

Six Years and 19 Lionfish Tournaments Later: A Look at Size Class Changes

Seis Años y 19 Torneos Lionfish Posteriores: Una Mirada a los Cambios de Clase de Tamaño

Six Ans et 19 Tournois Lionfish Plus Tard: Un Regard sur les Changements de Classe de Taille

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EXTENDED ABSTRACT

The Invasive lionfish (*P. volitans*) was first sighted in the Cayman Islands in February 2008 on a dive in Little Cayman. This single lionfish was removed and no other lionfish were reported until October that year in Cayman Brac. In January 2009 lionfish sightings were received by the Department of Environment (DoE) on a daily basis and a full-time response to lionfish began. A removal strategy was drafted and implemented in March 2009 with assistance from the Reef Environmental Education Foundation (REEF) and consisted of training volunteers whereby licensing them to extract and remove lionfish safely from Cayman reefs. Licensing was initially only for dive staff and using nets but gradually expanded to include residents and then short pole spears with a paralyzer tip imported by DoE. With restrictions in place prohibiting the importation of any type of spearing device into the Cayman Islands, the DoE had to apply for an exemption to this in order to import the pole spears for lionfish culling.

In September 2010, the first lionfish culling tournament was held, organized by a local dive company, Ambassador Divers, with guidance from DoE. This partnership continued and eventually grew to become a local non-profit organization, Cayman United Lionfish League (CULL) which has organized the majority of the 19 two-day tournaments held so far. These tournaments have been shown to have several benefits when used in conjunction with regular removal programs, namely: they remove a larger number of lionfish from reefs in a short period of time; they force teams to look outside of regularly culled areas in order to get more and larger fish; they are a great way to raise public awareness, especially when hosted at restaurants and samples are offered. Through the tournaments, just under 15,000 lionfish have been removed so far, approximately 8,000+ lbs.

Teams can have between two and eight members who must be licensed by the DoE and all lionfish brought to the weigh station must have their spines removed. Lionfish are measured individually but then weighed in bulk per team resulting in a combined weight for all of that teams fish. Prizes are awarded for first, second, and third place in four categories: Biggest, Smallest, Most Lionfish, and Most Combined Weight. By including smallest fish as a prize, cullers are encouraged to remove all lionfish not just the largest ones. This also allows cullers that are only licensed to use nets, and snorkel-only teams to participate and compete for a prize. As a result of including a smallest fish prize, Caudal Length (CL) is taken instead of Total Length (TL) as often the tails of smaller lionfish are damaged which would yield an inaccurate TL. A recent change has been to award the prize for Most Lionfish and Most Combined Weight based on the number of team members instead of per team. This proved to be more competitive between teams of varying size and has been well received by participants.

Figure 1 presents the Total Number of Fish Caught and Total Weight for each of the tournaments and shows the shift between these values over the period. Tournament #1 was only using nets and shows a large number of lionfish being culled but not a lot of weight, indicating a larger number of juvenile lionfish. This pattern varies over future tournaments but a.....

Large number of smaller fish 2010

As years progress, size increases too. 2012 finding more larger fish but also fewer smaller fish. Dive companies reported not seeing as many smaller fish either. Wondered if in fact there were fewer small fish on the reef or if cullers were losing ability to notice smaller fish because they were accustomed to seeing larger fish.

Shifted back towards smaller fish then gradual balancing out

As a result of multiple factors including: areas targeted, participation

The increase in size of lionfish over the years as a result of progression of the invasion also contributes to the increase in Total Weight over the years and can be seen in the Size Class graph in Figure 2.

Interesting since you can get a lot of small fish in a tournament but not a lot of weight. Had teams win tournaments with 200 small fish that didn't weigh as much as 15 larger fish.

Biggest – 451mmTL (333CL)

Smallest – 25mmTL (19CL)

Early tournaments were harder to organize and therefore not as regular because of the small number of volunteers and lack of sponsors. Prizes for the first nine tournaments had to be sourced and donated by companies and were often not ideal for teams: BBQ grills, mobile phones, etc. are hard to split between a team of eight. Finding suitable dates without other events was also a key factor as well as scheduling around the busy season for dive companies.

Type of gear used also affected the results with nets only being used for the first four tournaments. Spears were then gradually introduced starting in mid-2010 for dive companies and mid-2011 for residents. Not everyone was issued spears at that time though so both methods were

used until around 2013. Experience of cullers was also apparent between teams with the more active dive companies and residents turning in significantly more fish than casual teams. It was difficult to separate these two experience levels since there were already so many prizes and categories and this caused some residents to stop participating.

Local supermarket, Foster’s Food Fair, agreed to sponsor cash prizes starting in 2014 and because of this and a partnership with the Cayman Islands Tourism Association (CITA), the CULL group was formed. This allowed for more regular tournaments and provided an extra incentive.....

KEYWORDS: Lionfish, tournament, Cayman Islands

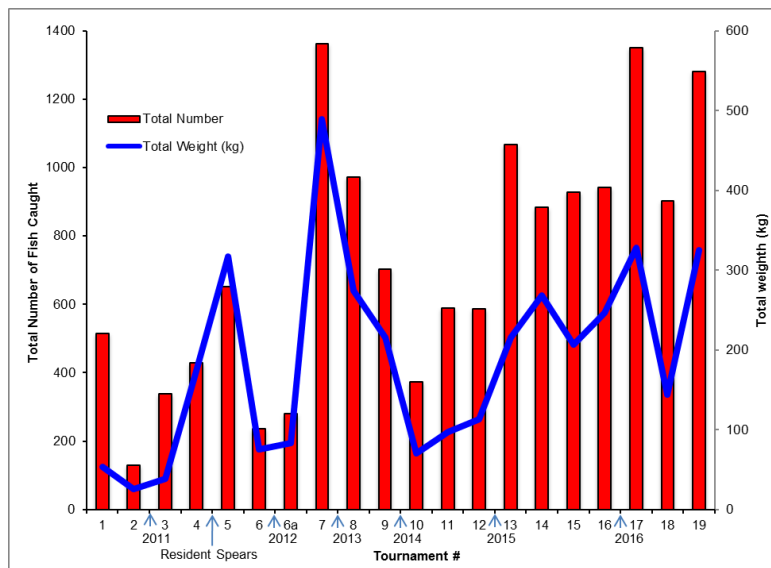


Figure 1. Total Number of Fish Caught and Total Weight for each of the tournaments.

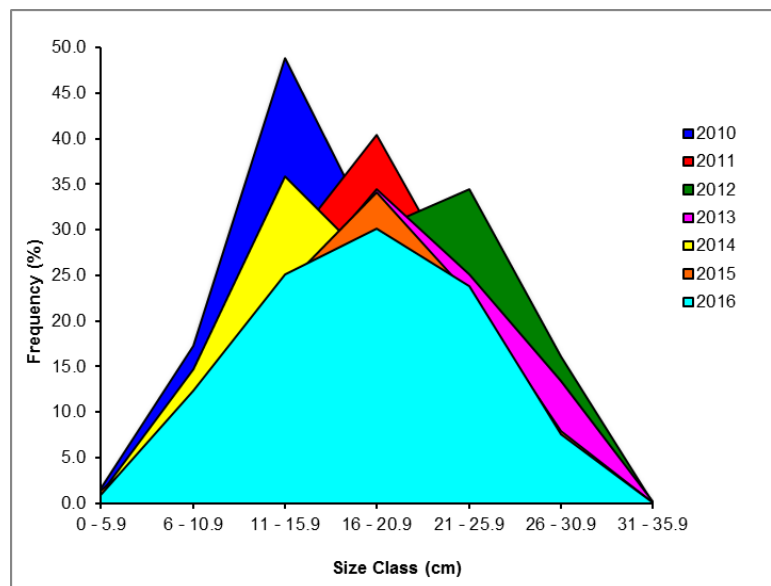


Figure 2. Annual size classes of lionfish caught