

REELING IN REVENUE:

Opportunities to increase the value of Atlantic bluefin tuna and support recovery through the live-release fishery



Ecology Action Centre

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The Atlantic bluefin tuna (*Thunnus thynnus*) is an iconic marine species. It is highly prized by both recreational and commercial fishermen as a furious fighter on the line and a top commodity in the sashimi trade. The bluefin tuna fishery provides **economic opportunities** in many parts of the world, with the western population of Atlantic bluefin tuna providing an important source of economic activity in Canada's Atlantic provinces. However, the population of western Atlantic bluefin is at just **36% of the 1970 level**¹ with overfishing ranking as the leading cause of this decline². In order to allow this severely depleted population to grow and to support higher levels of fishing in the future, it is critical that **catch limits are not increased** until the population is rebuilt and science indicates that the population can withstand additional pressure.

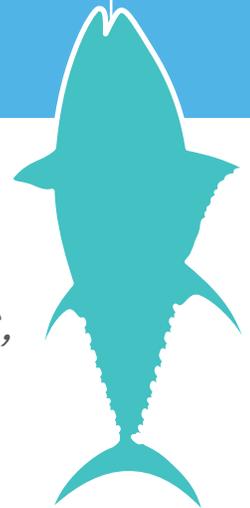
In the meantime, is there a way for Canada to increase the economic returns of its western Atlantic bluefin fishery without putting additional pressure on the population?

THE STUDY

A new study offers some good news for Canada and the western Atlantic bluefin population: Canada's recreational live-release fishery has the potential to generate six times more revenue on a tonne per tonne basis than its commercial bluefin fishery. The study also suggests that there is the potential for the live-release fishery to expand and further that more value can be derived from the bluefin tuna fishery under existing catch limits.

The analysis was conducted by Gardner Pinfold Consultants Inc. and commissioned by the Ecology Action Centre.

*In 2012, the live-release charter vessels operated approximately 1,000 trips, earning an estimated **\$1.8 million.***



METHODOLOGY

The study compares the current economic returns from Atlantic Canada's commercial bluefin fishery to those from its live-release, bluefin charter boat fishery. The study also assesses the potential returns from an expanded live release fishery. To analyze the current economic returns from Atlantic Canada's live-release bluefin fisheries, all available published and public data were utilized. However, published data on the costs and earnings of Canadian bluefin tuna charter enterprises are not currently available. Estimating these costs and earnings involved analyzing two types of data: 1) published costs and earnings of similar vessels in other fisheries; and 2) operating cost data gathered through industry consultation. Charter operations have cost and revenue structures that are somewhat different than commercial fishing enterprises, and therefore much of the data related to recreational fishing came from recreational industry consultation. Published data were used to confirm industry-reported costs, estimate industry averages, and supply missing cost elements.

Given limited data available to analyze the potential future demand for bluefin charters, the following best available data were used: North American recreational fishing demand studies, Department of Fisheries and Oceans (DFO) catch and effort record, and industry consultation.

*Live-released bluefin have the potential to generate up to **six times more** revenue on a tonne per tonne basis than a commercially caught bluefin.*

RESULTS

The study concluded the following on the current and potential returns of the live-release fishery:

CANADA'S LIVE-RELEASE BLUEFIN FISHERY IS GROWING

Industry participants indicated that demand for bluefin charters has grown consistently since 2010, when DFO first authorized the fishery. It is estimated that in 2012, in Prince Edward Island (PEI) and Gulf Nova Scotia (NS) live-release charter vessels operated approximately 1,000 trips, earning an estimated \$1.8 million³.

LIVE-RELEASED BLUEFIN HAVE THE POTENTIAL TO GENERATE OVER \$100,000 IN CHARTER REVENUE PER TONNE

In 2012, Canada's commercial Atlantic bluefin tuna fishery generated just over \$17,000 in landed value for every tonne of bluefin caught. In comparison, this analysis shows that Canada's bluefin live-release charter industry has the potential to secure over \$100,000 in gross revenue per tonne, or approximately six times more than the commercial fishery⁴.

THERE IS UNTAPPED POTENTIAL IN LIVE-RELEASE BLUEFIN FISHERY

Currently, only 47 of the 268 total commercial license holders that are eligible to participate in the live-release fishery operate charter businesses, suggesting there is significant opportunity for growth. Under the assumptions used in this analysis, the live-release quota that is currently unused (20%) represents a minimum of about 120 additional trips or close to \$100,000 in potential revenue from these trips. Furthermore, the study finds that transferring effort from the commercial sector to the live-release sector could increase the returns to the Canadian bluefin fishery, even with start-up costs of approximately \$20,000-30,000 taken into account. More specifically, the analysis suggests that a reallocation of an additional 10 tonnes to the live-release fishery could further increase their revenues from the bluefin fishery. Revenues could increase to over \$2.2 million⁵, or \$112,000 per tonne transferred, with commercial fishery revenues decreasing by less than \$200,000⁶.

SPIN-OFF ECONOMIC OPPORTUNITIES MAY BE POSSIBLE

In addition to the revenue generated from live-release boat trips, expansion of the live-release industry has potential to create additional economic benefits for communities in the region through spending that occurs as a result of the charter business.

Charter operations are increasingly offering holiday packages that include transportation from the airport, accommodations in nearby towns or onsite, and fishing gear and merchandise. These value-added elements have the potential to increase industry returns.

BACKGROUND

BLUEFIN TUNA FISHING IN CANADA

Historic records indicate that the recreational fishery for bluefin tuna started off of Wedgeport, Nova Scotia in the 1930s. By the 1960s, a recreational fishery had also begun in the Gulf of St. Lawrence off of PEI. In the 1970s, bluefin tuna started to become more valuable largely due to increasing demand in Japan for sashimi (raw bluefin), and fishermen in Atlantic Canada responded by catching tuna for sale. After this shift to a predominately commercial fishery, the recreational fishery continued primarily through the annual tuna tournament in Wedgeport, NS until 2010 when DFO started an experimental live-release tuna fishery. The recreational live-release fisheries that have emerged in PEI and NS involve charter operators that guide day trips for paying clients for the purposes of hooking and releasing a live bluefin tuna.

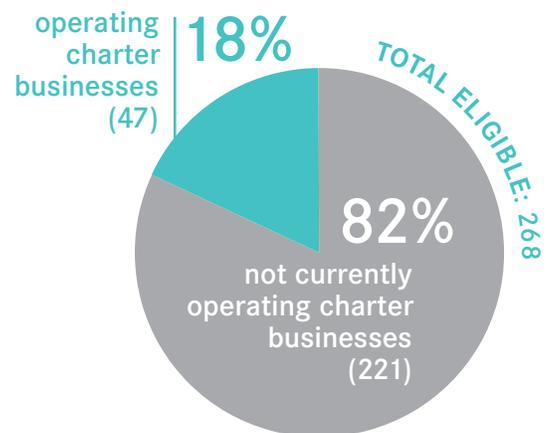
WESTERN BLUEFIN TUNA POPULATION

Canada fishes primarily on the western population of Atlantic bluefin tuna. Western bluefin spawn in the Gulf of Mexico in spring, and many of the largest individuals migrate to eastern Canadian waters to feed in July through November. The health of the entire western Atlantic bluefin population is highly dependent on the health of the giant bluefin found in Canadian waters, especially in the Gulf of St. Lawrence, as these are the most fertile fish in the population and responsible for producing a large share of the offspring each year.

The population of western Atlantic bluefin is at just 36% of the 1970 level⁷, with overfishing being one of leading causes of this decline⁸. In 1998, the International Commission for the Conservation of Atlantic Tunas (ICCAT), the multi-governmental body responsible for bluefin tuna fishery management, adopted a 20-year rebuilding plan for western Atlantic bluefin tuna after prior efforts had failed to rebuild the population and in fact led to further declines. Now, 15 years into this rebuilding plan, the population is still severely depleted. In response to the last stock assessment update in 2013, the scientific body that advises ICCAT recommended maintaining the western Atlantic bluefin tuna quota at the current level of 1,750 t to allow the population to grow.

COMMERCIAL LICENCE HOLDERS

that are eligible to participate in the live-release fishery



THE LIVE-RELEASE FISHERY TODAY

Of the 1,750 tonne (t) quota set by of the International Commission for the Conservation of Atlantic Tunas (ICCAT) in 2013, Canada got 22.32% or 483.160 t, with 10 t designated for mortality associated with the live-release fishery and scientific research. DFO now applies a mortality rate for live-release of 3.4%⁹ to set the total number of fish that can be hooked in the live-release fishery¹⁰.

Currently, recreational bluefin licences can only be obtained by bluefin fishermen who also own a commercial bluefin licence. According to DFO, in 2012 there were 47 operators (27 in PEI, 20 in Gulf NS) of bluefin tuna live-release charters in the Gulf region.

According to DFO, bluefin charter operators in PEI and the Gulf NS ran 1,002 bluefin charter trips in 2012. 2013 saw a 46% increase in trips in PEI and a 28% increase in trips in Gulf NS (1,179 and 249 trips, respectively, or 1,428 total). Data on the number of trips are not available prior to 2012, but there has been a steady increase in the number of trips since 2010, according to recreational fishing representatives. PEI operators charge between \$1,000 and \$2,000 per fishing trip. NS operators charge, on average, between \$2,000 and \$2,500 per trip.

LIVE-RELEASE FISHERY REGULATIONS

DFO licence conditions outline several regulations for live-release licence holders.

These include but are not limited to¹¹:

- A maximum of two fishing trips per calendar day is authorized;
- A maximum of one fish hook-up per trip. A hook-up is when a fisherman catches a tuna and keeps it on the line, or brings it alongside the boat, for 45-60 minutes of "fight time";
- Gear is limited to rod and reel and biodegradable barbless circle hooks;
- All bluefin must be released in a way that causes the least harm to the fish;
- Licence holder required to obtain a hail-out reference number from DFO;
- Vessels may be required to have an at-sea observer on board; and
- Vessel operators are required to supply the dockside monitoring company with a copy of all monitoring documents.

CONCLUSION

Within Atlantic Canada, there is an opportunity to **increase the economic benefits** related to Atlantic bluefin tuna fishing without increasing the quota. More specifically, the live-release bluefin charter boat fishery in PEI and the Gulf NS has the potential to yield as much as **six times the revenue** of Canada's commercial bluefin fishery per tonne.

The live-release fishery results in significantly **lower mortality levels**, which is critical given the western Atlantic bluefin population is still severely depleted and is currently under consideration for a Species At Risk Act (SARA) listing. If conducted properly and according to DFO charter fishery licence conditions, the live-release recreational fishery could become an important - and **environmentally sustainable** - revenue stream for Atlantic Canadian fishermen and coastal tourism operators, while still allowing rebuilding and eventual recovery of the population.



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¹ICCAT Report on the Standing Committee on Research and Statistics 2013

http://www.iccat.es/Documents/BienRep/REP_EN_12-13_II_2.pdf

²Recovery Potential Assessment For Western Atlantic Bluefin Tuna (*thunnus Thynnus*) In Canadian Waters <http://www.dfo-mpo.gc.ca/Library/344451.pdf>

^{3,4}Western Atlantic Bluefin Tuna Recreational Fishery Economic Analysis, Gardner Pinfold Consulting, 2014

⁵Estimate based on a post-release mortality of 5.6%

⁶Western Atlantic Bluefin Tuna Recreational Fishery Economic Analysis, Gardner Pinfold Consulting, 2014

⁷ICCAT Report on the Standing Committee on Research and Statistics 2013

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⁸Recovery Potential Assessment For Western Atlantic Bluefin Tuna (*thunnus Thynnus*) In Canadian Waters <http://www.dfo-mpo.gc.ca/Library/344451.pdf>

⁹Changed from 5.6% for the 2013 season

¹⁰Stokesbury, M.J.W., Neilson, J.D., Susko, E. and S. J. Cooke. 2011. Estimating mortality of Atlantic bluefin tuna (*Thunnus thynnus*) in an experimental recreational catch-and-release fishery. *Biological Conservation* 144:11 2684-2691.

¹¹DFO Maritimes Tuna 2013 Charter Fishery Licence Conditions