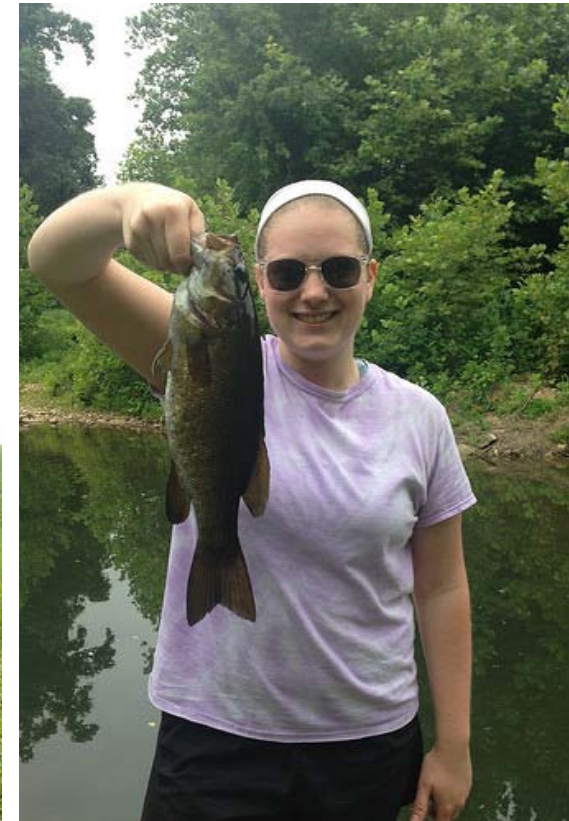


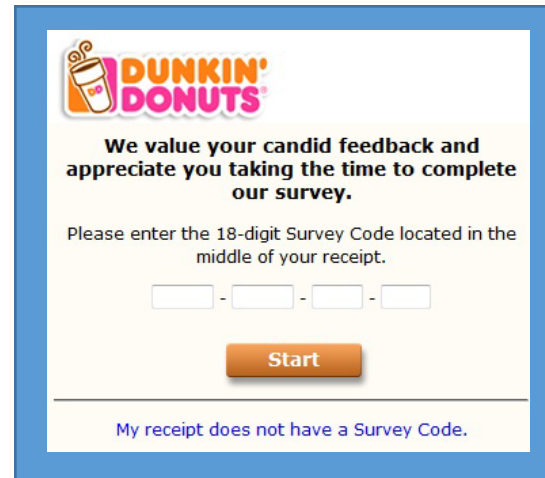
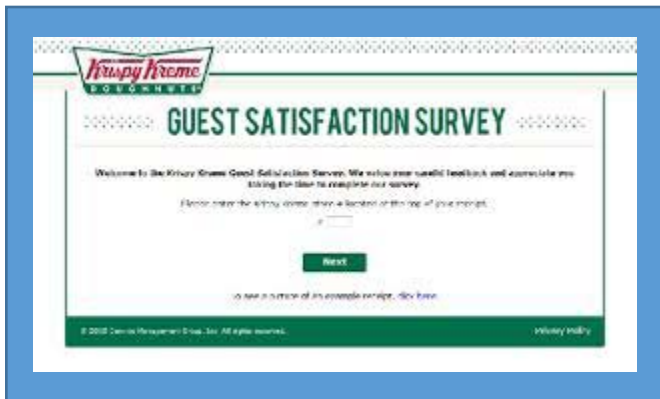
2016 Maryland Non-Tidal Angler Survey

Scott Knoche, Research Economist, Morgan State University
Susan Rivers, Maryland DNR Fisheries Service,
and many others...



Why a Survey?

- Companies spend LOTS of \$ on surveys to better understand their customers!



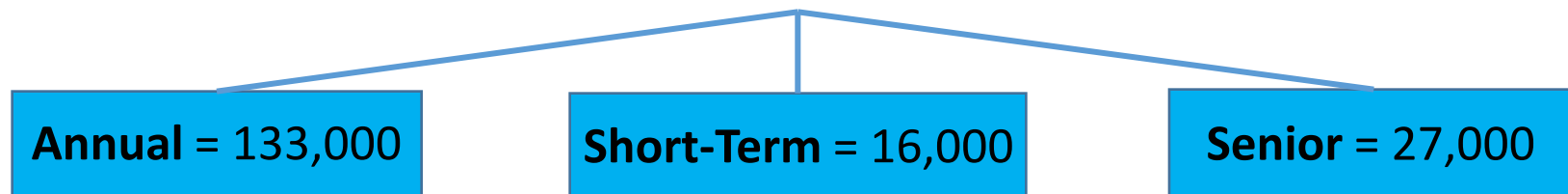
- This can help organizations adjust product offerings & improve services
- Non-Tidal anglers are an important **customer** of the MDNR Fisheries Service



*At participating SUBWAY® Restaurants for a limited time only.
One free cookie per customer per week.

Maryland Angler as Customer

2015 MD License Purchases Permitting Non-Tidal Fishing



- Need better understanding of the fishing experiences (i.e., products) Maryland anglers are consuming
 - For Seniors, we don't know whether they are fishing Non-Tidal waterways
 - We **do** know which anglers are fishing for trout (via trout stamp purchases)

To create, maintain & enhance exceptional non-tidal fishing experiences, more information is needed about our customers

- Participation
- Fishing Locations
- Satisfaction
- etc.
- Target Species
- Preferences
- Expenditures

Data Collection

- **Objective:** Cost-effectively collect management-relevant information on Maryland Non-Tidal anglers, to draw scientifically-defensible, population-level conclusions while minimizing sources of error
- **Impediments to this Objective Include:**

Sampling Error

When small subset of whole population is drawn from sample

Measurement Error

Respondent does not understand or misinterprets question

Coverage Error

Sample does not include all elements of population

Non-Response Error

When respondents differ from non-respondents

Survey Development

- Mixed-Mode Internet & Mail Survey
- Worked closely with MDNR Fisheries Service personnel to develop and refine survey structure & content
- Rigorous Survey Pretesting
 - Hour-long cognitive interviews (N= 18)
 - Using computer screen sharing software, I observed individuals take survey
 - Afterwards, we had in-depth discussion on survey comprehension
 - No major issues identified, some minor changes made



Survey Sampling & Mailing

- Random Sample

- Individuals permitted to fish during Non-Tidal MD waterways during 2015

- Four contacts

- Web Survey Solicitation (Mailings 1 – 3)

1. Letter introducing survey w/ survey web address
2. Reminder postcard 1 w/ survey web address
3. Reminder postcard 2 w/ survey web address

- Hard Copy Survey (Mailing 4)

4. Survey booklet with Business Reply Mail envelope

- Response rate

- 936 responses / 3829 valid addresses = 24.5%



Page 1: Non-Tidal Emphasis

Fishing in Non-Tidal Waterways and Tidal Waterways in Maryland

When responding to questions in this survey, it is important to distinguish between your fishing in Non-Tidal Waterways and Tidal Waterways in Maryland. These two types of waterways are defined below.

- Tidal Waterways – Chesapeake Bay & tidal tributaries, Coastal Bays & Atlantic Ocean
- Non-Tidal Waterways – Non-tidal rivers & streams, lakes, ponds, and reservoirs

Map of Maryland Tidal Waterways and Areas with Non-Tidal Waterways



Page 2: Trip-Specific Questions

11. When thinking about this previous fishing trip, please indicate how much you agree or disagree with the following statements.

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
Catch (ex: size, # of fish) met or exceeded my expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental quality met or exceeded my expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fishing was the primary reason for taking a trip to this area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I plan on taking a fishing trip to this location again	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. For the same trip as above, please enter the dollar amount of your share of expenditures for each category below. Please be as accurate as possible – If unsure, provide your best estimate. If you made no expenditures for a category, please enter a “0”.

Transportation (ex: gas & tolls) \$ _____

Boat Expenses (ex: gas & launch fees) \$ _____

Groceries/Snacks/ Drinks \$ _____

Restaurant/ Takeout \$ _____

Entertainment \$ _____

Bait, Lures, & Tackle \$ _____

Guide Fees \$ _____

Lodging \$ _____

Other \$ _____

Page 3: # of Trips, Fishing Locations

13. Please list the number of fishing trips you took to Maryland Non-Tidal Rivers/Streams during each season below. (If you took no trips during a season, please enter "0")

Winter 2015 Spring 2015 Summer 2015 Fall 2015
(Jan. 2015 – Mar. 2015) (Apr. 2015 – June 2015) (July 2015 – Sept. 2015) (Oct. 2015 – Dec. 2015)

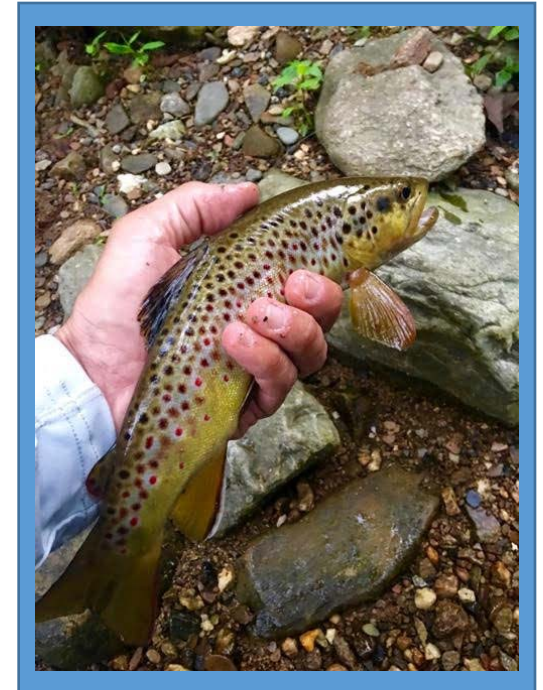
of trips

14. Please list the three Maryland Non-Tidal Rivers/Streams where you went fishing the most in 2015. For each waterbody, also list the county, # of trips, and species targeted. (If you did not fish in a Maryland Non-Tidal River/Stream in 2015, please skip to question 15.)

<u>Non-Tidal River/Stream</u>	<u>County</u> (list multiple, if necessary)	<u># of trips</u>	<u>Species Targeted</u> (list multiple, if necessary)

Pages 5-8: Trout

- Trout Angler participation
 - Fishing for trout in past 10 years?
 - # of trout fishing trips in 2015?
- Factors influencing trout fishing site selection



and....

- Something called a “Choice Experiment”

What is a Choice Experiment?

- Survey approach in which an individual chooses between two (or more) hypothetical products
- Elicits tradeoffs between product attributes
- Used by corporations to estimate demand for new products and product attributes

Where would YOU go
Trout Fishing?

27. Choice 4: Where would you go trout fishing? (check only one box below)

Fishing Site Characteristics		<u>Fishing Site A</u>	<u>Fishing Site B</u>
<u>Waterbody</u>	<i>Type of Waterbody</i>	River/Stream	River/Stream
<u>Catch</u>	<i>Type of Trout</i>	Stocked Rainbow Trout	Wild Brook Trout
	<i>Typical Catch Rate</i>	1 trout per 45 minutes	1 trout per hour
	<i>Trophy Possibility</i>	1 trophy per 5 trips (Rainbow Trout 18" or above)	1 trophy per 2 trips (Brook Trout 10" or above)
<u>Regulations</u>	<i>Lure/Bait</i>	Fly Fishing Only	Fly Fishing Only
	<i>Creel Limit</i>	2 trout	5 trout
<u>Distance</u>	<i>Driving Distance</i>	125 miles	35 miles
Where would you go fishing? (Please Check Only One)		<input type="checkbox"/>	<input type="checkbox"/>

28. Which of the following would you rather do? (check only one)

- Go trout fishing at the site you selected above
 Go trout fishing at my usual location
 Do something else (go fishing for another species, stay home, etc.)

Page 9: Participation Constraints

**I WOULD GO
FISHING
MORE OFTEN
IN MARYLAND
NON-TIDAL
WATERWAYS
IF...**

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
I was able to catch more fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
access to fishing sites was better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I knew when and where to fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
environmental quality was higher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regulations were less restrictive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fishing areas were less crowded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fishing was less expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I had somebody to go with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was able to catch larger fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I had more leisure time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Progress & Next Steps

- Data entry complete
- Data cleaning near completion
- Report with summary statistics under development
 - Final report this Fall/Winter
- Finalize trout angler fishing site choice model

