Devolution and Policy Change in the Gulf of Mexico: Red Snapper Management

by

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Abstract

In 2020, American states were given management authority for *Lutjanus campechanus* (northern red snapper) in federal waters of the Gulf of Mexico through Amendment 50 to the Gulf of Mexico Reef Fishery Management Plan. This amendment, which devolved authority to a more local scale, was preceded by years of heated debate about the methods and numbers by which red snapper should be managed. Given the politically divisive nature of both red snapper and American politics in recent years, how was Amendment 50 passed? Our research uses public policy theory, specifically its Multiple Streams Theory, to describe the process of Amendment 50's passage. We focus on the messaging strategy used by stakeholder groups. We examine their preferences and rationale for devolved management. Analysis shows that supporters associated state management with longer seasons and more flexible management practices. It also shows a general preference by stakeholders for more locally scaled management of their natural resources. Those with negative attitudes often mistrusted accountability systems in place in the states, feared overfishing, and generally preferred federal management. Beyond its ability to inform future management decisions for red snapper, this research, via the lessons learned from Amendment 50, can inform future natural resource devolution initiatives.

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I would like to thank my advisor, Dr. Kelly Dunning, and my committee, Dr. Ryan Williamson and Dr. Steven Scyphers, for their guidance and support on this project throughout my time in graduate school. I would also like to give a huge shoutout to my fellow students in the Conservation Governance Lab: Kasen Wally, Sabine Bailey, Amanda Alva, Dan Morris, Catherine Cummings, and Greg Johnson. Y'all's constant support, friendship, and answering all of my questions is deeply appreciated. Finally, I would like to thank my family for their constant support, and more specifically, my dad for taking me fishing.

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1. Introduction

Lutjanus campechanus (red snapper) is one of the most prized fish in the Gulf of Mexico. Its shimmering red scales and delicious taste attract many tourists to fishing trips and restaurants along the entire Gulf Coast. In 2018, it was the most landed[1] fish across the entire Gulf in both commercial and recreational fisheries, generating $29,595,000, a figure which includes landings in the Gulf of Mexico but also the Atlantic where some are caught as well (National Marine Fisheries Service, 2020). Recreationally, red snapper was the most landed fish on the Gulf Coast at 12,617,000 pounds (15,695 individual fish) landed, and for the recreational sector across the United States, red snapper was the third most harvested fish per pound at 19,142,000 pounds, behind only *Morone saxatilis* (striped bass) and *Coryphaena* (dolphinfishes).

Fishing is both an important cultural pastime and is also a major contributor to the economic output of the Gulf of Mexico ("The Gulf"). 1.8 million Gulf Coast residents recreationally fished in marine waters in 2018, and the total number of trips, including visitors to the Gulf, amounted to almost 56 million (National Marine Fisheries Service, 2020). In 2018, commercial fisheries and seafood in the Gulf of Mexico generated $887,357,000 (National Marine Fisheries Service, 2020). More generally, the Gulf provides over two trillion dollars to the United States' Gross Domestic Product every year (Shepard et al., 2013, p. 201). $660 billion of this is generated by coastal counties, and an additional $110 billion comes from ocean-centered activities. These communities produce roughly 27% of employment across the Gulf states, which demonstrates the economic importance of the Gulf of Mexico to state economies (Cato, 2008). The Gulf tourism and recreation sector makes up a majority of this employment (71%) (Cato, 2008).

Since the 1980s, red snapper in federal waters of the Gulf of Mexico have been managed by the Gulf of Mexico Fishery Management Council (or "Gulf Council"), one of the eight regional fishery management councils created by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (Magnuson-Stevens Act) which gives management authority of fisheries within federal waters of the United States to the National Marine Fisheries Service

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[1] In fishing, a "landing" refers to all the fish that a boat brings to port (Organisation for Economic & Co-operation and Development, 2021).

(NOAA Fisheries) of the National Oceanic and Atmospheric Administration of the United States (Fisheries, 2020). Federal management through NOAA Fisheries and the Gulf Council brought the population of red snapper back from the brink of collapse in the early 1980s. Into the late 2010s, however, these same management measures had continually shortened the recreational angling season for red snapper in federal waters. Given the importance of the red snapper fishery to the Gulf Coast economy and culture, it is unsurprising that the announcement of a 3-day long recreational fishing season for red snapper in federal waters of the Gulf of Mexico generated intense debate over proper management of the fishery. Ultimately, these concerns over management and data collection led to Amendment 50 to the Gulf of Mexico Reef Fish Management Plan by the Gulf of Mexico Fishery Management Council. This amendment gave each Gulf state the authority to manage recreational red snapper fishing seasons in federal waters of the Gulf of Mexico (Gulf Council, 2019).

The proposed solution was hotly debated. Under state management in the years before NOAA Fisheries took over in the 1980s, red snapper populations had nearly collapsed. In the 2010s when state management first became discussed as a possible solution to solve ever-shortening seasons, the conversation was centered on uncertainty in data. How many red snapper were in Gulf waters, and do states or NOAA Fisheries have better population numbers? Was the continued shortening of the recreational season necessary to ensure the fishing stock's sustainability? Some individuals and organizations preferred federal management for fear that states would open up red snapper fishing access unsustainably, which would lead to a second collapse of the fishing stock. Others believed that federal management was hurting local economies and was too strict based on personal experience of fishing for red snapper.

Given the divisive, political nature of environmental and natural resource issues in the United States, the devolution of red snapper management authority from the federal to the state level serves as an interesting and important case study. How was this decision made? What politics allowed for the fate of an immensely important fish found in federal waters to be handed to individual states? To explore this question, I use John Kingdon's Multiple Streams Theory, a public policy framework which seeks to explain the policy process by showing how three "streams," the problem stream, policy stream, and politics stream, must align to create a policy window through which new policy solutions can emerge (Kingdon, 2013). I focus my analysis

on the problem stream with particular emphasis on how problem framing, or how a problem is understood, described, and constructed often to emphasize particular aspects of an issue, directs the problem stream and thus influences the policy process. My results show how specific stakeholder groups described and effectively constructed the issue of red snapper management in order to achieve their preferred policy solutions. My results suggest that new fishery policy and management plans are strongly directed by the premiere, existing federal fisheries legislation: the Magnuson-Stevens Act.

The role of problem framing is well studied in political science literature (Knaggård, 2015; Meijerink & Huitema, 2010; Mintrom & Luetjens, 2017; Storch & Winkel, 2013). More specifically, the literature has also examined the importance of recreational fisherman attitudes toward fisheries management (Crandall et al., 2019; Curtis et al., 2019; Scyphers et al., 2013, 2021). Literature on natural resource governance suggests that inclusion of local stakeholders (i.e, recreational fishermen) is crucial for effective and efficient management when inclusion of stakeholders is deemed important or mandated (Espinosa-Romero et al., 2011; Jordan & Benson, 2013; Mackinson et al., 2011; Tallis et al., 2010). Together, the literature makes Amendment 50 a compelling case study, and this research's objective to better understand the problem framing and policy process behind Amendment 50 is the first of its kind and will inform future devolutions of management power from national to more local levels of government.

To examine Amendment 50's policy process, I employed a critical case study design to collect and analyze *n=2,206* stakeholder comments, newspaper articles, and politician statements. I used a grounded theory approach to draw out the precise themes in each comment, later consolidating these into thematic codes (Charmaz, 2006; Saldaña, 2016). I also pulled from one Narrative Policy Framework's narrative strategies, the *angel-devil shift*, to show how each stakeholder comment framed various actors as heroes or villains of red snapper management (Shanahan, Jones, Mcbeth, et al., 2018). The resulting data highlighted how each stakeholder type constructed the "problem" of red snapper management, including who they believed to be the best and worst actors for red snapper. Research into the policy stream revealed that all prior attempts to devolve power to state management of red snapper failed, and I propose a reason why: those reforms did not go through the established fishery management plan amendment process via the regional councils. Multiple Streams Theory suggests that this failure is due to the

policy stream not aligning and joining with the problem and politics stream. Functionally, this suggests that the Magnuson-Stevens Act upholds the policy landscape for federal fisheries in the United States, and attempts to circumvent this law have proven unsuccessful for the red snapper case.

My findings show that recreational fishermen largely supported state management of red snapper in federal waters, and their primary reasons for this were that the states possess greater flexibility for adjusting local seasons than the federal government. This ability would lead to longer seasons and greater access to red snapper for these fishermen. Federal charter for-hire captains, who are federally licensed to fish in federal waters of the United States, and their stakeholders, however, preferred to remain under federal management. This is because, for their sector, federal management offered proven season stability and access to red snapper, and if their sector's quota for red snapper were given to the states, they feared the states would undermine their gained stability to increase the season length and total catch for recreational fishermen. Many charter for-hire stakeholders supported Amendment 50, but only if the charter sector was removed from it. Finally, I found that interest groups participated in this process in the manner that Multiple Streams Theory predicted. They framed problems surrounding red snapper management in ways which supported their preferred policy solutions. For example, the Ocean Conservancy did not fully support Amendment 50 until accountability measures had been written into the amendment to ensure that states would have a diminished quota for the next fishing season if they overfished in the current one. In sum, my findings show that stakeholder understanding of red snapper management issues did influence the final form of Amendment 50. This highlights the general importance of stakeholder interaction wherever tricky, divisive natural resource management policies are being suggested. If those affected by the policy do not support the policy, the proposed policy is not likely to succeed.

This paper is laid out in seven sections. First, in the Policy Case Context, I detail the historical, biological, and political realities leading up to the passage of Amendment 50. Second, I perform a Theory-driven Review of the Literature to explain why Kingdon's Multiple Streams Theory provides the analytical angle for this case. This section also lays out the expectations for my research based on Multiple Streams Theory. Third, in the Literature Review section, I frame this research in the broader context of red snapper, fisheries management, problem framing, and

natural resource governance literature. Fourth, I detail the Methods used in this research. Fifth, I lay out my Findings on problem framing by stakeholder type. Sixth, in my Discussion, I summarize my findings and show their broader implications toward natural resource management and devolved management. Finally, seventh, the Conclusion looks forward to future areas of research after a summary of my research.

2. Policy Case Context

The red snapper fishery is divided into two distinct regulatory parts: commercial and recreational. In 2015, Amendment 40 divided the recreational sector into two components: a private angling component and a federally permitted for-hire and charter component (Fisheries, 2019). The federal for-hire component consists of those vessel operators with a federal permit to be a charter vessel or headboat[2] catching reef fish[3]. The private angling component is any private angler or for-hire vessel without a federal permit. Importantly, Amendment 40 split the recreational quota and annual catch limit[4] between the for-hire and recreational angling components, thus ensuring greater stability and season certainty for the for-hire industry. The decision to split the quota occurred because of problems with yearly overfishing from the recreational sector which reduced the following year's season length, thus hurting the for-hire industry's livelihoods. This split was set to automatically end after three years of implementation, but Amendment 50 removed this sunset clause, which are rules within a law or plan that ends part of the plan at a specified date.

Amendment 50A-F: State Management Program for Recreation Red Snapper ("Amendment 50") is an amendment to the Gulf of Mexico Reef Fish Fishery Management Plan. The rule was approved by the Gulf of Mexico Fishery Management Council (Gulf Council), going into effect the following year in 2020. The amendment delegated management authority of

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[2] Charter vessel and headboat both refer to pay-for-service fishing vessels. Charter refers to vessels that have six or fewer individuals on board, whereas headboats usually have greater than six. Traditionally, a single group rents a charter boat for a trip, whereas headboats have pay-per-person trips (Ditton et al., 1991). Charter vessel licenses function so that customers do not have to purchase their own saltwater fishing licenses.

[3] "Reef fish" refers to 31 species of fish in the Gulf of Mexico identified as living on reefs (Fisheries, 2021a).

[4] The limit of fish or number of pounds of fish designed to keep overfishing from occurring (Fisheries, 2021e).

the recreational red snapper fishery in the federal waters of the Gulf to Texas, Louisiana, Mississippi, Alabama, and Florida (Gulf Council, 2019). Under the amendment, each state can now individually and autonomously change season length, bag limit, and minimum and maximum size limits for the recreational fishery within federal guidelines. This was a major change, because legally the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Steven Act) only allows for NOAA Fisheries to manage fish located in federal waters. The amendment also allows for states to close their federal waters to recreational red snapper by requesting NOAA Fisheries do so. Under the plan, red snapper remains a federally managed species, and each state is delegated the authority to manage the fishery. If the state does not satisfy federal quota requirements or is found to mishandle management, NOAA Fisheries withholds the right to take back that state's recreational red snapper season to federal guidelines in federal waters, including season length, bag limit, and size limits (NOAA, 2020). This amendment is the current solution to what many stakeholders have considered non-functional federal management of the fishery (American Sportfishing Association, 2019). Under federal management, the recreational fishermen saw their season lengths dwindle down to a three day season in 2017.

The Gulf of Mexico Reef Fish Management Plan (the plan which Amendment 50 amends) was created by the Gulf Council. The Gulf Council is one of eight regional fisheries management councils created by NMFS under mandate of the Magnuson-Steven Act. The councils are charged with creation and maintenance of fishery management plans, conducting public meetings on proposals and plans, deciding annual catch limits based on the best available science, creating and implementing stock rebuilding plans, and isolating research priorities by working with science, technical, and advisory committees (Fisheries, 2022b).[5] The Gulf Council manages the federal waters of the Gulf of Mexico, and they are the ones that proposed, voted on, and passed Amendment 50. The Gulf Council is composed of 17 voting members, including 11 private citizens who are involved in the recreational or commercial fishery, or involved in related

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[5] The Gulf Council has the following committees: Scientific and Statistical Committee, Technical Committee, and an Advisory Panel.

conservation and management (usually scientists and professors) (Gulf of Mexico Fishery Management Council, 2018).[6]

The process of rulemaking[7] in the Gulf Council has several steps. After an issue is identified and reviewed, a Full Amendment is drafted, followed by an Environmental Impact Statement if necessary, which considers the ways the policy might affect the fishery. If this is done, then the Gulf Council will draft management "Options" which will be presented to the public, along with the Full Amendment, for a hearing. These hearings happen in each state in multiple major coastal cities (Gulf Council, 2018). Comments generated in person and online are then reviewed by the Gulf Council and its committees, and a final ruling follows. The Gulf Council breaks down Fisheries Management Plan Amendments into different "Actions". In the case of Amendment 50, both the Gulf Council and the states selected "preferred" options. Once these options are discussed and one is selected, the amendment is sent to the federal Secretary of Commerce to be signed in as a new rule.

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[6] The remaining voting members are the heads of the state fish and wildlife agencies, the Administrator of the National Marine Fisheries Service Southeast Regional Office, or their designees. The council includes four non-voting members who advise on specific issues, including foreign affairs, safety and marine law enforcement, and data and research in the Gulf states. The voting members are nominated by each Gulf state, and they are then appointed by the Secretary of Commerce.

[7] Rulemaking is the process of creating regulations, rules, or laws which organizations or individuals must follow and comply with. It is one of the basic tools in the policy process in which rules are created or amended to address a problem identified by communities and policymakers, resulting in legal actions and requirements to address the problem (i.e., rules) (Congressional Research Service, 2013).
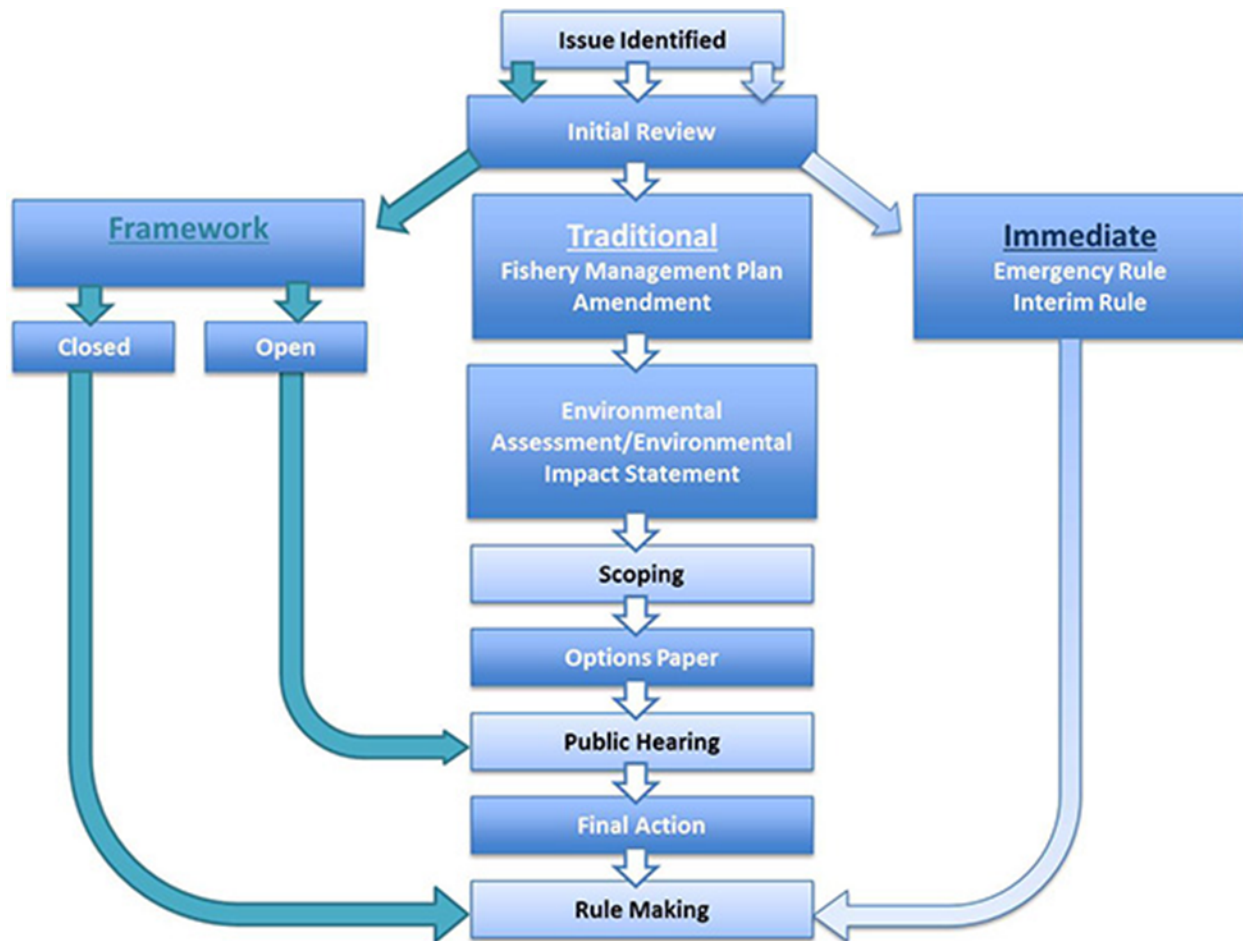
Image 1: Fisheries Management Council Management Process (South Atlantic Fishery Management Council, 2016)

The National Marine Fisheries Service (also known as National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries)) is the parent organization for the eight regional management councils. It is the federal government's agency for managing fisheries in federal waters, and it takes direction from guidelines within the Magnuson-Stevens Fishery Conservation and Management Act of 1976. The Magnuson-Stevens Act is the primary law that governs marine fisheries in the United States' federal waters (Fisheries, 2021c). It guides NOAA Fisheries to prevent overfishing, rebuild overfished stocks, work towards social and economic benefit, and ensure the sustainability and safety of the United States' seafood. It provides ten national standards for fisheries management plans, and the Secretary of Commerce must ensure all plans meet these standards before approving them (Fisheries, 2018).

Prior to the passage of the Magnuson-Stevens Act, federal waters only extended to twelve nautical miles off the coast. In part to stop foreign fishing vessels from fishing in these waters,

the Magnuson-Stevens Act extended these waters out to two hundred nautical miles in 1976 (Fisheries, 2021c). In 1996 and 2007, the Magnuson-Stevens Act underwent major revisions: the Sustainable Fisheries Act and the Magnuson–Stevens Fishery Conservation and Management Reauthorization Act respectively. The latter coincided with major changes to the red snapper fishery, including the Gulf of Mexico's first Individual Fishing Quota[8] for commercially caught red snapper (Fisheries, 2020). In fact, the 2007 Reauthorization encouraged market-based strategies for management such as catch-shares and other limited access privilege programs. The Magnuson-Stevens Act Reauthorization Act also made changes to the way that NOAA collects data on its fisheries.[9] NOAA Fisheries sets the annual catch limits of their fisheries using this data. If the annual catch limit was exceeded in a given year, the limit was lowered the following year to account for this overage. These data and accountability measures are what led to very short recreational red snapper fishing seasons in the federal waters of the Gulf, culminating in a three-day season in 2017.

Through the Magnuson-Stevens Act, NOAA Fisheries has acted to end overfishing and rebuild certain fishery stocks, including red snapper, which they began managing in 1987 (Fisheries, 2020). In 1987, the red snapper stock was seriously overfished, and in 1990 its Spawning Potential Ratio[10] was only two percent. By contrast, NOAA's target for the red snapper population in the Gulf is 26% percent, which means that at least one fourth of the snapper population should be able to reproduce after a fishing season has concluded. To reach this target, NOAA Fisheries has implemented various management measures including but not limited to adjusting size limits, shortening season lengths, reducing bag limits,[11] determining gear limitations, and managing the total catch quotas for the fishery. While these began working, the rebuilding was slow, and by 2005 the spawning potential ratio was only 4.7%. Thus, in 2007,

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[8] An Individual Fishing Quota is a catch-share system which gives individual people a certain number of pounds or amount of fish that they can catch year-to-year.

[9] NOAA's Marine Recreational Fisheries Statistics Survey became the Marine Recreational Information Program in 2008 (Fisheries, 2021d).

[10] Spawning Potential Ratio refers to how many eggs the population is capable of producing relative to if the population were unfished.

[11] "Bag limit" is the number of a species of fish that one can legally catch in a single day or trip.

the total allowable catch[12] of the fishery was cut by 45%, the recreational bag limit was lowered from five fish per day to two, an Individual Fishing Quota was implemented for the commercial sector, and the minimum size limit, or the smallest fish one is allowed to keep, was lowered to diminish the number of snapper that died by being caught and then tossed back. These measures began rebuilding the stock with much greater success, and by 2018 the spawning potential ratio was 20%, much closer to the 26% goal of the rebuilding plan.

Although the population of red snapper increased and the individual fish grew larger and aged, the recreational sector saw its season lengths in federal waters grow steadily shorter between 2007 and 2017. This is because, with an increasing red snapper population, red snapper were caught more easily which means the year's recreational quota was more quickly reached. NOAA data found that in 2017, recreational fishermen were catching red snapper at four times the rate they were before the population began to recover. Additionally, the average weight of a red snapper caught by a fisherman (or "landed") has increased, meaning the total amount of pounds allotted for a season's quota was more quickly reached. Both of these contributed to NOAA Fisheries shortening the recreational season even as the total quota for the recreational sector increased. Further, even with shortened seasons and larger quotas, NOAA's data found that the recreational fishery overfished its quota from 2007 to 2013. This occurred because recreational anglers were reaching the annual catch limit more quickly than anticipated as red snapper size and numbers increased.

In 2014, 21 commercial fishermen brought NOAA Fisheries to court over the management of the recreational red snapper fishery (Murphy, 2014). They claimed that NOAA Fisheries had mishandled the fishery by not addressing the overfishing that occurred between 2007 and 2013. The courts agreed, leading NOAA Fisheries to set a new type of annual catch target, which was set to eighty percent of whatever the recreational quota should have been set at. Accountability measures were also established, and the recreational sector would now be accountable for overages by subtracting the overages from the following year (Fisheries, 2020).

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[12] Total Allowable Catch is the maximum number of fish that can legally be caught in a single year. Each Fisheries Management Council establishes this number with guidance from their Science and Statistical Committee which determines the Acceptable Biological Catch, or the maximum allowable catch that accounts for scientific uncertainty.

This was done by shortening the season in federal waters, and the states retaliated to this by lengthening red snapper seasons in their state waters. This resulted in recreational fishermen overfishing the allotted quota, further shortening the following year's season due to overage control.
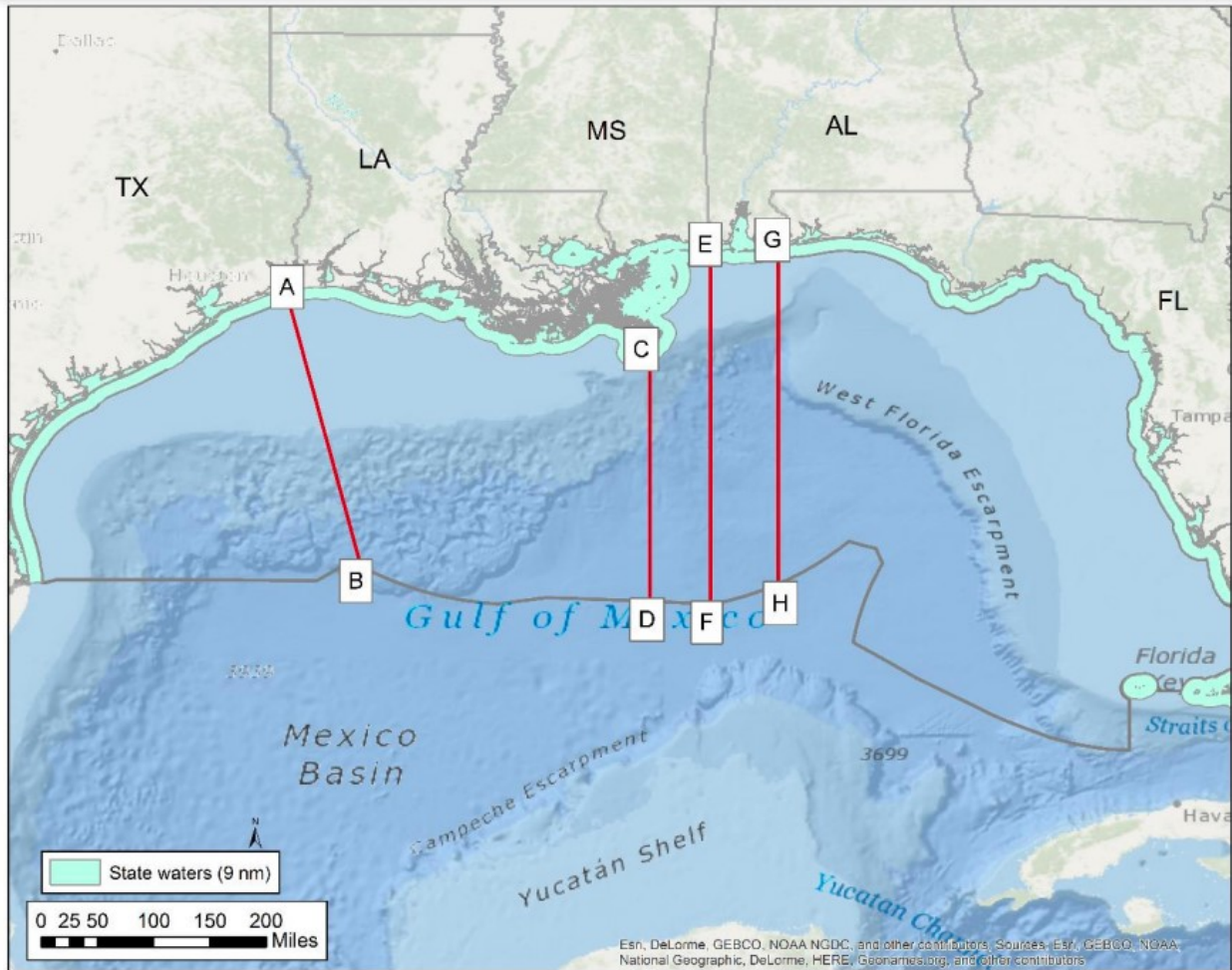
Image 2: Amendment 50 Map of Federal Water State Divisions. This map shows the five Gulf states of Texas (TX), Louisiana (LA), Mississippi (MS), Alabama (AL), and Florida (FL) (Gulf of Mexico Fishery Management Council, 2019a). The light blue border around the coast of each state represents each state's state waters, which extend nine nautical miles offshore from the coast. The gray line which runs through the Gulf of Mexico represents the federal water line at 200 nautical miles, which was established by the original Magnuson-Stevens Act in 1976. Lines A-H represent the suggested division of federal waters by Amendment 50 for the states.

In 2015, the first major attempt to shift management of red snapper from the federal to the state level occurred. Amendment 39 to the Gulf of Mexico Reef Fish Fishery Management Plan was put forward by the Gulf Council as a state management plan for red snapper. It stalled

into failure, however, at least in part because of disagreement between the states on their proportional allotment of the red snapper quota (White, 2019). The quota allotment would have been based on previous landings of red snapper, meaning that the state of Alabama, for instance, would have received 35 to 40 percent of the quota even though its shoreline is much smaller than Texas's, who would have only received 10 to 16 percent (Morrison, 2016). Additionally, states' decision-makers were unhappy with the amount of federal oversight that would have remained in place with Amendment 39. Without an approved measure to change the management status quo, the recreational sector saw its seasons continue to dwindle, culminating in 2017, when the federal season was set to be only three days in length.

Leaders in the Gulf states did not sit idly by as the federal government agencies shortened seasons. In response to the 2007 changes, leaders in Texas and Florida lengthened their state water seasons and increased their catch limits (Morrison, 2016). To adjust for the increased catch in these two states, NOAA Fisheries reduced the gulf-wide quota of red snapper. This resulted in the compliant states, Mississippi, Alabama, and Louisiana, having a reduced quota because of Texas and Florida's non-compliance. By 2014, all the Gulf States had longer recreational red snapper seasons than the federal water season. Additionally, by 2014, Louisiana, Alabama, and Mississippi had extended their state waters out to nine nautical miles from three to match those of Texas and Florida, even though this is only possible with Congressional approval. At the time, Congress had not approved this, creating a gray zone in which both state and federal officials patrolled and ticketed fishermen by different rules. In 2015, the expansion of state waters jurisdiction was made law through an unconventional quirk in American lawmaking: omnibus legislation, or a bill which contains dozens of often unrelated laws. The U.S. Congress added a year-long provision into the 2015 spending omnibus bill to recognize the additional state waters. This extension was made permanent by the passage of the Bipartisan Sportsmen's Act in 2016.

Responding to the outrage of a three day long season in 2017, the United States Department of Commerce extended the season in federal waters by thirty-nine days (Fisheries, 2020). This action was quickly sued by the Environmental Defense Fund and Ocean Conservancy, two environmental non-government organizations (NGOs) whose missions are to protect the environment and the oceans respectively (Environmental Defense Fund, 2017). They claimed that the extension was done illegally, and before the court could rule, the Department of

Commerce conceded, ensuring that this type of extension would not occur again in the future. Notably, NOAA Fisheries has been recently brought to court by NGOs over "capricious" disregard to scientific decision-making. In 2014, National Wildlife Federation v. National Marine Fisheries Service found that NOAA Fisheries disregarded the small population number of an endangered fish in the Columbia River by placing too much emphasis on population growth rate (Schwaller, 2016).

In 2017 the U.S. Congress directed NOAA[13] to create a state pilot program for red snapper, and the ensuing negotiations led to giving the Gulf states exempted fishing permits for the 2018 and 2019 red snapper seasons (*Shelby Announces Legislation Impacting Red Snapper, Gulf Coast*, 2017; White, 2019). Exempted fishing permits are licenses issued to individuals or entities which allow for them to harvest a fish that is out of season or otherwise protected by a management plan. This pilot program, in addition to the exempted fishing permit, put each of the Gulf states in charge of the recreational angling season dates for snapper landed in their state (Fisheries, 2020). Additionally, in December 2017, a new regulation redefined[14] the "minimum stock size threshold" for the fishery, which is the amount of fish below that would be considered overfished and in need of a stock rebuilding plan and other protections. This regulation changed the red snapper fishery's ecological status from "overfished" to "rebuilding." This had major implications for recreational fishermen because for "rebuilding" stocks, any overfishing done by the recreational sector would not need to be paid back in 2018.

Following the two years of success of the state management under the exempted fishing permits, Amendment 50 to the Gulf of Mexico Reef Fish Fishery Management Plan was drafted and passed, creating a provision that allows for the Gulf states to manage not only their own recreational red snapper fishery season length, but also set size and bag limits that fall within federal guidelines (Fisheries, 2021b). The plan was broken down into three "Program Actions" for the Gulf Council to decide upon, and each action has "Alternatives," which are the possible options on how the action could be implemented (Gulf of Mexico Fishery Management Council,

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[13] Consolidated Appropriations Act; Public Law 115-31.
[14] Amendment 44: Minimum Stock Size Threshold Revision for Reef Fish Stocks with Existing Status Determination Criteria

2019b). The decisions over Program Actions for the Gulf Council included: 1) which parts of the recreational sector should be given to the states to control, 2) how to apportion the Annual Catch Limit quotas amongst the states, and 3) how to establish a legal method for the states to close federal waters once the season is over. Each of these choices had a list of possible options ("Alternatives") that the Gulf Council and the States could choose from. The Gulf Council chose to only give states control of the private angling component of the recreational sector, leaving the Charter For Hire component under federal management. They chose to keep the Annual Catch Limit quota the same as it had been under the exempted fishing permits, and the increase of 3.78% would be split between Florida and Alabama. Finally, the Gulf Council decided that each individual state should petition NOAA Fisheries to close the federal waters of their coasts.

Next for Amendment 50, each state needed to decide on two different State Actions: 1) decide if they wanted to manage red snapper through delegation or through a conservation equivalency plan, and 2) decide how they would adjust the quota for any overfishing that occurred. All states chose to manage red snapper through delegation, meaning they would manage the entire red snapper season, including setting the bag limit, minimum size limit, maximum size limit, and season length. The only variance between the states was that Florida did not elect to continue stopping charter for-hire captains and crew from keeping fish for themselves, which had been the status quo. The alternative to delegation was that each state would draft and submit a red snapper management plan to NOAA Fisheries for approval each year. Finally, all states chose to handle any quota overages themselves. Importantly, with either of these two options, the NOAA Fisheries and its collected data would determine the quota for each year.

Amendment 50: Actions and chosen Alternatives

Gulf Council Choices	Action 1.1: Components of the Recreational Sector to include in State Management Programs	Preferred Alternative 2: The state will only manage its private angling component, and the federal for-hire component will continue to be managed federally. The sunset measure on the rule which separates federal for-hire from private angling will be removed, meaning the separation will continue.
	Action 1.2: Mechanism to implement optional state management of federal for-hire vessels	Alternative was only necessary if, in Action 1.1, Alternative 4 was chosen. It was not.
	Action 2: Apportioning the Recreational ACL (Quota)	Preferred Alternative 8: The private angling Annual Catch Limit will be apportioned among the states based on each state's requested exempted fishing permit. The remaining 3.78% will be distributed proportionally between Florida and Alabama.
	Action 3: Procedure for Allowing a Gulf State to Request the Closure of Areas of Federal Waters Adjacent to State Waters to Red Snapper Recreational Fishing	Preferred Alternative 2: Establish a procedure to allow a state to request National Marine Fisheries Service (NOAA Fisheries) close areas of federal waters adjacent to state waters to red snapper recreational fishing.
State Choices – Individual State Amendments	Action 1: Authority Structure for State Management	Preferred Alternative 2: Establish a management program that **delegates** management authority for recreational red snapper fishing in federal waters to [a state]. State's harvest plan must be consistent with federal requirements, and if not, management will be returned to the federal government. States may elect to establish or modify any of the following options:
		Option 2a: bag limit Option 2b: prohibition on for-hire vessel captains and crew from retaining a bag limit Option 2c: minimum size limit within the range of 14 to 18 inches total length Option 2d: maximum size limit
	Action 2: Post-Season Quota Adjustment	Preferred Alternative 2: Add a **state-specific** overage and underage adjustment to the existing post-season accountability measure for the recreational sector red snapper Annual Catch Limit.

Image 3: Amendment 50 Actions and Chosen Alternatives. This image shows each choice that the Gulf Council or each state needed to make for Amendment 50. Actions are the management considerations in question, and in the final column, the Alternatives are the ones that the Gulf Council and each state chose.

While congressmen, recreational fishermen, and state natural resource agencies all agreed that recreational anglers were receiving unacceptable red snapper season management under federal management, the devolution of this management to each individual state represents a new direction in fisheries management policy in the U.S (Palazzo, 2017). This is especially true because red snapper is abundant now only because of federal intervention starting in the 1980s (Fisheries, 2020). Additionally, major uncertainties around states' red snapper data collection systems still exist (Carl, 2021). The next section will demonstrate the theoretical framework by which I explain how this novel devolution of management power occurred despite occurring during an exceptionally politically divisive period in American politics and despite the large degree of uncertainty around state accountability and data systems.

3. Theory Review

In the polarized state of American politics today, how has the management of red snapper evolved from the NOAA Fisheries to the individual Gulf States? To answer this question, I apply John Kingdon's Multiple Streams Theory (Kingdon, 2013). Kingdon understands the public policy process to happen in the following steps: the setting of the agenda, the definition and specification of "alternatives," an authority to decide amongst those alternatives, and then the implementation of the chosen alternative (Kingdon, 2013: 2). Kingdon's agenda refers to the events and issues government officials or those close to them are paying significant attention to at a specific time (Kingdon, 2013: 3). Multiple Streams Theory argues that the policy process is made of three streams: problem, policy, and politics, which are separate from one another, each subject to its own rules and realities (Zahariadis, 2007: 65). When these streams are coupled by events or policy entrepreneurs, a policy window opens, allowing for problems to be solved with the new policy thought of as a solution to a problem. Throughout this theory review, I will highlight how Multiple Stream Framework provides expectations for this case study. Expectations are specialized hypotheses for qualitative research such as case studies that allow for the assessment of qualitative findings based on a given framework.

(3.1) The Problem Stream

As an important nuance, Kingdon separates the idea of a "problem" from "conditions." A condition, he maintains, is not a "problem" until people are convinced that the condition should be changed (Kingdon, 2013: 113). What condition, then, becomes a problem worth doing something about? If an observed condition conflicts with a person's values, then this incongruence becomes a problem for that person (Kingdon, 2013: 110). In the busy realm of governance[15] and politics, however, not all problems nor plausible solutions receive equal attention by policymakers. In the problem stream, problems rise to the surface through indicators and data, focusing events such as catastrophe, and feedback from constituents or policy-affected

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[15] Governance is the process of governing, which includes decision, social structures, laws, and institutions as they come together to create legislation, mandates, or otherwise interact with groups (Bevir, 2012).

individuals (Kingdon, 2013: 113). Policy entrepreneurs then work with the indicators, feedback, or focusing event to frame the problem in a way that would justify their preferred alternative, or solution (Kingdon, 2013: 115).

The problem of red snapper management exhibits ambiguity. Problem framing and policy making in the Multiple Streams Theory assume conditions of ambiguity, which are inherent in politics (Zahariadis, 2007: 69). Ambiguity here refers to "a state of having many ways of thinking about the same circumstances or phenomena" (Feldman, 1989; Zahariadis, 2007: 69). Ambiguity allows for groups with different desired policy outcomes to unite, and without it, compromise and cooperation would be much more difficult (Stone, 2012: 178-79). Importantly, ambiguity does not diminish with more available information or data. Instead, ambiguity is manipulated by policy entrepreneurs with information in order to "clarify or create meaning" for policy makers (Bergquist, 2020; Zahariadis, 2007: 69).

Red snapper issues are ambiguous because the "problem" of their management and the efficacy of proposed solutions are both unclear and highly subject to manipulation by policy entrepreneurs. Is there actually an issue with the federal management system, and are red snapper truly abundant enough to support greater fishing levels? The inherent ambiguity of this issue makes it such that identifying the underlying problem is difficult and subjective, meaning policy entrepreneurs frame certain elements as more important than others to support their preferred policy (Zahariadis, 2007: 67). Based on Kingdon's definitions of the problem stream and existing work on ambiguity, I expect that the construction of the red snapper "problem" will differ across actors based on their goals and interaction with red snapper. Interest groups, politicians, and any red snapper actor will shape the problem stream to strongly support their preferred policy solution based on their motivations. In the research, this will mean that each actor will focus on distinct parts of the red snapper narrative to highlight their perception of the "problem" that needs to be fixed.

(3.2) Policy Entrepreneurs

Policy entrepreneurs are crucial players in the policy process, players who actively frame problems and join the streams together at critical times to bring about new policy solutions (Kingdon, 2013: 166). This involves presenting the problem and reframing policy solutions to navigate structural barriers, such as laws which dictate what problems an agency can and cannot respond to, and occasionally compete with opponent's framing (Boscarino, 2016; Brown, 2020). Kingdon identifies policy entrepreneurs by three traits. First, it is a person who has a "claim to a hearing," which comes from three places: expert knowledge, being a decision-maker in a place of authority, or simply being in the position of speaking for a group (Kingdon, 2013: 169). Second, these entrepreneurs are identified for having excellent connections and negotiation skills. Third, they are persistent. Based on Kingdon's definition, I expect to find individuals and organizations which are dedicated to specific policy solutions to solve the "problem" of red snapper. The actors which have the greatest influence over the red snapper policy process will be those that possess expert or respected local knowledge, are already red snapper fishery decision makers, or serve as the voice for their organization which supplies their policy aims. I expect that each of these policy entrepreneur actors will highlight distinct policy solutions based on their personal and organization's objectives.

(3.3) The Policy Stream

Kingdon highlights "a long process of 'softening up'" in which policy entrepreneurs float ideas, introduce and amend bills, and make speeches as they work toward their preferred solutions (Kingdon, 2013: 117). This is the policy stream, where they work with a "primeval soup" of ideas in which ideas float around, recombine, and dissolve as if in a natural selection system. Not all ideas survive as they compete for policy maker attention, but this process of "softening up" important individuals and institutions allows for the best ideas to surface, the ones that have the best chance of influencing policy communities to accept their proposals when the time comes (Kingdon, 2013: 128). This plausible suite of policy solutions, which is Kingdon's policy stream, is where Amendment 50 arose as the best idea from the soup of ideas. Based on Kingdon's definition of the policy stream, I expect to see many and different policy solutions being suggested to solve the "problem" of red snapper management. I expect that these solutions

will vary based on the type of policy entrepreneur or interest group which suggests them. I anticipate these differences will be important for understanding how and why Amendment 50 passed, and I believe these differences will be important for understanding the significance of this regulatory action for other resource management issues. I expect that Amendment 50 will have been chosen as the policy solution because it represented the best and most agreeable of all the suggested policy options.

(3.4) Narrative Policy Framework & Symbols

My work also draws lightly from the Narrative Policy Framework which maintains and shows that narratives do shape the policy process (Shanahan et al., 2018: 173). Specifically, this work examines how different red snapper stakeholders cast different characters as the heroes and villains in their red snapper narrative. This strategy is called the *angel-devil shift* in Narrative Policy Framework, and it is used to influence which policies are considered by influencing the public perception of a particular actor (i.e., a state government or an interest group). Effectively, an actor which considers themselves a hero, villain, or victim will either *angel shift* or *devil shift* a different actor, meaning they will use their language to describe one actor as very heroic toward their attempts to solve the "problem" of red snapper management (angel shift) or describe a different actor as very villainous (devil shift).

One tool used by policy entrepreneurs and policy makers are symbols, and in the realm of politics, symbols are often ambiguous (Stone, 2012 : 182; Zahariadis, 2007: 70). Symbols both evoke emotion but also convey simple meaning, using that emotion to focus the debate on specific interpretations of the problem (Zahariadis, 2007: 78). They are used to tell stories, which are endemic in defining and understanding policy problems (Stone, 2012: 158). These stories have a beginning, middle, and end as well as heroes, villains, and victims. Symbols offer an anchor point around which these stories circulate (Stone, 2012). Using symbols which are broadly understood across a community increases the chances that a policy entrepreneur will be able to successfully couple the streams (Zahariadis, 2007: 76). Based on this literature, I expect that conversations about red snapper management will actively frame various actors as heroes or villains in a manner which supports the preferred narrative and policy solution of the speaker.

For example, it is possible that conversations about red snapper are not a discussion not about the wellbeing of a fishery stock, but instead a conversation about federal mismanagement in which recreational fishermen are cast as a victim, the federal "bureaucracy" plays the villain, and various actors vie for the position of hero. The opposite is also possible, and the federal government might be considered the hero who is saving red snapper from recreational fishermen who would harvest red snapper unsustainably. I expect that these narratives will vary from actor to actor, and they will always support the actor's red snapper management goals.

(3.5) The Politics Stream

The politics stream consists of the "national mood" of the public, election results, administration changes, partisan makeup of Congress, and the campaigns of interest groups (Kingdon, 2013: 145). This stream serves as a check on political agendas, because any of the actors in this stream, ranging from politicians to interest groups, can block proposed alternatives to problems (Kingdon, 2013: 163).

In the case of red snapper, the actors are spread out across the scale of governance. The head of the Department of Commerce, who is a presidential appointee, must sign fisheries management plans for them to be official. NOAA Fisheries generates data and scientific advice under mandate from the Magnuson-Stevens Act, a policy which has been significantly amended several times by Congress since its establishment. National NGOs such as the Ocean Conservancy and Environmental Defense Fund also weigh in on red snapper management considerations.

The Fisheries Management Councils, which are created via Magnuson-Stevens Act mandate to manage fisheries within their region,[16] serve as the meeting place for sharing data,

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[16] There are eight regions of the U.S. which have Fisheries Management Councils: the North Pacific (Alaska, Washington, and Oregon), Western Pacific (Hawai'i and the U.S. associated islands), Pacific (Idaho, Washington, Oregon, and California), Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and Florida), South Atlantic (Florida, Georgia, South Carolina, and North Carolina), Mid-Atlantic (South Carolina, Virginia, Maryland, Delaware, Pennsylvania, New Jersey, and New York), New England (Rhode Island, Connecticut, Massachusetts,

stakeholder concerns, and the implementation of Congressional law. The Gulf Council, the Fisheries Management Council which oversees red snapper, proposed, held public hearings for, workshopped, and eventually finalized what became Amendment 50. Notably, the Gulf Council is seated by appointees from the Gulf states[17], including marine scientists, prominent recreational sector actors such as marina owners and "at large" individuals such as a well-known Chief Operations Officer of a marina that sits on the Gulf Shores/Orange Beach Tourism Board, important commercial fishermen, and representatives from the state's natural resource agencies (Gulf Council, 2021). The Gulf of Mexico's NOAA Fisheries regional office also votes. This is important because, as described, the Gulf Council is seated by local and state stakeholders, making it a chamber of local and state interests. The vote and presence of the regional NOAA Fisheries office serves as direct federal connection and federal input into the process of making fishery management plans, acting as a balance to state and local interests.

For these reasons, the Gulf Council would be known as a "policy community," which Kingdon defines as a group of specialists for a policy area who know one another's work, proposals, ideas, and often each other quite well (Kingdon, 2013: 117). Those with stakes in red snapper continue down the scales of governance to include state politicians, state natural resource agencies, the commercial fishing industry, the Charter for-hire sector, and finally the recreational fishermen themselves. Many of these actors form interest groups which pressure the Gulf Council as they consider ideas and alternatives for new management plans.

Based on Kingdon's definition of the politics stream, I expect to find that the "national mood" and the narrative strategies of interest groups will influence the outcome of Amendment 50. This will mean that I expect to find that certain policy solutions from the policy stream will have been dropped because of elements from the politics stream. I expect that both of these politics stream elements will influence the policy process outcome (i.e., Amendment 50), and I will test for this via qualitative analysis of stakeholder and politician statements.

New Hampshire, and Maine), and the Caribbean (the U.S. Virgin Islands and Puerto Rico) (U.S. Regional Fishery Mangement Councils, 2021).

[17] Texas, Louisiana, Mississippi, Alabama, and Florida

(3.6) Policy Windows and Focusing Events

Policy windows are opened when the three streams converge at a critical time (Kingdon, 2013: 165). The problem must be identified, a feasible and acceptable policy solution must be available in the policy community, and the political scene must be amenable to the policy change. Policy entrepreneurs are critical players at this time as they couple the streams by connecting problems to policy solutions and overcome hurdles by reconfiguring proposals and taking advantage of focusing events which might cause the window to open (Kingdon, 2013: 166). Policy windows can open in various ways. Sometimes, a program is due for annual renewal. Other times, a sudden and unexpected change in the political makeup of Congress can open a window. Either way, policy entrepreneurs must be poised and ready to utilize an open window when it occurs, because these windows do not usually stay open for long (Kingdon, 2013: 184). Consistent with Multiple Streams Theory, I expect to find that a focusing event at the national level will open the policy window for Amendment 50.

4. Literature Review

(4.1) Red Snapper Literature

As a charismatic and economically important inhabitant of the Gulf of Mexico, red snapper has been the subject of scholars from economic and human dimensions fields for decades. Often, this research looks into the Individual Fishing Quota programs, which are limited access programs for the commercial sector. This research explores its benefits and effects over time (Agar et al., 2014; Cullis-Suzuki et al., 2012; Ropicki et al., 2018; Solís et al., 2014; Tokotch et al., 2012). Research also looks into the bioeconomics of the fishery (Gillig et al., 2001), the drivers of its recreational sector (Gillig et al., 2001), and offers economics critiques of red snapper management (Abbott et al., 2018). In policy implementation, management practices have been critiqued as closer to faith-based than science-based in their justification (Cowan et

al., 2011). Recently, Scyphers et al.'s research utilizing the Great Red Snapper Count[18] found that knowledge of the Great Red Snapper Count and its scientific methods and goals was positively correlated with recreational angler satisfaction, supporting Crandall et al.'s findings that stakeholder participation and inclusion improves satisfaction with management (Crandall et al., 2019; Scyphers et al., 2021).

(4.2) Recreational Fishery and Stakeholder Literature

Anglers are vocal about regulations and conditions, and a wealth of literature has used these voices to guide policy decisions and understand compliance or adoption of new rules and tools (Curtis et al., 2019; Scyphers et al., 2013). Studies have been used to examine stakeholder impressions of implemented or proposed limited access programs, spatial management, and general impressions of regional management (Brinson & Wallmo, 2017; Chan et al., 2018; Crandall et al., 2018, 2019; Cullis-Suzuki et al., 2012; Edison et al., 2006; Ordoñez-Gauger et al., 2018; Tokotch et al., 2012; Veiga et al., 2013). Indeed, recreational fishermen are part of a broader socio-ecological system, and understanding angler behaviors is critical for effective management of recreational fisheries (Lyons et al., 2016; Ward et al., 2016). While many studies focus on commercial fisheries as the industry that places greatest pressure on stocks, recreational fisheries do have significant ecological and economic impact (Coleman et al., 2004; Cooke & Cowx, 2004).

(4.3) Fisheries Policy Literature

More policy-based approaches to fisheries management have examined country policy to understand whether a certain policy is ripe for adoption, such as salmon health policy in Canada (Wittrock et al., 2019). Others have highlighted the key role that interest groups play in

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[18] The Great Red Snapper Count is a Congressionally funded project designed to independently assess the population count of red snapper in the Gulf of Mexico. The assessment was done separately from the Gulf of Mexico Fishery Management Council's normal method, and it employed 21 different fisheries experts utilizing a range of methods (Harte Research Institute, 2021).

determining national level policy formation (Orach et al., 2017). This cited literature examines both the commercial and recreational aspects of the red snapper fishery, and while there is abundant ecological, economic, and even social research available on red snapper, there is a notable gap in public policy literature on the same.

While public policy approaches have not examined the decision-making and problem framing surrounding Amendment 50, there is some literature which examines the social and managerial context of red snapper and Amendment 50 from 2013 through 2020. Other analyses of the red snapper fishery provide an overview of its management and policy context (Alhale, 2017; Torres Pabon, 2020). Other published works offer a similar examination, all offering legal, policy, and stakeholder context perspectives on H.R. 3094: the Gulf States Red Snapper Management Authority Act, Amendment 39 to the Gulf of Mexico Reef Fish Fishery Management Plan, and Amendment 40 to Gulf of Mexico Reef Fish Fishery Management Plan[19] (Morrison, 2016; René, 2016; Simmons et al., 2019). It was also found that the Gulf Council's process of inclusion was unsuccessful under the Reasonable Person Model, stating that its political environment did not lend itself to easy conflict management (Ávila, 2018). Through interviews, Avila found that groups within the system (recreational fishermen, commercial fishermen, and those seated on the Gulf Council) all held mistrust of other groups, which undermined the Council's authority and power and did not lend itself to meaningful action. All of these sources provided discussion and assessment of the actual events and sociopolitical reality surrounding red snapper management, but none utilized a public policy framework to understand the problem framing and policy surrounding Amendment 50. My research provides a novel contribution by being the first to apply Multiple Streams Theory to understand the fisheries management process through the Regional Councils in the United States.

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[19] Amendment 40 to the Gulf of Mexico Reef Fishery Management Plan separated the recreational sector into a private angling component and a federally permitted for-hire component.

(4.4) Problem Framing Literature in Fisheries & Natural Resources

There is abundant literature examining the importance of problem framing in the field of fisheries management, natural resource management, and environmental policy. However, problem framing approaches have never been applied to red snapper management in the Gulf of Mexico specifically. Problem framing and discourse analysis have been used in fisheries management case studies around the globe to help inform fishery management. In Mexico, analysis of discourse around climate change and other fisheries issues from fishing cooperatives through the Institutional Analysis Development framework found tension between their federal government and fishermen around the role of specific actors and how scientific knowledges are used in management (García Lozano et al., 2019). Similar stakeholder sentiment analysis to what is done in this research has been performed for amendments in the South Atlantic Fishery Council to understand which stakeholders supported which amendments (Wiegand, 2012). Bayesian belief networks are commonly employed in this context to facilitate discussion and understand how fishing stakeholders understand fishery issues (Gammage & Jarre, 2020; Haapasaari et al., 2012, 2013; Tiller et al., 2013).

Knaggård highlights the importance of the problem framing process in the Multiple Streams Theory, noting that framing happens on both the individual and the aggregate level of networks, including media (Knaggård, 2015). A study in Germany illustrates how forestry science must actively frame climate policy in order for forestry to be a part of the solution, and policy entrepreneurs generally are extremely important actors in climate problem framing and water policy (Meijerink & Huitema, 2010; Mintrom & Luetjens, 2017; Storch & Winkel, 2013). Problem framing has been used to understand climate policy and worldview in Russia (Tynkkynen, 2010), the "wicked problem" of developing environmental policy in the Greater Yellowstone Ecosystem (Mcbeth & Shanahan, 2004), and energy policy in the United Kingdom (Scrase & Ockwell, 2010). In community forestry and deforestation, a problem framing lens helps to describe the United Nation's policy and action choices (Skutsch & Turnhout, 2020).

(4.5) Related Multiple Streams Theory Literature

Other scholars have used Multiple Streams Theory to examine natural resource, environmental policy, socio-ecological systems, and other policy areas around the globe across all levels of governance (Jones et al., 2016; Liu et al., 2010; Orach & Schlüter, 2016; Rawat & Morris, 2016; Ruseva et al., 2019). Multiple Streams Theory has been used to examine state-level political response to climate change (Yusuf et al., 2016). Natural disasters such as flooding and wildfires have provided windows for institutional change in the United States (Huber-Stearns et al., 2019). Multiple Streams Theory has been used to prescribe new, environmental frameworks for developing countries and to understand climate policy integration in the global South (Hernandez & Bolwig, 2021; Poudel, 2009). Multiple Streams Theory has been found to be a functional framework for explaining environmental politics and carbon emissions trading policies in Germany (Brunner, 2008). In fisheries and natural gas, Multiple Streams Theory has been used to show the agenda-setting process and how science is imbued into and used in the policy stream (Orach et al., 2017; Runhaar & van Nieuwaal, 2010). In forestry policy, Multiple Streams Theory has been used to explain the initial failure and eventual success of an industry-led policy in Canada (Anderson & MacLean, 2015).

Multiple Streams Theory has been employed in many other academic fields besides natural resources and the environment. In the medical sciences, Multiple Streams Theory was used to show that human papillomavirus must compete with "bleak national mood" and other cancers for attention (Walhart, 2013). Both with soil degradation and United Kingdom anti-slavery policy, authors have suggested problem reframing to ensure resonance with stakeholders and policy makers (Bouma & McBratney, 2013; Gardner, 2018). In the transportation realm, Multiple Streams Theory was used in Brazil to show how mayoral reality greatly influenced automobile dependence reversal discussion, and it was employed in Indonesia to explain how dealt with ambiguity and balance the framing between desire for economic versus environmental development of highways (Khayesi & Amekudzi, 2011; Suprayoga et al., 2020).

(4.6) Fisheries Co-management Literature

Passing management of red snapper in federal waters down to the state governments represents an exciting and somewhat puzzling moment of authority devolution and co-management of recreational fisheries in the United States. While there is literature which examines co-management fisheries systems for efficacy and how they could be improved (Ayers & Kittinger, 2014; Yandle, 2008), the research often focuses on co-management at the community level. Nonetheless, partnerships across public, private, and tribal groups across scales of governance is highlighted as an important consideration for combating the effects of climate change on sensitive fisheries (Lomonico et al., 2021). Despite the possible benefits of partnership in the fisheries sector, James Wilson's work on bureaucracies suggests that transfers of management control would be against the nature of many bureaucracies because this would not align with their agency goals (Wilson, 2019). Individuals working within government bureaucracies, such as NOAA Fisheries, have vested interest in achieving their agency's goals, leading to an environment of risk-aversion and rule-following. In the case of Amendment 50, his work expects that NOAA Fisheries would not want to give state natural resource agencies management control of red snapper because it does not easily fall within regulatory guidelines (i.e., it is not clearly laid out in the Magnuson-Stevens Act), meaning the action could risk their agency's mandate to protect fishing stocks.

(4.7) Literature Contribution

My research seeks to fill a knowledge gap to explain how this particular form of fisheries, federal-state co-management through devolution of policy came to be. In my analysis, I will use the concepts developed here to show how the storytelling and problem framing surrounding red snapper management from newspapers, anglers, the red snapper industry, politicians, and the regulatory agencies themselves explain the success of Amendment 50. Understanding how the issue of red snapper management was framed will help to inform future policy considerations which seek to devolve natural resource management authority from the national level to more local levels of authority.

This work provides novel insights to Multiple Streams Theory in several ways. Notably, it expands upon the framework's uses, showing how it can explain fisheries management policy and decision-making in a contentious political environment that is influenced by multiple levels of government. It shows that Multiple Streams Theory can work to explain complicated decision-making processes across multiple scales of governance by using the case examples of Amendment 50 and the Gulf of Mexico Fishery Management Council, a federally created council composed of a group of local and state fisheries stakeholders which creates management plans for federally-managed fishes. At the time of writing, no other papers use Multiple Streams Theory to explain the policy process around fisheries management in the United States context. This work illustrates the complicated web of interaction between federal policy, federal lawmakers, local stakeholders, and regional management of a resource. More generally, my contribution is to show how policy emerges around complicated natural resource management issues with stakeholders across all scales of governance. This specific case study will help clarify the actors and perceptions surrounding future red snapper management decisions, but it is also broadly applicable to any natural resource management issue.

5. Methods

(5.1) Case selection

The passage of Amendment 50 to the Gulf of Mexico Reef Fisheries Management Plan is the case study for this research. Using red snapper as the focal fish to study decision-making in the fisheries management context is logical and relevant because of its socioeconomic importance and its high-profile coverage in the news and Congress. Further, it represents a unique case of management devolution in which NOAA Fisheries gave management of this species to the states. Understanding how stakeholders constructed the problem of red snapper management helps to explain Amendment 50's policy window and inform future natural resource management decisions. I focus my data collection on the problem stream to help show how red snapper management problems were framed by various stakeholder groups and policy entrepreneurs. Red snapper management generated abundant conversation between the years of 2013-2021, offering great opportunity for social scientific analysis.

(5.2) Research Design

This research is designed as a critical, exploratory case study that examines the political context surrounding the passage of Amendment 50 as a way to help explain its passage into fisheries management law. Case study research examines past and contemporary variables that cannot be manipulated by the researcher, making it a logical method for studying Amendment 50 (Yin, 2018). Case studies are also used to explain social occurrences in-depth, and in this case I explain a policy process. As a critical case, I argue that understanding the process behind Amendment 50 can greatly inform future natural resource management decision-making. I employ Kingdon's Multiple Streams Theory as a way to explain the fisheries management decision-making in this case (Kingdon, 2013).

I developed each of the three streams of the theoretical frame through exploratory research. I used data composed of stakeholder and policy entrepreneur comments from online, open access public comments about red snapper to define the problem stream. For this case, I define policy entrepreneurs as those individuals charged with creation of fisheries management policy that played an integral part in the creation of Amendment 50 (i.e., specific federal lawmakers and interest groups that lobbied heavily for specific alternatives). I define stakeholder as any individual who interacts with the red snapper fishery (i.e., recreational anglers, commercial fishermen, lawmakers, management officials, etc.) A thorough review of policy documents about red snapper and Magnuson-Stevens Act legislation, legislative actions, and the red snapper fisheries management plans was used to develop the policy stream narrative. The politics stream was formed through qualitative assessment of the data and attention to the national political mood (i.e., who was in the White House, the state of party politics, etc.). Specifically, I used comments from the Gulf of Mexico Fishery Management Council's online open comment submissions for Amendments 39 and 50 to the Gulf of Mexico Reef Fish Fishery Management Plan. I also used the comments submitted to a 2015 Louisiana Department of Wildlife and Fisheries survey on attitudes toward state control of red snapper. These data sources gave voice to several different local actors, including the important voice of many recreational fishermen who served to gain or lose the most from state management of red snapper.

Newspaper articles and Congressional transcripts from hearings and committees were used to develop the problem stream at federal and inter-state discussions.

(5.3) Data collection

I performed an extensive review of news articles, stakeholder comments, and web pages from involved agencies (i.e., NOAA Fisheries and the Gulf Council). To understand how different stakeholders were talking about the problem of red snapper management, I started this project by collecting newspaper articles, blog posts, congressional testimonies, and congressional reports through the database NexisUni. In total, I collected 2,206 data points, including 47 from Nexis Uni and 41 from Google searches. These were triangulated with the use of government documents, including 28 from Regulations.gov open comments for Amendments 50 and 39, 236 from the Gulf Council's Amendment 50 online open comments sheet, 301 from the Gulf Council's Amendment 39 online open comments sheet, 1,552 from the Louisiana Department of Wildlife and Fisheries survey on state control of red snapper, and 1 Gulf Council video. The details of these processes are summarized in the following paragraphs.

Starting March 22, 2021, I searched Google and NexisUni using the searches: ""Red snapper" AND management AND Gulf of Mexico AND Amendment 50" and ""Red snapper" AND management AND Gulf of Mexico." Search criteria was filtered to be only from 2013-2020. 2013 is when Amendment 39 to the Gulf of Mexico Reef Fisheries Management act was first proposed, and it kickstarted the conversation about state management of red snapper. 2020 is when Amendment 50 was officially implemented. The first search, which included "Amendment 50," would see all results (n=87) assessed and incorporated if applicable to the research. Rationale behind its search terms was to find specifically those articles and comments which talked about Amendment 50, limited the geography to the Gulf of Mexico, and were about red snapper management. These factors served as inclusion criteria for content gathered from NexisUni. The second search, ""Red snapper" AND management AND Gulf of Mexico," removed "Amendment 50" in order to collect conversation about red snapper management and state management of snapper that had begun years before Amendment 50 was proposed. Articles which met inclusion criteria were pulled from the beginning pages of this result (accounting for

duplication, total *n* from search=4,179). To ensure no duplicates occurred, I used NexisUni's permalink generation to put a unique link into the spreadsheet as well as copied the exact title into the spreadsheet. Whenever a new NexisUni article was added, the researchers would search for the exact NexisUni title in the spreadsheet. In the event that a comment was taken from the article to be made into its own data point (as happened when a new speaker had a quote within the article), the researcher would search the spreadsheet for a significant portion of this quote to ensure it was not already present. Across all searches, NexisUni yielded a total of *n*=47 data points from 32 articles. Inclusion criteria necessitated that the articles have spoken or written statements about red snapper, so articles that simply recounted regulations, were transcripts of laws, or were announcements of red snapper season opening or closure, were not included. To be included, an article or statement needed to speak about red snapper in a qualitative manner that expressed a viewpoint or spoke about red snapper management practices. Simultaneously, Google searches using the same search terms and inclusion criteria were performed. Articles found in this manner often snowballed into other articles (Sadler et al., 2010; Taherdoost, 2016). This resulted in 28 articles, web pages, or blog posts, which generated 42 data points.

I triangulated our data from news sources with official governmental data in the form of four government documents, the first titled "Reef Fish Amendment 50 - State Management of Recreational Red Snapper (Responses)." This resource contained all the comments submitted online (with accompanying demographic data) to the Gulf of Mexico Fisheries Management Council about Amendment 50. This sheet contained 222 comments and yielded 236 data points. The second government document included a comment sheet for Amendment 39 with 324 total comments, yielding 301 usable data entries. The third government document source was Regulations.gov, a website designed to allow anyone to comment on proposed legislations and rules. It also had open comment periods for Amendments 50 and Amendment 39, yielding 28 data entries. The fourth government document used was found at the end of the submitted comments for the Gulf Council's Amendment 39 sheet. The Louisiana Department of Wildlife and Fisheries submitted a report of a survey they sent to Louisiana fishing license purchasers that polled the individuals whether they believed that Louisiana or the federal government should manage red snapper. This document yielded 1,552 data entries.

All comments gathered from government documents had to be clearly about red snapper or red snapper management to be included in the data. Those that were not were highlighted, were removed from the data, and were placed in a separate spreadsheet to be reviewed a second time. This second review determined finally if a comment met criteria for inclusion. Each comment received its own line in the spreadsheet. Any statement from an institution or interest group was given a single line, but congressional letters, hearings, or documents in which there were multiple signatories or multiple speakers were broken up into different lines – one for each speaker or signatory. This was done to collect better data on how different politicians were talking about red snapper, and it ensures the fidelity of each individual comment by separating their comments from a different speaker. While newspaper articles often cited two or three different quotes which said similar things, these were still broken up to maintain the fidelity of each speaker's comments.

(5.4) Coding

To describe and define the narrative and policy context, I employed Stone's work on problem framing and narratives to build a spreadsheet in Google Sheets. Stone talks about politics and policy narratives as having heroes, villains, and victims (Stone, 2012). Narrative Policy Framework builds on this by describing how policy entrepreneurs and stakeholders can intentionally or unintentionally use narrative strategies to support their preferred policy solutions (Shanahan, Jones, & McBeth, 2018; Shanahan, Jones, Mcbeth, et al., 2018). Specifically for this research, I code for the *devil-angel shift,* a narrative strategy in which a policy entrepreneur or stakeholder portrays the individuals or organizations who oppose their preferred policy or management solutions as villainous while they speak about the individuals or organizations which support their preferred solution as heroic. In this case, Amendment 50 is the policy outcome, and understanding who were considered the heroes and villains can help to explain its passage. I constructed my original spreadsheet with these elements of narrative and problem framing in mind.

Demographic data was collected for each data line to identify the speaker. This data was usually explicitly stated or inferred, but in the stakeholder comments, the speaker often self-

identified. This input was followed by a listing of the positive and negative themes present in the article or comment. These themes were generated into codes using grounded theory, meaning that I allowed the words and framing of the data to create the codes that I used (Charmaz, 2006). Essentially, these codes constituted the narrative that the speaker used when talking about red snapper management. Next, I coded for who the speakers considered the heroes and villains of red snapper management and why they believed that was the case. All of these variables combined allow for a useful sorting and comparison of data. All codes were defined in a codebook that operationalized each theme and detailed the inclusion criteria for each theme so that the qualitative data gathered from comments and articles could be included in the dataset with consistency (DeCuir-Gunby et al., 2011) (see Appendix 1). This process was iterative, and as I added articles or comments I would add codes if new narratives and perspectives appeared. Throughout this process, I left analytic memos on the same file that discussed and explained any changes or additions I made to our codes, columns, or to the data in any way.

I coded *n=2,206* stakeholder comments and documents which were found using Google, Nexis Uni, and snowball methodology. These data were coded iteratively using a first cycle of an in vivo grounded theory approach followed by a second cycle in which these codes were distilled into themes (Saldaña, 2016). In vivo coding was utilized for the first cycle because it utilizes the speaker's own words, thereby ensuring that the researcher remains true to the speaker's intent and sentiment. Grounded theory is an inductive analysis of qualitative research, data, and cases in which the researcher's process of analysis allows for theories and concepts to emerge from the codes and cases themselves (Charmaz, 2006). A grounded theory approach works for in vivo coding and works well for this case, especially for examining stakeholder and policy entrepreneur comments to develop the problem stream. This was done by utilizing Word's comment feature where the original statement was highlighted, and the in vivo code was written into the comment. As patterns emerged, these codes were collapsed or split iteratively based on analytic memo writing and observation. After taking note of similar and reoccurring in vivo codes, a second cycle of thematic coding was performed. These codes were then utilized to input each comment into the database. Having more specific thematic codes for the database allows for descriptive and quantitative analysis because it limits the number of possible codes to a manageable number while remaining true to the sentiments of the speaker. Eventually, repetition

and recurrence of similarly worded comments allowed for me to code new comments only utilizing the thematic codes.

(5.5) Data Analysis

As mentioned in the theory section of this paper, the framework provided by Kingdon's Multiple Streams Theory and other literature offer structure and expectations for understanding the data output. Generally, I expect that each component of Multiple Streams Theory will be present in the case of Amendment 50. I expect that the problem stream will be shaped and narrated differently by different stakeholders. Framing will vary by type of actor because they will be framing the problem of red snapper management to support their preferred policy solutions in the problem stream. Use of the *angel-devil shift* narrative strategy to frame some management actors as heroic and others as villainous will also vary according to type of stakeholder. Multiple Streams theory suggests that the policy stream will include various legislative attempts and unrealized management solutions, consistent with the "primeval soup" of ideas that leads to the creation of Amendment 50, thus this is an expectation of this research. Likewise, theory allows me to expect to find that the "national mood," political context, and pressures from interest groups of the politics stream will affect both the problem and policy stream by shaping the discussion and blocking certain management solutions from being passed. Finally, I expect that the data will reveal focusing events which initiated Amendment 50 and opened the policy window for it to pass through.

Consistent with other policy studies employing Multiple Streams Theory, the collected data provide descriptive and narrative insight to explain each of the three streams for this case. To test these expectations, I analyzed the data using descriptive statistics broken down by type of speaker and where the stakeholder fell in the *Positive-Negative* category. These statistics were then used to develop the problem stream because they showed what the primary positives, negatives, and hesitations toward state control of red snapper were by category of speaker. Then the four largest groups of speakers are examined for their *angel-devil shifting*, and I examine who they consider the heroes and villains of red snapper management. In my Findings, I go over how the gray literature and policy documents inform the Amendment 50 case through each

Multiple Streams Theory component. Then, I detail the perspectives of each type of stakeholder and show how it forms to the problem stream, politics stream, and overall understanding of Amendment 50's policy process.

6.   Findings

(6.1) Multiple Streams Components: Findings from Policy Documents and Gray Literature

In this section of my Findings, I go over how my research into policy documents and gray literature around red snapper informs our understanding of Amendment 50's policy process. I start with the story of red snapper within the United States government context, highlighting various attempts at red snapper legislation in Congress. Then I discuss components of the politics stream and how Executive branch politics attempted to alter the flow of red snapper policy. After a brief discussion of the likely policy window, I begin a new section which analyzes the data and stakeholder language which constructs the problem stream.

(6.2) Policy Stream Findings

Ever since the Magnuson-Stevens Act gave rulemaking and management power to NOAA Fisheries and established the Regional Fishery Council system, the majority of red snapper fishing management and fishery plan changes have occurred through this system. This means they are occurring through the executive branch of the American government, specifically in NOAA Fisheries under the Department of Commerce. This established norm, however, has been challenged multiple times by the Legislative branch. Even when the management norm was not being challenged by new legislation, red snapper commonly appeared in Congressional ongoings, especially once the recreational fishing season began to noticeably dwindle in length.

Red snapper issues have appeared many times in Congress,[20] beginning around the time that an important amendment to the Magnuson-Stevens Act, the Sustainable Fisheries Act of 1996, was passed. This amendment created the red snapper quota system for both the recreational and commercial fishery, mandating that snapper could not be kept once the yearly quota was reached. Outside of amendments to the Magnuson-Stevens Act, the type of legislation red snapper appears in often includes mentions in appropriations acts. Appropriations acts are the bills through which Congress funds the government each year, including government agencies and programs. Often, these individual appropriations bills, which would normally be smaller and focused on funding specific agencies or programs, become federal omnibus spending bills which have become subject to pork barreling.[21] An omnibus spending bill is one in which many spending measures and regulations have been placed, often due to time constraints (Oleszek et al., 2015). Often, in the United States, these bills will carry legislation and spending measures which might be too politically contentious or tedious to pass as a standalone bill. This is especially true for environmental regulations and policies, where omnibus legislation has served as one of the only methods for Congress to circumvent gridlock on environmental issues (Klyza & Sousa, 2013). Thus, the omnibus spending bills which fund the United States government year-on-year has become a conduit for smaller, more specific (sometimes even for a single state) spending projects and regulations. This bill passes with only one collective vote, making it an efficient, all-or-nothing approach to passing spending measures or new regulations. The fact that red snapper has appeared in omnibus spending bills is important because it illustrates that red snapper is contentious or at least an issue of limited geographic focus and therefore more difficult to pass legislation on at the national level.

Red snapper also appears in shorter bills that sought to pass control of red snapper to individual states. In one example, Senator Vitter of Louisiana sought to give states "exclusive" control of red snapper, contingent on all the state Governors agreeing on a management plan

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[20] "Red snapper" has appeared in fifty-five bills, resolutions, or general legislation since 1995 (Congress.gov, 2021). Of those fifty-five legislative pieces, "red snapper" appeared in sixteen bill titles.

[21] Pork barreling is the legislative process of putting "pork" into omnibus bills to have it passed in disguise or simply by necessity because of the primary spending purpose of the bill. "Pork" refers to spending that is usually unnecessary and deemed to be primarily to please constituents or interest groups.

together (Text - S.747 - 113th Congress (2013-2014), 2013).[22] "Red snapper" has appeared in Committee Meetings 140 times, sometimes only in reference to how much red snapper is talked about relative to other important global or national events (*House Hearing, 115th Congress — The Federal Trade Commission's Enforcement of Operation Chokepoint Related Businesses*, 2018). Additionally, red snapper bills and Congressional conversation is often a cover for general economic interests. A notable example is when Representative Lamborn from Colorado, while making introductory remarks, referenced Congressman Graves's red snapper bills but assured listeners that the discussion of various fisheries bills that day was ultimately about "supporting American small businesses" (*Subcommittee on Water, Power and Oceans House Bill Hearings on September 26, 2017*, 2017).

Congress finances the regulatory changes that federal fisheries managers must abide by (i.e., the mandate that NOAA Fisheries find a solution to red snapper management). The 2019 Senate Appropriations Committee, a committee that writes the bill which allocates federal spending to government agencies, "commended" the Gulf Council for approving and passing Amendment 50, and they urged the Department of Commerce to approve it while providing five million dollars exclusively to NOAA Fisheries for "technical support" and "successful implementation" of the new management plan (Senate Appropriations Committee, 2019). In this same document, they mandate NOAA Fisheries to investigate "agency-independent" and "alternative" stock assessments. Following these Congressional mandates from 2017 and 2019 to independently examine the number of red snapper in the Gulf of Mexico, the "Great Red Snapper Count" was carried out by a team of 21 fisheries experts (Harte Research Institute, 2021). It released the results in late 2020 and found that red snapper abundance was roughly three times the amount of previous NOAA Fisheries estimates. Predictably, now many recreational fishermen are questioning how NOAA Fisheries and the Gulf Council will adjust the overall Annual Catch Limit to reflect this new information (Rainer, 2021). In summary, the policy stream for Amendment 50 and red snapper management more broadly has entertained various policy solutions at the federal level of government. These solutions have come from a

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[22]The 2013 Senate Bill 747 by Senator Vitter of Louisiana, titled "A bill to grant exclusive fishery management authority over the red snapper fish in the Gulf of Mexico to certain States" (Text - S.747 - 113th Congress (2013-2014), 2013)

variety of sources, ranging from attempted new legislation, appropriations acts, and executive orders. Despite these attempts, it was ultimately the established routes of fisheries rulemaking via the Magnuson-Stevens Act that resulted in the solution of Amendment 50.

(6.3) Politics Stream Findings

The "national mood" of the public in 2017 was politically divisive, especially around environmental and natural resource management issues. This was the context in which Amendment 50 was discussed, right around when the 3-day snapper season was announced. Former President Donald Trump, following the preferences of his Republican Party base, was committed to the environmental deregulation of industries, roll-back of the Environmental Protection Agency, and opening of federal lands to more resource extraction (Bomberg, 2021). Presidential appointees to the Executive branch agencies are designed to oversee their President's priorities, including the directors in the Department of Commerce which NOAA Fisheries is a part of. It is perhaps possible, then, to consider his pro-deregulation agenda as part of the politics stream which allowed passage of management authority of red snapper to the states to gain traction. Internal memos between then Secretary of Commerce Wilbur Ross and his Director of Policy and Strategic Planning, Earl Comstock, showed willful disregard of the Magnuson-Stevens Act's rules which make management practices which result in overfishing illegal (Comstock, 2017a, 2017b). These decision-makers discussed a plan to extend the 2017 season with state natural resource agency cooperation, though knowing it would result in a lawsuit from environmental groups or commercial fishermen. This was done, Comstock argued, to provide leadership for Congress and to place pressure on Congress to amend the Magnuson-Stevens Act to solve the issue of red snapper management. They recognized that lasting change would necessarily have to come through Congress, as Congress is the only entity that can change the Magnuson-Stevens Act rules which bind NOAA Fisheries. Ultimately, as seen, Congress did not provide new legislation or amendments to the Magnuson-Stevens Act, instead simply mandating that NOAA Fisheries pilot a state management program.

At a different level of government, the Gulf states which have red snapper fisheries all notably voted for Donald Trump during the 2016 elections ("2016 Presidential Election Results,"

2017). While this does not mean they also supported deregulation of red snapper specifically, it does mean their state citizen constituency, who are also the primary fishers of red snapper in the Gulf, voted for a President whose platform included deregulation. It is possible that this agreement of political philosophy allowed for red snapper negotiations to commence at a political level previously inaccessible under different executive branch leadership. On a more local but plausibly more important scale is the mood of recreational anglers during this period. Fisheries policy affects their world, after all, and by and large recreational anglers contested the short seasons and bag limits imposed by federal data and management policy. The Magnuson-Stevens Act requires that fishery management plans be considerate of how regulations will affect local fishing economies and fishery-dependent communities. For this reason, one could argue that Gulf Council members are legally bound to consider how red snapper stakeholders understand and respond to red snapper management challenges. As seen in the data, most recreational fishermen supported longer red snapper fishing seasons and disagreed with the management practices mandated by the Magnuson-Stevens Act and fulfilled by NOAA Fisheries.

(6.4) Policy Window Findings

The policy window for this case was most likely opened by the great public outcry in 2017 at the announcement of a 3-day long season. This outcry caused the Department of Commerce to extend the federal season to match the much lengthier state water seasons. This prompted Congress to mandate that NOAA Fisheries investigate state management. This is when discussions of state control began anew in the Gulf Council, which led to NOAA Fisheries giving the states Exempted Fishing Permits[23] in 2018 and 2019, followed by the permanent solution of Amendment 50 in 2020. Even before the season announcement of 2017, the public discourse surrounding red snapper management was framing the problem as poor federal

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[23] Exempted Fishing Permits are permits issued by NOAA Regional Fisheries Offices which allow for the harvest or collection of a fish species which would normally be out of season or otherwise protected. Normally, these are usually only granted for scientific research or educational purposes (Fisheries, 2022a).

management practices, federal data collection, and federal management philosophy. Given this problem framing, it is easier to see how a shift in management to the states was sold as the functional policy solution.

7. Problem Stream: Descriptive Findings

This section details the themes, characters, narratives used by Amendment 50 stakeholders and policymakers. First, I describe the data by outlining the orientation of the comments, where comments were sourced from online, the primary states represented in the data, and when these comments or articles were posted online. Then, I describe the primary themes present across all stakeholder types in the data. Next, I describe who were the main voices present in the data. After this general description of the stakeholders, I transition into a deeper discussion about what the four main stakeholder groups are saying about red snapper management.

To begin, we find that there are two main directions of messaging on Amendment 50: those messages going from the public to policymakers and fisheries managers, and then those messages going from policymakers, NGOs, and elected leaders to the public. The following are examples from the data of these two directions.

Policymaker to public:

> *Limiting our fishermen to only 11 days of work has serious consequences to South Louisiana. The Gulf Coast has no choice but to consider new management methods for red snapper in the Gulf of Mexico. Over the last few years it has become obvious federal management of red snapper in the Gulf has been a disaster, with dates and regulations constantly changing, sometimes even after seasons have already opened. –* Representative Charles Boustany, congressman from Louisiana, 2014

Public to policymaker:

> *The management of red snapper fishing has been very unacceptable to recreational anglers. There are more red snapper in Gulf waters than are being told about by fishery*

managers. There is no reason for such restrictive regulations on recreational fishermen and spearfishermen. The Gulf population off the west coast exists mostly in federally controlled waters. The management policies for west Gulf coast populations needs to be given to the state of Florida. – recreational fisherman from Florida, 2018

For the public to policymaker statements, most come from surveys and open comment periods initiated by the Gulf of Mexico Fisheries Management Council or state wildlife management agencies (namely, the Louisiana Department of Wildlife and Fisheries who surveyed Louisianan offshore anglers) (refer to Table 1 for a complete list of comment types from the data). The sheer magnitude of comments submitted to these two organizations is what constitutes 95.9% of this research. These surveys and open comment periods[24] allowed for individual stakeholders to contribute their voice to the red snapper policy process, and together the sum of all voices offers a window into the narrative held by each stakeholder. For the policymaker to public direction, most communication comes through publicly available politician statements, newspaper articles, organizational press releases (such as from the Congressional Sportsmen Foundation or the Environmental Defense Fund), or Congressional testimony which are usually posted to their respective websites. This communication allowed for those policy makers to shape the narrative by allowing them to explain the red snapper policy process to the general public. The stories told in this direction often reflect the voices of the public. Politician statements are concerned with the desires of their constituents, and newspaper articles are in tune with local sentiments.

Table 1: Total number of comment type

Type of news, article, or comments		
Stakeholder comment	2116	0.96
Statement from politician	33	0.01
National, state, and city newspaper	28	0.01
Organizational press release	22	0.01
Congressional testimony	5	0.002
Blog post	1	0.0005
Gulf Council A50 video	1	0.0005

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[24] Referencing the Louisiana Department of Wildlife and Fisheries 2015 survey on red snapper management and the Gulf of Mexico Fisheries Management Council open comment online submissions for Amendments 39 and 50.

Table 2: Total number of comment origins

Origin of comments or articles		
LA	1643	0.74
TX	196	0.09
FL	150	0.07
AL	82	0.04
MS	28	0.01
National	63	0.03
Regional	17	0.008
Other	20	0.009
Null	7	0.003
Grand Total	**2206**	**1.00**

The articles and stakeholder comments come mostly from the Gulf States of Texas, Louisiana, Mississippi, Alabama, and Florida (refer to Table 2 for a complete breakdown of locations from the data). The largest number of comments comes from Louisiana where *n=1549* are from a survey completed by the Louisiana Department of Wildlife and Fisheries which polled offshore recreational fishermen if Louisiana should manage red snapper in federal waters. Louisiana has *n = 94* comments or articles when this survey is removed from the total, placing it in the middle of the Gulf States for the number of total articles or comments. Mississippi has the fewest number of articles and comments, which aligns with it also having the smallest annual landing of red snapper amongst all Gulf States. All Gulf States had resident stakeholders submit comments to the Gulf of Mexico Fishery Management Council for Amendment 50 and Amendment 39, and all had news articles from state sources. *National* refers to national newspapers and statements from federal politicians and agencies. *Regional* refers to Southeast or Gulf-specific news sources or Gulf Council communications. *Other* contains single comments and newspaper articles from non-Gulf States. *Null* was reserved for when a state could not be identified for a stakeholder comment.

(7.1) When did these comments occur?

Chart 1: Comments and Articles by Date of Occurrence (with 2015 LA Survey separated)
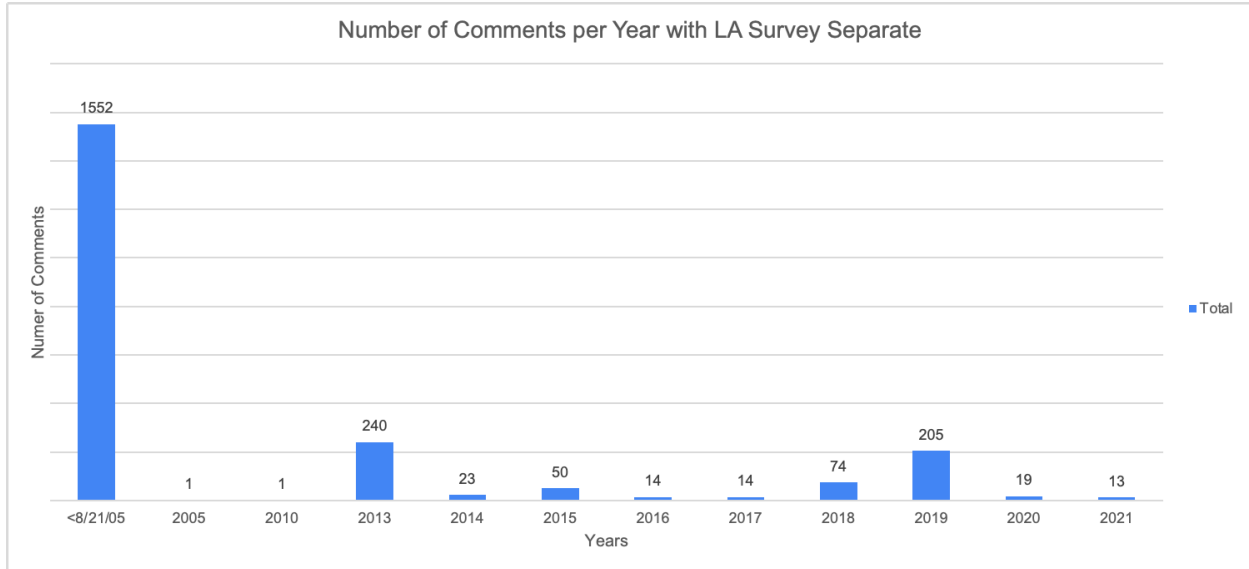
Understanding the chronology of these comments provides insights into the timing of red snapper management's policy process, especially for how the policy stream interacts with focusing events and data. See Appendix 4 for a longer discussion.

(7.2) Overview of most common themes

Table 3: Inclusion Criteria for Theme Codes

Name of code	Inclusion criteria
Resource abundance	When it is said that red snapper are plentiful and great in number.

State management is better	When the connotation of the comment is that states inherently manage natural resources better as a belief. When local government manages local resources better as a belief. That local is better which is why they support Amendment 50. Mention of species being non-migratory and therefore should be managed by states/locally. Mention of a local actor having ownership of a species and therefore should be managing it.
Better access	When speaker wants easier access or greater ability to go fishing. Mention of season length increase, bag limit increase, size limit increases. This includes mention of "flexible" access by fishermen when talking about their ability to go fishing.
Economics	Mentions of money or local economy. Mention of tourism.
States are trustworthy	If there are reasons listed for why states would manage well. If the speaker states belief that the state has capability/professionalism/ability to manage. Speaker expresses belief in the integrity and credibility of the state.
Accountability	When an agency has good practices to ensure overfishing does not occur. When an agency is claimed to be more fair in its handling and balancing of group interests. Additionally, in the *Other* positive-negative category: when a group needs to be held 'accountable' for their actions

Flexibility	When a state can react more quickly/rapidly/nimbly than the federal government. When mentioned that each state's local reality is different from another state, and therefore should not be managed like other states.
Better science	When stated that a governance institution has a better idea of the actual numbers of red snapper in the water, has better surveying or counting methods, or will do a better job getting accurate numbers than other governance groups. When *Other* is selected for the Positive-Negative category: When there is a complaint about survey or scientific methods; when a scientific suggestion for management is offered. When there is mention of scientific processes.
Better collaboration	When state control is supported for ideas that states will be able to work very well in tandem with the federal government; idea that transferring management to state would make regulation rules less confusing and easier follow; ideas that more voices should be considered in management process (i.e., More recreational voices in Gulf Council); mention of simplifying rules to be one set of rules for water line, quotas, etc. For comments regarding federal-state water line confusion - expression of confusion/desire for agreement/consistency with rules

Mistrust of state government	Mentions that one state might not play by the rules; mention that states might overfish their allotted quota at expense of other states; mention of states not having appropriate measures in place to prevent overfishing; mention of local government being too corrupt to hold management power; when a comment or article claims that one or more states will abuse new state control and management
Federal management is better	Mention that federal science is better; mention that federal data collection is better/more trustworthy than states'; Mention that federal government will better protect red snapper or better manage red snapper allocation amongst stakeholders
Negative perception of data accuracy	Complaint is about actors having different data methodologies, so cross comparison is not possible; when a stakeholder accuses an agency of making regulations without knowing the actual numbers of a red snapper
May lead to overfishing	Mention that passing control to state-level governance could result in too many snapper being caught; mention that a specific actor's policy or choices is leading to too many fish being caught
Environment degradation	Claim that state control will lead to environmental issues such as ecosystem breakdown due to overfishing or regulatory practices; destruction of habitat

Lack of recreational fisherman accountability	Idea that recreational fishermen will ignore rules and overfish; idea that recreational fishermen are uneducated and do not understand why regulations are in place
Domino effect	Idea that devolving management of red snapper to states will start the devolution of other species/natural resources to the states (in a bad way)
Unfair group advantage	When comment claims that some groups or people are benefiting from management practices over others in an unfair way; if switching to state control is claimed to benefit certain groups over other groups disproportionately; claims that passing management to states will disproportionately benefit the commercial industry (fishhouses, restaurants)
Other	Assigned only when no other code fit a component of the statement. When assigned, leave note in spreadsheet in "Notes" column to explain.
Null	Used to fill remaining columns when no remaining themes could be assigned to a comment.

Table 4: Total number of theme occurrences across all stakeholder types by preference

Total number of theme occurrences across all stakeholder types by preference	Positive		Neutral		Negative		Hesitant		Other		Total for each theme	
Accountability	36	0.03	1	0.03	0	0.00	10	0.05	12	0.01	59	0.02
Better access	134	0.11	5	0.13	0	0.00	10	0.05	498	0.36	647	0.22
Better collaboration	28	0.02	2	0.05	0	0.00	6	0.03	33	0.02	69	0.02
Better science	132	0.11	2	0.05	0	0.00	8	0.04	42	0.03	184	0.06
Economics	68	0.06	2	0.05	0	0.00	4	0.02	156	0.11	230	0.08
Flexibility	212	0.18	6	0.16	1	0.01	13	0.06	45	0.03	277	0.09
Resource Abundance	125	0.11	3	0.08	2	0.01	9	0.04	394	0.28	533	0.18
State management is better	237	0.20	0	0.00	0	0.00	4	0.02	8	0.01	249	0.08
States are trustworthy	159	0.13	0	0.00	0	0.00	6	0.03	11	0.01	176	0.06
Pro-state management other	33	0.03	2	0.05	0	0.00	5	0.02	23	0.02	63	0.02
Negative perception of data accuracy	1	0.001	1	0.03	16	0.10	30	0.14	71	0.05	119	0.04
Environmental degradation	0	0.00	0	0.00	1	0.01	0	0.00	5	0.003	6	0.006
Domino effect	0	0.00	0	0.00	1	0.01	0	0.00	0	0.00	1	0.0003
May lead to overfishing	2	0.002	3	0.08	26	0.15	33	0.16	3	0.002	67	0.02
Lack of recreational fisherman accountability	3	0.003	0	0.00	9	0.05	6	0.03	6	0.004	24	0.01
Mistrust of state government	8	0.01	5	0.13	42	0.25	19	0.09	10	0.01	84	0.03

Unfair group advantage	1	0.001	3	0.08	25	0.15	12	0.06	54	0.04	95	0.03
Federal management is better	2	0.002	3	0.08	35	0.21	27	0.13	7	0.01	74	0.02
Anti-state management other	0	0.00	0	0.00	10	0.06	8	0.04	5	0.003	23	0.01
Grand Total:	**1178**	**1.00**	**38**	**1.00**	**168**	**1.00**	**210**	**1.00**	**1383**	**1.00**	**2977**	**1.00**

The *Null* code was removed from this table because it simply meant that a comment was not assigned theme codes for certain columns. There were six columns for Positive on state management codes and six columns for Negative on state management codes. This means there are 12 total possible code assignments. If a comment had only three positive codes assigned and no negative codes, it means it would receive 9 *Null* code assignments to fill the remaining columns. For this reason, a total count of all occurrences of the *Null* code are not useful for description of this case.

Many themes emerged to create the narrative for positive and negative perceptions of state control of red snapper. By magnitude and across all categories of speaker, themes which were associated with support for state control appeared most (refer to Table 3 for an inclusion criteria table which explains the rationale for themes and coding for this section). Rationale for positive perceptions of state level management included beliefs that this form of management would result in *better access* to red snapper and better economic gains for coastal communities and local fishing economies (*economics;* here and in the following sections, italicized words are the language I used to code the data, and I place the italicized code after the sentence in which its representative theme appears) (refer to Table 4 for a complete list of all themes in the data as they appear based on stakeholder preference on state control)*.* This *better access* would be facilitated through state management, because states were often associated with the idea that they could manage red snapper seasons with greater *flexibility* than NOAA Fisheries. States were also associated with better data collection methodologies that would more closely reflect how many red snapper recreational fishermen believed to be in Gulf waters based on their personal experiences (*resource abundance, better science)*. For these reasons and due to the general belief of stakeholders that states should manage local resources (*state management is better*), these themes appeared most.

Recreational fishermen as a group want the opportunity to go fishing, and many recreational fishermen who supported state management focused on how state management would mean longer fishing seasons (*better access*). Other groups also focused on this plausible result of state management, and together the groups generated a variety of ways state management could achieve this: weekend-only seasons, increased bag limit, and greater minimum and maximum size limits. This increase in accessibility and the ability to keep more captured fish was used in a positive connotation. Many recreational fishermen, as well as some other groups, closely tied the idea that they should be able to catch more red snapper with their personal observations of plentiful red snapper in the Gulf of Mexico (*resource abundance*). Many recreational fishermen felt that red snapper regulations in the 2010s did not match the large number of red snapper they saw on their personal fishing trips. This mismatch in observed experience and the limited federal water fishing season led many groups to question NOAA Fisheries' data collection process, which will be discussed in greater depth in a later section. These two closely related themes were the top two most frequent throughout the data, and the following quote from the data from a Georgia-based recreational fishermen in 2019 shows both:

> *Yes, the state should manage their water. Also, they should open red snapper in early April and for many months. There are so many snapper you can't get down to catch many other species, and for the last four years we have killed more snapper trying to catch grouper and seabass than we could have kept and gone in…*

As seen in this quote, recreational fishermen sometimes felt that red snapper were actually overabundant. This led to the inability to catch other target fish when red snapper were not in season and could not be kept, thus resulting in a frustrating amount of red snapper dying after being thrown back. Through this lens and experience, one can see how many recreational fishermen became frustrated with the ever-shortening season under NOAA Fisheries.

The third most common theme overall centered around ideas that state-level management would be more flexible, meaning stakeholders believed it would be more adaptive, nimble, and able to quickly adjust to seasonal variables like bad weather (*flexibility*). Often, this idea was tied to local governance of the resource. First, local governance was often associated with the ability

to quickly adjust season lengths based on local factors such as weather. Second is that many stakeholders pointed out that fishing for red snapper varies from state to state by way of seasonal weather, marine topography, and relative abundance of red snapper. State governments, these stakeholders argued, are best equipped to govern resources with these variables. The Ocean Conservancy highlights this theme and its possible benefits in the following quote from 2017:

> *State management, or any alternative method of regional management, provides a real and meaningful chance for private recreational fishermen from throughout the five Gulf states to fish under regulatory conditions that cater directly to their local needs. Fishermen from each state fish at different times of the year, with different techniques and different local knowledge, out of ports that range in character and culture from Naples to Venice to Brownsville. Allowing the states to develop individual conservation equivalent plans that are customized to the unique fishing traits of private fishermen in their waters could ultimately result in more days on the water for anglers, greater accountability from the private recreational component, and decreased likelihood that the recreational component will exceed its share of the overall red snapper quota season after season.*

Often tied to ideas of more flexible, adaptive management[25] is the sentiment that state governments and agencies are inherently better suited to manage natural resources such as red snapper compared with their federal counterparts (*state management is better*). These statements were usually precipitated on belief or ideas of state ownership of natural resources, but occasionally they were grounded in fisheries concepts that red snapper is a reef fish, meaning it stays within a small range on a reef, not a pelagic fish which roams the entire Gulf, and thus the species should be managed by states. This is the fourth most common theme, and it is expressed by a recreational fisherman in Alabama from 2018 in the following quote:

> *The Federal Government has NO BUSINESS in regulating State fisheries in States with waters bordering the Gulf of Mexico; their governance of our State resources is fundamentally wrong and flawed and should end IMMEDIATELY; the Feds do not manage our deer herds and they should not manage (mismanage) our fisheries; Red*

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[25] Adaptive management refers to management which changes over time in order to best address new conditions, new science, and new knowledge or experiences. The idea of this management philosophy is that management needs to adapt to changing conditions in order to be most effective. It usually has an active focus on learning from experience to improve management practices (ScienceDirect Topics, 2022).

snapper are NOT pelagic or migratory and are resident fish and should be treated as such.

Statements such as these convey several normative perceptions on state control of red snapper. The first idea is that states ought to have ownership over the natural resources within their borders. The quoted statement argues that this ownership should extend outwards into the Gulf of Mexico wherever fisheries are concerned. People with these perceptions argue that the federal government should not have any management control over natural resources within a state's jurisdiction. In this statement, the speaker considers red snapper to be a "resident" species of fish, thus justifying that there should only be state control of the species.

The fifth most common overall theme was how red snapper regulations and recreational fishermen impacted local coastal economies (*economics*). Any stakeholder perceptions on money or assets required to fish for red snapper, the money red snapper brings to state economies via tourism, or how red snapper regulations affect local economies and businesses were included in this theme. Often, *economics* themes would appear in comments from recreational fishermen describing the costs vs. benefits of fishing for red snapper given the very short seasons and small bag limits. Several comments were concerned that the cost of off-shore fishing for red snapper was too high to make the trip worth it, especially when the red snapper season did not overlap with other off-shore species fishing seasons. This element is a very important social factor for red snapper management because of how important the fish is to the Gulf Coast economies. Below is a representative quote of the theme from a Louisiana recreational fisherman in 2013:

> *At the price of fuel and the amount of money spent on fishing equipment, etc., it seems that a 4 fish per angler limit is a manageable amount, even if the fish size limit was decreased. The recreational angler outspends the commercial sector by far, yet the commercial sector wastes many fish on the undersize limit.*

A number of negative sentiments toward state control or about discontent with red snapper management status quo under NOAA Fisheries also appeared amongst stakeholder groups. These stakeholders were usually mistrustful of state governments given negative personal experience with state politicians or resource management agents or because they

remembered how low red snapper populations fell under state management in the 1980s (*mistrust of state management*). If they did not highlight past grievances, stakeholders often focused on uncertainty toward state data collection (*negative perception of data accuracy*), feeling that states might overfish if their data collection systems were not robust. Some feared that states, if given the power to manipulate quota allotments between the red snapper fishing sectors (recreational fishermen, federal charter for-hire, and commercial fishermen), states would cater to lobbying interests and not distribute the quotas fairly (*unfair group advantage*).

Of all negative themes, stakeholder discussion focused most on how data collection systems were flawed or inaccurate (*negative perception of data accuracy)*. Often, they blamed NOAA Fisheries' Marine Recreational Information Program (MRIP)[26] for underestimating the total number of red snapper, leading to NOAA Fisheries to set shorter seasons than they felt were justified. Other times, stakeholders were concerned that state data collection systems might not be careful enough, which in a state management scenario, might lead to overfishing due to longer seasons and larger catch limits. Recreational fishermen often based their perception of inaccurate data on their own fishing experiences, citing the large number of red snapper they saw and caught while fishing (*resource abundance*). Below is a representative from a Louisiana recreational fisherman in 2015 which expresses these themes:

> *The present system is byzantine. The counting methodology is flawed – there are abundant snapper around virtually every platform 20 miles or more off-shore. The current season for recreational fisherman is beyond ludicrous.*

Stakeholder groups were also concerned that Amendment 50 and state management might benefit some fishing groups over others (*unfair group advantage*). The unfair benefit varied by stakeholder, but usually it referred to recreational fishermen feeling that the commercial sector was being given unfair preference (i.e., greater levels of quota and access to red snapper) over the recreational sector by managers. The inverse also occurred, where

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[26] The Marine Recreational Information Program is NOAA Fisheries' national survey program which tracks fishermen trips and catch data (Fisheries, 2022c). It is a collaborative program with local, state, and regional authorities, and its implementation is tailored to each region's specific fisheries.

stakeholders, primarily the federal charter for-hire sector, feared that, utilizing Amendment 39 or 50, the states would give disproportionate levels of red snapper access to recreational fishermen. Below is a representative quote from a Louisiana recreational fisherman from 2015 in which the *unfair group advantage* theme appeared:

> *I strongly support that commercial and recreational fishermen have the exact same seasons, size limitations and daily creel limits. Giving one person or group a greater allocation of the public resources gives power to the politician making his decision susceptible to bribes or political pressure. The decisions should be made by fisheries biologists and scientists to protect the species.*

One of the primary negative reasons stakeholders opposed state control was mistrust of their state governments and natural resource agencies (*mistrust of state government*). This concern expressed itself in different ways depending on the stakeholder. Many groups worried that states lacked accountability measures to record or correct for overfishing that might occur within their jurisdiction. Fishermen groups expressed concern that some Gulf states will ignore fishing quotas to please their constituents. Stakeholders also expressed concerns that there is a lack of interstate cooperation to achieve sustainable harvest of red snapper across borders. The following is an excerpt which shows the *mistrust of state government* theme from a House Natural Resources Committee dissenting opinion on H.R. 3094, a bill designed to give states total control of red snapper management:

> *…The Gulf States continue to set liberal seasons in their waters, resulting in a smaller share of the quota available to be harvested in the Exclusive Economic Zone (EEZ)… Instead of addressing these problems and using creative management approaches already allowed by law to lengthen the season, H.R. 3094 would turn red snapper management over to the five Gulf States. It would allow the states to determine recreational catch allocations for red snapper even though they have proven incapable so far of agreeing on what those allocations might be. At a hearing last Congress, one state fisheries director suggested his state should receive 60 percent of the quota, leaving just 40 percent for the other four states, combined.*

(7.3) Voices: Who is talking about red snapper?

Table 5: Total number of Speaker's Expertise

Speaker's expertise		
Recreational fisherman	1991	0.903
Federal charter for-hire	67	0.030
Interest groups, NGOs	47	0.021
National political leader	38	0.017
Reporter	24	0.011
Other, Null	22	0.010
Scientist, Industry expert	9	0.004
Commercial fisherman	5	0.002
State officials	3	0.001
Grand Total	**2206**	**1.00**

Who were the main voices framing the issue of red snapper policy devolution? These included *recreational fishermen, federal charter for-hire stakeholders, interest groups,* and *national political leaders*. The largest category is *recreational fisherman*, which refers to an individual who participates in the private angling component of the red snapper fishery (refer to Table 5 for a complete list of all stakeholder types). Recreational fisherman voices came from three sources: the open comments submissions for Amendments 50 and 39 via the Gulf Council, the open comment submissions for the same through NOAA Regulations.gov, and the Louisiana Department of Wildlife and Fisheries red snapper survey. These recreational fishermen offered their perspective on state and federal red snapper management, their experiences fishing for red snapper, and their ideas on how red snapper management could improve. Below is a representative example of a common type of recreational fisherman stakeholder comment from Alabama in 2018:

> *I am very much in support of state management of red snapper and all reef fish… It only makes sense to give the states control of the seasons and control of the quota so each state can manage for their particular ecosystem. Alabama waters are not the same as Mississippi, Florida, or Louisiana waters and should not be managed as if they are. Please let the state fisheries departments do what they do best: manage fish.*

The second most common voice came from the *federal charter for-hire* sector. This sector of the recreational red snapper quota is defined as those individuals holding a license which permits them to take paying customers, who are not required to also have saltwater fishing licenses, onto the water to fish for designated species. In the case of red snapper, a charter captain must apply to the Southeast Regional NOAA Office for a permit to be able to keep any red snapper caught on their trip (Fisheries, 2019). Importantly, in 2015, the recreational quota for red snapper was split between private anglers and the federal charter for-hire captains. Functionally, this stabilized and increased the season length for the charters, leaving the diminishing season length issues entirely to the private angling component for the recreational fishermen. The following is a representative quote from a federal charter for-hire stakeholder in Florida from 2018:

> *If the council is seriously entertaining the thought of a "State Management" [Exempted Fishing Permit], I would ask to refrain from including the [Charter For-Hire] fleet. We have worked under and have protections under current federal law. My state has not shown me that it is concerned with the wellbeing of the CFH fleet. I can support this type of management alternative for the Private Sector, if that is what they would like to pursue, but please keep CFH as a federally managed user group.*

The third most common speaker grouping was *interest groups*. This group is defined as a non-governmental group which seeks to influence policy, often through letter writing to policymakers and management planners or through attending organizational press releases and workshops. The various groups often had diverse narratives and agendas depending on the actor, and those narratives will be drawn out in a later section. This category included organizations such as the American Sportfishing Association, the Coastal Conservation Association, the Congressional Sportsmen's Foundation, the Environmental Defense Fund, the Ocean Conservancy, and other smaller groups such as the Galveston Professional Boatmen's Association. Below is a representative sample from Ocean Conservancy's Vice President of Conservation Policy and Programs in 2017:

> *..The Department of Commerce must commit to managing fairly and accountably for all fishermen and return to making science-based decisions that deliver healthy fisheries for*

the benefit of fishermen and coastal communities. Commerce needs to focus on rebuilding trust with stakeholders after this short-sighted decision. Under this stay, we will continue working with fishermen and other stakeholders to explore innovative management and data collection solutions while ensuring that Gulf red snapper is rebuilt on time and kept healthy for generations of fishermen to come.

National political leaders refers to federal politicians from both the United States House of Representatives and the Senate. These lawmakers also weighed in on red snapper management. Typically, statements and legislative attempts were initiated by Representatives from the Gulf states, but they were supported by Representatives from non-Gulf states as well. Statements came from Congress.gov testimonies and hearings, from news articles which quoted the federal lawmakers, and from statements posted to individual Congressperson websites. Below is a representative example from the data from Congressman Garret Graves of Louisiana:

For years now red snapper has been a major priority for commercial and recreational anglers, and yesterday's win builds upon our previous efforts to allow states to manage the red snapper fishery. We will continue forcing law changes toward sensible management of this public resource. It should not take congressional action to force the Gulf of Mexico Fishery Management Council to advance meaningful conservation measures in the Gulf Coast, but their conflicted and flawed management efforts cannot be left alone. We've taken the steps necessary to increase advance policies, increase access and ensure sustainability of our Gulf reef fish when others haven't. This step builds upon the successful state management of red snapper that we secured a few years ago and our legislation, the Modern Fish Act, that requires improved balance in recreational and commercial fish management and the use of improved fish data collected by the State of Louisiana to manage our fisheries.

Finally, *Reporter* refers to any writer whose newspaper article was simply a recounting of events and statements, and they typically did not offer a pro- or anti-state lean on red snapper management. *Other* was used when the author fits in no existing category, such as marina owners. Notably, the Gulf Council's open comment demographic identification options included "other" as an option for the commenter to select. If an individual self-selected "other" in the Gulf Council comments, then their selection was left as *Other* in our dataset. These individuals varied widely in the content of their statements. *Null* was used when the author was unidentifiable through lack of original source self-identification and when the text of their comment did not

specify their identification. It was exclusively used for comments submitted to NOAA's Regulations.gov open comments and for Amendment 50 and 39's open comments. *Scientist/Industry experts* offered their perspective on red snapper from a scientific or experienced viewpoint, usually offering evidence for why states should or shouldn't management red snapper. *Commercial fishermen* are those individuals licensed to catch a portion of the commercial sector's red snapper quota, and in this research they do not appear very much because Amendment 50 targets the recreational sector only. Finally, *state officials* are those individuals who work for the state legislatures or natural resource agencies, and they typically highlighted their state's ability to manage red snapper responsibly through data collection systems they had in place.

In the following section, I discuss how recreational fishermen, federal charter for-hire stakeholders, interest groups, and national political leaders talked about red snapper (refer to Table 6 for a complete list of all stakeholder types and their preferences on state control). Each section discusses the primary themes each of these stakeholders focuses on. Follow these four discussions of general themes, I examine each of these four characters based on their messaging of heroes and villains of red snapper management.

8. Problem Stream: Qualitative Findings

Table 6: Total number of speaker comments by sentiment type

Stakeholder Type	*Positive*		*Hesitant*		*Negative*		*Neutral*		*Other*		*Total*	
Federal charter for-hire	13	0.20	20	0.31	18	0.27	0	0.00	15	0.23	**66**	**1.00**
Commercial fisherman	1	0.20	0	0.00	3	0.60	0	0.00	1	0.20	**5**	**1.00**
Industry expert/Scientist	5	0.00	2	0.00	1	0.00	1	0.00	0	0.00	**9**	**1.00**

Interest group	25	0.00	18	0.00	3	0.00	0	0.00	1	0.00	**47**	**1.00**
National political leader	26	0.68	0	0.00	10	0.26	0	0.00	2	0.05	**38**	**1.00**
Null	5	0.45	3	0.27	3	0.27	0	0.00	0	0.00	**11**	**1.00**
Other	3	0.27	2	0.18	1	0.09	2	0.18	3	0.27	**11**	**1.00**
Recreational fisherman	781	0.392	44	0.023	30	0.015	7	0.004	1130	0.567	**1992**	**1.00**
Reporter	13	0.54	5	0.21	1	0.04	4	0.17	1	0.04	**24**	**1.00**
State official	3	0.003	0	0.00	0	0.00	0	0.00	0	0.00	**3**	**1.00**
Grand Total	875	0.39	94	0.04	70	0.03	14	0.006	1153	0.52	**2206**	**1.00**

(8.1) Recreational Fishermen

Table 7: Recreational Fishermen Themes by Sentiment Type

Recreational Fishermen Themes	Positive		Negative		Hesitant		Neutral		Other		Total	
Accountability	18	0.02	0	0.00	4	0.07	0	0.00	12	0.01	34	0.01
Better access	115	0.13	0	0.00	2	0.03	2	0.20	491	0.37	610	0.26
Better collaboration	17	0.02	0	0.00	1	0.02	0	0.00	32	0.02	50	0.02
Better Science	76	0.08	0	0.00	4	0.07	0	0.00	41	0.03	121	0.05
Economics	38	0.04	0	0.00	2	0.03	0	0.00	154	0.11	194	0.08

Flexibility	159	0.17	0	0.00	3	0.05	2	0.20	44	0.03	208	0.09
Pro-state management other	26	0.03	0	0.00	4	0.07	0	0.00	23	0.02	53	0.02
Resource abundance	108	0.12	1	0.02	7	0.12	1	0.10	387	0.29	504	0.21
State management is better	224	0.24	0	0.00	2	0.03	0	0.00	8	0.01	234	0.10
States are trustworthy	129	0.14	0	0.00	1	0.02	0	0.00	11	0.01	141	0.06
Negative perception of data accuracy	0	0.00	5	0.12	12	0.21	0	0.00	67	0.05	84	0.04
May lead to overfishing	0	0.00	0	0.00	0	0.00	1	0.10	0	0.00	1	0.00
Mistrust of state government	5	0.01	15	0.36	5	0.09	1	0.10	8	0.01	34	0.01
Environment degradation	0	0.00	0	0.00	0	0.00	0	0.00	5	0.00	5	0.00
Lack of recreational fisherman accountability	0	0.00	1	0.02	1	0.02	0	0.00	4	0.00	6	0.00
Unfair group advantage	0	0.00	6	0.14	5	0.09	1	0.10	51	0.04	63	0.03
Federal management is better	0	0.00	6	0.14	2	0.03	2	0.20	1	0.00	11	0.00
Anti-state management other	0	0.00	8	0.19	3	0.05	0	0.00	5	0.00	16	0.01
Grand Total	**915**	**1.00**	**42**	**1.00**	**58**	**1.00**	**10**	**1.00**	**1344**	**1.00**	**2369**	**1.00**

Recreational fishermen who supported state control (focused on four main themes: that *state management is better* than federal management under NOAA Fisheries, that states are able

to manage red snapper with greater *flexibility* than the federal government, that *states are trustworthy* and possess accountability systems to ensure they will not overfish red snapper, and that state management will lead to *better access* of red snapper for recreational fishermen (see Table 7 for all recreational fisherman themes) (refer to Table 6 for a complete list of all stakeholder comments in the data detailed by preference on state management). The most mentioned theme was that *state management is better* than status quo, federal management under NOAA Fisheries. This theme also carried the idea that states inherently manage natural resources better than the federal government. Essentially, many recreational fishermen who supported state management believed that state agencies would be able to manage red snapper better due to their locality. This idea that local management is better is situated in the belief that local management arrangements would be able to more quickly adapt to sudden events like bad weather and set seasons which were congruent with local fishing realities (*flexibility*). Recreational fishermen largely believed that this arrangement would lead to longer seasons with more fishable days (*better access*). Their argument was that states are better able to set season and fish limits based on local knowledge and local conditions, which the federal government was unable to do given its one-size-fits-all management of the species across the entire Gulf of Mexico. Recreational fishermen who supported state management often backed up their claims by either stating or providing examples of how state governments had good data collection systems in place or had previously helped a different species of fish through conservation measures. The following quote is from an Alabama recreational fisherman in 2018 which expresses several of these positive themes toward state management.

> *I am very much in support of state management of Red Snapper and all reef fish… It only makes sense to give the states control of the seasons and control of the quota so each state can manage for their particular ecosystem. Alabama waters are not the same as Mississippi, Florida or Louisiana waters and should not be managed as if they are. Please let the state fisheries departments do what they do best, manage fish…*

Not all recreational fishermen were positive for state management. Some expressed some hesitancy toward state control, and their primary concerns were that state data collection systems might not find accurate numbers of red snapper, which might lead to overfishing. (*negative perception of data accuracy*, *may lead to overfishing*). Many cited fears that state management

might lead to disobeyed quotas or accidental overfishing due to incongruent data collection methods between the states. Though these fishermen were hesitant toward state control, many also stated that they had seen an abundance of red snapper in Gulf waters (*resource abundance*). Those that experienced seeing a large number of red snapper often also supported some level of increased harvest, though they still expressed uncertainty that state management was the route for this to occur or that increased harvest even should. The following is a quote from a recreational fisherman from Louisiana in 2019, and it expresses how some fishermen perhaps supported Amendment 50, but had hesitations centered around data.

> *While I support Amendment 50 and want to see state management of red snapper, I do have concerns. I want to make sure that every state's harvest and effort data collection system is compatible with MRIP. If a state's system isn't able to talk with MRIP and accurately estimate catch, I fear we could be unknowingly overfishing and don't want to see that go unchecked...*

Recreational fishermen who were categorized as *Other* on state control of red snapper were not necessarily impartial or neutral on the matter. These fishermen did not self-identify as supporting or opposing state management, and their comments did not clearly state their stance. Mostly, *Other* recreational fishermen wanted management, whomever that may be, to lengthen red snapper seasons, increase bag limits, or generally open up access to red snapper (*better access*). Many cited their personal experience of seeing huge numbers of red snapper while fishing, even having trouble catching anything other than red snapper when targeting other fish (*resource abundance*). Often, *Other* recreational fishermen were frustrated with status quo management, complaining that current regulation made fishing for red snapper economically unviable given the expense of fuel and tackle for such a small bag limit and season length (*economics*). In these comments, they often claimed that the management agencies did not have correct estimates of how many snapper were in Gulf waters (*negative perception of data accuracy*). Finally, there was a fair amount of concern that red snapper were being managed in a way that unfairly benefited other stakeholders in the fishery, usually commercial fishermen (*unfair group advantage*). The following is a representative quote from a recreational fisherman in 2013 from Louisiana coded for *Other* on state control.

The season is already too short, and the limit is restrictive enough. The red snapper is the most abundant fish you see while fishing in the Gulf of Mexico. Not sure what the reasoning is behind more restrictions for recreational fishing. If anything, cut back on the limits of the commercial fishermen. They are the ones that need to reduce their catch.

Relative to the number of fishermen who were *Positive* and *Other* on state control, the recreational fishermen who opposed state management numbered very few ($n = 30$, 1.5%). Their concerns with state management were varied, but primarily focused on a lack of trust in the state to manage red snapper fairly (*mistrust of state government*). Several cited concerns that states would simply open up access and implement "feel good" regulation, or that the states might cave to lobbying from groups like commercial fishermen (*unfair group advantage*). Below is a representative *Negative* quote from a Louisianan recreational fisherman from 2015:

I have seen corruption with money and power… The state of Louisiana doesn't have a great track record. While I like the fact that Louisiana has helped the recreational angler in the last two years, I am a bit leery that commercial lobbyists with big money will come in and buy their way.

(8.2) Federal Charter For-hire Fishermen

Table 8: Federal Charter For-Hire Themes by Sentiment Type

Federal Charter For-Hire	Positive		Hesitant		Negative		Other		Total	
Accountability	1	0.06	0	0.00	0	0.00	0	0.00	1	0.01
Better access	2	0.12	4	0.15	0	0.00	5	0.25	11	0.12
Better collaboration	0	0.00	0	0.00	0	0.00	1	0.05	1	0.01
Resource abundance	1	0.06	0	0.00	0	0.00	4	0.20	5	0.05
Better Science	1	0.06	0	0.00	0	0.00	0	0.00	1	0.01
Economics	3	0.18	1	0.04	0	0.00	1	0.05	5	0.05

State management is better	4	0.24	2	0.07	0	0.00	0	0.00	6	0.06
Flexibility	1	0.06	0	0.00	0	0.00	0	0.00	1	0.01
States are trustworthy	2	0.12	0	0.00	0	0.00	0	0.00	2	0.02
Negative perception of data accuracy	0	0.00	2	0.07	1	0.03	2	0.10	5	0.05
Mistrust of state government	1	0.06	0	0.00	4	0.13	1	0.05	6	0.06
Environment degradation	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Lack of recreational fishermen accountability	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Unfair group advantage	0	0.00	3	0.11	6	0.19	1	0.05	10	0.11
May lead to overfishing	0	0.00	3	0.11	4	0.13	1	0.05	8	0.08
Federal management is better	1	0.06	10	0.37	14	0.45	4	0.20	29	0.31
Domino effect	0	0.00	0	0.00	1	0.03	0	0.00	1	0.01
Anti-state management other	0	0.00	2	0.07	1	0.03	0	0.00	3	0.03
Grand Total	**17**	**1.00**	**27**	**1.00**	**31**	**1.00**	**20**	**1.00**	**95**	**1.00**

In 2015 through Amendment 40 to the Gulf of Mexico Reef Fishery Management Plan, the federal charter for-hire sector received a separate quota from private recreational fishermen. This meant that the federal charter for-hire sector now had an allotment of red snapper that only their sector could catch each year. Functionally, this meant that any overfishing done by private recreational fishermen would not impact federal charter for-hire seasons. Previously, when the

federal charter for-hire and recreational fishermen shared the same quota, payback for overfishing done by recreational fishermen would also impact the federal charter for-hire sector. Thus, in 2015 with the newfound separation, the federal charter for-hire sector saw increased season length and stability for red snapper fishing. Notably, the majority of comments from federal charter for-hire stakeholders were satisfied with management under the federal status quo system (*federal management is better*) (see Table 8 for a complete list of federal charter for-hire themes). The underlying concern in these comments was that, if states were given complete control of the recreational red snapper sector, then states would undo Amendment 40 in order to give private recreational fishermen longer seasons at the expense of the longer and more stable seasons the charter for-hire industry had come to enjoy.

Federal charter for-hire stakeholders who supported state management focused on how state management would improve local, coastal economies because states would manage their local resources better than a distant federal agency. Many of the sentiments reflected in this category are similar to those expressed by recreational fishermen. Often, *Positive* federal charter for-hire stakeholders expressed an ideological sentiment that states should manage these fish because states should govern local resources (*state management is better*). State management was also tied to the idea that it would improve local economies through extended season length, thus improving local tourism and fishing expenditure opportunities (*economics*). The following is a representative quote from an Alabama federal charter for-hire stakeholder in 2013. Notably, this comment is from 2013, before Amendment 50 or Amendment 40 was passed, meaning the federal charter for-hire fishing quota was still grouped with all recreational fishermen.

> *I believe we as a state should govern our own fisheries due to the fact that I believe we know our waters and what we have better than anyone else! I also believe that each state on our Gulf Coast has its own unique fishery that is different from its neighboring states! And each has an abundance of certain species that can't be governed with a blanket law and regulations… I know we all have the same goals in mind in protecting our great resources, but I have seen our local economy take a great hit due to these strict limitations and short seasons! I have had friends lose their charter boats and businesses due to them…*

While some federal charter for-hire stakeholders were clearly supportive or against Amendment 50 and state management, many fell somewhere in between and were conditionally supportive or generally uncertain about state management. Many of these *Hesitant* stakeholders preferred to remain under federal management through Amendment 40 (*federal management is better*). Despite a general preference to remain under federal management, many of these federal charter for-hire stakeholders recognized that state management could improve red snapper access and season length for private recreational fishermen (*better access*). However, they simultaneously expressed the concern that states, if given management of the entire recreational quota, might give greater access to private recreational fishermen at the expense of the federal charter for-hire industry (*unfair group advantage*). Below is a quote from a 2019 charter for-hire stakeholder from Louisiana who supports Amendment 50, but with conditions:

> *While I support Amendment 50 and want to see state management of red snapper, I do have concerns. I want to make sure that every state's harvest and effort data collection system is compatible with MRIP. If a state's system isn't able to talk with MRIP and accurately estimate catch, I fear we could be unknowingly overfishing and don't want to see that go unchecked. It would be bad for the fish stock, but it could also be bad for fishermen if the overfishing results in the reduction of seasons or the available fish to catch in the future. I would like to see provisions put into Amendment 50 that would hold states accountable if in the future we realize overfishing has occurred while their catch effort and harvest systems are being benchmarked against MRIP. As a federally permitted charter vessel, I would like to see Amendment 50 keep its preferred alternative that keeps us separate. I support Amendment 50 but want our system to remain the way it is under the federal system.*

Federal charter for-hire stakeholders who had no clear stance on state management (*Other*) mostly focused on how fishermen should have greater access to the abundance of red snapper they saw in Gulf waters (*better access, resource abundance*). Similar to the majority of federal charter for-hire comments, these stakeholders preferred to remain under federal management with Amendment 40, though they did not explicitly oppose state management (*federal management is better*). The following is a representative quote from a charter captain out of Texas in 2019:

Hello, my name is Captain [removed] and my family business has been fishing central west coast of Florida for nearly 90 years and four generations, plus I am a recent MREP graduate. We operate 6 federally permitted vessels both charter and head boats, and I represent the Florida Guides association as their [removed]. State Management of Red snapper In the EFPs or amendment, please do not include the for hire recreational sector in any type of state management scenario.

Federal charter for-hire stakeholders who opposed state management preferred to remain under federal control through the system set up by Amendment 40 (*federal management is better*). They feared that states would revert the quota changes made by Amendment 40. This would mean private recreational fishermen would now have access to a larger red snapper quota to the possible detriment of the federal charter for-hire sector (*unfair group advantage*). This would return the federal charter for-hire stakeholders to the same problem they experienced before Amendment 40 where recreational fishermen would continue to overfish the recreational quota, even with the larger quota amount. This would return the federal charter for-hire sector to the same shortened and uncertain seasons experienced by the private recreational fishermen. Further, many of these stakeholders opposed state management because they did not trust that states would manage the recreational red snapper fishery sustainably, instead allowing for recreational fishermen to catch too many each year (*mistrust of state government*, *may lead to overfishing*). Below is a representative quote from a charter fishing company manager in Florida from 2018:

If recreational fishermen overfish their quota three years in a row, how is that being responsible? The Charter for Hire section is using, for the most part, electronic log books. This is accountability. The Charter for Hire has not overfished our Quota. Please do not Punish us by using option 2b. We prefer to keep AM40 and be separate from the recreational sector. I believe the states will yield to political pressure and not use scientific data to sustain, let alone rebuild the Red Snapper. Just look at Florida, extending the federal season on weekends when they knew the allocation would be overfished. I ask you to use reason in this matter. Let the people that don't have boats but love to fish have access to our Red Snapper. Sincerely, [name removed].

(8.3) Interest Groups

Table 9: Interest Groups/NGO Expert Themes by Sentiment Type

Interest Groups/NGO Experts	Positive		Hesitant		Negative		Total	
Resource abundance	3	0.03	0	0.00	0	0.00	3	0.02
Accountability	6	0.07	5	0.08	0	0.00	11	0.07
Better access	12	0.14	4	0.06	0	0.00	16	0.10
Better collaboration	5	0.06	1	0.02	0	0.00	6	0.04
Better Science	19	0.22	1	0.02	0	0.00	20	0.12
Economics	2	0.02	0	0.00	0	0.00	2	0.01
Flexibility	19	0.22	7	0.11	0	0.00	26	0.16
State management is better	4	0.55	0	0.00	0	0.00	4	0.02
States are trustworthy	15	0.17	3	0.05	0	0.00	18	0.11
Negative perception of data accuracy	0	0.00	11	0.17	3	0.27	14	0.09
Federal management is better	1	0.01	7	0.11	0	0.00	8	0.05
Mistrust of state government	0	0.00	5	0.08	3	0.27	8	0.05
Lack of recreational fishermen accountability	0	0.00	1	0.02	0	0.00	1	0.01
Unfair group advantage	0	0.00	1	0.02	0	0.00	1	0.01
May lead to overfishing	0	0.00	13	0.20	3	0.27	16	0.10
Federal Management is better	0	0.00	2	0.03	0	0.00	2	0.01
Anti-state management other	0	0.00	2	0.03	1	0.09	3	0.02
Some states bad guys	0	0.00	1	0.02	1	0.09	2	0.01
Grand Totals	**86**	**1.00**	**64**	**1.00**	**11**	**1.00**	**161**	**1.00**

There are 17 different interest groups in the data that voiced their perceptions on state management of red snapper.[27] They ranged from local city groups such as the Galveston

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[27] Environmental Defense Fund, American Sportfishing Association, Congressional Sportsmen Foundation, Center for Sportfishing Policy, Ocean Conservancy, Coastal Conservation Association, Galveston Professional Boatmen's

Professional Boatmen's Association to national-level NGOs such as the Environmental Defense Fund. Notably, the Environmental Defense Fund and Ocean Conservancy drafted articles and letters which expressed different concerns across time. This reflects the policy differences present between Amendment 39 and Amendment 50, and it also reflects the development of the problem stream over time. For example, data collection methods became a primary concern in the late 2010s, whereas earlier hesitancies focused more on state accountability measures.

Those interest groups that expressed support for state management include the following: Environmental Defense Fund (2020), American Sportfishing Association, Congressional Sportsmen Foundation, Center for Sportfishing Policy, Ocean Conservancy (2017), Coastal Conservation Association, Galveston Professional Boatmen's Association, Gulf of Mexico Reef Fish Shareholders' Alliance, Boat Owners Association, Guy Harvey Ocean Foundation, International Game Fish Association, National Marine Manufacturers Association, and Louisiana Wildlife Federation. These interest groups believed that state management would lead to longer, more stable seasons for the recreational sector of red snapper fishermen (*better access*) (see Table 9 for complete list of interest group themes). Often, this was framed as being achieved through the state's ability to manage red snapper in a way that is more tailored to their unique coastal and Gulf ecology (*flexibility*). This could be through the state extending the season because of bad weather days or through a state's ability to monitor fishing effort more closely and thus only close the season when the quota is very close to being met. Interest groups supporting state management tended to have the perception that Gulf states have reputable and strong data collection methods in place to prevent overfishing *(states are trustworthy, better science)*. Many statements cited a state's previous successful conservation work with other species such as *Sciaenops ocellatus* (red drum, commonly known as red fish) and *Cynoscion nebulosus* (speckled trout, commonly known as spotted seatrout) as well as states' previous work to develop data collection methodologies. Further, many cited the state's success in managing red snapper through the Exempted Fishing Permit granted to the states through NOAA Fisheries

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Association, Gulf of Mexico Reef Fish Shareholders' Alliance, Charter Fisherman's Association, Turtle Island Restoration Network, Boat Owners Association, Guy Harvey Ocean Foundation, International Game Fish Association, National Marine Manufacturers Association, Southern Shrimp Alliance, Louisiana Wildlife Federation, Gulf Angler Focus Group.

for the years 2018 and 2019. The following is a representative quote from the director of fisheries policy for the Congressional Sportsmen's Foundation in 2020:

> *This all comes down to which is considered the 'best available science.' MRIP was never designed to manage in-season closures, so the states developed their own programs in order to provide their anglers with more access without going over the quotas. Now that they've proven they can very successfully manage the harvest during the season, the state programs - not MRIP - should be declared to be the best available science to inform Gulf red snapper management.*

Interest groups that expressed hesitancy on state control of red snapper focused their concern on state data collection methodologies and how uncertainty around data may lead to overfishing. These groups expressed concern that state data collection methods would not be comparable to the federal Marine Recreational Information Program, which is NOAA Fisheries' recreational fishing survey program that collects information on fishing effort and catch (*negative perception of data accuracy*). For example, a Gulf state might collect data on the number of fish caught using a specific survey method, but a different state might use a different method for tracking fish landings. This would mean that, when trying to figure out how many red snapper are caught across the entire Gulf of Mexico, one would need to ensure that the final numbers for each state are mathematically comparable. If they are not, then the worry is that red snapper might be being overfished even though the data from each state would show that the number of landed fish is within the regulations. If this were to occur, the hesitant interest group stakeholders worried that overfishing of the quota could occur (*may lead to overfishing*).

These groups, however, often recognized the potential benefit of Amendment 50 for recreational fishermen through the *flexibility* it would allow states for management. The following groups expressed hesitancy toward state management in their messaging: Environmental Defense Fund, Ocean Conservancy, Gulf of Mexico Reef Fish Shareholders' Alliance, Charter Fishermen's Association, and Gulf Angler Focus Group. Notably, of the 18 occurrences of *Hesitant*, 15 were from 2018-2019 during the discussion surrounding Amendment 50. The following is a representative example of *Hesitant* language from the Gulf of Mexico Reef Fish Shareholders' Alliance in 2019:

The Shareholders' Alliance continues to support the idea of state management for private anglers in the red snapper fishery so long as management plans are compliant with the Magnuson-Stevens Fishery Conservation and Management Act (MSA)… However, we remain concerned that the current State Management Amendments do not contain the proper accountability measures to ensure that private angler EFPs and the State Management Plans will not allow overfishing. It remains unclear how the data from the new Marine Recreational Information Program (MRIP) surveys and the state surveys will be reconciled to create a true comparison of landings. Without proper calibration in place, we are concerned that the private angler sector could continue to routinely go over their quotas…

The interest groups which did not support state control were Charter Fisherman's Association, Turtle Island Restoration Network, and Galveston Professional Boatmen's Association. These three groups were concerned with how inconsistent or inaccurate data collection at the state level might lead to overfishing (*negative perception of data accuracy*, *may lead to overfishing*). Further, they cited how accountability measures between states were not congruent, meaning some states might not fully correct for a previous year's overfishing. The Charter Fisherman's Association was primarily concerned with how this overage would affect charter fishermen differently from state to state, resulting in instability for their fishery. The lack of accountability measures built into the state sections of Amendment 50 was also a highlighted concern for the Turtle Island Restoration Network. The Galveston Professional Boatmen's Association said the following in 2018:

Unfortunately, the impacts to the federally permitted charter and commercial fishing fleets are often prioritized below the needs of the open-access, private angler component of the recreational fishery. A prime example of this is displayed in the proposed state EFP requests. A state-proposed EFP to manage private anglers only would be a good concept; if it were to include a robust data collection and validation system as well… GPBA wants no part of contributing to recreational overages through the state-proposed EFP inclusion of the CFH fleet in Texas. The state-proposed EFPs undermine the purposes of Reef Fish Amendment 40 and threaten the stability of our federally permitted CFH fleet.

(8.4) National Political Leaders

Table 10: National Political Leader Themes by Sentiment Type

National Political Leader Themes	Positive		Negative		Total	
Better Science	24	0.28	0	0.00	24	0.18
Flexibility	23	0.27	0	0.00	23	0.17
Economics	18	0.21	0	0.00	18	0.13
Resource abundance	7	0.08	0	0.00	7	0.05
Accountability	6	0.07	0	0.00	6	0.04
State management is better	2	0.02	0	0.00	2	0.01
States are trustworthy	2	0.02	0	0.00	2	0.01
Better collaboration	1	0.01	0	0.00	1	0.01
Pro-state management other	1	0.01	0	0.00	1	0.01
Pro-state management other	1	0.01	0	0.00	1	0.01
Negative perception of data accuracy	0	0.00	5	0.10	5	0.04
Lack of recreational fishermen accountability	0	0.00	5	0.10	5	0.04
Mistrust of state government	0	0.00	10	0.20	10	0.07
Unfair group advantage	0	0.00	10	0.20	10	0.07
May lead to overfishing	0	0.00	10	0.20	10	0.07
Federal management is better	0	0.00	10	0.20	10	0.07
Grand Total	**85**	**1.00**	**50**	**1.00**	**135**	**1.00**

This category of speakers includes members of Congress and the federal government. These speakers are particularly important because of their function as decision-makers for the entire country. Through passing laws such as the Magnuson-Stevens Act and the Modern Fish Act, Congress can and has shaped fisheries management priorities and possibilities. These national politicians, however, are not usually fisheries management experts. While they amplify and support the voices of their constituents in their respective states, this does not also mean each Congressperson or Senator is an expert in red snapper ecology. This is why laws such as the Magnuson-Stevens Act and the Modern Fish Act usually direct other, specialized federal agencies (in this case, NOAA Fisheries) to enact changes.

Normally, fisheries policy changes happen through the Fisheries Management Councils under NOAA Fisheries. In the case of red snapper, however, national political leaders

occasionally tried to circumvent the usual process for fisheries policy changes by pushing legislation which would wrest control from NOAA Fisheries and give it directly to the state governments. Usually, these were initiated by congressmen from the Gulf States. Congressman Garret Graves from Louisiana was particularly productive, bringing forward various legislative initiatives on red snapper, including the RED SNAPPER Act, the Gulf States Red Snapper Management Authority Act, and the DESCEND Act. While not all of these dealt with state control, all of them represent national politicians taking action for issues expressed by their constituents without waiting for NOAA Fisheries or the regional councils to make the changes through the established fishery management systems.

National politicians in favor of devolved responsibility for management of red snapper focused on three main themes for their rationale: better data collection methods, greater *flexibility* under state management, and how state management would improve local economies (see Table 10 for a complete list of national political leader themes). Politicians in favor of state management highlighted how states will have better data collection methods, more up-to-date seasonal catch and fishermen effort numbers, and in general have a more accurate measure of the number of red snapper within the waters off of their coasts (*better science*). This was used to compare state data to federal data collection, which proponents of state control often critiqued as out-of-touch and generally incorrect. Below is excerpt from a 2021 letter to the Secretary of Commerce from Representative Garret Graves and other concerned members of Congress which was coded for *better science* as it highlighted how state data collection systems were superior to the federal system:

> *Over the past several years, all five Gulf States and their recreational anglers have funded and developed new systems to provide timely, higher quality data than had been available under the federal Marine Recreational Information Program (MRIP)… These extraordinary efforts to better collect data were necessary, because MRIP failed to generate accurate and timely information needed for management. Moreover, according to multiple studies, including in an examination by the National Academies of Science, MRIP has been deemed to have "fundamental" flaws.*

The second most common sentiment held by national politicians in favor of state management was that state natural resource authorities can more quickly and nimbly adjust season lengths and catch limits for red snapper based on local factors like bad weather (*flexibility*). This *flexibility* was associated with longer seasons because states could close or extend their season based on day-to-day catch data and extend the season for their state if bad weather prevented recreational fishermen from fishing on a given day. Further, state management would allow for seasons to be set relative to each state's climate. For example, many recreational fishermen complained that, in Texas, June is often very windy. State management would, in theory, allow for Texas to account for this and increase the total number of fishable days by starting the red snapper season at a later date than when federal management historically chose. If the large proportion of recreational fishermen who support state management from this research can be considered the voices of these elected leader's constituents, then it is politically logical that these elected leaders would support state management of red snapper with themes that validate state control. The following is a representative quote of this theme from Senator Mary Landrieu from Louisiana in 2014 in response to the announcement of an 11-day red snapper season. It shows how the themes of *better science* and *flexibility* were often tied together as ways in which the states could improve access for their recreational fishermen.

> *It is unconscionable that in the face of rising red snapper stocks, Gulf fisherman could be subjected to the shortest recreational red snapper season in history. This is a stark reminder the old system governing recreational fishing for red snapper is unquestionably broken. The State of Louisiana has demonstrated its ability to collect better data that allows regulators to make more informed decisions based on real-time information, yet federal regulators have not kept up.*

The third most common theme expressed by national politicians in favor of state management was that state management of red snapper would be better for state and local economies (*economics*). This sentiment was usually closely tied to the idea that longer seasons, which state control would allow through better data collection and more flexible management, would allow for increased tourism dollars and more chances for local fishermen to go fishing. This would increase business at local marinas and tackle shops. Improved business and revenue

are important constituent concerns, so it is logical that national elected leaders supported state management of red snapper when it served to improve the lives of their constituents. The following is a representative quote which expresses this theme from a letter to the Secretary of Commerce from Representative Garret Graves and other congressmen:

> *State Management of Gulf Red Snapper has been a remarkable success ensuring these resources are available for anglers today and in the future and remain the iconic fishery and economic driver of years past. According to NOAA Fisheries, 2.6 million Gulf anglers took 58.6 million fishing trips in 2017 and spent $13.5 billion on trips and durable goods.*

National politicians who were opposed to state management of red snapper were fewer in number in the dataset than those that supported it (26% of total; refer to Table 6 for the totals and percentages for data). These opposition views were found in the "Dissenting Views"[28] sections of committee reports on various House bills (H.R. 3588 and H.R. 3094) that sought to pass some or all management of red snapper to the states. Four common concerns with state management were shared between these two bills. First, these politicians opposed state management because they mistrusted that states would manage red snapper sustainably or fairly (*mistrust of state government*). Second, they worried that states might cater to recreational fishermen's voices and move quota to the recreational fishing sector at the expense of other fishing groups (*unfair group advantage*). Third, both of these concerns might lead to a poorly managed red snapper fishery, meaning overfishing could easily occur (*may lead to overfishing*). Finally, for these reasons, these politicians preferred that red snapper management stay with the federal government which, despite its problems, had led to the revival of the red snapper fishing stock (*federal management is better*).

One of the main four concerns expressed by these national politicians was that states would not manage red snapper populations sustainability (*mistrust of state government*).

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[28] Dissenting Views are the written opinions of a group which disagrees with a majority opinion or vote. They detail why they disagree. These are often provided for court case decisions and also for some legislation, as is the case in this context.

Specifically, these national politicians were concerned that states would ignore NOAA Fisheries science and regulations in favor of increasing access to red snapper for recreational fishermen. This concern cited the Gulf State's state water seasons for red snapper, which the states had previously extended in order to counteract the short season in federal waters. This, the opposition politicians claimed, showed that states were ultimately more interested in recreational fisherman happiness than they were the overall sustainability of red snapper. The following quote from the data expresses this theme:

> *The Gulf States continue to set liberal seasons in their waters, resulting in a smaller share of the quota available to be harvested in the EEZ... [H.R. 3588] would allow the states to determine recreational seasons, extend their management jurisdiction over thousands of square miles of the Gulf without funding for law enforcement, and ignore science-based annual catch limits set by the Gulf of Mexico Fishery Management Council.*

Another concern of national politicians who opposed state management was that state management might lead to states catering to recreational fishermen at the expense of the commercial sector and seafood industries (*Unfair group advantage*). The dissenting letters cited that these bills which would pass red snapper management down to the states were opposed by many restaurants, commercial fishermen, conservation groups, and businesses - all groups which feared that states would open up red snapper access to recreational fishermen in a way that would be both unsustainable and economically damaging to the multimillion dollar seafood industry. The following is a representative quote from the dissenting letter to H.R. 3094 which expresses the concern over unfair treatment of specific fishing groups:

> *Not only would the bill allow for overfishing, [H.R. 3094] would also let the newly formed state management body take as much as 10 percent of the commercial quota each year and give it to the recreational sector. In combination, these two changes would be a disaster for the red snapper stock, the commercial reef fishermen and many related businesses that have sacrificed to help put this stock on the path to rebuilding.*

As seen in the above quote, there were also concerns that state management would lead to overfishing of red snapper (*may lead to overfishing*). Specifically, the concern is that state

management will lead to unsustainable harvest of red snapper via recreational fishermen being given increased access. Notably, the dissenting opinion lists the Trump administration as one of the instigators of this overfishing, as seen in the following quote:

> *The Trump Administration has exacerbated this problem, not solved it, by extending the private boat recreational red snapper season in the Gulf this year 15 times longer than was recommended by NOAA scientists and managers. That has led to massive overfishing and legal challenges that could hamstring the fishery for years to come.*

Finally, these dissenting politicians expressed their thoughts that federal agencies should be the entity to manage red snapper (*federal management is better*). Specifically, they felt that institutions given management authority through the Magnuson-Stevens Act, i.e., NOAA Fisheries and the Gulf of Mexico Fishery Management Council, should be the entities to manage red snapper. Further, if state management were to be the final decision, these politicians felt that it should come about through established management methods through the Gulf Council. Below is an example, both from the Dissenting Opinion on H.R. 3094, which conveys the belief that established federal agency norms should be the method for solving the red snapper issues:

> *But the larger problems with this bill lie in its rejection of the Magnuson-Stevens Act as a framework for fisheries management. It is only private boat anglers that have resisted working through the Gulf Council, hoping instead that Congress will give them everything they want at the expense of others. This is not how our fisheries should be managed… We believe that the Gulf Council is the appropriate venue for making decisions about a complex, mixed-sector fishery like red snapper.*

9. Problem Stream: Heroes & Villains of Red Snapper

Table 11: Inclusion Criteria: Villain Theme Codes

Why are they bad	
self interest	Refers to any mention of "politics" being bad, a government being influenced by a group, politicians doing something for their own benefit, a group (e.g., commercial fishermen) being accused of acting for themselves at the expense of another group, states putting in place regulatory rules that are lax and would benefit their constituents over the health of the fishery; When a group/agency is referred to as receiving financial incentive to choose certain management policies over others; when a group is accused of paying to have their preferred policies enacted.
bad management	Refers to general idea that agency management is "flawed" or bad; when there is general discontent for how a agency's management and policy-making has gone
mistrust	Claims that agency/entity do not have the support of a person because that person does not believe in the integrity or follow-through of that agency. Speaker does not believe an agency will do a good job of management if management is given to them in the future.
negative perception of federal managers	Overt disdain for federal government; belief that feds are incompetent (usually beyond just the red snapper case)

anti-access	Refers to when a group is receiving access to a fishery at the claimed expense of a different group; if an agency is talked about as having laws or rules that are to the detriment of one group in terms of their ability to access red snapper.
anti-science	Claims that an agency actively ignores science in making regulations or actions.
overfishing	Refers to claims of too many fish being caught (that it is unsustainable/causing there to be too few); claims that a group's fishing practices are harming the fishery by catching too many fish; claims that one group's fishing practices will impact the fishery much more than another's
don't understand context	Whenever a comment or article claims that an actor does not know what is going on in a specific area. Whenever an actor is claimed to be very far away. Claims that an actor is "clueless"/doesn't know about red snapper.
negative perception of data accuracy	Claims that an agency is operating without knowing how many red snapper there actually are; claims that agency does not have accurate data collection; when the comment is about numbers of red snapper being unknown.

Table 12: Inclusion Criteria: Hero Theme Codes

Why are they good	
Seeking to increase access	If an actor is portrayed as a hero/good guy because they are trying to increase the ability of fishermen to go fishing for red snapper
better understand the local context	Whenever there is mention of an actor being better able to manage because they are local/near the resource and therefore understand it better.
general belief	When statement expresses that states/an actor will do a better job of management without a given reason; when statement expresses that an actor is simply better for something without a given reason; expression that state/an actor "should" manage something without given reason why; belief that one form of governance/an actor is inherently better than the others.
good for economy	When one actor is preferred because their access or control of red snapper is considered good for the economy/contributes money to local communities.
more capacity	When a governance or agency is generally described to be better able to manage red snapper, literal mention of having more resources to manage red snapper.

more flexibility	When an actor is considered to be better for management of red snapper because of their ability to manage red snapper in a more localized/regional/adaptive/nimble manner than another actor.
better science	Whenever a comment/article claims that an actor has better data collection processes and practices than another. When an agency has a better idea of the amount of snapper present.
will ensure stock sustainability better	When an actor is preferred because there is belief that their control will ultimately be better for RS population growth and sustainable management
Other	When the actor is a good choice for red snapper management for a reason no existing theme fits.
Null	To fill the blank when no reason or actor is given

Following one of the Narrative Policy Framework's narrative strategies, the *angel-devil shift*, I coded each article and comment for who the speaker framed as the hero and the villain characters of the red snapper management narrative. This allowed for me to extract stakeholder perceptions of and sentiments toward various red snapper actors, such as state governments, the federal government, the Gulf Council, and fishermen groups. All together, these themes begin to form a narrative around red snapper management heroes and villains. It frames the heroes as those who have the best knowledge of red snapper and local context while also being able to most quickly change season details based on new information.

Table 13: Heroes of red snapper management: Total numbers of Themes

Heroes of red snapper management: Themes		
Better understand the local context	211	0.20
More flexibility	177	0.17
General belief	155	0.15
Will ensure stock sustainability better	134	0.13
Better science	108	0.10
Seeking to increase access	103	0.10
Other	68	0.06
More capacity	60	0.06
Good for economy	47	0.04
Grand Total	**1063**	**1.00**

The *null* code (*n=3349*) was removed from Table 12 for two reasons. First, because it is only a placeholder code for when no heroic actor and theme were present in a comment. Second, there were two columns for heroic actors. When a comment only contained one heroic actor, the second column was filled with *null*. For these reasons, *null* has a much higher total number, and comparison of other occurring theme codes to the *null* code is not a useful comparison. This is also done for Table 13 for the same reason.

Irrespective of the actor, several themes were used most frequently to heroically frame an actor. First among these was how well an actor understood local fishing contexts and realities (*better understand the local context*) (see Table 13 for complete list of heroic themes). These actors were considered a better choice for red snapper management because they have greater access to and understanding of local environments, local culture, local hydrology, and local weather. With this local knowledge, they are framed to be better able to manage red snapper with finer and more appropriate actions than actors which are further away. Second was the actor's ability to adapt to sudden seasonal changes and geographic context in order to extend the season or adjust the season to match geographic and climatic realities (*more flexibility*). These actors were considered better for red snapper management because they are able to more quickly and nimbly change season length and catch limits to reflect on the ground realities.

The third most common theme employed by stakeholders to make an actor the hero of red snapper management was to frame a particular actor as having greater capacity, knowledge, or ability to manage red snapper in a way that will ensure stock sustainability and stability into the future (*will ensure stock sustainability better*). This was sometimes stated as a belief, but it was often accompanied by examples of the hero actor having reputable systems in place for stock management and data collection or previous success stories. Finally, a fourth theme argued

that an actor was the better manager for red snapper because they have more accurate data and better data collection systems and methods than a different actor (*better science*). Having more accurate and timely data is important because, legally through the Magnuson-Stevens Act which governs all federal fisheries management, NOAA Fisheries is required to use the "best available science" to make management plans for the fisheries it controls.

In addition to specific traits and themes attributed to heroic actors, many times the heroes were simply the preference of the speaker without accompanying rationale (*general belief*). This can be attributed to beliefs and attitudes. Attitudes are how an individual perceives something, usually on a scale of positive to negative (Decker et al., 2012). Beliefs often influence attitudes, and they are what an individual thinks is true regardless of fact. In this context, beliefs influence an actor's preferred policy solution, and this belief drives actors to advocate for their preferred policy solutions. In summary, the primary heroic themes show that a management actor was considered and made heroic when they 1) understood the local fishing context, 2) were in a position to adaptive and flexibly manage the red snapper seasons, and 3) possess solid science and data collection methods to ensure overfishing of red snapper would not occur.

Table 14: Villains of red snapper management: Total Numbers of Themes

Villains of red snapper management: Themes		
Bad management	507	0.35
Self interest	206	0.14
Anti-access	191	0.13
Negative perception of data accuracy	164	0.11
Overfishing	112	0.08
Negative perception of federal managers	82	0.06
Don't understand context	80	0.06
Other	43	0.03
Anti-Science	26	0.02
Mistrust	27	0.02
Grand Total	**1438**	**1.00**

Null = 2971

The *devil-shift* tactic was employed by stakeholders to make one actor appear like a villain of red snapper management. These villains were often described as having management practices which were harmful, hurtful, or negligent, and many stakeholder comments expressed

generalized frustration with federal management status quo (*bad management*) (see Table 14 for a complete list of villain themes). Characterizations of villains sometimes focused on allegations of corruption, ulterior management motives, or that management decisions were influenced by lobbying from wealthy fisherman groups (i.e., commercial fishermen) (*self interest*). Usually, these claims highlighted that the villain actors were giving one fisherman group unfair access to red snapper at the expense of their identified group (*anti-access*). This sentiment could have been directed toward policymakers making management decisions which benefited certain groups over others, or it could have also referred to other fishermen groups enjoying disproportionately high access to red snapper at the perceived expense of the speaking stakeholder. Another villain trait was attributed to those who collected inaccurate red snapper population data or fishermen effort data (*negative perception of data accuracy*). This theme became increasingly important in more recent years as the conversation about red snapper shifted to focus acutely on which agencies possessed the "best available science" for decision-making. Finally, villainous actors were also ones who would create policy that would allow or catch themselves too many red snapper in a way that was detrimental to the overall survivability of the population (*overfishing*).

The following paragraphs detail the *angel-devil shift* perspectives for recreational fishermen, national politicians, charter for-hire stakeholders, and interest groups. Pairing the actors which each stakeholder group casts as either the hero or villain of the red snapper narrative along with the themes reveals how the problem stream for each stakeholder group is constructed.

(9.1) Recreational Fishermen Heroes & Villains

Table 15: *Positive* Recreational Fishermen Heroes with Numbers of Themes

Positive Recreational Fishermen Heroes		
Federal Government	**1**	**1.00**
Better science	1	1.00
NGOs	**1**	**1.00**
Will ensure stock sustainability better	1	1.00
Recreational Fishermen	**16**	**1.00**
Good for economy	7	0.44
Will ensure stock sustainability better	7	0.44
Null	1	0.06

Other	1	0.06
State government	**681**	**1.00**
Better understand the local context	179	0.26
General belief	130	0.19
More flexibility	128	0.19
Better science	53	0.08
More capacity	50	0.07
Seeking to increase access	41	0.06
Will ensure stock sustainability better	37	0.05
Other	36	0.05
Null	26	0.04
Good for economy	1	0.00
Null	**863**	**1.00**
Null	863	1.00
Grand Total	**1562**	**1.00**

Recreational fishermen with positive perceptions of state management overwhelmingly viewed state governments as the heroes for red snapper management. Their messaging framed state governments as the best manager for red snapper because state governments know and understand local fishing realities better than other management actors (*better understand the local context*) (see Table 15 for a complete list of pro-state management recreational fishermen heroes and their accompanying themes). The implication is that the federal government's style of management did not account for local realities such as weather, red snapper populations, or ocean topography and habitat. State management would be superior precisely because each state could tailor their own red snapper seasons to their distinct federal waters and climate (*more flexibility*). Finally, these pro-state management recreational fishermen sometimes simply preferred state management, and they used positive adjectives and descriptions of state natural resource agencies and their management strategies without citing more specific reasons (*general belief*). The following is a representative example from a Texas recreational fisherman from 2019 which highlighted how states were inherently a better choice for red snapper management:

> *I am a recreational angler from Texas and I fully support Amendment 50. State management of red snapper under the exempted fishing permit has been a tremendous success so far, and a great improvement over previous federal management that had recently produced seasons as short as three days… State managers inherently have better insight into what works best for the anglers of their state and will ultimately produce more and better opportunities both for private boat anglers and the charter/for-hire fleet.*

Table 16: *Positive* Recreational Fishermen Villains with Numbers of Themes

Positive Recreational Fishermen Villains		
Commercial fishermen	**30**	**1.00**
Anti-access	16	0.53
Self interest	9	0.30
Overfishing	4	0.13
Other	1	0.03
Federal Government	**240**	**1.00**
Bad management	90	0.38
Negative perception of federal managers	49	0.20
Don't understand context	34	0.14
Negative perception of data accuracy	31	0.13
Anti-access	10	0.04
Other	10	0.04
Self interest	9	0.04
Null	5	0.02
Mistrust	2	0.01
Charter For Hire	**8**	**1.00**
Anti-access	4	0.50
Self interest	4	0.50
Gulf Council	**53**	**1.00**
Bad management	27	0.51
Negative perception of data accuracy	9	0.17
Don't understand context	6	0.11
Self interest	5	0.09
Anti-access	2	0.04
Mistrust	2	0.04
Null	1	0.02
Other	1	0.02
NGOs	**4**	**1.00**
Self interest	3	0.75
Anti-access	1	0.25
other	**3**	**1.00**
Bad management	2	0.67
Anti-access	1	0.33
Null	**645**	**1.00**
Null	645	1.00
Grand Total	**983**	**1.00**

Recreational fishermen who supported state management primarily framed the federal government as the villain. The most specific complaint these fishermen held was that NOAA Fisheries' policies did not reflect red snapper fishing reality (*don't understand context*) (see Table 16 for a complete list of pro-state management recreational fishermen villains and their accompanying themes). This resulted in generalized frustration about federal red snapper management, and some comments from pro-state management recreational fishermen used negative language toward federal managers without giving much reason (*bad management*). These were often frustrations about diminishing season length or bag limits, both of which at this time NOAA Fisheries controlled to ensure overfishing did not occur. Occasionally, these frustrations were directed specifically at the federal government as an entity (*negative perception of federal managers*). These sentiments often extended past the red snapper case and applied more broadly to federal management of local natural resources, such as other wildlife. The following example from 2018 from a Floridian recreational fisherman was succinctly displays the:

> *I believe the affected states can better manage and respond to fisheries science than any elected Federal Bureaucrat.*

Notably, while the federal government was more commonly framed as the villain, there was also considerable frustration directed at the Gulf Council and commercial fishermen. The Gulf Council received some of the same generalized frustration that was directed at the federal government. These comments showed that the Gulf Council was sometimes considered a federal-level actor, even though it is seated by important fisheries stakeholders from each of the Gulf states. The frustration toward the commercial fishermen typically included claims that they were responsible for any overfishing of red snapper – not recreational fishermen. In this same vein, recreational fishermen often claimed that commercial fishermen were receiving preferential treatment and higher red snapper quotas at the expense of recreational fishermen. Typically, the Gulf Council was the perpetrator of this unequal treatment, being subject to the commercial fishing lobby. The following is a representative quote from a Louisiana recreational fishermen in 2015 which expresses these sentiments:

We absolutely need to remove the Gulf Council's control of our resources. They have [expletive deleted] up our red snapper fishing… This is causing law abiding people to turn into law breakers because they feel like they are getting [expletive deleted] in an effort to save the [American Red Snapper] for the commercial guys. Please do whatever it takes to remove gulf council control of our state waters out to NINE miles...

Table 17: *Other* Recreational Fishermen Heroes with Numbers of Themes

Other Recreational Fishermen Heroes		
Commercial fishermen	**1**	**1.00**
Will ensure stock sustainability better	1	1.00
Federal Government	**6**	**1.00**
Will ensure stock sustainability better	5	0.83
Other	1	0.17
Charter For Hire	**3**	**1.00**
Better understand the local context	2	0.67
Good for economy	1	0.33
NGOs	**2**	**1.00**
General belief	1	0.50
Will ensure stock sustainability better	1	0.50
other	**7**	**1.00**
Will ensure stock sustainability better	4	0.57
Better science	1	0.14
Better understand the local context	1	0.14
Good for economy	1	0.14
Recreational Fishermen	**55**	**1.00**
Good for economy	31	0.56
Will ensure stock sustainability better	12	0.22
Better understand the local context	5	0.09
General belief	5	0.09
Seeking to increase access	2	0.04
Regional (Gulf Council)	**2**	**1.00**
Will ensure stock sustainability better	2	1.00
State government	**45**	**1.00**
Seeking to increase access	18	0.40
Other	9	0.20
Will ensure stock sustainability better	6	0.13
Better science	3	0.07
More capacity	3	0.07
Better understand the local context	2	0.04
General belief	2	0.04
More flexibility	1	0.02
Null	1	0.02
null	**2139**	**1.00**
Null	2139	1.00

Grand Total	**2260**	**1.00**

When the recreational fishermen whose messaging did not clearly support nor oppose state management of red snapper focused on heroes of red snapper, they typically positioned either themselves as a group or the state governments as the hero. When highlighting themselves, the focus was primarily that recreational fishermen are good for local economies and that they spend a lot of money to catch red snapper (*good for economy*) (see Table 17 for a complete list of *Other* recreational fishermen villains and their accompanying themes). Their argument was that seasons should be longer and access to red snapper increased in order to extend the amount of time and money recreational fishermen spend in coastal towns and on fishing equipment. When these neutral-presenting recreational fishermen framed the state government as the hero, they typically focused on how the state government could or would increase recreational fishing access to red snapper through longer seasons and larger bag limits compared with status quo management (*seeking to increase access*). Notably, there was a greater magnitude of focus on villains and less on heroes amongst these recreational fishermen. This is in part likely due to the coding process, because if a comment was giving high praise to one management actor, it often explicitly stated support for or against state management. Comments coded for *Other* were strictly coded for *Other* because they did not clearly support one actor over another. An example quote from a Florida recreational fisherman in 2019 positions recreational fishermen as the heroes because of their contribution to coastal economies, and it vilifies commercial fishermen as self-interested actors who have unfair access to red snapper.

> *Commercial and recreational anglers should not be treated differently. Just because recreational anglers can't afford lobbyists does not make them second class citizens. Recreational angling provides more to the economy than commercial fishing.*

Table 18: *Other* Recreational Fishermen Villains with Numbers of Themes

Other Recreational Fishermen Villains		
Commercial fishermen	**143**	**1.00**
Anti-access	58	0.41
Overfishing	47	0.33
Self interest	24	0.17
Other	10	0.07

Mistrust	2	0.01
Anti-science	1	0.01
Null	1	0.01
Federal Government	**315**	**1.00**
Bad management	195	0.62
Negative perception of data accuracy	28	0.09
Negative perception of federal managers	27	0.09
Don't understand context	21	0.07
Self interest	19	0.06
Anti-access	16	0.05
Mistrust	4	0.01
Null	2	0.01
Other	2	0.01
Overfishing	1	0.00
Charter For Hire	**57**	**1.00**
Anti-access	37	0.65
Self interest	9	0.16
Overfishing	7	0.12
Null	2	0.04
Other	2	0.04
Gulf Council	**128**	**1.00**
Bad management	60	0.47
Negative perception of data accuracy	30	0.23
Self interest	23	0.18
Anti-access	4	0.03
Don't understand context	4	0.03
Mistrust	4	0.03
Negative perception of federal managers	2	0.02
Other	1	0.01
other	**69**	**1.00**
Bad management	44	0.64
Overfishing	14	0.20
Anti-access	7	0.10
Self interest	2	0.03
Negative perception of data accuracy	1	0.01
Other	1	0.01
Recreational Fishermen	**7**	**1.00**
Overfishing	4	0.57
Anti-science	1	0.14
Mistrust	1	0.14

Other	1	0.14
Restaurants	**2**	**1.00**
Self interest	2	1.00
State government	**43**	**1.00**
Bad management	21	0.49
Self interest	10	0.23
Negative perception of data accuracy	4	0.09
Other	3	0.07
Anti-access	2	0.05
Mistrust	2	0.05
Null	1	0.02
null	**1496**	**1.00**
Null	1496	1.00
Grand Total	**2260**	**1.00**

Recreational fishermen who did not explicitly support or oppose state management in their comments had very similar *angel-devil shift* patterns to pro-state management recreational fishermen. The top three villainized actors for this group are the federal government, the Gulf Council, and Commercial Fishermen. The federal government was often the recipient of generalized frustration over the short seasons and other management grievances (*bad management*) (see Table 18 for a complete list of *Other* recreational fishermen villains and their accompanying themes). The Gulf Council also received these same complaints, though to a lesser degree than did the federal government. These complaints focused mostly on poor management decisions, but some recreational fishermen also highlighted how the Gulf Council's regulations did not match the amount of red snapper they themselves observed while fishing (*negative perception of data accuracy*). Recreational fishermen also claimed that commercial fishermen and the charter for-hire sector were receiving larger quota allotments and unfair preferential treatment compared to their private angling quota (*anti-access*). The following is a representative quote from a Louisiana recreational fisherman in 2013 that framed the federal government as the villain through complaints that federal managers were making poor management decisions because it lacked local knowledge.

> *This is just one more step the Obama administration is taking to turn our great country into a dictatorship. The abundance of Red Snapper in the Gulf does not call for*

shortening the season to 27 days. With the typical recreational angler they can catch a legal limit within 30 minutes. You call that a shortage? Not to mention the economic impact that a short season will carry. Get your facts straight, get out from behind your desk and take a kid fishing!

Table 19: *Negative* Recreational Fisherman Villains with Numbers of Themes

Negative Recreational Fisherman Villains		
Commercial fishermen	**4**	**1.00**
Self interest	4	1.00
Federal Government	**3**	**1.00**
Negative perception of data accuracy	2	0.66
Bad management	1	0.33
Gulf Council	**1**	**1.00**
Self interest	1	1.00
NGOs	**2**	**1.00**
Self interest	2	1.00
other	**1**	**1.00**
Mistrust	1	1.00
State government	**14**	**1.00**
Self interest	7	0.50
Bad management	2	0.14
Pay offs (financial)	2	0.14
Negative perception of data accuracy	1	0.07
Don't understand context	1	0.07
Overfishing	1	0.07
null	**35**	**1.00**
Null	35	1.00
Grand Total	**60**	**1.00**

Table 20: *Negative* Recreational Fisherman Heroes with Numbers of Themes

Negative Recreational Fisherman Heroes		
Federal Government	**8**	**1.00**
Will ensure stock sustainability better	4	0.50
Other	3	0.38
General belief	1	0.13
Recreational Fishermen	**1**	**1.00**
Other	1	1.00
The Politician	**1**	**1.00**
Better science	1	1.00
null	**50**	**1.00**
Null	50	1.00
Grand Total	**60**	**1.00**

Recreational fishermen who opposed state management villainized the state government and considered the federal government to be the hero. Specifically, the state governments were often spoken of with mistrust and with the fear that states would cater to constituents and interest group lobbies (*self interest*) (see Tables 19 and 20 for a complete list of anti-state management recreational fishermen heroes and villains and their accompanying themes). This catering would mean opening up access to red snapper at the cost of the fishery's long-term recovery. One of the primary groups mentioned which had a strong lobbying force were commercial fishermen. The narrative from these anti-state management recreational fishermen described commercial fishermen as petitioning for and receiving unfair access to red snapper at the expense of recreational fishermen (*self interest*). When these same fishermen highlighted a hero, they typically positioned the federal government as the preferred actor for managing red snapper. The held belief is that federal management is preferable to state management because federal management will ensure that the near collapse stock levels seen during the 1980s do not happen again (*will ensure stock sustainability better*). The following is a representative quote from a Louisiana recreational fisherman in 2015 which placed the state as a villain whose policies would lead to overfishing. It frames the federal government as the hero who stepped in to save red snapper.

> *Giving the State all red snapper management may result in another 14 inch disaster as in the spillway. I remember what happened before the Feds took control of the red snapper. I simply don't trust the state management anymore.*

(9.2) National Political Leader Heroes & Villains

Table 21: *Positive* National Political Leader Heroes with Numbers of Themes

Positive National Political Leader Heroes		
other	**2**	**1.00**
More capacity	2	1.00
Recreational Fishermen	**1**	**1.00**
Seeking to increase access	1	1.00
Regional (Gulf Council)	**1**	**1.00**
Seeking to increase access	1	1.00
State government	**36**	**1.00**
More flexibility	16	0.44

103

Better science	12	0.33
Seeking to increase access	6	0.17
General belief	2	0.06
The Politician	**8**	**1.00**
Seeking to increase access	6	0.75
Will ensure stock sustainability better	2	0.25
null	**4**	**1.00**
Null	4	1.00
Grand Total	**52**	**1.00**

National political leaders who supported state management of red snapper positioned the state governments as the heroes. These national politicians believed states would manage red snapper more quickly and adaptively because states would manage smaller, more local areas (*more flexibility*) (see Table 21 for a complete list of pro-state management national political leader heroes and their accompanying themes). If bad weather in Texas occurs in June, then the state of Texas could extend the season into July or August for Texas fishermen. They also spoke frequently on the idea that state data collection is superior to and more accurate than federal data collection systems (i.e., NOAA Fisheries' Marine Recreational Information Program) (*better science*). This is important because knowledge of the population numbers for red snapper year-to-year is one of the primary factors in determining how long the red snapper fishing season will be. This has continued to be a primary complaint in more recent years, especially following the Great Red Snapper Count's results in 2020. The following is a representative quote from Representative Bradley Byrne from Alabama in 2015 about House Bill 1335 which frames the state as the best actor for red snapper management.

> *Tonight was a big win for Red Snapper fishermen in the Gulf and fishermen all across the country. These provisions were designed to give the Gulf states control over the science and data collection as it relates to Red Snapper, and I believe that with better data and more flexibility for fisheries managers, we can get back to having a real Red Snapper season in the Gulf.*

Table 22: *Positive* **National Political Leader Villains with Numbers of Themes**

Positive National Political Leader Villains		
Federal Government	**33**	**1.00**
Negative perception of data accuracy	13	0.39
Anti-science	10	0.30
Bad management	7	0.21
Don't understand context	2	0.06
Anti-access	1	0.03
Gulf Council	**2**	**1.00**
Anti-access	2	1.00
null	**17**	**1.00**
Null	17	1.00
Grand Total	**52**	**1.00**

For these same politicians who supported state management, the federal government was overwhelmingly positioned as the villain of the story. The federal government was perceived to have an inaccurate data collection system (*negative perception of data accuracy*), and they also blamed the federal government for actively choosing to act on this "faulty data" rather than deferring to the state's better data (*anti-science*) (see Table 22 for a complete list of pro-state management national political leader villains and their accompanying themes). The following quote from a 2021 Letter to the Secretary of Commerce Gina Raimondo from Garret Graves expresses these frustrations:

> *With the new State data systems, a new, unprecedented state-of-the-art independent stock assessment, and ongoing questions in NOAA Fisheries' own historical recreational data system, this may be one of the most uncertain periods in the management of any fishery in the nation's history. The only thing that is undeniably clear is that the red snapper population is far healthier than anyone at NOAA Fisheries ever suspected. Why would we force a recalibration that regresses to less-accurate data, resulting in punitive management decisions which are contrary to macro data sets?*

Table 23: *Negative* **National Political Leader Villains & Heroes with Numbers of Themes**

Negative National Political Leader Villains			*Negative* National Political Leader Heroes		
Recreational Fishermen	**10**	**1.00**	**Federal Government**	**5**	**1.00**
Anti-science	5	0.50	Will ensure stock sustainability better	5	1.00
Overfishing	5	0.50	**Regional (Gulf Council)**	**5**	**1.00**
State government	**10**	**1.00**	General belief	5	1.00
Self interest	10	1.00	**Null**	10	1.00
			null	10	1.00
Grand Total	**20**	**1.00**	**Grand Total**	**20**	**1.00**

National politicians who were against state control framed local actors (i.e., state governments and recreational fishermen) as the villains and the federal and regional actors as the heroes. Recreational fishermen were framed as characters who would ignore scientific management (*anti-science*) in order to be able to fish for more red snapper (*overfishing*) (see Table 23 for a complete list of anti-state management national political leader heroes and villains and their accompanying themes). The state governments were seen as enablers of this behavior, succumbing to the political pressure to appease their recreationally fishing constituents (*self interest*). Keeping management power with the federal government and the regional Gulf Council was believed to be the better course of action because they would prevent these negative effects from occurring (*will ensure stock sustainability better*, *general belief*). Notably, these dissenting national politicians often expressed these beliefs as a counterargument to statements from other national politicians which supported state control. Their narratives directly counter the points which were deemed reasons for state control by the other politicians. A representative quote which summarizes these beliefs is found in Senator Raúl Grijalva's words from 2018.

> *The Trump Administration has exacerbated this problem [of overfishing], not solved it, by extending the private boat recreational red snapper season in the Gulf this year 15 times longer than was recommended by NOAA scientists and managers. That has led to massive overfishing and legal challenges that could hamstring the fishery for years to come… [H.R. 3588] would allow the states to determine recreational seasons, extend their management jurisdiction over thousands of square miles of the Gulf without funding for law enforcement, and ignore science-based annual catch limits set by the Gulf of Mexico Fishery Management Council. The bill would also force NOAA and Council scientists to accept and use data from states and fishermen, even if that data has no real scientific value.*

(9.3) Federal Charter For-Hire Heroes and Villains

Table 24: *Positive* Charter For-Hire Heroes with Numbers of Themes

Positive Charter For-Hire Heroes		
Federal Government	**1**	**1.00**
Other	1	1.00
Regional (Gulf Council)	**1**	**1.00**
Other	1	1.00
State government	**10**	**1.00**
Better understand the local context	2	0.20
More capacity	2	0.20
More flexibility	2	0.20
Other	2	0.20
Good for economy	1	0.10
Seeking to increase access	1	0.10
null	**14**	**1.00**
Null	14	1.00
Grand Total	**26**	**1.00**

Table 25: *Positive* Charter For-Hire Villains with Numbers of Themes

Positive Charter For-Hire Villains		
Federal Government	**3**	**1.00**
Bad management	2	0.66
Don't understand context	1	0.33
Gulf Council	**1**	**1.00**
Bad management	1	1.00
null	**22**	**1.00**
Null	22	1.00
Grand Total	**26**	**1.00**

The federal charter for-hire stakeholders who supported state management were few in number (20%; reference Table 6 for total percentages). For those that were, they narrated a familiar casting of villains and heroes: the federal government and the Gulf Council as the villains and state governments as the heroes. These stakeholders expressed that the Gulf Council and federal government enacted poor management decisions that were not congruent with the local contexts they experienced, such as bad weather events and larger numbers of localized red snapper (*bad management, don't understand context*) (see Tables 24 and 25 for a complete list of pro-state management federal charter for-hire heroes and villains and their accompanying themes). These pro-state management federal charter for-hire fishermen mostly labeled the state

government as the hero for a variety of reasons, ranging from better understanding of the local context (*better understand the local context*), to having greater functional capacity to manage red snapper (*more capacity*), to having greater flexibility to adaptively manage red snapper (*more flexibility*). One of these pro-state management federal charter for-hire fishermen from Louisiana expressed several of these codes in the following quote from 2013. Notably, this statement is from 2013 before Amendment 40 was passed, meaning the federal charter for-hire fishing quota was still joined with the recreational fishermen.

> *The feds have no idea of how to manage the fisheries and have proven that. It is about time the Government found something better to do with the people on that board and left our fisheries to our individual states. We can count fish and our people can manage them better. We have been fighting for our jobs and are getting desperate at this point.*

Table 26: *Negative* Federal Charter For-hire Heroes with Numbers of Themes

Negative Federal Charter For-hire Heroes		
Federal Government	**5**	**1.00**
Will ensure stock sustainability better	3	0.60
Other	1	0.20
Seeking to increase access	1	0.20
For Hire	**1**	**1.00**
Will ensure stock sustainability better	1	1.00
null	**30**	**1.00**
Null	30	1.00
Grand Total	**36**	**1.00**

Table 27: *Negative* Federal Charter For-hire Villains with Numbers of Themes

Negative Federal Charter For-hire Villains		
Commercial fishermen	**1**	**1.00**
Self interest	1	1.00
Gulf Council	**1**	**1.00**
Self interest	1	1.00
other	**1**	**1.00**
Bad management	1	1.00
Recreational Fishermen	**1**	**1.00**
Overfishing	1	1.00
State government	**8**	**1.00**
Self interest	4	0.50
Overfishing	2	0.25
Bad management	1	0.13

Other	1	0.13
null	**24**	**1.00**
Null	24	1.00
Grand Total	**36**	**1.00**

Similar to the federal charter for-hire fishermen who supported state control, those who opposed it were also few in number. Consistently, however, they labeled the state governments as their villains and the federal government as their hero, which is similar to the hero-villain narratives in other cases. Their concern is that states would choose to manage red snapper by increasing the recreational fishing season beyond what the fishery can sustain (*self interest*), leading to overfishing by recreational fishermen (*overfishing*) (see Tables 26 and 27 for a complete list of anti-state management federal charter for-hire heroes and villains and their accompanying themes). Anti-state management federal charter for-hire stakeholders' primary theme was concern that their state managers would seek to please recreational fishermen (i.e., their constituents) at the expense of the charter for-hire fishing experience.

Given the small number of federal charter for-hire comments, there is a very small number of actors directly identified as villains for their case. The most commonly occurring hero was the federal government. Federal charter for-hire captains and stakeholders who opposed state management felt that the federal government would manage year-to-year red snapper population numbers better than the states would (*will ensure stock sustainability better*). Notably, many charter for-hire stakeholders opposed state management without directly villainizing them in their narratives. Often, this looked like a comment which requested that the charter for-hire sector be left out of Amendment 50 altogether (i.e., that the federal charter for-hire sector remain under federal control). In 2015, the recreational fishing quota for red snapper was split between the recreational angling and the charter for-hire components via Amendment 40 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico. This allowed for the federal charter for-hire sector to spread out its fishing in a predictable manner across a much longer season, resulting in increased seasonal stability for its sector. The expressed concern with state management is that the states might elect to recombine the two sectors to make a single recreational fishing quota, which the federal charter for-hire stakeholders feared would return

them to the same issues they had experienced previously. The following quote is representative of these codes and ideas, and it comes from a charter for-hire stakeholder in Florida from 2018:

> *If the council is seriously entertaining the thought of a "State Management" EFP, I would ask to refrain from including the CFH fleet. We have worked under and have protections under current federal law. My state has not shown me that it is concerned with the wellbeing of the CFH fleet. I can support this type of management alternative for the Private Sector, if that is what they would like to pursue, but please keep CFH as a federally managed user group.*

(9.4) Interest Group Heroes & Villains

Table 28: *Positive* Interest Group Heroes with Numbers of Themes

Positive Interest Group Heroes		
Federal Government	**1**	**1.00**
More flexibility	1	1.00
null	**11**	**1.00**
Null	11	1.00
Recreational Fishermen	**2**	**1.00**
Seeking to increase access	1	0.50
will ensure stock sustainability better	1	0.50
Regional (Gulf Council)	**3**	**1.00**
More flexibility	1	0.33
Other	1	0.33
Seeking to increase access	1	0.33
State government	**32**	**1.00**
More flexibility	11	0.34
Better science	7	0.22
Better understand the local context	6	0.19
Seeking to increase access	5	0.16
Will ensure stock sustainability better	2	0.06
Other	1	0.03
the politician	**1**	**1.00**
Seeking to increase access	1	1.00
Grand Total	**50**	**1.00**

Interest groups, a category which includes NGOs, that supported state management overwhelmingly cast the state governments as the heroes in their narratives. Overall, they believed that state management would be better able to adapt to local events which affect red

snapper fishing in their areas. They felt that states could more quickly adapt to and change seasonal operations than the federal government could (*more flexibility*) (see Table 28 for a complete list of pro-state management interest group heroes and their accompanying themes). They also expressed the idea that state data collection methods are robust and can accurately and sustainably measure red snapper populations, sometimes to an even greater degree of accuracy than the existing federal systems (*better science*). Finally, these interest groups which supported state control highlighted that states have a higher degree of knowledge about local environments and local natural resources, meaning they are naturally positioned to be more efficient caretakers of natural resource systems (*better understand the local context*). Notably, the organizations which make up the interest group category are diverse, ranging from the Ocean Conservancy at the national level, to regional groups such as the Gulf of Mexico Reef Fish Shareholders' Alliance, to state level organizations such as the Coastal Conservation Associations, to local level groups such as the Galveston Professional Boatmen's Association. Each of these interest groups have different and sometimes competing interests. Despite these differences, the state governments were still most considered the heroes of the red snapper narrative. The Texas Coastal Conservation Association provides a representative example of this supportive language from 2019 which positions the state as the hero.

> *State fisheries directors in the Gulf have a long history of successfully managing marine resources and they are proving once again that wild natural resource management works best when it is local and flexible. The states understand how to best manage the fishery to meet the needs of everyone in the state, including each state's charter/for-hire fleet and the anglers who use those boats to access this public resource. In Action 1.1 of Amendment 50, we support Alternative 4, allowing every Gulf state the opportunity to decide if it will manage both private boat anglers and those utilizing the state's charter fleet. CCA believes the states will ultimately deliver a more robust season for all recreational anglers, regardless of whether they fish from their own boats or on for-hire vessels.*

Table 29: *Positive* Interest Group Villains with Numbers of Themes

Positive Interest Group Villains		
Federal Government	**19**	**1.00**
Negative perception of data accuracy	8	0.42
Bad management	6	0.32
Anti-access	2	0.11
Don't understand context	2	0.11

Mistrust	1	0.05
Gulf Council	**1**	**1.00**
Bad management	1	1.00
null	**30**	**1.00**
Null	30	1.00
Grand Total	**50**	**1.00**

These same interest groups that supported state management almost unanimously considered the federal government the villain in this context. The collective complaint was primarily that NOAA Fisheries was willfully using inaccurate data on red snapper population numbers to create each year's recreational fishing quota (*negative perception of data accuracy, anti-science*) (see Table 29 for a complete list of pro-state management interest group villains and their accompanying themes). This use of inaccurate data, in part, is what led to their claims that the federal government was being negligent in its management of the red snapper fishery (*bad management*). The following 2020 quote from the Center for Sportfishing Policy is an example of these sentiments in this context.

> *When red snapper management completely failed in 2017, the five Gulf states and Congress realized NOAA Fisheries does not have the tools or the will to properly manage this fishery, and they took significant steps to remedy the situation. Since then, we have seen the most successful red snapper seasons in the Gulf in the last decade, but unfortunately, NOAA Fisheries seems intent on going back to business as usual.*

Table 30: *Negative* Interest Group Heroes with Numbers of Themes

Negative Interest Group Heroes		
NGOs	**1**	**1.00**
Will ensure stock sustainability better	1	1.00
null	**5**	**1.00**
Null	5	1.00
Grand Total	**6**	**1.00**

Table 31: *Negative* Interest Group Villains with Numbers of Themes

Negative Interest Group Villains		
null	**2**	**1.00**
Null	2	1.00
Recreational Fishermen	**1**	**1.00**
Overfishing	1	1.00

State government	3	1.00
Negative perception of data accuracy	2	0.66
Self interest	1	0.33
Grand Total	**6**	**1.00**

Very few interest groups were entirely negative in their perception of state management for red snapper. Typically, a statement from one of these interest groups would offer support, but with qualifications and hesitancies. Only three comments from interest groups entirely opposed state control. One group, a local-level NGO, considered themselves the hero of the red snapper case acting in a watchdog-like fashion (see Tables 30 and 31 for a complete list of anti-state management federal charter for-hire heroes and villains and their accompanying themes). Their comment raised a number of questions and points which they felt needed to be addressed before any management changes to the fishery were considered. The other two interest groups were critical of the proposed changes' ability to improve the charter for-hire sector in their states. For this reason, they opposed Amendment 50 at the time of their comments. Notably, many of these same organizations later have comments which expressed support for state control after changes were made to Amendment 50 between its original form in 2017 and its passage in 2020. For example, one significant change was the assurance that the federal charter for-hire sector would remain under federal control. After this change occurred, many federal charter for-hire interest groups, which had originally been hesitant, supported Amendment 50. The following 2018 quote is from Galveston Professional Boatmen's Association in Texas, and it positions the states as the villain in this case by demonstrating the data-related challenges associated with state control.

> *A state-proposed EFP to manage private anglers only would be a good concept; if it were to include a robust data collection and validation system as well. In the process of development, there were differing levels of transparency from state to state. For Texas, the level of engagement and transparency were insufficient considering the potential impacts to federally permitted businesses and our coastal community. The varying state-proposed changes in data collection appear to fall short of increasing accountability within the recreational sector and offer few defined improvements compared to status quo. In Texas' proposal, there are no concrete protections for the charter for hire allocation established in Amendment 40; but the varying attempts to diminish the stability of this allocation are apparent.*

Table 32: Top Heroes & Villains

Positive Actors	Top Hero	Top Villain
Recreational Fisherman	State Government	Federal Government
Federal Charter For-hire	State Government	Federal Government
Interest Group	State Government	Federal Government
National Political Leader	State Government	Federal Government
Negative Actors	Top Hero	Top Villain
Recreational Fisherman	Federal Government	State Government
Federal Charter For-hire	Federal Government	State Government
Interest Group	NGOs	State Government
National Political Leader	Federal Government, Gulf Council	State Government, Recreational Fishermen

10. Discussion

In this section, I will discuss my Findings based on the expectations that I developed using Multiple Streams Theory for each component. These include the problem stream, policy stream, politics stream, policy entrepreneurs, and focusing events. Because this research focuses on understanding the problem stream and how problem framing played a key role in the policy development of Amendment 50, this discussion will frequently reference the problem stream throughout the section.

(10.1) Problem Stream

In my Findings, I draw out the primary ways in which different red snapper stakeholder groups construct and understand the problem of red snapper management in the Gulf of Mexico. This problem framing is a key part of the policy process, and it clearly altered the direction of the policy stream and clearly formed Amendment 50 as the final solution. This finding is congruent with other problem framing research which shows that problem framing impacts the creation and passage of policy solutions through problem definition in environmental policy and natural resource management (Bardwell, 1991; Dewulf et al., 2004; Elrick-Barr & Smith, 2022). My research corroborates the importance of this problem framing toward finalization of a policy solution. Specific to my case, however, is the examination of problem framing between fishery

stakeholder groups and how this directly impacts fishery policy solutions. Prior research has found that direct inclusion of fishermen knowledge in the fishery management process generates deep insights which positively affect the management process (Stead et al., 2006).

My findings in the problem stream are congruent with the expectations set by Multiple Streams Theory and problem framing literature. Kingdon notes that, in the problem stream, issues float to the surface and onto the agenda when they are carried by indicators and data, focusing events such as natural disasters, or feedback from constituents or policy-affected individuals (Kingdon, 2013). The case of red snapper management finds all three of these options are present. The crisis of the ever-shortening season demanded national-level attention as it contained all three of Kingdon's points in the problem stream: 1) data to demonstrate a problem, 2) a focusing event, and 3) vocal constituents who provided feedback to policymakers.

Studies at the federal level of policy making have shown that changes in data indicators has the important potential to both increase but possibly decrease lawmaker attention to an issue, and my findings suggest that this remains true (DeLeo & Duarte, 2021). Data quality is a consistent part of the red snapper conservation and problem stream, and as expected, data quality was interpreted with ambiguity. Other studies also find that use of data when combined with narratives and contextualization of the problem can influence the policy process (Kelly et al., 2014; Lawton & Rudd, 2014; Rose, 2015). Conversations revolved around data collection practices and choosing who (i.e., NOAA Fisheries or state natural resource agencies) had the "best available science" and data numbers to base red snapper fishing seasons on. Congruent with Stone's work on ambiguity and symbols, I found that red snapper became symbolic of coastal economies and "American small businesses" as present in Senator Lamborn's language (*Subcommittee on Water, Power and Oceans House Bill Hearings on September 26, 2017*, 2017; Stone, 2012).

A focusing event was present as expected through the Multiple Streams policy process, namely the 2017, 3-day long recreational fishing season in federal waters. The Gulf Council conversation about state management was rebooted due to the public outcry around that season length. Finally, the problem stream was largely created and defined by feedback from the policy-

affected individuals, especially the recreational fishermen, federal charter for-hire stakeholders, and interest groups. Recreational anglers largely defined the problem as a lack of access to a natural resource which they perceive to be abundant. This lack of access conflicts with the long-standing American value of access to game species for hunting and fishing.[29]

The problem stream of the federal charter for-hire stakeholder group specifically was very important in altering the course of Amendment 50. In the years leading up to the passage of Amendment 40 which separated the federal charter for-hire red snapper quota from the recreational fishermen quota, the charter stakeholders used language which mirrored much of what recreational fishermen were saying at that same time. From 2013 to 2014, most federal charter for-hire stakeholders supported state management of the recreational red snapper fishery. This changed starkly with the passage of Amendment 40 in 2015. At this point, the language of charter stakeholders and their framing of the management problem changed. Now, there was mixed support for state control of the recreational sector, but more specifically there was majority preference that the federal charter for-hire sector be left out of Amendment 39 and Amendment 50. These stakeholders made it very clear that they preferred federal management under Amendment 40. Those charter stakeholders which supported state management for the recreational sector often did so contingent on their sector not being included in Amendment 50. State governments, now, were framed as the villains who would take away the season stability gained through Amendment 40 in order to give more quota to recreational fishermen in their states. States, who once were considered the heroes which would increase access to red snapper, were now considered villains who would take that same access away. After the passage of Amendment 40, nearly all charter for-hire stakeholders were against states managing their sector's quota. Many still supported Amendment 50, but only if the federal charter for-hire sector remained under federal control through the Amendment 40 arrangement.

Originally, Amendment 50 contained a clause which would dissolve Amendment 40 and return the charter for-hire sector's quota back to the larger recreational fishing quota. As

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[29] The United States' system of wildlife management was established by the Public Trust Doctrine, which dictates that the public owns wildlife and that it is held in trust by the government to manage it for the public (Decker et al., 2012).

described above, this language was rejected as written by many in the charter for-hire sector. Eventually, this clause was removed, resulting in the final version of Amendment 50. In this way, we see how the problem stream and pressure exerted from a stakeholder group altered the policy stream, forcing it to accommodate their preferences in order to pass through the policy window. This interaction between stakeholder and stream is expected in the Multiple Streams Theory policy process, and as shown, it is also present in fisheries management discussions at the regional level.

Different red snapper stakeholders highlighted either the state or federal governments as having better data based on their preferred policy solution. This finding is consistent with the expectations set by Narrative Policy Framework which states that actors will frame other actors as either heroes or villains of an issue in order to support their preferred policy solutions (Shanahan et al., 2018). As suggested by Shanahan and Stone, characters played an important role in Amendment 50's policy process, and the casting of these characters as either heroes or villains of a particular policy solution was also present in the data (Shanahan et al., 2013; Stone, 2012). For example, recreational fishermen often framed state governments as heroes who would improve their recreational red snapper fishing season. State governments were described as being more flexible and more knowledgeable about local fishing conditions, and this knowledge would lead to improved ability to manage the fishery. Toward this end, they framed the federal government (i.e., NOAA Fisheries) as a villainous actor whose management practices were causing the recreational red snapper fishery to become unfishable. As seen throughout my findings, the narrative use of heroes and villains is commonplace and constitutes a consistent part of each stakeholder group's problem framing.

(10.2) Policy Stream

The policy stream from which Amendment 50 emerged shows solutions developing over time and at various scales of governance. While the existence of various policy solutions supported by different actors is expected from Multiple Streams Theory, a present novelty is that these policy solutions come from different levels of government. Attempts to change red snapper management in federal waters have come from three areas within the policy stream: different

federal legislation (e.g., House bills), through fishery council amendments to existing fishery management plants (i.e., Amendment 39, Amendment 50), and via executive order. Typically, fisheries management plans for federal water species are created by the regional fishery councils which were created via the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), a federal-level law. Despite this being the normal route for fishery management and policy, numerous federal lawmakers attempted to pass control of red snapper in federal waters to the states via legislation in Congress as a way to circumvent what they and their constituents perceived as a failure of management by NOAA Fisheries via the Magnuson-Stevens Act. Notably, none of these bills which directly and solely addressed red snapper management passed to become law. In a different branch of the federal system, President Trump attempted to extend the 2017 red snapper season in federal waters. This, however, was tried in court and proved an unsuccessful route for policy change given that it was illegal through the Magnuson-Stevens Act. Instead, the policy solution arose through the legislatively established method: through the regional fishery council amendment process. Future research could explore the political reasons why an amendment to the Magnuson-Stevens Act was not apparently considered as a solution to red snapper management.

Within the Gulf of Mexico Fishery Management Council process, the policy stream carries an important story. Amendment 39 was the failed precursor to Amendment 50, and it attempted to also give management authority of red snapper in federal waters to either regions of the Gulf of Mexico or, through one listed alternative, to individual states. As discussed in previous sections, Amendment 39 failed at least in part due to disagreement between state actors about quota allotments between the states. An interesting possibility for future research could look specifically into this failure to contrast it to the success of Amendment 50. As we know, Amendment 50 was the eventual policy solution to the problem of red snapper management, but aspects of the original plan were altered before it was passed. Most notably, the original plan called for the federal charter for-hire's separate quota to be rejoined with the private angling one after a few years for adjustment. As discussed, this was unacceptable to the federal charter for-hire interest group, and so through exerting political pressure they changed Amendment 50 into an acceptable form, resulting in the final version of Amendment 50.

An important element of the policy stream is the legal constraints within the Magnuson-Stevens Act. Specifically, the Regional Fishery Management Councils have a series of objectives listed in the Magnuson-Stevens Act that guide the council's fishery management plans. One of the objectives is that the council's management plans must take into consideration the economic impact of any changes to a fishery for each participant type in the fishery. In other words, any changes that are made to fishing equipment rules or quota allotments must take into consideration how they will impact people who rely on the fishing economy. This consideration must then be balanced with consideration about whether management changes or amendments will improve or decrease the recovery of a fishing stock, and overfished stocks must be improved. As prior research notes, policy for fisheries is challenging to perfect as fish habitat occurs at the local level of management while regional and federal level policy typically addresses fisheries at a much larger, usually economic and biological, scale (Jordan & Benson, 2013). The tension between these objectives can greatly bind the policy options available to Gulf Council decision-makers.

(10.3) Politics Stream

The politics stream for this case consisted of three primary influences: the "national mood" generated by recreational red snapper fishermen, the pressure exerted by the federal charter for-hire stakeholders, and the pressure exerted by national environmental NGOs. This finding is congruent with the expectation of Multiple Streams Theory that the "national mood" of the public and the campaigns of interest groups influence and serve as a check to the policy stream. After the focusing event of the 3-day 2017 red snapper season, the mood of recreational red snapper fishermen could be described as ranging from irate, despondent, to mistrustful. As seen through my findings, the broadly felt sentiment of recreational red snapper fishermen was, based on their personal experiences of seeing large numbers of red snapper when fishing, that they should be allowed to fish for longer and more flexible seasons than what NOAA Fisheries had been providing them. This ensured that any solution to the red snapper management problem was bound by this sentiment, meaning Gulf Council decision-makers needed to account for these sentiments for Amendment 50 to succeed. Simultaneously, as previously shown, the outcome of Amendment 50 was edited significantly by the pressure exerted by the federal charter for-hire

stakeholders who did not want for their sector to be included with state management or be returned to the recreational fishery quota. Finally, the Environmental Defense Fund and the Ocean Conservancy acted in the politics stream by pressuring the federal government by bringing it to court when it illegally extended the recreational red snapper season in 2017.

My findings seem to support the expectations laid out by Wilson's work on bureaucracy. Specifically, I find that NOAA Fisheries remains true to the existing rules and follows the established rulemaking process instead of trailblazing with new policy and new management approaches (i.e., complete state management of red snapper). This is congruent with Wilson's ideas of federal agency risk aversion and working within existing constraints. This is for a few reasons. First, it can be argued that delegating management of red snapper to the states via a Gulf Council management plan represents not a transfer of management power, but the sharing of management responsibilities. The fact remains that NOAA Fisheries did not relinquish the primary control mechanism of the fishery: the power to set yearly quotas. Further, NOAA Fisheries is still the agency that all collected data on red snapper must pass through. In this way, NOAA Fisheries has found a solution which pleases stakeholders and eases their management load while still keeping it vested with ultimate management authority. It should be mentioned in this discussion of bureaucracies that the Fishery Management Councils are created by the same federal law that gives NOAA Fisheries management power. Therefore, it is possible to say that there was less competition for management power through Amendment 50's delegation. Rather, it was a rebalancing of power within a single bureaucratic system.

Another possible explanation of Amendment 50's success exists within American politics and partisanship: the American Republican party's traditional ideology of "small government" and deregulation of the environment and natural resources (Aldrich, 1995; Baldassarri & Gelman, 2008; Cain et al., 2020; Gershtenson et al., 2006). In essence, this means they support limiting the size, reach, and cost of the federal government. Within this framework, the passage of Amendment 50 could be a logical function of a Republican-led administration. NOAA Fisheries, as a government agency headed by an appointee of President Trump, may have been more amenable to relinquishing some management authority given the administration's emphasis on state's power, slimming down the bureaucracy, and deregulating natural resources.

As shown in my findings, while President Trump's deregulatory agenda itself did not clearly lead to Amendment 50 as the policy solution, there was considerable internal discussion in the Department of Commerce centering on the 3-day fishing season in 2017. Additionally, while the Gulf states and the Executive branch at the time were all Republican, my findings did not indicate that red snapper management was overtly influenced by partisan politics, though further research is needed to say this conclusively. Ultimately, the underlying "mood" which influenced red snapper policy was situated within the fishery and its stakeholders who were these national politicians' constituents. Future research could further examine if partisan politics influenced red snapper management. That said, it remains true that President Trump's Secretary of Commerce signed Amendment 50 to enact it, and it is unknown if a Democratic appointee to the same office would have done differently.

(10.4) Policy Entrepreneurs

Multiple Streams Theory expects that policy entrepreneurs will arise from individuals with a stake in the problem. I expected policy entrepreneurs in the red snapper case to come from within the red snapper fishery decision-makers (i.e., the Gulf Council) or in the form of an individual who has widely respected local and expert knowledge of red snapper. However, there were no obvious individuals to label as policy entrepreneurs at the regional or state level of discussion studied in this paper. It is possible that they are still present within the Gulf Council or NOAA Fisheries, but the political and policy process within the Gulf Council around internal discussions of Amendment 50 was not documented or studied in this research. Notably, the regional fishery management councils are seated by appointees from various sectors within each region's fishery, and this has led to criticism that the council members themselves are subject to personal fishery stakes and interests rather than being perfectly committed to enacting impartial management plans (Cloutier, 1996; Powers, 2004; Thomas et al., 2010). Further research could examine the interior political environment of the Fisheries Management Council to understand how the interactions among appointees might shape the final outcomes of management plans and their amendments.

Despite a lack of named, individual policy entrepreneurs, there were several interest groups which actively worked to shape the outcome of Amendment 50. This is in line with Multiple Streams Theory expectations, which state that policy entrepreneurs can come from organizations that persistently participate in the policy process with expert and local knowledge. Policy process literature has also found that interest groups and local stakeholders are important actors towards influencing policy processes at the national level (Dür & Mateo, 2014; Furlong, 1997). My findings are congruent with previous research which finds that interest groups can also influence fisheries policy (Mikalsen & Jentoft, 2001; Orach et al., 2017).

While the individual discussions which ultimately decided Amendment 50's final form are unknown for this research, the efforts of these interest groups to influence the ultimate outcome are well documented. The Environmental Defense Fund and the Ocean Conservancy submitted consistent letters to express both support and highlight hesitations with the various drafts of Amendments 39 and 50, and as stated previously, both sued the Trump Administration for extending the red snapper season in federal waters in 2017. Given these groups established legitimacy through the judiciary system, it's reasonable to highlight them as important actors for the red snapper case who uphold the Magnuson-Stevens Act. A second highly important group has already been highlighted: the federal charter for-hire stakeholders. Several different, named groups of federal charter stakeholders exist (e.g., the Charter Fisherman's Alliance), but it is unclear if any one group alone significantly influenced the policy process of Amendment 50. Instead, these groups echoed and perhaps amplified the common sentiments of the federal charter for-hire stakeholders. As discussed, these sentiments led to the most extreme alterations of Amendment 50 from draft to final form.

At the federal level, Congressman Garret Graves of Louisiana was a vocal proponent for improving recreational access to red snapper across the Gulf of Mexico. Though federal level intervention ultimately had very little legislative effect on the red snapper policy process toward Amendment 50 and state control outside of Congressional mandate, Representative Graves stood out as an advocate for recreational fishermen across the Gulf of Mexico. He introduced several amendments and new bills which would directly pass control of red snapper seasons in federal waters to each Gulf State (Library of Congress, 2022). While many of his red snapper legislative

attempts never left committee, his language and legislative attempts amplified the voices of recreational red snapper fishermen across the Gulf of Mexico. Future research could examine why congressional-level attempts to deal with red snapper management failed when the regional-level processes of the Gulf Council ultimately succeeded.

(10.5) Implications

My findings restate the importance of listening to stakeholders to generate more effective management and policy solutions by incorporating their local knowledge and sentiments. This finding echoes previous research which highlights the importance of stakeholder engagement toward effective governance of coastal resources and fisheries, including the understanding stakeholder perceptions and the use of local and traditional knowledges to create acceptable policy solutions (Espinosa-Romero et al., 2011; Jordan & Benson, 2013; Mackinson et al., 2011; Tallis et al., 2010). My findings also show that local stakeholders can fundamentally alter the policy process by constricting which policy solutions can be considered. This is especially true when legal language of existing laws mandates that new policy be considerate of local economies and local peoples, but even without this legal baseline this impediment can easily occur. In summary, I found that Amendment 50's policy process hinged upon the input of economically important, local stakeholders (i.e., the federal charter for-hire sector). For future cases of politically divisive, natural resource management challenges, my research underscores the importance of stakeholder inclusion in the process.

(10.6) Limitations & Areas for Improvement

The majority of the data for this research comes from the digitally posted words of recreational fishermen. While this itself is not a limitation, the total number of data for other stakeholder types is much smaller in comparison. This smaller number for interest groups, national politicians, and federal charter for-hire stakeholders limits generalizability for these groups and their messaging. Future research could examine more statements from any of these types to perform a similar analysis as was done in this paper. Another drawback of this study is the lack of triangulation for the findings with interviews. Interviews with Gulf Council personnel

or anyone from a stakeholder category would have ground truthed my findings. Future research could focus on interviews rather than comments to see if any differences occur. Another notable limitation is that, because of the inability to ask follow-up questions via interview, it was sometimes unclear if a comment was referring to the Gulf Council or to NOAA Fisheries when it referred to federal management. Understanding if recreational fishermen were directing their frustration at NOAA Fisheries or the Gulf Council would improve future communications.

An area for future research could dive more deeply into the various policy arenas present in the regional fishery management context. In the case of red snapper management at the federal level, many legislation attempts emerged and disappeared throughout the 2010s. At the regional council level, the internal discussions for amendments to management plans have not yet been researched. Examination into either of these would further illuminate the fishery management policy process in the United States. Another area for research could look if stakeholder messaging varies between states and across time. A primary theme in the data was that individual states have different fishing realities when it comes to red snapper. If this is true, it seems possible that messaging at the stakeholder level could vary between states.

11. Conclusion

In this paper, I use Multiple Streams Theory to examine the policy process of Amendment 50 to the Gulf of Mexico Reef Fish Management Plan. While I examine each component of Multiple Streams Theory, my research focuses on the problem stream and how different stakeholders of the red snapper fishery frame and understand management problems within the fishery. To do this, I collected *n=2,206* data points, including stakeholder comments, newspaper articles, congressional testimonies, and politician statements. Each of these were coded by hand according to grounded theory utilizing in vivo coding. Specifically, I coded for all the themes that were present in a comment or article. Then I pulled out the hero or villain for each data point and coded for why the speaker believed that to be the case. The result is a sentiment profile of various red snapper stakeholder types which discovered what they believe to be the primary issues with red snapper management.

Broadly, those who supported state management of red snapper focused their messaging on the integrity and efficacy of state marine fisheries management. They focused on state accountability systems, claiming that states were well prepared to ensure overfishing of red snapper would not occur and if it did, that states had systems in place to ensure the overfishing would be accounted for the following year through shorter seasons and a smaller quota for the year. This framing was often accompanied with statements which positioned states as being more flexible actors than the federal government. They argued that, if states were managing their own red snapper catch into federal waters for their state, they would be able to monitor fishing effort and red snapper landings with greater accuracy in order to more quickly open and close seasons. The result would be that state management would result in longer seasons for recreational fishermen, which was a primary goal for these fishermen. Generally, the data show that the primary reasons for not supporting state management were general mistrust of state management, preference for federal management, and concern that state management would lead to overfishing. This narrative essentially runs counter to the primary positive themes, demonstrating how opponents and proponents of state management chose to highlight and frame specific details of the red snapper management problem to support their preferred policy solution. Finally, stakeholders who did not express preference for state or federal management focused their narratives and comments on their personal experience. They felt that, based on the number of red snapper they saw on their fishing trips, access to red snapper should be increased via longer seasons or greater catch limits.

I found that the expectations of Multiple Streams Theory were met and were able to explain Amendment 50's policy process. This indicates that, even for contentious fishery management challenges at the regional level of governance, Multiple Streams Theory is still an effective tool for breaking down and understanding these policy processes. First, for the problem stream, I found that problem framing varied by stakeholder type and matched their preferred policy solution. While individual policy entrepreneurs were not obviously present at the regional level, interest groups did alter the flow of the policy stream and edited Amendment 50. Specifically, the federal charter for-hire sector did not support Amendment 50 when it contained language to give states management power over their sector and quota allotment. They preferred to stay under federal management, which had led to greatly increased seasonal stability for their

sector. I also found that the Ocean Conservancy and Environmental Defense Fund were critical actors in the policy stream. Not only did they submit frequent letters to the Gulf Council which highlighted their concerns and ideas about Amendment 50, but they also sued the federal government under President Trump when it extended the recreational season for red snapper in 2017. This action ensured that the policy solution to the red snapper problem would not occur through executive intervention from the White House, and it upheld the language of the Magnuson-Stevens Act as the most important federal fisheries law.

I found that the policy stream was flush with proposed policy solutions across the levels of government. In Congress, several legislative attempts to pass management of red snapper in federal waters to the Gulf States were introduced. However, none were ever considered for the solution. At the regional level, as dictated by the Magnuson-Stevens Act and the established fisheries management norm for federal waters, Amendment 50 was preceded by a first attempt at state management for red snapper: Amendment 39. The policy window, however, was not open for state management at that time, and Amendment 39 stalled into failure over, at least in part, disagreement over quota allotment between the states. This mix of policy solutions is congruent with the expectations of Multiple Streams Theory. Finally, I found that the politics stream included all stakeholders in the red snapper fishery. Interestingly, I found that the policy stream was uniquely bound by the politics stream via a clause in the Magnuson-Stevens Act which mandates that regional council Fishery Management Plans must consider the social and economic impacts on fishing communities and fishery dependent stakeholders. For this reason, the voices of recreational fishermen, charter for-hire stakeholders, and commercial fishermen carry extra weight for determining the final policy solution for the red snapper issue.

Contrary to expectations, I did not find that national level, partisan politics affected Amendment 50's policy process. While it is possible that President Trump's extension of the recreational red snapper fishing season was justified by Republican ideology of small, hands-off governance and his environmental policy of opening up access to natural resources, there was no indication in the data that directly supported this idea. That said, policy documents show that red snapper was internally discussed in the Department of Commerce as its Secretary strategized to illegally extend the 2017 red snapper season to show Congress that the Department of Commerce

was ready to act on red snapper. It is unclear, however, if this would have still happened if a different President had been elected or if a different solution all together might have emerged. Future research could look more specifically at red snapper legislation and conversation in Congress and at the Executive level to better determine how partisan politics might affect federal fishery considerations.

In all, my findings show the importance of hearing and incorporating stakeholder sentiments into policy processes for fisheries management. This might seem obvious when the end goal of management is a healthy fish stock which supports a healthy fishing economy, but my research highlights that how stakeholders understand a management challenge and how they choose to present this problem to policymakers can and does impact what policies are politically possible. In other words, Amendment 50 was altered based on stakeholder beliefs, and it ultimately succeeded because it made those changes.

While certain elements of Amendment 50's policy process deal specifically in fisheries legislation, the ways in which stakeholders impact and shape policy processes can be generalized to other natural resource management challenges. It is my hope that these findings can help to inform future natural resource management decisions which consider devolved or more local-level management. As the world experiences climatic change at the global level, local level adaptations will play a key role in mitigating its effects. The ability to incorporate local stakeholder knowledge and sentiment into mitigation policy will become a critical skill for the policymakers charged with managing the future of our resources.

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13. Appendix

(13.1) Appendix A: Full Codebook

Table 33: Full Codebook

Code	Definitions
Positive, neutral, or Negative on State Control	
Positive	Total support for state with no hesitations or questions
Slightly positive	Support for state control but has hesitations, misgivings, caveats, or suggests a federal-state hybrid management regime.
Negative	Total support for federal control. No questions or hesitancies.
Slightly negative	Support for federal control, but displays hesitancy, uncertainty
Neutral	Does not show preference for one level of governance over the other.
other	Is an article or comment that is about Red Snapper but is not about which government level of control there should be.
Null	[unused]
Author's expertise	
State political leader	Is a state senator, governor, or congressman

National political leader	Is a nationally elected leader. Usually a Senator or Representative.
Scientist	An individual trained in the sciences. This category would refer to individuals that are not politicians and not working for NGOs. An author should be given "NGO expert" before being given "scientist".
Interest group	A comment, press release, or article that comes from a non-governmental organization or other group
Rec fisherman	Recreational angler/fisherman. Refers to an individual who purchases a recreational fishing license and goes fishing.
Commercial fisherman	Refers to those individuals who own or purchase IFQ allocation in order to catch and sell red snapper.
Charter/For Hire	Refers to an individual who is in charge of a federally permitted charter vessel or headboat, or one who runs a For Hire fishing business.
Reporter	Refers to an individual who writes an article as a journalist, but does not have stakes in the red snapper industry.
NGO expert	Refers to an individual who works for a non-governmental organization who has a scientific background or years of experience in the field. Differs from "scientist" in that this category should be chosen whenever a scientist works for a NGO. (This category

	was eventually combined with "Interest Group.")
Industry expert	Refers to a person who has worked in a given industry and serves as an expert witness for that industry (e.g., a chef or fish house master)
Other	When author or speaker does not fit into another category
Null	When author or speaker is unidentifiable
Pro Reasons	
Resource abundance	When it is said that red snapper are plentiful and great in number
state manage nat res better than feds	When the connotation of the comment is that states INHERENTLY manage natural resources better. As a belief. Or that local government manages local resources better as belief. That local is better which is why they support Amendment 50; mention of species being non-migratory and therefore should be managed by states/locally; mention of a local actor having ownership of a species and therefore should be managing it.

Better access	When speaker wants easier access or greater ability to go fishing. Season length increase, bag limit increase, size limit increases. This includes mention of flexible access by fishermen when talking about their ability to go fishing.
Economics	Mentions of money or local economy. Mention of tourism.
Trust	Speaker expresses belief in the integrity and credibility of one governance group over another.
States have proven themselves	If there are reasons listed for why state would manage well, if stated belief that state department of fisheries has capability/professionalism/ability to manage
Accountability	When an agency has good practices to ensure overfishing does not occur, when an agency is claimed to be more fair in its handling and balancing of group interests; in "other" also: when a group needs to be held 'accountable' for their actions
Flexibility	When a state can react more quickly/rapidly/nimbly than federal government. When mentioned that each state's local reality is different from another state, and therefore should not be managed like other states.

Better science	When stated that a governance institution has a better idea of the actual numbers of red snapper in the water, has better surveying or counting methods, or will do a better job getting accurate numbers other governance groups. (When "other" is selected for Pos-Neg category: When there is a complaint about survey or scientific methods; when a scientific suggestion for management is offered) when there is mention of scientific processes
Better collaboration	When state control is supported for ideas that states will be able to work very well in tandem with the federal government; (for comments regarding federal-state water line confusion - expression of confusion/desire for agreement/consistency with rules); idea that transferring management to state would make regulation rules less confusion and easier follow; ideas that more voices should be considered in management process (i.e., More recreational voices in Gulf Council); mention of simplifying rules to be one set of rules for water line, quotas, etc.
Other	Selected when the speaker mentions a theme that does not have an existing code. For a positive sentiment theme. When selected, an explanation should be put in the "Notes" column.
Null	Selected when no remaining themes are present for coding.
Anti Reasons	

lack of interstate cooperation/common goals	Mentions that one state might not play by the rules; mention that states might overfish their allotted quota at expense of other states
MS is better science	Mention that federal science is better; mention that federal data collection is better/more trustworthy than states'
negative perception of data accuracy	Complaint is about a governance level having different data methodologies, so cross comparison is not possible; when stakeholder accuses agency of making regulations without knowing the actual present numbers of a resource
MS is better stakeholders	Mention that federal government will better protect red snapper or better manage RS allocation amongst stakeholders
may lead to overfishing	That passing control to state-level governance could result in too many snapper being caught; mention that a specific actor's policy or choices is leading to too many fish being caught
environment degradation	Claim that state control will lead to environmental issues such as ecosystem breakdown due to overfishing or regulatory practices; destruction of habitat
lack of state accountability	Should refer to mention of states not having appropriate measures in place to prevent overfishing; mention of local government being too corrupt to hold management power

lack of recreational fishermen accountability	Idea that rec anglers will ignore rules and overfish; idea that rec anglers are uneducated and do not understand why regulations are in place
domino effect	Idea that devolving management of RS to states will start the devolution of other species/natural resources to the states (in a bad way)
may benefit some over others	[In stakeholder comments] when comment claims that some groups or people are benefiting from management practices over others in an unfair way; if switching to state control is claimed to benefit certain groups over other groups disproportionately
some states bad guys	When a comment or article claims that one or more states will abuse new state control and management (or that certain states already are mishandling the fishery)
too friendly for big business	Claims that passing management to states will disproportionately benefit the commercial industry (fishhouses, restaurants)
Other	Selected when the speaker mentions a theme that does not have an existing code. Refers to a negative sentiment theme. When selected, an explanation should be put in the "Notes" column.
Null	Selected when no remaining themes are present for coding.

Bad Guy	
Commercial fishermen	Refers to those individuals who own or purchase IFQ allocation in order to catch and sell red snapper.
For Hire	Refers to an individual who is in charge of a federally permitted charter vessel or headboat, or one who runs a For Hire fishing business.
Gulf Council	Refers to the Gulf of Mexico Fishery Management Council
Recreational Fishermen	Refers to an individual who purchases a recreational fishing license and goes fishing.
Restaurants	Refers to owners of restaurants or restaurant interest groups
Federal Government	Refers to the federal government of the United States, including mention of NOAA Fisheries, the President of the United States, or mention of "the feds."
State government	Refers to the state governments or state natural resource agencies.
NGOs	Refers to non-government organizations.
Other	Refers to an actor who is not listed. When chosen, it should be explained in the "Notes" column.

Null	Chosen when there is no actor framed as the "Bad Guy."

Why are they bad	
Pay offs (financial)	When a group/agency is referred to as receiving financial incentive to choose certain management policies over others; when a group is accused of paying to have their preferred policies enacted
self interest	Refers to any mention of "politics" being bad, a government being influenced by a group, politicians doing something for their own benefit, a group (e.g., commercial fishermen) being accused of acting for themselves at the expense of another group, states putting in place regulatory rules that are lax and would benefit their constituents over the health of the fishery
bad management	Refers to general idea that agency management is "flawed" or bad; [use when a more specific code does not fit]; when there is general discontent for how federal management has gone
mistrust	Claims that agency/entity do not have the support of a person because that person does not believe in the integrity or follow-through of that agency. Speaker does not believe agency will do a good job of management if management is given to them in the future.

feds are bad	Overt disdain for federal government; belief that feds are incompetent (usually beyond just the RS case)
anti-access	Refers to when a group is receiving access to a fishery at the claimed expense of a different group; if an agency is talked about as having laws or rules that are to the detriment of one group in terms of their ability to access RS.
anti-science	When an agency actively ignores science in making regulations or actions [code was largely unused, because most claims from states (and NGOs) are that actors have poor data collection techniques, not that they actively deny any science or data]
overfishing	Refers to claims of too many fish being caught (that it is unsustainable/causing there to be too few); claims that a group's fishing practices are harming the fishery; claims that one group's fishing practices will impact the fishery much more than another's
don't understand context	Whenever a comment or article claims that an actor does not know what is going on in a specific area. Whenever an actor is claimed to be very far away. Claims that an actor is "clueless"/doesn't know about RS.
negative perception of data accuracy	Claims that an agency is operating without knowing how many red snapper there actually are; claims that agency does not have accurate data collection; when the comment is about NUMBERS of red snapper being unknown

Other	Refers to a theme which is not listed. When chosen, it should be explained in the "Notes" column.
Null	Selected when no remaining themes are present for coding or when there is no explanation for why an actor is receiving negative sentiment.
Good Guy	
Commercial fishermen	Refers to those individuals who own or purchase IFQ allocation in order to catch and sell red snapper.
For Hire	Refers to an individual who is in charge of a federally permitted charter vessel or headboat, or one who runs a For Hire fishing business.
The politician	When a politician at the national or state level is considered the "good guy" and heroic actor for red snapper managmenet
Rec Fishermen	Refers to an individual who purchases a recreational fishing license and goes fishing.
Restaurants	Refers to owners of restaurants or restaurant interest groups
Federal Government	Refers to the federal government of the United States, including mention of NOAA Fisheries, the President of the United States, or mention of "the feds."

State Government	Refers to the state governments or state natural resource agencies.
Regional (Gulf Council)	Refers to the Gulf of Mexico Fishery Management Council
NGOs	Refers to non-government organizations.
Other	Refers to an actor who is not listed. When chosen, it should be explained in the "Notes" column.
Null	Chosen when there is no actor framed as the "Good Guy."
Why are they good	
Seeking to increase access	If an actor is portrayed as a hero/good guy because they are trying to increase the ability of fishermen to go fishing for RS
better understand the local context	Whenever there is mention of an actor being better able to manage because they are local/near the resource and therefore understand it better. Any mention of 'local'
general belief	When statement expresses that states/an actor will do a better job of management without a given reason; when statement expresses that an actor is simply better for something without a given reason; expression that state/an actor "should" manage something without given reason why; belief that one form of governance/an actor is inherently better than the others

good for economy	When one actor is preferred because their access or control of RS is considered good for the economy/contributes money to local communities
more capacity	When a governance or agency is generally described to be better able to manage RS, literal mention of having more resources to manage RS
more flexibility	Actor is considered to be better for management of RS because of their ability to manage RS in a more localized/region/adaptive/nimble manner than another
better science	Whenever a comment/article claims that an actor has better data collection processes and practices than another. When an agency has a better idea of the amount of snapper present.
will ensure stock sustainability better	When an actor is preferred because there is belief that their control will ultimately be better for RS population growth and sustainable management
Other	Refers to a theme which is not listed. When chosen, it should be explained in the "Notes" column.
Null	Selected when no remaining themes are present for coding or when there is no explanation for why an actor is receiving positive sentiment.

General Good things	
Better science	When better data, better data collection, or better scientific processes are deemed the most important part of the statement
flexibility	When the primarily good thing is considered to be an actor's ability to manage RS adaptively, nimbly, or locally/regionally
accountability	When the best good thing is considered to be an actor's trustworthiness in management; an actor's measures taken to ensure good management/the fact that this was done
collaboration	When the best thing is considered to be an actor's ability to work in tandem with other organizations for better management; when simplifying rules to have only one set of rules is deemed the best thing
local control	When the best thing is considered to be state management in general; when localized control is the most important thing; when state management itself is deemed to be the best thing over all other good things (often that state management overall will be better than federal management)
greater access	When the best thing is considered to be easier access to fishing for RS.
compromise	When the best thing is considered to be making concessions between actors

Other	Refers to a theme which is not listed. When chosen, it should be explained in the "Notes" column.
Null	When no general good thing is mentioned.
General bad things	
Data	When data collection, scientific methods, or incorrect counted number of RS is deemed the worst thing
poor management	When complaints about management of an actor is deemed to be the worst thing
cross scale collaboration	Mention of management confusion/difficulties between levels of governance/agencies; mention of agency/governance roles that are being overstepped as worst thing
overfishing	When ideas of depleting the RS stock because of poor fishing practices is deemed the general bad thing
reporting	When the primary complaints are about how the data is constructed/given to the public is the primary issue [code largely unused]
user group conflict	When the primary issue is contention between sectors (rec, for hire, commercial)
the feds	When anti-federal government sentiment is the biggest negative thing

Other	Refers to a theme which is not listed. When chosen, it should be explained in the "Notes" column.
Null	When no general bad thing is mentioned.

(13.2) Appendix B: Evolution of Search Terms

The first searches were done using the following search parameters: "red snapper" AND management AND Gulf of Mexico. The rationale behind these terms was to limit the results geographically and thematically because the research is targeting articles and comments referring to state control of red snapper. Searches were performed utilizing various combinations of search terms on NexisUni, and eventually ""Red snapper" AND management AND Gulf of Mexico AND Amendment 50" was selected as a search which would see all results (n=87) assessed and incorporated if applicable to the research. Rationale behind these search terms was to find specifically those articles and comments which talked about Amendment 50, limited the geography to the Gulf of Mexico, and were about red snapper management. These factors served as inclusion criteria for content gathered from NexisUni. Quickly, however, it became apparent that limiting searches to only those with mention of Amendment 50 was too narrow because of the timeframe the words "Amendment 50" were used. Conversation about red snapper management and even state management of snapper had begun years before Amendment 50 was proposed. Thus, ""Red snapper" AND management AND Gulf of Mexico" was also used, and articles which met inclusion criteria were pulled from the beginning pages of this result (accounting for duplication, total n=4,179).

(13.3) Appendix C: Discussion of Datasheet Structure

Column A is the article link or stakeholder comment. Column B is the title of the article or link if it was a stakeholder comment. These two columns ensured I could search my spreadsheet to know I was not accidentally coding the same article twice. Column C is "Name of Organization." Column D is "Type of news or article or comment," and it is useful for sorting the data by type (i.e., "Stakeholder Comment"). Column E is the state which the speaker self-identifies as home (for the Louisiana Department of Wildlife and Fisheries survey, all respondents were considered to be from Louisiana since their stake in red snapper is centered in Louisiana). Column F is the date of the article or that the comment was submitted. Column G is whether the article or comment is the article or comment's perception of state control of red snapper. This was selected to provide a variable which would indicate support of or opposition to

Amendment 50. Column H is "Author's expertise," and it details who is speaking (i.e., recreational fishermen, reporter, national political leader, etc.). Columns I – N are "Pro Reasons," and columns O – T are "Anti Reasons." Both sections contain drop down selections of thematic codes generated from the first and iterative cycle of in vivo coding. A list of these codes were made for the "Pro Reason," "Anti Reason," "Why are they bad," "Why are the good," "General Good thing," and "General bad thing" columns. The "Pro Reason" category contained thematic codes to describe why a comment was supporting state control of red snapper. The "Anti Reason" was the opposite, containing codes to explain why a speaker did not support state control. "Why are they bad" and "Why are the good" were preceded by columns titled "Bad Guy 1," "Bad Guy 2," "Good Guy 1," and "Good Guy 2" which contained a list of actors generated by qualitative assessment of stakeholder comments. "Why are they bad" and "Why are they good" contained a list of thematic codes which described why a speaker believed a given actor was good or bad.

(13.4) Appendix D: Discussion of Dates

The years with the largest number of articles or comments are 2013, 2015, 2018, and 2019. Amendment 39 was initiated in 2013, and all but five of these data points were Gulf Council open comments for Amendment 39. Amendment 39 was the Gulf Council's first attempt to pass regional or state management of red snapper, but it failed at least in part due to disagreement over quota allotment between the states. For 2015, 1552 of the data points were from the Louisiana Department of Wildlife and Fisheries survey comments, and a further 44 of them were from the Gulf Council's Amendment 39 comments. Notably, in 2015, Amendment 40 to the Gulf of Mexico Reef Fishery Management Plan was enacted, and it separated the federal charter for-hire quota from the private angling quota. Thus, at this date, the language and sentiments of charter captains change to oppose Amendments 39 and 50 for fear that a state managed recreational red snapper fishery would see them lose the season length and stability gained under Amendment 40 with federal control. Numbers again spiked in 2018 and 2019 at the inception of Amendment 50 due to the Gulf Council's open comments for this Amendment. In 2018, $n = 64$ data points were from the Amendment 50 sheet. In 2019, $n = 166$ came from the

same sheet. The rest of the points for both years came from newspaper articles, organizational press releases, and politician statements.

Table 34: Total number of Dates

Total Number of Dates

2005-2012	2	0.001
2013	240	0.11
2014	23	0.01
2015	1602	0.73
2016	14	0.006
2017	14	0.006
2018	74	0.03
2019	205	0.09
2020	19	0.009
2021	13	0.006
Grand Total	**2206**	**1.00**