Alberta Conservation Association
2013/14 Project Summary Report

Project Name: Summer Sport Fishery on the Peace River, Alberta, 2013

Fisheries Program Manager: Peter Aku

Project Leader: Bill Patterson

Primary ACA staff on project:

Aaron Androsoff, Melissa Buskas, Paul Hvenegaard, Dave Jackson, Bill Patterson, Nikita Robinson, Robb Stavne, Lenore Stone and Ken Wright

Partnerships

Canada Summer Jobs

Key Findings

- Angling effort and success on the Peace River between the Smoky and Cadotte rivers seemed low.
- Total estimated angling effort was 3,575 h over a four-month period, with associated fishing pressure of 1.0 h/ha.
- Anglers harvested an estimated 284 walleye for a yield of 0.08 kg/ha.
- Anglers made 566 trips to the Heart River/Pat's Creek access site and fished for 1,167 hours.
- Anglers made 341 trips to the Whitemud River access site and fished for 697 hours.
- Approximately half (53%) of anglers fished from the two access sites; the remaining half (47%) fished at alternate sites.

Introduction

The portion of the Peace River located in northwest Alberta is categorized as a cool-water fishery that supports sport fish species such as walleye (*Sander vitreus*), northern pike (*Esox lucius*), goldeye (*Hiodon alosoides*) and burbot (*Lota lota*). Angling is typically concentrated at the mouths of tributaries flowing into the mainstem (Nelson and Paetz 1992). However, little is known about recreational angling pressure along this portion of the river. In this project, we conducted an angler survey along a section of the river around the town of Peace River (i.e., between the confluences of the Smoky and Cadotte rivers) to provide Alberta Environment and Sustainable Resource Development (ESRD) with current data regarding the sport fishery.

Methods

Following methods described in Pollock et al. (1994), we conducted a reduced-effort creel survey at two sites on the Peace River between the Smoky River confluence and the Cadotte River confluence between June 3 and September 25, 2013. The two survey access sites were

located in the town of Peace River and at the Whitemud River confluence. The town access site, located 6 km downstream of the Smoky River confluence, extended over 300 m and encompassed the confluences of the Heart River and Pat's Creek. The Whitemud River access site was located 19 km upstream from the Cadotte River. The survey was stratified into four temporal sampling units; weekday and weekend (including holidays), further divided into morning (0900 to 1530) and evening (1530 to 2130) units. At both access sites, 37 (17%) of the possible 224 temporal sampling units were surveyed. We collected trip data from anglers by interviewing them when they finished angling or when the creel shift ended. We asked anglers a series of questions regarding the number of hours fished and number of each fish species harvested and released, and we collected biological data from their harvested catch. To supplement the sport harvest data, we test-angled fish throughout the survey period, recording the number of hours fished, fish species, fork length (mm), and total length (mm). Angler counts within the total survey area (between Smoky and Cadotte river confluences) were conducted to determine a ratio-of-use (ROU) for extrapolating data collected at the two survey sites to the total survey area. We used a bootstrap technique to calculate estimates and associated 95% confidence intervals (CI) for the total number of angler trips, hours fished, angling pressure (h/ha), number of fish harvested and number of fish released. Catch rates were calculated as total ratio estimators following Malvestuto (1983).

Results

At the Heart River/Pat's Creek access site, we surveyed 103 anglers who fished for 211.5 h. Total angler catch ranged from a low of four northern pike to a high of 22 burbot, with associated catch rates of 0.02 northern pike/h and 0.10 burbot/h (Table 1). Anglers reported catching 0.09 walleye/h and 0.04 goldeye/h. Estimated angling effort was 1,167 h (95% CI = 923 – 1,422).

At the Whitemud River access site, we surveyed 56 anglers who fished for 114.25 h. Total angler catch ranged from a low of two goldeye to a high of 77 walleye, with associated catch rates of 0.01 goldeye/h and 0.71 walleye/h (Table 1). Estimated angling effort was 697 h (95% CI = 406 – 993).

Table 1. The number of fish caught at the Heart River/Pat's Creek and Whitemud River access sites, Peace River, 2013.

Access site	Species	Number harvested	Number released	Catch rate (fish/h)
Heart River/Pat's Creek	walleye	3	17	0.09
	northern pike	1	3	0.02
	goldeye	1	17	0.04
	burbot	1	21	0.10
Whitemud River	walleye	20	57	0.71
	northern pike	1	8	0.08
	goldeye	0	2	0.01
	burbot	3	5	0.06

Based on 16 ROU surveys, 53% (95% CI = 42 – 64, n = 72) of anglers on the Peace River between the Smoky River and Cadotte River confluences fished at one of the two survey access sites; the remaining 47% fished at alternate sites. Total estimated angling effort was 3,575 h (95% CI = 2,602 – 4,821), and angling pressure was 1.0 h/ha (95% CI = 0.8 – 1.4). Anglers harvested an estimated 284 walleye (95% CI = 78 – 520) for a total yield of 301.8 kg (95% CI = 108.1 – 525.2) or 0.08 kg/ha (95% CI = 0.03 – 0.15).

Conclusions

Catch rate for all fish at Heart River/Pat's Creek and Whitemud River was 0.3 fish/h and 0.8 fish/h, respectively. Angling pressure at Whitemud River was higher than at Heart River/Pat's Creek, but pressure was low at both sites. During ROU surveys, we observed anglers fishing from both the shoreline and boats, mostly at confluences. Angling effort and success along this section of the Peace River seemed low.

Communications

- Delivered presentation to ESRD, "Peace River Sport Fishery Survey," in December 2013.
- Prepared ACA data report: *Summer Sport Fishery on the Peace River, Alberta, 2013*.

Literature Cited

Malvestuto, S.P. 1983. Sampling the recreational fishery. Pages 397 – 419. *In:* L.A. Nielsen and D.L. Johnson, editors. Fisheries techniques. American Fisheries Society, Bethesda, Maryland, USA. 468 pp.

Nelson, J.S., and M.J. Paetz. 1992. The fishes of Alberta. University of Alberta, Edmonton, Alberta, Canada. 437 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.

Photo Captions

Alberta Conservation Association seasonal staff member Nikita Robinson surveying an angler at the Heart River/Pat's Creek access site, Peace River, 2013. Photo: Aaron Androsoff [filename: Photo1_Peace River_2013-14_Aaron Androsoff.jpg]

Alberta Conservation Association seasonal staff member Aaron Androsoff with a test-angled goldeye at the Whitemud River access site, Peace River, 2013. Photo: Nikita Robinson [filename: Photo2_Peace River_2013-14_Nikita Robinson.jpg]

Alberta Conservation Association staff member Melissa Buskas at Cadotte River during a ratio-of-use survey, Peace River, 2013. Photo: Dave Jackson
[filename: Photo3_Peace River_2013-14_Dave Jackson.jpg]