

Memorandum

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To: Alicia Pruden-Beniuk
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SUBJECT: 2015 Lac La Biche Winter Domestic Netting Survey

The number of domestic licenses issued for Lac La Biche has been steadily increasing since 2010. In 2015 there were 164 licenses issued which is an 156% increase from 64 issued licenses in 2010. For 2015, sixty-one licenses were issued to First Nation fishers and one hundred-three licenses were issued to Metis fishers. In all years since 2004, more Metis licenses were issued, however the percentage of First Nation licenses has been increasing since 2010 (Figure 1).

Fisheries management conducted a winter domestic netting survey from January 9 to March 31, 2015 to determine the domestic effort and harvest on Lac La Biche. This survey followed a stratified random survey design. Survey days were selected randomly and stratified by weekday/weekend, and AM/PM. This survey entailed driving circuits around the perimeter of the lake while observing for nets or net sign.

Effort data was collected through observing and recording active nets during scheduled survey circuits. Harvest data includes all catch data from nets, collected through observations by staff or by phone interviews. Effort and harvest estimates were calculated empirically following the analysis flowchart in Figure 2. For the purposes of this report, domestic netting effort is measured as net sets. One net set is defined as a single net set for an uninterrupted duration of time. The number and species of fish caught were analyzed to estimate harvest and catch.

Of the 82 available survey days, a total of 38 days were surveyed. During the 38 scheduled circuits of the lake, a total of 24 fishermen were observed actively netting. These fishermen set a total of 38 nets in 10 different locations, with Maccagno Point being the most frequently-netted location (Figure 3). Data was also collected opportunistically outside of the survey from an additional six licence holders, who accounted for an additional 14 net sets. This additional data

was used for improving harvest estimates, but was not included in effort calculations. Of these 30 domestic fishermen, 21 identified themselves as Métis accounting for 20% of Métis domestic licences issued for Lac La Biche in 2015. The percentage of First Nation domestic licence use was somewhat lower at 15%. A map depicting access sites and netting locations can be found in Figure 4.

March was the peak month for winter domestic netting effort in 2015, while February was the least active (Table 1). Overall, there were an estimated 82 nets set (95% C.I. 59 – 110) during the 2015 winter domestic netting survey period (Figure 5). These nets were set for an average of 19.5 hours (95% C.I. 17.0 – 21.8) for an estimated total netting effort of 1598.2 hours (95% C.I. 1108.9 – 2201.1).

Of the 52 actively fishing nets encountered during the survey, fisheries management staff observed 40 net pulls, obtained telephone interviews for an additional 3 nets, and were unable collect any information from 9 nets. A total of 926 walleye, 148 northern pike and 233 lake whitefish were recorded by fisheries management staff. Other fish species caught were burbot (n=24), longnose sucker (n=10), and white sucker (n=143). Individual fishers caught a range of 0 – 86 walleye, 0 – 19 northern pike and 0 – 20 lake whitefish in their nets.

The estimated harvest rate for walleye was 21.5 fish/net (95% C.I. 15.1 – 28.9), resulting in an estimated harvest of 1764 walleye (95% C.I. 1072 – 2669). With an average weight of 2.26 kg, this translates into approximately 3995.5 kg of harvested walleye (95% C.I. 2427.4 – 6043.0). The estimated harvest rate for northern pike was 3.4 fish/net (95% C.I. 2.2 – 5.0), resulting in an estimated harvest of 282 northern pike (95% C.I. 158 – 451). With an average weight of 3.6 kg, this translates into approximately 1005.8 kg of harvested northern pike (95% C.I. 563.0 – 1607.4). The estimated harvest rate for lake whitefish was 5.3 fish/net (95% C.I. 3.4 – 7.4), resulting in an estimated harvest of 434 lake whitefish (95% C.I. 248 - 677). With an average weight of 1.6 kg, this translates into approximately 681.1 kg of harvested lake whitefish (95% C.I. 390.3 – 1063.5). A comparison between the harvest of these three species can be found in table 2.

Cc: Kathy Hendren, Resource Manager, Lower Athabasca Region.

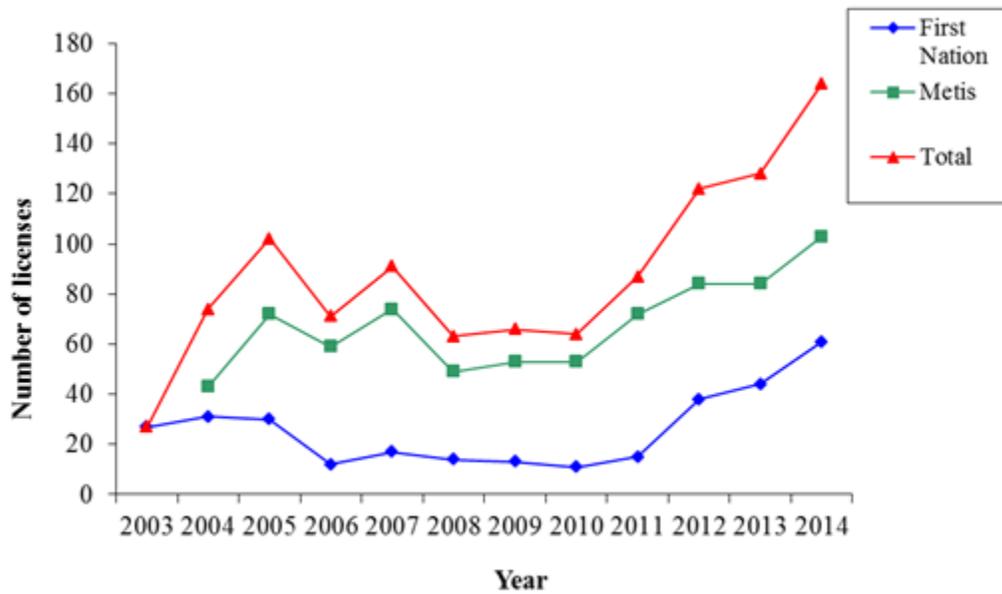


Figure 1. Type and number of licenses issued on Lac La Biche by year.

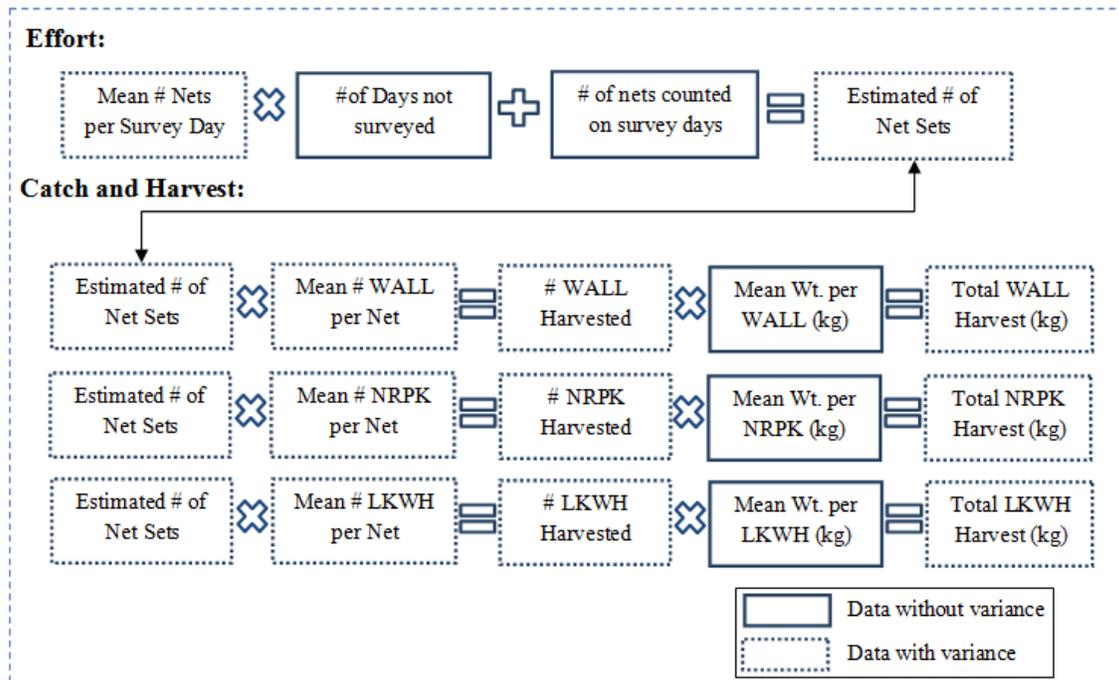


Figure 2. Analysis flowchart of the mathematical operations used for determining effort and harvest for the 2015 winter domestic fishery on Lac La Biche.

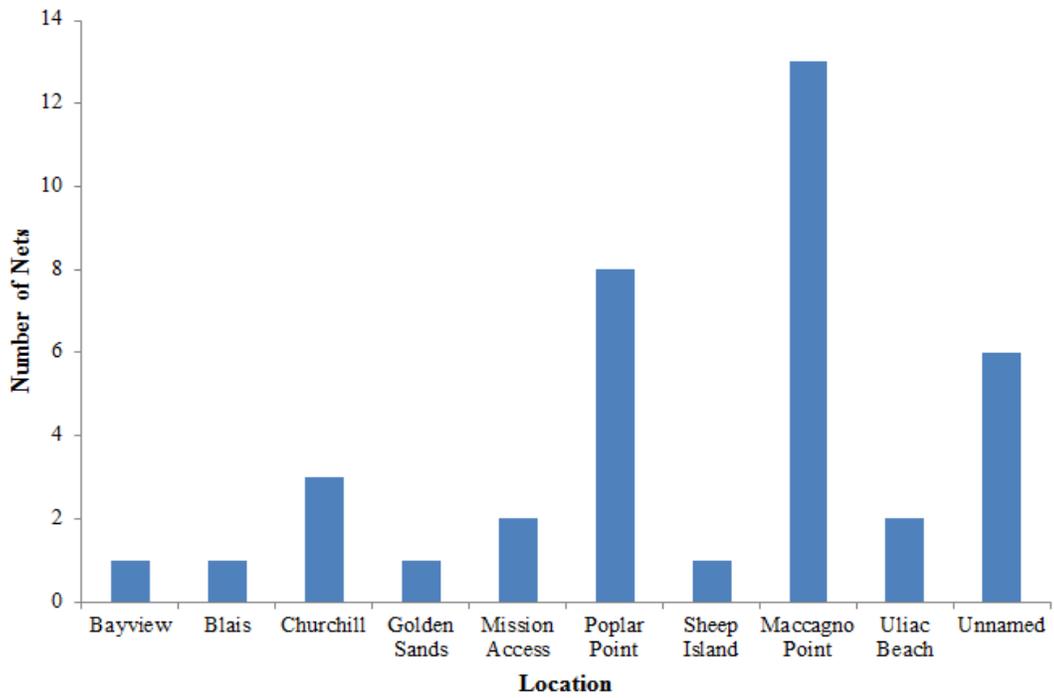


Figure 3. Number of nets set per location during the 2015 winter domestic netting survey on Lac La Biche.

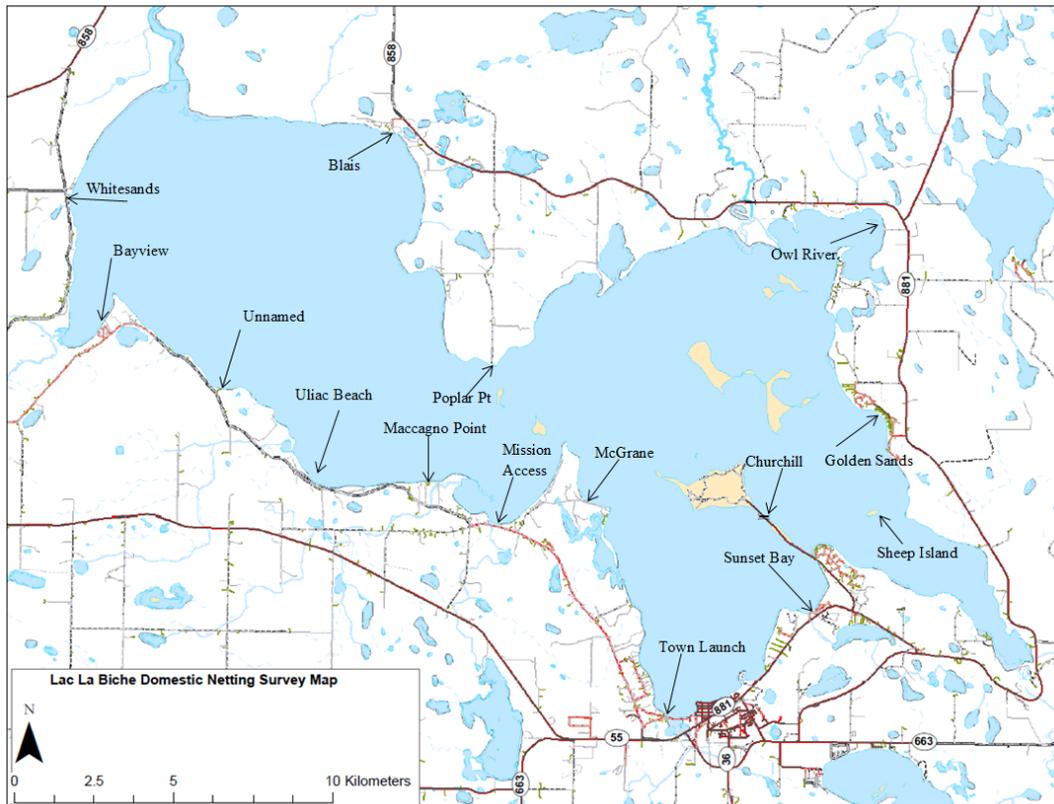


Figure 4. Map depicting access points, and netting locations during the 2015 winter domestic netting survey on Lac La Biche.

Table 1. Observed effort for each month of the 2015 Lac La Biche winter domestic netting survey

Month	# of Net Sets	% of Net Sets
January	8	21.05
February	7	18.42
March	23	60.53
Total	38	100

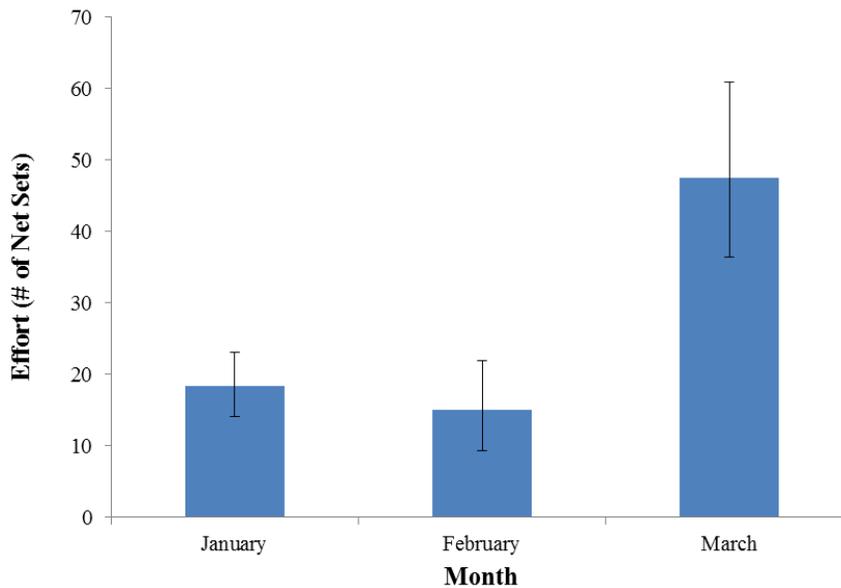


Figure 5. Estimated effort per month during the 2015 winter domestic netting survey on Lac La Biche. Error bars indicate 95% confidence intervals.

Table 2. Estimated parameters of Walleye, Northern Pike and Lake Whitefish from the 2015 winter domestic netting survey on Lac La Biche

	Walleye	95% C.I.	Northern Pike	95% C.I.	Lake Whitefish	95% C.I.
Harvest Rate (fish/net)	21.5	(15.1-28.9)	3.4	(2.2-5.0)	5.3	(3.4-7.4)
Harvest (number)	1764	(1072-2669)	282	(158-451)	434	(248-677)
Harvest (Kg)	3995.5	(2427.4-6043.0)	1005.8	(563.0-1607.4)	681.1	(390.3-1063.5)