

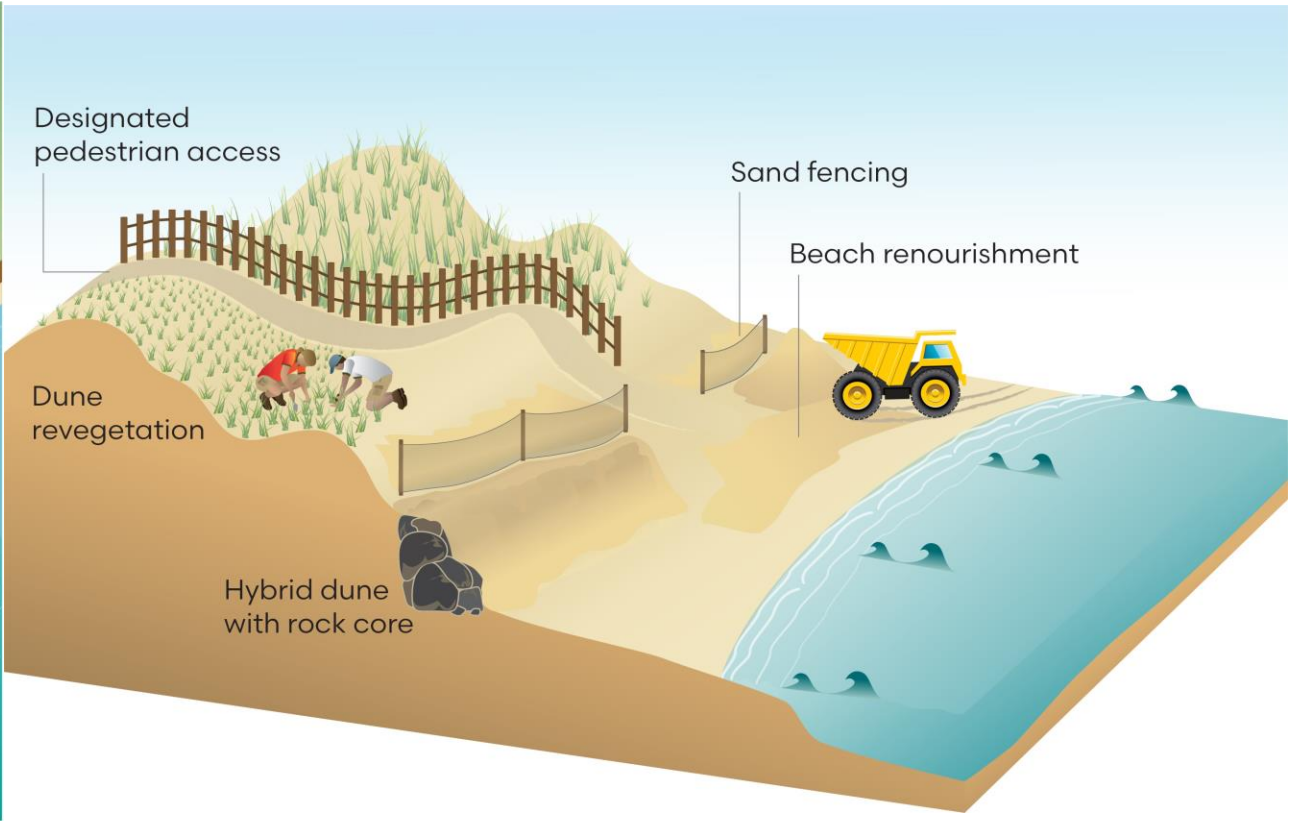
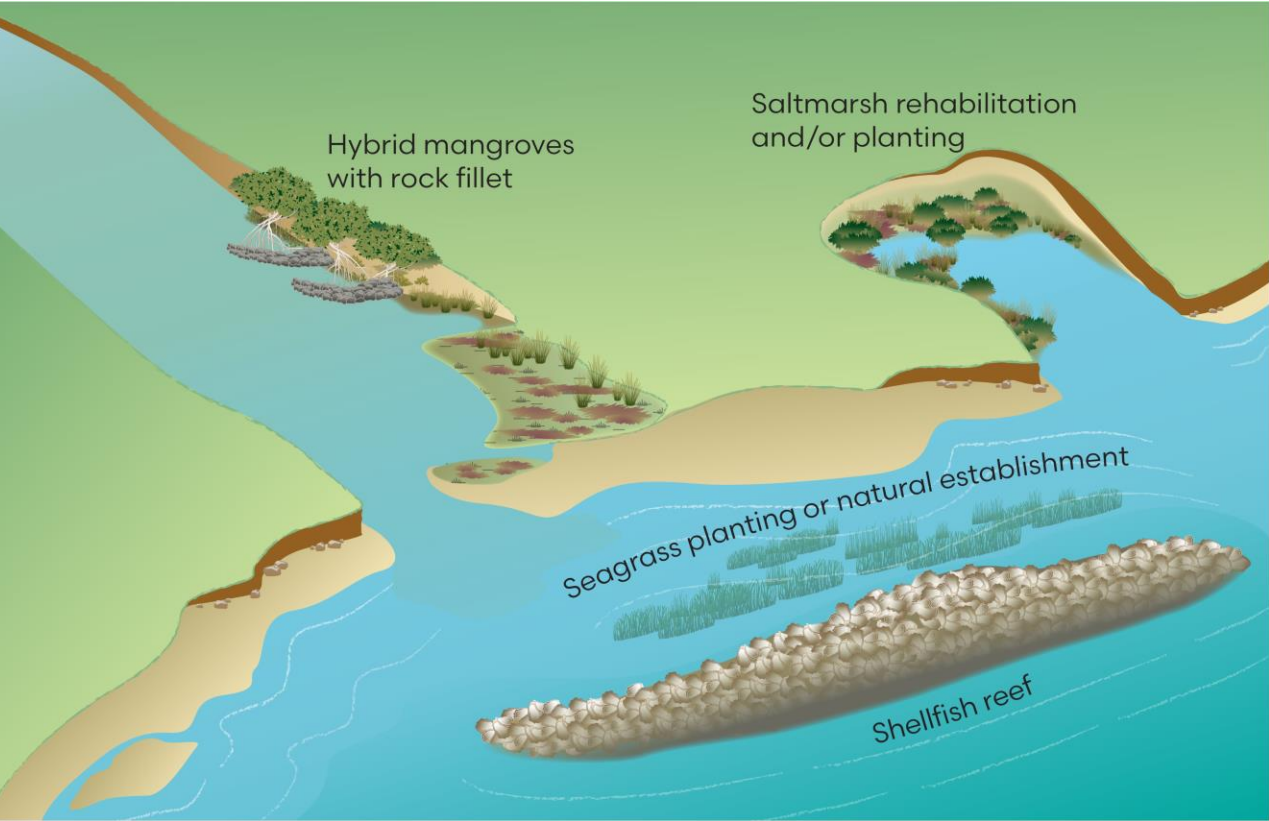


LIVING SHORELINES AUSTRALIA

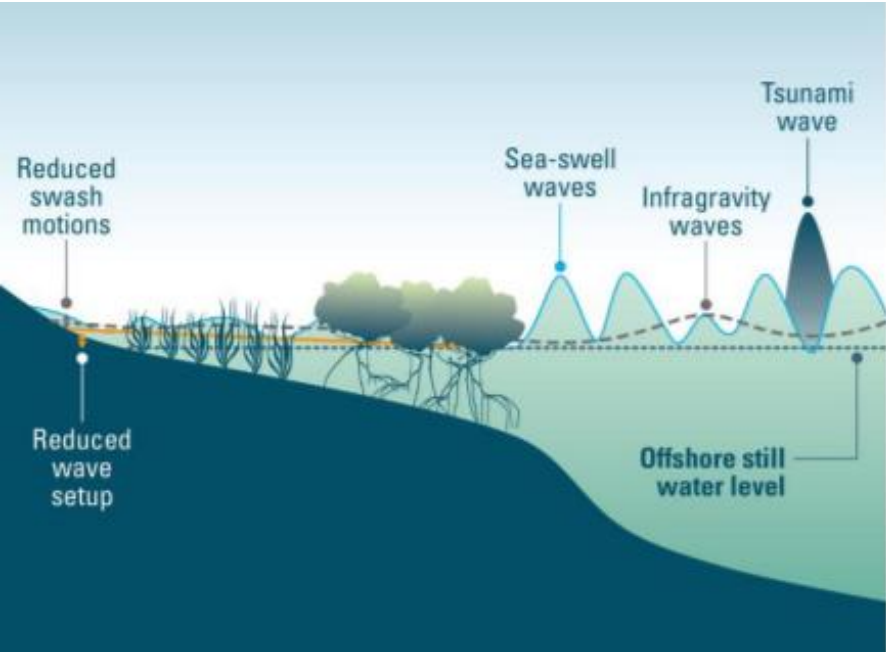
Dr Rebecca Morris, The University of Melbourne

www.livingshorelines.com.au

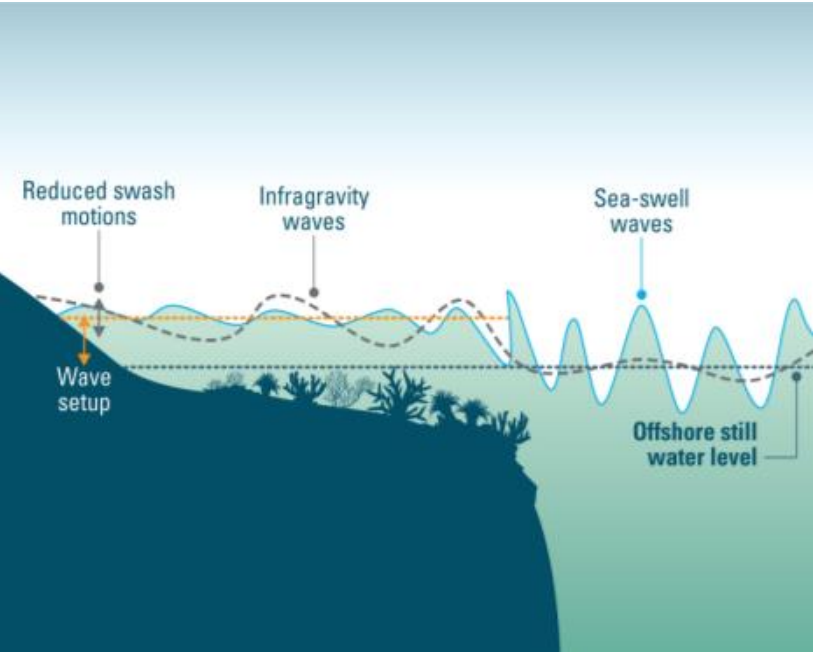
Living shorelines



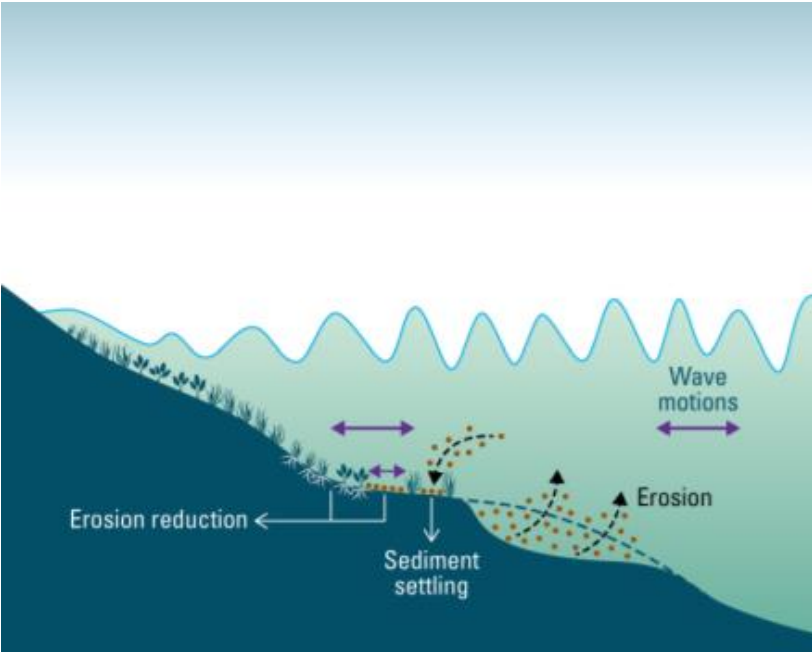
Living shorelines



Wave attenuation due to roughness

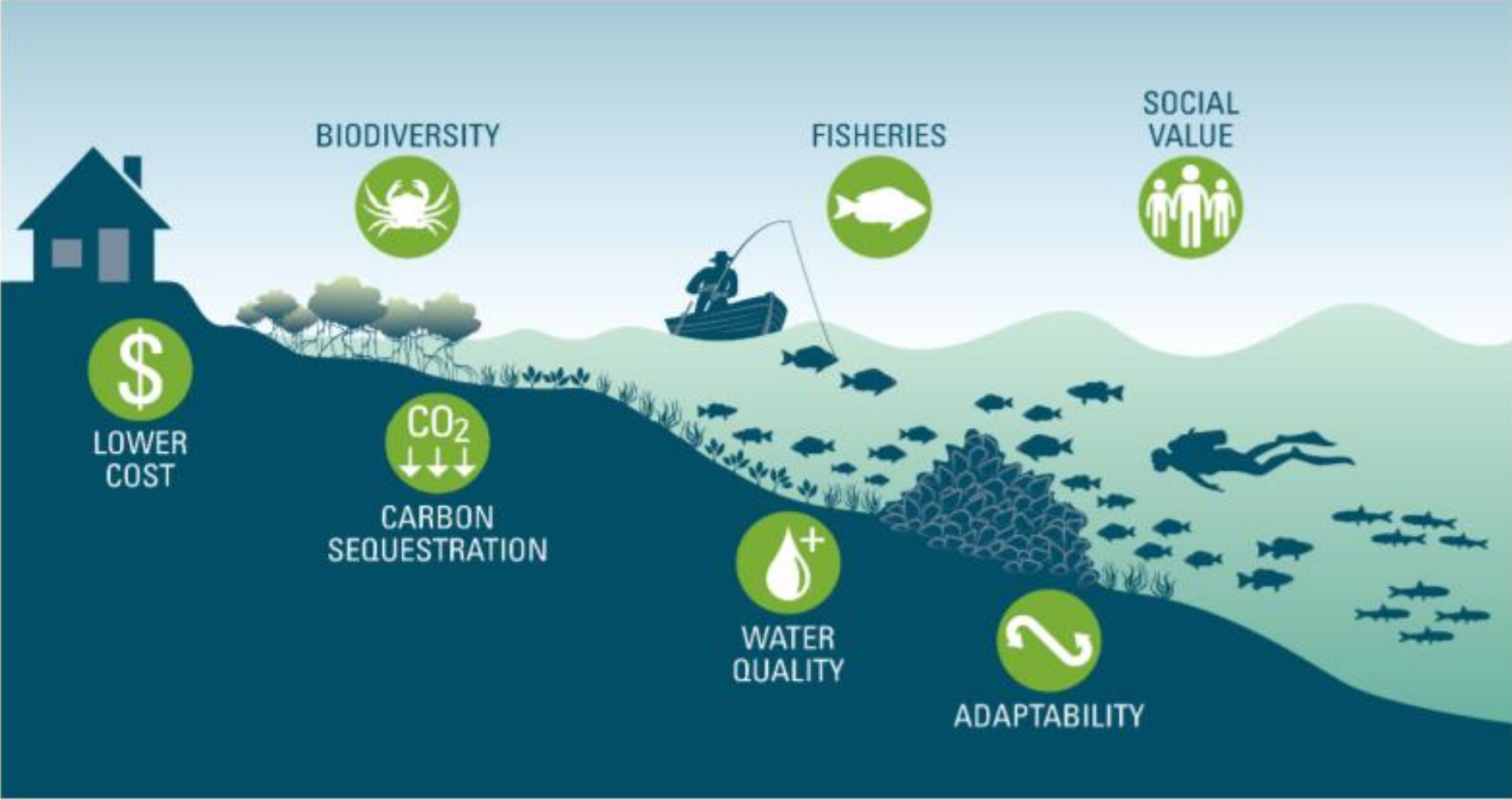


Wave attenuation by depth-induced breaking

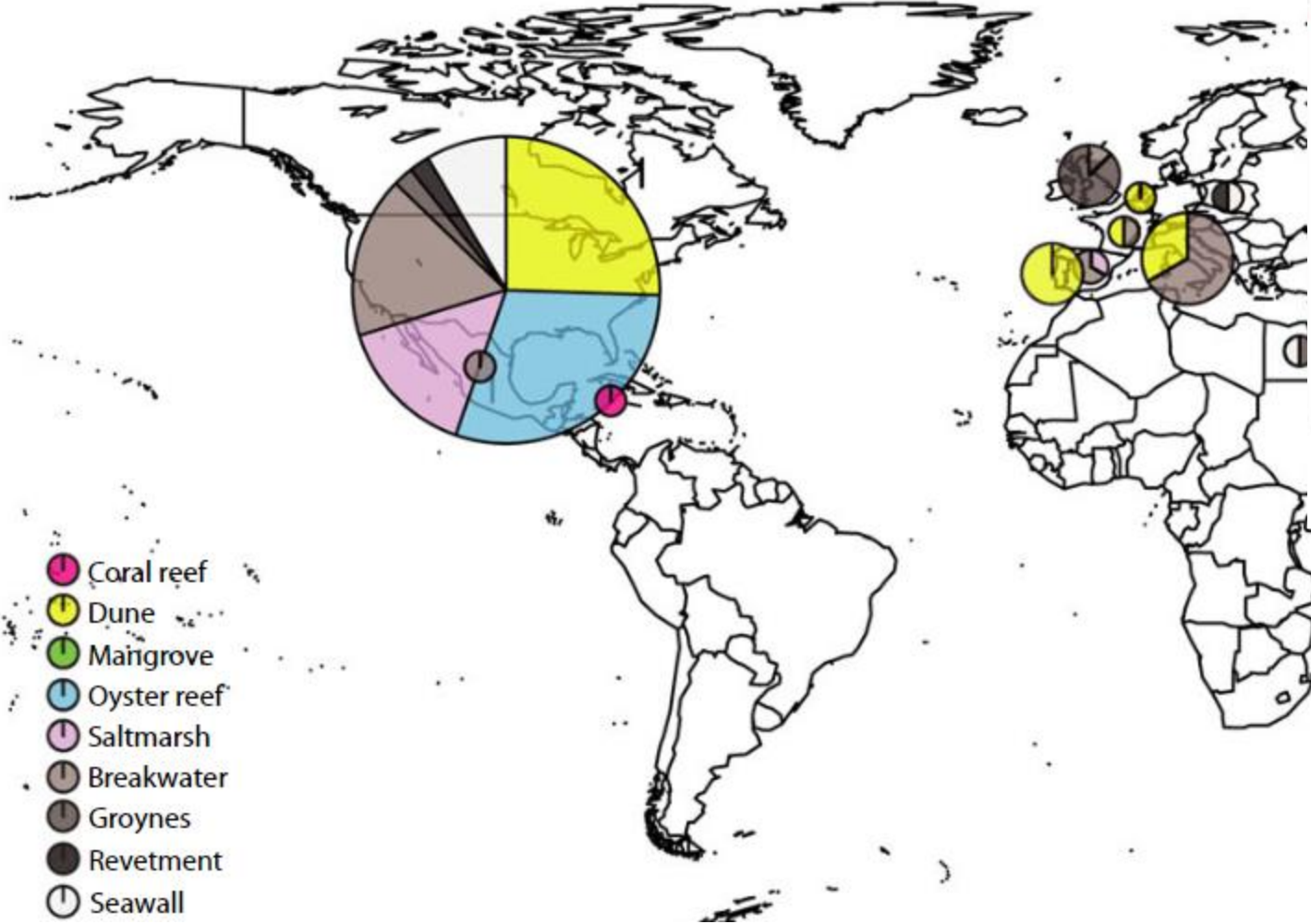


Erosion mitigation within ecosystem

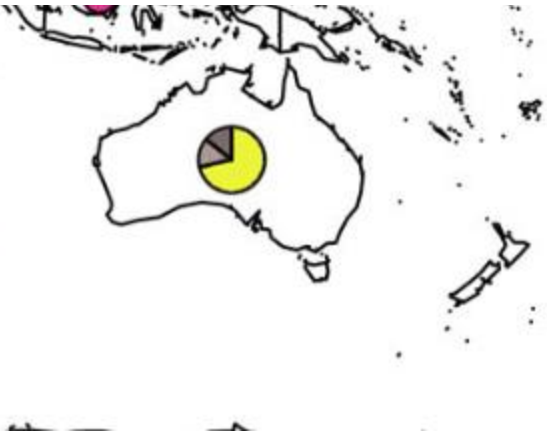
Potential benefits of living shorelines



Living shorelines in Australia



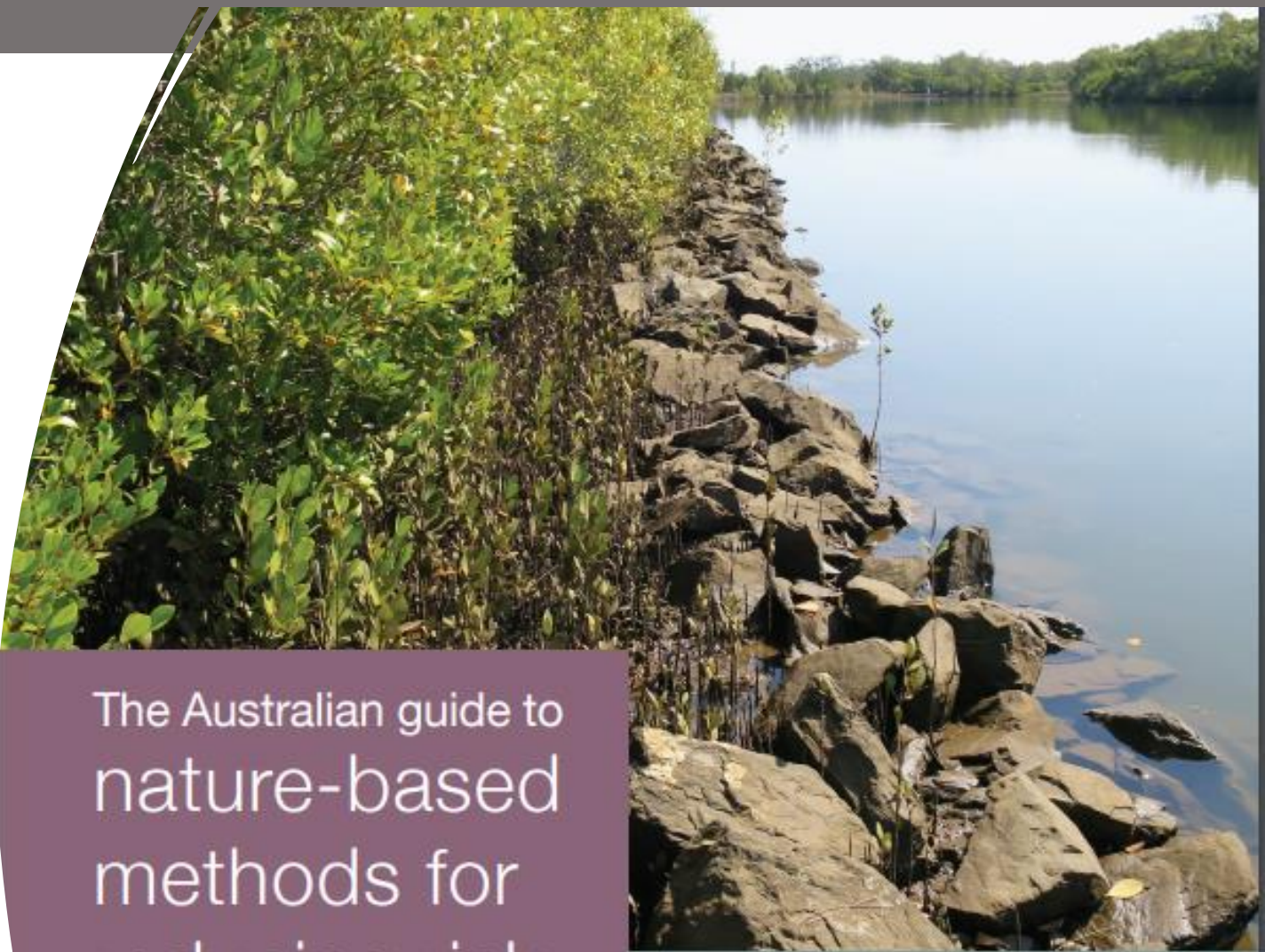
Smith et al. 2020. *Frontiers in Marine Science*



Morris et al. 2018. *Global Change Biology*

Australian guidelines

Rebecca L. Morris (University of Melbourne)
Melanie J. Bishop (Macquarie University)
Paul Boon (University of Melbourne)
Nicola K. Browne (Curtin University)
James T. Carley (University of New South Wales)
Benedikt J. Fest (University of Melbourne)
Matthew W. Fraser (University of Western Australia)
Marco Ghisalberti (University of Western Australia)
Gary A. Kendrick (University of Western Australia)
Teresa M. Konlechner (University of Melbourne)
Catherine E. Lovelock (University of Queensland)
Ryan J. Lowe (University of Western Australia)
Abbie A. Rogers (University of Western Australia)
Viveka Simpson (University of Melbourne)
Elisabeth M. A. Strain (University of Tasmania)
Arnold A. Van Rooijen (University of Western Australia)
Elissa Waters (University of Melbourne)
Stephen E. Swearer (University of Melbourne)



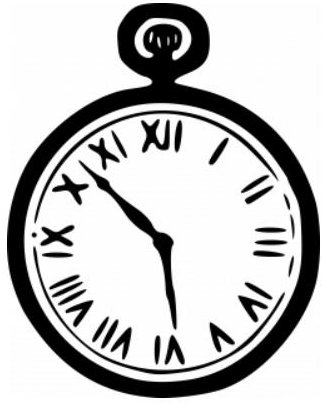
The Australian guide to
nature-based
methods for
reducing risk
from coastal
hazards

MAY 2021

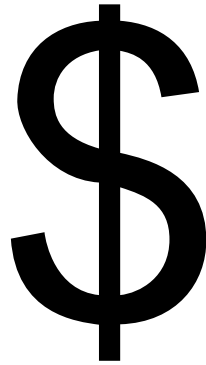
Earth Systems and Climate Change Hub
Report No. 26

Australian guidelines – Chapter 5

Barriers:



Timeframes and Risk



Funding

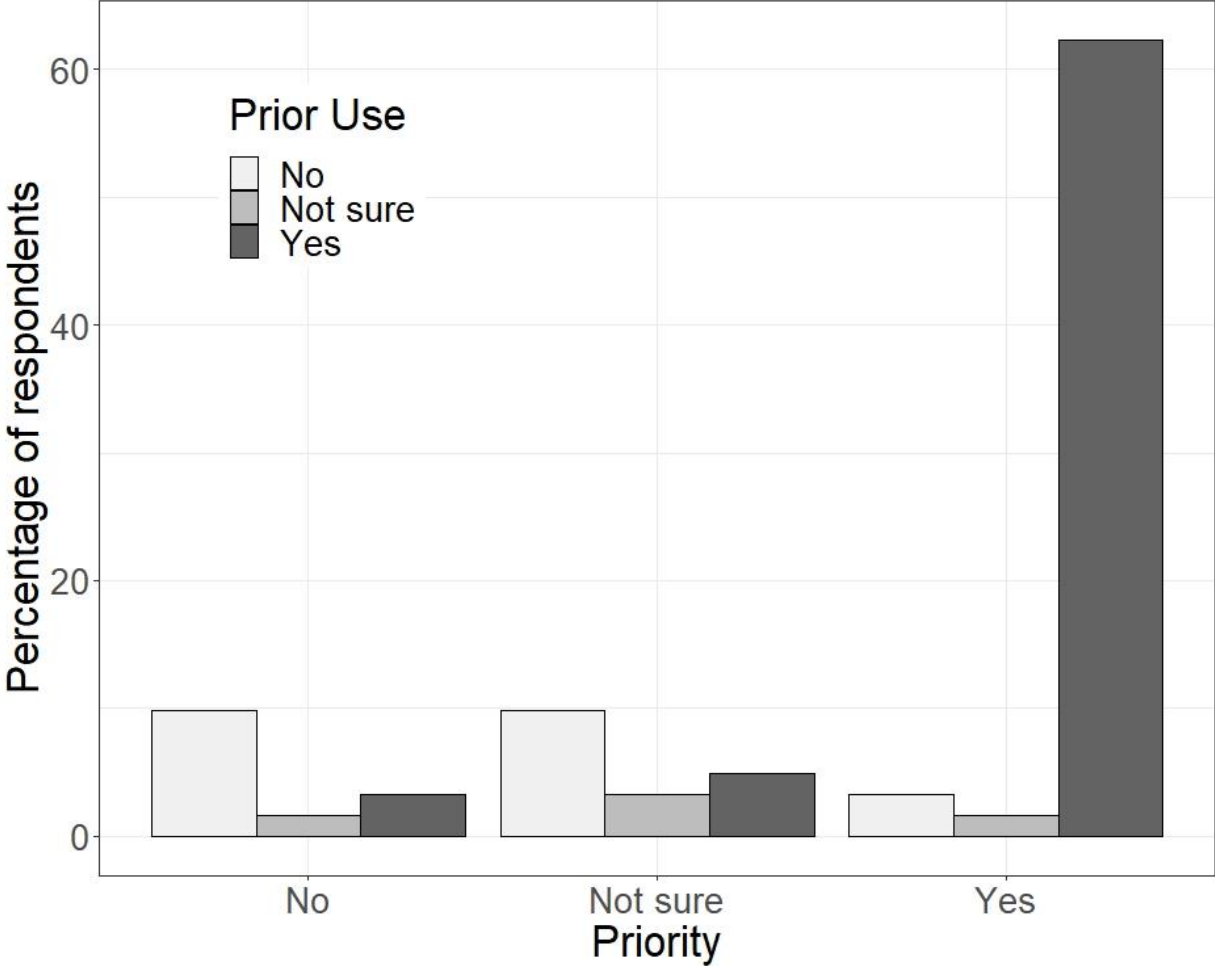


Lack of Precedent

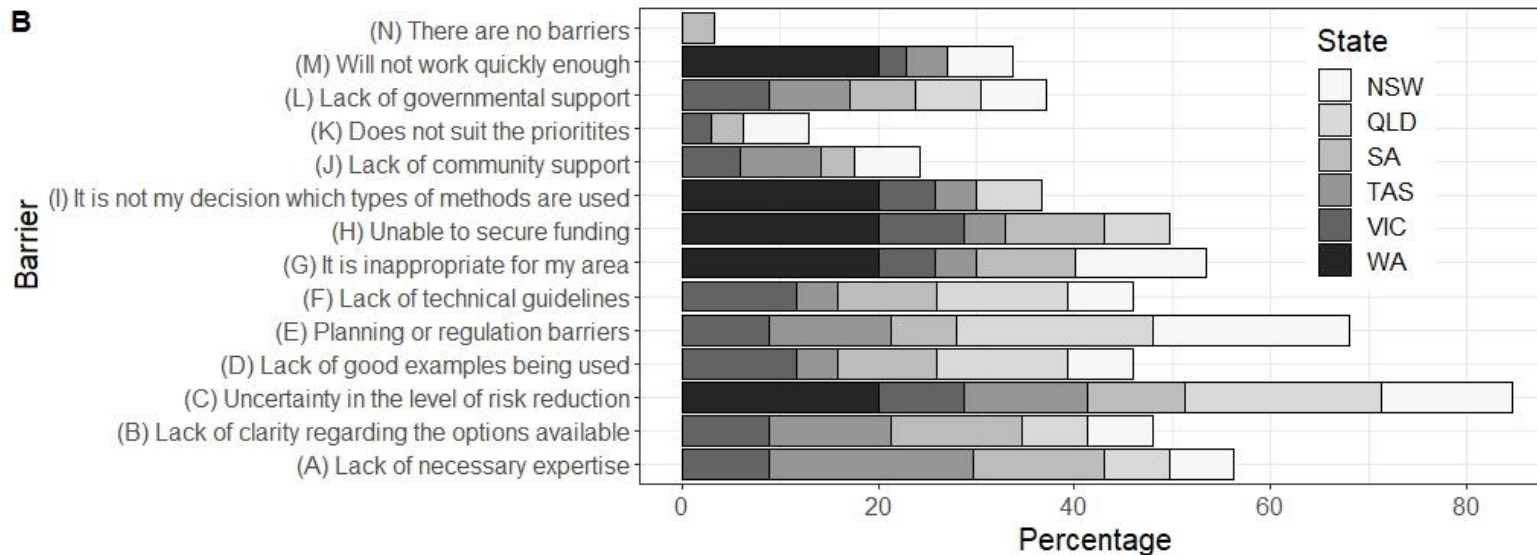
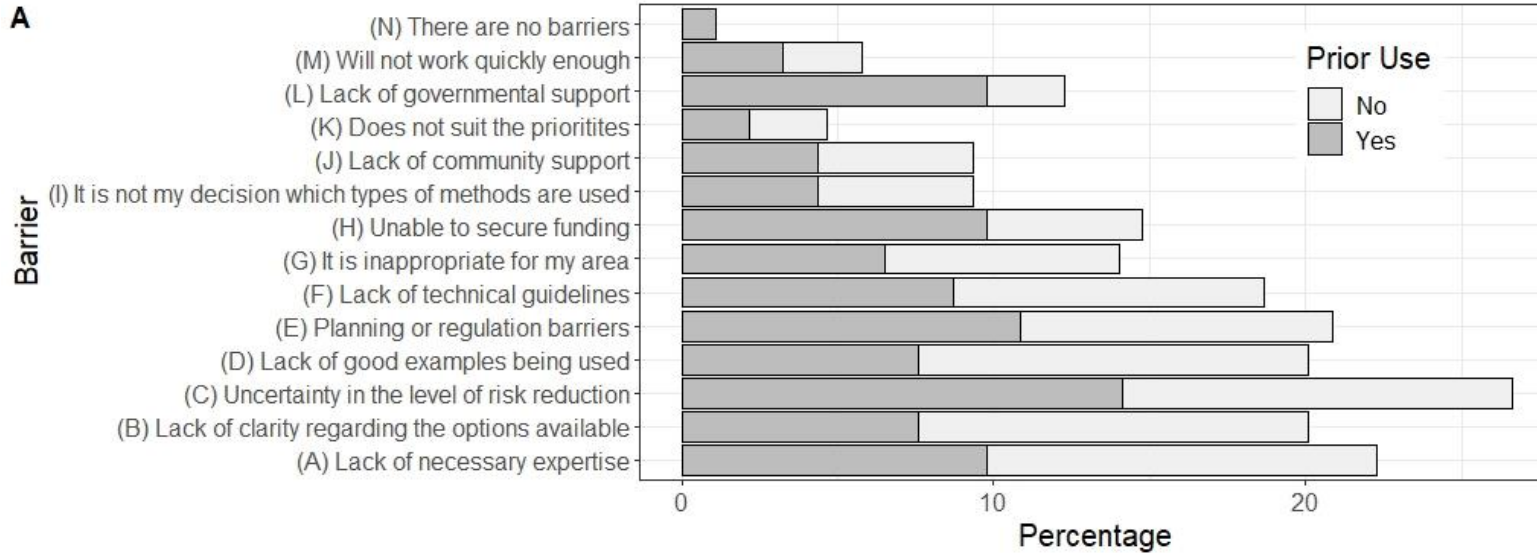
Enabler: co-benefits

Living Shorelines Australia

67 respondents – 65% LGA
44 people – had used LS
41 people – priority



Living Shorelines Australia

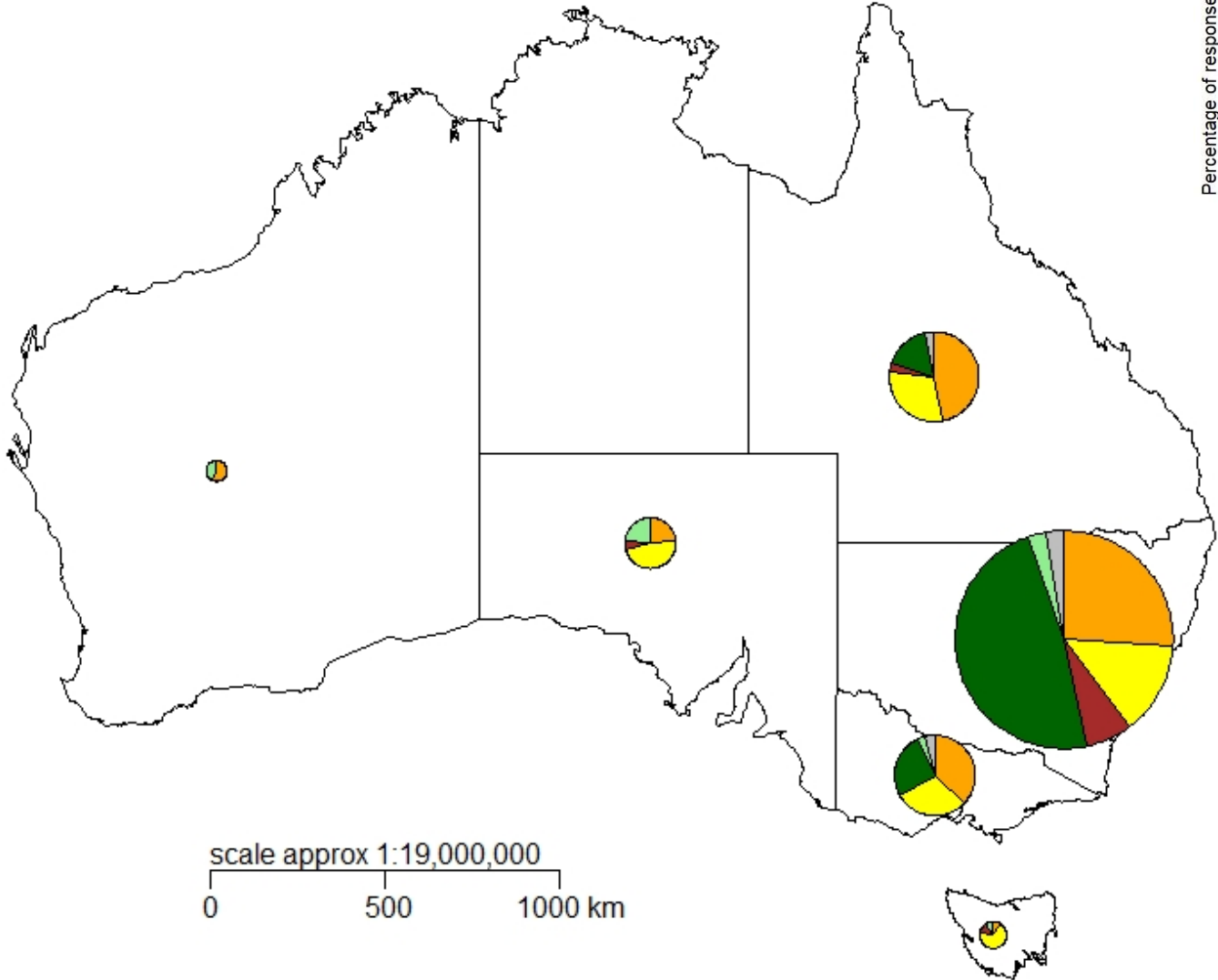
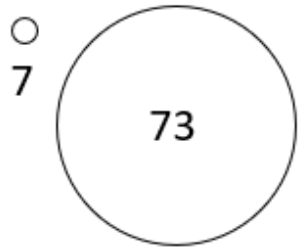


Top 5 barriers:

- Uncertainty in the level of risk reduction
- Lack of necessary expertise
- Planning or regulation barriers
- Lack of good examples being used
- Lack of clarity in the options available

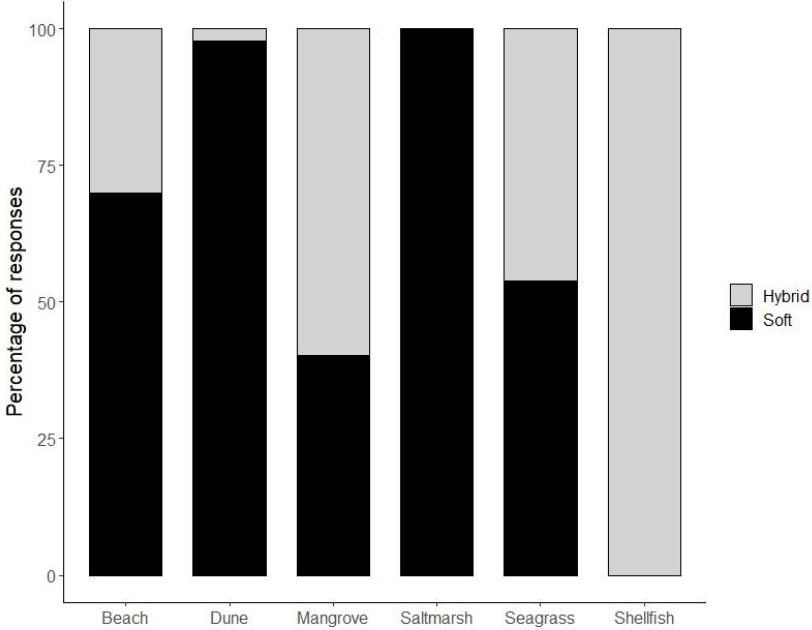
Living Shorelines Australia

- Beach
- Dune
- Saltmarsh
- Mangrove
- Seagrass
- Shellfish



scale approx 1:19,000,000

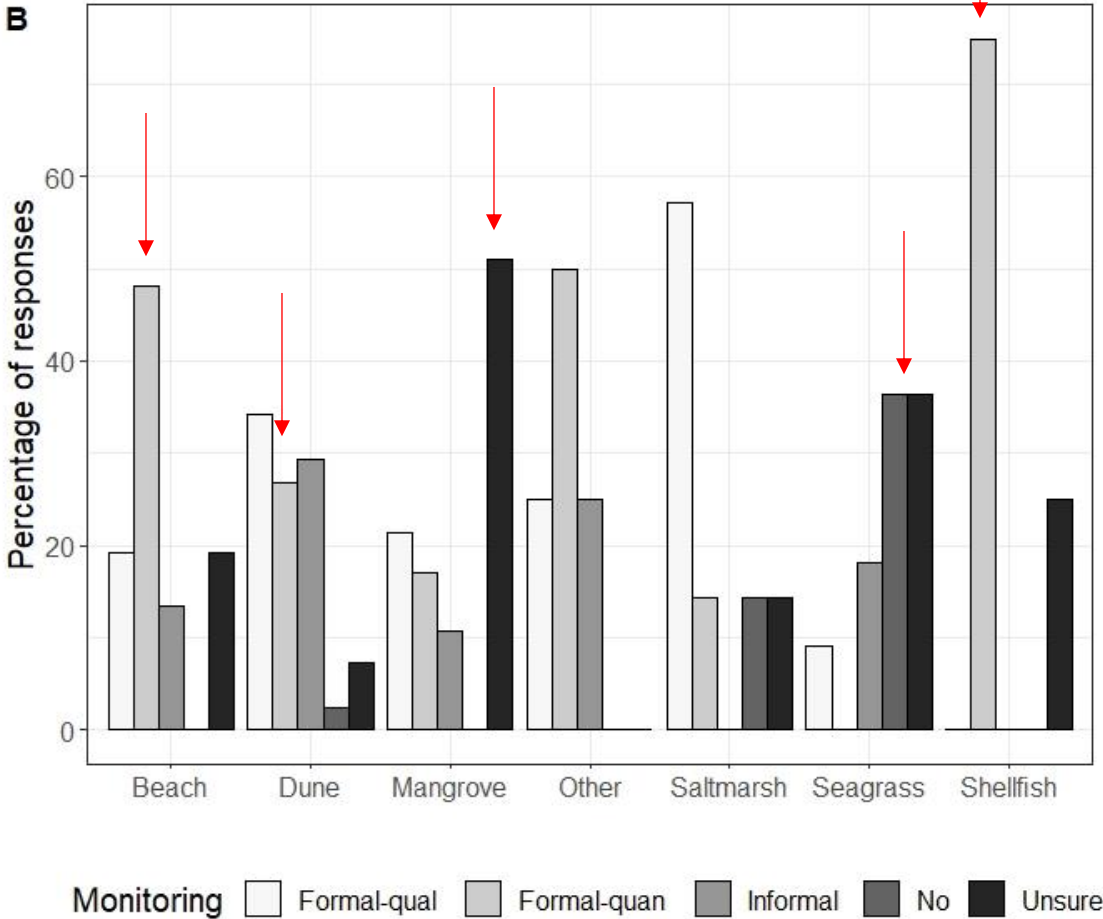
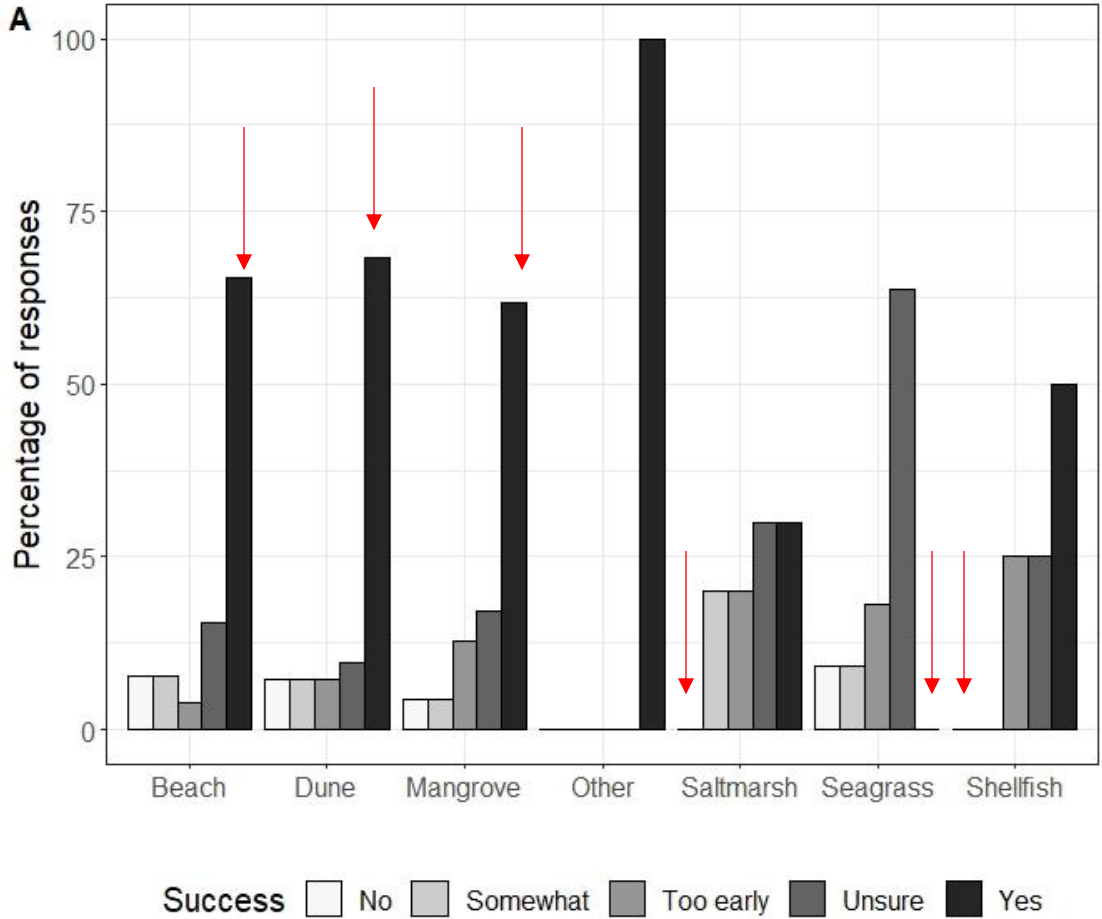
0 500 1000 km



Living Shorelines Australia

59% were considered successful
 13% were somewhat or not successful

Formal monitoring – 53.6%
 (Quantitative – 30.1%; Qualitative – 24.1%)



Living Shorelines Australia - recommendations

Compile commonly used techniques and currently available information, supplemented with additional research where needed, to develop technical guidelines for different methods if they do not exist currently.



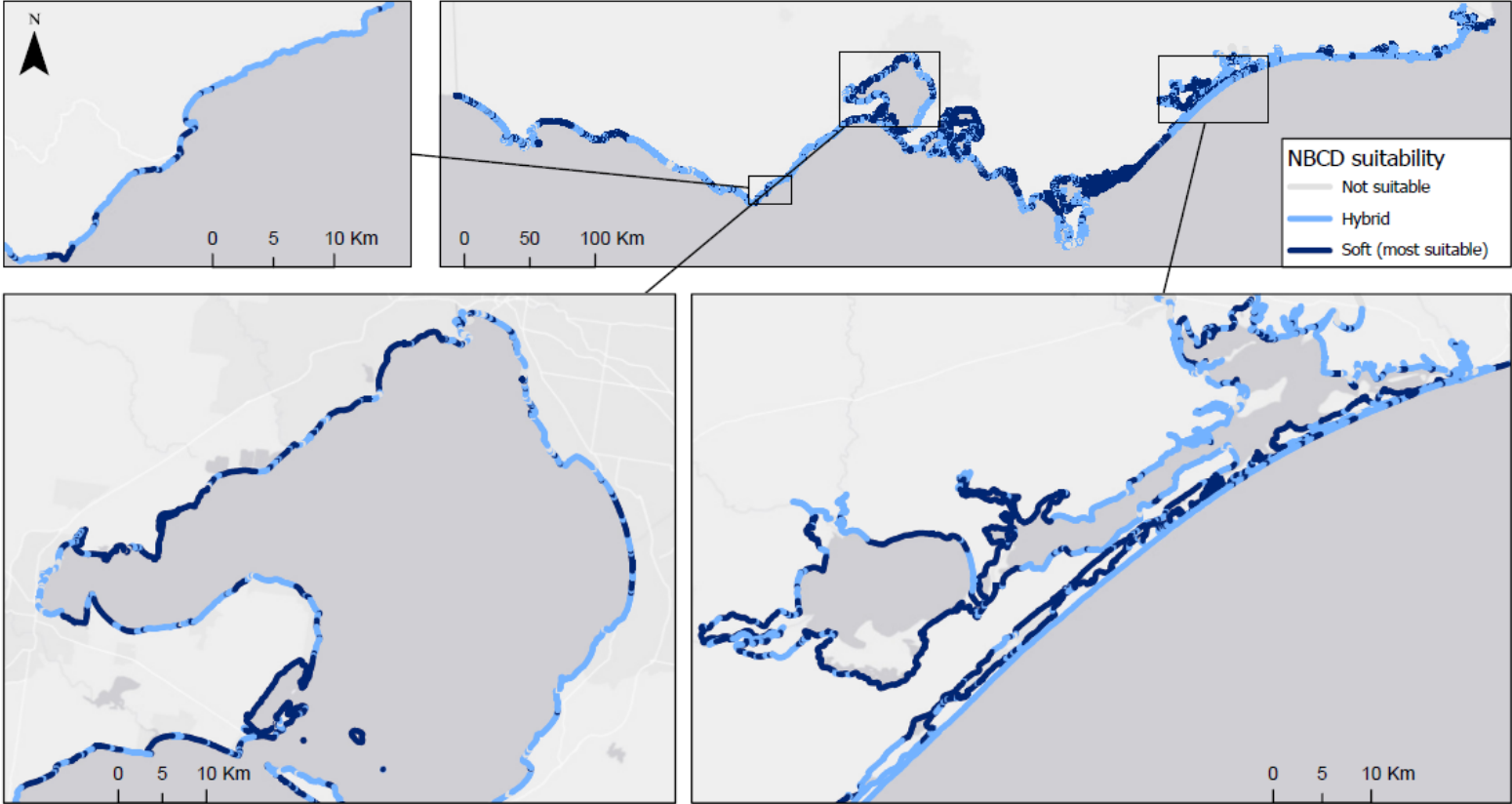
Living Shorelines Australia - recommendations

Identify emerging technologies for research programs to provide the ecological, engineering and socio-economic information necessary to support broader use. For example hybrid approaches represent an opportunity for living shorelines in more diverse environmental settings but are less well studied/characterised.



Living Shorelines Australia - recommendations

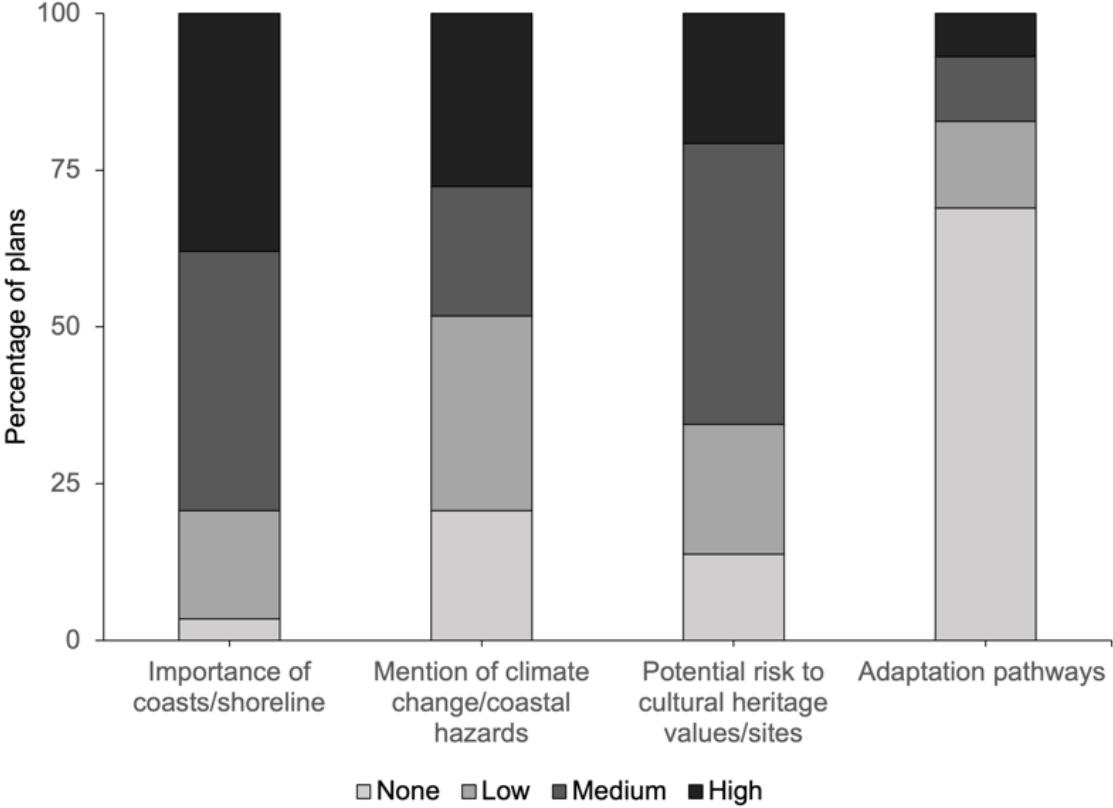
Increase the number of living shorelines using ecosystems that are currently not well represented as demonstration projects. Decisions could be aided by a living shorelines options analysis for coastlines.



Living Shorelines Australia - recommendations

Work with diverse stakeholders, including researchers, practitioners, community and Aboriginal and Torres Strait Islander

Organisations to co-design living shoreline projects for built, natural, recreational and cultural assets.



Acknowledgements

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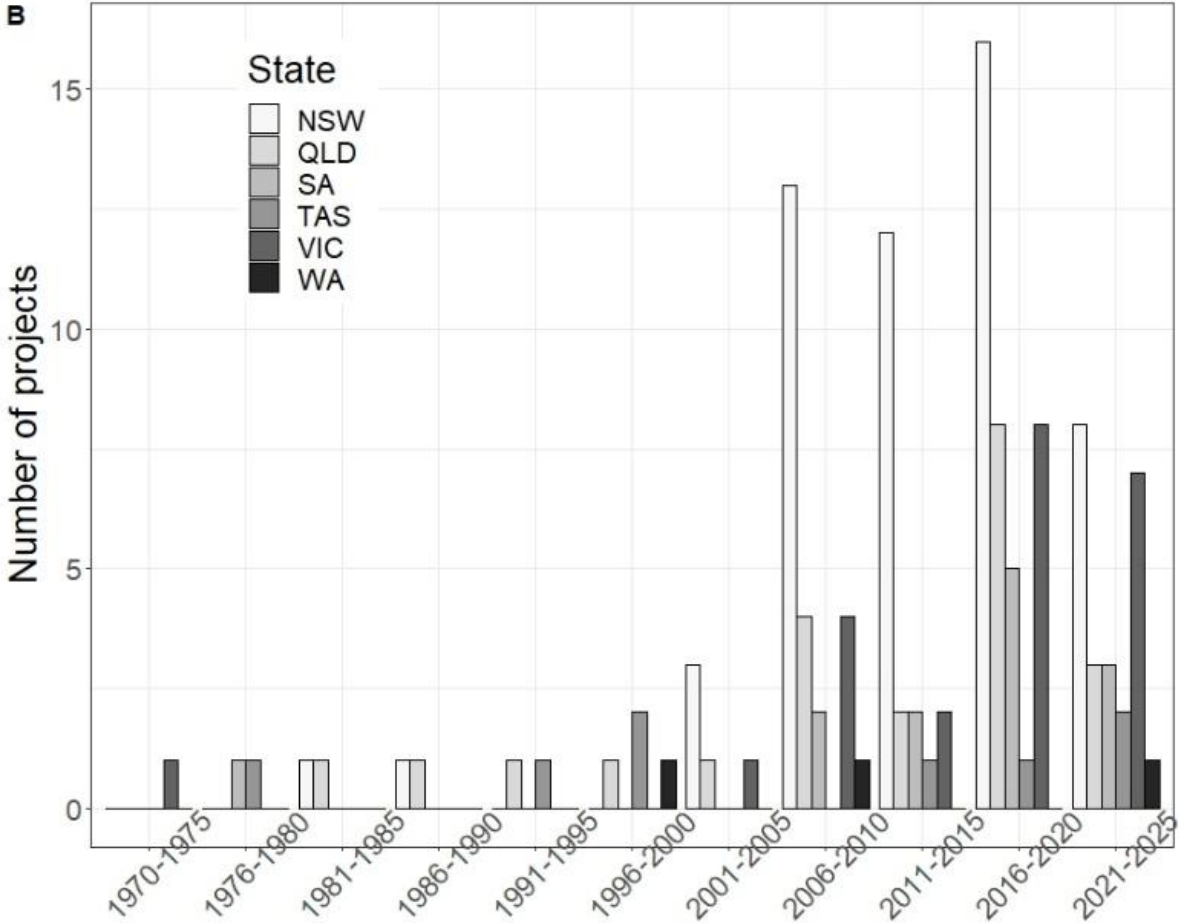
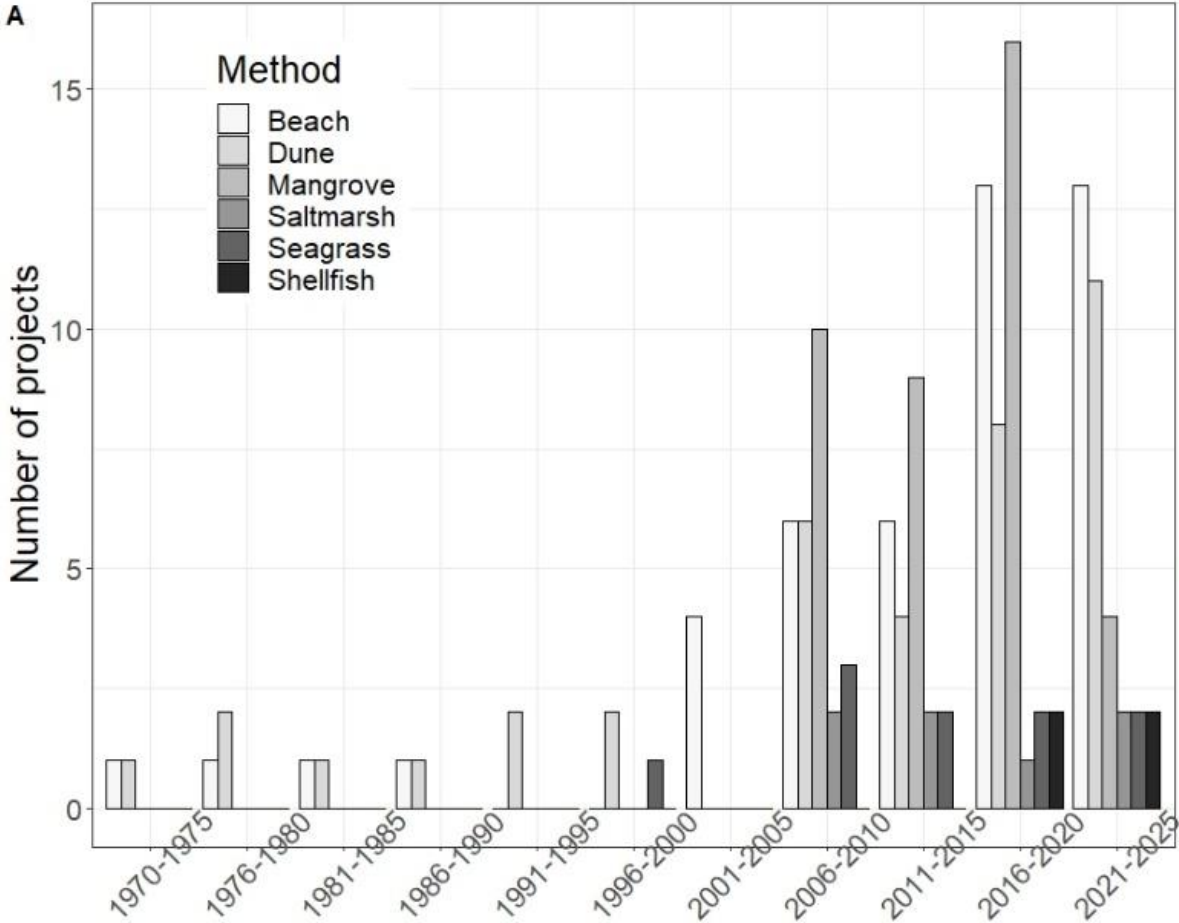
Funding/Partners:



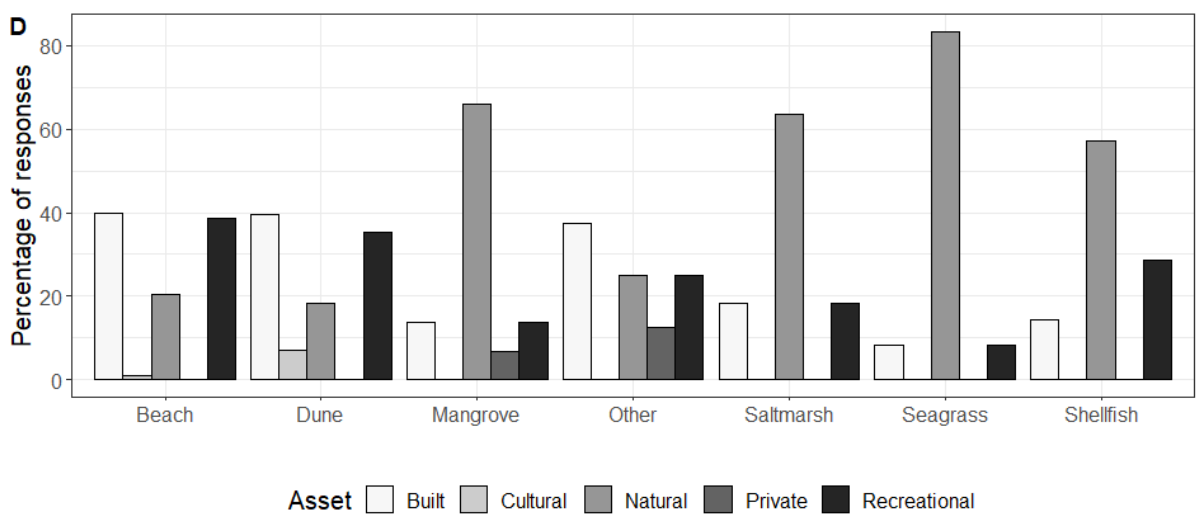
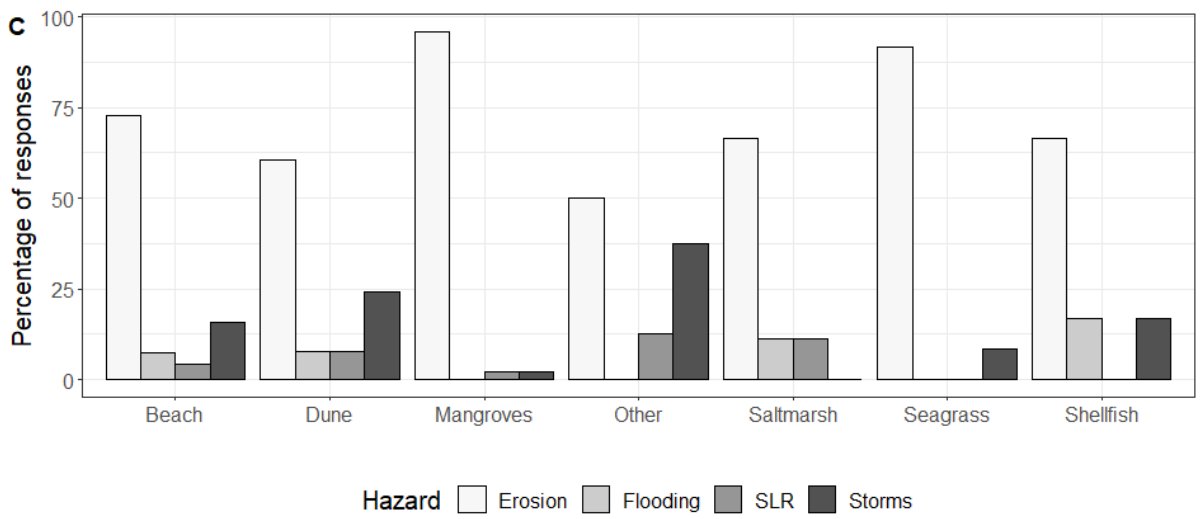
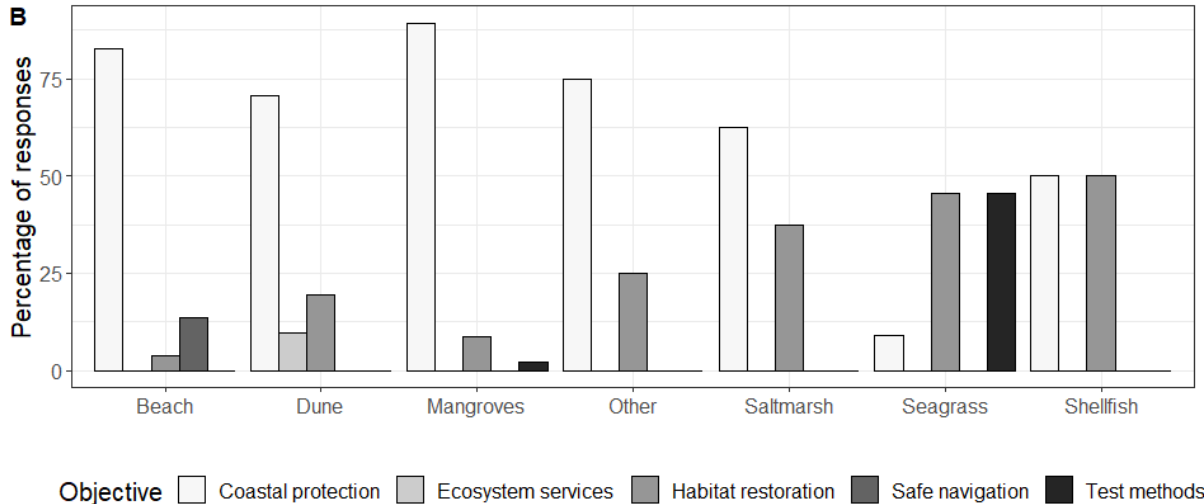
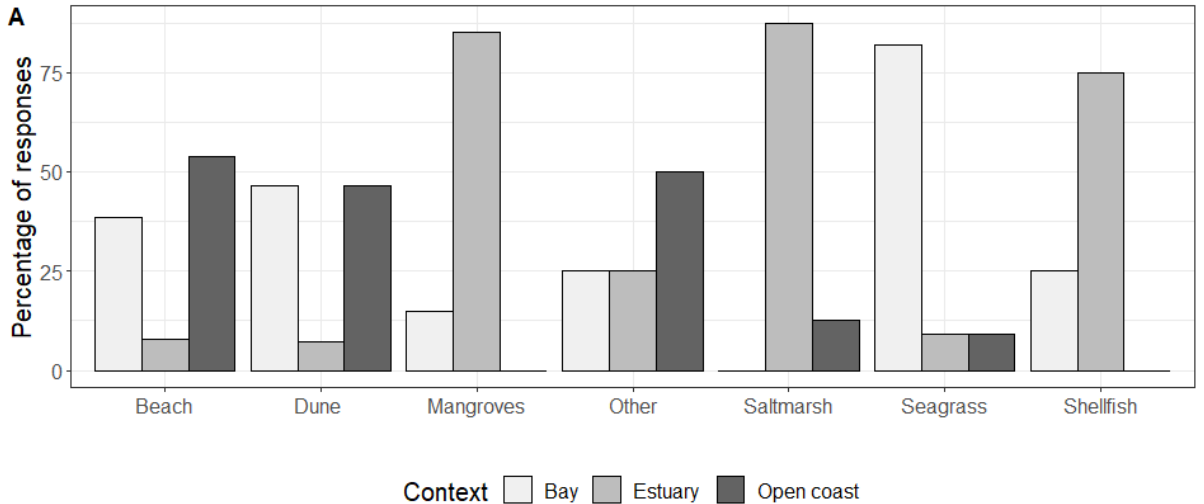
FOR MORE INFORMATION

Rebecca Morris | rebecca.morris@unimelb.edu.au | [@morris_becki](https://twitter.com/morris_becki)

Living Shorelines Australia



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Approach	Technique	Example	Length (m)	Cost (m ⁻¹)
Beach	Soft	Artificial nourishment, replenishment or scraping	690	356
	Hybrid	Sand pumping, sand bypassing	1000	5235
Dune	Soft	Restricting access, revegetation, reshaping, sand fencing	800	46.5
	Hybrid	Dune with rock core	550	4000
Mangrove	Soft	Planting seeds or seedlings	2750	60
	Hybrid	Rock fillet/sill, wooden logs or pilings	407.5	158
Saltmarsh	Soft	Restricting access, hydrological restoration, revegetation	1000	10
	Hybrid	-	-	-
Seagrass	Soft	Planting seeds or fragments	5000	Unknown
	Hybrid	Metal pins, sediment stabilising matting	Unknown	Unknown
Shellfish	Soft	-	-	-
	Hybrid	Rock or shell consolidated or unconsolidated	1037.5	1396.5