Editor

The authors also should better explain which type of invertebrates are included in the category of invertebrates and why do not use biomass data from lobsters and invertebrates given that this parameter can be more informative as several studies have shown.

We have included two new tables in the supplementary materials listing all invertebrate and fish species considered in the analysis (Table I and J). As mentioned in response to Antonio Di Franco (Rev #3), the sampling protocols implemented more than ten years ago did not consider size structure of invertebrates due to the heterogeneity in measuring them (for example, an abalone and a lobster will be measured differently). As such, we cannot estimate invertebrate biomass. The sampling protocols in question are referenced in our manuscript

Reviewer 2

We appreciate your detailed suggestions to improve our Methods and Results sections. We have taken note of all your comments and made the pertinent modifications to our manuscript. Below, you will find your original comments in italics and our answers to them in normal font.

Methods

Page 2, line 38: Replace 'oftem' to 'often'

We have replace the misspelled "oftem" for "oftem".

Page 4, line 146: What the size scale used?

We have explicitly stated that fish length was estimated to the nearest centimeter

Page 5, line 150: What means 'MXP'?

We have included that MXP is the standard ISO3 code for Mexican Pesos

Page 7, line 220: Replace to '...as done in Leslie et al [47]…'

We have replaced the citation to explicitly cite "Leslie et al [47]"

Results

There are no captions a,b,c,d for figure 2 and 3.

We apologize for this honest mistake. A previous version of the manuscript had captions A – D in Fig 2 and A – B in Fig 3, which were changed for explicit titles after a reviewer's suggestion. The figures have been amended to include captions and titles.

Page 7, line 241-242: 'Invertebrate and fish densities showed positive trends in ISLA Natividad in most years.' I checked the figure and verified that only two years had positive trends in Isla Natividad. Please, verify.

We appreciate the detailed revision. This sentence should have been merged with the one that followed to read "Invertebrate and fish densities showed positive trends in all reserves for some years." The correction has been made.

Page 8, lines 268-270: This sentence is a Discussion. Consider to move to the discussion. The above sentences also sound like discussion. Rethink this entire paragraph

We appreciate the suggestions to increase readability. Writing an interdisciplinary paper like this one poses many challenges. On of them is to appropriately convey complex topics in the social sciences to natural scientists and vice versa. We have structured this specific section of the manuscript to help natural scientists that are unfamiliar with the topic. As such, we present what literature has shown to be true as an expectation, and follow it by our results. To make these paragraph more digestible, we have split it into two distinct paragraphs.

Reviewer 3: Antonio Di Franco

We appreciate the professional and constructive comments received. Every comment was grounded in objective criticism that ultimately improved the quality of our work. We have included all the suggestions. We are particularly thankful for the suggestions to expand the discussion, as well as the added references. The manuscript has been much improved by your detailed review. In the next lines, you will find your original comments in italics, followed by our responses where we point out where changes have been made.

Abstract

"Small-scale fisheries face great challenges since they are difficult to monitor, enforce, and manage.". I would suggest to specify here also (and maybe primarily) the role of overexploitation of coastal resources (as done in the introduction).

We have modified the sentence to read "Small-scale fisheries face great challenges since they are difficult to monitor, enforce, and manage, **which may lead to overexploitation**"

"First, some of these reserves might be too young for the effects to show". It would be useful to specify the range of reserves age

We have included the range of reserve ages (6 - 10 years)

"Fourth, local fisheries are already well managed, and it is unlikely that reserves might have a detectable effect in catches.". This may sound contradictory with what stated at the beginning at the abstract and could lead the reader to assume that the investigated reserves would not represent the most appropriate case study to represent the general context.

We appreciate the detailed comment and agree that it might be misleading. The reserves were implemented with two objectives: 1) increase densities within the region and 2) Increase catches. Our intention with this sentence was to highlight that a system already managed at MSY will not show increased catches after a spatial closure, as shown by Hilborn et al 2006. As such, we've modified the sentence to read "Fourth, local fisheries are already well managed, **and while reserves may protect populations within its bounded regions**, it is unlikely that reserves might have a detectable effect in catches."

Main text

Lines 77-78: "The profits from each TURF are shared amongst all fishers from the cooperative.". That's an extremely interesting point, and it would deserve to be expanded a bit (e.g. how these profits are shared?).

We agree that this is an interesting point, but expanding on it might distract the reader from the central topic of our analyses. The commonly used definition of a fishing cooperative is that profits are shared amongst members (for example, Costello and Kaffine, 2012 or Ovando et al., 2013). Our intention here is to highlight the level of cooperative management and collective action in these communities, which motivates and enables them to engage in conservation. In the manuscript, we mentioned this based on our local knowledge of Mexican cooperatives. However, Bonnie McCay has documented the collective management of mexican fishing cooperatives, and we've added references to this research (*i.e.* McCay 2014; 2017) in case the reader is interested in it.

Lines 91-92: "The reserves obtained legal recognition in 2018". Does this imply that the reserve were just not enforced paper parks until 2018? Please clarify

Lines 100-102: please consider previous comment

Due to the lack of a regulatory framework and subsequent bureaucratic delays, the reserves were not recognized by the government until 2018. However, fishers had enforced and recognized them since 2006. We have modified the text to read: "The reserves **were implemented and enforced by the community since 2006, but** obtained legal recognition in 2018."

Line 110: please replace "manged" with "managed"

This misspelling has been fixed.

Line 136: "iv) are not directly adjacent to the reserves". Please specify the rationale behind this condition. I would assume it is to avoid spillover effect in control sites. In that case please provide a rough estimation of the distance of control sites from reserves.

We have modified this sentence so it reads "iv) are not directly adjacent to the reserves to avoid confounding due to spillover effect **(sites were at least 1 km apart)"**. Additionally, we want to highlight that we discuss the possible issue of confounded estimates in our discussion (now in L301 – 303).

Lines 172-173: was lobster and invertebrate biomass available? Because this indicator could be more informative than density (as previously reported in many papers, at least for fishes). Also size distribution could be an interesting indicator

We agree that this would have been an interesting indicator. Unfortunately, the protocol created in 2006 did not call for size data to be collected for invertebrates. As such, we cannot estimate biomass of any invertebrate species.

Line 266: please change "sotrong" in "strong"

This misspelling has been fixed.

Lines 267-268: "and enforce rules to ensure sustainable management". Is this statement anecdotal or there is any supportive evidence?

The sentence was meant to provide a concluding statement based on the collection of SES variables (*i.e.* it was anecdotal). However, similar results have been found by previous work, which we have now referenced to strengthen the claim.

Lines 276-277: "fishers harvest healthy stocks". Please see previous comment

Lobster fisheries in both regions have been certified by the Marine Stewardship Council, which is why we reference the SES variable RS4.1 (Resource status).

Lines 314-318: I agree with the authors that this could be a process suggesting an overall benefit to fisheries, and therefore the lack of data on fishing effort represent a significant gap. However I acknowledge that authors properly addressed this point

Line 332: "relative to the life histories of the protected species". Please detail the lifespan of the species of lobster that represent the main target of the fisheries

This was a vague statement that needed some clarification. The central idea is that not enough time has passed to allow for recovery of all species, not only lobster. We've modified the sentence to read: "Maria Elena and Punta Herrero are relatively young reserves (<6 years old; RS5 in Table 1) and effects may not yet be evident; community-based marine reserves in tropical ecosystems may take six years or more to show a spillover effect."

Lines 337-339: please consider the paper "Linking home ranges to protected area size: The case study of the Mediterranean Sea" where the authors highlighted that even very small reserves should be able to deliver significant ecological effect for lobsters. Despite not being the same species of lobster the logic should be the same. Authors could adapt these findings based on eventually available information of the lobster species investigated

We appreciate the suggestion, and have included a reference to this very relevant work by adding the sentence: "Small reserves in the Mediterranean Sea have shown that the effect of a reserve is only observable for species with a home range smaller than the reserve."

Lines 340-343: does this imply that lobster home range is 7 km? this would be extremely large compared to available estimates for other lobsters.

We agree that this range is uncommon for home ranges of spiny lobster, which tend to move between 200 m and 1 km in a given day. However, the review done by Green et al highlights that over moderate time periods (weeks to months), spiny lobster can move up to 7 km.

Discussion

One possible explanation of the lack of evidence of reserve effect could be also lack of proper enforcement and compliance. This is actually one of the most common causes of lack of reserve effectiveness (as reported in multiple papers cited in the manuscript, like Edgar et al. 2014, and Di Franco et al. 2016). The authors could briefly discuss this option, also excluding it in case of evidence of high enforcement and/or compliance.

We agree that this is a common cause for lack of effectiveness in other reserves. This is a topic worth discussing and we have added an entire paragraph (starting in L 325) addressing this.

Lines 382-384: a recent paper highlighted that support toward MPAs can be driven by perceptions of ecological effectiveness, social impacts, and good governance of MPAs (https://onlinelibrary.wiley.com/doi/full/10.1111/conl.12640). This could provide an interesting element to expand this section of the discussion.

We appreciate the suggestion. We have included a reference to this interesting and relevant paper.