

OVERFISHING OF THE ATLANTIC BLUEFIN TUNA

Backgrounder: Supply Side

The Atlantic bluefin tuna averages 500 pounds in weight and can produce around 10,000 pieces of sushi from one fish. In Japanese culture the sushi industry is of critical importance, for both financial and cultural reasons. The tuna industry contributes largely to the sushi industry. With the rapid decline in stock numbers the possibility of extinction for this species is real and rising. For sushi lovers worldwide this means beloved spicy tuna rolls and sashimi would be off the menu, for good.

A few types of tuna in the world include the *Albacore*, *Southern bluefin*, *Bigeye*, *Pacific bluefin* and *Atlantic bluefin*. The popular species on the East Coast is the Atlantic bluefin tuna. The Atlantic bluefin tuna lives in both Eastern and Western coastal water of the Atlantic Ocean. Unfortunately with all of the overfishing the bluefin tuna population is currently endangered. The American-based Pew Environment Group states that the main culprits in the over-harvesting of the fish, which travel from one side of the Atlantic Ocean to the other, are Spain, Italy, Malta and France.

In the United States most tuna fishing occurs in the Atlantic Ocean in smaller commercial fishing boats. The larger fish caught are over-nighted to Japan to insure the best price possible is negotiated. Western Atlantic stocks of bluefin tuna are severely overfished, leading to over-harvesting of the eastern stocks due to high demand in Asian markets. According to *Longo* (2012) "While western Atlantic stocks have been critically depleted and have become less commercially viable, the eastern Atlantic stock has remained a major source of Atlantic bluefin tuna to supply the global market, particularly Japan". Fish caught in the United States are exported to Japan for sale at fish markets. In Japan, the bluefin tuna is utilized in sushi and sold for thousands of dollars per pound. *Forbes* (2013) found that a Japanese buyer, "Kimura paid 155.4 million yen (US \$1.76 million) for an 488 pound fish. That's around \$3,600 per pound". Due to the increased demand for these fish the price per pound is extremely large.

Both the Eastern and Western stocks of tuna have the same spawning location, the Mediterranean Sea. Fishing practices have increased in the Mediterranean Sea due to the ease of catching tuna as large numbers of bluefin live in one small area at the same time. The practice of fishing in the Mediterranean Sea where the tuna go to spawn is severely diminishing the tuna stock in the Atlantic. *Longo* (2012) states, "Western Atlantic bluefin stocks have experienced a dramatic depletion. Spawning stock biomass (adult-aged fish) has declined to about 20–29 percent of 1970 levels". The fishing for bluefin tuna has drastically changed since it was introduced. *Longo* (2012) describes that, "Early Mediterranean civilizations developed methods to capture bluefin that migrated close to shorelines, including the construction of elaborate traps. Trap technology has evolved into an industrialized business. *Longo* (2012) states, "Fishing operations use large-scale, highly mechanized fishing gear, notably long-liners, which can have up to 3,000 baited hooks, and purse-seiners, which can have a carrying capacity of up to 4,000 tons."

Current Issues with the Tuna Market

Western stocks of bluefin tuna are already severely depleted with the eastern stocks close behind due to current fishing practices on the supply-side of the market. Government intervention is critical to the survival of this fishery. Bluefin tuna numbers are affected greatly as their reproductive rate is much slower than other species. This species of fish does not reproduce until a much later age and a larger size. If this species is being caught young and at smaller sizes they never reach maturity and do not have the ability to spawn and create young.

Japanese Culture: Demand Side

Many Japanese do not realize how depleted the bluefin tuna stocks are. In Japanese culture fish in general is a staple food in their diet, many of these individuals consume fish on a very regular basis. Especially with tuna this is a high priced fish that can reach upwards of \$21 for a single piece of tuna. In Japan, *Foster* (2013) writes that eating tuna is a, “special treat that families might splurge on once every month or two.” This fish is an indicator of wealth due to its high price, the average citizen does not have the ability to purchase such an expensive fish (*Foster*, 2013). Bluefin is seen as a “Veblen” or status good, which is only strengthened by its cultural importance. Many of the elite in Japan believe that alarmist media or environmental NGO’s are engaged in a propaganda war against Japan and its relationship to fishing and whaling and continue to eat it at their leisure. *Foster* (2013) states that, “eating fish is a fundamental part of Japanese culture.” Some countries, such as various European ones and the US, have removed or severely restricted Atlantic bluefin tuna from their domestic markets in an attempt to combat the extinction threat. But, unfortunately in Japan, most restaurants have no plans on taking this item off of the menu because of the high price this fish can retrieve. Without the removal of this item or a implemented strategy this species will most likely become extinct in the immediate to near future.

The decline in the number of Atlantic bluefin tuna in the wild directly affects the cost of the Atlantic bluefin tuna for sushi markets. Due to its dwindling population, if this species continues to decline the prices of this fish will continually increase. In addition, if these fish pressures persist, the average fish size will also decrease because of the lack of ability to reach a mature weight. Since these fish take longer than most other species to reach their mature sizes, increased fishing pressure will force fishers to continually catch bluefin, even if they are not fully grown. For the industry generally, this will become detrimental, as smaller fish do not bring in as much profit as a larger ones, thus intensifying harvesting rate in the immediate term.

Extinction of this species would result in the loss of biodiversity, culture, and significantly impact fishing economies built around the bluefin.

Issues With The Current Market

As of 2014, there is thought to be 20-29% left of the spawning stock worldwide. Overfishing and illegal catching is a major contributor to such low stocks of this species. Especially in the Mediterranean Sea area where about 40% of the bluefin caught fall under the category of being illegal, unreported and unregulated fishing catches.

The overfishing of the Atlantic Bluefin tuna in the Mediterranean provides a perfect example of Garrett Hardin’s tragedy of the commons. The tragedy of the commons is an economic theory by Hardin that argues that individuals will act both independently and rationally in their own best interest with disregard to the damage they are doing to others. According to *Hardin* (1964), “therein is the tragedy. Each [person] is locked into a system that compels one to increase [their] own herd without limit – in a world that is limited. Ruin is the destination toward which all rush, each pursuing [their] own interest in a society that believes in the freedom of the commons.” In the case of Atlantic bluefin, multiple countries who share a fishery are depleting the stocks out of economic self-interest without regard to the damage they are doing to the longterm health of the fishery, and in particular the spawning ground. Countries believe that if they choose not to catch bluefin another country inevitably will. A solution to the tragedy of the commons is challenging to implement as it would have to rely on the morality of individual commercial fishers and sovereign countries. Given this reality, an external governing body, such as the ICCAT (International Commission for the Conservation of Atlantic Tuna), will need

to take measures and implement a system to protect the Atlantic Bluefin Tuna from overfishing where users that value the communal benefit over their own marginal gains will be rewarded and those who do not will be met with punitive actions.

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