

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Rapid Creek, Pennington County**  
**02-0062-00**  
**1991**

Table 1. Population and Biomass Estimates for Rapid Creek

**Site Number:** 1412  
**Site Midpoint (Latitude, Longitude):** 44.07907606, -103.25491933  
**Survey Completed by:** South Dakota Game, Fish and Parks  
**Stream Classification:** BR3

**Date Sampled:** 10/22/1991  
**Site Length (m):** 100  
**Mean Width (m):** 0.0  
**Number of Pass:** 2  
**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	74	176	403	74	0	0	1760	0	0.00	2832	130.8	30.3
Brown Trout	>=200mm	108	123	140	108	0	0	1230	0	0.00	1979	252.9	191.8
Brown Trout	All	182	244	299	189	0	0	2440	0	0.00	3926	203.2	137.1
Longnose Dace	All	6	5	8	6	0	0	50	0	0.00	80	83.3	8.0
Mountain Sucker	All	6	6	8	6	0	0	60	0	0.00	97	180.0	82.6
White Sucker	All	61	73	91	61	0	0	730	0	0.00	1175	278.5	305.2

**Site Number:** 1656  
**Site Midpoint (Latitude, Longitude):** 44.05452135, -103.40589571  
**Survey Completed by:** South Dakota Game, Fish and Parks  
**Stream Classification:** BR3

**Date Sampled:** 03/25/1991  
**Site Length (m):** 100  
**Mean Width (m):** 0.0  
**Number of Pass:** 2  
**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	232	264	289	239	0	0	2640	0	0.00	4248	133.4	34.9
Brown Trout	>=200mm	68	70	74	68	0	0	700	0	0.00	1126	224.6	126.0

Brown Trout All 300 331 353 309 0 0 3310 0 0.00 5326 154.0 75.4

**Site Number:** 1656  
**Site Midpoint (Latitude, Longitude):** 44.05452135, -103.40589571  
**Survey Completed by:** South Dakota Game, Fish and Parks  
**Stream Classification:** BR3

**Date Sampled:** 10/17/1991  
**Site Length (m):** 100  
**Mean Width (m):** 0.0  
**Number of Pass:** 2  
**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	194	237	273	201	0	0	2370	0	0.00	3813	119.0	34.0
Brown Trout	>=200mm	85	89	96	85	0	0	890	0	0.00	1432	228.0	125.7
Brown Trout	All	279	320	349	291	0	0	3200	0	0.00	5149	152.2	84.8

**Site Number:** 1833  
**Site Midpoint (Latitude, Longitude):** 44.07611720, -103.47551527  
**Survey Completed by:** South Dakota Game, Fish and Parks  
**Stream Classification:** BR3

**Date Sampled:** 10/17/1991  
**Site Length (m):** 100  
**Mean Width (m):** 0.0  
**Number of Pass:** 2  
**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	98	174	286	98	0	0	1740	0	0.00	2800	108.0	26.1
Brown Trout	>=200mm	41	43	48	41	0	0	430	0	0.00	692	253.7	192.2
Brown Trout	All	139	192	246	139	0	0	1920	0	0.00	3089	150.9	93.5

**Site Number:** 1843  
**Site Midpoint (Latitude, Longitude):** 44.07203156, -103.47488319  
**Survey Completed by:** South Dakota Game, Fish and Parks  
**Stream Classification:** BR3

**Date Sampled:** 09/30/1991  
**Site Length (m):** 100  
**Mean Width (m):** 0.0  
**Number of Pass:** 2  
**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	114	141	171	114	0	0	1410	0	0.00	2269	133.5	35.3
Brown Trout	>=200mm	27	27	28	27	0	0	270	0	0.00	434	238.5	137.8
Brown Trout	All	141	161	181	141	0	0	1610	0	0.00	2590	153.6	55.6

Site Number: 1936

Site Midpoint (Latitude, Longitude): 44.08412803, -103.56026979

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR3

Date Sampled: 09/30/1991

Site Length (m): 100

Mean Width (m): 0.0

Number of Pass: 2

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	114	141	171	114	0	0	1410	0	0.00	2269	133.5	35.3
Brown Trout	>=200mm	27	27	28	27	0	0	270	0	0.00	434	238.5	137.8
Brown Trout	All	141	161	181	141	0	0	1610	0	0.00	2590	153.6	55.6
Splake Trout	<200mm	9	9	10	9	0	0	90	0	0.00	145	132.2	33.0
Splake Trout	All	9	9	10	9	0	0	90	0	0.00	145	132.2	33.0

Site Number: 1952

Site Midpoint (Latitude, Longitude): 44.08822830, -103.57398811

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR3, RB2

Date Sampled: 09/30/1991

Site Length (m): 100

Mean Width (m): 0.0

Number of Pass: 2

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	65	92	134	65	0	0	920	0	0.00	1480	132.2	29.7
Brown Trout	>=200mm	21	21	22	21	0	0	210	0	0.00	338	251.0	218.3

Brown Trout	All	86	105	129	86	0	0	1050	0	0.00	1689	161.2	75.8
Cutthroat Trout	>=200mm	1	1	1	1	0	0	10	0	0.00	16	260.0	142.0
Cutthroat Trout	All	1	1	1	1	0	0	10	0	0.00	16	260.0	142.0
Rainbow Trout	<200mm	1	1	4	1	0	0	10	0	0.00	16	140.0	32.0
Rainbow Trout	>=200mm	1	1	1	1	0	0	10	0	0.00	16	280.0	291.0
Rainbow Trout	All	2	2	4	2	0	0	20	0	0.00	32	210.0	161.5
Splake Trout	<200mm	1	1	4	1	0	0	10	0	0.00	16	140.0	28.0
Splake Trout	All	1	1	4	1	0	0	10	0	0.00	16	140.0	28.0

**Site Number:** 2007

**Site Midpoint (Latitude, Longitude):** 44.08387011, -103.60810831

**Survey Completed by:** South Dakota Game, Fish and Parks

**Stream Classification:** BR3

**Date Sampled:** 10/11/1991

**Site Length (m):** 100

**Mean Width (m):** 0.0

**Number of Pass:** 2

**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	119	164	214	119	0	0	1640	0	0.00	2639	133.4	32.6
Brown Trout	>=200mm	48	60	81	48	0	0	600	0	0.00	965	251.0	196.0
Brown Trout	All	167	228	285	171	0	0	2280	0	0.00	3669	167.2	80.4

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 Rapid Creek, 1981-1991

**Site 1412**

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 06, 1988	195	172-218	
	Oct 10, 1990	87	76-102	
	Oct 22, 1991	176	74-403	
Brown Trout >=200mm	Oct 06, 1988	140	136-146	BR3
	Oct 10, 1990	176	175-179	BR3
	Oct 22, 1991	123	108-140	BR3
Longnose Dace	Oct 22, 1991	5	6-8	

Mountain Sucker	Oct 06, 1988	19	18-23
	Oct 22, 1991	6	6-8
Rainbow Trout <200mm	Oct 06, 1988	2	2-4
White Sucker	Oct 06, 1988	36	36-37
	Oct 22, 1991	73	61-91

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**Site 1656**


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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	Sep 10, 1990	367	343-391	
	Mar 25, 1991	264	239-289	
	Oct 17, 1991	237	201-273	
Brown Trout >=200mm	Sep 10, 1990	74	73-77	BR3
	Mar 25, 1991	70	68-74	BR3
	Oct 17, 1991	89	85-96	BR3

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**Site 1833**


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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 07, 1988	116	86-155	
	Aug 03, 1990	90	85-98	

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Brown Trout <200mm	Oct 17, 1991	174	98-286	
Brown Trout >=200mm	Oct 07, 1988	59	56-65	BR3
	Aug 03, 1990	40	39-43	BR3
	Oct 17, 1991	43	41-48	BR3

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**Site 1843**


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Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 07, 1988	28	28-28	
	Aug 03, 1990	23	22-27	
	Sep 30, 1991	141	114-171	
Brown Trout >=200mm	Oct 07, 1988	28	28-28	BR3
	Aug 03, 1990	24	17-46	BR3
	Sep 30, 1991	27	27-28	BR3

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**Site 1936**


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Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 30, 1991	141	114-171	
Brown Trout >=200mm	Sep 30, 1991	27	27-28	BR3
Splake Trout <200mm	Sep 30, 1991	9	9-10	

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**Site 1952**

<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brown Trout <200mm	Aug 02, 1990	65	65-65	
	Sep 30, 1991	92	65-134	
Brown Trout >=200mm	Aug 02, 1990	11	11-11	BR3
	Sep 30, 1991	21	21-22	BR3
Cutthroat Trout >=200mm	Aug 02, 1990	1	1-1	
	Sep 30, 1991	1	1-1	
Rainbow Trout <200mm	Sep 30, 1991	1	1-4	
Rainbow Trout >=200mm	Sep 30, 1991	1	1-1	RB2
Splake Trout <200mm	Sep 30, 1991	1	1-4	

**Site 2007**

<b>Species/Size</b>	<b>Date</b>	<b>Pop Est.</b>	<b>(95% C.I.)</b>	<b>Stream Classification</b>
Brown Trout <200mm	Aug 02, 1990	180	150-210	
	Oct 11, 1991	164	119-214	
Brown Trout >=200mm	Aug 02, 1990	37	37-39	BR3
	Oct 11, 1991	60	48-81	BR3



Cutthroat Trout <200mm	Aug 02, 1990	1	1-4
Cutthroat Trout >=200mm	Aug 02, 1990	3	3-3

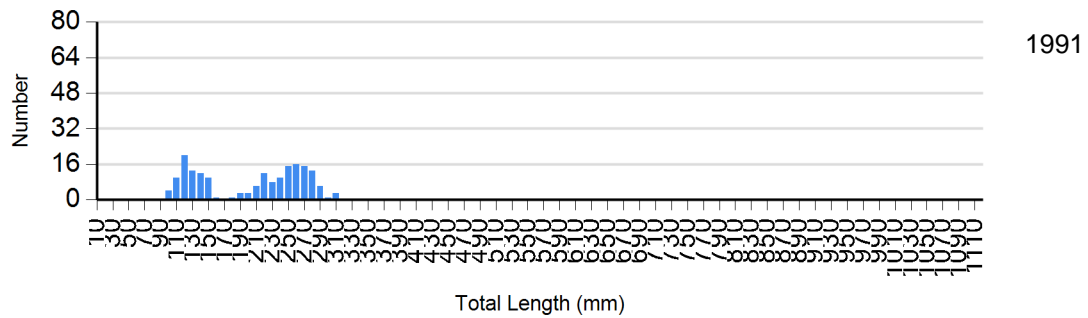
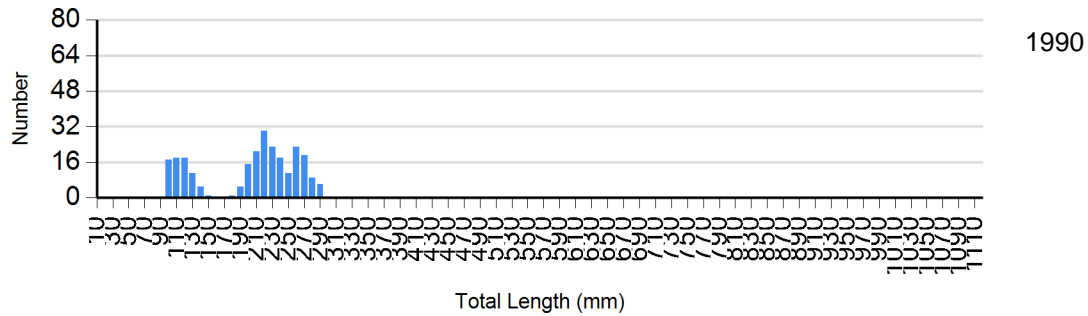
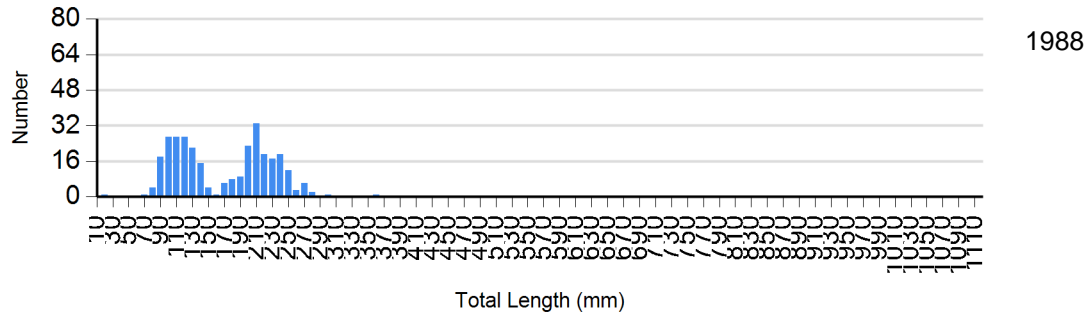
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## Length Frequency Distribution

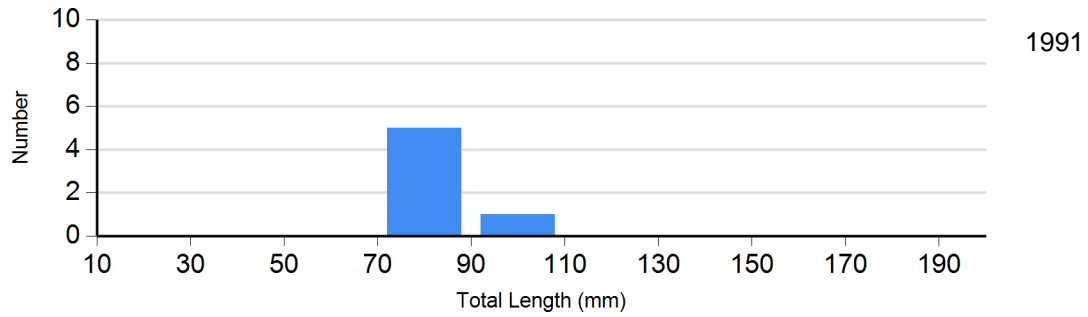
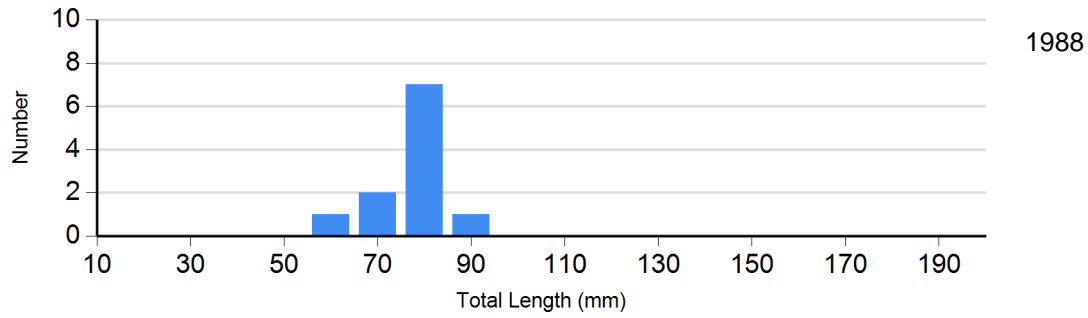
Length frequency histogram of species sampled by year.

Site: 1412

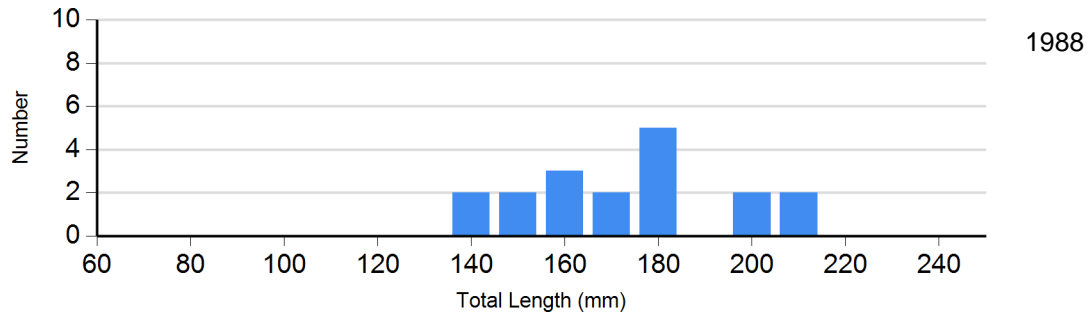
Species: Brown Trout

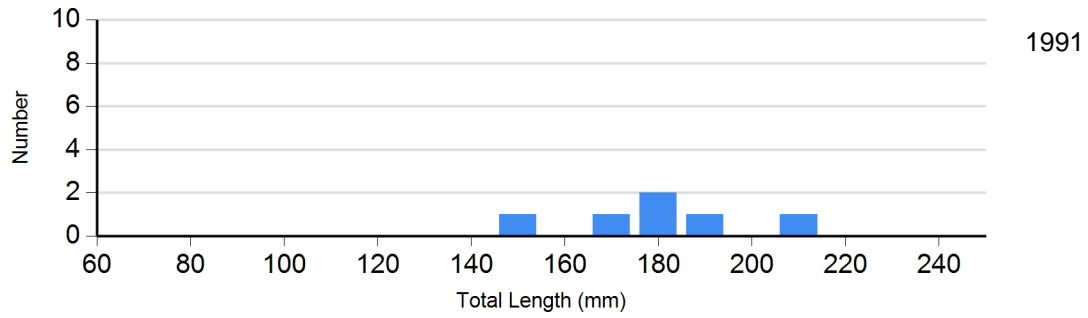
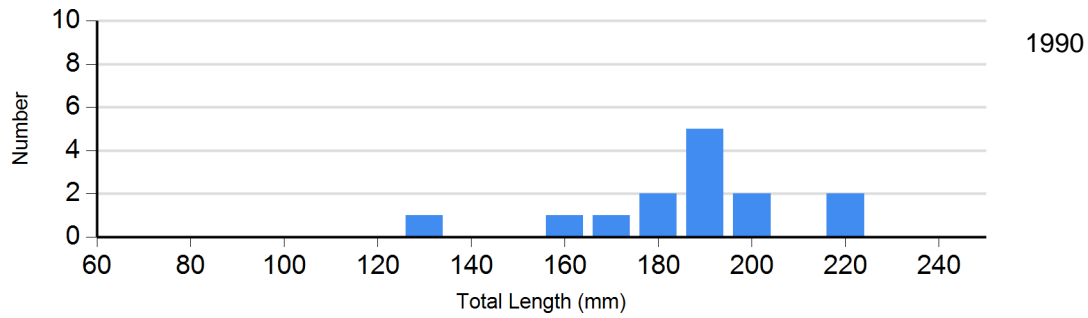


**Site:** 1412  
**Species:** Longnose Dace

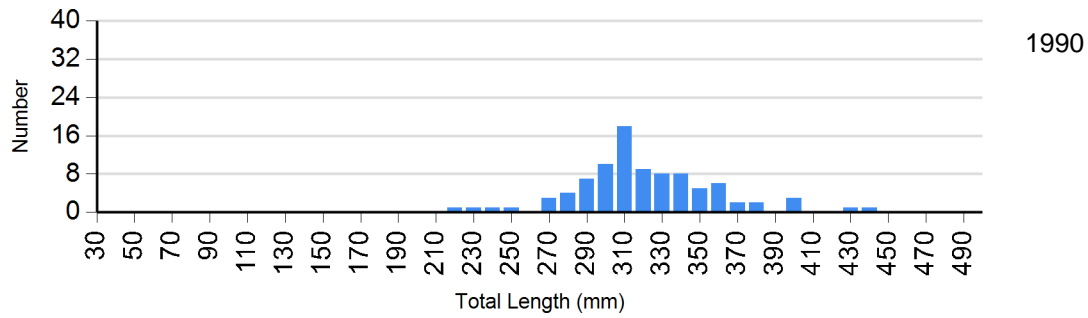
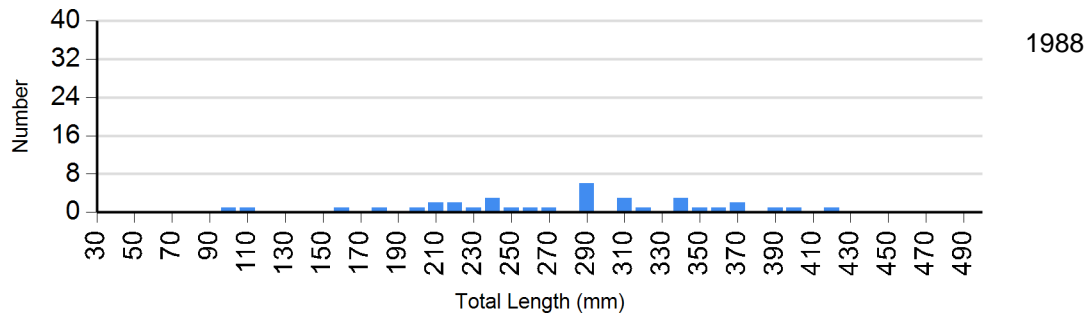


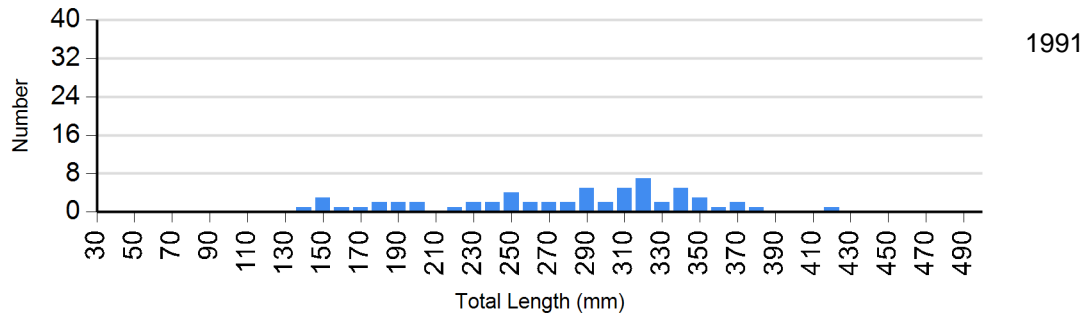
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**Species:** Mountain Sucker



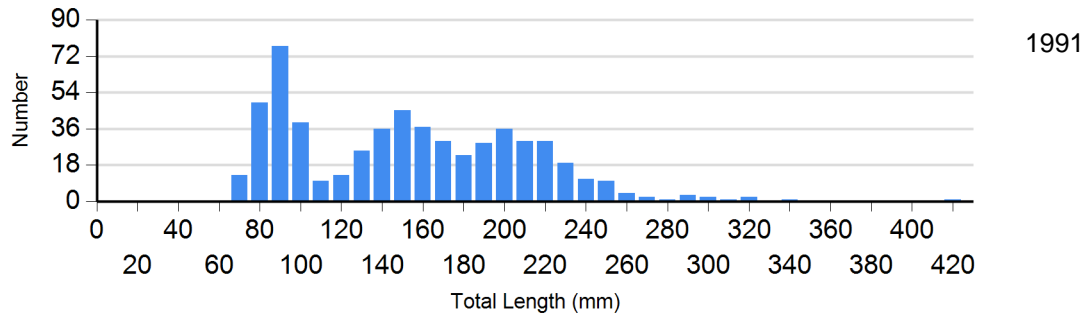
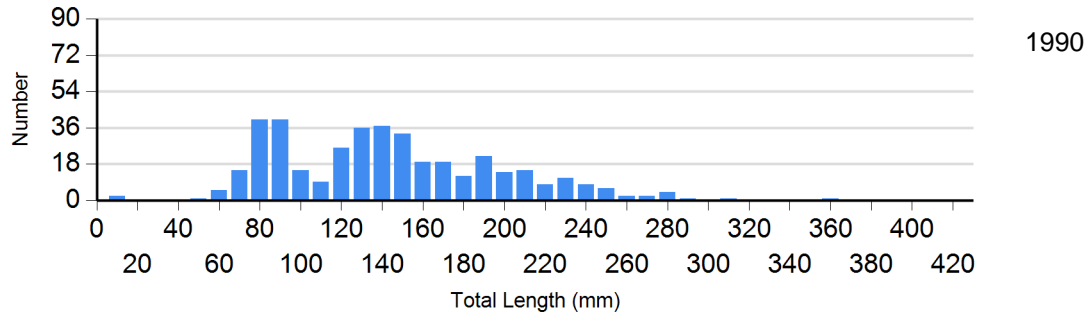


**Site:** 1412  
**Species:** White Sucker

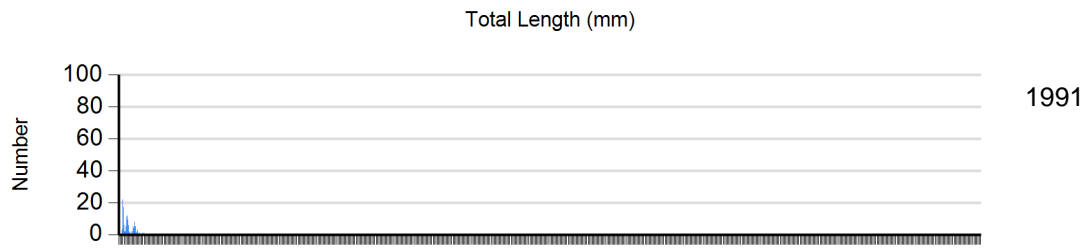
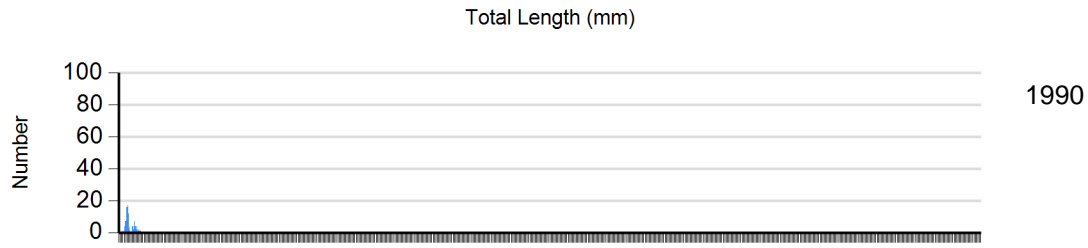
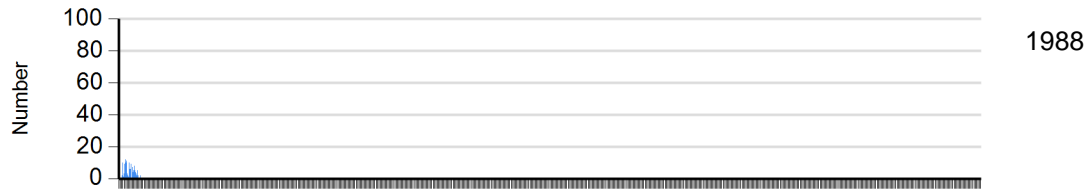




Site: 1656  
Species: Brown Trout

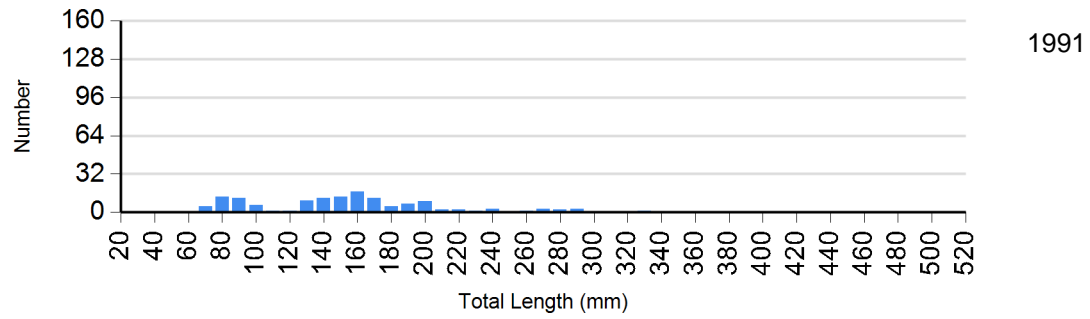
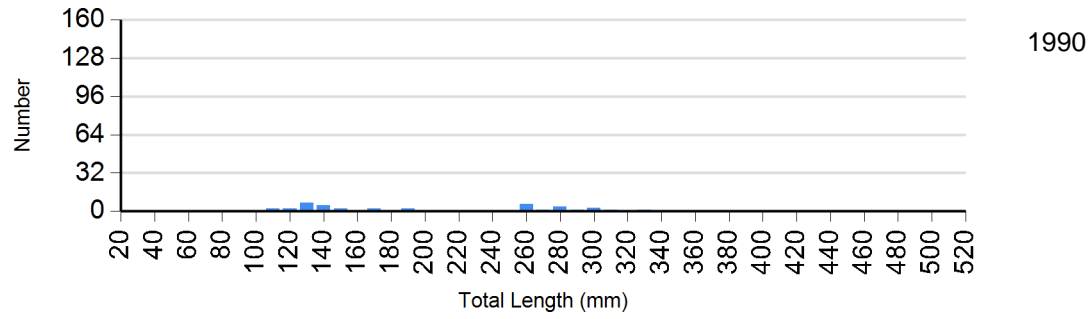
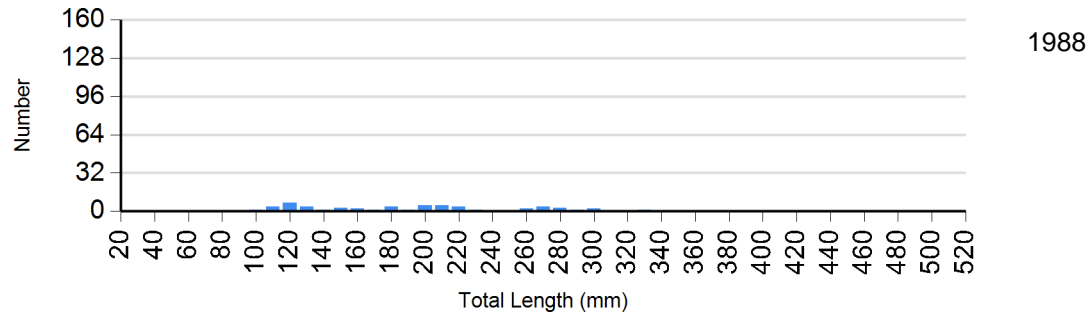


Site: 1833  
Species: Brown Trout

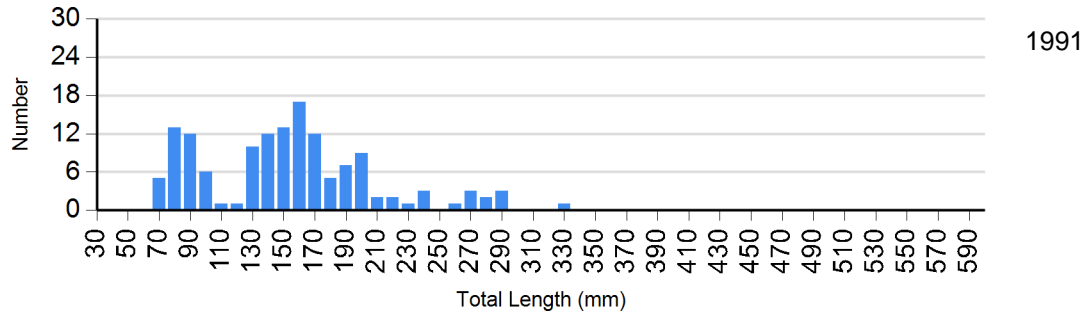


Total Length (mm)

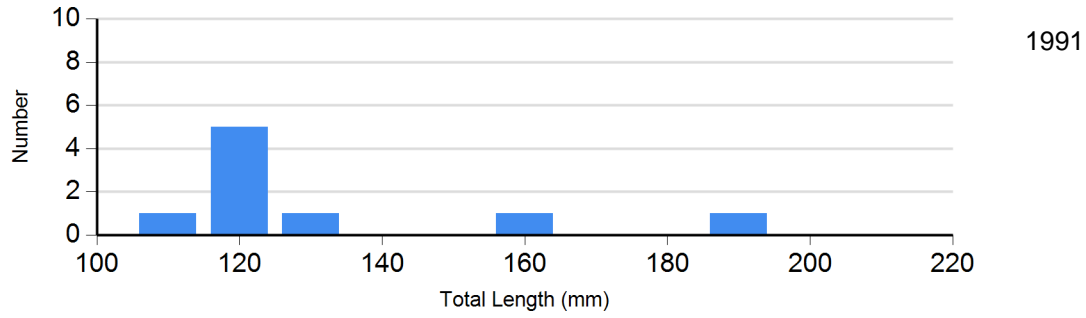
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Species: Brown Trout



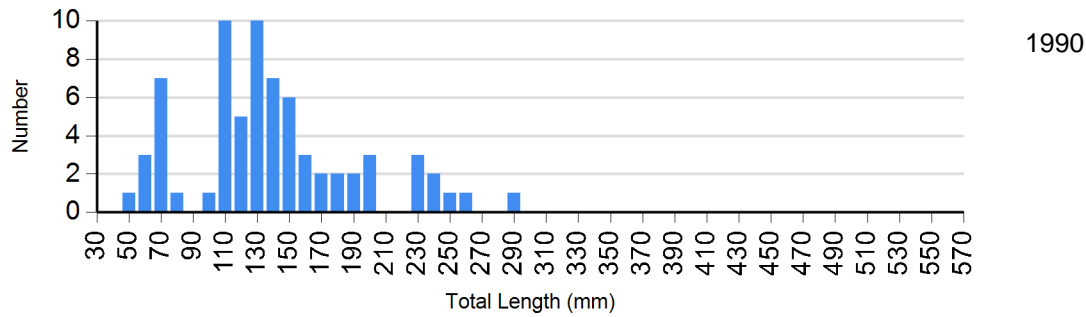
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**Species:** Brown Trout



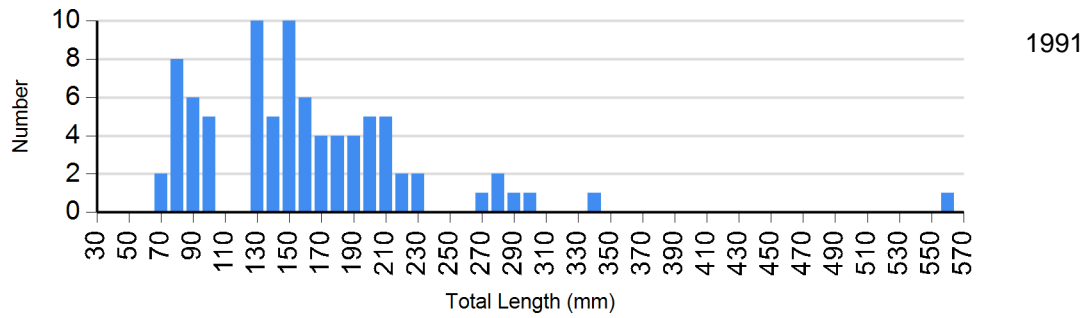
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**Species:** Splake Trout



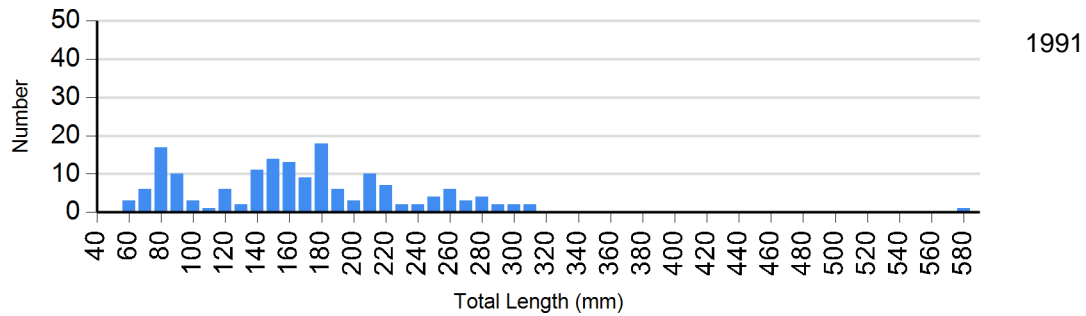
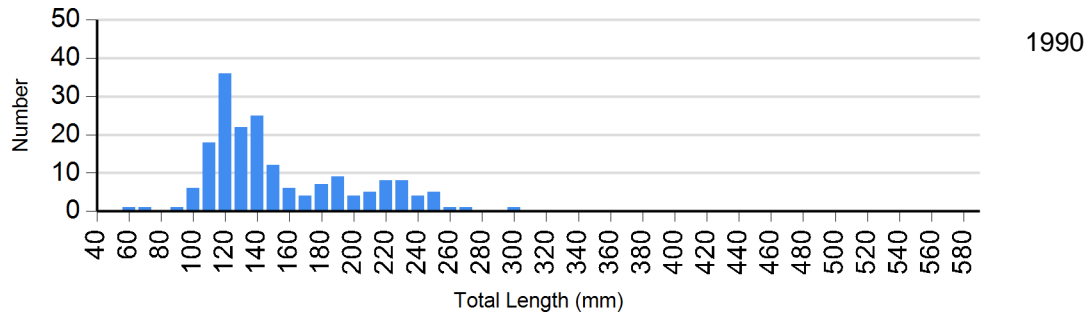
**Site:** 1952  
**Species:** Brown Trout







Site: 2007  
Species: Brown Trout



Site: 2007  
Species: Cutthroat Trout

