

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



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THE FEASIBILITY OF THE USE OF FIN SIZE AS A COMPLEMENTARY REGULATORY
MEASURE FOR SHARKS IN TRADE – EXECUTIVE SUMMARY

1. This document has been submitted by the Secretariat, in relation to agenda item 56 on *Sharks and rays (Elasmobranchii spp.)*.
2. The following represents an executive summary of the study “The feasibility of the use of fin size as a complementary regulatory measure for sharks in trade” prepared for the CITES Secretariat by a consultant in early 2015, under the framework of the EU-CITES project “Strengthening capacity in developing countries for sustainable wildlife management and enhanced implementation of CITES wildlife trade regulations, with particular focus on commercially-exploited aquatic species”.

Executive Summary

3. Legal size limits are one of the oldest and most commonly adopted management measure to regulate the impact of fisheries on aquatic resources and are often aimed at maintaining the productivity of the stock, either by allowing individuals to reproduce at least once before capture, or, when fecundity increases with size, protect the animals that are most beneficial to the stock. Both legal minimum and maximum size have been applied for management of shark stocks.
4. One of the requirements for an export permit for a CITES-Appendix II listed specimen is that it has not been obtained in contravention of national law, including legal size limits. This test however, will usually not take place before the specimen, which can be a processed product, enters into trade, which presents challenges to the enforcement of such a measure.
5. The aim of the study was therefore to assess the likely effectiveness and feasibility of the use of the size of shark fins as a complementary measure to legal sizes for regulating the trade in fins of shark species, including the species included in Appendix II of CITES, in particular in situations where other data is sparse.
6. Shark fins are an important component of the international shark trade. Shark fins are a highly valued commodity, which can be worth as much as 50 times the value of shark meat and reach retail prices over \$400/kg and can represent one of the key drivers for targeted and non-targeted fisheries for some shark species.
7. Shark fins differ in size and amount of fin needles present in the fin, factors that also drive market prices and demand. The most valuable are usually the dorsal, lower caudal and pectoral fins due to their high needle content.
8. In order to test if the shark size can be predicted by the fin size, the relationship between total shark length and dorsal fin base length of 16 species of sharks (including the CITES listed *Carcharhinus longimanus*, *Sphyrna lewini*, *Sphyrna mokarran* and *Sphyrna zygaena*) was examined using linear regression. Using the result and data on size at sexual maturity obtained from literature, fin size at maturity was calculated.

9. While the relationship between dorsal fin length and total length was statistically significant in all but one dataset, and explained 90% of variation in 9 out of 19 datasets, the study concludes that larger samples sizes than the ones available to the authors will be needed to produce robust models for each species.
10. The preliminary analysis of inferred fin size at maturity indicates that the parameter varies substantially between species and even regions and the study concludes that it is not possible to define a common minimum fin size of biological significance for the species analyzed. Species- and stock- specific minimum fin sizes could however be easily determined when data on maturity and fin size is available.
11. The biological and economic impacts of applying fin size limits were assessed using a yield-per-recruit model, based on biological data for *Carcharhinus longimanus*. Five simulation runs were performed to compare the effects of different assumptions about minimum size regulations and post-release mortality.
12. The authors remark that implementing a legal fin size without a corresponding legal shark size regulation would generally have limited conservation benefits, as harvesting for other products than fins would remain unregulated, except in situations where sharks are mainly taken for their fins or as an additional discouragement of shark finning, a practice that is illegal in most countries. The possibility to infer shark sizes from fins may also be a useful tool for enforcement officers in situations where fin/body weight ratio is applied to enforce a finning ban. Legal shark size limits exist in 7 out of the 29 countries reviewed in the study.
13. The analysis of the model of biological and economic effects of establishing a minimum size regulation indicated a generally positive effect of the regulation, that was however very sensitive to assumptions about post-release mortality, with higher post-release mortality reducing benefits of the management measure. Short-term economic losses after the establishment of the regulation were predicted to be relatively minor for low post-release mortality values. The authors state that information on post-release mortality of sharks is generally scarce.
14. The study concludes that:
 - preliminary analysis indicates that fin size and body size is strongly correlated for some of the species, but more data is needed to reliably verify the findings;
 - fin sizes corresponding to maturity sizes of different species vary significantly and no biologically meaningful legal fin size for all sharks can be established;
 - legal fin sizes would be most useful when used complementary to legal size restrictions; and
 - establishing legal size restrictions could have substantial biological benefits at the expense of minor economic impacts, when post-release mortality is low.
15. Regarding possible next steps, the authors recommend:
 - the compilation of more data on fin sizes, biological characteristics, including post-release mortality;
 - stakeholder consultation on the feasibility of implementing legal shark size limits; and
 - integrating the shark fin size to body ratio into existing visual identification software, such as iSharkFin.