

Moyie Lake Burbot: Population Assessment 2007



Matthew D. Neufeld

BC Ministry of Environment
401 – 333 Victoria Street
Nelson, BC V1L 4K3

April 2008



This project was funded by the Bonneville Power Administration through the Northwest Power and Conservation Council's Fish and Wildlife Program, in co-operation with the Idaho Department of Fish and Game, and the Kootenai Tribe of Idaho.



Table of Contents

Table of Contents.....	i
List of Tables.....	ii
List of Figures	ii
List of Appendices	iii
Abstract	1
1.0 Introduction.....	2
2.0 Methods.....	5
2.1 <i>Burbot Trapping</i>	5
2.1.1 Trapping Equipment and Burbot Handling.....	5
2.1.2 North Moyie.....	5
2.1.3 South Moyie.....	6
2.2 <i>Population Estimate</i>	6
2.2.1 Single Census - Peterson Type Estimate.....	6
2.2.2 Multiple Census - Jolly-Seber Estimate	7
3.0 Results.....	8
3.1 <i>Burbot Trapping</i>	8
3.1.1 North Moyie.....	8
3.1.2 South Moyie.....	8
3.2 <i>Population Index</i>	12
3.2.1 Single Census - Peterson Type Estimate.....	12
3.2.2 Multiple Census - Jolly-Seber Estimate	12
4.0 Discussion	16
4.1 <i>Burbot Trapping</i>	16
4.2 <i>Population Estimate</i>	17
Recommendations.....	20
Acknowledgements	21
Literature Cited	22
Appendices	25

List of Tables

Table 1. Summary of Peterson burbot trapping data from the north basin Moyie Lake, spring 2007.....	12
Table 2. Summary of trapping data used for Jolly-Seber population estimates on north Moyie (including trapping data from previous Prince (2007) studies).....	13
Table 3. Summary of trapping data used for Jolly-Seber population estimates on south Moyie (including trapping data from Prince (2007) studies).	13
Table 4. Jolly-Seber model output where equal survival and recruitment rates assumed among basins, but allowed for differential catchability.....	15
Table 5. Jolly-Seber model output where the catchability (on the logit scale) at each sampling event was a linear function of the number of traps set.....	16

List of Figures

Figure 1. Location of the Kootenai River burbot recovery area and proposed broodstock sources in Duncan Reservoir, Arrow Lakes Reservoir, Columbia and Moyie Lakes.....	4
Figure 2. Plot of number of burbot captured vs number of traps set (data from all years, sampling events and basins).....	7
Figure 3. North Moyie Lake trap set and burbot capture locations, April 2007.....	9
Figure 4. North Moyie trap set and burbot capture locations, May 2007.....	10
Figure 5. South Moyie trap set and burbot capture locations, October 2007.....	11

List of Appendices

Appendix A. North Moyie trap set data, 2007 (see Appendix B for Site ID details).	26
Appendix B. North Moyie site location data, 2007.	31
Appendix C. North Moyie cumulative burbot capture data for population analysis (2005-2007)	40
Appendix D. South Moyie Trap Set Data 2007.	57
Appendix E. South Moyie cumulative burbot capture data for population analysis (2005-2007)	58

Abstract

Burbot trapping on the north basin of Moyie Lake was undertaken on two separate sampling periods from April 16 to May 2, and May 22 to May 28, 2007. Sampling effort totalled 448 trap-days (one trap fished for 24 h) for a total catch of 255 burbot. Mean catch per unit effort (CPUE) of burbot for both sampling periods combined was 1.14 burbot per trap set (48 h period). On the south basin of Moyie Lake, an additional sampling session was completed between October 23 and 24, 2007. Sampling effort totalled 27 trap-days, for a total catch of 22 burbot and a mean CPUE of 1.63 burbot per trap set (48 h). In total, 19 of these 22 captured burbot were transported to the University of Idaho for conservation aquaculture research. Trapping data from these sessions on north and south Moyie were combined with data from previous studies to develop population estimates. The north and south basins of Moyie were treated as separate populations for estimation as little movement occurs between the two basins. The population size on Moyie Lake was estimated using both single and multiple census methods. Population estimates using different methods showed some variability, however poor precision because of the small number of marked fish that were recaptured resulted in overlap of the confidence bounds of almost all estimates. Analysis for both study areas suggested that there was insufficient mixing of tags between the samples for Peterson estimates, which would tend to bias our results lower than the actual population size. As well, trapping data suggested that trap avoidance may be an issue, which would tend to bias both our estimates higher than the actual population size. Given these issues, it was likely that the true population sizes were somewhere between the results of these two types of estimates. Given the constraints noted above, we evaluated all the data and established a population estimate that reflected the most likely compromise. In the north basin, although there was variability in estimates using these two methods as well as poor precision, there was reasonable evidence to suggest the population in the north basin was between 1500 and 2500 adult burbot. Estimates of population size for the south basin were more consistent between estimate methods, although they also showed poor precision. There was reasonable evidence to suggest the population in the south basin was between 1000 and 1200 adult burbot. The annual survival rate on both basins was estimated to be ~70-80%. Previous studies modelling the historic burbot population in Kootenay Lake have suggested an exploitation rate of 20% annually was the maximum sustainable for that population. Based on the estimates of population size for Moyie Lake and these modelling results for a different burbot population, the maximum sustainable exploitation rate may be somewhere between 300-500 burbot/year on the north basin and 200-240 burbot/year on the south basin of Moyie Lake.

1.0 Introduction

Burbot (*Lota lota*) has become a species of special concern in Kootenay Lake and in the Kootenay River in south eastern British Columbia. Both the lake and river supported large sport harvests of burbot throughout the 1960s and 1970s, until severe declines resulted in eventual closure of these fisheries (Ahrens and Korman 2002, Paragamian et al. 2000). In Canada, the Kootenay Lake population has been Red Listed (S1) by B.C.'s Conservation Data Center. Recent trapping and underwater video work suggests the historic population on Kootenay Lake at Balfour has been extirpated (Baxter et al. 2002a and 2002b, Neufeld and Spence 2004a and 2004b, Neufeld 2005). In the Kootenay/ai River in BC and Idaho, the population may now be less than 30 individuals (Pyper et al. 2004). A plan has now been developed to address burbot restoration in Idaho (Neufeld et al. 2006), and a multilateral agreement has been signed to ensure this issue is addressed (KVRI Burbot Committee 2005). Both U.S. and Canadian committee members are now working in the field and at the planning table to address the problem.

Studies are currently underway to identify important habitats, determine the status of remnant stocks, develop fish culture techniques, and assess the impact of dam operations on burbot reproduction in the Kootenay system. Previous work in Canada has included night surveys to identify burbot spawning activity in Kootenay Lake (Spence 1999, Baxter et al. 2002a and 2002b, Neufeld and Spence 2004), and operation of a fence on the Goat River to identify spawning numbers on that tributary (Bisset and Cope 2002). Joint efforts in both Canada and the US have included trapping on Kootenay Lake and Kootenay/ai River to help assess population strength and distribution (Pyper et al. 2004, Neufeld and Spence 2004b, Neufeld 2005) as well as tagging fish for telemetry investigations (Neufeld and Spence 2004a, Paragamian 1994, Paragamian 2000, Paragamian et al. 2001, Paragamian et al. 2005, Paragamian and Wakkinen in press, Partridge 1983). These investigations have identified a population size considered by managers to be too small to recover on its own, and also insufficient to provide suitable numbers as broodstock for conservation aquaculture operations.

Given the status of the Kootenay/ai population, burbot from Columbia Lake as well as Duncan and Arrow Lakes reservoirs have been provided to the Kootenai Tribe of Idaho (KTOI) and the University of Idaho (U of I) to assist the development of conservation aquaculture techniques for this species (Baxter et al. 2002a and 2002b, Neufeld and Spence 2004a and 2004b, Neufeld 2005). Genetic testing and behavioural studies are now under way to identify which of these stocks is best suited as a broodstock source (Powell et al. 2008). It is anticipated that fish culture using a brood source from one of these Canadian water bodies will be key to restoring burbot in the recovery area (Figure 1; KVRI Burbot Committee 2005, Neufeld et al. 2006).

Burbot studies on Trout and Columbia lakes have indicated that the populations in these water bodies are most likely not large enough to support any take for broodstock purposes (Baxter et al. 2002a and 2002b, Neufeld and Spence 2004a and 2004b, Prince and Spence 2007). In fact, the Columbia Lake burbot fishery has been closed since 2007 due to conservation concerns. Although burbot numbers on Arrow Lakes Reservoir and Duncan Reservoir appear to be healthy (Arndt and Baxter 2006, Neufeld 2005), genetic samples from these populations show enough divergence from Kootenay burbot to suggest consideration of other stocks for conservation aquaculture purposes (Powell et al. 2008). Genetic analysis points to Moyie Lake as a suitable brood source for re-introduction into the Kootenay/ai River (Powell et al. 2008). Not only do these fish show

genetic similarities to Kootenay River burbot, but they are more likely to be acceptable from a fish health perspective given they occur within the Kootenay River drainage.

Prior to 2005, very little was known about burbot stock strength in Moyie Lake. Therefore, detailed studies to estimate population strength and quantify fishery impacts were undertaken starting in 2005. Reports detailing both the fishery impacts (Westover 2007) and an estimate of population size (Prince 2007) were completed by the spring of 2007. Although the total Moyie Lake harvest in 2006-07 and the south basin population size were quantified reasonably well during these initial surveys, the number of recapture samples for the north basin was too small to develop a reliable population estimate. Additional work was therefore completed in 2007 to increase the number of recapture events and provide a more reliable estimate of population size.

This study followed many of the recommendations of previous sampling efforts (Prince 2007) and was designed to identify some basic burbot life history traits and refine the estimate of population size on Moyie Lake. This estimate will help provide the data necessary to set limits around the export of broodstock for Kootenai burbot recovery efforts, as well as to effectively manage the winter sport fishery.

Specifically, our objectives were to:

- refine previous estimates of Moyie Lake burbot population status;
- use population estimates and mortality factors to begin developing a guideline for the number of burbot available for harvest and removal for fish culture experiments without substantially impacting successful recruitment and long term maintenance of fisheries on this system;
- provide burbot from Moyie Lake for conservation aquaculture experiments in Idaho.

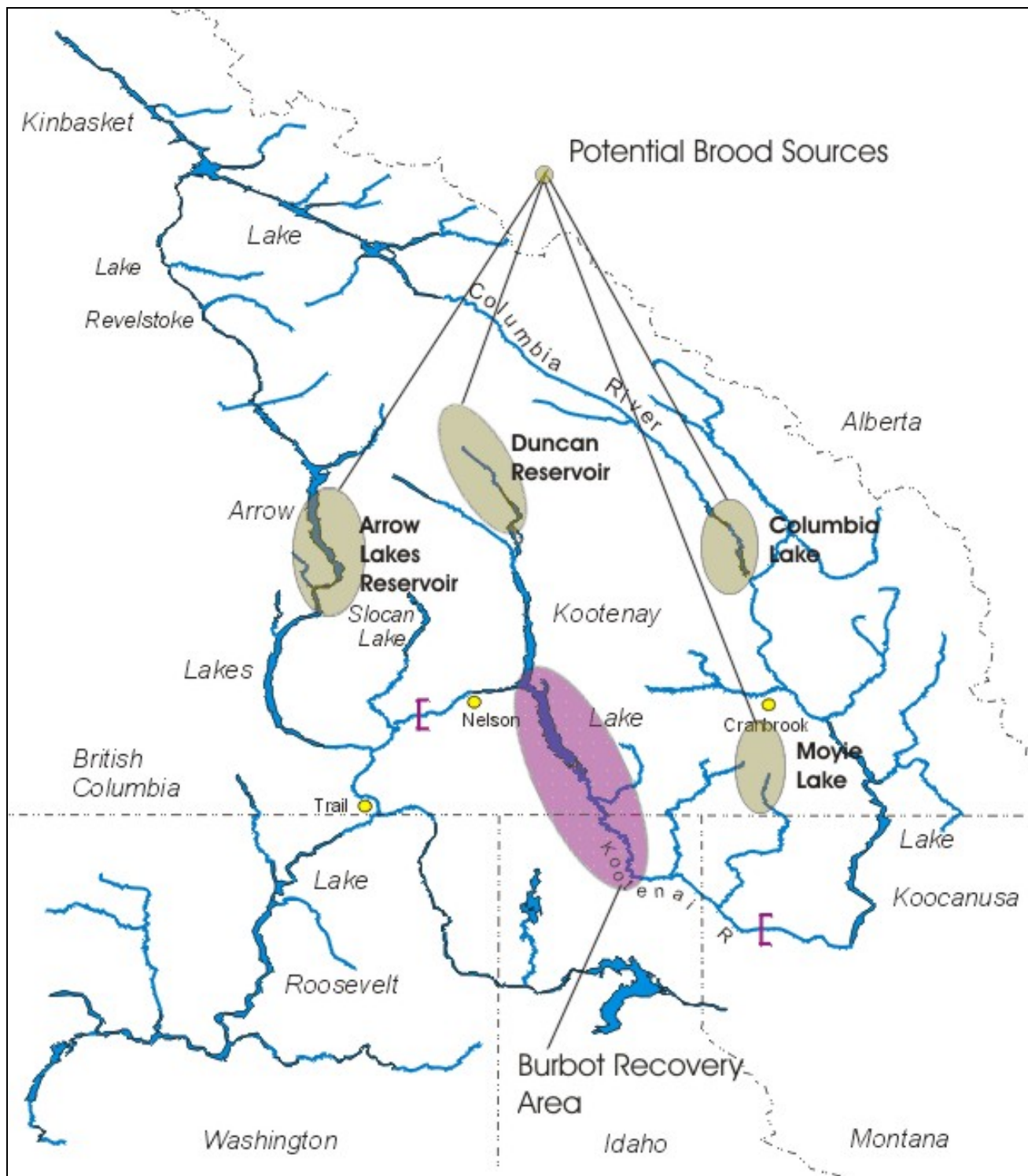


Figure 1. Location of the Kootenai River burbot recovery area and proposed broodstock sources in Duncan Reservoir, Arrow Lakes Reservoir, Columbia and Moyie Lakes.

2.0 Methods

2.1 Burbot Trapping

2.1.1 Trapping Equipment and Burbot Handling

Sampling was conducted from a 7.0 m boat. Maximum and minimum depths as well as set locations were recorded for all net sets using a GPS capable depth sounder (Garmin GPSMAP 182C). Trap set and pull times were recorded for each set. Burbot were captured for marking using cod traps. All traps were baited with kokanee (*Oncorhynchus nerka*) spawner carcasses placed in mesh bait bags (further described in Spence 2000). Traps were pulled from depth with an electric winch assembly (EZ Pull electric pot puller model-AMS6013PCSTD), quickly tagged with a Floy or PIT tag and then either released overboard or retained in holding tanks onboard for hatchery broodstock. Depending on the number of burbot present in traps, the tagging process was often less than 30 seconds and never took more than 1 minute to complete.

2.1.2 North Moyie

Burbot trapping was undertaken on two separate sampling periods from April 16 to May 2, and May 22 to May 28, 2007. This work built on four earlier sampling sessions between 2005 and 2007 (detailed in Prince 2007; Appendix C). Analysis of previous trapping efforts on the north basin of Moyie Lake (Prince 2007) suggested that trap spacing of 87 meters was enough to avoid trap competition. For this study, we selected spacing of traps at 100 meters, and confined set depth to 25 meters or less due to concerns over mortality and significant damage resulting from decompression trauma when burbot are removed from deep water locations (Neufeld and Spence 2004c). Previous burbot studies have suggested relatively even distribution of burbot by depth in the spring after ice off and in the fall after turnover (Bernard et al. 1993, Prince 2007).

Locating traps on a grid by referencing locations from landmarks and a map in past studies has been a difficult or impossible task, and when traps are placed closer than 100 meters, trap competition may become an issue. To increase the accuracy of trap placements we first laid out a 100x100 m point grid on a GIS coverage of Moyie Lake using ArcMap software. Then, using an HP IPac (model HX2790) showing the map and grid, and a wireless bluetooth GPS antenna (model GPS 10 Deluxe) to indicate our location in real time on the grid, we navigated the boat to our selected sample set locations. In the first sampling session (April), we set traps at each of the sample points that fell within the boundary of the lake, and were not deeper than 25 m, to provide a marked sample. In the second sampling session (May), we randomly selected a subset of these locations to provide a recapture sample. These two sessions were combined and added to previous study data for multiple mark-recapture analysis.

The target length of trap sets was 48 hours following recommendations of Bernard et al. (1991), with some small variation in set duration depending on the daytime set and pull times. Observations from previous studies suggest that few burbot enter traps during daylight hours (Bernard et al 1991, Prince 2007) and, therefore, effort was not adjusted for the small deviation in daylight soak times around the target of 48 h and each set represented one unit of effort (one trap set). Catch per unit effort (CPUE) was then simply the total number of burbot captured divided by the total number of trap sets.

2.1.3 South Moyie

Burbot trapping was undertaken on one sampling period between October 23 and 24, 2007 on the south basin of Moyie Lake. This work built on three additional sampling sessions between 2005 and 2007 (detailed in Prince 2007). Although the primary objective of sampling on south Moyie was to provide adult broodstock for hatchery trials, recapture samples were also used to supplement mark-recapture samples from previous studies. Because high quality, healthy burbot were required for brood stock, all sets on south Moyie were restricted to depths of less than 7 meters to reduce damage associated with deep water retrieval (Neufeld and Spence 2004c). To accommodate this objective, traps were not set in a random pattern. Although burbot are distributed through all depth intervals in Moyie Lake, previous studies suggest that the use of shallow traps for tagging projects does not significantly skew recapture results (Lafferty et al. 1992, Neufeld and Spence 2004a, Prince 2007) and given the time period between this and previous samples (1 year) adequate mixing of tags was a reasonable assumption. Given the primary objective of sampling was to provide broodstock, the target set length was adjusted to 24 h for this study; however, there was some deviation around this target. Again, observations that few burbot enter traps during daylight hours (Bernard et al 1991, Prince 2007) resulted in no adjustment for the small deviation in daylight soak times around the target. However, given that these sets were half the length of our standard sets, 0.5 of a standard trap set was used as the level of effort for each set in calculations. Thus, catch per unit effort (CPUE) was the total number of burbot captured divided by $\frac{1}{2}$ the total number of trap sets.

2.2 Population Estimate

2.2.1 Single Census - Peterson Type Estimate

For the single recapture estimate, burbot were trapped on north Moyie during April 2007 and May 2007 (method detailed in section 2.1.1). We used both a Chapman modification (Seber 1982) and Maximum Likelihood Estimator (MLE) method to estimate the total number of burbot in north Moyie Lake during the spring of 2007. Our recapture number of 8 burbot was near the minimum for MLE estimators and reasonable for Chapman's modification, so we presented both estimates.

The total number of burbot using the Chapman modification was calculated as:

$$\hat{N} = \frac{(n_1 + 1)(n_2 + 1)}{(m_2 + 1)} - 1$$

where $\hat{N}$ is the estimated total population size, n_1 is the number of fish that were initially captured, marked, and released in April 2007, n_2 is the number of fish that were captured in May 2007, and m_2 is the number of marked fish that were recaptured in May, 2007. Ninety-five percent confidence intervals for $\hat{N}$ were calculated using methods outlined in Seber (1982) for Chapman population estimates with small sample size. This method assumes that $\hat{N}$ is Poisson distributed and produces confidence bounds that are non-symmetric around the estimated total.

The total number of burbot using MLE was calculated as:

$$\hat{N} = \frac{(n_{10} + n_{11})(n_{01} + n_{11})}{n_{11}} = \frac{n_1 n_2}{m_2}$$

where $\hat{N}$ is the estimated total population size, n_1 is the number of fish that were initially captured, marked, and released in April 2007, n_2 is the number of fish that were captured in May 2007, and m_2 is the number of marked fish that were recaptured in May, 2007. Confidence intervals using MLE methods were calculated by maximizing the likelihood function over unknown parameters.

Assumptions around tag loss and mortality were evaluated in this present study. A post-tagging mortality rate of 5% is approximately equal to the actual rates observed in recent studies on Duncan Reservoir and Moyie Lake (Neufeld and Spence 2004c, Prince 2007), while a tag loss rate of 5% was similar to that reported by Lafferty et al. (1992). Although tag loss and mortality in combination could be as high as 10%, the impact to estimates was small given the wide confidence intervals.

2.2.2 Multiple Census - Jolly-Seber Estimate

For the multiple recapture estimates, data were used from burbot trapping on north and south Moyie between September 2005 and October 2007 (methods detailed in section 2.1.2 and 2.1.3) including 4 sampling sessions on each basin. Trapped fish were marked with uniquely coded Floy tags and were subsequently released. Previous studies and the results from this study suggested little movement of fish between basins, and therefore they were treated as separate populations (Prince 2007). Jolly-Seber multiple census population estimates were calculated using the program MARK. Two models reflecting variation in assumptions were fit to the data. First, a Jolly-Seber model was fit to the combined North and South basin dataset. This model assumed equal survival and recruitment rates among basins, but allowed for differential catchability. Secondly, because of the apparent relationship between catch and effort (Figure 2) an alternate Jolly-Seber model was fit where the catchability (on the logit scale) at each sampling event was a linear function of the number of traps set.

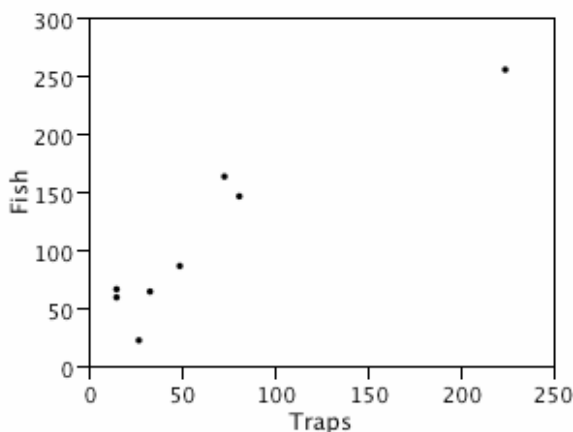


Figure 2. Plot of number of burbot captured vs number of traps set (data from all years, sampling events and basins).

3.0 Results

3.1 Burbot Trapping

3.1.1 North Moyie

Burbot trapping was undertaken on two sampling periods between April 16 and May 2 (April Session) as well as May 22 and May 28, 2007 (May Session). Sampling effort totalled 448 trap-days effort (one trap fished for 24 hours) for a total catch of 255 burbot (Appendices A to C). Mean CPUE of burbot for both sampling periods combined was 1.14 burbot per trap set (48 h period).

Although much of Moyie Lake is greater than 25 m in depth, deeper sets were avoided because of concerns over decompression trauma and associated mortality with deep water trapping (Neufeld and Spence 2004c). Although previous work on Moyie Lake, Duncan Reservoir and some Alaskan lakes has suggested that burbot use much of the deep water habitat not sampled in this and previous studies (Lafferty et al. 1992, Neufeld and Spence 2004a, Prince 2007), previous studies also suggest that the use of shallow traps for tagging projects does not significantly skew recapture results if enough time elapses between trapping sessions to allow sufficient tag mixing.

Traps set in the April session had a mean depth of 14.3 m (range 1.7 - 25.0 m). A total of 324 trap/days effort resulted in the capture of 180 burbot (Figure 3, Table 1) and a mean CPUE of 1.11 burbot per trap set (48 h). Traps set in the May session had a mean depth of 14.2 m (range 2.5 - 24.2 m). A total of 124 trap-days of effort resulted in the capture of 75 burbot (Figure 4, Table 1) and a mean CPUE of 1.19 burbot per trap set (48 h).

Trapping data suggested a relatively even distribution of burbot by depth. The number of burbot captured in each set ranged from zero to five, and there was no significant difference in the set depth of traps stratified by the number of burbot captured (Kruskal-Wallis $p=0.847$). In addition, there was no difference in the depth of traps that captured fish and those that did not (Kolmogorov-Smirnov $p=0.523$). Trapping data also suggested that the depth of capture had little effect on recapture probability. The depth of burbot captured once and those captured more than once showed no significant difference (Kolmogorov-Smirnov $p=0.153$).

3.1.2 South Moyie

Burbot trapping was undertaken on one sampling period between October 22 and 24, 2007 (October Session) to provide fish for population estimation and a conservation aquaculture program. Sampling effort totalled 27 trap-days effort (one trap fished for 24 h), for a total catch of 22 burbot (Figure 5, Table 3; Appendices D and E) and a mean CPUE of 1.63 burbot per trap set (48 h). Trap sets had a mean depth of 3.6 m (range 1.5 - 7 m). In total, 19 of the 22 captured burbot were transported to the University of Idaho for conservation aquaculture research.

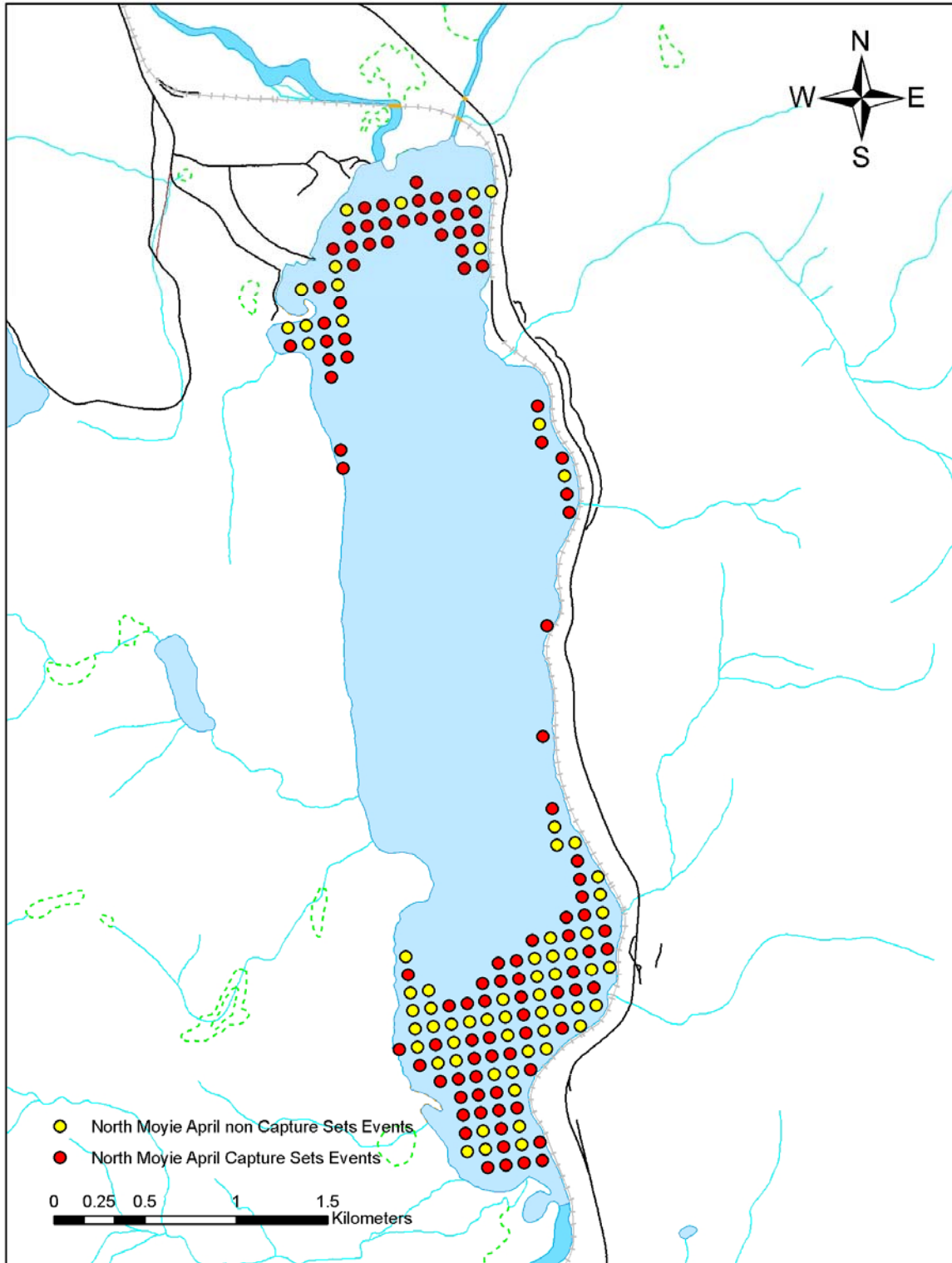


Figure 3. North Moyie Lake trap set and burbot capture locations, April 2007.

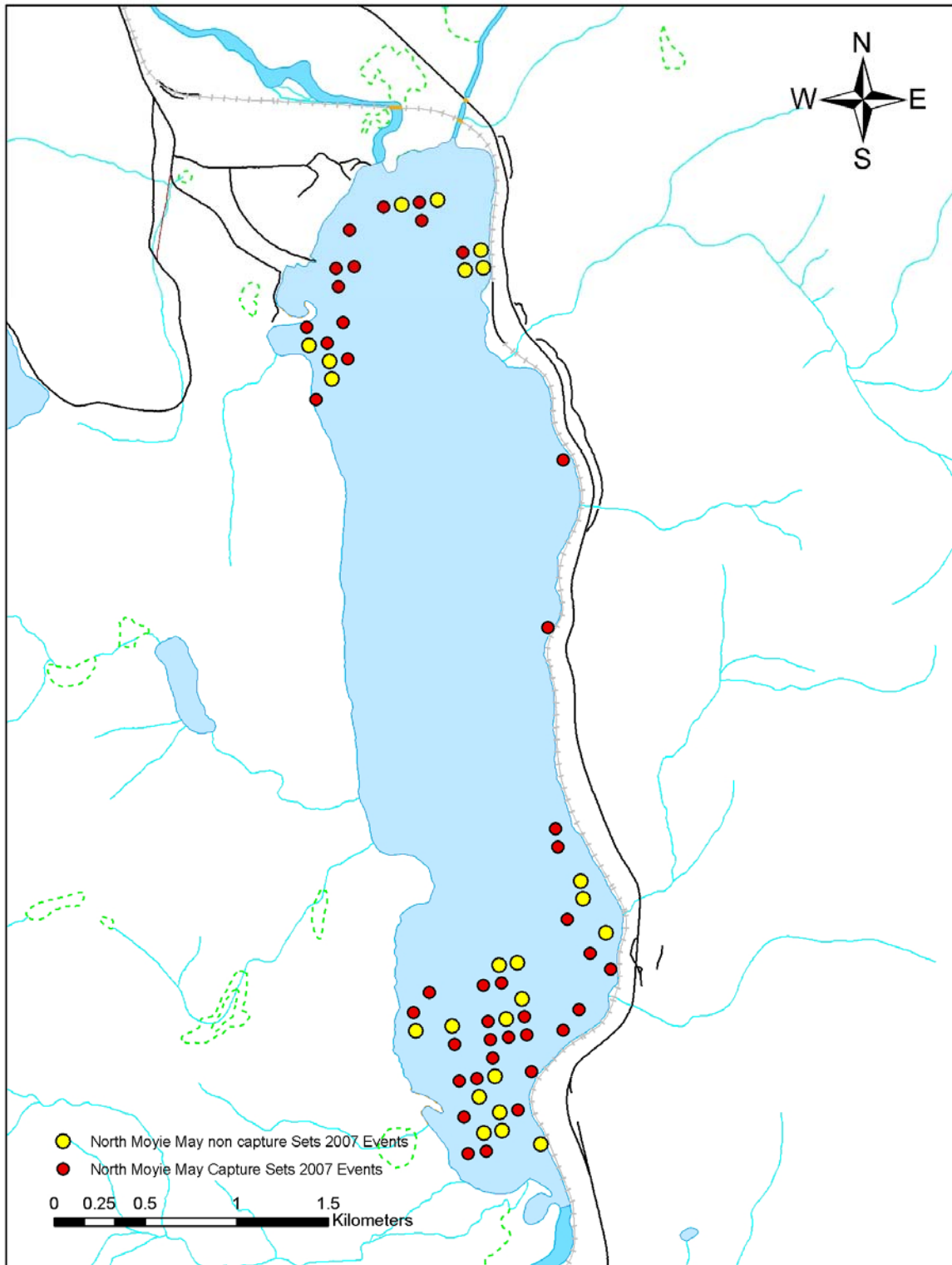


Figure 4. North Moyie trap set and burbot capture locations, May 2007.

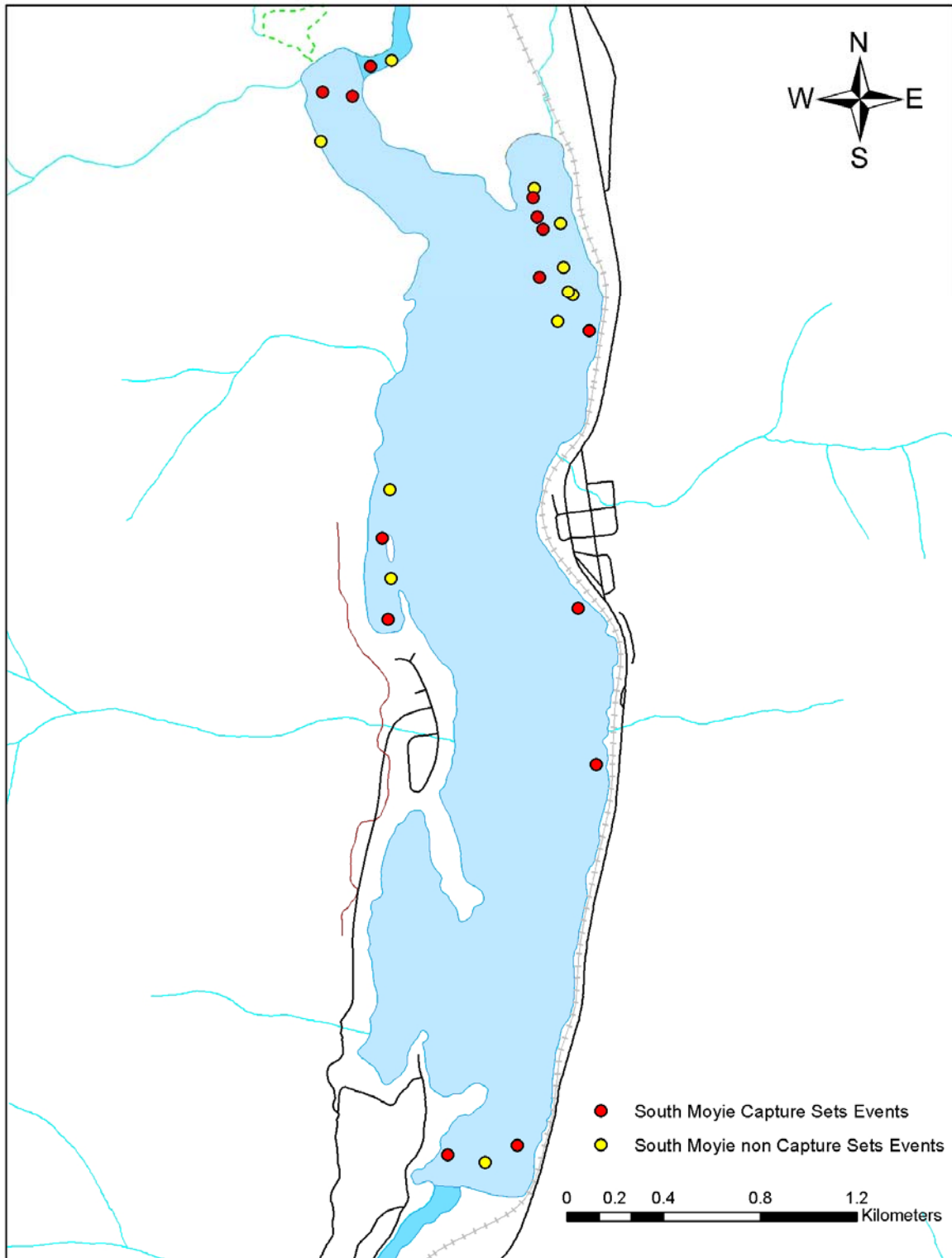


Figure 5. South Moyie trap set and burbot capture locations, October 2007.

3.2 Population Index

3.2.1 Single Census - Peterson Type Estimate

Burbot were captured during two sampling sessions (dubbed sessions 4 and 4') in April and May, 2007. These sessions were added to three previous sampling efforts (Prince 2007) for multiple census samples (detailed in section 3.2.2; Table 1 and 2). For the purpose of the single census estimate, events 4 and 4' were sufficiently close in time that an assumption of the population being largely closed was reasonable. A total of 178 burbot were captured and tagged in session 4, two of which were recaptured during this same sampling effort. One additional burbot died from decompression trauma. This resulted in a total of 180 burbot captures and 177 released with tags in session 4. In sampling session 4', a total of 75 burbot were captured, of which eight had been tagged in session 4 and 67 were untagged, for a mark rate of 11% (Table 1). Given this capture history (Table 1) the total number of adult burbot in north Moyie Lake in the spring of 2007 was estimated to be 1500 and 1700 (SE~400) using Chapman and MLE Peterson methods, respectively (Table 2). We examined the effects of tag loss and post tagging mortality on these estimates (assumed to be ~10%), which decreased the resulting estimate by ~10%. However, this reduction was dwarfed by uncertainty in the estimates due to low recapture rates.

Table 1. Summary of Peterson burbot trapping data from the north basin Moyie Lake, spring 2007.

Event	4	4'
Year	2007	2007
Start Date	16-Apr	22-May
End Date	02-May	28-May
Recaptured from Event 4	2 ^a	8
Recaptured from Event 4'		0
Captured with Tags	2 ^a	8
Captured without Tags	178	67
Captured	180	75
Released with Tags	177	n/a
Handling Related Mortalities	1	n/a
Removed to Hatchery	0	0

^a recaps within a single event should be eliminated for closed population model estimates.

3.2.2 Multiple Census - Jolly-Seber Estimate

Burbot in both the north and south basins of Moyie Lake were captured during 4 sampling sessions which were used to provide a Jolly-Seber population estimate (Table 2 and 3). Two of these periods (2 and 4) had two sampling sessions within, completed less than one month apart, which were pooled to increase sample size. Three of these sampling sessions were completed during previous studies (event 1, 2 and 3; Prince 2007), while one was completed during this current study (event 4; Table 2 and 3).

In north basin, a total of 255 burbot were captured during sampling session 4, 13 of which were recaptured during session 4, and 20 of which were recaptured from previous sessions. Two of these 20 fish were recaptures from tags that were applied in the south basin of Moyie, and were therefore excluded for this analysis. This resulted in a north basin, session 4 mark rate of about

7% (Table 2). On south basin, a total 22 burbot were captured during session 4, five of which were tagged for a mark rate of 23% (Table 3).

Table 2. Summary of trapping data used for Jolly-Seber population estimates on north Moyie [including trapping data from previous studies(Prince 2007)].

Event	1	2	3	4	All
Year	2005	2006	2006	2007	
Start Date	09-Sep	12-May	30-Oct	16-Apr	Totals
End Date	12-Sep	09-Jun	05-Nov	28-May	
Recaptured from Event 1	0	4 ^{a,c}	0	6	11
Recaptured from Event 2		1 ^b	1	11 ^d	12
Recaptured from Event 3			0	3	3
Recaptured from Event 4				13 ^{be}	13
Captured with Tags	0	5	1	33 ^e	39
Captured without Tags	66	141	85	222	514
Captured	66	146	86	255	553
Released with Tags	66	136	84	220	506
Handling Related Mortalities	0	10	2	2	14
Removed to Hatchery	0	0	0	0	0

^a contains 1 recapture that was a stray from S.Basin and should be eliminated from abundance estimates

^b recaptures within a single event should be eliminated for open population model estimates

^c contains 1 recapture that lost its tag but due to recapture date and event (i.e. 1st date of 2nd sample event), it had to have been originally tagged in event 1 and is therefore included in abundance estimates

^d contains 2 recaptures that were strays from S.Basin and should be eliminated from abundance estimates

^e contains 2 recaptures 2-4 days apart in session 4 and 1 fish recaptured with a tag in 2007 was not found in any tagging data

* 3 of the 2005 fish tagged in the North Basin were harvested during the 2006 winter fishery and one found dead July 10 (2007) on bottom of lake.

Table 3. Summary of trapping data used for Jolly-Seber population estimates on south Moyie (including trapping data from Prince (2007) studies).

Event	1	2	3	4	All
Date: Year	2005	2006	2006	2007	
Beginning	13-Sep	08-May	03-Nov	23-Oct	
Ending	15-Sep	07-Jun	09-Nov	24-Oct	
Recaptured from Event 1	0	3	2	1	6
Recaptured from Event 2		^a 3	8	4	12
Recaptured from Event 3			0	0	0
Recaptured from Event 4				0	0
Captured with Tags	0	6	10	5	21
Captured without Tags	59	157	54	16	286
Captured	59	163	64	22	308
Released with Tags	^b 59	158	20	0	237
Handling Related Mortalities	0	5	1	0	6
Removed to Hatchery	0	0	30	22*	52

^a recaptures within a single event should be eliminated for open population model estimates

^b 1 of the 2005 fish tagged in the South Basin was harvested during the 2006 winter fishery

* 1 additional fish caught in session 4 (from N Basin in Apr 06).

The population estimate for the north basin was calculated using two models with different assumptions. The first most general model (equal survival and recruitment among basins and differential catchability) resulted in population estimates for north basin of ~4500 burbot (Table 4). The second model (assuming catchability at each sampling event as a linear function of the number of traps set; Table 5) was more complex and was based a poorly developed relationship between catch and effort (limited data points for extrapolating 2007 population size because of increased effort; Figure 2). However, other than the low 2007 estimate, population estimates for the preceding periods were relatively stable near ~2600 (Table 5). The population estimate for South Basin was also calculated using these two models, both of which resulted in population estimates of ~2000 burbot for the 2006 population. Again, the second model was based on a poorly developed relationship between catch and effort and showed a low 2005 and 2007 estimate, likely because of model assumptions. There was not enough data to track population trends between sampling periods on either basin as SE was very large for all.

Tag loss and handling mortality rates of 5% respectively were likely (Lafferty et al.1992, Neufeld and Spence 2004c, Prince 2007) however these were not directly measured in this study. Homogeneous tag loss¹ is thought to have little effect on estimates of abundance in the full Jolly-Seber model (Arnason and Mills, 1981) but leads to a negative bias in survival rates. However, a combination of non-homogeneous tag-loss and tagging-induced mortality can lead to biases in estimates of abundance (McDonald et al. 2003).

For example, if animals have a probability θ of losing a tag after each capture (McDonald et al, 2003, Model 1), the relative bias in the estimated population sizes can be approximated as:

$$(1 - p_i) \frac{\theta}{1 - \theta}.$$

Based on Table 4, the catchabilities appear to be in the order of 10% and a 5% tag-loss after capture would lead to relative biases in the population estimates as follows:

$$.90 \frac{.05}{.95} = .047$$

This implies that the relative biases in the population estimates are likely much smaller than the SE and not of concern. Similarly, McDonald et al (2003) examined the effects of tagging-induced mortality and its effect is similar (i.e. a 5% tagging induced immediate mortality after each release also may also lead to an approximate 5% positive bias) and is again much smaller than the precision of each estimate. Therefore, the effects of tag loss and post tagging mortality in these estimates were dwarfed by uncertainty in the estimates due to low recapture rates, and were not deemed relevant.

On north Moyie in session 4 (4 and 4' combined) there was a general increase in tag recovery rates with increasing time since release. We recovered 10% (6 of 66), 8% (11 of 136) and 4% (3 of 84) of the marks from session 1, 2 (2 and 2' combined) and 3, respectively. In addition, we recovered

¹ Homogeneous tag loss implies that the probability of losing a tag between sampling events is the same for all tagged fish regardless of when tagged or other covariates.

about 5% of the tags in session 4' which were released in session 4. This trend of increasing recovery rates with increasing time since original capture suggested that trapping effects (trap avoidance) may have occurred. On south Moyie in session 4, there were insufficient tag recoveries from session 1 and 3 to properly evaluate recapture trends associated with time since release. However, it is likely that the same trapping effects observed in the north basin affected our results in this basin as well. We recovered 1.7% (1 of 59), 2.5% (4 of 158) and 0% (0 of 20) of the marks from sessions 1, 2 (2 and 2' combined) and 3, respectively.

Table 4. Jolly-Seber model output where equal survival and recruitment rates assumed among basins, but allowed for differential catchability.

	Based on 2005/2006 Data (Prince 2007)		Based on 2005/2006/2007 data	
Period ¹	North Basin Est (SE)	South Basin Est (SE)	North Basin Est (SE)	South Basin Est (SE)
Catchability				
1.0 (Fall 2005)	ne	ne	ne	ne
1.7 (Spring 2006)	0.08 (0.06)	0.10 (0.09)	0.03 (0.02)	0.12 (0.07)
2.2 (Fall 2006)	ne	ne	0.02 (0.01)	0.06 (0.02)
2.8 (Summer 2007)	NA	NA	ne	ne
²Survival - between periods (SE)				
1.0 (Fall 2005)	0.56 (0.40)	0.56 (0.40)	0.81 (0.33)	0.81 (0.33)
1.7 (Spring 2006)	ne	ne	0.96 (0.43)	0.96 (0.43)
2.2 (Fall 2006)	NA	NA	ne	ne
Population Estimates				
1.0 (Fall 2005)	ne	ne	ne	ne
1.7 (Spring 2006)	2000 (1500)	1500 (1200)	4600 (2700)	1300 (700)
2.2 (Fall 2006)	ne	ne	4500 (1800)	1200 (500)
2.8 (Summer 2007)	NA	NA	ne	ne
¹ Periods are converted to decimal years starting with Fall 2005 = 1. ² Survival rates are reported for the actual interval in question. Yearly survival rates are obtained using $\phi_{\text{Yearly}} = \phi_{\text{Actual}}^{1/\Delta t}$. For example, the actual survival rate based on the 2005/2006 data between the Fall of 2005 (t=1) and the Spring of 2006 (t=1.7) is estimated as 0.56. The estimated yearly survival rate is estimated as $0.56^{1/.7} = .44$ ne – not estimable at start and end of experiment NA – not available with 2005/2006 data are used				

Annual survival rates on north and south Moyie appear to be ~ 70-80% (between period survivals ~80-95%; Table 4 and 5). Low survival rates calculated by the second model (Table 5) for the last period were again based on a poorly developed catch/effort relationship (limited data points for extrapolating 2006-07 survival rates because of increased effort in 2007) and were not reflected in population estimates. As well, the low survival rates generated in previous studies were likely the result of limited sample size, and not actual survival rates.

Table 5. Jolly-Seber model output where the catchability (on the logit scale) at each sampling event was a linear function of the number of traps set.

	Based on 2005/2006 Data (Prince 2007)		Based on 2005/2006/2007 data	
Period ¹	North Basin Est (SE)	South Basin Est (SE)	North Basin Est (SE)	South Basin Est (SE)
Catchability				
1.0 (Fall 2005)	0.40 (0.34)	0.40 (0.34)	0.02 (0.01)	0.02 (0.01)
1.7 (Spring 2006)	0.07 (0.06)	0.11 (0.09)	0.06 (0.02)	0.05 (0.02)
2.2 (Fall 2006)	0.27 (0.23)	0.31 (0.26)	0.04 (0.01)	0.03 (0.01)
2.8 (Summer 2007)	NA	NA	0.32 (0.11)	0.02 (0.01)
²Survival - between periods (SE)				
1.0 (Fall 2005)	0.55 (0.40)	0.55 (0.40)	0.98 (0.33)	0.98 (0.33)
1.7 (Spring 2006)	0.11 (0.09)	0.11 (0.09)	0.85 (0.10)	0.85 (0.10)
2.2 (Fall 2006)	NA	NA	0.26 (0.10)	0.26 (0.10)
Population Estimates				
1.0 (Fall 2005)	180 (150)	130 (116)	2800 (900)	2800 (900)
1.7 (Spring 2006)	2000 (1600)	1400 (1200)	2800 (900)	2900 (800)
2.2 (Fall 2006)	400 (250)	220 (200)	2400 (700)	1200 (500)
2.8 (Summer 2007)	NA	NA	800 (300)	700 (300)
¹ Periods are converted to decimal years starting with Fall 2005 = 1. ² Survival rates are reported for the actual interval in question. Yearly survival rates are obtained using $\phi_{\text{Yearly}} = \phi_{\text{Actual}}^{1/\Delta t}$. See Table 4 for example. ne – not estimable at start and end of experiment NA – not available with 2005/2006 data are used				

4.0 Discussion

4.1 Burbot Trapping

Previous studies in Alaska have identified a relationship between mean CPUE and population size, and established methods to use CPUE as a population index (Bernard et al. 1993). However, this work was completed using hoop traps, and the cod traps used in this study perform significantly better in still water conditions (Spence 1999b, Prince 2007) and therefore should be used in future studies. The use of different capture techniques between these studies means that the relationship between mean CPUE and population size established by Bernard et al. (1993) needs to be updated to reflect differing methods. Despite significant sampling effort, including three years of trapping and tagging, population estimates in this study using mark-recapture methods had wide confidence bounds. This uncertainty in Moyie Lake population estimates was too large to properly evaluate the relationship between CPUE and population size. However, population size was likely relatively stable through the study period and although CPUE showed some variability during this same period (Prince 2007), it may still provide a good index given the wide confidence bounds around this current mark-recapture estimate. Further evaluation of the relationship between CPUE and population size needs to be completed before any confidence is placed on this method for Moyie Lake. However, it shows some promise to reduce effort expended to index population strength.

4.2 Population Estimate

Although significant effort was expended in this and previous studies, a number of biases likely exist in the data and related estimates. Burbot catches were low relative to the population as a whole and, without additional data, little could be done to fit the models to correct for these issues. Evenson (1998) also identified that low probability of capture for burbot population studies in Alaska often resulted in marginally precise estimates, and fluctuations in catchability often confounded population index methods using CPUE.

In general, population estimates in this study using similar methods showed little measurable variation between time periods, with the exception of our model based on catchability. However, there were significant differences in the estimated population size depending on the estimate type employed.

These differences may have resulted from a combination of trap effects and inadequate mixing of marked and unmarked fish during recapture sessions. Trapping data showed an increase in recapture rate as the time since original capture increased. Although some previous studies have suggested that trapping effects were not an issue using hoop traps to capture burbot (Bernard et al. 1993) this trend in our data suggested some trap avoidance by previously captured burbot using cod traps. The probability of this effect being related to differences in the traps appears unlikely given their similarity in design and capture mechanism. Trap soak times were also similar to the work of Bernard et al. (1993). If trap avoidance is in fact occurring, this would bias both Jolly-Seber and Peterson estimates higher than the actual population size.

The Peterson estimates from this and previous studies were significantly lower than Jolly-Seber estimates. This may have resulted from insufficient mixing of marked and unmarked fish due to shorter times between sample sessions (2 and 2' as well as 4 and 4') used to complete those calculations (~1 month between samples; Prince 2007). In contrast, better mixing of tags likely occurred between samples for the Jolly-Seber estimate as a result of longer times between sample sessions (> 6 months). The implications of this difference are that Peterson estimates from this and previous studies may have underestimated the true population size. A simple Peterson estimate using sessions 1, 2 and 3 pooled as a mark sample and 4 as a recapture sample can be used to test the potential for underestimation due to lack of mixing. The pooled approach yields a much larger estimate of about 3600 fish. Although violations of estimate assumptions are probable with this approach due to mortality and other factors that occurred in the period of time between these samples, the higher estimate further suggests insufficient mixing in our 4' estimate.

Population estimates had poor precision because of the small number of marked fish that were recaptured despite significant effort. A model based estimate where catchability was a function of traps set may be a feasible alternative to the unspecified JS model, but the large amount of effort in 2007 that is well away from the bulk of the data points makes extrapolation tenuous.

In comparing results from the previous report (Prince 2007) and this report, the estimated population abundances for the North basin are extremely variable. Closed population estimates ranged from:

- 1700 (SE 1000) based on 2007 data with a single recapture between episodes 2 and 2'
- 6000 (SE 3500) based on 2007 data with a single recapture between episodes 2 and 3
- 7400 (SE 5000) based on 2007 data with episodes 2, 2' and 3.
- 7400 (SE 5000) based on 2007 data with episodes 2, 2' and 3 and catchability modeled as a function of effort
- 1500 (SE 400) based on 2008 data with 8 recaptures between episodes 4 and 4'.

The estimates for north basin from the open population models are not much better (see Tables 4 and 5) ranging from 4500 (SE 1800) when the most general model is fit; and 2400 (SE 700) in 2006 and a very small estimate of 800 (SE 300) for 2007 when catchability is modeled as a function of effort.

All of these estimates (except for the estimate of 800) are consistent with each other because of the very large SEs and there is no objective way to choose among them. As well, better estimates in the future are unlikely, given that the extensive data collected to date was not robust enough to account for potential biases or significantly refine SE of estimates. However, given these limitations, an estimate of around 1500-2500 fish would seem to be a compromise that is reasonably supported by the data. The very low estimate of 800 (SE 300) fish is based on extrapolating the relationship between catchability and effort well beyond the range of most of the data, and therefore is likely an outlier.

Estimates of population size for the South basin are more consistent. Closed population estimates ranged from:

- 800 (SE 300) based on 2007 data with a single recapture between episodes 2 and 2'
- 1200 (SE 300) based on 2007 data with a single recapture between episodes 2 and 3
- 1200 (SE 300) based on 2007 data with episodes 2, 2' and 3.
- 1200 (SE 300) based on 2007 data with episodes 2, 2' and 3 and catchability modeled as a function of effort

The estimates for south basin from the open population models ranged from 1300 (SE 700), 1200 (SE 500) and up to 2800 (SE 900) for models where catchability is modeled as a function of effort. All of these estimates are again consistent with each other (given the relatively large SE). An estimate of around 1000-1200 fish would seem to be reasonably supported by the data.

Ahrens and Korman (2002) suggested an exploitation rate of 20% annually was the maximum sustainable based on modelling of the historic burbot population in Kootenay Lake. Care must be taken when applying this rate because the exploitation rate (Ahrens and Korman 2002) is based on a modelling exercise from a separate population, and the applicability of this rate to Moyie Lake burbot has not been evaluated. However, based on the estimated population size in the north basin of Moyie Lake (~1500 to 2500) and these modelling results, a maximum sustainable exploitation rate may be somewhere between 300 to 500 burbot/year. Westover (2007) estimated harvest in 2006-07 of 168 and a total catch of 347 burbot. Using the lower of the population estimates to roughly account for aforementioned biases, we might already be harvesting the population at about half the maximum sustainable level, and this does not take into account significant statistical uncertainty in estimates of both population size and catch. In addition, a creel survey conducted in

2007-08 showed a significant change in effort (report in prep.) and likely a larger harvest. This population estimate and the final harvest numbers from 2007-08 (when this report is complete) must be further evaluated to identify whether the sport harvest is sustainable.

Based on estimates of population size in the south basin of Moyie Lake (~1000 to 1200) and modelling results of sustainable exploitation rates (Ahrens and Korman 2002), a sustainable exploitation rate for south Moyie Lake may be somewhere between 200 to 240 burbot/year. Westover (2007) estimated no harvest in 2006-07 and a total catch of 21 burbot. Although there is likely some small harvest in the south basin, this work suggests it is likely a small number. In addition to harvest, broodstock capture programs have removed ~25 burbot per year from the south basin of Moyie Lake in each of the last 2 years of study. However, the removal of broodstock and the low level fishery currently appear well within the bounds of sustainable harvest. Again, care must be taken when applying this rate because of uncertainty around the applicability of Ahrens and Korman (2002) exploitation rate and the poor precision of estimates.

Recommendations

- If broodstock collection is to continue on Moyie Lake, some continued monitoring needs to be completed to set targets for broodstock removal. This includes population estimates generated every 3 to 4 years to track population status as well as some annual monitoring and periodic full assessments of harvest to track changes in fishery participation or harvest.
- Future indexing programs should consider issues of trap avoidance and tag mixing identified in this study when planning future studies.
- Given the high variability in M-R estimates despite significant effort in this study, refined CPUE based methods may be more efficient with similar uncertainty; however, methods to use CPUE to index burbot numbers need to be refined if they are to be reliable.
- Significant advantages to spawning fish in the wild and rearing eggs in a hatchery setting have been identified, however more study needs to be completed to identify spawning sites and timing on Moyie Lake if this technique is to be employed.
- Creel survey results from 2006-07 (Westover 2007) and population estimates from the same period (current report) suggested an annual harvest rate which may be sustainable. However monitoring of this fishery in 2007-08 showed a significant change in effort (report in prep.) and likely a larger harvest. The current sport fishing regulations for burbot on Moyie Lake should be evaluated against this increase in effort, and changes made if it appears that harvest rates are not sustainable.

Acknowledgements

Angela Prince and Scott Cope of Westslope Fisheries conducted much of the previous fieldwork this study built on. Don Miller of Kootenay Wildlife Services Ltd., Jack Siple and Chris Lewendowski (KTOI) as well as John Bell (MoE) conducted much of the fieldwork for this project. Colin Spence (MoE) provided invaluable technical experience during this project and critical review of this paper. Albert Chirico (MoE) helped produce maps detailing trapping locations. Ron Ek (BC Freshwater Fisheries Society) provided the use of a tank and trailer for burbot transport. Vaughn Paragamian (IDFG) and Sue Ireland (KTOI) provided administrative support and technical direction. In addition, the Bonneville Power Administration (Northwest Power and Conservation Council Fish and Wildlife Program) funded the project through the Idaho Department of Fish and Game and the Kootenai Tribe of Idaho. Lastly, thanks go to Carl Schwartz for his advice regarding study design, completion of analysis of M-R data and the development of population estimates using the Program MARK.

Literature Cited

- Ahrens, R. and J. Korman. 2002. What Happened to the West Arm Burbot Stock in Kootenay Lake? Use of an Age-Structured Population Model to Determine the Possible Causes for Recruitment Failure. Consult. rept. prep. by Ecometric Research Inc. for B.C. Min. Environment, Lands and Parks, Nelson, BC
- Arnason A. N. and Mills K. H. (1981). Bias and loss of precision due to tag loss in Jolly-Seber estimates for mark-recapture experiments. Canadian Journal of Fisheries and Aquatic Sciences 38, 1077-1095.
- Arndt, S. and J. Baxter. 2006. Status of Burbot (*Lota lota*) in Arrow Lakes Reservoir. Report prepared for the Columbia Basin Fish & Wildlife Compensation Program (Nelson) and BC Hydro (Castlegar).
- Baxter, J., C. Spence and M. Neufeld. 2002a. Kootenay Lake Burbot Studies Progress 2000-2001. Report prepared for the Ministry of Water Land and Air Protection, Nelson, B.C.
- Baxter, J., C. Spence and M. Neufeld. 2002b. Kootenay Lake Burbot Studies Progress 2001-2002. Report prepared for the Ministry of Water Land and Air Protection, Nelson, B.C.
- Bernard, D.R., J.F. Parker and R. Lafferty. 1993. Stock Assessment of Burbot Populations in Small and Moderate-Sized Lakes. North American Journal of Fisheries Management. 13:657-675.
- Bisset, J. E., and R. S. Cope. 2002. Goat River Burbot Spawner Enumeration Program, Creston, B. C. Report prepared for Columbia-Kootenay Fisheries Renewal Partnership, Cranbrook, B. C. Prepared by Westslope Fisheries, Cranbrook, B. C.
- Cowen L. and Schwarz C. J. (2006). The JollySeber Model with Tag Loss. Biometrics 62, 699-705.
- Evenson, Matthew J. 1998. Burbot Research in the Tanana River Drainage. Fisheries Data Series # 98-38. Alaska Department of Fish & Game, Division of Sport Fish, December, 1998.
- Jolly G. M. (1965). Explicit estimates from capture-recapture data with both death and immigration - Stochastic model. Biometrika 52, 225-247.
- KVRI Burbot Committee. 2005. Kootenai River/Kootenay Lake Burbot Conservation Strategy. Prepared by the Kootenai Tribe of Idaho with assistance from S. P. Cramer and Associates. 77 pp.
- Lafferty, R., J.F. Parker, D.R. Bernard. 1992. Stock Assessment and Biological Characteristics of Burbot in Lakes of Interior Alaska during 1991. Fishery Data Series # 92-20. Alaska Department of Fish & Game, Division of Sport Fish, July 1992.

- McDonald T. L., Amstrup S. C. and Manly B. F. J. (2003). Tag loss can bias Jolly-Seber capture-recapture estimates. *Wildlife Society Bulletin* 31, 814-822.
- Northcote, T.C. 1973. Some Impacts of Man on Kootenay Lake and Its Salmonids. Great Lakes Fishery Commission, Technical Report No. 2.
- Neufeld and Spence. 2004a. Kootenay Fisheries Investigations, Sturgeon and Burbot Progress, 2002. Report prepared for Ministry of Environment, Lands and Parks, Nelson B.C.
- Neufeld and Spence. 2004b. White Sturgeon and Burbot Recovery Progress 2003-04. Report prepared for Ministry of Environment, Lands and Parks, Nelson B.C.
- Neufeld and Spence. 2004c. Evaluation of a Simple Decompression Procedure to Reduce Decompression Trauma in Trap Caught Burbot. *Transactions of the American Fisheries Society*. 133:5 560-574.
- Neufeld, M.D, V.L. Paragamian and S. Ireland. 2006. Draft Kootenai River Burbot – 5 Year Operational Research Plan. Report completed for the KVRI Burbot Committee.
- Neufeld. 2005. White Sturgeon and Burbot Recovery Progress in British Columbia 2004-05. Report prepared for Ministry of Environment, Lands and Parks, Nelson B.C.
- Paragamian, V. L. 1994. Kootenai River Fisheries Investigation: stock status of burbot and rainbow trout and fisheries inventory. Idaho Department of Fish and Game. Bonneville Power Administration. Annual Progress Report (1993), Project 88-65. Boise, Idaho.
- Paragamian, V. L. 2000. The Effects of Variable Flows on Burbot Spawning Migrations in the Kootenai River, Idaho, USA and British Columbia, Canada. Pages 111-123 in V. L. Paragamian and D. W. Willis, editors. *Burbot: biology, ecology, and management*. American Fisheries Society, Fisheries Management Section, Publication Number 1, Bethesda Maryland.
- Paragamian, V. L., and V. D. Wakkinen. In progress. Seasonal Movement and the Interaction of Temperature and Discharge on Burbot in the Kootenai River, Idaho, USA, and British Columbia, Canada.
- Paragamian, V. L., V. Whitman, J. Hammond, and H. Andrusak. 2000. Collapse of the Burbot Fisheries in Kootenay Lake, British Columbia, Canada, and the Kootenai River, Idaho, USA, post-Libby Dam. Pages 155-164 in V. L. Paragamian and D. W. Willis, editors. *Burbot: biology, ecology, and management*. American Fisheries Society, Fisheries Management Section, Publication Number 1, Bethesda, Maryland.
- Paragamian, V. L., J. Kozfkay, and V. Whitman. 2001. Kootenai River Fisheries Investigation: burbot stock status. Idaho Department of Fish and Game. Bonneville Power Administration. Annual Progress Report, Project 88-65. Boise, Idaho.

- Paragamian, V. L., B. Gunderman, and R. Hardy. 2005. Effects of Regulated Discharge on Burbot Migration. *Journal of Fish Biology* 66:1199-1213.
- Partridge, F. 1983. Kootenai River Fisheries Investigations in Idaho. Completion Report. Prepared for the US Army Corps of Engineers by the Idaho Department of Fish and Game.
- Powell, M., V. L. Paragamian, and J. Dunnigan. 2008. Mitochondrial variation in western North American burbot with special reference to the Kootenai River in Idaho and Montana. *in* V. L. Paragamian and D. Bennett, editors. *Burbot: ecology, management, and culture*. Symposium 59. American Fisheries Society, Bethesda, Maryland.
- Prince, A. and C.R. Spence. 2007. Moyie Lake Burbot Stock Status, 2005-2006. Consultant report prepared for BC Ministry of Environment, Nelson, B.C.
- Pyper, B.J., M.J. Daigneault, V.L. Paragamian, and S.C. Ireland. 2004. Population Dynamics and Extinction Risk of a Burbot (*Lota lota*) Stock in Decline. S. P Cramer and Associates, Gresham, OR. Draft report prepared for the Kootenai Tribe of Idaho. 46pp.
- Seber G. A. F. 1965. A note on the multiple recapture census. *Biometrika* 52, 249-259.
- Seber, G.A.F. 1982. The Estimation of Animal Abundance and Related Parameters. Second Edition. Charles Griffin & Company Ltd. London.
- Spence, C.R. 1999a. Kootenay Lake Burbot Studies: Progress 1998-1999. Report to Habitat Conservation Trust Fund and Bonneville Power Administration from the Ministry of Environment, Lands and Parks, Nelson, B.C. ii+53 pp.
- Spence, C.R. 1999b. A Comparison of Catch Success Between Two Styles of Burbot Traps in Lakes, pages 165-170. *In*: V.L. Paragamian and D.W. Willis (editors). *Burbot Biology, Ecology, and Management*. Publication Number 1, Fisheries Management Section of the American Fisheries Society. Spokane, WA.
- Westover, W.T. 2007. Moyie Lake Creel and Spawning Survey (January-March 2007). BC Ministry of Environment Report.
- Zar, J.H. 1996. Biostatistical Analysis. 4th edition. Prentice-Hall Inc., N.J.

Appendices

Appendix A. North Moyie trap set data, 2007 (see Appendix B for Site ID details).

Float ID	Site ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)
12	E55	16-Apr-07	2.0	18-Apr-07	2	6.0
6	E54	16-Apr-07	1.7	18-Apr-07		6.0
18	E53	16-Apr-07	4.6	18-Apr-07		6.0
22	E52	16-Apr-07	3.5	18-Apr-07	3	6.0
4	E51	16-Apr-07	5.2	18-Apr-07		6.0
2	E50	16-Apr-07	16.4	18-Apr-07	2	6.0
20	E49	16-Apr-07	22.5	18-Apr-07	3	6.0
14	D43	16-Apr-07	17.6	18-Apr-07	2	6.0
17	D44	16-Apr-07	21.0	18-Apr-07	3	6.0
11	D48	16-Apr-07	15.0	18-Apr-07	2	6.0
9	D49	16-Apr-07	10.6	18-Apr-07	2	6.0
21	D50	16-Apr-07	13.3	18-Apr-07	1	6.0
8	D51	16-Apr-07	3.7	18-Apr-07	4	6.0
3	D53	16-Apr-07	2.4	18-Apr-07	1	6.0
16	C53	16-Apr-07	1.8	18-Apr-07		6.0
19	C50	16-Apr-07	9.3	18-Apr-07		6.0
13	C51	16-Apr-07	4.1	18-Apr-07		6.0
10	B51	16-Apr-07	5.3	18-Apr-07		6.0
1	B50	16-Apr-07	6.8	18-Apr-07	1	6.0
5	F57	16-Apr-07	1.7	18-Apr-07		6.0
7	F56	16-Apr-07	3.6	18-Apr-07	2	6.0
22	F55	18-Apr-07	13.1	20-Apr-07	4	5.7
18	F54	18-Apr-07	19.8	20-Apr-07	2	5.7
6	G57	18-Apr-07	5.4	20-Apr-07	2	5.7
3	G56	18-Apr-07	12.9	20-Apr-07	1	5.7
5	G55	18-Apr-07	25.0	20-Apr-07	1	5.7
7	H57	18-Apr-07	8.0	20-Apr-07	4	5.7
12	H56	18-Apr-07	16.4	20-Apr-07	3	5.7
16	H55	18-Apr-07	24.7	20-Apr-07	3	5.7
19	I57	18-Apr-07	11.4	20-Apr-07		5.7
10	I56	18-Apr-07	19.0	20-Apr-07	2	5.7
13	J58	18-Apr-07	5.9	20-Apr-07	2	5.7
1	J57	18-Apr-07	12.5	20-Apr-07	3	5.7
8	J56	18-Apr-07	18.2	20-Apr-07	2	5.7
4	K55	18-Apr-07	24.8	20-Apr-07	1	5.7
9	K57	18-Apr-07	9.8	20-Apr-07	2	5.7
21	K56	18-Apr-07	18.1	20-Apr-07	2	5.7
17	L57	18-Apr-07	11.3	20-Apr-07	3	5.7
11	L56	18-Apr-07	15.4	20-Apr-07	2	5.7
14	L55	18-Apr-07	18.4	20-Apr-07	3	5.7
20	L54	18-Apr-07	21.3	20-Apr-07	3	5.7
2	L53	18-Apr-07	23.1	20-Apr-07	4	5.7
6	M57	20-Apr-07	10.9	22-Apr-07		6.0
3	M56	20-Apr-07	14.1	22-Apr-07	1	6.0
18	M55	20-Apr-07	17.1	22-Apr-07	2	6.0
5	M54	20-Apr-07	20.1	22-Apr-07		6.0
22	M53	20-Apr-07	21.9	22-Apr-07	1	6.0

Float ID	Site ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)
13	N57	20-Apr-07	25.0	22-Apr-07		6.0
10	O45	20-Apr-07	23.6	22-Apr-07	4	6.0
12	O44	20-Apr-07	21.4	22-Apr-07		6.0
16	43	20-Apr-07	24.6	22-Apr-07	5	6.0
7	P42	20-Apr-07	24.8	22-Apr-07	1	6.0
4	P41	20-Apr-07	24.6	22-Apr-07		6.0
21	P40	20-Apr-07	22.7	22-Apr-07	3	6.0
9	P39	20-Apr-07	15.0	22-Apr-07	1	6.0
1	N33	20-Apr-07	14.0	22-Apr-07	2	6.0
8	M27	20-Apr-07	20.3	22-Apr-07	1	6.0
17	M22	20-Apr-07	17.6	22-Apr-07		6.0
11	M23	20-Apr-07	23.1	22-Apr-07	3	6.0
2	M21	20-Apr-07	22.1	22-Apr-07		6.0
14	N20	20-Apr-07	9.3	22-Apr-07	1	6.0
20	N21	20-Apr-07	3.9	22-Apr-07		6.0
22	M17	22-Apr-07	19.0	24-Apr-07	2	6.2
5	M16	22-Apr-07	16.0	24-Apr-07	2	6.2
18	M15	22-Apr-07	14.9	24-Apr-07		6.2
3	M14	22-Apr-07	14.3	24-Apr-07	2	6.2
6	M13	22-Apr-07	13.2	24-Apr-07	1	6.2
13	M12	22-Apr-07	12.8	24-Apr-07		6.2
11	N19	22-Apr-07	12.1	24-Apr-07	1	6.2
17	N18	22-Apr-07	16.0	24-Apr-07	1	6.2
2	N17	22-Apr-07	15.7	24-Apr-07	1	6.2
20	N16	22-Apr-07	15.1	24-Apr-07		6.2
14	N15	22-Apr-07	14.3	24-Apr-07	1	6.2
4	N14	22-Apr-07	13.7	24-Apr-07		6.2
7	N13	22-Apr-07	11.7	24-Apr-07	2	6.2
21	N12	22-Apr-07	9.9	24-Apr-07		6.2
9	O14	22-Apr-07	11.6	24-Apr-07		6.2
1	O15	22-Apr-07	12.9	24-Apr-07	1	6.2
8	O16	22-Apr-07	13.0	24-Apr-07	2	6.2
19	O19	22-Apr-07	8.4	24-Apr-07		6.2
10	O18	22-Apr-07	11.8	24-Apr-07		6.2
12	O17	22-Apr-07	12.6	24-Apr-07		6.2
16	M11	22-Apr-07	10.9	24-Apr-07		6.2
6	L11	24-Apr-07	13.2	26-Apr-07	1	6.0
3	L12	24-Apr-07	13.8	26-Apr-07		6.0
18	L13	24-Apr-07	14.0	26-Apr-07	1	6.0
5	L14	24-Apr-07	14.5	26-Apr-07		6.0
22	L15	24-Apr-07	15.0	26-Apr-07		6.0
13	L16	24-Apr-07	17.3	26-Apr-07		6.0
16	K16	24-Apr-07	21.3	26-Apr-07	1	6.0
7	K15	24-Apr-07	15.9	26-Apr-07		6.0
21	K14	24-Apr-07	15.0	26-Apr-07		6.0
4	K13	24-Apr-07	15.5	26-Apr-07		6.0
11	K12	24-Apr-07	15.2	26-Apr-07		6.0
17	K11	24-Apr-07	14.1	26-Apr-07		6.0
20	K10	24-Apr-07	13.5	26-Apr-07		6.0
14	J9	24-Apr-07	13.2	26-Apr-07	1	6.0
2	J10	24-Apr-07	14.3	26-Apr-07		6.0

Float ID	Site ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)
9	J11	24-Apr-07	15.2	26-Apr-07	1	6.0
1	J12	24-Apr-07	16.5	26-Apr-07	1	6.0
8	J13	24-Apr-07	17.1	26-Apr-07	1	6.0
10	J14	24-Apr-07	18.0	26-Apr-07	1	6.0
12	J15	24-Apr-07	18.6	26-Apr-07	1	6.0
19	I15	24-Apr-07	23.2	26-Apr-07	1	6.0
2	I4	26-Apr-07	8.0	28-Apr-07	1	5.8
9	J4	26-Apr-07	8.0	28-Apr-07	4	5.8
1	J5	26-Apr-07	8.7	28-Apr-07	3	5.8
8	I5	26-Apr-07	11.4	28-Apr-07		5.8
10	I6	26-Apr-07	13.5	28-Apr-07		5.8
12	I7	26-Apr-07	13.5	28-Apr-07	2	5.8
4	I8	26-Apr-07	13.7	28-Apr-07		5.8
11	I9	26-Apr-07	14.2	28-Apr-07		5.8
17	I10	26-Apr-07	15.3	28-Apr-07	1	5.8
20	I11	26-Apr-07	16.1	28-Apr-07		5.8
14	I12	26-Apr-07	17.0	28-Apr-07		5.8
7	I13	26-Apr-07	18.2	28-Apr-07		5.8
13	I14	26-Apr-07	20.6	28-Apr-07	2	5.8
21	H14	26-Apr-07	23.0	28-Apr-07	2	5.8
16	H13	26-Apr-07	20.8	28-Apr-07	1	5.8
19	H12	26-Apr-07	17.8	28-Apr-07		5.8
6	H11	26-Apr-07	16.0	28-Apr-07	2	5.8
18	H10	26-Apr-07	15.1	28-Apr-07	3	5.8
3	H9	26-Apr-07	13.8	28-Apr-07		5.8
5	H8	26-Apr-07	13.6	28-Apr-07	1	5.8
22	H7	26-Apr-07	13.2	28-Apr-07	1	5.8
10	G4	28-Apr-07	1.7	30-Apr-07	4	5.9
2	G5	28-Apr-07	7.1	30-Apr-07		5.9
8	G6	28-Apr-07	12.0	30-Apr-07		5.9
1	G7	28-Apr-07	12.8	30-Apr-07	1	5.9
9	G8	28-Apr-07	12.3	30-Apr-07	1	5.9
20	G9	28-Apr-07	12.9	30-Apr-07	1	5.9
17	G10	28-Apr-07	14.5	30-Apr-07	1	5.9
11	G11	28-Apr-07	16.4	30-Apr-07	1	5.9
4	G12	28-Apr-07	18.9	30-Apr-07		5.9
12	G13	28-Apr-07	22.2	30-Apr-07	1	5.9
16	F5	28-Apr-07	3.8	30-Apr-07		5.9
21	F6	28-Apr-07	9.0	30-Apr-07	3	5.9
13	F7	28-Apr-07	11.2	30-Apr-07	1	5.9
7	F8	28-Apr-07	10.3	30-Apr-07	2	5.9
14	F9	28-Apr-07	11.9	30-Apr-07	1	5.9
22	H6	28-Apr-07	11.5	30-Apr-07	1	5.9
5	H5	28-Apr-07	7.9	30-Apr-07	1	5.9
3	H4	28-Apr-07	4.9	30-Apr-07	1	5.9
18	F10	28-Apr-07	13.7	30-Apr-07		5.9
6	F11	28-Apr-07	15.6	30-Apr-07		5.9
19	F12	28-Apr-07	17.2	30-Apr-07		5.9
9	E9	30-Apr-07	8.4	2-May-07	2	6.7
20	E10	30-Apr-07	13.2	2-May-07		6.7
11	E11	30-Apr-07	15.4	2-May-07	1	6.7

Float ID	Site ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)
17	E12	30-Apr-07	16.7	2-May-07		6.7
4	E13	30-Apr-07	19.1	2-May-07		6.7
12	F13	30-Apr-07	20.9	2-May-07	1	6.7
7	D10	30-Apr-07	14.4	2-May-07	1	6.7
14	D11	30-Apr-07	17.0	2-May-07		6.7
18	D12	30-Apr-07	18.1	2-May-07		6.7
6	D13	30-Apr-07	17.4	2-May-07		6.7
19	D14	30-Apr-07	16.8	2-May-07		6.7
2	E14	30-Apr-07	21.0	2-May-07		6.7
16	D16	30-Apr-07	19.4	2-May-07		6.7
21	D15	30-Apr-07	17.5	2-May-07	2	6.7
10	C11	30-Apr-07	17.3	2-May-07	2	6.7
4	C47	22-May-07	10.5	24-May-07	2	10.7
7	D48	22-May-07	13.4	24-May-07		10.7
8	D49	22-May-07	10.5	24-May-07		10.7
5	E49	22-May-07	22.0	24-May-07	4	10.7
1	D50	22-May-07	13.5	24-May-07	1	10.7
22	C50	22-May-07	10.0	24-May-07		10.7
6	C51	22-May-07	2.5	24-May-07	2	10.7
17	E51	22-May-07	5.1	24-May-07	3	10.7
2	E53	22-May-07	4.6	24-May-07	5	10.7
13	E54	22-May-07	2.5	24-May-07	1	10.7
19	F54	22-May-07	16.1	24-May-07	3	10.7
11	F56	22-May-07	3.3	24-May-07	1	10.7
10	H57	22-May-07	9.1	24-May-07	3	10.7
21	I57	22-May-07	10.4	24-May-07		10.7
14	J57	22-May-07	12.5	24-May-07	1	10.7
20	K57	22-May-07	9.8	24-May-07		10.7
12	J56	22-May-07	19.1	24-May-07	4	10.7
9	L54	22-May-07	21.9	24-May-07	2	10.7
16	L53	22-May-07	22.7	24-May-07		10.7
18	M53	22-May-07	20.9	24-May-07		10.7
3	M54	22-May-07	17.9	24-May-07		10.7
5	M22	24-May-07	15.0	26-May-07	1	9.1
17	M21	24-May-07	23.4	26-May-07	5	9.1
2	N19	24-May-07	13.3	26-May-07		9.1
13	N18	24-May-07	15.8	26-May-07		9.1
19	N15	24-May-07	15.0	26-May-07	1	9.1
11	M17	24-May-07	20.0	26-May-07	2	9.1
6	P42	24-May-07	22.2	26-May-07	1	9.1
22	N33	24-May-07	12.3	26-May-07	3	9.1
1	O16	24-May-07	12.5	26-May-07		9.1
8	O14	24-May-07	11.4	26-May-07	1	9.1
7	M12	24-May-07	13.0	26-May-07	1	9.1
4	L11	24-May-07	13.5	26-May-07	2	9.1
20	J15	24-May-07	18.8	26-May-07		9.1
12	J13	24-May-07	17.2	26-May-07		9.1
14	J12	24-May-07	16.6	26-May-07	2	9.1
21	J11	24-May-07	15.4	26-May-07	1	9.1
10	J9	24-May-07	12.6	26-May-07	2	9.1
18	I15	24-May-07	23.2	26-May-07		9.1

Float ID	Site ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)
9	I14	24-May-07	19.9	26-May-07	1	9.1
3	I12	24-May-07	17.2	26-May-07		9.1
16	I11	24-May-07	16.1	26-May-07	2	9.1
16	H14	26-May-07	24.1	28-May-07	2	11.1
3	H12	26-May-07	17.5	28-May-07	1	11.1
9	H11	26-May-07	16.0	28-May-07	1	11.1
18	H10	26-May-07	15.2	28-May-07	1	11.1
22	H9	26-May-07	13.8	28-May-07		11.1
6	H7	26-May-07	13.3	28-May-07		11.1
20	I7	26-May-07	13.5	28-May-07	1	11.1
12	J5	26-May-07	10.0	28-May-07		11.1
14	H6	26-May-07	11.7	28-May-07		11.1
10	G5	26-May-07	6.4	28-May-07	1	11.1
4	F5	26-May-07	4.2	28-May-07	1	11.1
21	G6	26-May-07	12.3	28-May-07		11.1
1	G9	26-May-07	13.0	28-May-07	1	11.1
19	F9	26-May-07	11.3	28-May-07	1	11.1
8	G8	26-May-07	12.1	28-May-07		11.1
7	F7	26-May-07	11.1	28-May-07	2	11.1
5	F11	26-May-07	15.3	28-May-07	2	11.1
17	F12	26-May-07	16.2	28-May-07		11.1
2	D12	26-May-07	17.9	28-May-07		11.1
13	D13	26-May-07	16.8	28-May-07	2	11.1
11	E14	26-May-07	21.3	28-May-07	2	11.1

Appendix B. North Moyie site location data, 2007.

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584000	5463600	A1	584600	5467300	G38	585300	5464700	N12
584000	5463700	A2	584600	5467400	G39	585300	5464800	N13
584000	5463800	A3	584600	5467500	G40	585300	5464900	N14
584000	5463900	A4	584600	5467600	G41	585300	5465000	N15
584000	5464000	A5	584600	5467700	G42	585300	5465100	N16
584000	5464100	A6	584600	5467800	G43	585300	5465200	N17
584000	5464200	A7	584600	5467900	G44	585300	5465300	N18
584000	5464300	A8	584600	5468000	G45	585300	5465400	N19
584000	5464400	A9	584600	5468100	G46	585300	5465500	N20
584000	5464500	A10	584600	5468200	G47	585300	5465600	N21
584000	5464600	A11	584600	5468300	G48	585300	5465700	N22
584000	5464700	A12	584600	5468400	G49	585300	5465800	N23
584000	5464800	A13	584600	5468500	G50	585300	5465900	N24
584000	5464900	A14	584600	5468600	G51	585300	5466000	N25
584000	5465000	A15	584600	5468700	G52	585300	5466100	N26
584000	5465100	A16	584600	5468800	G53	585300	5466200	N27
584000	5465200	A17	584600	5468900	G54	585300	5466300	N28
584000	5465300	A18	584600	5469000	G55	585300	5466400	N29
584000	5465400	A19	584600	5469100	G56	585300	5466500	N30
584000	5465500	A20	584600	5469200	G57	585300	5466600	N31
584000	5465600	A21	584600	5469300	G58	585300	5466700	N32
584000	5465700	A22	584600	5469400	G59	585300	5466800	N33
584000	5465800	A23	584600	5469500	G60	585300	5466900	N34
584000	5465900	A24	584600	5469600	G61	585300	5467000	N35
584000	5466000	A25	584600	5469700	G62	585300	5467100	N36
584000	5466100	A26	584600	5469800	G63	585300	5467200	N37
584000	5466200	A27	584700	5463600	H1	585300	5467300	N38
584000	5466300	A28	584700	5463700	H2	585300	5467400	N39
584000	5466400	A29	584700	5463800	H3	585300	5467500	N40
584000	5466500	A30	584700	5463900	H4	585300	5467600	N41
584000	5466600	A31	584700	5464000	H5	585300	5467700	N42
584000	5466700	A32	584700	5464100	H6	585300	5467800	N43
584000	5466800	A33	584700	5464200	H7	585300	5467900	N44
584000	5466900	A34	584700	5464300	H8	585300	5468000	N45
584000	5467000	A35	584700	5464400	H9	585300	5468100	N46
584000	5467100	A36	584700	5464500	H10	585300	5468200	N47
584000	5467200	A37	584700	5464600	H11	585300	5468300	N48
584000	5467300	A38	584700	5464700	H12	585300	5468400	N49
584000	5467400	A39	584700	5464800	H13	585300	5468500	N50
584000	5467500	A40	584700	5464900	H14	585300	5468600	N51
584000	5467600	A41	584700	5465000	H15	585300	5468700	N52
584000	5467700	A42	584700	5465100	H16	585300	5468800	N53
584000	5467800	A43	584700	5465200	H17	585300	5468900	N54
584000	5467900	A44	584700	5465300	H18	585300	5469000	N55
584000	5468000	A45	584700	5465400	H19	585300	5469100	N56
584000	5468100	A46	584700	5465500	H20	585300	5469200	N57
584000	5468200	A47	584700	5465600	H21	585300	5469300	N58
584000	5468300	A48	584700	5465700	H22	585300	5469400	N59
584000	5468400	A49	584700	5465800	H23	585300	5469500	N60

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584000	5468500	A50	584700	5465900	H24	585300	5469600	N61
584000	5468600	A51	584700	5466000	H25	585300	5469700	N62
584000	5468700	A52	584700	5466100	H26	585300	5469800	N63
584000	5468800	A53	584700	5466200	H27	585400	5463600	O1
584000	5468900	A54	584700	5466300	H28	585400	5463700	O2
584000	5469000	A55	584700	5466400	H29	585400	5463800	O3
584000	5469100	A56	584700	5466500	H30	585400	5463900	O4
584000	5469200	A57	584700	5466600	H31	585400	5464000	O5
584000	5469300	A58	584700	5466700	H32	585400	5464100	O6
584000	5469400	A59	584700	5466800	H33	585400	5464200	O7
584000	5469500	A60	584700	5466900	H34	585400	5464300	O8
584000	5469600	A61	584700	5467000	H35	585400	5464400	O9
584000	5469700	A62	584700	5467100	H36	585400	5464500	O10
584000	5469800	A63	584700	5467200	H37	585400	5464600	O11
584100	5463600	B1	584700	5467300	H38	585400	5464700	O12
584100	5463700	B2	584700	5467400	H39	585400	5464800	O13
584100	5463800	B3	584700	5467500	H40	585400	5464900	O14
584100	5463900	B4	584700	5467600	H41	585400	5465000	O15
584100	5464000	B5	584700	5467700	H42	585400	5465100	O16
584100	5464100	B6	584700	5467800	H43	585400	5465200	O17
584100	5464200	B7	584700	5467900	H44	585400	5465300	O18
584100	5464300	B8	584700	5468000	H45	585400	5465400	O19
584100	5464400	B9	584700	5468100	H46	585400	5465500	O20
584100	5464500	B10	584700	5468200	H47	585400	5465600	O21
584100	5464600	B11	584700	5468300	H48	585400	5465700	O22
584100	5464700	B12	584700	5468400	H49	585400	5465800	O23
584100	5464800	B13	584700	5468500	H50	585400	5465900	O24
584100	5464900	B14	584700	5468600	H51	585400	5466000	O25
584100	5465000	B15	584700	5468700	H52	585400	5466100	O26
584100	5465100	B16	584700	5468800	H53	585400	5466200	O27
584100	5465200	B17	584700	5468900	H54	585400	5466300	O28
584100	5465300	B18	584700	5469000	H55	585400	5466400	O29
584100	5465400	B19	584700	5469100	H56	585400	5466500	O30
584100	5465500	B20	584700	5469200	H57	585400	5466600	O31
584100	5465600	B21	584700	5469300	H58	585400	5466700	O32
584100	5465700	B22	584700	5469400	H59	585400	5466800	O33
584100	5465800	B23	584700	5469500	H60	585400	5466900	O34
584100	5465900	B24	584700	5469600	H61	585400	5467000	O35
584100	5466000	B25	584700	5469700	H62	585400	5467100	O36
584100	5466100	B26	584700	5469800	H63	585400	5467200	O37
584100	5466200	B27	584800	5463600	I1	585400	5467300	O38
584100	5466300	B28	584800	5463700	I2	585400	5467400	O39
584100	5466400	B29	584800	5463800	I3	585400	5467500	O40
584100	5466500	B30	584800	5463900	I4	585400	5467600	O41
584100	5466600	B31	584800	5464000	I5	585400	5467700	O42
584100	5466700	B32	584800	5464100	I6	585400	5467800	O43
584100	5466800	B33	584800	5464200	I7	585400	5467900	O44
584100	5466900	B34	584800	5464300	I8	585400	5468000	O45
584100	5467000	B35	584800	5464400	I9	585400	5468100	O46
584100	5467100	B36	584800	5464500	I10	585400	5468200	O47

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584100	5467200	B37	584800	5464600	I11	585400	5468300	O48
584100	5467300	B38	584800	5464700	I12	585400	5468400	O49
584100	5467400	B39	584800	5464800	I13	585400	5468500	O50
584100	5467500	B40	584800	5464900	I14	585400	5468600	O51
584100	5467600	B41	584800	5465000	I15	585400	5468700	O52
584100	5467700	B42	584800	5465100	I16	585400	5468800	O53
584100	5467800	B43	584800	5465200	I17	585400	5468900	O54
584100	5467900	B44	584800	5465300	I18	585400	5469000	O55
584100	5468000	B45	584800	5465400	I19	585400	5469100	O56
584100	5468100	B46	584800	5465500	I20	585400	5469200	O57
584100	5468200	B47	584800	5465600	I21	585400	5469300	O58
584100	5468300	B48	584800	5465700	I22	585400	5469400	O59
584100	5468400	B49	584800	5465800	I23	585400	5469500	O60
584100	5468500	B50	584800	5465900	I24	585400	5469600	O61
584100	5468600	B51	584800	5466000	I25	585400	5469700	O62
584100	5468700	B52	584800	5466100	I26	585400	5469800	O63
584100	5468800	B53	584800	5466200	I27	585500	5463600	P1
584100	5468900	B54	584800	5466300	I28	585500	5463700	P2
584100	5469000	B55	584800	5466400	I29	585500	5463800	P3
584100	5469100	B56	584800	5466500	I30	585500	5463900	P4
584100	5469200	B57	584800	5466600	I31	585500	5464000	P5
584100	5469300	B58	584800	5466700	I32	585500	5464100	P6
584100	5469400	B59	584800	5466800	I33	585500	5464200	P7
584100	5469500	B60	584800	5466900	I34	585500	5464300	P8
584100	5469600	B61	584800	5467000	I35	585500	5464400	P9
584100	5469700	B62	584800	5467100	I36	585500	5464500	P10
584100	5469800	B63	584800	5467200	I37	585500	5464600	P11
584200	5463600	C1	584800	5467300	I38	585500	5464700	P12
584200	5463700	C2	584800	5467400	I39	585500	5464800	P13
584200	5463800	C3	584800	5467500	I40	585500	5464900	P14
584200	5463900	C4	584800	5467600	I41	585500	5465000	P15
584200	5464000	C5	584800	5467700	I42	585500	5465100	P16
584200	5464100	C6	584800	5467800	I43	585500	5465200	P17
584200	5464200	C7	584800	5467900	I44	585500	5465300	P18
584200	5464300	C8	584800	5468000	I45	585500	5465400	P19
584200	5464400	C9	584800	5468100	I46	585500	5465500	P20
584200	5464500	C10	584800	5468200	I47	585500	5465600	P21
584200	5464600	C11	584800	5468300	I48	585500	5465700	P22
584200	5464700	C12	584800	5468400	I49	585500	5465800	P23
584200	5464800	C13	584800	5468500	I50	585500	5465900	P24
584200	5464900	C14	584800	5468600	I51	585500	5466000	P25
584200	5465000	C15	584800	5468700	I52	585500	5466100	P26
584200	5465100	C16	584800	5468800	I53	585500	5466200	P27
584200	5465200	C17	584800	5468900	I54	585500	5466300	P28
584200	5465300	C18	584800	5469000	I55	585500	5466400	P29
584200	5465400	C19	584800	5469100	I56	585500	5466500	P30
584200	5465500	C20	584800	5469200	I57	585500	5466600	P31
584200	5465600	C21	584800	5469300	I58	585500	5466700	P32
584200	5465700	C22	584800	5469400	I59	585500	5466800	P33
584200	5465800	C23	584800	5469500	I60	585500	5466900	P34
584200	5465900	C24	584800	5469600	I61	585500	5467000	P35

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584200	5466000	C25	584800	5469700	I62	585500	5467100	P36
584200	5466100	C26	584800	5469800	I63	585500	5467200	P37
584200	5466200	C27	584900	5463600	J1	585500	5467300	P38
584200	5466300	C28	584900	5463700	J2	585500	5467400	P39
584200	5466400	C29	584900	5463800	J3	585500	5467500	P40
584200	5466500	C30	584900	5463900	J4	585500	5467600	P41
584200	5466600	C31	584900	5464000	J5	585500	5467700	P42
584200	5466700	C32	584900	5464100	J6	585500	5467800	P43
584200	5466800	C33	584900	5464200	J7	585500	5467900	P44
584200	5466900	C34	584900	5464300	J8	585500	5468000	P45
584200	5467000	C35	584900	5464400	J9	585500	5468100	P46
584200	5467100	C36	584900	5464500	J10	585500	5468200	P47
584200	5467200	C37	584900	5464600	J11	585500	5468300	P48
584200	5467300	C38	584900	5464700	J12	585500	5468400	P49
584200	5467400	C39	584900	5464800	J13	585500	5468500	P50
584200	5467500	C40	584900	5464900	J14	585500	5468600	P51
584200	5467600	C41	584900	5465000	J15	585500	5468700	P52
584200	5467700	C42	584900	5465100	J16	585500	5468800	P53
584200	5467800	C43	584900	5465200	J17	585500	5468900	P54
584200	5467900	C44	584900	5465300	J18	585500	5469000	P55
584200	5468000	C45	584900	5465400	J19	585500	5469100	P56
584200	5468100	C46	584900	5465500	J20	585500	5469200	P57
584200	5468200	C47	584900	5465600	J21	585500	5469300	P58
584200	5468300	C48	584900	5465700	J22	585500	5469400	P59
584200	5468400	C49	584900	5465800	J23	585500	5469500	P60
584200	5468500	C50	584900	5465900	J24	585500	5469600	P61
584200	5468600	C51	584900	5466000	J25	585500	5469700	P62
584200	5468700	C52	584900	5466100	J26	585500	5469800	P63
584200	5468800	C53	584900	5466200	J27	585600	5463600	Q1
584200	5468900	C54	584900	5466300	J28	585600	5463700	Q2
584200	5469000	C55	584900	5466400	J29	585600	5463800	Q3
584200	5469100	C56	584900	5466500	J30	585600	5463900	Q4
584200	5469200	C57	584900	5466600	J31	585600	5464000	Q5
584200	5469300	C58	584900	5466700	J32	585600	5464100	Q6
584200	5469400	C59	584900	5466800	J33	585600	5464200	Q7
584200	5469500	C60	584900	5466900	J34	585600	5464300	Q8
584200	5469600	C61	584900	5467000	J35	585600	5464400	Q9
584200	5469700	C62	584900	5467100	J36	585600	5464500	Q10
584200	5469800	C63	584900	5467200	J37	585600	5464600	Q11
584300	5463600	D1	584900	5467300	J38	585600	5464700	Q12
584300	5463700	D2	584900	5467400	J39	585600	5464800	Q13
584300	5463800	D3	584900	5467500	J40	585600	5464900	Q14
584300	5463900	D4	584900	5467600	J41	585600	5465000	Q15
584300	5464000	D5	584900	5467700	J42	585600	5465100	Q16
584300	5464100	D6	584900	5467800	J43	585600	5465200	Q17
584300	5464200	D7	584900	5467900	J44	585600	5465300	Q18
584300	5464300	D8	584900	5468000	J45	585600	5465400	Q19
584300	5464400	D9	584900	5468100	J46	585600	5465500	Q20
584300	5464500	D10	584900	5468200	J47	585600	5465600	Q21
584300	5464600	D11	584900	5468300	J48	585600	5465700	Q22
584300	5464700	D12	584900	5468400	J49	585600	5465800	Q23

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584300	5464800	D13	584900	5468500	J50	585600	5465900	Q24
584300	5464900	D14	584900	5468600	J51	585600	5466000	Q25
584300	5465000	D15	584900	5468700	J52	585600	5466100	Q26
584300	5465100	D16	584900	5468800	J53	585600	5466200	Q27
584300	5465200	D17	584900	5468900	J54	585600	5466300	Q28
584300	5465300	D18	584900	5469000	J55	585600	5466400	Q29
584300	5465400	D19	584900	5469100	J56	585600	5466500	Q30
584300	5465500	D20	584900	5469200	J57	585600	5466600	Q31
584300	5465600	D21	584900	5469300	J58	585600	5466700	Q32
584300	5465700	D22	584900	5469400	J59	585600	5466800	Q33
584300	5465800	D23	584900	5469500	J60	585600	5466900	Q34
584300	5465900	D24	584900	5469600	J61	585600	5467000	Q35
584300	5466000	D25	584900	5469700	J62	585600	5467100	Q36
584300	5466100	D26	584900	5469800	J63	585600	5467200	Q37
584300	5466200	D27	585000	5463600	K1	585600	5467300	Q38
584300	5466300	D28	585000	5463700	K2	585600	5467400	Q39
584300	5466400	D29	585000	5463800	K3	585600	5467500	Q40
584300	5466500	D30	585000	5463900	K4	585600	5467600	Q41
584300	5466600	D31	585000	5464000	K5	585600	5467700	Q42
584300	5466700	D32	585000	5464100	K6	585600	5467800	Q43
584300	5466800	D33	585000	5464200	K7	585600	5467900	Q44
584300	5466900	D34	585000	5464300	K8	585600	5468000	Q45
584300	5467000	D35	585000	5464400	K9	585600	5468100	Q46
584300	5467100	D36	585000	5464500	K10	585600	5468200	Q47
584300	5467200	D37	585000	5464600	K11	585600	5468300	Q48
584300	5467300	D38	585000	5464700	K12	585600	5468400	Q49
584300	5467400	D39	585000	5464800	K13	585600	5468500	Q50
584300	5467500	D40	585000	5464900	K14	585600	5468600	Q51
584300	5467600	D41	585000	5465000	K15	585600	5468700	Q52
584300	5467700	D42	585000	5465100	K16	585600	5468800	Q53
584300	5467800	D43	585000	5465200	K17	585600	5468900	Q54
584300	5467900	D44	585000	5465300	K18	585600	5469000	Q55
584300	5468000	D45	585000	5465400	K19	585600	5469100	Q56
584300	5468100	D46	585000	5465500	K20	585600	5469200	Q57
584300	5468200	D47	585000	5465600	K21	585600	5469300	Q58
584300	5468300	D48	585000	5465700	K22	585600	5469400	Q59
584300	5468400	D49	585000	5465800	K23	585600	5469500	Q60
584300	5468500	D50	585000	5465900	K24	585600	5469600	Q61
584300	5468600	D51	585000	5466000	K25	585600	5469700	Q62
584300	5468700	D52	585000	5466100	K26	585600	5469800	Q63
584300	5468800	D53	585000	5466200	K27	585700	5463600	R1
584300	5468900	D54	585000	5466300	K28	585700	5463700	R2
584300	5469000	D55	585000	5466400	K29	585700	5463800	R3
584300	5469100	D56	585000	5466500	K30	585700	5463900	R4
584300	5469200	D57	585000	5466600	K31	585700	5464000	R5
584300	5469300	D58	585000	5466700	K32	585700	5464100	R6
584300	5469400	D59	585000	5466800	K33	585700	5464200	R7
584300	5469500	D60	585000	5466900	K34	585700	5464300	R8
584300	5469600	D61	585000	5467000	K35	585700	5464400	R9
584300	5469700	D62	585000	5467100	K36	585700	5464500	R10
584300	5469800	D63	585000	5467200	K37	585700	5464600	R11

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584400	5463600	E1	585000	5467300	K38	585700	5464700	R12
584400	5463700	E2	585000	5467400	K39	585700	5464800	R13
584400	5463800	E3	585000	5467500	K40	585700	5464900	R14
584400	5463900	E4	585000	5467600	K41	585700	5465000	R15
584400	5464000	E5	585000	5467700	K42	585700	5465100	R16
584400	5464100	E6	585000	5467800	K43	585700	5465200	R17
584400	5464200	E7	585000	5467900	K44	585700	5465300	R18
584400	5464300	E8	585000	5468000	K45	585700	5465400	R19
584400	5464400	E9	585000	5468100	K46	585700	5465500	R20
584400	5464500	E10	585000	5468200	K47	585700	5465600	R21
584400	5464600	E11	585000	5468300	K48	585700	5465700	R22
584400	5464700	E12	585000	5468400	K49	585700	5465800	R23
584400	5464800	E13	585000	5468500	K50	585700	5465900	R24
584400	5464900	E14	585000	5468600	K51	585700	5466000	R25
584400	5465000	E15	585000	5468700	K52	585700	5466100	R26
584400	5465100	E16	585000	5468800	K53	585700	5466200	R27
584400	5465200	E17	585000	5468900	K54	585700	5466300	R28
584400	5465300	E18	585000	5469000	K55	585700	5466400	R29
584400	5465400	E19	585000	5469100	K56	585700	5466500	R30
584400	5465500	E20	585000	5469200	K57	585700	5466600	R31
584400	5465600	E21	585000	5469300	K58	585700	5466700	R32
584400	5465700	E22	585000	5469400	K59	585700	5466800	R33
584400	5465800	E23	585000	5469500	K60	585700	5466900	R34
584400	5465900	E24	585000	5469600	K61	585700	5467000	R35
584400	5466000	E25	585000	5469700	K62	585700	5467100	R36
584400	5466100	E26	585000	5469800	K63	585700	5467200	R37
584400	5466200	E27	585100	5463600	L1	585700	5467300	R38
584400	5466300	E28	585100	5463700	L2	585700	5467400	R39
584400	5466400	E29	585100	5463800	L3	585700	5467500	R40
584400	5466500	E30	585100	5463900	L4	585700	5467600	R41
584400	5466600	E31	585100	5464000	L5	585700	5467700	R42
584400	5466700	E32	585100	5464100	L6	585700	5467800	R43
584400	5466800	E33	585100	5464200	L7	585700	5467900	R44
584400	5466900	E34	585100	5464300	L8	585700	5468000	R45
584400	5467000	E35	585100	5464400	L9	585700	5468100	R46
584400	5467100	E36	585100	5464500	L10	585700	5468200	R47
584400	5467200	E37	585100	5464600	L11	585700	5468300	R48
584400	5467300	E38	585100	5464700	L12	585700	5468400	R49
584400	5467400	E39	585100	5464800	L13	585700	5468500	R50
584400	5467500	E40	585100	5464900	L14	585700	5468600	R51
584400	5467600	E41	585100	5465000	L15	585700	5468700	R52
584400	5467700	E42	585100	5465100	L16	585700	5468800	R53
584400	5467800	E43	585100	5465200	L17	585700	5468900	R54
584400	5467900	E44	585100	5465300	L18	585700	5469000	R55
584400	5468000	E45	585100	5465400	L19	585700	5469100	R56
584400	5468100	E46	585100	5465500	L20	585700	5469200	R57
584400	5468200	E47	585100	5465600	L21	585700	5469300	R58
584400	5468300	E48	585100	5465700	L22	585700	5469400	R59
584400	5468400	E49	585100	5465800	L23	585700	5469500	R60
584400	5468500	E50	585100	5465900	L24	585700	5469600	R61
584400	5468600	E51	585100	5466000	L25	585700	5469700	R62

Easting	Northing	Site ID	Easting	Northing	Site ID	Easting	Northing	Site ID
584400	5468700	E52	585100	5466100	L26	585700	5469800	R63
584400	5468800	E53	585100	5466200	L27			
584400	5468900	E54	585100	5466300	L28			
584400	5469000	E55	585100	5466400	L29			
584400	5469100	E56	585100	5466500	L30			
584400	5469200	E57	585100	5466600	L31			
584400	5469300	E58	585100	5466700	L32			
584400	5469400	E59	585100	5466800	L33			
584400	5469500	E60	585100	5466900	L34			
584400	5469600	E61	585100	5467000	L35			
584400	5469700	E62	585100	5467100	L36			
584400	5469800	E63	585100	5467200	L37			
584500	5463600	F1	585100	5467300	L38			
584500	5463700	F2	585100	5467400	L39			
584500	5463800	F3	585100	5467500	L40			
584500	5463900	F4	585100	5467600	L41			
584500	5464000	F5	585100	5467700	L42			
584500	5464100	F6	585100	5467800	L43			
584500	5464200	F7	585100	5467900	L44			
584500	5464300	F8	585100	5468000	L45			
584500	5464400	F9	585100	5468100	L46			
584500	5464500	F10	585100	5468200	L47			
584500	5464600	F11	585100	5468300	L48			
584500	5464700	F12	585100	5468400	L49			
584500	5464800	F13	585100	5468500	L50			
584500	5464900	F14	585100	5468600	L51			
584500	5465000	F15	585100	5468700	L52			
584500	5465100	F16	585100	5468800	L53			
584500	5465200	F17	585100	5468900	L54			
584500	5465300	F18	585100	5469000	L55			
584500	5465400	F19	585100	5469100	L56			
584500	5465500	F20	585100	5469200	L57			
584500	5465600	F21	585100	5469300	L58			
584500	5465700	F22	585100	5469400	L59			
584500	5465800	F23	585100	5469500	L60			
584500	5465900	F24	585100	5469600	L61			
584500	5466000	F25	585100	5469700	L62			
584500	5466100	F26	585100	5469800	L63			
584500	5466200	F27	585200	5463600	M1			
584500	5466300	F28	585200	5463700	M2			
584500	5466400	F29	585200	5463800	M3			
584500	5466500	F30	585200	5463900	M4			
584500	5466600	F31	585200	5464000	M5			
584500	5466700	F32	585200	5464100	M6			
584500	5466800	F33	585200	5464200	M7			
584500	5466900	F34	585200	5464300	M8			
584500	5467000	F35	585200	5464400	M9			
584500	5467100	F36	585200	5464500	M10			

Easting	Northing	Site ID	Easting	Northing	Site ID
584500	5467200	F37	585200	5464600	M11
584500	5467300	F38	585200	5464700	M12
584500	5467400	F39	585200	5464800	M13
584500	5467500	F40	585200	5464900	M14
584500	5467600	F41	585200	5465000	M15
584500	5467700	F42	585200	5465100	M16
584500	5467800	F43	585200	5465200	M17
584500	5467900	F44	585200	5465300	M18
584500	5468000	F45	585200	5465400	M19
584500	5468100	F46	585200	5465500	M20
584500	5468200	F47	585200	5465600	M21
584500	5468300	F48	585200	5465700	M22
584500	5468400	F49	585200	5465800	M23
584500	5468500	F50	585200	5465900	M24
584500	5468600	F51	585200	5466000	M25
584500	5468700	F52	585200	5466100	M26
584500	5468800	F53	585200	5466200	M27
584500	5468900	F54	585200	5466300	M28
584500	5469000	F55	585200	5466400	M29
584500	5469100	F56	585200	5466500	M30
584500	5469200	F57	585200	5466600	M31
584500	5469300	F58	585200	5466700	M32
584500	5469400	F59	585200	5466800	M33
584500	5469500	F60	585200	5466900	M34
584500	5469600	F61	585200	5467000	M35
584500	5469700	F62	585200	5467100	M36
584500	5469800	F63	585200	5467200	M37
584600	5463600	G1	585200	5467300	M38
584600	5463700	G2	585200	5467400	M39
584600	5463800	G3	585200	5467500	M40
584600	5463900	G4	585200	5467600	M41
584600	5464000	G5	585200	5467700	M42
584600	5464100	G6	585200	5467800	M43
584600	5464200	G7	585200	5467900	M44
584600	5464300	G8	585200	5468000	M45
584600	5464400	G9	585200	5468100	M46
584600	5464500	G10	585200	5468200	M47
584600	5464600	G11	585200	5468300	M48
584600	5464700	G12	585200	5468400	M49
584600	5464800	G13	585200	5468500	M50
584600	5464900	G14	585200	5468600	M51
584600	5465000	G15	585200	5468700	M52
584600	5465100	G16	585200	5468800	M53
584600	5465200	G17	585200	5468900	M54
584600	5465300	G18	585200	5469000	M55
584600	5465400	G19	585200	5469100	M56
584600	5465500	G20	585200	5469200	M57
584600	5465600	G21	585200	5469300	M58
584600	5465700	G22	585200	5469400	M59
584600	5465800	G23	585200	5469500	M60
584600	5465900	G24	585200	5469600	M61

Easting	Northing	Site ID	Easting	Northing	Site ID
584600	5466000	G25	585200	5469700	M62
584600	5466100	G26	585200	5469800	M63
584600	5466200	G27	585300	5463600	N1
584600	5466300	G28	585300	5463700	N2
584600	5466400	G29	585300	5463800	N3
584600	5466500	G30	585300	5463900	N4
584600	5466600	G31	585300	5464000	N5
584600	5466700	G32	585300	5464100	N6
584600	5466800	G33	585300	5464200	N7
584600	5466900	G34	585300	5464300	N8
584600	5467000	G35	585300	5464400	N9
584600	5467100	G36	585300	5464500	N10
584600	5467200	G37	585300	5464600	N11

Appendix C. North Moyie cumulative burbot capture data for population analysis (2005-2007).

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
17	15.7	9-Sep-05	1305	21.0	12-Sep-05	1245	white	010724	1000 1 ; /* 010724 /*
17	15.7	9-Sep-05	1305	21.0	12-Sep-05	1245	white	010723	1000 1 ; /* 010723 /*
17	15.7	9-Sep-05	1305	21.0	12-Sep-05	1245	white	010721	1000 1 ; /* 010721 /*
17	15.7	9-Sep-05	1305	21.0	12-Sep-05	1245	white	010722	1000 1 ; /* 010722 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010720	1000 1 ; /* 010720 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010718	1000 1 ; /* 010718 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010717	1000 1 ; /* 010717 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010715	1000 1 ; /* 010715 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010712	1000 1 ; /* 010712 /*
12	15.7	9-Sep-05	1315	26.0	12-Sep-05	1255	white	010713	1000 1 ; /* 010713 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010711	1100 1 ; /* 010711 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010710	1000 1 ; /* 010710 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010709	1000 1 ; /* 010709 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010708	1000 1 ; /* 010708 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010707	1001 1 ; /* 010707 /*
21	15.7	9-Sep-05	1322	23.0	12-Sep-05	1325	white	010705	1000 1 ; /* 010705 /*
22	15.7	9-Sep-05	1334	28.0	12-Sep-05	1345	white	010704	1000 1 ; /* 010704 /*
22	15.7	9-Sep-05	1334	28.0	12-Sep-05	1345	white	010703	1000 1 ; /* 010703 /*
22	15.7	9-Sep-05	1334	28.0	12-Sep-05	1345	white	010702	1000 1 ; /* 010702 /*
22	15.7	9-Sep-05	1334	28.0	12-Sep-05	1345	white	010770	1000 1 ; /* 010770 /*
22	15.7	9-Sep-05	1334	28.0	12-Sep-05	1345	white	010701	1000 -1 ; /* 010701 /*
4	15.7	9-Sep-05	1343	27.0	12-Sep-05	1402	white	010725	1000 1 ; /* 010725 /*
4	15.7	9-Sep-05	1343	27.0	12-Sep-05	1402	white	010727	1001 1 ; /* 010727 /*
4	15.7	9-Sep-05	1343	27.0	12-Sep-05	1402	white	010728	1100 1 ; /* 010728 /*
4	15.7	9-Sep-05	1343	27.0	12-Sep-05	1402	white	010726	1001 1 ; /* 010726 /*
9	15.7	9-Sep-05	1353	22.0	12-Sep-05	1414	white	010730	1000 1 ; /* 010730 /*
9	15.7	9-Sep-05	1353	22.0	12-Sep-05	1414	white	010731	1000 1 ; /* 010731 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
9	15.7	9-Sep-05	1353	22.0	12-Sep-05	1414	white	010729	1000 1 ; /* 010729 /*
9	15.7	9-Sep-05	1353	22.0	12-Sep-05	1414	white	010732	1000 1 ; /* 010732 /*
18	15.7	9-Sep-05	1401	21.0	12-Sep-05	1430	white	010734	1000 1 ; /* 010734 /*
18	15.7	9-Sep-05	1401	21.0	12-Sep-05	1430	white	010733	1000 1 ; /* 010733 /*
1	15.7	9-Sep-05	1409	16.0	12-Sep-05	1440	white	010735	1001 1 ; /* 010735 /*
1	15.7	9-Sep-05	1409	16.0	12-Sep-05	1440	white	010738	1000 1 ; /* 010738 /*
1	15.7	9-Sep-05	1409	16.0	12-Sep-05	1440	white	010736	1000 1 ; /* 010736 /*
1	15.7	9-Sep-05	1409	16.0	12-Sep-05	1440	white	010737	1000 -1 ; /* 010737 /*
5	15.7	9-Sep-05	1417	13.0	12-Sep-05	1457	white	010748	1000 1 ; /* 010748 /*
5	15.7	9-Sep-05	1417	13.0	12-Sep-05	1457	white	010746	1000 1 ; /* 010746 /*
5	15.7	9-Sep-05	1417	13.0	12-Sep-05	1457	white	010749	1000 1 ; /* 010749 /*
5	15.7	9-Sep-05	1417	13.0	12-Sep-05	1457	white	010747	1000 1 ; /* 010747 /*
16	15.7	9-Sep-05	1425	15.0	12-Sep-05	1507	white	010744	1000 1 ; /* 010744 /*
16	15.7	9-Sep-05	1425	15.0	12-Sep-05	1507	white	010745	1000 1 ; /* 010745 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010425	1000 1 ; /* 010425 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010741	1000 1 ; /* 010741 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010742	1000 1 ; /* 010742 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010739	1000 1 ; /* 010739 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010740	1000 1 ; /* 010740 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010743	1000 1 ; /* 010743 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010429	1000 1 ; /* 010429 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010430	1000 1 ; /* 010430 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010427	1001 1 ; /* 010427 /*
85	15.7	9-Sep-05	1434	12.0	12-Sep-05	1517	white	010426	1001 1 ; /* 010426 /*
13	15.7	9-Sep-05	1458	18.0	12-Sep-05	1534	white	010434	1000 1 ; /* 010434 /*
13	15.7	9-Sep-05	1458	18.0	12-Sep-05	1534	white	010433	1000 1 ; /* 010433 /*
13	15.7	9-Sep-05	1458	18.0	12-Sep-05	1534	white	010431	1000 1 ; /* 010431 /*
11	15.7	9-Sep-05	1508	19.0	12-Sep-05	1550	white	010435	1000 1 ; /* 010435 /*
19	15.7	9-Sep-05	1520	26.0	12-Sep-05	1600	white	010438	1000 1 ; /* 010438 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
19	15.7	9-Sep-05	1520	26.0	12-Sep-05	1600	white	010437	1000 1 ; /* 010437 /*
19	15.7	9-Sep-05	1520	26.0	12-Sep-05	1600	white	010439	1000 1 ; /* 010439 /*
19	15.7	9-Sep-05	1520	26.0	12-Sep-05	1600	white	010440	1000 1 ; /* 010440 /*
19	15.7	9-Sep-05	1520	26.0	12-Sep-05	1600	white	010436	1000 1 ; /* 010436 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010441	1000 1 ; /* 010441 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010446	1000 1 ; /* 010446 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010442	1000 1 ; /* 010442 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010443	1000 1 ; /* 010443 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010444	1000 1 ; /* 010444 /*
8	15.7	9-Sep-05	1529	21.0	12-Sep-05	1610	white	010445	1000 1 ; /* 010445 /*
16	6.4	12-May-06	1320	9.8	15-May-06	1025	white	010954	0100 1 ; /* 010954 /*
16	6.4	12-May-06	1320	9.8	15-May-06	1025	white	010953	0100 1 ; /* 010953 /*
4	6.4	12-May-06	1325	14.6	15-May-06	1030	white	010955	0100 1 ; /* 010955 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010962	0100 1 ; /* 010962 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010960	0100 1 ; /* 010960 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010956	0100 1 ; /* 010956 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010959	0101 1 ; /* 010959 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010957	0100 1 ; /* 010957 /*
1	6.4	12-May-06	1331	14.6	15-May-06	1035	white	010961	0100 1 ; /* 010961 /*
5	6.4	12-May-06	1342	20.7	15-May-06	1048	white	010967	0100 1 ; /* 010967 /*
5	6.4	12-May-06	1342	20.7	15-May-06	1048	white	010963	0100 1 ; /* 010963 /*
5	6.4	12-May-06	1342	20.7	15-May-06	1048	white	010965	0100 1 ; /* 010965 /*
5	6.4	12-May-06	1342	20.7	15-May-06	1048	white	010968	0100 1 ; /* 010968 /*
5	6.4	12-May-06	1342	20.7	15-May-06	1048	white	010964	0100 -1 ; /* 010964 /*
11	6.4	12-May-06	1347	28.7	15-May-06	1059	white	010969	0100 1 ; /* 010969 /*
7	6.4	12-May-06	1355	31.1	15-May-06	1103	white	010972	0100 1 ; /* 010972 /*
7	6.4	12-May-06	1355	31.1	15-May-06	1103	white	010974	0100 1 ; /* 010974 /*
7	6.4	12-May-06	1355	31.1	15-May-06	1103	white	010973	0100 1 ; /* 010973 /*
7	6.4	12-May-06	1355	31.1	15-May-06	1103	white	010971	0100 1 ; /* 010971 /*
7	6.4	12-May-06	1355	31.1	15-May-06	1103	white	010970	0100 1 ; /* 010970 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
10	6.4	12-May-06	1438	19.2	15-May-06	1118	white	010927	0101 1 ; /* 010927 /*
10	6.4	12-May-06	1438	19.2	15-May-06	1118	white	010925	0100 1 ; /* 010925 /*
10	6.4	12-May-06	1438	19.2	15-May-06	1118	white	010928	0100 1 ; /* 010928 /*
10	6.4	12-May-06	1438	19.2	15-May-06	1118	white	010926	0100 1 ; /* 010926 /*
10	6.4	12-May-06	1438	19.2	15-May-06	1118	white	010929	0100 1 ; /* 010929 /*
17	6.4	12-May-06	1434	17.7	15-May-06	1126	white	010930	0100 1 ; /* 010930 /*
6	6.4	12-May-06	1416	12.8	15-May-06	1140	white	010932	0100 1 ; /* 010932 /*
6	6.4	12-May-06	1416	12.8	15-May-06	1140	white	010931	0100 1 ; /* 010931 /*
9	6.4	12-May-06	1411	16.5	15-May-06	1145	white	010935	0100 1 ; /* 010935 /*
9	6.4	12-May-06	1411	16.5	15-May-06	1145	white	010933	0100 1 ; /* 010933 /*
9	6.4	12-May-06	1411	16.5	15-May-06	1145	white	010934	0101 1 ; /* 010934 /*
18	6.4	12-May-06	1407	20.4	15-May-06	1204	white	010936	0100 1 ; /* 010936 /*
21	9.8	15-May-06	1311	30.5	17-May-06	828	white	010948	0100 1 ; /* 010948 /*
21	9.8	15-May-06	1311	30.5	17-May-06	828	white	010949	0100 1 ; /* 010949 /*
21	9.8	15-May-06	1311	30.5	17-May-06	828	white	010947	0100 1 ; /* 010947 /*
7	9.8	15-May-06	1235	21.9	17-May-06	852	white	010946	0100 1 ; /* 010946 /*
5	9.8	15-May-06	1254	15.8	17-May-06	900	white	010945	0100 1 ; /* 010945 /*
11	9.8	15-May-06	1250	17.1	17-May-06	908	white	010943	0100 1 ; /* 010943 /*
11	9.8	15-May-06	1250	17.1	17-May-06	908	white	010944	0100 1 ; /* 010944 /*
20	9.8	15-May-06	951	9.8	17-May-06	915	white	010942	0100 1 ; /* 010942 /*
20	9.8	15-May-06	951	9.8	17-May-06	915	white	010941	0100 1 ; /* 010941 /*
14	9.8	15-May-06	958	14.0	17-May-06	920	white	010939	0100 1 ; /* 010939 /*
12	9.8	15-May-06	1242	34.7	17-May-06	935	white	010300	0100 1 ; /* 010300 /*
12	9.8	15-May-06	1242	34.7	17-May-06	935	white	010301	0100 1 ; /* 010301 /*
12	9.8	15-May-06	1242	34.7	17-May-06	935	white	010302	0100 1 ; /* 010302 /*
19	9.8	15-May-06	1019	20.1	17-May-06	1104	white	010303	0101 1 ; /* 010303 /*
19	9.8	15-May-06	1019	20.1	17-May-06	1104	white	010305	0101 1 ; /* 010305 /*
19	9.8	15-May-06	1019	20.1	17-May-06	1104	white	010304	0100 1 ; /* 010304 /*
19	9.8	15-May-06	1019	20.1	17-May-06	1104	white	010938	0100 1 ; /* 010938 /*
19	9.8	15-May-06	1019	20.1	17-May-06	1104	white	010937	0100 1 ; /* 010937 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
7	9.8	15-May-06	1009	11.3	17-May-06	1120	white	010308	0101 1 ; /* 010308 /*
7	9.8	15-May-06	1009	11.3	17-May-06	1120	white	010306	0100 1 ; /* 010306 /*
7	9.8	15-May-06	1009	11.3	17-May-06	1120	white	010307	0100 1 ; /* 010307 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010311	0100 1 ; /* 010311 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010309	0100 1 ; /* 010309 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010310	0100 1 ; /* 010310 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010312	0100 1 ; /* 010312 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010313	0100 1 ; /* 010313 /*
3	9.8	15-May-06	1013	29.3	17-May-06	1126	white	010314	0100 1 ; /* 010314 /*
17	9.8	15-May-06	1318	22.9	17-May-06	1140	white	010316	0100 1 ; /* 010316 /*
17	9.8	15-May-06	1318	22.9	17-May-06	1140	white	010315	0100 1 ; /* 010315 /*
1	9.8	15-May-06	1336	13.1	17-May-06	1220	white	010317	0100 1 ; /* 010317 /*
1	9.8	15-May-06	1336	13.1	17-May-06	1220	white	010318	0100 1 ; /* 010318 /*
4	9.8	15-May-06	1339	27.1	17-May-06	1225	white	010319	0100 1 ; /* 010319 /*
10	9.8	15-May-06	1343	22.9	17-May-06	1230	white	010323	0100 1 ; /* 010323 /*
10	9.8	15-May-06	1343	22.9	17-May-06	1230	white	010324	0100 1 ; /* 010324 /*
10	9.8	15-May-06	1343	22.9	17-May-06	1230	white	010322	0100 1 ; /* 010322 /*
7	9.1	17-May-06	1202	24.7	19-May-06	830	white	010250	0100 1 ; /* 010250 /*
7	9.1	17-May-06	1202	24.7	19-May-06	830	white	010975	0100 1 ; /* 010975 /*
16	9.1	17-May-06	1205	27.7	19-May-06	839	white	010269	0100 1 ; /* 010269 /*
16	9.1	17-May-06	1205	27.7	19-May-06	839	white	010270	0100 1 ; /* 010270 /*
16	9.1	17-May-06	1205	27.7	19-May-06	839	white	010273	0100 1 ; /* 010273 /*
16	9.1	17-May-06	1205	27.7	19-May-06	839	white	010271	0100 1 ; /* 010271 /*
16	9.1	17-May-06	1205	27.7	19-May-06	839	white	010272	0100 1 ; /* 010272 /*
22	9.1	17-May-06	1055	30.5	19-May-06	850	white	010269	0100 1 ; /* 010269 /*
14	9.1	17-May-06	1050	21.3	19-May-06	857	white	010267	0100 1 ; /* 010267 /*
10	9.1	17-May-06	1313	8.5	19-May-06	922	white	010266	0100 1 ; /* 010266 /*
1	9.1	17-May-06	1316	3.7	19-May-06	928	white	010265	0100 1 ; /* 010265 /*
1	9.1	17-May-06	1316	3.7	19-May-06	928	white	010263	0100 1 ; /* 010263 /*
1	9.1	17-May-06	1316	3.7	19-May-06	928	white	010264	0100 1 ; /* 010264 /*

Float	Water	Trap	Trap	Depth	Trap	Trap	Floy Tag		Encounter history for MARK analysis
ID	Temp (C)	Set Date	Set Time	(m)	Pull Date	Pull Time	Colour	1st Number	Events 1&2&3&4
17	9.1	17-May-06	1320	2.4	19-May-06	934	white	010262	0100 1 ; /* 010262 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010261	0100 1 ; /* 010261 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010259	0100 1 ; /* 010259 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010258	0100 1 ; /* 010258 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010256	0100 1 ; /* 010256 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010255	0100 -1 ; /* 010255 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010254	0100 -1 ; /* 010254 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010257	0100 -1 ; /* 010257 /*
13	9.1	17-May-06	1333	36.0	19-May-06	951	white	010260	0100 -1 ; /* 010260 /*
12	9.1	17-May-06	954	36.6	19-May-06	1005	white	010253	0100 1 ; /* 010253 /*
12	9.1	17-May-06	954	36.6	19-May-06	1005	white	010252	0100 1 ; /* 010252 /*
12	9.1	17-May-06	954	36.6	19-May-06	1005	white	010251	0100 1 ; /* 010251 /*
7	9.1	17-May-06	1000	31.7	19-May-06	1011	white	010273	0100 1 ; /* 010273 /*
2	9.1	17-May-06	1007	17.7	19-May-06	1018	white	010976	0100 1 ; /* 010976 /*
2	9.1	17-May-06	1007	17.7	19-May-06	1018	white	010978	0100 1 ; /* 010978 /*
18	9.1	17-May-06	1012	10.4	19-May-06	1025	white	010980	0100 1 ; /* 010980 /*
18	9.1	17-May-06	1012	10.4	19-May-06	1025	white	010979	0100 1 ; /* 010979 /*
9	9.1	17-May-06	1015	7.6	19-May-06	1031	white	010981	0100 1 ; /* 010981 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010982	0100 1 ; /* 010982 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010983	0100 1 ; /* 010983 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010987	0100 1 ; /* 010987 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010984	0100 1 ; /* 010984 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010985	0101 1 ; /* 010985 /*
20	9.1	17-May-06	1020	6.7	19-May-06	1035	white	010986	0111 1 ; /* 010986 /*
5	9.1	17-May-06	1025	22.6	19-May-06	1044	white	010988	0100 1 ; /* 010988 /*
11	9.1	17-May-06	1030	36.6	19-May-06	1049	white	010990	0100 1 ; /* 010990 /*
11	9.1	17-May-06	1030	36.6	19-May-06	1049	white	010991	0100 1 ; /* 010991 /*
11	9.1	17-May-06	1030	36.6	19-May-06	1049	white	010989	0100 -1 ; /* 010989 /*
3	9.1	17-May-06	1326	10.1	19-May-06	1102	white	010992	0101 1 ; /* 010992 /*
3	9.1	17-May-06	1326	10.1	19-May-06	1102	white	010993	0100 1 ; /* 010993 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
6	9.1	17-May-06	1035	26.8	19-May-06	1108	white	010994	0100 -1 ; /* 010994 /*
20	Storm n/a	7-Jun-06	1221	2.7	9-Jun-06	823	white	7972	0100 1 ; /* 007972 /*
17	Storm n/a	7-Jun-06	1225	1.8	9-Jun-06	825	white	7970	0100 1 ; /* 007970 /*
17	Storm n/a	7-Jun-06	1225	1.8	9-Jun-06	825		unmarked1	0100 0 ; /* unmarked1 /*
18	Storm n/a	7-Jun-06	1153	21.3	9-Jun-06	842	white	7973	0100 1 ; /* 007973 /*
22	Storm n/a	7-Jun-06	1116	28.3	9-Jun-06	853	white	7974	0100 1 ; /* 007974 /*
22	Storm n/a	7-Jun-06	1116	28.3	9-Jun-06	853	white	7975	0100 1 ; /* 007975 /*
8	Storm n/a	7-Jun-06	1141	14.0	9-Jun-06	932	white	7976	0100 1 ; /* 007976 /*
10	Storm n/a	7-Jun-06	1139	14.6	9-Jun-06	937	white	7977	0100 1 ; /* 007977 /*
10	Storm n/a	7-Jun-06	1139	14.6	9-Jun-06	937	white	7979	0100 1 ; /* 007979 /*
10	Storm n/a	7-Jun-06	1139	14.6	9-Jun-06	937	white	7978	0100 1 ; /* 007978 /*
9	Storm n/a	7-Jun-06	1249	29.6	9-Jun-06	956	white	7980	0100 -1 ; /* 007980 /*
9	Storm n/a	7-Jun-06	1249	29.6	9-Jun-06	956	white	7982	0100 -1 ; /* 007982 /*
13	Storm n/a	7-Jun-06	1247	22.6	9-Jun-06	1010	white	7984	0100 1 ; /* 007984 /*
13	Storm n/a	7-Jun-06	1247	22.6	9-Jun-06	1010	white	7983	0100 1 ; /* 007983 /*
4	Storm n/a	7-Jun-06	1244	2.4	9-Jun-06	1029	white	7985	0100 1 ; /* 007985 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7988	0100 1 ; /* 007988 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7991	0100 1 ; /* 007991 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7989	0100 1 ; /* 007989 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7990	0100 1 ; /* 007990 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7986	0100 1 ; /* 007986 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7987	0100 1 ; /* 007987 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	7999	0100 1 ; /* 007999 /*
7	Storm n/a	7-Jun-06	1240	7.6	9-Jun-06	1035	white	8000	0100 1 ; /* 008000 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7994	0100 1 ; /* 007994 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7997	0100 1 ; /* 007997 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7998	0100 1 ; /* 007998 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7995	0100 1 ; /* 007995 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7996	0100 1 ; /* 007996 /*
3	Storm n/a	7-Jun-06	1235	18.0	9-Jun-06	1045	white	7992	0100 1 ; /* 007992 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
21	Storm n/a	7-Jun-06	1230	18.3	9-Jun-06	1057	white	010987	0100 1 ; /* 010987 /*
21	Storm n/a	7-Jun-06	1230	18.3	9-Jun-06	1057	white	7969	0100 1 ; /* 007969 /*
7	7.1	30-Oct-06	1216	21.9	1-Nov-06	855	white	010359	0010 1 ; /* 010359 /*
7	7.1	30-Oct-06	1216	21.9	1-Nov-06	855	white	010360	0010 -1 ; /* 010360 /*
1	7.1	30-Oct-06	1226	25.6	1-Nov-06	912	white	010361	0010 1 ; /* 010361 /*
1	7.1	30-Oct-06	1226	25.6	1-Nov-06	912	white	010362	0010 1 ; /* 010362 /*
1	7.1	30-Oct-06	1226	25.6	1-Nov-06	912	white	010363	0010 1 ; /* 010363 /*
6	7.1	30-Oct-06	1310	26.8	1-Nov-06	1018	white	010364	0010 1 ; /* 010364 /*
6	7.1	30-Oct-06	1310	26.8	1-Nov-06	1018	white	010365	0010 1 ; /* 010365 /*
3	7.1	30-Oct-06	1302	16.5	1-Nov-06	1027	white	010366	0010 1 ; /* 010366 /*
3	7.1	30-Oct-06	1302	16.5	1-Nov-06	1027	white	010367	0010 1 ; /* 010367 /*
11	7.1	30-Oct-06	1256	9.8	1-Nov-06	1058	white	010368	0010 1 ; /* 010368 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010369	0010 1 ; /* 010369 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010370	0010 1 ; /* 010370 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010371	0010 1 ; /* 010371 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010372	0010 1 ; /* 010372 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010373	0010 1 ; /* 010373 /*
9	7.1	30-Oct-06	1427	25.6	1-Nov-06	1158	white	010374	0010 1 ; /* 010374 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010550	0010 1 ; /* 010550 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010551	0010 1 ; /* 010551 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010552	0010 1 ; /* 010552 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010553	0010 1 ; /* 010553 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010554	0010 1 ; /* 010554 /*
4	7.1	30-Oct-06	1416	27.4	1-Nov-06	1209	white	010555	0010 1 ; /* 010555 /*
8	7.1	30-Oct-06	1404	7.6	1-Nov-06	1231	white	010556	0010 1 ; /* 010556 /*
8	7.1	30-Oct-06	1404	7.6	1-Nov-06	1231	white	010557	0010 1 ; /* 010557 /*
8	7.1	30-Oct-06	1404	7.6	1-Nov-06	1231	white	010558	0010 1 ; /* 010558 /*
20	7.1	30-Oct-06	1357	6.4	1-Nov-06	1238	white	010559	0010 1 ; /* 010559 /*
20	7.1	30-Oct-06	1357	6.4	1-Nov-06	1238	white	010560	0010 1 ; /* 010560 /*
20	7.1	30-Oct-06	1357	6.4	1-Nov-06	1238	white	010561	0010 1 ; /* 010561 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
20	7.1	30-Oct-06	1357	6.4	1-Nov-06	1238	white	010562	0010 1 ; /* 010562 /*
20	7.1	30-Oct-06	1357	6.4	1-Nov-06	1238	white	010563	0010 1 ; /* 010563 /*
12	7.1	30-Oct-06	1502	28.3	1-Nov-06	1247	white	010564	0010 1 ; /* 010564 /*
12	7.1	30-Oct-06	1502	28.3	1-Nov-06	1247	white	010565	0010 1 ; /* 010565 /*
12	7.1	30-Oct-06	1502	28.3	1-Nov-06	1247	white	010566	0011 1 ; /* 010566 /*
12	7.1	30-Oct-06	1502	28.3	1-Nov-06	1247	white	010567	0010 1 ; /* 010567 /*
5	7.1	30-Oct-06	1437	25.9	1-Nov-06	1308	white	010569	0010 1 ; /* 010569 /*
5	7.1	30-Oct-06	1437	25.9	1-Nov-06	1308	white	010570	0010 1 ; /* 010570 /*
5	7.1	30-Oct-06	1437	25.9	1-Nov-06	1308	white	010571	0010 1 ; /* 010571 /*
5	7.1	30-Oct-06	1437	25.9	1-Nov-06	1308	white	010572	0010 1 ; /* 010572 /*
16	7.1	30-Oct-06	1446	27.1	1-Nov-06	1318	white	010573	0010 1 ; /* 010573 /*
16	7.1	30-Oct-06	1446	27.1	1-Nov-06	1318	white	010574	0010 1 ; /* 010574 /*
16	7.1	30-Oct-06	1446	27.1	1-Nov-06	1318	white	11498	0010 1 ; /* 011498 /*
16	7.1	30-Oct-06	1446	27.1	1-Nov-06	1318	white	11497	0010 1 ; /* 011497 /*
16	7.1	30-Oct-06	1446	27.1	1-Nov-06	1318	white	11496	0010 1 ; /* 011496 /*
18	7.1	30-Oct-06	1451	26.2	1-Nov-06	1330	white	11495	0010 1 ; /* 011495 /*
18	7.1	30-Oct-06	1451	26.2	1-Nov-06	1330	white	11494	0010 1 ; /* 011494 /*
11	7.1	1-Nov-06	1130	22.6	3-Nov-06	950	white	010274	0010 1 ; /* 010274 /*
11	7.1	1-Nov-06	1130	22.6	3-Nov-06	950	white	11450	0010 1 ; /* 011450 /*
3	7.1	1-Nov-06	1135	22.6	3-Nov-06	1000	white	11451	0010 1 ; /* 011451 /*
3	7.1	1-Nov-06	1135	22.6	3-Nov-06	1000	white	010872	0010 1 ; /* 010872 /*
3	7.1	1-Nov-06	1135	22.6	3-Nov-06	1000	white	010873	0010 1 ; /* 010873 /*
3	7.1	1-Nov-06	1135	22.6	3-Nov-06	1000	white	010871	0010 -1 ; /* 010871 /*
21	7.1	1-Nov-06	1005	18.3	3-Nov-06	1027	white	11452	0010 1 ; /* 011452 /*
1	7.1	1-Nov-06	932	22.9	3-Nov-06	1134	white	010865	0010 1 ; /* 010865 /*
7	7.1	1-Nov-06	940	27.4	3-Nov-06	1143	white	010864	0010 1 ; /* 010864 /*
7	7.1	1-Nov-06	940	27.4	3-Nov-06	1143	white	010863	0010 1 ; /* 010863 /*
7	7.1	1-Nov-06	940	27.4	3-Nov-06	1143	white	010862	0010 1 ; /* 010862 /*
4	7.1	1-Nov-06	1430	12.5	3-Nov-06	1154	white	010859	0010 1 ; /* 010859 /*
4	7.1	1-Nov-06	1430	12.5	3-Nov-06	1154	white	010861	0010 1 ; /* 010861 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
4	7.1	1-Nov-06	1430	12.5	3-Nov-06	1154	white	010860	0010 1 ; /* 010860 /*
13	7.1	1-Nov-06	1425	14.3	3-Nov-06	1200	white	010858	0010 1 ; /* 010858 /*
14	7.1	1-Nov-06	1415	13.7	3-Nov-06	1214	white	010855	0010 1 ; /* 010855 /*
8	7.1	1-Nov-06	1418	9.8	3-Nov-06	1218	white	010856	0011 1 ; /* 010856 /*
8	7.1	1-Nov-06	1418	9.8	3-Nov-06	1218	white	010857	0010 1 ; /* 010857 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010870	0010 1 ; /* 010870 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010869	0010 1 ; /* 010869 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010867	0010 1 ; /* 010867 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010868	0010 1 ; /* 010868 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010866	0010 1 ; /* 010866 /*
9	7.1	1-Nov-06	1356	14.9	3-Nov-06	1433	white	010854	0010 1 ; /* 010854 /*
5	7.1	1-Nov-06	1401	16.8	3-Nov-06	1440	white	010853	0010 1 ; /* 010853 /*
20	7.1	1-Nov-06	1406	18.9	3-Nov-06	1445	white	010852	0010 1 ; /* 010852 /*
21	7.2	3-Nov-06	1046	20.4	5-Nov-06	1019	white	010825	0010 1 ; /* 010825 /*
16	7.2	3-Nov-06	919	26.8	5-Nov-06	1039	white	010826	0010 1 ; /* 010826 /*
16	7.2	3-Nov-06	919	26.8	5-Nov-06	1039	white	010827	0010 1 ; /* 010827 /*
16	7.2	3-Nov-06	919	26.8	5-Nov-06	1039	white	010828	0010 1 ; /* 010828 /*
22	7.2	3-Nov-06	1058	14.3	5-Nov-06	1105	white	010830	0010 1 ; /* 010830 /*
22	7.2	3-Nov-06	1058	14.3	5-Nov-06	1105	white	010829	0010 1 ; /* 010829 /*
22	7.2	3-Nov-06	1058	14.3	5-Nov-06	1105	white	010831	0010 1 ; /* 010831 /*
9	7.2	3-Nov-06	1502	20.4	5-Nov-06	1158	white	010833	0011 1 ; /* 010833 /*
5	7.2	3-Nov-06	1458	16.8	5-Nov-06	1206	white	010834	0010 1 ; /* 010834 /*
20	7.2	3-Nov-06	1454	12.8	5-Nov-06	1212	white	010835	0010 1 ; /* 010835 /*
20	7.2	3-Nov-06	1454	12.8	5-Nov-06	1212	white	010836	0010 1 ; /* 010836 /*
18	7.2	3-Nov-06	1421	4.6	5-Nov-06	1223	white	010837	0010 1 ; /* 010837 /*
18	7.2	3-Nov-06	1421	4.6	5-Nov-06	1223	white	010838	0010 1 ; /* 010838 /*
18	7.2	3-Nov-06	1421	4.6	5-Nov-06	1223	white	010839	0010 1 ; /* 010839 /*
12	5.7	16-Apr-07	1434	2.0	18-Apr-07	1113	white	11227	0001 1 ; /* 011227 /*
12	5.7	16-Apr-07	1434	2.0	18-Apr-07	1113	white	11228	0001 1 ; /* 011228 /*
7	5.7	16-Apr-07	1612	3.6	18-Apr-07	1103	white	11225	0001 1 ; /* 011225 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
7	5.7	16-Apr-07	1612	3.6	18-Apr-07	1103	white	11226	0001 1 ; /* 011226 /*
3	5.7	16-Apr-07	1524	2.4	18-Apr-07	1121	white	11229	0001 1 ; /* 011229 /*
22	5.7	16-Apr-07	1445	3.5	18-Apr-07	1127	white	11230	0001 1 ; /* 011230 /*
22	5.7	16-Apr-07	1445	3.5	18-Apr-07	1127	white	11231	0001 1 ; /* 011231 /*
8	5.7	16-Apr-07	1520	3.7	18-Apr-07	1213	white	11232	0001 1 ; /* 011232 /*
8	5.7	16-Apr-07	1520	3.7	18-Apr-07	1213	white	11233	0001 1 ; /* 011233 /*
8	5.7	16-Apr-07	1520	3.7	18-Apr-07	1213	white	11234	0001 1 ; /* 011234 /*
8	5.7	16-Apr-07	1520	3.7	18-Apr-07	1213	white	11235	0001 1 ; /* 011235 /*
1	5.7	16-Apr-07	1555	6.8	18-Apr-07	1222	white	11236	0001 1 ; /* 011236 /*
2	5.7	16-Apr-07	1449	16.4	18-Apr-07	1254	white	11237	0001 1 ; /* 011237 /*
20	5.7	16-Apr-07	1454	22.5	18-Apr-07	1258	white	11238	0001 1 ; /* 011238 /*
20	5.7	16-Apr-07	1454	22.5	18-Apr-07	1258	white	11239	0001 1 ; /* 011239 /*
20	5.7	16-Apr-07	1454	22.5	18-Apr-07	1258	white	11240	0001 1 ; /* 011240 /*
14	5.7	16-Apr-07	1459	17.6	18-Apr-07	1305	white	11241	0001 1 ; /* 011241 /*
14	5.7	16-Apr-07	1459	17.6	18-Apr-07	1305	white	11242	0001 1 ; /* 011242 /*
17	5.7	16-Apr-07	1503	21.0	18-Apr-07	1308	white	11243	0001 1 ; /* 011243 /*
17	5.7	16-Apr-07	1503	21.0	18-Apr-07	1308	white	11244	0001 1 ; /* 011244 /*
17	5.7	16-Apr-07	1503	21.0	18-Apr-07	1308	white	11245	0001 1 ; /* 011245 /*
11	5.7	16-Apr-07	1508	15.0	18-Apr-07	1316	white	11246	0001 1 ; /* 011246 /*
11	5.7	16-Apr-07	1508	15.0	18-Apr-07	1316	white	11247	0001 1 ; /* 011247 /*
9	5.7	16-Apr-07	1515	10.6	18-Apr-07	1320	white	11248	0001 1 ; /* 011248 /*
9	5.7	16-Apr-07	1515	10.6	18-Apr-07	1320	white	11249	0001 1 ; /* 011249 /*
22	5.7	18-Apr-07	1137	13.1	20-Apr-07	1030	white	11200	0001 1 ; /* 011200 /*
22	5.7	18-Apr-07	1137	13.1	20-Apr-07	1030	white	11201	0001 1 ; /* 011201 /*
22	5.7	18-Apr-07	1137	13.1	20-Apr-07	1030	white	11202	0001 1 ; /* 011202 /*
18	5.7	18-Apr-07	1140	19.8	20-Apr-07	1040	white	11203	0001 1 ; /* 011203 /*
18	5.7	18-Apr-07	1140	19.8	20-Apr-07	1040	white	11204	0001 1 ; /* 011204 /*
5	5.7	18-Apr-07	1151	25.0	20-Apr-07	1045	white	11205	0001 1 ; /* 011205 /*
3	5.7	18-Apr-07	1148	12.9	20-Apr-07	1050	white	11206	0001 1 ; /* 011206 /*
6	5.7	18-Apr-07	1146	5.4	20-Apr-07	1055	white	11207	0001 1 ; /* 011207 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
6	5.7	18-Apr-07	1146	5.4	20-Apr-07	1055	white	11208	0001 1 ; /* 011208 /*
13	5.7	18-Apr-07	1242	5.9	20-Apr-07	1252	white	11209	0001 1 ; /* 011209 /*
13	5.7	18-Apr-07	1242	5.9	20-Apr-07	1252	white	11210	0001 1 ; /* 011210 /*
16	5.7	18-Apr-07	1202	24.7	20-Apr-07	1154	white	11211	0001 1 ; /* 011211 /*
16	5.7	18-Apr-07	1202	24.7	20-Apr-07	1154	white	11212	0001 1 ; /* 011212 /*
16	5.7	18-Apr-07	1202	24.7	20-Apr-07	1154	white	11213	0001 1 ; /* 011213 /*
12	5.7	18-Apr-07	1159	16.4	20-Apr-07	1200	white	11214	0001 1 ; /* 011214 /*
12	5.7	18-Apr-07	1159	16.4	20-Apr-07	1200	white	11215	0001 1 ; /* 011215 /*
12	5.7	18-Apr-07	1159	16.4	20-Apr-07	1200	white	11216	0001 1 ; /* 011216 /*
7	5.7	18-Apr-07	1156	8.0	20-Apr-07	1155	white	11217	0001 1 ; /* 011217 /*
7	5.7	18-Apr-07	1156	8.0	20-Apr-07	1155	white	11218	0001 1 ; /* 011218 /*
7	5.7	18-Apr-07	1156	8.0	20-Apr-07	1155	white	11219	0001 1 ; /* 011219 /*
7	5.7	18-Apr-07	1156	8.0	20-Apr-07	1155	white	11220	0001 1 ; /* 011220 /*
10	5.7	18-Apr-07	1237	19.0	20-Apr-07	1203	white	11221	0001 1 ; /* 011221 /*
10	5.7	18-Apr-07	1237	19.0	20-Apr-07	1203	white	11222	0001 1 ; /* 011222 /*
8	5.7	18-Apr-07	1246	18.2	20-Apr-07	1255	white	11273	0001 1 ; /* 011273 /*
1	5.7	18-Apr-07	1244	12.5	20-Apr-07	1248	white	11274	0001 1 ; /* 011274 /*
1	5.7	18-Apr-07	1244	12.5	20-Apr-07	1248	white	11272	0001 1 ; /* 011272 /*
1	5.7	18-Apr-07	1244	12.5	20-Apr-07	1248	white	11271	0001 1 ; /* 011271 /*
9	5.7	18-Apr-07	1333	9.8	20-Apr-07	1303	white	11269	0001 1 ; /* 011269 /*
9	5.7	18-Apr-07	1333	9.8	20-Apr-07	1303	white	11270	0001 1 ; /* 011270 /*
21	5.7	18-Apr-07	1336	18.1	20-Apr-07	1306	white	11268	0001 1 ; /* 011268 /*
21	5.7	18-Apr-07	1336	18.1	20-Apr-07	1306	white	11267	0001 1 ; /* 011267 /*
4	5.7	18-Apr-07	1250	24.8	20-Apr-07	1310	white	11266	0001 1 ; /* 011266 /*
2	5.7	18-Apr-07	1355	23.1	20-Apr-07	1342	white	11265	0001 1 ; /* 011265 /*
2	5.7	18-Apr-07	1355	23.1	20-Apr-07	1342	white	11264	0001 1 ; /* 011264 /*
2	5.7	18-Apr-07	1355	23.1	20-Apr-07	1342	white	11263	0001 1 ; /* 011263 /*
2	5.7	18-Apr-07	1355	23.1	20-Apr-07	1342	white	11261	0001 1 ; /* 011261 /*
20	5.7	18-Apr-07	1352	21.3	20-Apr-07	1348	white	11260	0001 1 ; /* 011260 /*
20	5.7	18-Apr-07	1352	21.3	20-Apr-07	1348	white	11259	0001 1 ; /* 011259 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
20	5.7	18-Apr-07	1352	21.3	20-Apr-07	1348	white	11258	0001 1 ; /* 011258 /*
14	5.7	18-Apr-07	1349	18.4	20-Apr-07	1355	white	11257	0001 1 ; /* 011257 /*
14	5.7	18-Apr-07	1349	18.4	20-Apr-07	1355	white	11256	0001 1 ; /* 011256 /*
14	5.7	18-Apr-07	1349	18.4	20-Apr-07	1355	white	11255	0001 1 ; /* 011255 /*
11	5.7	18-Apr-07	1347	15.4	20-Apr-07	1359	white	11254	0001 1 ; /* 011254 /*
11	5.7	18-Apr-07	1347	15.4	20-Apr-07	1359	white	11253	0001 1 ; /* 011253 /*
17	5.7	18-Apr-07	1345	11.3	20-Apr-07	1405	white	11252	0001 1 ; /* 011252 /*
17	5.7	18-Apr-07	1345	11.3	20-Apr-07	1405	white	11251	0001 1 ; /* 011251 /*
17	5.7	18-Apr-07	1345	11.3	20-Apr-07	1405	white	11250	0001 1 ; /* 011250 /*
3	6.0	20-Apr-07	1109	14.1	22-Apr-07	1110	white	11475	0001 1 ; /* 011475 /*
18	6.0	20-Apr-07	1112	17.1	22-Apr-07	1111	white	11477	0001 1 ; /* 011477 /*
18	6.0	20-Apr-07	1112	17.1	22-Apr-07	1111	white	11478	0001 1 ; /* 011478 /*
22	6.0	20-Apr-07	1120	21.9	22-Apr-07	1118	white	11479	0001 1 ; /* 011479 /*
14	6.0	20-Apr-07	1423	9.3	22-Apr-07	1147	white	11480	0001 1 ; /* 011480 /*
11	6.0	20-Apr-07	1415	23.1	22-Apr-07	1202	white	11482	0001 1 ; /* 011482 /*
11	6.0	20-Apr-07	1415	23.1	22-Apr-07	1202	white	11483	0001 1 ; /* 011483 /*
11	6.0	20-Apr-07	1415	23.1	22-Apr-07	1202	white	11484	0001 1 ; /* 011484 /*
8	6.0	20-Apr-07	1335	20.3	22-Apr-07	1222	white	11475	0001 1 ; /* 011475 /*
1	6.0	20-Apr-07	1327	14.0	22-Apr-07	1235	white	11492	0001 1 ; /* 011492 /*
21	6.0	20-Apr-07	1319	22.7	22-Apr-07	1237	white	11490	0001 1 ; /* 011490 /*
21	6.0	20-Apr-07	1319	22.7	22-Apr-07	1237	white	11491	0001 1 ; /* 011491 /*
21	6.0	20-Apr-07	1319	22.7	22-Apr-07	1237	white	11489	0001 1 ; /* 011489 /*
7	6.0	20-Apr-07	1235	24.8	22-Apr-07	1244	white	11493	0001 1 ; /* 011493 /*
16	6.0	20-Apr-07	1230	24.6	22-Apr-07	1307	white	11488	0001 1 ; /* 011488 /*
16	6.0	20-Apr-07	1230	24.6	22-Apr-07	1307	white	11487	0001 1 ; /* 011487 /*
16	6.0	20-Apr-07	1230	24.6	22-Apr-07	1307	white	11275	0001 1 ; /* 011275 /*
16	6.0	20-Apr-07	1230	24.6	22-Apr-07	1307	white	11276	0001 1 ; /* 011276 /*
16	6.0	20-Apr-07	1230	24.6	22-Apr-07	1307	white	11486	0001 1 ; /* 011486 /*
10	6.0	20-Apr-07	1225	23.6	22-Apr-07	1315	white	11278	0001 1 ; /* 011278 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
10	6.0	20-Apr-07	1225	23.6	22-Apr-07	1315	white	11280	0001 1 ; /* 011280 /*
10	6.0	20-Apr-07	1225	23.6	22-Apr-07	1315	white	11277	0001 1 ; /* 011277 /*
22	6.0	22-Apr-07	1134	19.0	24-Apr-07	1206	white	11350	0001 1 ; /* 011350 /*
22	6.0	22-Apr-07	1134	19.0	24-Apr-07	1206	white	11351	0001 1 ; /* 011351 /*
5	6.0	22-Apr-07	1136	16.0	24-Apr-07	1211	white	11352	0001 1 ; /* 011352 /*
5	6.0	22-Apr-07	1136	16.0	24-Apr-07	1211	white	11353	0001 1 ; /* 011353 /*
3	6.0	22-Apr-07	1139	14.3	24-Apr-07	1218	white	11356	0001 1 ; /* 011356 /*
3	6.0	22-Apr-07	1139	14.3	24-Apr-07	1218	white	11355	0001 1 ; /* 011355 /*
6	6.0	22-Apr-07	1142	13.2	24-Apr-07	1222	white	11357	0001 1 ; /* 011357 /*
7	6.0	22-Apr-07	1254	11.7	24-Apr-07	1241	white	11354	0001 1 ; /* 011354 /*
7	6.0	22-Apr-07	1254	11.7	24-Apr-07	1241	white	11358	0001 1 ; /* 011358 /*
17	6.0	22-Apr-07	1210	16.0	24-Apr-07	1320	white	11359	0001 1 ; /* 011359 /*
11	6.0	22-Apr-07	1209	12.1	24-Apr-07	1320	white	11360	0001 1 ; /* 011360 /*
8	6.0	22-Apr-07	1301	13.0	24-Apr-07	1349	white	11361	0001 1 ; /* 011361 /*
8	6.0	22-Apr-07	1301	13.0	24-Apr-07	1349	white	11362	0001 1 ; /* 011362 /*
1	6.0	22-Apr-07	1259	12.9	24-Apr-07	1352	white	11363	0001 1 ; /* 011363 /*
12	5.9	24-Apr-07	1307	18.6	26-Apr-07	1200	white	11364	0001 1 ; /* 011364 /*
10	5.9	24-Apr-07	1305	18.0	26-Apr-07	1206	white	11365	0001 -1 ; /* 011365 /*
8	5.9	24-Apr-07	1303	17.1	26-Apr-07	1210	white	11368	0001 1 ; /* 011368 /*
1	5.9	24-Apr-07	1302	16.5	26-Apr-07	1214	white	11545	0001 1 ; /* 011545 /*
9	5.9	24-Apr-07	1300	15.2	26-Apr-07	1218	white	11455	0001 1 ; /* 011455 /*
14	5.9	24-Apr-07	1234	13.2	26-Apr-07	1237	white	11456	0001 1 ; /* 011456 /*
18	5.9	24-Apr-07	1132	14.0	26-Apr-07	1340	white	11457	0001 1 ; /* 011457 /*
6	5.9	24-Apr-07	1128	13.2	26-Apr-07	1345	white	11458	0001 1 ; /* 011458 /*
9	5.8	26-Apr-07	1228	8.0	28-Apr-07	1206	white	11400	0001 1 ; /* 011400 /*
9	5.8	26-Apr-07	1228	8.0	28-Apr-07	1206	white	11401	0001 1 ; /* 011401 /*
9	5.8	26-Apr-07	1228	8.0	28-Apr-07	1206	white	11402	0001 1 ; /* 011402 /*
9	5.8	26-Apr-07	1228	8.0	28-Apr-07	1206	white	11403	0001 1 ; /* 011403 /*
1	5.8	26-Apr-07	1230	8.7	28-Apr-07	1213	white	11404	0001 1 ; /* 011404 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis
							Colour	1st Number	Events 1&2&3&4
1	5.8	26-Apr-07	1230	8.7	28-Apr-07	1213	white	11405	0001 1 ; /* 011405 /*
1	5.8	26-Apr-07	1230	8.7	28-Apr-07	1213	white	11406	0001 1 ; /* 011406 /*
2	5.8	26-Apr-07	1226	8.0	28-Apr-07	1220	white	11407	0001 1 ; /* 011407 /*
12	5.8	26-Apr-07	1235	13.5	28-Apr-07	1247	white	11408	0001 1 ; /* 011408 /*
17	5.8	26-Apr-07	1257	15.3	28-Apr-07	1258	white	11409	0001 1 ; /* 011409 /*
13	5.8	26-Apr-07	1321	20.6	28-Apr-07	1325	white	11410	0001 1 ; /* 011410 /*
13	5.8	26-Apr-07	1321	20.6	28-Apr-07	1325	white	11411	0001 1 ; /* 011411 /*
21	5.8	26-Apr-07	1326	23.0	28-Apr-07	1330	white	11412	0001 1 ; /* 011412 /*
21	5.8	26-Apr-07	1326	23.0	28-Apr-07	1330	white	11413	0001 1 ; /* 011413 /*
16	5.8	26-Apr-07	1330	20.8	28-Apr-07	1340	white	11414	0001 1 ; /* 011414 /*
6	5.8	26-Apr-07	1353	16.0	28-Apr-07	1404	white	11415	0001 1 ; /* 011415 /*
6	5.8	26-Apr-07	1353	16.0	28-Apr-07	1404	white	11416	0001 1 ; /* 011416 /*
18	5.8	26-Apr-07	1354	15.1	28-Apr-07	1409	white	11417	0001 1 ; /* 011417 /*
18	5.8	26-Apr-07	1354	15.1	28-Apr-07	1409	white	11418	0001 1 ; /* 011418 /*
18	5.8	26-Apr-07	1354	15.1	28-Apr-07	1409	white	11419	0001 1 ; /* 011419 /*
5	5.8	26-Apr-07	1358	13.6	28-Apr-07	1415	white	11420	0001 1 ; /* 011420 /*
22	5.8	26-Apr-07	1359	13.2	28-Apr-07	1420	white	11421	0001 1 ; /* 011421 /*
11	7.6	28-Apr-07	1311	16.4	30-Apr-07	1232	white	11369	0001 1 ; /* 011369 /*
17	7.6	28-Apr-07	1309	14.5	30-Apr-07	1236	white	11370	0001 1 ; /* 011370 /*
20	7.6	28-Apr-07	1306	12.9	30-Apr-07	1239	white	11371	0001 1 ; /* 011371 /*
9	7.6	28-Apr-07	1244	12.3	30-Apr-07	1242	white	11372	0001 1 ; /* 011372 /*
14	7.6	28-Apr-07	1400	11.9	30-Apr-07	1313	white	11373	0001 1 ; /* 011373 /*
7	7.6	28-Apr-07	1356	10.3	30-Apr-07	1316	white	11374	0001 1 ; /* 011374 /*
7	7.6	28-Apr-07	1356	10.3	30-Apr-07	1316	white	11424	0001 1 ; /* 011424 /*
21	7.6	28-Apr-07	1351	9.0	30-Apr-07	1334	white	11460	0001 1 ; /* 011460 /*
21	7.6	28-Apr-07	1351	9.0	30-Apr-07	1334	white	11459	0001 1 ; /* 011459 /*
21	7.6	28-Apr-07	1351	9.0	30-Apr-07	1334	white	11423	0001 1 ; /* 011423 /*
10	7.6	28-Apr-07	1234	1.7	30-Apr-07	1341	white	11462	0001 1 ; /* 011462 /*
10	7.6	28-Apr-07	1234	1.7	30-Apr-07	1341	white	11463	0001 1 ; /* 011463 /*
10	7.6	28-Apr-07	1234	1.7	30-Apr-07	1341	white	11464	0001 1 ; /* 011464 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
1	7.6	28-Apr-07	1242	12.8	30-Apr-07	1407	white	11465	0001 1 ; /* 011465 /*
22	7.6	28-Apr-07	1425	11.5	30-Apr-07	1412	white	11466	0001 1 ; /* 011466 /*
5	7.6	28-Apr-07	1428	7.9	30-Apr-07	1415	white	11467	0001 1 ; /* 011467 /*
12	6.7	30-Apr-07	1302	20.9	2-May-07	1110	white	11468	0001 1 ; /* 011468 /*
11	6.7	30-Apr-07	1255	15.4	2-May-07	1128	white	11469	0001 1 ; /* 011469 /*
9	6.7	30-Apr-07	1251	8.4	2-May-07	1135	white	11470	0001 1 ; /* 011470 /*
9	6.7	30-Apr-07	1251	8.4	2-May-07	1135	white	11471	0001 1 ; /* 011471 /*
7	6.7	30-Apr-07	1321	14.4	2-May-07	1142	white	11472	0001 1 ; /* 011472 /*
10	6.7	30-Apr-07	1359	17.3	2-May-07	1150	white	11473	0001 1 ; /* 011473 /*
10	6.7	30-Apr-07	1359	17.3	2-May-07	1150	white	11474	0001 1 ; /* 011474 /*
21	6.7	30-Apr-07	1356	17.5	2-May-07	1205	white	11281	0001 1 ; /* 011281 /*
19	10.7	22-May-07	1229	16.1	24-May-07	1138	white	11575	0001 1 ; /* 011575 /*
19	10.7	22-May-07	1229	16.1	24-May-07	1138	white	11577	0001 1 ; /* 011577 /*
19	10.7	22-May-07	1229	16.1	24-May-07	1138	white	11578	0001 1 ; /* 011578 /*
13	10.7	22-May-07	1227	2.5	24-May-07	1147	white	11576	0001 1 ; /* 011576 /*
2	10.7	22-May-07	1224	4.6	24-May-07	1147	white	11579	0001 1 ; /* 011579 /*
2	10.7	22-May-07	1224	4.6	24-May-07	1147	white	11580	0001 1 ; /* 011580 /*
2	10.7	22-May-07	1224	4.6	24-May-07	1147	white	11581	0001 1 ; /* 011581 /*
17	10.7	22-May-07	1222	5.1	24-May-07	1152	white	11582	0001 1 ; /* 011582 /*
5	10.7	22-May-07	1212	22.0	24-May-07	1159	white	11583	0001 1 ; /* 011583 /*
5	10.7	22-May-07	1212	22.0	24-May-07	1159	white	11584	0001 1 ; /* 011584 /*
5	10.7	22-May-07	1212	22.0	24-May-07	1159	white	11585	0001 1 ; /* 011585 /*
4	10.7	22-May-07	1205	10.5	24-May-07	1239	white	11586	0001 1 ; /* 011586 /*
4	10.7	22-May-07	1205	10.5	24-May-07	1239	white	11587	0001 1 ; /* 011587 /*
1	10.7	22-May-07	1214	13.5	24-May-07	1253	white	11589	0001 1 ; /* 011589 /*
6	10.7	22-May-07	1219	2.5	24-May-07	1300	white	11588	0001 1 ; /* 011588 /*
10	10.7	22-May-07	1244	9.1	24-May-07	1335	white	11590	0001 1 ; /* 011590 /*
10	10.7	22-May-07	1244	9.1	24-May-07	1335	white	11591	0001 1 ; /* 011591 /*
10	10.7	22-May-07	1244	9.1	24-May-07	1335	white	11592	0001 1 ; /* 011592 /*
14	10.7	22-May-07	1249	12.5	24-May-07	1345	white	11593	0001 1 ; /* 011593 /*

Float ID	Water Temp (C)	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy Tag		Encounter history for MARK analysis Events 1&2&3&4
							Colour	1st Number	
12	10.7	22-May-07	1256	19.1	24-May-07	1405	white	11594	0001 1 ; /* 011594 /*
12	10.7	22-May-07	1256	19.1	24-May-07	1405	white	11595	0001 1 ; /* 011595 /*
12	10.7	22-May-07	1256	19.1	24-May-07	1405	white	11596	0001 1 ; /* 011596 /*
12	10.7	22-May-07	1256	19.1	24-May-07	1405	white	11597	0001 1 ; /* 011597 /*
9	10.7	22-May-07	1259	21.9	24-May-07	1442	white	11598	0001 1 ; /* 011598 /*
9	10.7	22-May-07	1259	21.9	24-May-07	1442	white	11599	0001 1 ; /* 011599 /*
6	11.6	24-May-07	1306	22.2	26-May-07	1133	white	10850	0001 1 ; /* 010850 /*
22	11.6	24-May-07	1311	12.3	26-May-07	1141	white	10049	0001 1 ; /* 010049 /*
22	11.6	24-May-07	1311	12.3	26-May-07	1141	white	10851	0001 1 ; /* 010851 /*
9	11.6	24-May-07	1508	19.9	26-May-07	1149	white	11047	0001 1 ; /* 011047 /*
16	11.6	24-May-07	1515	16.1	26-May-07	1155	white	11150	0001 1 ; /* 011150 /*
16	11.6	24-May-07	1515	16.1	26-May-07	1155	white	11282	0001 1 ; /* 011282 /*
10	11.6	24-May-07	1431	12.6	26-May-07	1213	white	11283	0001 1 ; /* 011283 /*
10	11.6	24-May-07	1431	12.6	26-May-07	1213	white	11284	0001 1 ; /* 011284 /*
21	11.6	24-May-07	1428	15.4	26-May-07	1217	white	11285	0001 1 ; /* 011285 /*
4	11.6	24-May-07	1327	13.5	26-May-07	1241	white	11153	0001 1 ; /* 011153 /*
7	11.6	24-May-07	1324	13.0	26-May-07	1245	white	11286	0001 1 ; /* 011286 /*
8	11.6	24-May-07	1320	11.4	26-May-07	1249	white	11287	0001 1 ; /* 011287 /*
19	11.6	24-May-07	1228	15.0	26-May-07	1252	white	11288	0001 1 ; /* 011288 /*
11	11.6	24-May-07	1232	20.0	26-May-07	1312	white	11156	0001 1 ; /* 011156 /*
11	11.6	24-May-07	1232	20.0	26-May-07	1312	white	11153	0001 1 ; /* 011153 /*
17	11.6	24-May-07	1216	23.4	26-May-07	1320	white	11157	0001 1 ; /* 011157 /*
17	11.6	24-May-07	1216	23.4	26-May-07	1320	white	11158	0001 1 ; /* 011158 /*
17	11.6	24-May-07	1216	23.4	26-May-07	1320	white	11159	0001 1 ; /* 011159 /*
17	11.6	24-May-07	1216	23.4	26-May-07	1320	white	11160	0001 1 ; /* 011160 /*
17	11.6	24-May-07	1216	23.4	26-May-07	1320	white	11161	0001 -1 ; /* 011161 /*
5	11.6	24-May-07	1213	15.0	26-May-07	1322	white	11162	0001 1 ; /* 011162 /*
20	11.1	26-May-07	1231	13.5	28-May-07	1132	white	11163	0001 1 ; /* 011163 /*
9	11.1	26-May-07	1206	16.0	28-May-07	1203	white	11164	0001 1 ; /* 011164 /*
18	11.1	26-May-07	1207	15.2	28-May-07	1158	white	11165	0001 1 ; /* 011165 /*

Appendix D. South Moyie Trap Set Data 2007.

Float ID	Set Date	Depth (m)	Pull Date	# Burbot	Water Temp (C)	Easting	Northing
7	23-Oct-07	4.4	24-Oct-07	2	10.0	584387	5457729
4	23-Oct-07	2.9	24-Oct-07	2	10.0	584283	5457663
20	23-Oct-07	5.5	24-Oct-07	1	10.0	583994	5457663
11	23-Oct-07	5.5	24-Oct-07		10.0	584992	5460861
22	23-Oct-07	2.5	24-Oct-07	1	10.0	585010	5460974
5	23-Oct-07	3.9	24-Oct-07		10.0	584886	5461029
16	23-Oct-07	4.4	24-Oct-07	2	10.0	584835	5461222
12	23-Oct-07	3.0	24-Oct-07		10.0	584939	5461249
13	23-Oct-07	1.5	24-Oct-07		10.0	584961	5461132
6	23-Oct-07	4.5	24-Oct-07	2	10.0	584874	5461416
18	23-Oct-07	2.3	24-Oct-07	2	10.0	584851	5461551
19	23-Oct-07	2.3	24-Oct-07		10.0	584950	5461432
1	23-Oct-07	4.1	24-Oct-07	1	10.0	584163	5462063
17	23-Oct-07	3.6	24-Oct-07	1	10.0	584042	5462094
2	23-Oct-07	1.5	24-Oct-07	2	10.0	584253	5462174
14	23-Oct-07	5.0	24-Oct-07	1	10.0	584051	5460232
3	23-Oct-07	6.2	24-Oct-07	0	10.0	584066	5460060
10	23-Oct-07	7.0	24-Oct-07	1	10.0	584033	5459895
21	23-Oct-07	3.0	24-Oct-07	1	10.0	584817	5459838
8	24-Oct-07	4.2	24-Oct-07	1	10.0	584808	5459185
3	23-Oct-07	5.0	24-Oct-07	0	10.0	584108	5460426
13	23-Oct-07	2.1	24-Oct-07	0	10.0	584943	5461146
19	23-Oct-07	4.6	25-Oct-07	2	9.7	584856	5461469
12	24-Oct-07	1.9	25-Oct-07	0	9.7	584861	5461590
5	24-Oct-07	1.5	25-Oct-07	0	9.7	584343	5462189
17	24-Oct-07	4.0	25-Oct-07	0	9.7	584010	5461895
11	24-Oct-07	2.0	25-Oct-07	)	9.7	584144	5457612

Appendix E. South Moyie cumulative burbot capture data for population analysis (2005-2007).

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag		Encounter history for MARK analysis
						Colour	1st Number	Events 1&2&3&4
18	13-Sep-05	1022	8.0	15-Sep-05	1159	white	010800	1000 1 ; /* 010800 */
8	13-Sep-05	1026	24.0	15-Sep-05	1207	white	010801	1000 1 ; /* 010801 */
8	13-Sep-05	1026	24.0	15-Sep-05	1207	white	010805	1000 1 ; /* 010805 */
8	13-Sep-05	1026	24.0	15-Sep-05	1207	white	010802	1000 1 ; /* 010802 */
8	13-Sep-05	1026	24.0	15-Sep-05	1207	white	010804	1000 1 ; /* 010804 */
8	13-Sep-05	1026	24.0	15-Sep-05	1207	white	010806	1000 1 ; /* 010806 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010807	1000 1 ; /* 010807 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010808	1000 1 ; /* 010808 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010814	1000 1 ; /* 010814 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010813	1000 1 ; /* 010813 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010810	1000 1 ; /* 010810 */
13	13-Sep-05	1035	25.0	15-Sep-05	1229	white	010815	1100 1 ; /* 010815 */
19	13-Sep-05	1042	16.0	15-Sep-05	1240	white	010820	1000 1 ; /* 010820 */
19	13-Sep-05	1042	16.0	15-Sep-05	1240	white	010817	1100 1 ; /* 010817 */
19	13-Sep-05	1042	16.0	15-Sep-05	1240	white	010821	1000 1 ; /* 010821 */
19	13-Sep-05	1042	16.0	15-Sep-05	1240	white	010822	1000 1 ; /* 010822 */
19	13-Sep-05	1042	16.0	15-Sep-05	1240	white	010816	1000 -1 ; /* 010816 */
1	13-Sep-05	1049	10.0	15-Sep-05	1254	white	010803	1000 1 ; /* 010803 */
1	13-Sep-05	1049	10.0	15-Sep-05	1254	white	010824	1000 1 ; /* 010824 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010797	1000 1 ; /* 010797 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010793	1000 1 ; /* 010793 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010795	1000 1 ; /* 010795 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010476	1000 1 ; /* 010476 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010791	1000 1 ; /* 010791 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010787	1000 1 ; /* 010787 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010783	1000 1 ; /* 010783 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010477	1000 1 ; /* 010477 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010798	1000 1 ; /* 010798 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag Colour	Floy/PIT tag 1st Number	Encounter history for MARK analysis Events 1&2&3&4
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010788	1000 1 ; /* 010788 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010475	1000 1 ; /* 010475 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010790	1000 1 ; /* 010790 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010796	1000 1 ; /* 010796 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010794	1000 1 ; /* 010794 */
4	13-Sep-05	1102	19.0	15-Sep-05	1305	white	010784	1000 1 ; /* 010784 */
11	13-Sep-05	1055	11.0	15-Sep-05	1326	white	010779	1000 1 ; /* 010779 */
11	13-Sep-05	1055	11.0	15-Sep-05	1326	white	010781	1000 1 ; /* 010781 */
17	13-Sep-05	1112	16.0	15-Sep-05	1332	white	010479	1000 1 ; /* 010479 */
17	13-Sep-05	1112	16.0	15-Sep-05	1332	white	010478	1000 1 ; /* 010478 */
17	13-Sep-05	1112	16.0	15-Sep-05	1332	white	010480	1000 1 ; /* 010480 */
17	13-Sep-05	1112	16.0	15-Sep-05	1332	white	010481	1000 1 ; /* 010481 */
17	13-Sep-05	1112	16.0	15-Sep-05	1332	white	010482	1000 1 ; /* 010482 */
9	13-Sep-05	1121	11.0	15-Sep-05	1342	white	010483	1000 1 ; /* 010483 */
5	13-Sep-05	1131	17.0	15-Sep-05	1355	white	010484	1001 1 ; /* 010484 */
5	13-Sep-05	1131	17.0	15-Sep-05	1355	white	010485	1000 1 ; /* 010485 */
85	13-Sep-05	1138	16.0	15-Sep-05	1405	white	010486	1000 1 ; /* 010486 */
85	13-Sep-05	1138	16.0	15-Sep-05	1405	white	010487	1000 1 ; /* 010487 */
85	13-Sep-05	1138	16.0	15-Sep-05	1405	white	010488	1000 1 ; /* 010488 */
12	13-Sep-05	1145	24.0	15-Sep-05	1420	white	010491	1000 1 ; /* 010491 */
12	13-Sep-05	1145	24.0	15-Sep-05	1420	white	010490	1010 -1 ; /* 010490 */
12	13-Sep-05	1145	24.0	15-Sep-05	1420	white	010489	1010 1 ; /* 010489 */
16	13-Sep-05	1150	14.0	15-Sep-05	1439	white	010778	1000 1 ; /* 010778 */
16	13-Sep-05	1150	14.0	15-Sep-05	1439	white	010776	1000 1 ; /* 010776 */
16	13-Sep-05	1150	14.0	15-Sep-05	1439	white	010777	1200 -1 ; /* 010777 */
16	13-Sep-05	1150	14.0	15-Sep-05	1439	white	010809	1000 1 ; /* 010809 */
21	13-Sep-05	1156	19.0	15-Sep-05	1451	white	010493	1000 1 ; /* 010493 */
21	13-Sep-05	1156	19.0	15-Sep-05	1451	white	010497	1000 1 ; /* 010497 */
21	13-Sep-05	1156	19.0	15-Sep-05	1451	white	010750	1000 1 ; /* 010750 */
21	13-Sep-05	1156	19.0	15-Sep-05	1451	white	010495	1100 1 ; /* 010495 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag Colour	Floy/PIT tag 1st Number	Encounter history for MARK analysis Events 1&2&3&4
21	13-Sep-05	1156	19.0	15-Sep-05	1451	white	010494	1000 1 ; /* 010494 */
18	8-May-06	1122	3.0	10-May-06	909	white	010327	0100 1 ; /* 010327 */
18	8-May-06	1122	3.0	10-May-06	909	white	010326	0100 1 ; /* 010326 */
18	8-May-06	1122	3.0	10-May-06	909	white	010329	0100 1 ; /* 010329 */
18	8-May-06	1122	3.0	10-May-06	909	white	010328	0100 1 ; /* 010328 */
7	8-May-06	1113	5.8	10-May-06	923	white	010330	0100 1 ; /* 010330 */
7	8-May-06	1113	5.8	10-May-06	923	white	010336	0100 1 ; /* 010336 */
7	8-May-06	1113	5.8	10-May-06	923	white	010332	0110 -1 ; /* 010332 */
7	8-May-06	1113	5.8	10-May-06	923	white	010333	0100 1 ; /* 010333 */
7	8-May-06	1113	5.8	10-May-06	923	white	010334	0100 1 ; /* 010334 */
7	8-May-06	1113	5.8	10-May-06	923	white	010331	0100 1 ; /* 010331 */
7	8-May-06	1113	5.8	10-May-06	923	white	010675	0100 1 ; /* 010675 */
7	8-May-06	1113	5.8	10-May-06	923	white	010335	0100 1 ; /* 010335 */
11	8-May-06	1153	8.8	10-May-06	949	white	010678	0100 1 ; /* 010678 */
11	8-May-06	1153	8.8	10-May-06	949	white	010338	0100 1 ; /* 010338 */
11	8-May-06	1153	8.8	10-May-06	949	white	010677	0101 1 ; /* 010677 */
11	8-May-06	1153	8.8	10-May-06	949	white	010676	0100 1 ; /* 010676 */
11	8-May-06	1153	8.8	10-May-06	949	white	010339	0100 1 ; /* 010339 */
11	8-May-06	1153	8.8	10-May-06	949	white	010337	0100 1 ; /* 010337 */
21	8-May-06	1159	15.2	10-May-06	1000	white	010342	0100 1 ; /* 010342 */
21	8-May-06	1159	15.2	10-May-06	1000	white	010341	0100 1 ; /* 010341 */
21	8-May-06	1159	15.2	10-May-06	1000	white	010340	0100 1 ; /* 010340 */
1	8-May-06	1107	14.9	10-May-06	1008	white	010679	0100 1 ; /* 010679 */
1	8-May-06	1107	14.9	10-May-06	1008	white	010681	0110 -1 ; /* 010681 */
1	8-May-06	1107	14.9	10-May-06	1008	white	010680	0100 1 ; /* 010680 */
8	8-May-06	1012	16.8	10-May-06	1014	white	010693	0100 1 ; /* 010693 */
8	8-May-06	1012	16.8	10-May-06	1014	white	010344	0100 1 ; /* 010344 */
8	8-May-06	1012	16.8	10-May-06	1014	white	010682	0100 1 ; /* 010682 */
8	8-May-06	1012	16.8	10-May-06	1014	white	010343	0100 1 ; /* 010343 */
16	8-May-06	1020	23.2	10-May-06	1025	white	010685	0100 1 ; /* 010685 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag Colour	Floy/PIT tag 1st Number	Encounter history for MARK analysis Events 1&2&3&4
16	8-May-06	1020	23.2	10-May-06	1025	white	010688	0100 1 ; /* 010688 */
16	8-May-06	1020	23.2	10-May-06	1025	white	010689	0100 1 ; /* 010689 */
16	8-May-06	1020	23.2	10-May-06	1025	white	010686	0100 1 ; /* 010686 */
9	8-May-06	1026	25.3	10-May-06	1045	white	010691	0100 1 ; /* 010691 */
9	8-May-06	1026	25.3	10-May-06	1045	white	010345	0100 1 ; /* 010345 */
20	8-May-06	1043	27.4	10-May-06	1057	white	010346	0100 1 ; /* 010346 */
20	8-May-06	1043	27.4	10-May-06	1057	white	010347	0100 1 ; /* 010347 */
22	8-May-06	1053	22.9	10-May-06	1107	white	010348	0100 1 ; /* 010348 */
10	8-May-06	1255	30.2	10-May-06	1320	white	010692	0100 1 ; /* 010692 */
10	8-May-06	1255	30.2	10-May-06	1320	white	010349	0100 1 ; /* 010349 */
10	8-May-06	1255	30.2	10-May-06	1320	white	010694	0100 1 ; /* 010694 */
10	8-May-06	1255	30.2	10-May-06	1320	white	010695	0100 1 ; /* 010695 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010628	0100 1 ; /* 010628 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010698	0100 1 ; /* 010698 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010629	0100 1 ; /* 010629 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010627	0100 1 ; /* 010627 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010625	0100 1 ; /* 010625 */
7	8-May-06	1251	25.9	10-May-06	1332	white	010696	0100 1 ; /* 010696 */
2	8-May-06	1245	12.5	10-May-06	1341	white	010699	0100 1 ; /* 010699 */
3	8-May-06	1233	30.5	10-May-06	1403	white	010630	0100 1 ; /* 010630 */
3	8-May-06	1233	30.5	10-May-06	1403	white	010631	0100 1 ; /* 010631 */
3	8-May-06	1233	30.5	10-May-06	1403	white	010673	0100 1 ; /* 010673 */
19	8-May-06	1220	13.1	10-May-06	1426	white	010672	0100 1 ; /* 010672 */
19	8-May-06	1220	13.1	10-May-06	1426	white	010671	0100 1 ; /* 010671 */
9	8-May-06	1212	28.0	10-May-06	1433	white	010670	0100 1 ; /* 010670 */
9	8-May-06	1212	28.0	10-May-06	1433	white	010634	0100 1 ; /* 010634 */
9	8-May-06	1212	28.0	10-May-06	1433	white	010633	0110 -1 ; /* 010633 */
9	8-May-06	1212	28.0	10-May-06	1433	white	010632	0100 1 ; /* 010632 */
12	8-May-06	1204	21.9	10-May-06	1441	white	010637	0100 1 ; /* 010637 */
13	8-May-06	1059	14.9	10-May-06	1500	white	010636	0110 -1 ; /* 010636 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag		Encounter history for MARK analysis
						Colour	1st Number	Events 1&2&3&4
13	8-May-06	1059	14.9	10-May-06	1500	white	010635	0100 1 ; /* 010635 */
8	10-May-06	1127	21.6	12-May-06	843	white	010650	0100 1 ; /* 010650 */
18	10-May-06	1135	17.7	12-May-06	848	white	010653	0100 1 ; /* 010653 */
18	10-May-06	1135	17.7	12-May-06	848	white	010652	0100 1 ; /* 010652 */
18	10-May-06	1135	17.7	12-May-06	848	white	010655	0101 1 ; /* 010655 */
18	10-May-06	1135	17.7	12-May-06	848		unmarked2	0100 -1 ; /* unmarked2 */
17	10-May-06	1516	11.9	12-May-06	910	white	010656	0100 1 ; /* 010656 */
21	10-May-06	1142	21.3	12-May-06	915	white	010657	0100 1 ; /* 010657 */
22	10-May-06	1146	23.2	12-May-06	918	white	010658	0100 1 ; /* 010658 */
11	10-May-06	1153	35.1	12-May-06	926	white	010660	0100 1 ; /* 010660 */
11	10-May-06	1153	35.1	12-May-06	926	white	010659	0100 1 ; /* 010659 */
14	10-May-06	1227	46.3	12-May-06	937	white	010661	0100 1 ; /* 010661 */
14	10-May-06	1227	46.3	12-May-06	937	white	010663	0100 1 ; /* 010663 */
14	10-May-06	1227	46.3	12-May-06	937	white	010665	0100 1 ; /* 010665 */
14	10-May-06	1227	46.3	12-May-06	937	white	010647	0100 1 ; /* 010647 */
14	10-May-06	1227	46.3	12-May-06	937	white	010648	0100 1 ; /* 010648 */
14	10-May-06	1227	46.3	12-May-06	937	white	010662	0100 1 ; /* 010662 */
14	10-May-06	1227	46.3	12-May-06	937		unmarked3	0100 -1 ; /* unmarked3 */
14	10-May-06	1227	46.3	12-May-06	937		unmarked4	0100 -1 ; /* unmarked4 */
9	10-May-06	1522	32.0	12-May-06	957	white	010282	0100 1 ; /* 010282 */
9	10-May-06	1522	32.0	12-May-06	957	white	010283	0100 1 ; /* 010283 */
9	10-May-06	1522	32.0	12-May-06	957	white	010615	0100 1 ; /* 010615 */
9	10-May-06	1522	32.0	12-May-06	957	white	010614	0100 1 ; /* 010614 */
9	10-May-06	1522	32.0	12-May-06	957	white	010616	0100 1 ; /* 010616 */
13	10-May-06	1535	10.1	12-May-06	1005	white	010669	0101 1 ; /* 010669 */
13	10-May-06	1535	10.1	12-May-06	1005	white	010645	0100 1 ; /* 010645 */
4	10-May-06	1545	21.3	12-May-06	1016	white	010641	0100 1 ; /* 010641 */
4	10-May-06	1545	21.3	12-May-06	1016	white	010642	0100 1 ; /* 010642 */
4	10-May-06	1545	21.3	12-May-06	1016	white	010644	0100 1 ; /* 010644 */
4	10-May-06	1545	21.3	12-May-06	1016	white	010643	0110 -1 ; /* 010643 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag		Encounter history for MARK analysis
						Colour	1st Number	Events 1&2&3&4
3	10-May-06	1548	33.2	12-May-06	1025	white	010639	0100 1 ; /* 010639 */
3	10-May-06	1548	33.2	12-May-06	1025	white	010602	0100 1 ; /* 010602 */
3	10-May-06	1548	33.2	12-May-06	1025	white	010603	0100 1 ; /* 010603 */
3	10-May-06	1548	33.2	12-May-06	1025	white	010640	0100 1 ; /* 010640 */
3	10-May-06	1548	33.2	12-May-06	1025	white	010604	0100 1 ; /* 010604 */
20	10-May-06	1238	20.4	12-May-06	1038	white	010276	0110 1 ; /* 010276 */
20	10-May-06	1238	20.4	12-May-06	1038	white	010275	0100 1 ; /* 010275 */
7	10-May-06	1247	36.0	12-May-06	1047	white	010277	0100 1 ; /* 010277 */
2	10-May-06	1602	21.6	12-May-06	1155	white	010607	0100 1 ; /* 010607 */
2	10-May-06	1602	21.6	12-May-06	1155	white	010608	0100 1 ; /* 010608 */
2	10-May-06	1602	21.6	12-May-06	1155	white	010606	0100 1 ; /* 010606 */
2	10-May-06	1602	21.6	12-May-06	1155	white	010605	0110 1 ; /* 010605 */
2	10-May-06	1602	21.6	12-May-06	1155		unmarked5	0100 -1 ; /* unmarked5 */
10	10-May-06	1557	26.8	12-May-06	1209	white	010609	0100 1 ; /* 010609 */
10	10-May-06	1557	26.8	12-May-06	1209	white	010610	0100 1 ; /* 010610 */
10	10-May-06	1557	26.8	12-May-06	1209	white	010611	0100 1 ; /* 010611 */
10	10-May-06	1557	26.8	12-May-06	1209	white	010280	0100 1 ; /* 010280 */
10	10-May-06	1557	26.8	12-May-06	1209	white	010281	0100 1 ; /* 010281 */
1	10-May-06	1313	25.9	12-May-06	1224	white	010612	0100 1 ; /* 010612 */
1	10-May-06	1313	25.9	12-May-06	1224	white	010613	0100 1 ; /* 010613 */
9	10-May-06	1255	24.1	12-May-06	1235	white	010667	0100 1 ; /* 010667 */
9	10-May-06	1255	24.1	12-May-06	1235	white	010666	0100 1 ; /* 010666 */
9	10-May-06	1255	24.1	12-May-06	1235	white	010646	0100 1 ; /* 010646 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010287	0100 1 ; /* 010287 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010617	0100 1 ; /* 010617 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010284	0100 1 ; /* 010284 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010618	0100 1 ; /* 010618 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010286	0100 1 ; /* 010286 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010288	0100 1 ; /* 010288 */
16	10-May-06	1302	19.2	12-May-06	1253	white	010619	0100 1 ; /* 010619 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag		Encounter history for MARK analysis
						Colour	1st Number	Events 1&2&3&4
16	10-May-06	1302	19.2	12-May-06	1253	white	010285	0100 1 ; /* 010285 */
20	12-May-06	1105	7.9	15-May-06	846	white	010299	0100 1 ; /* 010299 */
20	12-May-06	1105	7.9	15-May-06	846	white	010623	0100 1 ; /* 010623 */
20	12-May-06	1105	7.9	15-May-06	846	white	010622	0100 1 ; /* 010622 */
20	12-May-06	1105	7.9	15-May-06	846	white	010624	0100 1 ; /* 010624 */
14	12-May-06	1117	9.1	15-May-06	854	white	010297	0100 1 ; /* 010297 */
14	12-May-06	1117	9.1	15-May-06	854	white	010296	0100 1 ; /* 010296 */
14	12-May-06	1117	9.1	15-May-06	854	white	010298	0100 1 ; /* 010298 */
14	12-May-06	1117	9.1	15-May-06	854	white	010295	0100 1 ; /* 010295 */
14	12-May-06	1117	9.1	15-May-06	854	white	010294	0100 1 ; /* 010294 */
13	12-May-06	1124	6.7	15-May-06	900	white	010620	0100 1 ; /* 010620 */
13	12-May-06	1124	6.7	15-May-06	900	white	010290	0100 1 ; /* 010290 */
13	12-May-06	1124	6.7	15-May-06	900	white	010292	0100 1 ; /* 010292 */
3	12-May-06	1127	5.8	15-May-06	905	white	010291	0100 1 ; /* 010291 */
3	12-May-06	1127	5.8	15-May-06	905	white	010293	0100 1 ; /* 010293 */
19	12-May-06	1136	16.5	15-May-06	911	white	010289	0100 1 ; /* 010289 */
7	12-May-06	1143	21.6	15-May-06	917	white	010950	0100 1 ; /* 010950 */
7	12-May-06	1143	21.6	15-May-06	917		unmarked6	0100 -1 ; /* unmarked6 */
22	12-May-06	1149	18.3	15-May-06	925	white	010952	0100 1 ; /* 010952 */
22	12-May-06	1149	18.3	15-May-06	925	white	010951	0100 1 ; /* 010951 */
3	5-Jun-06	918	3.7	7-Jun-06	840	white	010995	0100 1 ; /* 010995 */
3	5-Jun-06	918	3.7	7-Jun-06	840	white	010997	0100 1 ; /* 010997 */
3	5-Jun-06	918	3.7	7-Jun-06	840	white	010996	0100 1 ; /* 010996 */
6	5-Jun-06	915	7.0	7-Jun-06	849	white	010998	0100 1 ; /* 010998 */
7	5-Jun-06	922	11.0	7-Jun-06	902	white	7954	0100 1 ; /* 7954 */
7	5-Jun-06	922	11.0	7-Jun-06	902	white	7955	0100 1 ; /* 7955 */
22	5-Jun-06	953	27.1	7-Jun-06	915	white	7956	0100 1 ; /* 7956 */
8	5-Jun-06	1013	35.7	7-Jun-06	935	white	7957	0100 1 ; /* 7957 */
8	5-Jun-06	1013	35.7	7-Jun-06	935	white	7958	0100 1 ; /* 7958 */
13	5-Jun-06	1150	15.5	7-Jun-06	946	white	7959	0100 1 ; /* 7959 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag Colour	Floy/PIT tag 1st Number	Encounter history for MARK analysis Events 1&2&3&4
13	5-Jun-06	1150	15.5	7-Jun-06	946	white	7960	0100 1 ; /* 7960 */
12	5-Jun-06	1135	24.4	7-Jun-06	951	white	7961	0100 1 ; /* 7961 */
10	5-Jun-06	1058	17.7	7-Jun-06	1010	white	7962	0100 1 ; /* 7962 */
5	5-Jun-06	1130	29.6	7-Jun-06	1014	white	7964	0100 1 ; /* 7964 */
5	5-Jun-06	1130	29.6	7-Jun-06	1014	white	7963	0100 1 ; /* 7963 */
14	5-Jun-06	1123	32.9	7-Jun-06	1022	white	7966	0100 1 ; /* 7966 */
14	5-Jun-06	1123	32.9	7-Jun-06	1022	white	7965	0100 1 ; /* 7965 */
2	5-Jun-06	1110	14.0	7-Jun-06	1038	white	7967	0110 1 ; /* 7967 */
4	3-Nov-06	1321	24.4	5-Nov-06	1353	white	010840	0010 1 ; /* 010840 */
4	3-Nov-06	1321	24.4	5-Nov-06	1353	white	010841	0010 1 ; /* 010841 */
4	3-Nov-06	1321	24.4	5-Nov-06	1353	white	010842	0010 1 ; /* 010842 */
4	3-Nov-06	1321	24.4	5-Nov-06	1353	white	010843	0010 1 ; /* 010843 */
4	3-Nov-06	1321	24.4	5-Nov-06	1353	white	010844	0010 1 ; /* 010844 */
1	3-Nov-06	1340	9.4	5-Nov-06	1427	white	010845	0010 1 ; /* 010845 */
1	3-Nov-06	1340	9.4	5-Nov-06	1427	white	010846	0010 1 ; /* 010846 */
1	3-Nov-06	1340	9.4	5-Nov-06	1427	white	010847	0010 1 ; /* 010847 */
19	3-Nov-06	1328	2.4	5-Nov-06	1450		142158553A	0010 -1 ; /* 142158553A */
19	3-Nov-06	1328	2.4	5-Nov-06	1450		142725211A	0010 -1 ; /* 142725211A */
12	3-Nov-06	1346	20.4	5-Nov-06	1508	white	010848	0010 1 ; /* 010848 */
12	3-Nov-06	1346	20.4	5-Nov-06	1508	white	010849	0010 1 ; /* 010849 */
14	3-Nov-06	1302	17.1	5-Nov-06	1517	white	11025	0010 1 ; /* 11025 */
8	3-Nov-06	1255	20.7	5-Nov-06	1533	white	11026	0010 1 ; /* 11026 */
8	3-Nov-06	1255	20.7	5-Nov-06	1533	white	11027	0010 1 ; /* 11027 */
10	3-Nov-06	1350	14.9	5-Nov-06	1538		142175326A	0010 -1 ; /* 142175326A */
10	3-Nov-06	1350	14.9	5-Nov-06	1538		142275254A	0010 -1 ; /* 142275254A */
11	5-Nov-06	1334	9.5	7-Nov-06	830		142451513A	0010 -1 ; /* 142451513A */
18	5-Nov-06	1339	14.9	7-Nov-06	835		142254286A	0010 -1 ; /* 142254286A */
5	5-Nov-06	1342	25.0	7-Nov-06	843		142244731A	0010 -1 ; /* 142244731A */
5	5-Nov-06	1342	25.0	7-Nov-06	843		142251763A	0010 -1 ; /* 142251763A */
5	5-Nov-06	1342	25.0	7-Nov-06	843		142463132A	0010 -1 ; /* 142463132A */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag		Encounter history for MARK analysis
						Colour	1st Number	Events 1&2&3&4
5	5-Nov-06	1342	25.0	7-Nov-06	843		142824366A	0010 -1 ; /* 142824366A */
9	5-Nov-06	1347	23.0	7-Nov-06	851		142159354A	0010 -1 ; /* 142159354A */
9	5-Nov-06	1347	23.0	7-Nov-06	851		142253794A	0010 -1 ; /* 142253794A */
8	5-Nov-06	1547	6.3	7-Nov-06	906		142263447A	0010 -1 ; /* 142263447A */
12	5-Nov-06	1522	20.0	7-Nov-06	913		unmarked7	0010 -1 ; /* unmarked7 */
12	5-Nov-06	1522	20.0	7-Nov-06	913		142461250A	0010 -1 ; /* 142461250A */
4	5-Nov-06	1420	5.0	7-Nov-06	941		142244664A	0010 -1 ; /* 142244664A */
4	5-Nov-06	1420	5.0	7-Nov-06	941		142254567A	0010 -1 ; /* 142254567A */
1	6-Nov-06	1118	2.8	7-Nov-06	954		142252354A	0010 -1 ; /* 142252354A */
1	5-Nov-06	1440	10.2	7-Nov-06	1012		142461525A	0010 -1 ; /* 142461525A */
1	5-Nov-06	1440	10.2	7-Nov-06	1012		142463444A	0010 -1 ; /* 142463444A */
7	5-Nov-06	1504	20.0	7-Nov-06	1020	white	11028	0010 1 ; /* 11028 */
2	6-Nov-06	1028	10.0	8-Nov-06	957		142279734A	0010 -1 ; /* 142279734A */
85	6-Nov-06	1115	4.8	8-Nov-06	1000		142162727A	0010 -1 ; /* 142162727A */
85	6-Nov-06	1115	4.8	8-Nov-06	1000		142463337A	0010 -1 ; /* 142463337A */
83	6-Nov-06	1100	10.3	8-Nov-06	1005		142458173A	0010 -1 ; /* 142458173A */
7	6-Nov-06	1046	13.5	8-Nov-06	1013		142265623A	0010 -1 ; /* 142265623A */
7	6-Nov-06	1046	13.5	8-Nov-06	1013		142454213A	0010 -1 ; /* 142454213A */
16	6-Nov-06	1024	10.8	8-Nov-06	1251	white	11029	0010 1 ; /* 11029 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11030	0010 1 ; /* 11030 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11031	0010 1 ; /* 11031 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11032	0010 1 ; /* 11032 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11033	0010 1 ; /* 11033 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11034	0010 1 ; /* 11034 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11035	0010 1 ; /* 11035 */
22	6-Nov-06	1020	24.1	8-Nov-06	1304	white	11036	0010 1 ; /* 11036 */
10	6-Nov-06	1147	11.4	8-Nov-06	1320	white	11037	0010 1 ; /* 11037 */
3	6-Nov-06	1016	20.6	8-Nov-06	1323	white	11039	0010 1 ; /* 11039 */
3	6-Nov-06	1016	20.6	8-Nov-06	1323	white	11038	0010 1 ; /* unknown */
17	6-Nov-06	1052	18.5	8-Nov-06	1344	white	11040	0010 1 ; /* 11040 */

Float ID	Trap Set Date	Trap Set Time	Depth (m)	Trap Pull Date	Trap Pull Time	Floy/PIT tag Colour	Floy/PIT tag 1st Number	Encounter history for MARK analysis Events 1&2&3&4
21	6-Nov-06	1049	17.2	8-Nov-06	1350	white	11041	0010 1 ; /* 11041 */
7	7-Nov-06	1055	5.3	9-Nov-06	1140	white	11042	0010 1 ; /* 11042 */
4	7-Nov-06	1048	5.9	9-Nov-06	1146	white	11043	0010 1 ; /* 11043 */
14	7-Nov-06	931	24.7	9-Nov-06	1212	white	11045	0010 1 ; /* 11045 */
10	23-Oct-07	1357	7	24-Oct-07	1003		142464474A	0001 -1 ; /* 142464474A */
7	23-Oct-07	1301	4.4	24-Oct-07	928		142164544A	0001 -1 ; /* 142164544A */
7	23-Oct-07	1301	4.4	24-Oct-07	928		142751177A	0001 -1 ; /* 142751177A */
4	23-Oct-07	1305	2.9	24-Oct-07	934		142458143A	0001 -1 ; /* 142458143A */
4	23-Oct-07	1305	2.9	24-Oct-07	934		142447492A	0001 -1 ; /* 142447492A */
22	23-Oct-07	1318	2.5	24-Oct-07	1025		142733752A	0001 -1 ; /* 142733752A */
16	23-Oct-07	1324	4.4	24-Oct-07	1040		142244712A	0001 -1 ; /* 142244712A */
16	23-Oct-07	1324	4.4	24-Oct-07	1040		142159297A	0001 -1 ; /* 142159297A */
18	23-Oct-07	1333	2.3	24-Oct-07	1052		142259395A	0001 -1 ; /* 142259395A */
6	23-Oct-07	1329	4.5	24-Oct-07	1056		142725540A	0001 -1 ; /* 142725540A */
6	23-Oct-07	1329	4.5	24-Oct-07	1056		142853234A	0001 -1 ; /* 142853234A */
1	23-Oct-07	1339	4.1	24-Oct-07	1111		142735564A	0001 -1 ; /* 142735564A */
2	23-Oct-07	1343	1.5	24-Oct-07	1115		142257364A	0001 -1 ; /* 142257364A */
17	23-Oct-07	1142	3.6	24-Oct-07	806		142735137A	0001 -1 ; /* 142735137A */
19	24-Oct-07	1335	4.6	25-Oct-07	1048		142411177A	0001 -1 ; /* 142411177A */
19	24-Oct-07	1335	4.6	25-Oct-07	1048		142273452A	0001 -1 ; /* 142273452A */