

Perspectives from The Gulf of Mexico Shrimp Fishery



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Part 1: The Turtle Excluder Device (TED) Conflict

The United States is the leading consumer of shrimp in the world, and the domestic shrimp industry is the largest seafood industry in the country. More than 80% of the shrimp supplied by the domestic industry is harvested in the Gulf of Mexico region by the southeastern coastal states. Bycatch, the catch of non-target species, occurs in all fisheries. In sport fisheries unwanted species generally are released without harm. However, bycatch associated with commercial net-fisheries, such as the shrimp fisheries, frequently die. Unfortunately, bycatch species may be caught in sufficient numbers to cause overfishing or alteration of the marine ecosystem. Sea turtle bycatch from trawl fishing has been a major threat to these species for several decades. In 1978, the National Marine Fisheries Service (NMFS) began a research program to reduce the mortality of turtles caught in shrimp trawl. The method that NMFS selected to protect sea turtles was the Turtle Excluder Device (TED). A TED is a type of escape hatch in a shrimp net that allows sea turtles to exit the net while retaining the shrimp catch (Figure 1). In 1987, TED regulations were implemented that required all U.S. shrimpers to use TEDs while fishing in U.S. waters.

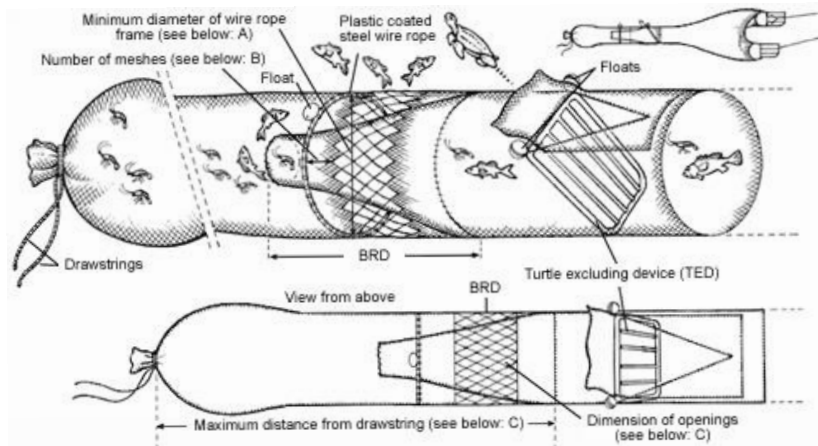


Fig. 1: TED/BRD diagram

¹ Photo Credits:

Sea Turtle and TED: NOAA photo library. www.sefsc.noaa.gov

Gulf South, Inc.: Photo by Ed Lallo Louisiana Seafood News www.louisianaseafoodnews.com

Shrimp Trawler: Gulf of Mexico Foundation www.gulfmex.org

TED protester: Photo by Mark Foley www.floridamemory.org

TED/BRD diagram: www.business.qld.gov.au

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The original TED arose from a melding of ideas from a fisherman and a government scientist. Despite this, much of the shrimp fishing industry viewed the TED with suspicion, because scientists developed it within a government controlled invention system. The shrimp fishing industry felt that government personnel had developed the TED without industry input and were forcing it on them as the only acceptable solution to the turtle bycatch problem. The industry believed that they had viable alternative ideas to solving the turtle bycatch problem that the federal government ignored. Thus, few shrimp fishers used the early versions of the TED.

Sea turtle bycatch falls under two pieces of legislation, the ESA and the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA guides management of USA fisheries in its exclusive economic zone (EEZ) (3–200 nautical miles from shore), and also specifies that bycatch related mortality of non-target species should be minimized. In 1996, with the reauthorization of the MSA additional mandates were added; the most noteworthy being National Standard 8 (NS8), which requires the identification of fishing communities and an assessment of their dependence on fishing. These and other regulatory directives have guided NMFS and regional Councils in conducting their social impact assessments over the past several decades. There have been few investigations into the complex links between fishing, its support industries, and the larger social and economic community. The lack of such research severely limits the capacity to draw conclusions about the true nature of social impacts resulting from management actions and restricts the ability to build any type of theoretical foundation. Indeed, much of the research to date has raised serious questions as to what constitutes a community itself, no less a fishing community.

With your group, analyze the Turtle Excluder Device conflict according to the Cohen framework.

Your analysis should assess each component of the Cohen framework with and a brief justification for your inferences. For example, to assess this environmental problem as:

• **An issue of values**, students should consider questions such as: *What type of ecosystem do we wish to live in, and how does our lifestyle impact that ecosystem? To what extent do environmental problems and the policy approaches we take reflect the way that we value the ecosystems and the worth we place on material consumption?*

• **A political issue**, students should consider questions such as: *Which political processes can best maintain environmental quality, and what are the political dimensions of this environmental problem? How has the political system defined this problem and set the boundaries for its potential solution?*

• **A technology and science issue**, students should consider questions such as: *Can science and technology solve environmental problems as quickly as they create them? Do we have the science in place to truly understand the causes and effects of this environmental problem or mitigate its impacts?*

• **A policy design and economic issue**, students should consider questions such as: *What public policies are needed to reduce environmentally damaging behaviors? How can corporate and private behavior be influenced? What mix of incentives and disincentives*

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seem most effective? What economic factors have caused pollution and stimulated particular forms of environmental policy?

•**A management issue**, students should consider questions such as: *Which administrative and organizational arrangements have proven to be most effective at protecting the environment? Do we have the organizational capacity in place to solve the environmental problem?*

Part 2: Bycatch in the Shrimp Trawl Fishery- A Socio-Environmental System

Bycatch is one of the most significant issues affecting fisheries management today. It is defined as that part of the capture that is discarded at sea, dead (or injured to an extent that death is the result). Capture, in turn, means all that is taken in the gear. The capture can be divided into three components: (a) the portion retained because it has economic value (catch), (b) the portion discarded at sea dead (bycatch), and (c) the portion released alive (release). In this sense, the term bycatch has a clear negative connotation for fishers or environmentalists, and programs and actions to 'reduce bycatch' can be considered as ways to improve the fishery, without being detrimental to the fishers. Bycatch can affect biodiversity through impacts on top predators, the removal of individuals from many species, or by elimination of prey. For the fishers, the bycatch issue can cause conflicts among fisheries, it gives fishers a bad public image, generates regulations and limitations on the use of resources, and frequently has negative effects on the resources harvested through the mortality of juvenile and undersized individuals of the target species before they reach their optimal size from the point of view of future yield.

Despite current mandatory use of TEDs and reported high compliance with TED regulations, there continues to be a correlation between shrimping effort in Gulf of Mexico waters and sea turtle strandings on coastal beaches. Some of the strongest evidence that bottom trawling results in increased sea turtle strandings is the decrease in strandings during periods of a closure (Figure 1). Nearly every year since 1981, shrimp trawling has been prohibited off the Texas coast out to 200 miles in early summer. Recent data for 2001 indicate strandings were reduced by 13% as compared to the previous five year average. Research has shown that Kemp's ridley and loggerhead turtles are attracted to shrimping areas. Analysis of digestive tract contents in Kemp's ridley turtles in Texas has documented consumption of species that are routinely discarded as bycatch by shrimp trawlers.

Bycatch can create a conservation problem when endangered species are affected. Of the seven species of sea turtles found around the world, six species that occur in USA waters (green *Chelonia mydas*, loggerhead *Caretta caretta*, olive ridley *Lepidochelys olivacea*, Kemp's ridley *Lepidochelys kempii*, leatherback *Dermochelys coriacea*, and hawksbill *Eretmochelys imbricata*) are covered by the Convention of International Trade on Endangered Species (CITES) and five of them are protected under the 1973 U.S. Endangered Species Act (ESA) as either threatened or endangered species.

Weekly Sea Turtle Strandings in 2001 vs. 5-Year Average (1996-2000)

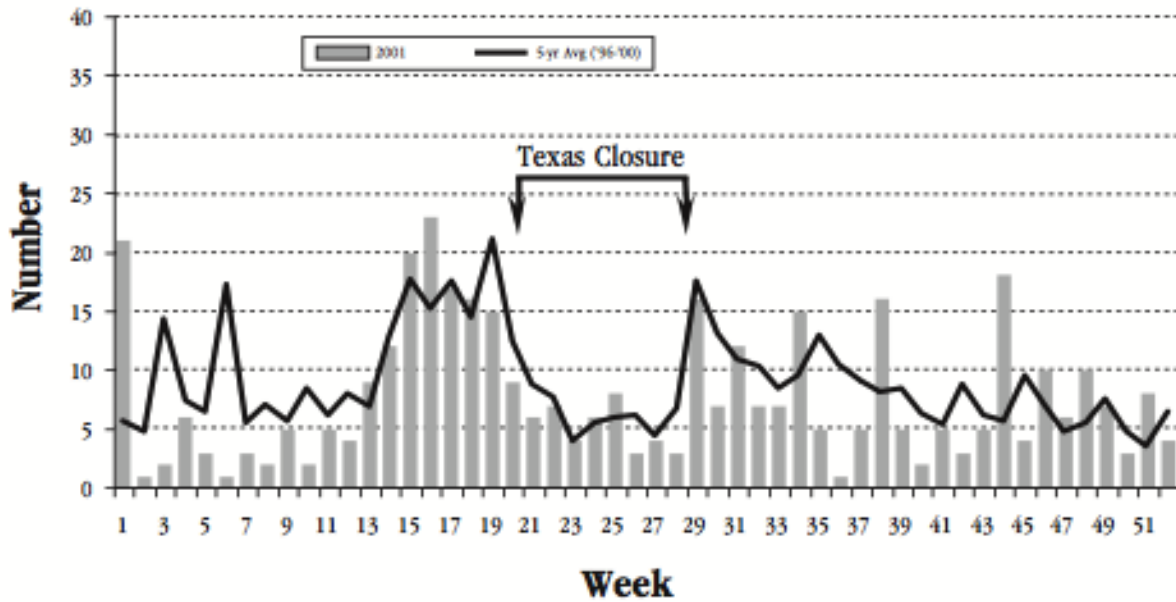


Fig. 2: Sea turtle strandings in 2001 compared to the five-year average (1996-2000), TPW, 2002.

Using a concept map, diagram the use of TEDs in the shrimp fishery as a socio-environmental system based on your Cohen assessment.

Part 3: A Shrimper's Perspective: Worldviews, Attitudes, and Values

Bycatch involves an extremely complex set of scientific, economic, political, and moral issues. As environmental professionals, it is important to remember that the environment being considered is not always your own. The chart below contains "shrimper profiles" based on actual shrimp fisher interviews. Profiles include demographic information (i.e. age, gender, race, generation, operation size, level of education, family information, how often you attend meetings) and 3-4 quotes to establish a starting point for you persona development. The objective of this activity is for you to immerse yourselves in a persona that is unlike you, and meant to encourage thinking beyond the scope of your typical worldview.

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Shrimper Profiles		
Demographics	Operation	Quotes
50 years old Male Cajun High School diploma	<ul style="list-style-type: none"> •Texas •Shrimping for 35 years •Owns one boat and operates this boat •Full time •No other income •4th generation •Attends 1-2 fisheries meetings per year 	<p>“I disagree that some species are not worth spending money to save.”</p> <p>“They don’t care what fishermen feel”</p> <p>“I agree somewhat that endangered species should be protected even at the cost of the economy and jobs.”</p>
60 years old Female Swedish High School diploma	<ul style="list-style-type: none"> •Florida •Shrimping more than 30 years •Full time •Other sources of income •3rd generation •Attends more than 6 fisheries meetings per year and participates in conference calls 	<p>“I don’t really like [to get involved in the political side of the fishing industry]-but it is a necessary evil!”</p> <p>“I think [the Gulf of Mexico is the best managed fishery in the world], because we are willing to put environmental issues above the people.”</p>
47 years old Male Associates degree Native American	<ul style="list-style-type: none"> •Texas •Shrimping for 16 years •Full time •No other income •2nd generation •Attends 1-2 fisheries meetings per year 	<p>“We should be sure future generations have an abundance of fish and wildlife.”</p> <p>“Some species are not worth spending money to save.”</p> <p>“TEDs cause significant catch loss.”</p>
49 years old Male Associates degree German	<ul style="list-style-type: none"> •Texas •Shrimping for 32 years •Owns more than one shrimp boat and hires captains for all the boats •Part time •Other sources of income •2nd generation •Attends 1-2 fisheries meetings per year 	<p>“In the last 30 years, the market price of shrimp has stayed the same, while the cost of operation has tripled.”</p> <p>“It is more important to protect nursery habitat for shrimp than to protect habitat for other species.”</p> <p>“Fish and wildlife are on earth primarily for people to use.”</p>

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Shrimper Profiles		
Demographics	Operation	Quotes
56 years old Male High School diploma Vietnamese	<ul style="list-style-type: none"> •Louisiana •Shrimping for 25 years •Owns one boat and operates this boat •Full time •No other source of income •1st generation •Attends 3-5 fisheries meetings per year 	<p>“People were using TEDs before rule was passed-trying to do the right thing.”</p> <p>“Shrimp trawling does not harm the turtle populations.”</p> <p>“I like to know [regulation] changes and I always follow rules on my boat.”</p>
59 years old Female Less than a high school diploma Vietnamese	<ul style="list-style-type: none"> •Louisiana •Shrimping for more than 25 years •Owns one boat and hires a captain to operate it •Full time •No other source of income •1st generation •Attends 3-5 fisheries meetings per year 	<p>“I would say that I have been significantly affected by changes from the oil spill and the effects after.”</p> <p>“Whether or not I see fish and wildlife it is important to know they exist.”</p> <p>“Public meetings are a useful way to receive information about proposed changes when they have vietnamese translators.”</p>
49 years old Male High School diploma Caucasian	<ul style="list-style-type: none"> •Louisiana •Shrimping for 30 years •Owns one boat and operate it •Full time •No other source of income •2nd generation •Attends 1-2 fisheries meetings per year 	<p>“I own one shrimp boat and operate this boat...this is how it should be only.”</p> <p>“I would like to continue [shrimping], but with imports and low shrimp prices and high fuel price we are likely to fold within a few years.”</p> <p>“...there are only a handful of us left.”</p>
54 years old Male Less than high school diploma Chocktaw Indian	<ul style="list-style-type: none"> •Louisiana •Shrimping for 38 years •Owns one boat and operates this boat •Full time •Other sources of income •1st generation •Attends 1-2 fisheries meetings per year 	<p>“I like to get involved in the political side of the fishing industry, because politicians are liars.”</p> <p>“Compared to reducing national debt; reducing crime; and reforming health care; protecting and rehabilitating the marine environment is more important.”</p> <p>“It is important to protect nursery habitat for all species.”</p>

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Shrimper Profiles		
Demographics	Operation	Quotes
55 years old Male Associates degree French	<ul style="list-style-type: none"> •Louisiana •Shrimping for 38 years •Owns one boat and operates this boat •Full time •No other source of income •1st generation •Attends 1-2 fisheries meetings per year 	<p>“At the time of the BP oil spill I was on the clean up team; we made all the fires. I came home on a break, low and behold on the news was some crack pot screaming about the hundreds of turtles we were burning. What a joke, none as far as all 18 boats reported none were burned....we were limited to a 9 square mile block to burn. If hundreds were in a nine square mile block you need to take them off the list of endangered animals.”</p>
53 years old Male High School diploma Dutch	<ul style="list-style-type: none"> •Florida •Shrimping 32 years •Part time •Other sources of income •1st generation •Attends 3-5 fisheries meeting per year 	<p>“I’ve had to change my career as a result of how little managers care about fishermen’s lives. Meetings are usually held after managers have already made up their minds to make a change.”</p> <p>“I agree that it is acceptable for people to kill wildlife if they are considered bycatch.”</p>
45 years old Female Some College Cajun	<ul style="list-style-type: none"> •Louisiana •Shrimping for 20 years •Owns more than one boat and hires captains for all the boats •Full time •No other source of income •4th generation •Attends 1-2 fisheries meetings per year 	<p>“For bycatch we need to find a way to either sell it or thrown it back over.”</p> <p>“Too much attention is given to wildlife in our society, because there is too much misinformation by environmental groups.”</p> <p>“It’s all about the politics. It’s never about the science.”</p>
50 years old Male Associates degree Vietnamese	<ul style="list-style-type: none"> •Texas •Shrimping for 22 years •Owns one boat and operates this boat •Full time •No other income •2nd generation •Attends 1-2 fisheries meetings per year 	<p>“Limit catch, let shrimp repopulate.”</p> <p>“We need to limit the shrimp catch on all the big boats that go all year long [or] it will make the shrimp extinct.”</p> <p>“Now the shrimp lesser every year since from the year the people build a lot [of] 2 engine boat [and] make everybody struggle in the shrimping business.”</p>

(Morris et al. unpublished data, 2013)

So that you can identify with the people and communities you are expected to consider, watch these Youtube videos:

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Shrimpers Fight TED proposal: <http://youtu.be/tcMECU9CXqA>

After the Cap video on “Seafood”: <http://www.afterthecap.org/afterthecap/>

The Shrimper Survivor: <http://youtu.be/nju6qvT5QOs>

Gulf Snapshots: <http://youtu.be/1rEVN6uJ9tE>

The Gulf of Shrimp and Oil: http://youtu.be/Axaqd_qMap8

Touring the Gulf: <http://youtu.be/qCHfHFIGwZA>

Shrimping Cajuns: <http://youtu.be/uZa6H3TqtpI>

After receiving your shrimper profile, develop your persona further by doing research on how shrimping and the coastal/marine ecosystem may be relevant to you, your family, and your community. Based on literature you find, write an essay comparing your shrimper persona’s environmental worldview and values to your own.

Are there differences? Similarities? What social norms exist for your persona? How might the way your persona views fisheries/environmental regulators differ from the way you view regulators? How do you define “environmentalists;” might you as a shrimper define “environmentalist”? What factors/barriers might contribute to your persona’s worldview (language, citizen status, environmental literacy)?

Other suggested questions to consider include:

Imagine the reality of coping with shrimping regulation changes in conjunction with the oil spill impacts/effects. How will your shrimping business fare? How will your family be affected? How will your community be affected? What is your future in the industry? What options do you have given your age, educational background, skill set? What particular regulations have the most significant impact on you as a shrimper? How are you impacted? Do you think these regulations are necessary? Why or why not?

Part 4: The Reauthorization of the MSA

On March 13, 2013, the U.S. House Natural Resources Committee held the first hearing on MSA reauthorization. That meeting brought together a variety of stakeholders to discuss current issues in federal fisheries.

Bob Gill is a member of the Gulf of Mexico Fishery Management Council and of the Southeastern Fishery Association. Mr. Gill is also the co-owner of “Shrimp Landing” a wholesale fish house in Florida.

Read Mr. Gill’s testimony at the oversight hearing.

<http://naturalresources.house.gov/uploadedfiles/gilltestimony03-13-13.pdf>

Now, imagine that you are an active member of the Southern Shrimp Alliance. Your organization has been called upon to send someone to represent the organization at the next hearing on MSA reauthorization. As

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the shrimper persona you've developed over the course of the case, work with your fellow shrimpers for 20 minutes in groups of 4-5 to develop a persuasive testimony similar to Mr. Gill's, using Cohen framework considerations. You'll have 8 minutes to present in-class a cohesive testimony that incorporates socio-environmental, as well as socio-cultural considerations for the collective shrimping community, as well as your specific community.

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