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SUBJECT Lac La Biche Summer Creel Survey, 2006

Fisheries Management conducted a creel survey on Lac La Biche (68-14-W4M; FWMIS Waterbody ID #4048) from May 20th to August 13th, 2006. The survey design incorporated both access creel and roving creel methods, stratified by day type (weekday versus weekend) and time of day (AM versus PM). Additionally, sample angling was conducted by fisheries staff.

Because the survey design included both roving creel and access creel shifts, data collection was limited for either creel type by the other. During the roving creel portion of the survey, staff interviewed 385 anglers compared to only 43 interviews conducted during the access creel survey. This data analysis was performed using the larger data set collected from the roving creel. Analysis was extrapolated to include the time period between May 19th (the day the lake opened to harvest) and August 31st.

Effort, harvest, and yield estimates were calculated following the analysis flowchart shown in Figure 1. Effort was calculated separately for boat anglers and shore anglers, due to the large number of shore anglers encountered and the assumption that there would be bias related to angling method (boat versus shore). Average trip length for boat anglers was calculated by taking the average trip time for all anglers during the roving creel and multiplying by two. Anglers were interviewed part way through their trip; presumably, some nearer the beginning of their trip, some nearer the end. It was assumed for the analysis that overall, anglers were interviewed at the midpoint of their angling trip. The resulting average angler trip time was 2.00 hours, and it was therefore unlikely that many anglers interviewed during the first rove of the day remained on the lake to be interviewed in the second rove. Daily mean effort for each stratum was therefore calculated by totaling the number of anglers observed across all roves in a sampled day and multiplying by the appropriate average trip length (boat angler or shore angler). Average trip length for shore anglers (0.68 hours) was determined by calculating the mean trip length of all completed trip interviews by shore anglers only.

In 2006, the Alberta sportfishing regulation for Lac La Biche included a zero harvest limit for both walleye and northern pike. Therefore, any walleye or northern pike retained by anglers during the survey period were illegally harvested.

Total angler effort for the period of May 19th to August 31st, 2006 was estimated to be 2,361 hours (95% confidence interval 1,881 – 2,950), or 0.10 hours/ha (95% C.I. 0.08 – 0.12). There were an estimated 1,110 boat angler trips and 206 shore angler trips over this time period, for a total of 1,317 angler trips (95% C.I. 1,069 – 1,617).

Anglers caught northern pike at a rate of 0.59 fish/hour (95% C.I. 0.45 – 0.74). Fisheries staff encountered 12 northern pike that had been retained by anglers during the roving creel and an additional 5 pike retained during the access creel. As a result, we estimate a minimum illegal harvest of 120 northern pike (95% C.I. 43 – 221) for the survey period. Anglers released approximately 1,267 (95% C.I. 884 – 1,735) northern pike. Total yield for northern pike during the survey period, calculated as harvested fish plus a 5% hooking mortality, was approximately 183 fish (95% C.I. 87 – 308). Biological data was not collected from harvested fish. No walleye were reported being caught during the roving creel survey.

Sample angling was conducted during the survey period, with a total angling effort of 77 hours across 60 angling trips. Staff caught a total of 78 northern pike, at a rate of approximately 1.00 fish/hour (95% C.I. 0.71 – 1.32). All fish were released. No walleye were captured during sample angling.

Cc: Kathy Hendren, Resource Manager Lower Athabasca Region

Figure 1. Flow chart of the mathematical operations used for determining the parameters of the 2006 summer sport fishery on Lac La Biche. Rectangles signify values with no variance; oblong boxes signify data with variance.

