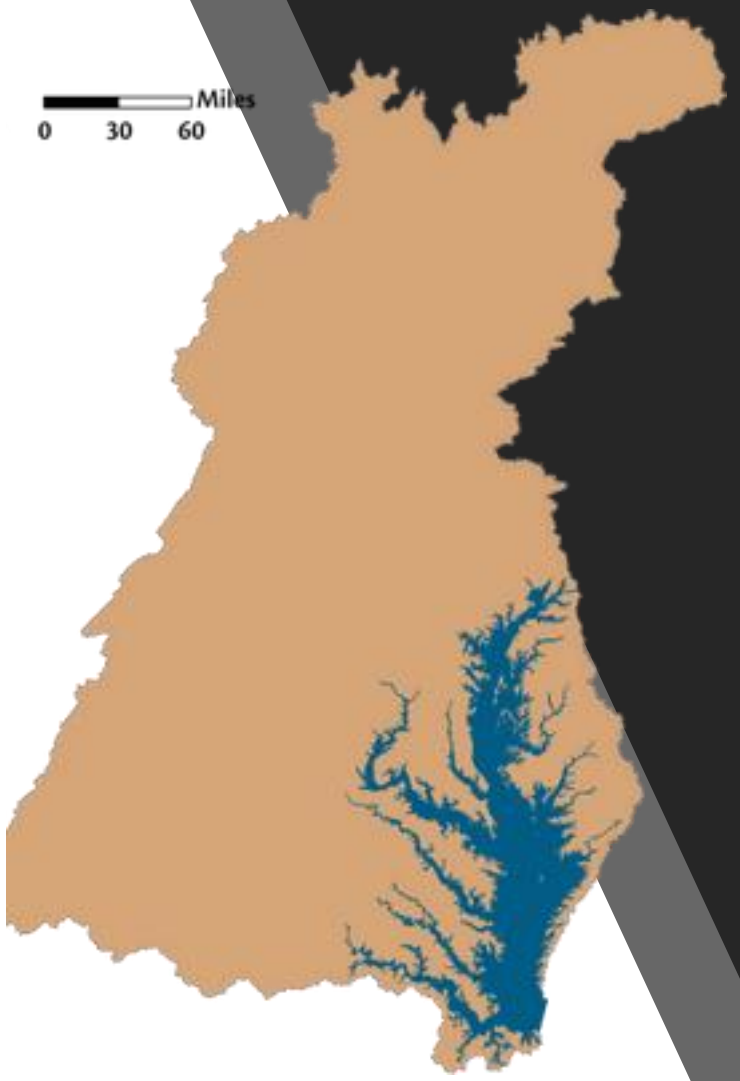
Rachel Felver

Habitat Goal Implementation Team Meeting

November 16, 2020

Social Marketing to Improve Shoreline Management



Purpose

Develop a community-based social marketing strategy that will encourage shoreline property owners to adopt environmentally-sensitive practices in relation to shorelines, based on identified barriers and benefits to shoreline management within the Chesapeake Bay.

Background

2018

GIT-Funding Project in 2018.

spring 2019

Awarded to Action Research in spring 2019.

Feb.–Mar. 2020

Mail survey sent to 1,600 shoreline property owners along the Bay in MD and VA

Nov. 2020

Two virtual focus groups scheduled.

Nov. 2020

Proposals being reviewed for “Developing Communications and Guidance for Shoreline Protection Options for Coastal Landowners”.

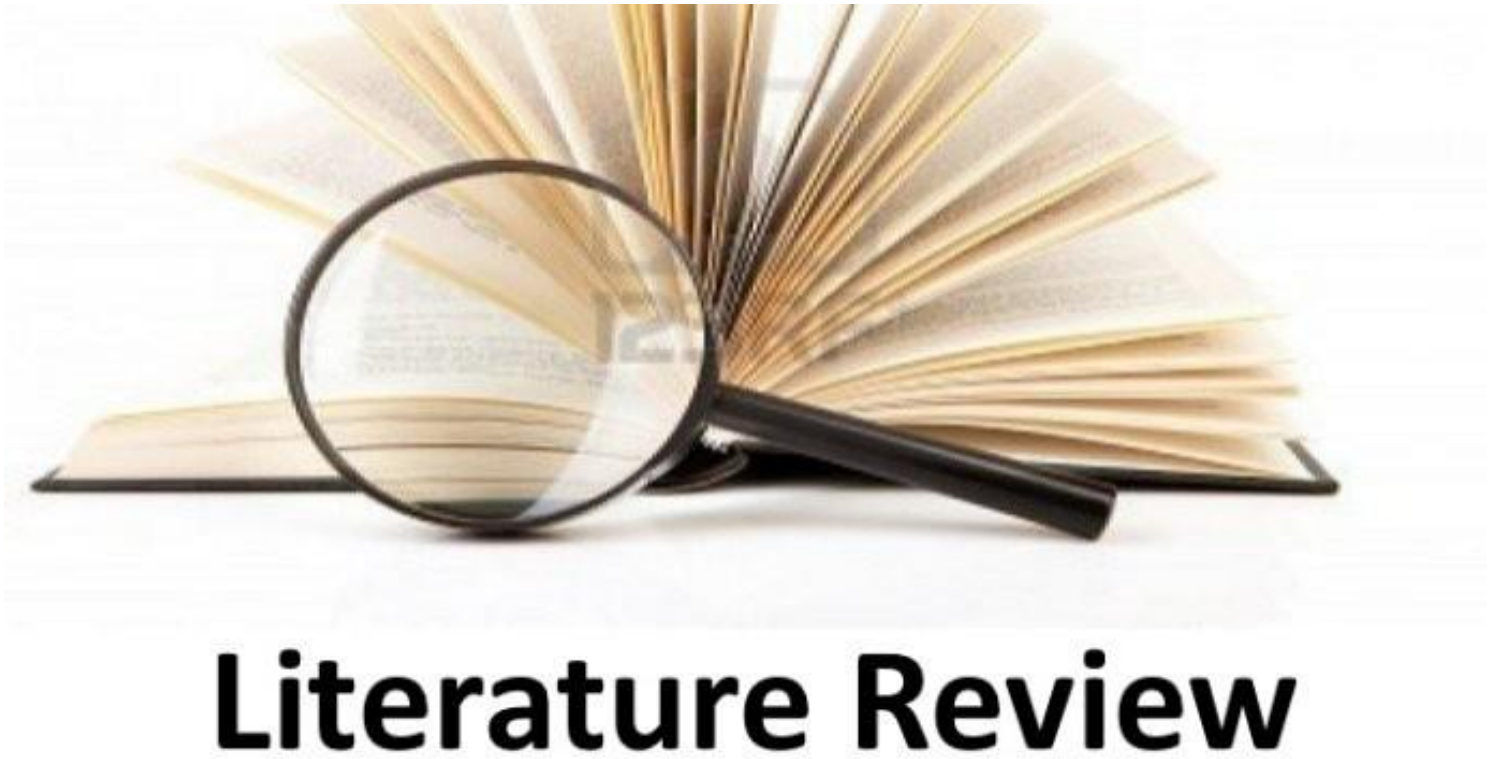
Dec. 2020

Final report and implementation strategy expected; project concludes.

Step One

- Steering committee of shoreline and communications experts established.
  - Nicole Carlozo (MD DNR)
  - Rebecca Chillrud (CRC)
  - Jen Dindinger (UMD, College of Ag and Natural Resources)
  - Rachel Felver (ACB)
  - Jim George (MDE)
  - Gina Hunt (MD DNR)
  - Pam Mason (VIMS)
  - Alison Rogerson (DE DNREC)
  - Lisa Wool (Nanticoke Watershed Alliance)

Step Two



Literature Review

- Existing literature on shoreline management.
- Goal was to establish a foundation for further research efforts to improve shoreline management.

Lit Review Findings

Identified research gaps about behaviors and social science related to living shorelines, removing existing armoring, planting vegetation and leaving shorelines touched/untouched.

Identified a set of 11 behaviors to improve shoreline management.

Eleven Identified Behaviors

- Leave an unarmored shoreline alone - let it erode, accrete, or stay neutral.
- Install beach nourishment (non-structural).
- Install armor – groins with no vegetative component (structural).
- Install armor – jetties with no vegetative component (structural).
- Install armor – breakwater with no vegetative component (structural).
- Install armor – revetment with no vegetative component (structural).
- Install buffer (upland/riparian) vegetation.
- Install living shoreline (LS) – jetties/groins with wetland vegetation (structural).
- Install living shoreline (LS) – offshore breakwater with wetland vegetation (hybrid).
- Install living shoreline (LS) – sills with wetland vegetation (hybrid).
- Install living shoreline (LS) – slope grading/vegetation (non-structural).

Step Three

- Survey of Shoreline Management Experts
  - Short online survey for 15 experts around the watershed (MDE, VIMS, CBT, DE DNREC, MD DNR, William & Mary)
  - Helped determine the relative impact of the previously-mentioned 11 behavior on
    - Excessive erosion,
    - Water quality,
    - Habitat, and
    - Climate resiliency.

Expert survey findings

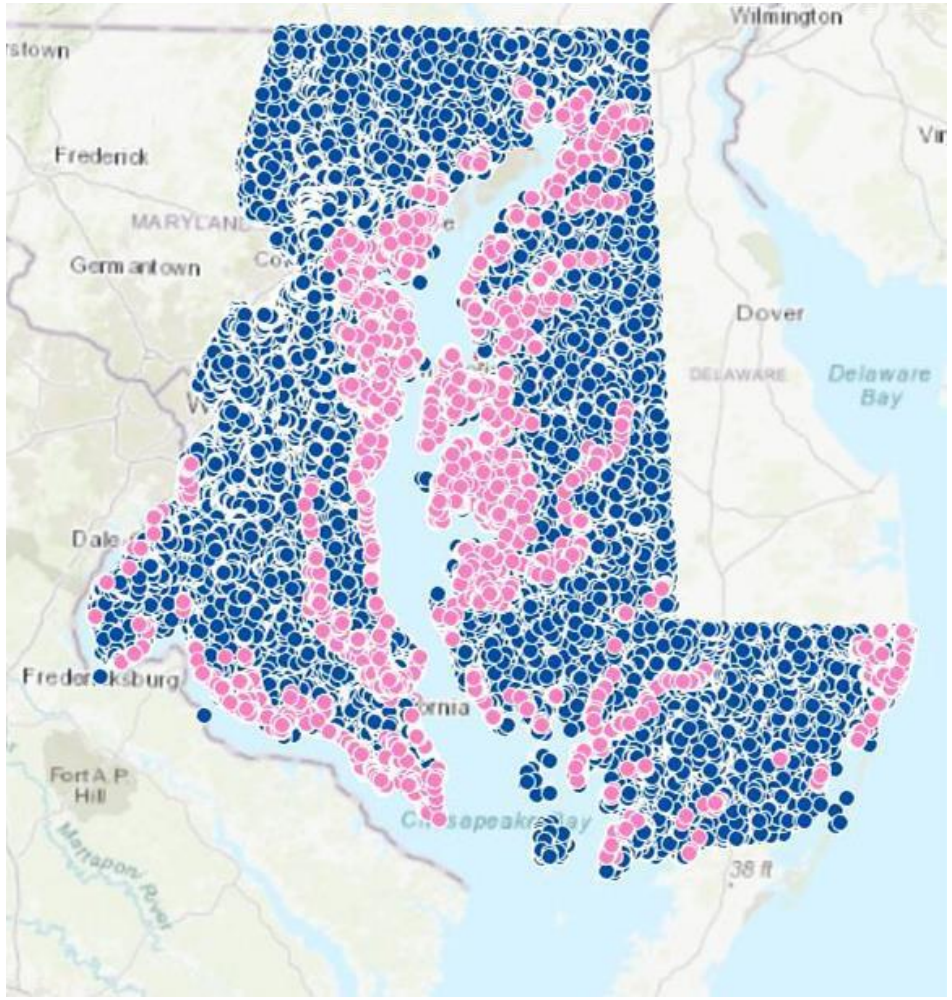
Behavior	Impact[2]	Penetration	Probability	Applicability	Weight[3]
Install buffer (upland/riparian) vegetation	7.40			1	7.40
Living Shoreline with sills	8.21			0.8	6.57
Living Shoreline with offshore breakwater	7.95			0.8	6.36
Living Shoreline - wetland vegetation	7.87			0.8	6.30
Living Shoreline with jetties/groins	7.81			0.8	6.25
Install beach nourishment	4.31			0.8	3.45
Armor - revetment with no vegetative component	3.42			1	3.42
Armor – breakwater with no vegetative component	3.16			1	3.16
Armor – jetties with no vegetative component	2.87			1	2.87
Armor – groins with no vegetative component	2.80			1	2.80
Leave an unarmored shoreline alone	3.47			0.8	2.78

Step Four

- Survey of Shoreline Property Owners
  - What did we want to find out?
    - Prioritize behaviors related to living shorelines for additional research.
    - Prioritize the behavior, “install buffer (upland/riparian) vegetation for additional research.
    - Prioritize the behavior, “leaving an unarmored shoreline alone” for additional research.
    - Remove the suite of armor-related behaviors and beach nourishment from the list.
    - Promoted six behaviors for additional research:
      - Leave an unarmored shoreline alone - let it erode, accrete, or stay neutral.
      - Install buffer (upland/riparian) vegetation.
      - Install living shoreline (LS) – slope grading/vegetation (non-structural).
      - Install living shoreline (LS) – jetties/groins with wetland vegetation (structural).
      - Install living shoreline (LS) – offshore breakwater with wetland vegetation (hybrid).
      - Install living shoreline (LS) – sills with wetland vegetation (hybrid).

Step Four – Cnt'd

- Mailed survey to 1,600 shoreline properties along the Bay in Maryland and Virginia.
  - Addresses randomly selected from an address list generated from state-level GIS data.
  - 468 returned as undeliverable, returned to sender or ineligible.
  - 349 completed surveys; response rate of 30.8%.
- Tailored Design Method.



Survey Questions

What are the shoreline management techniques currently in place at your property?

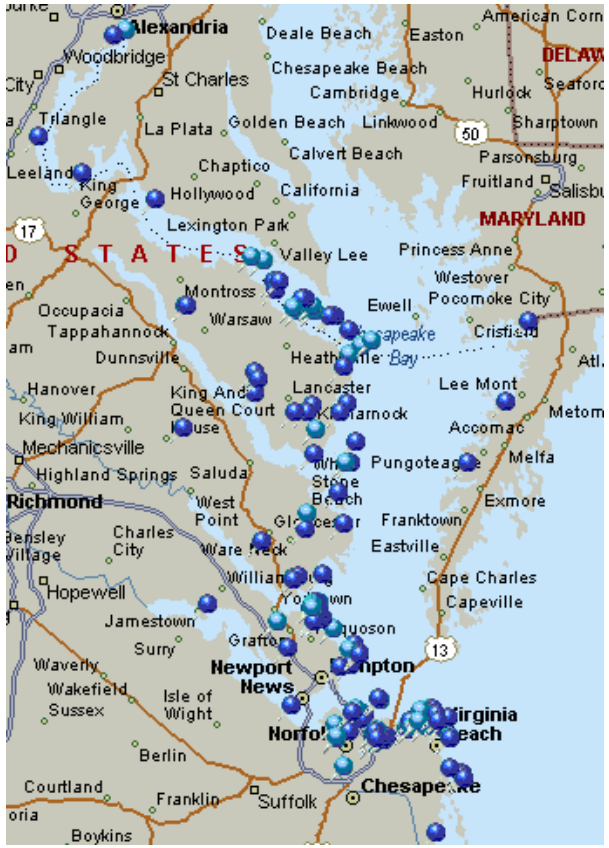
What is the probability that you will install shoreline management techniques (if they did not already have them)?

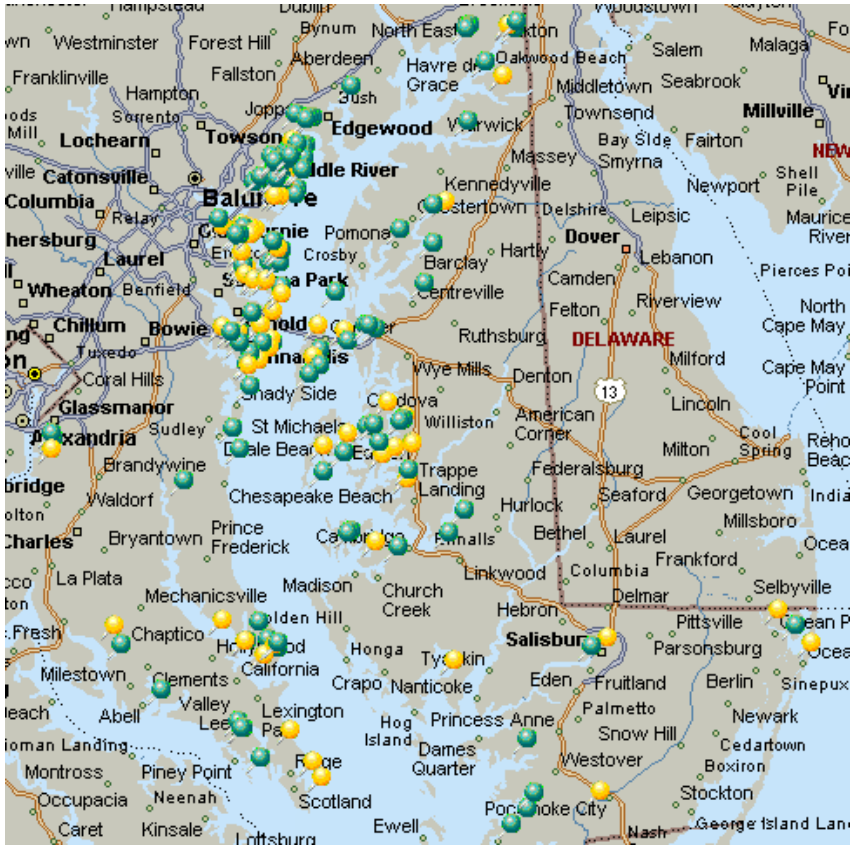
Given two lists to determine barriers and benefits to adopting shoreline management techniques.

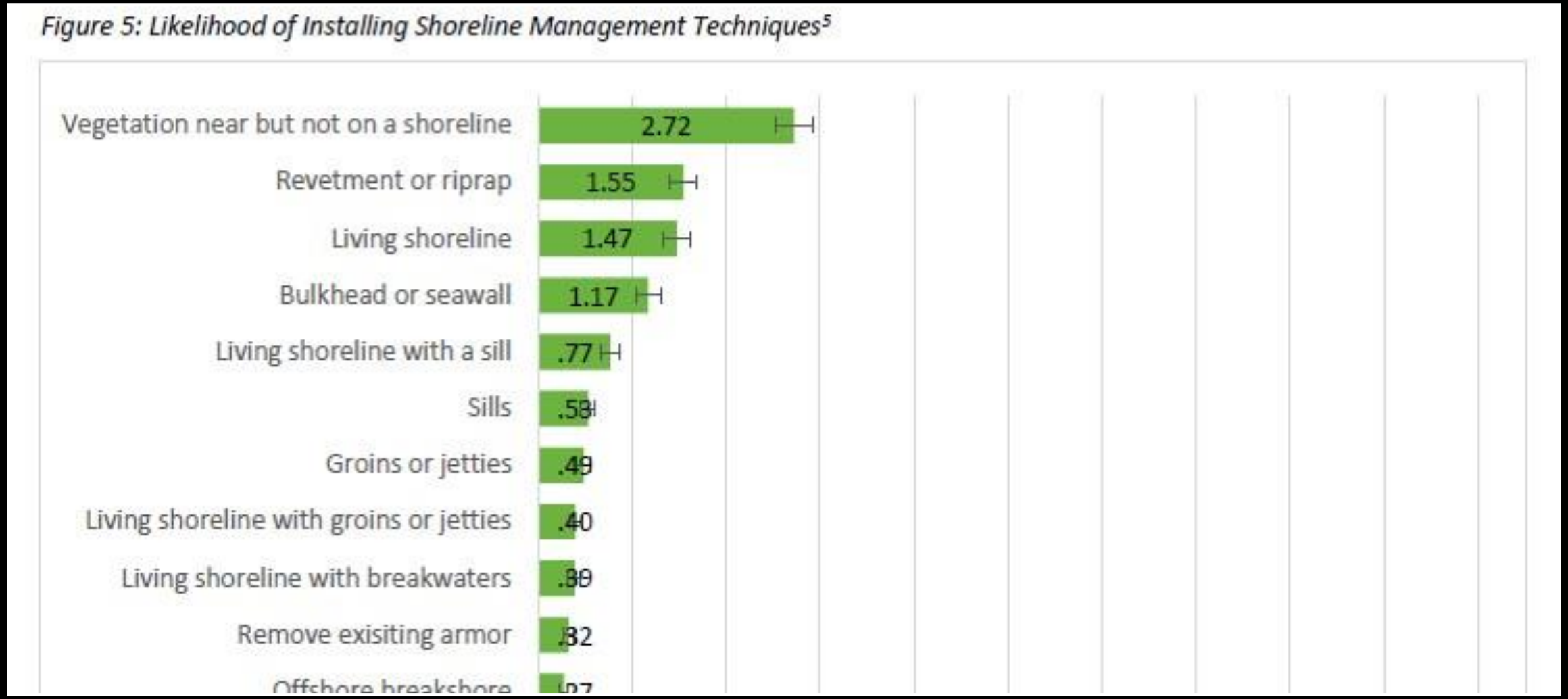
Asked to agree with a list of statements to determine their attitude toward shoreline management techniques.

What sources of information do you use if you have questions concerning your shoreline?

Number of survey respondents with unarmored and armored shorelines.

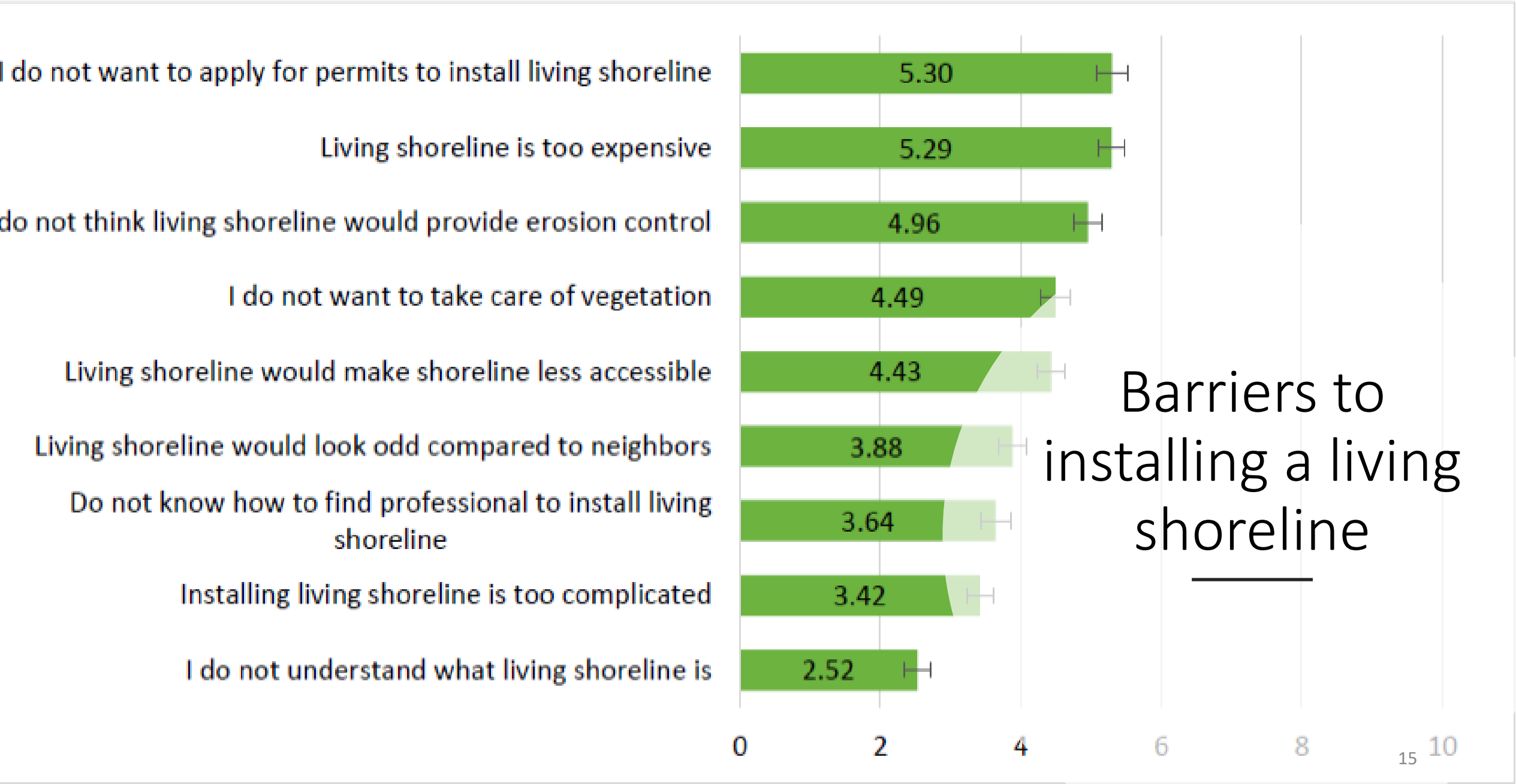






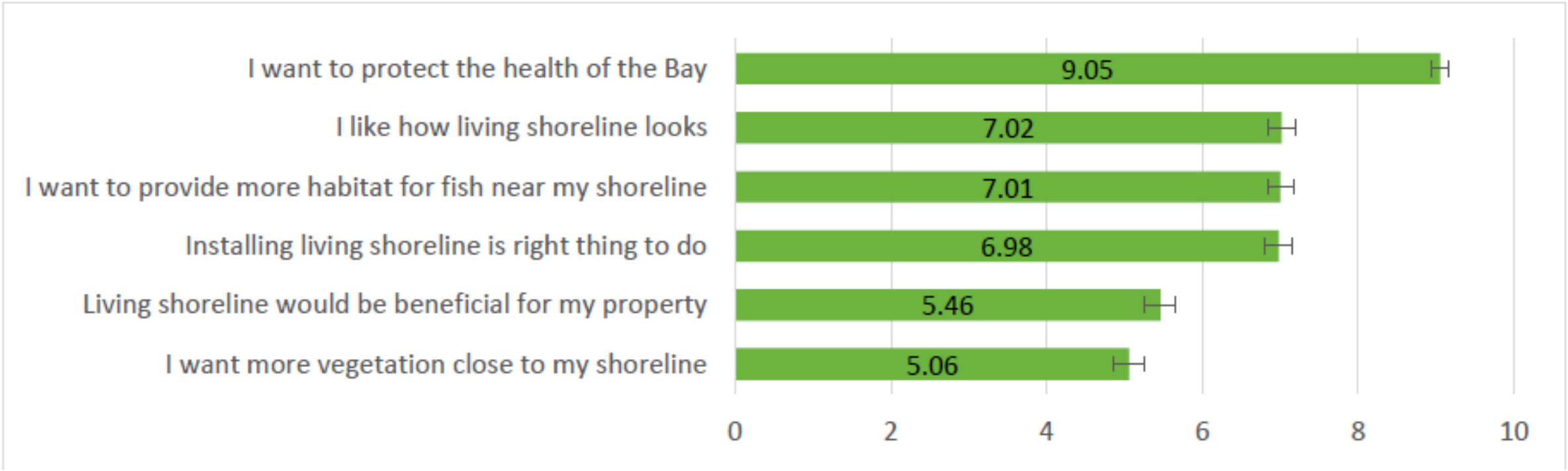
Likelihood of installing shoreline management techniques

re 6: Ranked Barriers to Installing a Living Shoreline



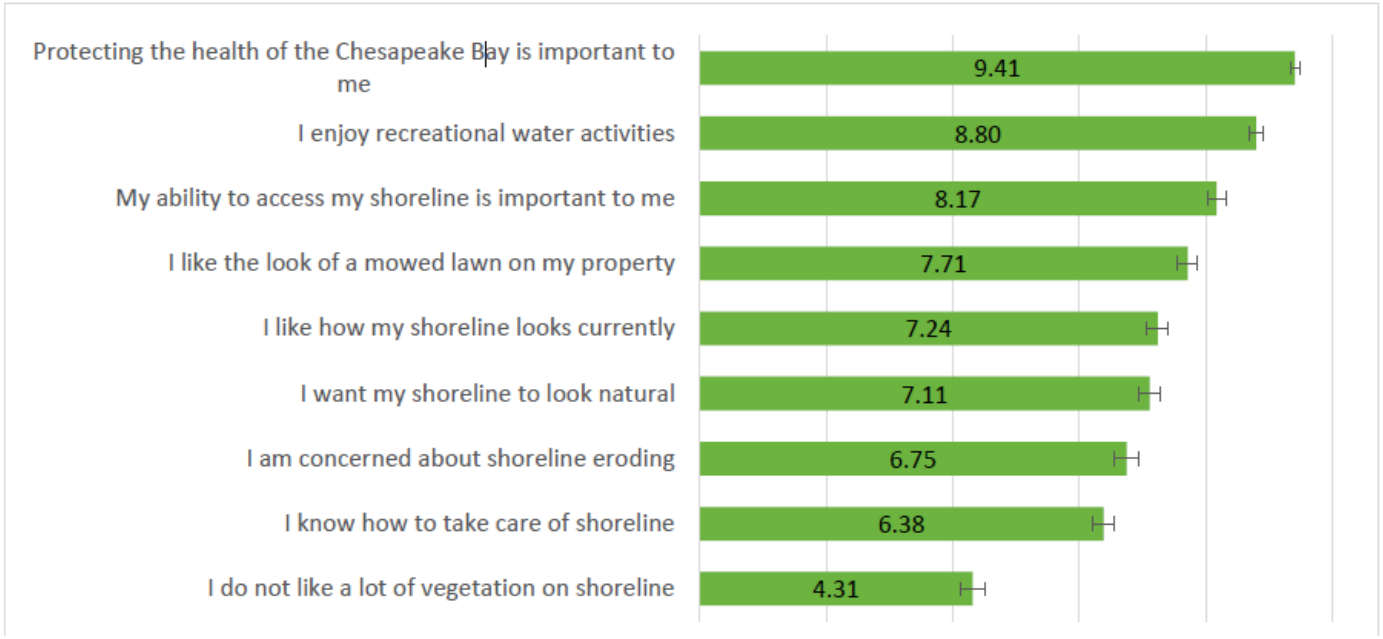
Barriers to installing a living shoreline

Figure 7: Ranked Benefits to Installing a Living Shoreline



Ranked Benefits to installing a living shoreline

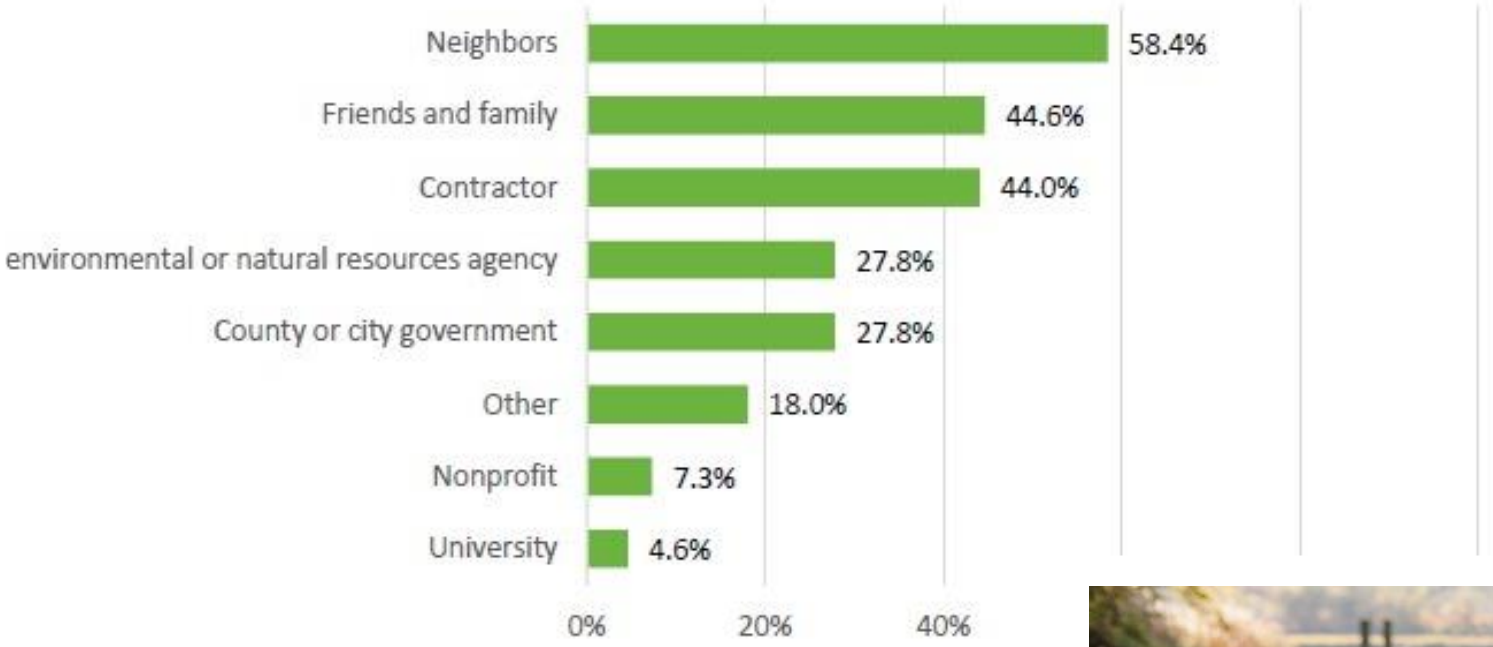
Figure 12: Shoreline-Related Attitudes



Survey Findings

Shoreline-related Attitudes

l3: Information Sources for Shoreline Management



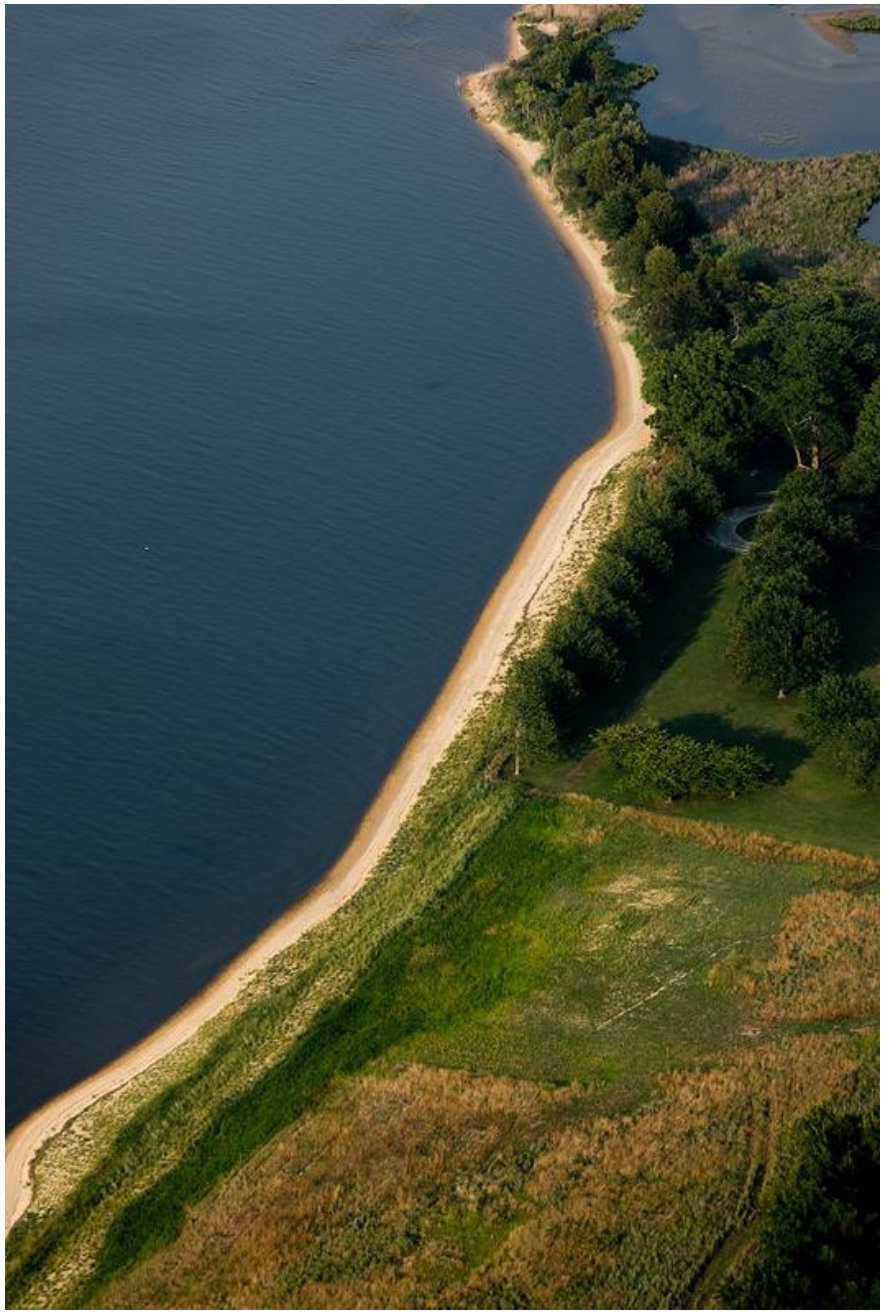


Table 4: Ranked Behaviors for Further Research

Behavior	Impact[7]	Penetration	Probability	Applicability	Weight[8]
Install buffer (upland/riparian) vegetation	7.39	-	2.72	1	20.12
Living Shoreline - wetland vegetation	7.87	-	1.47	0.8	9.26
Living Shoreline with sills	8.20	-	0.77	0.8	5.06
Leave an unarmored shoreline alone	3.47	-	1	0.8	2.78
Living Shoreline with jetties/groins	7.80	-	0.4	0.8	2.50
Living Shoreline with offshore breakwater	7.94	-	0.39	0.8	2.48

Behavior Selection Table

Challenges

SEVERAL ERRORS ASSOCIATED WITH GIS DATA WHEN MAILING OUT SURVEYS.

DATA SHOWS THAT RESPONDENTS MIS-UNDERSTOOD CERTAIN SURVEY QUESTIONS.

STRONG POSSIBILITY THAT RESPONDENTS DID NOT UNDERSTAND TERMINOLOGY USED.

LOW MOTIVATION TO INSTALL A LIVING SHORELINE AMONG RESPONDENTS.

LACK OF EXISTING COMMUNICATIONS AND OUTREACH MATERIALS ON LIVING SHORELINES.

Conclusions and Recommendations

Conclusion:

To engage in the desired behaviors, approximately two-thirds of shoreline property owners will first have to remove armor.

Recommendation:

- Conduct outreach first to target unarmored shorelines to keep their shorelines natural
- Plant upland vegetation
- Install a living shoreline.

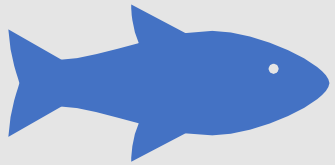
Next steps

Implementation and Evaluation Plan.

Recruit ambassadors.

Communications and outreach strategy targeted to supporting organizations.

Follow-up RFA



- Submitted by Fish Habitat Workgroup.
- Contractor is expected to develop communications products and deliverables based on the recommendations of the Implementation and Evaluation Plan.
  - Database of grant and funding options to install natural shorelines.
  - Three to five success stories and a list of applicable case studies.
  - Communications products.
  - Messaging for target audiences.
  - Database of ambassadors and organizations involved in this work.
  - Inventory of MD/VA/DE training and outreach for owners and contractors.

Questions?

Thank you!

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