Alberta Conservation Association

2019/20 Project Summary Report

Project Name: Fish Stocking Expansion – New Species Evaluation

Fisheries Program Manager: Peter Aku

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Partnerships

Alberta Environment and Parks

Cabela's Canada Inc.

Key Findings

- Rainbow trout were captured almost twice as often as brook trout.
- Rainbow trout captures were 67% of the total catch and brook trout were 33%.
- 50% of fish captures were within a month of stocking for both species.

Abstract

Annually, the ACA stocks waterbodies with catchable rainbow trout. In addition to rainbow trout stockings, we recently diversified angling opportunities at selected ponds by stocking brown and brook trout, creating multi-species fisheries. This project evaluated the contribution of brook trout to our stocked pond fisheries by the relative return to creel of brook and rainbow trout in selected ACA stocked ponds. Spring gill netting results indicate stocking created a population of both brook and rainbow trout for anglers to catch. Of the 2,676 trout we tagged and released, anglers reported catching a total of 161 (6%) consisting of 108 rainbow trout (67%) and 53 brook trout (33%). Of these, 54 rainbow trout (50%) and 15 brook trout (28%) were reported as

harvested. Approximately half of all fish captures occurred within the first month after stocking, indicating rapid utilization of trout from our ponds.

Introduction

In 1994, Alberta Environmental Protection and Alberta Fish Farmers Association initiated the Enhanced Fish Stocking Program (now Fish Stocking project (FS)) to supplement existing government trout stocking and provide larger trout for put-and-take ponds. Our project objective is to provide increased angling opportunities for Albertans by stocking catchable-sized (20+ cm) trout in parts of the province where angling opportunities are limited. In 1998, Alberta Conservation Association (ACA) assumed responsibility for delivery of FS. In addition to rainbow trout stockings, we recently diversified angling opportunities at selected ponds by stocking brown and brook trout. Our prior angler surveys indicate that catch rates of brown trout were substantially less than that of rainbow trout (Keeling and Fitzsimmons, 2016); however, we do not have comparable information for our brook trout stockings. Studies suggest that brook trout are more catchable than brown trout (Cooper 1953), while an Alberta study showed catch rates for brook trout to be considerably lower than that of rainbow trout (Lebedinsky 2016). This project will evaluate the contribution of brook trout to our stocked pond fisheries by estimating relative catch of brook and rainbow trout (Dillon et al 2000) in selected ACA stocked ponds.

Methods

Rainbow and brook trout used in this study were reared under comparable condition at the Cold Lake Fish Hatchery. In mid-April, a portion of trout to be stocked in each pond were marked with an external spaghetti anchor tag (Table 1). In early May, equal numbers of rainbow and brook trout, with approximate fork length of 211 mm, were stocked into Innisfree, Pleasure Island, and Telegraph Park Ponds and Heritage Lake (Table 1). Relative abundance of each species was assessed two weeks after stocking and again in September using short gill net sets (approximately 15 minutes) designed to minimize trout mortality. Anglers who caught a tagged trout were encouraged by signage on site to report their catch online or by telephone, and this

information was used to estimate the relative catch of each species. To encourage tag returns, draw prizes were advertised and winners awarded a prize package of angling gear.

Results

During gill netting, we captured from 9 to 64 rainbow trout and 20 to 51 brook trout. Despite differences in catch of trout species, a population of both brook and rainbow trout was created at all waterbodies for anglers to catch (Figure 1). Relatively fewer trout were captured at the study ponds in the autumn than in spring. Brook trout, however, seemed to persist longer than rainbow trout at Telegraph Park Pond and Pleasure Island Pond.

Rainbow trout were reported by anglers at a higher rate at all ponds relative to brook trout and brook trout tag returns, and harvest were approximately half the rate of the rainbow trout tag returns and harvest. Of the 2,676 tagged trout we released, anglers reported catching 161 (6%) consisting of 108 rainbow (67%) and 53 brook trout (33%). Of these, 54 rainbow (50%) and 15 brook trout (28%) were reported as harvested (Table 1). For both species, approximately half of all captures occurred within the first month after stocking, indicating rapid utilization of trout from our ponds (Figure 2).

Table 1. Total number of trout stocked and angler reporting rate of two species stocked into four ponds during the summer of 2019.

FS pond	Species	Total number stocked	Number tagged	Number reported	Number kept
Innisfree	Rainbow	600	185	15	3
	Brook	600	185	9	1
Heritage	Rainbow	1,600	485	7	5
	Brook	1,600	485	0	0
Pleasure Island	Rainbow	1,000	305	43	25
	Brook	1,000	301	28	10
Telegraph	Rainbow	1,200	365	43	21
	Brook	1,200	365	16	4

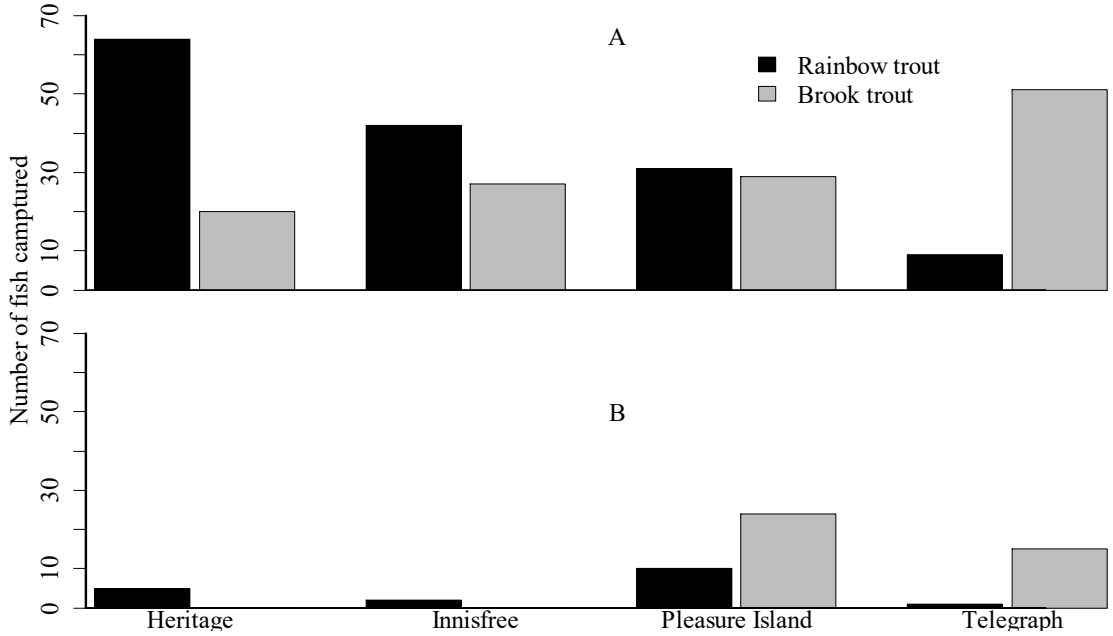

Figure 1. Gill net catches from May (A) and September (B) at four study ponds (2019).

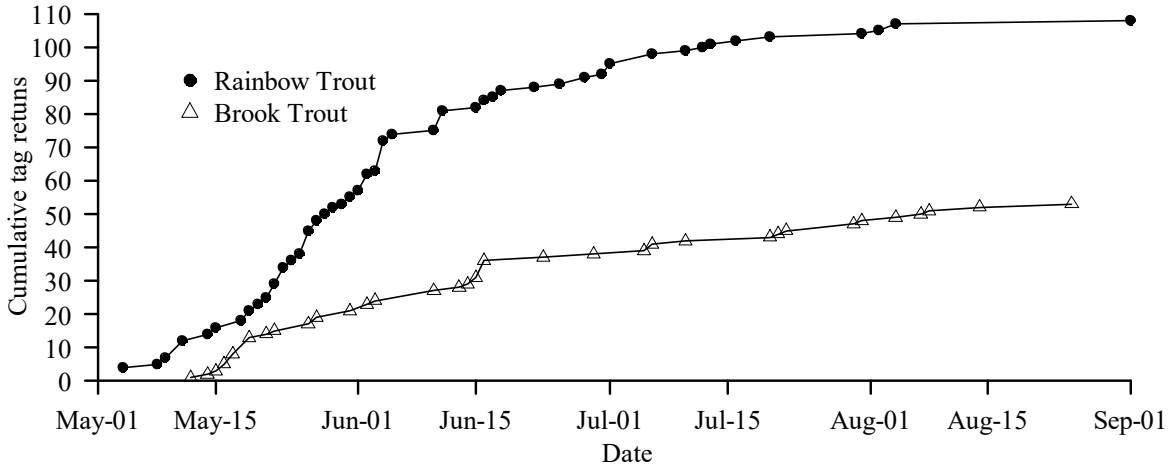

Figure 2. Cumulative tag returns by species for all study ponds combined from May 1 to September 1 (2019).

Conclusions

Both rainbow and brook trout appear to be well utilized by anglers in our study ponds with over half the reported trout captured within the first month. Rainbow trout were reported by anglers at a higher rate at all ponds relative to brook trout and brook trout captures and harvest were approximately half the rate of the rainbow trout.

Communications

- Gill netting data submitted to the provincial Fisheries and Wildlife Management Information System database.
- Information signs were installed at study ponds.
- The study was featured on ACA's social media platforms.

Literature Cited

Cooper, E. L. (1953). Returns from plantings of legal-sized brook, brown and rainbow trout in the Pigeon River, Otsego County, Michigan. Transactions of the American Fisheries Society, 82(1), 265-280.

Dillon, J. C., Schill, D. J., & Teuscher, D. M. (2000). Relative return to creel of triploid and diploid rainbow trout stocked in eighteen Idaho streams. North American Journal of Fisheries Management,20:1-9.

Keeling, B., and K. Fitzsimmons. 2016. Angler survey of single- and multi-species stocked ponds in the greater Edmonton area, 2015. Data Report, D-2016-103, produced by Alberta Conservation Association, Sherwood Park, Alberta, Canada. 12 pp + App.

Lebedynski, N. 2016. Aerated lakes angler survey: Swan and Spring Lakes, Alberta, 2015. Data Report, D-2016-101, produced by Alberta Conservation Association, Peace River, Alberta, Canada. 10 pp + App.

Photos

Photo 1. A tagged rainbow trout caught in gill net at Heritage Lake, September 10, 2019. Photo: Andrew Clough

Photo 2. Tag return raffle winner. Photo: Johnathan Bergen

Photo 3. ACA staff tagging trout at the Cold Lake Fish Hatchery. Photo: Kevin Fitzsimmons

Photo 4. Tagged trout information sign at Heritage Lake. Photo: Andrew Clough