

TIME AND TUNA ARE RUNNING OUT**BRIEFING TO: Western & Central Pacific Fisheries Commission – Scientific Committee Fourth Regular Session
Port Moresby, PNG - August 11-22, 2008**

A record catch of tuna was reported in the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area in 2007.¹ Remarkably, this increase in tuna catch comes against a backdrop of alarming global trends, such as 76% of the world's commercially harvested fish stocks already being fully exploited, over exploited or recovering from depletion.² The Pacific tuna stocks are not immune to these overexploitation trends, with overfishing occurring on both bigeye and yellowfin stocks. Yet, despite repeated warnings from the Scientific Committee on the status of these stocks, the 2007 catches of yellowfin were higher than the average level for the past 10 years,³ and the provisional bigeye catch was the second highest on record.⁴

Member states and participants of the WCPFC have agreed to act to ensure the conservation and management of remaining tuna stocks based on the best scientific advice, using the precautionary and ecosystem-based management approach as the core of their decision-making. The fact that parties continue not to act upon the continued decline in the bigeye and yellowfin stocks and the impacts that destructive and wasteful fishing practices are having on the broader Pacific marine life and ecosystem indicates that there needs to be a radical change in the current management paradigm.

Regional Fisheries Management Organisations (RFMOs) have failed to achieve sustainable management of tuna stocks. This ineffective management, highlighted by a recent decision to review their performance in light of these failings,⁵ is due in part to consensus-driven decision-making processes which favour those countries with the biggest commercial interest in the fisheries. This translates into ineffective implementation of the conservation and management measures required to ensure that these fisheries remain both sustainable and profitable in the long-term.

With the escalation of fuel prices, the fishing industry in the Pacific is in many cases operating on the margins of profitability. There are calls for further subsidies in order to maintain the current unsustainable level of fishing capacity in the region. Not only is this high level of fishing becoming a less profitable activity, the continued elimination of valuable marine resources, as well as the use of destructive fishing practices and high level of illegal, unregulated and unreported (IUU) fishing, is accelerating the diminishing returns of this sector.

¹ Overview Of Tuna Fisheries In The Western And Central Pacific Ocean, Including Economic Conditions – 2007 (Wcpfc-Sc4-2008/Gn Wp-1), Paper Prepared By Peter Williams And Peter Terawasi (http://www.wcpfc.int/sc4/pdf/SC4-GN-WP1%20final_.pdf)

² FAO 2007

³ Overview Of Tuna Fisheries In The Western And Central Pacific Ocean, Including Economic Conditions – 2007 (Wcpfc-Sc4-2008/Gn Wp-1), Paper Prepared By Peter Williams And Peter Terawasi (http://www.wcpfc.int/sc4/pdf/SC4-GN-WP1%20final_.pdf)

⁴ *ibid*

⁵ Joint Meeting of Tuna RFMOs, January 22 – 26, 2007, Kobe, Japan

Marine Reserves: Conservation and Fisheries Benefits

A critical element of the sustainability equation is the protection and conservation of the rich biodiversity of the Pacific, which extends beyond the target species themselves. There is a growing body of evidence that the establishment of a network of marine reserves can lead to enhanced yields in adjacent fishing grounds. Marine reserves enable the development of more natural, extended population age structures that promote resilience to overfishing and are important in maintaining the integrity of marine ecosystems in the face of climate change. In addition, marine reserves can also help provide a more predictable catch from year to year, enhancing fisheries' stability. They also serve as a form of insurance against management failure resulting in degradation of the ecosystem in non-designated areas.

Marine reserves also enhance catches beyond their boundaries as a result of either the spillover of adults and juveniles across reserve boundaries or from the export of larvae or eggs from reserves to fished areas. However, this benefit is most marked when the non-designated areas are subject to failing management and overfishing.

While the benefits of protection are more apparent for species spending much or all of their time within a marine reserve, reserves can also offer protection to migratory species, particularly if reserves are created in places where these species are especially vulnerable, such as spawning and nursery ground, as well as aggregation sites, such as seamounts. For highly mobile species like tuna it is also important to encompass an adequate and significant proportion of their critical habitat.

The Pacific high seas enclaves: A playground for Overfishers

Earlier this year Greenpeace conducted a nine week expedition to two areas of international waters of the Western and Central Pacific Ocean (WCPO)⁶ in furtherance of our campaign against the overfishing of the region's stocks of tuna and other fish, and promoting the need for a network of marine reserves covering 40% of the world's oceans.

During its mission, the Greenpeace ship found evidence that IUU fishing and unauthorised transshipments are pervasive in the high seas areas. In particular, we came across a total of 18 fishing vessels or support vessels that were likely to have been engaged in fishing in the high seas areas. Of these 18 vessels, two were overtly operating illegally:

The Queen Evelyn 168, an illegal purse seine vessel under the Philippine flag, was not authorised or registered to undertake any fishing activities in the WCPO. The vessel was at the transshipment site of her sister vessel, the Queen Evelyn 889, and the mothership, Kenken 888. It is likely that a transfer of fish at sea involving this illegal vessel was about to occur, but the arrival of Greenpeace prevented it from taking place. This vessel fled

⁶ The donut holes between Papua New Guinea and, the Federated States of Micronesia, Indonesia and Palau and the larger second area between Papua New Guinea, Nauru, Marshall Islands, Federated States of Micronesia, Kiribati, Tuvalu and the Solomon Islands, including the southern area bounded by Fiji, Solomon Islands and Vanuatu (for full summary finding see:

<http://weblog.greenpeace.org/makingwaves/DefendingOurPacific.pdf>).

immediately. All three vessels were owned by the Philippine company TSP Marine.

In the vicinity of the Queen Evelyn 168 another illegal unidentified pole and line vessel was observed and documented. It had markings that stated "TSP".

In addition, nine Taiwanese long-liners, including the Ho Tsai Fa 18 – which recently grounded in Indonesia with its crew and captain missing – were documented fishing in the high-seas. Those inspected had large quantities of shark fins and tails on board. It appeared that most of these vessels had no current agreements to fish in the EEZs of Pacific Island Countries and were thus targeting the high-sea exclusively. From our observations in 2006 (for full summary findings see: <http://www.greenpeace.org/raw/content/international/press/reports/plundering-pacific.pdf>) and earlier this year, it appears that IUU fishing continues to be rampant in the region. This would result in fishing effort, especially in the high seas pockets, being in danger of being grossly underestimated. Foreign fishing vessels are using the areas as an escape route to launder fish out of the region, and these areas are being used as a safe haven for pirate fishers due to the lack of regulation and enforcement.

The exclusion of IUU fishing impacts from scientific assessment and modelling creates a distorted perception of the state of the fishery that does not match-up with the reality. With 7,000 or more vessels fishing in the Pacific, the problem of "stolen fish" is likely to be large and will significantly undermine any management programmes. The high level of IUU fishing occurring in the region compromises the data used in scientific modelling and projections. The exploitation of bigeye and yellowfin stocks is far higher than the exploitation levels used to input into the management models used in these fisheries. It is therefore important that much higher and precautionary reductions are made in the amount of fish being caught in the region, as well as the closure of the existing loopholes that the pirates are exploiting.

Given the uncertainties outlined above, Greenpeace is concerned that the measures proposed to address the unsustainability of this fishery fall far short of what is necessary to ensure that the current situation is checked and reversed.

The Lure of the FAD – Final Desperation of the Hungry Fleets

The increase in purse seining in the Pacific has seen a huge increase in the catch of tuna using fish aggregations devices (FADs) in the skipjack and yellowfin fisheries. Unfortunately, mounting evidence shows that the use of FADs not only increases the efficiency of purse seine operations, but also lays waste to other marine life. In the pursuit of the lower value and more resilient skipjack tuna, FADs are jeopardising the more vulnerable and high value species such as bigeye and yellowfin. Every time a FAD is used, an average of 10% of the catch by weight will not be the type of tuna that is targeted, but juveniles of other tuna species, turtles, sharks, and a wide variety of other fish species.⁷ Scientific research from 2005 concludes that the global by-catch on floating FADs in tuna fisheries amounts to 100,000 tonnes every year, with catches around moored FADs resulting in further by-catch.⁸

⁷ D. Bromhead, J. Foster, R. Attard, J. Findlay and J. Kalish *Review of the impact of fish aggregating devices (FADs) on tuna fisheries*. Australian Department of Agriculture, Fisheries and Forestry, 2003.

⁸ Tim Dempster and Marc Taquet, 'Fadbase and Future Directions for Ecological Studies of Fad-Associated Fish', *SPC Fisheries Newsletter*, No. 112, January/March 2005, 18-19 at https://www.spc.int/coastfish/news/Fish_News/112/Dempster_112.pdf.

According to the University of Hawaii's pelagic fishing program, FADs fished by purse seine are considered a major contributor toward yellowfin and bigeye stocks being pushed towards an over-fished condition with high numbers of juveniles being caught as bycatch.⁹ Given that yellowfin and bigeye are of high commercial value, it is both environmentally destructive and uneconomical to accidentally kill these young, especially in the pursuit of the less valuable skipjack.

There is also growing evidence that FADs seriously disrupt the life-cycles of tuna that have not been caught. In May 2008, scientists reported that FADs appear to act like strong magnets that attract the tuna, and other fish, towards ecologically inappropriate waters with scarcer food supplies, distorting their migratory routes and possibly causing them to become undernourished. This has potentially serious broader ecological consequences.¹⁰

It should also be noted that during their soak times FADs are actually actively fishing by attracting and gathering fish. This phenomenon is currently not adequately incorporated into the effort calculations of the purse seine fisheries, distorting the scientific basis of the CPUE calculations of Pacific fisheries and management measures such as the Vessel Day Scheme.

Less is More - Maximising Economic Yield

In light of the uncertainties highlighted above, it can be seen that there is no element of foresight or precaution in the use of maximum sustainable yield as a de-facto target. An alternative target for fisheries management is maximum economic yield, the yield or effort level that results in the highest net economic returns.

Recent research into the maximum economic yield in the WCPO bigeye and yellowfin tuna fisheries¹¹ found that for bigeye and yellowfin tuna, the maximum economic yield occurs at a stock level around 40-50% and 15 to 30% higher respectively than that at which the maximum sustainable yield is obtained. As fuel costs continue to rise, the biomass at which maximum economic yield is achieved will continue to increase.

Other analysis of the maximum economic yield in the WCPO tuna fisheries has delivered a similar finding – effort reductions can increase the economic yield.¹²

The result that effort reductions and a higher biomass deliver a greater economic yield is driven by several factors. By catching less tuna, there will be price increases. Lower effort also results in lower costs – a reduction in effort does not only decrease revenue. The major benefit comes from the stock effect - the larger the stock, the less effort is required to catch the fish, further reducing costs. In sum, effort reductions can serve both conservation and economic goals. More money can be made by catching less fish.

⁹ The Associative Dynamics of Tropical Tuna to a Large-Scale Anchored FAD Array at http://www.soest.hawaii.edu/biolog/holland_itano_png.

¹⁰ J. Hallier and D. Gaertner, Drifting fish aggregation devices could act as an ecological trap for tropical tuna species, *Marine Ecology Progress Series*, Vol 353, 255–264, 17 Jan 2008: http://hal.ird.fr/docs/00/26/91/72/PDF/Hallier_GaertnerMEPS7180_Prev2.pdf

¹¹ Grafton RQ, Kompas T, Hilborn RW (2007), "Economics of overexploitation revisited", *Science* 318: 1601

¹² Bertignac, Campbell, Hampton & Hand, (2001) "Maximising Resource Rent from the Western and Central Pacific Tuna Fisheries", *Marine Resource Economics* 15: 151; Kompas & Che, (2006) "Economic profit and optimal effort in the Western and Central Pacific tuna fisheries", *Pacific Economic Bulletin* 21: 46-6

There is uncertainty in the modelling of maximum economic yield. However, given the larger biomass that is maintained at the maximum economic yield, the stock will be more resilient to shocks or modelling errors.

It should be noted that maximum economic yield should not be the sole arbiter of stock size or quotas. Greenpeace supports an ecosystem based approach to fisheries management, which requires consideration of the entire ecosystem in managing fisheries to ensure that ecosystem integrity is maintained.

Recommendations from the Scientific Committee should not simply reflect the effort reductions necessary to achieve the point estimate of maximum sustainable yield. Alternative targets such as maximum economic yield, with the inherent precaution built into them are more suitable reference points and do not leave a scenario where recommendations are framed around a position where there may still be a 50% probability that overfishing is occurring. By using maximum sustainable yield, the line is being cut far finer than need be, while at the same time costing money.

Recommendations

The Scientific Committee should recommend the following measures to decision-makers attending the WCPFC:

- 1. Establishment of no-take marine reserves in the enclosed high seas areas bounded by Pacific Island states¹³, as part of an holistic ecosystem approach, to both conserve their rich biodiversity and as a key fisheries management measure. These reserves would be the start of a network of reserves throughout the region and globally.**
- 2. An immediate 50% reduction in tuna fishing effort across the entire WCPO sector based on the average 2001-2004 levels, with a particular focus on purse seine fishing effort to account for the high levels of unknowns and uncertainties in the dataset.**
- 3. An immediate ban in the use of FADs in association with purse seine fisheries**
- 4. Implementation of the ecosystem approach to the management of tuna resources within tightly defined precautionary limits. As part of the ongoing management regime, research must be undertaken to reduce the uncertainty and indeterminacy attached to the key parameters/assumptions used as inputs for the management models. This should include an explicit evaluation of the scale and extent of IUU fishing.**

¹³ http://www.greenpeace.org/pacific_marine_reserves_map