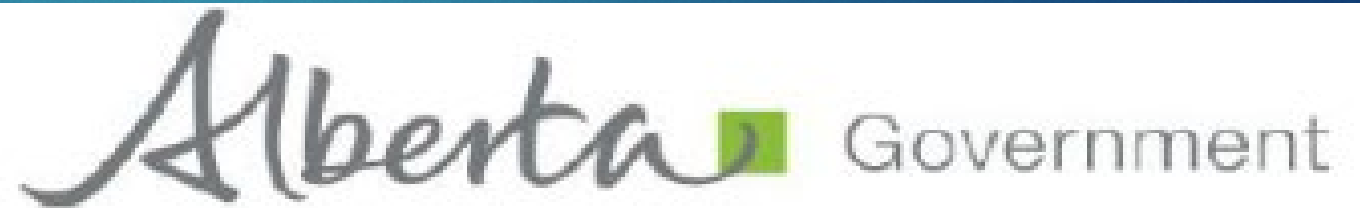



Blood Indian Reservoir – Carp Removal

JULY 2020



- 
- ▶ Fish are stocked in Alberta lakes to create, maintain or enhance fish populations
 - ▶ Creating fishing opportunities is our main focus with over 200 water bodies stocked primarily with trout
 - ▶ Economic benefit est. \$166 million spent by the angler on stocked trout fisheries each year

Purpose of Fish Stocking

- 
- ▶ The Area Fisheries biologist decides what waterbody will be stocked and with what fish species, size, ploidy, number and the time of year for the stocking. Biologist also manage criteria – such as catch and size limits (quality fishery)
 - ▶ Fish Culture delivers what the biologist require.....the angler is the client and there demands are met by the biologist

Who decides what is stocked?

Blood Indian Reservoir

- ▶ Blood Indian has been stocked annually since 1966 with ~150,000 Rainbow Trout.
- ▶ Since 2016, the stocking diversity in Blood Indian Reservoir has increased to include Brook Trout, Brown Trout, and, most recently, Tiger Trout. Rainbows are stocked both in spring and fall now
- ▶ The first discovery of Prussian Carp in Blood Indian Reservoir occurred in 2014

Fish Stocking Numbers Since 2016

- ▶ 2016 Spring – BKTR 7,500 21.5cm , BNTR 7,500 19.2cm and RNTR 135,000 9.5 cm LYLYL strain
- ▶ 2016 Fall – RNTR 16,700 21.4cm , BKTR 15,000 12.4 cm
- ▶ 2017 Spring – BKTR 7,500 20cm, BNTR 7,500 19.2cm and RNTR 132,737 8.5cm LYLY
- ▶ 2017 Fall – RNTR 15,558 20cm LYLY, BKTR 3,000 21cm, BKTR 14,000 12.3cm, BNTR 2,200 10.4cm and TGTR 29,608 23.6cm

** first year in 2017 fall Tigers stocked

Fish Stocking Numbers since 2016

- ▶ 2018 Spring – BKTR 6,000 19.9cm , BNTR 4,350 20.6cm and RNTR 81,000 9.5 cm LYLYL strain
- ▶ 2018 Fall – RNTR 30,000 7.8cm TLTLJ ,RNTR 9,000 LYLY, TGTR 14,226 23cm
- ▶ 2019 Spring – BKTR 6,500 21cm and BNTR 5,500 19.9cm
- ▶ 2019 Fall – RNTR 30,000 5.4cm TLTLJ, BNTR 10,000 10.5cm, TGTR 5,816 24cm and TGTR 65,369 10.1cm

** SLFH under major construction 2019 impacted rainbow numbers for stocking

Fish Stocking Numbers since 2016

- ▶ 2020 Spring – RNTR 40,000 7.5 cm CLCL, RNTR 29,000 16cm TLTLJ and BNTR 7,500 19.3cm
- ▶ 2020 Fall – RNTR 29,194 16.3cm CLCL, TGTR 8,500 22cm and TGTR 46,910 10cm

** SLFH under major construction 2019 impacted rainbow numbers for stocking in 2020

Planned stocking in 2021

Spring - RNTR 110,000 10cm CLCL and BNTR 7,500 19cm

Fall – RNTR 30,000 20cm CLCL and TGTR 7,500 23cm

Blood Indian Reservoir

- ▶ July 2020, a Prussian Carp removal was conducted by Fish Culture Staff
 - ▶ July 11th to July 28th
 - ▶ 2, 10 day shifts consisting of 8-10 staff members





Blood Indian Reservoir July 2020

- ▶ 181 Fyke nets
- ▶ 138 floating short set gill nets
- ▶ 12 NAG (North American Gill) Nets
- ▶ 335 beach seine pulls



Blood Indian Reservoir





Prussian Carp

- ▶ Prussian Carp were caught using short set gill nets, fyke nets and beach seine
- ▶ Total number captured and destroyed:
 - ▶ YOY $n = 345,045$
 - ▶ $1\text{cm}+ n = 5,482$





Days catch in fyke
nets (too small to give
to shore fisherman)



NASIN net sampling

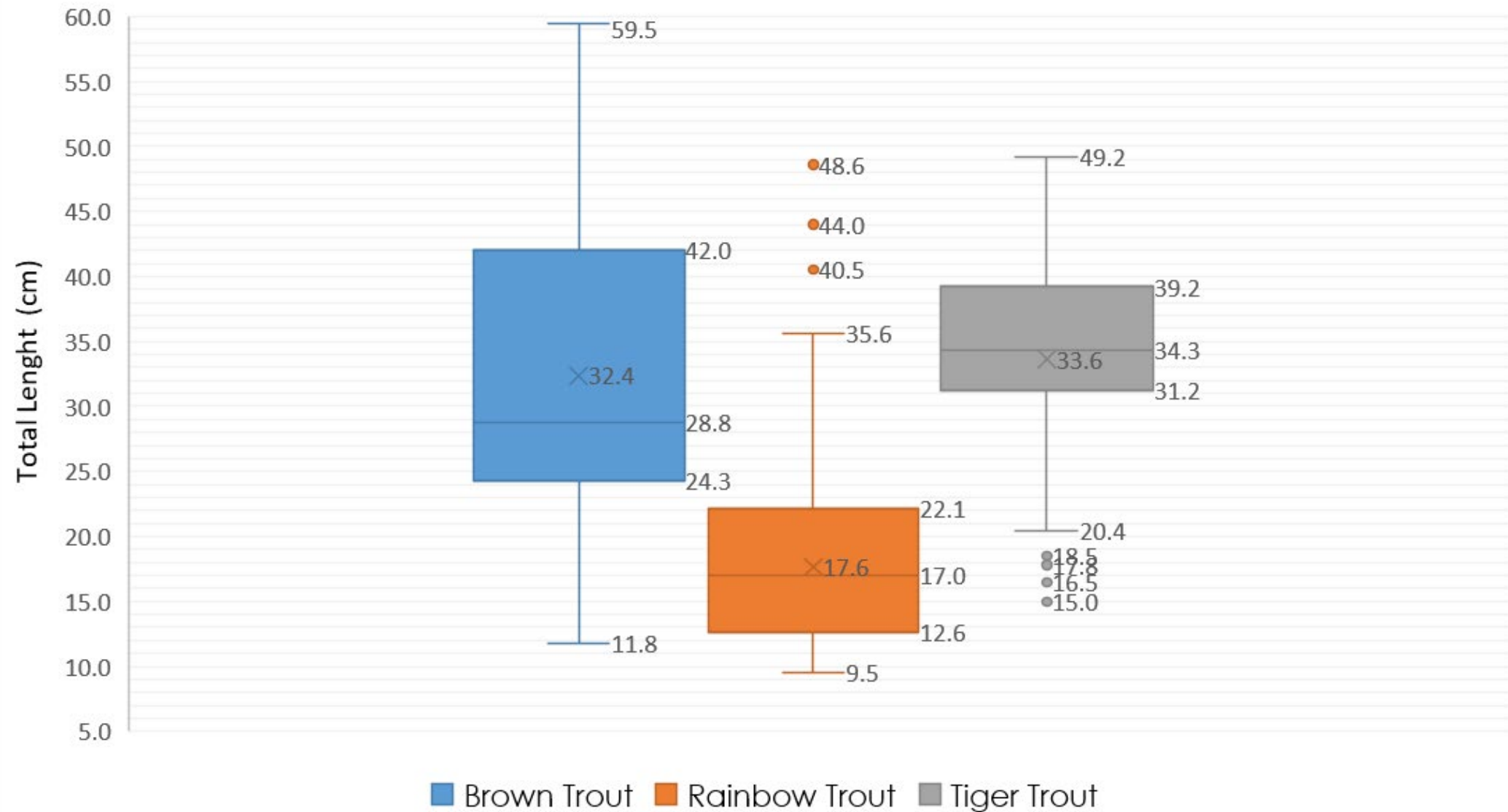


Trout

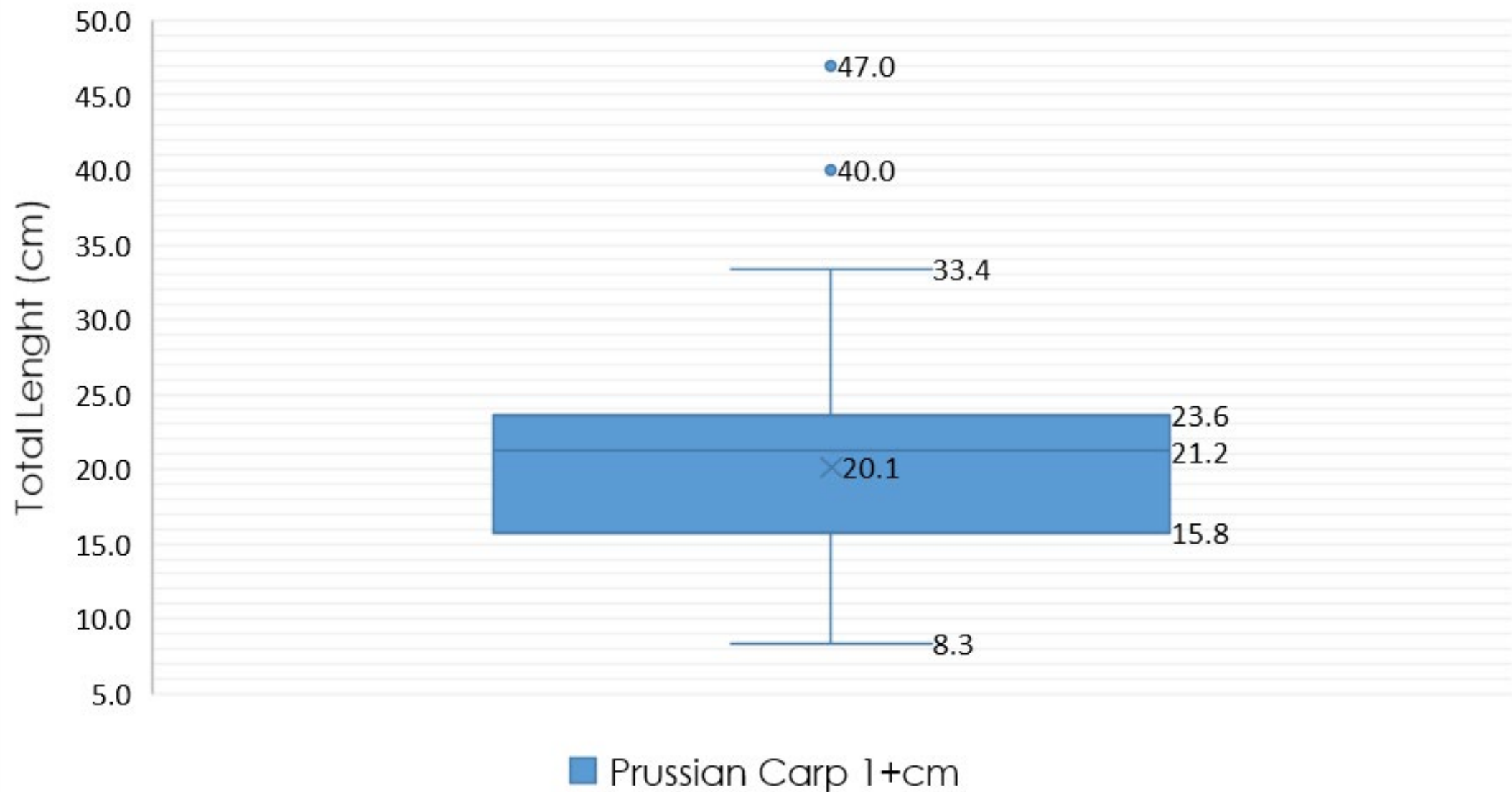
- ▶ Brown, Rainbow and Tiger Trout were bi-catch during this project
- ▶ Total number captured
 - ▶ Brown Trout: $n = 372$
 - ▶ Average size 32.4 cm
 - ▶ Rainbow Trout: $n = 767$
 - ▶ Average size 17.6 cm
 - ▶ Tiger Trout: $n = 77$
 - ▶ Average size 33.6 cm



Comparison of Measured Total Lengths of Trout



Prussian Carp Measured - Total Lengths



Blood Indian Reservoir – Water Quality

- ▶ Basic water quality was taken and sent to Exova Labs in Calgary
 - ▶ Waiting for Limnologist to analyze the data
- ▶ But, it can be stated that:
 - ▶ Reservoir has higher levels of Nitrogen (N) and phosphate (P) and Sulfate (SO_4)
 - ▶ The reservoir is high in pH and total dissolved solids
 - ▶ Water is turbid (cloudy)



**Environmental Quality Guidelines
for Alberta Surface Waters**

Blood Indian Reservoir – Invertebrate and Minnow Populations

- ▶ Invertebrate populations are lower than expected
 - ▶ Water beetles were abundant
 - ▶ Leeches were abundant
 - ▶ Snails were abundant
 - ▶ Lacked fresh water shrimp (trout preferred food source)
- ▶ Abundance of Fathead Minnows



Cormorants and Pelicans



Suggestions

- ▶ Remove Carp from the reservoir next season evaluate to this year
- ▶ Consider Carp Removal of Carp from Blood Indian Creek in spring
- ▶ Stock species that consume Carp
- ▶ Allow grasses to grow to natural height along shore lines (~2ft)
- ▶ Install a fence on the Northwest part of reservoir (where cows enter) to lower sediment disturbance and nutrient loading



Blood Indian Reservoir

- ▶ Blood Indian Reservoir is an oasis in the prairies
- ▶ Camping is great and has facilities to accommodate recreational users
- ▶ This is an important resources to manage to keep sport fishermen satisfied



QUESTIONS

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