

Shoreline Property Owner Decision Making: Motivations and Drivers

Amanda G. Guthrie*

Sarah Stafford, Donna Marie Bilkovic, Carl
Hershner

Living shoreline spectrum



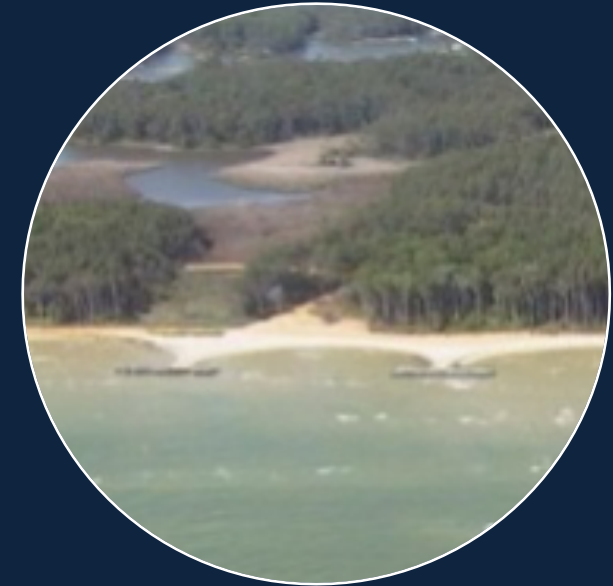
Planted marsh



Oyster sill

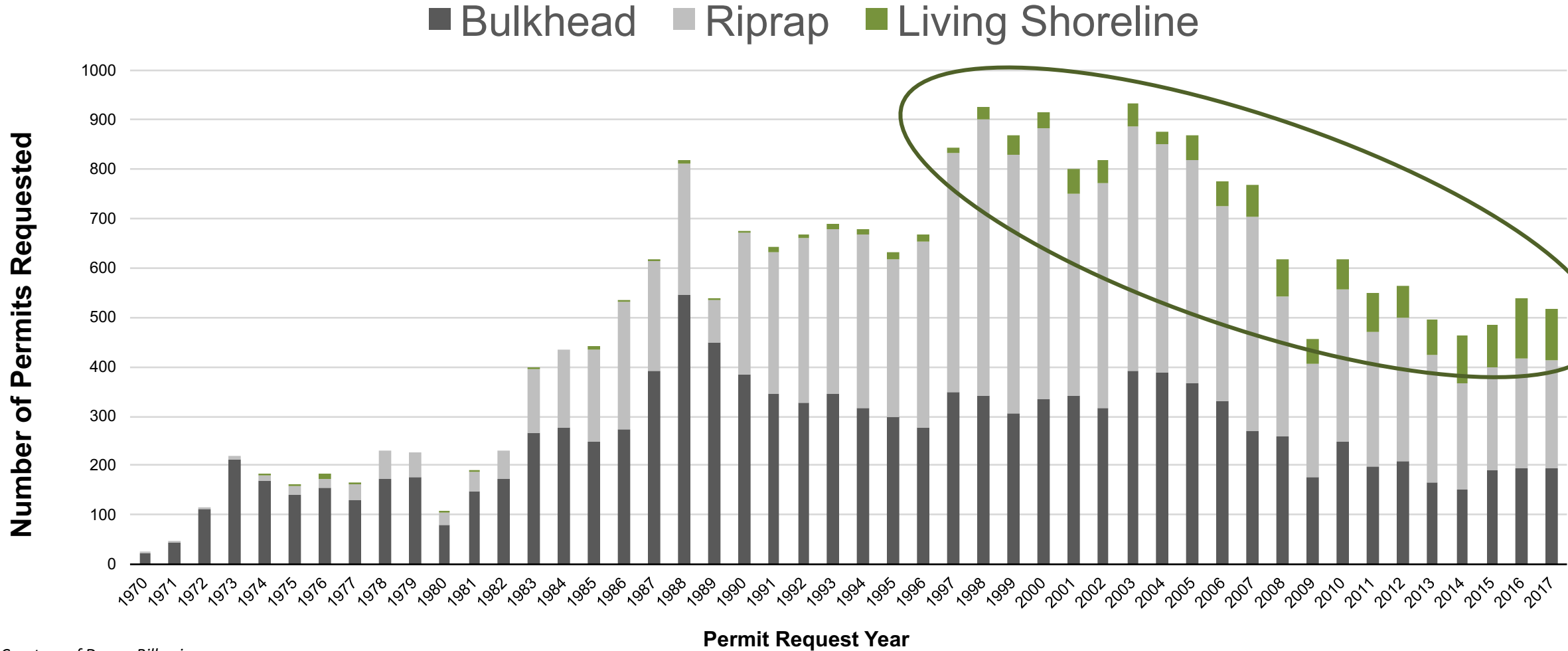


Rock sill



Breakwater

VA Living shorelines implementation

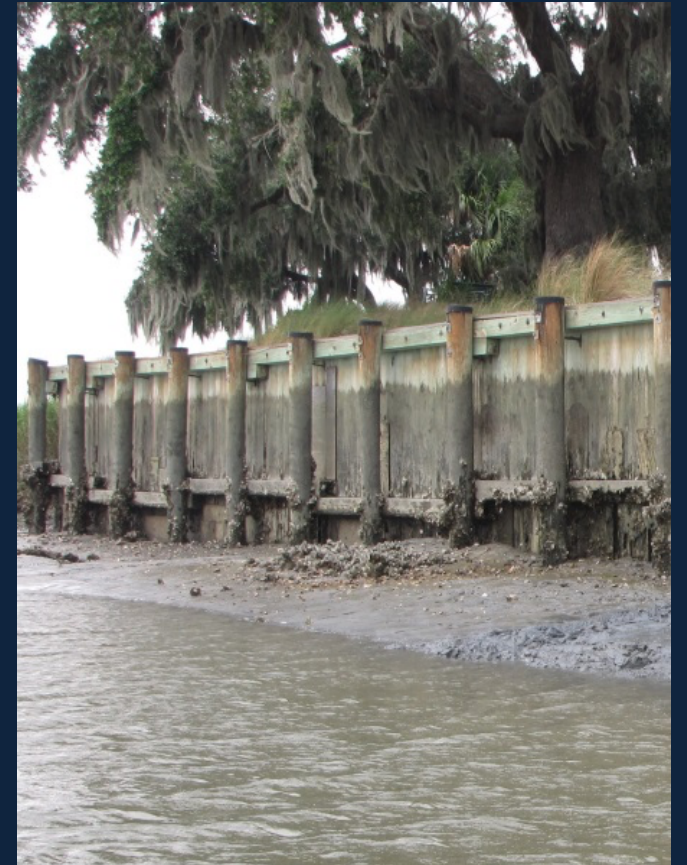


Courtesy of Donna Bilkovic

Image courtesy of D. Bilkovic

The Decision Process: Armoring

- Bulkheads are seen as “*effective and durable*”;
- Natural shorelines are more aesthetic
- More likely to armor
 - More valuable properties
 - Lower elevation & higher erosion rates
- Neighboring shorelines often predict modification type



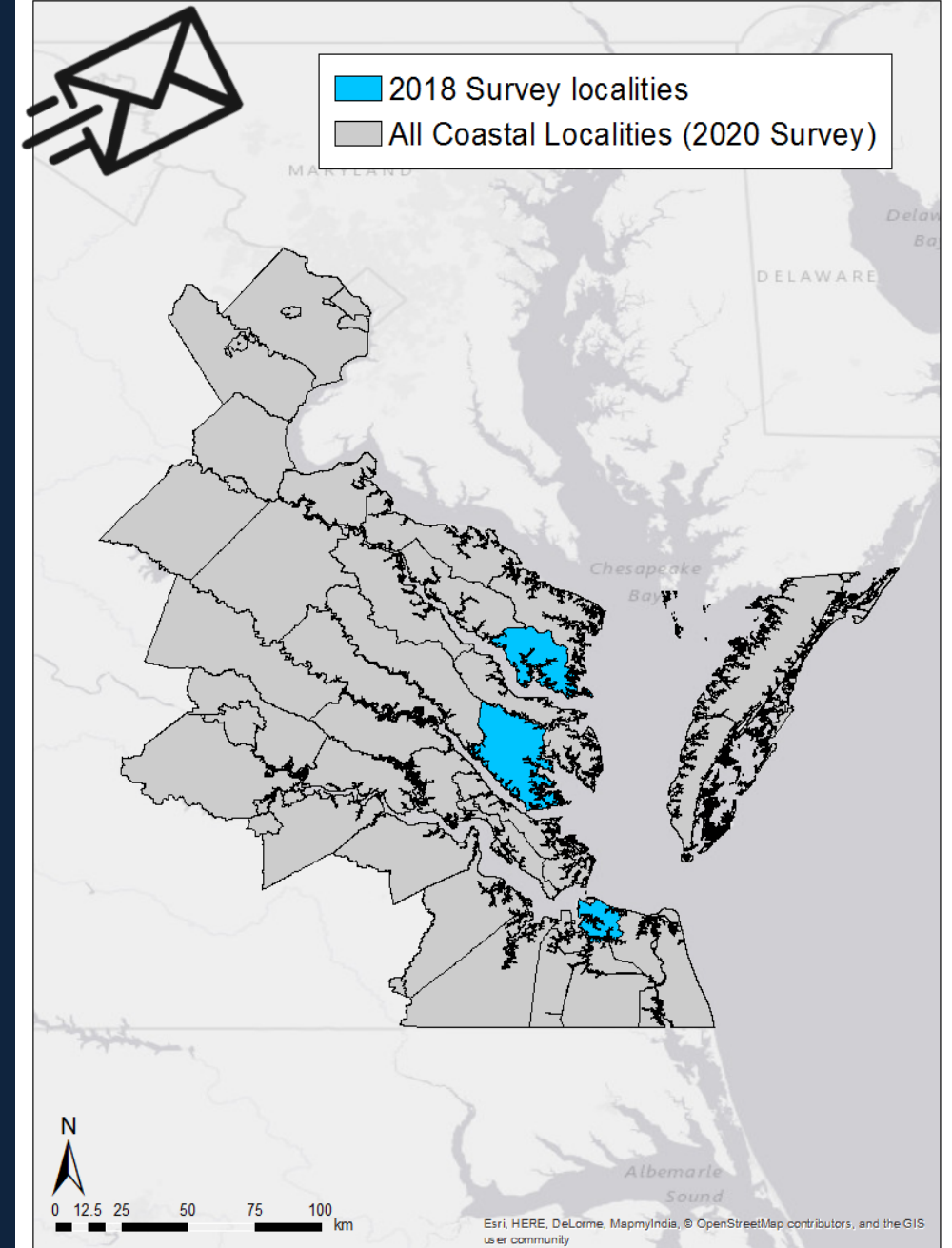
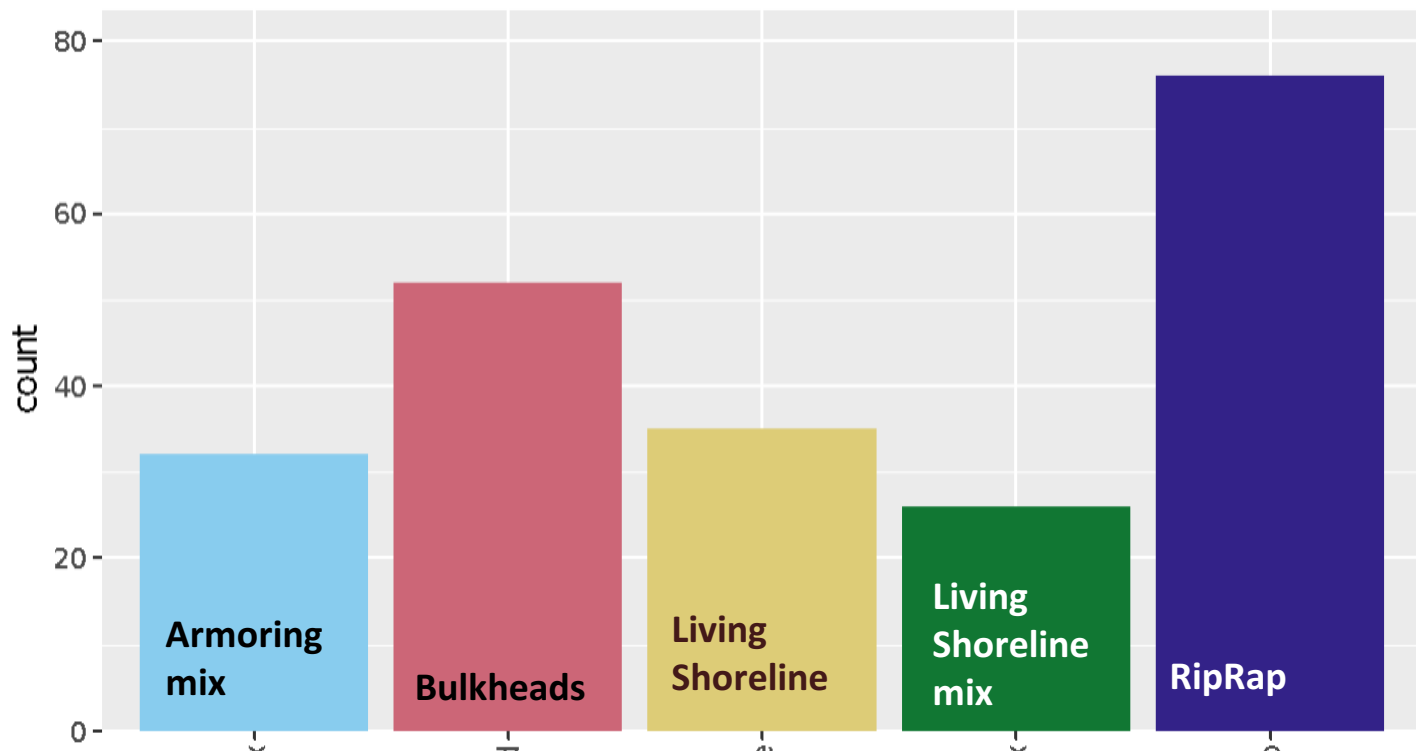
Objective

Evaluate property owners' motivations when deciding if and how to alter their shoreline for erosion control

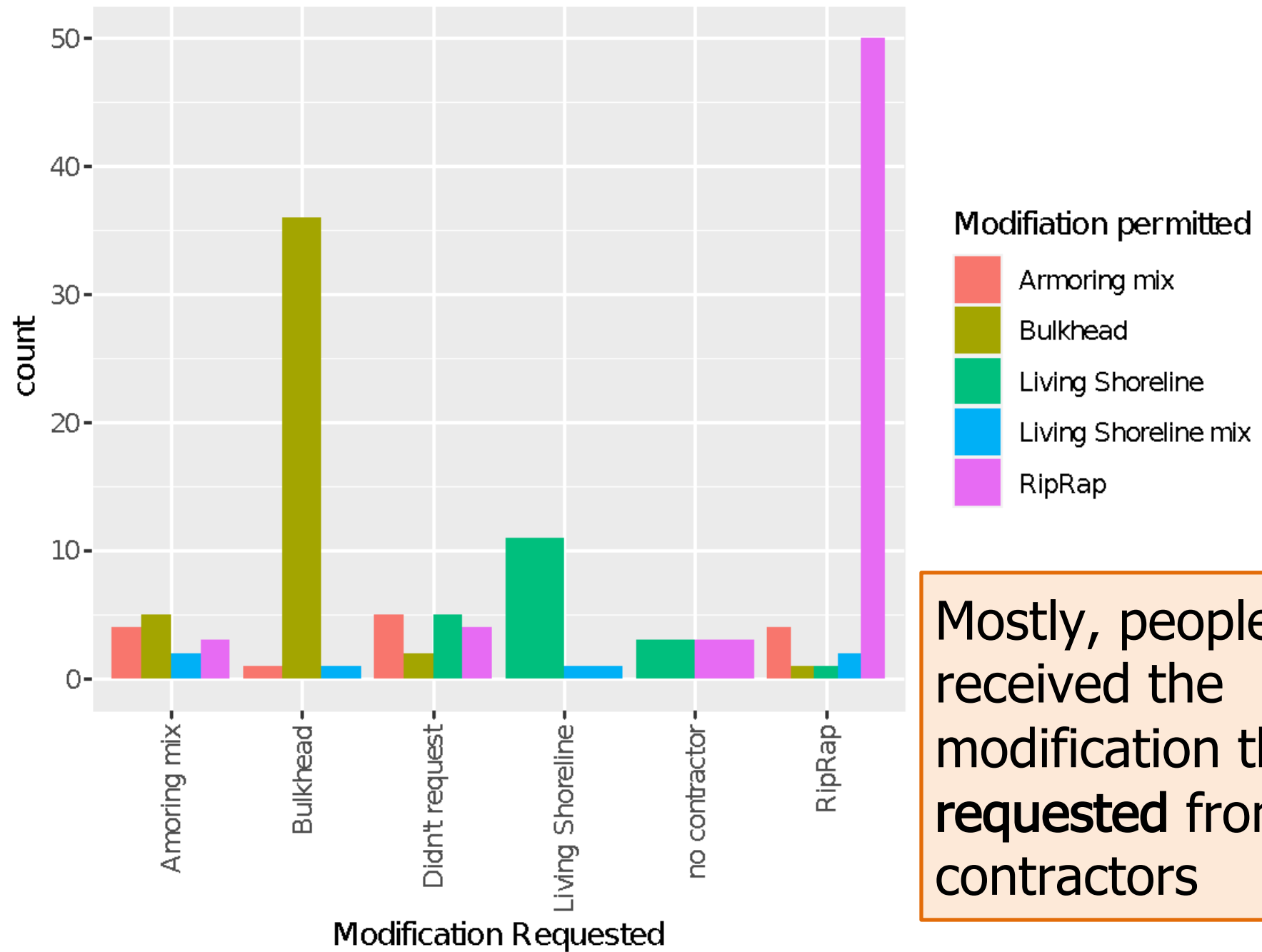
2020 survey

Mail survey: permit applications
– 40+% response / 500 surveys

2019 Permitted Modifications

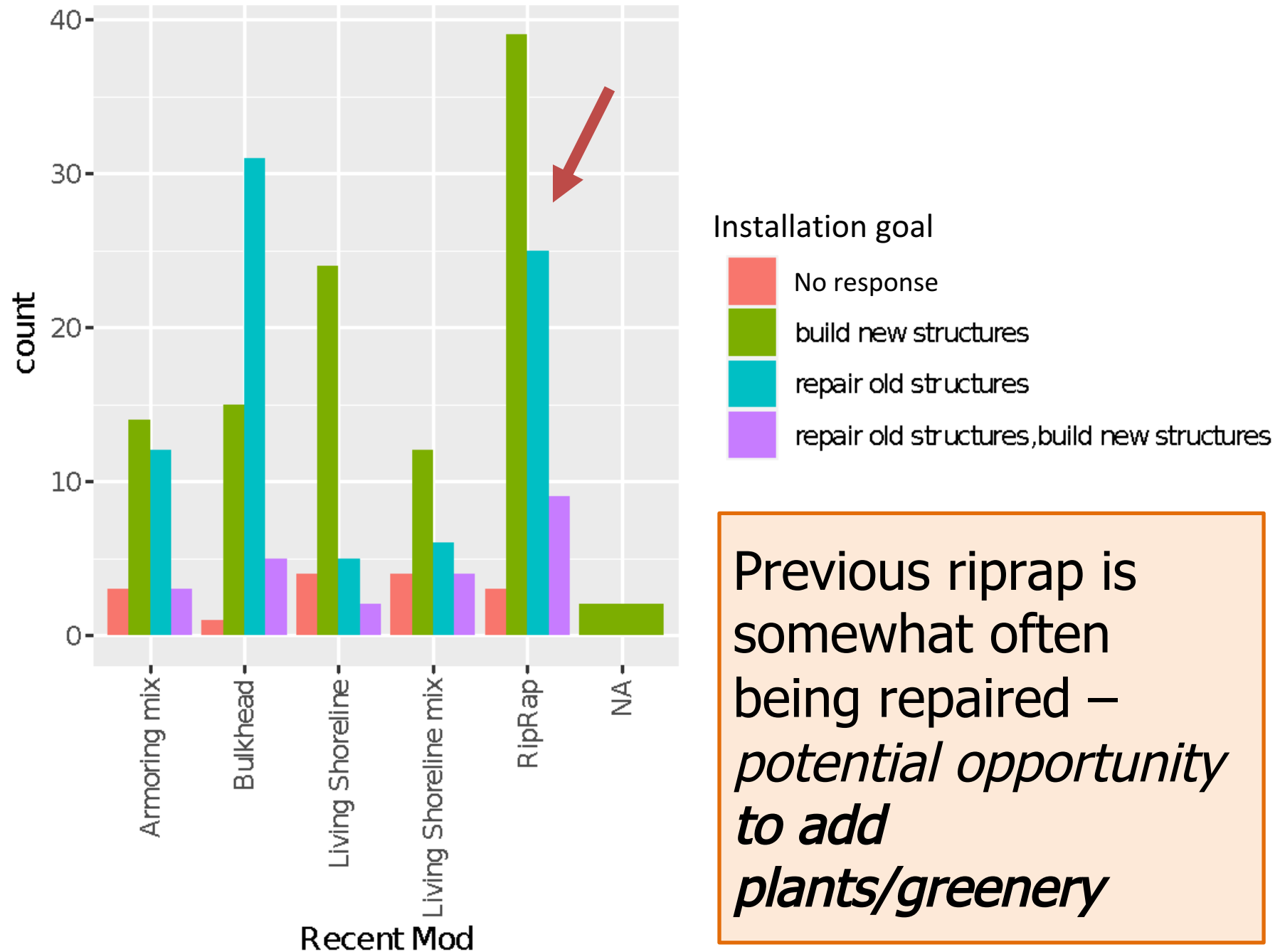


Modification requested vs permitted



Mostly, people received the modification that **they requested** from contractors

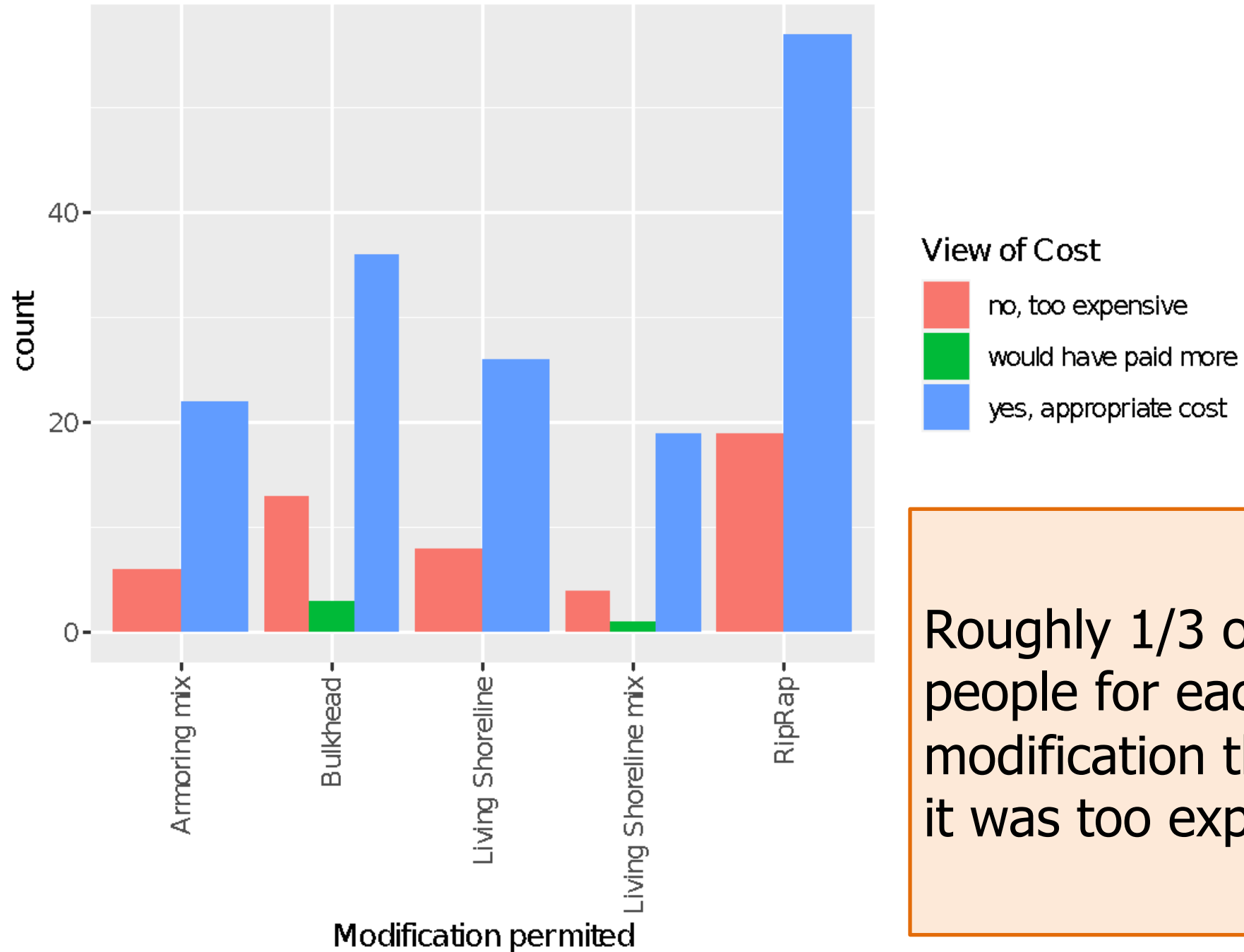
New or repair status



Most Frequent Motivations

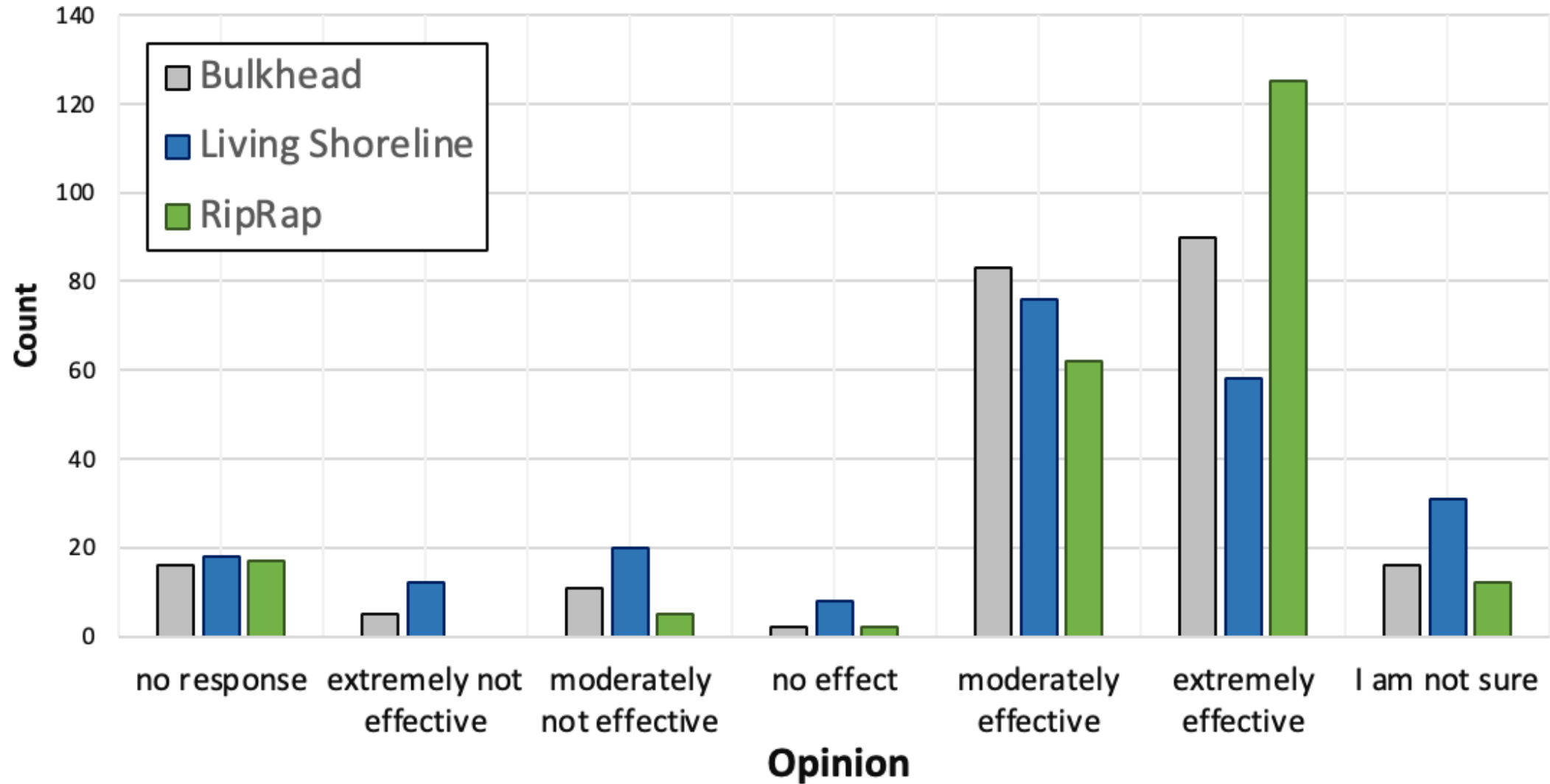
	Effectiveness	Withstand storms	Restore the shoreline	Cost	Effect on property value
Armoring mix	1 st	2 nd	3 rd		
Armoring		2 nd		3 rd	1 st
Rip Rap	1 st	2 nd			3 rd
Living Shoreline mix	3 rd	1 st	2 nd		
Living Shoreline	2 nd	3 rd	1 st		

Modification permitted and cost

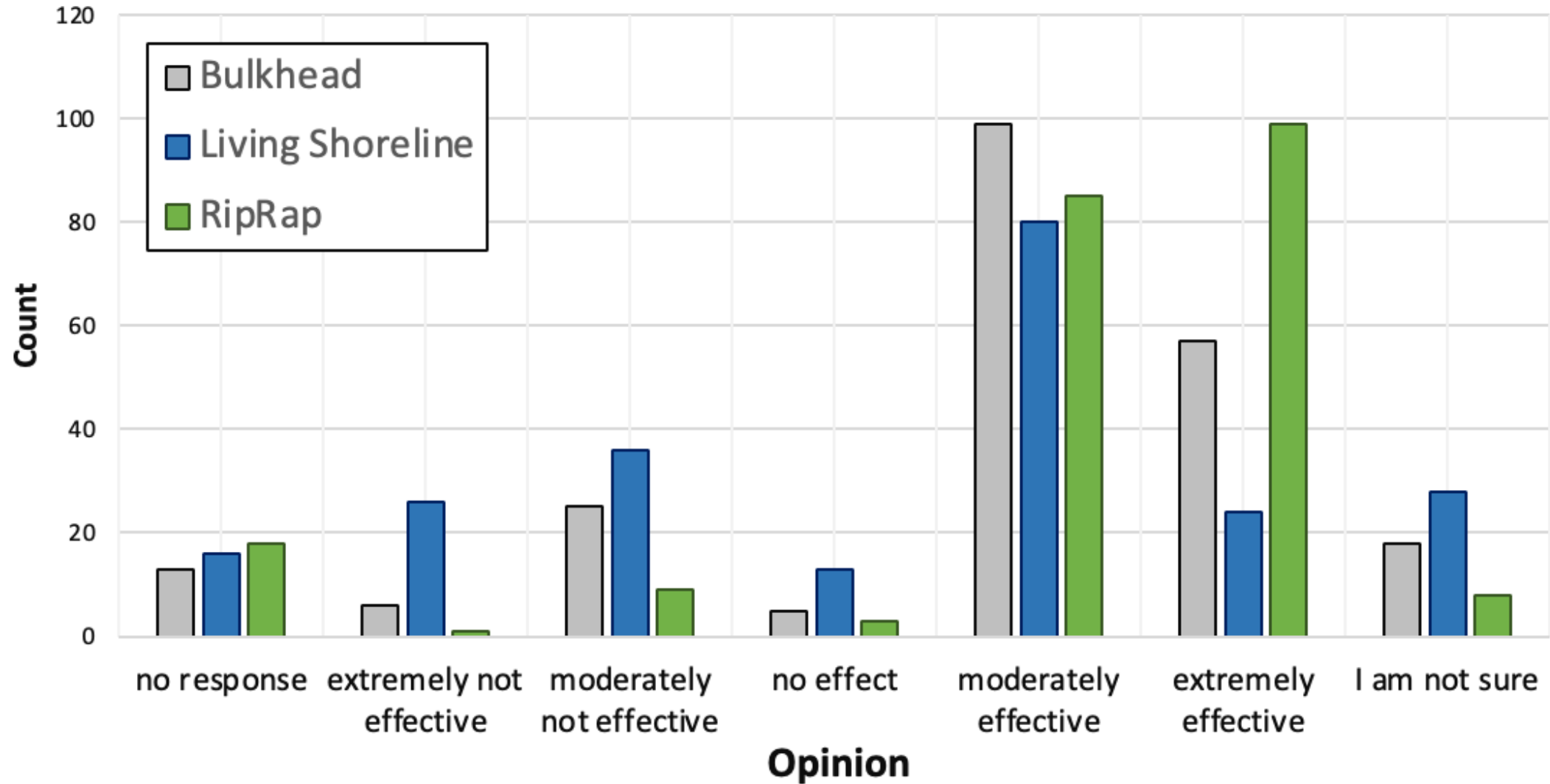


Roughly 1/3 of people for each modification thought it was too expensive

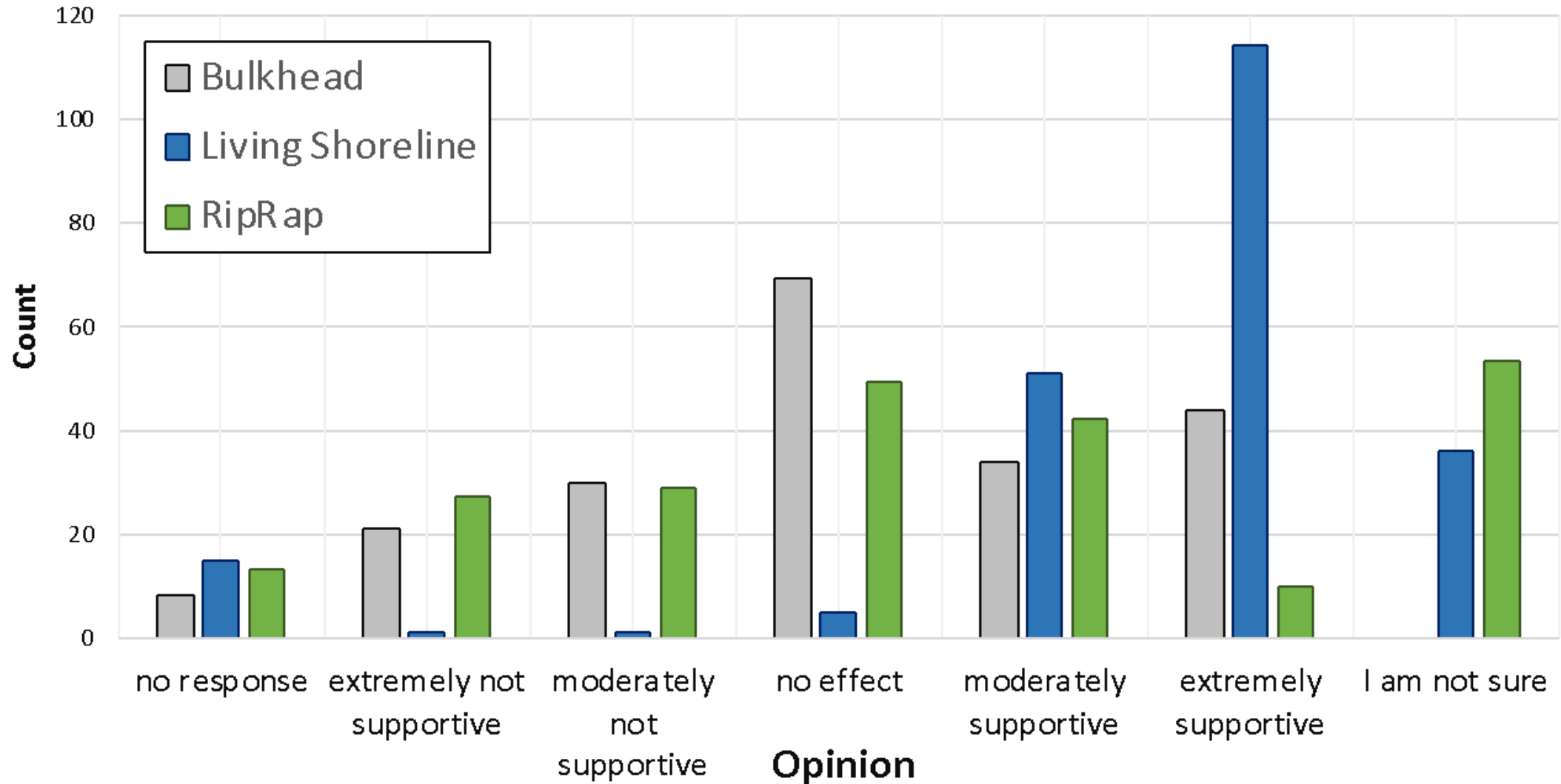
Erosion effectiveness



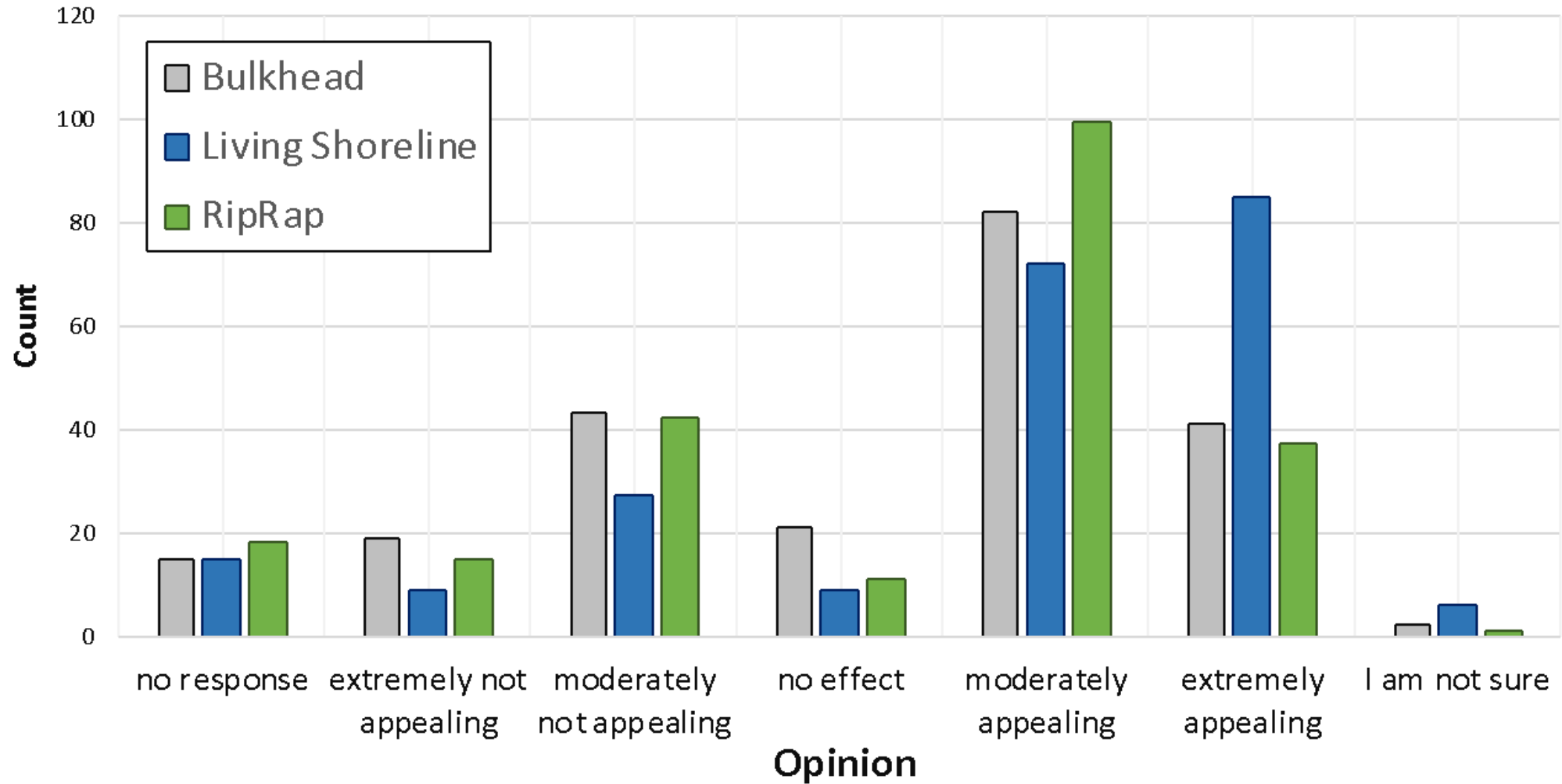
Withstand Storms



Species Support

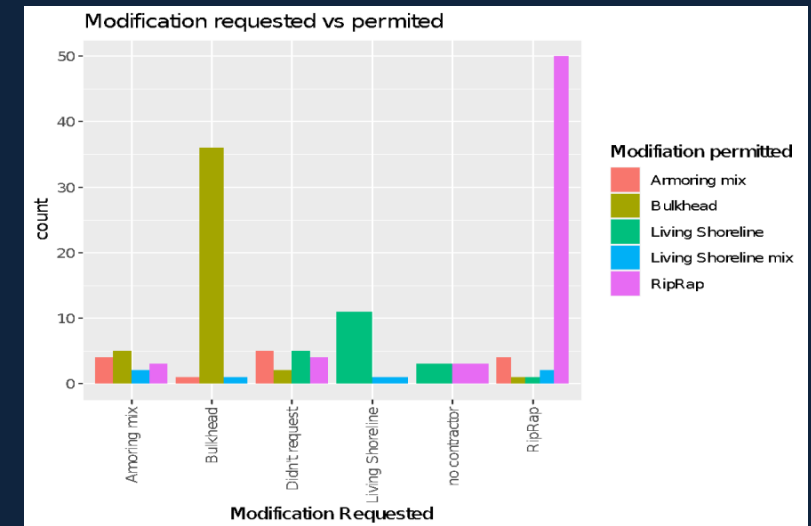


Aesthetics



Perception and Decision making

- RipRap is being repaired *and* newly installed
 - Contractors are key messengers
 - Property owners know what modification what they want
(potentially only little "wiggle room" to sway their opinion)



- Most properties applying for permits bought their home in the last 10 years

Perception and Decision making

- Property owners focus on erosion effectiveness, and ability to withstand storm damage
 - Riprap is often *perceived* to be better
- Living shorelines are valued aesthetically and are seen as good for species
 - but are *not* viewed as effective against erosion and storms

	Effectiveness	Withstand storms	Restore the shoreline	Cost	Effect on property value
Armoring mix	1 st	2 nd	3 rd		
Armoring		2 nd		3 rd	1 st
Rip Rap	1 st	2 nd			3 rd
Living Shoreline mix	3 rd	1 st	2 nd		
Living Shoreline	2 nd	3 rd	1 st		

Questions or comments?

agguthrie@vims.edu

**Shoreline Property Owner Decision Making:
Motivations and Drivers**

Amanda G. Guthrie*

Sarah Stafford, Donna Marie Bilkovic,
Carl Hershner

Econometrics and 2018 survey

Stafford, S., and A. G. Guthrie. 2020. What Drives Property Owners to Modify Their Shorelines? A Case Study of Gloucester County, Virginia. *Wetlands*.

<https://doi.org/10.1007/s13157-020-01358-6>

Thanks to **National Science Foundation**, Coastal SEES, Award #1600131,
and William & Mary Green Fee Fund