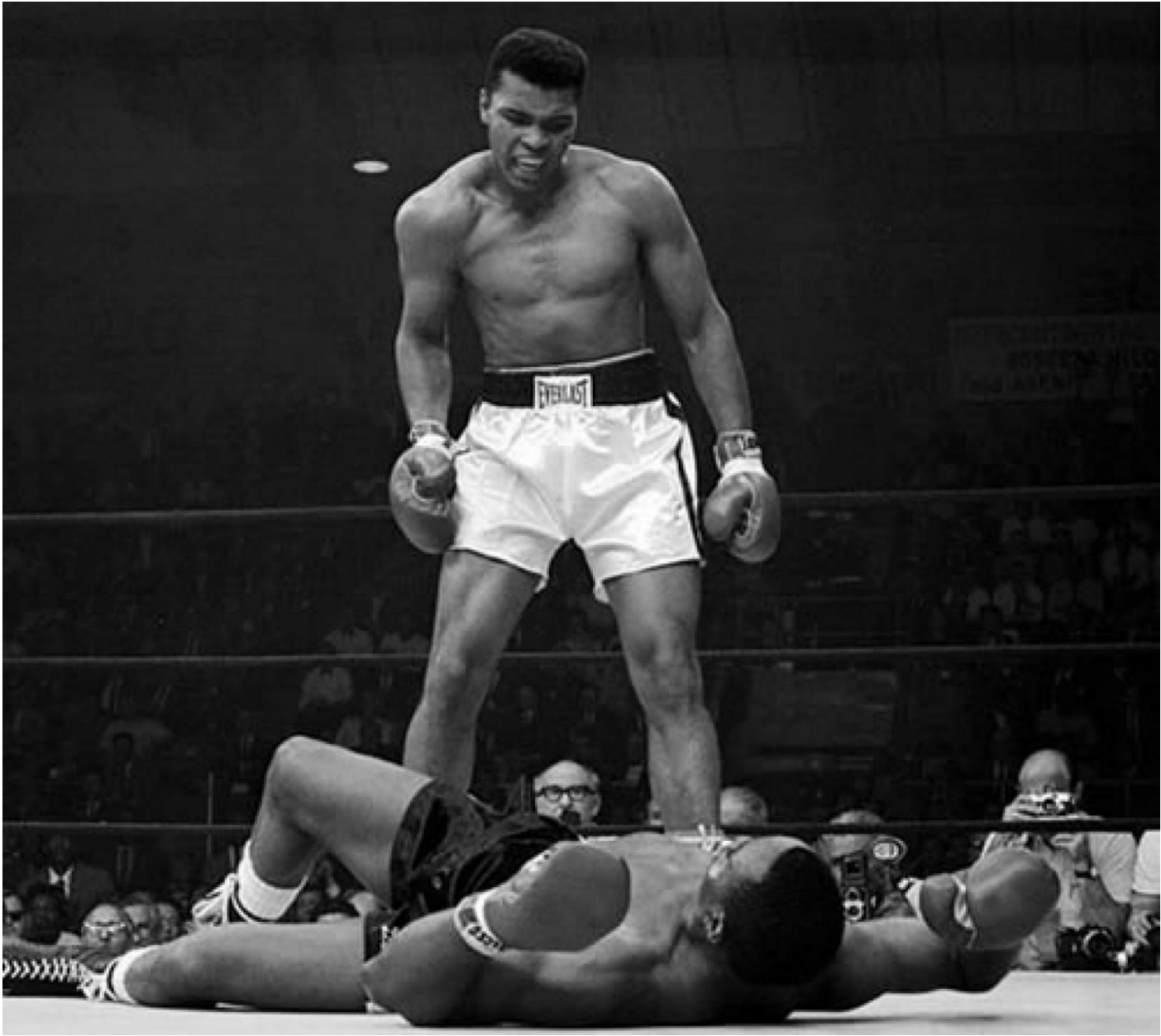


# Understanding the 'impact' of the Ningaloo Research Program

Dr Christopher Cvitanovic

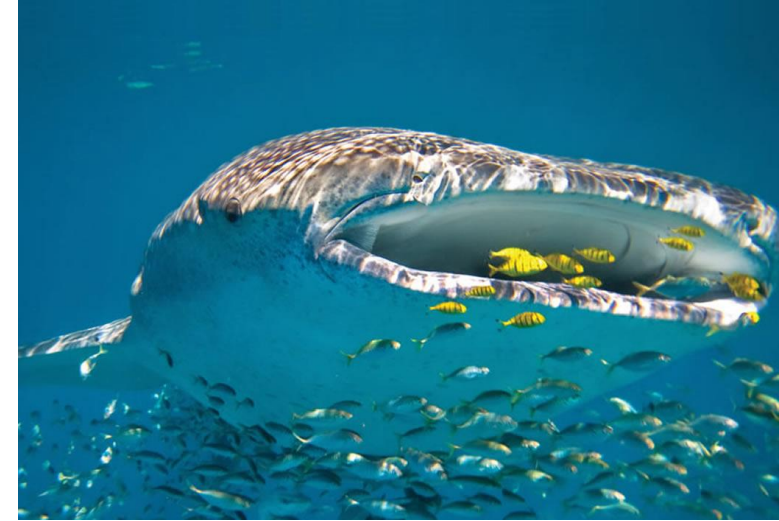
 @ChrisCvitanovic

Alistair Hobday, Ingrid van Putten, Jan McDonald, Mary Mackay, Rachel Kelly,  
Kelly Waples & Peter Barnes



# The Ningaloo Research Program (NRP)

- Commenced 2006
- Intense program of marine research valued at \$AUD36m.
- Specifically designed to generate new knowledge about the Ningaloo region ahead of its nomination as a World Heritage Area in 2011.
- 40 individual research projects:
  - Biodiversity
  - Physical environment
  - Socioeconomics and human use
  - Management support tools



# Aims

Evaluate the outcomes of the Ningaloo Research Program, and the 'Impacts' that it has generated;

- Has the NRP generated new knowledge to support the management and sustainable use of the Ningaloo Marine Park?

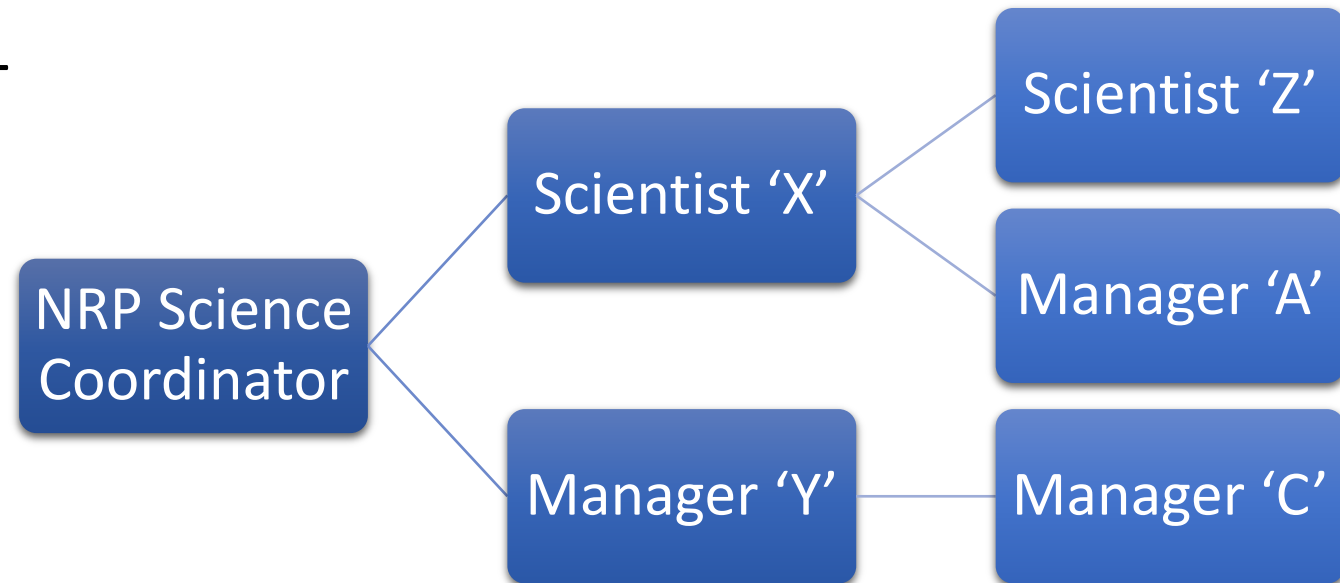


Department of  
**Parks and Wildlife**



# Methods

- Interviews with NRP participants, identified via purposive snowballing.
- Process identified 24 individuals, 21 of whom were interviewed.
  - 7 locally-based (Exmouth) decision-makers.
  - 7 remotely-based (Perth) decision-makers
  - 7 chief scientists who led research activities within the NRP
- All interviews analysed using NVIVO.



# Outcome 1: Science for management

*'...it produced a huge amount of new knowledge...everything from habitat mapping to biodiversity surveys, understanding key ecological processes, community structures, etcetera.'* (ID8)

*'I can't think of a single bit of research that came out of the program that doesn't have inherent value to management'* (ID13)

CSIRO PUBLISHING

*Marine and Freshwater Research*, 2012, **63**, 17–22

<http://dx.doi.org/10.1071/MF11074>

## A systematic evaluation of the incremental protection of broad-scale habitats at Ningaloo Reef, Western Australia



ELSEVIER

Contents lists available at ScienceDirect

Tourism Management

journal homepage: [www.elsevier.com/locate/tourman](http://www.elsevier.com/locate/tourman)



An analysis of visitor movement patterns using travel networks in a large marine park, north-western Australia

Claire B. Smallwood\*, Lynnath E. Beckley, Susan A. Moore

*School of Environmental Science, Murdoch University, 90 South Street, Murdoch 6150, Australia*



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Fisheries Research

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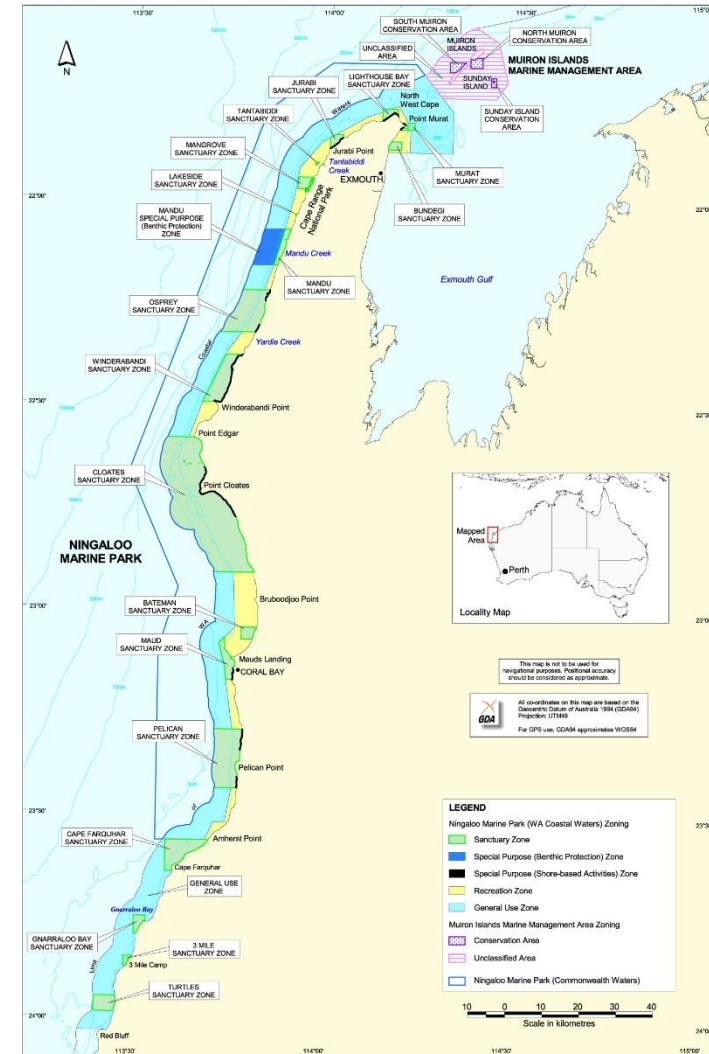


Spatial distribution and zoning compliance of recreational fishing in Ningaloo Marine Park, north-western Australia

# Outcome 1: Science for management

- Sanctuaries and Zoning
- Socio-ecological modelling (e.g.- visitor use)
- Monitoring (e.g.- establishment of baselines, documenting change, etc)
- Knowledge about individual species (e.g.- Whalesharks and turtles).

*'...based on our new understanding we now know that any redefinition of the sanctuary zones ...should go right across the marine park to link with the Commonwealth waters' (ID20)*

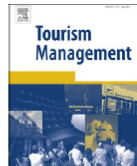




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Spatial distribution and zoning compliance of recreational fishing in Ningaloo Marine Park, north-western Australia

National Research  
**FLAGSHIPS**  
Wealth from Oceans



### Ningaloo Collaboration Cluster: Adaptive Futures for Ningaloo

Fulton, E., Gray, R., Sporcic, M., Scott, R., Little, R., Hepburn, M., Gorton, B., Hatfield, B., Fuller, M., Jones, T., De la Mare, W., Boschetti, F., Chapman, K., Dzidic, P., Syme, G., Dambacher, J. & McDonald, D.

Ningaloo Collaboration Cluster Final Report No. 5.3  
October 2011



*Are sanctuary zones at Ningaloo Marine Park assisting in the protection and recovery of rock lobster?*



*Monitoring the health of coral and fish communities at Ningaloo Reef*



# Outcome 2: Benefits to tourism



*'...it certainly raised the profile of Ningaloo Reef and the Ningaloo Marine Park on a global level...and increased levels of tourism in the region' (ID10)*

# Outcome 3: An engaged (and trusting) community



*'It educated the community which led to a feeling of ownership and custodianship of the local area' (ID1)*

*'If the public understand it more, they appreciate it more and have a better capacity to manage it themselves (ID8).*

# Community

# r

# ance



# Aims

What **impact** has the NRP had on local Ningaloo residents, and what does this mean for the management of the region?

Perceptions of community members regarding:

- The management of the Ningaloo Marine Park;
- The role and importance of science for managing the Ningaloo Marine Park; and
- Has the NRP improved the relationship between community members and managers in the region (trust, social cohesion, collection action and communication).

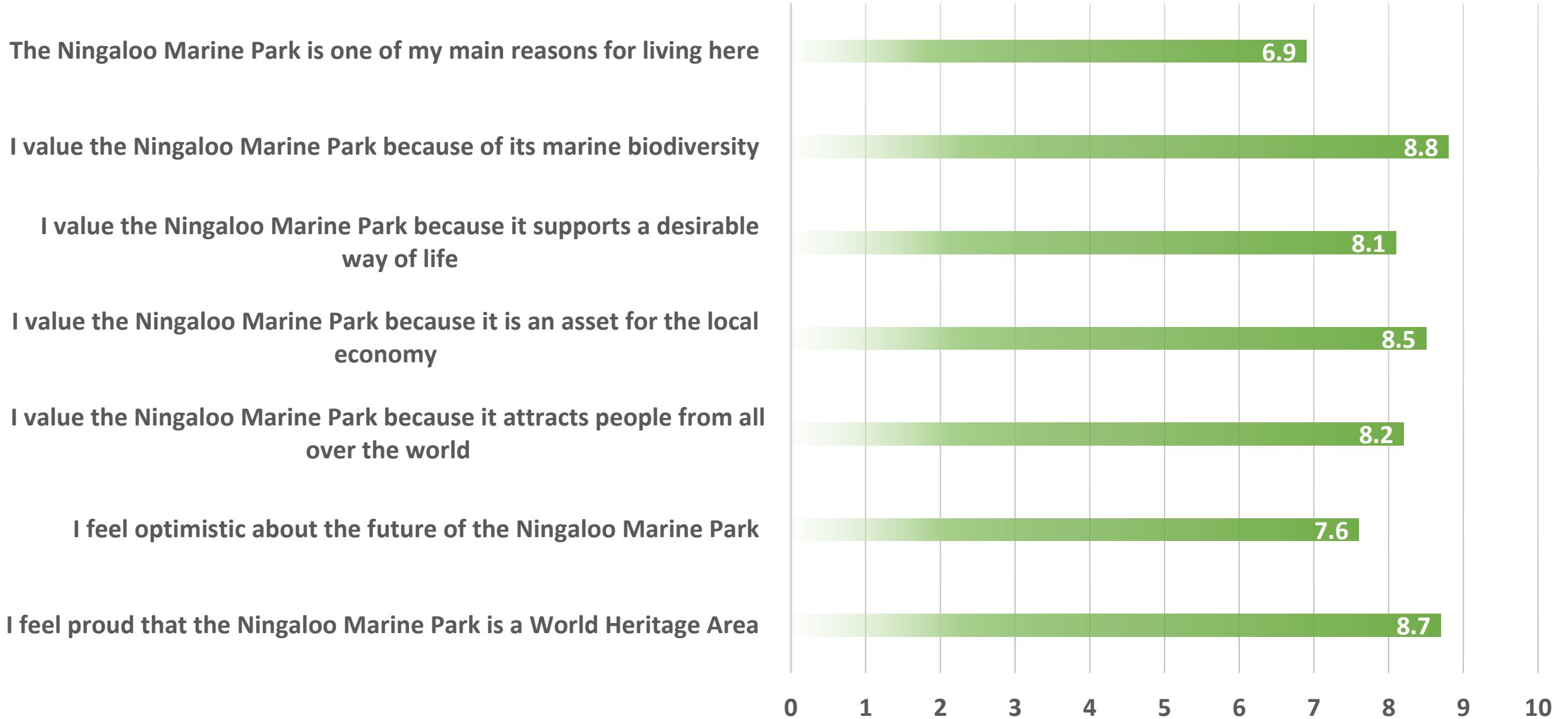
# Methods

- Quantitative survey for breadth (n=137)
- Survey questions developed from in-depth scoping interviews with residents representing major groups in the region.
- Demographic parameters:
  - Location (Coral Bay or Exmouth).
  - Year of birth (which was later converted to generation).
  - Gender.
  - Highest level of education completed.

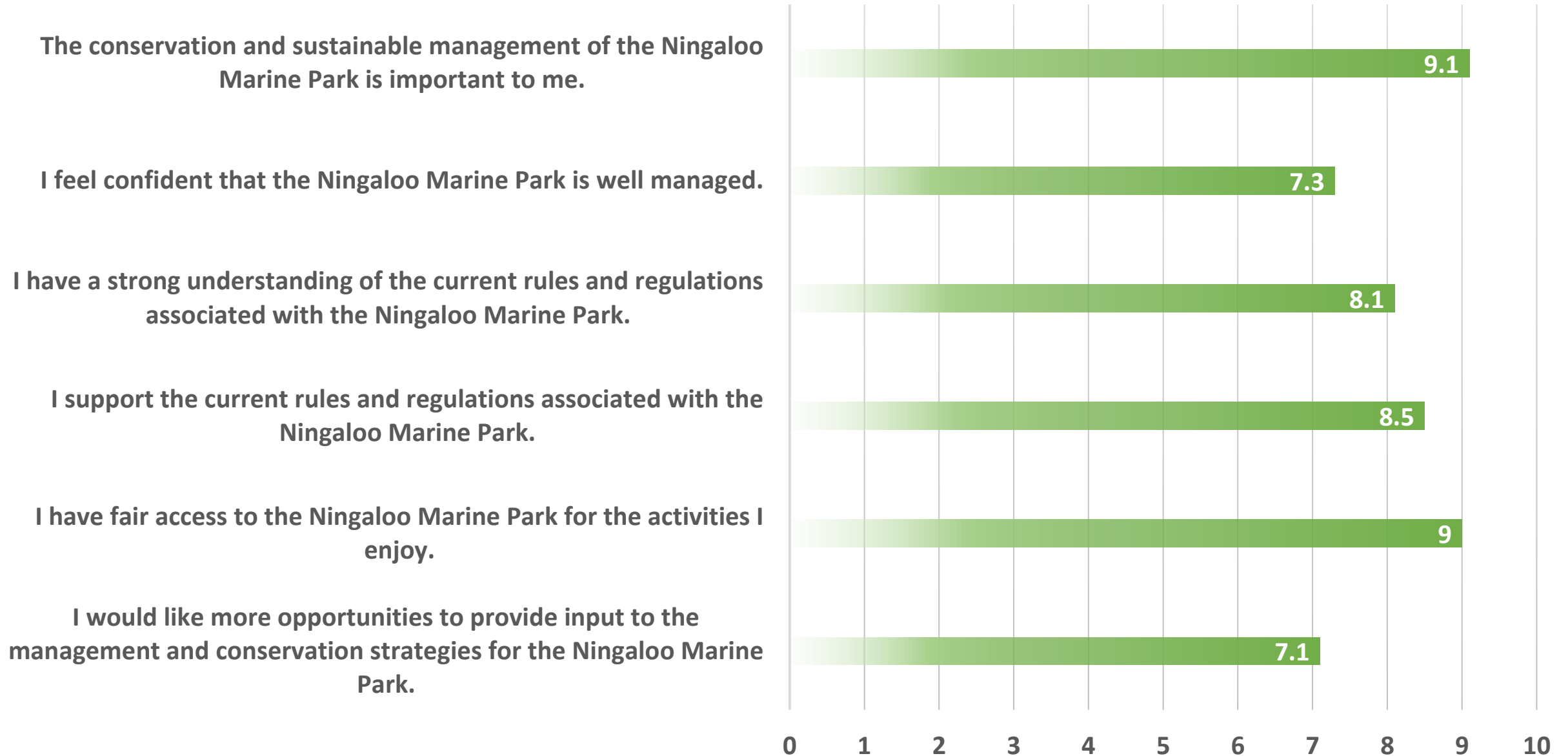




# Reasons for living in the region

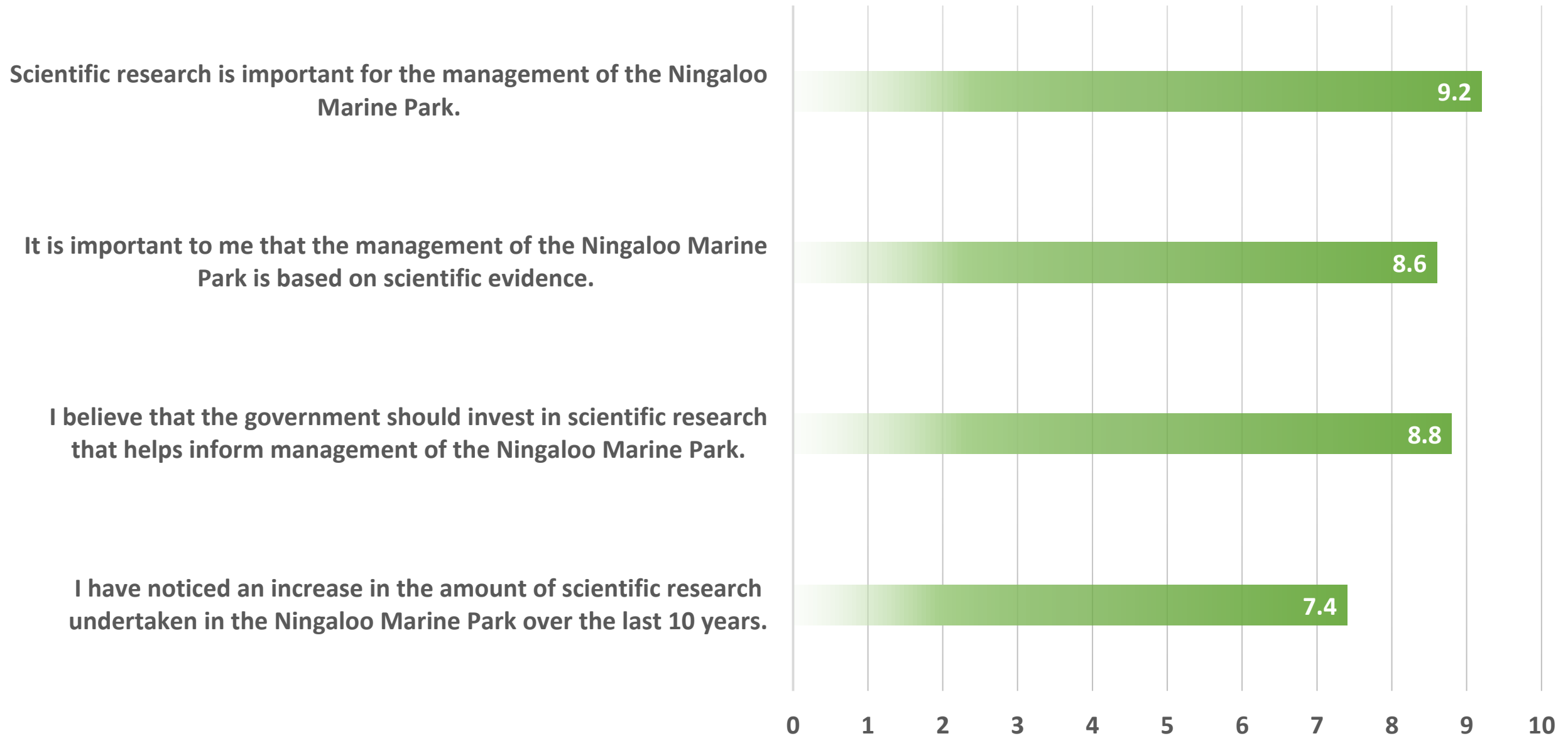


# Management of the Ningaloo Marine Park





# Importance of science in the region



# Improved trust between community and managers

The scientific research undertaken in the Ningaloo Marine Park has led to greater trust among the local community and marine park managers.

6.7

I trust the marine park managers to make better decisions in relation to the management of the Marine Park because of the science undertaken.

7.6

Increased trust between the local managers and community have led to better environmental outcomes for the management of the Marine Park

7.3

Increased trust between the local managers and community have led to better social outcomes for the management of the Marine Park.

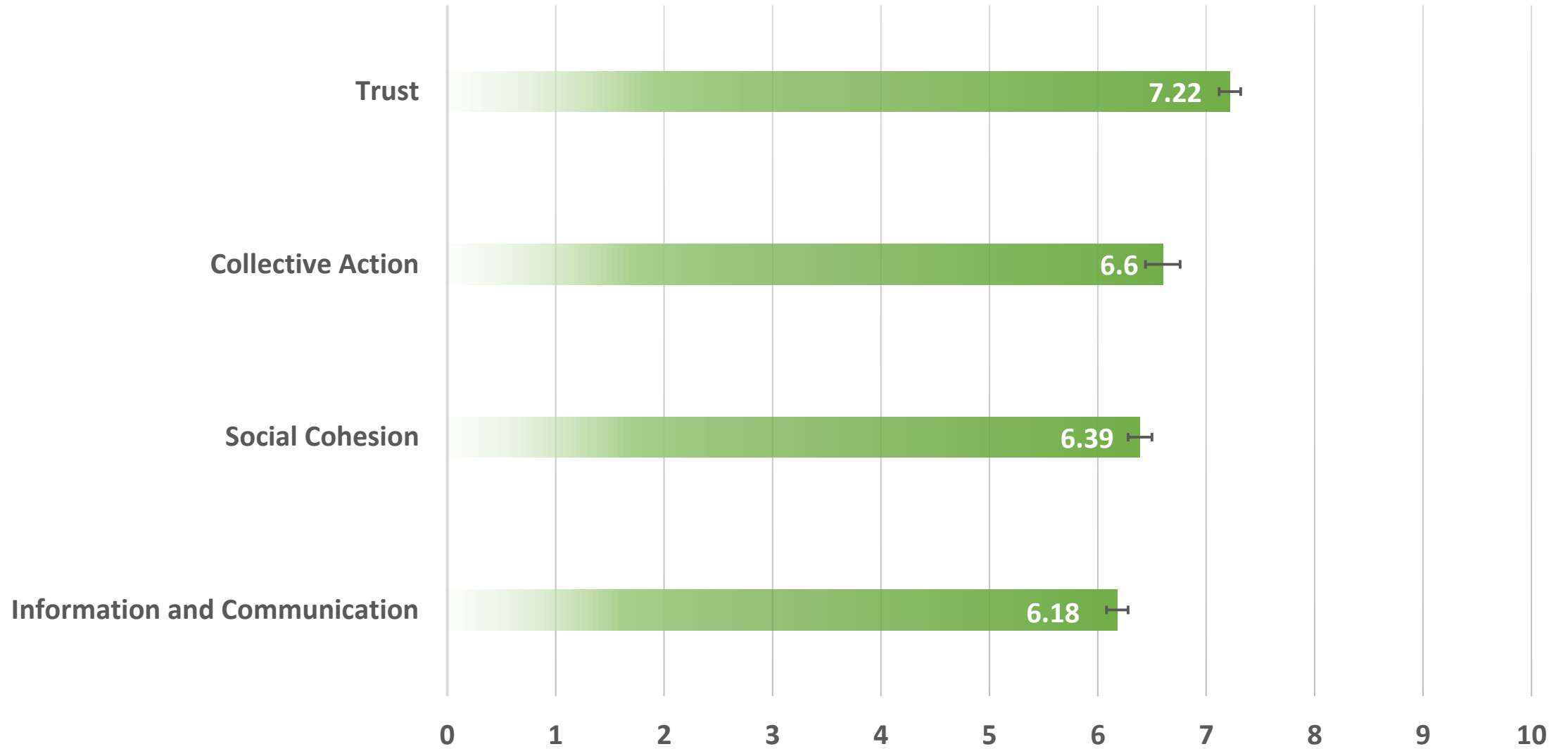
6.9

I trust the marine park managers to use the scientific information responsibly and ethically and not to impose a political agenda.

7.4

0 1 2 3 4 5 6 7 8 9 10

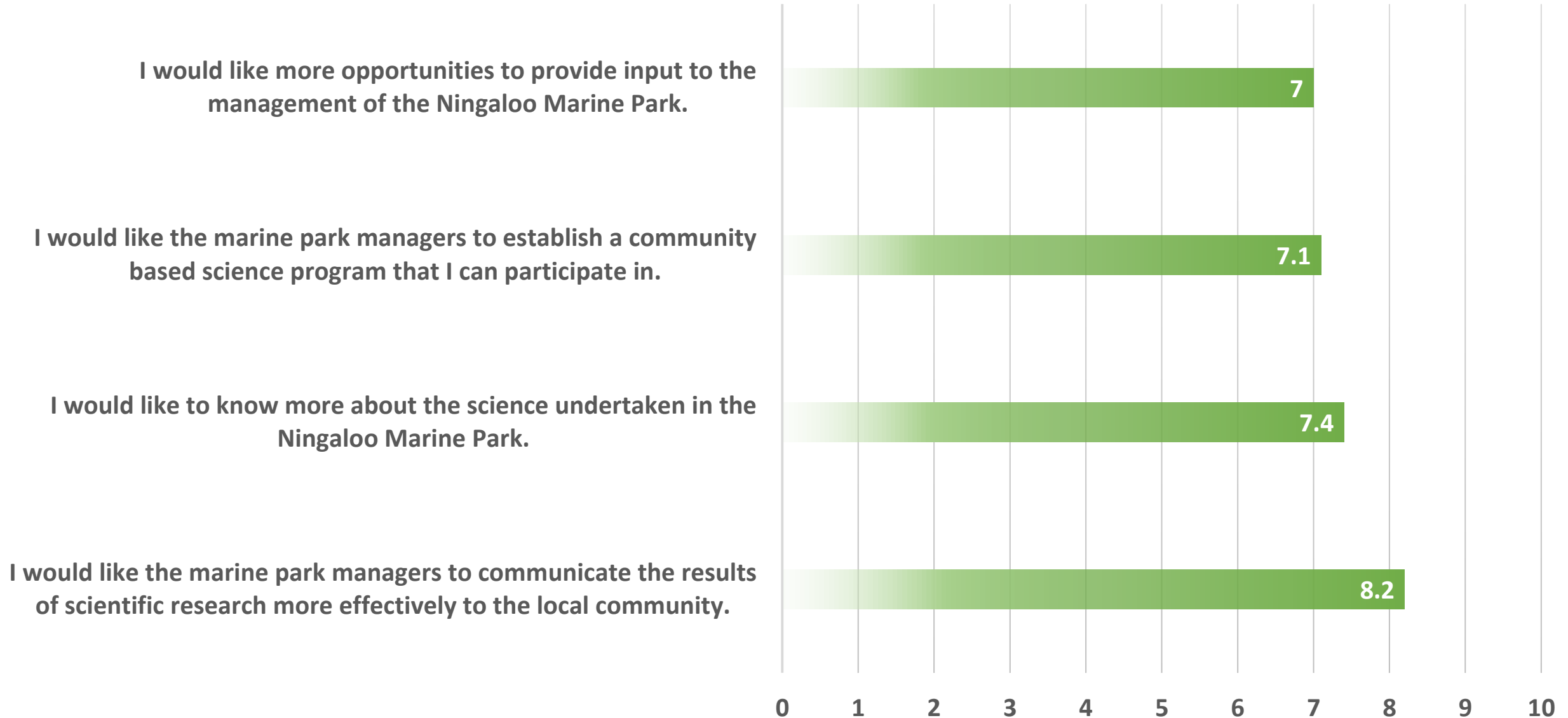
# Positive signs across all dimensions of social capital



# Summary

1. Ningaloo residents are largely happy with how the marine park is been managed, and supportive of existing rules and regulations.
2. Ningaloo residents believe that science is critical for managing the marine park successfully, and supportive of government investment into science in the region.
3. The Ningaloo Research Program, and increased science effort in the region, have improved trust among residents and DPaW (district officers and more broadly).
4. Residents believe that increased trust has led to improved environmental and social outcomes for the region.

# Opportunities for more 'impact'



No one size fits all approach...

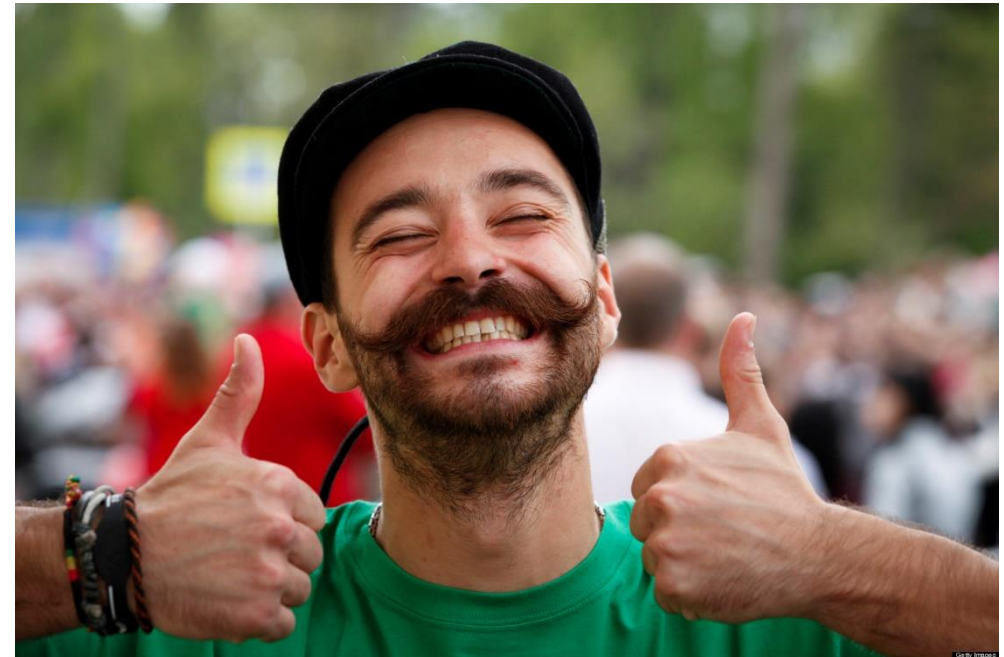


# Methods

- Developed typologies based on two axis:
  1. Confidence in the management of the park.
  2. Level of engagement in management.
- Multinomial logit analysis was used to characterise residents based on their perception of science, level of trust, collective action and cooperation, information and communication, and social cohesion.
- Fancy way of saying – a quantitative way to understand differences among ‘types’ of community members, and understand the implications for management.

# Engaged optimists (n=62)

- High confidence in the management of the marine park.
- High level of engagement in the management of the marine park.
- Strongly value science.
- More common in Coral Bay residents (likely due to community size and dominant marine focus of area).
- Female, 23-54 years old, less likely to have undertaken higher education.





# Leave it to the leaders (n=43)

- High confidence in the management of the marine park.
- Low level of engagement in the management of the marine park.
- Value the role of science.
- Mostly Exmouth residents.
- Most common in people who have resided in the region > 10 years.



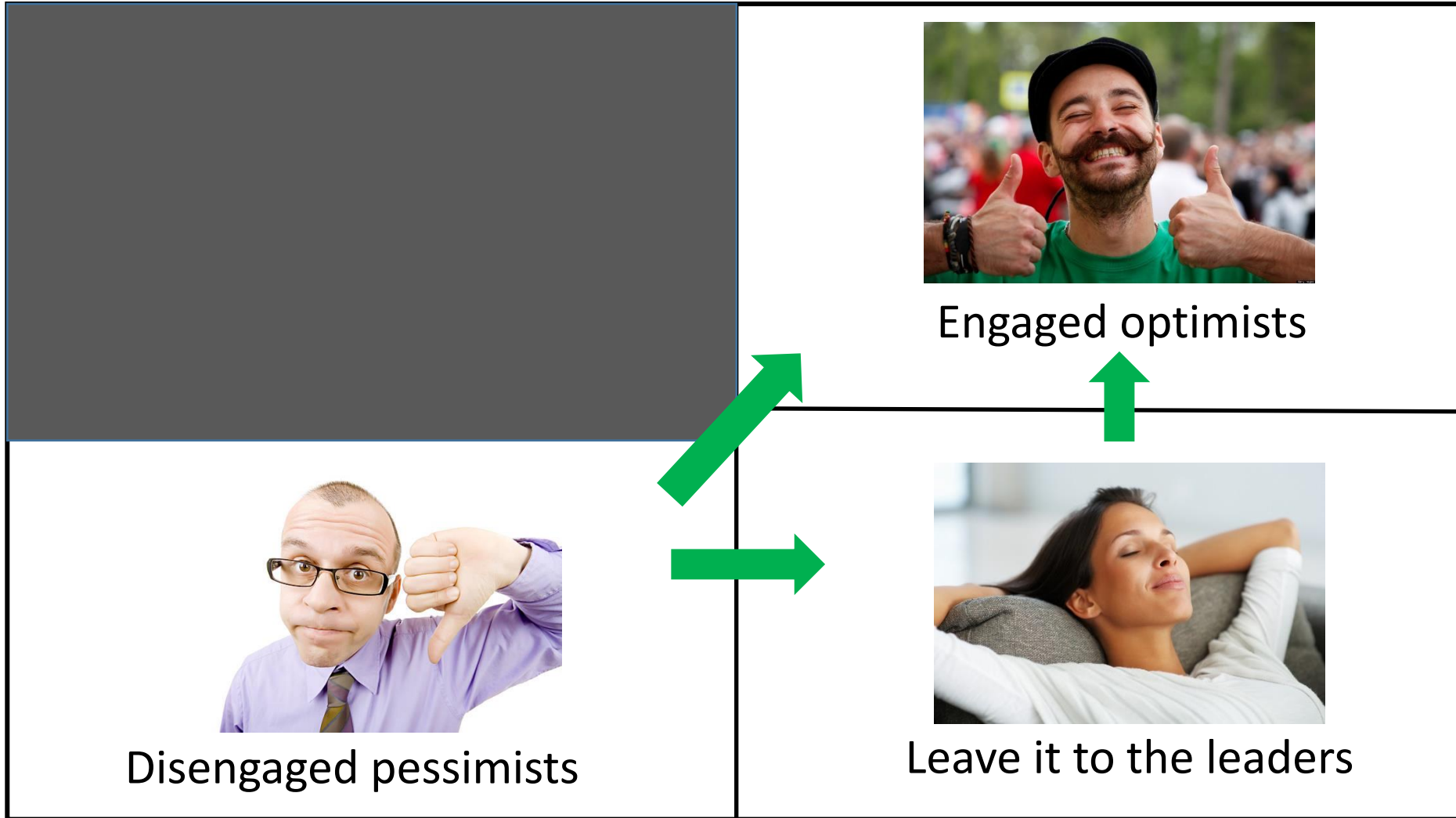
# Disengaged pessimists (n=35)

- Low confidence in the management of the marine park.
- Low level of engagement in the management of the marine park.
- Majority based in Exmouth.
- Typified by Baby Boomers (aged 54+) who have lived in the region for > 10 years.



High (10)

Engagement in Management



Low (1)

Confidence in Management

High (10)

# Practical implications

## Disengaged pessimists

- Baby Boomers living in region >10years.
- Need to illustrate links between science and **social outcomes** for the region (e.g.- link between tourism and economy; links between zoning and better recreational fisheries).
- Direct face-to-face discussion needed, focusing on two-way dialogue.
- Targeted forums with targeted 'invites' (e.g.- Church, community groups)
- No park fee's.



# Practical implications

## Leave it to the leaders

- Confident in management, but not engaged.
- Engaged in management could occur through better engagement in science.
- Establishment of citizen science research programs (don't use tourists), Exmouth focus.
- More *active* attempts to share outcomes of scientific research programs (i.e.- through social media such as twitter and Instagram).
- Efforts targeted towards this group will also reinforce feelings of Engaged Optimists.



# Summary

- The Ningaloo Research Program has had a significant impact:
  - Generated new knowledge to support management
  - Positive impacts on tourism (raised global profile of region)
  - Led to increased trust, social cohesion and collective action between managers and residents.
- In combination, residents feel this has led to improved environmental and social outcomes throughout the region.
- Opportunities relating to communication and information sharing available to sustain and enhance this trust – started to identify some practical strategies for achieving this.