

Management and Enforcement Challenges for Highly Migratory Species: The Case of Atlantic Bluefin Tuna

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1.0 INTRODUCTION

1.1 THE ATLANTIC BLUEFIN TUNA¹

Atlantic bluefin tuna (ABFT) (*Thunnus thynnus*) is both an iconic sport fish, with a history of competitive fishing in the Atlantic region (including the largest individual ever caught, in Auld's Cove, Nova Scotia)², and the target of a significant commercial fishery throughout much of its range. The latter is partly driven by the fact that the species is “highly valued in the sushi and sashimi markets”,³ but it also has wider markets. The combination of a “recreational” and large scale industrial fishery is an unusual, if not unique, challenge with respect to the choice of management approaches.

ABFT is a highly migratory species, ranging throughout temperate and tropical areas in the Atlantic Ocean and in the Mediterranean and Black Seas, which in itself presents serious obstacles to effective management. The major spawning grounds have been identified as the Gulf of Mexico (western Atlantic) and the Mediterranean (eastern Atlantic) (Figure 1). However, in recent years it has been determined that there is intermixing of these stocks in mid-Atlantic, and other potential spawning grounds have been identified in the western Atlantic;⁴ both of these factors further complicate the development of management measures. The focus of this paper is on the management of the western Atlantic stocks, and in particular the measures in place for the Canadian ABFT fishery.

1.2 Historical development of the Fishery

ABFT have been fished for millennia in the Mediterranean and the eastern Atlantic, and in the modern period there have been cycles of growth and collapse; while catches of the eastern ABFT were relatively stable (at around 30,000 tonnes) in the 1950s and early 1960s, there was a decline later in the 1960s (to 10,000-15,000 tonnes), followed by overall increases until a peak of about 50,000 tonnes in 1996.⁵ From that point, the eastern Atlantic fishery was subjected to management measures (including establishment of a Total Allowable Catch (TAC)) by the International Commission for the Conservation of Atlantic Tunas (ICCAT) (see the summary of ICCAT's origin and management record, below), including implementation of a 15 year recovery programme adopted in 2006 and implemented beginning in 2007.⁶

¹ This section summarizes a longer discussion in J. Phyne, M. Stokesbury, M. McLean, and P. Saunders, “Sustainability and the Atlantic Bluefin Tuna: Science, Socioeconomic Forces, and Governance,” *Journal of International Wildlife Law & Policy* 16 (2013) at 198-204.

² *Ibid* at 198; see also: Canadian Science Advisory Secretariat (DFO), “Recovery Potential Assessment For Western Atlantic Bluefin Tuna (*Thunnus thynnus*) In Canadian Waters”, Science Advisory Report 2011/056, at 3.

³ Phyne *et al*, *supra* note 1 at 198.

⁴ David E. Richardson, K. E. Marancik, J. R. Guyon, et al., “Discovery of a Spawning Ground Reveals Diverse Migration Strategies in Atlantic Bluefin Tuna (*Thunnus thynnus*),” Proceedings of the National Academy of Sciences of the United States of America—Early Edition (March 7, 2016), online at www.pnas.org/content/113/12/3299.full.pdf.

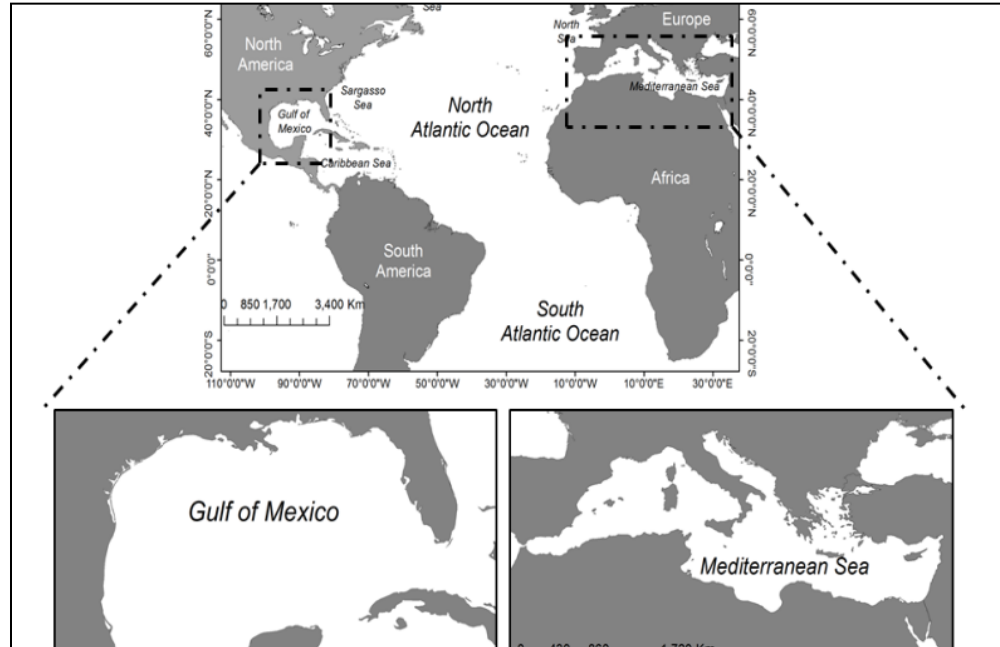
⁵ For a fuller discussion, see P. Saunders and M. Haward, “Politics, Science and Species Protection Law: A Comparative Consideration of Southern and Atlantic Bluefin Tuna”, 47/4 *ODIL* (2016) at 349-350, ; see also Phyne *et al*, *supra* note 1 at 205-210.348,

⁶ Saunders and Haward, *ibid*, at 350.

Figure 1

Spawning Grounds for ABFT

Source: *Phyne et al at 201*



The fishery in the western Atlantic was historically much smaller, but in the late 1960s to 1970s a Japanese longliner fleet (which had previously fished off Brazil) moved into areas in the Gulf of Mexico and off the northeastern US, with catches climbing until the imposition of the first ICCAT TACs effective in 1982. Despite the management efforts, by 1998 the western Atlantic stocks were in such a state of decline that a recovery and rebuilding programme was adopted by ICCAT effective in 1999, including closure to fishing in the Gulf of Mexico spawning grounds, closed seasons and multi-year allocations of TAC by country.⁷

2.0 INTERNATIONAL GOVERNANCE REGIME

2.1 United Nations Convention on the Law of the Sea 1982 (LOS 1982)⁸ and the United Nations Fish Stocks Agreement 1995 (UNFA)⁹

The management of ABFT, both at the international level via ICCAT and inside national jurisdictional zones, takes place within the overall structure provided by the LOS 1982 and the

⁷ *Ibid.*

⁸ United Nations Convention on the Law of the Sea, December 6, 1982, 1833 U.N.T.S. 396 (LOS 1982).

⁹ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 4, August 1995, U.N. Doc. A/CONF.164/37 (1995) [UNFA].

UNFA. The LOS 1982 established the rights and responsibilities of coastal states to manage and control the living resources within the Exclusive Economic Zones (EEZs) out to 200 nautical miles from shore, and the preservation of fishing as a “high seas freedom” (with some limited responsibilities), outside areas of national jurisdiction. This structure, however, left significant ambiguities as to the management of highly migratory species (HMS) such as tuna, which range widely through coastal state EEZs and high seas areas, and thus are not subject to any one overarching jurisdictional authority.¹⁰

With respect to HMS, the “sovereign rights” of the coastal state over fisheries in the EEZ were conditioned by a duty to “cooperate directly or through or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization” of the species.¹¹ The lack of precision in this obligation to cooperate, coupled with the significant economic interests in HMS stocks, led to a period of inevitable conflict between coastal states and the Distant Water Fishing Nations (DWFNs) which exploited these stocks, and the ultimate negotiation of UNFA, signed in 1995, as an “implementing agreement” for the relevant elements of the LOS 1982.

A full consideration of the impact and management innovations of UNFA is beyond the scope of this paper, but a central aspect is the confirmation that Regional Fisheries Management Organizations (RFMOs) would be the primary mechanisms by which the LOS 1982 obligation to cooperate is to be given effect. For example, if such an organization has “competence” over a defined fishery or fisheries, then coastal and fishing states are to “give effect to their duty to cooperate by becoming members of such organization or participants in such arrangement.”¹² ICCAT, although established in the 1970s (pursuant to a Convention signed in 1966, well before the LOS 1982), is the RFMO with international management responsibility for the ABFT (one of approximately 30 species under its purview).

2.2 ICCAT – Mandate, Structure and Record

ICCAT was established and in operation by the early 1970s, in response to widespread concerns about overexploitation and lack of management of tuna and other migratory species.¹³ Its governing body is the Commission (comprised of the contracting parties to the Convention), and its work is conducted through a number of constituent bodies, including a Standing Committee on Statistics and Research (SCRS) and a Conservation and Management Measures Compliance Committee (COC).¹⁴ ABFT management measures are based on western and eastern stocks, divided geographically as shown in Figure 2 (despite concerns about the scope of inter-mixing of stocks as referred to above).

¹⁰ Similar problems of transboundary management were encountered with straddling stocks, which exist at the limits of the EEZ and adjacent high seas areas. These stocks are also dealt with in UNFA, but are not addressed in this paper.

¹¹ LOS 1982, Art. 4(1).

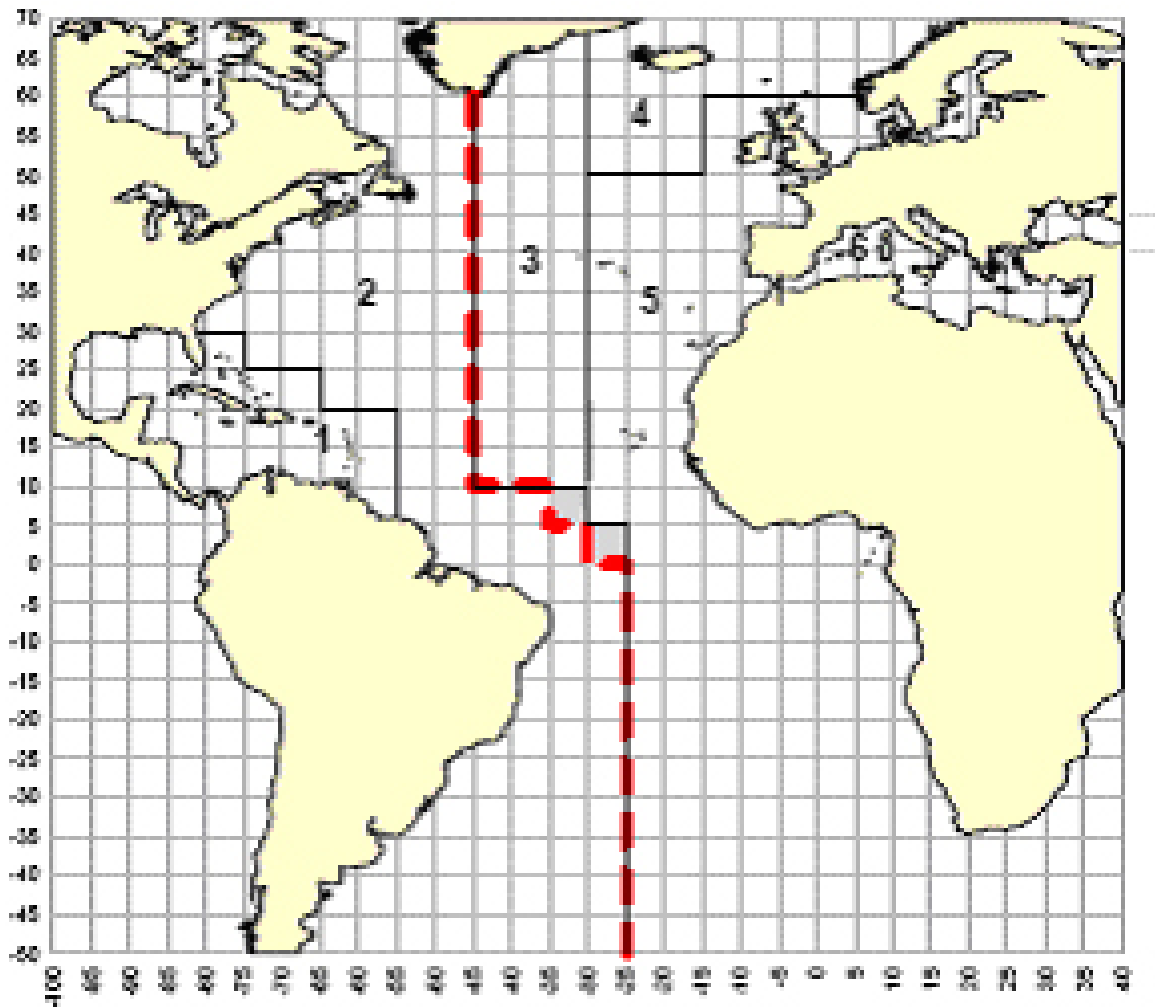
¹² UNFA, Art. 8(3). This obligation can be satisfied by agreeing to apply the conservation and management measures established by the organization.

¹³ Saunders and Haward, *supra* note 5, at 350.

¹⁴ For a more complete review of the organs of ICCAT, their functions and decision-making procedures, see Phyne *et al*, *supra* note 1, at 219-221.

Figure 2

Boundary between Western and Eastern ABFT Stocks for ICCAT Management



The first TACs for ABFT were established in 1981 (based on western and eastern stocks, divided as shown in Figure 2). In the following decades a number of management measures were recommended to contracting parties, including, *inter alia*: size limits; area and time closures; by-catch restrictions; and enforcement and compliance measures, including monitoring and surveillance, a vessel registry and port state inspection.¹⁵ Following years of decline in stocks, long-term recovery and rebuilding programmes were put in place following 2006, including

¹⁵ See *ibid*, at 221-223 for a discussion of management measures put in place by ICCAT from the 1980s onward.

long-term TAC allocations and additional measures¹⁶. The management of ABFT over the years since the establishment of ICCAT, despite some successes and limited recoveries, was regarded as a largescale failure, as stated by ICATT’s own independent review in 2008:

ICCAT [*contracting parties*] performance in managing fisheries on bluefin tuna particularly in the eastern Atlantic and Mediterranean Sea is widely regarded as an international disgrace and the international community which has entrusted the management of this iconic species to ICCAT deserve better performance from ICCAT than it has received to date.¹⁷

The reasons for this record are common to many RFMOs, and include: rejection of optimistic TAC recommendations in favour of even higher levels; failure of parties to comply with agreed management obligations, including data collection and enforcement measures against their own nationals; and the use of a consensus approach to decision-making (to avoid possible objection procedures). In recent years reform efforts have focussed on amendment of the Convention to better incorporate sustainability principles, development of improved harvest control rules (HCR) and implementation of a management strategy evaluation (MSE) methodology.¹⁸ There are signs of improvement, but political will and effective enforcement are still absolute requirements for eventual success: in this regard it should be noted that at its 2017 meeting, the Commission (based on some initial favourable results from rebuilding efforts), agreed on increases in the TAC for the eastern ABFT from 28,200 tonnes in 2018 to 36,000 tonnes in 2020.

3.0 MANAGEMENT AT THE NATIONAL LEVEL – CANADA

3.1 Fisheries Act and Related Measures

The Canadian ABFT allocation, within the overall western Atlantic TAC set by ICCAT, is relatively small when compared to the eastern Atlantic and Mediterranean quotas discussed above. For 2018, Canada was allocated 515.9 tonnes (including scientific catches and bycatch from other fisheries), or about 22% of the western Atlantic total of 2,350 020tonnes.¹⁹

There are approximately 775 individual licenses issued in Atlantic Canada and Quebec, for the Gulf of St. Lawrence, the Scotian Shelf, Bay of Fundy and Newfoundland and Labrador.²⁰ These are divided among 7 geographically defined inshore fleets, and an offshore licence, with additional allocations for aboriginal fisheries, scientific research (catch and release) and “other fleets” (i.e. bycatch from directed fisheries for swordfish and other tuna). In addition, a catch-

¹⁶ See the discussion of the “rebuilding” efforts in Saunders and Haward, *supra* note 5, at 351.

¹⁷ G. D. Hurry, M. Hayashi, and J. J. Maguire, “Report Of The Independent Performance Review: International Commission For The Conservation Of Atlantic Tunas (ICCAT),” ICCAT PLE-106/2008 43 (2008), at 22 (ICCAT Independent Review),

¹⁸ See the discussion of recent reform efforts in Saunders and Haward, *supra* note 5, at 351-353.

¹⁹ ICCAT, “Recommendation By ICCAT For An Interim Conservation And Management Plan For Western Atlantic Bluefin Tuna”, PLE 17-06, Nov. 2018; online at: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2017-06e.pdf>.

²⁰ For fleet allocations by percentage share, see, eg., DFO, “Bluefin Tuna – Atlantic Canada” (2012), online at: <http://www.dfo-mpo.gc.ca/decisions/fm-2012-gp/atl-037-eng.htm>. PEI and Southwest Nova have had the highest allocations, for a combined share of over 50% of the inshore allocations.

and-release charter boat fishery is licensed in some areas, with an allowance made for mortality from this activity.²¹

Management of the ABFT fishery is the responsibility of the Department of Fisheries and Oceans (DFO, acting under the authority of the federal *Fisheries Act*.²² The Department allocates the available TAC to the various fleets, and in cooperation with the industry defines an Integrated Fisheries Management Plan (IFMP) for ABFT.²³ While IFMPs are not directly enforceable,²⁴ the measures set out can subject to further regulations (see below), and incorporated as binding conditions of licenses. This allows for a range of enforcement actions, including suspensions/terminations of licenses for violations of their terms,²⁵ or prosecution, whether for fishing without a permit, or violating the regulations or the terms of a permit.²⁶

The applicable IFMP sets out a number of significant management measures which are given effect in this manner, including the following:

- Strict log-book requirements on all fishing activity, including “the provision of information on all discards, dead or alive”; these reporting requirements form the basis of Canada’s fulfilment of its reporting obligations to ICCAT.²⁷
- Individual reporting of each fish caught, which must be “tagged and tracked to market so that the end product is traceable”.²⁸
- Closed seasons and areas, including special protected areas (such as The Gully Marine Protected Area) limits
- Size limits.
- Gear restrictions (rod and reel and tended line fisheries in inshore fleets). Extensive catch reporting in ports, with dockside monitoring required for all catch.
- Prohibition of transshipment at sea.
- On-board observers where required, with a target of 5% coverage.²⁹

²¹ *Ibid.*

²² R.S.C 1985, c. F-14.

²³ See ABFT Integrated Fisheries Management Plan (IFMP) 2007, online at: <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/bluefin-tuna-thon-rouge/bluefin-thonrouge2007-eng.htm>. Annex I sets out the terms of reference for the Atlantic Large Pelagic Advisory Committee (ALPAC). The IFMP was updated in 2008 - online at <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/bluefin-tuna-thon-rouge/bluefin-thonrougeatl-eng.htm>.

²⁴ The following provision is required in all IFMPs:

This IFMP is not a legally binding instrument which can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister's discretionary powers set out in the *Fisheries Act*. DFO, “IFMP Template – Appendix A” (2018), online at: <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/guidance-guide/template-app-a-ann-modele-eng.htm>.

²⁵ The ability of DFO to administratively suspend or refuse renewal of licenses can, in many circumstances, provide a more serious effective penalty than a fine or similar measure, and can be done more expeditiously, without the time and cost of a prosecution.

²⁶ For the prosecution powers and penalties under the *Fisheries Act*, see s. 78, ss. 78.1-78.6, s. 79 and ss. 79.1-79.7. Ticketable offenses are dealt with in s. 79.7.

²⁷ See the summary of current measures at DFO, “Atlantic Bluefin Tuna – Monitoring and Enforcement” (2010), online at: <http://www.dfo-mpo.gc.ca/international/tuna-thon/Enforcement-eng.htm>.

²⁸ *Ibid.*

²⁹ *Ibid.*

As noted above, some of these measures have been given regulatory effect, in particular through the *Atlantic Fishery Regulations 1985*.³⁰ These include, *inter alia*: close times;³¹ weight limits;³² gear restrictions;³³ by-catch reporting;³⁴ and tagging procedures and requirements.³⁵

Prosecutions for violation of the regulations and license terms and conditions related to bluefin tuna fishing can result in significant penalties, and in recent years there has been some indication that courts are willing to take seriously the deterrent purposes of both fines and other penalties,³⁶ in the light of high profits available in the industry. In *R. v. Henneberry*³⁷ in 2009, the Nova Scotia Court of Appeal considered penalties imposed at trial for various offences committed by a fishing company and several individuals. During a three month period five vessels, fishing under two company and three individual licenses, had caught 176 bluefin tuna, of which 135 were taken in contravention of the Act and Regulations; the illegally caught fish had been sold for a total of \$1,196,412. 23.³⁸ The offences included a litany of violations:

[T]he eight appellants were convicted on March 1, 2006 on a host of charges ... failing to immediately enter confirmation numbers; failing to return incidental catch; the use of a tuna license concurrently with a shark license; failing to hail immediately; permitting an unauthorized person to fish a licence; fishing while a temporary replacement permit was in place; fishing without authorization; fishing without a fisher's registration card; and selling illegally caught fish.³⁹

The penalties imposed by the Trial Judge included individual fines and penalties applicable under s. 78 of the *Fisheries Act*, ranging from \$500.00 to \$25,000.00 for the corporate defendant (coupled with a 1 year license suspension under s. 79.1). The more significant penalty, however, was the levying of an amount of \$ 643,234.00 under s. 79 of the Act, which provides as follows:

79. Where a person is convicted of an offence under this Act and the court is satisfied that as a result of committing the offence the person acquired monetary benefits or monetary benefits accrued to the person, the court may, notwithstanding the maximum amount of any fine that may otherwise be imposed under this Act, order the person to pay an additional fine in an amount equal to the court's finding of the amount of those monetary benefits.

The trial judge interpreted this provision as allowing her to impose a penalty based on the *gross* sale proceeds from the 70 fish caught as a result of the most serious violations – on appeal both

³⁰ S.O.R./1986-21.

³¹ *Ibid*, s. 99 and Schedule XXV.

³² *Ibid*, s. 102.

³³ *Ibid*, s. 100.

³⁴ *Ibid*, s. 103

³⁵ *Ibid*, s. 104

³⁶ As noted earlier, suspensions of licenses can also have a significant impact. In a 2016 case involving violations arising from a charter boat trip (intended to be catch-and-release), three fishers were fined a total of \$ 65,000 and had their licenses suspended for five years. CBC News, "Zappa 1 tuna fishermen handed five-year suspension after guilty pleas", Feb. 29, 2016; online at: <http://www.cbc.ca/news/canada/nova-scotia/zappa-1-tuna-fishery-licence-suspension-antigonish-nova-scotia-1.3469650>.

³⁷ *R. v. Henneberry*, 2009 NSCA 112 (CanLII), <<http://canlii.ca/t/2617f>>.

³⁸ *Ibid*, at para. 4.

³⁹ *Ibid*, at para 5.

the Nova Scotia Supreme Court and the Nova Scotia Court of Appeal found this approach to be within the parameters of s. 79, which is not restricted to a narrow definition of net profits.⁴⁰

4.2 Alternative Approaches Under the *Species At Risk Act*

Given the serious decline in ABFT stocks in past decades, measures related to endangered species protection have been proposed at both the international and national levels. In 2010 an effort to have ABFT listed for a ban on trade under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) failed,⁴¹ with opposing states including Canada. Similarly, a move to have ABFT listed as endangered under the United States' *Endangered Species Act of 1973*⁴² was rejected in 2011, although it was listed as a "species of concern".⁴³

In May 2011, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), the independent committee of experts which designates species as within "at-risk" categories under the *Species At Risk Act* (SARA),⁴⁴ proposed that ABFT be listed as "endangered"⁴⁵ - a status which, if ultimately accepted and implemented by the Government, could have led to extensive recovery measures, including widespread prohibitions on taking and killing of the species.⁴⁶ A negative preliminary response was prepared for DFO in 2011,⁴⁷ and in May 2017 the Government formally decided not to designate ABFT under SARA.⁴⁸ The reasons focussed on the socio-economic impact of a small, but valuable fishery, including impact on the aboriginal fishery, and pointed to more recent ICATT assessments that indicated improved stock status.⁴⁹ By way of response to concerns raised, the Government promised to update the ABFT IFMP, including consideration of increased observer coverage.

⁴⁰ In *Henneberry*, the Court of Appeal left open the possibility that a "net proceeds" approach could be applied, depending on the facts, but that this decision was best left to the trial judge for a full assessment of the evidence. It was further noted that in some cases, the additional fish will in fact provide a monetary benefit to the "bottom line" beyond a simple net profit calculation. *Henneberry*, at para 65.

⁴¹ CITES, 993 U.N.T.S. 243. See "CITES Press Release: Governments not ready for trade ban on bluefin tuna", March 18, 2010; https://www.cites.org/eng/news/pr/2010/20100318_tuna.shtml.

⁴² 16 U.S.C. § 1531 – 1534.

⁴³ See National Oceanic and Atmospheric Administration, "Species of Concern: Atlantic Bluefin Tuna", www.nmfs.noaa.gov/pr/pdfs/species/bluefintuna_detailed.pdf.

⁴⁴ S.C. 2002, c. 29. See the discussion of the COSEWIC action at Saunders and Haward *supra* note 5, at 354. For a summary of the process and responsible agencies, see

Environment and Climate Change Canada "About the Species at Risk Act," online at www.ec.gc.ca/alefewe/default.asp?lang=Den&n=DED2FFC37-1; and for a critique of SARA in the marine context, see J. Hutchings, T. Stephens, and D. L. VanderZwaag, "Marine Species at Risk Protection in Australia and Canada: Paper Promises, Paltry Progressions," 47/4 *ODIL* (2016) 253, at 238-246.

⁴⁵ COSEWIC, "COSEWIC Assessment and Status Report on the Atlantic Bluefin Tuna (*Thunnus thynnus*) in Canada" (May 2011), online at: <http://www.registrelep.gc.ca/default.asp?lang=En&n=BDA1F68B-1>. The status report focussed on the severe decline of stocks in the face of over-fishing throughout its range, effects of seismic and other activities and the possible impact of the Deepwater Horizon spill on spawning areas.

⁴⁶ See the discussion at Saunders and Haward, *supra* note 5 at 354.

⁴⁷ Science Advisory Report 2011/056, *supra* note 2

⁴⁸ *List of Wildlife Species at Risk (Decisions Not to Add Certain Species) Order*, SI/2017-24; Annex "Statement Setting Out the Reasons for the Decisions Not To Add the Atlantic Bluefin Tuna and the Yellowmouth Rockfish to the List of Wildlife Species at Risk"

⁴⁹ *Ibid.*

While SARA designation may have been an attractive option for those who see the species as under continuing threat from exploitation throughout its range, the possibility appears to be off the table for the foreseeable future. Moreover, it has not really been demonstrated that designation in Canada, with no equivalent measures taken throughout the range of the ABFT, could have a significant impact on the overall prospects of the species.

5.0 CONCLUSIONS

The fundamental challenges facing the sustainability of ABFT stocks, including enforcement of management measures, remains at the international level, as the development of truly sustainable policies and associated commitment to national compliance actions (despite some progress in recent years) continue to face resistance. At the national level in Canada, enforcement of the internationally-agreed policies is feasible, given the relatively small size of the industry, the ability to track catches from origin to market, and the relatively benign fishing methods which are mandated in the Regulations. The major impact on stocks, however, comes from the much larger fisheries in the eastern Atlantic, and it would be difficult for unilateral steps in Canada, such as SARA designation, to significantly affect that broader outlook.

It should also be noted that the adequacy of scientific information on ABFT stocks remains a concern, and both ICCAT and the Canadian government are in fact making significant efforts in this regard, including tagging programmes and improving information on spawning grounds. Added to the current management difficulties is the foreseen, but as yet unquantified, impact of climate change on the range, productivity and health of these stocks.