

MICHIGAN FISH ADVISORY

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ROAD MAP TO OUR CONVERSATION

- History and Background of Fish Advisories – Statewide
- TR/SR/SB Summary of Fish Eating Survey Results
- TR/SR/SB Fish Consumption Guidelines



■ Public Health Agency

- **Mission:** *protect, preserve, and promote the health and safety of the people of Michigan with particular attention to providing for the needs of vulnerable and under-served populations.*

- **Public Health Code, (Act 368, 1978)**
 - 333.2473. (1)(a) Prevention and control of environmental health hazards
 - 333.2221 Organized programs to prevent disease, prolong life, and promote public health

- **Not Regulatory**

HEALTHY EATING

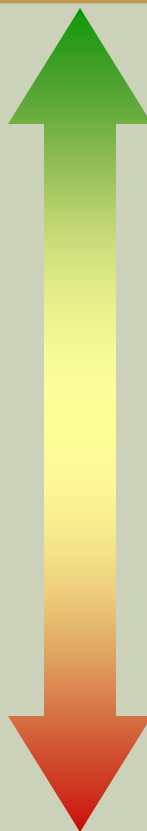
- **Low-fat, High protein**
- **Omega-3 fatty acids**
 - *Infant / Child*
 - Increased gestation times
 - Better developmental outcomes
 - visual acuity, cognitive function, motor skills
 - *Adults*
 - Reduced heart disease events/death with history heart attacks
 - Lower blood pressure

Source: Institute of Medicine of the National Academies. 2007.
Seafood Choices Balancing Benefits and Risks

WHY ISSUE FISH CONSUMPTION GUIDELINES?

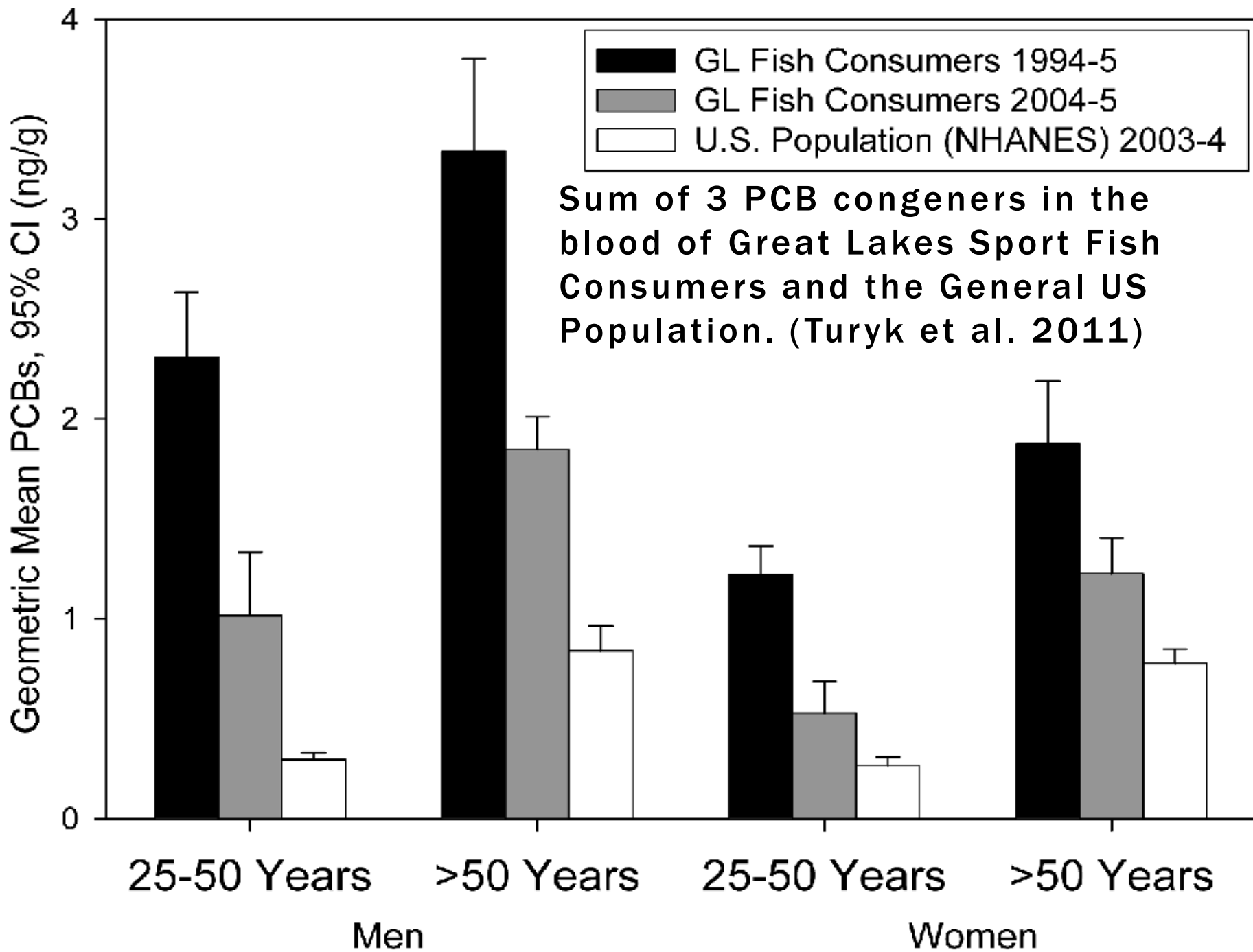
- **Chemical Contaminants:**
 - Persistent
 - Bioaccumulative
 - Long half-lives in people
 - Mercury, PCBs,
 - Dioxin/Furan/cPCBs (DLC)
- **Human Health Risk:**
Correlations to chronic diseases (diabetes, cancer, cardiovascular disease), effects on the reproductive and immune systems, and child development.
- **Exposure:** Known and Preventable

Lower



Higher





MEAL CONSUMPTION GUIDANCE BY WATERBODY AND SPECIES CONTAMINANT LEVELS



Collection



Fish



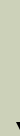
Filet



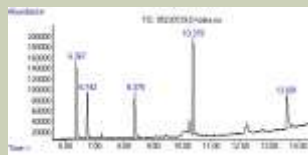
Lab



Homogenate



Data



Chromatogram



Analytical
Equipment



Samples












Extraction
&
Clean up

MEAL CONSUMPTION GUIDANCE BY WATERBODY AND SPECIES CONTAMINANT LEVELS

- **Assessment**
 - Fish contaminant data
 - Fish consumption screening values
 - Knowledge about trends and source
- **Management**
 - Review of annual updates
- **Communication**

FISH FILET Dioxin/Furan/cPCBs (DLC) (ppt-TEQ)

Source	Type (N)	Year(s)	Mean	95% UCL
US FDA	Total Diet Study			-
US FDA	All Fish- raw	Yellow Perch	Bluegill	-
US FDA	Catfish- raw			-
SB	Perch (7)	Rock Bass	Crappie	2.8
TR	Smallmouth Bass (20)			8.4
SB, TR	Walleye (20)	Walleye	Smallmouth Bass	9.8
SB	White Bass (30)			19
TR, SB	Catfish (19)	Catfish	White (Silver) Bass	18
TR, SR, SB	Carp (29)		Carp	51

* FDA data multiplied by 2 to estimate dioxin-like PCB TEQ

SAGINAW BAY WATERSHED FISH EATERS SURVEY (2007)

■ Topics

- Awareness of Fish Consumption Advisory
- Fish Consumption Patterns

http://www.michigan.gov/documents/mdch/FCS_Final_rpt_061407_199288_7.pdf

■ 1,088 anglers interviewed

- Tittabawassee River (23%)
 - Saginaw River (48%)
 - Saginaw Bay (17%)
 - Shiawassee River (12%)
-
- 907 anglers – Eat fish caught from Michigan Waters
 - 634 anglers - Eat fish from the water body they were fishing at the time of the interview.

CONCLUSIONS FROM SURVEY OF ANGLERS

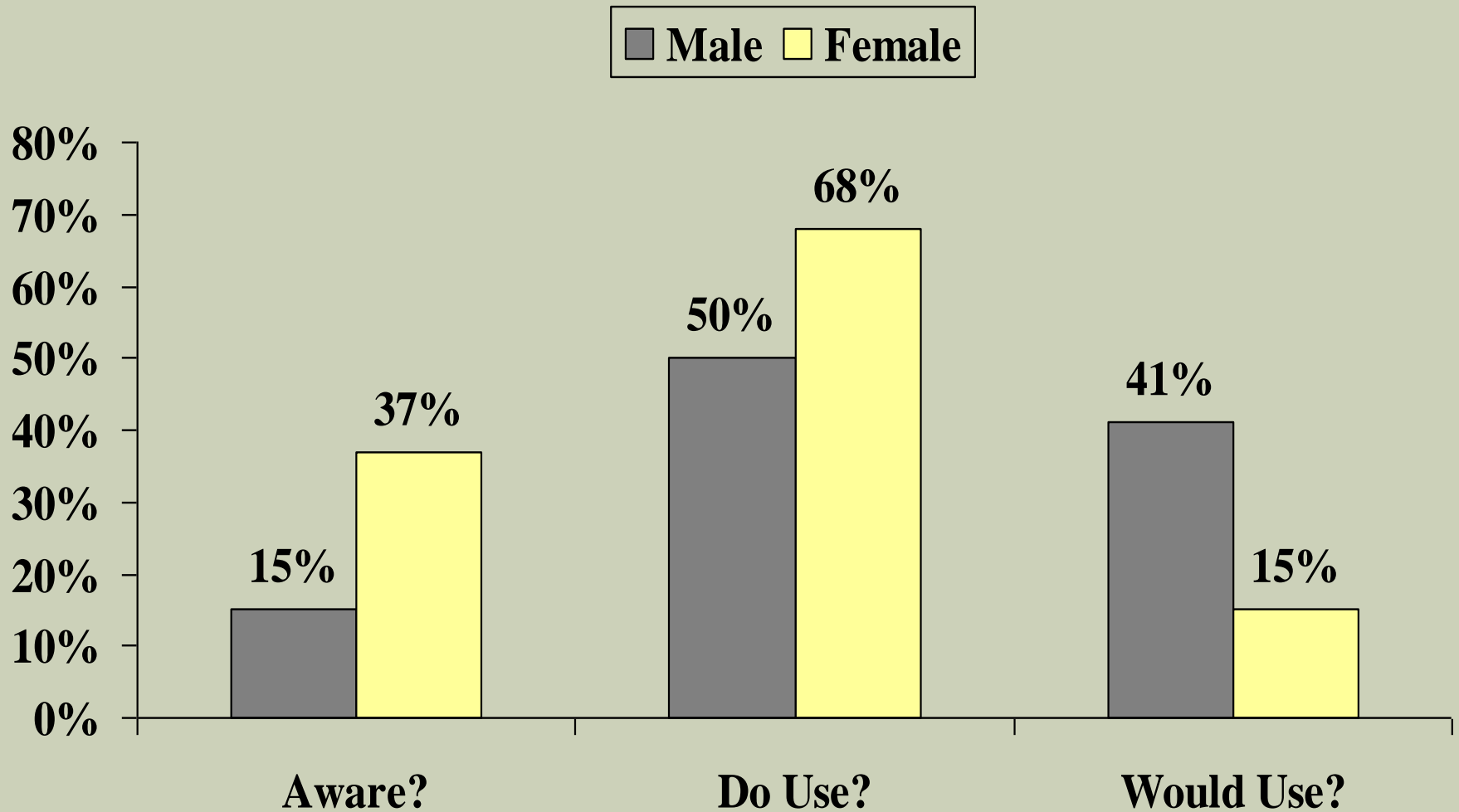
- The majority of anglers who eat TR/SR/SB fish live in Saginaw and Bay Counties.
- ~80% of anglers who eat the fish, feed those fish to their family members.
- Less awareness among minorities, females, people who eat bottom feeding fish, and shoreline anglers; However they are more open to the idea of using the advice.
- White male anglers were more aware and more likely to have already made a decision about using it.

CONCLUSIONS FROM SURVEY OF ANGLERS

- Consumption rates of caught fish are similar between minorities and whites.
- Walleye and perch are the most commonly consumed fish, however preferences in fish species eaten differ between whites and minorities.
- Some people only eat bottom feeding fish from these rivers, including a few who say they eat carp.

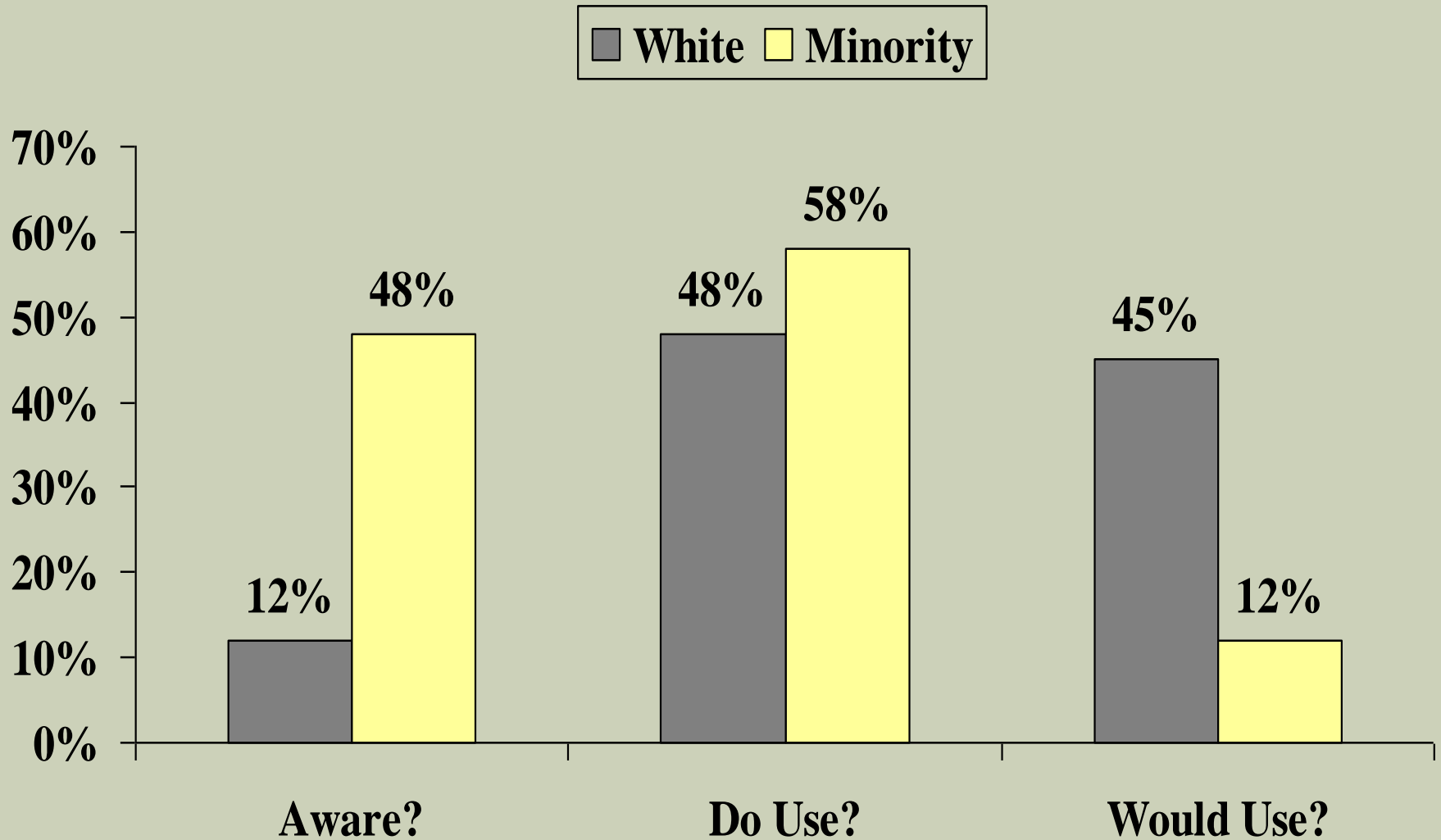
AWARENESS AND USE

“NO” RESPONSES BY GENDER

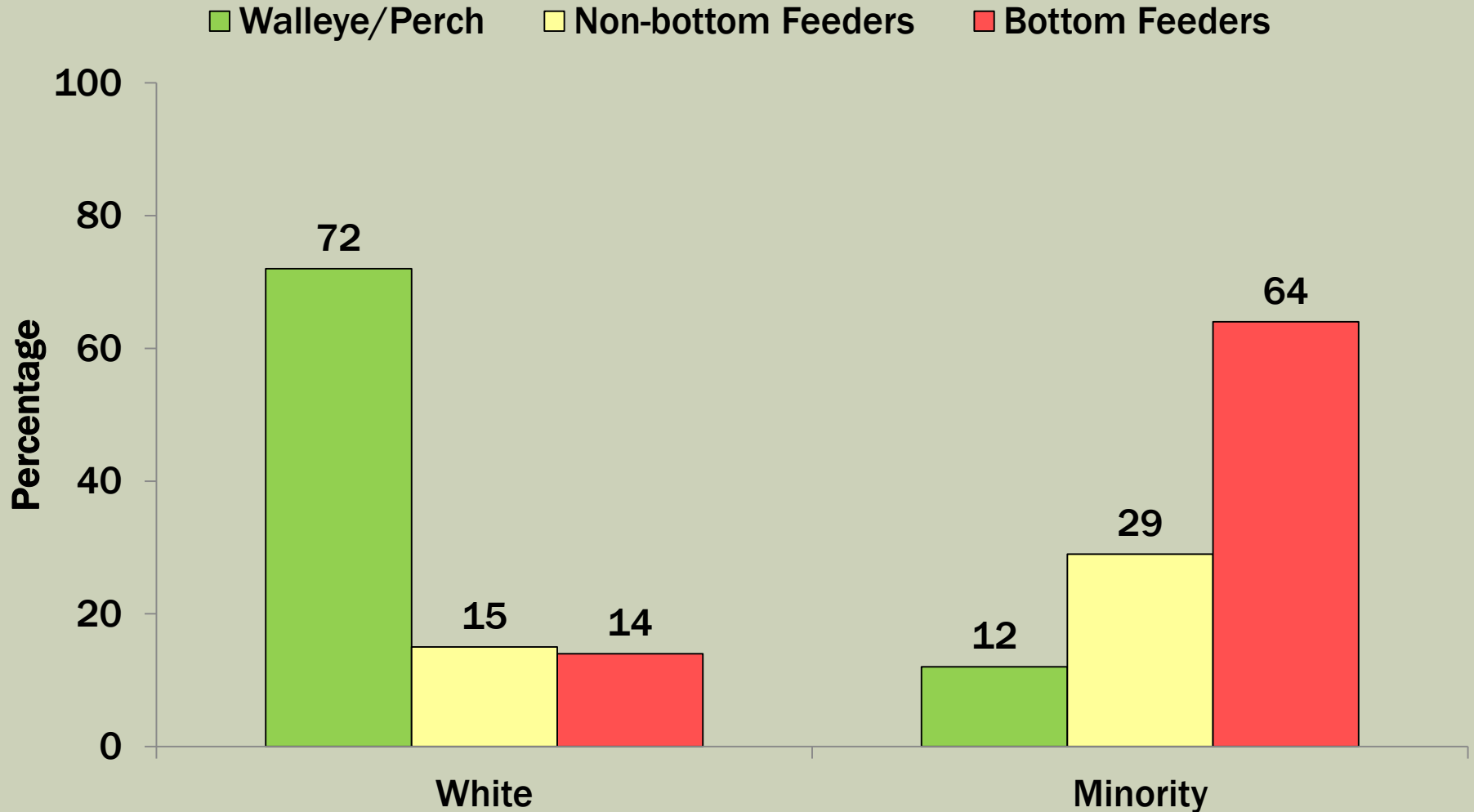


AWARENESS AND USE

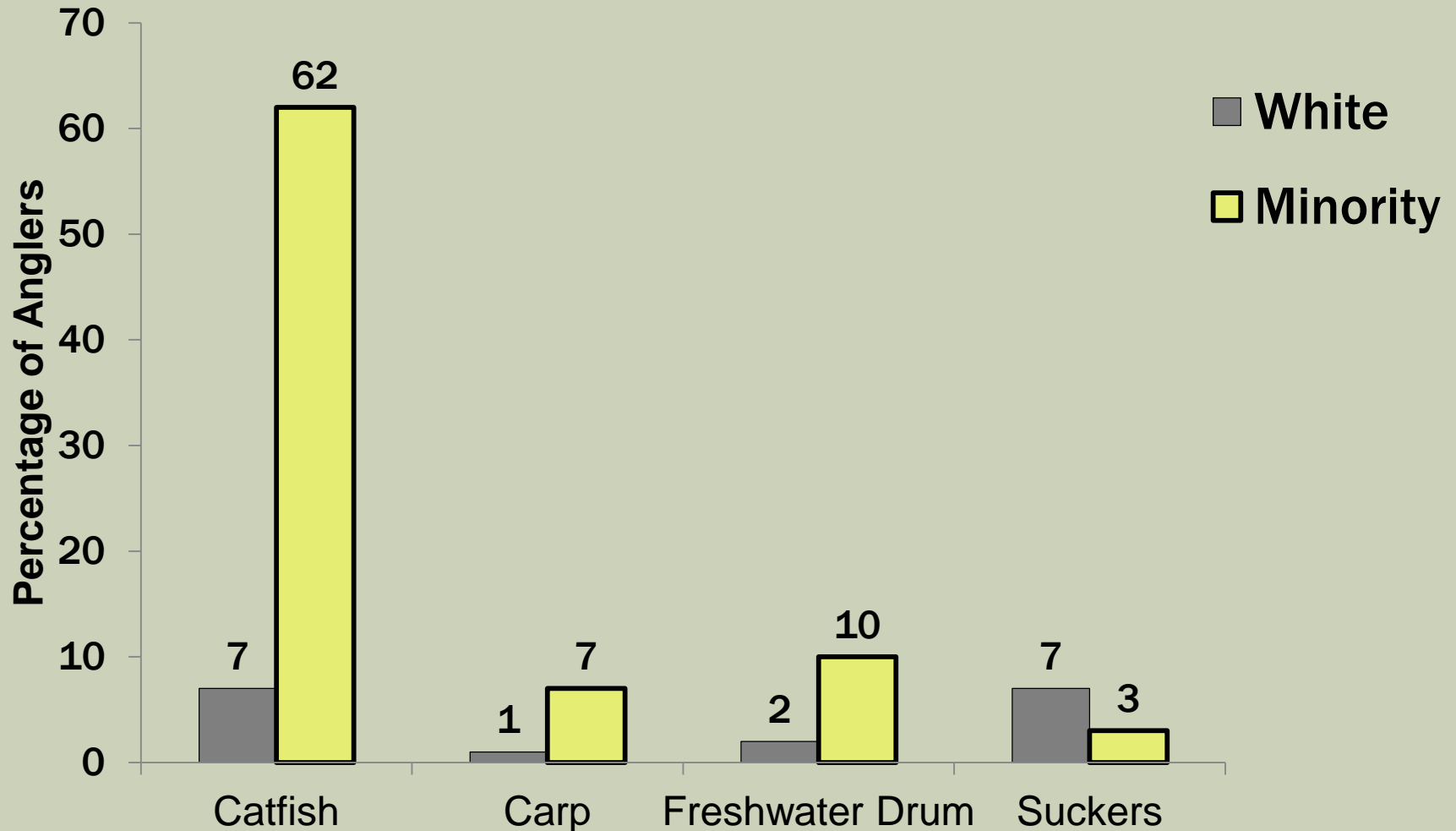
“NO” RESPONSES BY RACE



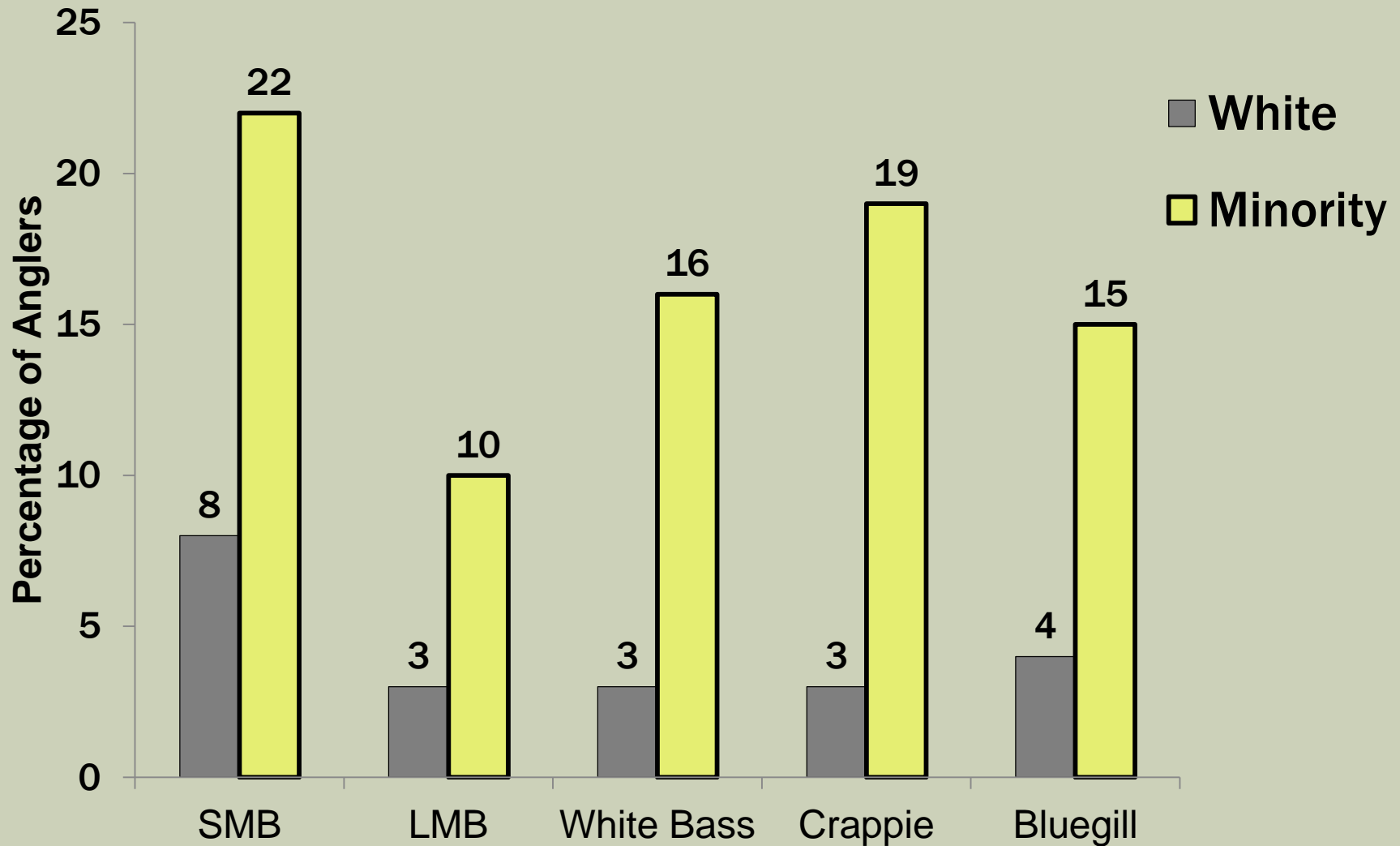
Differences in Fish Eaten



Differences in Fish Eaten



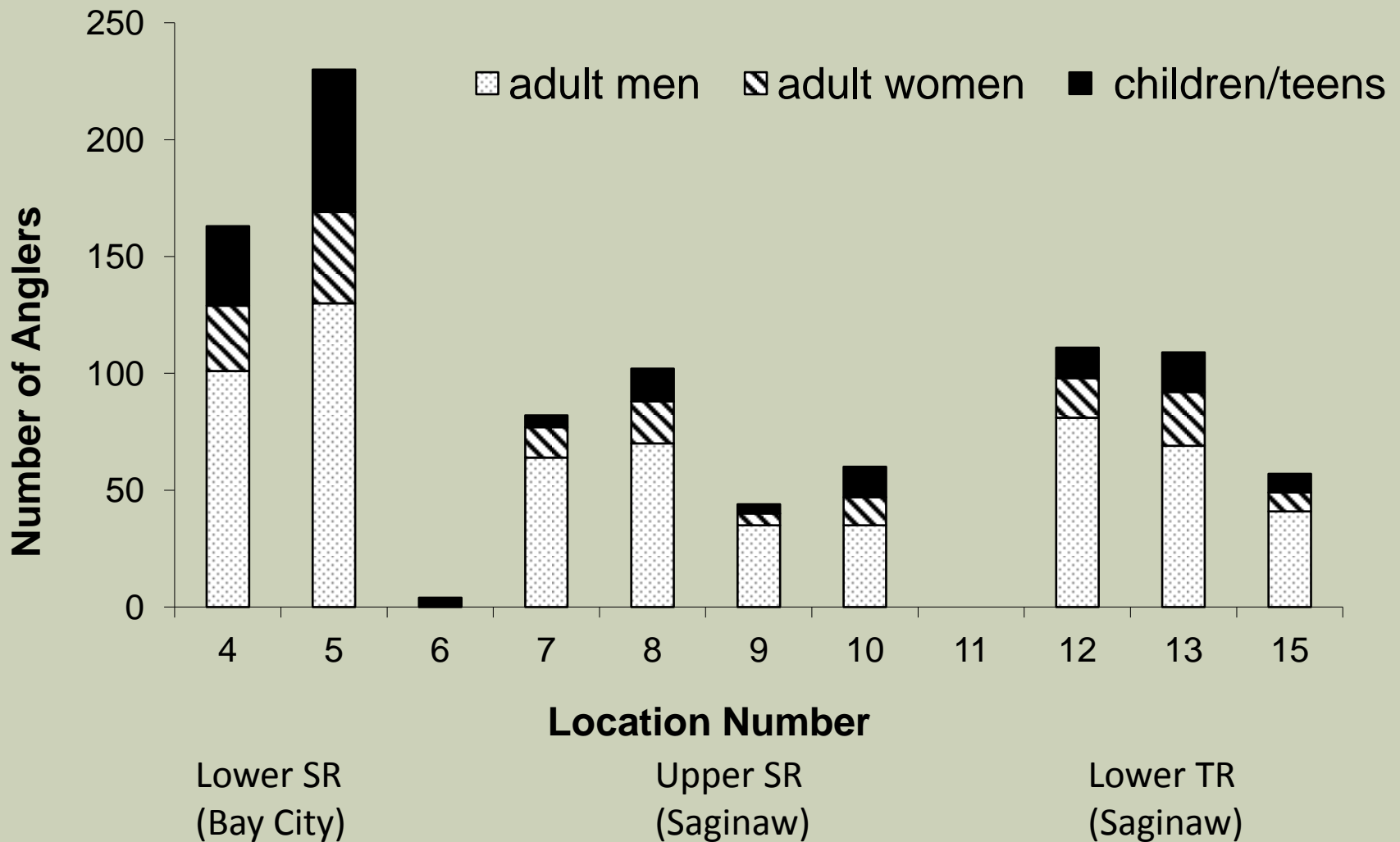
Differences in Fish Eaten



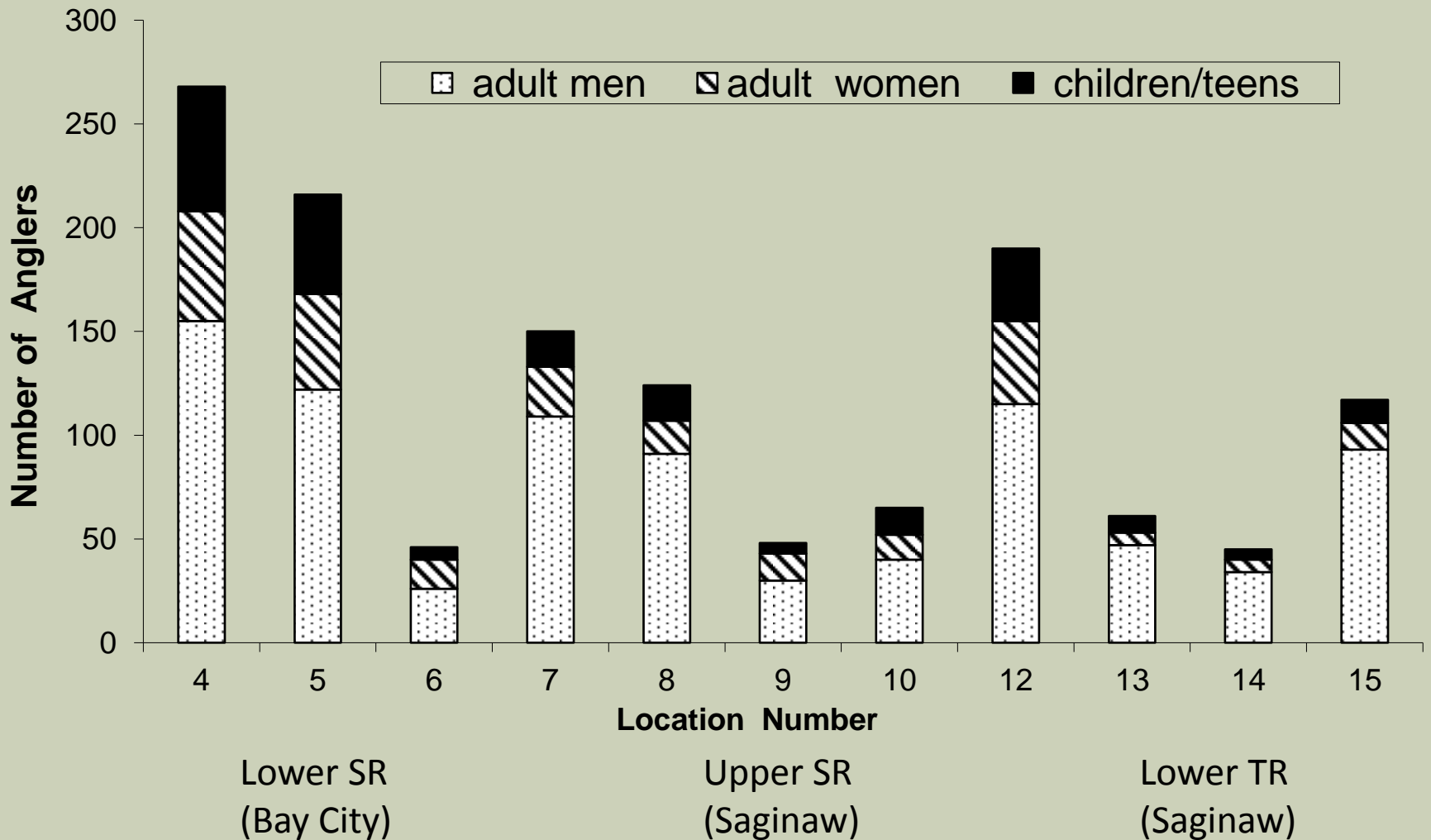
2009-2011 SUMMER SHORELINE DISTRIBUTION LOCATIONS

- 4 Vets Memorial Park - Bay City
- 5 Boys and Girls Club - Bay City
- 6 Cass River Boat Launch - Bay City
- 7 Hwy 13 - closer to Bay City
- 8 Hwy 13 - closer to Saginaw
- 9 Niagara Road - Saginaw
- 10 Ojibway Park - Saginaw
- 11 Rust Ave Boat Launch - Saginaw
- 12 Wicks Park - Saginaw
- 13 Center Road Boat Launch - Saginaw
- 14 West Michigan Park - Saginaw
- 15 Imerman Park - Saginaw

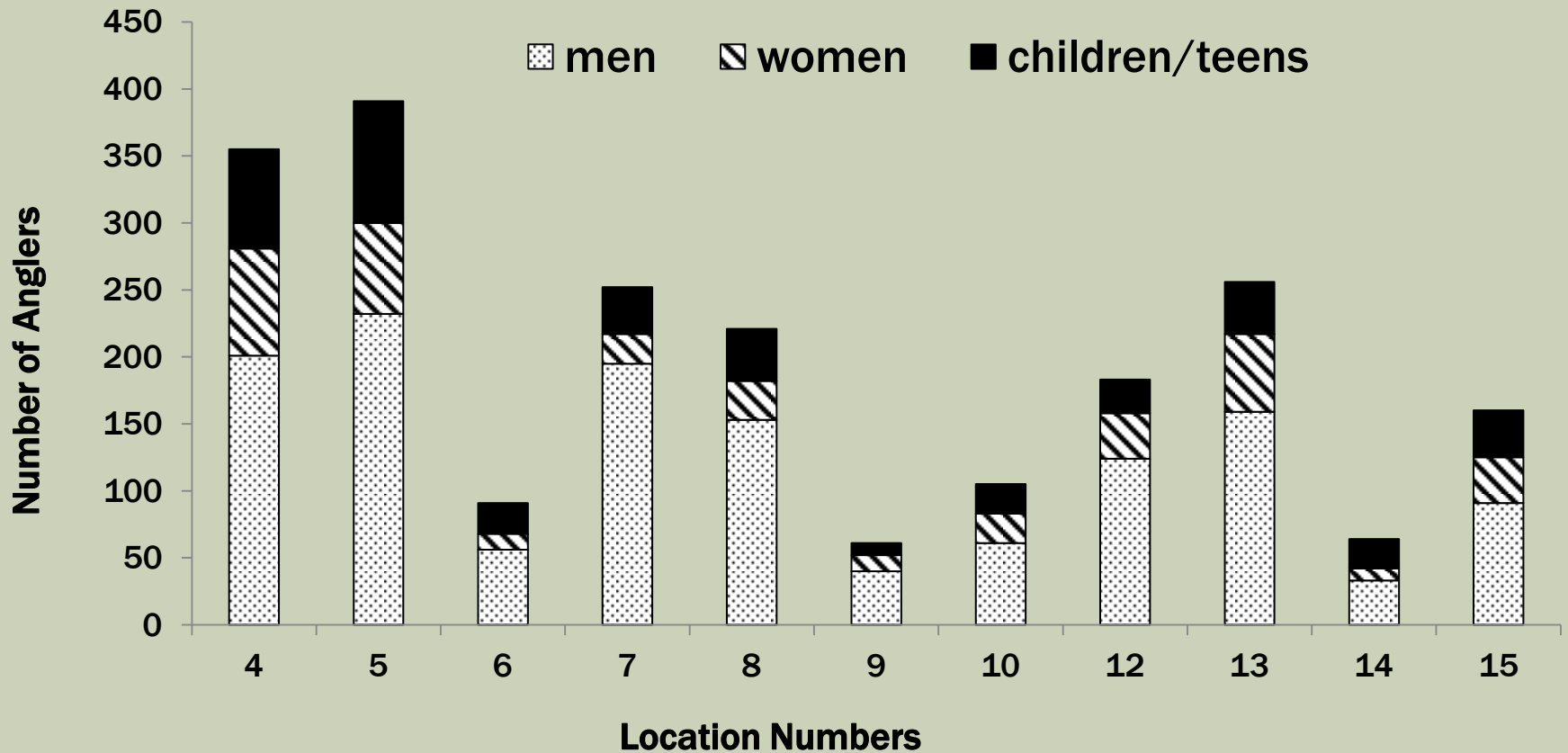
2009 - UNIQUE COUNTS OF ANGLERS BY LOCATION N=934



2010 - UNIQUE COUNTS OF ANGLERS BY LOCATION N=1,331



2011 - UNIQUE COUNTS OF ANGLERS BY LOCATION N=1,899

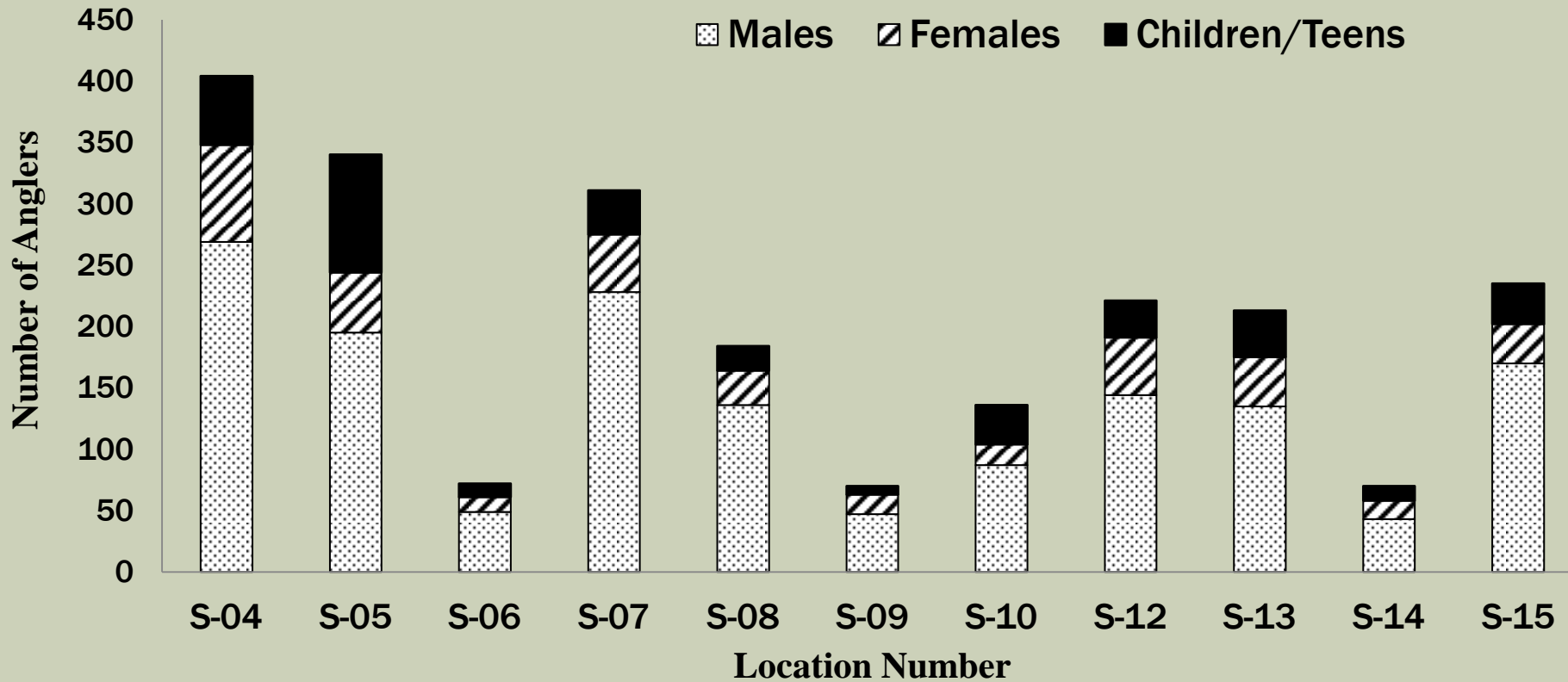


Lower SR
(Bay City)

Upper SR
(Saginaw)

Lower TR
(Saginaw)

2012 - UNIQUE COUNTS OF ANGLERS BY LOCATION N=2,049



Lower SR
(Bay City)

Upper SR
(Saginaw)


Lower TR
(Saginaw)




**Fish Advisories
for Men & Women***
For Saginaw Bay


 **EAT ALL YOU WANT**
 Burbot Yellow Perch
 Chinook Salmon Coho Salmon
 Rainbow Trout Steelhead
 Brown trout under 18 inches
 Walleye under 18 inches
 Whitefish under 18 inches


 **FOUR MEALS PER MONTH**
 Smallmouth Bass
 Brown Trout over 18 inches
 Walleye over 18 inches
 Lake Trout under 26 inches
 Whitefish between 18-22 inches
 All other species

 **DO NOT EAT**
 Carp
 Catfish
 White (Silver) Bass
 Whitefish over 22 inches
 Lake Trout over 26 inches

**For the Saginaw River &
Tittawabassee River**

 **EAT ALL YOU WANT**
 Walleye under 18 inches

 **FOUR MEALS PER MONTH**
 Smallmouth Bass
 Walleye over 18 inches
 All other species


 **DO NOT EAT**
 Carp
 Catfish
 White (Silver) Bass




*Advisory for men 15 years or older and women over 45 years old.




**Fish Advisories
for Women & Children****
For Saginaw Bay


 **CHOOSE ONE OPTION**
OPTION 1:
FOUR MEALS PER MONTH
 Burbot
 Yellow Perch
 Whitefish under 18 inches

OPTION 2:
PICK ONE FROM THIS LIST PER MONTH
 Chinook Salmon Coho Salmon
 Rainbow Trout Steelhead
 Walleye under 18 inches
 Brown Trout under 18 inches
 All other species

 **DO NOT EAT**
 Carp
 Lake Trout Catfish
 Smallmouth Bass White (Silver) Bass
 Walleye over 18 inches
 Brown Trout over 18 inches
 Whitefish over 18 inches

**For the Saginaw River &
Tittawabassee River**

 **ONE MEAL PER MONTH**
 Walleye under 18 inches
 All other species

 **DO NOT EAT**
 Carp
 Catfish
 White (Silver) Bass
 Smallmouth Bass
 Walleye over 18 inches



**Advisory for boys and girls under the age of 15 and women ages 15-45 years old.

SUMMARY

- TR/SR/SB fish have elevated chemical contaminant concentrations that cause fish consumption advisories.
- Many people eat fish from the TR/SR/SB.
- People who regularly eat contaminated fish will have higher levels of those chemicals in their body.
- People differ in the type of fish they eat, which will affect their exposure to the chemicals (i.e., type of angler, race, or gender.)
- Shoreline distribution of advisories is both targeted and efficient.