

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2011

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 165	Date Sampled: 08/08/2011	Conductivity (umhos/cm): 437
Site Midpoint (Latitude, Longitude): 44.50833116, -103.86577107	Site Length (m): 100	pH: 8.1
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 8.2	Water Temperature (C): 12.2
Stream Classification: BR1	Number of Pass: 4	Voltage: 350

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	96	99	104	96	1213	45	990	491	40.01	1593	84.5	36.9
Brown Trout	>=200mm	57	59	64	57	723	141	590	293	125.67	949	266.3	194.8
Brown Trout	All	153	159	166	153	1948	301	1590	789	269.15	2558	152.2	154.8

Site Number: 174	Date Sampled: 08/08/2011	Conductivity (umhos/cm): 428
Site Midpoint (Latitude, Longitude): 44.50196266, -103.86743501	Site Length (m): 100	pH: 8.1
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.4	Water Temperature (C): 12.9
Stream Classification: BR1, RB0	Number of Pass: 3	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	59	95	154	59	1287	60	950	521	54.01	1529	70.1	47.0
Brown Trout	>=200mm	74	77	82	74	1043	253	770	422	225.48	1239	284.6	242.1
Brown Trout	All	133	153	172	134	2073	491	1530	839	438.52	2462	189.5	237.0
Rainbow Trout	<200mm	1	1	5	1	14	0	10	5	0.21	16	106.0	17.0
Rainbow Trout	All	1	1	5	1	14	0	10	5	0.21	16	106.0	17.0

Site Number: 183
Site Midpoint (Latitude, Longitude): 44.49536447, -103.86558246
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/10/2011 **Conductivity (umhos/cm):** 439
Site Length (m): 100 **pH:** 8.1
Mean Width (m): 7.4 **Water Temperature (C):** 10.7
Number of Pass: 3 **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	44	48	55	44	652	27	480	264	24.11	772	91.2	41.4
Brown Trout	>=200mm	53	56	62	53	760	147	560	308	131.28	901	266.0	193.3
Brown Trout	All	97	105	115	97	1426	236	1050	578	210.45	1689	186.7	165.3

Site Number: 190
Site Midpoint (Latitude, Longitude): 44.48929462, -103.86435821
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1, RB2

Date Sampled: 08/10/2011 **Conductivity (umhos/cm):** 436
Site Length (m): 100 **pH:**
Mean Width (m): 7.4 **Water Temperature (C):** 11.5
Number of Pass: 3 **Voltage:** 350

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	69	83	101	69	1129	50	830	457	44.34	1335	88.2	44.0
Brown Trout	>=200mm	84	90	98	84	1224	247	900	496	220.70	1448	269.4	202.0
Brown Trout	All	153	173	191	155	2352	416	1730	953	371.14	2784	187.7	176.7
Rainbow Trout	>=200mm	1	1	1	1	14	4	10	6	3.18	16	302.0	262.0
Rainbow Trout	All	1	1	1	1	14	4	10	6	3.18	16	302.0	262.0

Site Number: 205
Site Midpoint (Latitude, Longitude): 44.47880965, -103.85669154
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1, RB0

Date Sampled: 09/12/2011 **Conductivity (umhos/cm):** 425
Site Length (m): 100 **pH:** 8.5
Mean Width (m): 12.6 **Water Temperature (C):** 9.0
Number of Pass: 3 **Voltage:** 350

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	85	84	104	85	665	31	840	269	27.65	1352	102.8	46.6
Brown Trout	>=200mm	72	73	76	72	578	115	730	234	102.35	1175	267.7	198.3
Brown Trout	All	157	379	694	157	3001	478	3790	1216	426.60	6098	178.5	159.2
Rainbow Trout	<200mm	1	1	1	1	8	0	10	3	0.30	16	152.0	42.0
Rainbow Trout	All	1	1	1	1	8	0	10	3	0.30	16	152.0	42.0

Site Number: 280

Site Midpoint (Latitude, Longitude): 44.43537516, -103.87451857

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 07/29/2011

Site Length (m): 100

Mean Width (m): 5.6

Number of Pass: 3

Conductivity (umhos/cm): 435

pH: 8.3

Water Temperature (C): 15.1

Voltage: 350

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	137	146	156	137	2595	105	1460	1051	93.36	2349	124.7	40.3
Brown Trout	>=200mm	80	80	81	80	1422	187	800	576	167.11	1287	234.3	131.7
Brown Trout	All	217	223	230	217	3963	321	2230	1605	286.66	3588	165.1	81.0

Site Number: 293

Site Midpoint (Latitude, Longitude): 44.42693092, -103.87312940

Survey Completed by:

Stream Classification: BK0, BR1

Date Sampled: 08/11/2011

Site Length (m): 100

Mean Width (m): 6.6

Number of Pass: 3

Conductivity (umhos/cm): 439

pH:

Water Temperature (C): 16.4

Voltage: 350

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	1	1	2	1	15	0	10	6	0.19	16	125.0	14.0
Brook Trout	All	1	1	2	1	15	0	10	6	0.19	16	125.0	14.0

Brown Trout	<200mm	160	160	162	160	2418	93	1600	979	83.47	2574	140.5	38.7
Brown Trout	>=200mm	62	62	62	62	937	111	620	379	99.39	998	224.3	118.8
Brown Trout	All	241	243	246	241	3672	233	2430	1487	208.23	3910	163.9	63.5

Site Number: 340
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK3, BR2, RB2

Date Sampled: 07/27/2011
Site Length (m): 100
Mean Width (m): 10.8
Number of Pass: 3
Conductivity (umhos/cm): 425
pH: 8.2
Water Temperature (C): 12.4
Voltage: 350

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	1	1	1	1	9	0	10	4	0.09	16	102.0	11.0
Brook Trout	>=200mm	1	1	5	1	9	1	10	4	0.82	16	217.0	99.0
Brook Trout	All	2	2	4	2	19	1	20	8	0.91	32	159.5	55.0
Brown Trout	<200mm	48	52	59	48	482	17	520	195	15.42	837	117.6	35.8
Brown Trout	>=200mm	31	33	38	31	306	55	330	124	49.26	531	249.3	180.3
Brown Trout	All	79	86	96	79	798	84	860	323	75.34	1384	169.2	105.8
Rainbow Trout	<200mm	34	49	79	34	454	12	490	184	11.02	788	123.2	27.2
Rainbow Trout	>=200mm	4	4	4	4	37	8	40	15	7.11	64	272.5	214.8
Rainbow Trout	All	38	48	66	38	445	21	480	180	18.85	772	138.9	47.4

Site Number: 360
Site Midpoint (Latitude, Longitude): 44.39613079, -103.90699704
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2, RB2

Date Sampled: 07/27/2011
Site Length (m): 100
Mean Width (m): 9.9
Number of Pass: 3
Conductivity (umhos/cm): 432
pH: 8.3
Water Temperature (C): 12.0
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)
Brown Trout	<200mm	100	151	211	100	1524	48	1510	617	42.75	2430	108.7	31.4
Brown Trout	>=200mm	11	14	25	11	141	16	140	57	14.44	225	218.5	114.5
Brown Trout	All	111	170	237	111	1716	74	1700	695	66.06	2735	119.6	43.1
Rainbow Trout	<200mm	3	3	5	3	30	2	30	12	1.45	48	169.3	53.7
Rainbow Trout	>=200mm	1	1	2	1	10	1	10	4	0.92	16	220.0	102.0
Rainbow Trout	All	4	4	7	4	40	3	40	16	2.37	64	182.0	65.8

Site Number: 392
Site Midpoint (Latitude, Longitude): 44.37690503, -103.91378843
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1, RB0

Date Sampled: 07/27/2011
Site Length (m): 100
Mean Width (m): 9.2
Number of Pass: 3
Conductivity (umhos/cm): 428
pH: 8.1
Water Temperature (C): 57.6
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	72	71	82	72	769	27	710	312	24.38	1142	132.8	35.5
Brown Trout	>=200mm	58	60	64	58	650	95	600	263	85.11	965	243.3	146.6
Brown Trout	All	130	181	231	131	1962	173	1810	794	154.66	2912	182.1	88.3
Rainbow Trout	<200mm	2	2	2	2	22	0	20	9	0.17	32	95.5	9.0
Rainbow Trout	All	2	2	2	2	22	0	20	9	0.17	32	95.5	9.0

Site Number: 401
Site Midpoint (Latitude, Longitude): 44.37393343, -103.91794831
Survey Completed by:
Stream Classification: BR2, RB0

Date Sampled: 07/28/2011
Site Length (m): 100
Mean Width (m): 14.5
Number of Pass: 3
Conductivity (umhos/cm):
pH:
Water Temperature (C):
Voltage: 350

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	307	362	396	328	2495	73	3620	1010	64.94	5825	105.5	29.2
Brown Trout	>=200mm	43	44	47	43	303	45	440	123	40.50	708	238.4	149.6
Brown Trout	All	350	402	432	372	2771	139	4020	1122	123.76	6468	121.8	50.0
Rainbow Trout	<200mm	2	2	3	2	14	0	20	6	0.15	32	99.0	12.5
Rainbow Trout	All	2	2	3	2	14	0	20	6	0.15	32	99.0	12.5

Site Number: 409

Site Midpoint (Latitude, Longitude): 44.36787332, -103.92197775

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 07/24/2011

Site Length (m): 100

Mean Width (m): 8.7

Number of Pass: 3

Conductivity (umhos/cm): 428

pH: 7.9

Water Temperature (C): 14.4

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	129	140	119	1491	51	1290	604	45.69	2076	103.9	34.3
Brown Trout	>=200mm	60	64	71	60	739	102	640	299	91.43	1030	240.0	138.5
Brown Trout	All	179	194	207	181	2242	182	1940	908	162.74	3121	149.5	81.3

Site Number: 427

Site Midpoint (Latitude, Longitude): 44.35908267, -103.92734829

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2

Date Sampled: 07/29/2011

Site Length (m): 100

Mean Width (m): 8.8

Number of Pass: 3

Conductivity (umhos/cm): 481

pH: 8.1

Water Temperature (C): 12.7

Voltage: 350

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	88	130	182	88	1482	54	1300	600	47.83	2092	112.4	36.2
Brown Trout	>=200mm	23	23	25	23	262	43	230	106	38.52	370	244.6	164.6

Brown Trout All 111 141 172 111 1607 115 1410 651 102.94 2269 139.8 71.7

Site Number: 442
Site Midpoint (Latitude, Longitude): 44.35001039, -103.92326936
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/01/2011 **Conductivity (umhos/cm):** 440
Site Length (m): 100 **pH:** 6.8
Mean Width (m): 6.6 **Water Temperature (C):** 11.9
Number of Pass: 3 **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	173	255	327	183	3842	100	2550	1556	88.95	4103	110.8	25.9
Brown Trout	>=200mm	36	42	53	36	633	97	420	256	86.47	676	244.8	153.0
Brown Trout	All	209	295	362	228	4445	235	2950	1800	209.73	4747	133.9	52.8

Site Number: 459
Site Midpoint (Latitude, Longitude): 44.33924790, -103.91586496
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 08/01/2011 **Conductivity (umhos/cm):** 421
Site Length (m): 100 **pH:** 8.0
Mean Width (m): 8.4 **Water Temperature (C):** 14.0
Number of Pass: 3 **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	213	356	481	231	4247	133	3560	1720	118.50	5728	90.4	31.2
Brown Trout	>=200mm	24	27	34	24	322	51	270	130	45.66	434	244.5	158.8
Brown Trout	All	237	375	484	266	4474	249	3750	1812	222.62	6034	106.0	55.7

Site Number: 477
Site Midpoint (Latitude, Longitude): 44.33239689, -103.90206721
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR2

Date Sampled: 08/04/2011 **Conductivity (umhos/cm):**
Site Length (m): 100 **pH:** 8.4
Mean Width (m): 7.2 **Water Temperature (C):** 11.5
Number of Pass: 3 **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	250	319	366	272	4403	118	3190	1783	105.49	5133	102.4	26.8
Brown Trout	>=200mm	23	23	24	23	317	49	230	129	43.74	370	243.0	154.3
Brown Trout	All	273	334	373	295	4610	196	3340	1867	174.98	5374	114.2	42.5

Site Number: 504

Site Midpoint (Latitude, Longitude): 44.31634742, -103.88904907

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 08/03/2011

Site Length (m): 100

Mean Width (m): 8.0

Number of Pass: 3

Conductivity (umhos/cm):

pH: 8.2

Water Temperature (C): 12.0

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)
Brown Trout	<200mm	214	240	260	220	2983	112	2400	1208	99.85	3862	135.1	37.5
Brown Trout	>=200mm	62	69	79	62	858	116	690	347	103.98	1110	233.7	135.8
Brown Trout	All	276	310	333	287	3853	235	3100	1561	210.25	4988	157.3	61.1

Site Number: 509

Site Midpoint (Latitude, Longitude): 44.31511348, -103.88464425

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 08/02/2011

Site Length (m): 100

Mean Width (m): 7.0

Number of Pass: 3

Conductivity (umhos/cm): 429

pH: 8.1

Water Temperature (C): 12.2

Voltage: 350

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	182	233	274	192	3320	111	2330	1345	99.07	3749	109.8	33.4
Brown Trout	>=200mm	67	74	84	67	1054	160	740	427	143.02	1191	239.9	151.9
Brown Trout	All	259	342	398	286	4873	363	3420	1974	324.39	5503	144.8	74.6

Site Number: 536
Site Midpoint (Latitude, Longitude): 44.29937388, -103.86811766
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/04/2011 **Conductivity (umhos/cm):** 501
Site Length (m): 100 **pH:** 8.4
Mean Width (m): 8.8 **Water Temperature (C):** 12.6
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	163	253	345	163	2875	88	2530	1164	78.58	4071	127.5	30.6
Brown Trout	>=200mm	80	97	119	80	1102	157	970	446	140.19	1561	237.6	142.4
Brown Trout	All	244	346	426	266	3932	279	3460	1592	248.94	5567	163.7	70.9

Site Number: 570
Site Midpoint (Latitude, Longitude): 44.28744929, -103.89652776
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR1

Date Sampled: 08/09/2011 **Conductivity (umhos/cm):** 447
Site Length (m): 100 **pH:** 7.8
Mean Width (m): 4.8 **Water Temperature (C):** 8.4
Number of Pass: 3 **Voltage:** 350

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	4	3	62	1	30	25	1.07	48	127.0	19.3
Brook Trout	All	3	3	4	3	62	1	30	25	1.07	48	127.0	19.3
Brown Trout	<200mm	202	230	252	208	4774	128	2300	1933	114.31	3701	129.7	26.8
Brown Trout	>=200mm	35	35	36	35	726	73	350	294	65.60	563	219.3	101.1
Brown Trout	All	237	260	277	243	5396	206	2600	2185	183.72	4183	142.9	38.1

Site Number: 582
Site Midpoint (Latitude, Longitude): 44.27841164, -103.90155690
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/02/2011 **Conductivity (umhos/cm):** 448
Site Length (m): 100 **pH:** 7.8
Mean Width (m): 4.4 **Water Temperature (C):** 11.7
Number of Pass: 3 **Voltage:** 350

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	155	203	245	161	4633	149	2030	1876	133.31	3266	140.1	32.2
Brown Trout	>=200mm	22	22	24	22	502	56	220	203	50.37	354	223.0	112.4
Brown Trout	All	177	221	256	186	5044	214	2210	2043	191.28	3556	150.4	42.5

Site Number: 592

Site Midpoint (Latitude, Longitude): 44.27134401, -103.90815531

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2

Date Sampled: 08/03/2011

Site Length (m): 100

Mean Width (m): 4.9

Number of Pass: 2

Conductivity (umhos/cm): 447

pH: 5.6

Water Temperature (C): 10.5

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	92	99	109	92	2006	55	990	812	48.79	1593	127.1	27.2
Brown Trout	>=200mm	14	15	19	14	304	29	150	123	26.16	241	216.1	96.4
Brown Trout	All	106	115	126	106	2330	86	1150	944	77.03	1850	138.9	37.0

Site Number: 621

Site Midpoint (Latitude, Longitude): 44.25495945, -103.92257741

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2, BR1

Date Sampled: 08/11/2011

Site Length (m): 100

Mean Width (m): 3.6

Number of Pass: 3

Conductivity (umhos/cm): 300

pH:

Water Temperature (C): 9.6

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	76	76	78	76	2111	76	760	855	68.12	1223	136.1	36.1
Brook Trout	>=200mm	7	7	7	7	194	21	70	79	18.58	113	215.4	107.0
Brook Trout	All	83	83	85	83	2306	97	830	934	86.72	1335	142.8	42.1
Brown Trout	<200mm	16	19	28	16	528	18	190	214	15.77	306	135.3	33.5

Brown Trout	>=200mm	14	14	16	14	389	52	140	158	46.48	225	228.1	133.9
Brown Trout	All	30	34	43	30	944	77	340	383	69.09	547	178.6	81.9

Site Number: 634

Site Midpoint (Latitude, Longitude): 44.24619561, -103.92508781

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK1, BR2

Date Sampled: 08/09/2011

Site Length (m): 80

Mean Width (m): 7.3

Number of Pass: 3

Conductivity (umhos/cm): 470

pH: 7.5

Water Temperature (C): 7.5

Voltage: 350

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	79	79	81	79	1084	50	988	439	45.04	1589	145.4	46.6
Brook Trout	>=200mm	45	45	46	45	617	74	563	250	65.63	905	220.4	119.1
Brook Trout	All	124	125	128	124	1714	128	1563	694	113.97	2514	172.6	74.5
Brown Trout	<200mm	3	3	3	3	41	3	38	17	2.78	60	187.7	75.7
Brown Trout	>=200mm	6	6	6	6	82	11	75	33	9.82	121	222.7	133.7
Brown Trout	All	9	9	9	9	123	14	113	50	12.60	181	211.0	114.3

Site Number: 640

Site Midpoint (Latitude, Longitude): 44.24186091, -103.92436021

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK1

Date Sampled: 08/11/2011

Site Length (m): 100

Mean Width (m): 3.0

Number of Pass: 3

Conductivity (umhos/cm): 476

pH: 7.8

Water Temperature (C): 7.8

Voltage: 350

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	99	102	107	99	3369	154	1020	1365	137.86	1641	147.1	45.8
Brook Trout	>=200mm	34	34	35	34	1123	145	340	455	129.83	547	226.0	129.5
Brook Trout	All	133	136	141	133	4492	312	1360	1819	278.88	2188	167.3	69.5

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, 2001-2011

Site 165

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 27, 2008	101	92-112	
	Aug 08, 2011	99	96-104	
Brown Trout >=200mm	Aug 27, 2008	40	40-42	BR1
	Aug 08, 2011	59	57-64	BR1

Site 174

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 03, 2005	54	51-60	
	Aug 26, 2008	61	47-84	

Brown Trout <200mm	Aug 08, 2011	95	59-154	
Brown Trout >=200mm	Oct 03, 2005	96	96-98	BR1
	Aug 26, 2008	71	71-73	BR1
	Aug 08, 2011	77	74-82	BR1
Rainbow Trout <200mm	Aug 08, 2011	1	1-5	
Rainbow Trout >=200mm	Aug 26, 2008	2	2-2	RB2

Site 183

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 10, 2011	48	44-55	
Brown Trout >=200mm	Aug 10, 2011	56	53-62	BR1

Site 190

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 07, 2004	15	15-16	
	Sep 11, 2006	53	53-55	
	Sep 19, 2007	59	57-63	
	Aug 10, 2011	83	69-101	
Brown Trout >=200mm	Oct 07, 2004	130	129-133	BR1

Brown Trout >=200mm	Sep 11, 2006	47	47-48	BR1
	Sep 19, 2007	66	65-69	BR1
	Aug 10, 2011	90	84-98	BR1
Rainbow Trout >=200mm	Aug 10, 2011	1	1-1	RB2

Site 205

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Oct 03, 2005	165	159-172	
	Aug 25, 2008	92	91-95	
	Sep 12, 2011	84	85-104	
Brown Trout >=200mm	Oct 03, 2005	37	37-38	BR2
	Aug 25, 2008	35	35-36	BR2
	Sep 12, 2011	73	72-76	BR1
Rainbow Trout <200mm	Sep 12, 2011	1	1-1	
Rainbow Trout >=200mm	Oct 03, 2005	1	1-2	RB2

Site 280

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 29, 2011	146	137-156	

Brown Trout >=200mm

Jul 29, 2011

80

80-81

BR1

Site 293

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 11, 2011	1	1-2	
Brown Trout <200mm	Aug 11, 2011	160	160-162	
Brown Trout >=200mm	Aug 11, 2011	62	62-62	BR1

Site 340

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 22, 2001	2	2-4	
	Sep 11, 2006	3	3-4	
	Sep 18, 2007	4	4-5	
	Sep 11, 2008	4	4-7	
	Jul 27, 2011	1	1-1	
Brook Trout >=200mm	Sep 11, 2006	1	1-5	BK3
	Jul 27, 2011	1	1-5	BK3
Brown Trout <200mm	Oct 22, 2001	78	72-87	
	Oct 31, 2002	142	90-209	

Brown Trout <200mm	Sep 22, 2003	57	50-68	
	Oct 05, 2004	102	67-153	
	Sep 11, 2006	54	54-56	
	Sep 18, 2007	78	69-90	
	Sep 11, 2008	64	63-67	
	Jul 27, 2011	52	48-59	
	Brown Trout >=200mm	Oct 22, 2001	127	126-130
Oct 31, 2002		107	104-112	BR1
Sep 22, 2003		77	77-79	BR1
Oct 05, 2004		34	34-35	BR2
Sep 11, 2006		34	34-35	BR1
Sep 18, 2007		35	35-36	BR1
Sep 11, 2008		34	34-36	BR2
Jul 27, 2011		33	31-38	BR2
Rainbow Trout <200mm	Oct 22, 2001	43	41-48	
	Oct 31, 2002	18	13-35	

Rainbow Trout <200mm	Sep 22, 2003	220	215-226	
	Oct 05, 2004	265	237-293	
	Sep 11, 2006	114	113-117	
	Sep 18, 2007	89	86-94	
	Sep 11, 2008	38	30-55	
	Jul 27, 2011	49	34-79	
Rainbow Trout >=200mm	Oct 22, 2001	53	46-65	RB1
	Oct 31, 2002	63	61-67	RB1
	Sep 22, 2003	45	45-46	RB1
	Oct 05, 2004	36	36-37	RB1
	Sep 11, 2006	8	8-10	RB1
	Sep 18, 2007	20	20-20	RB1
	Sep 11, 2008	63	19-310	RB1
	Jul 27, 2011	4	4-4	RB2

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 09, 2008	25	22-33	
	Jul 27, 2011	151	100-211	
Brown Trout >=200mm	Sep 09, 2008	6	6-6	BR2
	Jul 27, 2011	14	11-25	BR2
Rainbow Trout <200mm	Sep 09, 2008	1	1-2	
	Jul 27, 2011	3	3-5	
Rainbow Trout >=200mm	Sep 09, 2008	2	2-2	RB2
	Jul 27, 2011	1	1-2	RB2

Site 392

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 27, 2011	71	72-82	
Brown Trout >=200mm	Jul 27, 2011	60	58-64	BR1
Rainbow Trout <200mm	Jul 27, 2011	2	2-2	

Site 401

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 28, 2011	362	328-396	

Brown Trout >=200mm	Jul 28, 2011	44	43-47	BR2
Rainbow Trout <200mm	Jul 28, 2011	2	2-3	

Site 409

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 24, 2011	129	119-140	
Brown Trout >=200mm	Jul 24, 2011	64	60-71	BR1

Site 427

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jul 29, 2011	130	88-182	
Brown Trout >=200mm	Jul 29, 2011	23	23-25	BR2

Site 442

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 01, 2011	255	183-327	
Brown Trout >=200mm	Aug 01, 2011	42	36-53	BR1

Site 459

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 01, 2011	356	231-481	
Brown Trout >=200mm	Aug 01, 2011	27	24-34	BR2

Site 477

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 03, 2008	249	240-258	
	Aug 04, 2011	319	272-366	
Brown Trout >=200mm	Sep 03, 2008	49	49-50	BR1
	Aug 04, 2011	23	23-24	BR2

Site 504

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 03, 2011	240	220-260	
Brown Trout >=200mm	Aug 03, 2011	69	62-79	BR1

Site 509

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 02, 2011	233	192-274	
Brown Trout >=200mm	Aug 02, 2011	74	67-84	BR1

Site 536

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 04, 2011	253	163-345	
Brown Trout >=200mm	Aug 04, 2011	97	80-119	BR1

Site 570

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 09, 2011	3	3-4	
Brown Trout <200mm	Aug 09, 2011	230	208-252	
Brown Trout >=200mm	Aug 09, 2011	35	35-36	BR1

Site 582

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 02, 2011	203	161-245	
Brown Trout >=200mm	Aug 02, 2011	22	22-24	BR1

Site 592

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 03, 2011	99	92-109	
Brown Trout >=200mm	Aug 03, 2011	15	14-19	BR2

Site 621

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 21, 2008	88	77-102	
	Aug 11, 2011	76	76-78	
Brook Trout >=200mm	Aug 21, 2008	1	1-5	BK3

Brook Trout >=200mm	Aug 11, 2011	7	7-7	BK2
Brown Trout <200mm	Aug 21, 2008	28	28-30	
	Aug 11, 2011	19	16-28	
Brown Trout >=200mm	Aug 21, 2008	6	6-9	BR2
	Aug 11, 2011	14	14-16	BR1

Site 634

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 09, 2011	79	79-81	
Brook Trout >=200mm	Aug 09, 2011	45	45-46	BK1
Brown Trout <200mm	Aug 09, 2011	3	3-3	
Brown Trout >=200mm	Aug 09, 2011	6	6-6	BR2

Site 640

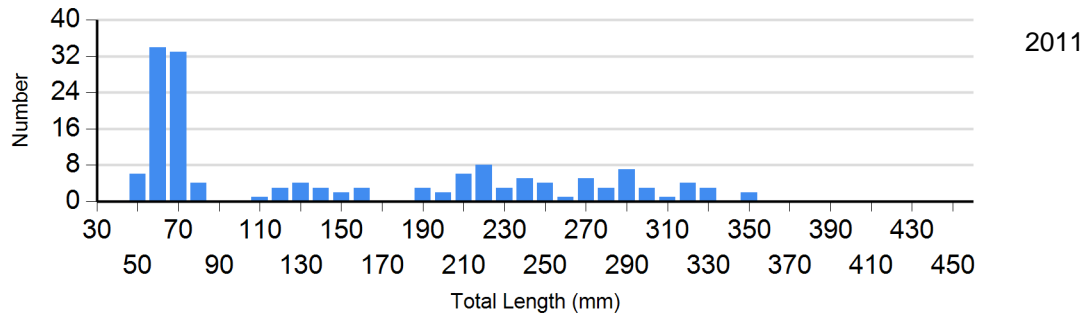
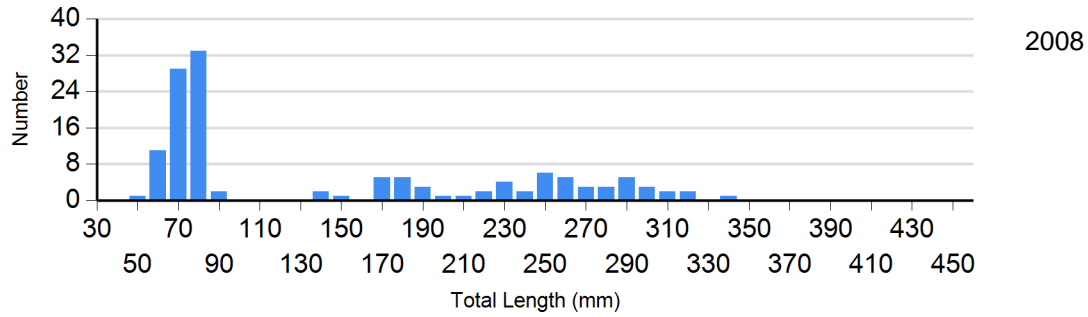
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 11, 2011	102	99-107	
Brook Trout >=200mm	Aug 11, 2011	34	34-35	BK1

Length Frequency Distribution

Length frequency histogram of species sampled by year.

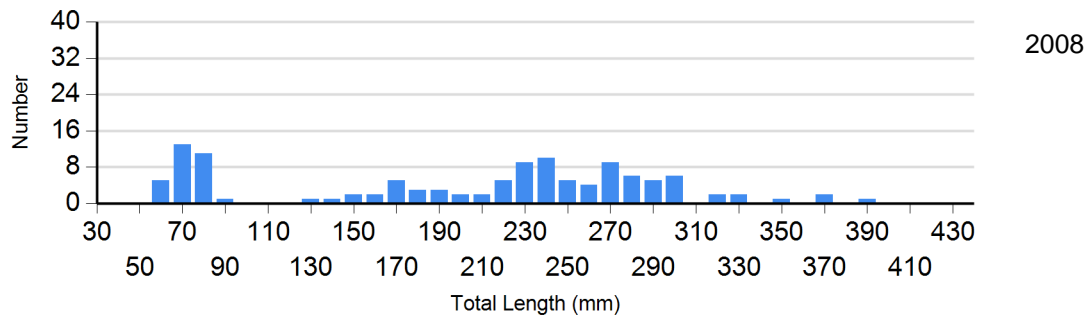
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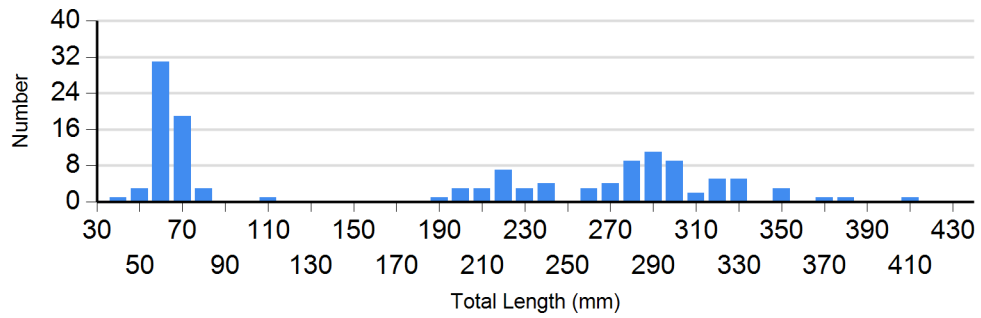
Species: Brown Trout



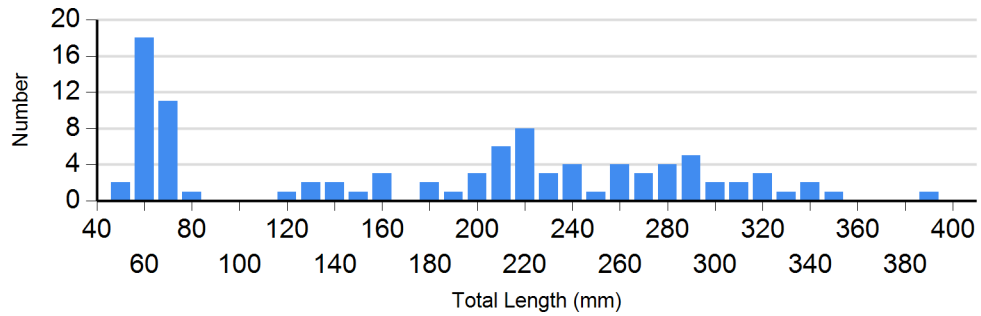
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Species: Brown Trout

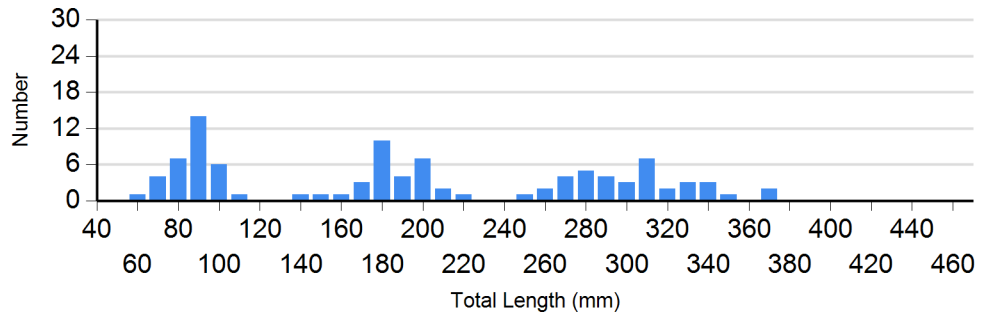


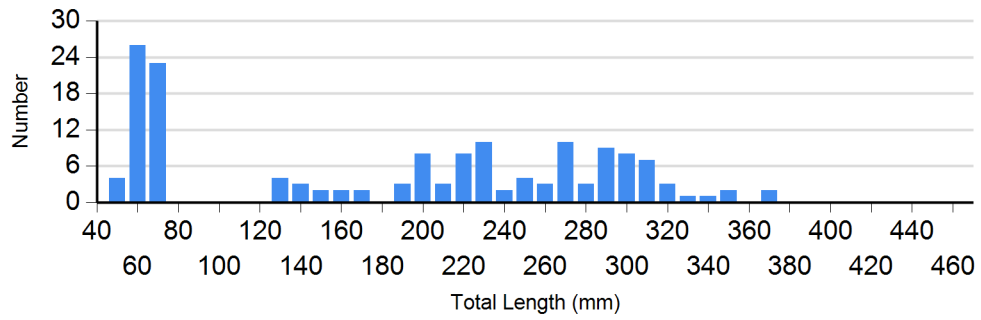
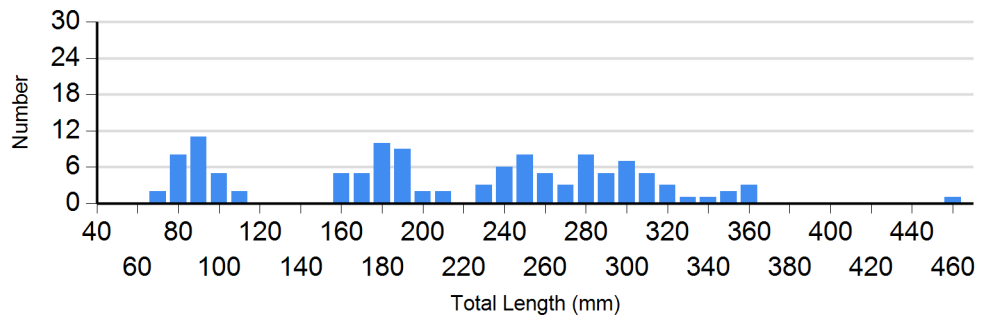


Site: 183
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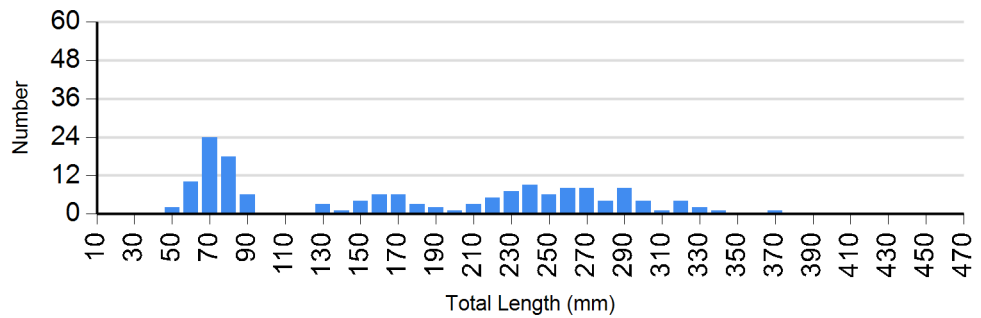
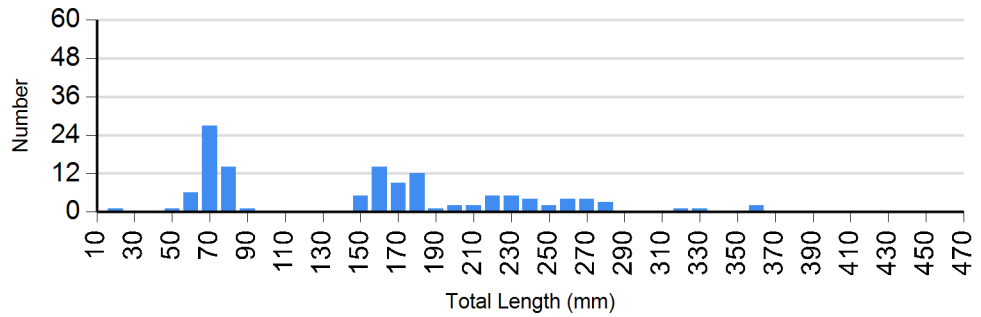


Site: 190
Species: Brown Trout

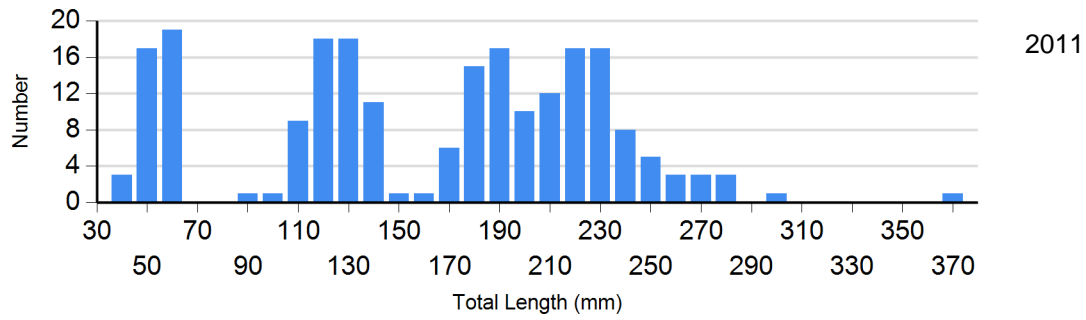




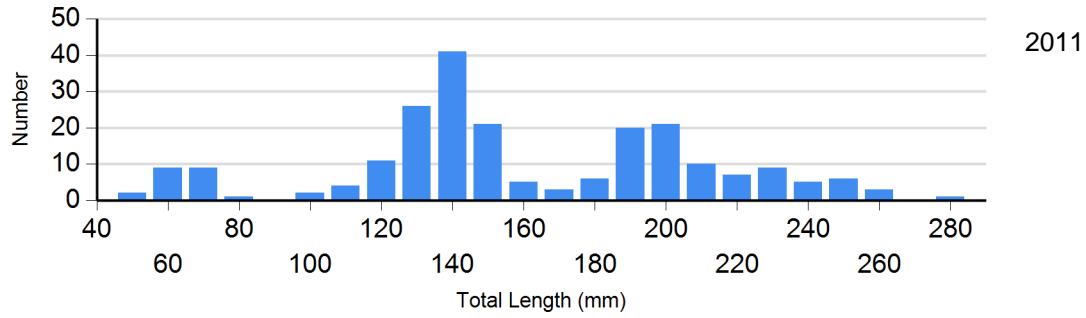
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Species: Brown Trout



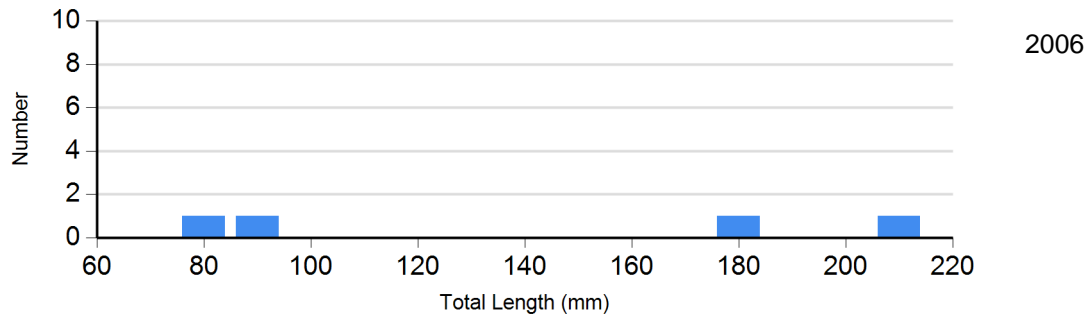
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Species: Brown Trout

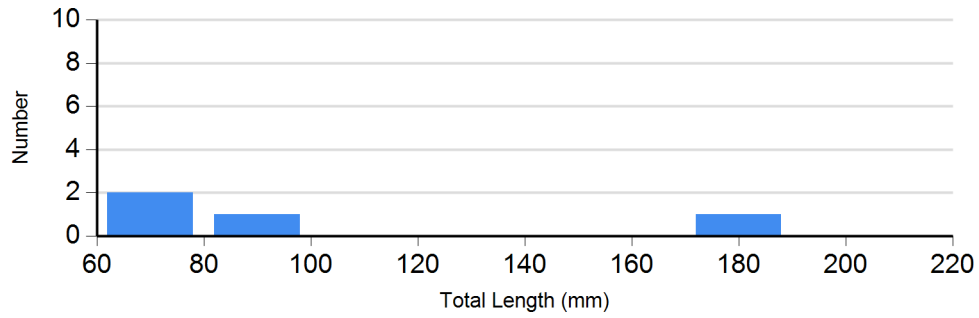
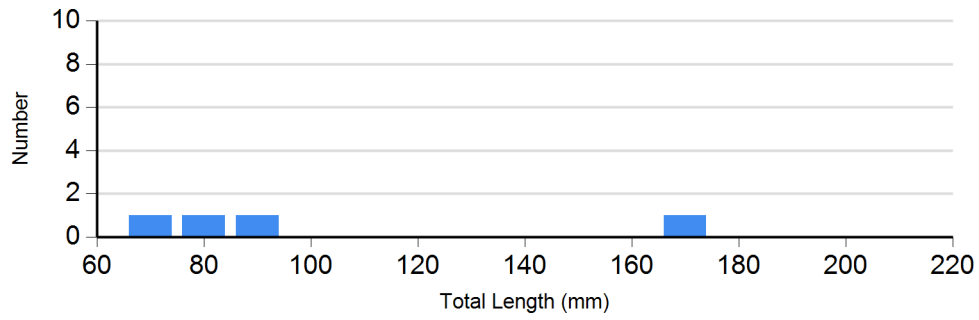


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Species: Brown Trout

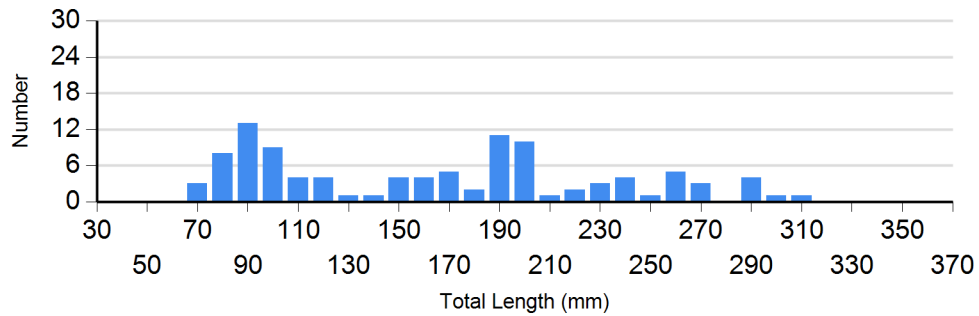
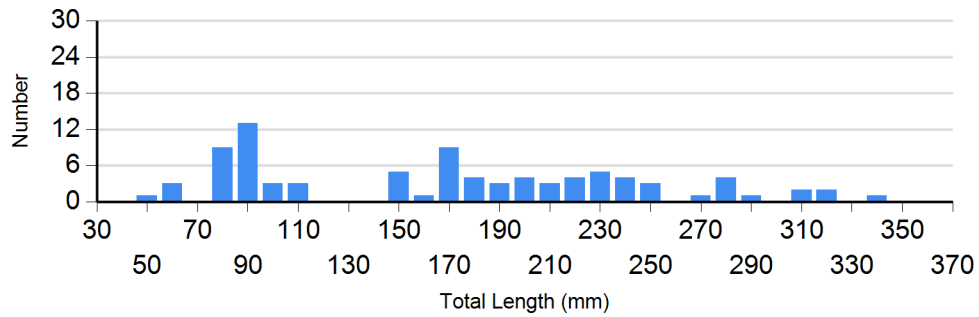


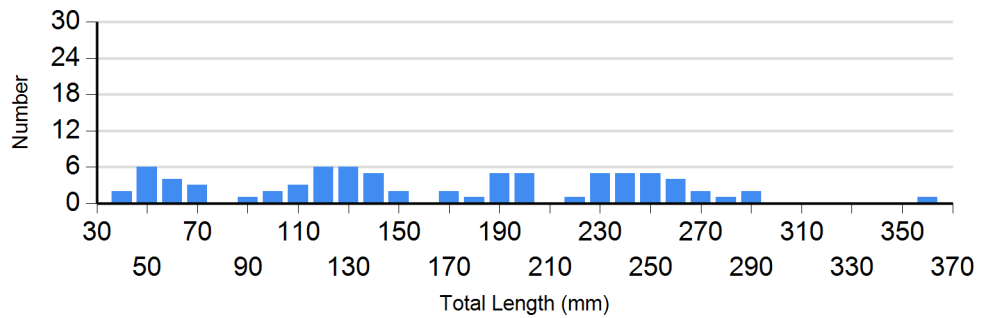
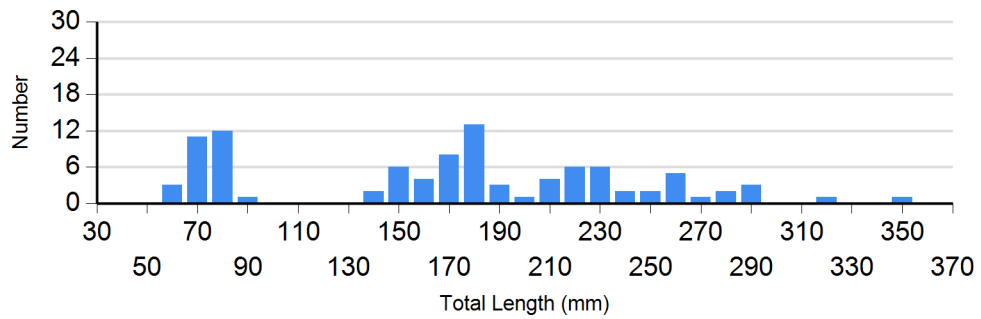
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Species: Brook Trout



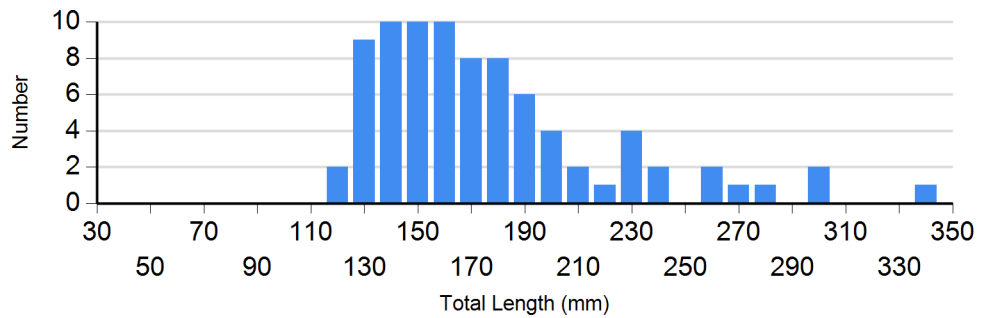
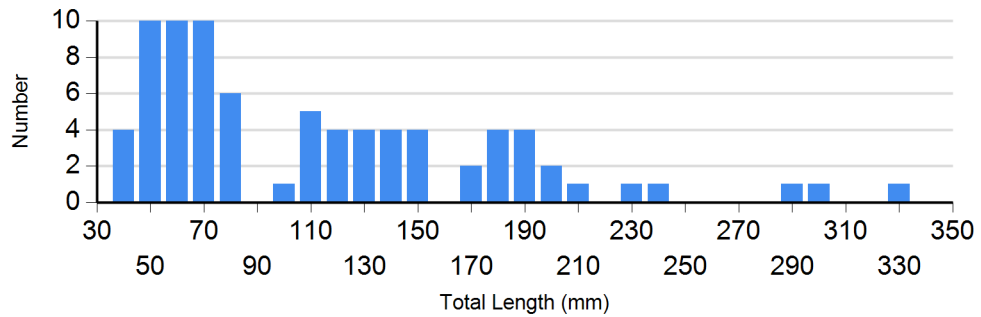


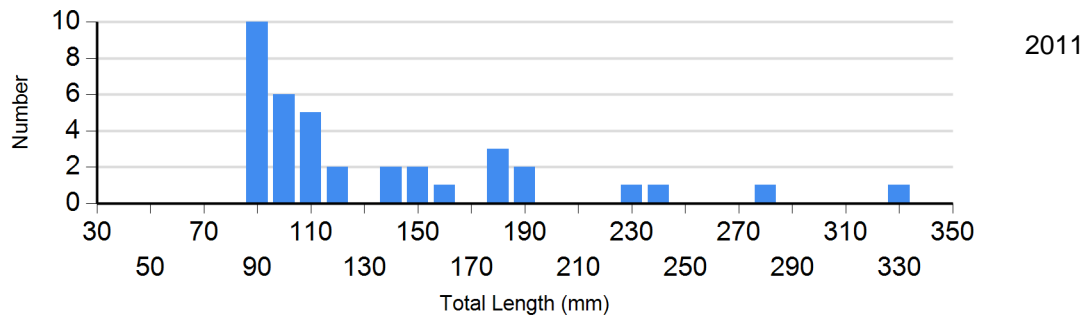
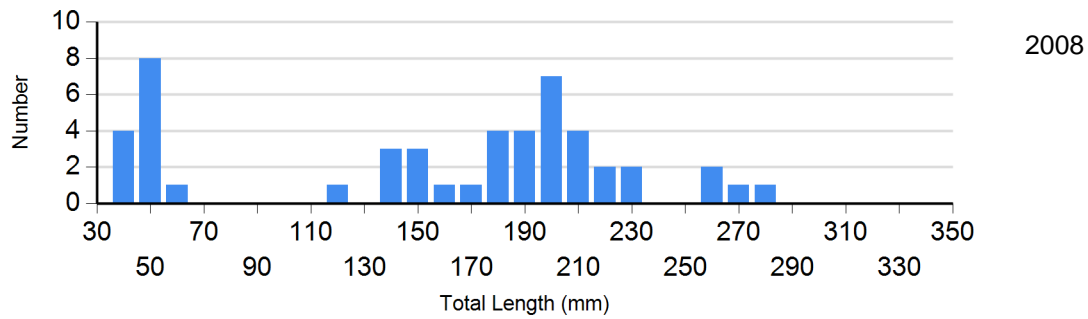
Site: 340
Species: Brown Trout



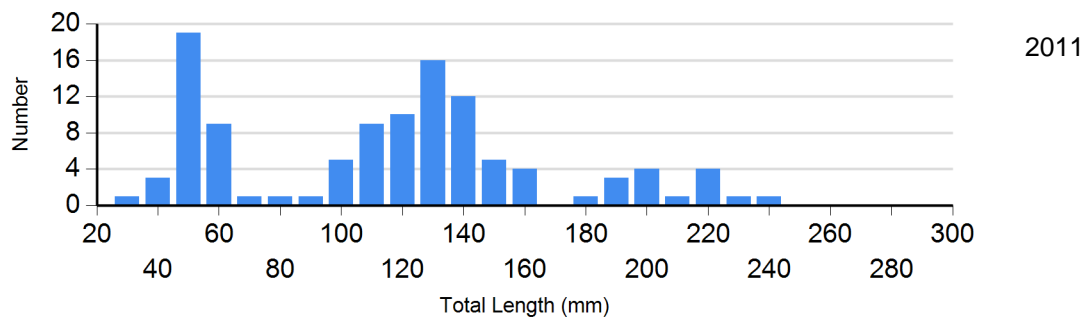
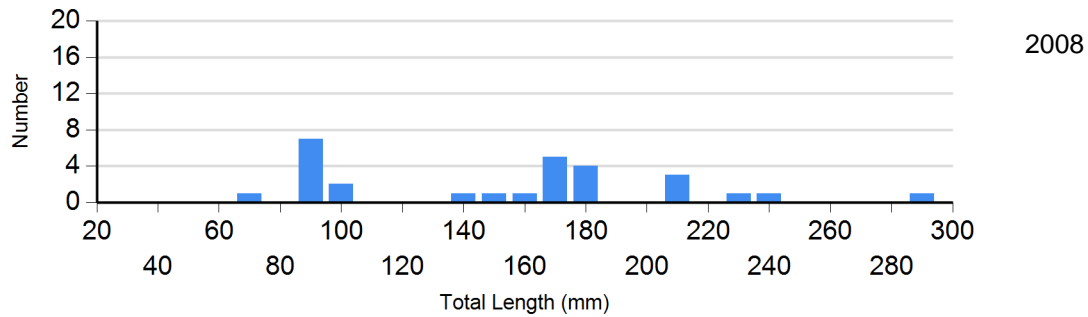


Site: 340
Species: Rainbow Trout

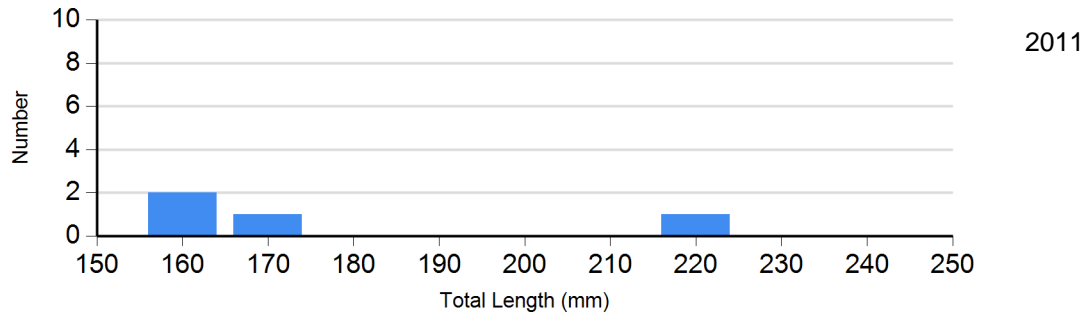




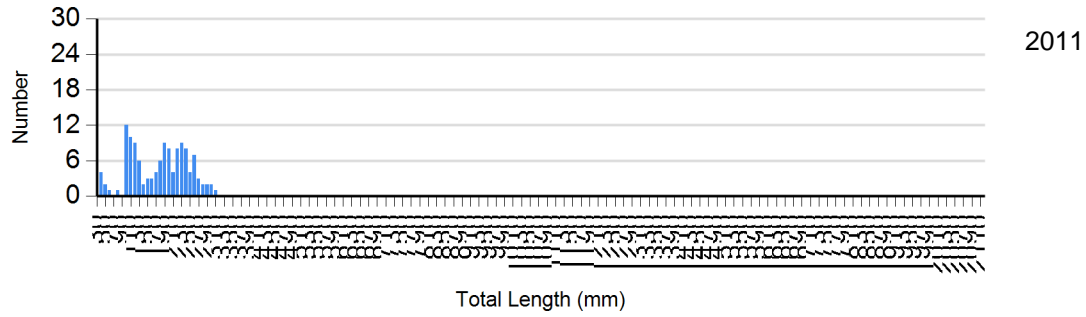
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Species: Brown Trout



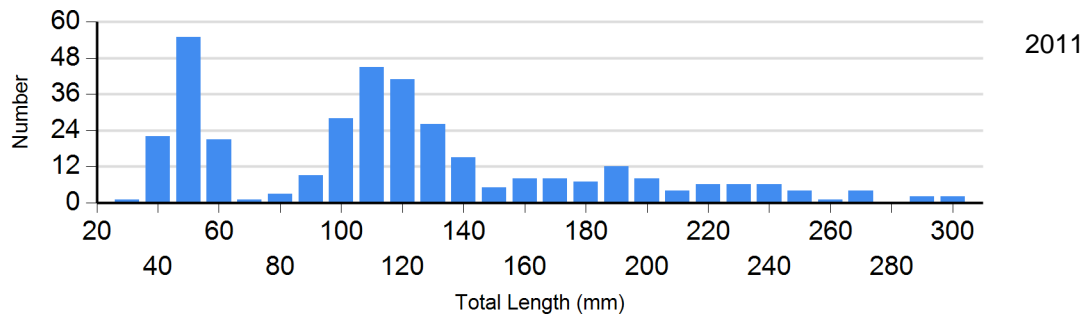
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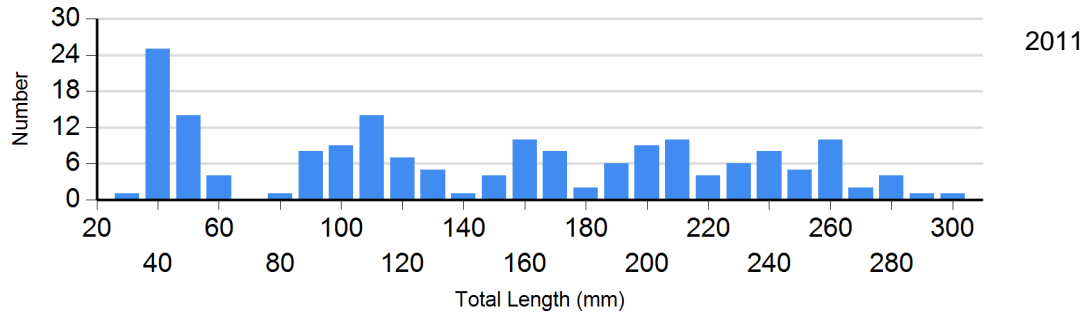
Site: 392
Species: Brown Trout



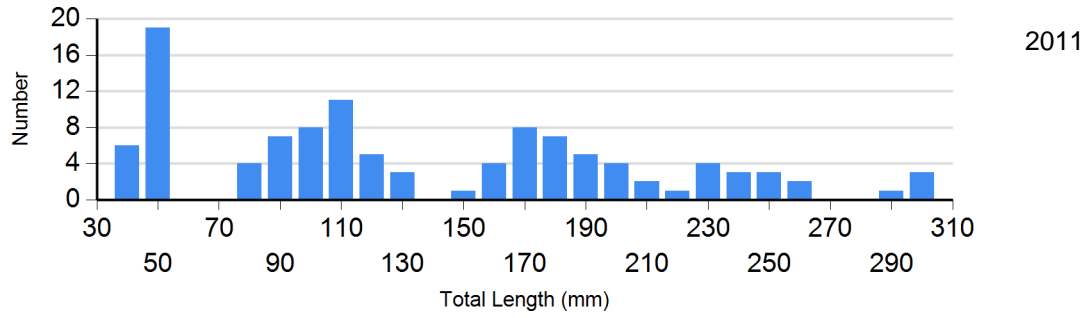
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Species: Brown Trout



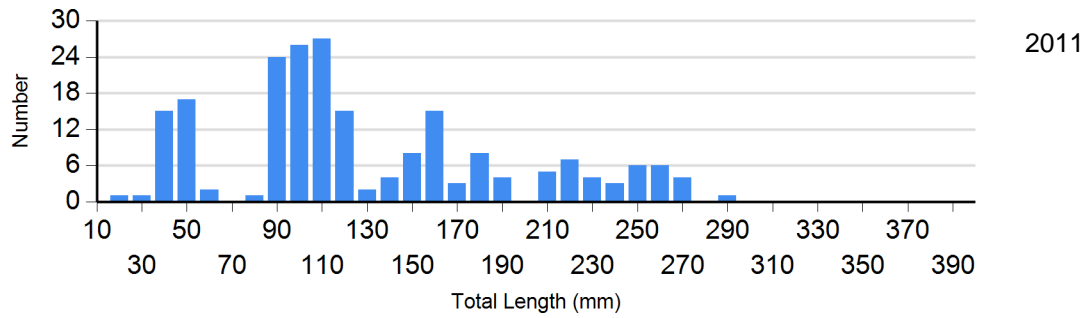
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Species: Brown Trout



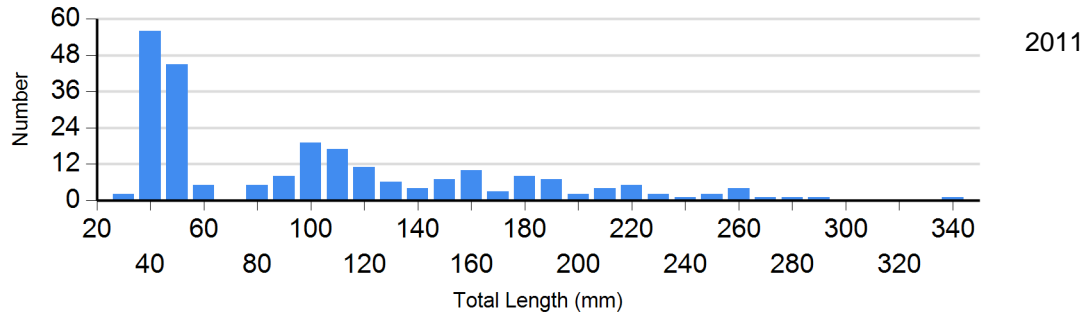
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Species: Brown Trout



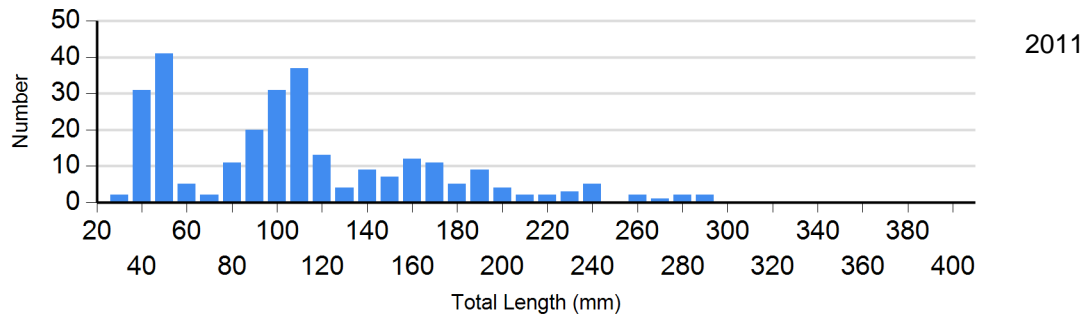
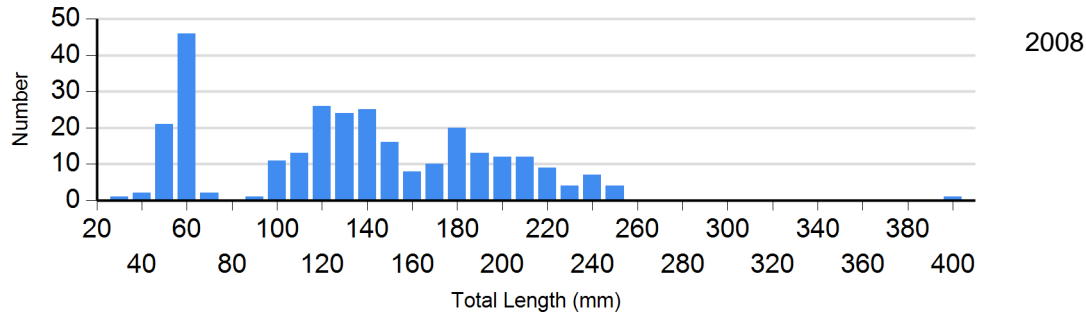
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Species: Brown Trout



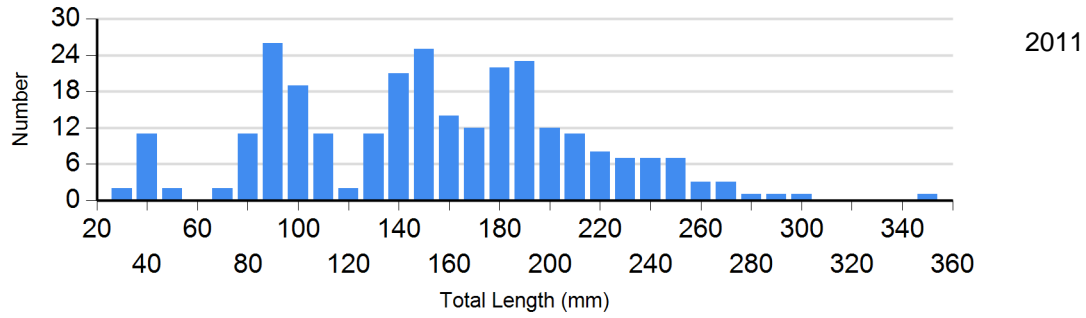
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Species: Brown Trout



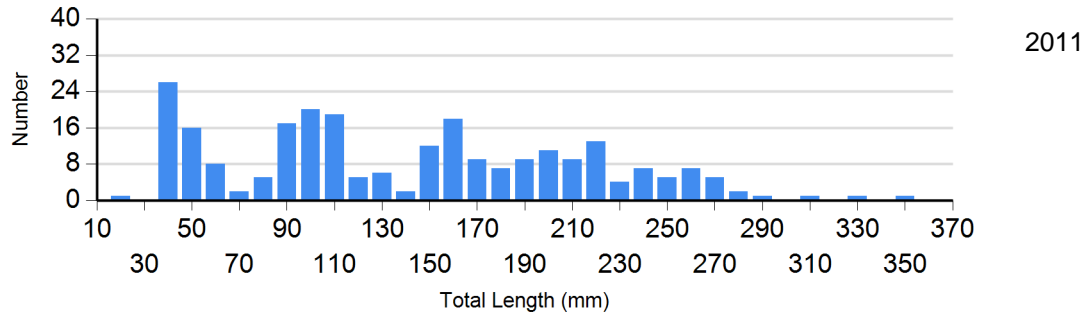
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Species: Brown Trout



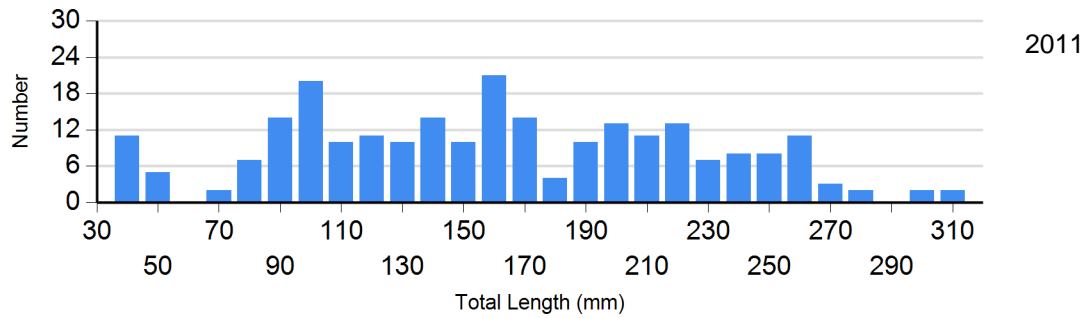
Site: 504
Species: Brown Trout



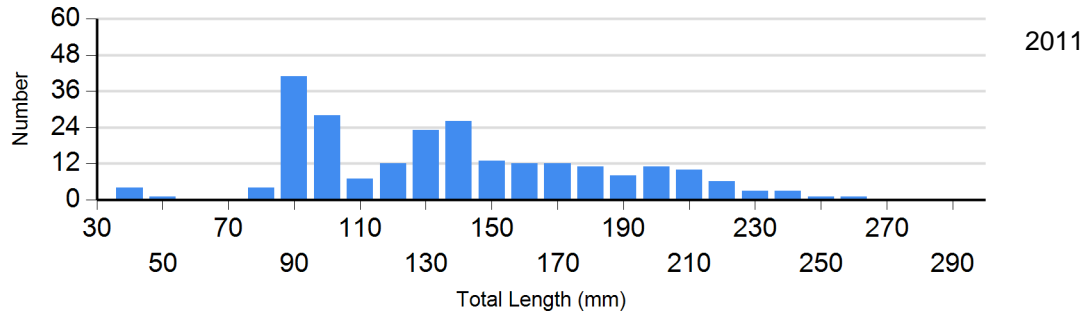
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Species: Brown Trout



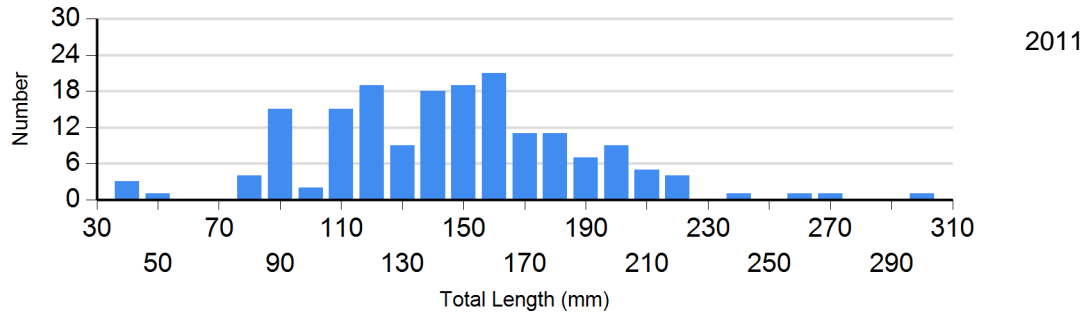
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Species: Brown Trout



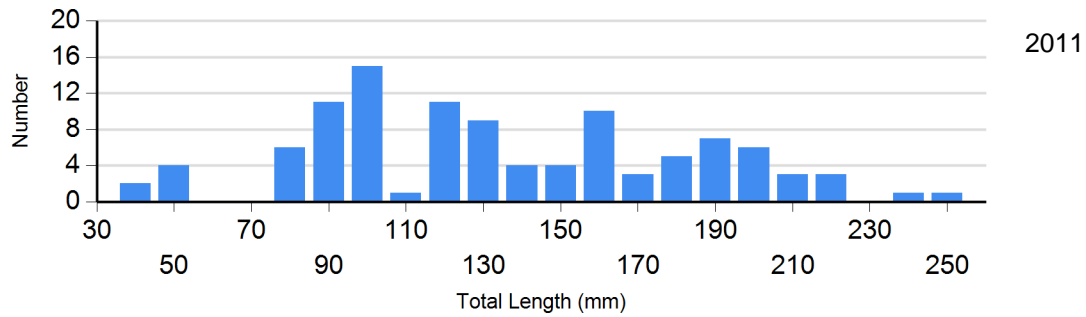
Site: 570
Species: Brown Trout



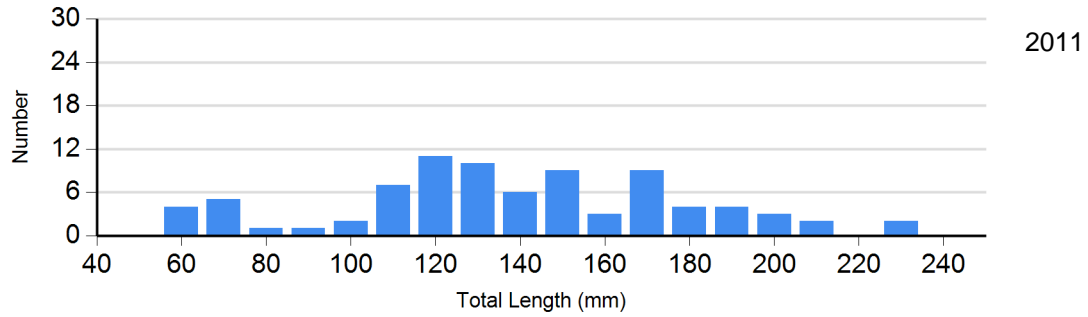
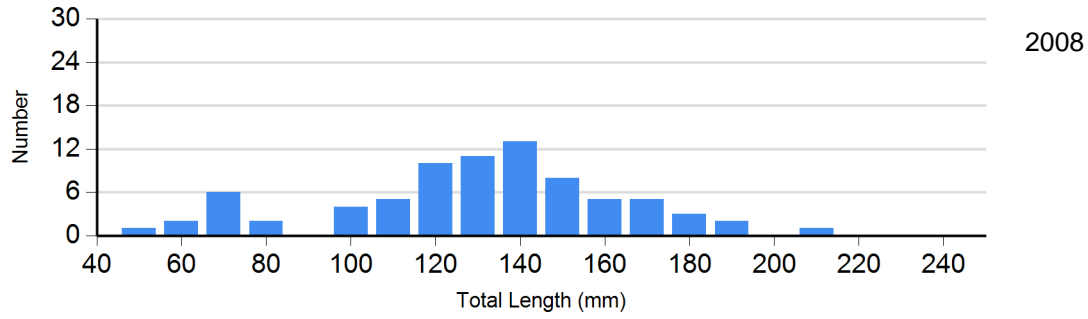
Site: 582
Species: Brown Trout



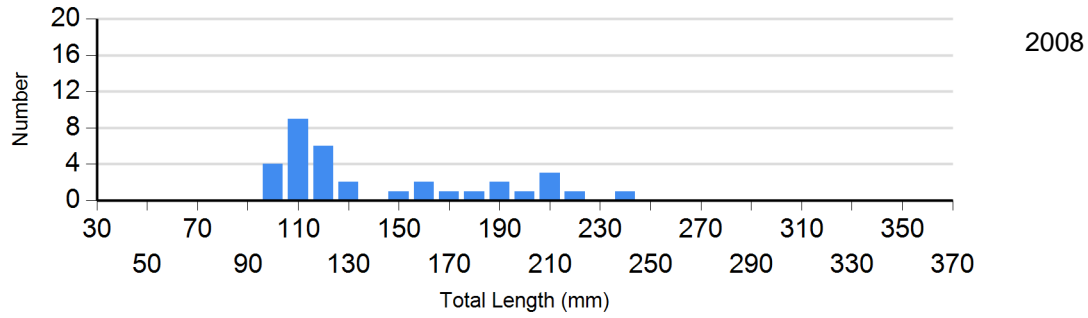
Site: 592
Species: Brown Trout

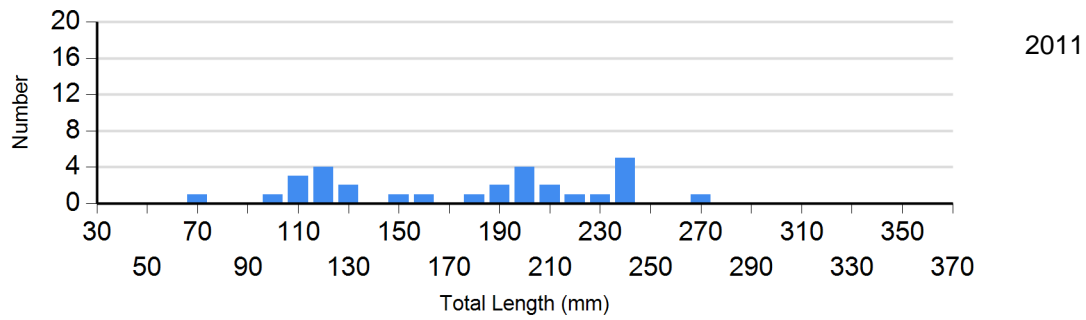


Site: 621
Species: Brook Trout

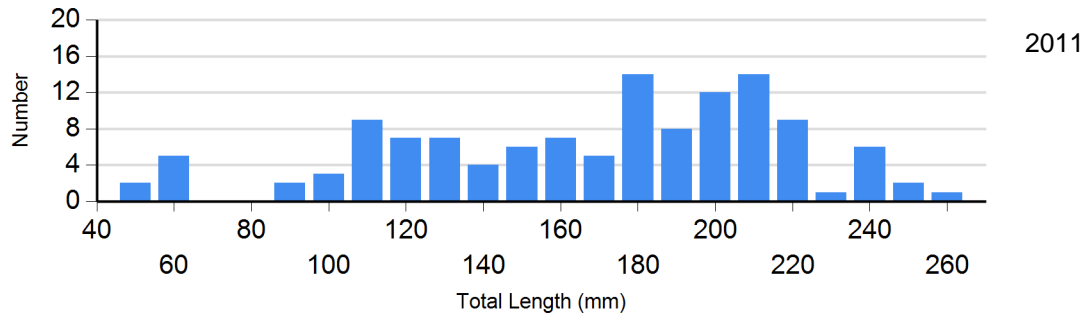


Site: 621
Species: Brown Trout

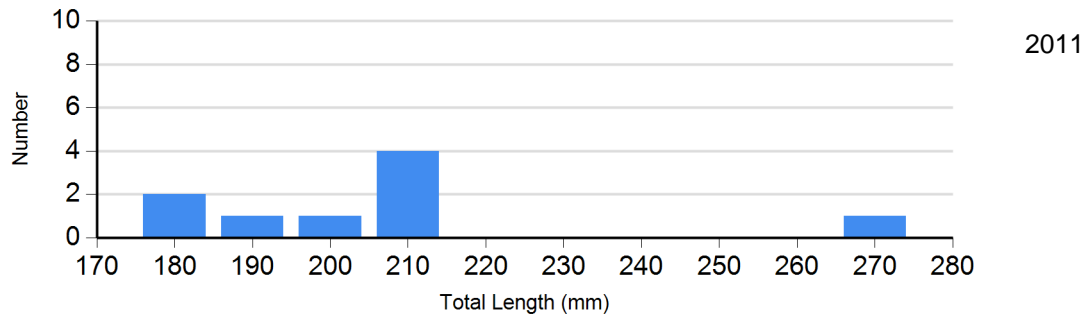




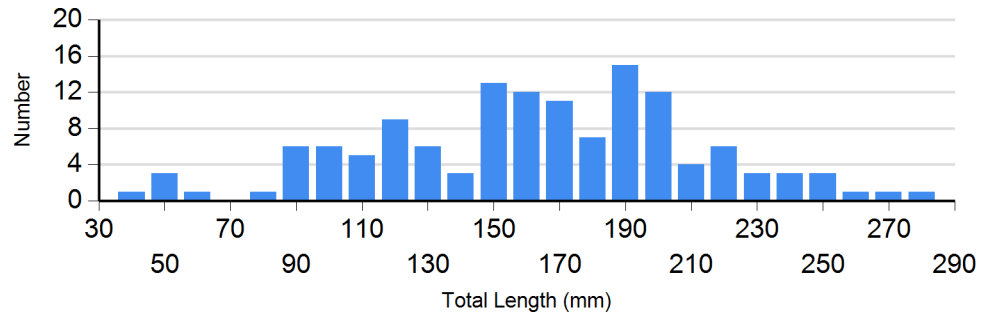
Site: 634
Species: Brook Trout



Site: 634
Species: Brown Trout



Site: 640
Species: Brook Trout



2011