

CWG Review 1: Spring 2015

Tier 1 Information:

1. Management Action

N-59: Ban the practice of spearfishing on SCUBA to enable sustainable use of our Florida reefs.

2. Intended Result (Output/Outcome)

What is the end product/result of this management action?

- Increased protection of and reduced impact to highly targeted reef fish species by recreational spearfishers.
- Increased populations of and size class structure within highly targeted reef fish species.
- An exception for lionfish will be made to support the continued removal of this species.

3. Duration of Activity

Is this a discrete action or a recurring activity? Explain.

- Legislation changes are a one-time activity, and the need for enforcement is ongoing.

4. Justification

What issue or problem will this management action address? Explain.

- The targeting of certain species of fish by spearfishers, and discriminate removal of commercially and ecologically important “trophy” reef fish species and individuals of reproductive size is the problem.
- Many nations with coral reef resources have recognized the great impact of this practice (spearfishing on SCUBA) on reef fish populations and have banned it.

5. Potential Pros

What are the potential advantages associated with this management action?

- If implemented, this RMA would reduce pressure on larger reproductive size fish by spearfishers (see outcomes/outputs and justification).
- It would also increase the quality of experience for non-extractive enjoyment of reefs. If people can see large groupers and snappers its more likely to attract divers, which results in increased economic opportunity for businesses that rely on non-extractive use of system.

6. Potential Cons

What are the potential disadvantages associated with this management action?

- There may be push back from the SCUBA community sector because it is safer to spear on SCUBA than freediving (shallow water blackout).
- There may be an economic impact to businesses that rely on spearfishing (charters, dive shops).
- There would need to be an exception so that lionfish could still be spearfished on SCUBA, which would allow for gear to be on board.
- Legislation needs specifics: no guns or Hawaiian slings for spearfishing on SCUBA. This may decrease retail sales of spear equipment from local companies.

7. Location

County/Counties: Miami-Dade, Broward, Palm Beach, Martin, Other?

- All four SEFCRI counties would be included.

Relevant Habitats: Coral reef, seagrass, watershed, etc.?

- Nearshore Hardbottom, all three parallel reefs and artificial reefs would be included.

Specific Location: City, site name, coordinates, etc.?

- No specific location.

8. Extent

Area, number, etc.

- The entire SEFCRI region would be included.

9. Is this action spatial in nature?

- No.

Do you believe this management action could be informed by the Our Florida Reefs Marine Planner Decision Support Tool?

If yes, you will proceed to the next section on Marine Planner Information.

- No.

Marine Planer Information:

N/A

Tier 2 Information: no Tier 2 info provided by CWGs (info below from SEFCRI)

WHY?

1. Strategic Goals & Objectives to be Achieved

Refer to the [SEFCRI Coral Reef Management Goals and Objectives Reference Guide](#).

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2. Current Status

Is this activity currently underway, or are there planned actions related to this recommendation in southeast Florida? If so, what are they, and what is their status.

- There are no known current efforts to ban spearfishing on SCUBA in the SEFCRI Region.
- FWC has implemented a ban on spearfishing while on a rebreather. If this will be thought of as a tiered approach, banning on SCUBA would be the next logical step to conserve this vulnerable group of targeted fish species.

3. Intended Benefits (Outcomes)

What potential environmental benefits or positive impacts might this management action have?

- This RMA would likely reduce the successful targeting of large, highly fecund fish, which would increase populations and size class diversity of those species on the coral reefs.

What potential social/economic benefits or positive impacts might this management action have?

- There would be increased ecosystem condition, increased fish diversity and an enhanced non-extractive recreational user experience.

What is the likely duration of these benefits - short term or long-lasting? Explain.

- The duration of these benefits would be long-lasting.

4. Indirect Costs (Outcomes)

What potential negative environmental impacts might this action have?

- The impacts to lionfish removal that we don't want to decrease must be considered.

What potential negative social/economic impacts might this action have?

- Potential loss of revenue for dive boat operators and dive shops from spearfishers could result.

What is the likely duration of these negative impacts - short term or long-lasting? Explain.

- The duration of this lost revenue would be long-lasting.

5. Risk

What is the threat of adverse environmental, social, or economic effects arising from not implementing this action?

- Overfishing of vulnerable species, highly fecund individuals will continue.

6. Relevant Supporting Data

What existing science supports this recommendation? (Provide citations)

- Gillet R and W Moy (2006). Spearfishing in the Pacific Islands: Current Status and Management Issues FAO/Fish Code Review No. 19. 72 pp.
- Fenner D. 2012. Challenges for Managing Fisheries on Diverse Coral Reefs. *Diversity*, 4, 105-160.
- Stoffle BW and SD Allen (2012). The Sociocultural Importance of Spearfishing in Hawai'i. NOAA Technical Memorandum NMFS-PIFSC-31. 38 pp.
- Frisch AJ, Cole AJ, Hobbs J-PA, Rizzari JR and KP Munkres (2012). Effects of Spearfishing on Reef Fish Populations in a Multi-Use Conservation Area. *PLoS ONE* December 2012 | Volume 7 | Issue 12 | e51938.
- Houk P, Rhodes K, Cuetos-Bueno J, Lindfield S, Fread V, and JL McIlwain (2012). Commercial coral-reef fisheries across Micronesia: A need for improving management. *Coral Reefs* 31:13-26.
- Richards BL, Williams ID, Vetter OJ and GJ Williams (2012). Environmental Factors Affecting Large-Bodied Coral Reef Fish Assemblages in the Mariana Archipelago. *PLoS ONE* 7(2): e31374. doi:10.1371/journal.pone.0031374
- Rhodes KL, Warren-Rhodes K, Houk P, Cuetos-Bueno J, Fong Q and W Hoot (2011). An Interdisciplinary Study of Market Forces and Nearshore Fisheries Management in Micronesia. A Report of the Marine Program of the Asia Pacific Conservation Region, The Nature Conservancy. Report No. 6/11. 120 pp.
- Goetze JS, Langlois TJ, Egli DP, and ES Harvey (2011) Evidence of artisanal fishing impacts and depth refuge in assemblages of Fijian reef fish. *Coral Reefs*. 30:507–51.
- Godoy N, Gelcich S, Vásquez, JA and JC Castilla (2010). Spearfishing to depletion: evidence from temperate reef fishes in Chile. *Ecological Applications* 20:1504–1511.
- Guam Department of Agriculture's Division of Aquatic and Wildlife Resources. (2009). Offshore Fisheries, http://www.guamdawr.org/aquatics/fisheries2/offshore/document_view.
- Wilkinson C (2008). Status of coral reefs of the world: (2008). Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296.
- Frisch AJ, Baker R, Hobbs JA and L Nankervis (2008). A quantitative comparison of recreational spearfishing and linefishing on the Great Barrier Reef: implications for management of multi-sector coral reef fisheries. *Coral Reefs*. 27:85–95
- Lloret J, Zaragoza N, Caballero D, Font T, Casadevall M and V Riera, (2008). Spearfishing pressure on fish communities in rocky coastal habitats in a Mediterranean marine protected area. *Fisheries Research* 94 (2008) 84–91
- Sabater MG and SP Tofaeono (2006). Spatial variation in biomass, abundance, and species composition of "key reef species" in American Samoa. Department of Marine and Wildlife Resources, Pago-Pago, American Samoa.
- Nevill J (2006). The impacts of spearfishing: notes on the effects of recreational diving on shallow marine reefs in southern Australia. OnlyOnePlanet Australia; Hampton Melbourne.
- Birkeland C and P Dayton (2005). The Importance in Fishery Management of Leaving the Big Ones. *Trends in Ecology and Evolution*. Vol.20 No. 7
- Strong evidence to support this ban both ecologically and economically in the future. There are many Caribbean nations and global nations with success stories upon banning spearfishing on scuba (some of which ban spearfishing all together): Bonaire, Bahamas, USVI, Dominican Republic, Puerto Rico, Cozumel (Marine

Park), Aruba, Curacao, Bermuda, Belize, Panama, Honduras (and Islands), Jamaica, Columbia, Grenada, Tobago, Mariana Islands, Guam, Australia, and Hawaii.

- Spearfishing on SCUBA is also banned in Australia, Mexico, most of UK, most Pacific Islands and most of the Caribbean. In the USA, this varies by state, but California has a ban on commercial spearfishing and Florida bans powerheads in most areas. There are many publications to support the efficacy and objectives of this RMA.

7. Information Gaps

What uncertainties or information gaps still exist?

- The relative number of large fish taken by spear versus angling is unknown, as is the total magnitude of fish taken by spear. It is a cryptic fishery.

WHEN?

8. Anticipated Timeframe for Implementation

How long will this recommendation take to implement?

- Immediate timeframe if action is taken.

9. Linkage to Other Proposed Management Actions

Is this activity linked to other proposed management recommendations?

- Yes, N-146.

If so, which ones, and how are they linked? (e.g., is this activity a necessary step for other management actions to be completed?)

- This RMA could be enhanced by N-146, which calls for establishment of an MPA zoning framework in the SEFCRI region.

Does this activity conflict with other existing or proposed management actions?

- This action could cause significant conflict with stakeholders and other RMAs, such as marine reserve establishment. It would also have a greater conservation benefit.

WHO?

10. Lead Agency or Organization for Implementation

What agency or organization currently has/would have authority? Refer to the [Agencies and Actions Reference Guide](#).

- FWC.

11. Other Agencies or Organizations

Are there any other agencies or organizations that may also support implementation? Explain.

- NOAA Fisheries.
- South Atlantic Fisheries Management Council.

12. Key Stakeholders

Identify those stakeholders most greatly impacted by this management action, including those from whom you might expect a high level of support or opposition. Explain.

- There may be a high level of opposition from some dive clubs, spear fishing clubs, some dive shops, and dive boat operators who target spear fishermen.
- This RMA is likely to be supported by operators and businesses that focus on non-extractive diving and snorkeling.

HOW?

13. Feasibility

Is there appropriate political will to support this? Explain.

- It is possible.
- A less restrictive alternative could be considered as well. For example, we could expand the list of species that cannot be taken via spear gun to include those most impacted by this practice such as: hogfish, red grouper, black grouper, etc.

What are the potential technical challenges to implementing this action? Has it been done elsewhere?

- This has been done in many other locations (see section 6 on relevant supporting data).

14. Legislative Considerations

Does the recommendation conflict with or actively support existing local, state, or federal laws or regulations?

Explain.

- No.

15. Permitting Requirements

Will any permits be required to implement this action? Explain.

- No.

16. Estimated Direct Costs

Approximately how much will this action likely cost? (Consider one-time direct costs, annual costs, and staff time, including enforcement.)

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Will costs associated with this activity be one-time or recurring?

- This would be a one-time process to establish legislation.
- Ongoing enforcement would be necessary.

If recurring, approximately how long will staff time and annual costs be necessary to implement the management action?

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17. Enforcement

Does this require enforcement effort?

- Yes. FWC will need to monitor and enforce.

Provide an explanation if available.

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18. Potential Funding Sources

Identify potential funding organizations/grant opportunities, etc.

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19. Measurable Outcomes/Success Criteria/Milestones

How will the success of this recommendation be measured? How will you know when the intended result is achieved?

- Documented increases in targeted reef fish populations and increases in diversity of their size class structure would result.

SEFCRI/TAC Targeted Questions:

1. **TAC** - Is the recommendation likely to achieve the intended result? Explain.

Tier 1 – #2 (Intended Result - Output/Outcome)

- Yes. The intended result of reduced fishing pressure and reduced selective removal of large bodied snapper and grouper could be achieved by the recommendation to prohibit spearfishing while using scuba.
- TAC Team 1 supports this MA. It is done in most other jurisdictions and will reduce selective removal of large fishes that have high fecundity and important roles on coral reefs.
- TAC Team #1 recommends an exception for removing lionfish.

2. TAC - Is the recommendation sufficient to address the identified issue or problem? Explain.

Tier 1 – #4 (Justification)

- The recommendation is one of a number of alternatives that would be needed to reduce fishing pressure on reef fish. The recommendation is not sufficient by itself to address the issue of reducing fishing pressure and reducing selective removal of large spawning size reef fish.

3. TAC - Is the recommendation technically achievable from a science or management perspective? Explain.

Tier 2 – #8 (Anticipated Timeframe for Implementation) and Tier 2 - #13 (Feasibility)

- The recommendation is technically feasible. This restriction has been in place in other jurisdictions around the Caribbean, including the Bahamas.
- Using scuba-team supports this RMA to be in effect in a number of jurisdictions around the Caribbean. Spearfishing tends to select the largest, most fecund fish. Not having this loss would improve sustainability of fish populations.
- Preventing spearfishing on scuba will address those fish populations. The United States is one of the only countries that still allows it.
- This RMA is highly supported by the TAC, but not by FWC currently.

4. SEFCRI Team, PPT & Other Advisors - Has this been done (by SEFCRI, other agencies or organizations in the SEFCRI region)? Explain.

Tier 2 – #2 (Current Status)

- No.

5. SEFCRI Team, PPT & Other Advisors - Is this recommendation a research or monitoring project? (Recommendations should be turn-dirt management actions, not the step you take before a management action). Explain.

- Possibly, but there may be literature available.
- This RMA is not likely a research or monitoring objective.

6. SEFCRI Team, PPT & Other Advisors - If either of the following applies to this management action, provide feedback on which information submitted by the Community Working Groups may be more appropriate, or if entries should be merged. Explain.

- a. There are different viewpoints for an individual management action (i.e. two working group members provided separate information, as indicated by a '/' marking between them).
- b. Information submitted for this and other draft management actions is sufficiently similar that they might be considered the same.

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7. SEFCRI Team, PPT & Other Advisors - Non-agency Question: Is the recommendation technically achievable from your stakeholder perspective? If not, do you have suggestions that would allow this to become technically achievable from your stakeholder perspective? Explain.

Tier 1 - #5 (Potential Pros), Tier 1 - #6 (Potential Cons), Tier 2 - #3 (Intended Benefits), Tier 2 - #4 (Indirect Costs) and Tier 2 - #12 (Key Stakeholders)

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8. SEFCRI Team, PPT & Other Advisors - Agency Question: Is the recommendation technically achievable from a

management perspective? If not, do you have suggestions that would allow this to become technically achievable from your agency's management perspective? Explain.

Tier 2 – #10 (Lead Agency or Organization for Implementation) and Tier 2 - #11 (Other Agencies or Organizations)

- Yes, it is feasible.
- This RMA is unlikely to be supported by FWC and some stakeholders.
- It would be a compromise, but the benefit outweighs the potential push back.
- SEE SEFCRI COMMENTS (TIER 2) FOR FURTHER DISCUSSION.

Comments from the Reviewers:

- TAC Team 1 supports this RMA. It is done in most other jurisdictions and will reduce selective removal of large fishes that have high fecundity and play important roles on coral reefs.
- TAC Team #1 recommends an exception for removing lionfish.
- See “Relevant Supporting Data” (Tier 2 Question 6).
- May need to do some literature review to defend “Intended benefits” (See References in “Relevant Supporting Data”).
- Hook and line takes a lot more individuals than spearfishing. There is an issue of magnitude if they are cleaning out or damaging the populations. Eliminating spearfishing won’t completely solve the problem, but it will decrease the ecological impact of removing large individuals.
- Breeders are the ones being targeted. It would make a difference in sex changing species (grouper). Losing spawning individuals with this practice.
- It is not being suggested that any of the RMAs alone will completely resolve the overfishing issue. This is one step in an attempt to solve the problem.

Questions from the Reviewers:

	Questions/Information Needs Highlighted by the Reviewers	Addressed by CWG:	Not Addressed by CWG Because:
1.	<p>Science indicates how this strategy is effective, but must provide more info on what additional measures must be taken to address this problem (This RMA alone is not sufficient to address the overfishing of large, target vulnerable species).</p> <p><i>The reviewer comment in this case does not apply to the title of this RMA. This RMA is not intended to solve the entire problem of sustainable reef use (overfishing of large, target species). It's meant to address spearfishing on SCUBA only.</i></p>	<input type="checkbox"/>	<input checked="" type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
2.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
3.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.

Questions from the CWGs back to the Reviewers:

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