

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
1991

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 25	Date Sampled: 09/27/1991	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.58977763, -103.88641571	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 0.0	Water Temperature (C):
Stream Classification: BR3	Number of Pass: 2	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	175	181	188	175	0	0	1810	0	0.00	2912	128.6	53.4
Brown Trout	>=200mm	72	72	74	72	0	0	720	0	0.00	1158	226.8	149.9
Brown Trout	All	247	253	260	247	0	0	2530	0	0.00	4071	157.2	104.1

Site Number: 174	Date Sampled: 09/24/1991	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.50196266, -103.86743501	Site Length (m): 100	pH:
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 0.0	Water Temperature (C):
Stream Classification: BR3	Number of Pass: 2	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	78	97	65	0	0	780	0	0.00	1255	118.6	27.9
Brown Trout	>=200mm	60	84	122	60	0	0	840	0	0.00	1352	262.2	211.8
Brown Trout	All	125	164	205	125	0	0	1640	0	0.00	2639	187.5	116.1

Site Number: 190	Date Sampled: 09/24/1991	Conductivity (umhos/cm):
Site Midpoint (Latitude, Longitude): 44.48929462, -103.86435821	Site Length (m): 100	pH:

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 0.0

Water Temperature (C):

Stream Classification: BR3

Number of Pass: 2

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	70	75	83	70	0	0	750	0	0.00	1207	154.7	46.9
Brown Trout	>=200mm	204	220	235	205	0	0	2200	0	0.00	3540	246.2	176.9
Brown Trout	All	274	297	315	279	0	0	2970	0	0.00	4779	222.8	151.7

Site Number: 205

Date Sampled: 09/24/1991

Conductivity (umhos/cm):

Site Midpoint (Latitude, Longitude): 44.47880965, -103.85669154

Site Length (m): 100

pH:

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 0.0

Water Temperature (C):

Stream Classification: BR3, RB2

Number of Pass: 2

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	61	65	72	61	0	0	650	0	0.00	1046	149.2	46.7
Brown Trout	>=200mm	132	175	219	132	0	0	1750	0	0.00	2816	267.0	241.3
Brown Trout	All	193	236	272	200	0	0	2360	0	0.00	3797	229.8	176.9
Rainbow Trout	>=200mm	11	11	12	11	0	0	110	0	0.00	177	290.0	290.7
Rainbow Trout	All	11	11	12	11	0	0	110	0	0.00	177	290.0	290.7

Site Number: 334

Date Sampled: 09/25/1991

Conductivity (umhos/cm):

Site Midpoint (Latitude, Longitude): 44.40606069, -103.89803263

Site Length (m): 100

pH:

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 0.0

Water Temperature (C):

Stream Classification: BR3, RB2

Number of Pass: 2

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	79	135	224	79	0	0	1350	0	0.00	2172	153.7	54.5
Brown Trout	>=200mm	116	123	132	116	0	0	1230	0	0.00	1979	245.1	196.0
Brown Trout	All	195	230	259	201	0	0	2300	0	0.00	3701	208.1	148.1
Rainbow Trout	<200mm	19	24	38	19	0	0	240	0	0.00	386	164.7	62.1
Rainbow Trout	>=200mm	47	60	83	47	0	0	600	0	0.00	965	241.9	180.3
Rainbow Trout	All	66	87	118	66	0	0	870	0	0.00	1400	219.7	146.2

Site Number: 340
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3, RB2

Date Sampled: 09/26/1991
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	66	67	70	66	0	0	670	0	0.00	1078	151.5	58.7
Brown Trout	>=200mm	21	23	29	21	0	0	230	0	0.00	370	238.1	169.7
Brown Trout	All	87	90	95	87	0	0	900	0	0.00	1448	172.4	84.9
Rainbow Trout	<200mm	39	75	166	39	0	0	750	0	0.00	1207	137.9	36.2
Rainbow Trout	>=200mm	23	26	34	23	0	0	260	0	0.00	418	252.2	191.8
Rainbow Trout	All	62	95	150	62	0	0	950	0	0.00	1529	180.3	93.9

Site Number: 508
Site Midpoint (Latitude, Longitude): 44.31483138, -103.88577053
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR3

Date Sampled: 09/27/1991
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	149	168	187	149	0	0	1680	0	0.00	2703	137.0	47.3
Brown Trout	>=200mm	94	96	100	94	0	0	960	0	0.00	1545	227.0	152.4
Brown Trout	All	243	262	278	246	0	0	2620	0	0.00	4216	171.8	111.3

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 Spearfish Creek, 1981-1991

Site 25

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 27, 1991	181	175-188	
Brown Trout >=200mm	Sep 27, 1991	72	72-74	BR3

Site 174

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 30, 1987	15	15-15	
	Sep 13, 1990	77	75-81	
	Sep 24, 1991	78	65-97	
Brown Trout >=200mm	Jul 30, 1987	54	54-54	BR3

Brown Trout >=200mm	Sep 13, 1990	141	137-147	BR3
	Sep 24, 1991	84	60-122	BR3

Site 190

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 29, 1987	7	7-7	
	Nov 02, 1988	175	144-206	
	Jul 31, 1990	226	149-307	
	Sep 24, 1991	75	70-83	
Brown Trout >=200mm	Jul 29, 1987	26	26-26	BR3
	Nov 02, 1988	110	68-179	BR3
	Jul 31, 1990	200	187-213	BR3
	Sep 24, 1991	220	205-235	BR3
Rainbow Trout <200mm	Jul 29, 1987	1	1-1	

Site 205

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Nov 02, 1988	66	66-66	
	Jul 31, 1990	103	78-137	

Brown Trout <200mm	Sep 24, 1991	65	61-72	
Brown Trout >=200mm	Jul 30, 1987	3	3-3	BR3
	Nov 02, 1988	56	56-56	BR3
	Jul 31, 1990	108	102-116	BR3
	Sep 24, 1991	175	132-219	BR3
Rainbow Trout <200mm	Nov 02, 1988	4	4-4	
Rainbow Trout >=200mm	Nov 02, 1988	3	3-3	RB2
	Jul 31, 1990	15	12-27	RB2
	Sep 24, 1991	11	11-12	RB2

Site 334

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 25, 1991	135	79-224	
Brown Trout >=200mm	Sep 25, 1991	123	116-132	BR3
Rainbow Trout <200mm	Sep 25, 1991	24	19-38	
Rainbow Trout >=200mm	Sep 25, 1991	60	47-83	RB2

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 26, 1991	67	66-70	
Brown Trout >=200mm	Sep 26, 1991	23	21-29	BR3
Rainbow Trout <200mm	Sep 26, 1991	75	39-166	
Rainbow Trout >=200mm	Sep 26, 1991	26	23-34	RB2

Site 508

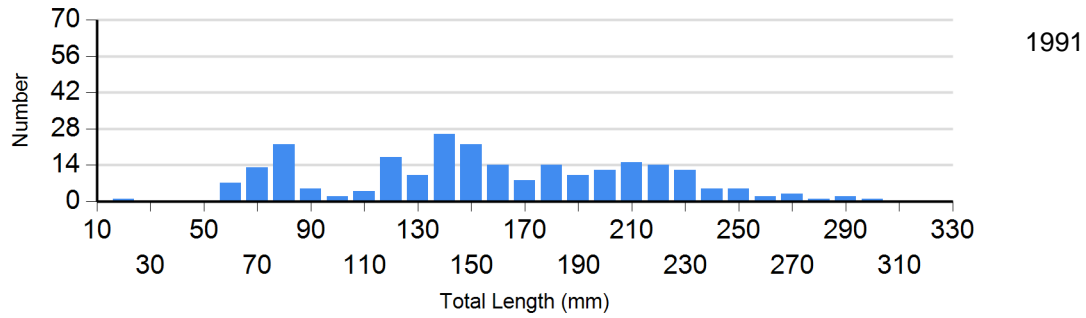
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 27, 1991	168	149-187	
Brown Trout >=200mm	Sep 27, 1991	96	94-100	BR3

Length Frequency Distribution

Length frequency histogram of species sampled by year.

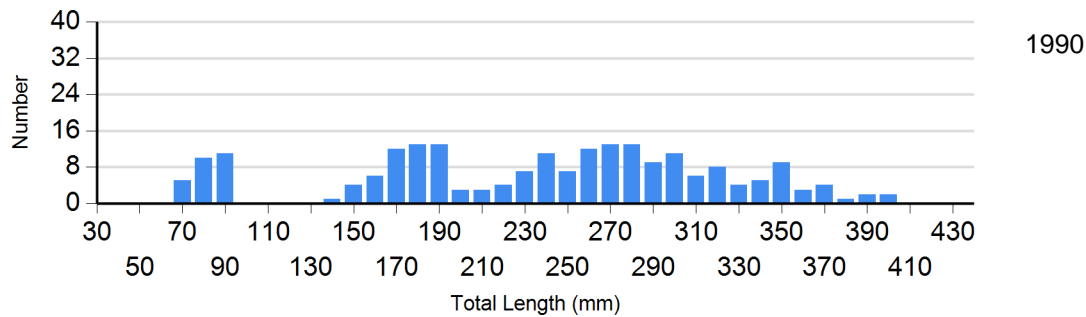
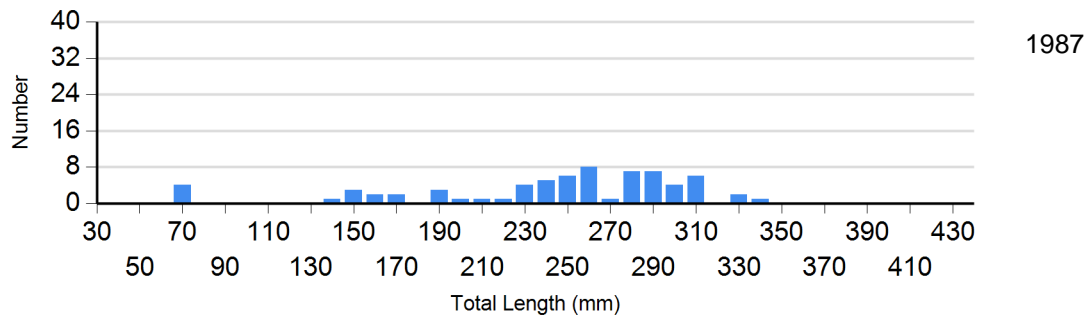
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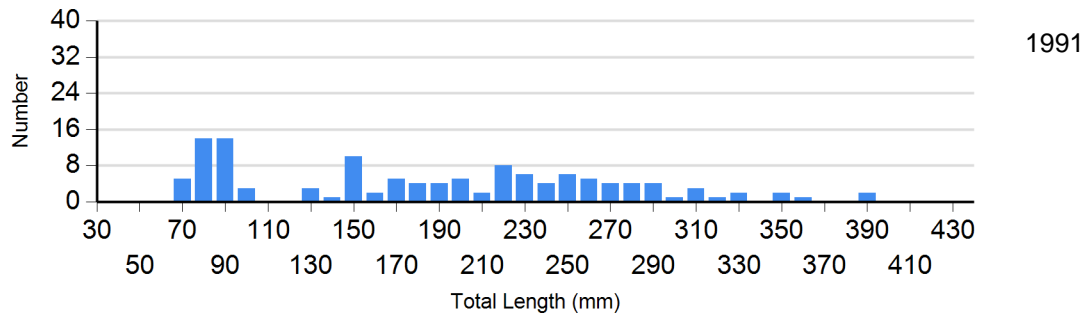
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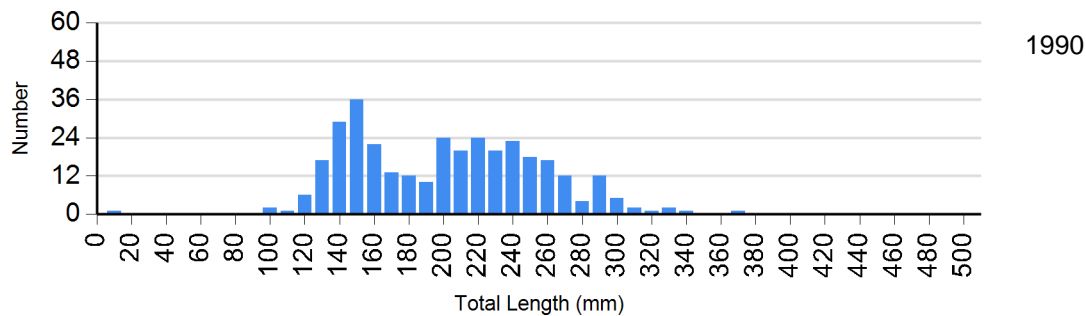
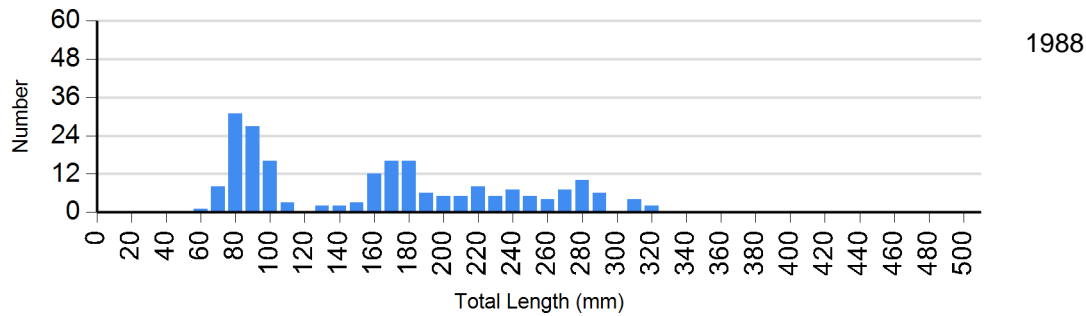
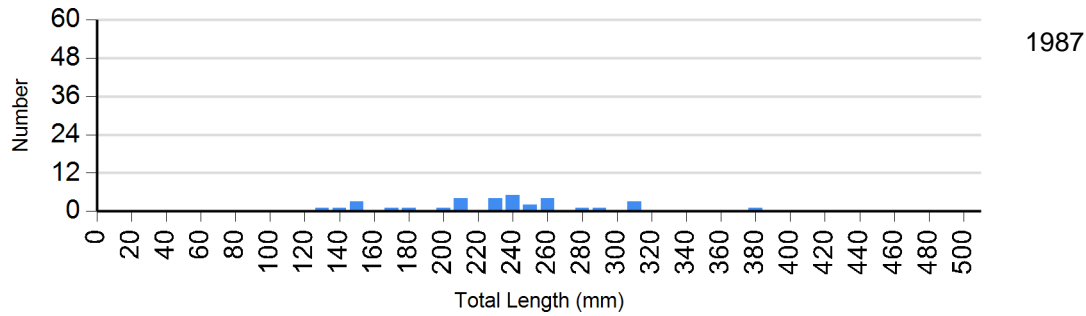
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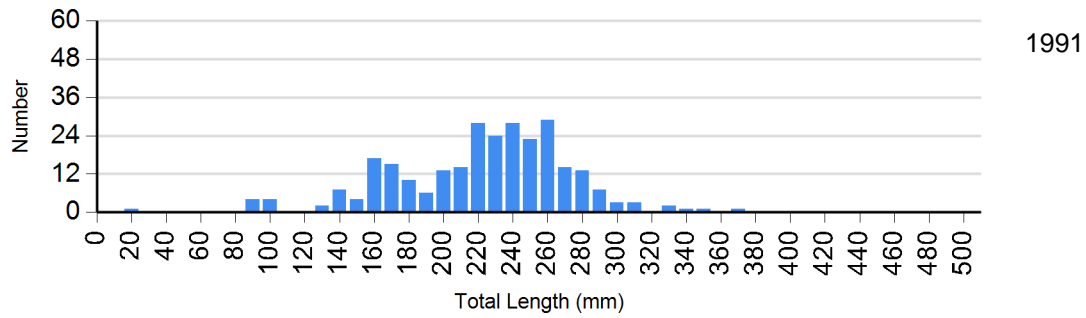
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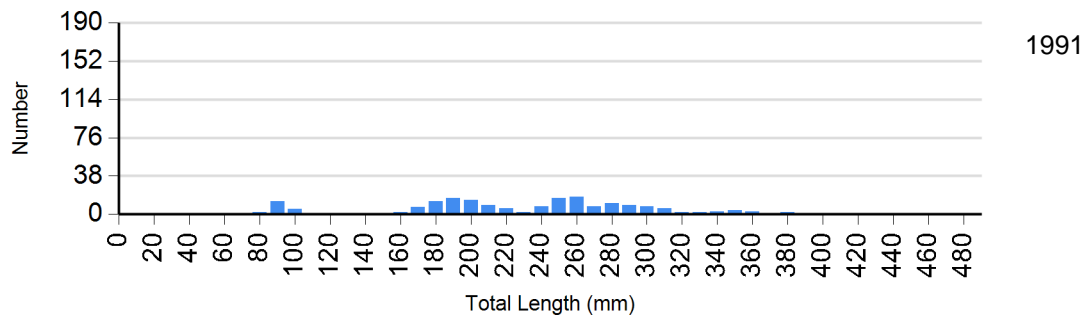
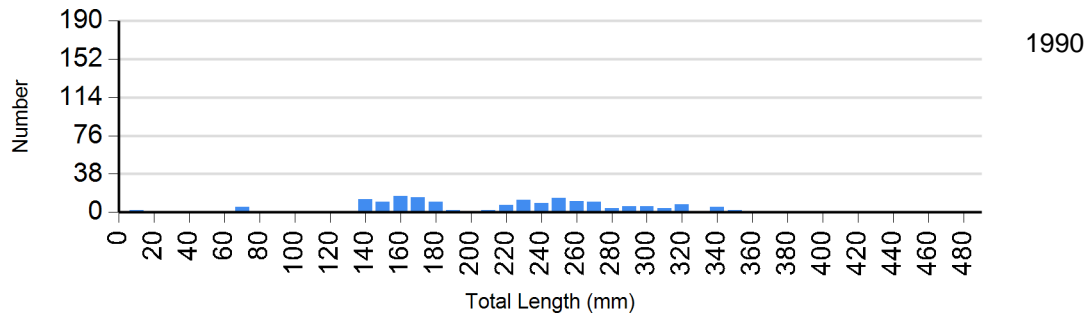
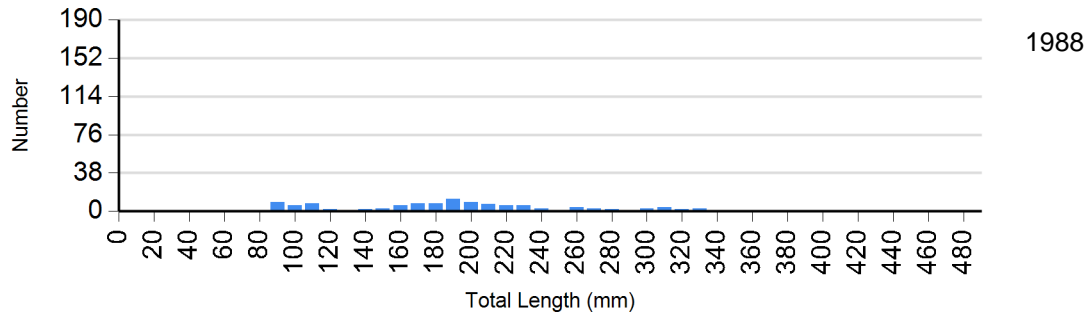


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Species: Brown Trout

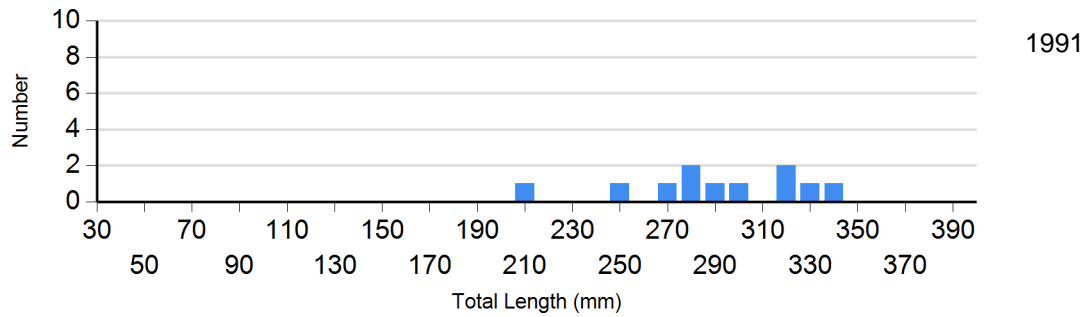
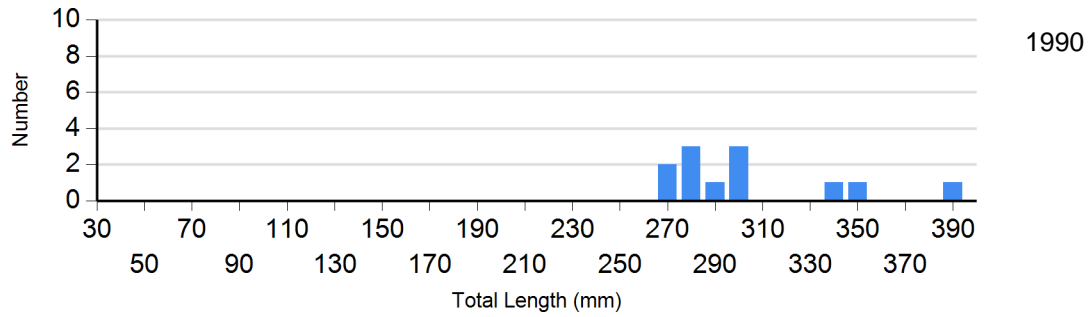
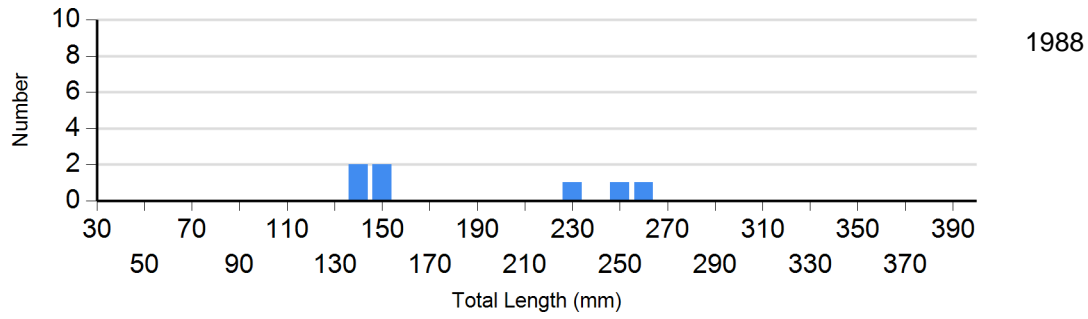




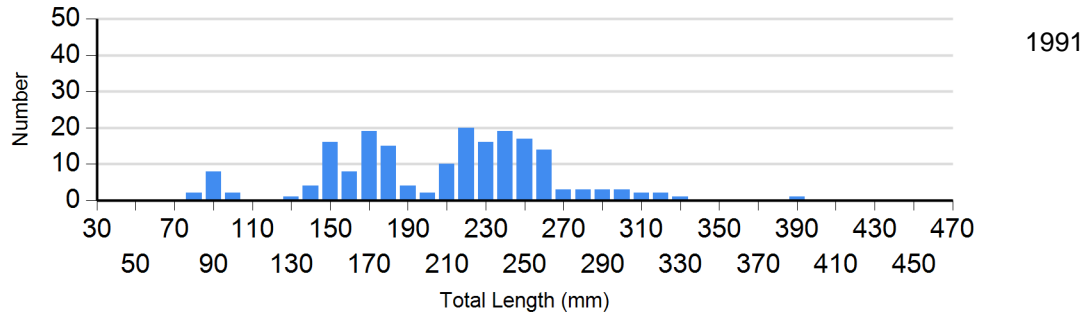
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Species: Brown Trout



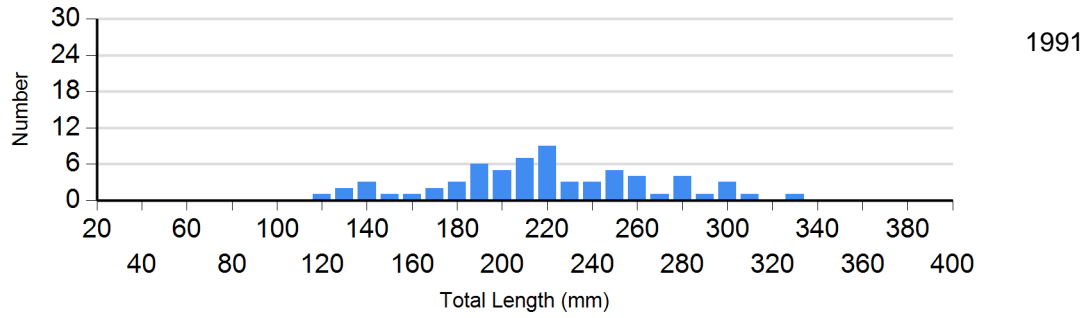
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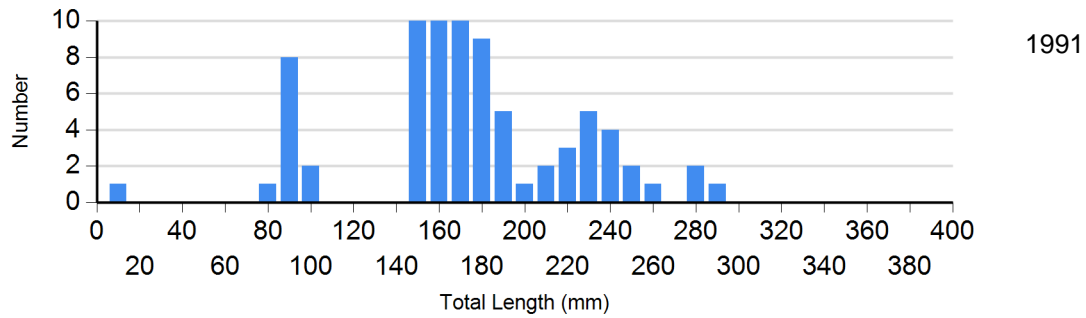
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Species: Brown Trout



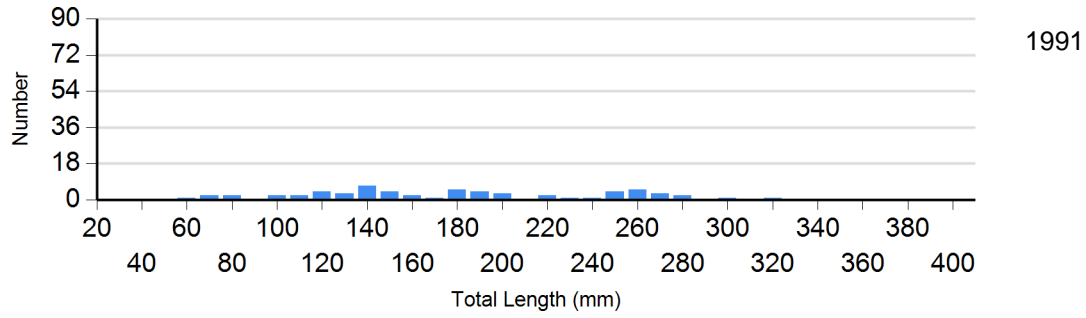
Site: 334
Species: Rainbow Trout



Site: 340
Species: Brown Trout



Site: 340
Species: Rainbow Trout



Site: 508
Species: Brown Trout

