



Muriel Lake Fall Walleye Index Netting, 2012

*Fisheries Management
Waterways/Lac La Biche, Cold Lake*

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Abstract

A Fall Walleye Index Netting (FWIN) survey was conducted on Muriel Lake from September 4 to 7, 2012. A total of 129 fishes of 2 species were caught, including three longnose suckers, and 126 brook stickleback. Three near shore “button hook” seine hauls were also conducted at random locations to look for species not captured in the FWIN nets. The seine hauls yielded a total of 12 brook stickleback. No walleye, northern pike, yellow perch or lake whitefish were captured during the survey. It is likely that those species have been extirpated from Muriel Lake.

Introduction

Alberta Environment and Sustainable Resource Development implements strategies to sustainably manage fish populations and provide sustainable harvest allocations for sportfish. Monitoring is required to evaluate the effectiveness of these strategies. The Cold Lake area Fisheries Management team conducted a Fall Walleye Index Netting (FWIN) survey on Muriel Lake (59 & 60-5-W4M, FWMIS waterbody ID 5396) during the first week of September 2012. The purpose of this survey was to assess the presence and relative abundance and population structure of sport fish species. The most recent netting data for Muriel Lake was from the last commercial fishery conducted in 1999.

Methods

This FWIN survey was conducted from September 4 to 7, 2012. A comprehensive description of equipment and methodology can be found in the Manual of Instructions Fall Walleye Index Netting (FWIN) (Morgan 2002). Eleven sampling locations were used for this survey (Figure 1). These sites were selected randomly and were all set within the 2 to 5 m depth stratum. The FWIN nets consisted of eight standard 7.62 m by 1.83 m panels of stretched mesh sizes of 25, 38, 51, 64, 76, 102, 127, and 152 mm. Two additional panels of 12 and 19 mm stretched mesh were attached but separated with a 10 m section of rope. Nets were set for 24 hrs, and surface water temperatures ranged between 10 and 15°C.

Catches were recorded by net location and mesh size. A net ID, date, mesh size, and count of each species of fish caught were recorded for each panel for catch-per-unit-effort (CPUE) calculations. Fork and total length (to the nearest millimetre) measurements were taken for both species, and weight (in grams), as well as sex and maturity were recorded for all large bodied fish.

The raw data from this FWIN survey is stored digitally in the Fish and Wildlife Management Information System (FWMIS) under Project ID # 16492.

Results

One hundred and twenty nine fishes were captured in total, representing two species. There were three longnose suckers (*Catostomus catostomus*) and 126 brook stickleback (*Culaea inconstans*) caught.

The two female, and one male longnose suckers were mature, and all three were between 350 and 352 mm total length (TL). All three specimens were captured at a single location, which was the greatest depth sampled on the lake (4.0 to 4.4 m), and in the same mesh panel (76 mm). Brook stickleback averaged 55 mm TL, and ranged from 41 to 63 mm TL, and were caught in the 19 and 25 mm.

Three near shore “button hook” seine hauls were also conducted at random locations to look for species not captured in the FWIN nets. The seine hauls yielded a total of 12 brook stickleback.

Interpretation

No walleye (*Sander vitreus*), northern pike (*Esox lucius*), yellow perch (*Perca flavescens*) or lake whitefish (*Coregonus clupeaformis*) were captured during the survey. It is likely that those species have been extirpated from Muriel Lake. Four decades of decreasing water levels combined with extremely low winter oxygen levels (less than 3.0 mg/l) are likely to have adversely affected recruitment and overwintering survival of these species.

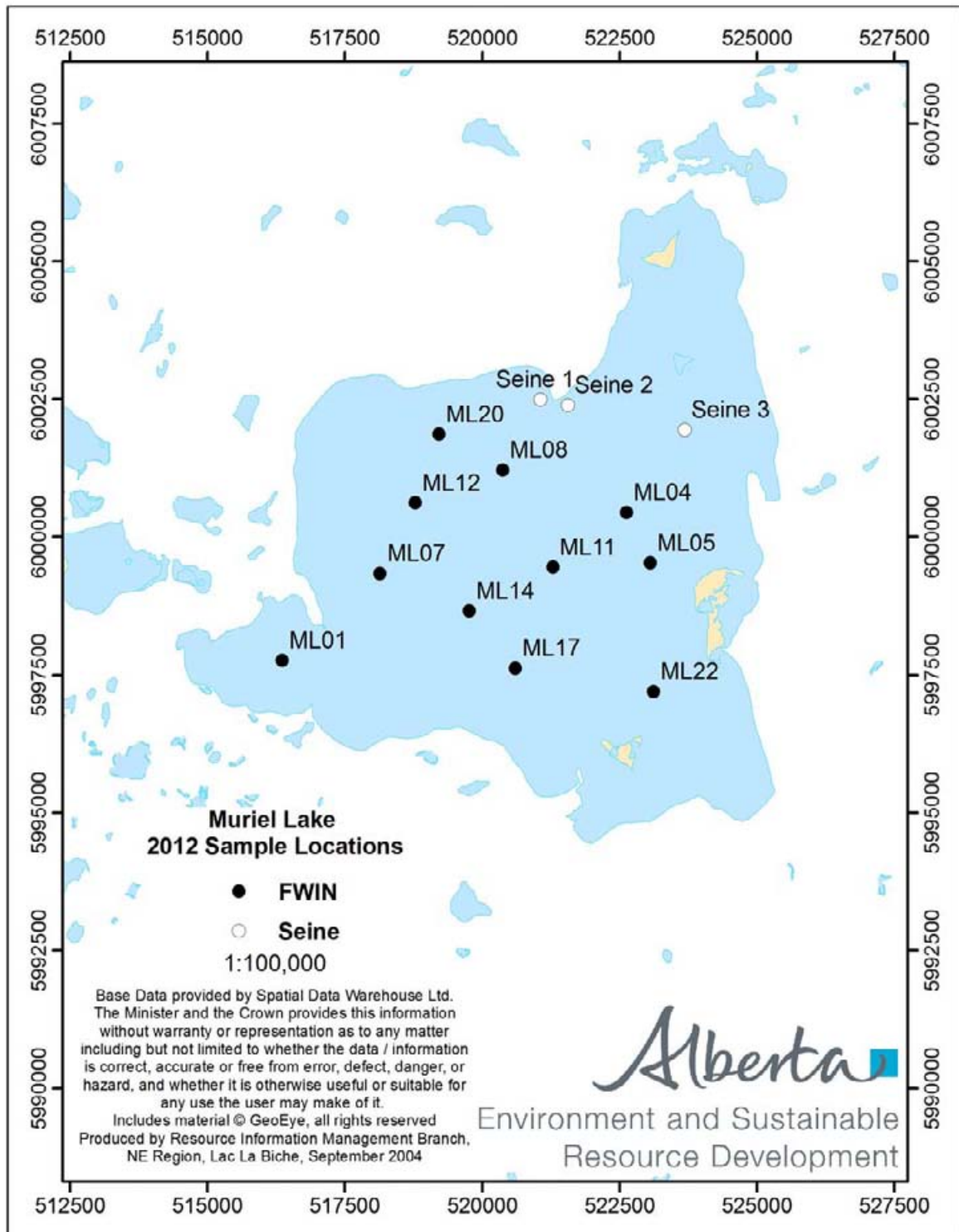


Figure 1. Sample locations for the Muriel Lake 2012 test netting survey. Sample locations were selected randomly. All 11 FWIN nets were set in the 2-5 m stratum.

Literature Cited

Morgan, G.E. 2002. Manual of Instructions – Fall Walleye Index Netting (FWIN). Percid Community Synthesis, Diagnostics and Sampling Standards Working Group. Ontario Ministry of Natural Resources. 34 p.