

Alberta Conservation Association 2008/09 Project Summary Report

Project Name: Gull Lake Winter Angler Survey, 2009

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Partnerships:

Alberta Sustainable Resource Development

Introduction

For several decades, Gull Lake has supported provincially important winter fisheries for lake whitefish and northern pike. A creel survey conducted in 1991 on the lake by the Alberta Sustainable Resource Development, Fish and Wildlife Division (ASRD) estimated upwards of 57,000 angling-trips and 233,000 angling-hours. In addition, angling pressure at Gull Lake was more than twice as high as those measured during similar surveys at Pigeon, Buck and Wabamun lakes. Catch rates were also up to three times higher at Gull Lake than at other nearby lakes. With the relatively high angling pressure and angler success, ASRD expressed concern regarding the effectiveness of the current regulations and the sustainability of the sport fishery on the lake. As a result, Alberta Conservation Association conducted a creel survey during the winter of 2008-2009 to generate data on the status of the lake whitefish and northern pike fisheries that can be used in evaluating the efficacy of existing management regulations.

Methods

Following methods described in Pollock et al. (1994), we conducted an access point creel survey on the lake from 6 January to 29 March 2009. During each survey we asked anglers a series of questions including: hours spent fishing, angling method, targeted species, and number of each fish species harvested and released. We recorded species and number, fork and total length, and weight of their catch. As the use of up to 3 angling-lines were permitted, the number of lines (or fishing rods) used was also recorded. All members of angling parties were interviewed. We will use bootstrap techniques following Haddon (2001) to estimate the total number of angler trips, hours fished, angling pressure, harvest, total yield and associated 95% confidence intervals (95% CI). Detailed data analyses is currently underway, therefore only a summary of field observations is included this report.

Results

Preliminary Results: During the survey, the creel attendant interviewed 1,149 anglers who fished for a total of 4,730 angling-hours. The average number of anglers per vehicle was two and the average number of fishing line per angler was 1.5. Species caught included lake whitefish, northern pike, yellow perch and burbot (Table 1). Observed total captures ranged from a low of

138 for burbot to a high of 1046 for lake whitefish (Table 1). Overall, lake whitefish and yellow perch dominated the catch, constituting 44 and 41% of total catch (n=2361), respectively; northern pike and burbot were poorly represented, constituting 8 and 6% of total catch, respectively. Harvest (fish kept by anglers) ranged from 33 for northern pike to 998 for lake whitefish (Table 1). Corresponding harvest rates ranged from 0.01 to 0.22 fish/h. Number of fish released by anglers ranged from a low of 48 for lake whitefish to a high of 688 for yellow perch (Table 1).

Table 1. Summary of angler-catch data collected during the winter creel survey at Gull Lake, 2009.

Species	Total catch	Harvested fish		Fish released	
	n	n	Catch rate (fish/h)	n	Catch rate (fish/h)
Lake whitefish	1046	998	0.22	48	0.01
Northern pike	192	33	0.01	159	0.03
Yellow perch	985	297	0.06	688	0.15
Burbot	138	48	0.01	90	0.02

Conclusion

Overall, anglers captured four species, lake whitefish, northern pike, yellow perch and burbot during the winter creel period. Lake whitefish and yellow perch dominated the catch, constituting 44 and 41% of total catch, respectively. Northern pike and burbot were poorly represented, constituting 8 and 6% of total catch, respectively.

Literature

Haddon, M. 2001. Modeling and quantitative methods in fisheries. Chapman and Hall/CRC, Boca Raton, Florida, USA. 406 pp.

Pollock, K.H., C.M. Jones, and T.L. Brown. 1994. Angler survey methods and their applications in fisheries management. American Fisheries Society Special Publication 25. 371 pp.