

IFA #1

Integrated Fisheries Assessment – Phase One
Swan Valley Sport Fishing Enhancement Inc.
Submitted by: Holly Urban & Melissa Johnson
2011



INTEGRATED FISHERIES ASSESSMENT - Part One

The Integrated Fisheries Assessment - Part 1 is a collaboration of various fisheries related projects in the Swan Valley Area conducted during the field season of 2011. This project was primarily funded through the Manitoba Fisheries and Enhancement Fund (FEF) and with support from project partners. The main objective of the project was to develop an integrated proposal to encompass both new and additional phases to past and present programs and research undertaken by SVSFE. Project activities included; fisheries and aquatic research on Whitefish Lake, Wellman Lake, the Swan River, and stocked trout lakes in the Duck and Porcupine mountains; walleye transfer/stocking for the surrounding area; and education seminars/events for youth & the public.

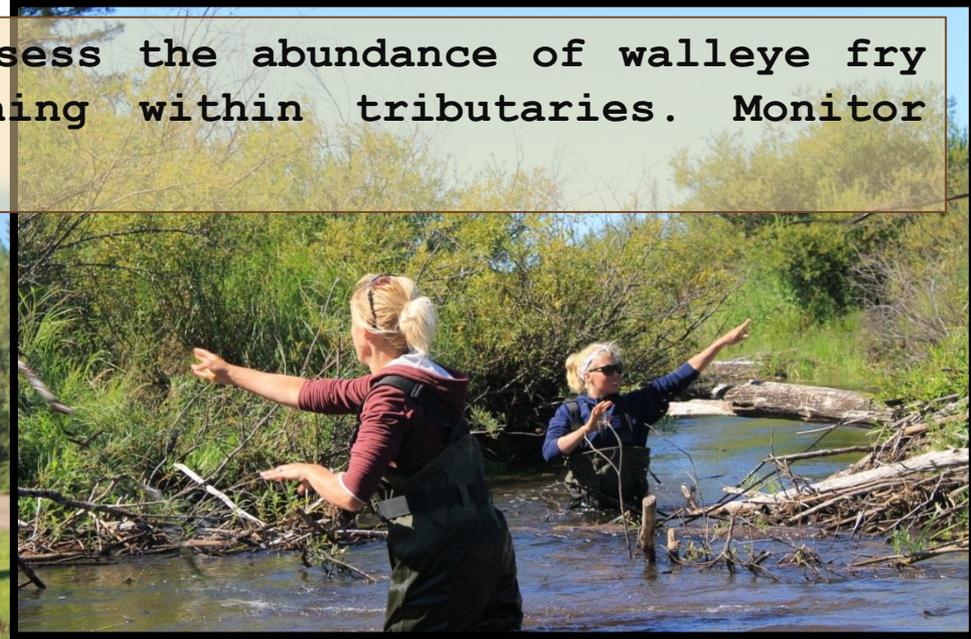
The full report of activities within the IFA #1 report is available, but for simplicity reasons, the report has been sectioned by location/activity to aid in sourcing material related to fisheries within the Swan Valley area. This document contains a summary of activities on Whitefish Lake completed in 2011.

Whitefish Lake

In 2011, SVSFE technicians, Water Stewardship staff, along with volunteers (including directors and the public) conduct year two of "End of Spring Trap Netting" at Whitefish Lake. The protocol is a live release sampling method which provides a snapshot of the fishery. Through the continual studies such as this, managers can obtain growth information, habitat utilization, relative abundance of fish stock and status of the fishery. SVSFE technicians also monitored the walleye spawn in the two tributaries; North and Lagoon Creek. In addition, collection of bathymetric data on Whitefish Lake was completed within to provide anglers up to date contour data.

North Creek & Lagoon Creek Assessment

Objective: Monitor flow, and assess the abundance of walleye fry & eggs. Monitor walleye spawning within tributaries. Monitor beaver activity.



North Creek



Walleye spawn success in North Creek & Lagoon Creek was sampled using driftnets. Walleye eggs and fry were observed in North Creek.

Lagoon Creek



Eggs and fry were not present in Lagoon Creek. Barriers are still an issue and further blasting is required to remove dams.

North Creek & Lagoon Creek Assessment

Opening of the North & Lagoon Creek tributaries has proven to benefit the fishery, as several species have repeatedly been found to occupy the creeks during the spawning season (notably walleye & white suckers). This was assessed through telemetry studies in 2009/2010 and visual observations in both 2010 & 2011. North Creek results from 2011 as well as increasing young of the year catches at Whitefish Lake indicate increased success of natural walleye reproduction



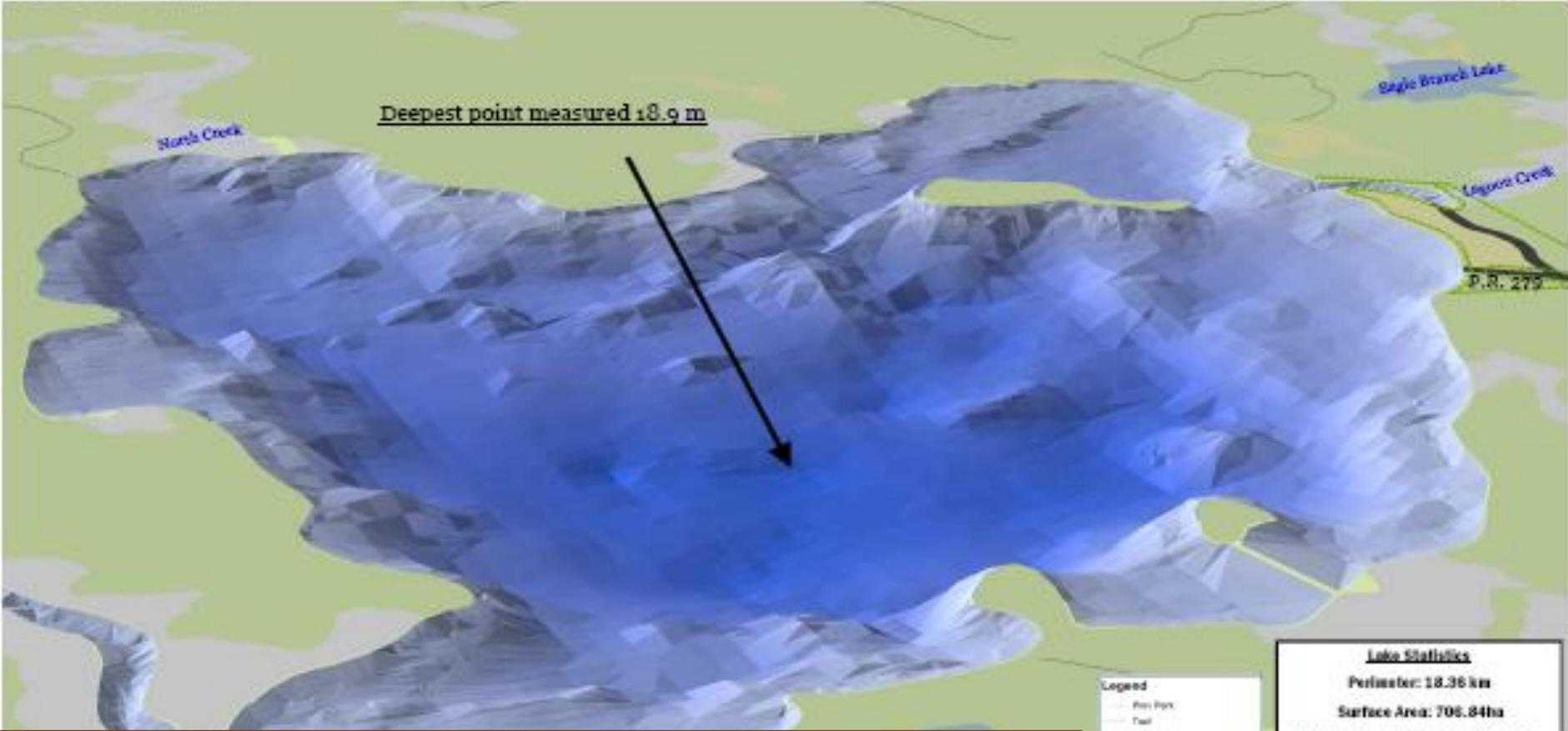
SVSFE is planning to continue beaver management with beaver dam blasting in 2012 (if conditions permit) as it is an ongoing necessity in sustaining the quality of the creeks. This will also include identifying species usage of the creek and to continue to assess the success of the walleye spawn.

Whitefish Lake

Bathymetric Mapping



WHITEFISH LAKE



Lake Statistics	
Perimeter:	18.36 km
Surface Area:	708.84ha
Bottom Substrate Area:	707.29 ha
Volume:	57,958,269 m ³
(Vertical exaggeration of contour intervals: 1M)	
Data Collected: July 10–Aug 30, 2010	

Data Collected by Swan Valley Sport Fishing Enhancement
Map Production: NRMT University College of the North

May 2011

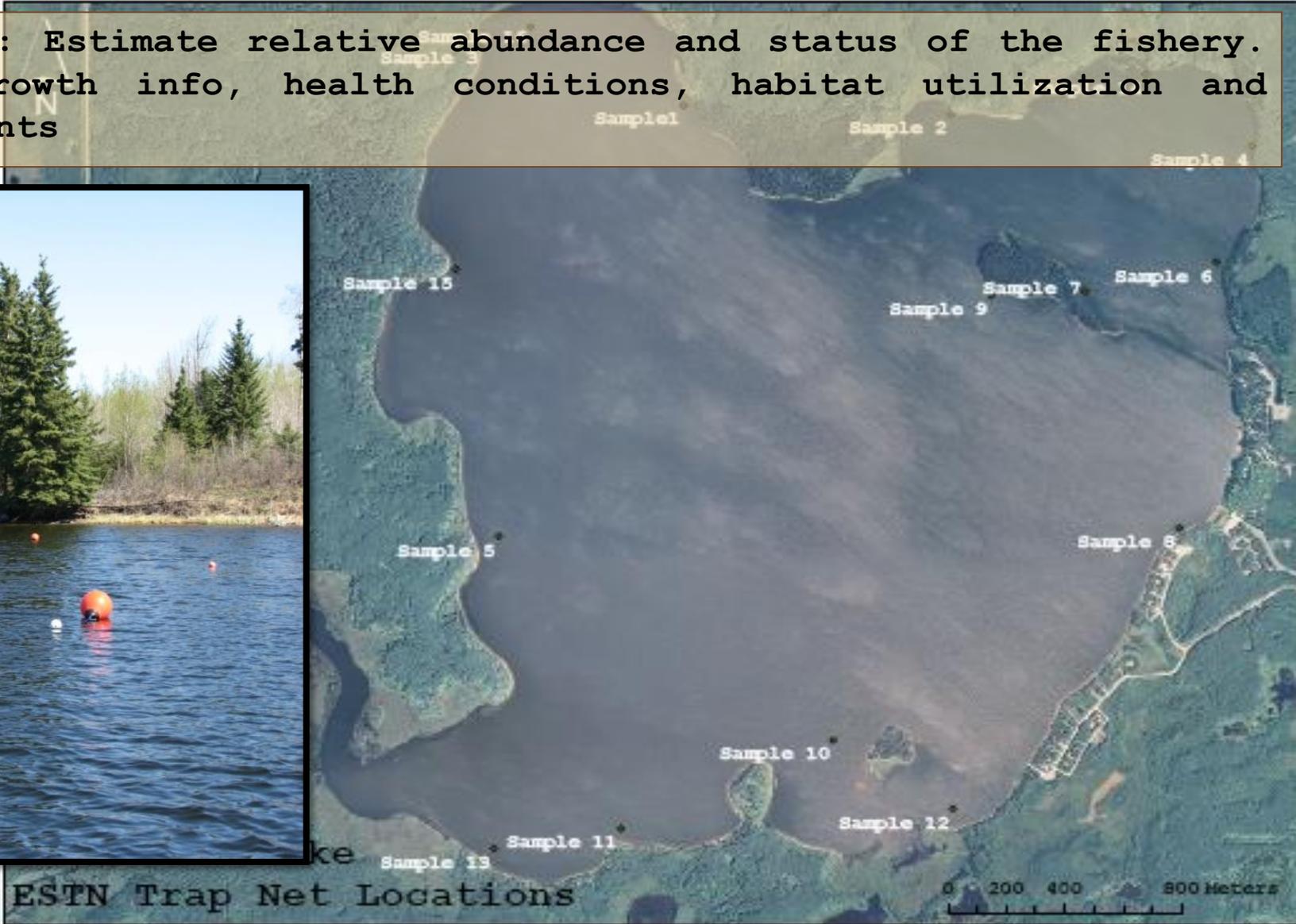
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This map is for informational purposes only. It is not intended to be used for any other purpose. It is not a substitute for a professional survey. It is not intended to be used for any other purpose. It is not intended to be used for any other purpose.

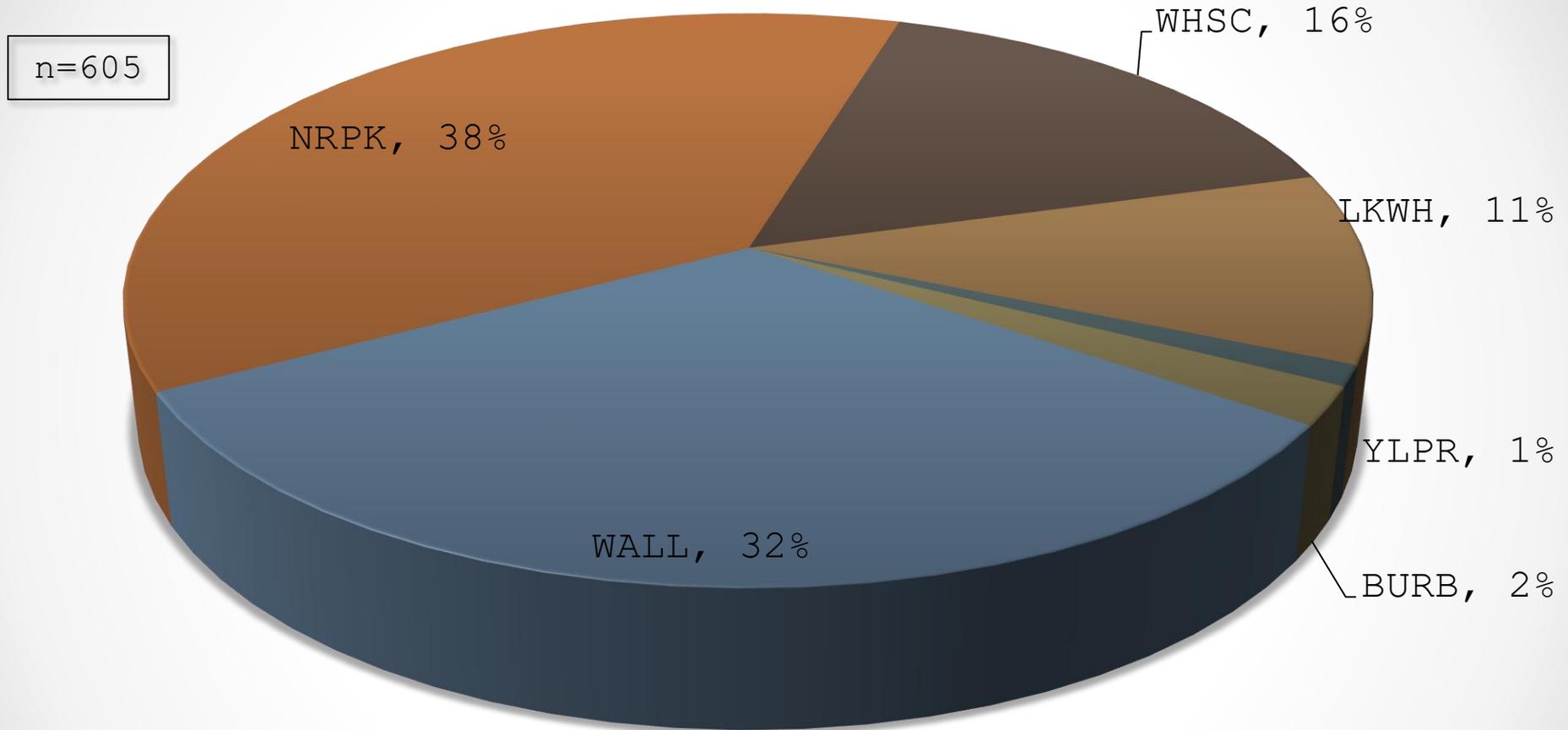
Whitefish Lake

End of Spring Trap Netting

Objective: Estimate relative abundance and status of the fishery. Obtain growth info, health conditions, habitat utilization and requirements



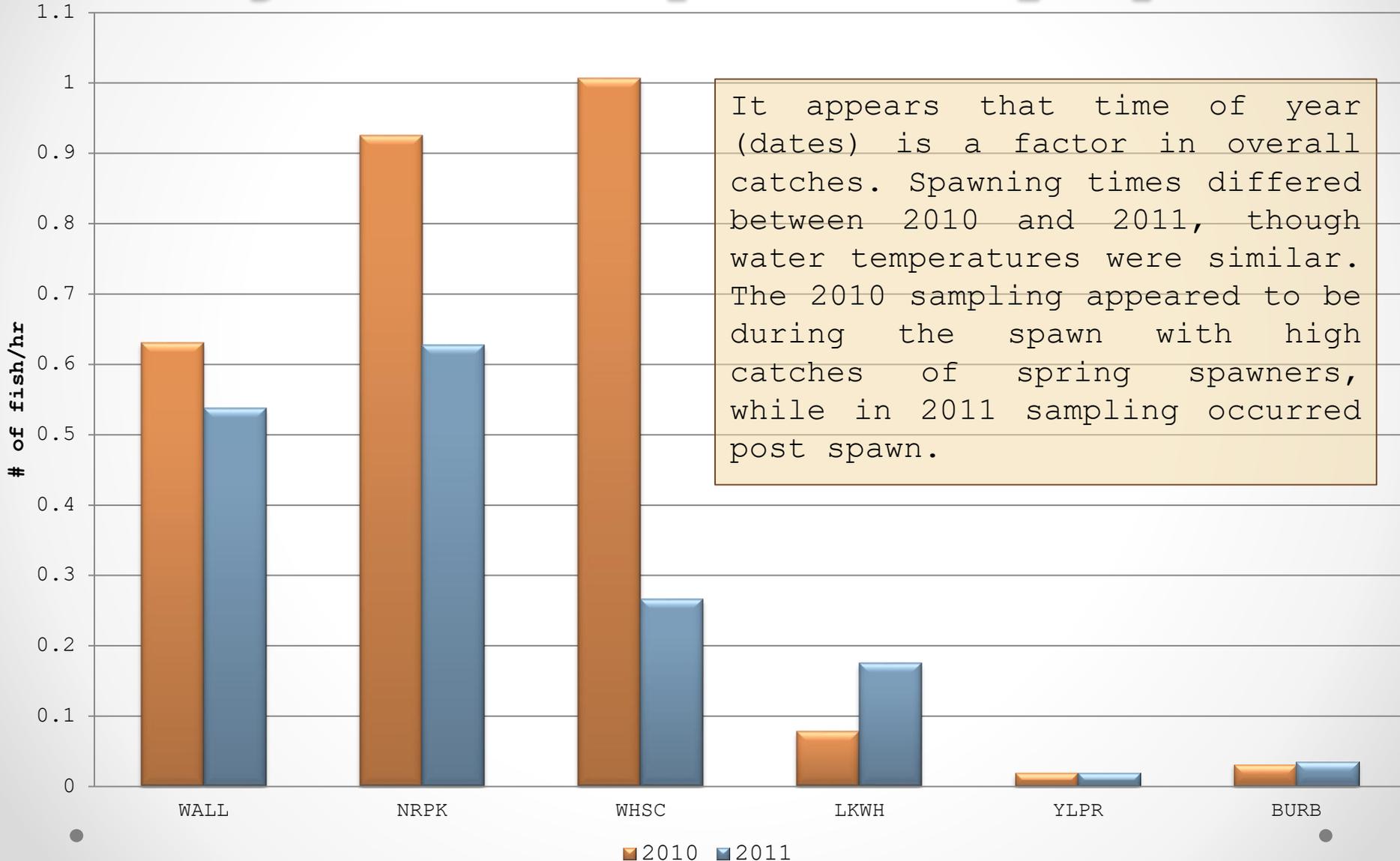
Species Composition



2011 trap netting results indicated a population **estimate** of 5,946 total tagged fish

Whitefish Lake 2010 & 2011

Average CPUE Comparison by Species



Walleye displayed a growth rate of 0.01 mm/day & 1.12 g/day. These fish were between 648 - 695 mm fork length, showing more growth in weight than length at this size.



Total Walleye 196



2010 barrel counts revealed 1089 walleye were harvested during the 4 month fishing period in 2010.

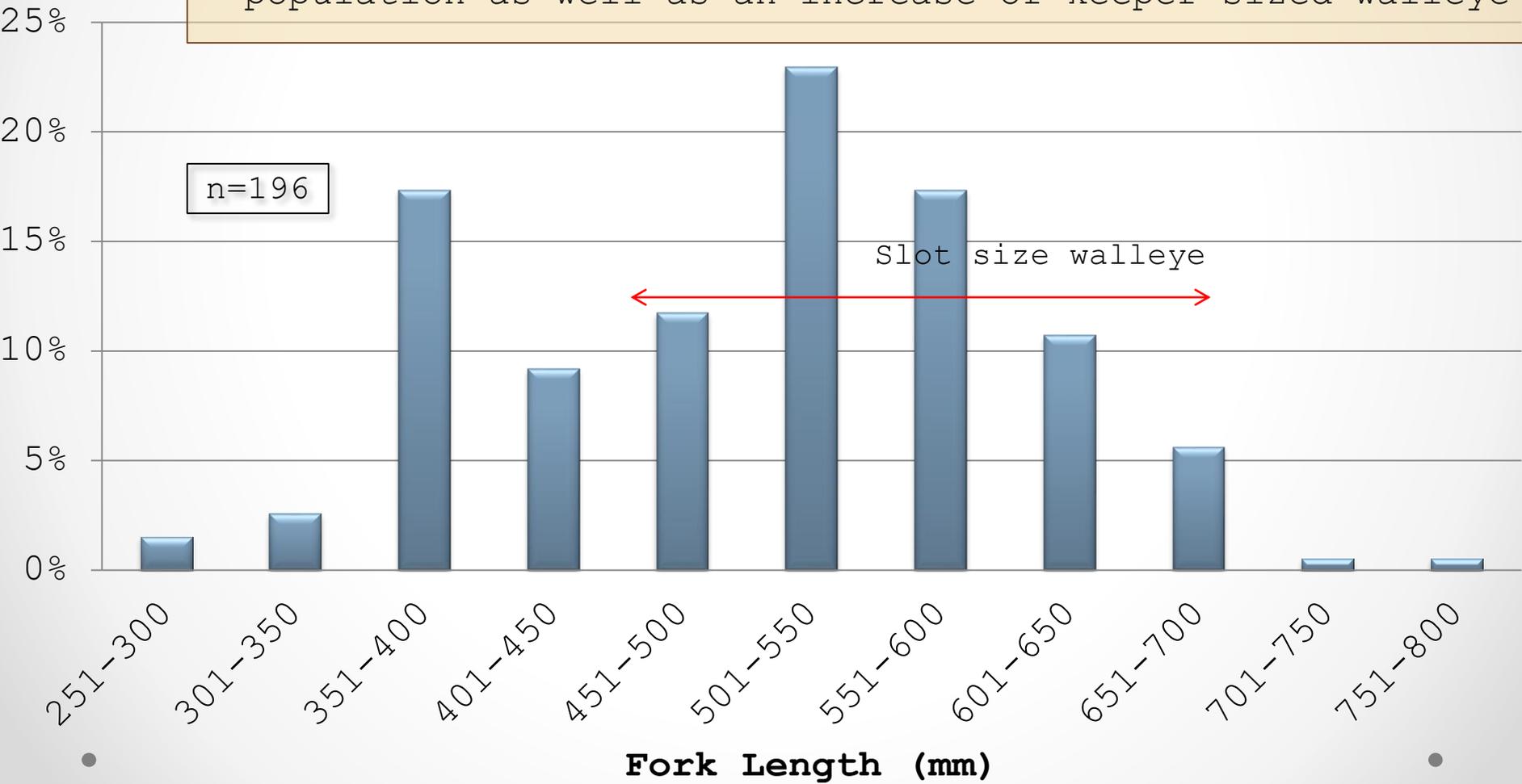
Walleye

Length Frequencies

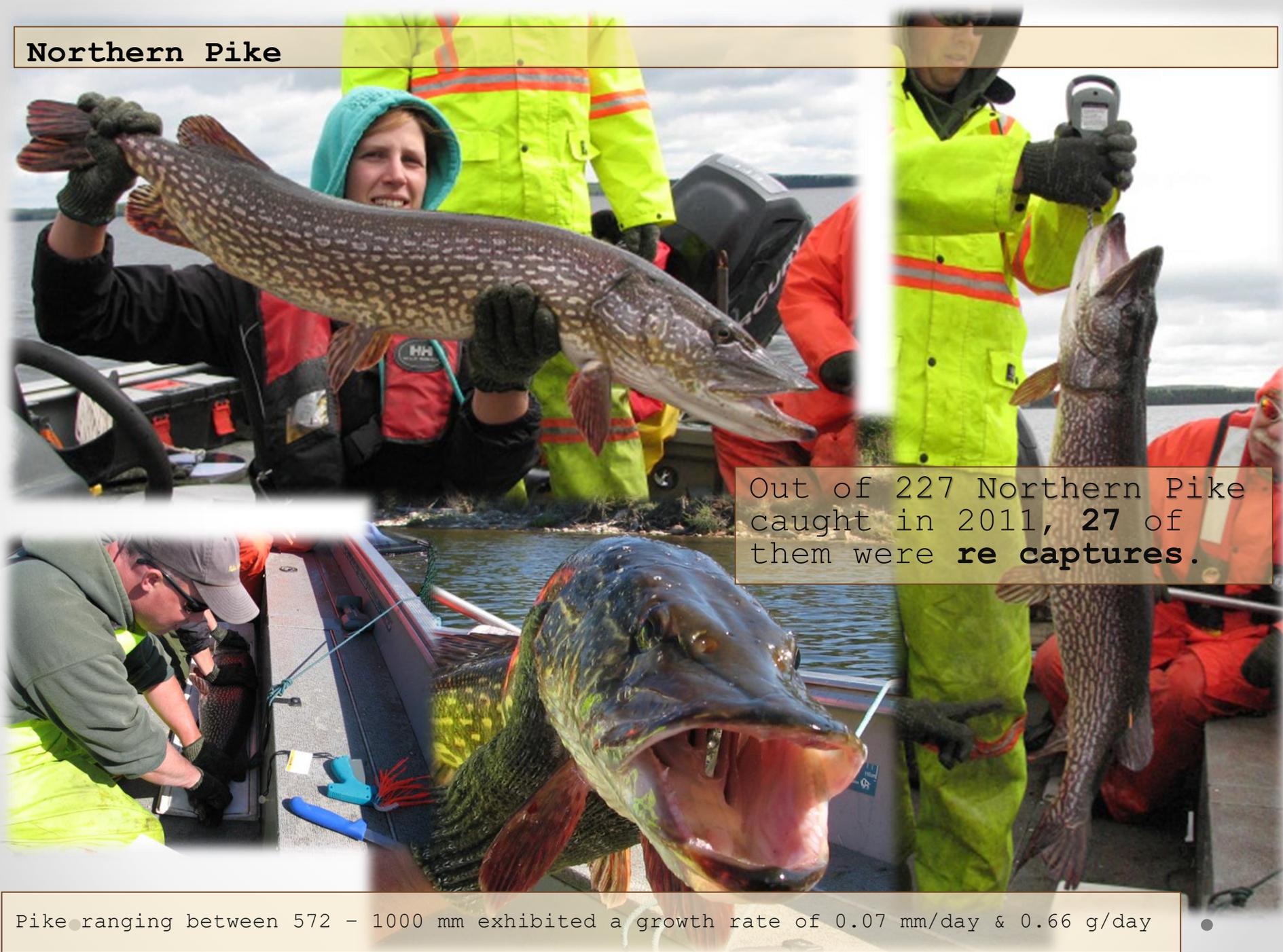
Walleye size distribution shows a healthy spawning population as well as an increase of keeper sized walleye

n=196

Slot size walleye



Northern Pike



Out of 227 Northern Pike caught in 2011, 27 of them were **re captures**.

Pike ranging between 572 - 1000 mm exhibited a growth rate of 0.07 mm/day & 0.66 g/day ●

Northern Pike Length Frequencies

n=227

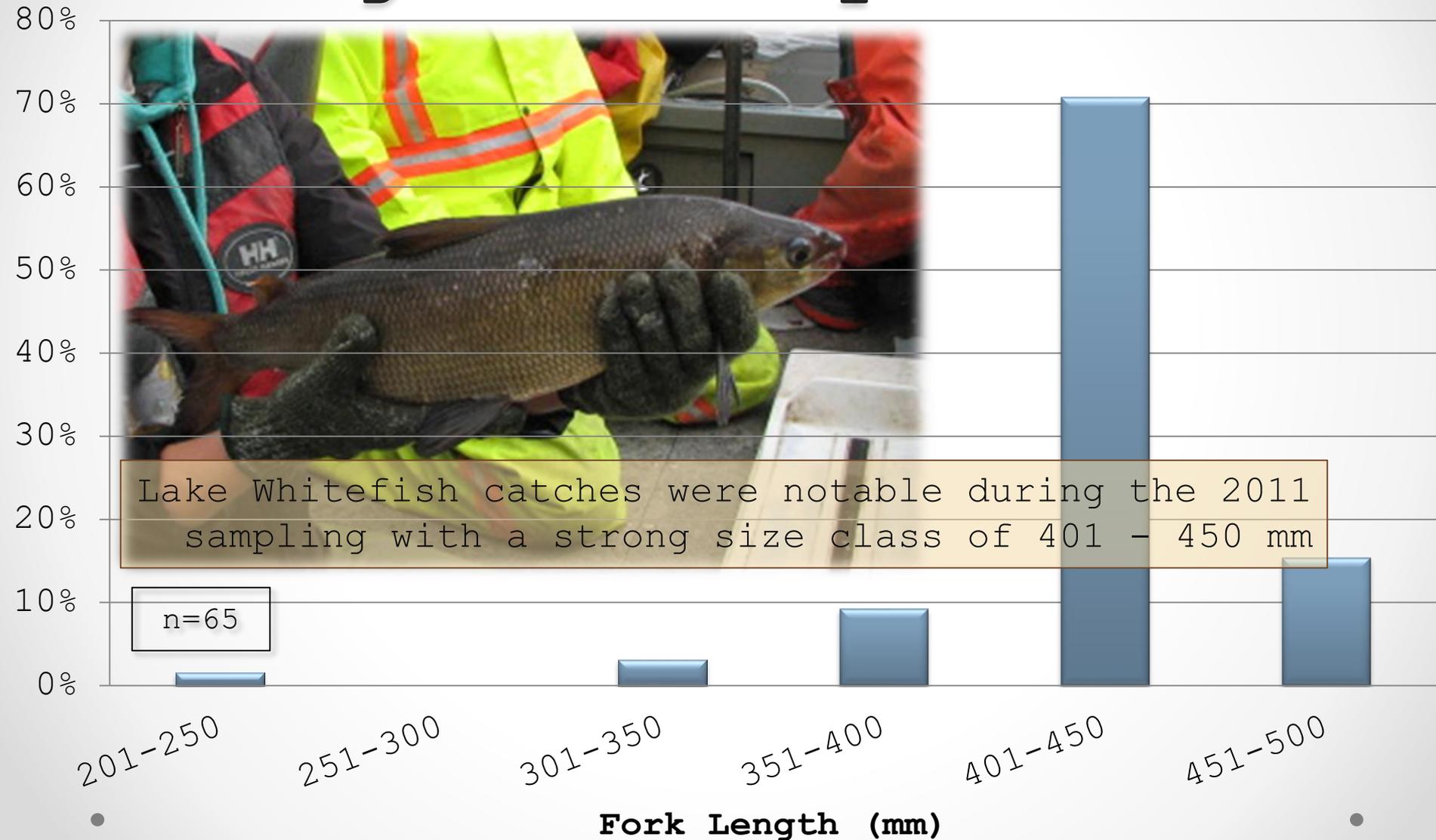
Northern Pike at Whitefish Lake
display a healthy size distribution

Pike over 75 cm

Fork Length (mm)	Frequency (%)
351-400	3.0
401-450	7.0
451-500	12.0
501-550	11.5
551-600	6.5
601-650	9.5
651-700	3.5
701-750	5.5
751-800	8.5
801-850	9.0
851-900	8.0
901-950	8.0
951-1000	4.5
1001-1050	1.5
1051-1100	0.5

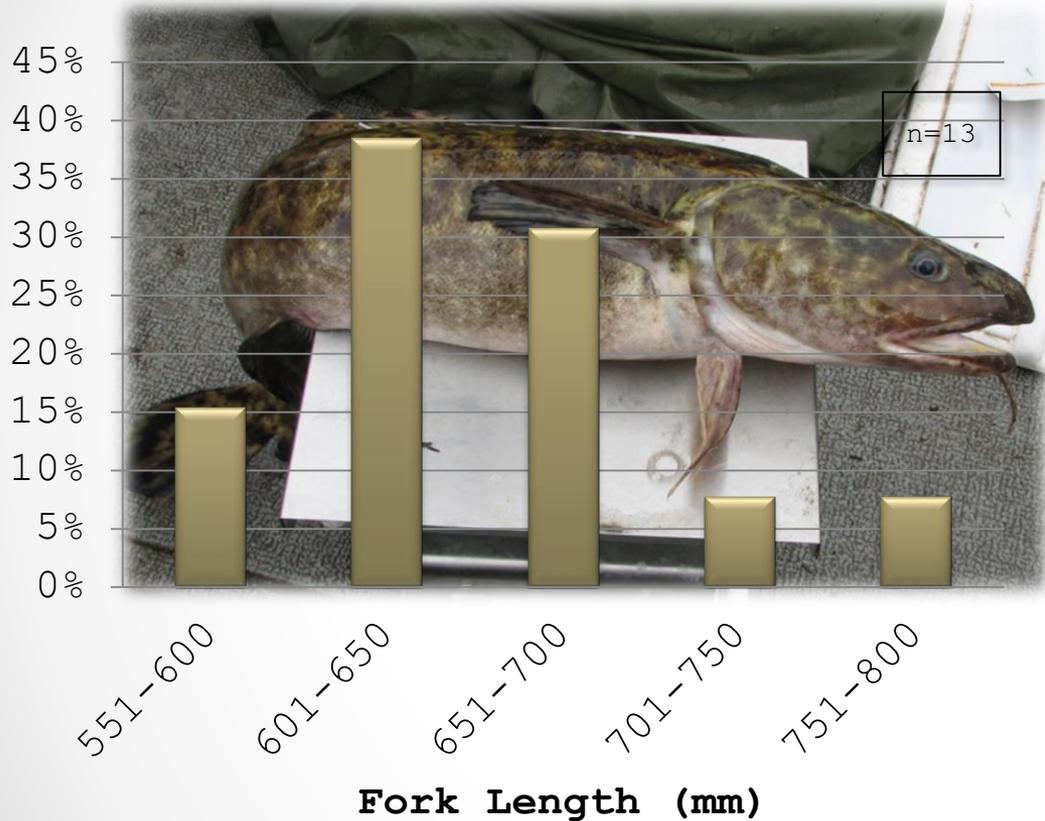
Fork Length (mm)

Lake Whitefish Length Frequencies



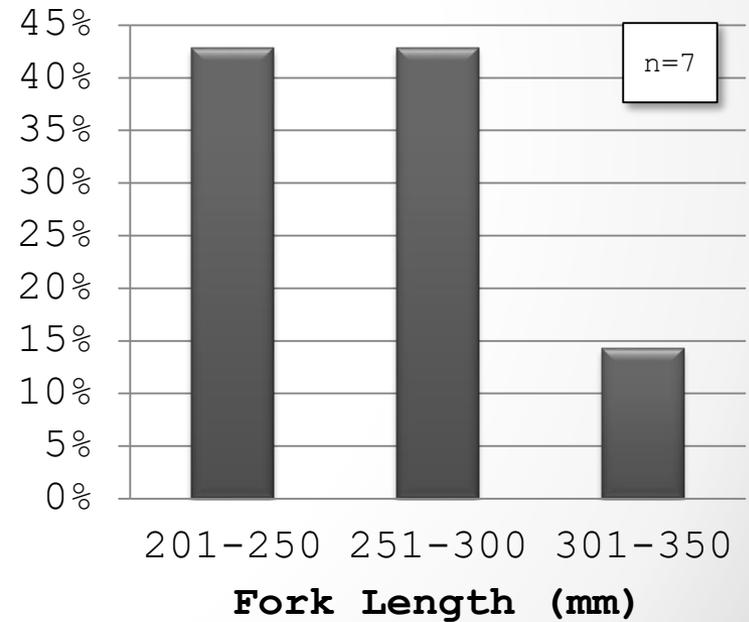
Other Species

Length Frequencies



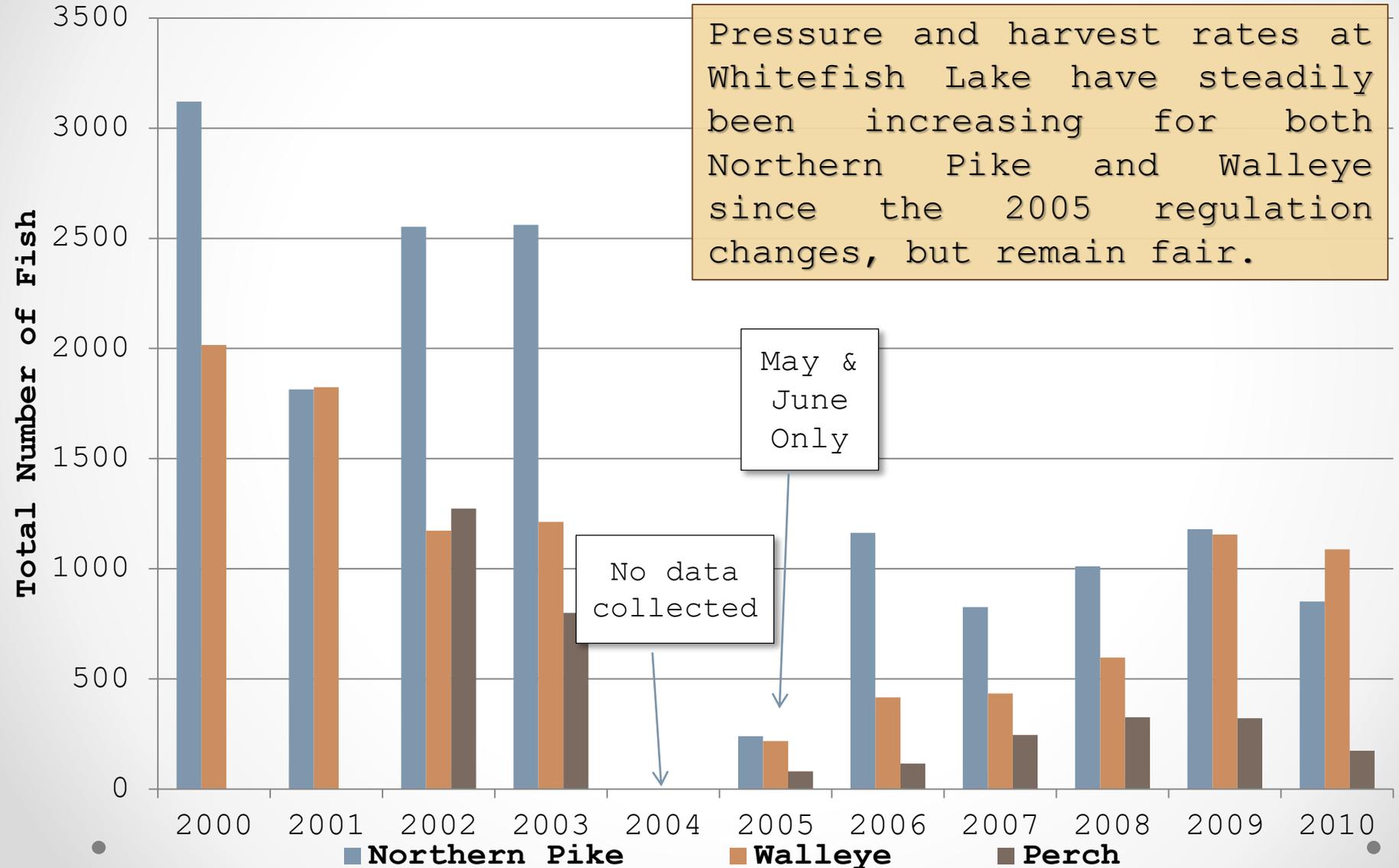
Burbot showed a fair distribution of larger sized fish

Yellow Perch numbers remained low as gear used for trap netting is size selective



Whitefish Lake

Barrel Counts



Whitefish Lake

End of Spring Trap Netting



Whitefish Lake is a naturally reproducing lake. Sustaining the quality of the creeks, monitoring spawn success & fish population, and creating positive awareness to anglers about the importance of conservation are all direct objectives of SVSFE and will continue in the future. All education and awareness is focused towards the sustainability of our fisheries.

A Special Thank - You!

SVSFE would like to acknowledge the importance and benefits the Fisheries Enhancement Fund brings to our recreational fishery. The stamp is always a reminder that a portion of the license fee helps fund projects to educate the public and to ensure that future generations will enjoy fishing as much as the present population does!

A special thank you to the following individuals for helping to make the IFA#1 project a success! Ian Kitch, Lloyd Rowe, Bruno Bruederlin, Intermountain Sport Fishing Enhancement, Don Stokotelny, Kyle Murhead, Patrick Theissan, Joel & Marilyn Delaurier, Arch Dowsett - Blue Lakes Resort, Manitoba Fly Fisherman's Association, A.J Sutherland, SVSFE Directors, University College of the North, Eddie Chow, Parks Staff and to the individuals we may have missed.

Project Funded by:

**Fisheries Enhancement Fund, Swan Lake Watershed Conservation District,
Glad & Wellman Lake Cottage Owners Association, Swan Valley Sport
Fishing Enhancement & Service Canada - Canada Summer Jobs**

Project Partners

- Water Stewardship – Fisheries Branch



- Swan Lake Watershed Conservation District



- Glad/Wellman Lake Campers & Cottage Owners Association



- Manitoba Fly Fisherman Association