Analysis of Management Strategies for the Red Snapper Recreational Fisheries in the Gulf of Mexico

Análisis de Estrategias de Manejo para la Pesca Recreativa del Pargo Rojo en el Golfo de México

Analyse des Strategies de Gestion de la Pêche Sportive au Vivaneau Rouge dans le Golfe du Mexique

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EXTENDED ABSTRACT

Introduction

Fish are considered a pilar source of food, commerce, and as part of the culture around the world. In a country like the United States (U.S.), a significant territorial extension is connected to the ocean resulting in fishing activities playing a significant role in citizen's life. One of the most prominent fisheries in the U.S. can be found in the Gulf of Mexico (GOM), bordered by the states of Florida, Alabama, Louisiana, Mississippi, and Texas. These fisheries play an important role in the economy of the country because it can provide jobs and also food to local people (McCrea-Strub et al. 2011). Nearly half of the United States' seafood comes from the Gulf, which is, in significant part, responsible for supporting the tourism industry, resulting in humans mainly impacting the fish stocks (Darnell 2015). The red snapper, *Lutjanus campechanus* (Poey 1860), is a common reef fish that lives in the GOM waters, and the eastern Atlantic coast (Froese and Pauly 2013). This fish species matures as early as two years and have very high fecundity, living for over 50 years (Gallaway et al. 2009). The red snapper has a price higher than any other snapper species (Huang et al. 1995), supporting one of the most important recreational and commercial offshore fisheries in the GOM (Fishcher et al. 2007). Their history has been defined as one of the most controversial fisheries in the United States, because of its different management measures through the years. This fishery has shown signs of serial overfishing as early as the 1880s (Stearns 1883). By 1950s, population declines were evident; around the 1970s fishermen began raising concerns about reductions in the western Gulf, which they attributed to a combination of increases in the number of snapper vessels and the bycatch of juvenile snapper by the burgeoning offshore shrimp fishery (Moe 1963). The increased fishing pressure caused red snapper populations to continue to decline through the 1980s, during which time egg production is estimated to have dropped to less than five percent of the unfished level (Porch 2007, Calay et al. 2015). As a response, in 1984, a rebuilding plan was established under the Magnuson-Stevens Act guidelines. This rebuilding plan imposed new management regulations that included federal seasons and quotas shortening on the red snapper fisheries. The purpose of these new rules was to allow the stock to grow and to rebuild the fishery by 2032. These harvest restrictions resulted in recreational fishermen, and the states become displeased and started questioning the effectiveness of this new federal management plan.

Methodology

Fishing activities, both commercial and recreational, have demonstrated to be a pivotal economic motor in the GOM. This fishery has been affected by overfishing for several years, which resulted in the federal agencies creating management regulations in the recreational sector, establishing shorter seasons, bags and size limits. These strategies created one of the most significant fisheries controversies of the country when states and fishermen became displeased with these restrictions. The purpose of this project is to create a timeline to compare the history of the recreational red snapper fisheries management in the GOM, taking into consideration the amendments and the regulatory measurements implemented by federal agencies. For making this possible an analysis of literature was realized to identify the history of Gulf red snapper management by the federal agencies. To be able to describe the management dynamics over time, secondary data from stock assessments, government reports, and academic journal articles were collected and analyzed. Finally, conclusions and recommendations are done for effective management strategies.

Results

This study focused on the red snapper recreational fisheries management in between the years of 1981 to 2017. Before 1981 there were no reliable estimates of recreational red snapper harvest (Hood et al.). Data has shown that the recreational sector has been exceeding the fishing quotas almost every year since they were imposed in 1991(Figure 1). For the 10 years, from 1996 the quotas were stable, but they show significant changes after 2006 year. Another measure implemented by the federal agencies was the imposition of bag limits. These limits became shorter with time, in 1991 the limit was 7 fish per angler/day, but by 1995 it was decreased to 5, in 1999 to 4 until 2008 where the limit was 2 fish per angler/day (Figure 2) which has been the limit for many years. In the case of the seasons, there was no season closures before 1997, which means that the seasons were open all year long. After 1997, the seasons started to become shorter until 2014, which was the year in

which season was restricted to only 9 days. In 2015 the recreational sector was divided into head-boats and private anglers to establish their own seasons.

Discussion

For many years the recreational red snapper fisheries in the GOM have been in the public eye because of the extensive controversy between the states and the federal agencies. States and fishermen argue that the regulations imposed have been overregulating the fishing activity, but federal agencies explain that these regulations are necessary to recover the stock. Data has shown that every year, the recreational sector has exceeded the quotas imposed. These quotas are supposed to promote sustainable fishing practices. Another measure implemented was the season shortenings. Beginning in 1997, they were set to in-season

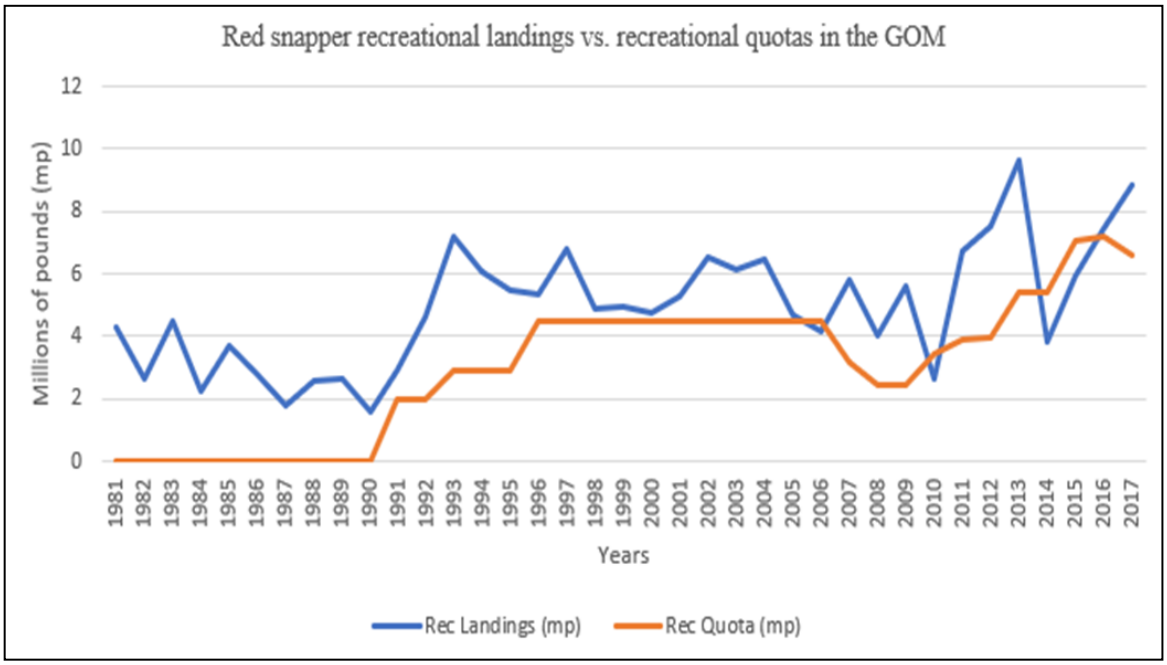

Figure 1. Red snapper recreational landings vs. recreational quotas from 1981 to 2017 in the Gulf of Mexico. (GOM).

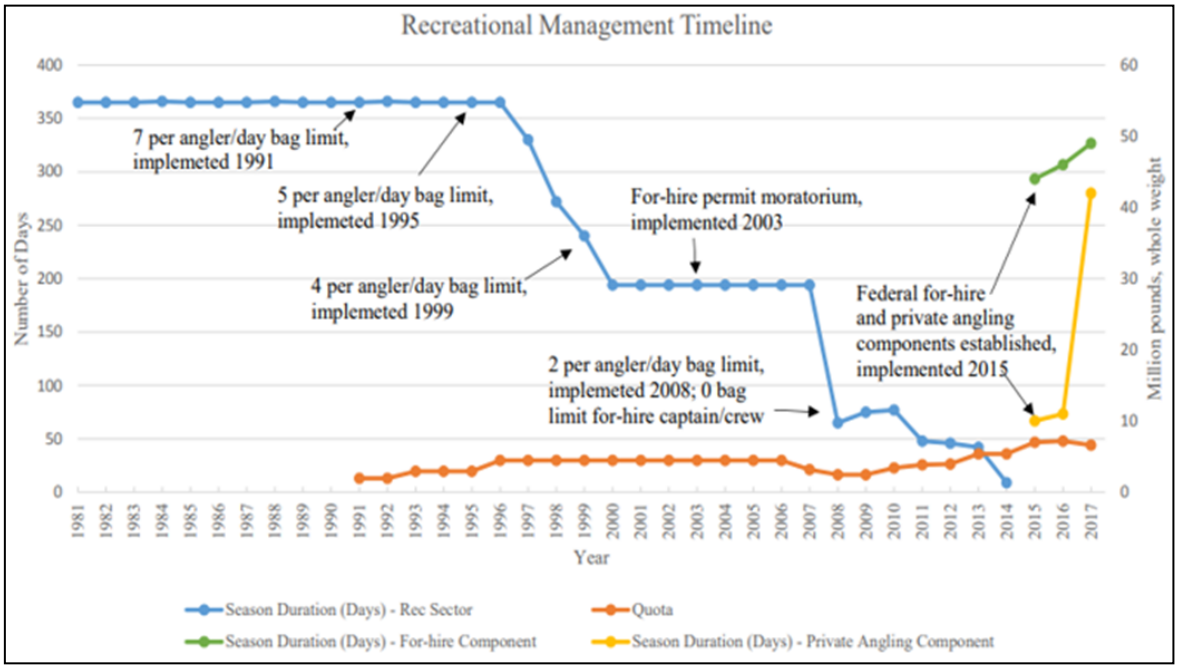

Figure 2 Red snapper recreational sector management timeline from 1981 to 2017.

closures. Even though the fishing season increased in length during 2009-2010, it has been shorter since 2011 despite the increasing quota for the recreational sector. Reducing the open season to 9 days in 2014 was the decision that elevated the conflict between the Federal and state agencies about the management. The decision to reduce open season days was made to reduce fishing mortality in short term.

Conclusion

One of the most important conclusions of this research is to determine what has been causing the controversy between the states and the federal agencies. One of the principal reasons for this problem is the discrepancy in vision goals from the management since each sector wants to increase their own benefits. The federal agencies have been establishing these restrictions to promote biological conservation. Their regulations are meant to increase the populations into optimal levels and maintaining sustainable fisheries. On the other hand, the states are mostly interested in promoting economic growth. They would like to have longer seasons and more accessibility to the red snapper fisheries. Recreational fishing is a big financial pillar in the GOM, and their practices include different activities like tourism, boat rentals, fishing licenses and gears, restaurant consumption, and many other expenditures. Meaning that recreational fisheries are significant economic contributors, providing state income and jobs. It is essential to mention that anglers also make their contribution to conservation efforts through the Sport Fish Restoration and Boating Trust Fund (SFRBTF) program, which is funded in part by the federal excise taxes on fishing equipment. Successful fisheries management should be a collective effort; states and federal agencies should work together. This process should be goal -oriented and integrate science and policy into decision making.

KEYWORDS: Red Snapper, recreational fisheries, Gulf of Mexico, management, fish

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