Fishing and Conservation: Interviewing Fishermen in Eleuthera

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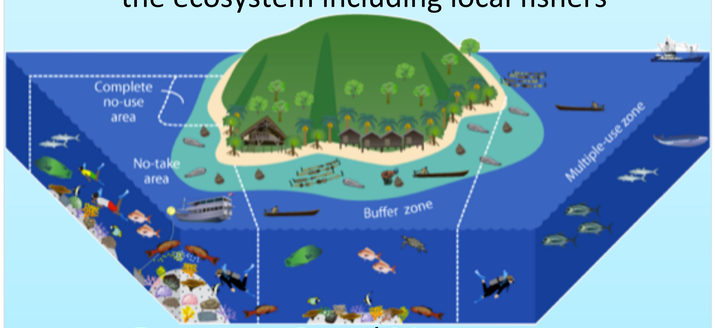
Introduction

Throughout the world, stocks of fish are significantly depleting. As a result 68 countries came together at the Convention for Biological Diversity (CBD) and created the 2020 target. This target stated that all the countries attending the CBD must have 10% of their waters protected by 2020. However, the Bahamas decided to take on the goal of having 20% of their waters protected through the use of Marine Protected Areas (MPA), these are for long term conservation. In order for MPAs to be successful, a balance between fisheries and conservation is necessary. When fishers are included in the planning and management of an area, then they are more likely to support the conservation efforts and abide by the regulations (Kincaid K. *et al. 2013)*. With local fishers support, an MPA is more sustainable because it does not rely on outside enforcement as is more likely to succeed.

Objectives

1. Assess of the knowledge, attitude and perceptions of local fishers in South Eleuthera
2. Assess of the willingness to support conservation and sustainable fisheries approaches

Successful MPA's consider all factors of the ecosystem including local fishers



Ecosystem Based Management

Figure 1. Ecosystem Based Management, an effective management plan for creating MPAs. This style of management takes into account the needs of the marine environment, the fishers, and other users. Broken up into four zones: No-Use, No-Take, Buffer, and Multi-Use.

Methods

Experiential Learning

Figure 2. Researcher with a local fisherman during an experiential learning class.

Fishers were asked both open and closed ended questions on a variety of subjects from opinions on conservation to how they have personally observed changes in their environment over time. There were 45 questions per interview and each interview lasted about half an hour. Interviewees were either randomly selected or referred to the interviewees by other fishers. This is known as snowball sampling.

Random Sampling

Figure 3. Landing site in Tarpum Bay, South Eleuthera.

Snowball Interviews

Figure 4. Researcher interviewing local fisherman outside of Rock Sound, South Eleuthera.

Results

We interviewed 25 fishers from different settlements in South Eleuthera and found that there were multiple trends in our collected data. Fishers acknowledged that fishing had become a more difficult task with increases in time fished and cost of fishing (fig 7). Many fishers told us that the amount of fishers had increased in recent years and were pessimistic about what that would mean for the fishery in the coming years. Another important aspect shown in figure 6 is that the two of the top three most targeted species, Nassau Grouper and conch hold serious economic importance. Conch holds significant cultural importance as a staple of the Bahamas. Also Lionfish, an invasive species that could afford to be fished more heavily, has not been as targeted as it could be. As a whole the results have shown need for conservation as well as that fishers are willing to participate in conservation measures. However, as shown in figure 5, the fishers agreement on what type of conservation varies.

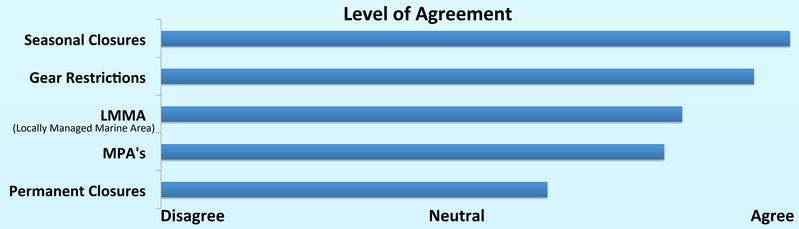


Figure 5. A Likert style graph showing the level of agreement of fishers on different conservation approaches.

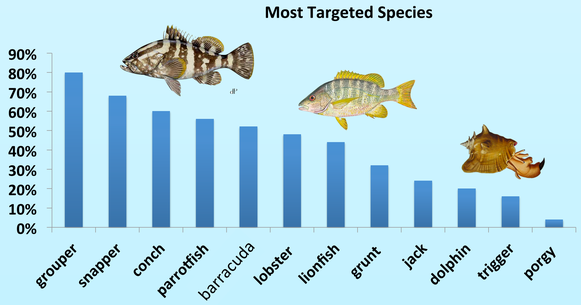


Figure 6. Graph showing the most targeted fish in South Eleuthera, according to the number of times mentioned by local fishers.

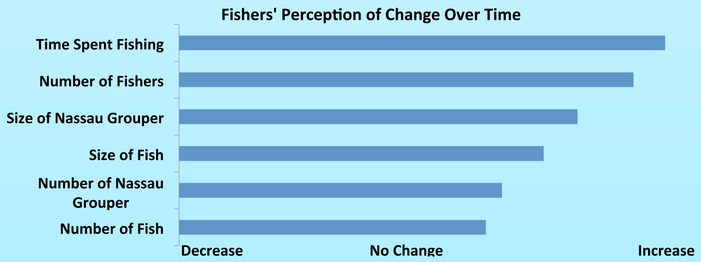


Figure 7. A Likert style graph showing fisher's observations regarding various changes in the local fishery over time.

Fishers' Views on Different Forms of Management (fig 5)

On seasonal Closures

"If you kill all the young then you wont have no new generation"

"Still won't stop people. I take lobster now, even in closed season, if I see it because it's a lot of money worth"

On MPAs and permanent closures

"Need parks, we've got to have these parks and have someone watching them. The Exumas have their parks, why not us?"

"If you make a park in an area where I go to than you will have to get police to stop me because I'm not going to stop,. Have to put in an area where no one is going"

Figure 8. A healthy coral patch reef, South Eleuthera.

Figure 9. Yellow Tail Snapper caught by local fishers.

Discussion

What does this mean?

- The purpose of the study was to assess the perception of change over time and evaluate willingness to support conservation amongst fishers.
- Our hypothesis was that fishers would have noticed the depleting fish populations and would generally be willing to participate in conservation.
- This theory was supported by the study, as most fisherman understood the need for conservation in their area and supported and wished to play a role in determining what these measures were.
- Although many fishers agreed that it was possible for conservation and fishers to work together, they varied greatly in their opinions on what enough conservation was and on how beneficial current regulations were.
- Due to the variation in fishers' opinions it could be beneficial to create a fisher's association on Eleuthera so that fishers could formalize their opinions and views on various management options and be heard more effectively by the government.

Why interview fishermen?

- Hearing the opinions of fishers and making sure efforts to create a protected area are supported by locals can be vital to the success of management, as learnt from previous studies such as one in Tanzania (Kincaid,K. *et al.* 2013) and another in Labrador Canada (Kincaid, K., Rose, G., 2013).
- Implementing management without fisher input can have multiple negative effects. It can ruin the local economy, be implemented in ways or areas in which it does not effectively protect marine resources or without any fisher support may simply not be abided by and have no effect. The latter is relevant to The Bahamas where enforcement ability is limited.
- It is possible to both increase enforcement and create new job opportunities through the creation of conservation management positions so that those who understand the local area would run the locally managed marine area. Not only would this provide more jobs but also a more sustainable marine managed area that does not have to rely on outside funding or enforcement.

Where do we go from here?

- The next step towards reaching sustainable management would be to re-interview local fisherman with more specific questions regarding management in their area with the intent to use the results to determine where said management would be implemented.
- This study and the results it leads to are integral to our objectives because not only are they pertinent to sustaining the marine environment, but also sustaining the people who rely on fishing for their livelihood.
- The results of this study can help determine how to effectively achieve the 2020 management goal while still accounting for the needs of local fishermen.

Citations

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