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FOR CONSERVATION AND SUSTAINABLE USE OF TUNAS

IUCN Red List

Toward improvement of IUCN Red List

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IUCN (the International Union for Conservation of Nature) released the Red List of Threatened Species last July, appealing the urgent need for the recovery of tuna stocks, as briefly reported in our previous newsletter.

Recently, tuna scientists published their critical view on listing tunas in the Red List in the magazine "Nanatsuno Umikara-from Seven Seas of the World". An excerpt is shown below. – Editor

Foreword

According to the IUCN's announcement this time regarding its Red List, three (Atlantic bluefin tuna, southern bluefin tuna and bigeye tuna) of all eight tuna species were designated as Threatened Species, and other two designated as Near Threatened Species.

Why are the tunas which are not endangered at all included in the Red List?



Dr. Uozumi

In what follows, the authors will comment on the source of evident errors of such designation and propose improvements in the criteria regarding the inclusion in the Red List and ways of its application.

Before doing that, we will outline the categories used in the IUCN Red List and criteria used for assessment. In the

IUCN Red List, nine categories are established based on the threatened degrees. There are three categories denoting the endangered status. They are, in the order of magnitude, Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). The species classified into these three categories are called Endangered Species.

How is the assessment made?

What information does the IUCN use to assess the status of stocks and classify them into categories? In order to assess the magnitude of endangered status and classify into each category, the IUCN uses the five criteria as shown below.

Criterion A: drastic decline in the number of mature individuals

Criterion B: narrow distribution range

Criterion C: small population

Criterion D: especially small population

Criterion E: probability of extinction



Mr. Miyabe

A clear range of values is demonstrated for each of the criteria, and detailed technical guidelines are in place to be used for assessment (IUCN 2008). The criterion that presents problem for marine resources including tunas is Criterion A which uses the decline rate of individuals (decline speed). With regard to Criteria B to D, the species are of extremely small size with the distribution range of 20,000 square kilometers and the small population with the number of mature individuals standing at less than 10,000 at the most. For this reason, in light of the vast area of distribution with huge number of mature individuals of tunas, these criteria do not apply to southern bluefin tuna and Atlantic bluefin tuna, no matter to what extent they are over-exploited.

Issues of the IUCN Red List

The reason that Criterion A presents a problem for fishery resources is that, if this criterion was applied, very many resources would be determined as Endangered Species. Many criticisms leveled against Criterion A can be summarized as follows.

All the international tuna management organizations aim to attain the maximum sustainable yield (MSY).

Theoretically, the MSY is attained when a species declines to half of its initial stock level. Generally, it is considered ideal that this MSY level is retained. But this is not the case of the IUCN criteria. In the IUCN, any species that attains the MSY level is deemed as endangered.

To show this criticism in a more concrete way, it is estimated that about 208,000 tons of bigeye parent fish whose stock status is close to the MSY level exist in the Western and Central Pacific. Supposing the average weight of the fish is 30kg, then it is estimated that 7 million mature bigeye tunas exist at present (Harley, S. et al. 2010). Given this size of stock, the probability of the stock to go extinct is zero.

However, this criticism does not have adequate applicability for southern bluefin tuna and Atlantic bluefin tuna, the two species that largely fell below the MSY level. Miyake (2011) points out the heart of this question. He asserts that the system is itself erroneous—one that says that future extinction risk is the same for the species which has declined to 500 and the species which numbers 7 million fish even after the decline. What it means is that it is not possible to estimate the future probability of extinction only with the decline rate of the species in question. The present stock size of parent individuals is at least needed in order to make accurate estimate.

The inclusion of southern bluefin tuna, Atlantic bluefin tuna and bigeye tuna in the Red List this time represents an erroneous assessment which was caused by making a large overestimate of the extinction risk as a result of ignoring the present stock size which is still enormous, and assessing the stock size only with the decline rate.

Choice of mistakes causes confusion

Then why has it come that only the decline rate was used? The main reason was because there is commonly little or no information, especially quantitative information, on endangered species. For this reason, it was considered not realistic to ask for even the present stock size, amid the situation where the decline rate was barely made available. And conservation-oriented biologists approved, under the precautionary principle, the first type mistake—a mistake of designating non-endangered species as endangered—in order to avoid the second type mistake -- one that determines that a certain species is not endangered even

when it is actually endangered.

This kind of approach may be inevitable in the case where the present stock size is uncertain. But when the present stock size is known, such an approach is obviously not scientific or rational to approve the first type mistake, by ignoring the evident fact. It is the essential role of science to use to the maximum possible extent the information that can be used.

In the IUCN's Red List guidelines (IUCN, 2008), a concept, which can be interpreted as an excuse against the above criticism, is given. It says that there are cases where the species which declined to the MSY level is designated as an Endangered Species pursuant to Criterion A, but it presents no problem in a medium- and long-term range, and if the stock is managed in a sustainable manner and is stabilized, then it would be removed from the Red List. In other words, some species which are not endangered are included in the Red List, but there is no problem because they would be taken out of the Red List if the species is properly managed.

But, no matter what kind of excuses are given, what would be the responsibility of the IUCN for making the confusion caused by its announcement of such erroneous results? The IUCN's way of announcement that conceals the essentials and emphasizes only the sensational part should be reconsidered as soon as possible.

The issue as stated in the foregoing pertains not only to the IUCN Red List but also fully applies to the criteria of the Convention for International Trade in Endangered Species of Wild Fauna and Flora (CITES). A completely same essential error was observed in the issue regarding the inclusion of Atlantic bluefin tuna in CITES Appendix, as discussed at the CITES meeting in 2010 (Uozumi, 2010).

To be sure, from the viewpoint of stock management, there are problems to the stocks that declined to below the MSY level. But it is obviously erroneous to replace the issue of overfishing with the one of the endangered status.

Conclusion

The current IUCN Red List has a great flaw as mentioned in the foregoing. Therefore, it is not possible to accept it as it is now. Especially, with regard to the resources currently used in fisheries, it is necessary to

Criterion A (decline rate) and Criterion E (extinction probability) and relations with categories

| Category | Critically Endangered (CR) | Endangered (EN) | Vulnerable (VU) |
|-------------------------------------|---|---|---|
| Assessment period (1) | 10 years or 3 generations (2) (whichever is longer; the maximum period 100 years) | 20 years or 5 generations (whichever is longer; the maximum period is 100 years) | 100 years |
| Criterion A, decline rate | The number of mature individuals (weight) declined 90% or more during the assessment period | The number of mature individuals (weight) declined 70% or more during the assessment period | The number of mature individuals (weight) declined 50% or more during the assessment period |
| Criterion E, extinction probability | extinction probability is 50% or more in the assessment period (3) | extinction probability is 20% or more in the assessment period | extinction probability is 10% or more in the assessment period |
| Subjected tuna species | southern bluefin tuna | Atlantic bluefin tuna | bigeye tuna |

Notes: 1) The assessment period is the period dating back from the present to the past. (2) The average age of parents is used as generation time. (3) The assessment period of Criterion E is the period from the present.

doubt the validity of its contents.

The IUCN should at least improve its criteria or revise their application. Matsuda et al. (1997) proposed a simple and easy Criterion E which incorporated the current stock size into Criterion A. By using this, it is possible to correct, to a considerable extent, the overestimation of endangered risk with regard to the species whose stock size is known. It is not right, even with whatever excuses, to make public the results that greatly mislead the general public with an interpretation – nearly an excuse – as mentioned above, despite the fact that an obviously erroneous conclusion has been drawn. If this is continued, the credibility of the Red List itself will be lost, and, as Dr. Mrosovsky asserts, it will be the credibility of the IUCN that will be critically endangered.

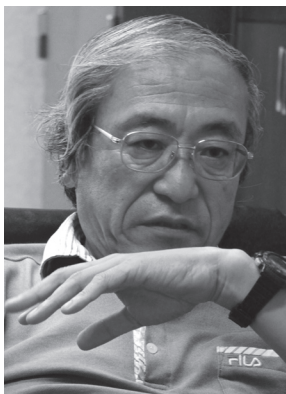
There is no fear of extinction with regard to the tuna species that were included in the Red List this time. This is evident from the results of the stock management of the International Fisheries Committee related to tunas which uses a large amount of objective information.

It is not right to say, however, that optimism can hold perennially. A clearly stringent state of overfishing still continues for the southern bluefin tuna and the Atlantic bluefin tuna. Overfishing of Pacific bigeye tunas continues even now, and regulations to check such overfishing have been introduced. But substantial effects of those regulations cannot be expected because there are many provisions that exempt small island nations. In addition, Chinese Taipei (Taiwan) and some other countries are further increasing their purse-seine fleet capacity, aggravating the deterioration of bigeye tuna stock. Unless such persistent situation is put to an end as soon as possible, movements calling for excessive protection of tunas, such as the inclusion in the IUCN Red List and the CITES Appendices, will certainly occur again, possibly shutting down the path toward the rational utilization of tuna resources.

We should not forget that the introduction and implementation of solidly effective regulations as well as the realization of sustainable utilization of the resources is the important prerequisite for us to continue to assert, strongly and clearly, that tuna resources will not go extinct.

Recovery from disaster

Tsunami-hit tuna fishing vessel goes out for fishing with strong will for restoration --the ship is seen as a light of hope--



The mega-scale earthquake and tsunami in eastern Japan in March this year also attacked distant-water tuna longline fishing vessels. The sight of No.3 Myojin-Maru (379 gross tons) tacitly demonstrated the destructive power of the tsunami. Half a year after the disaster, the vessel was repaired and left



Myojin-Maru stranded ashore by tsunami (Photo by Taikai Kumagai)

for the Indian Ocean in August. OPRF interviewed Takayuki Suzuki, the owner of the vessel who resumed tuna fishing with an indomitable will for the restoration of the region.



Lifted by crane (Photo: Taikai Kumagai)

Q: Where were you when the disaster occurred?

Suzuki: I was in my home town and fled to the heights immediately after the earthquake broke out. As the vessel was in dock at Kesenuma then and could not be set into motion, I gave up the idea of taking it back at an early point. I was only praying for the safety of the crew.

Q: Of the three vessels you owned, one was burnt down, and No.3 Myojin-Maru was stranded ashore. How did you feel when you saw your vessel carried onto land?

Suzuki: I was shocked. There was nothing I could do. The vessel would not return even if I cried and shouted. I was not in the condition to think calmly because my house and property were carried away by the tsunami. One thing I remember was that I felt relieved when I confirmed the safety of all my crew.

Q: Then what did you do next?

Suzuki: As this vessel ran aground with a tilt of about 4 degrees, I contacted the municipal office to make the surrounding area off-limit so that secondary damage might not occur. I also arranged to weld the vessel bottom with an H-beam so the vessel might not fall. It was very important because a greater damage could occur if the vessel fell down as there were frequent aftershocks at that time.

Q: When did you make the decision to repair the vessel and use it again?

Suzuki: I wondered what I should do, but, looking at the vessel closely, I found the damage was not so harsh. So the next step was to move it to the sea and repair. I consulted a salvage company and other experts and learned that the vessel can be returned to the sea. That was how I made the decision to repair it.

Q: It must have been a difficult work to return that giant vessel to the sea.

Suzuki: We did various related jobs, such as removing fuel in order to reduce the weight of the vessel. We had a crane vessel that can lift 3000 tons come from Tokyo. We also set conditions for lifting the vessel, including drilling ditches on the road where the vessel was located. In the end, we succeeded in bringing back the vessel to the sea.

Q: In retrospect, did you have any mental shock?

Suzuki: I may be wrong if I say I had none. But, at the same time, I had a strong will that I should not be overwhelmed by the disaster. That was my only support. I think all the people in tsunami-stricken area had the same feeling. I was helped by many people, and I am truly grateful for it. I consider that the vessel that was repaired and left the port was not mine alone, but rather one that carries with it the sentiment of all the affected people.

It is my hope that this vessel kindles the bright light of hope to overcome the damage of the disaster.

Resource management

WCPFC Committee expresses concern over the increase of purse-seiners near the equator

The Northern Committee of the Western and Central Pacific Fisheries Commission (WCPFC) was held in Sapporo, Hokkaido, from September 6 to 9, with about 100 participants from eight countries and a territory attending.

Amid the present circumstance where there is concern over decrease of bigeye tuna and skipjack moving northward toward North Pacific, the Committee decided to express its concern at the WCPFC plenary meeting scheduled for December this year about the increase in purse-seine fishing vessels operating in the tropical zone near the equator. In the area, fishing pressures on tunas have been mounting, as seen in the case where large-scale purse-seine fishing vessels—each capable of catching 7,000-10,000 tons of tunas in a year—are said to have increased from 50 in 1999 to 87 by 2009.

In an interview after the meeting, the Committee Chairman Masanori Miyahara (also Deputy Director General of the Fisheries Agency of Japan) positively evaluated the outcome of the meeting as the member countries shared the awareness on the issue of fishing capacity increase of purse-seiners in the area near the equator.

With respect to the conservation and management

measures for the bluefin tuna, member countries reported regarding the progress of their implementation on the "restraint of fishing effort to below the 2002-2004 level" and "the measure to reduce the catch of immature fish (ages 0-3) from the 2002-2004 level, with the exception of the Republic of Korea (ROK). The ROK, on its part, reported that it newly introduced the license system regarding its own bluefin tuna fishing and started to grasp the accurate catch volume.

At last year's annual meeting, the ROK stated that necessary measures should be implemented to regulate the catch of immature fish (ages 0-3) by managing its own fisheries. It has been reported that the ROK expressed its intention to join in the Commission's stock management effort in next year or afterwards after it obtained detailed catch data. Chairman Miyahara pointed out that the ROK's move with respect to management would present an important element in the WCPFC's review of the conservation and management measures of the Pacific bluefin tuna next year.

New Tuna Products

Effective use of under-utilized parts of tunas

Shinyo Suisan Co., based in Ichiki Kushikino, Kagoshima, western Japan, has developed five new tuna products in collaboration with the National Fisheries University, Kagoshima prefecture's research laboratory and machinery manufacturers.

The new products, developed after long arduous studies, feature effective use of the low-value parts of tunas which originated in the process of making sashimi blocks from frozen tunas. Some of them had usually been thrown away.

The products include "tuna wiener sausage," a health-oriented and light-tasted product; "tuna pie"; and "tuna hamburger" made from the combination of tuna skin and meat which has low calorie and abundant collagen.

Shinyo Suisan has long been coping with the use of under-utilized parts of tunas. In 2008, the company was awarded the Fisheries Agency Director-General Prize for its "Maguro Manju (a bun with tuna meat filling).

The products attracted popularity as delicious food at a sampling session OPRT conducted for fisheries journalists. Most of the journalists attending the sampling highly valued the efforts of the company to use the under-utilized parts of tunas under the present circumstance where the regulations on tuna fisheries are getting rigorous and supply of tunas is on the decline.



Tuna wiener sausage