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Restrictions designed to accommodate a variety of processing practices hamper effective regulation of shark finning. This can be resolved by requiring fishers to land sharks with fins still attached.

STRENGTHENING EUROPEAN FISHERIES MANAGEMENT:

OPTIONS FOR ENFORCING THE SHARK FINNING BAN

CONCLUSIONS OF AN EXPERT WORKSHOP ON EUROPEAN SHARK FISHERIES, TRADE AND MARKETS:

Hareide, N.R., J. Carlson, M. Clarke, S. Clarke, J. Ellis, S. Fordham, S. Fowler, M. Pinho, C. Raymakers, F. Serena, B. Seret, and S. Polti.* 2007. *European Shark Fisheries: a preliminary investigation into fisheries, conversion factors, trade products, markets and management measures*. European Elasmobranch Association.

EUROPEAN FLEETS are among the world's leaders in fishing for sharks. The most valuable parts of most sharks are their fins, which are a delicacy in Chinese cuisine. Shark meat is less profitable, which results in a strong economic incentive to cut off the fins and discard the carcass back into the sea, a practice called shark "finning". The Council of the European Union prohibited shark finning in 2003¹, but in 2006 the European Parliament questioned whether the regulations in place are effective at preventing this practice.

An expert workshop on shark fisheries in Europe, convened by the Shark Alliance and funded by the Lenfest Ocean Program, was held in Brussels in October 2006. Participants described and compared data on shark biology, fisheries, markets and trade (described in the full report), and developed recommendations regarding precautionary, science-based management methods to prevent the practice of shark finning. This *Lenfest Ocean Program Research Series* report is a summary of the expert workshop's findings.

* Opinions expressed herein are of the authors only and do not imply endorsement by any agency associated with the authors.

¹ Regulation EC 1185/2003.

SUMMARY OF RECOMMENDATIONS

The experts identified so many drawbacks associated with using a fin:carcass weight ratio to enforce a shark finning ban that they could not recommend this approach. They concluded that an effective and practical shark finning regulation would have to mandate the landing of sharks with fins attached and recommended this management policy in place of the current fin:carcass weight ratio. The group recommended EU Member States act in the meantime through their special fishing permit process to require that fins and carcasses always be landed together. The group also discussed and recommended actions to improve shark fisheries monitoring and management.

EUROPE'S SHARK FISHERIES

EUROPEAN FISHERIES have traditionally exploited many small bottom-living coastal sharks and skates, and have recently increased their exploitation of deep-water sharks. These species and fisheries are relatively well-understood. In contrast, the largest European shark fisheries, undertaken on the high seas by pelagic fleets from Spain, France and Portugal in the Atlantic, Pacific and Indian Oceans, are very poorly documented. Though these fisheries historically targeted primarily tunas and swordfish, longline catches of oceanic sharks are as large as or larger than the catch of target species, and most longliners now also target sharks. Additionally, the Atlantic shark stocks exploited by European fleets are also heavily fished by Japanese and Taiwanese tuna vessels that operate in the Atlantic as well as in the Indo-Pacific Ocean.

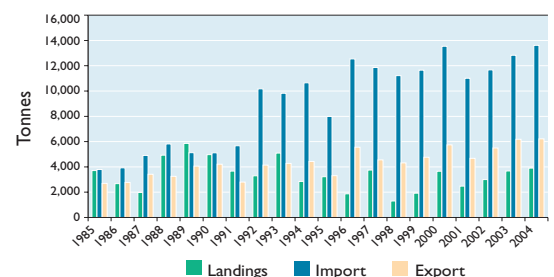
A lack of data on shark catches, use and discards has hampered stock assessments and the introduction of fisheries management. There is evidence, however, that many large oceanic sharks are being fished unsustainably and that the populations of the most biologically-vulnerable of these species are below healthy levels. Improved information on shark catches is essential for effective shark fisheries management but should not be used as an excuse for inaction. Precautionary limits are warranted immediately, based on the low reproductive capacity of sharks and the history of frequent collapse in shark fisheries.

INTERNATIONAL TRADE IN SHARK PRODUCTS

SHARK FISHERIES have often been undervalued and ignored, but have boomed in recent decades as international demand has risen for shark products. Shark fins, now among the most expensive seafood products in the world (up to 500 €/kg), are exported to East and Southeast Asia for processing and preparation of shark fin soup. The European Union is the world's largest exporter of shark fins to China, the biggest consumer market. Shark meat is usually low value, but is becoming increasingly popular; reported world landings have tripled since 1985. EU countries (particularly Spain and Italy) were responsible for 56% of global shark meat imports in 2005. Other shark products on the international market include liver oil, skins, cartilage, jaws and teeth.

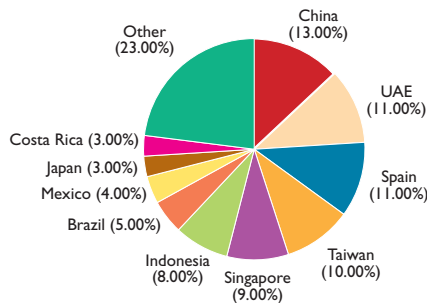
Since most shark product trade is under-recorded, it is difficult to estimate the relationship between trade and shark catches, and the total volume of shark fisheries globally. Official data on the quantity of shark fins landed, in particular, are clearly huge underestimates. The number of sharks that must be caught globally to produce the fins observed in international trade (some 26 to 73 million sharks per annum) is three or four times higher than the total official records of sharks captured by fisheries reported to FAO.

Global landings, import and export quantities for shark fins, 1985–2004 (tonnes)
(from Hareide *et al.* 2007).



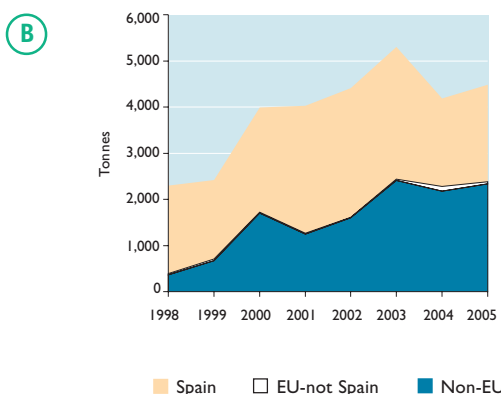
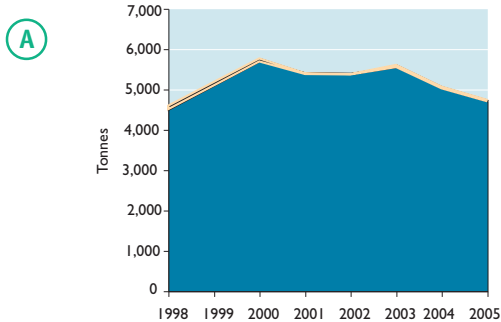
Origin of Hong Kong shark fin imports in 2005

(from Hareide *et al.* 2007). Spain is the largest single shark fin producing country exporting fins to Hong Kong. China's high total reflects cross-boundary trading with Hong Kong, not catches; UAE is high because it includes fins originally imported from several east African and Arabian States.



Shark fin imports to Hong Kong 1998–2005

(from Hareide *et al.* 2007). Shows the proportion of imports derived from non-European Union countries, European Union countries other than Spain, and Spain for: a) dried, unprocessed shark fins; and b) frozen, unprocessed shark fins.



ACCURATE FISHERIES AND TRADE DATA ARE NEEDED FOR EFFECTIVE MANAGEMENT

WHILE THE PRECAUTIONARY APPROACH to fisheries dictates that fisheries management should not wait until we have all the answers, fisheries scientists need good estimates of how many sharks have been taken out of the sea in order to make sound recommendations for fishing limits. This requires improved records both of shark catches and the products traded. When sharks are processed before they are brought to the dock, scientists and managers must use the volumes of processed products landed (such as meat, liver oil or fins) to determine how many animals were taken. They do this using a 'conversion factor' for how much shark product is equivalent to the original live sharks. Without such conversion factors, it is difficult to estimate the relationship between the volume of shark products traded and the quantities of sharks originally taken by fisheries. We do not, therefore, know the global impact that these fisheries are having on shark populations unless we can develop ways to measure how quantities of shark products relate to the number of sharks caught. Conversion factors are also important for the regulation of fisheries. They are used to calculate and enforce fishing quotas, and are widely used to implement bans on shark finning.

WHAT IS THE SHARK FIN CONVERSION FACTOR?

MOST FINNING REGULATIONS mandate a simple conversion factor between the weight of shark fins and the weight of the remainder of the body brought to the dock, verifying that all fins have a body to match, in an attempt to ensure that finning does not take place. Difficulties arise when conversion factors vary between fisheries, often because of different processing techniques, and the highest ratios drive the regulations. Discrepancies arise from keeping different numbers of fins from each carcass and/or cutting sharks differently when removing the fins so that more or less shark meat is left attached. For example, the fin:carcass ratio for blue sharks taken in US and Canadian Atlantic fisheries is about 2% of fin to whole weight or 5% of fin to dressed (headed and gutted) carcass weight. Portuguese and Spanish fleets fish the same blue shark population, but report ratios that are three times larger (over 6% and 15% respectively).

The main reason for the discrepancy between the fin:carcass ratios obtained by Spanish and Portuguese longline fleets and those observed in other shark fisheries is because the former retain the entire tail of each shark, instead of just the high value lower caudal lobe that is used in shark fin soup, as well as small fins not kept in other fisheries. They also leave some meat attached to the fins, which is later removed and discarded before processing. This meat may make up as much as one-third of the reported 'fin weight'. Keeping the whole tail also significantly increases the weight of the 'fins' because it includes part of the vertebral column and other tissues (likely another one-third of the total fin weight). Some fin traders air-freight high value shark fin (including the lower caudal lobes) to East Asia, but send the rest of the tail by low cost sea-freight because it will be processed into lower value products.

Stages in processing blue sharks.

- Blue shark landed from vessel gutted with head and fins intact – as recommended for European fleets.
- Removal of head – most primary fins still attached.
- Dressed carcass with head, gut and fins removed – the conversion factor for this product and for its fins can vary considerably, depending upon cutting practice.
- Skinned blue shark trunks.

A



B



C



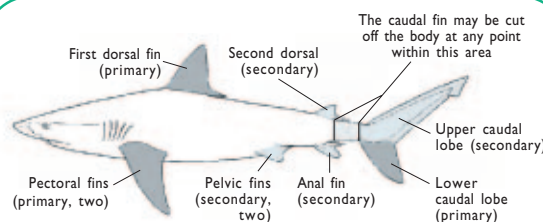
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WHAT IS THE BEST WAY TO ENFORCE A FINNING BAN?

THERE ARE THREE MAIN WAYS to enforce a finning ban. The first and most simple is to require that shark carcasses (whether gutted and beheaded on board or not) are landed with their fins still attached and further processing is undertaken on land. This approach is already common practice in many fleets, including Japan's and Taiwan's nearshore Pacific longline fleets. The second option is to require that the fins landed detached be counted and do not exceed a maximum number per carcass (but this would vary by species and fishery, be very time-consuming to monitor, and has never been applied). The third option is to require that there be a maximum fin to body weight ratio, and that fins and carcasses be landed together. This is the most widely used option around the world, including in Europe, although fins and carcasses can be landed separately under permit by 186 Spanish vessels and a small number of vessels registered in Portugal, UK, Germany and Lithuania.

The problem with the last approach stems from the fact that weight ratios can vary between species and fisheries. It is too complicated to set different ratios for different shark species or fisheries, so a single ratio is set nationally or regionally. Often these are set on the high end of calculated ratios and may fail to protect species with the smallest fins. In mixed shark fisheries, generous ratios can allow room to fin some sharks with high value fins and low value meat. At the same time, fishermen often argue for a ratio high enough to ensure they can keep all the desired fins of their target species. This approach can result in challenges, as currently the case in the EU and in regional fisheries bodies (e.g. ICCAT). These ratios may, therefore, need to be revised regularly in response to complaints, as dressing criteria change (for example as a result of changing market demand) or as fishers discover new ways to get around the management measures in force and hence to increase the profitability of the fishery. It would difficult to ensure that these revisions reflect true practices while still ensuring that finning does not occur.



The primary shark fins (dorsal, lower caudal lobe and two pectorals – dark shading) are retained by all fleets. Some European fleets also retain the secondary fins (light shading).

CONCLUSIONS

After thorough deliberation, the expert workshop reached the following conclusions:

- There are insufficient data to determine whether the current EU Shark Finning Regulation is effectively prohibiting shark finning.
- Implementation of the EU Shark Finning Regulation is seriously hampered by the derogation that allows the transshipment and separate landings of fins and carcasses.
- A fin:carcass ratio is a complicated and usually inadequate tool for preventing finning because of differences in fin cutting techniques and variability among shark species' fin sizes and values; these create loopholes to fin.
- Setting ratios at the upper end of (or above) scientifically derived ratios, as is often the case, exacerbates this problem and leaves species with small fins and/or low value meat at particular risk of finning.
- Lack of information and inconsistency in fin removal practices prevent scientific determination of a single optimal fin to carcass ratio.
- Given the uncertainty and complexity of the situation, the current EU Shark Finning Regulation cannot be characterized as effective.
- Consequently, to ensure finning cannot take place, sharks should be landed with their fins attached. This would not be too burdensome for the industry, because many onshore processing facilities already deal with whole sharks, and any port that can handle shark carcasses can also handle shark fins.
- Additional benefits of a "fins attached" policy include:
 - Calculation, decisions and alterations regarding ratios for different species or fisheries are unnecessary.
 - Enforcement burden is reduced because fins and carcasses do not need to be weighed separately.
 - Quality of the information on species and quantities of sharks landed (information important for fisheries management) is vastly improved.
 - "High-grading" (mixing carcasses and fins from different animals) is impossible.
 - Land-based processing of carcasses can include careful and precise fin cutting, increasing the value of the finished product.
- Shark fisheries and trade are not constrained by national borders. Their management is therefore a global issue, requiring action and coordination by managers at several jurisdictional levels.
- High fishing pressure coupled with the inherent vulnerability of most shark species makes the need for effective shark conservation measures urgent.
- Species-specific statistics from EU shark fisheries, landings, markets and trade are severely lacking; such information is vital for assessing shark populations and understanding and managing fisheries effectively.

WHAT IS SHARK FINNING?

Finning is the removal and retention of shark fins and the discard of the remainder of the carcass at sea. Fishermen do it because, during the past two or three decades, shark fins have become one of the most valuable of all fisheries products.

Demand for and value of shark meat products have increased less rapidly, resulting in a strong economic incentive to retain only the valuable fins instead of filling vessel storage space with low value shark meat.



RECOMMENDATIONS

The expert group made the following recommendations based on their findings:

The European Commission and Council of Ministers should:

- Amend the EU Shark Finning Regulation to require that sharks be landed with their fins still attached (sharks could still be beheaded and gutted); and
- Promote more effective Shark Finning Regulations within the Regional Fisheries Bodies (governing international waters) to which the EU is Party.

Individual EU Member States should take the following stop-gap actions to prevent shark finning in the meantime:

- Justify to the EU the need to process sharks at sea (as required) or discontinue issuing the special fishing permits that allow fishermen to remove shark fins at sea;
- Immediately stipulate that vessels removing shark fins under existing special fishing permits must land shark fins and carcasses at the same time, in the same port; and
- Encourage prompt amendment of the EU Shark Finning Regulation, as detailed above.

The European Commission, Member States and Regional Fisheries Bodies should:

- Mandate full coverage on shark fishing vessels by independent, on-board observers;
- Increase investment in shark data collection at landing sites and by processing and marketing industries;
- Establish effective monitoring and management measures for target and bycatch shark fisheries within their remit, including precautionary catch limits when data are lacking;
- Cooperate in the exchange of information and the harmonisation of management measures across borders; and
- Ensure that all landings and trade of shark fins, meat, and oil are recorded separately by commodity (and to the species level where possible).



About the Authors

The October 2006 expert workshop was attended by a group of international experts in shark research, trade, conservation and management drawn from ten countries. This *Lenfest Ocean Program Research Series* report is a summary of a detailed report prepared by the expert group at and following the October 2006 meeting. The detailed report and a full list of workshop attendees are published at www.lenfestocean.org and www.eulasma.org

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