

Preferences for Walleye Angling in Minnesota



January 8, 2010

Susan A. Schroeder

David C. Fulton, U.S. Geological Survey

Minnesota Cooperative Fish & Wildlife Research Unit

Caroline Carlin, Applied Economics

University of Minnesota

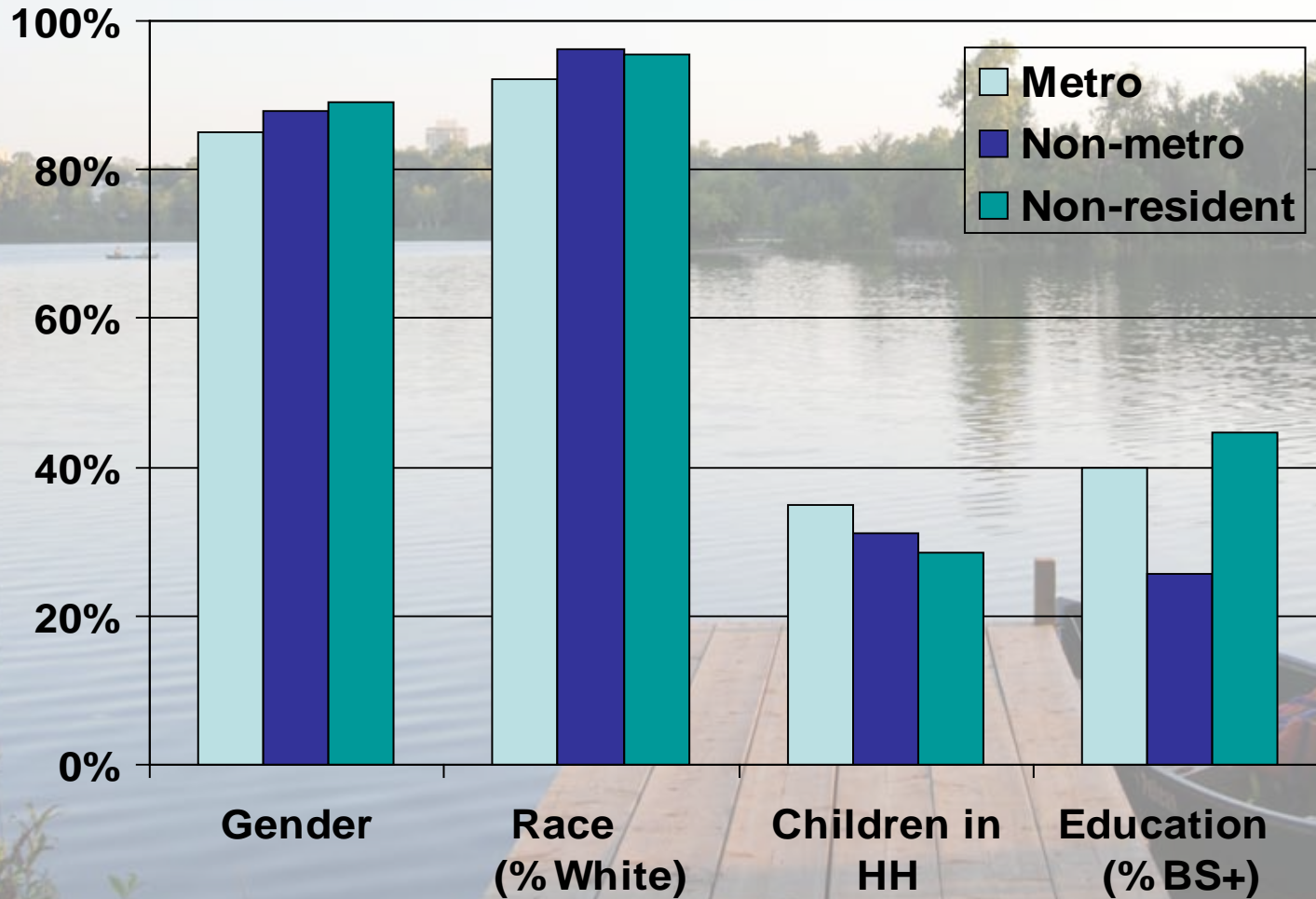
Research Objectives

- **Characterize the sociodemographics, use histories, and management & location preferences of Minnesota resident and nonresident anglers;**
- **Examine the use histories, fishing destinations, catch orientations, and preferred attributes of lakes specifically for walleye anglers.**

Methods: Data Collection

- **Mail survey**
 - Mailed: February – May 2009
 - 3 mailings, 3rd = nonresponse check
- **Sample -- 2008 license buyers (ELS)**
- **3 strata (1,000 each)**
 - MN resident anglers – metropolitan area
 - MN resident anglers – outside the metro
 - Nonresident anglers
- **59% response rate**

Sample Characteristics



Mean
respondent
age= 48

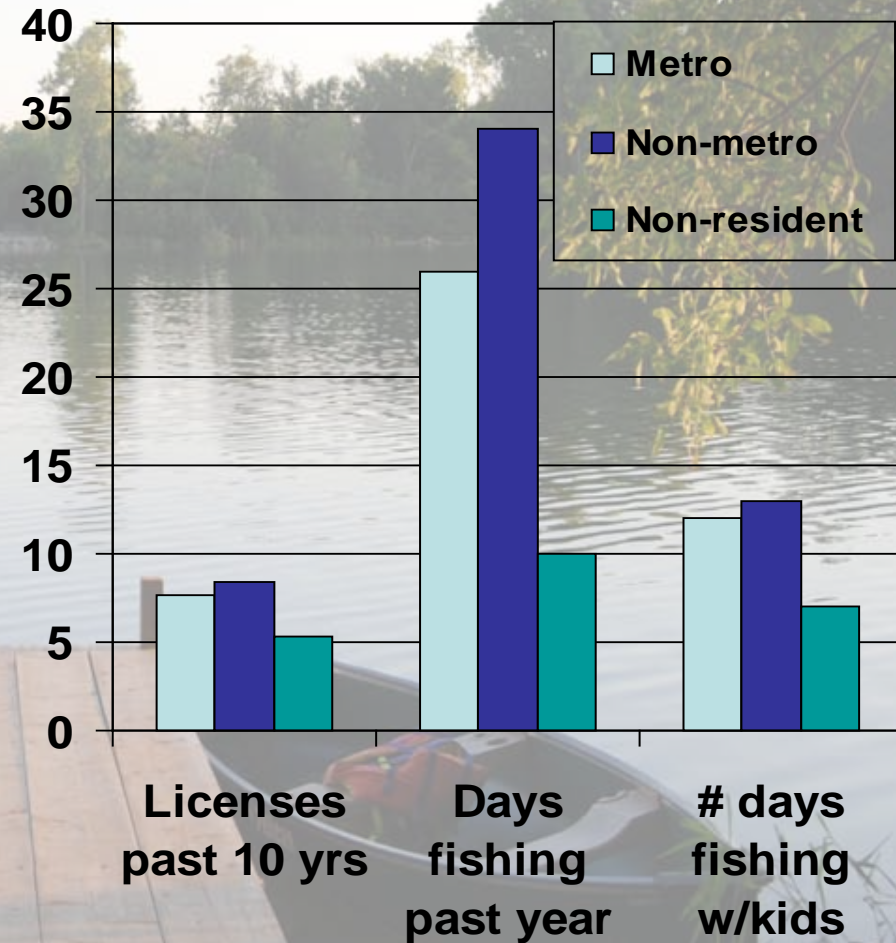
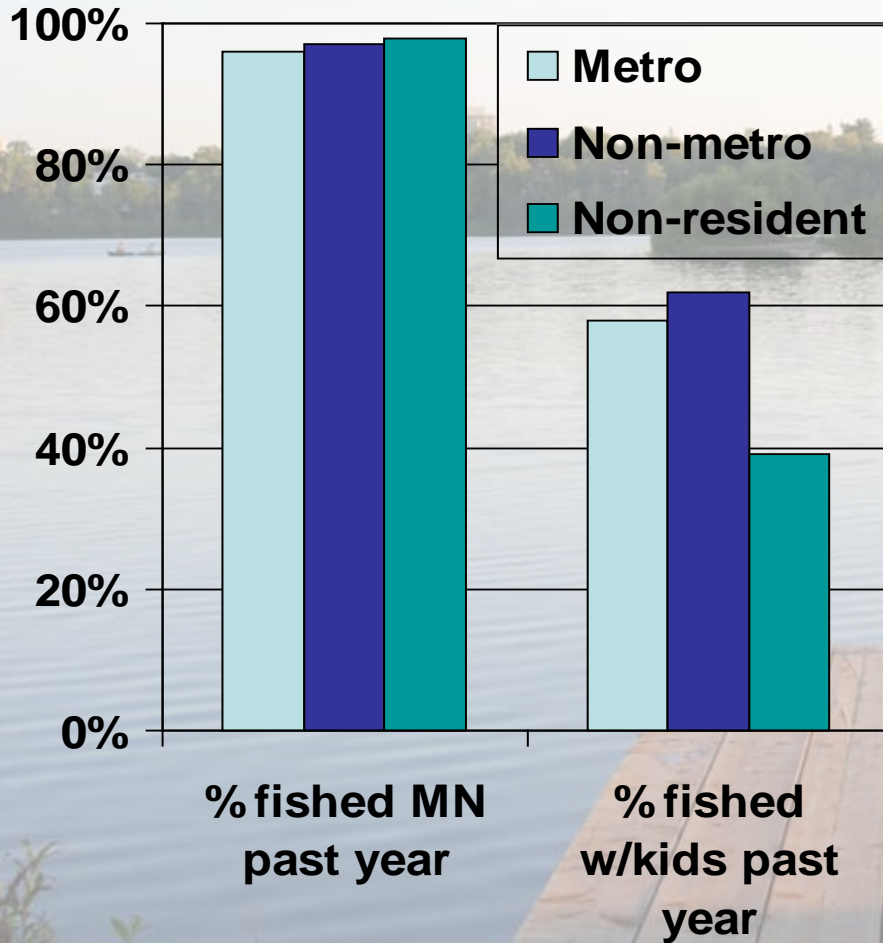
Gender= n.s.

Race= **

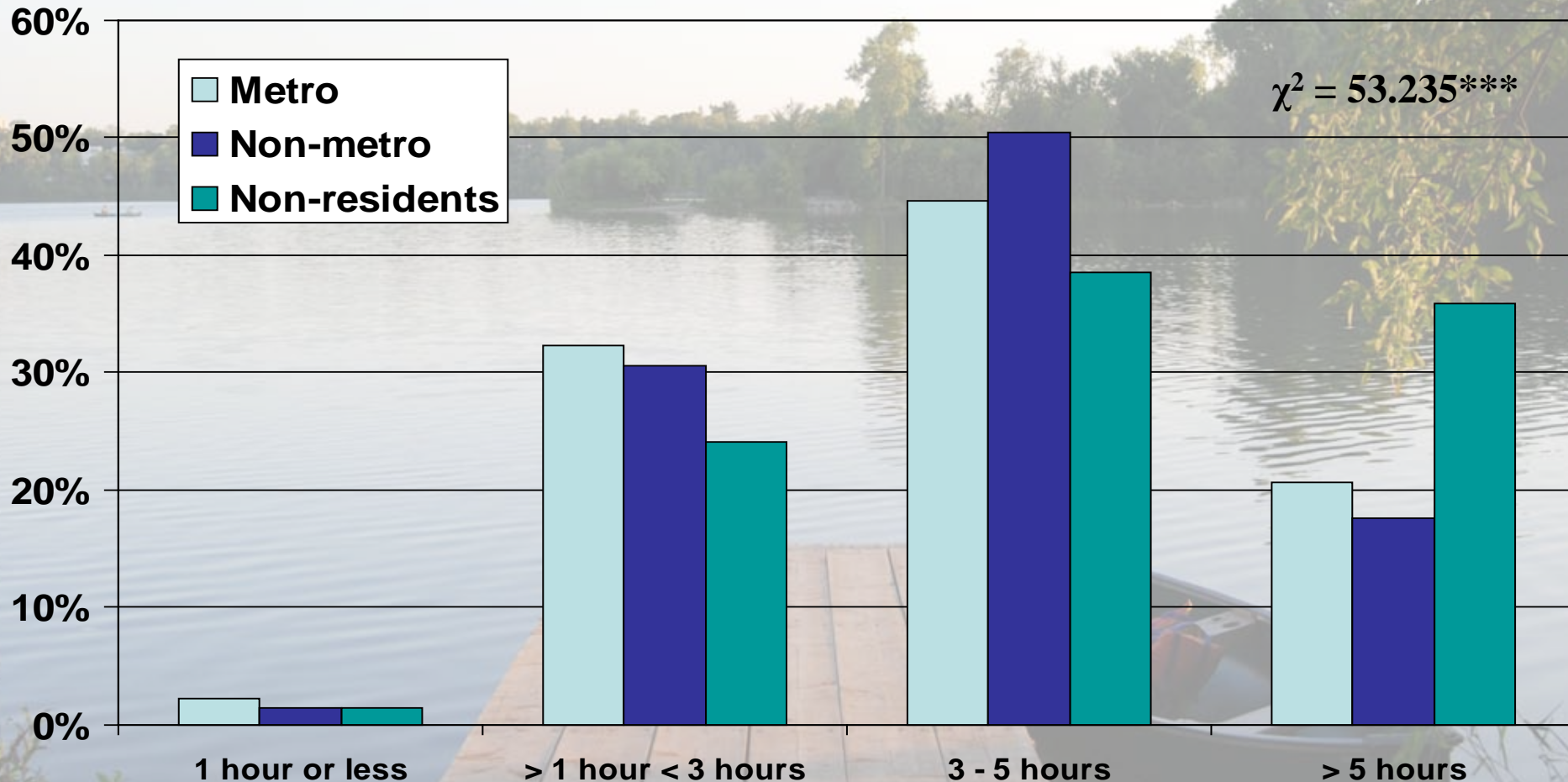
Children= n.s.

Education= ***

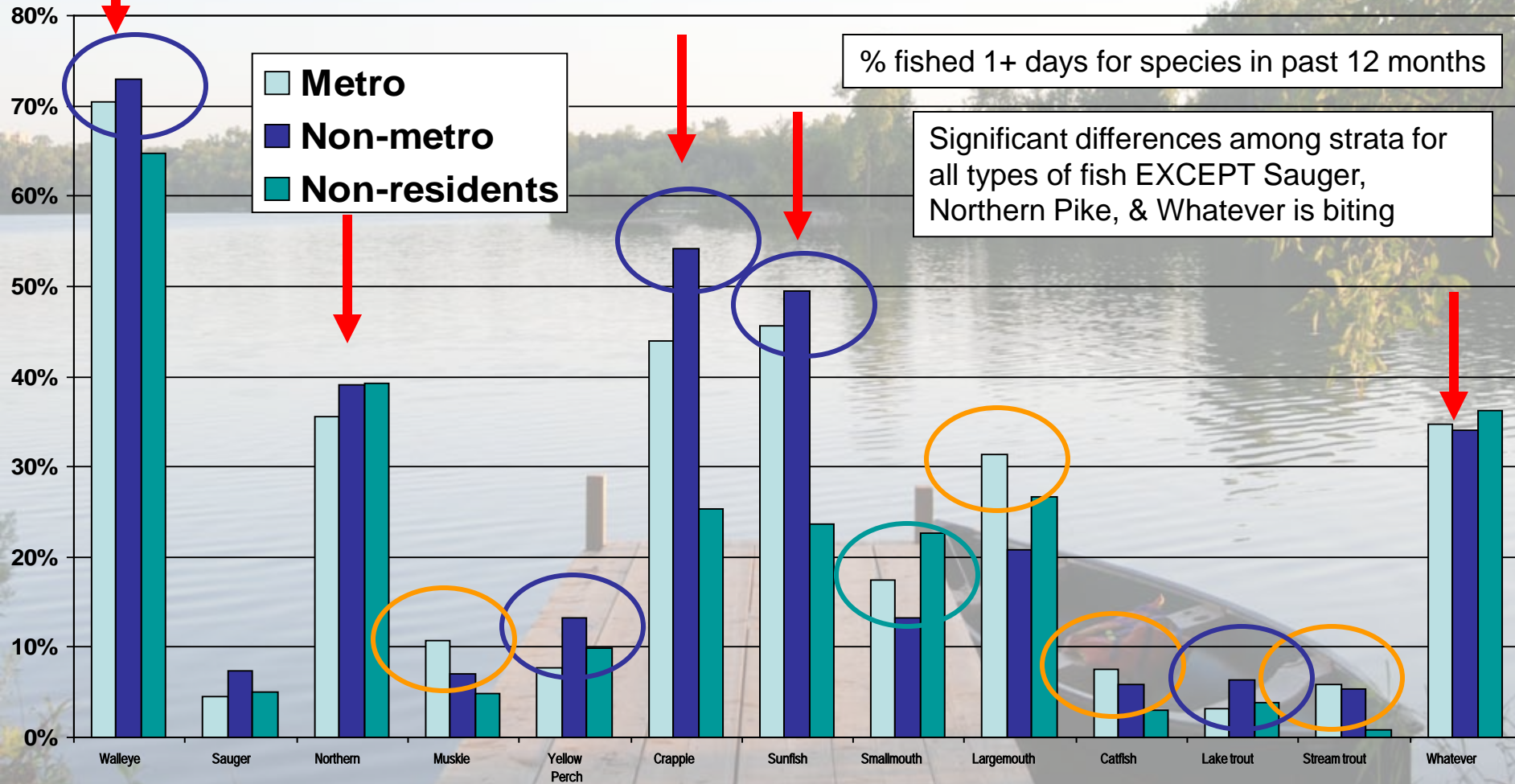
Fishing Background



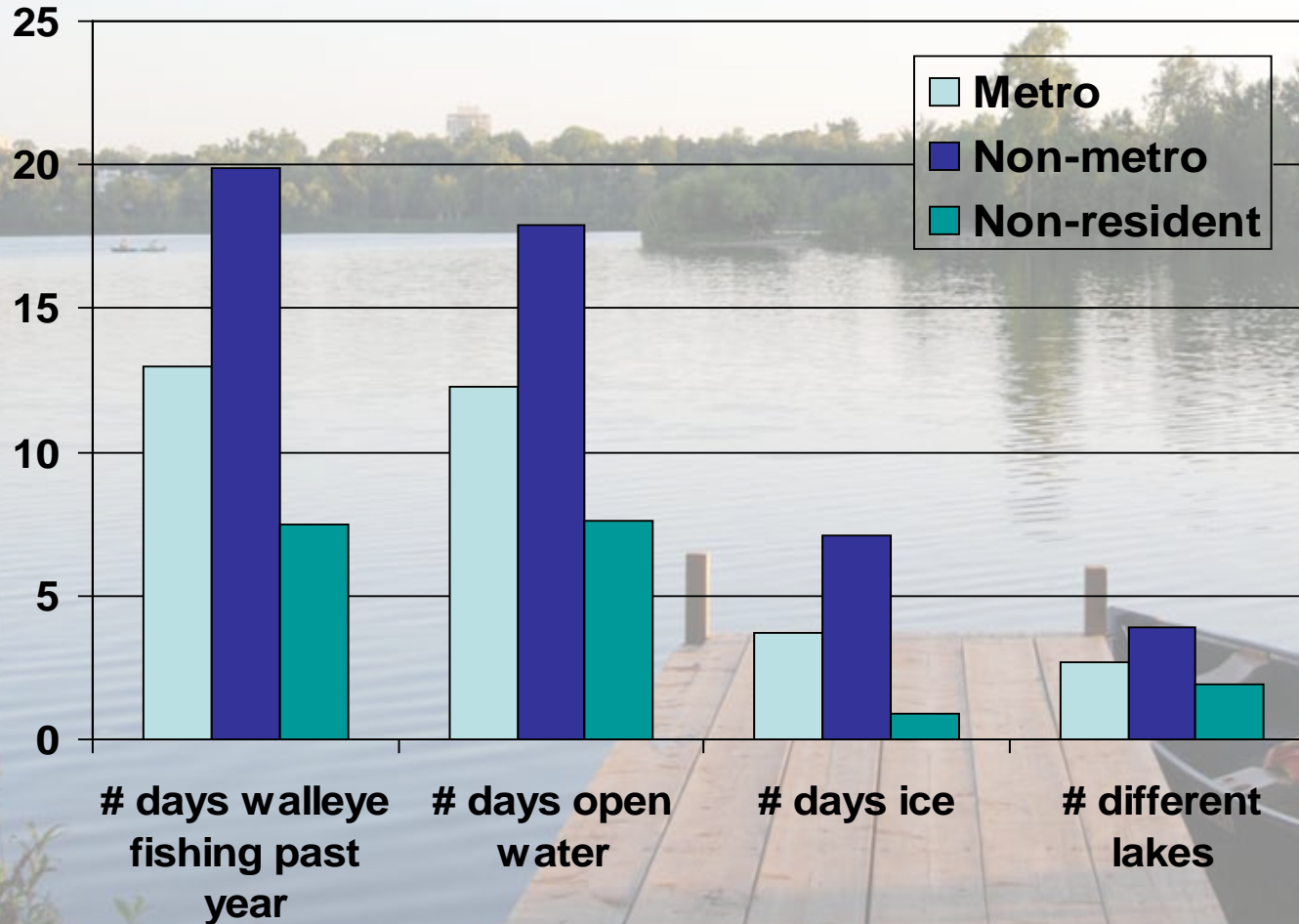
Length of time of fishing outings during past year



Type of Fish Targeted



Walleye Fishing



Days walleye= ***

Days open= ***

Days ice=***

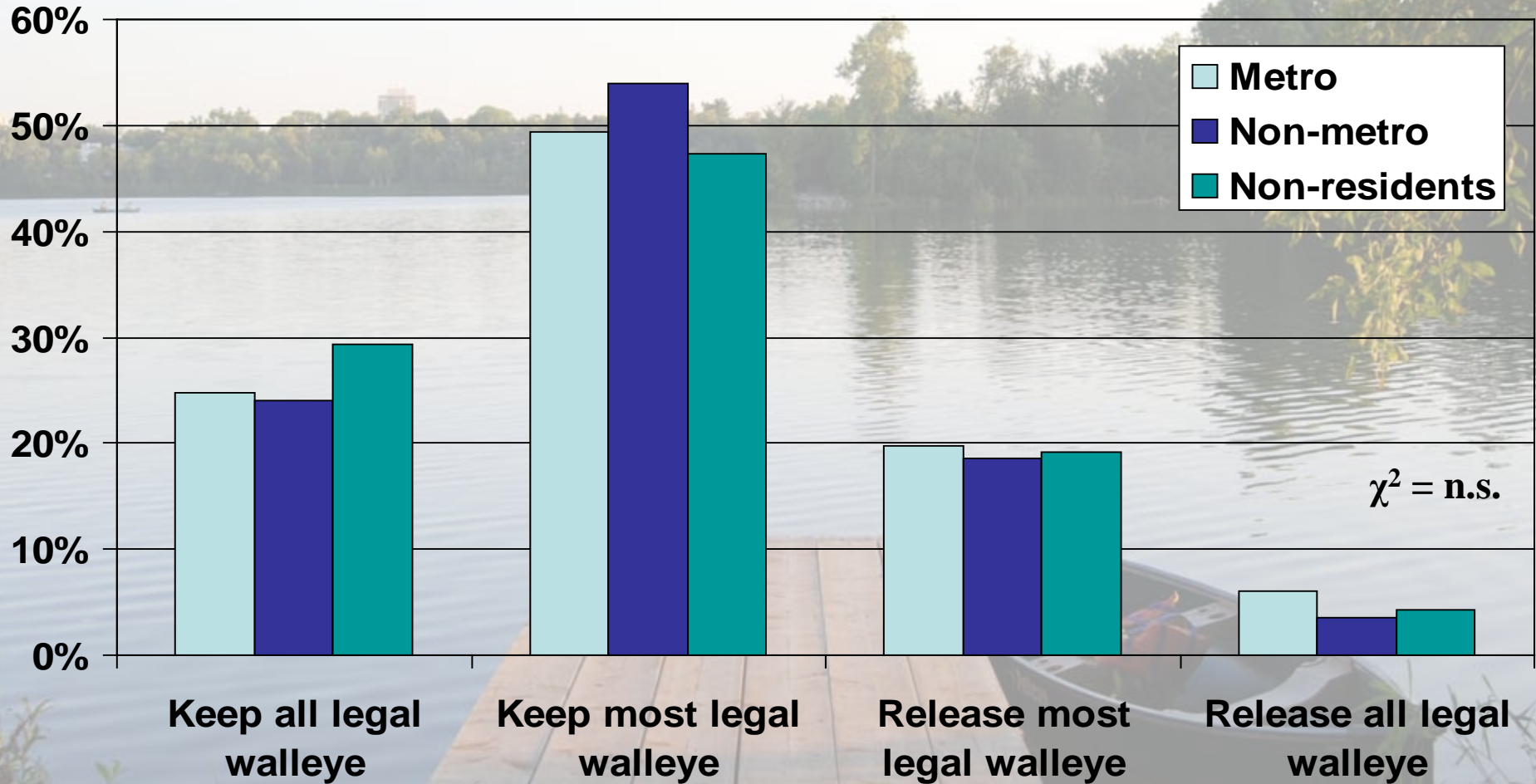
different lakes= ***

Walleye Fishing: MN Big Lakes

- **Fished by about 50% of resident anglers:**
 - Lake of the Woods
 - Lake Mille Lacs
- **Fished by 20-30% of resident anglers:**
 - Leech Lake
 - Lake Vermillion
 - Lake Winibigoshish
 - Red Lake
- **Fished by between 10 and 20% of resident anglers:**
 - Rainy Lake
 - Lake Kabetogama
 - Cass Lake
- **Fished by less than 10% of resident anglers:**
 - Lake Pepin

Smaller proportions of nonresident anglers reported that they fished these lakes

Typically Keep Walleye?



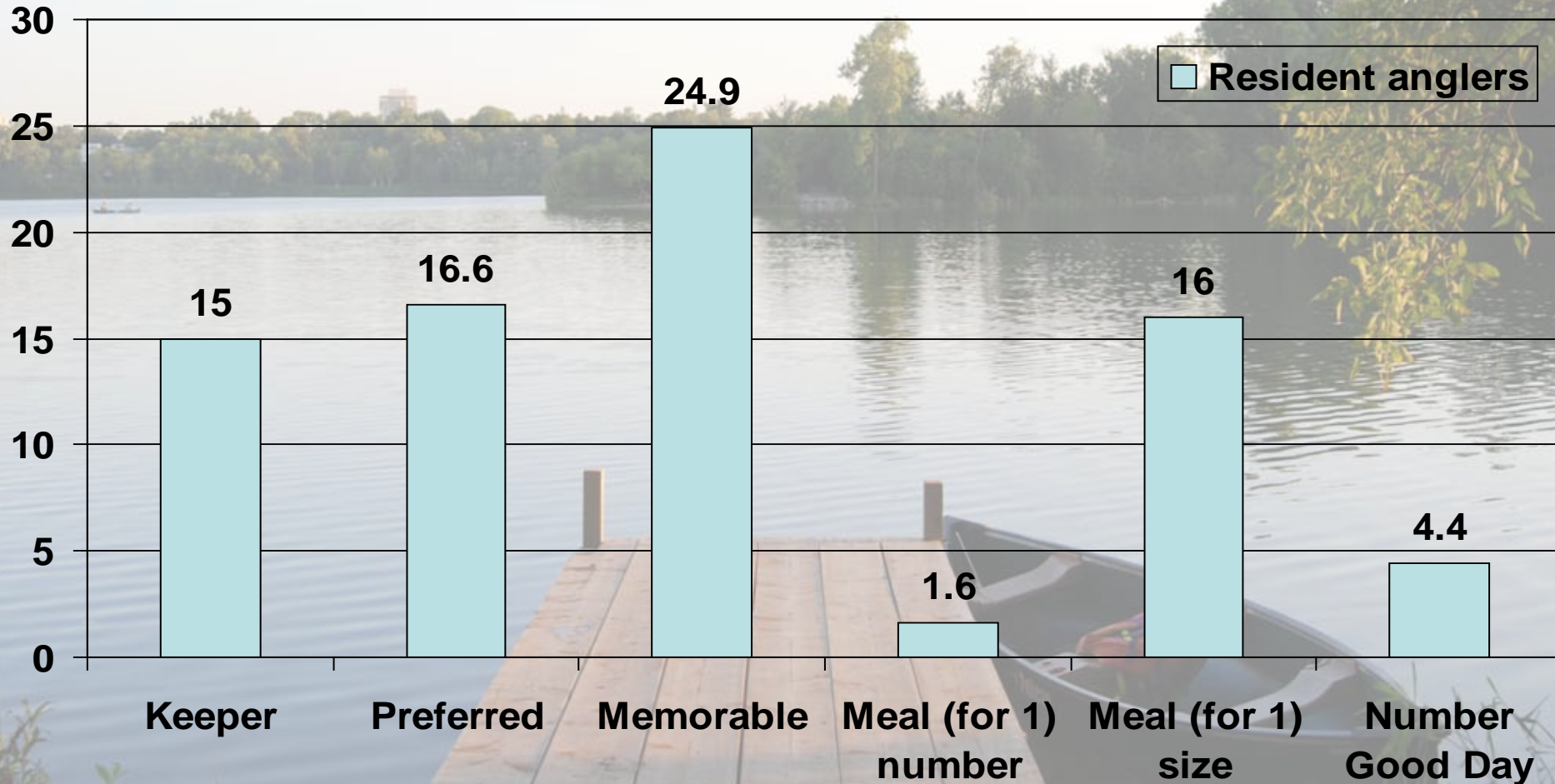
Walleye Consumption Orientation

- **20 items used to measure consumption orientation**
- **Where differences among strata, NR > CO**
- **No relationship between CO &:**
 - **Fishing with children**
- **Small relationships between CO &:**
 - **Age:**
 - + w/ catching something, keeping walleye
 - - w/ catching big walleye
 - **Number of 10 past years fishing:**
 - - catching big walleye
 - **Number of days fishing in past year:**
 - - catching big walleye

?? Questions ??

- **What would you estimate as the minimum sizes reported by MN resident anglers for walleye in these categories:**
 - **Keeper**
 - **Preferred**
 - **Memorable**
 - **To eat**

Mean Reported Walleye Sizes



Choosing a Place to Fish for Walleye

- Series of 16 hypothetical comparisons...
- Example:

<p>Scenario 1. Which lake would you choose to fish at?</p>	<p>Lake 1</p> <ul style="list-style-type: none"> ➤ Average walleye population with average catch rates. ➤ Few fish over 20" ➤ <u>Catch-and-release only for walleyes.</u> ➤ <u>4 hours</u> from your primary home to the lake. 	<p>Lake 2</p> <ul style="list-style-type: none"> ➤ Abundant walleye population with excellent catch rates. ➤ A lot of fish over 20" ➤ <u>4 walleye bag limit.</u> ➤ This lake has a <u>20-28" slot limit.</u> You must immediately release any walleyes in this range. ➤ <u>Less than 30 minutes</u> from your primary home to the lake. 	<p>If these were my only 2 choices I would not go</p>
<p>Check ONE box ?</p>	<p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p>

Lake Characteristics Affecting Lake Choice

- **Bag limits have a significant effect**
 - **Given the choice of only catch-and-release lakes, 42% of walleye anglers are predicted to stay home.**
 - **A 2-bag limit lake would cause 24% of the anglers to move from at-home or a catch-and-release lake.**
 - **2-bag to 4-bag limit provides moderate (14%) increase in preference; little change (3%) moving from 4-bag to 6-bag limit.**
 - **Impact of generous bag limits is slightly greater for older anglers.**

Lake Characteristics Affecting Lake Choice

- **Distance from primary residence also has a big impact**
 - **Fairly linear relationship:** for every additional hour of drive time, 5-6% more anglers would choose an alternate lake within 30 minutes of primary residence or stay home.
 - **Older anglers are slightly less likely to be discouraged by long drives.**
 - **Moderate increase in undesirability of long drives if there are children in the household.**
 - **Metro area residents and non-Minnesotans are somewhat more likely to drive longer distances.**
 - **Those who prefer the walleye species are somewhat more likely to be tolerant of longer distances.**

Lake Characteristics Affecting Lake Choice

- **The impact of slot limits depends greatly on the placement of the limit.**
 - **A slot limit of 17-26” would cause about 12% of the sample walleye anglers to select an alternate no-limit lake or stay home.**
 - **Slot limits of 20-28” or over 20” reduce this shift to only 3-4% of walleye anglers.**

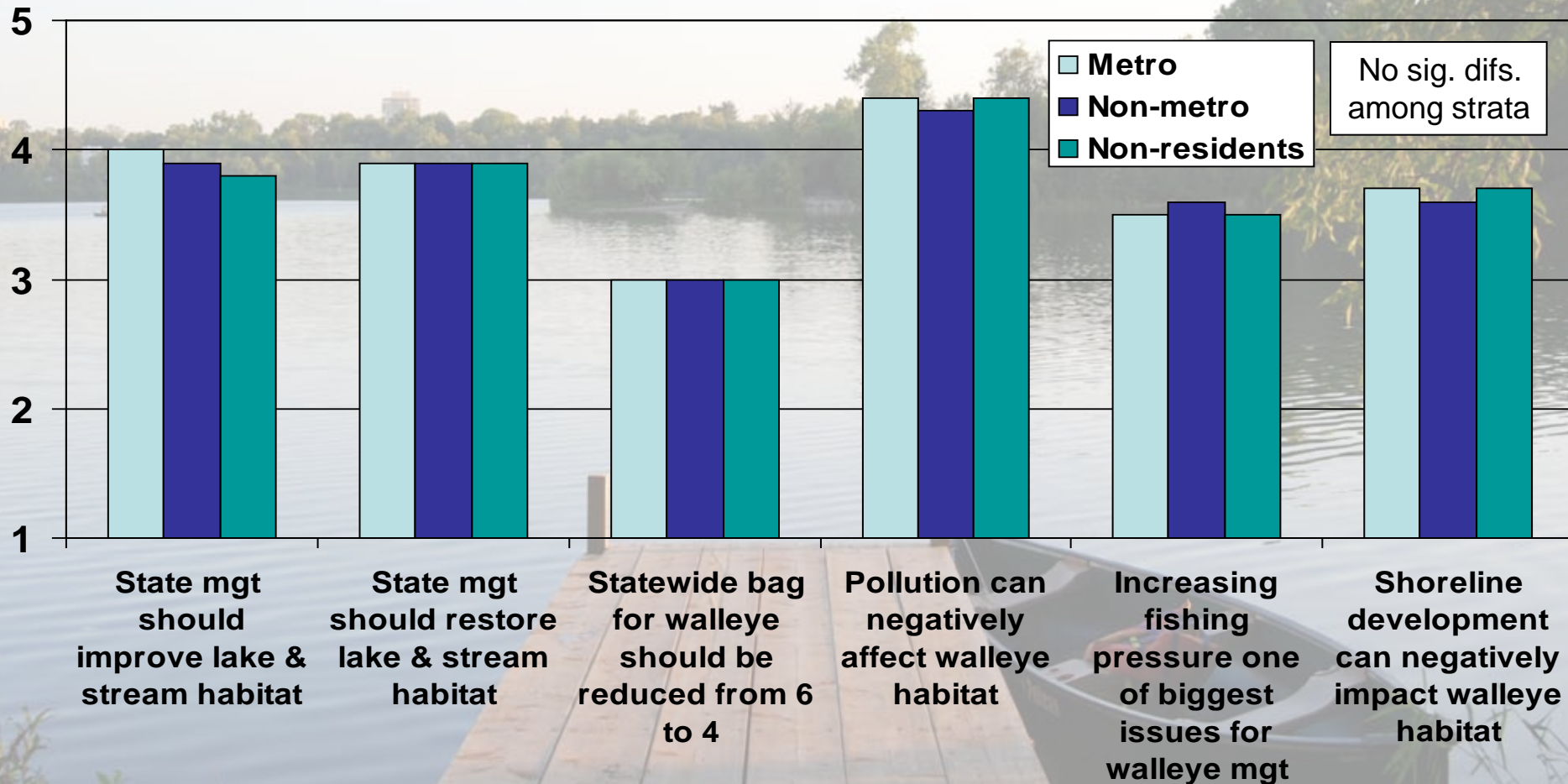
Lake Characteristics Affecting Lake Choice

- **Abundant walleye supply has a moderate impact on lake selection, causing about 8% of the population to switch from a lake with average population or from staying home.**
 - **Impact is slightly reduced for older anglers and those who fish frequently**
- **Size of walleye (“a lot” versus “a few” over 20 inches) has only a small impact on lake preference.**

Lake Characteristics Affecting Lake Choice

- **Gender and education level had no apparent interaction with the attractiveness of lake attributes.**

Fisheries Management & Knowledge

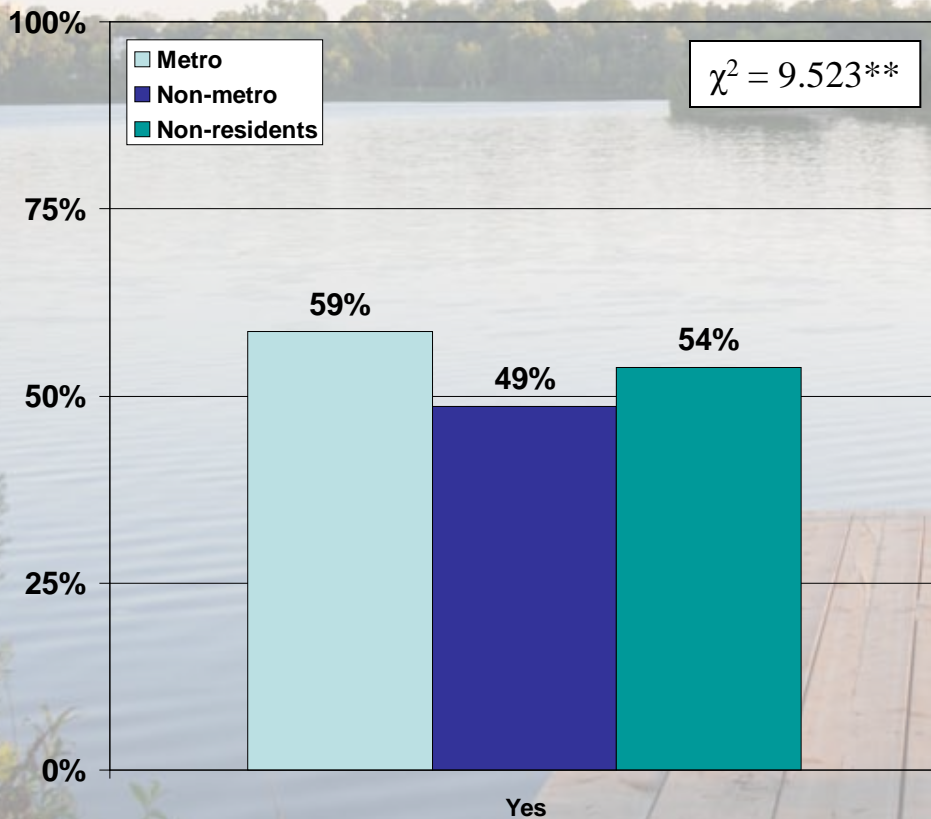


?? Question ??

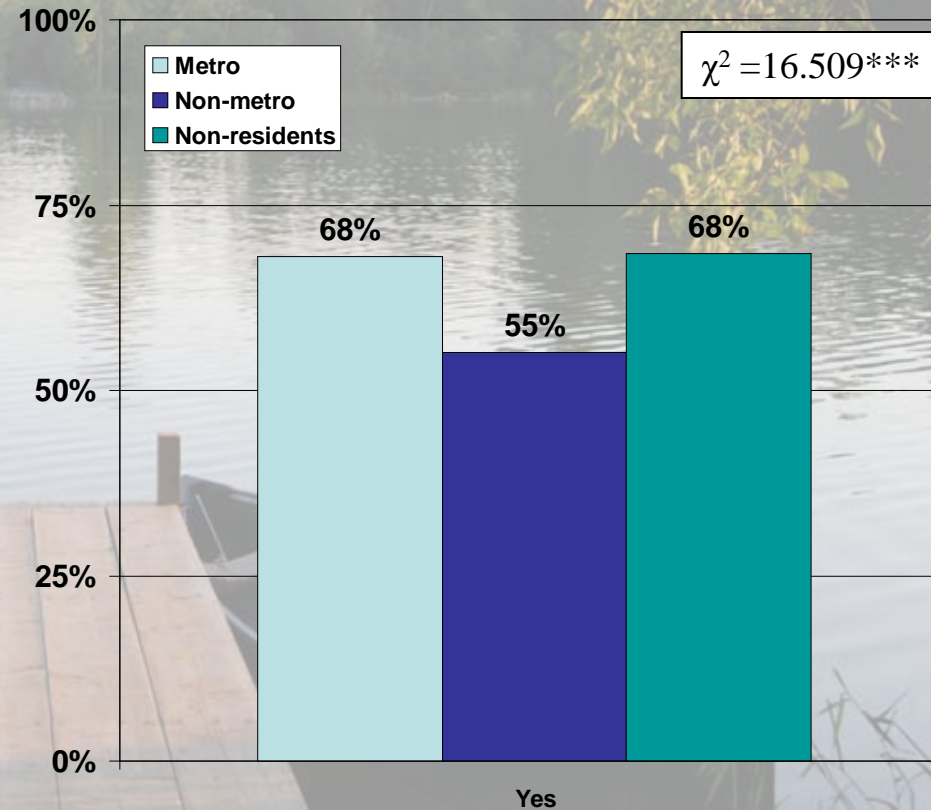
- **What proportion of MN anglers would you estimate would indicate that they would be willing to purchase a \$5 stamp to invest in walleye stocking and management?**

Willing to Purchase \$5 Walleye Stamp?

All Respondents



Respondents who Ever Specifically Target Walleye



Conclusions: Walleye Angling

- **50-70% of anglers specifically target walleye at least some of the time**
- **Among those who target walleye, it is the preferred species of about 60% of individuals**
- **About 75% of walleye anglers keep most or all of the legal walleye they catch**
- **Walleye anglers are more focused on catching some or many fish, compared to catching big fish.**
- **Preferred size of walleye to catch is 16-18”**

Conclusions: Walleye Lake Choice

- **Catch and release for walleye strongly NOT preferred**
 - Strong increase in preference from 0 fish to 2 fish
 - Moderate increase in preference from 2 fish to 4 fish
 - Little change in preference from 4 fish to 6 fish
- **Impact of slot limits depends on slot**
 - 17-26” slot substantially decreases preference
 - 20-28” or 20”+ only small decrease in preference
- **Abundant walleye population (vs. average) = moderate impact on preference**
- **Size of walleye (“a lot” vs. “a few” over 20”) = small impact on preference**
- **Distance from primary home = big linear impact on preference**

Questions/Discussion



Acknowledgements

- **MN Department of Natural Resources**
- **USGS MN Cooperative Fisheries and Wildlife Research Unit**
- **U of MN Department of Fisheries, Wildlife, and Conservation Biology**
- **Survey respondents**

