# 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 Wellman Lake completed in 2011.

# Wellman Lake

Through a co-operative project in 1992/93 between SVSFE and Fisheries Branch, a natural reef (5400 m2) was enhanced. Follow up monitoring indicated walleye an increase in walleye spawning on the reef. Minimal monitoring was completed after the enhancement was deemed successful.

The 2011 Fisheries Assessment included guzzling the enhanced reef, monitoring flow and walleye usage of Loat Creek and tracking telemetry tagged walleye during spawn. The objective was to provide better indication of preferred spawning habitat and areas in need of improvement. The second objective was to conduct a Creel Survey for Wellman Lake. Creel Surveys are a common tool fishery managers use to obtain the total pressure or "effort" that anglers exert on a fishery, angler catch rates, and fish harvest rates. SVSFE was fortunate to receive funding from the Service Canada – Canada Summer Jobs Grant to hire a student to conduct surveys and collect small fish community information (minnow traps/beach seining). The third objective of this project was to continue year two of the standard live release trap netting program (Near Shore Community Index Netting) which was launched by Water Stewardship in fall 2010. NSCIN program is designed to evaluate abundance and other attributes of fish species that inhabit the littoral zone of lakes. The 2010 Trap Netting was assisted by SVSFE, Wellman Lake Cottage Owners Assoc. members, MB Fly Fisherman’s Assoc. members, University College of the North (UCN) natural resource students and interested locals. This assessment was completed with the installation of telemetry tags on mature walleye for 2012 follow up spawning information.

# Wellman Lake

## Walleye Telemetry & Spawn Evaluation

**Objective: Identify walleye habitat with emphasis on the spawning season**

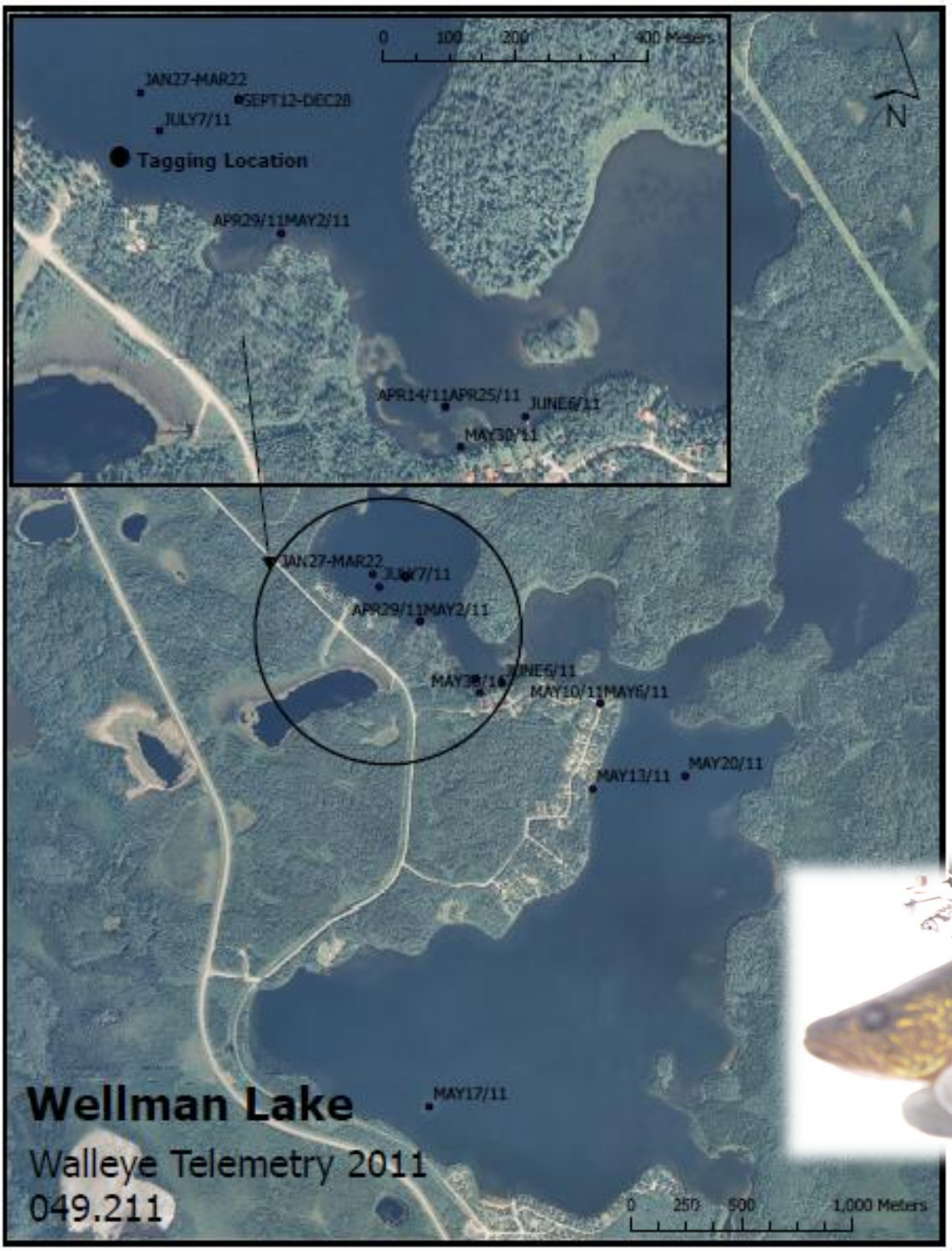
# Wellman Lake

**Tagging Locations**

## Telemetry

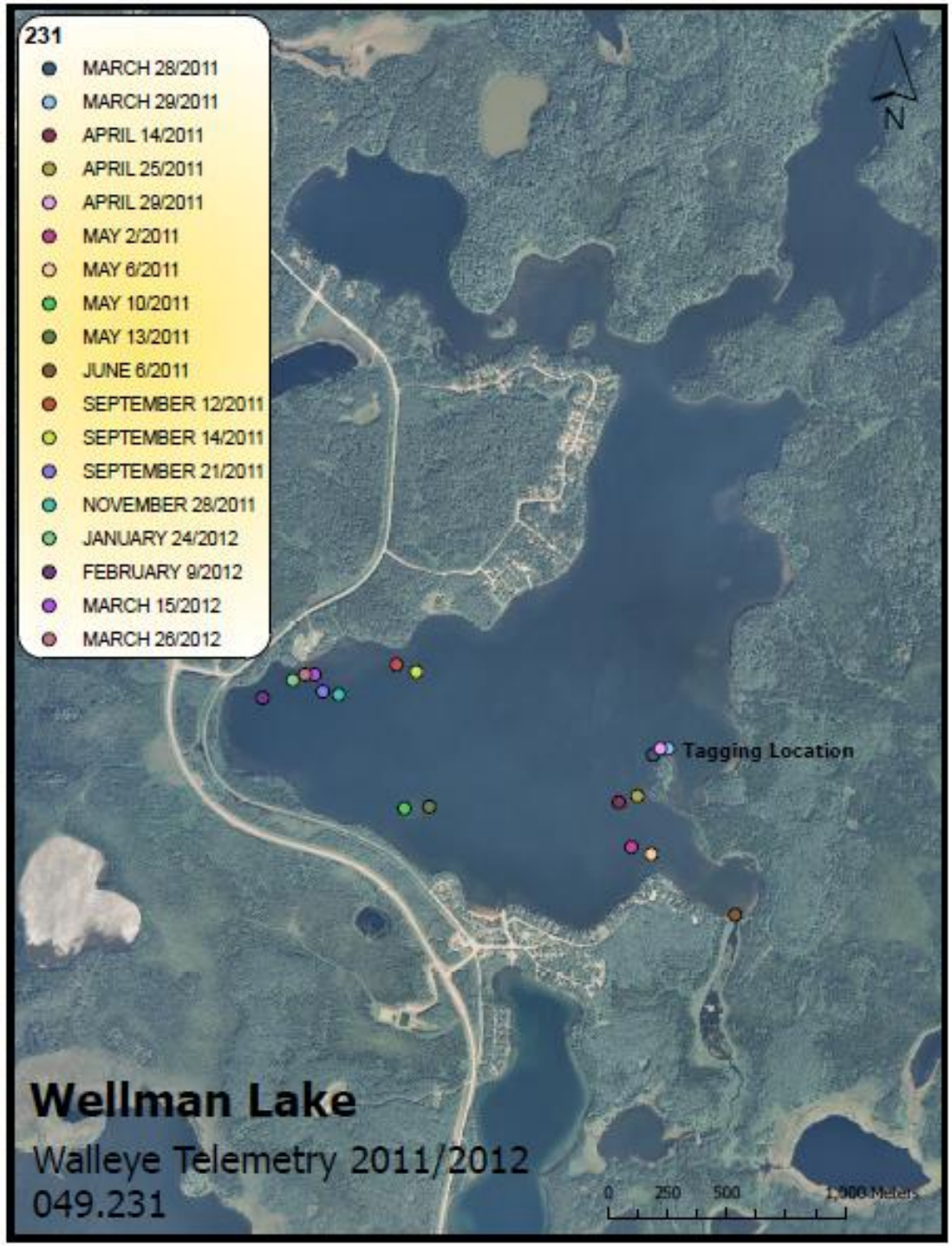
Three walleye were initially tagged between January & March of 2011, with the remaining seven tagged during fall trap netting. Tracking efforts on the 10 fish began shortly after. Walleye have been tracked to date, and will continue throughout the tag's two year life span with focus on the walleye spawn.

Telemetry performed in 1998 indicated 8 out of 10 walleye used the enhanced reef for spawning.



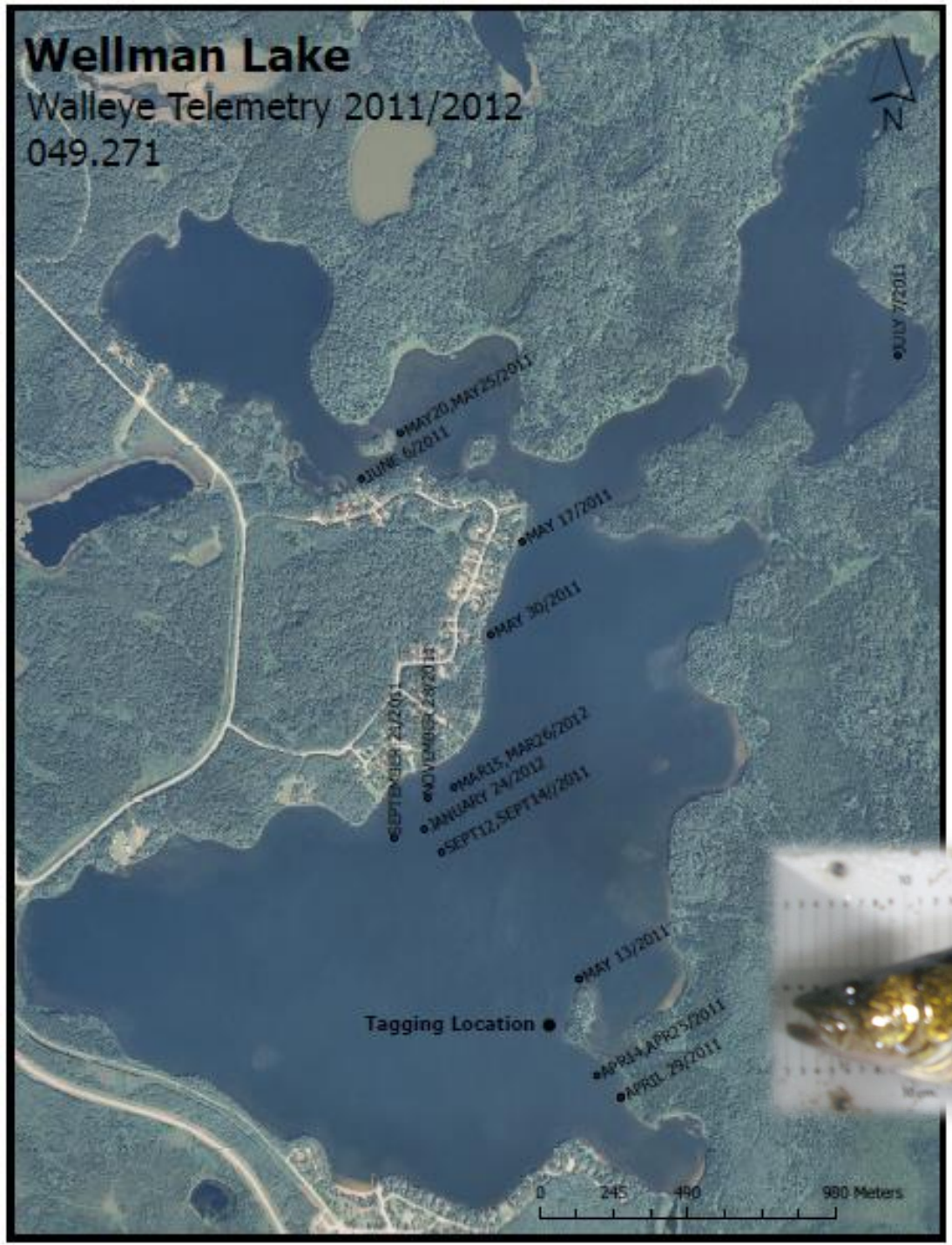

Walleye 049.211 was tagged in Regatta Bay. Movement was very minimal from tagging in January 2011 until May 2011. This movement was very likely done to complete its spawn, very shortly after - the fish returned to Regatta Bay.

Fork Length: 424 mm
Total Length: 456
Weight: 820 g
Tagged January 27/2011




Fish 049.231 frequented the east shore after tagging until the spawn. The fish appeared to utilize the enhanced spawning reef, and following this the fish resided in the west bay during fall and winter.

Fork Length: 364 mm
Total Length: 385 mm
Weight: 525 g
Tagged March 28/2011




049.271 was tagged on the east shore and remained here until the later half of the spawn. The fish then moved frequently between the west shore and Pickerel Bay.

Fork Length: 540 mm
Total Length: 570 mm
Weight: 1590 g
Tagged March 29/2011

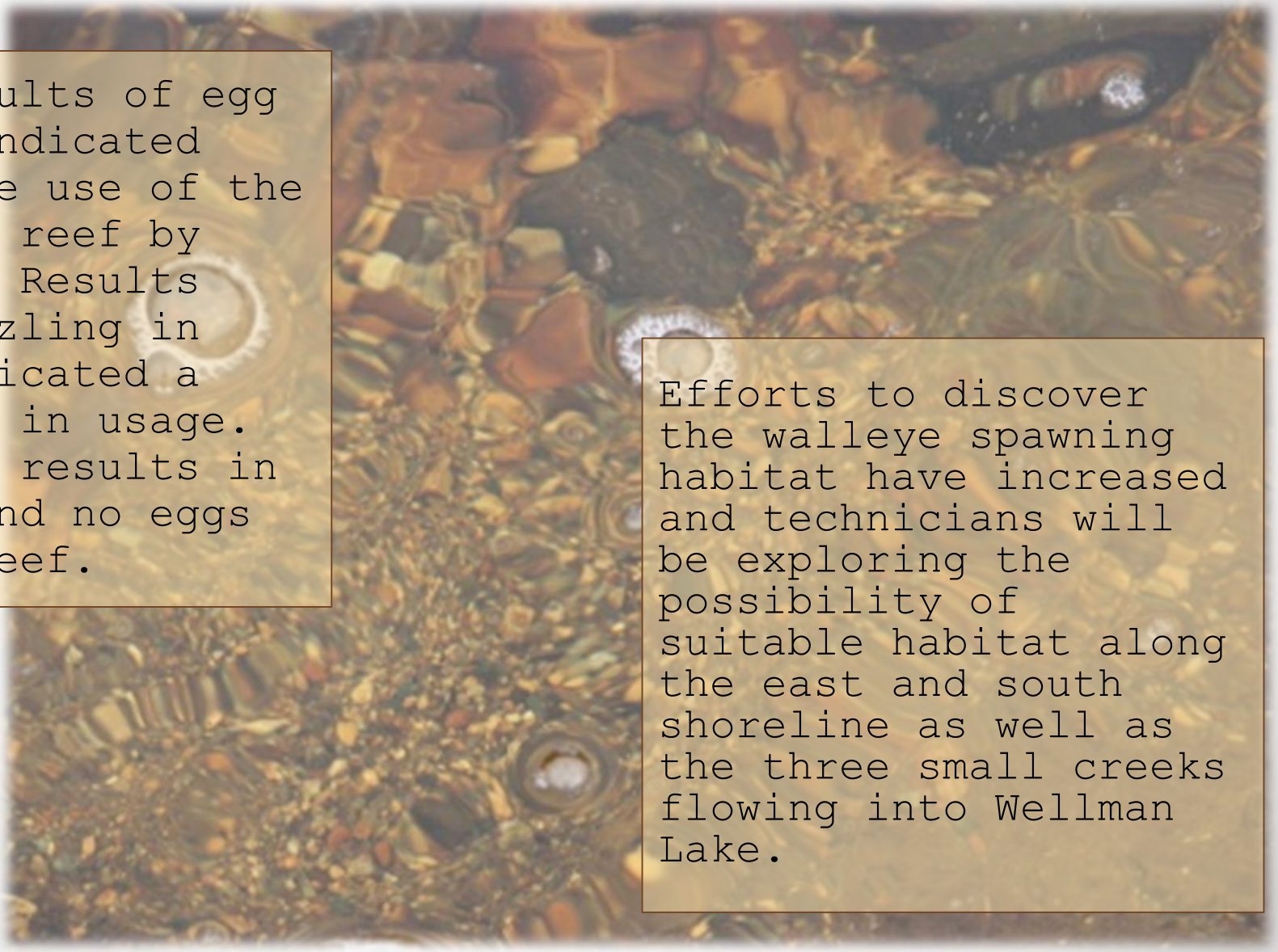
# Wellman Lake

## **Telemetry** & Spawn Evaluation

Telemetry results from the spring of 2012 & 2013 combined with the current from 2011 will indicate if the reef is still being utilized.

# Wellman Lake

## Walleye Telemetry & **Spawn Evaluation**



Past results of egg counts indicated extensive use of the enhanced reef by walleye. Results from guzzling in 2010 indicated a decrease in usage. Guzzling results in 2011 found no eggs on the reef.

Efforts to discover the walleye spawning habitat have increased and technicians will be exploring the possibility of suitable habitat along the east and south shoreline as well as the three small creeks flowing into Wellman Lake.

# Wellman Lake

## Loat Creek

**Objective: Assess potential spawning habitat and monitor water parameters during the spring**

# Wellman Lake

## Loat Creek

Abundant forage species present

Indicate favorable conditions for walleye spawning.

Other species were found utilizing creek: white sucker, yellow perch

# Wellman Lake

## Loat Creek

Adequate water quality during spawning time

Suitable substrate for spawning

**Conclusion:**

Suitable spawning habitat in the lower reaches between Regatta Bay Road and the lake is probable and dependant on beaver management efforts

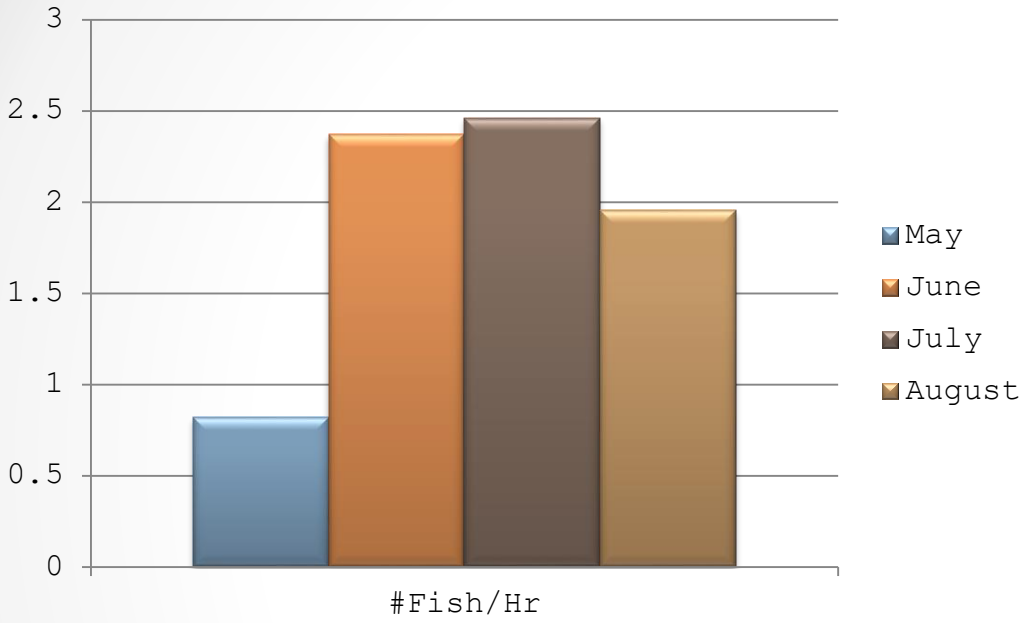
# Wellman Lake

## Creel Surveys

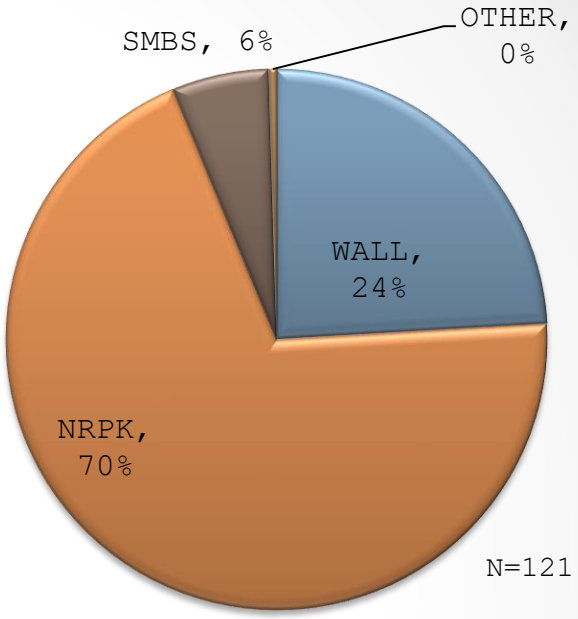
**Objective: Obtain total pressure, angler catch rates, and fish harvest rates**

# Wellman Lake

## Creel Surveys




**Wellman Lake 2011 Creel Surveys**
**Total Fish Caught**




**Average Fishing Quality:** 2.25 fish/hour

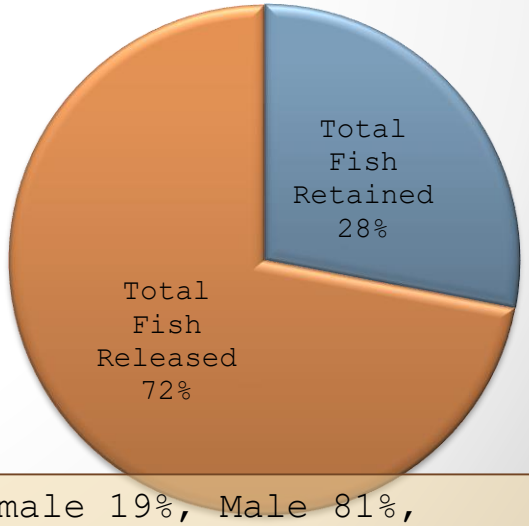
**Total Estimated Fish Harvested:** 78.2 kg

**Average hours fished:** 3.2

*Week days 69.5% Weekends 30.5%*

*AM Effort 22% PM Effort 78%*

*Effort fr. Boat 93% fr. Shore 7%*



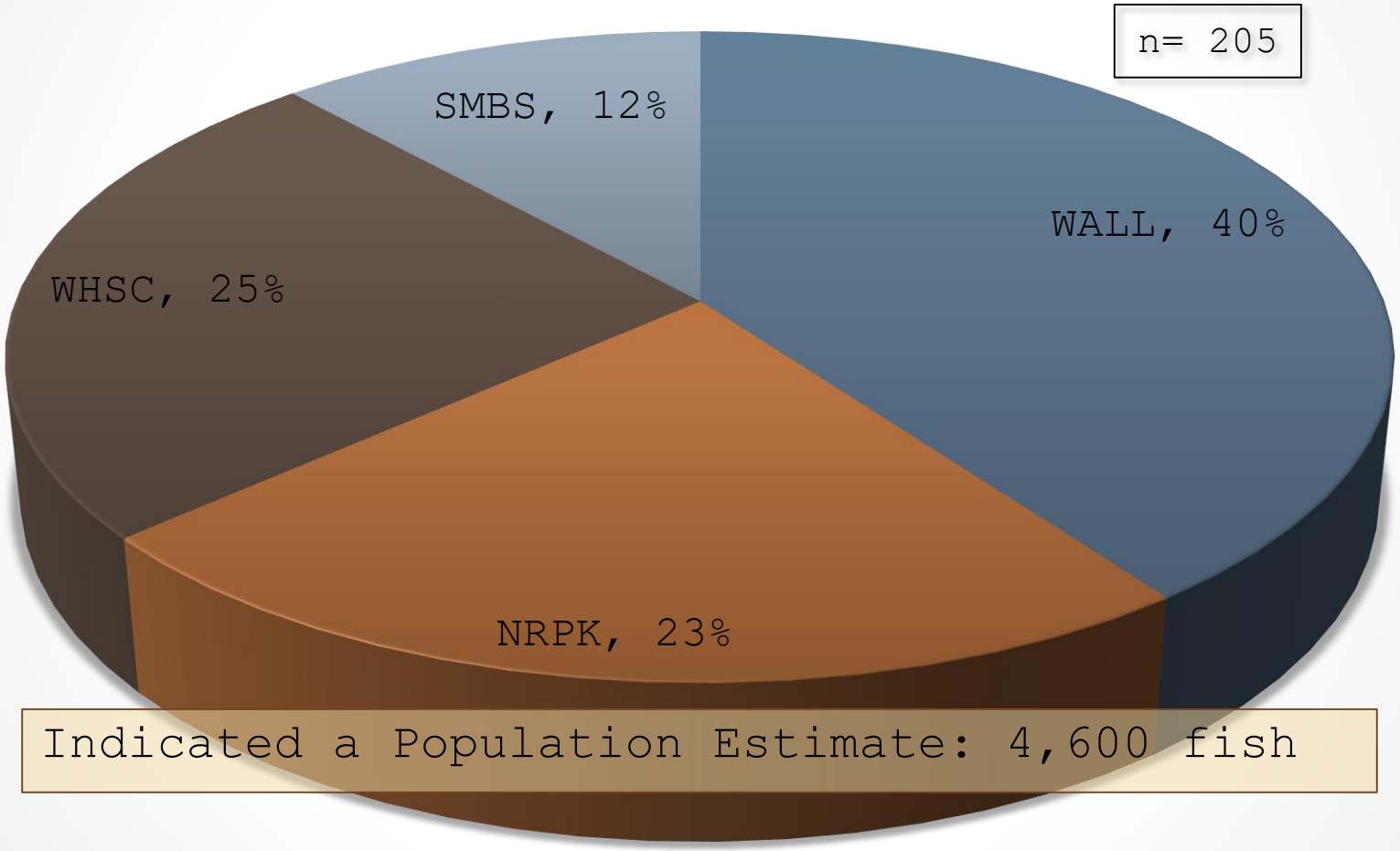

Anglers consisted of: Youth 22%, Adult 71%, Senior 6%, Female 19%, Male 81%, Local 69%, MB Resident 11%, Non-Resident 19%

# Wellman Lake

## Fall Trap Netting

**Objective: Conduct Year Two trap netting to estimate relative abundance and status of the fishery. Obtain growth info, health conditions, habitat utilization and requirements**

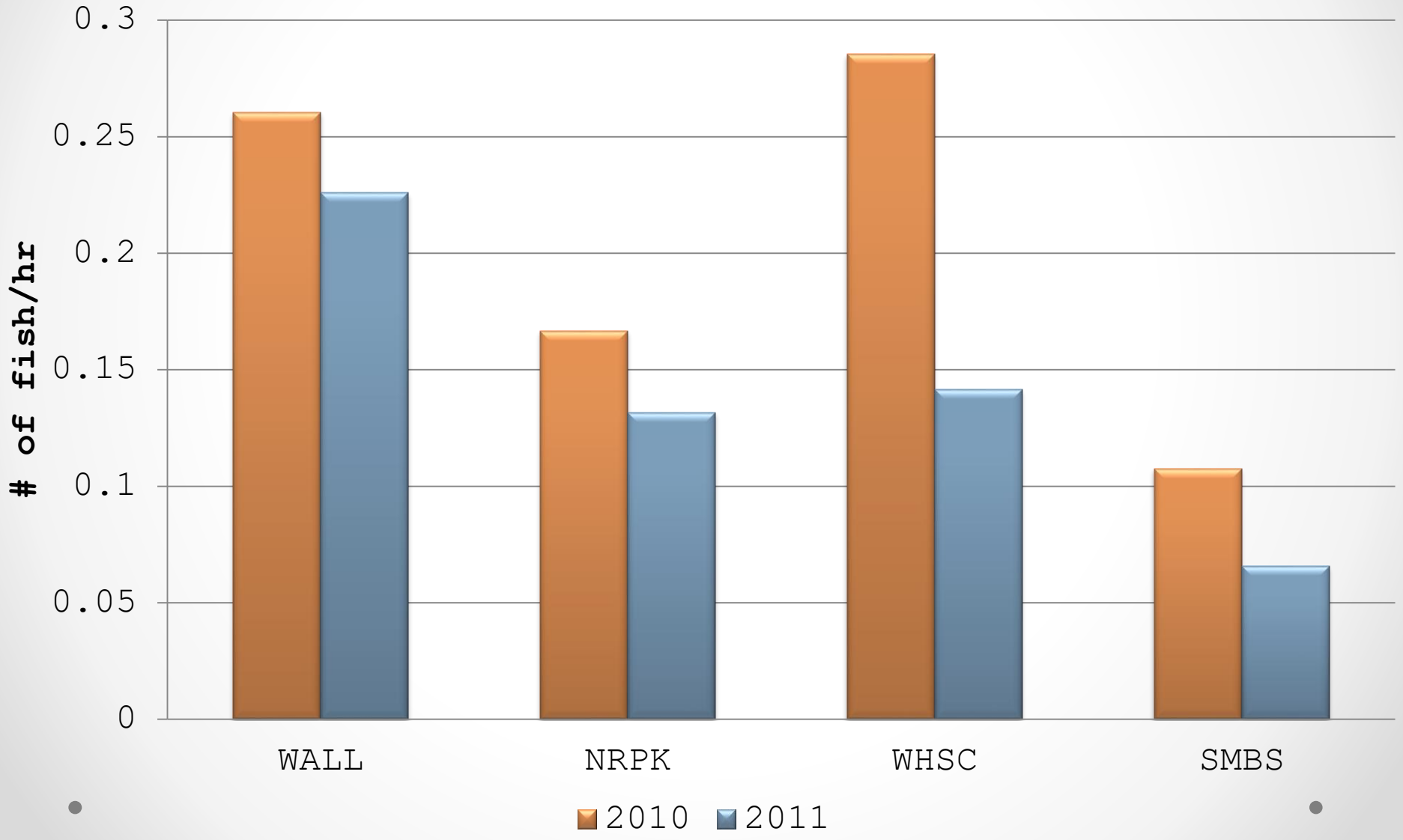
# Species Composition




Indicated a Population Estimate: 4,600 fish

# Wellman Lake 2010 & 2011

## Average CPUE Comparison by Species

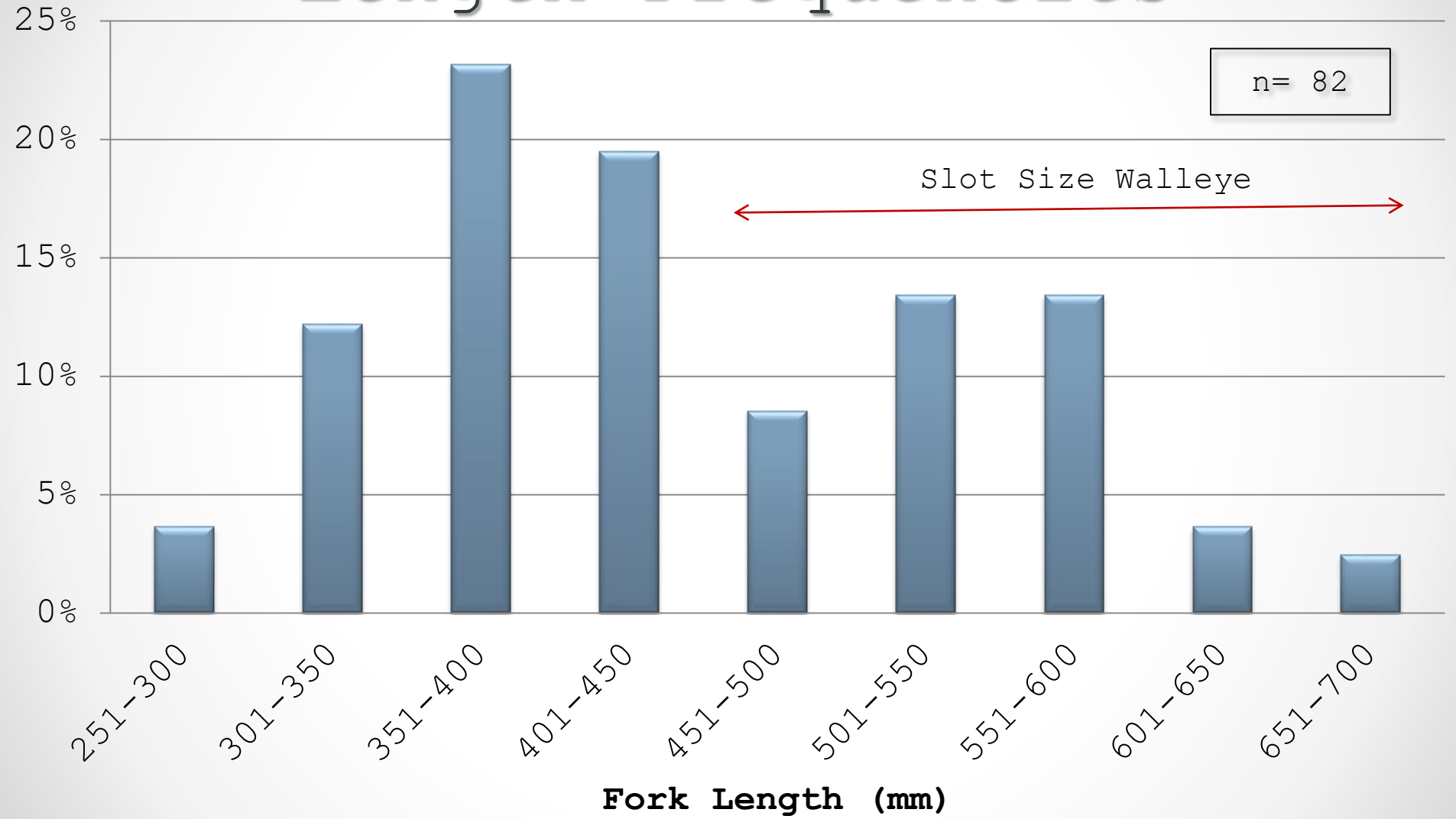


# Wellman Lake Walleye

Walleye recaptures indicated minimal growth and loss of weight in walleye tagged during 2010.

Total of 82 walleye caught

# Walleye Length Frequencies



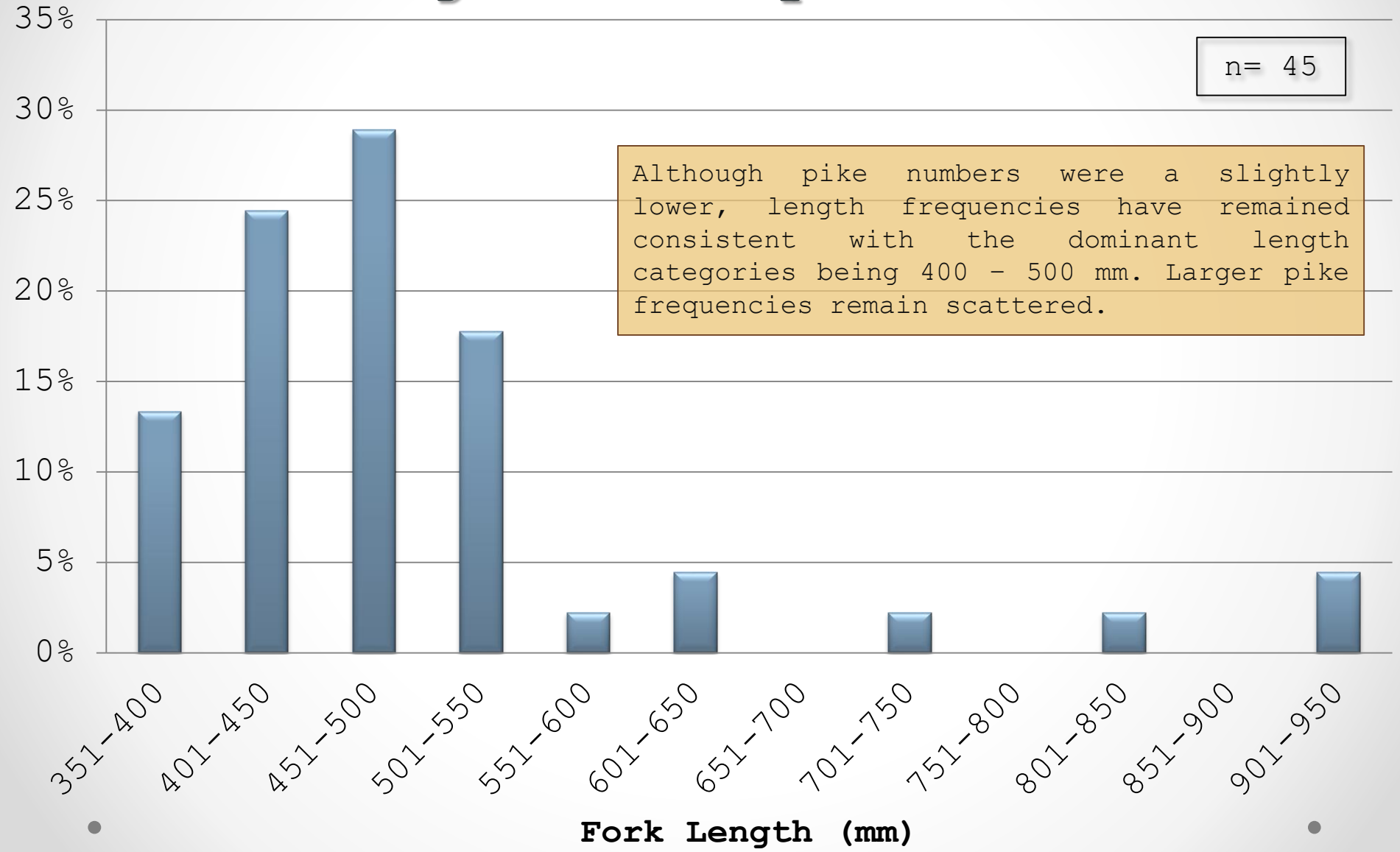

Wellman Lake shows a healthy population of keeper sized walleye. One concern is 29% of slot size walleye were found harvested in this year's creel study

# Wellman Lake Northern Pike

Northern pike showed a growth rate of 0.05 mm/day & 1.8g/day.

Total of 45 northern pike caught

# Northern Pike Length Frequencies

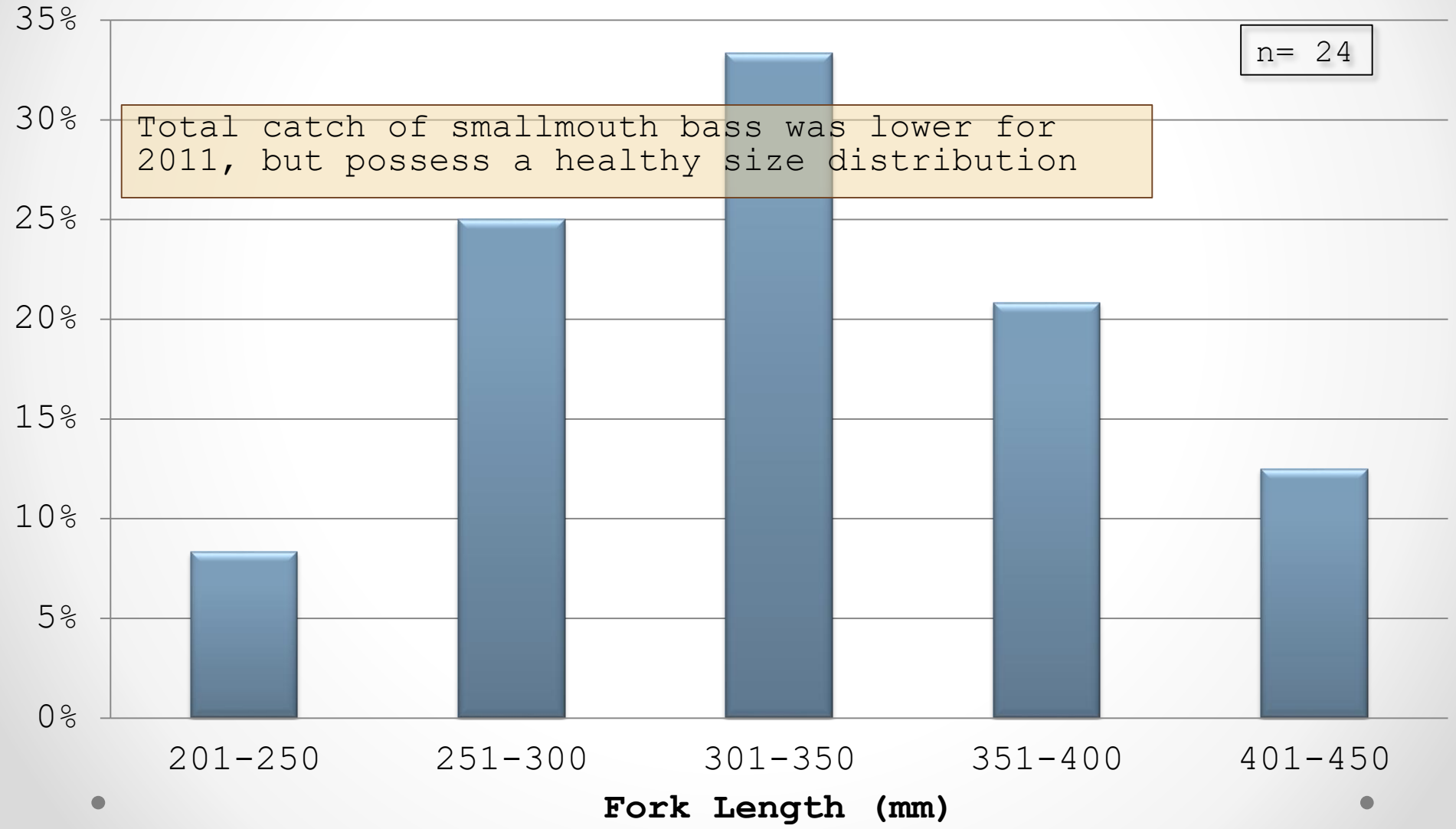


# Wellman Lake Smallmouth Bass

Recaptures indicated a growth for smallmouth bass at 0.05mm/day & 0.43 g/day

Total of 24 smallmouth bass caught

# Small Mouth Bass Length Frequencies



# Wellman Lake

TRAP NETTING

- Walleye – there are two concerns in regards to walleye.

1) The harvesting of slot size walleye and 2) the availability/quality of spawning habitat. High pressure from all users and the above concerns has encouraged SVSFE's stocking committee to keep supplemental stocking of walleye on the list. Further investigations on the spawning habitat and stocking success should be considered.

- Northern Pike – Inconsistent frequencies in larger pike are a concern as these fish control the smaller pike population and keep it in balance. These larger fish are also sought out by anglers.

- Smallmouth Bass – populations should be monitored as this species can compete with the walleye population.

Findings will be reviewed by Fisheries Branch to develop future management strategies for Wellman Lake.

# 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