

Alberta Conservation Association 2016/17 Project Summary Report

Project Name: Summer Angler Survey at Haig and Moose Lakes, Alberta, 2016

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Partnerships

Alberta Environment and Parks
Government of Canada – Canada Summer Jobs

Key Findings

- In the summer of 2016, an estimated 722 anglers fished for 2,415.8 hours at Haig Lake and captured 4,913 walleye and 614 northern pike.
- In the summer of 2016, an estimated 1,846 anglers fished for 5,476.2 hours at Moose Lake and captured 762 walleye and 2,554 northern pike.
- Angling pressure was 2.64 h/ha at Haig Lake and 1.35 h/ha at Moose Lake.
- Overall, catch rate at Haig Lake was significantly higher than at Moose Lake.

Introduction

High fishing pressure, coupled with slow-growing and late maturing populations, has resulted in the overharvest of many of Alberta's sport fish populations (Sullivan 2003), including northern pike and walleye. To facilitate the management of these sport fish species, Alberta Environment and Parks (AEP) developed the *Alberta Walleye Management and Recovery Plan* in 1995 and the *Alberta Northern Pike Management and Recovery Plan* in 1999 (Berry 1995, 1999). Effective management requires an understanding of fishing pressure and harvest on lakes. To facilitate management, we conducted angler surveys on Haig and Moose lakes in 2016 to generate data on angler effort and angler catch and harvest. We also collected biological data on sport fish that were harvested.

Methods

We conducted a single-access survey at Haig Lake and a multiple-access survey combined with a ratio-of-use (ROU) survey at Moose Lake between June 1 and August 31, 2016, following methods described in Pollock et al. (1994). Surveys were stratified into four temporal units; weekday and weekends/holidays subdivided into morning (08:00 to 15:00) and evening (15:00 to

22:00) shifts. We interviewed anglers at the end of their fishing trips and recorded hours spent fishing and the number of each fish species harvested and released; we also collected biological data from harvested fish. The same information was collected during ROU surveys, but these surveys also included a question about the landing point for the vessel. We used bootstrap techniques to calculate estimates and 95% confidence intervals (CI) for the number of angler trips, angler hours, number of fish harvested, and number of fish released. We calculated catch rates as total ratio estimators following Malvestuto (1983).

Results

At Haig Lake, we interviewed 248 anglers who fished for 806.75 hours. These anglers harvested 130 walleye and 13 northern pike, and released 1,434 walleye and 207 northern pike. Estimated angling pressure was 2.64 h/ha (95% CI = 2.02 – 3.43) with 722 anglers (95% CI = 597 – 860) fishing for 2,415.8 hours (95% CI = 1,844.3 – 3,133.9). An estimated 4,905 walleye (95% CI = 3,530 – 6,661) and 616 northern pike (95% CI = 416 – 870) were caught. Walleye and northern pike catch rates were 2.03 fish/h and 0.26 fish/h, respectively. An estimated 480 walleye (95% CI = 347 – 648) and 33 northern pike (95% CI = 13 – 60) were harvested during the survey period.

At Moose Lake, we interviewed 711 anglers who fished for 2,194 hours. These anglers harvested 34 walleye and 71 northern pike, and released 237 walleye, 986 northern pike, and 43 yellow perch. Estimated angling pressure was 1.35 h/ha (95% CI = 1.16 – 1.55) with 1,846 anglers (95% CI = 1,583 – 2,120) fishing for 5,476.2 hours (95% CI = 4,716.7 – 6,275.9). An estimated 761 walleye (95% CI = 562 – 988) and 2,555 northern pike (95% CI = 2,095 – 3,059) were caught. Walleye and northern pike catch rates were 0.14 fish/h and 0.47 fish/h, respectively. An estimated 117 walleye (95% CI = 67 – 179) and 187 northern pike (95% CI = 136 – 246) were harvested during the survey period.

Conclusions

While more anglers fished at Moose Lake than at Haig Lake, Haig Lake experienced a higher fishing pressure during the survey period because of its smaller size. Overall, the catch rate at Haig Lake was significantly higher than at Moose Lake.

Communications

A report, *Sport Fishery Angler Survey at Haig and Moose Lakes, Alberta, 2016*, detailing these results of this project was published on ACA's website.

Literature Cited

Berry, D.K. 1995. Alberta's walleye management and recovery plan. Alberta Environment Protection, Natural Resources Service, Number T/310, Edmonton, Alberta, Canada. 32 pp.

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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.

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Photos



Alberta Conservation Association seasonal staff member Christine Kuntzemann with a walleye caught at Haig Lake, 2016. Photo: Sandy Van Dijk



Alberta Conservation Association seasonal staff member Sandy Van Dijk with a northern pike caught at Haig Lake, 2016. Photo: Christine Kuntzemann