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

Twenty-eighth meeting of the Animals Committee
Tel Aviv (Israel), 30 August-3 September 2015

Conservation and management of sharks [Resolution Conf. 12.6 (Rev. CoP16)]

Implementation of Res. Conf. 12.6 (Rev. CoP16)

WORKSHOP ON THE ASSESSMENT OF PRODUCTIVITY, SUSCEPTIBILITY AND MANAGEMENT OF
MEXICAN APPENDIX II LISTED SHARKS (MEXICO CITY, JULY 8-10 2015)

This information document is presented by Mexico, in relation to agenda item AC28 Doc. 17.1.1 Anexo 7.[*]

The full report of the Workshop is currently under development, and will be made available in the web site of the Mexican Scientific Authority to CITES (the National Commission on Knowledge and Use of Biodiversity, CONABIO), in the following link: http://www.biodiversidad.gob.mx/CITES/taller/PsaMrisk2015.

1. Background and objective of the Workshop

With the purpose of strengthening the implementation of CITES provisions regarding the Appendix II listings of Mexican sharks subject to harvest and destined to international trade (Sphyrna lewini, Sphyrna mokarran, Sphyrna zygaena y Carcharhinus longimanus), the Mexican Scientific Authority (CONABIO), in collaboration with the National Fisheries Institute (INAPESCA) and researchers from the Center on Scientific Investigation and Superior Education of Ensenada (CICESE), met on march 2015 in Ensenada (Baja California) with researchers from CICIMAR-BCS and ECOSUR-Campeche to review the methods on Assessment of Productivity and Susceptibility (PSA; Patrick, et al. 2010) and Risk by Management (MRisk; Lack, et al., 2014), in order to adapt them to assess the vulnerability of Mexican populations of hammerhead and white tip sharks. During the workshop, the participants agreed to divide the assessment of Mexican shark species in six zones throughout two of Mexico's littorals.

The methodologies mentioned above are semi-quantitative, and allowed assessing in an efficient fashion the vulnerability of shark species that are subject to harvest, based on three main criteria: productivity (biology of the species), susceptibility (harvest pressures), and management (at a national level).

Based on the methodologies adapted to Mexico and the agreed "zoning", the "Workshop on the assessment of productivity, susceptibility, and management of Mexican Appendix II listed sharks" (Mexico City, July 8 to 10, 2015) was held. The workshop was attended by 34 experts from: 5 federal institutions (CONABIO, INAPESCA, CONAPESCA, SEMARNAT, and CONANP), 7 academic institutions (CICESE, CICIMAR, ECOSUR, UNAM, Universidad de Guadalajara y Universidad Veracruzana, Universidad del Mar), 3 NGOs (SOMEPEC A. C., IEMANYA Oceánica A. C. y COBI A. C.) and independent consultants. These participants brought to the table

_____

[*] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

their experience on management and research of shark fisheries in Mexico, along all fishery zones, littorals, and fleets that operate in Mexico.

2. Outcomes of the workshop

2.1. Productivity and Susceptibility Assessment (PSA)

Workshop participants provided information that allowed to ponder the different parameters assessed (**Annex 1**), both on Productivity as well as Susceptibility (see results in **Annex 2**). The analysis of these parameters was made through the program PSA Version 1.4 (March, 2010) included in the *NOAA Fisheries Toolbox* (PSA, 2015), to obtain the Vulnerability values for each species per fishery zone, littoral, and type of fleet (whether minor, or major-medium height).

2.1.1. *Species Vulnerability per Fishery Zone*

Based on the information per Fishery Zone, maps per type of species and fleet were developed, each of which include a table on the Vulnerability results (which range from 0 to 3, being 0 the lowest vulnerability and 3 the highest), and the Quality of the information upon which these were based (pondered from 1 to 5, being 1 information of the highest quality), and with a six-color gradient to represent the Vulnerability in each zone (ranging from green to red; each color separated by 0.5 points in vulnerability) (**Figures 1-7**). Additionally, the fishery zones that were not assessed are indicated in grey; similarly, those in which any given species does not occur are indicated in white.
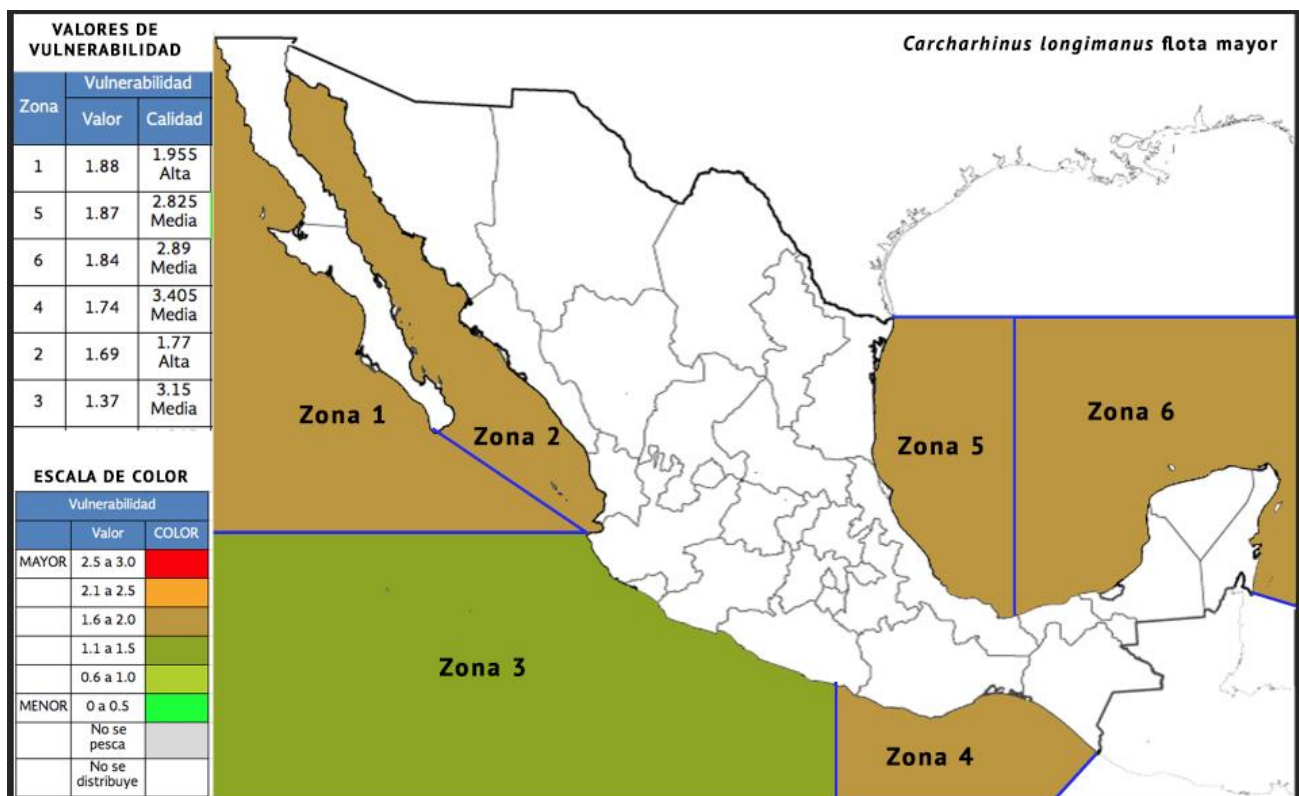

Figure 1. Graphic representation of the vulnerability of *C. longimanus* in the 6 fishery zones in Mexico for major fleets.

VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad	
	Valor	Calidad
5	2.11	2.13 Media
4	2.09	3.135 Media
6	2.01	1.99 Alta
1	1.94	2.455 Media
3	1.78	2.99 Media

ESCALA DE COLOR

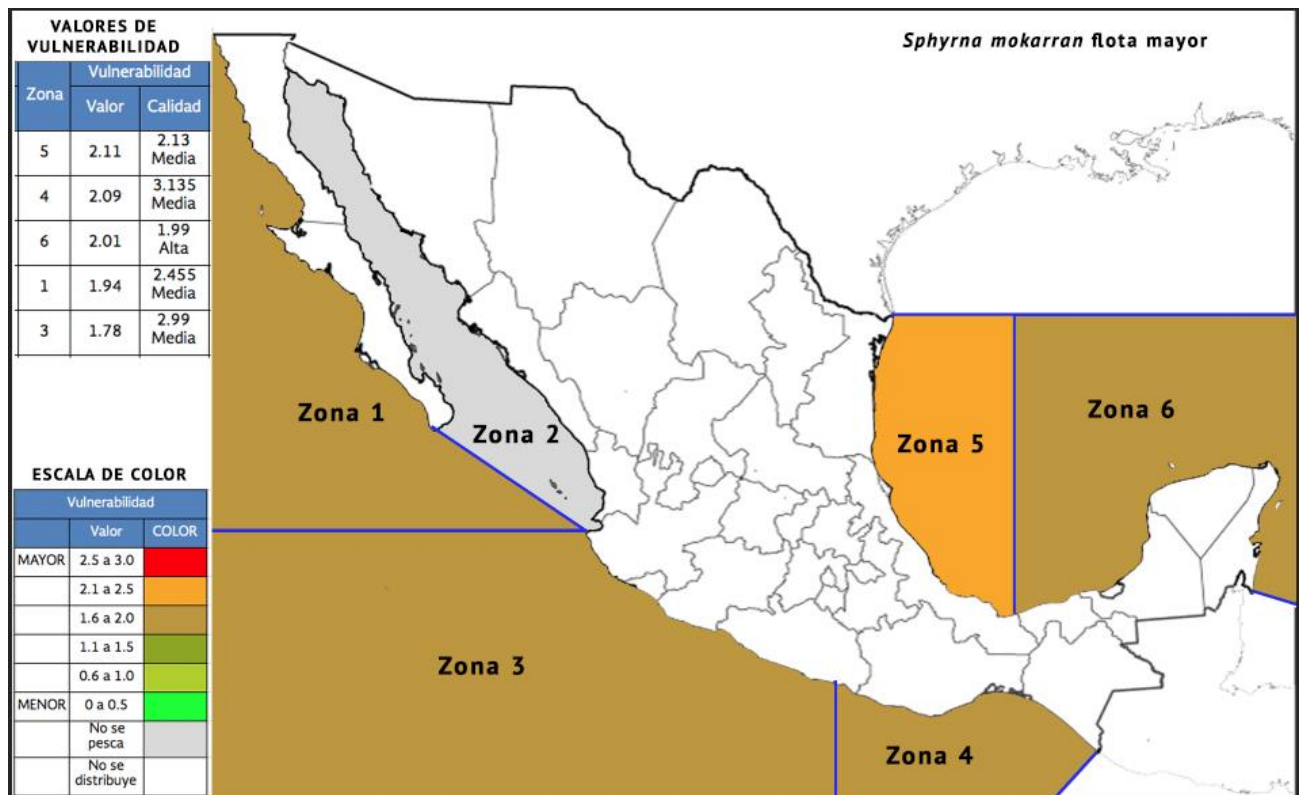|	Vulnerabilidad	
	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Figure 2. Graphic representation of the vulnerability gradient of *S. mokarran* in the 6 fishery zones in Mexico for major fleets. The vulnerability gradient ranges from values of 2.11 to 1.78.

VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad	
	Valor	Calidad
5	2.18	2.195 Media
6	1.92	2.1 Media

ESCALA DE COLOR

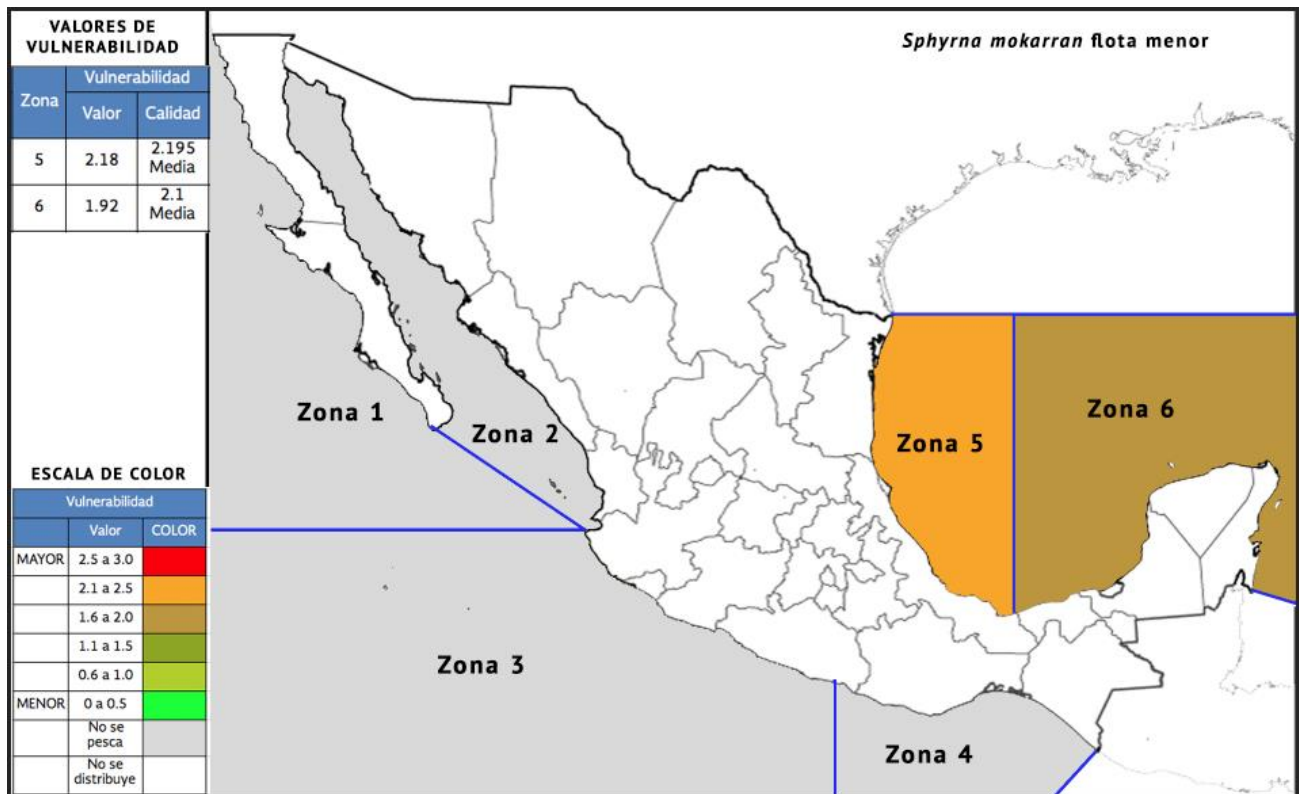|	Vulnerabilidad	
	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Figure 3. Graphic representation of vulnerability of *S. mokarran* in the 2 fishery zones where the species interacts with minor fleets. Its vulnerability gradient ranges from 2.18 to 1.92 values.
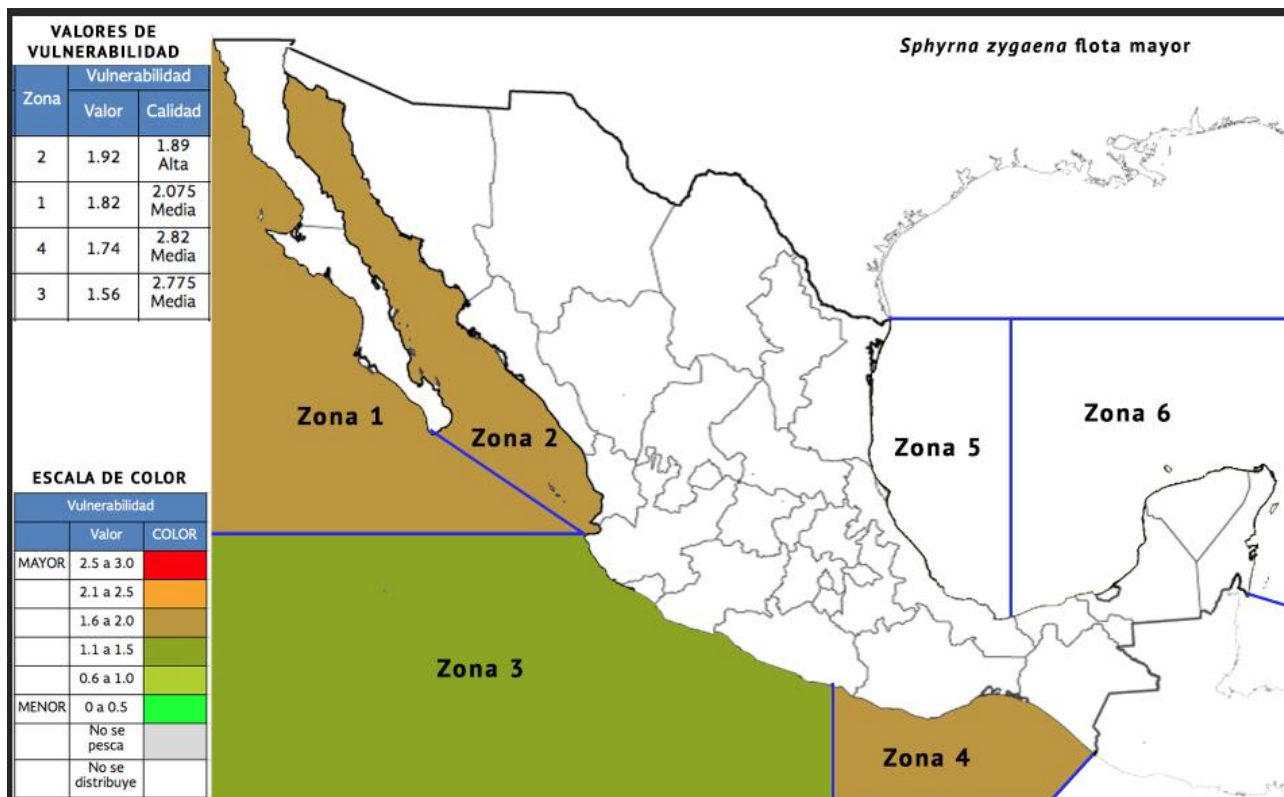
Figure 4

VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad	
	Valor	Calidad
2	1.92	1.89 Alta
1	1.82	2.075 Media
4	1.74	2.82 Media
3	1.56	2.775 Media

ESCALA DE COLOR

	Vulnerabilidad	
	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Sphyrna zygaena flota mayor

Figure 4. Graphic representation of the vulnerability gradient of *S. zygaena*, for major fleets in the 4 fishery zones where the species occurs. Its vulnerability gradient ranges from 1.56 to 1.92.
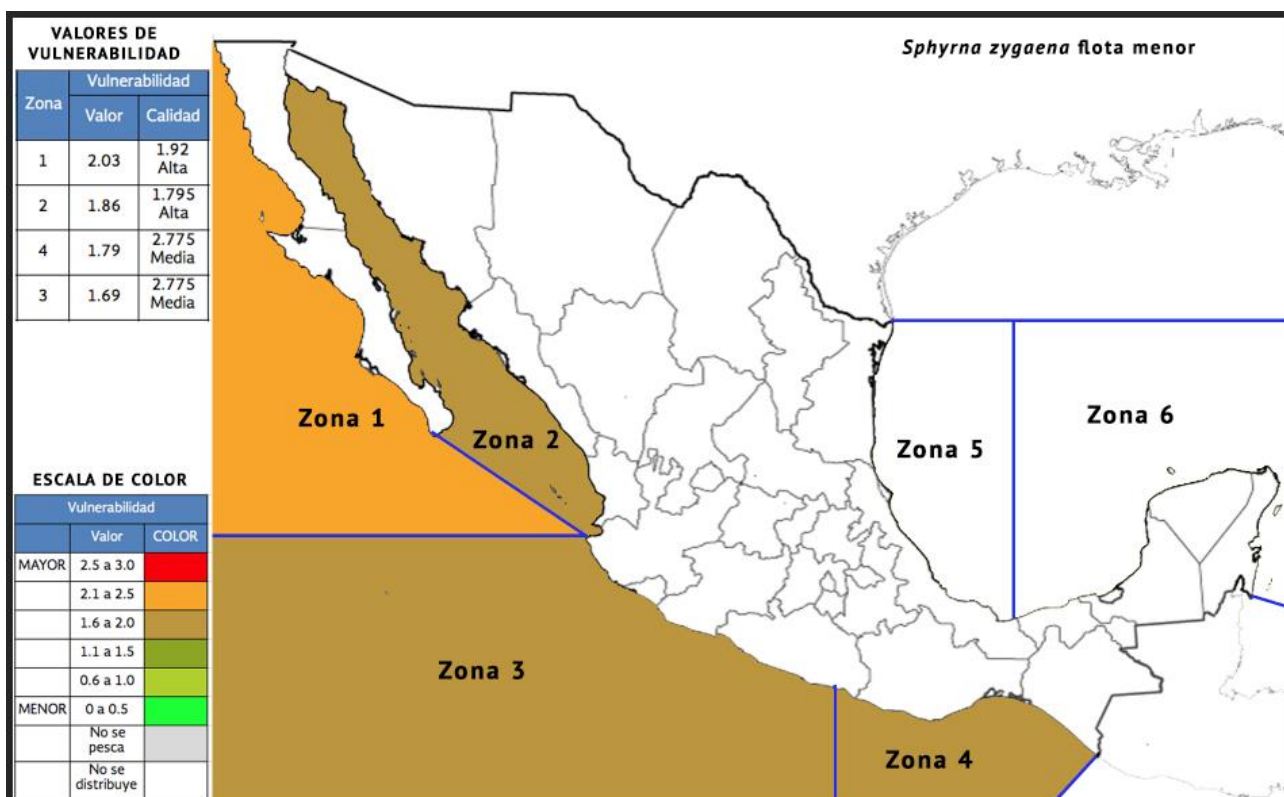
Figure 5

VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad	
	Valor	Calidad
1	2.03	1.92 Alta
2	1.86	1.795 Alta
4	1.79	2.775 Media
3	1.69	2.775 Media

ESCALA DE COLOR

	Vulnerabilidad	
	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Sphyrna zygaena flota menor

Figure 5. Graphic representation of the vulnerability gradient of *S. zygaena* for minor fleets in the 4 Fishery Zone where the species occurs. Its vulnerability gradient ranges from 1.69 to 2.03.
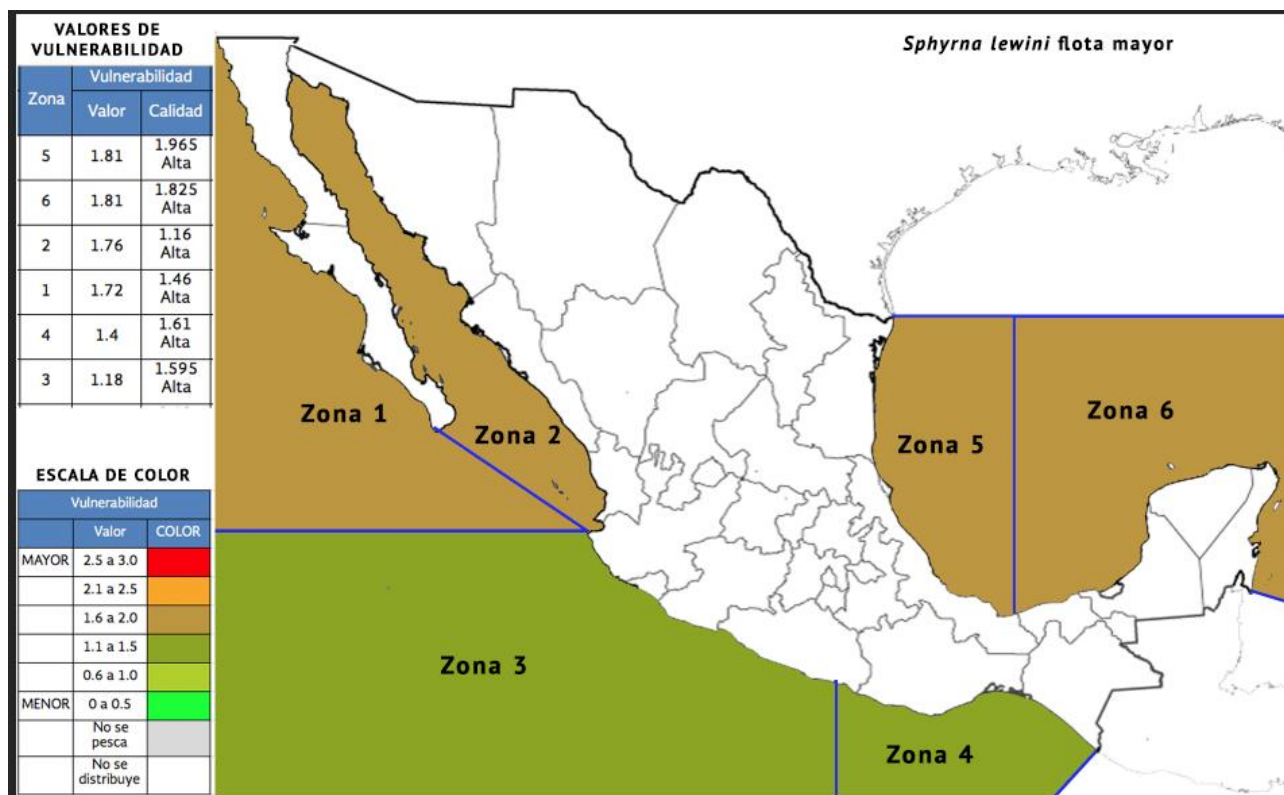
VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad Valor	Calidad
5	1.81	1.965 Alta
6	1.81	1.825 Alta
2	1.76	1.16 Alta
1	1.72	1.46 Alta
4	1.4	1.61 Alta
3	1.18	1.595 Alta

ESCALA DE COLOR — Vulnerabilidad

	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Sphyrna lewini flota mayor

Figure 6. Graphic representation of the vulnerability gradient of *S. lewini* in the 6 fishery zones in Mexico for major fleets. Its vulnerability gradient ranges from 1.18 to 1.81.
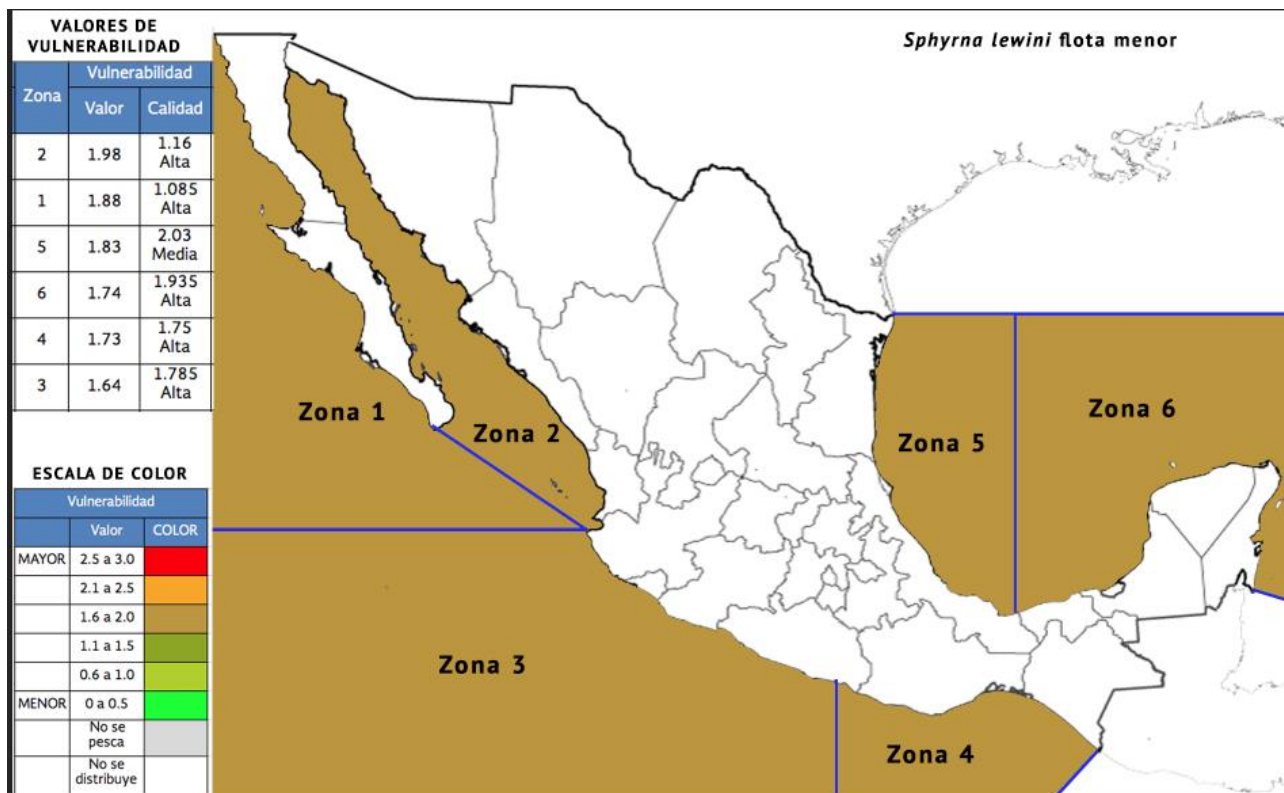

VALORES DE VULNERABILIDAD

Zona	Vulnerabilidad Valor	Calidad
2	1.98	1.16 Alta
1	1.88	1.085 Alta
5	1.83	2.03 Media
6	1.74	1.935 Alta
4	1.73	1.75 Alta
3	1.64	1.785 Alta

ESCALA DE COLOR — Vulnerabilidad

	Valor	COLOR
MAYOR	2.5 a 3.0	
	2.1 a 2.5	
	1.6 a 2.0	
	1.1 a 1.5	
	0.6 a 1.0	
MENOR	0 a 0.5	
	No se pesca	
	No se distribuye	

Sphyrna lewini flota menor

Figure 7. Graphic representation of the vulnerability gradient in minor fleets for *S. lewini* in the 6 fishery zones in Mexico. Its vulnerability gradient ranges from 1.64 to 1.98.

2.1.2. Species vulnerability per littoral

The littoral-based assessment was achieved by taking into consideration the previously obtained productivity and susceptibility values per species, per littoral, based on the following criteria:

a) The productivity-related information voids in certain fishery zones where complemented with data reported for other fishery zones, giving priority to the following:
- Species-specific information in the fishery zone
- Species-specific information in the concerned littoral
- Species-specific information in other littoral
- Species-specific information in other parts of the world
- Information on 'sister' species (i.e. of the same genus)

b) Bearing in mind that the assessment method employed is for data-deficient fisheries, in the cases where certain fishery zones lacked information for a susceptibility attribute, and based on a precautionary approach, the information considered was that of other fishery zones of the same littoral.

c) Averages were obtained for each species-littoral attribute; with the exception of the horizontal-match attribute, where the percentage considered was that of the match of all minor and major fleets per littoral, taking into consideration the distribution per species as recognized by the IUCN and complemented by recent catch data.

Table 1 shows the result of the vulnerability values for each species and fleet in both littorals, with the same color gradient used for fishery zones, as well as the information quality.

Figure 8 shows the vulnerability obtained on the basis of the productivity (axis X, with a 3-1), and the susceptibility (axis Y, with a 1-3 scale). Each point of the graphics represents the diversity of species targeted per fleet. The further any given point is from the origin, the bigger its Euclidian distance is from the origin, and hence the higher its vulnerability. In this sense:
- In the Atlantic littoral the most vulnerable species is *S. mokarran*, for both types of fleets.
- In the Pacific littoral, the most vulnerable species is *S. mokarran* for major fleets, and *S. zygaena* for minor fleets.
- The information quality for *S. lewini* was high in the Pacific (both fleets), as well as in minor fleets in the Atlantic. The remaining species and fleets showed medium-quality information.

Table 1. Species productivity, susceptibility and vulnerability values (Euclidian distance between the point in the graphic and the origin), including the quality of the information corresponding to each of the littorals. The data is arranged from higher to lower vulnerability.

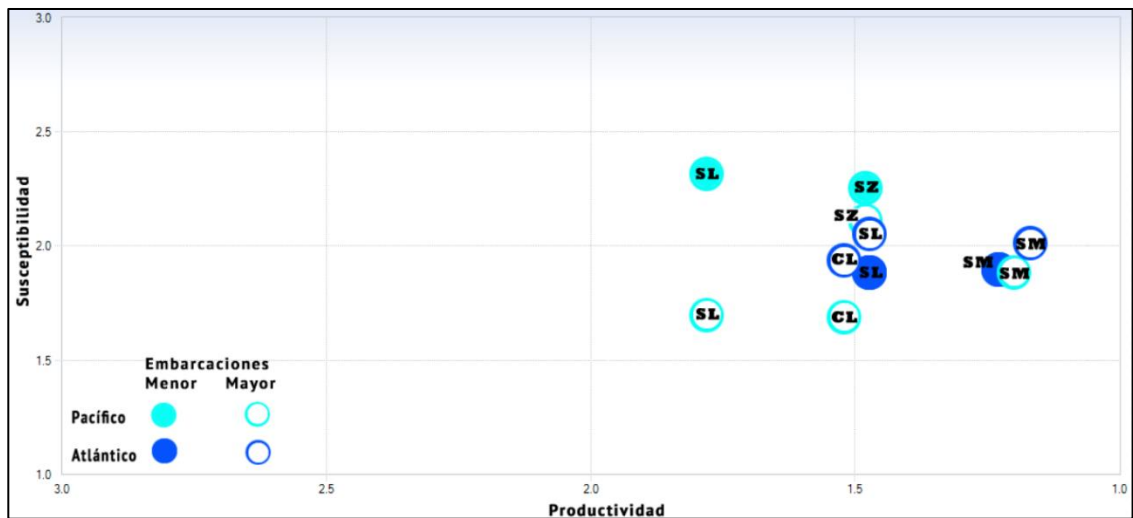| Littoral	Fleet	Species	Productivity		Susceptibility		Vulnerability		
			Value	Quality	Value	Quality	Value	Quality	
Atlantic	Major	*Sphyrna mokarran*	1.17	1.67	2	2.48	**2.09**	**2.07**	**Medium**
	Minor	*Sphyrna mokarran*	1.23	1.62	1.89	2.67	**1.98**	**2.14**	**Medium**
	Major	*Sphyrna lewini*	1.47	1.4	2.05	2.39	**1.86**	**1.89**	**High**
	Minor	*Sphyrna lewini*	1.47	1.4	1.88	2.48	**1.77**	**1.94**	**High**
	Major	*Carcharhinus longimanus*	1.52	3.07	1.94	2.45	**1.75**	**2.76**	**Medium**
Pacific	Major	*Sphyrna mokarran*	1.2	4.67	1.89	1.89	**2.01**	**3.28**	**Medium**
	Minor	*Sphyrna zygaena*	1.48	3.13	2.25	1.39	**1.97**	**2.26**	**Medium**
	Major	*Sphyrna zygaena*	1.48	3.13	2.11	1.62	**1.88**	**2.37**	**Medium**
	Minor	*Sphyrna lewini*	1.78	1.55	2.32	1.3	**1.8**	**1.42**	**High**
	Major	*Carcharhinus longimanus*	1.52	3.07	1.69	1.67	**1.63**	**2.37**	**Medium**
	Major	*Sphyrna lewini*	1.78	1.62	1.7	1.26	**1.41**	**1.44**	**High**

Figure 8. Productivity-susceptibility interaction in the Atlantic and Pacific littorals for: SL = *Sphyrna lewini*, SM = *Sphyrna mokarran*. SZ = *Sphyrna zygaena* y CL = *Carcharhinus longimanus* in major fleets (hollow circles) and minor fleets (filled in circles) in the Oceanic (light blue) and Atlantic (dark blue) littorals.

2.2. MRisk

A total of 10 criteria of the MRisk where assessed, per the categories of: status of the population, adaptive management system, and generic management (**Annex 1**).

On this basis, the information obtained per MRisk category was added up for each fleet. Considering the assessment scale proposed by Lack *et al*. (2014), which ranges from 6-28 points (values between 6-13 indicate a high risk; 13-21 indicate medium risk; and 21-28 indicate minor risk), the MRisk of these species in Mexico is high. The reliability of this information was assessed on a 1-50 point based scale (1-20 indicates a high reliability; 20-40 a medium reliability; and 40-50 a low reliability). Hence, the information of the MRisk outcome is high.

Given that the management measures for shark species in Mexico are implemented at a general level, with adjustments based on the fleet type, the assessment carried out distinguished between minor and major fleets (**Table 2**). On the basis of this assessment, it was possible to identify that in Mexico there are general management measures on a "sharks" group level within the national legal framework which reduce the impact of harvest on the populations and shark species, namely:
- The General Act on Fisheries and Sustainable Aquaculture (DOF, 2007)
- Bans (DOF 2013 and 2014)
- Mexican Official Standard for Responsible Harvest of Sharks and Stingrays (NOM-PESC-029-2006; 2007)
- National Action Plan for the Management and Conservation of Sharks, Stingrays, and related species in Mexico (PANMCT; CONAPESCA-INP, 2004). And,
- The National Fisheries Letter (DOF, 2010)

The above mentioned legal framework requires the generation of data on landings and harvest efforts, landing information provided by all fleets (whether minor or major) to INAPESCA. By contrasting the data provided by major and minor fleets, it was found that regardless of the littoral and harvested species, the MRisk for major fleets is lower (since they have surveillance based on radio-buoys and an on-board observer program), in contrast to minor fleets (where surveillance activities are carried out in the coast).

Table 2. MRisk values for major and minor fleets, based on the adjusted Lack *et al*. (2014) methodology.

Minor fleets					
Category	Valor Average	Ponderation	Outcome	International trade factor*	Quality**
Population status	1	2	2	1.6	1
Adaptive management system	2	4	8	6.4	9
General management	2.7	1	2.7	2.2	4
Final value				**10.2**	**14**
Major fleets					
Category	Average	Ponderation	Outcome	International trade factor*	Quality**
Population status	1	2	2	1.6	1
Adaptive management system	2.1	4	8.5	6.8	7

General management	3.2	1	3.2	2.6	2
Final value				**11.0**	**10**

*Multiplied by a factor of 0.8, considering it is a species of high international demand, and based on Lack *et al.* (2004)
**Based on a modification of the assessment scale, where 1 represents the best information quality, and 5 the worst.

3. Conclusions

a) None of the assessed species presented minimum vulnerability from harvest values (0-0.5), neither higher vulnerability values (2.4 a 3).
b) *S. lewini* and *C. longimanus* consistently showed an intermediate vulnerability in throughout all fishery zones and types of fleets (with values lower to 2). Particularly, *S. lewini* obtained the lower vulnerability values in fishery zones 1, 3 and 4; whereas *C. longimanus* showed lower vulnerability in zone 3 for major fleets.
c) *S. mokarran* showed the highest vulnerability values in all fishery zones.
d) *S. zygaena* showed medium vulnerability values in all zones and types of fleet, with the exception of zone 1 for minor fleets, where it showed a high vulnerability.
e) Concerning the MRisk, regardless of the species subject to harvest, the management by risk for major fleets is lower than that of minor fleets; hence, it is advisable to improve the management and surveillance activities in the latter.
f) These outcomes will be of great use for the formulation of non-detriment findings (NDFs), since they provide information on vulnerability and risk by management of the concerned species, at the point of origin of the harvest at fishery zone, littoral and fleet scale.

4. References

Lack, M., Sant, G., Burgener, M. and Okes, N. (2014). Development of a Rapid Management-Risk Assessment Method for Fish Species through its Application to Sharks: Framework and Results. Report to the Department of Environment, Food and Rural Affairs. Defra Contract No. MB0123.

Productivity-Susceptibility Analysis (PSA). 2015. Consultado en línea el 1 de enero del 2015 [http://nft.nefsc.noaa.gov/PSA.html].

Patrick, W. S., Spencer, P., Link, J., Cope, J., Field, J., Kobayashi, D., ... & Overholtz, W. (2010). Using productivity and susceptibility indices to assess the vulnerability of United States fish stocks to overfishing. *Fishery Bulletin*, *108*(3), 305-322.

Annex 1.- PSA and MRisk formats used at the Workshop

PSA format modified from Patrick *et al.*, 2010.

#	Weighting	Description	Name of the attribute	High (3)	Medium (2)	Low (1)
Productivity						
1	4	Intrinsic population growth rate	R	>0.2	0.1-0.2	<0.1
2	3	Average expected máximum age for the population under natural conditions	Maximum age (years)	8	8 to 23	> 23
3	2	Maximum recorded length for the species	Max. length (cm)	< 150 cm	150-250 cm	> 250 cm
4	3	Constant that measures the rate of which a species achieves its max. size	von Bertalanffy constant	> 0.25	0.05-0.25	< 0.05
5	3	Proportion of sharks that die due to causes unrelated to harvest	Natural estimated mortality	> 0.38	0.16-0.38	< 0.16
6	4	Average number of Young produced by a female of a given size/age	Fecundity	> 66	34-66	< 34
7	3	Periodicity on which a species reproduces	Reproductive cycle	Biannual	Annual	Biennial or higher
8	2	Size at which 50% of the individuals are mature	Maturity length	100 cm	100-150 cm	> 150 cm
9	4	Age at which 50% of the individuals are mature	Maturity age	< 5 years	5 a 11 years	> 11 years
10	2	Levels within the trophic network. Predators are found in the higher levels.	Trophic level	<3.1	3.1-3.8	>3.8
Susceptibility						
#	Weighting	Description	Name of the attribute	High (3)	Medium (2)	Low (1)
11	4	Match (or coincidences) between fleets and population in fishery zones	Area coincidence	> 50%	25%-50%	< 25%
12	2	% of its distribution that the species occupies given the harvest	Geographic concentration	< 25%	25%-50%	> 50%
13	4	Probability of a fishery fleet to encounter the population in a water column	Vertical coincidence	> 50	25%-50%	< 25%
14	3	Number of fleets that participate in harvest	Size of the fleet (in * the ranges of major fleets)	>300 / >400*	100-300 / 200-400*	<100 / <200*
15	3	# of months that the fisheries are active in the fishery zones	Fishery seasonality	> 6	4 a 6	< 4
16	4	Average annual weight (kg) of harvest per fleet in any given fishery zone	Magnitude of harvest (kg)	>200	100 a 200	<100
17	3	Augmentation or reduction of the interaction between fisheries and species, given a seasonal migration	Seasonal migration	Major interaction	Not affected	Minor interaction
18	2	Augmentation or reduction of the interaction between fisheries and species, given aggregations due to alimentation of reproduction	Aggregations	Major interaction	Not affected	Minor interaction
19	2	Species vulnerability to harvest equipment due to its morphology	Morphology affects harvest	Major selectivity to harvest equipment	Moderate selectivity	Minor selectivity
20	3	Survival % when a species is liberated post-harvest	Post-harvest survival	< 33%	33% - 67%	> 67%
21	2	Target species, or bycatch species	Desirability or value of the fishery	Target species	Very common in bycatch	Uncommon in bycatch

MRisk format modified from Lack *et al.*, 2014.

		Values
Population status	1. *What is the status of each population (or species, when populations aren't clearly*	

		delimited)?	
		Overexploited	1
		Uncertain	1
		Unknown	1
		Overexploited, but at a level that allows their recovery	2
		Recovery of the stock is possible	2
		Overexploitation, where the stock is at a sustainable level, but subject to constant harvest	3
		Sustainable-level harvest	4
Adaptive management system	*Assessment and monitoring*	*2. There is collection of information that allows the assessment of the species/population?*	
		No data are known to be required	1
		Landing data is required	2
		Data on landings and harvest effort are required	3
		Incomplete information requirement	4
		3. Have the available data been assessed in favor of decision making processes?	
		No assessment	1
		Some assessments have been carried out	2
		Full stock assessments	4
		Specific management of species/populations	
		4. How is the fisheries management?	
		No species/population management in place	1
		Species by species management, yet it is not adaptive management	2
		Management of species/population, with some signs of adaptive management	3
		Adaptive management per species	4
		5. The management measures in place are appropriate for the species?	
		Not consistent recommendations	1
		Partially implemented scientific-based recommendations	2
		Appropriate measures	4
	Compliance	*6. How complete is the compliance regimen to support the specific management measures in place?*	
		No measures on compliance, or no information to assess if the compliance	1
		Very limited compliance measures	2
		Limited compliance measures	3
		Appropriate compliance measures	4
		7. What is the level of compliance recommended for the species or population?	
		No information	1
		Low level of compliance	2
		Acceptable level of compliance	3
		High level of compliance	4
		8. Is the lack of reports on illegal harvest considered a problem for the species or population?	
		It is considered a problem	1
		It is considered a problem, and there are measures set in place to address the issue, yet it is unclear if they are successful	2
		It is considered a problem, yet the measures set in place to address the issue are known to be successful	3
		It's not considered a problem	4
General fishery management		*9. Are there general management measures that can help reduce the impacts on the species or population?*	
		No measures set in place	1
		There are, yet they are unlikely to reduce the impact of harvest	2
		Yes, with some probability that they reduce the impact of harvest	3
		Yes, and they significantly reduce the impact of harvest	4
		10. How complete is the compliance regimen, in order to support the general management measures relevant to the species or population?	
		There are no known management measures	1
		Very limited management measures	2
		Limited management measures	3
		Measures relevant to the compliance regimen	4

Annex 2.- PSA values per species, fleet and fishery zone, obtained during the Workshop

Fishery zone	Fleet	Species	Productivity		Susceptibility		Vulnerability		
			Value	Quality	Value	Quality	Value	Quality	Quality assessment
1	Minor	*Sphyrna zygaena*	1.57	2.4	2.44	1.44	2.03	1.92	High
1	Major	*Sphyrna mokarran*	1.23	2.6	1.81	2.31	1.94	2.455	Medium
1	Major	*Carcharhinus longimanus*	1.43	2.13	2.03	1.78	1.88	1.955	High
1	Minor	*Sphyrna lewini*	1.6	1.17	2.25	1	1.88	1.085	High
1	Major	*Sphyrna zygaena*	1.57	2.4	2.12	1.75	1.82	2.075	Medium
1	Major	*Sphyrna lewini*	1.6	1.17	2	1.75	1.72	1.46	High
2	Minor	*Sphyrna lewini*	1.6	1.2	2.41	1.12	1.98	1.16	High
2	Major	*Sphyrna zygaena*	1.57	2.47	2.28	1.31	1.92	1.89	High
2	Minor	*Sphyrna zygaena*	1.57	2.47	2.19	1.12	1.86	1.795	High
2	Major	*Sphyrna lewini*	1.6	1.2	2.06	1.12	1.76	1.16	High
2	Major	*Carcharhinus longimanus*	1.43	2.23	1.62	1.31	1.69	1.77	High
3	Major	*Sphyrna mokarran*	1.33	3.6	1.62	2.38	1.78	2.99	Medium
3	Minor	*Sphyrna zygaena*	1.67	3.8	2.03	1.75	1.69	2.775	Medium
3	Minor	*Sphyrna lewini*	2.07	2.07	2.34	1.5	1.64	1.785	High
3	Major	*Sphyrna zygaena*	1.67	3.8	1.81	1.75	1.56	2.775	Medium
3	Major	*Carcharhinus longimanus*	1.67	3.8	1.31	2.5	1.37	3.15	Medium
3	Major	*Sphyrna lewini*	2.07	2.07	1.72	1.12	1.18	1.595	High
4	Major	*Sphyrna mokarran*	1.2	3.8	2.06	2.47	2.09	3.135	Medium
4	Minor	*Sphyrna zygaena*	1.53	3.8	2.03	1.75	1.79	2.775	Medium
4	Major	*Carcharhinus longimanus*	1.53	4	1.94	2.81	1.74	3.405	Medium
4	Major	*Sphyrna zygaena*	1.53	3.8	1.94	1.84	1.74	2.82	Medium
4	Minor	*Sphyrna lewini*	1.8	2	2.25	1.5	1.73	1.75	High
4	Major	*Sphyrna lewini*	1.8	2	1.72	1.22	1.4	1.61	High
5	Minor	*Sphyrna mokarran*	1.1	1.67	2.06	2.72	2.18	2.195	Medium
5	Major	*Sphyrna mokarran*	1.1	1.67	1.91	2.59	2.11	2.13	Medium
5	Major	*Carcharhinus longimanus*	1.33	3.4	1.84	2.25	1.87	2.825	Medium
5	Minor	*Sphyrna lewini*	1.47	1.4	2	2.66	1.83	2.03	Medium
5	Major	*Sphyrna lewini*	1.47	1.4	1.97	2.53	1.81	1.965	High
6	Major	*Sphyrna mokarran*	1.23	1.67	1.97	2.31	2.01	1.99	High
6	Minor	*Sphyrna mokarran*	1.23	1.67	1.75	2.53	1.92	2.1	Medium
6	Major	*Carcharhinus longimanus*	1.33	3.4	1.78	2.38	1.84	2.89	Medium
6	Major	*Sphyrna lewini*	1.47	1.4	1.97	2.25	1.81	1.825	High
6	Minor	*Sphyrna lewini*	1.47	1.4	1.81	2.47	1.74	1.935	High