Reducing the susceptibility of Parrotfish to fish traps; A meta-analysis identifying feasible management strategies.

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Results:

The Honduran field study revealed that herbivorous fish, particularly Acanthurus chirurgus, are more likely to be caught by the traps. Interestingly, whilst neither trap type (Z-trap, chevron or rectangular) or mesh size (1” or 2” square mesh) affected the probability of parrotfish being caught, the traps with smaller mesh size (Figure 1) were more effective in catching parrotfish. This is likely due to the fact that parrotfish are more susceptible to small mesh size (Figure 1). Thus, they may be vulnerable to capture at each end of the spectrum of mesh size, as demonstrated by the relative capture rate (Figure 1).

Materials and methods:

The traps were deployed in the Antillean Z-trap and rectangular trap design, and each trap was equipped with a single mesh size (1” or 2” square mesh). The traps were set on a variety of substrates, including soft sediment, coral rubble, and rock. Each trap was set for a specific number of days (1-6 days), and catches were recorded for each trap.

The substrate the trap was set on significantly affected the probability of catching parrotfish. Results show that parrotfish make up 8% of the biomass on shallow reefs, 1% on intermediate reefs, and 0.2% on deep reefs. Thus, they may be vulnerable to capture at each end of the spectrum of mesh size, as demonstrated by the relative capture rate (Figure 1).

Discussion:

The results of this study indicate that the susceptibility of Parrotfish to fish traps is significantly affected by the mesh size and substrate type. Results show that parrotfish make up 8% of the biomass on shallow reefs, 1% on intermediate reefs, and 0.2% on deep reefs. Thus, they may be vulnerable to capture at each end of the spectrum of mesh size, as demonstrated by the relative capture rate (Figure 1).

Conclusions:

There are species-specific variations in the susceptibility of parrotfish to fish traps. Understanding these variations is crucial for developing effective management strategies.

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www.unab人大常委.org
or www.forceproject.org
Reducing the Susceptibility of Parrotfish to Fish Traps: A Meta-Analysis Identifying Feasible Management Strategies

KEY WORDS: Scaridae, vulnerability, fish traps, management strategies

Reduciendo la Susceptibilidad de los Peces Loro a las Trampas: Un Meta-Análisis que Identifica Estrategias Viables de Manejo

PALABRAS CLAVE: Scaridae, susceptibilidad, trampas, estrategias viables de manejo

En Réduisant la Susceptibilité des Poissons Perroquet aux Pièges: Une Méta-Analyse Identifiant des Stratégies Faisables de Maniement

MOTS CLÉS: Scaridae, susceptibilité, pièges, stratégies faisables de maniement

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ABSTRACT
Parrotfish are essential to the health and resilience of coral reefs. As the Caribbean’s main herbivores, they reduce the extent and canopy height of macroalgae, create space for coral settlement, and mediate spatial competition between corals and algae. Due to their crucial ecological function, protecting parrotfish populations is an increasing management priority across the region. Identifying and implementing realistic yet effective management strategies for areas that are subject to fishing pressure is essential, considering that 98% of Caribbean coastal waters are not under marine protection. Parrotfish may be particularly vulnerable in locations where fish traps are widely used. Their simple construction and ease of deployment, combined with their ability to capture fish not susceptible to hook-and-line, make this non-selective fishing gear advantageous to fishers. However, their sustained use has been widely blamed for the overexploitation of near shore reef fish populations including parrotfish in many areas of the Caribbean. In the current study, we collated data from the literature and combined this with results from original trap experiments conducted in Honduras to build a regression model to calculate the importance of different factors affecting the susceptibility of parrotfish species to trapping, including design, dimensions, mesh size, deployment substrate, depth, and soak times. The results suggest easily interpretable management guidelines for fish trap use to be applied in areas where banning fish traps is currently unachievable due to limited enforcement capacity, strong cultural connections to fish traps, or a large economic dependence with few available alternatives.

High Profit Pelagic Fisheries Lure Artisanal Fishers into Cycles of Debt, Risk, and Climate Vulnerability

KEY WORDS: Pelagic, artisanal, economics, fisheries

La Pesca Pelágica de Alta Rentabilidad Lleva a Pescadores Artesanales a Ciclos de Deuda, Riesgo y Variabilidad Climática

PALABRAS CLAVE: Pelágico, artesanales, económico, pesquerías

La Pêche Pélagique à Bénéfices Élevés Appâte les Pêcheurs Artisanaux dans la Faillite, Les Risques et l'Impact de la Vulnérabilité Climatique

MOTS CLÉS: Pélagique, artisanaux, pêcheurs

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ABSTRACT
Fishing is an important source of income to many who have limited employment opportunities in tropical rural areas. Typically, most descriptions of fishing practices in these areas have been restricted to reef fish fisheries, and studies that document pelagic fisheries are rare. This paper provides a socio-economic description of the artisanal pelagic fishery in San