

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Whitewood Creek, Lawrence County**  
**09-0056-00**  
**2014**

Table 1. Population and Biomass Estimates for Whitewood Creek

**Site Number:** 383  
**Site Midpoint (Latitude, Longitude):** 44.46006016, -103.62011969  
**Survey Completed by:**  
**Stream Classification:** BR3

**Date Sampled:** 07/24/2014  
**Site Length (m):** 100  
**Mean Width (m):** 6.5  
**Number of Pass:** 3  
**Conductivity (umhos/cm):**  
**pH:**  
**Water Temperature (C):**  
**Voltage:** 200

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	15	4	10	6	3.26	16	260.0	239.0
Brown Trout	All	2	2	3	2	31	7	20	12	6.53	32	162.0	239.0
Mountain Sucker	All	329	340	349	331	5202	89	3400	2107	79.69	5471	106.8	17.2
White Sucker	All	1	1	2	1	15	2	10	6	2.08	16	228.0	152.0

**Site Number:** 515  
**Site Midpoint (Latitude, Longitude):** 44.41178603, -103.69411585  
**Survey Completed by:**  
**Stream Classification:** BR2, RB2

**Date Sampled:** 07/29/2014  
**Site Length (m):** 100  
**Mean Width (m):** 8.8  
**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	22	22	23	22	249	161	220	101	144.20	354	365.5	647.3
Brown Trout	All	26	26	28	26	295	191	260	119	170.41	418	319.4	647.3
Mountain Sucker	All	217	624	1204	217	7076	84	6240	2866	75.17	10040	93.9	11.9
Rainbow Trout	>=200mm	3	3	4	3	34	19	30	14	16.98	48	362.7	559.0

Rainbow Trout All 3 3 4 3 34 19 30 14 16.98 48 362.7 559.0

Site Number: 539

Site Midpoint (Latitude, Longitude): 44.39558878, -103.70337461

Survey Completed by:

Stream Classification: BR2, RB2

Date Sampled: 07/21/2014

Site Length (m): 100

Mean Width (m): 6.9

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	14	14	202	77	140	82	68.35	225	323.8	379.3
Brown Trout	All	20	21	25	20	303	115	210	123	102.53	338	245.8	379.3
Longnose Dace	All	52	81	130	52	1168	10	810	473	8.86	1303	66.9	8.5
Mountain Sucker	All	43	43	43	43	620	14	430	251	12.40	692	125.0	22.4
Rainbow Trout	>=200mm	1	1	1	1	14	5	10	6	4.11	16	310.0	319.0
Rainbow Trout	All	1	1	1	1	14	5	10	6	4.11	16	310.0	319.0

Site Number: 558

Site Midpoint (Latitude, Longitude): 44.38550441, -103.71870274

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1, RB2

Date Sampled: 07/28/2014

Site Length (m): 100

Mean Width (m): 6.7

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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)
Brown Trout	<200mm	15	15	17	15	224	15	150	91	13.14	241	120.3	65.7
Brown Trout	>=200mm	33	33	34	33	493	104	330	199	92.79	531	273.0	211.0
Brown Trout	All	48	48	50	48	716	133	480	290	118.71	772	225.3	185.6
Longnose Dace	All	25	27	32	25	403	6	270	163	5.16	434	80.5	14.3

Mountain Sucker	All	37	38	42	37	567	18	380	230	15.99	611	135.7	31.6
Rainbow Trout	>=200mm	1	1	1	1	15	6	10	6	5.46	16	355.0	410.0
Rainbow Trout	All	1	1	1	1	15	6	10	6	5.46	16	355.0	410.0

Site Number: 588

Site Midpoint (Latitude, Longitude): 44.36654564, -103.73424434

Survey Completed by:

Stream Classification: BR1

Date Sampled: 07/28/2014

Site Length (m): 100

Mean Width (m): 4.6

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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)
Brown Trout	<200mm	16	16	17	16	350	24	160	142	21.63	257	151.2	69.2
Brown Trout	>=200mm	43	43	44	43	940	197	430	381	175.64	692	264.0	209.2
Brown Trout	All	59	59	60	59	1290	228	590	523	203.56	949	233.4	176.7
Mountain Sucker	All	2	2	4	2	44	4	20	18	3.63	32	175.0	93.0

Site Number: 623

Site Midpoint (Latitude, Longitude): 44.34930091, -103.74750999

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2, BR1

Date Sampled: 07/22/2014

Site Length (m): 100

Mean Width (m): 6.6

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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	7	7	7	7	106	7	70	43	6.10	113	173.1	64.6
Brook Trout	>=200mm	20	20	20	20	302	52	200	122	46.64	322	245.6	172.9
Brook Trout	All	27	27	27	27	408	59	270	165	52.74	434	226.8	144.8
Brown Trout	<200mm	20	20	21	20	302	17	200	122	15.27	322	140.2	56.6

Brown Trout	>=200mm	17	27	58	17	408	63	270	165	56.53	434	241.5	155.2
Brown Trout	All	37	41	49	37	620	68	410	251	60.27	660	186.7	109.0

Site Number: 625

Site Midpoint (Latitude, Longitude): 44.34842796, -103.74949926

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK3, BR1

Date Sampled: 07/24/2014

Site Length (m): 100

Mean Width (m): 6.4

Number of Pass: 3

Conductivity (umhos/cm):

pH:

Water Temperature (C):

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	2	2	4	2	31	1	20	13	1.04	32	108.5	37.0
Brook Trout	>=200mm	1	1	2	1	16	1	10	6	1.22	16	200.0	87.0
Brook Trout	All	3	3	5	3	47	3	30	19	2.61	48	139.0	62.0
Brown Trout	<200mm	50	49	59	50	770	36	490	312	32.31	788	81.7	47.0
Brown Trout	>=200mm	25	25	27	25	393	58	250	159	51.93	402	231.2	148.0
Brown Trout	All	75	141	249	75	2216	260	1410	897	231.80	2269	131.5	117.2
Longnose Dace	All	10	9	14	10	141	3	90	57	2.37	145	91.6	18.8

Site Number: 628

Site Midpoint (Latitude, Longitude): 44.34916370, -103.75287279

Survey Completed by:

Stream Classification: BK0, BR1

Date Sampled: 07/22/2014

Site Length (m): 100

Mean Width (m): 5.2

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)
Brook Trout	<200mm	4	4	5	4	77	4	40	31	3.65	64	98.5	53.0
Brook Trout	All	4	4	5	4	77	4	40	31	3.65	64	98.5	53.0
Brown Trout	<200mm	64	74	88	64	1426	77	740	577	68.64	1191	104.4	53.9

Brown Trout	>=200mm	36	36	36	36	694	109	360	281	97.42	579	299.3	157.3
Brown Trout	All	100	104	110	100	2004	226	1040	811	202.17	1673	174.5	113.0

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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 Whitewood Creek, 2004-2014

**Site 383**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout >=200mm	Jul 24, 2014	1	1-2	BR3
Mountain Sucker	Jul 24, 2014	340	331-349	
White Sucker	Jul 24, 2014	1	1-2	

**Site 515**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 12, 2009	11	11-11	
Brown Trout >=200mm	Aug 12, 2009	17	17-17	BR2
	Jul 29, 2014	22	22-23	BR2

Longnose Dace	May 03, 2005	365	366-396	
Mountain Sucker	May 03, 2005	4	5-7	
	Aug 12, 2009	91	91-91	
	Jul 29, 2014	624	217-1204	
Rainbow Trout >=200mm	Jul 29, 2014	3	3-4	RB2

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**Site 539**

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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	Jul 11, 2013	1	1-1	BK3
Brown Trout <200mm	May 03, 2005	3	3-4	
	Sep 27, 2005	31	31-32	
	Jul 11, 2013	2	2-4	
Brown Trout >=200mm	May 03, 2005	16	16-16	BR2
	Sep 27, 2005	13	13-14	BR2
	Aug 12, 2009	15	15-15	BR2
	Jul 11, 2013	32	31-36	BR1
	Jul 21, 2014	14	14-14	BR2

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Longnose Dace	May 03, 2005	283	284-305	
	Sep 27, 2005	51	51-51	
	Jul 21, 2014	81	52-130	
Mountain Sucker	May 03, 2005	59	47-78	
	Sep 27, 2005	45	45-46	
	Aug 12, 2009	91	91-91	
	Jul 11, 2013	108	71-160	
	Jul 21, 2014	43	43-43	
Rainbow Trout >=200mm	Aug 12, 2009	2	2-2	RB2
	Jul 21, 2014	1	1-1	RB2

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**Site 558**


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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 27, 2005	1	1-1	
Brown Trout <200mm	May 04, 2005	5	5-5	
	Sep 27, 2005	174	168-181	
	Jul 16, 2008	4	4-4	

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Brown Trout <200mm	Jul 12, 2013	43	42-46	
	Jul 28, 2014	15	15-17	
Brown Trout >=200mm	May 04, 2005	15	15-15	BR2
	Sep 27, 2005	21	21-21	BR1
	Jul 16, 2008	12	12-12	BR2
	Jul 12, 2013	55	55-56	BR1
	Jul 28, 2014	33	33-34	BR1
Longnose Dace	May 04, 2005	39	40-50	
	Sep 27, 2005	41	38-48	
	Jul 28, 2014	27	25-32	
Mountain Sucker	May 04, 2005	15	16-20	
	Sep 27, 2005	19	19-20	
	Jul 16, 2008	7	7-7	
	Jul 12, 2013	14	13-19	
	Jul 28, 2014	38	37-42	
Rainbow Trout >=200mm	Jul 16, 2008	3	3-3	RB2

Rainbow Trout >=200mm	Jul 28, 2014	1	1-1	RB2
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**Site 588**


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Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout >=200mm	Sep 01, 2011	1	1-1	BK3
Brown Trout <200mm	Jul 15, 2008	7	7-7	
	Sep 01, 2011	64	59-72	
	Aug 27, 2013	31	31-32	
	Jul 28, 2014	16	16-17	
Brown Trout >=200mm	Jul 15, 2008	33	33-33	BR1
	Sep 01, 2011	22	15-44	BR3
	Aug 27, 2013	44	42-49	BR1
	Jul 28, 2014	43	43-44	BR1
Longnose Dace	Sep 01, 2011	3	3-5	
	Aug 27, 2013	1	1-2	
Mountain Sucker	Aug 27, 2013	2	2-4	
	Jul 28, 2014	2	2-4	

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**Site 623**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 22, 2014	7	7-7	
Brook Trout >=200mm	Jul 22, 2014	20	20-20	BK2
Brown Trout <200mm	Jul 22, 2014	20	20-21	
Brown Trout >=200mm	Jul 22, 2014	27	17-58	BR1

**Site 625**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Jul 24, 2014	2	2-4	
Brook Trout >=200mm	Jul 24, 2014	1	1-2	BK3
Brown Trout <200mm	Jul 24, 2014	49	50-59	
Brown Trout >=200mm	Jul 24, 2014	25	25-27	BR1
Longnose Dace	Jul 24, 2014	9	10-14	

**Site 628**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 17, 2009	12	12-12	
	Jul 22, 2014	4	4-5	
Brown Trout <200mm	Aug 17, 2009	58	58-58	

Brown Trout <200mm	Jul 22, 2014	74	64-88	
Brown Trout >=200mm	Aug 17, 2009	34	34-34	BR1
	Jul 22, 2014	36	36-36	BR1

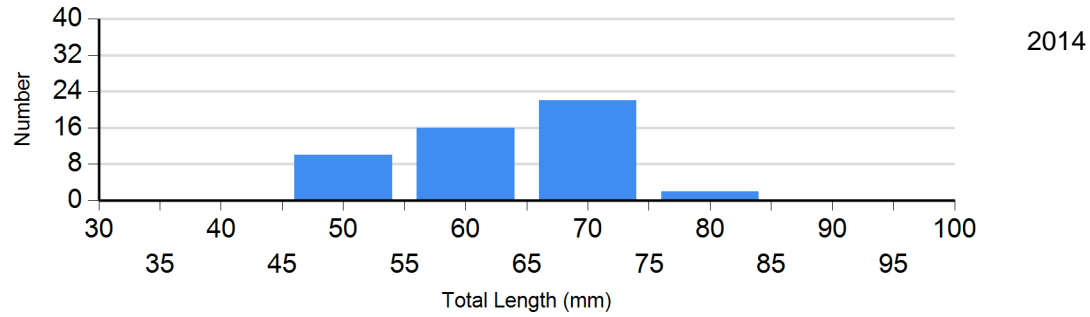
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## Length Frequency Distribution

Length frequency histogram of species sampled by year.

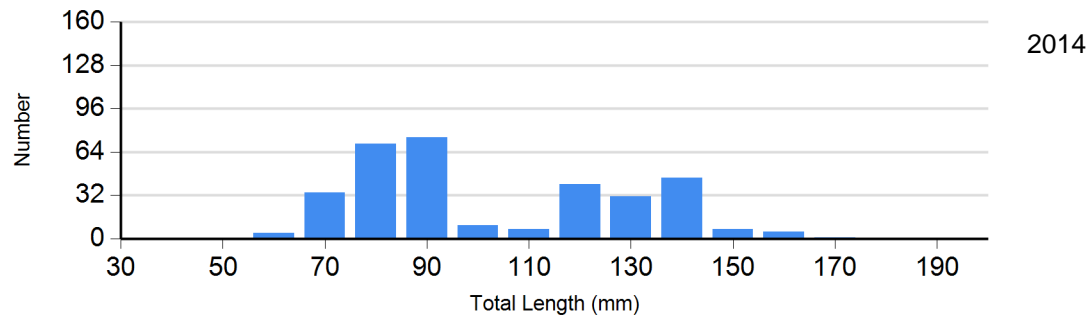
**Site:** 383

**Species:** Longnose Dace



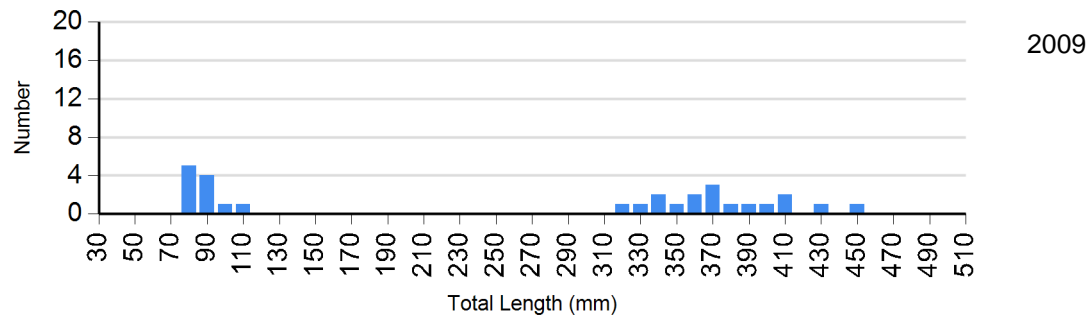
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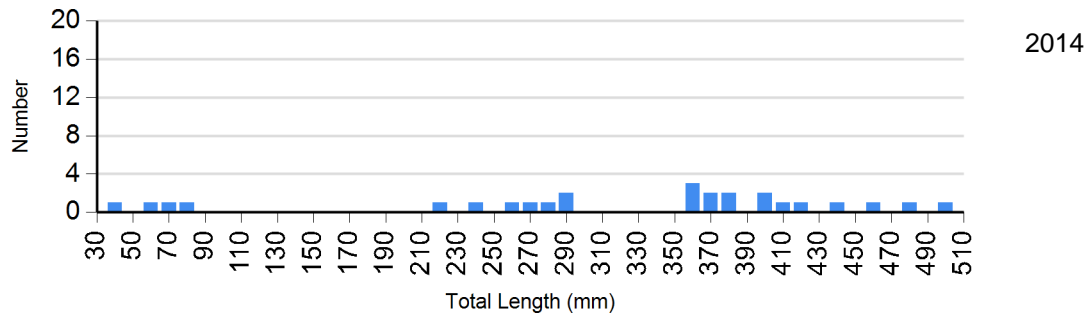
**Species:** Mountain Sucker



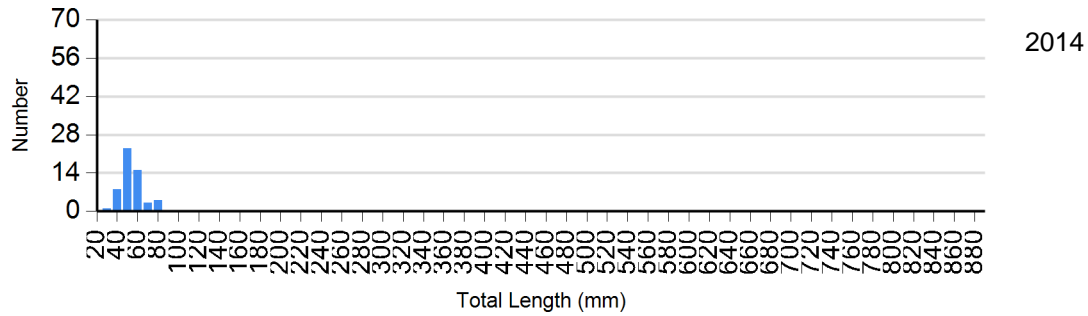
**Site:** 515

**Species:** Brown Trout

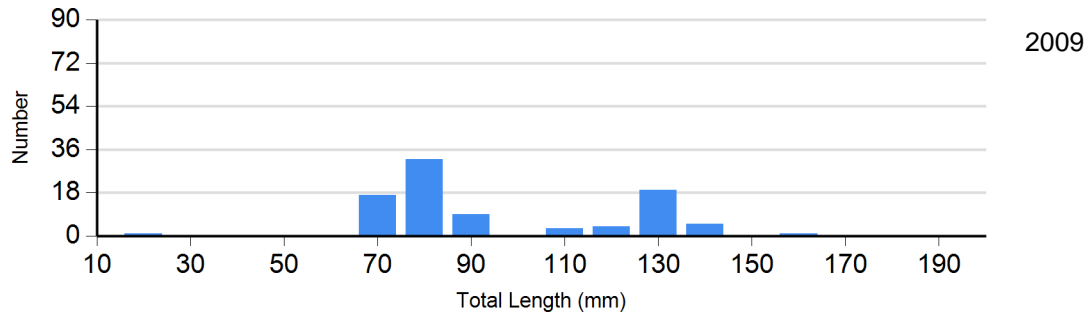


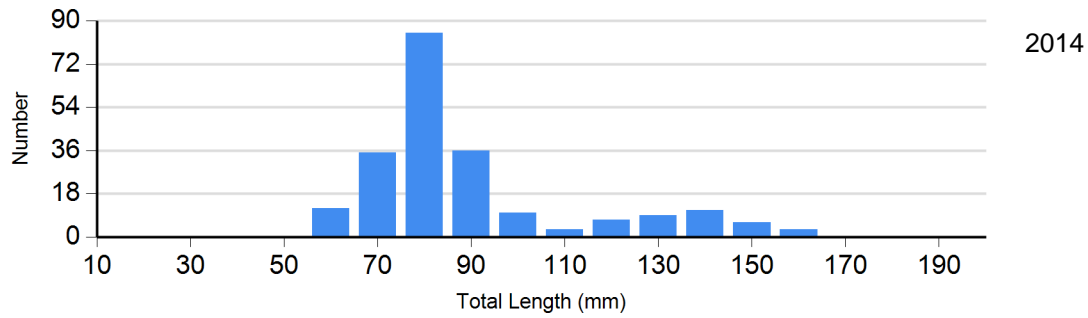


**Site:** 515  
**Species:** Longnose Dace

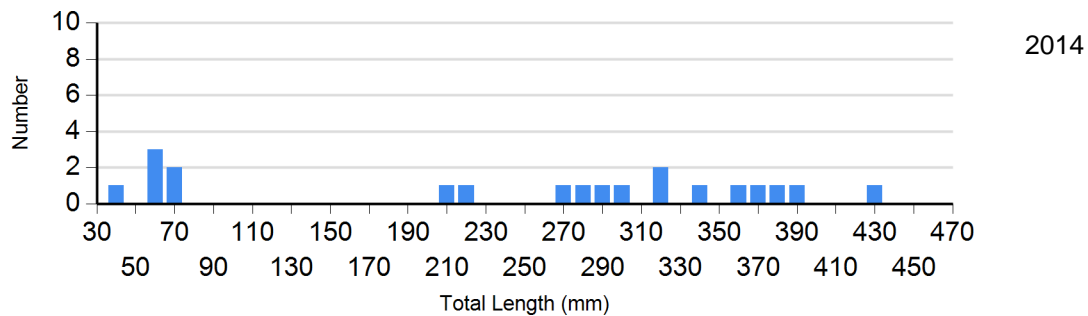
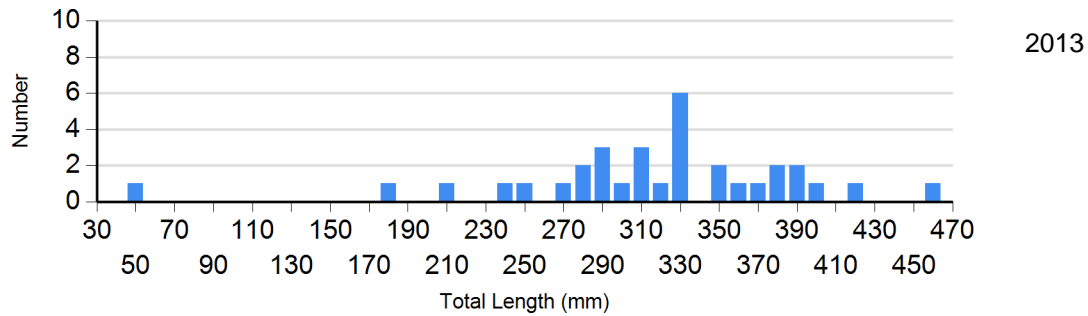
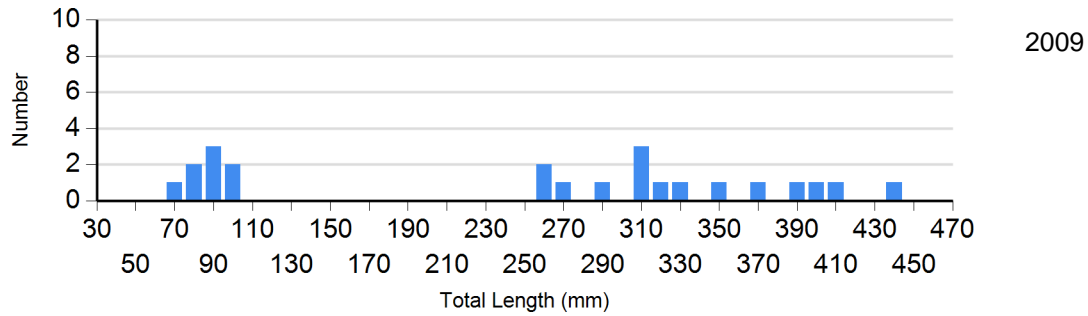


**Site:** 515  
**Species:** Mountain Sucker

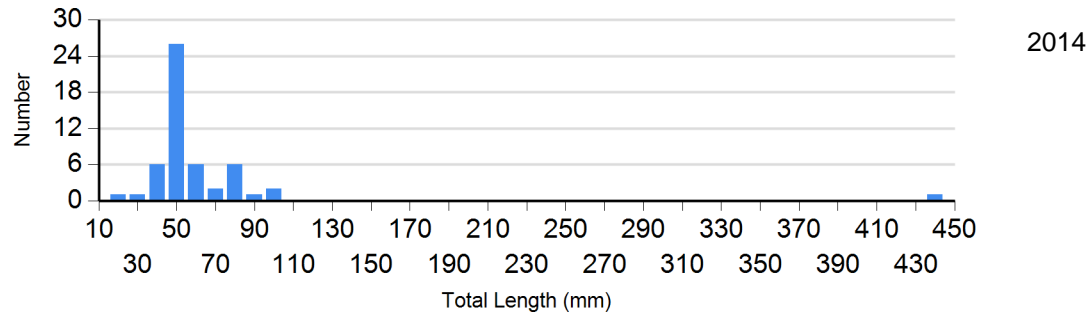




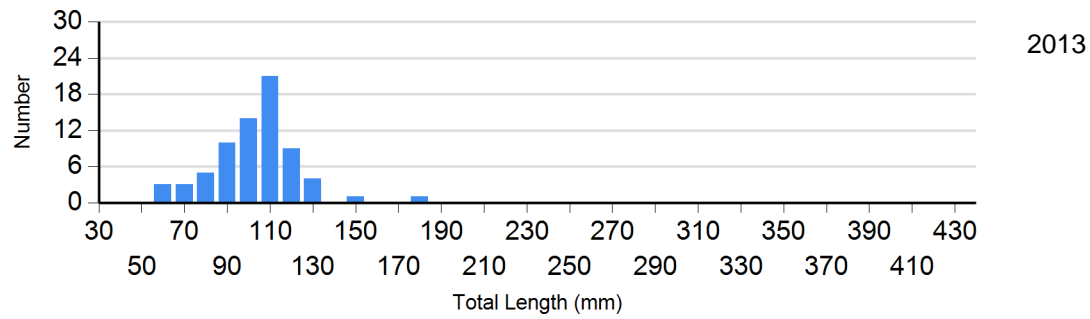
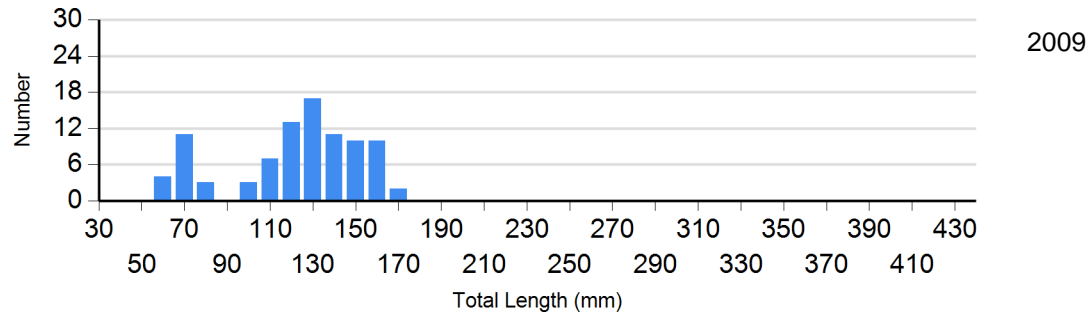
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Species: Brown Trout



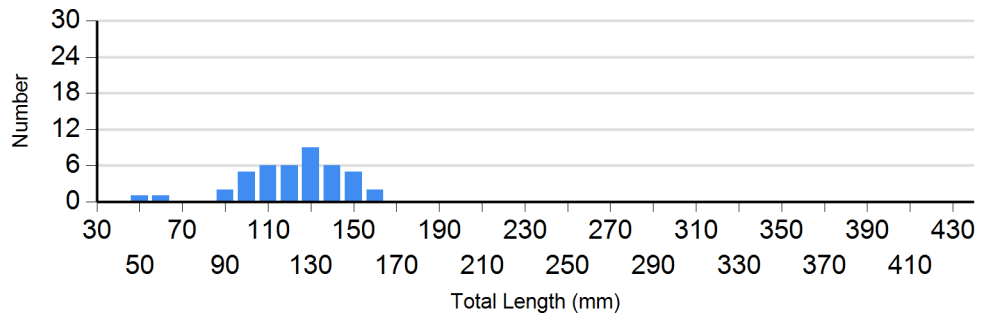
**Site:** 539  
**Species:** Longnose Dace



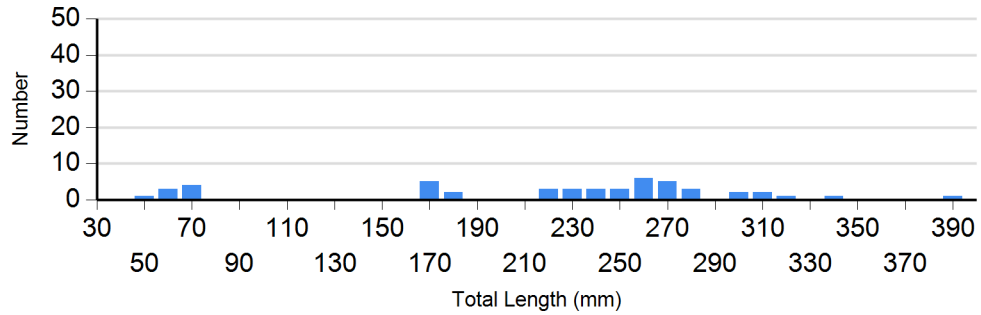
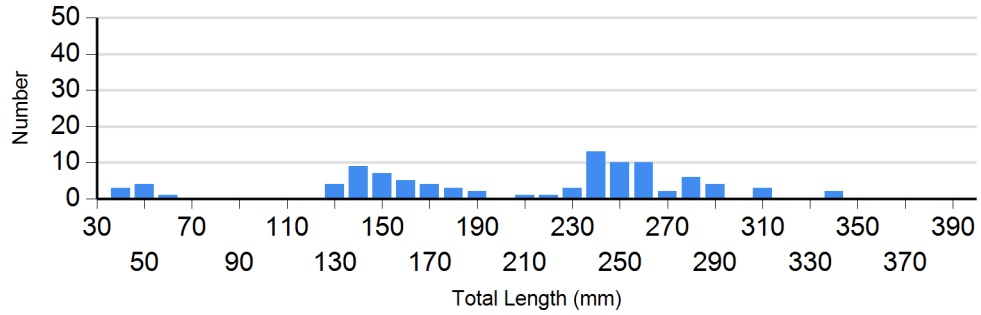
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**Species:** Mountain Sucker



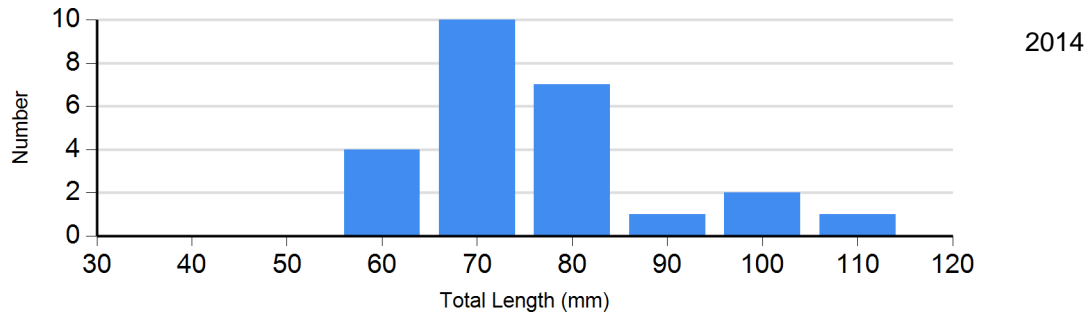
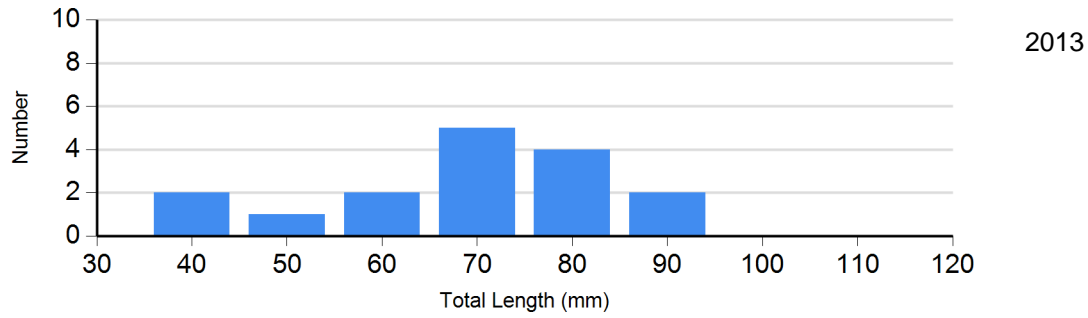




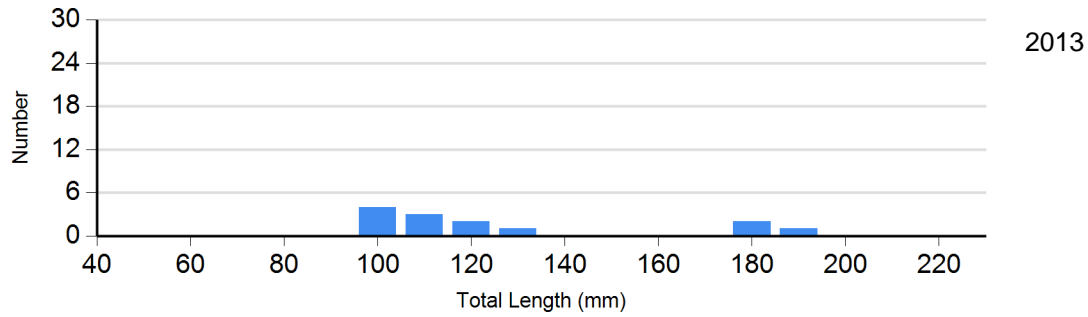
Site: 558  
Species: Brown Trout

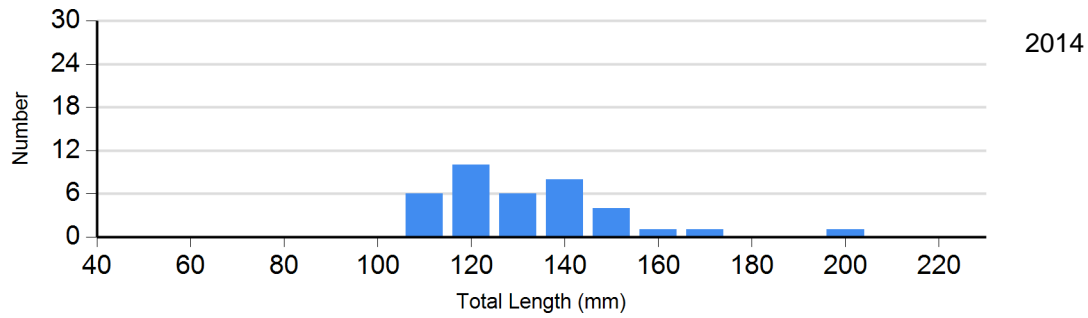


**Site:** 558  
**Species:** Longnose Dace

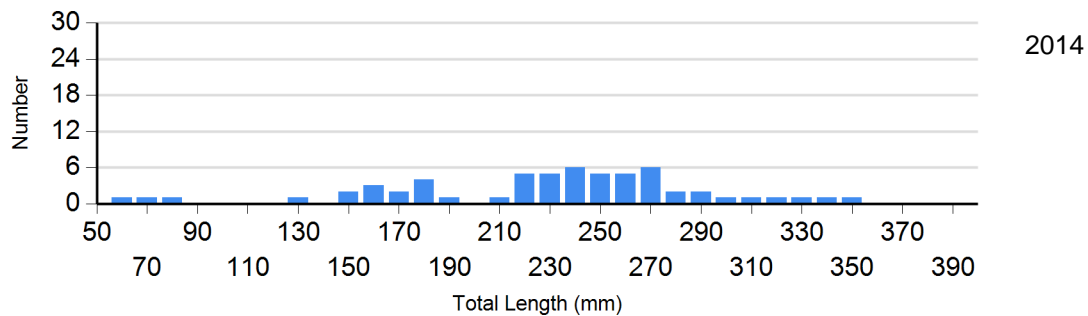
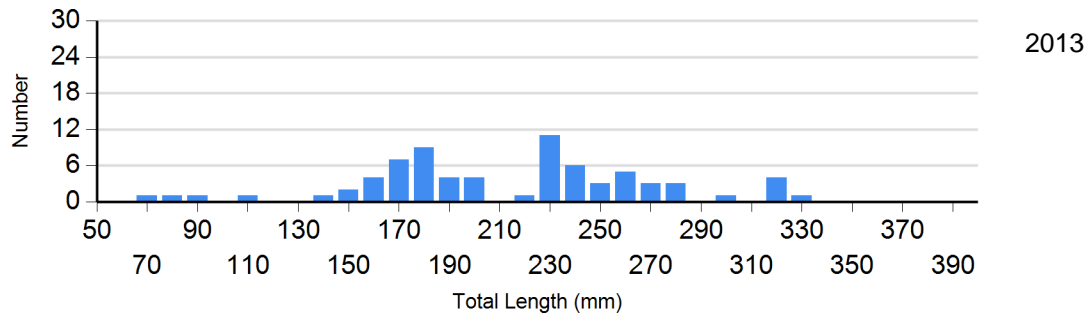
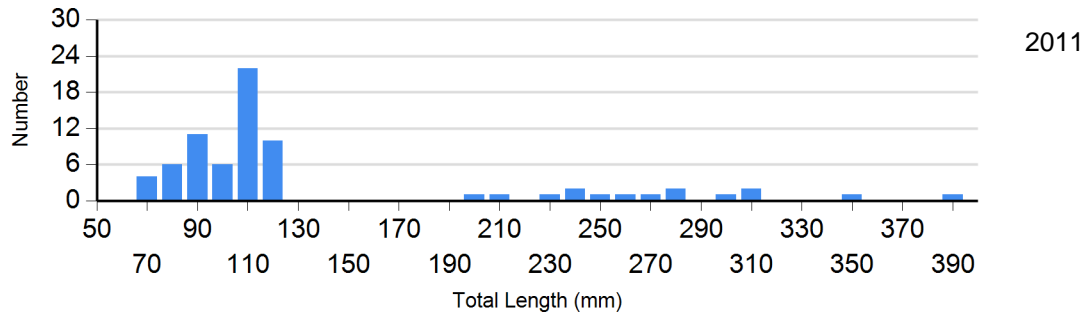


**Site:** 558  
**Species:** Mountain Sucker

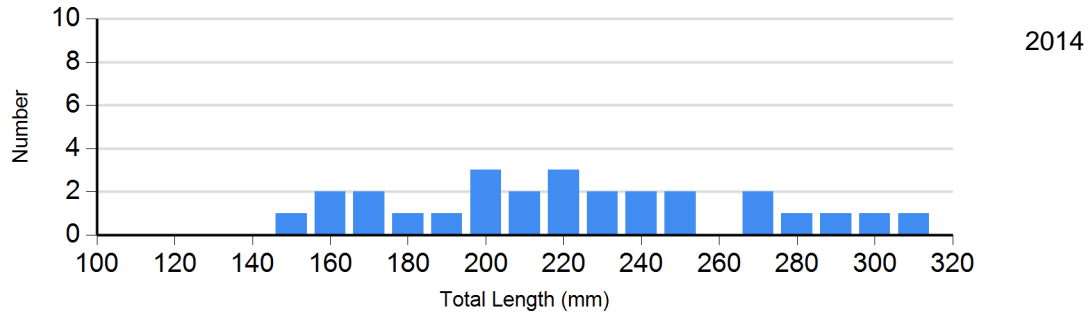




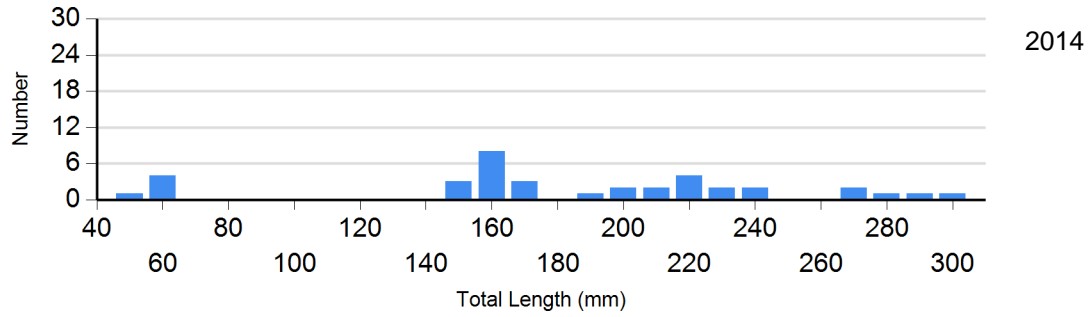
Site: 588  
Species: Brown Trout



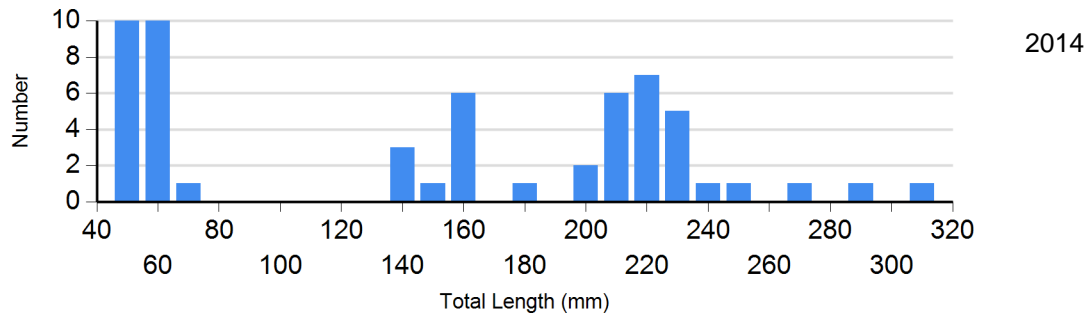
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**Species:** Brook Trout



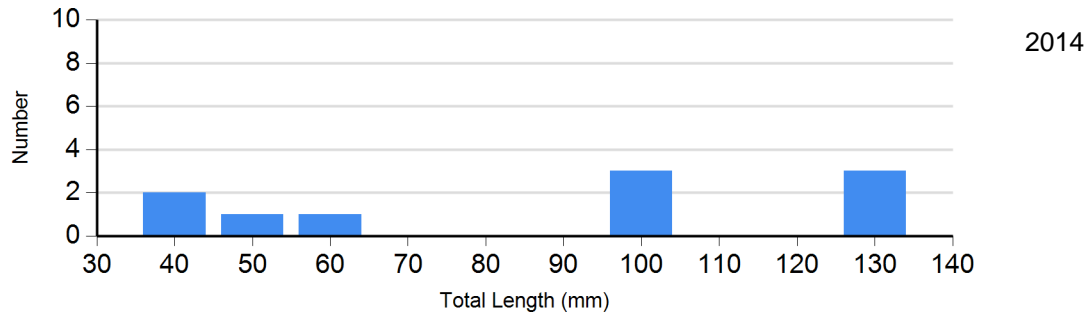
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**Species:** Brown Trout



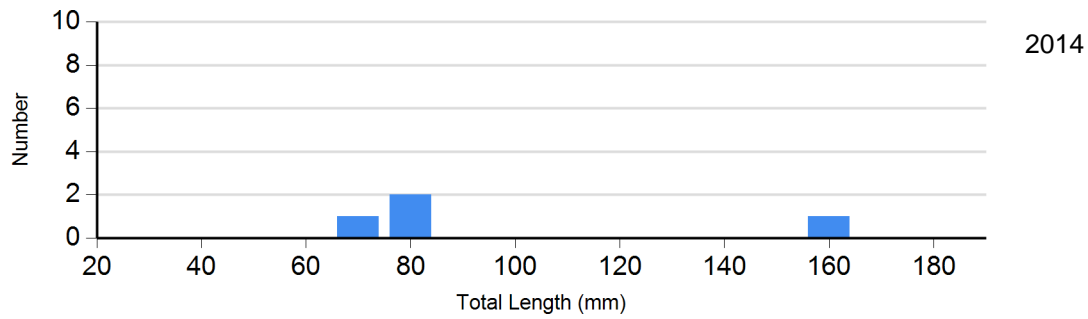
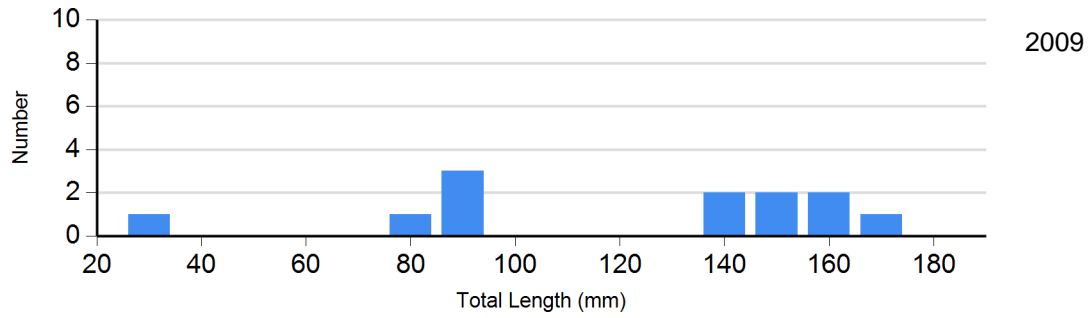
**Site:** 625  
**Species:** Brown Trout



**Site:** 625  
**Species:** Longnose Dace



**Site:** 628  
**Species:** Brook Trout



Site: 628  
Species: Brown Trout

