Measuring and Changing Stewardship Behaviors

Suzanne Etgen

WSA
ANNE ARUNDEL COUNTY

Why are Individual Stewardship Action Important?

64,000 square miles

6 states + DC

1,800 local governments

18 million people

150,000 move into the Bay watershed per year

Our Bay

Chesapeake Bay Watershed Agreement
10 broad goals for Bay restoration

https://www.chesapeakebay.net/what/what_guides_us/watershed_agreement

Stewardship Outcome

"Increase the number and diversity of trained and mobilized citizen volunteers with the knowledge and skills needed to enhance the health of their local watersheds."

Citizen Stewardship Framework
Increasing citizen actions for watershed health

Knowledge & skills

Community Leaders/ Champions

Volunteerism/ Collective Community Action

Individual Citizen Actions and Behaviors

Increasingly Environmentally Literate Population (Elit Goal)

Mobilize/Increase

Photos Courtesy Chesapeake Bay Program

Chesapeake Bay Stewardship Indicator

1. Baseline measurement of Stewardship (Individual actions and likelihood to act, volunteerism and civic engagement)
2. Inform effective interventions to increase Stewardship actions

Behaviors

- **Pet waste (2: on property/off property)**
- **Leaves/Lawn clippings (2)**
- **Litter (2: drop/pick-up)**
- **Fats, grease/Medicines down the drain (2)**
- **Fertilizer use/keep off hard surfaces (2)**
- **Pesticide/Herbicide use (2)**
- **Conservation landscaping**
- **Rain garden installation**
- **Septic system**
- **Tree planting**
- **Downspout redirect**
- **Rain barrel/Connected, emptied (2)**
- **Water conservation**

Stewardship Indicator
Sampling Methodology

Chesapeake Bay Counties

State boundary
County boundary
Chesapeake Bay watershed
Chesapeake Bay
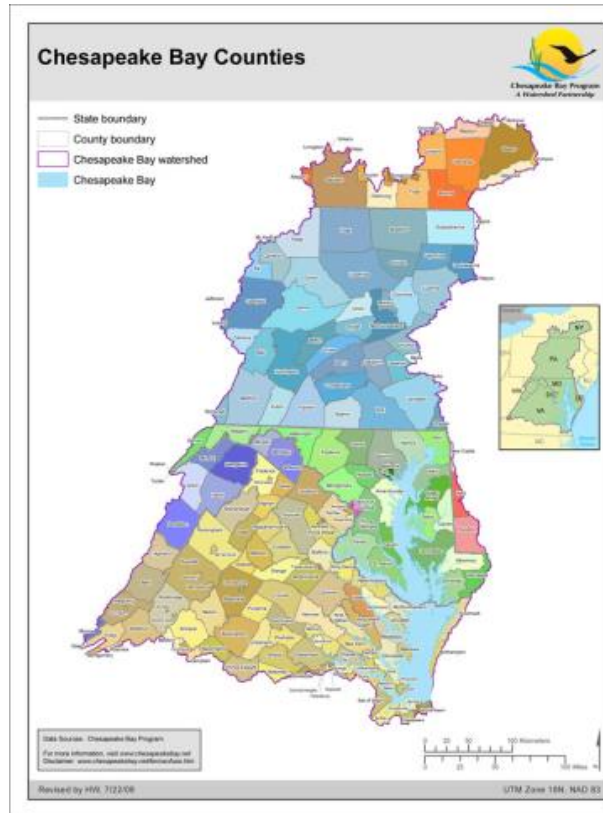
	2017 Baseline
Anne Arundel County, MD +678 Interviews	All states statistically significant N=5,212
VA	1,001 (±3.1%)
MD	1,005 (±3.1%)
PA	1,003 (±3.1%)
DC	801 (±3.5%)
WV	600 (±4.0%)
NY	400 (±4.9%)
DE	402 (±4.9%)

Fielded March – May 2017
13-minute interview
Wireless and Landline
Spanish language interviewing

How can the Stewardship Indicator HELP us HELP people?

What: Choose the Right Behavior

Who: Prioritize an Audience

Why: Indicator does not answer "why".

What: Choose the Right Behavior

- **Impact**
  - **How much will this contribute to improving water quality?**

- **Opportunity**
  - **How many in the community are *not* doing this?**

- **Likelihood**
  - **How willing/likely is your target audience to do it?**

ADAPTED FROM DOUG-MCKENZIE MOHR

Stewardship Indicator: 2017 Final Baywide Data + Anne Arundel County

	Adoption	Non-Adoption	Likelihood	Product
Lawn fertilizer off hard surfaces	27.0%	73.0%	24.25	17.70
Plant a tree	40.2%	59.8%	28.40	16.98
Replace an area of grass lawn with natives	30.7%	69.3%	21.55	14.93
Install a rain barrel	17.1%	82.9%	15.60	12.93
Empty rain barrel between rainstorms	66.9%	33.1%	38.35	12.69
Create a rain garden	17.2%	82.8%	14.85	12.30
Bag, mulch, or compost leaves	70.3%	29.7%	39.75	11.81
Fertilize a grass lawn	62.1%	37.9%	29.10	11.03
Use pesticides	63.3%	36.7%	29.00	10.64
Use herbicide	68.5%	31.5%	32.90	10.36
Car washing in driveway or street*	63.0%	37.0%	24.40	9.03
Install low flow fixtures	61.2%	38.8%	22.75	8.83
Downspouts directed to hard surfaces.	71.9%	28.1%	25.95	7.29
Blow grass clippings onto hard surfaces	84.2%	15.8%	44.85	7.09
Septic system inspected	87.2%	12.8%	55.15	7.06
Pick up dog waste	71.4%	28.7%	23.38	6.70
Oil or grease down the drain	87.0%	13.0%	45.60	5.93
Pick up other people's litter	85.9%	14.1%	33.95	4.79
Medicine down the drain	91.1%	8.9%	50.55	4.50
Toss litter on the ground	94.2%	5.8%	58.25	3.38

Adoption = Percentage of the population performing a positive behavior
(at least sometimes) or not performing a negative behavior (seldom or never)

Who: Prioritize an Audience

- **SIZE:** As a segment of a population, what is the actual or relative size of this segment?

- **Opportunity:** Is that audience not doing a desired behavior? (i.e. are homeowners with small waterfront lawns making a larger or smaller impact than homeowners with large lawns far from the waterfront?)

- **Likelihood (READINESS TO ACT)**: How concerned is the target audience with the problem issue/behavior? How likely are they to take action on this behavior?

ADAPTED FROM DOUG-MCKENZIE MOHR

Citizen Stewardship Indicator: 2017 Final Baywide Data

"Very Likely" to Begin Picking Up Pet Waste
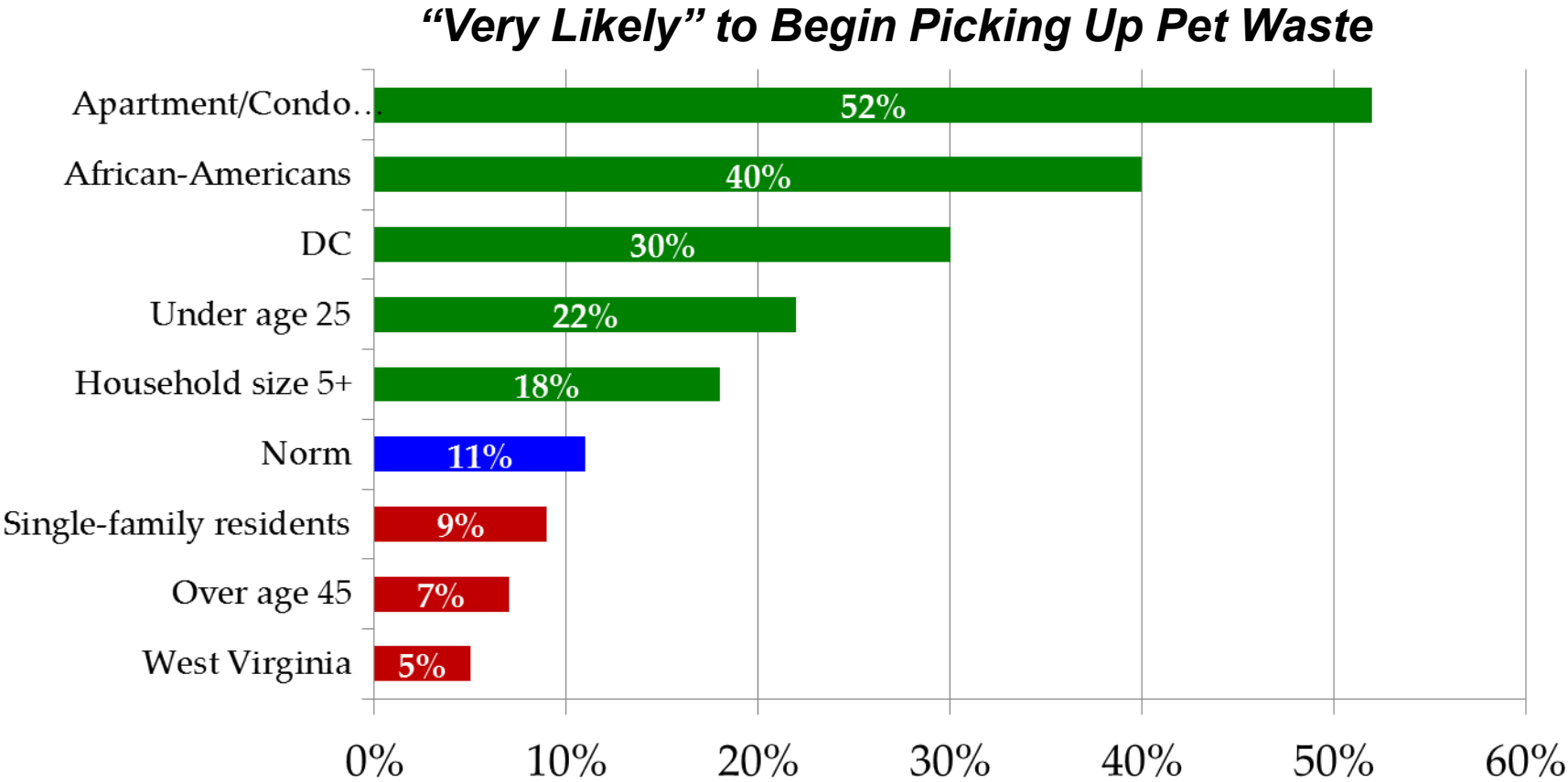
Looking forward over the next year or so, how likely are you to do each of these things using the scale very likely, somewhat likely, or not likely?
Pick up your dog's waste and dispose of it in the trash when you are…
…On your own property.

About the Survey   Survey Trends   Survey Data   Behavior Change   Campaigns   About Us

Inspiring Action, Fostering Stewardship

Thousands of Chesapeake Bay watershed residents were surveyed about their stewardship behaviors that impact the Bay's health.

Learn about the survey

Survey Data

The Citizen Stewardship Index Survey reveals insight into the knowledge, attitudes, and practices of residents in the Chesapeake Bay Watershed. Explore the survey results below to inform your behavior change campaign.

STRENGTH OF DATA ⓘ
99/100
Download the methodology (.pdf)

CURRENT SAMPLE
5,212 Respondents
Download this data (.xls)

BAY-WIDE SAMPLE
5,212 Respondents
Download this data (.xls)

Filter:

🌐 Location   ⌄

👶 Age   ⌄

🏛 Education   ⌄

🚼 Children in the household   ⌄

🏠 Home ownership   ⌄

🏢 Housing type   ⌄

👥 Community type   ⌄

🌱 Family involved in agriculture   ⌄

⛪ Religious affiliation   ⌄

👥 Race or ethnicity   ⌄

💵 Income   ⌄

⚥ Gender   ⌄

BEHAVIORS

The Citizen Stewardship Index Survey questions were based on 19 behaviors. Some of the behaviors are positive and encouraged, while others are negative and should be minimized or stopped. Explore the behaviors below, filter the list by behavior type, or sort the behaviors by their overall combined score, environmental impact, available opportunity, or likelihood of adoption.

Select Behavior Type: [All ⌄]

Sort by: [Combined Score ⌄]

⌄   **SCORE 95**   **DOG WASTE**
Pick up your dog's waste and dispose of it in the trash when you are **off** your property.
[**View behavior data**]

⌄   **SCORE 93**   **DOG WASTE**
Pick up your dog's waste and dispose of it in the trash when you are **on** your property.
[**View behavior data**]

Filter by demographic

🌐 Location ⌃

Explore Map | Select Locations

Delaware ⌄

Maryland ⌃

☐ Shore Region
E Shore + Harford + Southern MD

☑ Anne Arundel County

☑ Baltimore County

☑ Montgomery County

☑ Prince George's County

☑ Baltimore City

☐ Piedmont Region
Allegany -> Carroll + Howard

New York ⌄

Pennsylvania ⌄

Virginia ⌄

Washington, DC ⌄

West Virginia ⌄

😊 Age ⌃

☐ Less than 25

☐ 25 to 34

☐ 35 to 44

☐ 45 to 54

☑ 55 to 64

☑ 65 to 74

☑ 75 or more

Survey Data
The Citizen Stewardship Index Survey reveals insight into the knowledge, attitudes, and practices of residents in the Chesapeake Bay Watershed. Explore the survey results below to inform your behavior change campaign

Filters:

CLEAR ALL | Maryland - Anne Arundel County ✕ | 55 to 64 ✕ | 65 to 74 ✕ | 75 or more ✕ | Maryland - Baltimore County ✕ | Maryland - Montgomery County ✕ | Maryland - Prince George's County ✕ | Maryland - Baltimore City ✕

STRENGTH OF DATA ⓘ	CURRENT SAMPLE	BAY-WIDE SAMPLE
50/100	256 Respondents	5,212 Respondents

THE BEHAVIORS
The Citizen Stewardship Index Survey questions were based on 19 behaviors. Some of the behaviors are positive and encouraged, while others are negative and should be minimized or stopped. Explore the behaviors below, filter the list by behavior type, or sort the behaviors by their overall combined score, environmental impact, available opportunity, or likelihood of adoption.

Select Behavior Type: **All** ⌄   Sort by: **Combined Score** ⌄

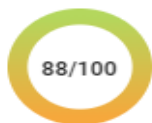|	SCORE		
⌄	**87**	**STORMWATER MANAGEMENT** Created a rain garden, or an area specifically designed to capture and quickly absorb excess rainwater.	View behavior data
⌄	**87**	**STORMWATER MANAGEMENT** Do you have a rain barrel, which is a container that collects rain water from your downspouts?	View behavior data
⌄	**75**	**POLLUTION MANAGEMENT** Planted a tree.	View behavior data
⌄	**74**	**YARD WASTE** Replaced an area of grass lawn with native low-maintenance plants.	View behavior data
⌄	**72**	**STORMWATER MANAGEMENT** Do any of your downspouts drain directly to hard surfaces like a driveway, sidewalk, or street gutter?	View behavior data
⌄	**63**	**POLLUTION MANAGEMENT** Sweep lawn fertilizer off hard surfaces, or use a spray guard to keep it off hard surfaces.	View behavior data
⌄	**58**	**WATER CONSUMPTION** Have you installed low flow sinks, shower heads or toilets to conserve water at your home?	View behavior data

What: Choose a Behavior

Rain Barrel

Anne Arundel County - Maryland; Baltimore County - Maryland; Montgomery County - Maryland; Prince George's County - Maryland; Baltimore City - Maryland

Sample Size: 679/679

AVAILABLE OPPORTUNITY	LIKELIHOOD OF ADOPTION	ENVIRONMENTAL IMPACT	COMBINED SCORE
88/100	85/100	LOW	87

Plant a Tree

Anne Arundel County - Maryland; Baltimore County - Maryland; Montgomery County - Maryland; Prince George's County - Maryland; Baltimore City - Maryland

Sample Size: 679/679

AVAILABLE OPPORTUNITY	LIKELIHOOD OF ADOPTION	ENVIRONMENTAL IMPACT	COMBINED SCORE
68/100	74/100	HIGH	71

Pet Waste

Anne Arundel County - Maryland; Baltimore County - Maryland; Montgomery County - Maryland; Prince George's County - Maryland; Baltimore City - Maryland

Sample Size: 679/679

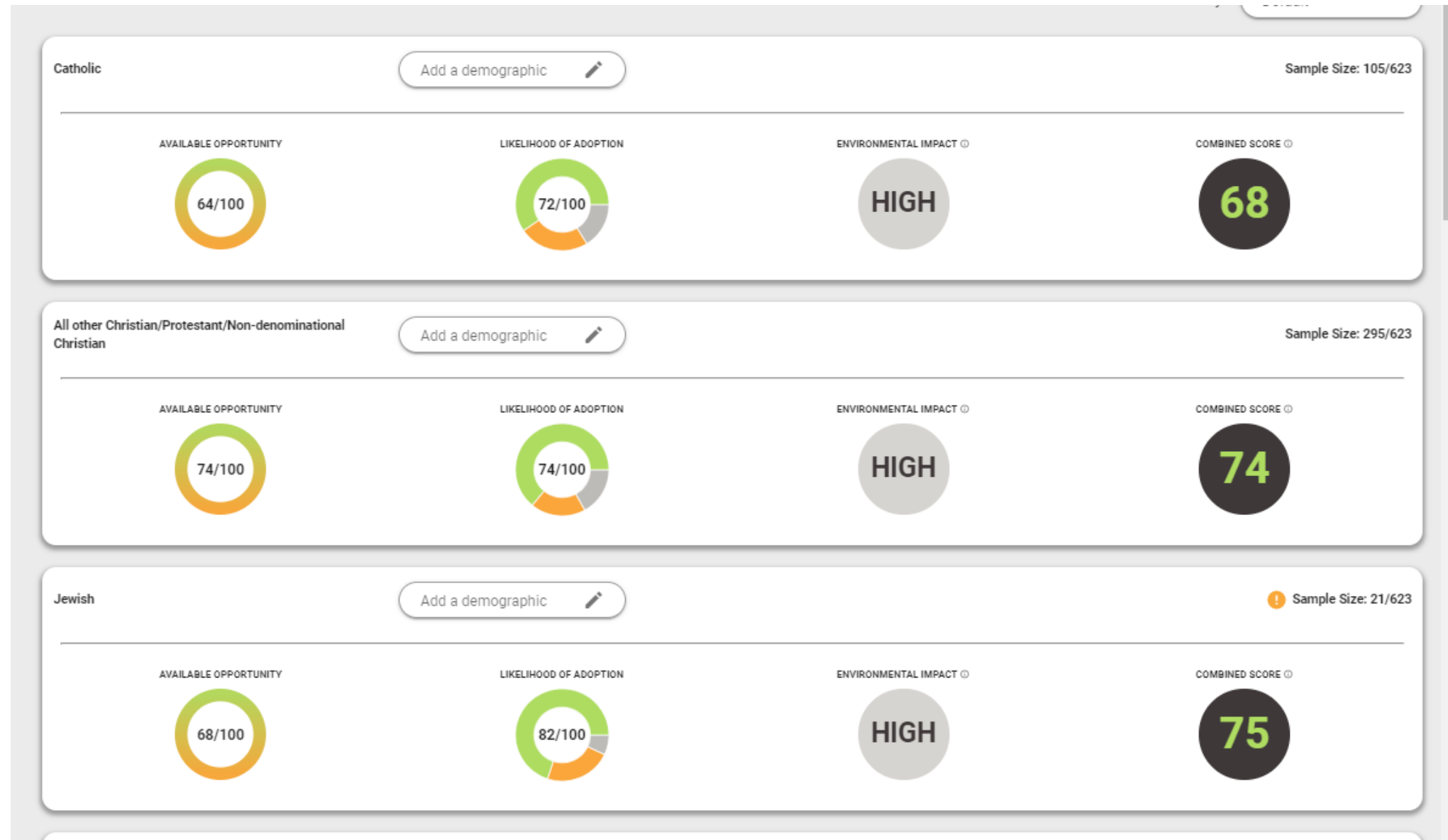| AVAILABLE OPPORTUNITY	LIKELIHOOD OF ADOPTION	ENVIRONMENTAL IMPACT	COMBINED SCORE
16/100	79/100	HIGH	48

Who: Prioritize an Audience

About The Survey

In 2017, the Chesapeake Bay Program conducted the Citizen Stewardship Index Survey, its first comprehensive survey of people's actions and attitudes in the Chesapeake Bay Watershed. The survey was developed and conducted by OpinionWorks LLC on behalf of the Chesapeake Bay Program. The data was collected through mobile and landline phone interviews with 5,212 randomly selected watershed residents between March 14 and June 13, 2017. The Chesapeake Bay Program intends to repeat the survey every five years.

6 WATERSHED STATES & WASHINGTON, DC
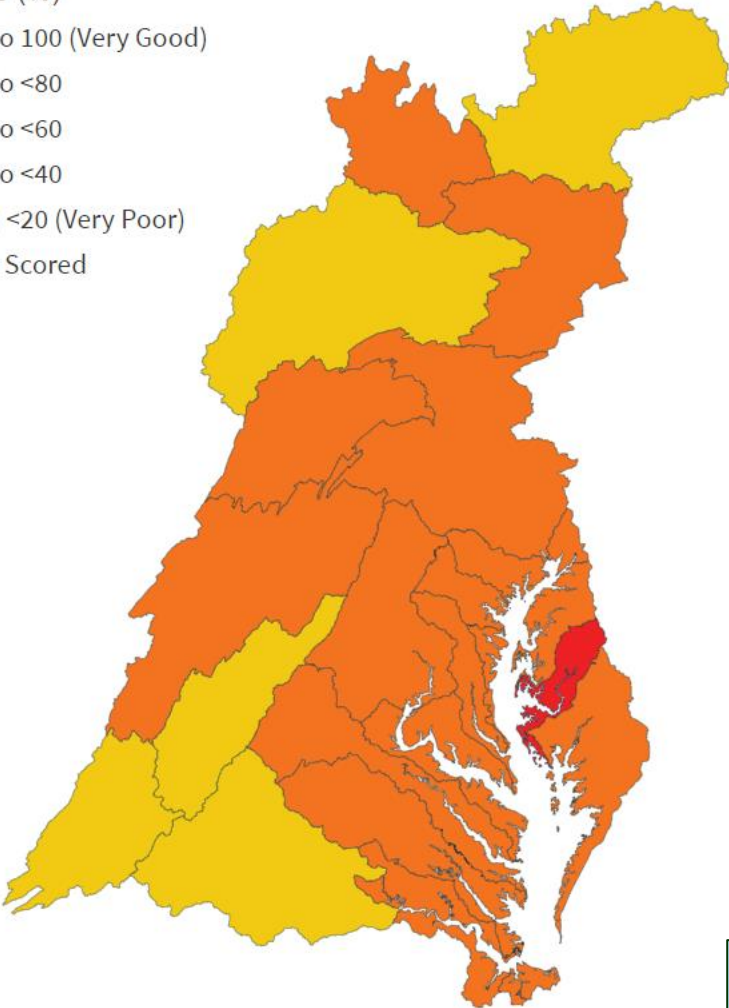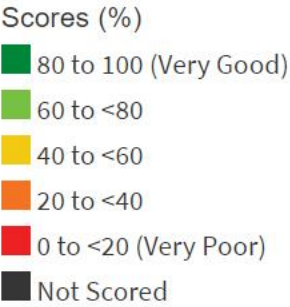
20 MEASURED BEHAVIORS

5,212 COMPLETED SURVEYS

12 DEMOGRAPHIC SEGMENTS

Stewardship Indicator: Bay Report Card

Scores (%)
- 🟩 80 to 100 (Very Good)
- 🟢 60 to <80
- 🟨 40 to <60
- 🟧 20 to <40
- 🟥 0 to <20 (Very Poor)
- ⬛ Not Scored

	2017 Baseline
	All states statistically significant N=5,212
VA	1,001 (±3.1%)
MD	1,005 (±3.1%)
PA	1,003 (±3.1%)
DC	801 (±3.5%)
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Next Fielding: 2022