



This presentation is a review and discussion of a proposed lionfish removal opportunity in south Florida. The presentation will summarize innovative approaches that the Florida Fish and Wildlife Conservation Commission (FWC) has used to combat the lionfish invasion and provide details of a proposed special opportunity as well as information on how the effectiveness of the opportunity would be evaluated.

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Background

- Lionfish are invasive species that represent a potential threat to native wildlife and ecosystems
- Harvest by divers is the primary means of lionfish removal
 - Spears and hand-held nets
- Public is our best defense
- FWC encourages divers to remove lionfish whenever they are encountered
- Benefits of harvesting lionfish
 - Help the environment
 - Easy spearfishing target
 - Excellent food fish



Lionfish are invasive species that reproduce rapidly and represent a potential threat to native wildlife and ecosystems. Lionfish are successful invaders because they are highly adaptable to a broad range of environments, have no natural controls (i.e., diseases or parasites) or predators in Florida, and reproduce rapidly. When established, lionfish may disrupt the natural balance of the invaded ecosystem by preying on native juvenile fish species as well as herbivorous fish that are essential to keep the algae in coral reef systems from overgrowing corals.

Currently, harvest by divers is the primary means of localized lionfish population control with divers using either spears and hand-held nets to capture fish. While total eradication of lionfish from Florida waters is unlikely due to their adaptability and reproductive capacity, the public is the best method of population control and FWC encourages divers to actively harvest or remove lionfish whenever they encounter them. There are several benefits to removing as many lionfish as possible from the waters off Florida. Many divers who already target lionfish do so out of a desire to help the environment and improve the state of our natural marine resources. Divers are also attracted to harvesting lionfish because they are easy to spear and are desirable as a food fish.

FWC has been and is continuing to be innovative in its efforts to engage the public on this issue and make the harvest of lionfish easier and more desirable to divers, as discussed on the next slide.

Lionfish: Innovative Management

- Eliminating regulatory barriers to harvest
- Regulations to curtail new introductions
- Outreach and non-regulatory actions
 - Attending tournaments and festivals
 - Sponsoring derbies
 - Reef Rangers
 - Kiosks for on-site sign-up
 - Report Florida Lionfish smartphone app
 - Lionfish Removal and Awareness Day



FWC has been paving the way to facilitate lionfish control by increasing harvest opportunities through eliminating regulatory barriers, reducing the chance of future captive escapes, and participating in state-wide outreach.

FWC has taken many steps to reduce regulations for individuals who want to harvest lionfish. Recreational lionfish harvesters are no longer required to have a recreational fishing license when using a pole spear, Hawaiian sling, hand-held net, or any other spearing device designed and marketed exclusively for lionfish (proper licenses are still required for commercial harvest and to harvest lionfish using all other legal gears). FWC has also removed bag limits for recreational or commercial lionfish harvest, and there are no size limits or closed seasons for lionfish. Additionally, persons diving with a rebreather are now allowed to harvest lionfish.

Measures have also been put in place to minimize the potential for new introductions of lionfish into Florida waters. FWC staff worked with the Division of Aquaculture at the Florida Department of Agriculture and Consumer Services to coordinate implementation of a prohibition on breeding lionfish and cultivating their eggs or larvae in captivity. Measures have also been added to limit the possibility of new introductions by prohibiting the import of any lionfish into the state of Florida.

Lionfish are such a high priority for FWC that a Lionfish Outreach Team (Team) was created. The Team's goal is to educate the public about lionfish, their impact the marine ecosystem, safe handling practices, and how to properly remove them from the environment. FWC attends fishing tournaments and festivals and gives presentations to raise public awareness about the lionfish problem. FWC also continues to sponsor and support lionfish derbies, a primary means of localized lionfish control.

FWC has also designed a new program, Reef Rangers, which is comparable to the Adopt-A-Highway Program offered by the Florida Department of Transportation where volunteers commit to litter removal from their section of the highway. Similarly, participants in the Reef Rangers program pledge to protect their local reefs against the lionfish invasion and conduct lionfish removals at regularly scheduled intervals on reefs of their choice. Divers can sign up for the Reef Rangers program online at ReefRangers.com or at a lionfish event using the program's traveling sign-up kiosks.

The Team has also launched the Report Florida Lionfish smartphone app, where anyone can report their lionfish harvest. Finally, FWC recently designated the first Saturday after Mother's Day each year as Lionfish Removal and Awareness Day, and the inaugural festival was held in Pensacola May 17-18, 2015. More than 3,000 people attended and almost 2,400 lionfish were removed state-wide during and leading up to that weekend.

Lionfish Removal Opportunity

- Encourage the diving public to harvest lionfish
 - Remind divers to harvest lionfish on all dive trips
 - Introduce divers to the ease of harvesting lionfish
- Lobster sport season (mini-season) provides an opportunity to engage the diving public
 - 2-day annual event
 - Roughly 59,000 participants each year
 - Draws visitors and recreational divers from across the state



FWC is continually looking for additional innovative ways to urge marine resource users, especially divers, to harvest lionfish. While many divers actively target lionfish for the purpose of environmental stewardship, ease of harvest, and lack of recreational or commercial bag limits, many others are not yet involved in these efforts. The purpose of the lionfish removal opportunity (opportunity) proposed in this presentation is to encourage all divers to harvest lionfish whenever they are in the water, regardless of the reason for their dive. In addition, it would motivate other divers who have never harvested lionfish to do so. Staff hopes that once a new potential lionfish hunter discovers the ease of harvesting lionfish, combined with the lack of a bag limit and the value of lionfish as a food fish, that they will continue harvesting lionfish during subsequent dives, even outside the scope of the proposed opportunity.

The proposed opportunity would be available to divers harvesting lobster during the lobster two-day sport season (also known as mini-season). The sport season is an annual two-day event that attracts an average of 59,000 participants from around the state and beyond. Most sport season participants harvest lobsters while diving, making this a chance for the Commission to engage tens of thousands of divers from across the state in lionfish removal during a single two-day period. For this reason, the opportunity is proposed for the 2015 sport season, occurring July 29 and 30 of this year.

Proposed Opportunity Details

- Pilot program
- During upcoming lobster sport season: July 29 - 30, 2015
 - Divers who harvest **10 or more** lionfish per day would be allowed **a single** lobster over the bag limit per day
 - Maximum of 1 extra lobster per person per day
 - Divers must harvest and possess at least 10 lionfish each day before taking an extra lobster
 - Must retain lionfish while on the water
- Prohibited spearfishing zones apply
 - Upper Keys
 - Fishing piers, bridges, etc.



All other sport season rules would apply

The proposed opportunity would serve as a pilot program with the goal of encouraging people to harvest lionfish while diving for other purposes by allowing divers that harvest 10 or more lionfish to harvest one lobster over the bag limit per person per day during the lobster sport season. The Commission will consider implementing this opportunity for the 2015 sport season, July 29-30, 2015, via an Executive Order.

Under this opportunity, a diver would only be allowed to possess a single lobster above the bag limit per day, regardless of how many lionfish over 10 they harvested. In addition, the lionfish must be harvested prior to taking the extra lobster, and divers would be required to retain their lionfish while on the water to verify their qualification for the additional lobster.

There are many areas in south Florida where spearing is prohibited, and those areas would continue to be closed to spearing during the proposed opportunity. Lionfish can be harvested with hand-held nets while diving in these areas.

All other sport season rules would continue to apply during the proposed opportunity. These include license requirements for lobster harvest, allowable lobster harvest methods (no spearing), and areas closed to lobster harvest. All sport season rules can be found in 68B-24, Florida Administrative Code (see www.FLRules.org), and a summary can be found online at MyFWC.com/fishing/ by clicking on "Saltwater," "Recreational," and "Lobster."

Sport Season Bag Limits

Area	Sport Season Lobster Bag limit	Bag limit after harvest of 10+ lionfish
Monroe County & Biscayne National Park	6	7
Outside Monroe County & Biscayne National Park	12	13

Off-the-water lobster possession limits would be modified accordingly



Since lobster sport season bag limits are not uniform throughout Florida, the maximum number of lobster a diver would be able to take under this opportunity would depend on the area where they were harvesting lobster. In Monroe County and Biscayne National Park, the sport season bag limit is six lobster per person per day, so with the harvest of 10 or more lionfish, someone in this area would be allowed to harvest seven lobster per day under the proposed opportunity. Where lobster harvest is allowed outside of Monroe County and Biscayne National Park, the sport season bag limit is 12 lobster per person per day. Under the proposed opportunity, divers would be able to legally harvest 13 lobster per day following the harvest of 10 or more lionfish in these areas.

In addition to daily bag limits, sport season participants must adhere to off-the-water lobster possession limits which are designed to account for the fact that on the second day of the season a harvester may have his catch from the first day with him when not on the water. These limits would be adjusted to account for the extra lobster allowed in conjunction with the harvest of 10 or more lionfish. For this reason, the off-the-water possession limit on the first day of the sport season for divers who harvest 10 or more lionfish would be seven lobster in Monroe County and Biscayne National Park and 13 lobster outside Monroe County and Biscayne National Park. On the second day of the sport season, a person who harvested 10 or more lionfish on both days would have an off-the-water possession limit of 14 lobster (Monroe County and Biscayne National Park) or 26 lobster (outside Monroe County and Biscayne National Park). Participants would be encouraged to take a picture of their lionfish catch and report it on the Report Florida Lionfish app in order to document their eligibility for possessing the extra lobster once they leave the water and to brag about their contribution to lionfish removal efforts.

Working With Our Partners

- Coordinate with the Florida Keys National Marine Sanctuary (FKNMS) and Florida Department of Environmental Protection
- FWC law enforcement would work with other law enforcement agencies to ensure understanding of the opportunity



In order to help ensure the success of the opportunity, FWC would coordinate with its partners in south Florida such as Florida Keys National Marine Sanctuary (FKNMS) and Florida Department of Environmental Protection during the implementation of the proposed opportunity.

FWC law enforcement in the region would work with other law enforcement agencies that are active in the sport season such as the United States Coast Guard, National Oceanic and Atmospheric Administration Law Enforcement, and local County Sheriff's Offices to ensure that all agencies understand the details of the proposed opportunity in order to minimize potential enforcement issues.

Proposed Opportunity Outreach

Types of messages:

- Opportunity details
- Safe lionfish handling
- Safe spearing practices
- Encourage reporting catch with Report Florida Lionfish app

Getting the message out:

- Press releases
- Social media
- Materials sent to dive shops
- Targeted emails to lobster permit holders
- Join FKNMS in annual sport season educational booth



Success of the proposed opportunity depends on lobster sport season participants knowing about it and being able to participate in a safe manner. If this opportunity is created, FWC would use targeted outreach that includes specific details about the opportunity, safe harvest and handling of lionfish, and safe spearing practices. Participants would also be encouraged to report their lionfish catch with the Report Florida Lionfish smartphone app or online at MyFWC.com/Lionfish by clicking “Report Lionfish.”

Because of the strength of FWC’s current lionfish outreach program, staff are poised to quickly distribute materials such as Frequently Asked Questions, pamphlets, and online instructional videos in order to reach as many potential sport season participants as possible before the beginning of the 2015 season on July 29.

Messaging to the diving public would be accomplished through press releases, social media (Facebook, Twitter, Google+), and educational materials sent to dive shops for distribution. FWC would also be able to send informational materials via email directly to individuals that have harvested lobster during sport season in recent years. As part of our work with our partners, FWC would also assist FKNMS with their annual sport season educational booth on U.S. 1 in the Keys, where lobster harvesters can get all the latest regulatory information about the sport season as well as answers to any questions they may have.

Evaluation of Opportunity Success

- An assessment of success is essential for considering whether to continue this opportunity in future years
- Input for evaluation:
 - Annual post-season survey of recreational lobster harvesters
 - Collaboration with law enforcement agencies
 - Outreach to partners in the region



In order to determine if this opportunity should continue in future years, the success of the opportunity and its implementation would be assessed using multiple inputs including: the annual post-season recreational lobster harvester survey, information from law enforcement agencies in south Florida, and outreach to our partners in the region.

Every year, the Florida Fish and Wildlife Research Institute (FWRI) conducts a survey of recreational lobster harvesters that harvest during the sport season and the first month of the regular season. This survey provides an avenue to gauge the level of participation in the opportunity and the effectiveness of its implementation. New survey questions would be added to determine whether harvesters were aware of the opportunity and, if so, how they learned about it, whether they participated in the opportunity, and how many lionfish they harvested.

Additional input that would be used to evaluate the opportunity's success would be gathered through collaboration with law enforcement agencies involved in the sport season in order to understand on-the-ground benefits and problems, especially those regarding potential safety issues.

Finally, FWC would consult with partners in south Florida, such as FKNMS, to gain their perspective on the effectiveness of the opportunity. These partners may also be able to provide insight on aspects of the opportunity or outreach that could be modified to be more effective if it is continued in the future.

Special Opportunity Considerations

- Innovative management tool
- Increased awareness and participation in lionfish removal
- Minimal or no effect on harvest of lobster in future years
- May reduce amount of lobster available during regular season this year
- May shift harvest from commercial to recreational fishery
- Outreach challenges
 - Additional boating safety challenges during an already intense season
 - Safe lionfish handling practices for inexperienced spearfishers
- Large areas in south Florida closed to either lobster harvest or spearing
- Increases regulatory complexity



The proposed opportunity represents the use of innovative management to control the lionfish population that has the potential to increase awareness and participation in lionfish removal across the state even after the sport season. However, there are many considerations to be evaluated before creating this special opportunity.

Spiny lobster is a unique fishery in that the number of lobster in Florida are not believed to be strongly tied to harvest levels because a large portion of recruitment comes from outside U.S. waters. Due to the unique life history of lobster, the proposed opportunity is expected to have minimal or no effect on the number of lobsters available for harvest in future years.

Since there are a finite number of lobsters available for harvest each lobster season, increasing the number of lobsters that individuals can harvest during the sport season may reduce the number of lobsters available for harvest during the regular recreational lobster season that follows from Aug. 6 to March 31. Increasing harvest during the sport season may also shift some proportion of harvest away from the commercial fishery to the recreational sector.

Outreach challenges should also be considered. Because the sport season draws an average of 59,000 participants to south Florida from around the state each year, there are many more people than usual on and in the water in that area. This proposed opportunity has the potential to exacerbate existing boating safety concerns related to the number of resource users and the flurry of activity during the sport season. Outreach efforts would focus on safe boating as well as safe lionfish handling practices for inexperienced spearfishers. Because one of the goals of the opportunity is to introduce divers who have not harvested lionfish in the past to the benefits and ease of removal, many of these efforts would need to target novice spearfishers and lionfish harvesters.

Large areas off south Florida are closed to either lobster harvest or spearing, posing two complications: confusion for participants and potential enforcement concerns. The location of areas open to lobster harvest during the sport season can already be confusing to some participants, especially since people come from all over the state to participate. Encouraging divers to harvest lionfish would require them to know not only where they are allowed to harvest lobster, but also where they are allowed to use spearing gear when harvesting lionfish. Additionally, since divers that want to partake in the opportunity would be required to harvest the lionfish before harvesting the additional lobster, it is possible that they could take speared fish and spearing gear into areas where spearing is prohibited but lobster harvest is allowed in their quest to harvest the additional lobster, creating potential additional enforcement challenges.

Finally, the proposed opportunity would increase overall regulatory complexity and therefore could contribute to

stakeholder confusion.

Staff Recommendations

Encourage the public to harvest lionfish while diving for other purposes by authorizing the Executive Director to establish this special lionfish removal opportunity via Executive Order

- During the 2015 lobster sport season:
 - Allow possession of a single lobster over the bag limit per person per day with harvest of at least 10 lionfish
- Success of the program would be evaluated before consideration of continuing the opportunity in future

If approved and directed, the Executive Director will establish this opportunity through Executive Order



Staff recommends authorizing the Executive Director, in consultation with the Chairman, to establish the proposed special lionfish removal opportunity allowing divers who harvest at least 10 lionfish each day to possess one lobster over the bag limit per person per day during the 2015 lobster sport season, July 29-30. If created, success of the program would be evaluated for consideration of continuing the opportunity in the future.

If authorized, the Executive Director will establish this opportunity through issuance of an Executive Order.

The following slides are considered backup material
and are not anticipated to be part of the actual
presentation to the Commission



Areas Closed to Lobster Harvest or Spearing

This slide will be updated to include a map of where lobster harvest or spearing are prohibited during mini season

