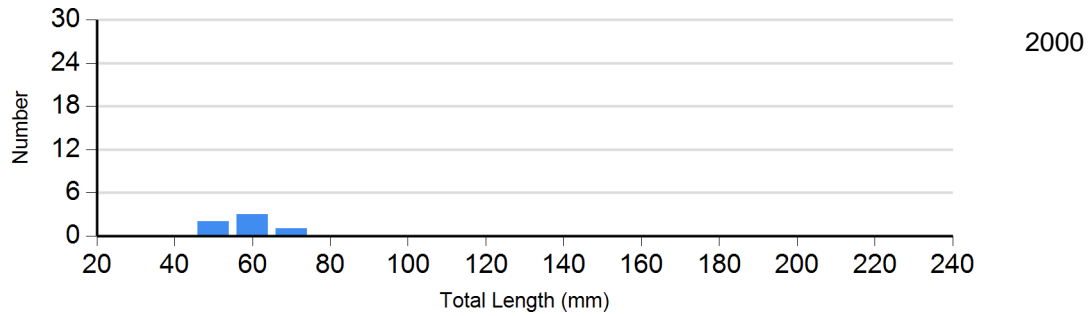


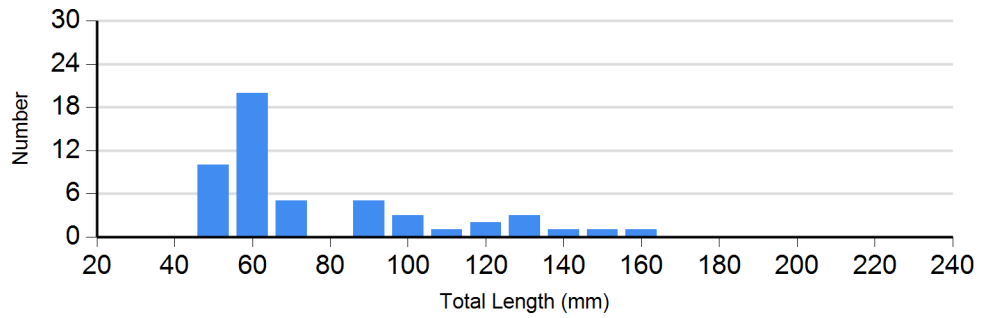
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Species: White Sucker



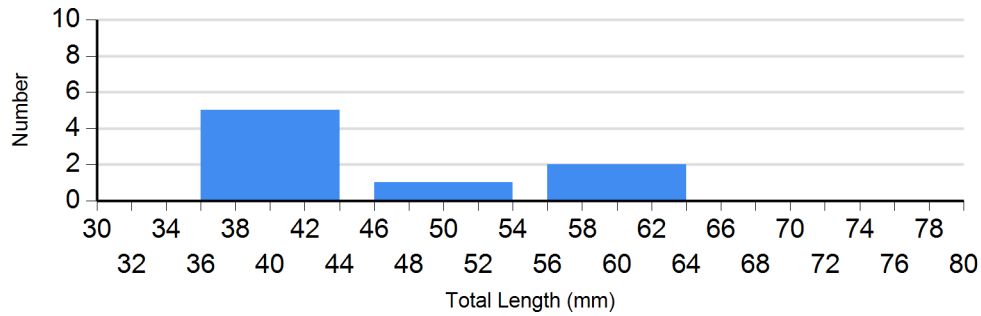


Site: 131
Species: Creek Chub

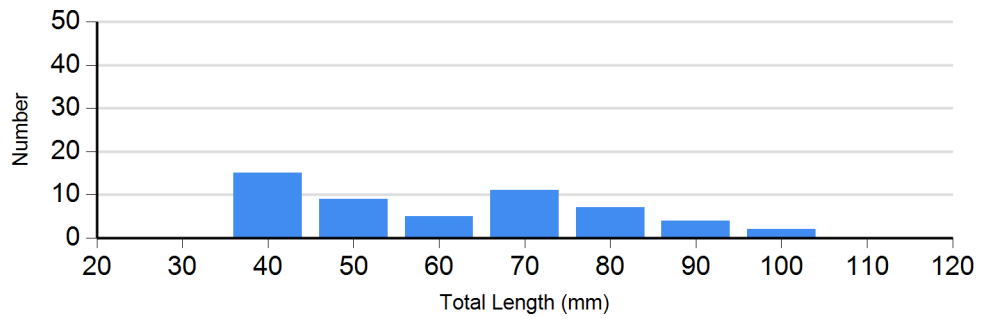


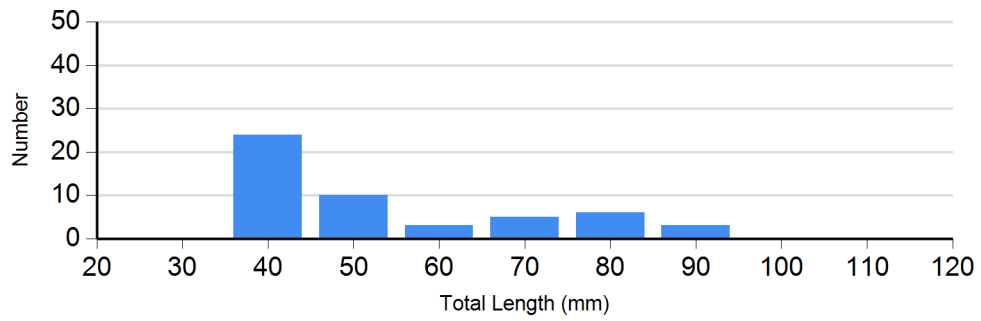
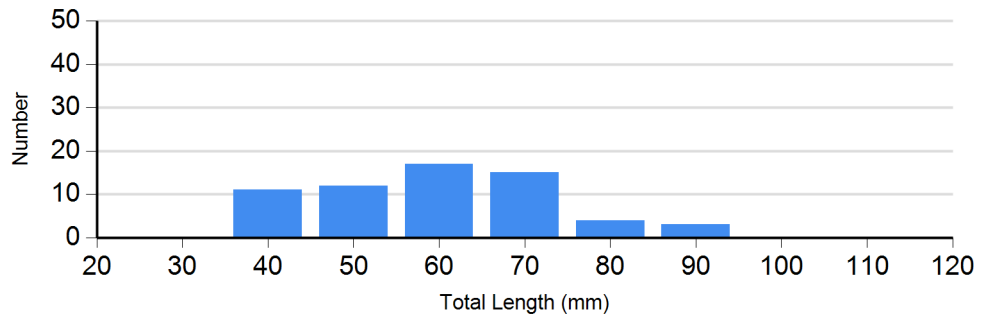
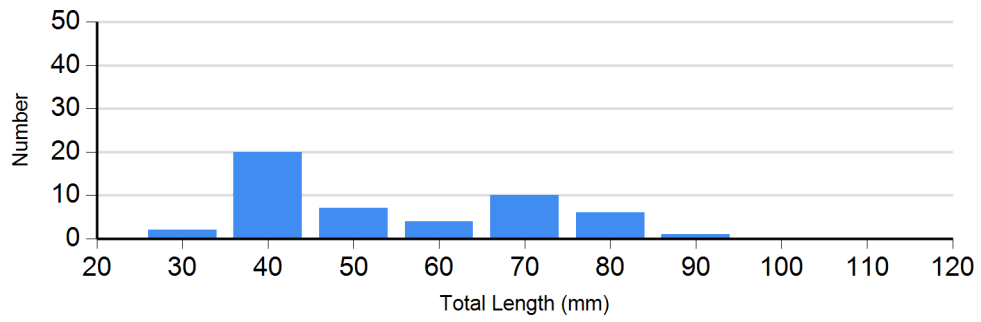


Site: 131
Species: Fathead Minnow

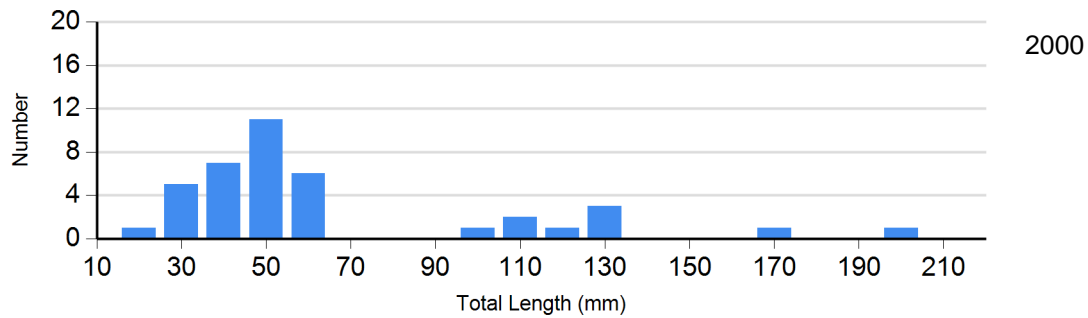


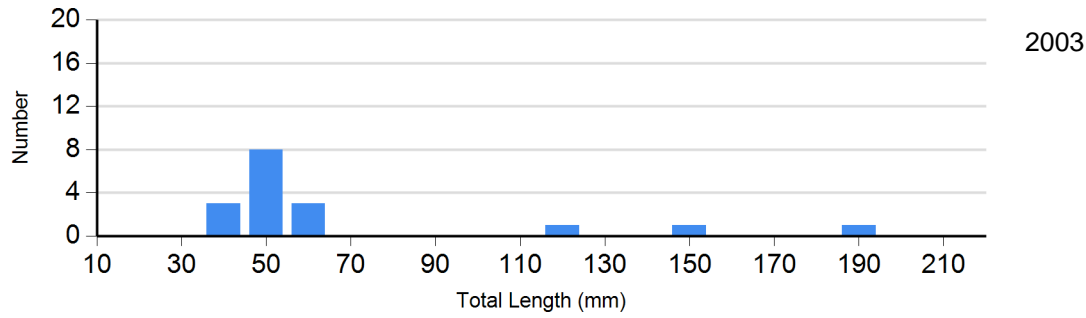
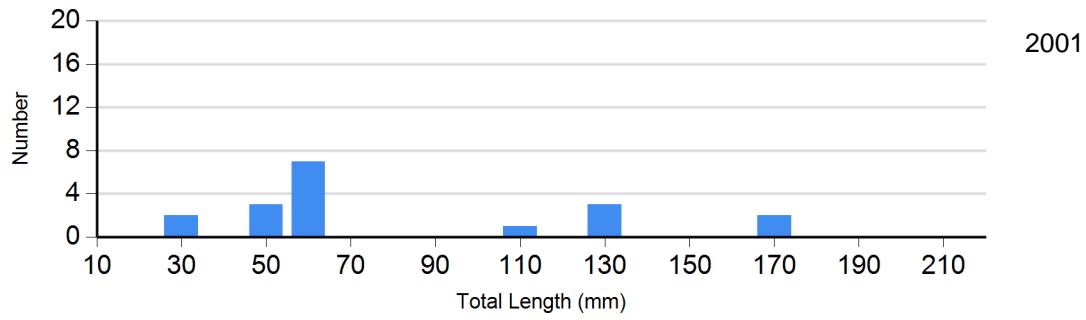
Site: 131
Species: Longnose Dace



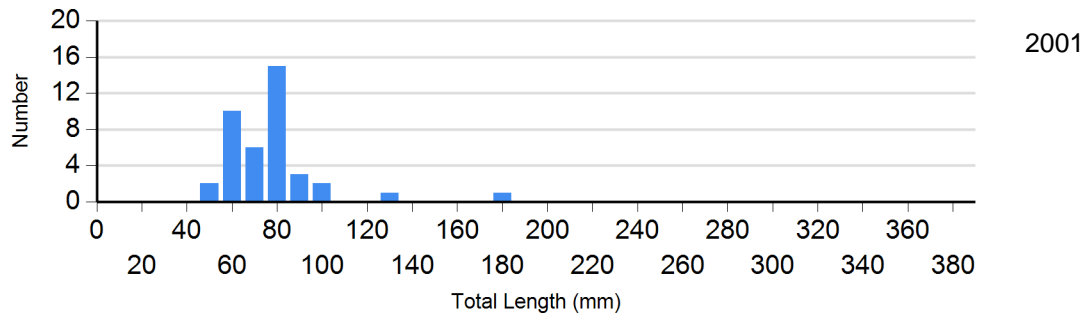
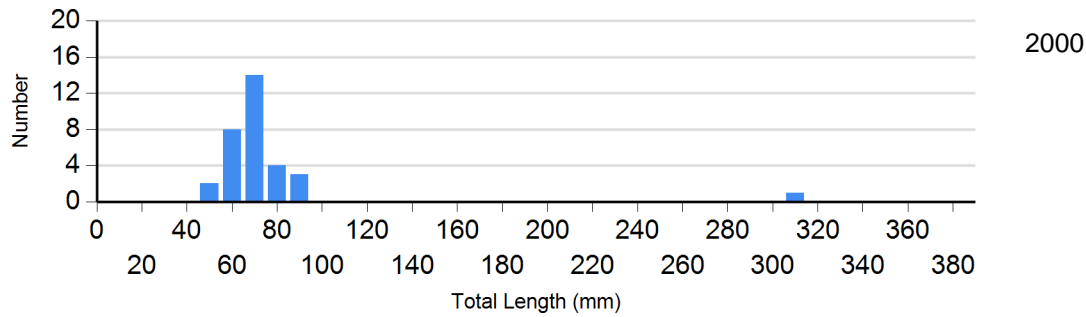


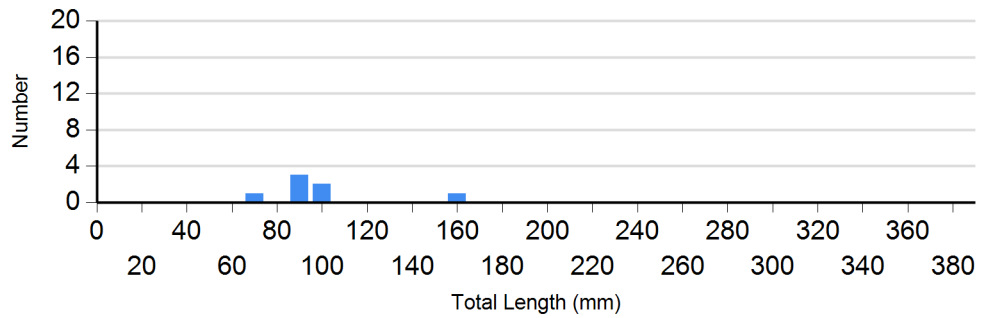
Site: 131
Species: Stone Cat



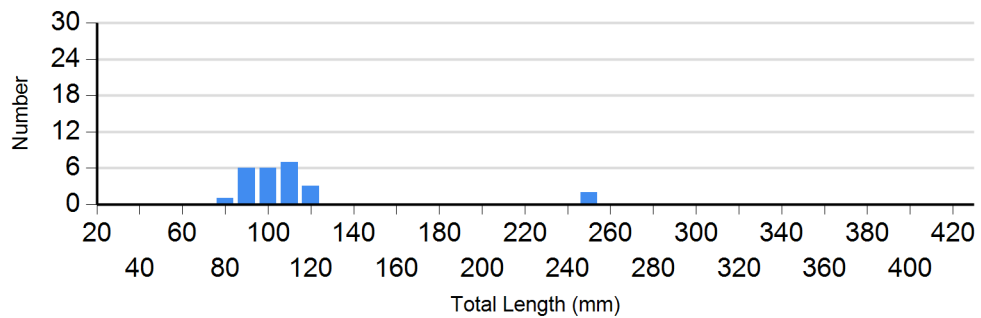
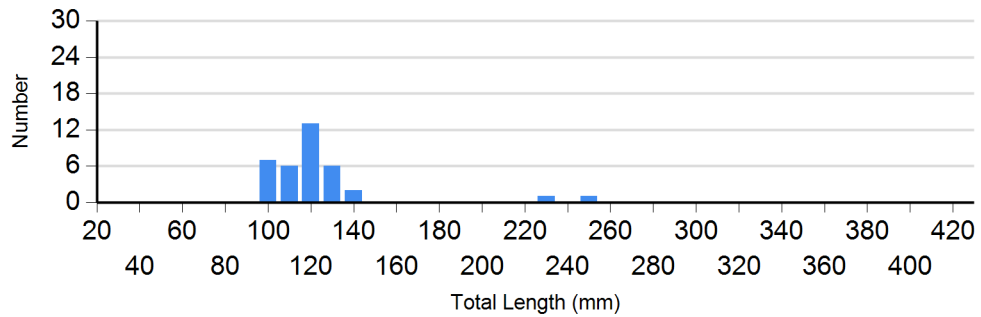
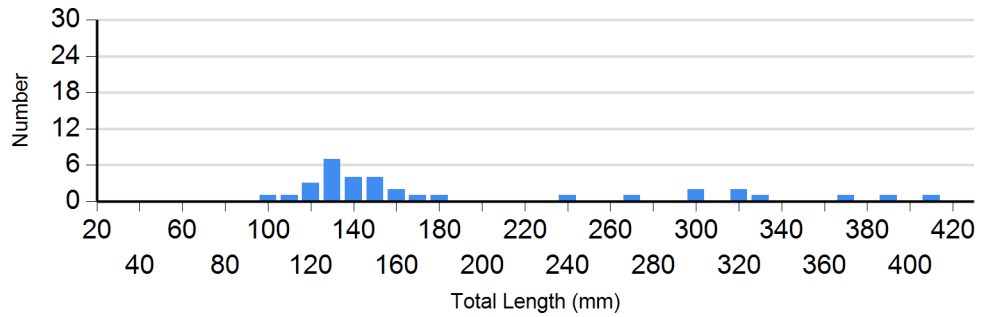


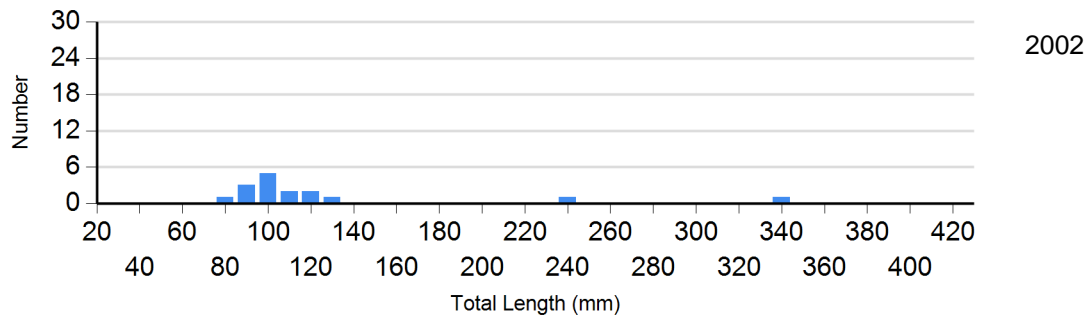
Site: 131
Species: White Sucker



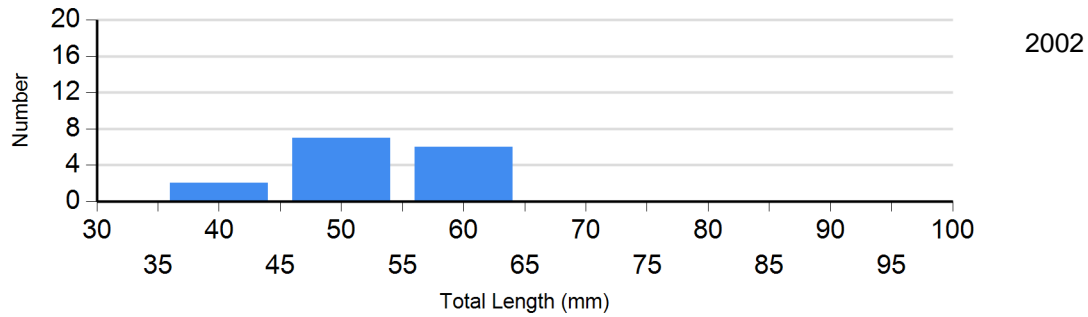


Site: 295
Species: Brown Trout

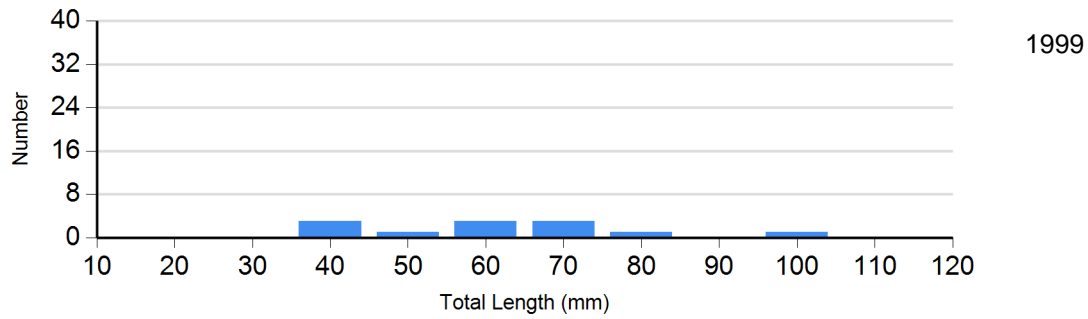


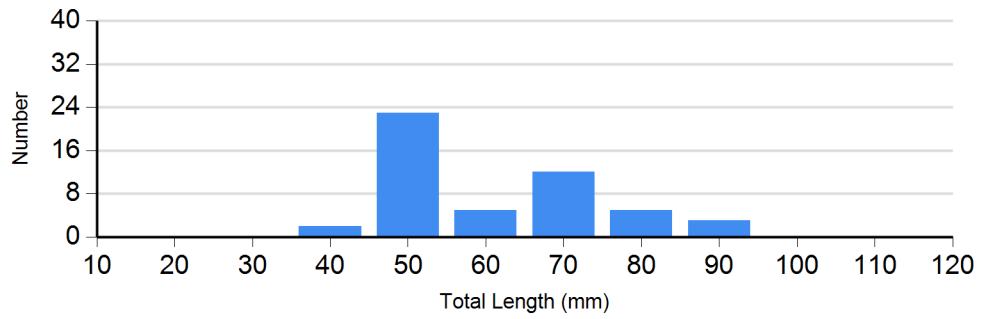
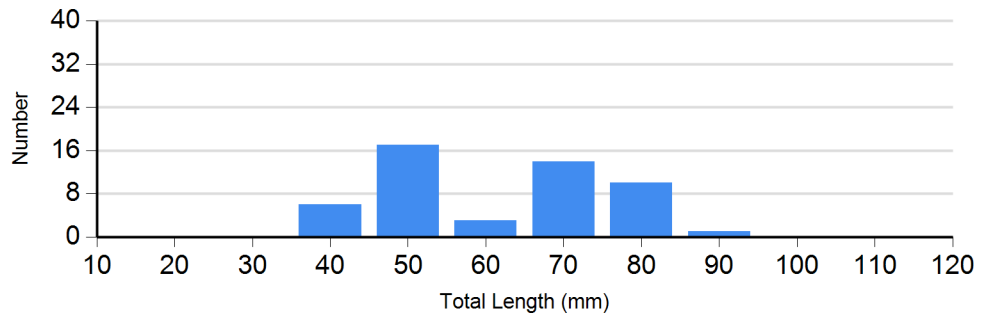
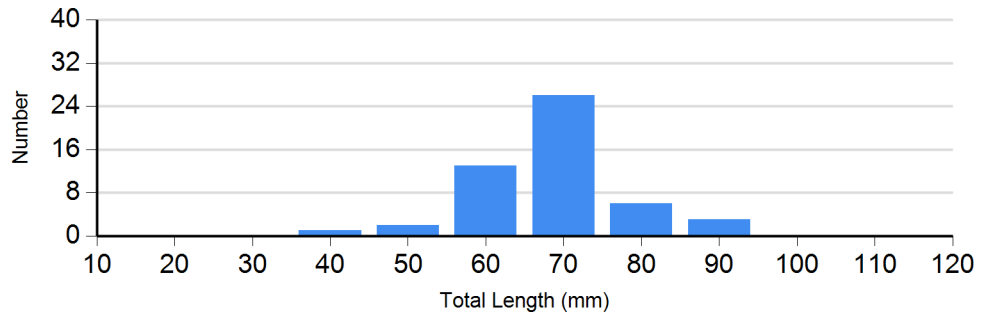
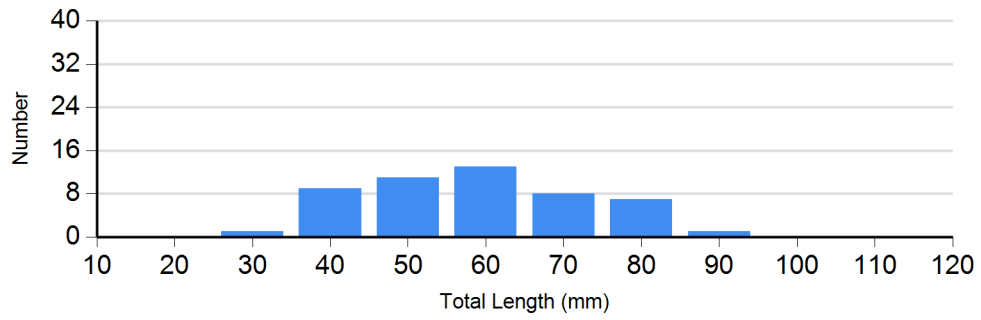


Site: 295
Species: Creek Chub

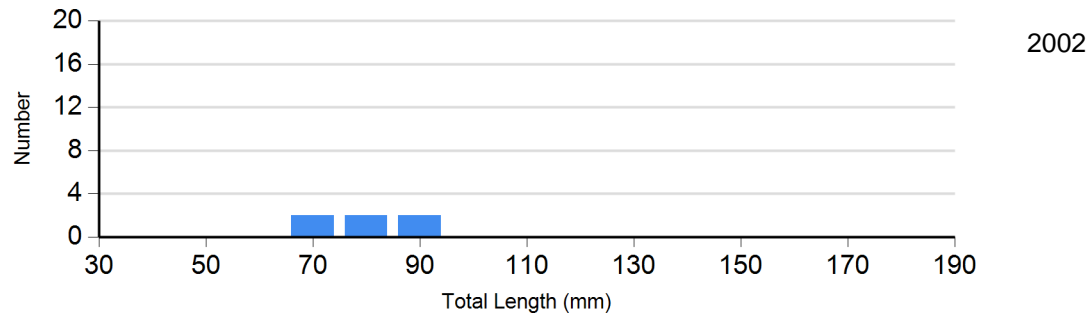
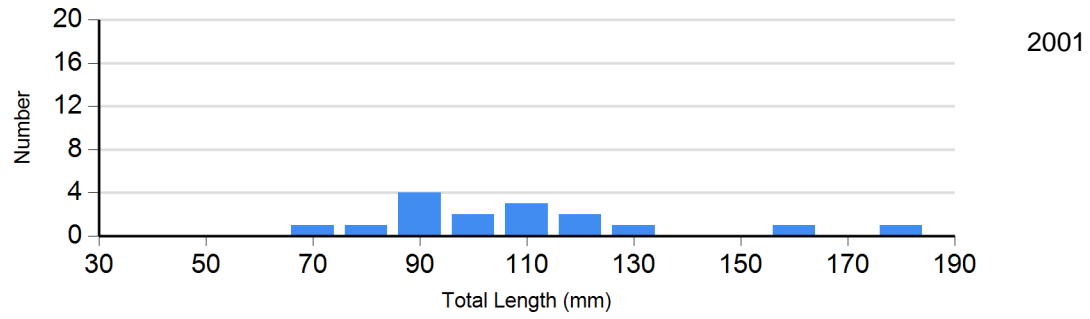
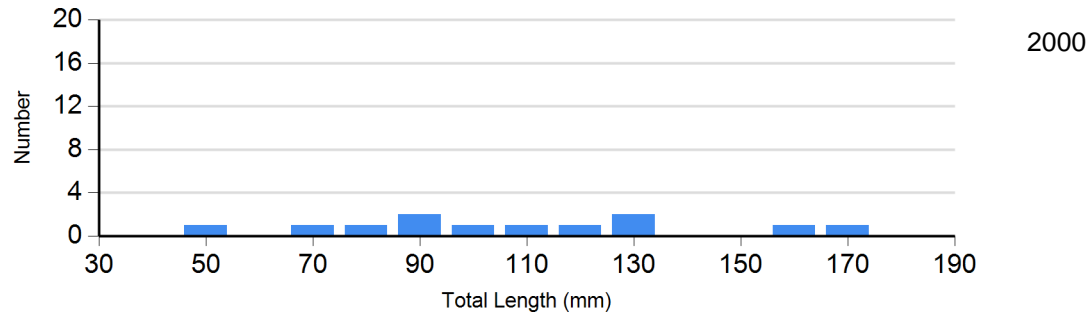


Site: 295
Species: Longnose Dace

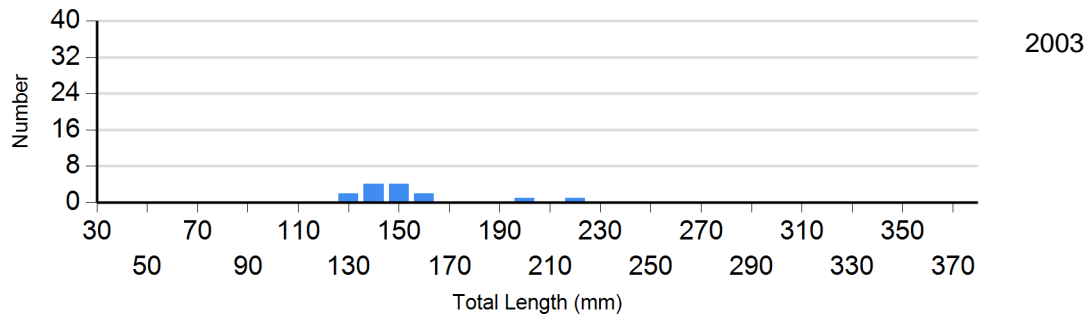
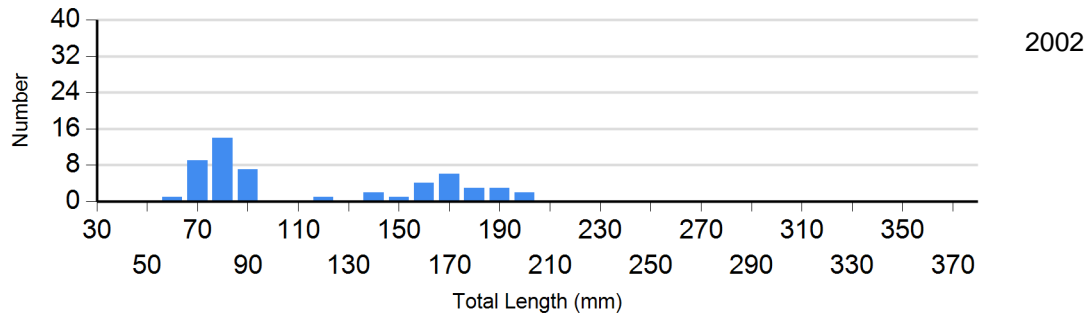
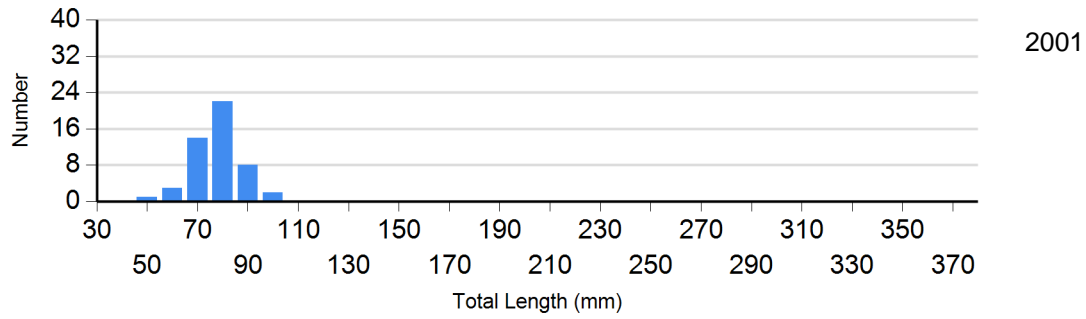




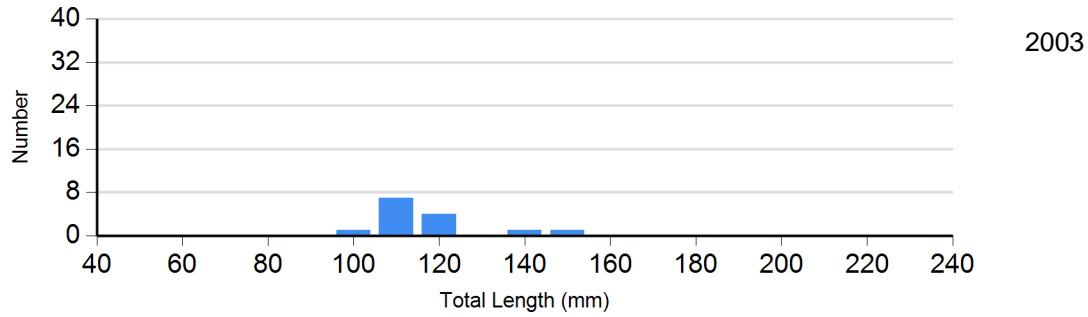
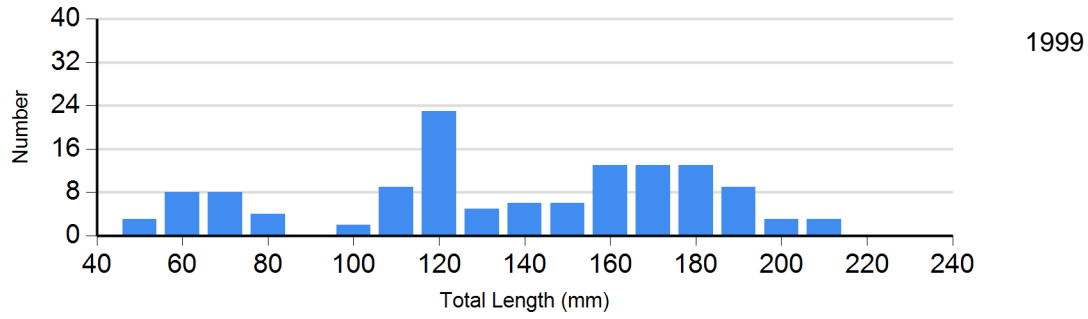
Site: 295
Species: Mountain Sucker



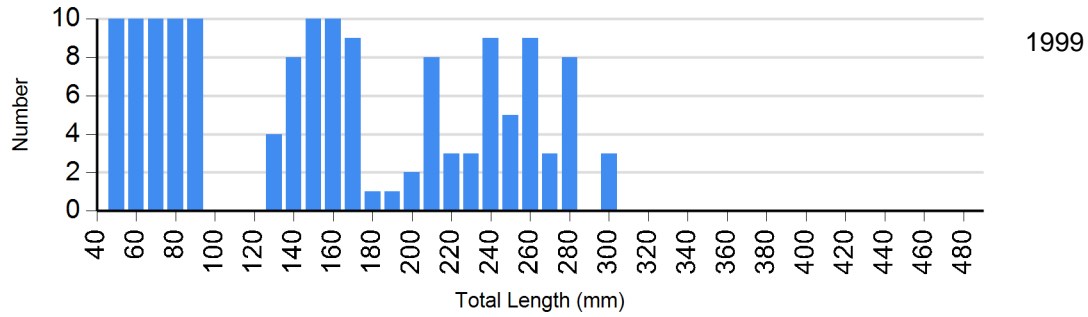
Site: 295
Species: White Sucker

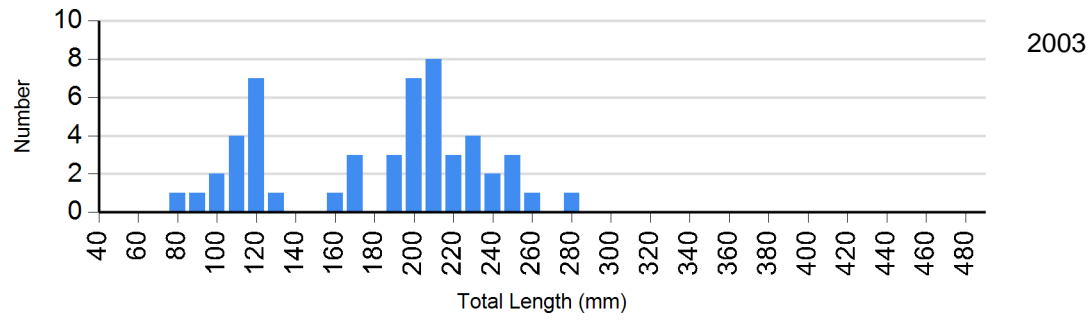


Site: 690
Species: Brook Trout



Site: 690
Species: Brown Trout





Site: 744
Species: Brook Trout

