

***Spanish River Lake Sturgeon *Acipenser fulvescens*
Spawning Assessment
2003, 2005, 2006, 2008, 2009***

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Abstract

Lake sturgeon spawning assessment projects were conducted in the Spanish River during the spring of 2003, 2006, 2008, and 2009 by Sagamok Anishnawbek with support from the Anishinabek/Ontario Fisheries Resource Centre, and, in 2005 by the Ontario Ministry of Natural Resources. Lake sturgeon were tagged, sampled and released alive. A total of 103 lake sturgeon were caught over the duration of all projects conducted by Sagamok, while 54 were caught during the 2005 study. The number of sturgeon captured during these spawning assessment projects indicate that sturgeon continue to utilize spawning habitat in the Spanish River. Age frequency distributions and mean age over all survey years indicate a fairly young population. Sex ratios of the captured sturgeon in the years with a good sample size were heavily skewed towards males. Although there continues to be a small subsistence fishery within the Sagamok Anishnawbek harvesting area of the North Channel, exploitation on a larger scale in the area (i.e., commercial fishery) has recently ceased due to government regulation. Sturgeon generally cannot compensate for adult mortality that may be associated with commercial fisheries so accordingly, it may now be expected that the age frequency and the mean age of the population will increase going forward. Population growth will take considerable time however considering the slow growth rate, late maturity and periodic spawning exhibited by sturgeon. Further netting projects should be conducted in the future utilizing similar methodology in order to detect changes in relative abundance, to track year-class strength and spawning success, and as a means of recapturing tagged fish. Sagamok Anishnawbek Community members should also be polled in order to determine the nature and extent of their sturgeon subsistence fishery. This would provide the potential to gain insight (anecdotally at least) into perceived changes to the fishery, its impact on population recovery, and an opportunity to collect information from recaptured (previously tagged) fish.

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Introduction

Lake sturgeon *Acipenser fulvescens* (sturgeon) have been harvested from the Spanish River by members of Sagamok Anishnawbek for many generations. There is a growing concern about decreasing numbers of sturgeon both locally by First Nation community members and also province-wide. Since sturgeon generally cannot compensate for increased adult mortality (OMNR 2009) that may be associated with commercial fisheries, (The Ontario Ministry of Natural Resources (OMNR) implemented a “zero harvest” for recreational fisheries in 2008 and similar restrictions for the commercial fishery in 2009. Consequently, in 2009 the OMNR completed a synthesis of existing sturgeon data and information in Ontario as a background document for the development of a provincial lake sturgeon strategy/management plan (Ontario Ministry of Natural Resources. 2009.)

Training provided by the Anishinabek/Ontario Fisheries Resource Centre (A/OFRC) over the last decade or so has developed a capacity within the Sagamok Anishnawbek community to competently conduct fisheries assessment projects. As a result, considerable effort has been allocated recently to determining the status of this very important sturgeon population.

Sturgeon spawning assessment projects were conducted in the Spanish River during the spring of 2003, 2006, 2008, and 2009 by Sagamok Anishnawbek with support from the A/OFRC, and, in 2005 by the OMNR Lake Huron Upper Great Lakes Management Unit (UGLMU).

The goal of these spawning assessment projects was to characterize the sturgeon spawning population using the Spanish River, collect biological data, and to develop a baseline for comparison purposes in the future. Sturgeons were tagged to help determine the post spawn movements of adult fish and for confirmation of return spawners in the future.

The purpose of this report is to summarize data from spawning assessment projects conducted in the Spanish River during the spring of 2003, 2006, 2008, and 2009 by Sagamok Anishnawbek and in 2005 by UGLMU.

Methods

All sturgeon spawning assessment projects reported here with the exception of 2005, were conducted in the Spanish River downstream of the Town of Espanola Dam as far as the boat launch just west of Highway 6 (Figure 1.). In 2005, sampling was conducted throughout the entire river downstream of the dam. The predominantly sampled area (between the dam and the boat launch) is known previously to be suitable/used for sturgeon spawning. There was some small variance in net locations, however all nets were set in the same general area. Large-mesh multi-filament gillnets were set for varying durations ranging from two hours to overnight sets. All sturgeon captured were sampled for fork length, total length, weight, sex, and aging structures (pectoral spine). Sex was determined by release of eggs or milt upon application of gentle pressure along the ventral surface of the fish. Water temperatures were monitored throughout the project.

Sturgeons were tagged during each of the spawning assessment projects. Floy tags and/or Passive Integrated Transponder (PIT) tags were applied, depending on the year. PIT tags were implanted behind the first scute, and the external Floy tag was applied along the left hand side of the dorsal fin (Anishinabek/Ontario Fisheries Resource Centre, 2010). A list of tag numbers and fish data has been forwarded to the local OMNR Office at Espanola and to the Lake Huron UGLMU. A news release was also issued prior to each project start date outlining the project objectives and numbers to call with information regarding tagged fish.

All data were entered into FISHNET 2.0 to generate fish statistics. Graphic materials were generated using Microsoft Excel.

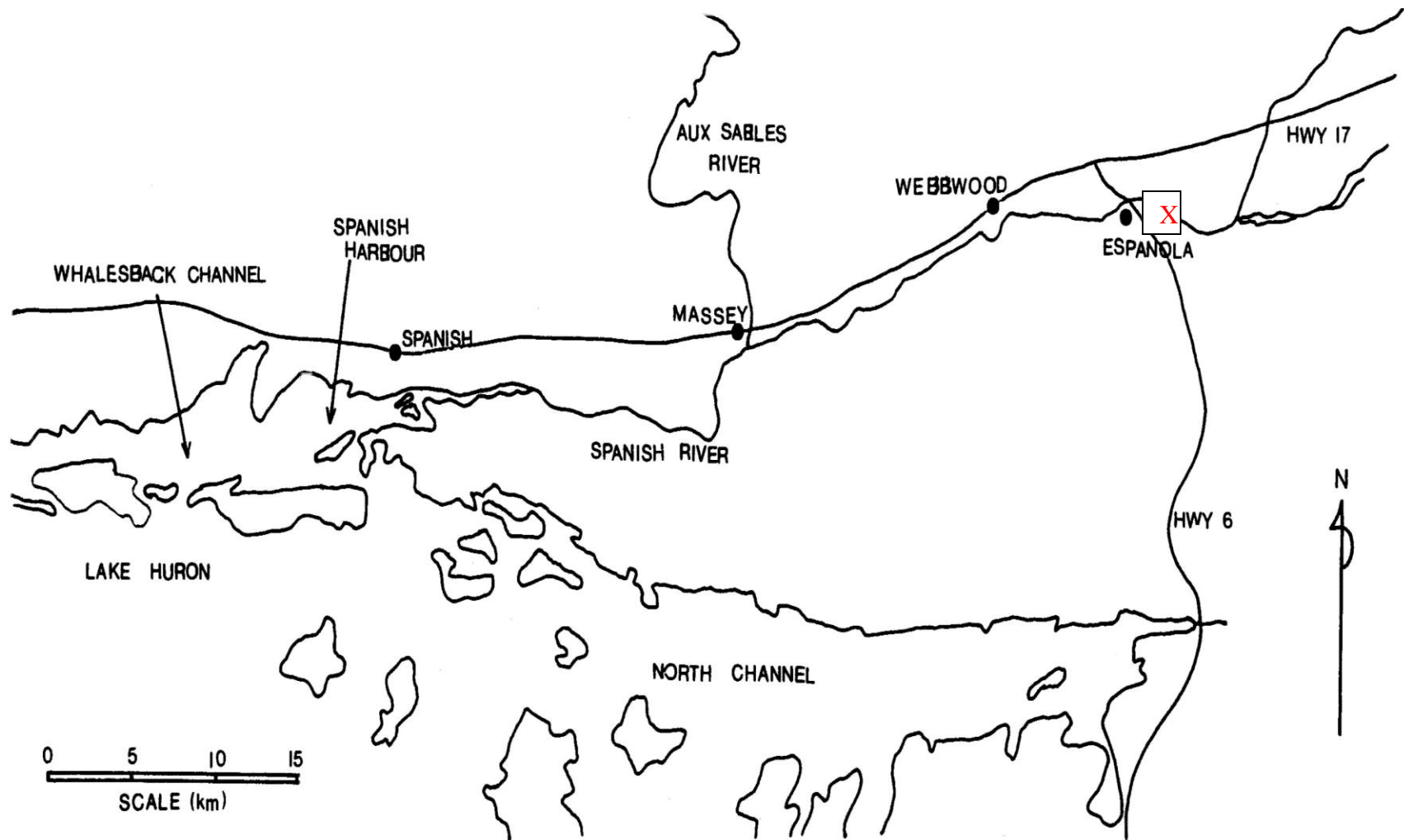


Figure 1. Map of general netting location on Spanish River downstream of the Town of Espanola

Results

2003 Netting

In 2003, netting was conducted between May 21-June 12, and on June 17, 18. A total of 27 net-sets were completed. Water temperatures ranged from 12 to 17 degrees Celsius (°C) over the course of the project. A total of 5 Sturgeon were captured. Ages ranged from 7-15 years old with a mean age of 10.8 years. Total length ranged from 970 to 1230 mm. Mean total length was 1144 mm. Round weight ranged from 4500-15000g with a mean of 9000g. Two of the fish were determined to be males while the others were of undetermined sex.

2005 Netting

In netting conducted in 2005 by UGLMU, 54 Sturgeon were captured. Ages ranged from 7-20 years old with a mean age of 13.4 years. Thirty-six (67%) of the fish were males; nine were of unknown sex, while data were not recorded for sex of the remaining 9 fish. Total length ranged from 221-1515mm with a mean total length of 1167mm. Round weight ranged from 50-25500g, with a mean round weight of 12660 grams. Five of the sturgeon from the sample was very obviously juveniles, having total length of less than 381mm.

2006 Netting

Netting in 2006 was conducted from May 15 to June 8. Forty eight net-sets were completed. Water temperatures ranged from 10.2 – 18°C. Ten sturgeon of unknown sex were captured. Age data collected from 5 of the 10 sturgeon ranged from 7-31 with a mean age of 17.8 years. Total length ranged from 1178-1402mm with a mean of 1308mm. Round weight ranged from 10200-22679g with a mean weight of 17002g.

2008 Netting

In 2008, netting was conducted between May 21 and June 6. Twenty eight net-sets were completed. Water temperatures ranged from 12 – 15°C. Forty nine Sturgeon were captured, sampled and released alive. Forty five fish (92%) were males, 3 were females and one fish was of unknown sex. Age data were collected from 48 fish with a range from 7-21 years and a mean age of 12.8 years. Total length from 49 sampled Sturgeon ranged from 1030-1410mm with a mean of 1246mm. Round weight from only 26 fish ranged from 4535-9979g with a mean of 6716g.

2009 Netting

Netting in 2009 was conducted from May 13 to June 18. In total, 84 samples (net-sets) were collected. Water temperatures ranged from 10 – 17°C over the project. Thirty eight of the 39 fish that were caught were released alive. Thirty five of the fish (90%) were males, one was a female, and 3 were of unknown sex. Thirty six fish were mature, and 3 were immature. Ages from 34 sampled sturgeon ranged from 8-34 years with a mean of 12.7. Total length ranged

from 1063-1418mm with a mean of 1230mm. Round weight ranged from 9000-20000g with a mean of 13193g.

Mean age, size (total length), and round weight are summarized for each sampling year, minus juveniles (Table 1). Age frequency data for 2005, 2008, and 2009 are presented graphically in Figure 2 below. Age frequencies for 2003 and 2006 are not presented because of small sample sizes. Year class strength does not track well from year to year, however, age 14 presents well in 2005 and 2008 as the modal age (N=14 and 11 respectively). Modal age of the sampled fish in 2009 was 11 years (N=8).

Table 1. Sturgeon Attribute Data (combined sexes)

	Mean Age (N)	Mean TLEN in mm (N)	Mean RWT in g (N)
2003	10.8 (4)	1144 (5)	9000 (5)
2005	13.4 (35)	1265 (45)	14230 (40)
2006	17.8 (5)	1308(9)	17002 (9)
2008	12.8 (48)	1246 (49)	6716 (26)
2009	12.7 (34)	1230 (39)	13193 (36)
All Years	13 (126)	1248 (148)	12255 (117)

Tag numbers and fish attribute data pertaining to the fish they were applied to be presented in Appendix 1.

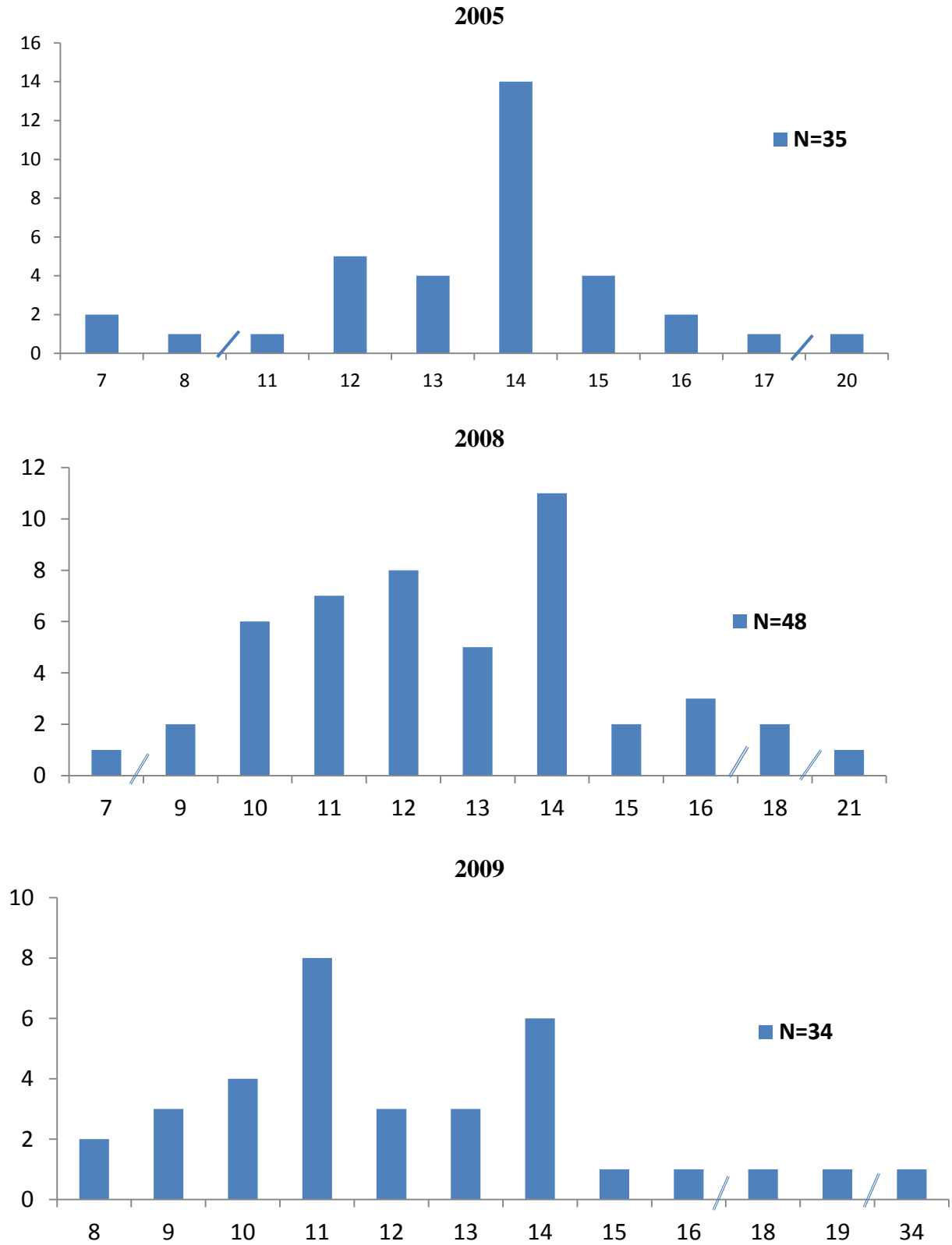


Figure 2. Spanish River sturgeon age frequency distributions, 2005, 2008, 2009.

Discussion

Data collected during these spawning assessment projects indicate that sturgeon continue to utilize spawning habitat in the Spanish River. Although mean age from the years 2003 and 2006 have been disregarded because of such a small sample size, age frequency distributions and mean age over all other survey years indicate a fairly young population.

Sex ratios of the captured sturgeon in the years with a good sample size were heavily skewed towards males. Since males mature earlier than females, 12-20 years for males versus 14-33 years for females (Scott and Crossman 1973), it is not surprising that this population of young fish (mean age approximately 12-13 years) is predominantly composed of males.

Although there continues to be a small subsistence fishery within the Sagamok Anishnawbek community (Bruce McGregor, Lands Technician, Sagamok Anishnawbek, personal communication), exploitation on a larger scale in the area (i.e., commercial fishery) has now ceased. Sturgeon cannot compensate for adult mortality that may be associated with commercial fisheries, accordingly, it may now be expected that the age frequency and the mean age of the population will increase going forward. Population growth will take considerable time however considering the slow growth rate, late maturity and periodic spawning (males spawn every 2-3-years, females every 4-9 years) exhibited by sturgeon.

Recommendations

Further netting projects should be conducted in the future utilizing similar methodology in order to detect changes in relative abundance, to track year-class strength and spawning success, and as a means of recapturing tagged fish.

Sagamok Community members should be polled in order to determine the nature and extent of the sturgeon subsistence fishery. This would provide the potential to gain insight (anecdotally at least) into perceived changes to the fishery, its impact on population recovery, and an opportunity to collect information from recaptured (previously tagged) fish.

References

Anishinabek/Ontario Fisheries Resource Centre. 2010. Spanish River Lake Sturgeon *Acipenser fulvescens* Assessment, 2009.

Ontario Ministry of Natural Resources. 2009. The Lake Sturgeon in Ontario. Fish and Wildlife Branch. Peterborough, Ontario. 48 p. + appendices.

Scott, W.B. and E.J Crossman. 1973. Lake Sturgeon. p. 82-89 In *Freshwater Fishes of Canada*. Bulletin 184. Fisheries Research Board of Canada. Ottawa, Ontario. 966 p.

Appendix 1. Fish Attribute Data

2003

SAM	SPC	FISH	FATE	FLEN	TLEN	RWT	SEX	MAT	GIRTH	LAMJC	TAGID	TAGSTAT	TAGDOC	AGEST	AGE	PRJ_CD	V0	ENTRY
00004	031	00001	R	1150	1190	10000					525	A	91199	5	9	FRC_IS03_SA1	+++	
00012	031	00002	R	1130	1210	15000	1	2	390	1	501	A	91199	5	15	FRC_IS03_SA1	+++	
00015	031	00004	R	1040	1120	7000	1	2	380	1	502	A	91199	0		FRC_IS03_SA1	+++	
00017	031	00005	R	1130	1230	8500			400		503	A	91199	5	12	FRC_IS03_SA1	+++	
00027	031	00006	R	850	970	4500					504	A	91199	5	7	FRC_IS03_SA1	+++	

2005

YEAR	PRJ_CD	SAM	BASIN	SPC	FISH	TLEN	RWT	GIRTH	SEX	MAT	AGEST	AGE	TAGID	TAGSTAT	TAGDOC
2005	LHA_IA05_031	00001	SCR	031	00001	838							9795	C	B5016
2005	LHA_IA05_031	00002	NC	031	1	1245		527					6197	C	
2005	LHA_IA05_031	00003	NC	031	1								6404	C	39016
2005	LHA_IA05_031	00004	NC	031	00001	1200							6644	C	B5016
2005	LHA_IA05_031	00005	NC	031	00001	1380		490					6905	C	B5016
2005	LHA_IA05_031	00006	NC	031	00001	1515		600					9056	C	B5016
2005	LHA_IA05_031	105	NC	031	1	1243	25500		9		4	12	7834		
2005	LHA_IA05_031	13	NC	031	1										
2005	LHA_IA05_031	15	NC	031	1	1170	1050	415	9		4	14	7835		
2005	LHA_IA05_031	207	NC	031	1	1229	12929		1		4	16	7826	A	25012
2005	LHA_IA05_031	210	NC	031	1	1317	15475	488	1		4	14	7823	A	25012
2005	LHA_IA05_031	211	NC	031	1	1244	13175	425	1		4	14	6825	A	25012
2005	LHA_IA05_031	212	NC	031	1	1235	11925	406	1		4		18935	A	25012
2005	LHA_IA05_031	212	NC	031	2	1207	14275		1		4	15	18928	A	25012
2005	LHA_IA05_031	216	NC	031	1	1367	16175	454	1		4	14	18932	A	25012
2005	LHA_IA05_031	219	NC	031	1	1309	14925	444	1		4	14	19677	A	25012
2005	LHA_IA05_031	220	NC	031	1	1330	15175	434	1		4	13	19675	A A	25012
2005	LHA_IA05_031	220	NC	031	2	1158	11175		1		4	7	18934	A	25012
2005	LHA_IA05_031	220	NC	031	3	1361	16925	457	1		4	15	19674	A	25012
2005	LHA_IA05_031	220	NC	031	4	1133	11675	415	1		4	14	18933	A	25012

2005	LHA_IA05_031	220	NC	031	5	1266	13675	445	1		4	12	19678	A	25012
2005	LHA_IA05_031	220	NC	031	6	1285	14925		1		4		19696	A	25012
2005	LHA_IA05_031	221	NC	031	1	1180	11275	377	1		4	12	19695	A	25012
2005	LHA_IA05_031	221	NC	031	2	1451	18675	459	1		4	14	19694	A	25012
2005	LHA_IA05_031	221	NC	031	3	1285	14675	470	1		4	13	19679	A	25012
2005	LHA_IA05_031	222	NC	031	1	1282	15175	444	1		4	14	19680	A	25012
2005	LHA_IA05_031	223	NC	031	1	1183	12075	382	1				19693	A	25012
2005	LHA_IA05_031	228	NC	031	1	1011	7925		9		4	8	19683	A	25012
2005	LHA_IA05_031	228	NC	031	2	250	100		9						
2005	LHA_IA05_031	229	NC	031	1								19695	C	25012
2005	LHA_IA05_031	229	NC	031	2	1407	17675	502	1		4	14	19690	A	25012
2005	LHA_IA05_031	230	NC	031	1	1296	13675	429	1		4	14	19681	A	25012
2005	LHA_IA05_031	230	NC	031	2	1226	12425	398	1		4	13	19691	A	25012
2005	LHA_IA05_031	231	NC	031	1	1409	17425	460	1		4	15	19684	A	25012
2005	LHA_IA05_031	231	NC	031	2	1223	14525	446	1		4	17	19689	A	25012
2005	LHA_IA05_031	237	NC	031	1	1149	10675	390	1		4	7	19688	A	25012
2005	LHA_IA05_031	32	NC	031	1	268	75	110	9						
2005	LHA_IA05_031	46	NC	031	1	221	50	68	9						
2005	LHA_IA05_031	46	NC	031	2	279	100		9						
2005	LHA_IA05_031	49	NC	031	1	1288	15675	475	1		4	20	7831	A	25012
2005	LHA_IA05_031	49	MB	031	2	1319	14925	428	1		4	15			
2005	LHA_IA05_031	61	NC	031	1	1359	15178		1		4	14	19699	A	25012
2005	LHA_IA05_031	61	NC	031	2	1311	13925		1		4	11	19651	A	25012
2005	LHA_IA05_031	61	NC	031	3	1253	12675	408	1		4	12	19652	A	25012
2005	LHA_IA05_031	65	NC	031	1	1115	10675	415	1		4	13	19657	A	25012
2005	LHA_IA05_031	71	NC	031	1	381	275	159	9						
2005	LHA_IA05_031	72	NC	031	1	1388	19675	530	1		4	14	19669	A	25012
2005	LHA_IA05_031	72	NC	031	2	1226	14175		1		4	14	7827	A	25012
2005	LHA_IA05_031	73	NC	031	1	1285	14925	478	9		4		19660	A	25012
2005	LHA_IA05_031	73	NC	031	2	1334	14675	428	1		4	14	19668	A	25012
2005	LHA_IA05_031	77	NC	031	1								19652	C	25012
2005	LHA_IA05_031	77	NC	031	2	1185	11175	405	1		4	12	19671	A	25012
2005	LHA_IA05_031	77	NC	031	3	1388	19675	530	1				7829	A	25012

2005	LHA_IA05_031	77	NC	031	4	1357	16675	474	1		4	16	7828	A	25012
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2006

SAM	SPC	FISH	FATE	FLEN	TLEN	RWT	SEX	MAT	GIRTH	LAMIJC	TAGID	TAGSTAT	TAGDOC	XPITTAGID	AGE	PRJ_CD	V0	ENTRY
00008	031	00005	R	1190	1330	17236	9	9	467	0		A		140945139A		FRC_IS06_SA1	+++	
00027	031	00002	R	1074	1178	10200	9	9	395	9				140945516A		FRC_IS06_SA1	+++	
00036	031	00003	R	1250	1328	17690	9	9	500	0		A		140945534A	31	FRC_IS06_SA1	+++	
00038	031	00004	R	1256	1348	19051	9	9	502			A		132952144A		FRC_IS06_SA1	+++	
00038	031	00005	R	1170	1272	14515	9	9	670			A		140947321A		FRC_IS06_SA1	+++	
00038	031	00006	R	1264	1349	22679	9	9	525			A		140912355A	19	FRC_IS06_SA1	+++	
00038	031	00007	R	1168	1266	15422	9	9	450			A		137945316A	24	FRC_IS06_SA1	+++	
00038	031	00008	R	1320	1402	22226	9	9	532			A		137929291A		FRC_IS06_SA1	+++	
00039	031	00009	R	1167	1298	16000	9	9	465			A		137965563A	7	FRC_IS06_SA1	+++	
00039	031	00010	R	1147	1260	15000	9	9	430			A		137952235A	8	FRC_IS06_SA1	+++	

2008

SAM	SPC	FISH	FATE	FLEN	TLEN	RWT	SEX	MAT	GIRTH	LAMIJC	TAGID	TAGSTAT	TAGDOC	XPITTAGID	AGE	PRJ_CD	V0	ENTRY
00002	031	00001	R	1195	1325		1	9	422					140912390A	12	SMA_IS08_SA1	+++	
00002	031	00002	R	1100	1245		1	9	425					141126386A	14	SMA_IS08_SA1	+++	
00002	031	00003	R	1042	1112	6350	1	9	374					140932311A	14	SMA_IS08_SA1	+++	
00002	031	00004	R	1322	1375		1	9	532					137916186A	21	SMA_IS08_SA1	+++	
00002	031	00005	R	1041	1114		1	9	383					140936553A	10	SMA_IS08_SA1	+++	
00002	031	00006	R	1025	1124		1	9	406					137934332A	10	SMA_IS08_SA1	+++	
00002	031	00007	R	1200	1261		1	9	450					137979111A	12	SMA_IS08_SA1	+++	
00002	031	00008	R	1075	1190	5443	1	9	412					137924535A	10	SMA_IS08_SA1	+++	
00002	031	00009	R	1181	1295		1	9	443					140937331A	13	SMA_IS08_SA1	+++	
00002	031	00010	R	1112	1221		2	9	457					140944286A	12	SMA_IS08_SA1	+++	
00002	031	00011	R	1250	1329		1	9	431					137915090A	18	SMA_IS08_SA1	+++	
00002	031	00012	R	1060	1160		1	9	385					140909180A	14	SMA_IS08_SA1	+++	
00002	031	00013	R	1125	1239		1	9	488					137939693A	12	SMA_IS08_SA1	+++	

00002	031	00014	R	1150	1264		2	9	475					140946324A	12	SMA_IS08_SA1	+++	
00002	031	00015	R	1124	1246		1	9	463					140909625A	12	SMA_IS08_SA1	+++	
00003	031	00016	R	1085	1173		1	9	403					137947151A	16	SMA_IS08_SA1	+++	
00003	031	00017	R	1180	1275		1	9	474					141123674A	16	SMA_IS08_SA1	+++	
00003	031	00018	R	1137	1218	6350	1	9	435					140956155A	11	SMA_IS08_SA1	+++	
00004	031	00019	R	1092	1230		1	9	435					140962327A	11	SMA_IS08_SA1	+++	
00004	031	00020	R	1123	1235		1	9	440					137909572A	09	SMA_IS08_SA1	+++	
00004	031	00021	R	1035	1104		1	9	385					137945760A	9	SMA_IS08_SA1	+++	
00004	031	00022	R	1250	1365		1	9	492					137919392A	12	SMA_IS08_SA1	+++	
00004	031	00023	R	1205	1305		1	9	442		19696	C		140916152A		SMA_IS08_SA1	.++	
00004	031	00024	R	1180	1270		1	9	483					140973323A	10	SMA_IS08_SA1	+++	
00004	031	00025	R	1062	1145		2	9	360					141126116A	14	SMA_IS08_SA1	+++	
00006	031	00026	R	1200	1302	6804	1	9	440			117FLOY		140953617A	13	SMA_IS08_SA1	+++	
00006	031	00027	R	1265	1380	7711	1	9	503			118FLOY		140923755A	18	SMA_IS08_SA1	+++	
00006	031	00028	R	1148	1251	6804	1	9	477			119FLOY		137675347A	11	SMA_IS08_SA1	+++	
00006	031	00029	R	1141	1242	6350	1	9	445			120FLOY		141119456A	14	SMA_IS08_SA1	+++	
00006	031	00030	R	1196	1305	6804	1	9	413			121FLOY		137965215A	14	SMA_IS08_SA1	+++	
00006	031	00031	R	1272	1410	7257	1	9	480			122FLOY		137918213A	11	SMA_IS08_SA1	+++	
00006	031	00032	R	1165	1293	8165	1	9	502			123FLOY		140946221A	11	SMA_IS08_SA1	+++	
00008	031	00033	R	1070	1205	5897	1	9	422			124FLOY		150938550A	10	SMA_IS08_SA1	+++	
00008	031	00034	R	1102	1212	5443	1	9	416			125FLOY		150945467A	15	SMA_IS08_SA1	+++	
00008	031	00035	R	1150	1240	6350	1	9	410			475FLOY			13	SMA_IS08_SA1	+++	
00008	031	00036	R	950	1030	4536	9	9	365			474FLOY		150951524A	7	SMA_IS08_SA1	+++	
00008	031	00037	R	1130	1235	6804	1	9	420			471FLOY		150967170A	13	SMA_IS08_SA1	+++	
00008	031	00038	R	1140	1180	6350	1	9	420			455FLOY		150949451A	10	SMA_IS08_SA1	+++	
00008	031	00039	R	1290	1370	9979	1	9	560			457FLOY		150946097A	14	SMA_IS08_SA1	+++	
00008	031	00040	R	1140	1240	6350	1	9	410			458FLOY		150959613A	11	SMA_IS08_SA1	+++	
00014	031	00041	R	1215	1315		1	9	460			460FLOY		150957177A	16	SMA_IS08_SA1	+++	
00015	031	00042	R	1084	1120	5443	1	9	401			461FLOY		150964535A	12	SMA_IS08_SA1	+++	
00015	031	00043	R	1213	1331	7254	1	9	410			462FLOY		150963365A	13	SMA_IS08_SA1	+++	

00017	031	00044	R	1253	1410	9072	1	9	480		463FLOY		150945617A	14	SMA_IS08_SA1	+++	
00017	031	00045	R	1110	1180	5443	1	9	400		464FLOY		150946445A	15	SMA_IS08_SA1	+++	
00018	031	00046	R	1210	1320	7711	1	9	440		466FLOY		150964490A	14	SMA_IS08_SA1	+++	
00018	031	00047	R	1210	1280	7711	1	9	460		467FLOY		150954622A	14	SMA_IS08_SA1	+++	
00021	031	00048	R	1020	1090	4535	1	9	370		468FLOY		150945363A	11	SMA_IS08_SA1	+++	
00028	031	00049	R	1220	1295	7711	1	9	444		470FLOY		150946527A	14	SMA_IS08_SA1	++.	

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SAM	SPC	FISH	FATE	FLEN	TLEN	GIRTH	RWT	SEX	MAT	XPITTAGID	TAGSTAT	TAGDOC	TAGID	AGEST	AGE	PRJ_CD	V0
00003	031	00001	R	1113	1210	420	14000	9	9	150962727A	A		FRC062	4	11	FRC_IS09_SA1	+++
00006	031	00002	R	1046	1152	410	13000	9	9	150959092A	A		FRC064	4		FRC_IS09_SA1	+++
00008	031	00003	R	1070	1191	437	13500	1	2	150958090A	A		FRC065	4	14	FRC_IS09_SA1	+++
00011	031	00004	R	1217	1331	417	15500	1	2	150953351A	A		FRC066	4	12	FRC_IS09_SA1	+++
00013	031	00005	R	1185	1307	400	14200	1	2	150938651A	A		FRC067	4		FRC_IS09_SA1	+++
00013	031	00006	R	1117	1231	421	13000	1	2	140945516A	C		FRC068	0		FRC_IS09_SA1	+++
00014	031	00008	R	1124	1219	395	13000	1	2	150944330A	A		FRC069	4		FRC_IS09_SA1	+++
00015	031	00010	R	1048	1125	380		1	2	150939340A	A		FRC071	4	10	FRC_IS09_SA1	+++
00016	031	00009	R	1041	1151	353		1	2	150936657A	A		FRC070	4	8	FRC_IS09_SA1	+++
00019	031	00011	R	968	1063	370	10500	1	2	150937794A	A		FRC074	4	11	FRC_IS09_SA1	+++
00019	031	00012	R	1203	1337	475	17000	1	2	150958715A	A		FRC075	4	9	FRC_IS09_SA1	+++
00019	031	00013	R	1107	1204	395	12000	1	2	150937223A	A			4	12	FRC_IS09_SA1	+++
00019	031	00014	R		1204	395	12500	1	2	150962770A	A			4	9	FRC_IS09_SA1	+++
00019	031	00015	R	1090	1206	405	12500	1	2	150956440A	A			4	10	FRC_IS09_SA1	+++
00020	031	00017	R	1024	1127	396	11500	1	2	150945315A	A			4	11	FRC_IS09_SA1	+++
00030	031	00019	R	1216	1315	425	15000	1	2	150961477A	A			4	13	FRC_IS09_SA1	+++
00030	031	00020	R	1320	1348	473	20000	2	2	150938245A	A			4	34	FRC_IS09_SA1	+++
00036	031	00021	R	1172	1180	470	15000	1	2	150967296A	A			4	10	FRC_IS09_SA1	+++
00038	031	00222	R	1175	1268	460	16000	1	2	150961463A	A			4	13	FRC_IS09_SA1	+++
00043	031	00022	R	1200	1295	435	14000	1	2	151311334A	A			4	11	FRC_IS09_SA1	+++
00043	031	00023	R	1250	1350	455	14500	1	2	151311334A	A			4	14	FRC_IS09_SA1	+++

00043	031	00024	R	1060	1165	385	10000	1	2	151315326A	A			4	11	FRC_IS09_SA1	+++
00050	031	00025	R	1145	1212	400	12000	1	2	151313194A	A			4	15	FRC_IS09_SA1	+++
00053	031	00026	R	1275	1390	450	18000	1	2	150954464A	A			4	14	FRC_IS09_SA1	+++
00060	031	00027	R	1220	1265	405	13000	1	2	150957314A	A			4	14	FRC_IS09_SA1	+++
00060	031	00028	R	1050	1195	365	11000	1	2	150963345A	A			4	11	FRC_IS09_SA1	+++
00060	031	00029	R	1060	1180	355	10000	1	2	150962264A	A			4	10	FRC_IS09_SA1	+++
00073	031	00030	R	1012	1135	364	9500	1	2					4	11	FRC_IS09_SA1	+++
00073	031	00031	R	1012	1101	339	9000	1	2					4	9	FRC_IS09_SA1	+++
00073	031	00032	R	1094	1199	375	10250	1	2					4	11	FRC_IS09_SA1	+++
00075	031	00033	R	1095	1205	390	11000	1	2					4	19	FRC_IS09_SA1	+++
00077	031	00034	R	1125	1230	475	14500	1	2					4	12	FRC_IS09_SA1	+++
00078	031	00035	R	1125	1200	395	12500	1	2					4	16	FRC_IS09_SA1	+++
00078	031	00036	R	1043	1129	365	10500	1	2					4	8	FRC_IS09_SA1	+++
00082	031	00037	R	1285	1395	470	16000	1	2					4	18	FRC_IS09_SA1	+++
00082	031	00038	R	1149	1258	445	13000	1	2					4	13	FRC_IS09_SA1	+++
00084	031	00039	R	1279	1418	440	15000	1	2					4	14	FRC_IS09_SA1	+++
00084	031	00040	R	1141	1260	402	13000	1	2					4	14	FRC_IS09_SA1	+++
00002	031	00041	K	1115	1225	400		9	9					4		FRC_IS09_SA1	+++