



12-1-2015

Sustainability of Atlantic Bluefin Tuna Stocks: The Problem of Overfishing

Erini Lemos

Follow this and additional works at: <https://repository.upenn.edu/psr>



Part of the [Environmental Studies Commons](#)

Recommended Citation

Lemos, Erini (2015) "Sustainability of Atlantic Bluefin Tuna Stocks: The Problem of Overfishing," *Penn Sustainability Review*. Vol. 1 : Iss. 7 , Article 4.

Available at: <https://repository.upenn.edu/psr/vol1/iss7/4>

This paper is posted at ScholarlyCommons. <https://repository.upenn.edu/psr/vol1/iss7/4>
For more information, please contact repository@pobox.upenn.edu.

Sustainability of Atlantic Bluefin Tuna Stocks: The Problem of Overfishing

SUSTAINABILITY OF ATLANTIC BLUEFIN TUNA STOCKS: THE PROBLEM OF OVER-FISHING

Issenberg, S. *The Sushi Economy*. Gotham Books. (2007).

Mukai, A & Yamaguchi, Y. "Japan Sushi Chain Pays Record \$1.76 Million for Tuna at Auction", *Bloomberg Business*. (2013).

Fromentin & Powers. *Atlantic Bluefin tuna: population dynamics, ecology, fisheries and management*. Fish and Fisheries. (2005).

Sonu, C. S. NOAA Technical Memorandum NMFS Tuna fisheries, trade and market of Japan. NOAA. (1999).

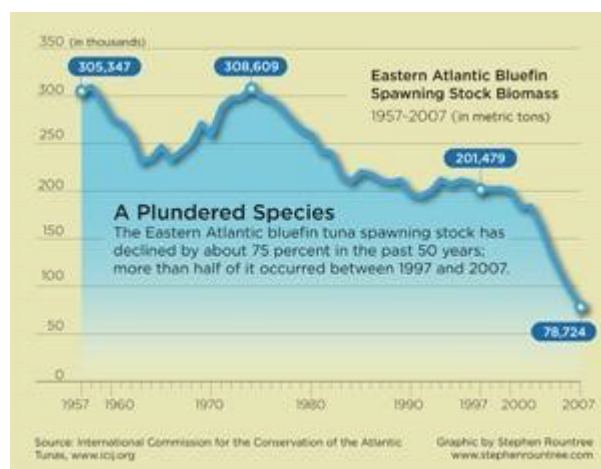
Gilford, G. 200 tons of illegally caught Atlantic bluefin tuna show how we're driving these fish to extinction. *QUARTZ*. (2014).

Fromentin et.al. *The spectre of uncertainty*

REELING IN THE LAST OF THE TUNA

Whether crossing stretches of the Atlantic in great shoals or crossing countries to reach the world's most exclusive restaurants, the Atlantic Bluefin tuna (AB-FTE), is a king among fish. In the wild this apex predator reaches up to 10 feet in length, weighs up to half a ton, and has a lifespan of over 35 years. On the market, the fish that at one point could not be sold at any price by Mediterranean fishermen, now fetches enormous profits at fish auctions such as Tsukiji in Japan. In January 2013, a record \$1.76 million was paid for a single Atlantic Bluefin weighing 489 lbs – the fish was worth its weight in silver (Mukai, A & Yamaguchi, Y, "Japan Sushi Chain Pays Record \$1.76 Million for Tuna at Auction", *Bloomberg Business*, Jan 2013.)

However, its newfound celebrity status has had devastating impacts. The ever-increasing demand for tuna is putting excessive pressure on global fisheries, resulting in the rapid decline of multiple tuna sub-species. The case of the Atlantic Bluefin represents the archetypical scenario of overexploitation; we may see the first major predatory fish driven to extinction if sustainable management is not implemented and adhered to.



A BRIEF HISTORY OF THE BLUEFIN

Prior to the mass popularization of sushi in the 1970s, the revered pink, fatty flesh of Bluefin tuna (o-toro or chu-toro) was predominantly limited to Japanese markets. However, as globalization led to the emergence of sushi bars in Europe and the U.S., global demand for tuna drastically increased. A positive feedback loop developed;

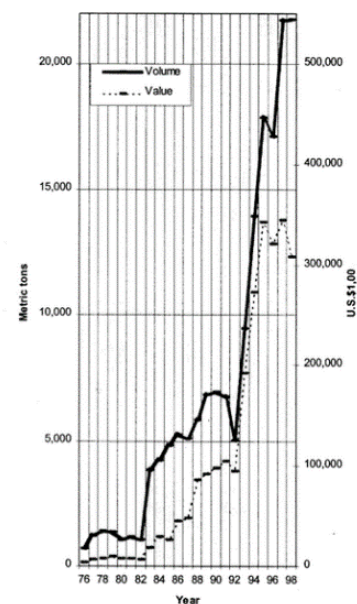
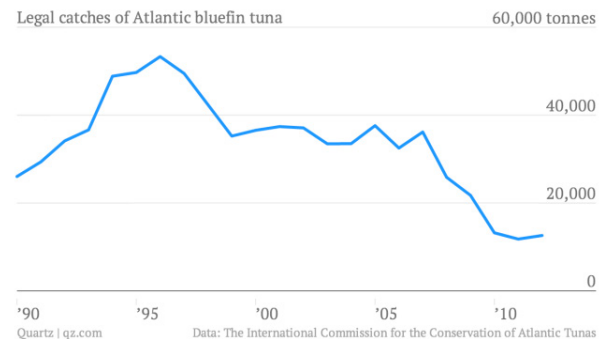


Figure 12. Japanese imports of fresh and frozen bluefin tuna, 1976-1998. (Source: Japan Marine Products Importers Association 1977-1999)

with increased prevalence of tuna in eastern and western cuisines, both fishing and consumption rose.

Between 1970 and 1990 the ABFTE catch increased by 2,000 % while the average price for Bluefin exported to Japan increased by 10,000% (IUCN).

Today, the tuna industry (which includes all all Tunnini from Skipjack to the endangered Bluefin) is worth \$5.5 billion, and by weight makes up 5% of the world's annual fish catch. Consequently, stocks of Atlantic Bluefin have dropped some 90% despite it making up only 1% of the annual tuna catch (Hickmann, 2009).

The two big evils : Unsustainable quotas and illegal fishing

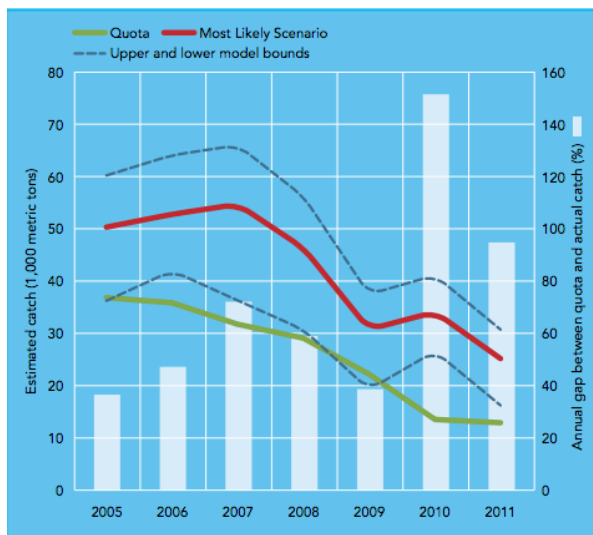


Fig. 1 Excess Catch of Eastern Atlantic Bluefin 2005-2011

At the annual EU Fisheries Meeting in 2009, fisheries scientists suggested a maximum catch of 15,000 tons of ABFTE per year, a number deemed sufficient to avoid species collapse. Despite this figure, the transnational corporations and international governments decided on a catch of 29,500; the following year, the actual yield was near 61,000 tons (2010).

Unreported and unregulated illegal fishing (UUI) is the second biggest contributor to the subsequent demise of the Atlantic Bluefin and has not only persistent but increased over the years. Between 1998-2007, 50,000 tons of ABFTE was caught each year, despite quotas being set at 20,000-25,000 (Fromentin 2014). Since then, the Interna-

tional Commission for the Conservation of Atlantic Tuna (ICCAT) has developed new management plans seeking to curtail this overexploitation. However, when even a modest catch can reel in many thousands of dollars, it is easy to see why fishermen continue to take the risk. From just one Italian port, 205 tons of illegal tuna were seized by port authorities – one such vessel was loaded with 3000 juvenile tuna (Pew 2013).

WHERE ARE WE NOW?

Facing multiple threats from unsustainable and unregulated fishing, advances in technology, overbearing demand and substantial illegal fishing, it's not surprising that the Atlantic Bluefin's future is looking decidedly fishy. The World Ocean Review's 2014 report stipulates that 10% of Bluefin stocks were overexploited or depleted from 1974 to 2009. Since 2009, between 51-57% have been overexploited, while a mere 12.7% remained underutilized.

WHY DOES THIS MATTER?

Perspective is important. You may wonder, considering the plethora of environmental problems ailing our planet, why the survival of one subspecies is so crucial. Why is this article not about plastic pollution, fracking or the great evil of bacon? Two reasons:

- Firstly the Atlantic Bluefin is the panda of the ocean; its survival is a beacon of hope and a reassurance that we can pull our sustainability crisis back from the brink of collapse.
- Secondly, the health of the animals at the top of a food chain is a reflection of the entire ecosystem's health. Letting Bluefin tuna reach extinction would bring about unpredictable and almost certainly negative ecosystem changes

- o Without predatory Atlantic Bluefin to keep populations in check, smaller pelagic species such as flying fish would increase in population putting unsustainable pressure on their food source and increasing interspecies competition.
- o Additionally, with no more tuna to catch the fishing industry will turn its attention to smaller tuna sub-species and other large pelagic fish thus endangering their populations as well.

in management of exploited fish stocks: The illustrative case of Atlantic Bluefin tuna. Marine Policy. (2014).

Hickmann. M. Britain takes up tuna's case. The Independent. (2009).

Bestor. C.T. How Sushi Went Global. Global Policy Forum. (2000).

M.Casey, Sushi eaters pushing Pacific bluefin tuna to the brink of extinction, CBS News, (2014).

The Pew Charitable Trusts – The Story of Atlantic Bluefin Tuna. <http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2013/10/08/the-story-of-atlantic-bluefin-tuna>

ICCAT (2010 figures) - <https://www.iccat.int/en/>

World Ocean Review (2014 figures) - <http://worldoceanreview.com/en/>

IUCN Red List - <http://www.iucnredlist.org/>

SO, WHAT TO DO...

“Atlantic Bluefin Tuna can still recover...” (Fromentin et al.) (2014)

Considering the current state of the oceans, there seem to be three main approaches moving forward.

Business as usual: Assuming no efforts are made to improve the management of Atlantic Bluefin Tuna, populations would eventually collapse resulting in the eventual extinction of the species by the middle of the century. (R.Murray, *The End of the Line*, 2009).

Reducing and Enforcing Quotas: Strictly regulating reduced quotas, targeting only mature tuna and limiting fishing to certain months of year. These measures would aim to allow stocks to recover by alleviating pressure on existing fisheries and allowing young fish to mature and reproduce. It is worth noting that quotas have been attempted in the past (2009), and were not successful. As such, while restricting legal catch may seem sufficient, history might prove otherwise.

Sustainable management: This approach would not only involve enforcing sustainable fishing measures (as seen above), but also further efforts to rebuild the population such as setting up marine reserves, fining illegal catches and improving consumer awareness.

To rebuild ABFTE stocks, a consistent maximum catch of up to 26,000 million tons would need to be adhered to (B.Worm. 2009).

In a rather ironic twist of fate the Atlantic Bluefin’s now iconic reputation may just be what could save the species from extinction. Much like the panda or the clownfish (since *Finding Nemo*), there seems to be no better way to save a species than by making it part of our popular culture. Ideally, the same will occur for the Atlantic Bluefin. However, with the ICCAT planning on increasing quotas by 20% over the next two years (PTak, Pew Charitable Trusts, 2014), the species’ fate is far from clear. It remains to be seen whether the species will be able to recover, or if we will have to move on to a new fad food.

Eirini is a junior in the college dual majoring in English Literature and Environmental Studies concentrating in sustainability and environmental management. She hopes to combine her joint interests in the humanities and environmental awareness to pursue a career in journalism (perhaps environmental journalism) in the future.