

SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY
Spearfish Creek, Lawrence County
09-0021-00
2008

Table 1. Population and Biomass Estimates for Spearfish Creek

Site Number: 165	Date Sampled: 08/27/2008	Conductivity (umhos/cm): 440
Site Midpoint (Latitude, Longitude): 44.50833116, -103.86577107	Site Length (m): 100	pH: 8.9
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 7.4	Water Temperature (C): 10.9
Stream Classification: BR1	Number of Pass: 3	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	92	101	112	92	1357	32	1010	549	28.95	1625	95.4	23.9
Brown Trout	>=200mm	40	40	42	40	537	113	400	218	101.19	644	270.1	211.0
Brown Trout	All	145	169	191	147	2270	241	1690	919	215.07	2719	148.3	106.1

Site Number: 174	Date Sampled: 08/26/2008	Conductivity (umhos/cm): 440
Site Midpoint (Latitude, Longitude): 44.50196266, -103.86743501	Site Length (m): 100	pH: 8.9
Survey Completed by: South Dakota Game, Fish and Parks	Mean Width (m): 6.5	Water Temperature (C): 12.6
Stream Classification: BR1, RB2	Number of Pass: 3	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	47	61	84	47	942	51	610	382	45.95	981	111.7	54.6
Brown Trout	>=200mm	71	71	73	71	1097	232	710	444	206.96	1142	268.7	211.3
Brown Trout	All	145	162	178	146	2503	450	1620	1014	401.39	2607	206.2	179.6
Rainbow Trout	>=200mm	2	2	2	2	31	8	20	13	7.21	32	285.0	261.5
Rainbow Trout	All	2	2	2	2	31	8	20	13	7.21	32	285.0	261.5

Site Number: 180
Site Midpoint (Latitude, Longitude): 44.49750366, -103.86765556
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/26/2008 **Conductivity (umhos/cm):** 452
Site Length (m): 100 **pH:** 8.7
Mean Width (m): 6.5 **Water Temperature (C):** 11.7
Number of Pass: 3 **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	49	144	436	49	2231	129	1440	904	115.39	2317	122.9	57.9
Brown Trout	>=200mm	36	36	38	36	558	101	360	226	90.57	579	259.0	181.9
Brown Trout	All	102	114	127	102	1766	225	1140	715	201.29	1834	180.6	127.6

Site Number: 185
Site Midpoint (Latitude, Longitude): 44.49358162, -103.86572072
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1, RB1

Date Sampled: 08/25/2008 **Conductivity (umhos/cm):** 438
Site Length (m): 100 **pH:** 8.9
Mean Width (m): 8.3 **Water Temperature (C):** 12.2
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	17	17	17	17	204	9	170	83	8.09	274	112.2	44.4
Brown Trout	>=200mm	48	48	50	48	576	113	480	233	100.50	772	265.8	195.3
Brown Trout	All	106	111	118	106	1333	232	1110	540	206.75	1786	225.6	173.7
Rainbow Trout	>=200mm	6	6	6	6	72	15	60	29	13.34	97	276.7	207.3
Rainbow Trout	All	6	6	6	6	72	15	60	29	13.34	97	276.7	207.3

Site Number: 192
Site Midpoint (Latitude, Longitude): 44.48757551, -103.86367009
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/27/2008 **Conductivity (umhos/cm):**
Site Length (m): 100 **pH:** 8.8
Mean Width (m): 8.0 **Water Temperature (C):** 10.6
Number of Pass: 3 **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	50	53	59	50	663	32	530	269	29.02	853	121.8	49.0
Brown Trout	>=200mm	39	43	51	39	538	97	430	218	86.94	692	257.9	180.9
Brown Trout	All	103	114	126	103	1427	185	1140	578	164.84	1834	181.4	129.4

Site Number: 205

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

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2

Date Sampled: 08/25/2008

Site Length (m): 100

Mean Width (m): 11.9

Number of Pass: 3

Conductivity (umhos/cm): 423

pH: 8.7

Water Temperature (C): 10.9

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	91	92	95	91	771	39	920	312	34.75	1480	118.6	50.5
Brown Trout	>=200mm	35	35	36	35	293	53	350	119	47.44	563	256.9	181.2
Brown Trout	All	314	338	354	322	2832	307	3380	1147	274.08	5438	157.0	108.4
Hatchery Rainbow Trout	>=200mm	6	6	6	6	50	12	60	20	10.32	97	281.5	230.0
Hatchery Rainbow Trout	All	6	6	6	6	50	12	60	20	10.32	97	281.5	230.0

Site Number: 313

Site Midpoint (Latitude, Longitude): 44.41358924, -103.88164505

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0, BR1, RB0

Date Sampled: 08/28/2008

Site Length (m): 100

Mean Width (m): 5.1

Number of Pass: 3

Conductivity (umhos/cm): 432

pH: 8.8

Water Temperature (C): 9.9

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	1	1	1	1	20	0	10	8	0.09	16	85.0	5.0

Brook Trout	All	1	1	1	1	20	0	10	8	0.09	16	85.0	5.0
Brown Trout	<200mm	214	217	221	214	4285	207	2170	1736	185.06	3492	146.2	48.4
Brown Trout	>=200mm	57	57	58	57	1126	138	570	456	123.27	917	223.5	122.6
Brown Trout	All	302	310	318	302	6122	405	3100	2479	361.62	4988	162.5	66.2
Rainbow Trout	<200mm	2	2	2	2	39	1	20	16	1.08	32	133.0	30.5
Rainbow Trout	All	2	2	2	2	39	1	20	16	1.08	32	133.0	30.5

Site Number: 325
Site Midpoint (Latitude, Longitude): 44.41162982, -103.89370972
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK2, BR2

Date Sampled: 08/28/2008
Site Length (m): 100
Mean Width (m): 5.3
Number of Pass: 3
Conductivity (umhos/cm): 434
pH: 8.5
Water Temperature (C): 11.8
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	94	94	95	94	1774	68	940	718	61.08	1512	122.9	38.6
Brook Trout	>=200mm	5	5	7	5	94	11	50	38	9.57	80	206.8	113.6
Brook Trout	All	350	376	393	359	7094	313	3760	2873	279.27	6050	127.1	44.1
Brown Trout	<200mm	63	64	67	63	1208	54	640	489	47.95	1030	123.2	44.5
Brown Trout	>=200mm	5	5	5	5	94	14	50	38	12.38	80	231.8	147.0
Brown Trout	All	97	105	115	97	1981	112	1050	802	99.76	1689	131.2	56.4

Site Number: 340
Site Midpoint (Latitude, Longitude): 44.40182261, -103.89476328
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR2, RB1

Date Sampled: 09/11/2008
Site Length (m): 100
Mean Width (m): 10.2
Number of Pass: 3
Conductivity (umhos/cm): 416
pH: 9.0
Water Temperature (C): 9.8
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	7	4	39	2	40	16	1.42	64	105.8	40.5
Brook Trout	All	4	4	7	4	39	2	40	16	1.42	64	105.8	40.5
Brown Trout	<200mm	63	64	67	63	626	28	640	254	25.15	1030	132.6	45.0
Brown Trout	>=200mm	34	34	36	34	333	59	340	135	52.56	547	251.4	176.9
Brown Trout	All	136	149	162	136	1458	144	1490	591	128.93	2397	174.3	99.0
Rainbow Trout	<200mm	30	38	55	30	372	21	380	151	19.14	611	118.6	57.6
Rainbow Trout	>=200mm	19	63	310	19	617	83	630	250	74.06	1014	226.3	134.5
Rainbow Trout	All	49	83	146	49	812	80	830	329	71.24	1335	160.3	98.2

Site Number: 352

Site Midpoint (Latitude, Longitude): 44.39795626, -103.90290352

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1, RB1

Date Sampled: 09/10/2008

Site Length (m): 100

Mean Width (m): 7.9

Number of Pass: 3

Conductivity (umhos/cm): 433

pH: 9.0

Water Temperature (C): 9.5

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	71	70	84	71	890	41	700	361	36.20	1126	123.8	45.5
Brown Trout	>=200mm	29	57	135	29	725	132	570	294	117.46	917	249.7	181.5
Brown Trout	All	149	261	383	149	3319	326	2610	1344	290.74	4199	160.3	98.1
Rainbow Trout	<200mm	3	3	4	3	38	2	30	15	1.74	48	171.3	51.0
Rainbow Trout	>=200mm	8	8	10	8	102	23	80	41	20.73	129	276.3	228.3
Rainbow Trout	All	11	11	13	11	140	25	110	57	22.47	177	247.6	179.9

Site Number: 360

Site Midpoint (Latitude, Longitude): 44.39613079, -103.90699704

Date Sampled: 09/09/2008

Site Length (m): 70

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR2, RB2

Mean Width (m): 8.7

Number of Pass: 3

Conductivity (umhos/cm): 414

pH: 8.8

Water Temperature (C): 12.0

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	22	25	33	22	289	10	357	117	9.25	575	136.3	35.9
Brown Trout	>=200mm	6	6	6	6	69	9	86	28	8.35	138	234.7	134.8
Brown Trout	All	122	149	175	123	1722	98	2129	697	87.73	3425	157.4	57.1
Rainbow Trout	<200mm	1	1	2	1	12	1	14	5	0.88	23	199.0	85.0
Rainbow Trout	>=200mm	2	2	2	2	23	3	29	9	2.39	46	222.0	116.0
Rainbow Trout	All	3	3	4	3	35	4	43	14	3.27	69	214.3	105.7

Site Number: 387

Site Midpoint (Latitude, Longitude): 44.38064123, -103.91331223

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 09/09/2008

Site Length (m): 100

Mean Width (m): 12.2

Number of Pass: 3

Conductivity (umhos/cm): 448

pH: 8.9

Water Temperature (C): 9.1

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	212	231	246	216	1888	79	2310	765	70.98	3717	142.9	42.1
Brown Trout	>=200mm	81	81	83	81	662	89	810	268	79.78	1303	232.3	135.0
Brown Trout	All	404	423	436	410	3457	243	4230	1400	216.94	6806	167.6	70.3

Site Number: 416

Site Midpoint (Latitude, Longitude): 44.36462108, -103.92755468

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1, RB2

Date Sampled: 09/08/2008

Site Length (m): 100

Mean Width (m): 7.0

Conductivity (umhos/cm): 431

pH: 8.9

Water Temperature (C): 10.9

Number of Pass: 3

Voltage:

275

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	147	159	171	147	2268	84	1590	919	74.56	2558	116.7	36.8
Brown Trout	>=200mm	45	46	49	45	656	108	460	266	96.74	740	250.8	165.1
Brown Trout	All	254	266	276	256	3795	295	2660	1537	263.46	4280	148.2	77.8
Rainbow Trout	>=200mm	2	2	2	2	29	6	20	12	5.49	32	273.0	215.5
Rainbow Trout	All	2	2	2	2	29	6	20	12	5.49	32	273.0	215.5

Site Number: 418

Site Midpoint (Latitude, Longitude): 44.36357703, -103.92915307

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 10/08/2008

Site Length (m): 100

Mean Width (m): 7.5

Number of Pass: 3

Conductivity (umhos/cm): 450

pH: 8.8

Water Temperature (C): 8.7

Voltage: 275

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	265	307	335	279	4088	170	3070	1656	151.35	4940	119.4	41.5
Brown Trout	>=200mm	65	66	69	65	879	105	660	356	93.40	1062	225.9	119.0
Brown Trout	All	393	453	486	420	6033	383	4530	2443	342.42	7289	140.4	63.6

Site Number: 440

Site Midpoint (Latitude, Longitude): 44.35115222, -103.92510290

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BR1

Date Sampled: 09/04/2008

Site Length (m): 100

Mean Width (m): 7.6

Number of Pass: 3

Conductivity (umhos/cm): 413

pH: 9.0

Water Temperature (C): 10.0

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	165	254	337	171	3358	157	2540	1360	140.06	4087	133.0	46.7

Brown Trout	>=200mm	106	108	112	106	1428	212	1080	578	189.52	1738	235.8	148.7
Brown Trout	All	367	401	421	381	5302	497	4010	2147	443.51	6452	173.2	93.7

Site Number: 449
Site Midpoint (Latitude, Longitude): 44.34524209, -103.92368082
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 09/04/2008
Site Length (m): 100
Mean Width (m): 6.6
Number of Pass: 3

Conductivity (umhos/cm): 438
pH: 9.0
Water Temperature (C): 8.6
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	118	124	132	118	1887	76	1240	764	68.30	1995	126.1	40.5
Brown Trout	>=200mm	86	88	92	86	1339	181	880	542	161.56	1416	233.5	135.2
Brown Trout	All	204	213	222	204	3241	283	2130	1312	252.62	3427	171.4	87.3

Site Number: 452
Site Midpoint (Latitude, Longitude): 44.34299923, -103.92186628
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 09/03/2008
Site Length (m): 100
Mean Width (m): 5.9
Number of Pass: 3

Conductivity (umhos/cm): 433
pH: 9.0
Water Temperature (C): 10.3
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	101	121	143	101	2038	74	1210	826	66.28	1947	137.9	36.4
Brown Trout	>=200mm	48	49	52	48	825	126	490	334	112.81	788	240.9	153.1
Brown Trout	All	150	168	185	151	2830	213	1680	1146	190.27	2703	171.0	75.3

Site Number: 467
Site Midpoint (Latitude, Longitude): 44.33538537, -103.91026231
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 09/22/2008
Site Length (m): 100
Mean Width (m): 7.0
Number of Pass: 3

Conductivity (umhos/cm): 439
pH: 9.1
Water Temperature (C): 8.4

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	189	205	219	191	2929	114	2050	1186	102.03	3298	136.9	39.0
Brown Trout	>=200mm	84	84	86	84	1200	165	840	486	147.34	1352	230.7	137.5
Brown Trout	All	340	357	369	345	5100	370	3570	2066	330.20	5744	165.8	72.5

Site Number: 477

Date Sampled: 09/03/2008

Conductivity (umhos/cm):

Site Midpoint (Latitude, Longitude): 44.33239689, -103.90206721

Site Length (m): 100

pH: 9.0

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 6.6

Water Temperature (C): 8.3

Stream Classification: BR1

Number of Pass: 3

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	239	249	258	240	3768	142	2490	1526	127.00	4006	120.8	37.8
Brown Trout	>=200mm	49	49	50	49	741	101	490	300	89.79	788	226.6	135.6
Brown Trout	All	302	319	332	306	4827	288	3190	1955	257.08	5133	138.8	59.7

Site Number: 497

Date Sampled: 09/02/2008

Conductivity (umhos/cm): 433

Site Midpoint (Latitude, Longitude): 44.32086915, -103.89242676

Site Length (m): 100

pH: 8.9

Survey Completed by: South Dakota Game, Fish and Parks

Mean Width (m): 6.8

Water Temperature (C): 9.2

Stream Classification: BR1

Number of Pass: 3

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	164	166	170	164	2435	93	1660	986	83.39	2671	121.3	38.4
Brown Trout	>=200mm	40	41	44	40	601	73	410	244	65.32	660	224.1	121.7
Brown Trout	All	237	252	264	240	3696	220	2520	1497	196.62	4055	141.5	59.6

Site Number: 529
Site Midpoint (Latitude, Longitude): 44.30371593, -103.87139548
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 09/02/2008 **Conductivity (umhos/cm):** 450
Site Length (m): 100 **pH:** 8.8
Mean Width (m): 7.2 **Water Temperature (C):** 8.1
Number of Pass: 3 **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	219	224	230	219	3095	109	2240	1254	97.39	3604	130.7	35.2
Brown Trout	>=200mm	58	58	59	58	802	109	580	325	97.43	933	233.4	136.1
Brown Trout	All	289	296	303	289	4090	240	2960	1657	214.53	4763	152.2	58.7

Site Number: 560
Site Midpoint (Latitude, Longitude): 44.29446806, -103.89018647
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BR1

Date Sampled: 08/18/2008 **Conductivity (umhos/cm):** 448
Site Length (m): 100 **pH:** 8.8
Mean Width (m): 10.8 **Water Temperature (C):** 10.1
Number of Pass: 3 **Voltage:** 250

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	238	253	265	241	2335	84	2530	946	75.06	4071	145.4	36.0
Brown Trout	>=200mm	55	56	59	55	517	59	560	209	52.47	901	223.9	113.7
Brown Trout	All	300	316	328	304	2916	148	3160	1181	131.73	5084	160.1	50.6

Site Number: 584
Site Midpoint (Latitude, Longitude): 44.27698245, -103.90261379
Survey Completed by: South Dakota Game, Fish and Parks
Stream Classification: BK0, BR2

Date Sampled: 08/19/2008 **Conductivity (umhos/cm):** 433
Site Length (m): 100 **pH:** 9.1
Mean Width (m): 6.8 **Water Temperature (C):** 11.6
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)
Brook Trout	<200mm	3	3	3	3	44	1	30	18	1.29	48	147.7	32.7
Brook Trout	All	3	3	3	3	44	1	30	18	1.29	48	147.7	32.7
Brown Trout	<200mm	347	377	396	358	5552	163	3770	2248	145.85	6066	120.5	29.4
Brown Trout	>=200mm	11	11	13	11	162	16	110	66	14.61	177	215.4	101.0
Brown Trout	All	450	471	485	457	6936	222	4710	2809	198.52	7578	123.4	32.1

Site Number: 586

Site Midpoint (Latitude, Longitude): 44.27578909, -103.90444780

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0, BR1

Date Sampled: 08/19/2008

Site Length (m): 100

Mean Width (m): 4.0

Number of Pass: 3

Conductivity (umhos/cm): 452

pH: 8.6

Water Temperature (C): 8.0

Voltage: 250

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	5	5	6	5	124	2	50	50	1.75	80	113.0	15.8
Brook Trout	All	5	5	6	5	124	2	50	50	1.75	80	113.0	15.8
Brown Trout	<200mm	173	187	200	174	4643	150	1870	1881	133.73	3009	131.9	32.3
Brown Trout	>=200mm	45	45	47	45	1117	113	450	453	100.65	724	217.4	100.9
Brown Trout	All	218	231	242	220	5736	273	2310	2323	243.89	3717	149.6	47.6

Site Number: 600

Site Midpoint (Latitude, Longitude): 44.26807115, -103.91408013

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0, BR2

Date Sampled: 08/20/2008

Site Length (m): 100

Mean Width (m): 5.5

Number of Pass: 3

Conductivity (umhos/cm): 442

pH: 8.5

Water Temperature (C): 9.3

Voltage: 250

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	4	4	72	1	40	29	1.29	64	127.5	20.0
Brook Trout	All	4	4	4	4	72	1	40	29	1.29	64	127.5	20.0
Brown Trout	<200mm	330	336	342	330	6059	146	3360	2454	130.07	5406	107.2	24.0
Brown Trout	>=200mm	5	5	6	5	90	8	50	37	7.54	80	213.6	93.6
Brown Trout	All	379	400	414	386	7213	184	4000	2921	164.06	6436	108.8	25.5

Site Number: 607

Site Midpoint (Latitude, Longitude): 44.26398611, -103.91859836

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK0, BR2

Date Sampled: 08/21/2008

Site Length (m): 100

Mean Width (m): 3.4

Number of Pass: 3

Conductivity (umhos/cm): 460

pH: 9.1

Water Temperature (C): 8.2

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)
Brook Trout	<200mm	1	1	2	1	29	1	10	12	0.49	16	124.0	19.0
Brook Trout	All	1	1	2	1	29	1	10	12	0.49	16	124.0	19.0
Brown Trout	<200mm	108	108	110	108	3135	109	1080	1269	97.55	1738	115.8	34.9
Brown Trout	>=200mm	12	12	12	12	348	39	120	141	34.44	193	217.2	110.8
Brown Trout	All	135	136	139	135	3947	179	1360	1599	159.73	2188	125.9	45.3

Site Number: 621

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

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK3, BR2

Date Sampled: 08/21/2008

Site Length (m): 100

Mean Width (m): 4.3

Number of Pass: 3

Conductivity (umhos/cm): 448

pH: 8.4

Water Temperature (C): 9.5

Voltage: 250

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	77	88	102	77	2029	65	880	822	57.61	1416	132.8	31.8
Brook Trout	>=200mm	1	1	5	1	23	3	10	9	2.39	16	216.0	116.0
Brook Trout	All	78	91	107	78	2099	69	910	850	61.86	1464	133.8	33.0
Brown Trout	<200mm	28	28	30	28	646	18	280	262	15.94	451	131.8	27.6
Brown Trout	>=200mm	6	6	9	6	138	17	60	56	14.93	97	220.3	120.8
Brown Trout	All	34	35	39	34	807	36	350	327	31.77	563	147.4	44.1

Site Number: 642

Site Midpoint (Latitude, Longitude): 44.24035494, -103.92362080

Survey Completed by: South Dakota Game, Fish and Parks

Stream Classification: BK2

Date Sampled: 08/18/2008

Site Length (m): 100

Mean Width (m): 4.3

Number of Pass: 3

Conductivity (umhos/cm): 451

pH: 8.4

Water Temperature (C): 8.1

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	112	115	120	112	2680	89	1150	1085	79.25	1850	140.1	33.1
Brook Trout	>=200mm	7	7	8	7	163	18	70	66	16.27	113	221.4	111.7
Brook Trout	All	119	122	127	119	2843	107	1220	1152	95.81	1963	144.9	37.7

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, 1998-2008

Site 165

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 27, 2008	101	92-112	
Brown Trout >=200mm	Aug 27, 2008	40	40-42	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	Oct 03, 2005	96	96-98	BR1
	Aug 26, 2008	71	71-73	BR1

Rainbow Trout >=200mm	Aug 26, 2008	2	2-2	RB2
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Site 180

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 26, 2008	144	49-436	
Brown Trout >=200mm	Aug 26, 2008	36	36-38	BR1

Site 185

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 25, 2008	17	17-17	
Brown Trout >=200mm	Aug 25, 2008	48	48-50	BR1
Rainbow Trout >=200mm	Aug 25, 2008	6	6-6	RB1

Site 192

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 27, 2008	53	50-59	
Brown Trout >=200mm	Aug 27, 2008	43	39-51	BR1

Site 205

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Oct 14, 1998	1	1-2	
Brown Trout <200mm	Oct 14, 1998	124	125-141	

Brown Trout <200mm	Oct 26, 1999	338	239-437	
	Oct 03, 2005	165	159-172	
	Aug 25, 2008	92	91-95	
Brown Trout >=200mm	Oct 14, 1998	147	144-152	BR1
	Oct 26, 1999	73	73-75	BR1
	Oct 03, 2005	37	37-38	BR2
	Aug 25, 2008	35	35-36	BR2
Hatchery Rainbow Trout >=200mm	Aug 25, 2008	6	6-6	
Rainbow Trout <200mm	Oct 14, 1998	1	1-1	
	Oct 26, 1999	14	14-16	
Rainbow Trout >=200mm	Oct 03, 2005	1	1-2	RB2

Site 313

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 28, 2008	1	1-1	
Brown Trout <200mm	Aug 28, 2008	217	214-221	
Brown Trout >=200mm	Aug 28, 2008	57	57-58	BR1

Rainbow Trout <200mm

Aug 28, 2008

2

2-2

Site 325

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 28, 2008	94	94-95	
Brook Trout >=200mm	Aug 28, 2008	5	5-7	BK2
Brown Trout <200mm	Aug 28, 2008	64	63-67	
Brown Trout >=200mm	Aug 28, 2008	5	5-5	BR2

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	
Brook Trout >=200mm	Sep 11, 2006	1	1-5	BK3
Brown Trout <200mm	Oct 25, 1999	116	76-171	
	Oct 23, 2000	162	140-184	
	Oct 22, 2001	78	72-87	

Brown Trout <200mm	Oct 31, 2002	142	90-209	
	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	
Brown Trout >=200mm	Oct 25, 1999	98	85-113	BR1
	Oct 23, 2000	114	105-125	BR1
	Oct 22, 2001	127	126-130	BR1
	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
Rainbow Trout <200mm	Oct 25, 1999	22	15-44	

Rainbow Trout <200mm	Oct 23, 2000	37	35-42	
	Oct 22, 2001	43	41-48	
	Oct 31, 2002	18	13-35	
	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	
Rainbow Trout >=200mm	Oct 25, 1999	39	37-44	RB1
	Oct 23, 2000	46	40-57	RB1
	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

Rainbow Trout >=200mm	Sep 11, 2008	63	19-310	RB1
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Site 352

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 10, 2008	70	71-84	
Brown Trout >=200mm	Sep 10, 2008	57	29-135	BR1
Rainbow Trout <200mm	Sep 10, 2008	3	3-4	
Rainbow Trout >=200mm	Sep 10, 2008	8	8-10	RB1

Site 360

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 09, 2008	25	22-33	
Brown Trout >=200mm	Sep 09, 2008	6	6-6	BR2
Rainbow Trout <200mm	Sep 09, 2008	1	1-2	
Rainbow Trout >=200mm	Sep 09, 2008	2	2-2	RB2

Site 387

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 09, 2008	231	216-246	
Brown Trout >=200mm	Sep 09, 2008	81	81-83	BR1

Site 416

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 08, 2008	159	147-171	
Brown Trout >=200mm	Sep 08, 2008	46	45-49	BR1
Rainbow Trout >=200mm	Sep 08, 2008	2	2-2	RB2

Site 418

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Sep 13, 2006	1	1-1	
Brook Trout >=200mm	Jun 17, 1998	1	1-1	BK3
Brown Trout <200mm	Jun 17, 1998	137	111-164	
	Oct 06, 2004	73	64-86	
	Sep 28, 2005	190	165-215	
	Sep 13, 2006	265	229-301	
	Sep 19, 2007	288	272-304	
Brown Trout >=200mm	Oct 08, 2008	307	279-335	
	Jun 17, 1998	70	60-84	BR1
	Oct 06, 2004	117	114-122	BR1

Brown Trout >=200mm	Sep 28, 2005	39	38-42	BR1
	Sep 13, 2006	42	36-53	BR1
	Sep 19, 2007	75	73-79	BR1
	Oct 08, 2008	66	65-69	BR1
Rainbow Trout <200mm	Sep 13, 2006	2	2-4	

Site 440

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 04, 2008	254	171-337	
Brown Trout >=200mm	Sep 04, 2008	108	106-112	BR1

Site 449

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 04, 2008	124	118-132	
Brown Trout >=200mm	Sep 04, 2008	88	86-92	BR1

Site 452

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 03, 2008	121	101-143	
Brown Trout >=200mm	Sep 03, 2008	49	48-52	BR1

Site 467

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 22, 2008	205	191-219	
Brown Trout >=200mm	Sep 22, 2008	84	84-86	BR1

Site 477

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Jun 16, 1998	243	77-679	
	Sep 03, 2008	249	240-258	
Brown Trout >=200mm	Jun 16, 1998	42	38-50	BR1
	Sep 03, 2008	49	49-50	BR1

Site 497

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 02, 2008	166	164-170	
Brown Trout >=200mm	Sep 02, 2008	41	40-44	BR1

Site 529

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Sep 02, 2008	224	219-230	
Brown Trout >=200mm	Sep 02, 2008	58	58-59	BR1

Site 560

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brown Trout <200mm	Aug 18, 2008	253	241-265	
Brown Trout >=200mm	Aug 18, 2008	56	55-59	BR1

Site 584

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 19, 2008	3	3-3	
Brown Trout <200mm	Aug 19, 2008	377	358-396	
Brown Trout >=200mm	Aug 19, 2008	11	11-13	BR2

Site 586

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 19, 2008	5	5-6	
Brown Trout <200mm	Aug 19, 2008	187	174-200	
Brown Trout >=200mm	Aug 19, 2008	45	45-47	BR1

Site 600

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 20, 2008	4	4-4	
Brown Trout <200mm	Aug 20, 2008	336	330-342	

Brown Trout >=200mm	Aug 20, 2008	5	5-6	BR2
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Site 607

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 21, 2008	1	1-2	
Brown Trout <200mm	Aug 21, 2008	108	108-110	
Brown Trout >=200mm	Aug 21, 2008	12	12-12	BR2

Site 621

Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 21, 2008	88	77-102	
Brook Trout >=200mm	Aug 21, 2008	1	1-5	BK3
Brown Trout <200mm	Aug 21, 2008	28	28-30	
Brown Trout >=200mm	Aug 21, 2008	6	6-9	BR2

Site 642

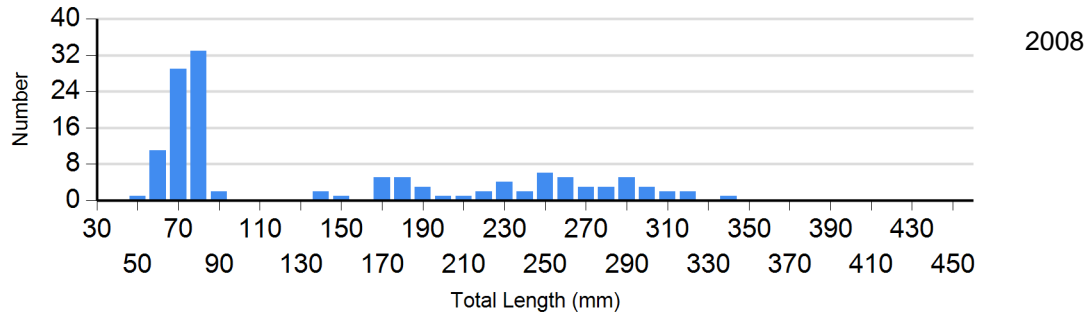
Species/Size	Date	Pop Est.	(95% C.I.)	Stream Classification
Brook Trout <200mm	Aug 18, 2008	115	112-120	
Brook Trout >=200mm	Aug 18, 2008	7	7-8	BK2

Length Frequency Distribution

Length frequency histogram of species sampled by year.

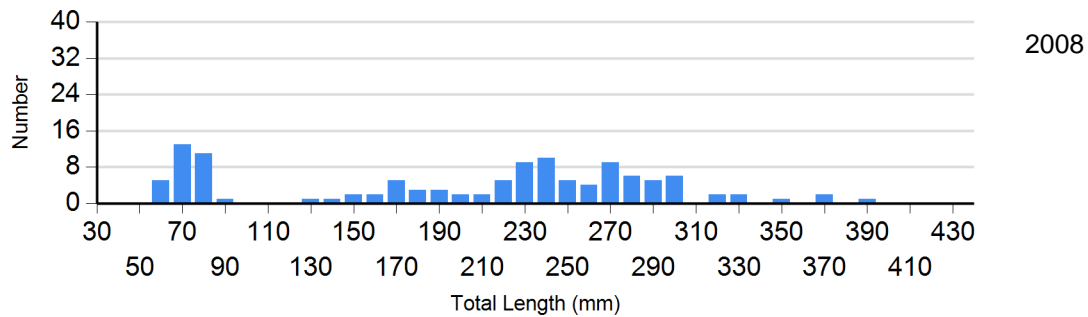
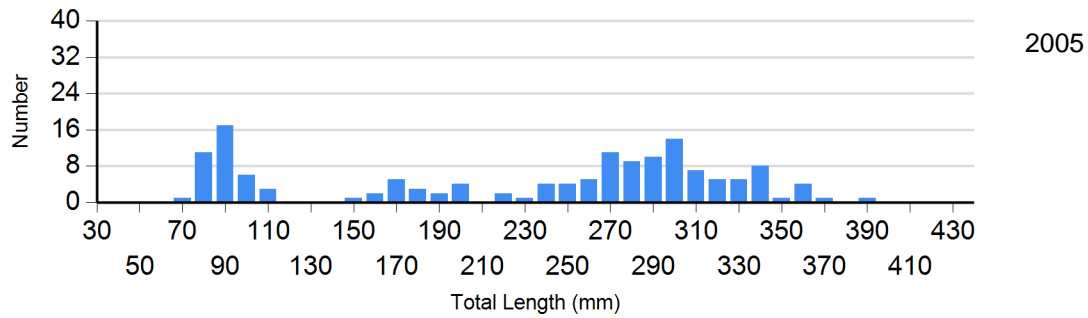
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Species: Brown Trout

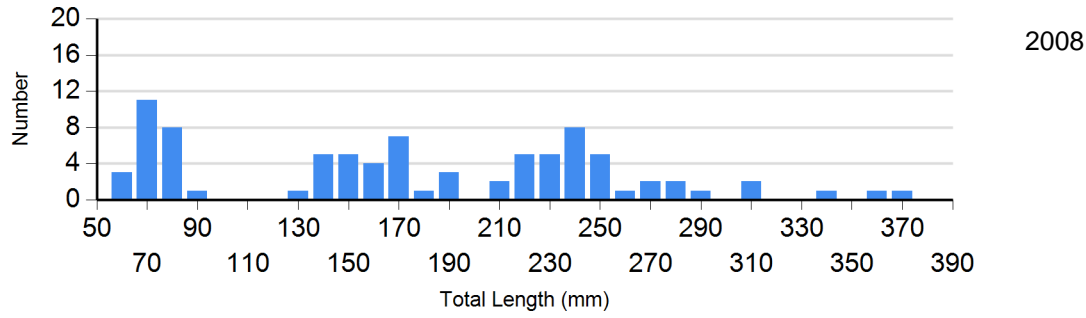


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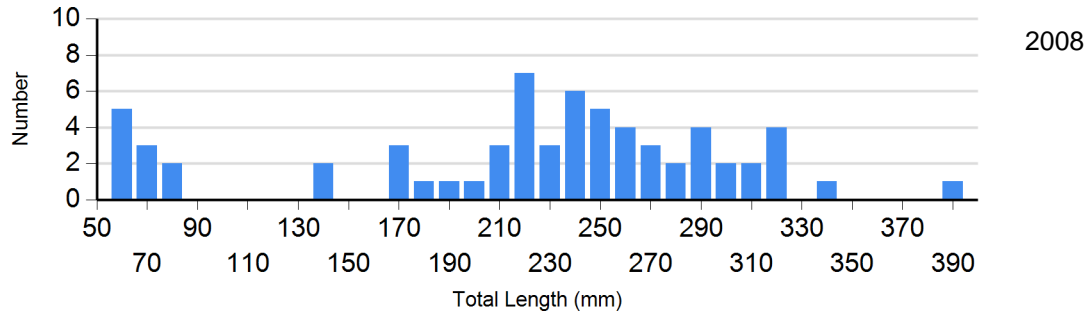
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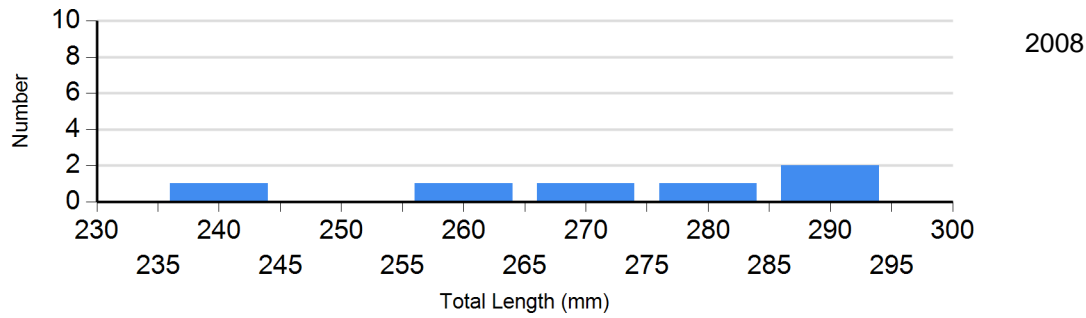
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Species: Brown Trout



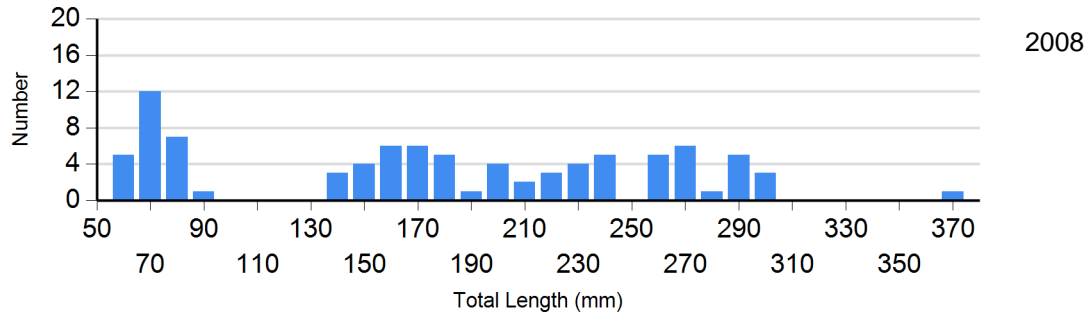
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Species: Brown Trout



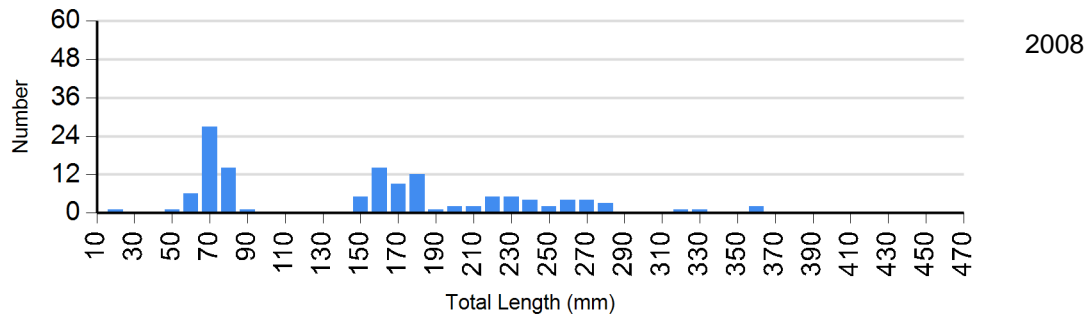
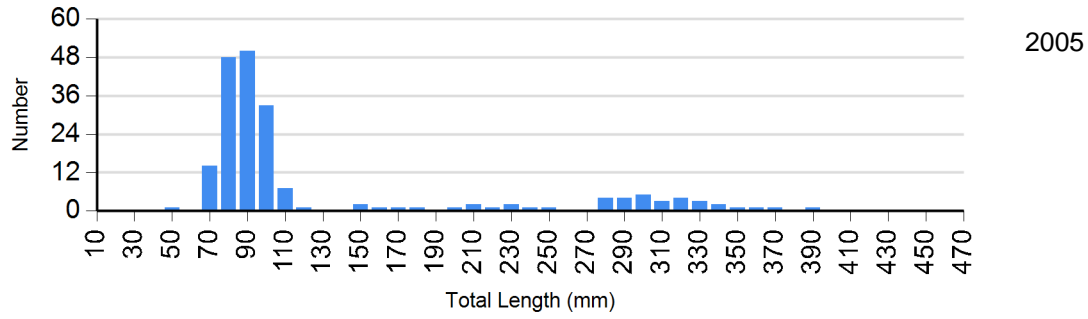
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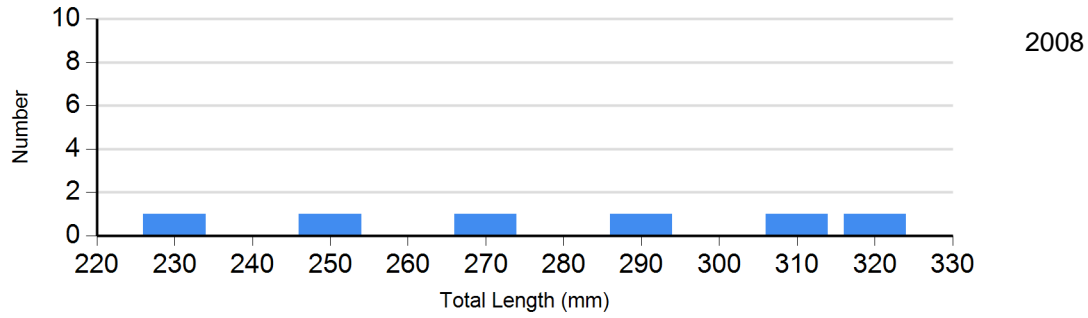
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Species: Brown Trout



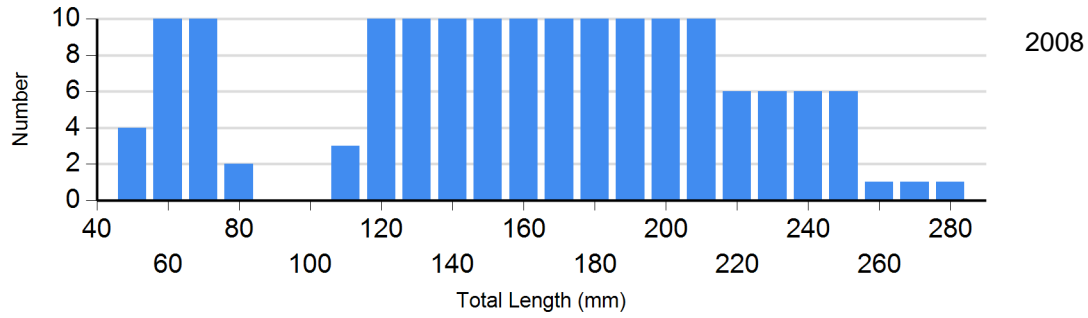
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Species: Brown Trout



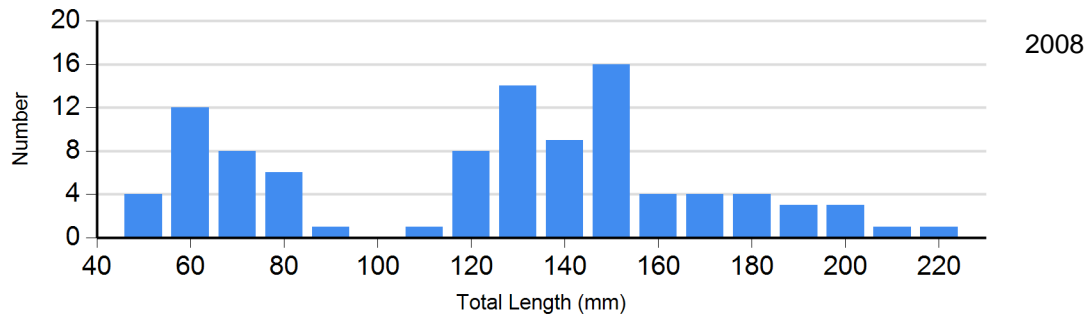
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Species: Hatchery Rainbow Trout



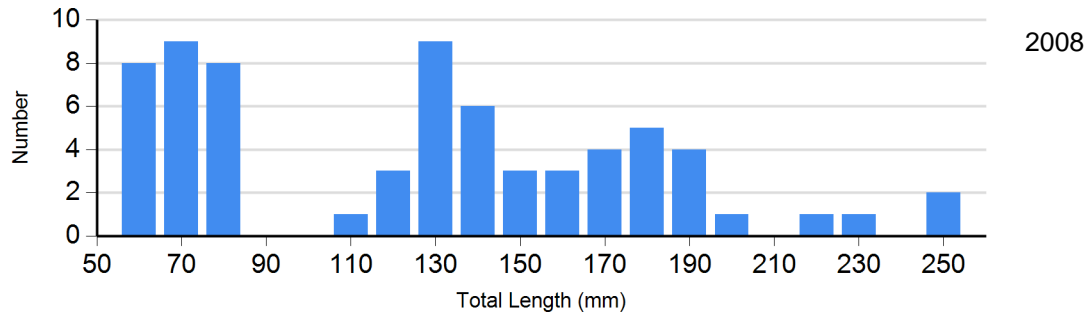
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Species: Brown Trout



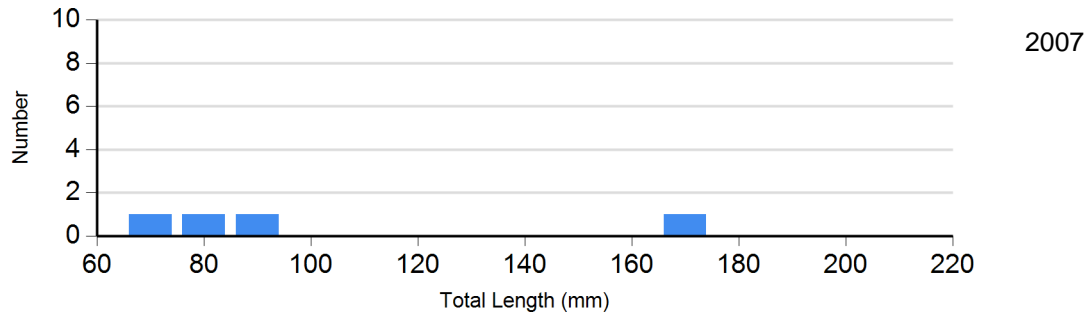
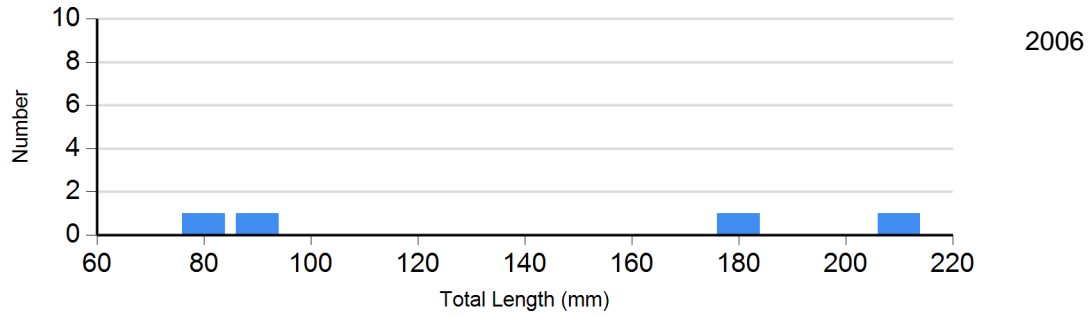
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Species: Brook Trout

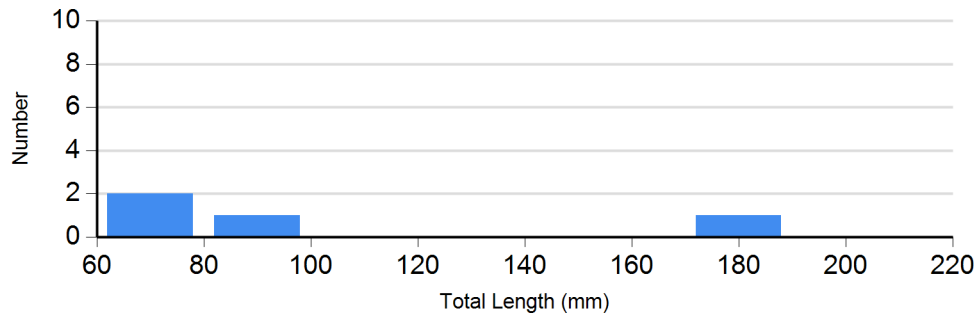


Site: 325
Species: Brown Trout



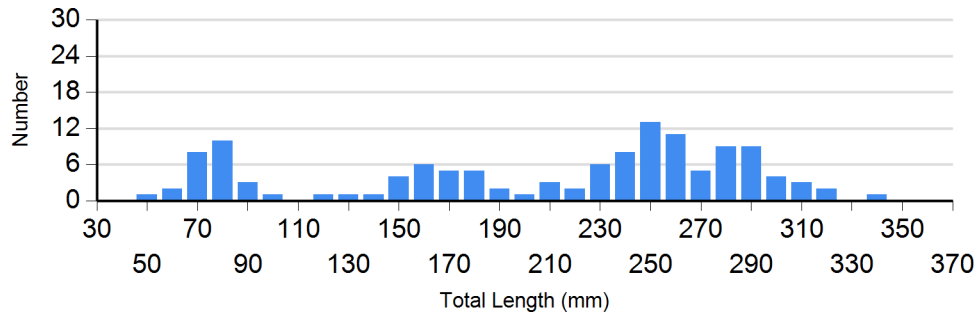
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Species: Brook Trout



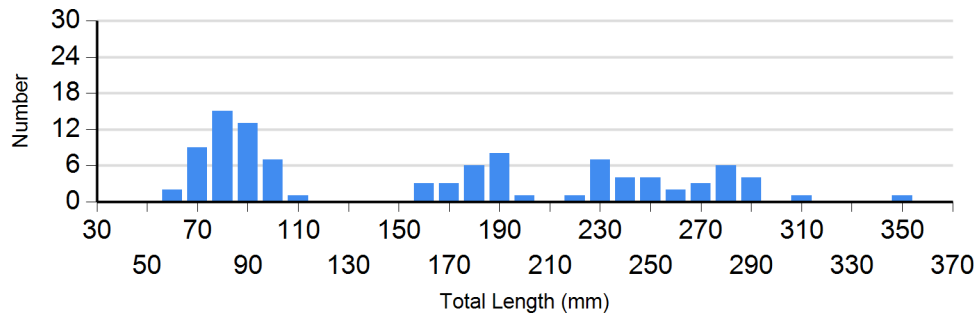


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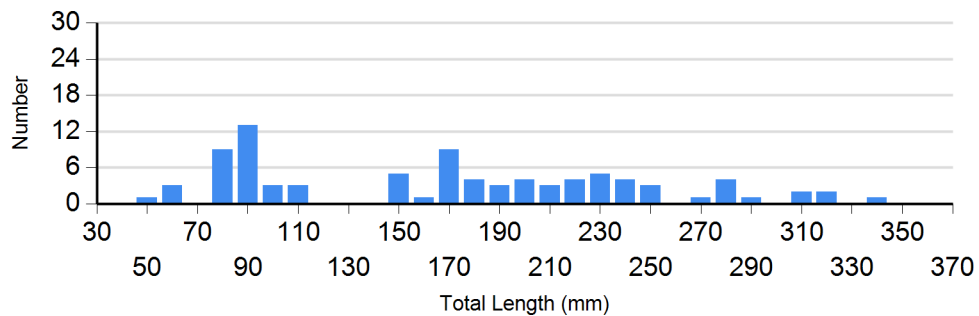
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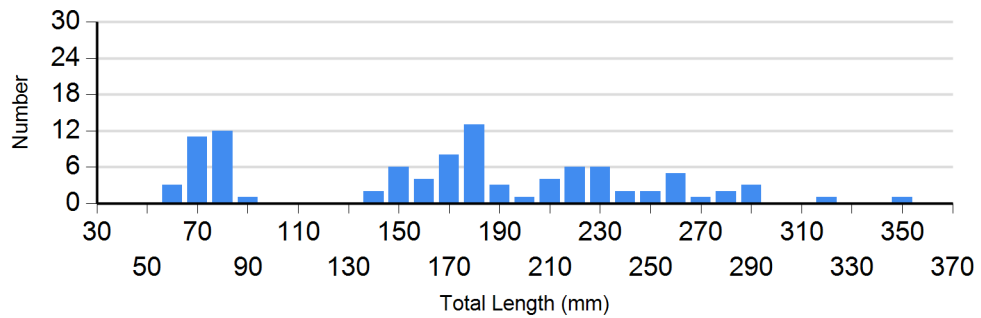
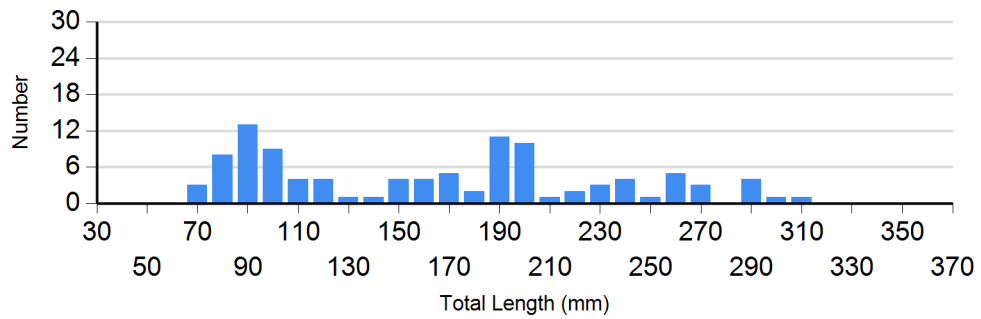
2003



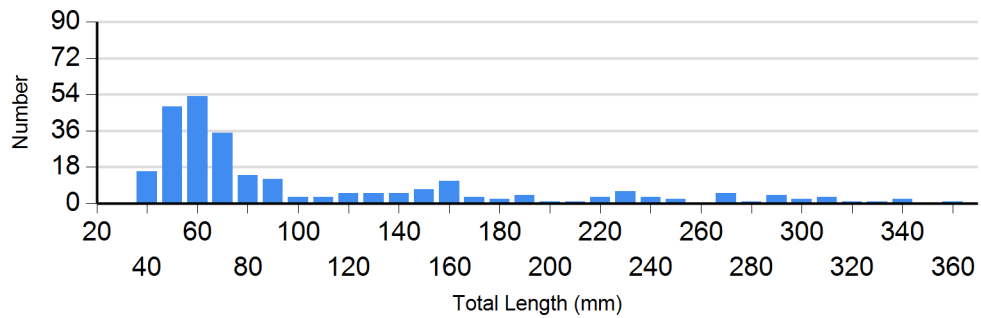
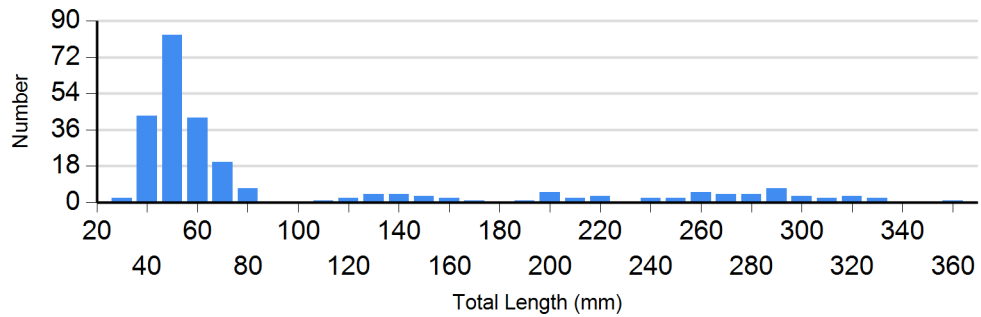
2004

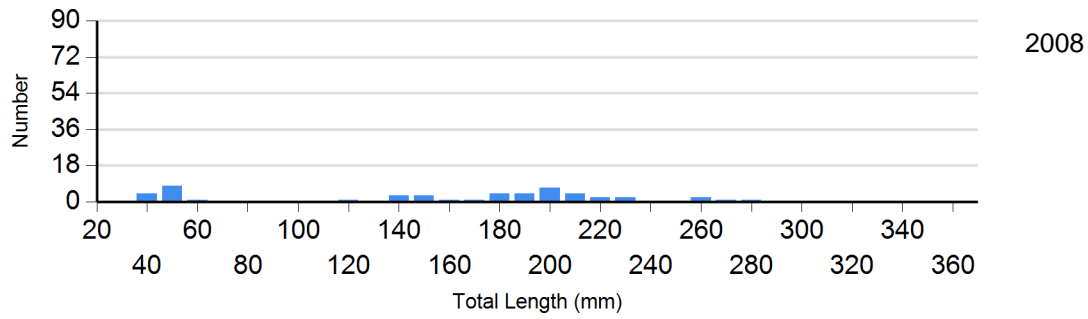
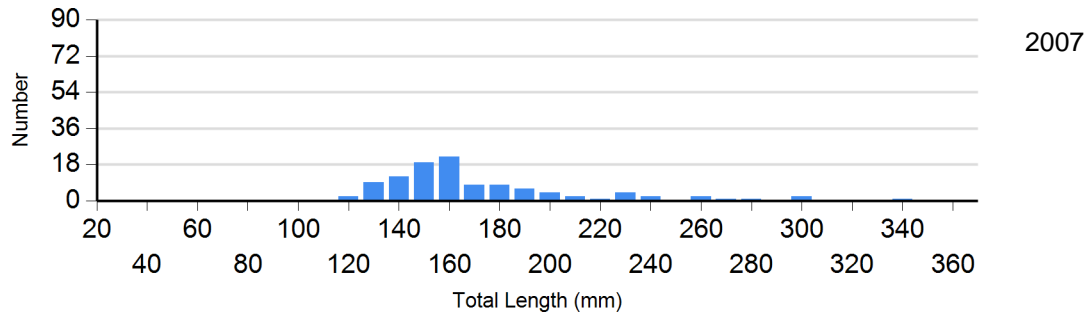
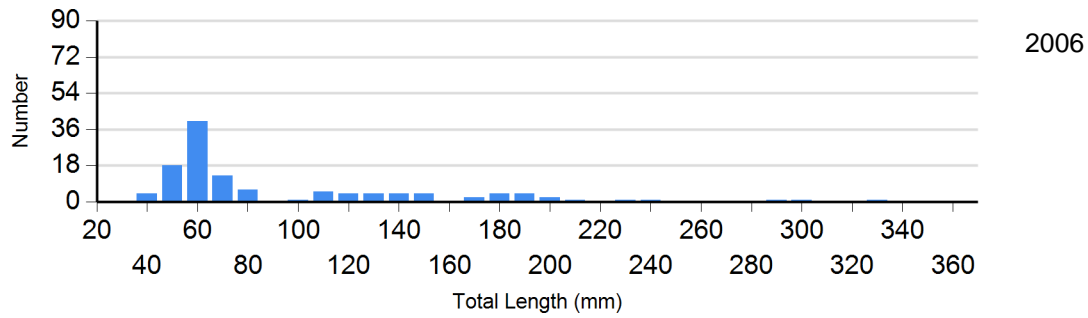


2006

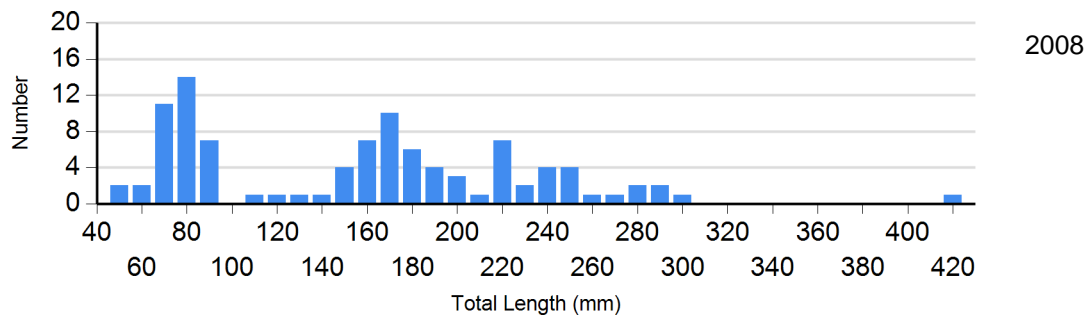


Site: 340
Species: Rainbow Trout

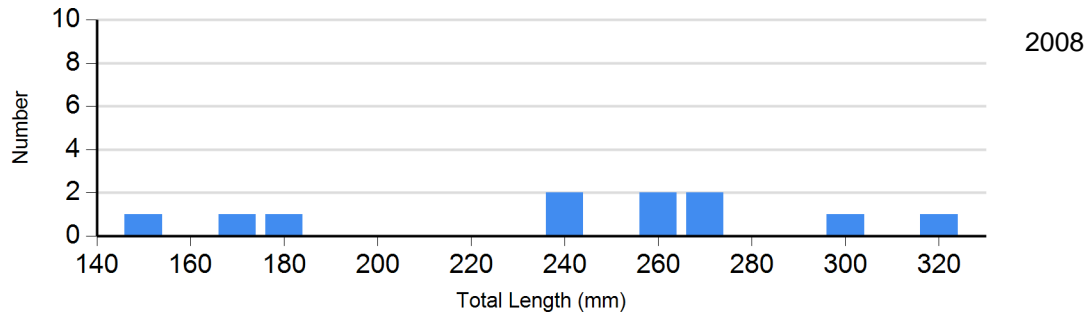




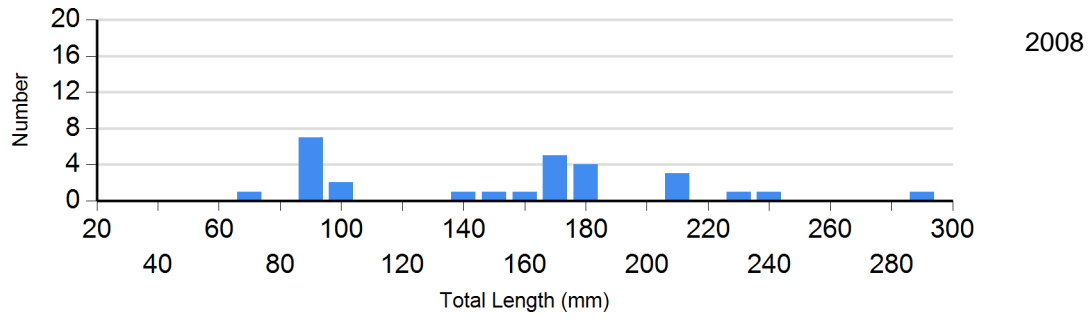
Site: 352
Species: Brown Trout



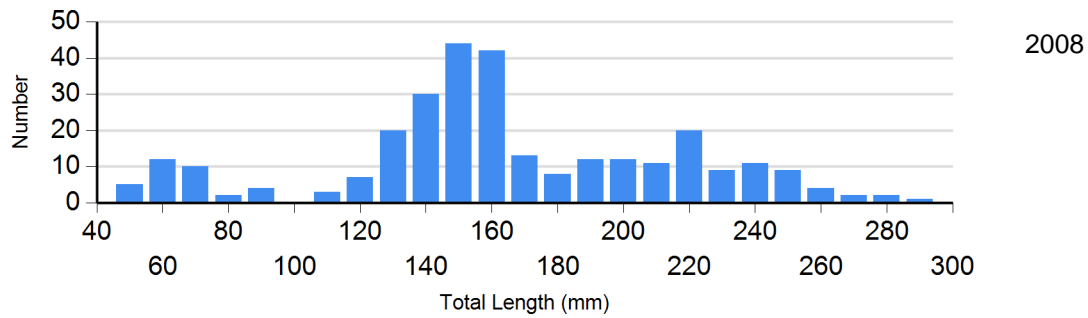
Site: 352
Species: Rainbow Trout



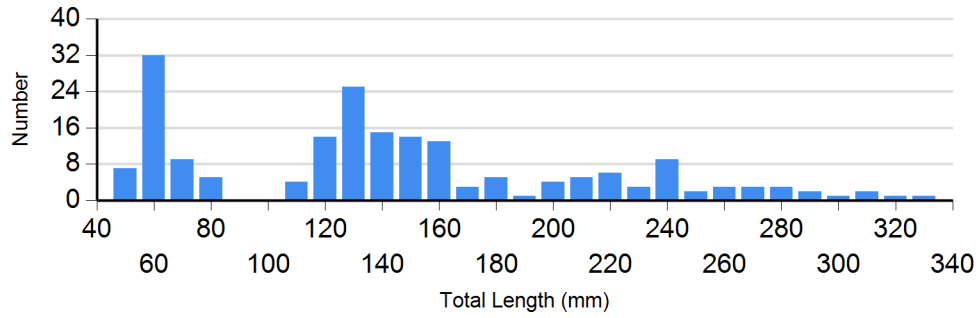
Site: 360
Species: Brown Trout



Site: 387
Species: Brown Trout

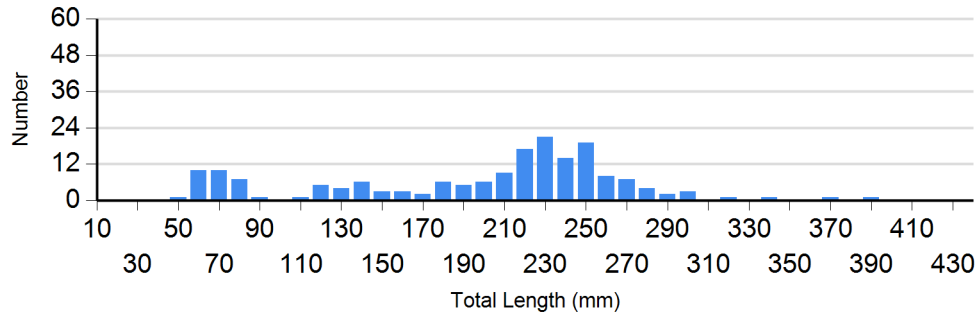


Site: 416
Species: Brown Trout

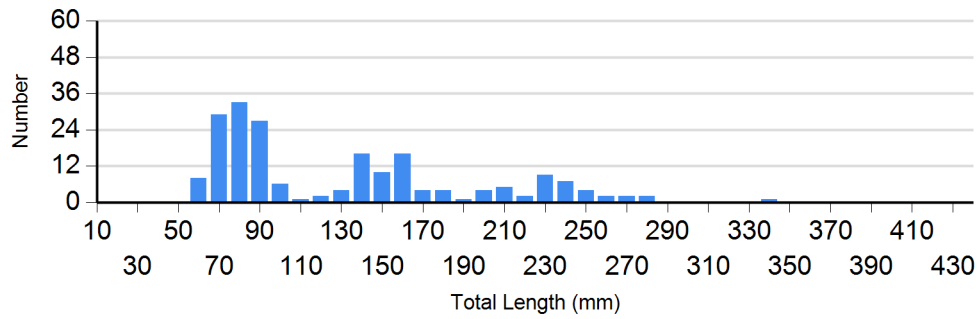


2008

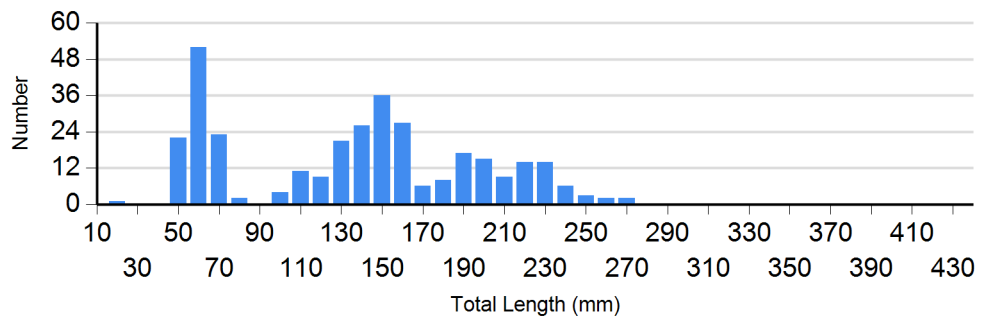
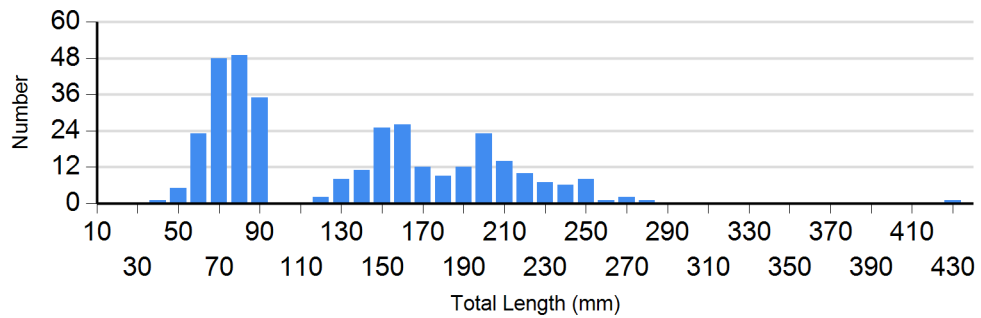
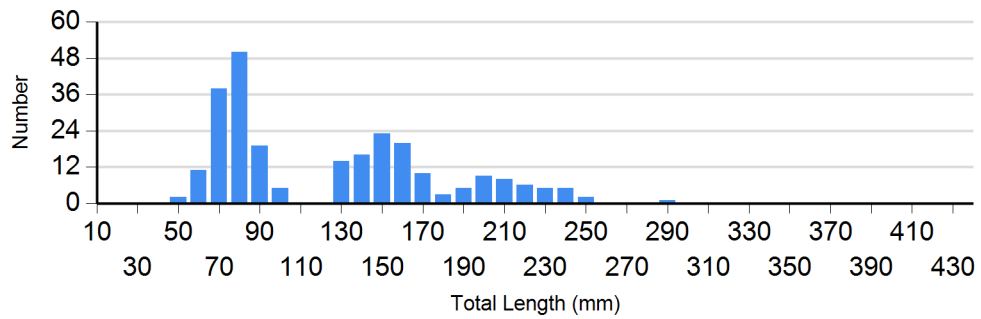
Site: 418
Species: Brown Trout



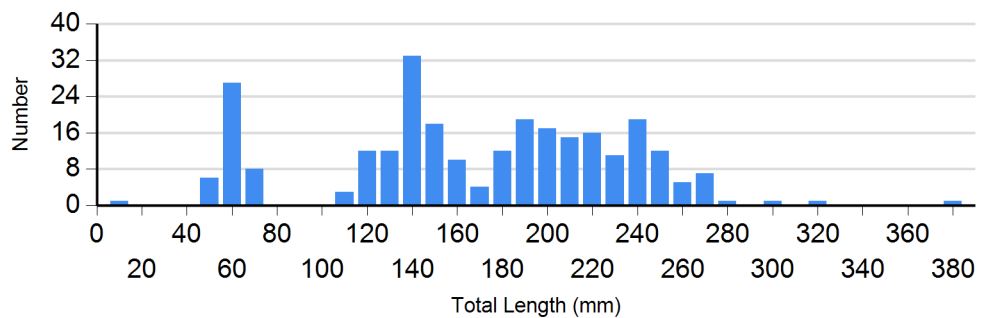
2004



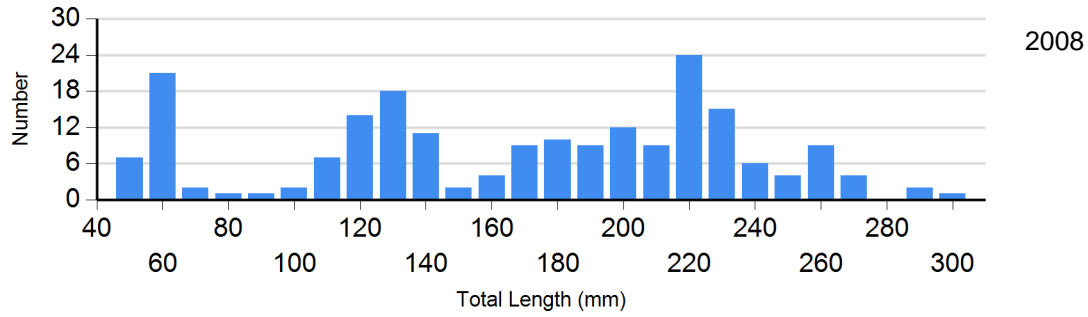
2005



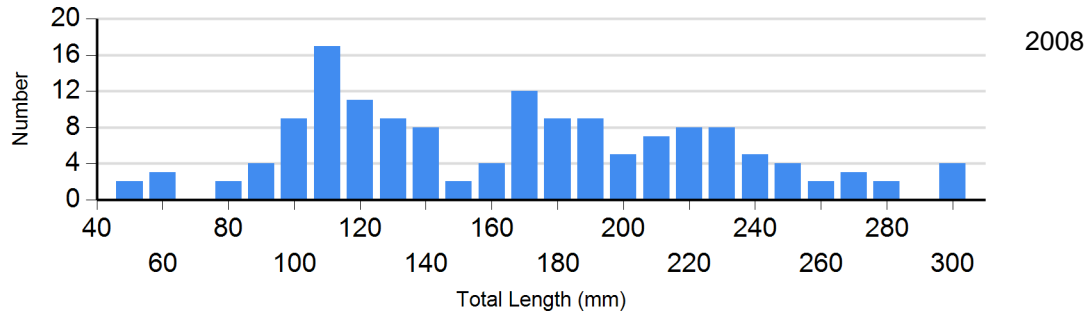
Site: 440
Species: Brown Trout



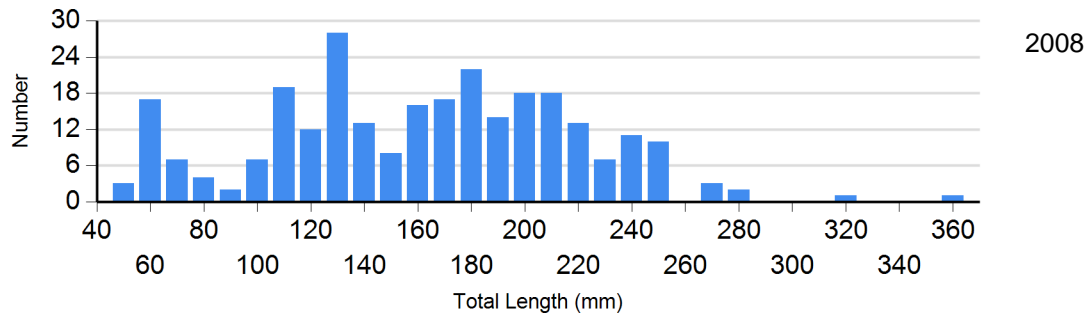
Site: 449
Species: Brown Trout



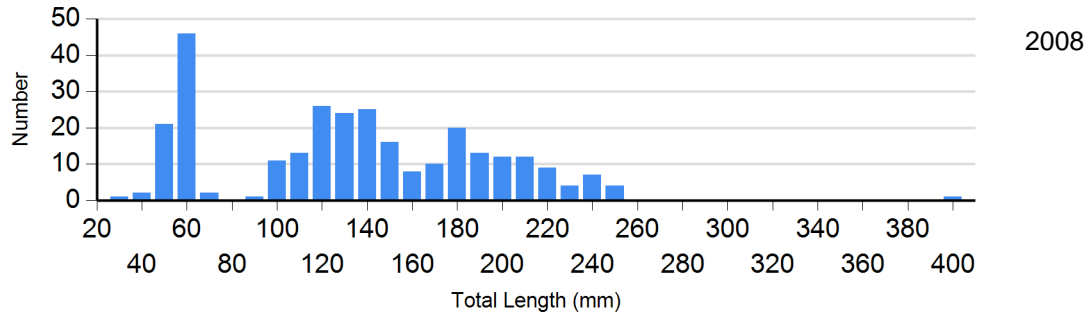
Site: 452
Species: Brown Trout



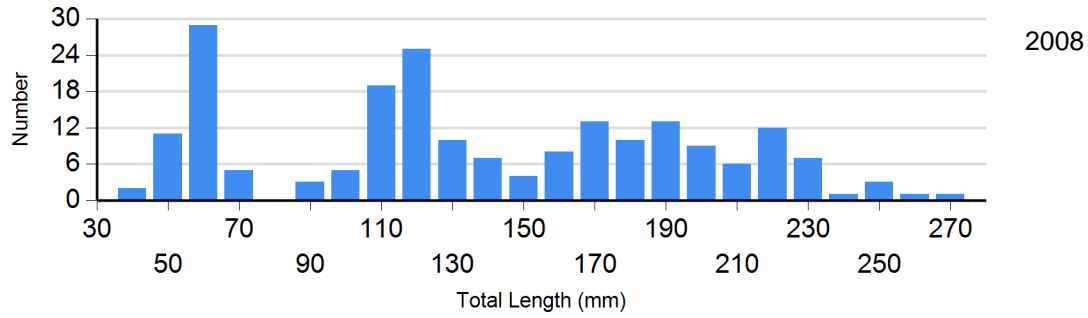
Site: 467
Species: Brown Trout



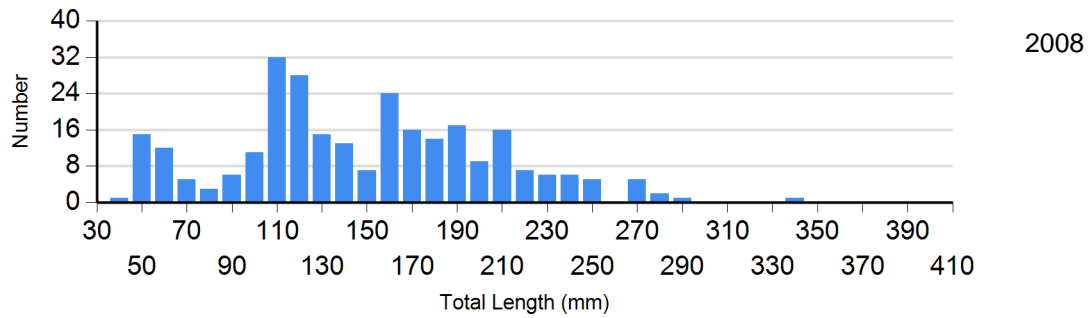
Site: 477
Species: Brown Trout



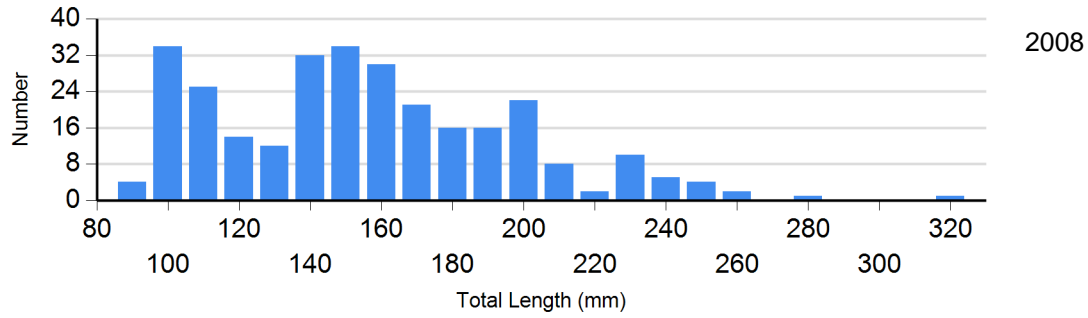
Site: 497
Species: Brown Trout



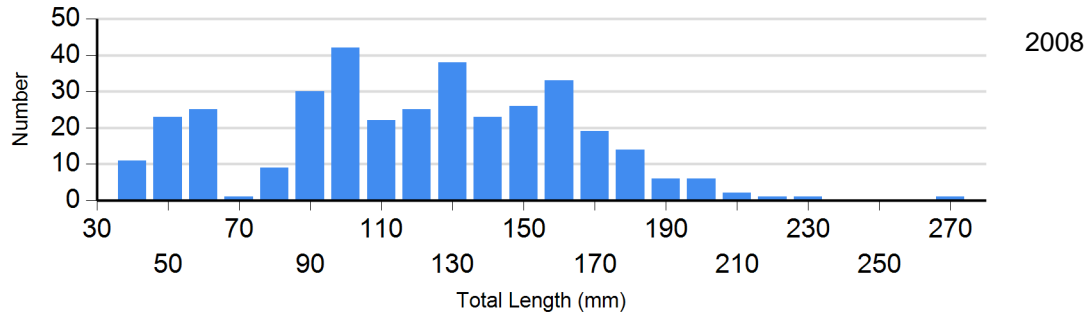
Site: 529
Species: Brown Trout



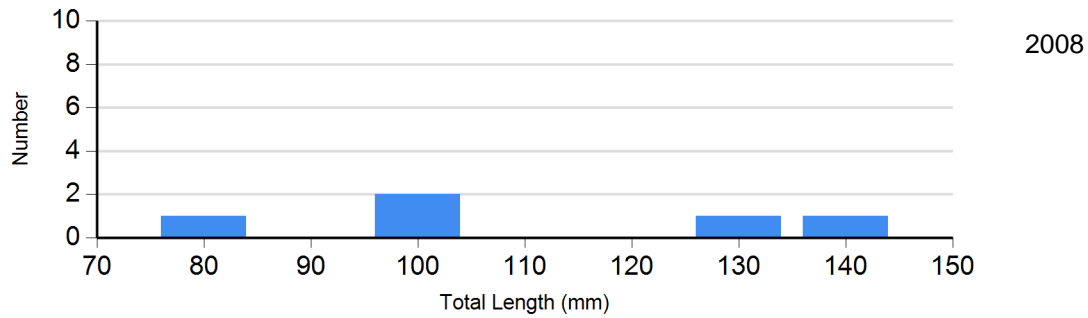
Site: 560
Species: Brown Trout



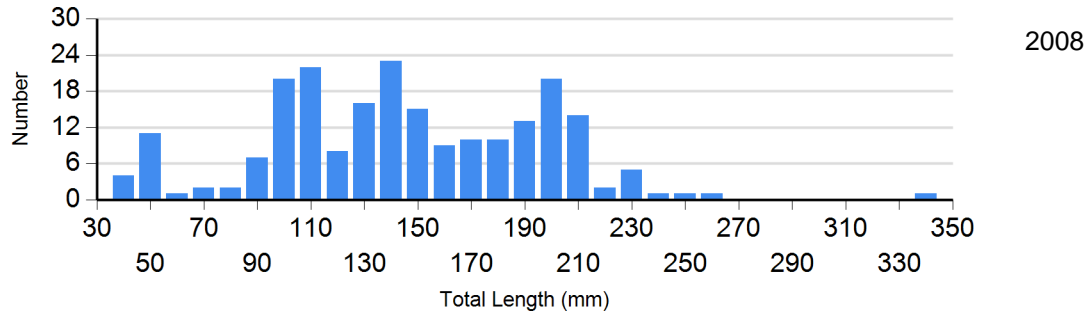
Site: 584
Species: Brown Trout



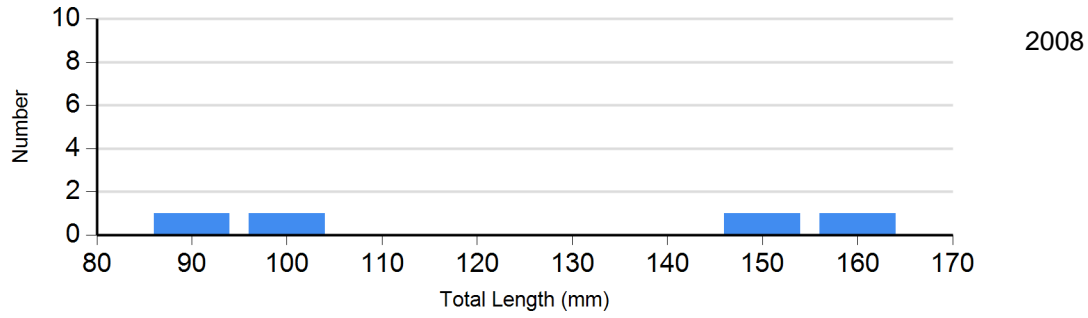
Site: 586
Species: Brook Trout



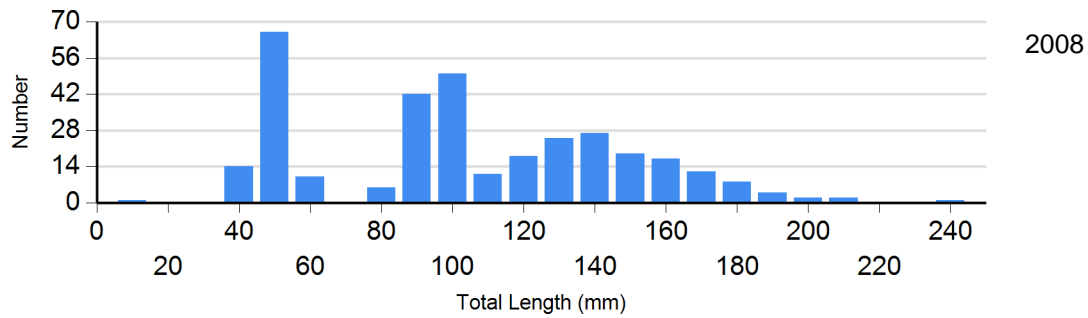
Site: 586
Species: Brown Trout



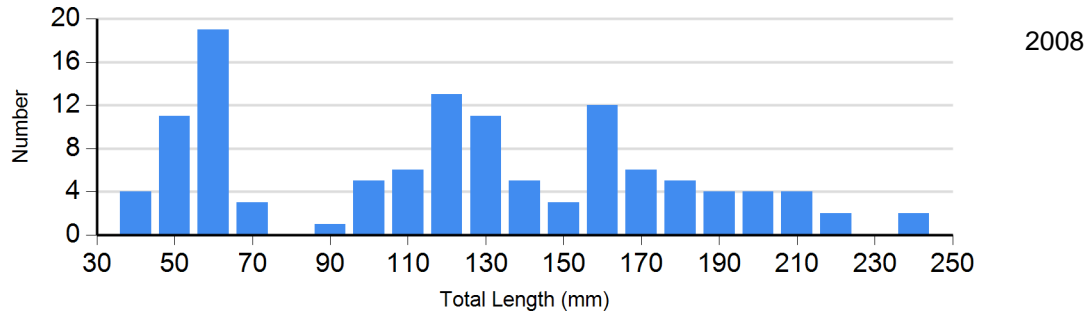
Site: 600
Species: Brook Trout



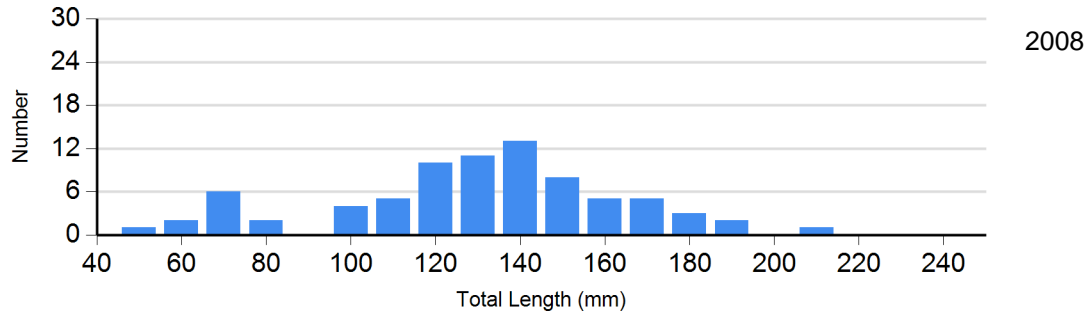
Site: 600
Species: Brown Trout



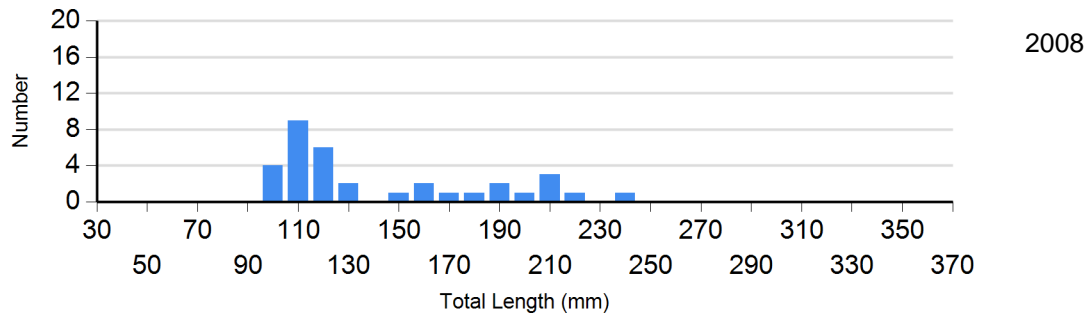
Site: 607
Species: Brown Trout



Site: 621
Species: Brook Trout



Site: 621
Species: Brown Trout



Site: 642
Species: Brook Trout

