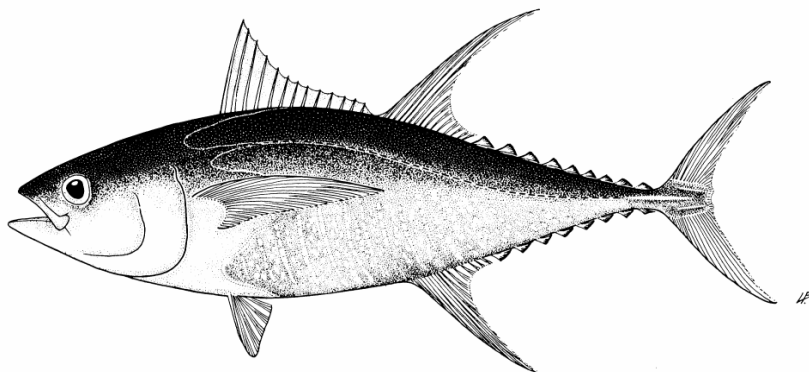




Greenpeace Position Paper on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean



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TO: The 1st Meeting of the Scientific Committee of the Western and Central Pacific Fisheries Commission (WCPFC-SC1), Noumea, New Caledonia. 8th – 19th August 2005

Greenpeace has a long term and growing interest in the management and, more importantly, conservation of Pacific oceanic tuna populations. It is largely on the basis of this interest, that Greenpeace has requested, and been granted, observer status to meetings arranged under the auspices of the Western and Central Pacific Fisheries Commission (WCPFC) to regulate fishing activity over the Western and Central Pacific Convention Area (WCPFC-CA)

This paper provides our temporary position to the first meeting of the Western and Central Pacific Fisheries Commission - Scientific Committee (WCPFC-SC1). It outlines our understanding and recommendations concerning the overall management of tuna populations within the WCPFC-CA. These recommendations are specific to the management of Bigeye and Yellowfin Tuna. Greenpeace will be providing a more comprehensive report that will outline effort reduction options to the 2nd Commission meeting of the WCPFC in December 2005.

Of the effort controlling schemes available in our region, Greenpeace believes that the Palau Arrangement provides a valuable regional framework within which fishing effort in the WCPO purse-seine fishery can be reduced to assure the future of the yellowfin and bigeye tuna fisheries. In order to fully assure a positive conservation status for these species Greenpeace believes that the regional effort reductions should be extended to tuna fisheries using other fishing techniques, in particular longlining, which accounts for the greatest proportion of the bigeye tuna catch at the regional level. We do acknowledge effort reductions in place at national levels, and recommend an extension to the area covered for the entire purse-seine fishery.

Moreover, Greenpeace considers that the Vessel Day Scheme (VDS) used to reduce effort, needs to be underpinned by robust conservation efforts and instruments which can assure that the impacts of climatic change (perhaps in the form of increased ENSO events and other changes in oceanographic conditions) can be prospectively accommodated. Key to such prospective efforts will be the ability to reliably detect changes and trends as soon as they become evident, while also preserving a vigorous population able to accommodate such change and variation to the maximum possible degree.

Greenpeace has the following broad understanding of the current status of tuna stocks over the area derived from published stock assessments and other literature which has led to this conclusion.

According to the latest published stock assessment which will be updated this week [1], recent aggregate catches of all four targeted tuna species taken by all fishing methods (purse-seine, longline, troll, or pole and line) are close to historic high levels at almost 2 million metric tonnes. These record levels were attained following a sharp rise in catches post 1998. In 2003, the catch consisted of 64% skipjack tuna, 24% yellowfin tuna, 5% bigeye tuna and 7% albacore tuna. This accounts for around 72% of the WCPO tuna fishery and around 50% of the global catch. According to one source [12] foreign fleet operations account for 90% of the catch.

Considered by gear type over the WCPO as a whole, the purse seine fishery took around 1.2 million tonnes in 2003 of which 80% was skipjack and 18% and 2% was yellowfin and bigeye respectively. Estimated pole and line catches in 2003 of around 300,000 tonnes comprised 15% of the regional catch and consisted of 82% skipjack together with 12% albacore, 5% yellowfin and 1 % bigeye. The longline catch of 222,000 tonnes comprised 12% of the WCPO catch consisting of 38% albacore, 32% yellowfin and 29% bigeye tuna. The balance of 5,308 tonnes taken by troll gear consisted largely of albacore tuna plus catch by other gears at 215,000 tonnes.

The above figures not only encompass a diversity of gear type, but also a diversity of operations ranging from highly industrialised distant water fleets to artisanal and subsistence operations. There is some overlap between the fish species taken using the various gear types. The purse seine and pole and line catches are largely of skipjack, while the longliners land, in total, almost equal proportions of albacore, yellowfin and bigeye. Of significance to stock management is that an unknown proportion of the smaller yellowfin and bigeye caught in the purse seine fishery are probably misclassified as skipjack tuna and usually juvenile bigeye also not distinguished from juvenile yellowfin.

The mainstay of the large scale operations, the skipjack tuna, is considered as being fished within sustainable limits and capable of supplying current catches, even without current high levels of recruitment. The yellowfin stock is considered to be close to full exploitation level with any increases in fishing mortality potentially pushing the stock into an overfished state. There may be differences in exploitation rate over the area which may ultimately dictate a need for area specific management. Bigeye tuna are not currently considered overfished, but current exploitation levels are not considered sustainable and fishing mortality is possibly exceeding the overfishing benchmark. Finally, the albacore tuna stock status is to some extent uncertain due to inadequate data, but is not currently thought to be overfished.

New estimates of stock status for skipjack tuna are due to be presented at this meeting; the WCPFC-SC1, together with a re-evaluation of albacore tuna along with stock assessment for all four species. While these estimates will update model parameters and underlying assumptions and hence some stock status metrics, they are not predicted to change the existing overall status conclusions.

Overall, the fisheries targeting the four species of tuna over the WCPO are highly complex, involving a variety of techniques at a variety of scales ranging from the industrial to artisanal. There is some overlap between species targeted by different fisheries and some evidence of differential intensities of fishing of these stocks in some areas of the WCPO. This is reflected in spatial estimates of biomass changes resulting from impacts of fishing.

The impact of fisheries upon the biomass of individual stocks has been estimated. In the case of skipjack tuna over the WCPO as a whole the reduction in biomass due to fishing is estimated at 10-15% although difficulty in deriving this figure via the models used is acknowledged [5]. In the case of yellowfin tuna [1,2] the differential is estimated overall at 35% but with regional differences such that this rises to around 50%-60% in tropical regions of the WCPO. In the case of albacore a figure of less than 20% is estimated [3], while bigeye tuna biomass is around 35% lower than estimated in the absence of fishing, having declined to 60% of its 1960s level at one point. Again, the impact of fisheries has reduced the population in tropical regions by some 50% [6] although in some regions decreases of 80% are estimated [1].

Fisheries impacts upon tuna populations have, however, been the subject of controversy in the scientific literature. An estimate published in 2003 [7] suggested that globally some 90% of the world's predatory fishes had been lost since the onset of industrial fishing. Using Japanese longlining data over the period 1952-1999, it was demonstrated that the biomass of Pacific tuna was reduced to around 10% of pre-industrial levels. This conclusion was challenged [8] on the grounds that longlining data were not appropriately used in the study since changes in targeted tuna species had taken place for largely economic reasons. Nonetheless, the authors of the original study considered that the 90% reduction figure could be justified and could be corroborated to some degree using other data sets [9, 10]

Tuna fisheries pursued in the region in some cases appear to be sustained by recent relatively high levels of recruitment. In the case of skipjack tuna, recruitment appears to have been particularly high in 1997-98 following an upward shift in the mid-1980's which has since been sustained [2]. In the case of yellowfin tuna, high recruitment levels have also been a feature of recent years. A strong increasing trend in recruitment estimates for bigeye tuna, however, may actually be an artefact related to the development of the fisheries in certain areas and this requires investigation. The estimates for albacore recruitment are considered somewhat imprecise but are considered to have declined in recent years [3]. It is known that ENSO variability affects recruitment differentially across species. *El Nino* events appear to result in higher recruitment into skipjack and yellowfin populations while albacore recruitment appears to be higher under *La Nina* conditions. The ENSO status also appears to strongly influence the distribution of tuna. In the case of skipjack tuna, it appears that this can be used to predict the abundance of the fish within a fishing ground extending some 6000km along the equator [4].

Some observers have noted that on both economic and conservation grounds that there are too many purse seine vessels operating in the area. [11].

In 2005 a total of 191 foreign vessels are involved in this fishery. Thirty-five of these vessels are Japanese vessels, 34 Taiwanese, 27 Korean, 20 Philippeans, 17 United States, 24 Vanuatu, 8 China, 6 FSM, 6 Marshall Islands, 4 New Zealand, 3 PNG, 3 Solomon Islands, 2 Netherlands Antilles, 1 Spain and 1 Kiribati. However, the composition of the fleet is entirely different when, instead of the flag being flown, the controlling country is considered. Taiwan then has 64 vessels, Japan 36, United States 28, Philippines 23, Korea 27, New Zealand 4, Netherlands 2 and Spain 1. (US and Netherlands have joint control on 2 vessels). None of the Pacific Island States has any control over these vessels [15]. Given the large catch attributable to purse seine operations, it is logical that these should be the target of the Vessel Day Scheme agreed under the Palau Arrangement.

Nonetheless, large numbers of vessels are involved in the longline fishery and most of the catch is taken by the large vessel distant water fleet of Japan, Korea and Taiwan. In 2000 the fleets numbered 216, 166 and 149 for each country respectively. There has, however, been significant growth in the numbers of longline vessels locally and domestically flagged. In the case of the pole and line fleet, much of the fishing activity was attributable to the Japanese distant water fleet operating some 40 vessels plus the large Indonesian artisanal fleet. The general trend for numbers of vessels active in this fishery is downwards, particularly for domestic based operations.

Accordingly, fishing effort restrictions on the purse-seine fishery are likely to benefit the yellowfin and bigeye tuna populations which are currently approaching or exceeding overfishing benchmarks. A significant benefit to the bigeye tuna populations could be achieved by effort restrictions on longlining since this fishery appears to take around 70% of the total catch. Similarly, benefits to the yellowfin population could also be expected since longlining accounts for around 23% of the total catch, though the benefit is much less clear. Moreover, careful examination of the local economic impacts of such measures needs to be made given recent developments of the locally based fleet engaged in longlining.

Greenpeace, therefore, supports efforts being made to emplace effort restrictions in the purse seine fishery as a means of ensuring sustainability. In addition, overall regulation and management could benefit from imposing effort reductions in fisheries utilising other gears.

The primary instrument of effort regulation under the Palau Arrangement is the Vessel Day Scheme under which a total allowable effort (TAE) is allocated to each of the parties bound by the arrangement. The concept of effort control was examined in a recent evaluation of the UK fishing industry by the UK Royal Commission. This evaluation concluded that effort controls had many advantages over attempting to regulate via catch controls. Effort controls seek to limit the number of boats or fishers working in the industry, and restrict the time spent in finding and catching fish. Some may limit the power or size of vessels and the periods during which fishing can be carried out. Other methods of effort control include Individual Transferable Quotas (ITEQs), licences and the decommissioning of vessels.

Crucially, the Royal Commission report noted that in addition to the conventional instruments of effort control, access rights to fisheries may need to be limited through, for example, a system of no-take marine reserves and licensing of fishing in specific areas.

In the case of the Palau Arrangement, the TAE assigned to each Party is calculated on the basis that 50% is based on the distribution of the assessed relative biomass of skipjack and yellowfin tuna within the waters of the Parties and 50% on the annual distribution of the number of vessel days fished in waters of the Parties averaged over a three year period using the most recent data. The Palau Arrangement only covers part of the WCPA but is certainly a valuable framework.

Greenpeace considers that the overall effectiveness of effort restrictions in relation to the WCPO tuna fisheries could be considerably enhanced by designating no-take marine reserves. Tuna species, however, are highly mobile and to be effective, marine reserves need to encompass an adequate and significant proportion of the critical habitat or some spatio-temporal stability.

Definition of the core habitat for the tuna species targeted by fisheries in the WCPO is critical to the successful designation of marine reserves. In the case of the skipjack tuna, although it occurs throughout the equatorial and sub-tropical Pacific, catches are highest in the western Pacific warm pool. This pool is displaced under the influence of ENSO variability as noted above [4]. Hence any designation of marine reserves must fully account for this variability. Catches of yellowfin tuna increase towards the east as do skipjack catches in response to *El Nino* events, and the majority of catch continues to be taken in equatorial regions. In the case of bigeye tuna the greatest proportion of the catch appears to be taken by longlining in the eastern area of the equatorial WCPO and in the EPO east of 150W. There are high catches also in the Philippines and Indonesia.

These board observations could be refined considerably by expansion of the Vessel Monitoring system (VMS) to cover all vessels that will be operating within the WCPFC-CA. In addition, it is possible that in combination with other information such as migration patterns, spawning areas, fishing mortality and habitat use, the catch/effort data itself could be used to help define priority areas for protection under a marine reserve scheme. Considerable data already exists in relation to the spatial and temporal dynamics of the tuna fisheries in the WCPO which could serve as the basis for a definition and designation of no-take marine reserves.

Greenpeace, therefore, believes that if developed in a progressive manner, the Palau Arrangement (VDS as its successor) and the VMS in use to a wider extent in the WCPFC-CA in connection with this agreement could provide a great deal of data which could be used to supplement existing biological data. This, in turn would help considerably to define a suitable network of marine reserves needed in the WCPFC-CA in order to fully achieve the conservation of tuna species targeted in the region.

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