Understanding recreational fishers’ compliance with no-take zones in the Great Barrier Reef Marine Park

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1. Context
- In 2004 the amount of no-take zones (“Green Zones”) in the Great Barrier Reef Marine Park (GBRMP) increased from 5% to 33%.
- Despite public participation, parts of the recreational fishing sector opposed the rezoning.
- Recreational fishing accounts for most of the compliance offenses related to zoning in the GBRMP.

2. Research aim
- We aimed this study for 1) understanding recreational fishers compliance with Green Zones in the GBRMP and 2) assessing a reliable method for measuring compliance.

3. Compliance → Conservation
- Conservation of the GBRMP relies on user compliance.
- Benefits of understanding compliance: determining environmental impact of infractions, gauging awareness and interpretive effort, inferring the enforcement-compliance link and directing enforcement in quantity, space and time.

4. The crux
- Measuring compliance is complex.
- Most methods can be unreliable and/or logistically and economically inefficient (e.g., aerial and vessel-based observation, user reports, indirect observation).
- Poaching is illegal and stigmatizing = high response bias in conventional social surveys.

5. Methods
- Social survey applied at the main boat ramp in Townsville, Queensland, Australia.
- Random Response Technique (RRT) (Warner, 1965): probabilistic method based on a randomizing device (Fig 1).

6. Results (N=144)
- We found high compliance with both methods.
- A previous study in the same study area, before the rezoning, used direct observation (Davis et al., 2004) and also found high compliance.
- Fines were the main compliance driver, whereas as high fish numbers (in Green Zones) were the main non-compliance driver (Fig. 2).

- Fishers’ had erroneous beliefs (e.g., confiscation of property, jail) regarding the repercussions from poaching, these can have a coercive effect which further encourage compliance.
- We found differences between “yes” and “no” respondents with the RRT: “No” respondents were more likely to feel comfortable using the RRT (p=0.01), understand why the RRT ensured confidentiality (p= 0.01) and perceive higher compliance levels (p=0.058).

7. Management implications
- We found high compliance and room for improvement.
- Do we want people to comply because they are afraid of fines? Or do we want people to comply because they are aware of the benefits of no-take zones?
- Compliance based on rational drivers (e.g., fines) is generally expensive since it relies on enforcement.
- Normative drivers (e.g., peer pressure, legitimacy) should be further exploited.
- RRT is an effective method for studying fishers’ compliance.
- Perceived compliance and the false consensus effect deserve closer attention for further use in compliance studies.

“Through interpretation, understanding; through understanding, appreciation; through appreciation, protection.” Anonymous U.S. National Park Service ranger

References:

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