



**FIELD GUIDE TO THE IDENTIFICATION
OF SHARKS FROM FINS**

&

iSharkFin



65th meeting of the CITES Standing Committee
Geneva 07-11 July 2014



**CITES AND COMMERCIALY-EXPLOITED AQUATIC SPECIES
INCLUDING THE EVALUATION OF LISTING PROPOSALS
*JAPANESE TRUST FUND PROJECT***



One of the activities of this project is related to the development of tools and guides for the identification of products and specimens of commercially-exploited aquatic species listed by CITES to enhance implementation of the CITES trade regulations



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PURPOSES AND TARGETS OF THE GUIDE AND THE iSharkFin SOFTWARE

- user-friendly tools for the identification of shark species from fins
- people who will perform the species identification are:

- port inspectors
- custom agents
- fish traders

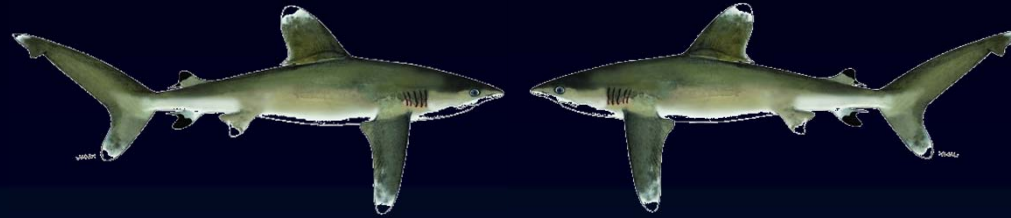
with or without a formal training - *non scientists*



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RATIONALE FOR THE SELECTION OF THE SPECIES



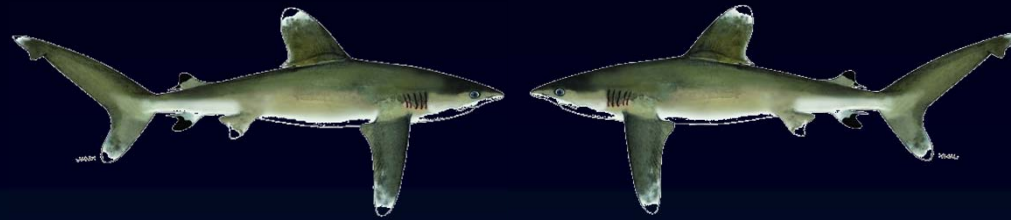
- Conservation status/legislation
- Target species in trade
- Species globally distributed
- Availability, common species in the catch
- Others (other vulnerable species, looks-alike species)



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SPECIES SELECTED



41 species and species complex

29 considered as priority

10-15 species for the first release of the guide



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SPECIES SELECTED

Great white shark (*Carcharodon carcharias*)

Silky shark (*Carcharhinus falciformis*)

Oceanic whitetip shark (*Carcharhinus longimanus*)

Dusky shark (*Carcharhinus obscurus*)

Sandbar shark (*Carcharhinus plumbeus*)**

Tiger shark (*Galeocerdo cuvier*)

Scalloped hammerhead (*Sphyrna lewini*)

Great hammerhead (*Sphyrna mokarran*)

Smooth hammerhead (*Sphyrna zygaena*)

Blue shark (*Prionace glauca*)

Shortfin mako (*Isurus oxyrinchus*)

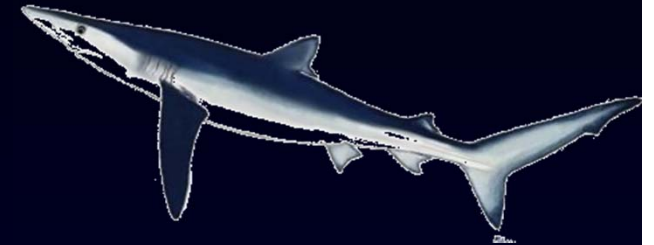
Longfin mako (*I. paucus*)

Sand tiger shark (*Carcharias taurus*)

Porbeagle (*Lamna nasus*)*

Alopias superciliosus

Alopias pelagicus



Other species listed in CITES

Ò Basking shark (*Cetorhinus maximus*)

Ò Whale shark (*Rhincodon typus*)

Sawfishes (*Pristidae*)

*need to get samples

**confusion with *Sphyrna* and *C. obscurus*)

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Duty travel in Suao harbour



Duty travel in Suao harbour



Duty travel in Suao harbour Specimens collected

Species	Total (n)	Female (n)	Male (n)	Fork Length (cm)
<i>Alopias pelagicus</i>	5	5		129,4 - 159
<i>Alopias superciliosus</i>	21	10	11	132 - 185
<i>Carcharhinus falciformis</i>	3	1	2	76 - 178,2
<i>Carcharhinus plumbeus</i>	1		1	128,5 - 128,5
<i>Isurus oxyrinchus</i>	7	3	4	158,8 - 189,4
<i>Isurus paucus</i>	2	2		169,5 - 170,2
<i>Mobula spp.</i>	2			-
<i>Prionace glauca</i>	14	10	4	139,4 - 237
<i>Sphyrna lewini</i>	1	1		-
<i>Sphyrna zygaena</i>	3		3	160 - 178,7
Total	59	31	25	

FIELD GUIDE TO THE IDENTIFICATION OF SHARKS FROM FINS – main contents



SECTION I: Introduction

- background information necessary to explain why this guide and the software associated were developed
- Morphometric and functional characteristics of the shark fins
- Fisheries and trade of the fins
- Rationale for the selection of the species



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FIELD GUIDE TO THE IDENTIFICATION OF SHARKS FROM FINS – main contents



SECTION II: How to use the guide

This section could be a sort of road map conducting the user through different scenarios and “how to do” modules:

Scenario 1 - Identification of one shark fin (dorsal, pectoral, caudal)

(How to take photos; Use of the field guide; Use of the software)

Scenario 2 - Bag of fins

(How to deal with bag of fins, including useful advises to quickly sample and identify a big amount of fins stocked up in bags at the market or on board a vessel)

Scenario 3 – pieces of fins or sharks products

(the genetic techniques available, their application and forensically validated methods)



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SECTION III: Matrix, Keys to ID and Fact sheets

- Quick matrix to the identification
- Taxonomic keys to the identification
- Fact sheets for each species:
 - characteristics for the three main fins: dorsal, pectoral and caudal
 - comparison with similar species



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FIELD GUIDE TO THE IDENTIFICATION OF SHARKS FROM FINS – fact sheet example

Carcharhinus amblyrhynchoides (Whitley, 1934)
(CARCHARHINIDAE)



TRADE CATEGORY NAME:
Xxxx Xxxxx

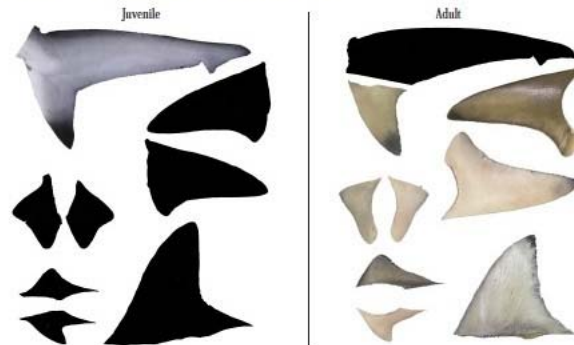
-  Graceful shark
-  Requin gracile
-  Tiburón gràcil

DISTRIBUTION



CONSERVATION STATUS IUCN RED LIST: VULNERABLE A2D+4D VER 3.1; CITES, CMS:

FIN IDENTIFICATION CHARACTERISTICS



iSharkFin – *in theory*

“An expert system based on a machine learning techniques for the identification of shark fins from the shape”

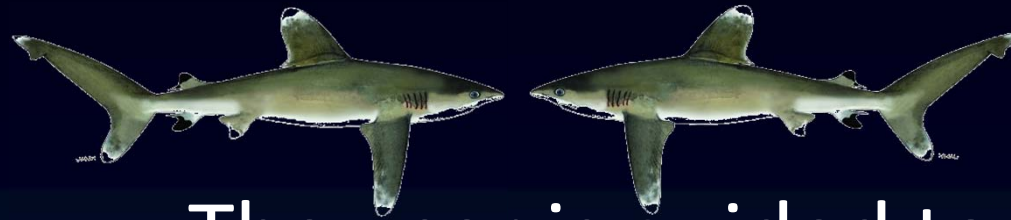
Child of IPEz for the taxonomic identification of fishes
developed by the University of Vigo



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iSharkFin – *in practice*



The user is guided to:

STEP 1: take a standard photo

STEP 2: indicate some points on the fin shape

STEP 3: reply by the software



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iSharkFin - METHOD

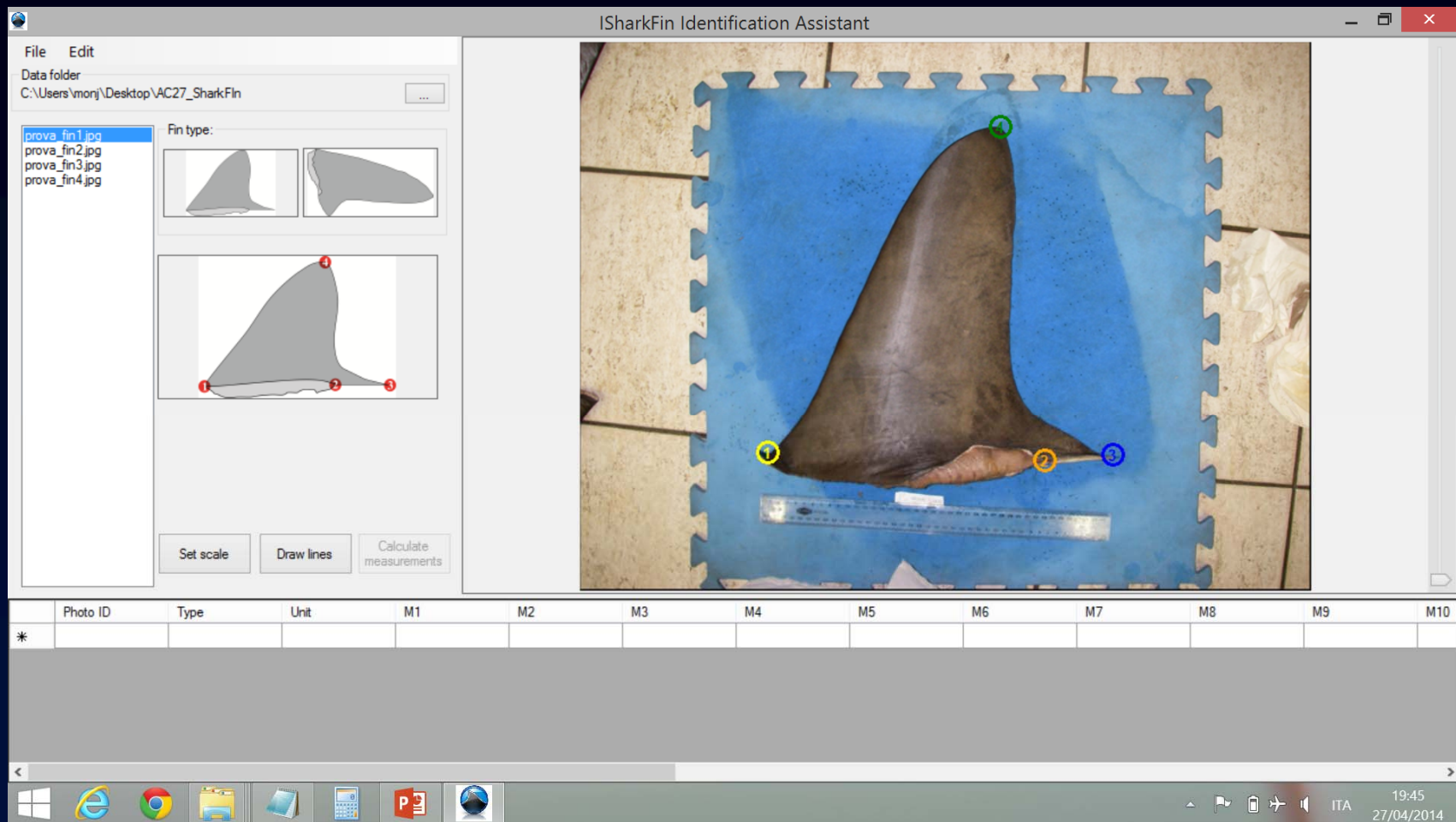
take
a
standard
photo



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iSharkFin - METHOD



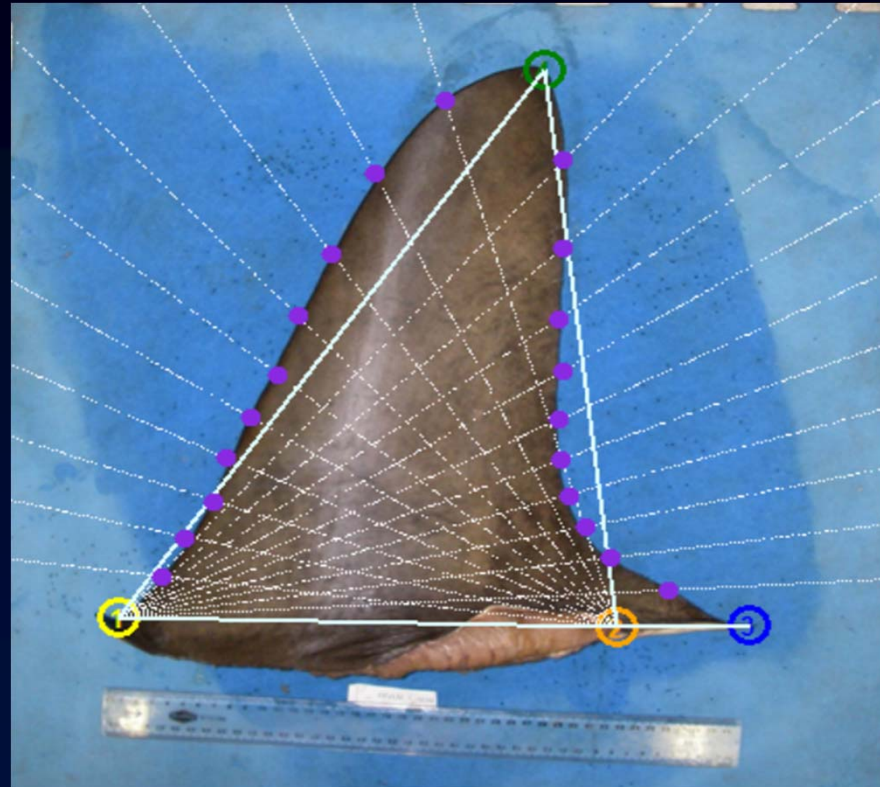
THE FOUR PRIMARY LANDMARKS

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iSharkFin - METHOD

NUMEROUS FANS
ARE TRACED BY THE
SOFTWARE AND THE
POINT INTERCEPTING
THE OUTLINE
DEFINED



iSharkFin – MAIN OUTPUTS



1) THE SPECIES IS REGULATED/NOT

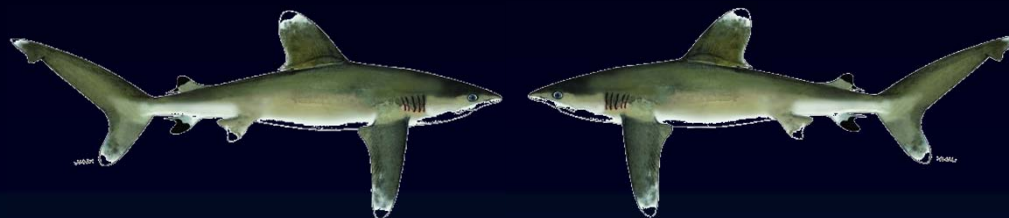
2) NAME OF THE SPECIES



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iSharkFin – some other characteristics



Output: says the statistical significance of the result in terms of probability

Language: the software will be available in English, Spanish, French, other languages upon request

Dried fins: can be analyzed

Additional tools: to facilitate the collection of catch data (correlation between the base of the fin and TL so total weight)

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FUTURE DEVELOPMENTS OF THESE TOOLS

FIELD GUIDE → Ebook or digital magazine

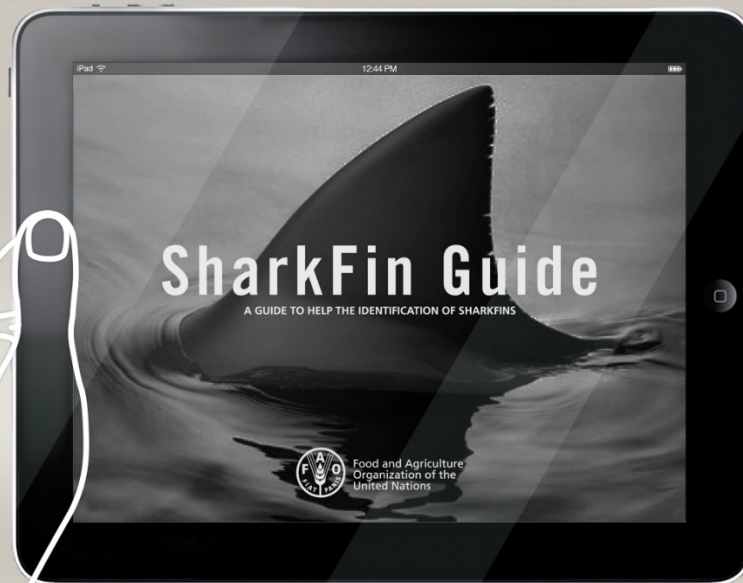
ISharkFin software → Tablet application



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SharkFin Guide

A GUIDE TO HELP THE IDENTIFICATION OF SHARKFINS



Food and Agriculture
Organization of the
United Nations



Introduction

How to use this guide

Matrix

Key

Species

Fake text to summarize the progress of the development of the field guide in terms of available information (contents, photos, ...) and status of the draft of the fact sheets.

29 species are considered a priority for the field guide. Among these, participants agreed to further select some species with the aim to identify the first fact sheets to be published in electronic version. The selection will be based on the availability of the information as well as on other criteria to be defined.

Several tables are still being compiled by the author to have a quick access to the current state of the guide. In particular, the tables show the information available for each field of the fact sheets and the photos availability for each species in the list (see Annex 4).

An excel file was compiled by the author to extract information on samplings needed to enhance the identification by the software (see Annex 5)

It is anticipated that a beta version of the software will be finalized by March 2014 and a first electronic version of the field guide will be release in June 2014. Meanwhile a first draft including section I and II, with some species fact sheets of the section III could be ready to be published online by the end of 2013. The guide and the software will be finalized by the end of 2014.



Fisheries, fin trade, chain of process, catch problems

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TEAM OF WORK *(...so far)*

FIELD GUIDE

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Dave Ebert (Scientific supervisor)

iSharkFin DEVELOPMENT

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Elisa Perez Costa (University of Vigo, assistant in data collection);

FAO

Emanuela D'Antoni (scientific illustrator)

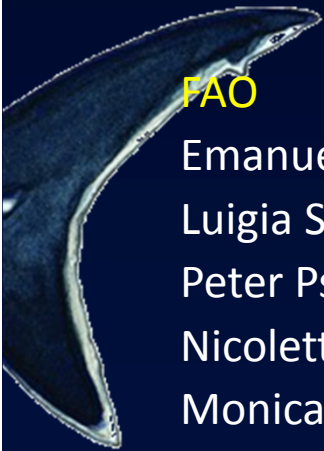
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Nicoletta De Angelis (scientific reviser)

Monica Barone (FAO consultant, editorial coordinator)

Johanne Fischer (FAO Senior Fisheries Officer, coordinator)



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GRACIAS

谢谢



THANKS



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