

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Boxelder Creek, Pennington County
09-0065-00
2018

Table 1. Population and Biomass Estimates for Boxelder Creek

Site Number: 1983
Site Midpoint (Latitude, Longitude): 44.15674459, -103.46614706
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR2

Date Sampled: 08/16/2018
Site Length (m): 100
Mean Width (m): 8.2
Number of Pass: 3
Conductivity (umhos/cm):
pH:
Water Temperature (C): 17.0
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)
Brook Trout	<200mm	3	3	3	3	37	2	30	15	1.88	48	181.3	57.7
Brook Trout	All	3	3	3	3	37	2	30	15	1.88	48	181.3	57.7
Brown Trout	<200mm	16	16	17	16	195	11	160	79	9.98	257	157.1	57.3
Brown Trout	>=200mm	11	11	11	11	134	21	110	54	18.66	177	249.8	155.8
Brown Trout	All	27	27	28	27	329	33	270	133	29.59	434	194.9	100.6
Longnose Dace	All	41	46	55	41	561	8	460	227	7.23	740	78.3	14.4
Mountain Sucker	All	3	3	4	3	37	2	30	15	1.47	48	152.3	45.0
Stone Cat	All	28	36	53	28	439	16	360	178	14.05	579	139.3	35.8
White Sucker	All	63	64	67	63	780	36	640	316	32.46	1030	141.3	46.6

Site Number: 2099
Site Midpoint (Latitude, Longitude): 44.19841227, -103.53502386
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR3

Date Sampled: 05/15/2018
Site Length (m): 100
Mean Width (m): 8.2
Number of Pass: 3
Conductivity (umhos/cm):
pH:
Water Temperature (C): 13.0
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)
Brook Trout	<200mm	50	54	61	50	661	22	540	268	19.94	869	131.3	33.8
Brook Trout	All	50	54	61	50	661	22	540	268	19.94	869	131.3	33.8
Brown Trout	<200mm	18	18	20	18	220	6	180	89	5.40	290	123.0	27.5
Brown Trout	>=200mm	2	2	4	2	24	5	20	10	4.08	32	251.5	186.5
Brown Trout	All	20	21	25	20	257	12	210	104	10.59	338	135.9	46.2
Longnose Dace	All	53	64	81	53	783	9	640	317	8.16	1030	79.9	11.7
Mountain Sucker	All	12	19	46	12	232	13	190	94	11.69	306	105.3	56.3
White Sucker	All	8	8	9	8	98	9	80	40	7.80	129	167.6	89.3

Site Number: 2099
Site Midpoint (Latitude, Longitude): 44.19841227, -103.53502386
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK3, BR2

Date Sampled: 08/16/2018
Site Length (m): 100
Mean Width (m): 6.6
Number of Pass: 3
Conductivity (umhos/cm):
pH:
Water Temperature (C): 10.0
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)
Brook Trout	<200mm	7	7	8	7	107	5	70	43	4.34	113	158.1	45.6
Brook Trout	>=200mm	2	2	2	2	30	3	20	12	2.86	32	215.5	105.0
Brook Trout	All	9	9	10	9	137	8	90	56	7.20	145	170.9	58.8
Brown Trout	<200mm	58	58	60	58	884	42	580	358	37.22	933	131.7	47.2
Brown Trout	>=200mm	9	9	9	9	137	16	90	56	14.00	145	221.2	114.3
Brown Trout	All	67	67	69	67	1021	61	670	413	54.48	1078	143.7	59.8
Longnose Dace	All	75	82	92	75	1249	16	820	506	14.50	1319	78.7	13.0
Mountain Sucker	All	16	16	17	16	244	6	160	99	5.52	257	125.6	25.4

White Sucker	All	5	5	7	5	76	3	50	31	3.07	80	156.0	45.2
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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	
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 Boxelder Creek, 2008-2018

Site 1983

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 25, 2010	21	21-21	
	Jun 20, 2012	16	13-26	
	Jun 19, 2013	1	1-5	
	Jun 06, 2016	6	6-6	
	Jul 07, 2016	1	1-1	
	May 15, 2017	17	17-18	
	Aug 16, 2018	3	3-3	

Brook Trout >=200mm	Aug 25, 2010	7	7-7	BK2
	Jun 20, 2012	5	5-5	BK3
	Jun 19, 2013	1	1-1	BK3
	Jul 31, 2014	2	2-2	BK3
	Jun 06, 2016	10	10-11	BK2
	May 15, 2017	3	3-4	BK3
Brown Trout <200mm	Aug 25, 2010	18	18-18	
	Jun 20, 2012	31	30-35	
	Jun 19, 2013	4	4-4	
	Jul 31, 2014	9	9-11	
	Jun 06, 2016	25	25-26	
	Jul 07, 2016	47	41-58	
	May 15, 2017	14	14-16	
	Aug 16, 2018	16	16-17	
Brown Trout >=200mm	Aug 25, 2010	21	21-21	BR2
	Jun 20, 2012	16	16-16	BR2

Brown Trout >=200mm	Jun 19, 2013	13	13-14	BR2
	Jul 31, 2014	5	5-5	BR3
	Jun 06, 2016	24	24-24	BR2
	Jul 07, 2016	18	18-18	BR2
	May 15, 2017	15	15-16	BR2
	Aug 16, 2018	11	11-11	BR2
Longnose Dace	Jun 19, 2013	170	89-293	
	Jul 31, 2014	69	47-107	
	Jun 06, 2016	199	169-229	
	Jul 07, 2016	233	206-260	
	May 15, 2017	122	114-132	
	Aug 16, 2018	46	41-55	
Mountain Sucker	Aug 25, 2010	20	20-20	
	Jun 20, 2012	16	16-17	
	Jul 31, 2014	3	3-4	
	Jun 06, 2016	2	2-6	

Mountain Sucker	Jul 07, 2016	3	3-4
	May 15, 2017	7	7-7
	Aug 16, 2018	3	3-4
Stone Cat	Aug 25, 2010	6	6-6
	Jun 20, 2012	18	19-25
	Jun 19, 2013	6	5-13
	Jul 31, 2014	11	7-32
	Jun 06, 2016	27	28-36
	Jul 07, 2016	30	31-39
	May 15, 2017	79	41-166
	Aug 16, 2018	36	28-53
White Sucker	Aug 25, 2010	28	28-28
	Jun 20, 2012	5	5-7
	Jun 19, 2013	102	95-111
	Jul 31, 2014	75	72-81
	Jun 06, 2016	9	9-9

White Sucker	Jul 07, 2016	26	26-28
	May 15, 2017	23	23-24
	Aug 16, 2018	64	63-67

Site 2099

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jun 20, 2012	57	57-58	
	Jun 19, 2013	47	45-51	
	Aug 01, 2014	31	31-33	
	May 15, 2018	54	50-61	
	Aug 16, 2018	7	7-8	
Brook Trout >=200mm	Jun 20, 2012	5	5-5	BK2
	Jun 19, 2013	5	5-5	BK2
	Aug 01, 2014	6	6-6	BK2
	Aug 16, 2018	2	2-2	BK3
Brown Trout <200mm	Jun 20, 2012	63	51-81	
	Jun 19, 2013	14	11-25	

Brown Trout <200mm	Aug 01, 2014	50	49-53	
	May 15, 2018	18	18-20	
	Aug 16, 2018	58	58-60	
Brown Trout >=200mm	Jun 20, 2012	1	1-2	BR3
	Aug 01, 2014	7	7-7	BR2
	May 15, 2018	2	2-4	BR3
	Aug 16, 2018	9	9-9	BR2
Longnose Dace	Jun 19, 2013	180	146-214	
	Aug 01, 2014	285	286-316	
	May 15, 2018	64	53-81	
	Aug 16, 2018	82	75-92	
Mountain Sucker	Jun 20, 2012	78	49-130	
	Jun 19, 2013	20	17-29	
	Aug 01, 2014	68	64-75	
	May 15, 2018	19	12-46	
	Aug 16, 2018	16	16-17	

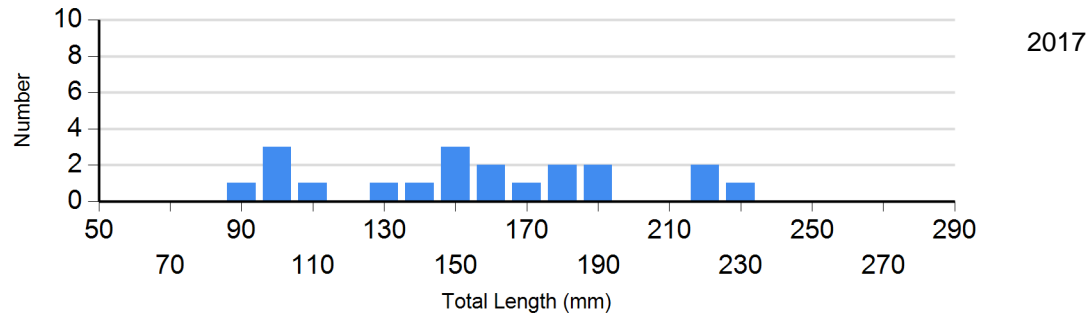
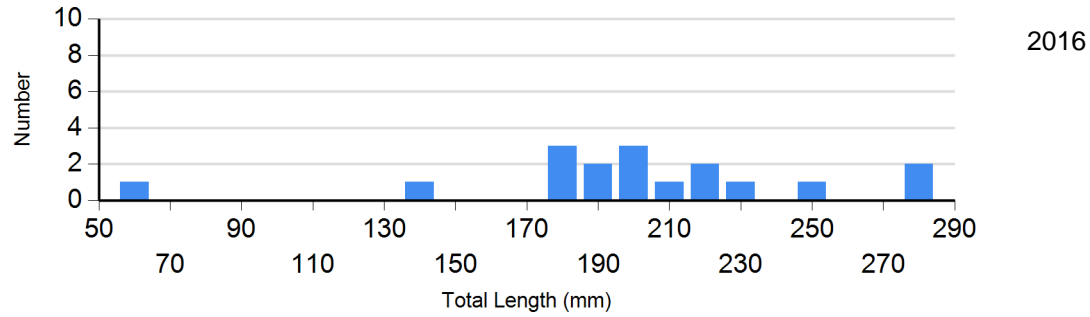
White Sucker	Jun 20, 2012	1	1-5
	Jun 19, 2013	1	1-1
	Aug 01, 2014	7	7-9
	May 15, 2018	8	8-9
	Aug 16, 2018	5	5-7

Length Frequency Distribution

Length frequency histogram of species sampled by year.

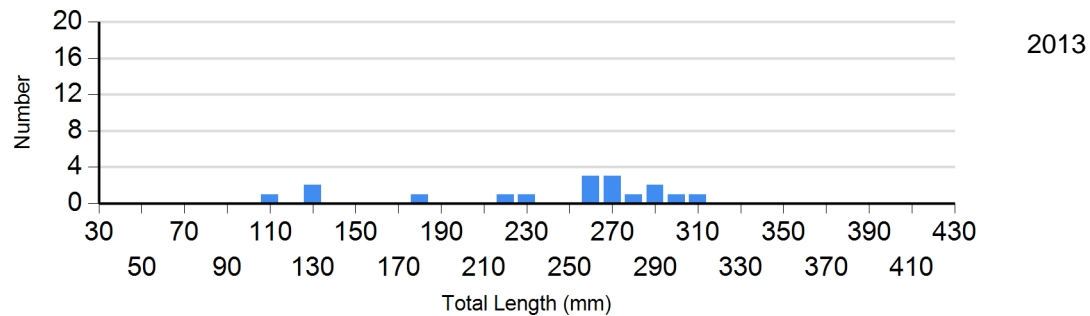
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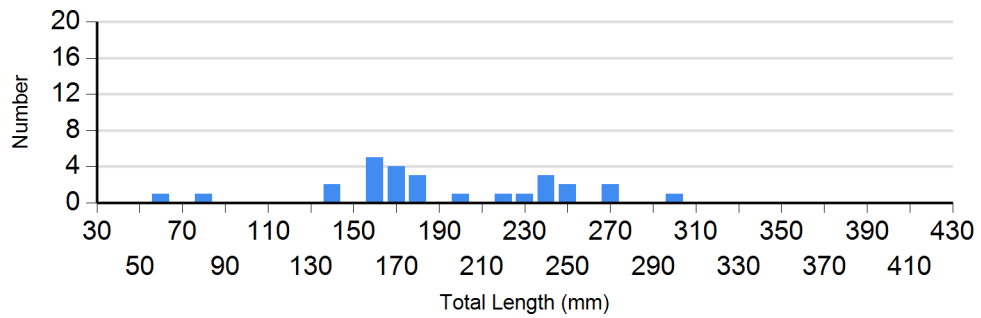
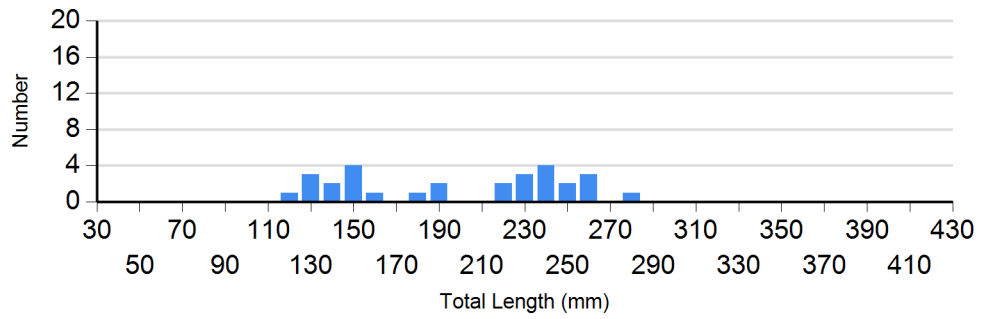
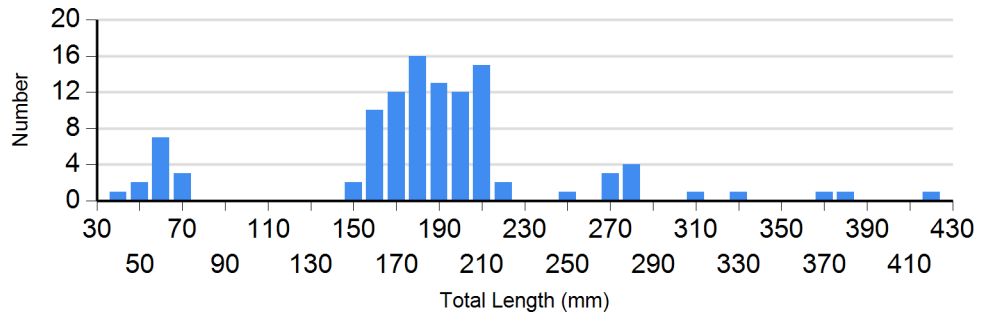
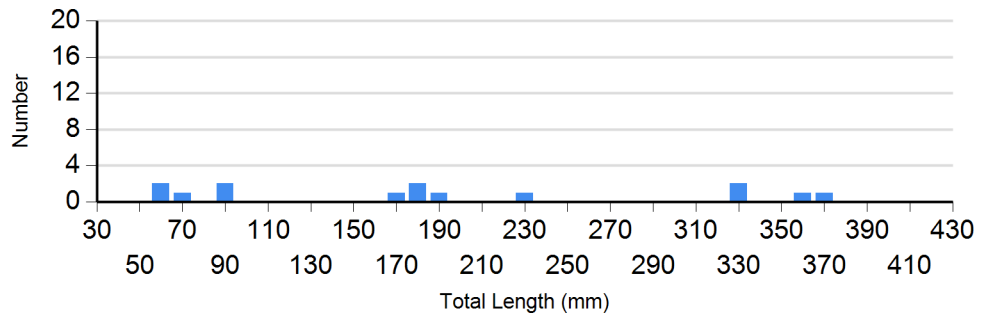
Species: Brook Trout



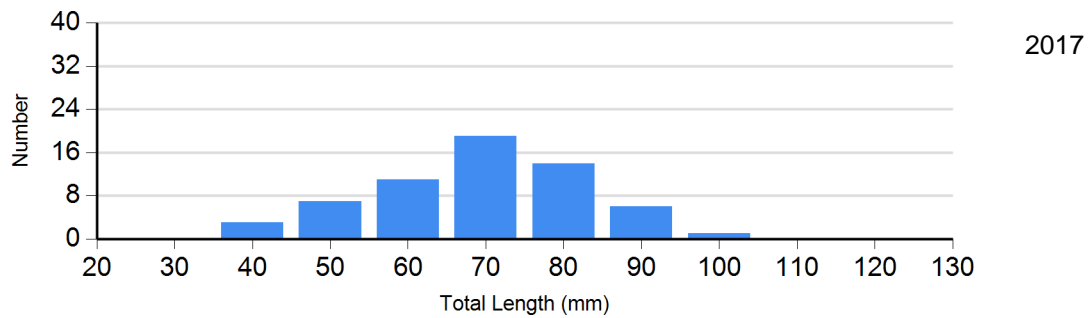
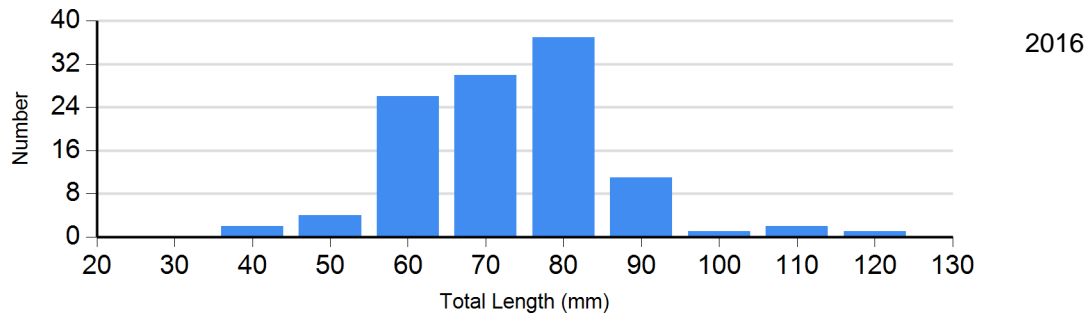
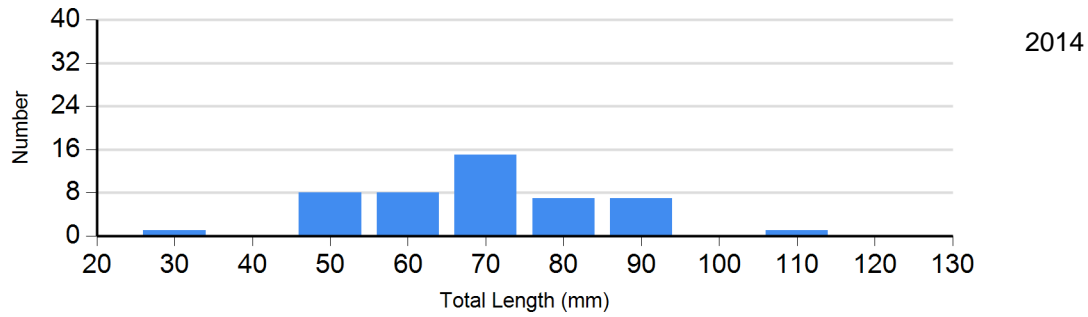
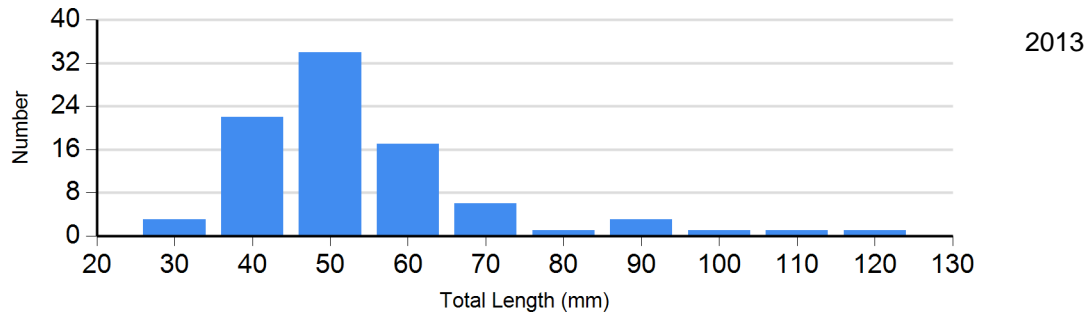
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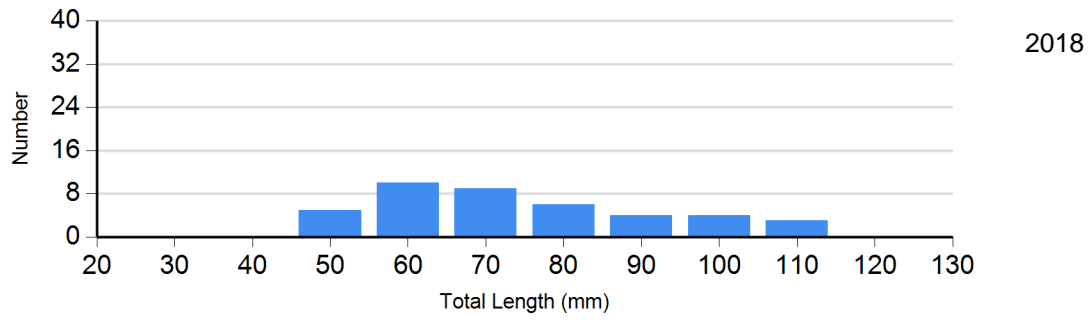
Species: Brown Trout



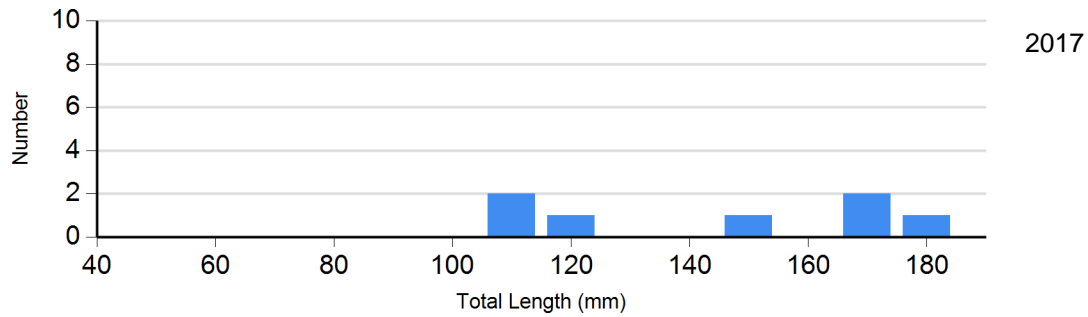
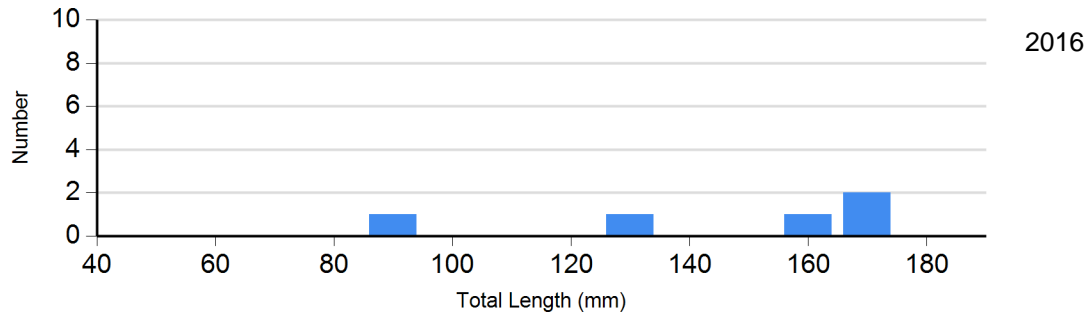


Site: 1983
Species: Longnose Dace

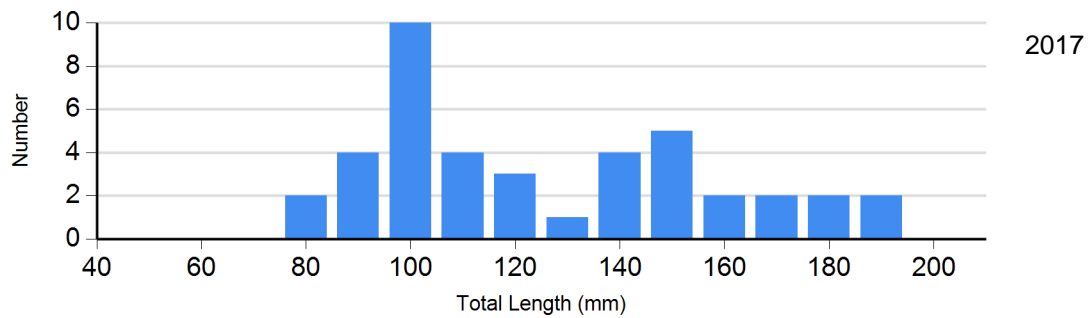
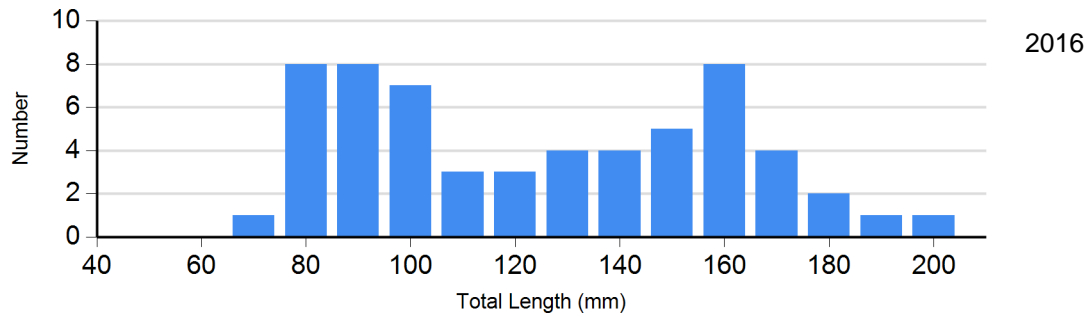
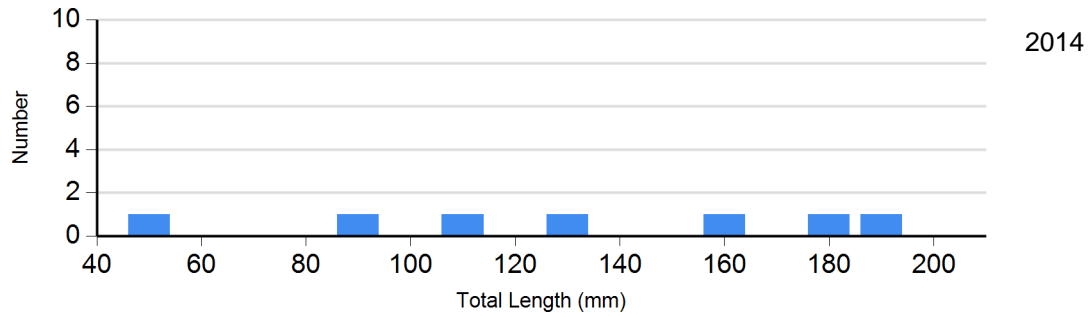
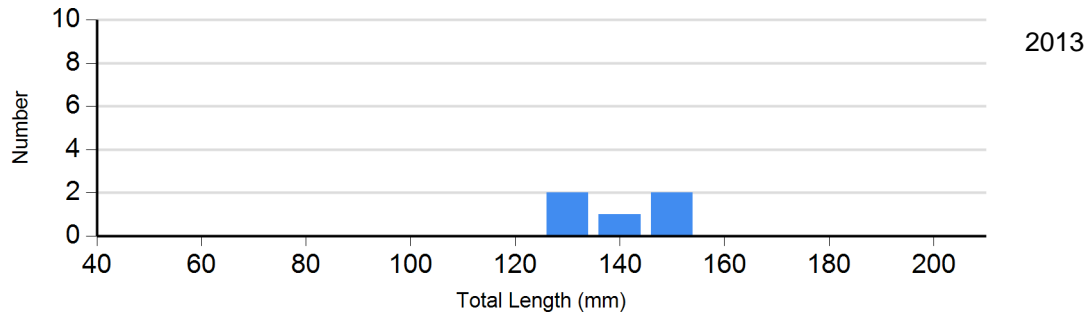


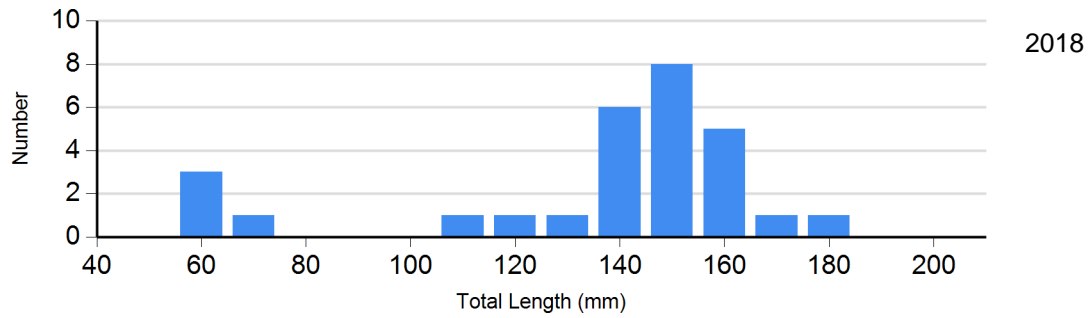


Site: 1983
Species: Mountain Sucker

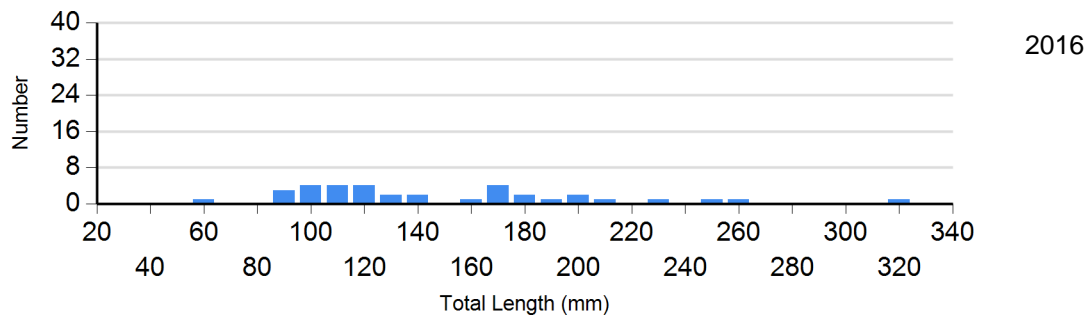
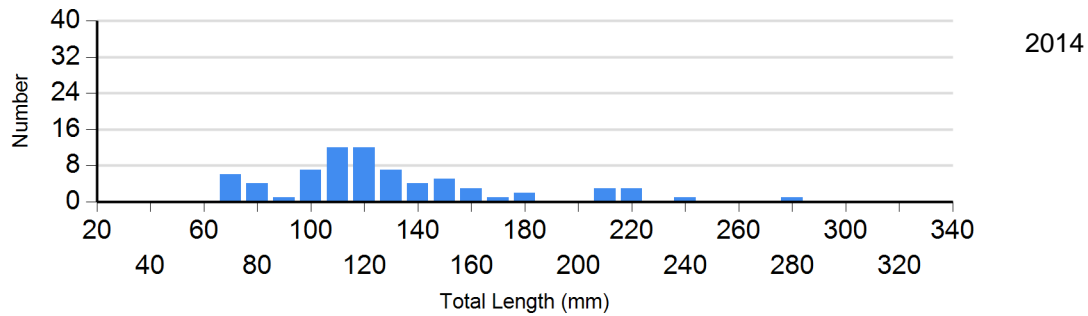
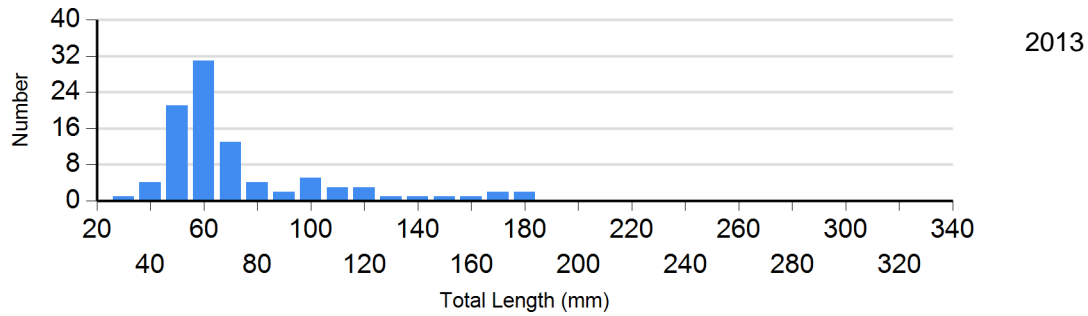


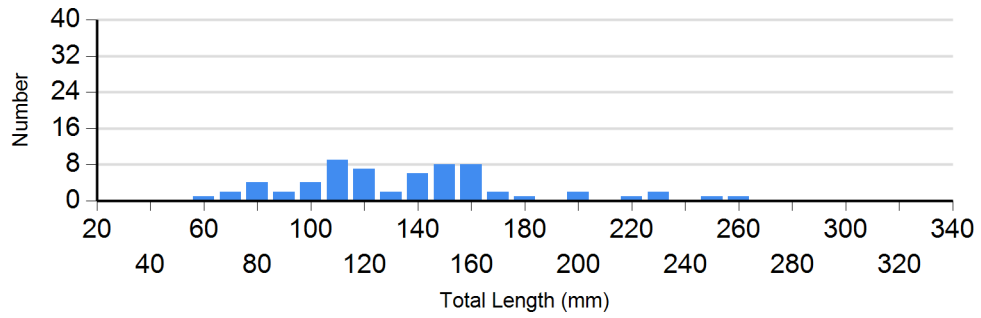
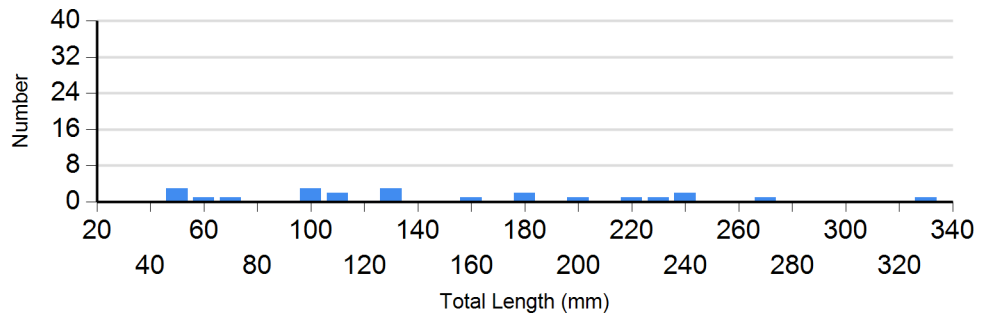
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Species: Stone Cat



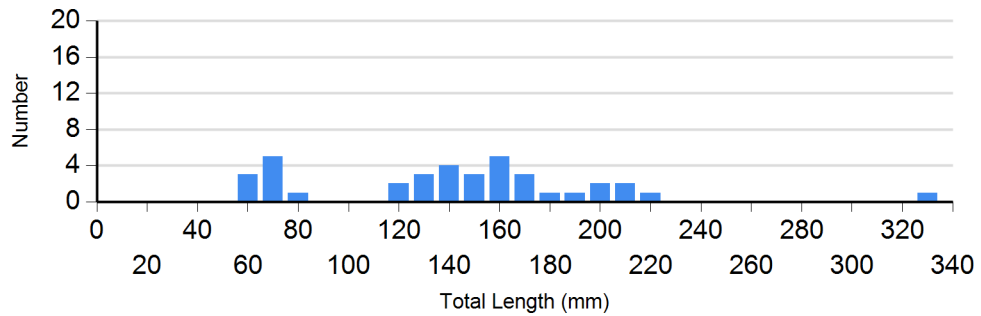
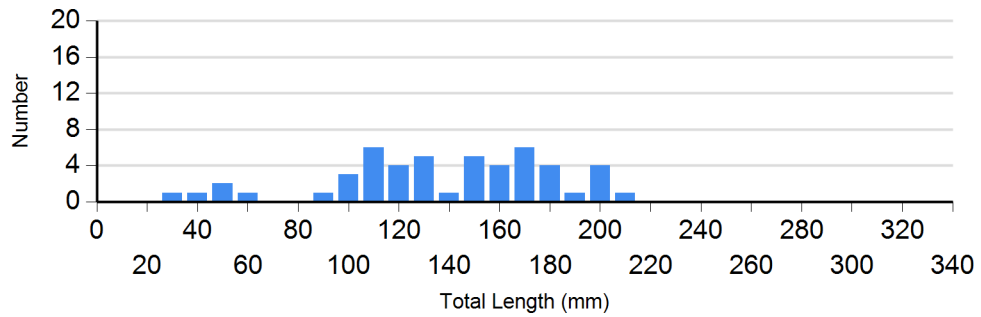


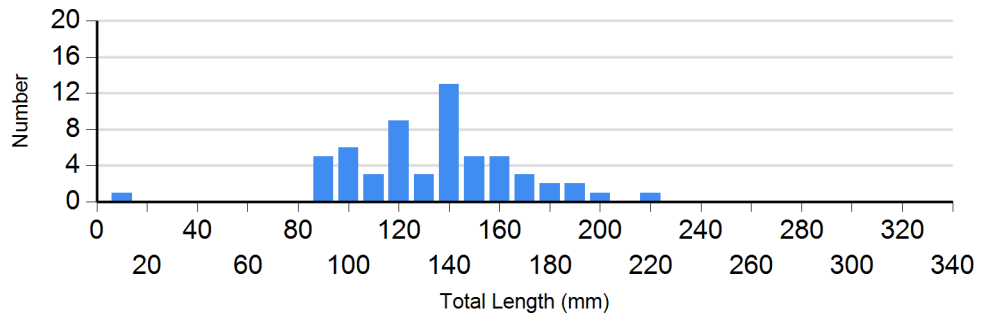
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Species: White Sucker



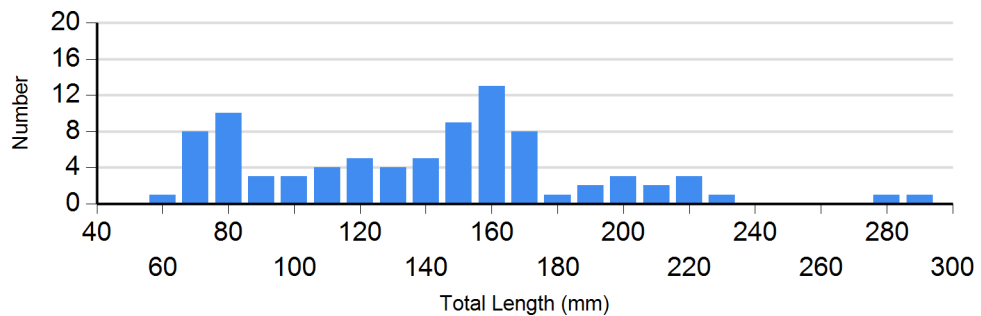
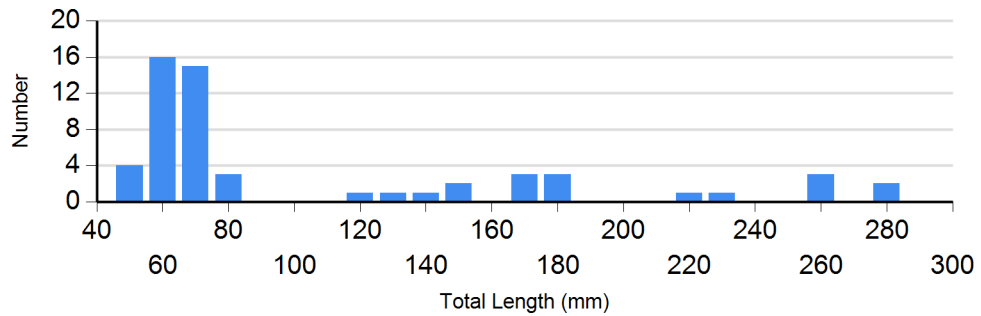
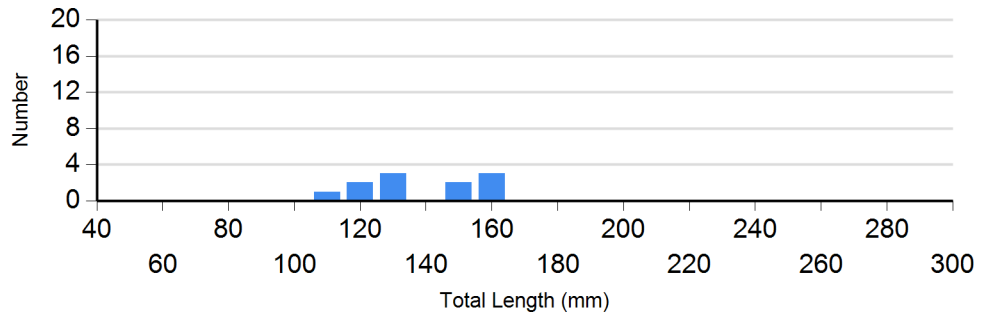


Site: 2099
Species: Brook Trout

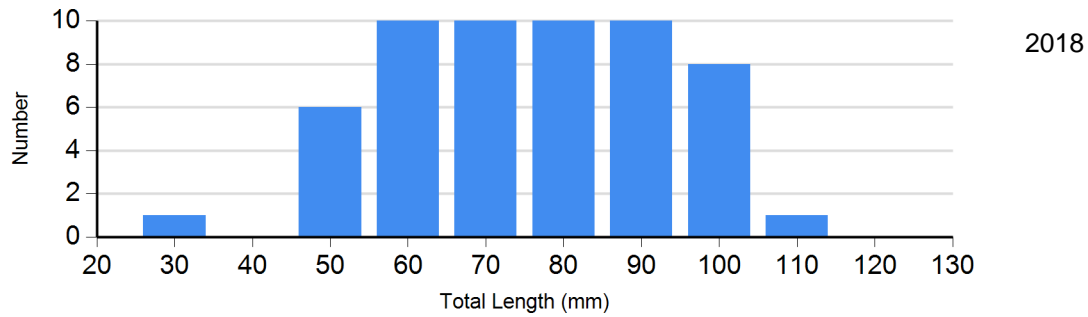
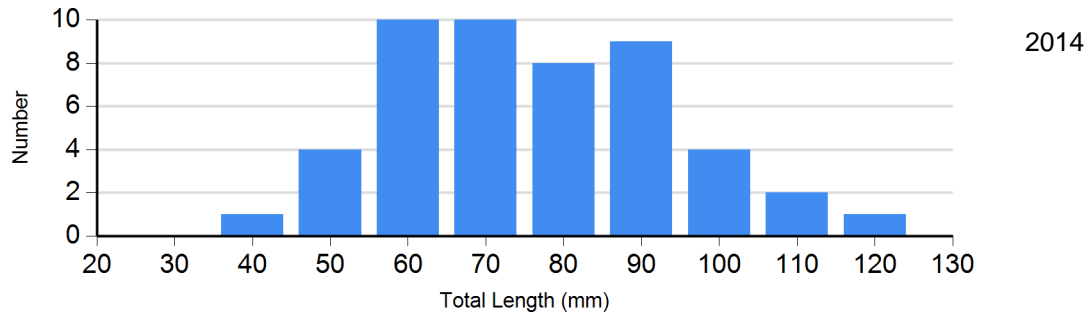
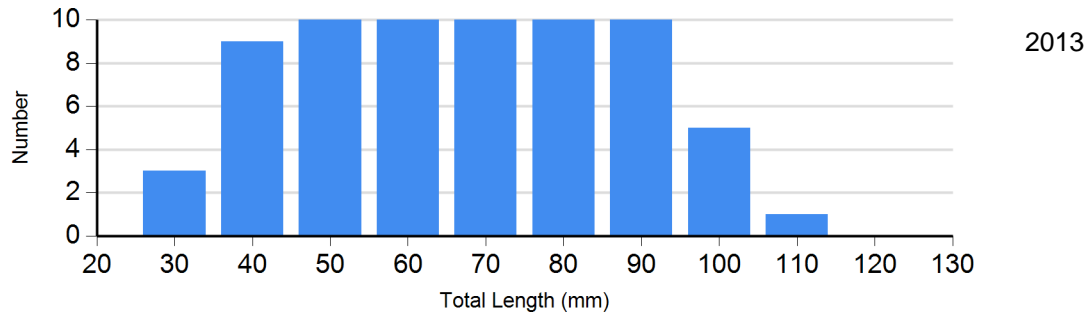




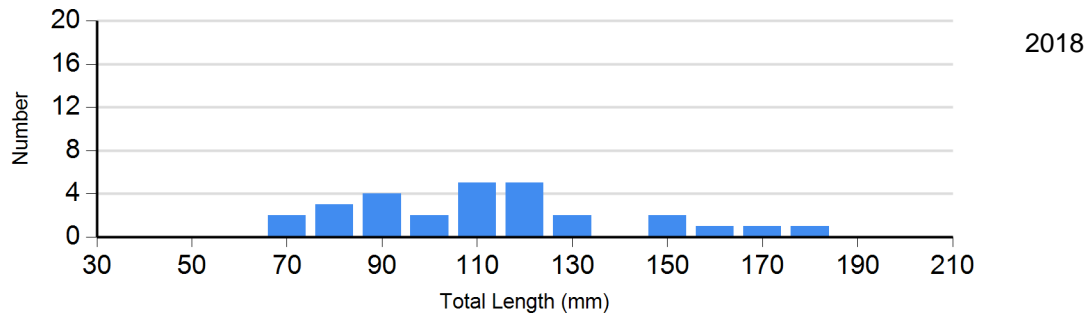
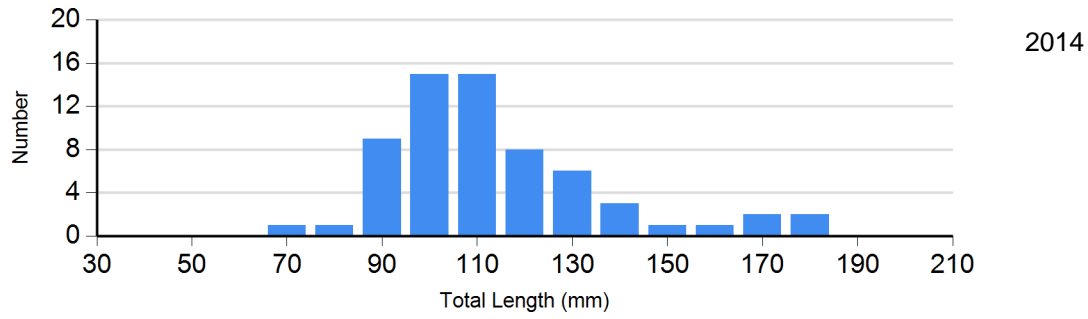
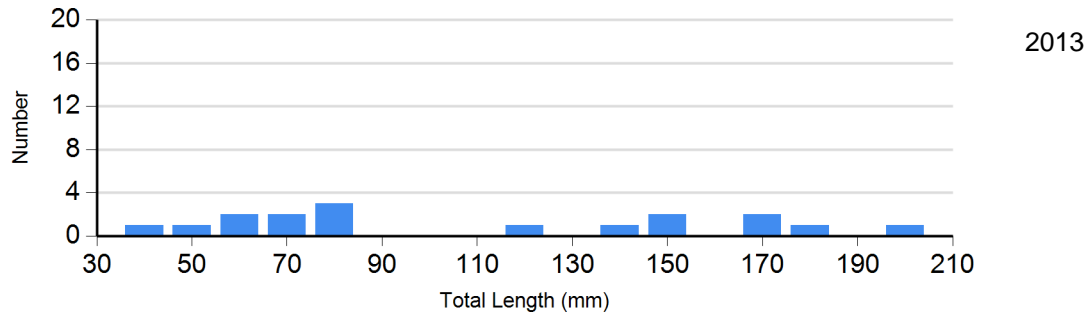
Site: 2099
Species: Brown Trout



Site: 2099
Species: Longnose Dace



Site: 2099
Species: Mountain Sucker



Site: 2099
Species: White Sucker

