

WHY THE BLUEFIN TUNA AERIAL SPOTTING BAN IS STILL THERE?

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SUMMARY

The ICCAT Multi-Annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean set the prohibition for the use of aircrafts for searching for bluefin tuna, with the objective to better control the catches. The provision was necessary at that time, but now it is not necessary anymore, thanks to the effective enforcement of many other provisions. A collateral effect is that experienced tuna professional spotters, who are essential for the scientific surveys, are now aged and very limited in number. Therefore, this short paper proposes to remove the ban, examining all aspects, for renewing also the professional spotters who are essential for the scientific aerial surveys.

RÉSUMÉ

Le programme ICCAT pluriannuel de rétablissement du thon rouge de l'Atlantique Est et de la Méditerranée interdit l'utilisation d'aéronefs pour la recherche de thon rouge, dans le but de mieux contrôler les captures. Cette disposition était nécessaire à l'époque, mais elle ne l'est plus aujourd'hui, grâce à l'application efficace de nombreuses autres dispositions. Un effet collatéral est que les professionnels expérimentés de la détection des thons, qui sont essentiels pour les prospections scientifiques, sont maintenant âgés et en nombre très limité. Par conséquent, ce bref document propose de lever l'interdiction, en examinant tous les aspects, pour renouveler également les professionnels de la détection qui sont essentiels pour les prospections scientifiques aériennes.

RESUMEN

El programa de recuperación plurianual para el atún rojo en el Atlántico este y Mediterráneo de ICCAT estableció la prohibición del uso de aeronaves para buscar atún rojo, con el objetivo de controlar mejor las capturas. Esta disposición era necesaria en aquel momento, pero ahora ya no es necesaria gracias a la ejecución eficaz de muchas otras disposiciones. Un efecto colateral es que los avistadores profesionales de atún experimentados, quienes son esenciales para las prospecciones científicas, están ahora mayores y son muy pocos. Por lo tanto, este breve documento propone eliminar la prohibición, examinando todos los aspectos, para renovar también los avistadores, que son esenciales para las prospecciones aéreas científicas.

KEYWORDS

Aerial tuna spotting, management measures, tuna professional spotters, scientific surveys, bluefin tuna, Thunnus thynnus, Mediterranean Sea.

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1. Introduction

In 2006, ICCAT adopted the Rec. 06-05, “Recommendation by ICCAT to establish a multi-annual Recovery Plan for bluefin tuna in the eastern Atlantic and Mediterranean”, with the purpose to fully recover the depleted stock of eastern bluefin tuna (*Thunnus thynnus*) at that time.

The time frame set by the Plan for recovering the stock was 15 years.

As a matter of fact, the plan was enforced in all its parts, was revised and updated over the years, and the eastern bluefin tuna stock recovered quickly that it was supposed, thanks not only to the very strict controls and fishery measures, but also to several years of positive environmental and oceanographic situations, which helped the recovery with strong and sometimes prolonged recruitments.

The Rec. 06-05, on art. 18, stated: “CPCs shall take necessary measures to prohibit the use of airplanes or helicopters for searching for bluefin tuna in the Convention area.”

At that time, the prohibition was possibly necessary, but certainly reasonable, for insuring a better control of the fishing activities, because it was unknown to which extent all measures of the Plan will be duly enforced.

Rec. 2014-04 (Recommendation by ICCAT amending the Rec. 13-07 by ICCAT to establish a multi-annual Recovery Plan for bluefin tuna in the eastern Atlantic and Mediterranean) even strengthened the ban and, on art. 25, set: “CPCs shall take necessary measures to prohibit the use of airplanes, helicopters or any types of unmanned aerial vehicles for searching for bluefin tuna in the Convention area.”

Rec. 2018-02 (Recommendation by ICCAT to establish a multi-annual Management Plan for bluefin tuna in the eastern Atlantic and in the Mediterranean Sea) confirmed again the ban and, on art. 48, set: “The use of any aerial means, including aircraft, helicopters or any types of unmanned aerial vehicles to search for bluefin tuna shall be prohibited.”

2. Short history and analysis of the aerial spotting for bluefin tuna in the Mediterranean Sea

The aerial spotting for bluefin tuna is a practice that was initially experimentally proposed in the '30s (Heldt, 1932) and finally developed in the '70s and expanded in the '80 till the early beginning of the current century.

At the beginning, the aerial spotting was used by the French purse-seine fleet since 1974 (Farrugio *et al.*, 1977) and then by the Italian purse-seine fleet since 1978 (Arena, 1980, 1988a, 1988b) for discovering in a faster way the bluefin tuna schools, either juveniles or spawners, and the aircrafts were strictly linked to the fleets, sometimes even directly owned by some shipowners. Sometimes the aircrafts of the two fleets worked together for several years, particularly in the southern Tyrrhenian Sea, in the Ligurian Sea, in the NE Balearic area and in the southern part of the Gulf of Lion. The spotters were experienced tuna fishermen, who progressively developed their additional personal skills from the aircrafts.

In the '80s, this practice became more diffused and in some cases the aircraft was considered as an additional “fishing vessel” when sharing the fishery benefits within some groups of vessels or cooperatives. A single aircraft was working for many purse-seiners at the same time, not only discovering the tuna schools, but also trying to identify those schools which were closer to the ship’s concentrations or keeping an individual school under direct control from the air till the first fishing vessel was able to approach it.

The aircrafts, during the free fishing times, were also discriminating the tuna schools, trying to select the ones which were more abundant in terms of total estimated weight. For estimating the weight and the number of fish, it was necessary to have very well trained and experienced spotters, usually fishermen having a high sighting capability, but also particular skills for assessing the total weight of a tuna school, sometimes made of fish with very mixed sizes. The situation was different for the aggregations of juvenile tunas (mostly in the northern Mediterranean, from very late August to November), because in those cases the spotter was able to roughly estimate just the total weight, due to additional difficulties.

These skills were greatly appreciated both by the fleet and the industry, but they needed a lot of years to be developed and then enhanced. In some cases, when all fish in a given school were caught by a purse seiner, there was a peculiar attention when those fish arrived to the industry, weighting with care the full catch and counting

the tunas. These data were immediately passed to the spotter, for helping him to improve his estimates. Just an example: at the end of the '80s, when a large school estimated in 210 tons was fully caught by a purse seiner in the southern Tyrrhenian Sea, the spotter made a mistake in assessing the number for only 12 tunas, quite an accurate estimate indeed.

Of course, the visibility, the water transparency and the sea state are conditioning factors for a good estimate, but some very experienced spotters were capable to distinguish (just looking at the sea-surface ripples) between dolphins and tunas at a distance of about 25 miles from the aircraft.

These skills were not only appreciated by the fleet and the industry, but also by the very few scientist (and I was among them) that worked on board of the aircrafts in those years for studying in detail the behaviour of bluefin tuna in the wild, during the migrations, during spawning activities and during the fishing trials. The support by the professional spotters at that time was an essential component of the research and allowed the scientists to better directly study the behaviour of bluefin tuna in the wild, particularly the spawning behaviour.

Of course, the aerial support to the purse-seine fishing fleet was also an important economic factor of this activity, better and more directly addressing the vessels to the schools, optimising the costs and expanding the opportunities.

From the mid '90s and till the ban, it was assessed that there were at least 36 aircrafts assisting the various purse-seine fleets in the several countries (surely in Spain, France, Italy, Malta, Croatia, Greece, Turkey, Cyprus, Libya, Tunisia and Algeria), but just very few had on board very experienced spotters and the differences in the effectiveness were remarkable. There were no ICCAT rules for registering those aircrafts or controlling them.

Of course, this uncontrolled expansion of the tuna aircrafts activity resulted in a higher capacity of the fleets, and this happened when the demand of bluefin tuna for the international markets increased in a substantial way and then when the tuna farming and fattening activities were initially developed in the Mediterranean area (Miyake *et al.*, 2003).

The eastern bluefin tuna stock, at that time, was clearly overfished and overexploited and therefore ICCAT adopted several fishing limitations for fishing this stock, which resulted at the beginning in catch limits (ICCAT Rec. 98-05 and Rec. 00-09) and then in the first "Conservation and Management Plan" (ICCAT Rec.02-08), that included, for the first time for a fish species in the Mediterranean Sea, catch quota for all ICCAT CPCs (Anon., 1999, 2001, 2003).

This Plan was followed by several improvements and updates (ICCAT Rec. 06-05, Rec. 07-04, Rec. 08-05, Rec. 09-06, Rec. 10-04, Rec. 12-03, Rec. 13-07, Rec. 13-08, Rec. 14-04, Rec. 14-05, Rec. 16-09, Rec. 17-07 and Rec. 18-02), but only 7 Recommendations (Rec. 06-05 art. 18, Rec. 08-05 art. 26, Rec. 10-04 art. 27, Rec. 12-03 art. 28, Rec. 13-07 art. 28, Rec. 14-04 art. 25, and Rec. 18-02 art. 48) were specifically including the prohibition for the aerial spotting activities (Anon., 2008, 2009, 2010, 2011, 2013, 2014, 2015, 2017, 2018, 2019).

In these last years, after the enforcement of all these recommendations, most of the tuna spotting aircrafts stopped their activities, but not all. A very few of them, plus some new types of ultra-light aircrafts, illegally continued a limited tuna spotting activity, without any effective control by the CPCs concerned, due to some holes in the legislations and to the lack of effective contacts between the fishery authorities and the air control authorities.

In the mean time, there were changes in the fishery pattern of the purse-seiners, because the limited quota and the fact that all their catches are going to fattening cages imposed some dimensional choices in the catch, which now need to fit the specific needs of the farms. Nowadays, the purse-seine fleet has very sophisticated and advanced sonars, which are able not only to detect the tuna schools, but in some cases also to assess the individual size of the fish. Therefore, the fleets are avoiding as much as possible to catch very small adult tunas and also giant tunas, concentrating the efforts mostly on medium-size tunas, the best for the fattening process and for the export markets. There is just an exception, the catches going to the Croatian farm, which are mostly juveniles, having a specific size derogation provision by ICCAT. These choices imply that several times the purse-seine vessels, even if there were many tuna schools around, had to wait for several days before catching the tunas of the right size, because the vessel's quota is usually exhausted in just one haul operation.

As a matter of fact, the bluefin tuna fishing activity, thanks to the many rules, provisions and controls, is now possibly the most controlled fishery, even if a certain number of IUU activities are still existing, but these (which must be contrasted in any possible way) are unfortunately “a part of the game”, like in any other human activity. Now, thanks to the ICCAT Recommendations, there are catch quota in place, fishing closures, observers on tuna fishing vessels, tuna traps and farms, all fishing vessels, transport vessels, tuna traps and farms are duly registered and monitored and there is possibly the most advanced fishery certification system, the eBCD.

Therefore, this fishery can be considered as “fully controlled”, at least for the many registered activities, and the EBFT stock recovery is certifying those many important efforts.

Taking all these facts into account, now it seems unnecessary to continue with the prohibition of the aerial spotting, because the aerial support can be officially carried out within rules, but just for the aircrafts and helicopters (if any); the drones are another issue and are not concerned by this paper, being outside the scopes.

The authorised aircrafts could be included in a specific list (as the fishing vessels are) by ICCAT and this will facilitate the controls by the CPCs and the safety of these aircrafts can be improved (i.e.: imposing 2-engine aircrafts). Of course, a registered aircraft shall comply with all safety measures in place in the CPCs.

The work of the aircrafts will certainly facilitate the fleets’ operations, making faster the detection of the schools having the fish of the most adequate size, possibly avoiding the activity at sea to last for weeks. From an efficiency and economic point of view, this is certainly an improvement which is able to largely compensate the aircraft’s cost.

The use of spotting aircrafts cannot result, in any way, in any additional fishing effort and shall not have any specific impact on the stock, because of the severe controls in place. Furthermore, if necessary, specifically trained ICCAT observers can be officially hosted on the aircrafts. In such a case, the observers could be there not only for compliance purposes, but also for restarting again the aerial observation of the bluefin tuna behaviour in the wild, an important component of the bluefin tuna studies. In such a case, the scientific data should go directly to ICCAT GBYP and made available to SCRS BFT SG scientists.

There is another very important issue that must be considered when proposing to remove the ban for the aerial spotting activity: the opportunity to have again trained and experienced professional spotters.

At the moment, most (almost all) the experienced spotters who worked in the tuna aerial spotting activity in the past are now aged and they are progressively losing their skills year after year because of the missed yearly training in professional activities.

Since the beginning, the ICCAT GBYP aerial survey adopted a protocol, which is updated yearly (https://www.iccat.int/GBYP/Docs/Aerial_Survey_Phase_8_Protocol.pdf), where the crew on each aircraft shall include a pilot/(who could be also a professional spotter), an experienced professional spotter and two scientific spotters. The problem is that the scientific spotters should mostly take care of all the data recording and the scientific details of the survey, while the detection and the estimates are mostly delegated to the professional spotters (even if not exclusively).

The aerial surveys are now used as fishery-independent indices also by the BFT MSE and OMs procedures, and they will be used also in the assessment as soon as the series will be longer enough, facts that enhance the importance of having reliable estimates.

This implies the absolute need to have professional spotters available every year for ICCAT GBYP purposes and younger and trained professional spotters can be provided only by tuna commercial aerial spotting activities.

3. Conclusion

It is very clear that the initial prohibition of the aerial tuna spotting activities was well-based for limiting the fishing pressure on the stock in an open fishery situation.

It is also very clear that the tuna aerial spotting activity under the current regulatory situation for the fishery can be carried out without any of the potential dangers that were there many years ago. A regulated and controlled aerial spotting activity (taking into account the additional provisions reported above and the provision that all

measures concerning aerial activities shall be transmitted also to the air traffic control authorities) cannot in any way result in an additional fishing effort, because of the controls in place, or in any additional catch, because of the strict quota system.

On the contrary, it could enhance the efficiency of the fleet, in all terms, including the economic one.

At the same time, due to the need to have efficient replacements over the years of the professional spotters currently used by ICCAT GBYP, the controlled aerial spotting activity is the only possible way to attain this result. Furthermore, in case of a mandatory presence of ICCAT observers on the professional tuna spotting aircrafts, it would be possible to resume again the rbdomantic field observation of the tuna behaviour in the wild, an important component of the bluefin tuna studies which was interrupted at the aearly beginning of the '90s, when the Sicilian regional government decided to close the Fishery Research Institute directed by Prof. Arena, who was the scientist carrying out these very important field studies over about two decades.

Therefore, there are all elements for revising the current prohibition, without any impact on the bluefin tuna resource and with a collateral positive impact on research activities.

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