



LIONFISH CONTROL PLAN

Action Items Summary 2017



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Two species of Indo-Pacific lionfish have invaded the coastal and deep waters of the state of Florida. Lionfish possess a multitude of characteristics that have allowed them to establish as successful invaders. To address this invasive species, the Florida Fish and Wildlife Conservation Commission's (FWC) Lionfish Control Plan (LCP) team implemented several action items in 2017. This annual summary document highlights those successes.

Theme 1: Policy and Regulations

Goal 1.1: Prevent Introduction of other Scorpionfish

Risk assessment

Scorpionfish Risk Assessments: The FWC Division of Habitat and Species Conservation contracted the University of Florida to assess risk of Scorpionfish species not established in Florida, but present in the live animal trade. Risk assessments were conducted for lionfish species in the following genera: *Dendrochirus*, *Parapterois*, and *Pterois*. An existing risk screening tool for freshwater fish will be evaluated and modified for marine fish risk assessment after completion of bioprofiles for these lionfish species. Bioprofiles of 19 lionfish species were completed in 2017. This project will continue through June 2018.

Goal 1.2: Reduce regulatory barriers to facilitate lionfish removals

Executive Orders, rules, or regulation changes

Executive Order 17-29: Divers that harvested 25 lionfish and obtained a 2017 Lionfish Challenge coin between May 20, 2017 and the start of mini-season, July 25, 2017, were allowed a single spiny lobster per day over the bag limit during the 2017 lobster two-day mini-season.

Removal of other regulatory barriers

Lionfish Gear Exemption Permits: The FWC issued removal permits to organizations and tournament organizers exempting gear restrictions for a set time to facilitate lionfish removal from areas where spearfishing gear is otherwise prohibited. Nine permits were issued in 2017.

Goal 1.3: Ensure that the public is following guidelines to maintain human safety

Promotion of safe capture techniques/commercial law support

The FWC increased communications with NOAA (National Oceanic and Atmospheric Administration) and other Gulf state representatives to identify and address potential regulatory barriers preventing the advancement of commercial lionfish removal technologies.

Theme 2: Control Efforts

Goal 2.1: Encourage involvement in lionfish control

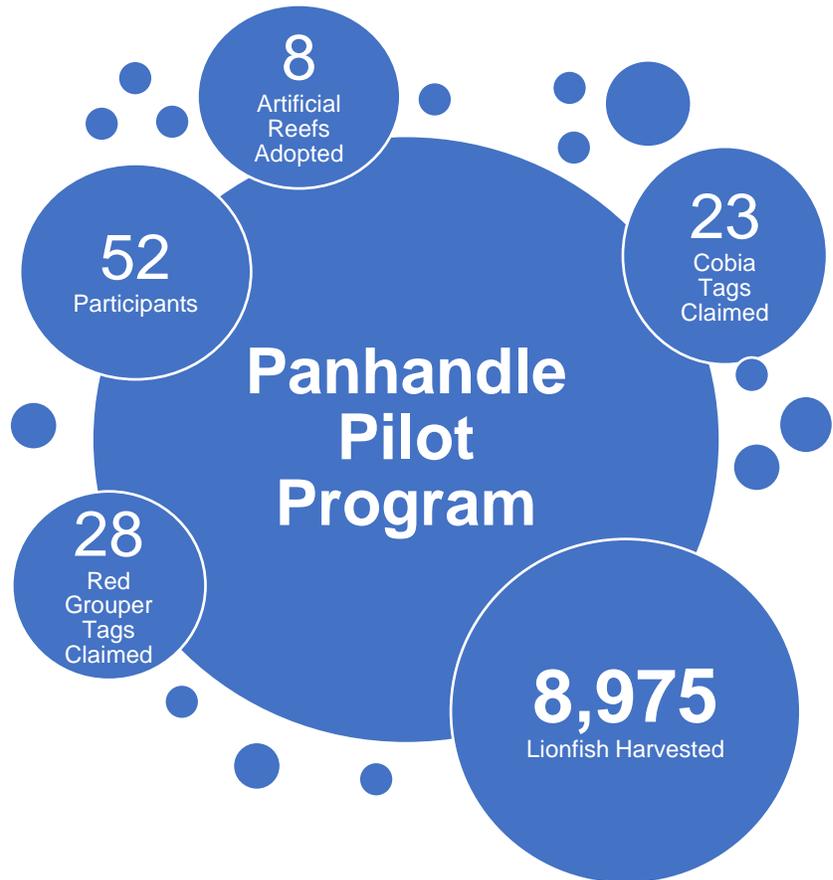
STATEWIDE EFFORTS REMOVED NEARLY 160,000 LIONFISH FROM FLORIDA WATERS IN 2017

Incentive programs

Reef Rangers: The program is designed similarly to the “Adopt-A-Highway” program in which individuals or teams pledge to conduct regular lionfish removals on local reefs of their choice and report these removals on ReefRangers.com. Participants receive an “FWC Lionfish Control Team” t-shirt and sticker for registering and adopting a reef and can win additional prizes for continued participation. The website launched in 2014 but was revamped and relaunched in September 2017.

Panhandle Pilot Program:

This 2016 stakeholder-inspired incentive program explored the use of resource-based incentives in seven panhandle counties, where lionfish densities tend to be high. The year-long pilot program began on Lionfish Removal and Awareness Day 2016 (May 14) and concluded the following year on May 19, 2017. To participate in this program, divers had to remove at least 100 lionfish from the waters off Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin counties and submit the tails to an FWC-approved checkpoint for verification. For every 100 lionfish submitted, participants had the opportunity to receive a FWC-issued tag for either a red grouper (100 available) or cobia (30 available) over the bag limit in state waters. To further encourage lionfish removals from these areas, individuals or teams of divers who submitted 500 lionfish had the opportunity to rename an artificial reef (10 available).





Lionfish Challenge Recreational Lionfish King, Ken Ayers

Lionfish Challenge: The goal of this ongoing statewide program is to reward recreational and commercial lionfish harvesters for their efforts with various prizes and incentives. To participate in the Lionfish Challenge, participants removed lionfish from Florida waters and submitted them to checkpoints located statewide. Qualified participants received a t-shirt and commemorative coin, which was valid for an additional spiny lobster per day during the two-day sport season in July. Additional submissions allowed participants to win additional prizes to encourage continuous removal efforts. During 2017, 122 participants harvested 26,454 lionfish.

Commercial lionfish landings

In 2017, commercial lionfish landings were over 116,000 pounds



Lionfish Challenge Commercial Champion, Joshua Livingston

With increasing interest in lionfish throughout the invaded range, there has been a rise in demand for lionfish in the seafood market. The FWC encourages the public to get involved in the development of the commercial lionfish market by including a discussion on licensing requirements, safe handling practices and maintaining a database of Florida lionfish wholesale dealers' purchasing requirements. Furthermore, the FWC encourages commercial harvesters and wholesale dealers to follow all reporting requirements to ensure commercial lionfish landings data are accurate. In 2017, 1,976 lionfish were harvested in Florida waters and brought into live trade.

Lionfish Tournaments

The FWC allocated assistance funds to encourage lionfish harvest through organized tournaments. The amount of funding provided was based primarily on the type of tournament being held (lionfish specific or tournament with a lionfish category) and then secondarily the number of participants. In 2017, 23 tournaments resulted in over 24,000 lionfish removed from Florida waters. The FWC staff conducted lionfish removal dives in compliance with American Academy of Underwater Sciences (AAUS) standards to collect lionfish for outreach and educational events. In 2017, the FWC removed 1,598 lionfish.



"Become the Predator" lionfish workshops

This program included a presentation and lionfish excursion. The presentation educated divers on lionfish, the invasion, statewide control programs, harvest equipment, collection techniques and includes a fillet demonstration. The lionfish excursion provided an opportunity for divers to receive a hands-on, field experience harvesting lionfish.



Table 1: "Become the Predator" Workshops in 2017

Date	City	Presentation Host	Excursion Host	Total Participants	Total Lionfish Removed
January 2017	Pensacola	Dive Pros	Niuhi Dive Charters	38	100
April 2017	Deerfield Beach	Dixie Divers	Dixie Divers	33	72
May 2017	Panama City Beach	Diver's Den	Diver's Den	19	366
June 2017	Destin	Discovery Dive World	Sea Pal Dive Charters	20	17

Theme 3: Education and Outreach

Goal 3.1: Ensure accurate, consistent, effective information about lionfish is developed, updated, and disseminated

Outreach materials and communications

- Provided updated information and messaging reflecting newest advances in research, outreach programs, control, and commercial market.
- Facilitated communications with "Fresh from Florida" and Florida Department of Agricultural and Consumer Services to collaborate on best methods for expanding the lionfish seafood market.
- Established partnerships with a variety of marketing representatives to advertise Lionfish Removal and Awareness Day including: iHeart Media, Guy Harvey Magazine, Visit Pensacola, and Lamar Advertising. The FWC continues to work with the media on an as-request basis for current messaging, programs and ways to get involved, commercial market and development of innovative removal strategies.

- Continued to utilize the agency's Reef Rangers Facebook page to engage stakeholders, advertise current events and articles, and remain active in the industry. As of December, the Reef Rangers page had over 3,300 followers.

Outreach and partner events and meetings

- Hosted 3rd annual Lionfish Removal and Awareness Day. Headquartered in Pensacola with 8 satellite events statewide.
- Hosted Lionfish Awareness at DEMA Dive-In-Day at the Capitol Building in Tallahassee. Featured lionfish tastings prepared by chefs, diving and conservation booths, commercial lionfish harvester "meet and greet" and safe handling demonstrations for state and local legislatures and agency Commissioners.
- FWC staff attended the Lone-star Lionfish Symposium in Galveston, Texas. The FWC acted as representative and guide as members of Texas Parks and Wildlife Department and partners worked to develop a Texas specific lionfish control plan.
- FWC staff presented to the Gulf of Mexico Fishery Management Council in San Antonio, Texas, to update the Gulf states on Florida's lionfish outreach and control efforts.
- Participated in the National American Fisheries Society meeting hosted in Tampa.
- Planned potential lionfish event to facilitate inter-state coordination with other Gulf States.



Lionfish Removal and Awareness Day Festival 2017, Pensacola



FWC Staff at DEMA Dive-In and Lionfish Awareness Day, Florida Capitol Building

Table 2: Outreach Events

Event Type	Number of Events Attended by FWC	Number of Attendees
Conference/ Convention	5	1,808
“Lionfish: Classroom Invasion” Dissection	3	149
Festival	10	7,527
Presentation	14	515
Tournament	8	1,041
Workshop	1	55
Total:	41	11,095

Theme 4: Research and Monitoring

Goal 4.1: Improve removal and detection capabilities for lionfish Research

Removal frequency and efficiency research: The FWC contracted with the University of Florida to investigate the frequency of lionfish removal efforts to maximize diver efficiency and reduce recruitment rates on artificial reefs in the northern Gulf of Mexico.

Deep-water lionfish control research: The FWC announced a request for proposals for stakeholders to research, test, and develop equipment and methodologies for harvesting lionfish beyond recreational dive limits. The request for proposals was announced in September 2017. Eleven proposals were submitted, and five vendors were awarded contracts in December 2017.

Monitoring

The FWC’s Fish and Wildlife Research Institute (FWRI) is conducting reef fish surveys in the Keys that include lionfish to assess species composition and size distributions.

MFM staff have been monitoring, receiving reports, and collecting samples of lionfish that have external lesions and implications of a viral or bacterial pathogen. The reports of lionfish with lesions began in August and samples have been sent to the FWRI Fish Health laboratory and University of Florida for analysis. Further investigation is ongoing.