

Alberta Conservation Association 2015/16 Project Summary Report

Project Name: Fish Stocking Expansion – New Species and Strains

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Partnerships

Alberta Environment and Parks
Government of Canada – Canada Summer Jobs

Key Findings

- The Enhanced Fish Stocking (EFS) project has expanded to include stocking of brown trout and field evaluation of rainbow trout strains.
- Angler effort was high at the three EFS ponds we surveyed: 2,158 h/ha at Beaumont Pond, 657 h/ha at Morinville Fish and Game Pond, and 435 h/ha at Heritage Lake.
- Catch rates of rainbow trout were highest at Beaumont Pond and lowest at Morinville Fish and Game Pond.
- At multi-species ponds, catch rates were much higher for rainbow trout than for brown trout.
- Most anglers were satisfied with their fishing experience at all three ponds and chose to fish at the ponds because of their proximity to home.

Introduction

To expand the scope and diversity of our fish stocking effort and provide new angling opportunities to Albertans, we continue to assess new fish species and new strains of rainbow trout for stocking through our Enhanced Fish Stocking (EFS) project. In 2015/16, we expanded the EFS project to include stocking of brown trout, in addition to the rainbow trout we typically stock. Brown trout were stocked into seven EFS ponds. To evaluate these new fisheries, we assessed angling effort, catch and harvest rates, and angler satisfaction and motivation at Beaumont Pond and at Morinville Fish and Game Pond. Heritage Lake near Morinville is stocked with rainbow trout only and was added to our study for comparison. We also collaborated with Government of Alberta fish hatchery staff to develop a 2016/17 study to evaluate field performance of two strains of rainbow trout we commonly stock.

Methods

In addition to the rainbow trout we typically stock, approximately 5,000 twenty-centimetre brown trout were stocked into seven EFS ponds in 2015/16. Ponds receiving brown trout were selected based on their popularity with anglers, potential to overwinter trout and proximity to urban centres. We conducted angler surveys at Beaumont, Morinville and Heritage ponds from May 12 to July 25, 2015. Angler interviews were used to determine trip length, the number of fish harvested and released, and angler satisfaction with their fishing experience. We collected supplementary information on angler effort at each pond from May 1 to August 18 using trail cameras programmed to take a photograph hourly from 0800 to 2200 hours daily. Angler effort and trip length estimates were generated through bootstrapping techniques, and effort was spatially corrected for the area not surveyed by the trail cameras. We arranged for two strains of rainbow trout commonly stocked through the EFS project to be reared under similar conditions at the Cold Lake Fish Hatchery. These fish will be stocked into select EFS ponds in the spring of 2016.

Results

Angler effort (h/ha) was relatively high at all our study ponds but was exceptionally high at Beaumont Pond (Table 1), which also recorded the highest rates of trout capture and harvest (Table 2). Brown trout catch and harvest at Beaumont and Morinville ponds was disproportionately low and essentially supplemental to rainbow trout rates. Anglers were largely satisfied with their fishing experience, with 94%, 75% and 80% expressing satisfaction at Beaumont, Morinville, and Heritage ponds, respectively. When anglers were asked why they decided to fish these ponds in particular, 56%, 70%, and 64% of anglers at Beaumont, Morinville and Heritage ponds, respectively, said their primary motivation was these waterbodies' proximity to their home.

Table 1. Summary of angling pressure at Beaumont, Morinville, and Heritage Enhanced Fish Stocking ponds during the summer of 2015.

EFS pond	Angling effort (h/ha)		Number of trips		Angling hours	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Beaumont	2,158	1,875–2,495	2,595	2,161–3,115	5,395	4,690–6,239
Morinville	657	511–860	905	676–1,215	1,445	1,123–1,891
Heritage	435	321–607	2,993	2,121–4,239	5,772	4,224–8,061

Table 2. Summary of estimated rainbow trout (RNTR) and brown trout (BNTR) harvested and released from Beaumont, Morinville and Heritage ponds during the summer of 2015. NA indicates that no fish were reported harvested.

EFS pond	Species	No. fish stocked	Total catch rate (fish/h)	Harvest rate (fish/h)	Fish harvested		Release rate (fish/h)	Fish released	
					Mean	95% CI		Mean	95% CI
Beaumont	RNTR	2,500	0.95	0.29	1,542	1,340–1,783	0.66	3,562	3,096–4,119
	BNTR	1,000	0.059	0.0085	48	40–43	0.051	274	240–317
Morinville	RNTR	1,250	0.19	0.03	41	32–54	0.16	227	177–298
	BNTR	600	0.016	NA	NA	NA	0.016	23	18–30
Heritage	RNTR	5,000	0.18	0.13	724	530–1,011	0.053	306	224–428

Approximately 3,500 Troutlodge Silver Steelhead and Lyndon strain rainbow trout have been sequestered at the Cold Lake Fish Hatchery. These fish are scheduled for stocking and field evaluation at three EFS ponds in 2016.

Conclusions

To diversify the fisheries created through the EFS project, brown trout were stocked into seven EFS ponds in 2015/16, in addition to the rainbow trout we typically stock. Angler effort was evaluated at three ponds, including at two ponds stocked with brown trout. Overall, angling pressure was high at all three ponds, indicating these waterbodies' popularity among the angling public. Although Beaumont and Morinville ponds were stocked with brown trout, rainbow trout was the primary species reportedly caught by anglers. Brown trout stocking appears most appropriate for ponds that receive heavy angling pressure or where winter survival is a possibility. Similar to our previous findings, most anglers indicated being satisfied with their fishing experience and chose to fish these ponds primarily due to these waterbodies' proximity to their home. Preparation for a 2016 field evaluation of two rainbow trout strains we commonly stock is underway.

Communications

- Profiled brown trout stocking on *Let's Go Outdoors*.
- Prepared ACA data report on the study.

Photos



Town of Beaumont employees watch as fish are transferred through a hose from a stocking truck into Beaumont Pond. Photo: Kevin Fitzsimmons



Anglers fishing from shore and boaters on the water at Beaumont Pond. Photo: Alberta Conservation Association



Government of Alberta employee Harvey Pollock tests water quality at Morinville Fish and Game Pond before fish stocking. Photo: Michael Short