

Gillnetting Survey of Lake Lanthe Trout

February 2018

Results of Lake Netting Survey



Lee Crosswell, Fish & Game Officer, February 2018



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Summary

Lake Ianthe, situated on State Highway 6 approximately 65 kilometres south of Hokitika and 16 kilometres north of Hari Hari, was gillnetted in January 2018 to survey the resident brown trout population and was instigated to investigate trout condition following a perceived increase in the Rudd population over the summer months. Rudd have the potential to affect the sports fishery by competing directly and indirectly for sports fish food. Rudd may also have general habitat impacts by altering habitat structure and availability for sports fish prey species. The 2018 survey aimed to replicate previous surveys conducted in 1998, 2006 and 2013. Data is compared between 2013 and 2018. Fifty-seven brown trout were caught during the 2018 Lake Ianthe survey. Brown trout weight and condition factor has increased since the 2013 survey of the same lake, while fish length and catch rate showed no statistically significant change from 2013. Despite a perceived increase in the Rudd population within Lake Ianthe over the 2017/18 summer season, there appears to have been no immediate decline in the condition of the brown trout. However, any indirect influences on the brown trout may take some time to display. Staff recommend repeating the survey in 2022, and intermittently assisting DOC on Rudd control surveys to assess the ongoing impact of the Rudd populations on the sports fishery.

Introduction

Lake Ianthe is situated on state highway 6 approximately 65 kilometres south of Hokitika and 16 kilometres north of Hari Hari and lies within the West Coast Fish & Game region. Covering an area of approximately 4.7km² the lake is reasonably small on a national scale. A maximum depth of approximately 32m has been recorded, but more than half the lake is less than six metres in depth, with substantial areas at the southern end less than 3m.

Bonar Creek is the major tributary flowing into the lake at the southern end. Bonar Creek has a steep gradient and can dry up during the summer months. It provides little spawning for salmonids with the lake in general having very few suitable spawning areas directly flowing into the lake. The lake drains through Ianthe Creek at the southern end to the Wanganui River. Lake Ianthe experiences a typical West Coast climate with a high (4000mm annually), relatively evenly distributed annual rainfall. There is no prevailing wind with the lake being sheltered from the coast by the Ianthe Piedmont Plateau.

The lake surrounds are heavily forested and all the main podocarp and hardwoods typical of Westland lowland forest are represented. On the lower slopes and in the gullies surrounding the lake the forest is characterised by of very large podocarps and a low uneven canopy of small hardwoods, vines and tree ferns. Stands of Kahikatea interspersed with tall herbaceous swamp plants (flax, manuka and cabbage tree) are found at the southern end of the lake. The lakeshore vegetation is especially well developed with many native water plants abundant. A large tussocky sedge (*Scirpus Polystachus*) not found elsewhere in New Zealand, lives on the lake shore.

In terms of angling Lake Ianthe has a reputation of for producing good sized, well-conditioned brown trout, and occasionally quinnat salmon of both the lake resident and seas-run life history.

Shallow trolling and harling are the predominant fishing methods used but flyfishing within casting distance of the shoreline from small boats is also popular.

Since 2012 there have been numerous releases of juvenile quinnat salmon into the lake.

The 1994/6 NIWA 'National Angling Survey' estimated lake usage in 1994/1995 at 140 angler days per season. Then, it was almost exclusively being used by West Coast licence holders. Lake Ianthe's popularity has continued to increase. The NIWA 'National Angling Survey' shows a rise in estimated angler days from 250 in 2004/2005, to 580 in 2007/2008, and 380 in 2014/2015 (Unwin, 2016).

In January 2013 a local trout angler caught an unusual species of orange coloured fish while trout fishing in Lake Ianthe. The angler presented the fish to Fish & Game and it was positively identified as a Rudd (*Scardinius erythrophthalmus* L.) a noxious pest species. A pest fish survey was carried out in January 2013 by the Department of Conservation (DOC) with the assistance of Fish & Game to gather information on the abundance and distribution of the Rudd population in the lake and to check for the presence of any other pest species.

The January 2013 survey resulted in the capture of 32 Rudd varying in length from 65 – 290mm. The range in size caught (which relates to age) indicates that Rudd had been present in the lake for at least 3 to 5 years (McCaughan, 2013). The fish were caught only along the eastern shoreline of the lake suggesting that at that their distribution at that stage favours certain parts of the lake.

During late 2017, early 2018 Fish and Game West Coast received several calls from anglers saying that Rudd numbers had increased significantly over the summer. From these reports a lake survey was initiated to compare brown trout health with that from 2013 to see if the perceived increase in Rudd numbers has negatively affected the trout fishery.

Method

Three sizes of sinking monofilament gill net were used with stretched mesh sizes of 115mm or 4.62" (4 nets), 87mm or 3.5" (2 net), and 70mm or 2.5" (2 nets). The 20m nets were set with one end attached to the shore and at tangents to the shoreline.

Previous net sites were replicated at regular intervals around the lake. The nets were set for 2-4hrs at first light during January 2018.

Each fish caught was weighed to the nearest 5gms using electronic scales and measured (fork length) to the nearest 5mm. Healthy fish were returned immediately to the water while dead fish were retained for otolith extraction and gut content identification.

Condition factor was calculated using the formula:

$$CF = \frac{W * 100,000}{L * L * L}$$

Where CF is condition factor, W is weight in grams and L is the fork length in millimetres.

Catch per unit effort (CPUE) was calculated for each net size and expressed as catch per 100m net per hour.

Data was statistically analysed using a one-way ANOVA. Probability (P) values are given for all analyses and significant differences noted where values are below 0.05 (95% Confidence).

Results

57 brown trout were netted on 3 occasions between the 16th and 18th of January 2018. One salmon was caught during the 2018 survey. No Rudd were caught in the survey however it has not been established if the nets or methodology used for catching brown trout are effective at catching Rudd.

The 2018 gillnetting data is compared to the 2013 data to ascertain if trout have altered in length, weight, condition and catch rate. Statistically significant changes in fish characteristics are noted. The p-value indicates the probability of getting the difference observed by chance. A significant change is noted with 95% confidence if a probability value less than 0.05 is obtained from the ANOVA.

Table 1: *Summary of netting data from all Lake Ianthe surveys*

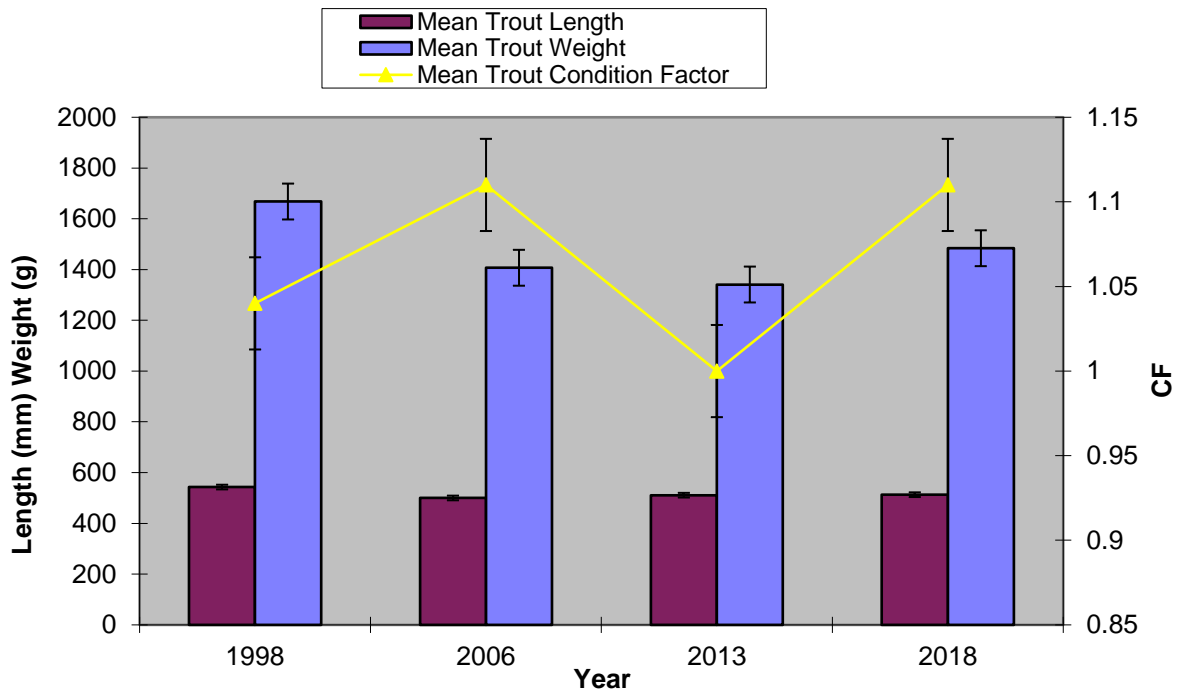
Attribute	Survey year			
	1998	2006	2013	2018
Mean Length	534(mm)	500(mm)	511(mm)	513(mm)
Mean Weight	1668(g) 3.71(lb)	1407(g) 3.1(lb)	1341(g) 2.95(lb)	1484(g) 3.26(lb)
Mean Condition	1.04(cf)	1.11(cf)	1.00(cf)	1.11(cf)
Mean Catchrate	6.3(#/100m/hr)	6.8(#/100m/hr)	3.7(#/100m/hr)	3.4(#/100m/hr)
Fish Caught	108	97	56	57

Table 2: *Analysis of variance of measured attributes to ascertain changes in the Lake Ianthe trout population.*

Attribute	Survey year		Significant difference	
	2013	2018	2013-2018	(p-value)
Mean Length	511(mm)	513(mm)	No change	0.87
Mean Weight	1341(g) 2.95(lb)	1484(g) 3.26(lb)	Increase	<0.05
Mean Condition	1.00(cf)	1.11(cf)	Increase	<0.05
Mean Catch rate	3.7(#/100m/hr)	3.4(#/100m/hr)	No change	0.61

Statistical analysis indicates that the average length of trout in Lake Ianthe has not changed significantly between 2013 & 2018, while average weight and trout condition has increased.

Size and Condition trends in Lake Ianthe trout (All mesh)



Hadland (1999) noted that in the 1998 survey there was the distinct lack of fish below 450mm. There was a ‘bunching’ of fish between 450mm and 550mm with only one fish caught below 450mm. The 2006 survey population appeared to have changed with approximately 12% of the fish caught measuring less than 450mm. At the other end of the scale 37% of the fish caught in the 1998 survey were above 550mm as opposed to 7% in 2006 (Kelly, 2007). The 2013 survey results were similar to 2006 with approximately 12% of the fish caught below 450mm and 16% above 550mm. 2018 showed 16% less than 450mm, with 28% above 550mm in length.

Diet:

The stomach contents of 40 trout were examined. Only items that could be positively identified were recorded. 26 of the trout examined contained bullies, 14 had empty stomachs, 1 contained damsel fly larvae, and 1 contained a dragonfly larva, bullies and a single juvenile Rudd of approximately 50mm.

Parasites:

It was noted in the 1998 survey that approximately 20% of the fish caught had the parasitic copepod *Paenodes spp.* The same parasite which eats into the flesh around the nasal ducts, eyes and pectoral fins is still prevalent in the lake. Nearer to 40% of fish in the 2006 survey had the parasite present. Mostly the effects on the trout were minimal and the parasite was only visible on close examination, but a small percentage had unsightly degradation of the flesh around the nasal ducts, eyes and pectoral fins. It is the only lake where the parasite has been noted in the West Coast Region during the lake netting program. The 2018 survey did not examine copepod infection however no severe symptoms were observed.

Discussion

The purpose of the 2018 survey was to further investigate the influence of Rudd on the Lake Ianthe sports fish population. Results indicate trout weight and condition factor has increased since the 2013 survey. The recent survey suggests that the increase in Rudd observed during the past spring and summer has not negatively influenced the trout population in Lake Ianthe. It appears that trout are feeding on juvenile Rudd in the lake as they do in other areas where they co-exist. This appears to be on a small scale and is likely to be seasonal while the Rudd are of a small size. From the stomach contents of the trout examined it would seem trout predation of the Rudd is having little effect on the Rudd population during January.

When considering the increases in both weight and condition factor we should also consider that the 2013 was completed during October-November 2013, while the recent survey was conducted during January 2018. Trout during the spring survey can be expected to still be recovering from the winter spawning period.

Average catch-rate remains lower than early surveys, however set time would need to be closer between surveys before making assumptions that abundance is lower. Often trout enter the nets not long after being set and catch rate is likely to decline with time as trout utilising the habitat nearby are captured.

The perceived increase in Rudd may cause more issues indirectly with competition for food, and where they affect macrophyte communities. Given this it would be worth looking at the diet of the Rudd caught during DOC control operations to see what proportion of their diet aligns with that of the brown trout. If the Rudd are feeding largely on the introduced *Lagarosiphon* in the lake and they are not on feeding on the same food as the brown trout or the Bully population their effect on the trout may not be overly significant. Bullies are clearly an important addition to the diet of trout in the lake, so we should consider the Rudd's influence on the Bully population as an important factor. If affects on the trout from an increase in Rudd are indirect, this may take some time or a few seasons to show. It should also be considered that Rudd affects on the trout population may be different at different areas of the lake itself, with perhaps some lake habitat better suited to the Rudd population than others.

Staff Recommendations

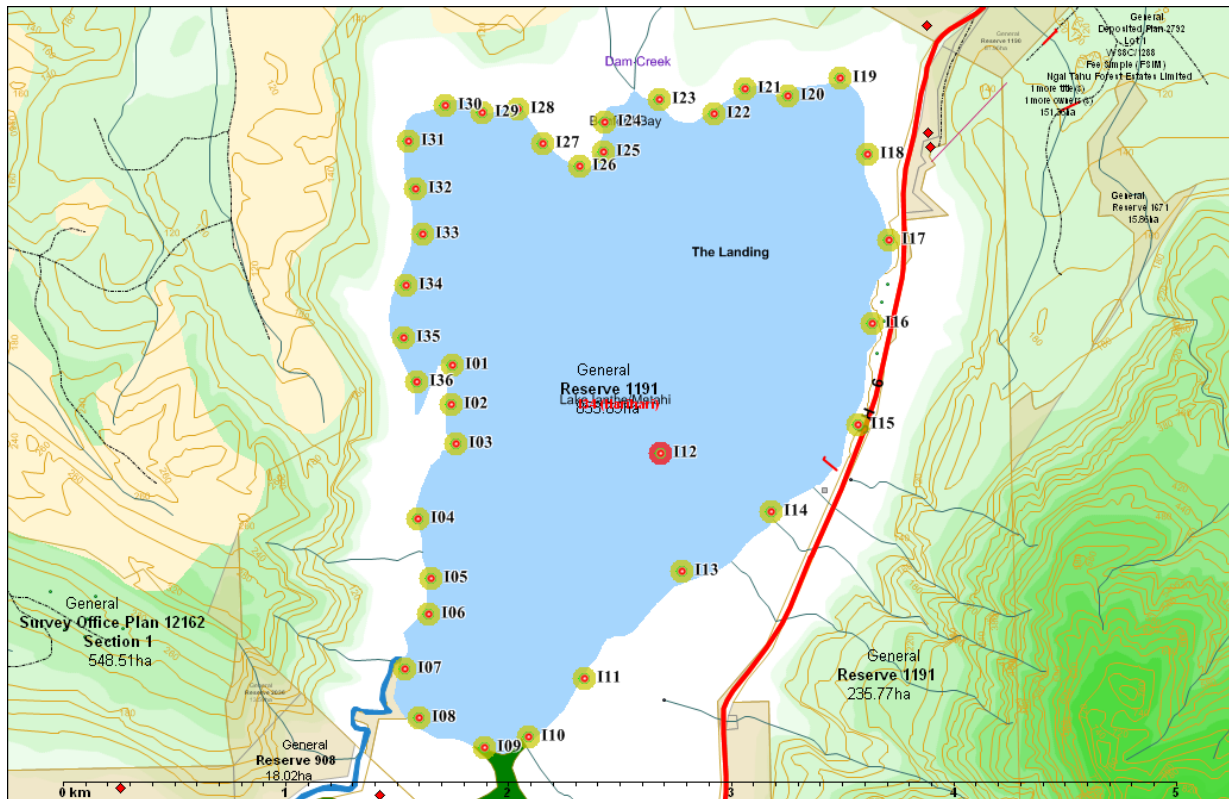
- Complete a gillnetting survey of Lake Ianthe in 2022.
- Intermittently assist DOC on Rudd control/cull surveys. During this control, examine the stomach content of the Rudd to investigate their diet to determine likely indirect affects of Rudd on the trout population.

References

- Hadland, I. (1999)** Gillnetting Surveys: Lake Ianthe. *Fish & Game Internal Report*.
- Hicks, B.J.** Biology and potential impacts of Rudd (*Scardinius erythrophthalmus* L.) in New Zealand.
- Kelly, D. (2007)** Gillnetting Survey: Lake Ianthe. *Fish & Game Internal Report*.
- McCaughan, H.M.C. (2013)**. Pest Fish - South Islands West Coast. *Internal Report - Department of Conservation, Mabaanni Area Office, Christchurch*.
- Unwin, M.J. (2016)**. Angler usage of New Zealand lake and river fisheries: results from the 20014/15 National Angling Survey.

Appendices

Appendix A: Net site Map



Appendix B: NZMG references for net sites

ID #	Latitue	Longitude	ID #	Latitue	Longitude
I01	-43.054845	170.612976	I19	-43.043693	170.634829
I02	-43.056413	170.612860	I20	-43.044356	170.631865
I03	-43.058030	170.613032	I21	-43.044016	170.629542
I04	-43.060999	170.610865	I22	-43.045001	170.627801
I05	-43.063435	170.611470	I23	-43.044376	170.624831
I06	-43.064839	170.611273	I24	-43.045235	170.621784
I07	-43.067042	170.609850	I25	-43.046435	170.621633
I08	-43.069033	170.610570	I26	-43.046954	170.620304
I09	-43.070303	170.614167	I27	-43.046005	170.618293
I10	-43.069922	170.616596	I28	-43.044580	170.617008
I11	-43.067620	170.619775	I29	-43.044691	170.615040
I12	-43.058661	170.624291	I30	-43.044358	170.612996
I13	-43.063426	170.625320	I31	-43.045733	170.610924
I14	-43.061127	170.630303	I32	-43.047682	170.611245
I15	-43.057722	170.635245	I33	-43.049507	170.611520
I16	-43.053652	170.636163	I34	-43.051559	170.610575
I17	-43.050318	170.637217	I35	-43.053669	170.610320
I18	-43.046787	170.636173	I36	-43.055460	170.610998

Appendix C: Catch Data 1998, 2006, 2013 & 2018:

Date	sex	Length	Weight	Condition	Date	sex	Length	Weight	Condition
3/11/1998	m	510	1365	1.03	4/11/1998	f	550	1890	1.14
3/11/1998	f	525	1925	1.33	4/11/1998	f	535	1660	1.08
3/11/1998	m	535	1505	0.98	4/11/1998	m	575	2000	1.05
3/11/1998	f	550	1425	0.86	4/11/1998	m	490	1330	1.13
3/11/1998	f	550	1670	1.00	4/11/1998	f	560	1565	0.89
3/11/1998	m	550	1600	0.96	4/11/1998	m	515	1395	1.02
3/11/1998	f	590	1790	0.87	4/11/1998	f	570	1600	0.86
3/11/1998	f	520	1450	1.03	4/11/1998	f	525	1650	1.14
3/11/1998	f	560	1690	0.96	4/11/1998	f	470	1050	1.01
3/11/1998	h	560	1790	1.02	4/11/1998	m	519	1140	0.82
3/11/1998	m	520	1350	0.96	4/11/1998	f	525	1765	1.22
3/11/1998	m	550	1620	0.97	4/11/1998	f	450	960	1.05
3/11/1998	m	590	1715	0.84	4/11/1998	f	495	1420	1.17
3/11/1998	m	540	1340	0.85	4/11/1998	m	505	1440	1.12
3/11/1998	f	500	1260	1.01	4/11/1998	m	620	1975	0.83
3/11/1998	m	560	1750	1.00	4/11/1998	f	515	1600	1.17
3/11/1998	m	570	1740	0.94	4/11/1998	f	535	1625	1.06
3/11/1998	f	610	2300	1.01	4/11/1998	f	525	1550	1.07
3/11/1998	m	580	2160	1.11	4/11/1998	f	530	1600	1.07
3/11/1998	f	570	1790	0.97	4/11/1998	m	605	2320	1.05
3/11/1998	f	520	1655	1.18	4/11/1998	f	595	2000	0.95
3/11/1998	m	560	1705	0.97	4/11/1998	f	555	1610	0.94
3/11/1998	m	565	2025	1.12	4/11/1998	m	550	1560	0.94
3/11/1998	m	550	2000	1.20	4/11/1998	f	440	1020	1.20
3/11/1998	f	590	2520	1.23	4/11/1998	f	470	1425	1.37
3/11/1998	m	580	2260	1.16	4/11/1998	f	520	1560	1.11
3/11/1998	f	510	1445	1.09	4/11/1998	m	505	1480	1.15
3/11/1998	m	540	1560	0.99	4/11/1998	m	510	1480	1.12
3/11/1998	m	550	1740	1.05	5/11/1998	m	580	2105	1.08
3/11/1998	f	575	2180	1.15	5/11/1998	f	535	2045	1.34
3/11/1998	m	570	1880	1.02	5/11/1998	m	580	1915	0.98
3/11/1998	m	510	1515	1.14	5/11/1998	m	520	1475	1.05
3/11/1998	m	540	1430	0.91	5/11/1998	m	490	1445	1.23
3/11/1998	f	545	1830	1.13	5/11/1998	m	525	1735	1.20
3/11/1998	m	560	2085	1.19	5/11/1998	f	570	1600	0.86
3/11/1998	m	560	1370	0.78	5/11/1998	m	500	1460	1.17
3/11/1998	m	530	1210	0.81	5/11/1998	m	560	1670	0.95
3/11/1998	m	510	1350	1.02	5/11/1998	f	570	1665	0.90
4/11/1998	m	580	2070	1.06	5/11/1998	f	520	1530	1.09
4/11/1998	f	505	1500	1.16	5/11/1998	m	580	1640	0.84
4/11/1998	m	525	1650	1.14	5/11/1998	m	550	1700	1.02
4/11/1998	f	510	1395	1.05	5/11/1998	f	495	1525	1.26
4/11/1998	f	535	1805	1.18	5/11/1998	m	600	2005	0.93
4/11/1998	m	580	2125	1.09	5/11/1998	m	510	1290	0.97
4/11/1998	m	595	2180	1.03	5/11/1998	f	510	1280	0.96
4/11/1998	m	680	1710	0.54	5/11/1998	m	560	1480	0.84
4/11/1998	f	530	1725	1.16	5/11/1998	f	570	1990	1.07
4/11/1998	m	530	1635	1.10	5/11/1998	m	535	1770	1.16
4/11/1998	m	610	2800	1.23	5/11/1998	m	585	2120	1.06
4/11/1998	f	520	1465	1.04	5/11/1998	m	530	1200	0.81
4/11/1998	f	540	1730	1.10	5/11/1998	f	525	1470	1.02
4/11/1998	m	590	2160	1.05	5/11/1998	m	550	1360	0.82
4/11/1998	m	500	1445	1.16	5/11/1998	f	490	1330	1.13
4/11/1998	m	540	1660	1.05					

Date	sex	Length	Weight	Condition	Date	sex	Length	Weight	Condition
2006	m	515	1450	1.06	2006	f	525	1400	0.97
2006	m	515	1535	1.12	2006	f	505	1395	1.08
2006	m	485	1105	0.97	2006	f	505	1440	1.12
2006	f	515	1175	0.86	2006	f	520	1415	1.01
2006	f	455	1030	1.09	2006	f	485	1235	1.08
2006	f	415	945	1.32	2006	f	515	1640	1.20
2006	m	485	1125	0.99	2006	m	530	1390	0.93
2006	f	505	1225	0.95	2006	f	475	1315	1.23
2006	f	505	1325	1.03	2006	f	540	1745	1.11
2006	m	500	1345	1.08	2006	f	500	1375	1.10
2006	m	530	1430	0.96	2006	f	505	1465	1.14
2006	m	525	1560	1.08	2006	f	500	1660	1.33
2006	f	345	515	1.25	2006	f	500	1485	1.19
2006	f	425	945	1.23	2006	f	430	1120	1.41
2006	f	510	1775	1.34	2006	m	565	1670	0.93
2006	m	490	1280	1.09	2006	m	540	1775	1.13
2006	m	510	1585	1.19	2006	f	485	1445	1.27
2006	m	580	2085	1.07	2006	m	520	1520	1.08
2006	f	520	1460	1.04	2006	f	525	1720	1.19
2006	f	465	1305	1.30	2006	f	615	2320	1.00
2006	f	530	1590	1.07	2006	m	510	1435	1.08
2006	m	500	1380	1.10	2006	f	410	825	1.20
2006	f	535	1890	1.23	2006	f	415	960	1.34
2006	m	505	1610	1.25	2006	m	505	1470	1.14
2006	f	535	1585	1.04	2006	m	520	1090	0.78
2006	m	579	1730	0.89	2006	m	480	1390	1.26
2006	m	515	1495	1.09	2006	f	500	1280	1.02
2006	m	510	1730	1.30	2006	f	460	1200	1.23
2006	m	520	1530	1.09	2006	f	470	1200	1.16
2006	f	490	1450	1.23	2006	f	410	900	1.31
2006	m	530	1690	1.14	2006	f	410	835	1.21
2006	f	505	1485	1.15	2006	m	530	1450	0.97
2006	f	550	1540	0.93	2006	f	375	670	1.27
2006	f	555	1910	1.12	2006	m	520	1425	1.01
2006	f	525	1410	0.97	2006	m	515	1430	1.05
2006	m	525	1615	1.12	2006	f	525	1460	1.01
2006	f	530	1630	1.09	2006	m	525	1485	1.03
2006	m	570	1790	0.97	2006	f	280	280	1.28
2006	f	485	1340	1.17	2006	f	530	1585	1.06
2006	f	440	1010	1.19	2006	m	495	1485	1.22
2006	f	490	1440	1.22					
2006	f	578	2150	1.11					
2006	m	445	1080	1.23					
2006	m	515	1375	1.01					
2006	m	550	1670	1.00					
2006	m	505	1315	1.02					
2006	m	535	1605	1.05					
2006	f	485	1430	1.25					
2006	f	465	1090	1.08					
2006	f	495	1295	1.07					
2006	m	520	1335	0.95					
2006	f	530	1635	1.10					
2006	f	540	1720	1.09					
2006	f	465	1100	1.09					

Date	sex	Length	Weight	Condition	Date	sex	Length	Weight	Condition
31/10/2013	m	545	1520	0.94	6/11/2013	f	510	1380	1.04
31/10/2013	m	545	1760	1.09	6/11/2013	m	510	1220	0.92
31/10/2013	f	540	1570	1.00					
31/10/2013	f	545	1280	0.79					
31/10/2013	f	475	1220	1.14					
31/10/2013	m	580	1700	0.87					
31/10/2013	m	525	1360	0.94					
31/10/2013	f	430	810	1.02					
31/10/2013	m	520	1360	0.97					
31/10/2013	m	530	1460	0.98					
31/10/2013	f	545	1550	0.96					
31/10/2013	f	555	1810	1.06					
31/10/2013	m	525	1380	0.95					
31/10/2013	m	540	1570	1.00					
31/10/2013	f	500	1400	1.12					
4/11/2013	m	520	1370	0.97					
4/11/2013	u	370	600	1.18					
4/11/2013	f	490	1240	1.05					
4/11/2013	f	530	1490	1.00					
4/11/2013	f	490	1260	1.07					
4/11/2013	m	570	1800	0.97					
4/11/2013	m	565	1900	1.05					
4/11/2013	m	530	1420	0.95					
4/11/2013	m	525	1300	0.90					
4/11/2013	m	535	1450	0.95					
4/11/2013	m	510	1010	0.76					
5/11/2013	f	490	1330	1.13					
5/11/2013	m	540	1120	0.71					
5/11/2013	m	555	1360	0.80					
5/11/2013	f	470	1250	1.20					
5/11/2013	m	555	1590	0.93					
5/11/2013	m	555	1570	0.92					
5/11/2013	m	475	960	0.90					
5/11/2013	f	500	1010	0.81					
5/11/2013	m	570	1780	0.96					
5/11/2013	m	560	1850	1.05					
5/11/2013	u	400	790	1.23					
5/11/2013	m	500	1380	1.10					
5/11/2013	m	570	1920	1.04					
5/11/2013	m	530	1320	0.89					
5/11/2013	u	390	780	1.31					
5/11/2013	u	430	960	1.21					
5/11/2013	m	520	1480	1.05					
6/11/2013	f	475	1200	1.12					
6/11/2013	m	520	1290	0.92					
6/11/2013	u	385	660	1.16					
6/11/2013	f	470	1010	0.97					
6/11/2013	m	515	1250	0.92					
6/11/2013	m	540	1530	0.97					
6/11/2013	m	530	1290	0.87					
6/11/2013	m	540	1450	0.92					
6/11/2013	m	485	1240	1.09					
6/11/2013	f	440	840	0.99					
6/11/2013	m	555	1690	0.99					

Date	sex	Length	Weight	Condition	Date	sex	Length	Weight	Condition
16/01/2018	m	560	1740	0.99	18/01/2018	m	570	1942	1.05
16/01/2018	f	535	1960	1.28	18/01/2018	f	520	1813	1.29
16/01/2018	m	370	769	1.52	18/01/2018	f	378	719	1.33
16/01/2018	m	485	1540	1.35					
16/01/2018	f	535	2140	1.40					
16/01/2018	m	540	1670	1.06					
16/01/2018	m	565	1780	0.99					
16/01/2018	m	575	2370	1.25					
16/01/2018	f	555	1470	0.86					
16/01/2018	m	410	994	1.44					
16/01/2018	f	535	1710	1.12					
16/01/2018	m	560	1470	0.84					
16/01/2018	f	620	2103	0.88					
16/01/2018	m	505	1652	1.28					
16/01/2018	f	510	1282	0.97					
16/01/2018	m	550	1866	1.12					
17/01/2018	m	565	1640	0.91					
17/01/2018	m	570	1750	0.94					
17/01/2018	f	570	1678	0.91					
17/01/2018	m	600	2132	0.99					
17/01/2018	m	575	1465	0.77					
17/01/2018	f	480	1374	1.24					
17/01/2018	f	465	1225	1.22					
17/01/2018	f	490	1436	1.22					
17/01/2018	f	470	1287	1.24					
17/01/2018	f	460	1282	1.32					
17/01/2018	f	550	1852	1.11					
17/01/2018	f	400	899	1.40					
17/01/2018	f	525	1427	0.99					
17/01/2018	f	399	724	1.14					
17/01/2018	f	480	1085	0.98					
17/01/2018	f	488	1431	1.23					
17/01/2018	f	520	1042	0.74					
17/01/2018	f	440	914	1.07					
18/01/2018	f	540	1510	0.96					
18/01/2018	f	545	1590	0.98					
18/01/2018	m	505	1514	1.18					
18/01/2018	f	410	954	1.38					
18/01/2018	m	510	1607	1.21					
18/01/2018	f	515	1605	1.18					
18/01/2018	f	440	1201	1.41					
18/01/2018	f	460	1260	1.29					
18/01/2018	f	550	1655	0.99					
18/01/2018	m	430	1082	1.36					
18/01/2018	f	505	1655	1.29					
18/01/2018	f	625	1799	0.74					
18/01/2018	unknown	~550	*	*					
18/01/2018	m	605	1875	0.85					
18/01/2018	m	535	1505	0.98					
18/01/2018	m	580	1721	0.88					
18/01/2018	f	460	1054	1.08					
18/01/2018	m	570	1669	0.90					
18/01/2018	m	470	930	0.90					
18/01/2018	f	500	1310	1.05					