

# SHARKSAVERS

## Population Declines for Shark Species Prevalent in the Shark Fin Trade

Based on market studies (Clarke et al 2006), the following table summarizes the most prevalent species appearing in the shark fin trade (in descending order) and examples of recent population declines:

Species	Decline	Region	Source
<b>Blue Shark</b>	87%	Central Pacific	1950's to 1990's <sup>3</sup>
	60%	Northwest Atlantic	1986 to 2000 <sup>1</sup>
<b>Near Threatened</b>	80%	North Atlantic	mid 80s to early 90's <sup>2</sup>
	5-6%/yr	Central Pacific	1950s to 1990s <sup>3</sup>
<b>Hammerheads</b>	89%	Northwest and Western Central Atlantic	1986 to 2000 <sup>1,4</sup>
<b>Great Endangered</b>	>99%	Mediterranean Sea	Early 1800s to 2006 <sup>5</sup>
<b>Scalloped Endangered</b>	64% Scalloped 79% Great	South Africa	1978 to 2003 <sup>6</sup>
<b>Smooth Vulnerable</b>	80% Great	Eastern Atlantic	No dates provided <sup>7</sup>
	Collapsed Great	West Africa	No dates provided <sup>7</sup>
	85%	Australia	44 years <sup>8</sup>
	93%	Southern Brazil	1994 to 2008 <sup>9</sup>
	98% scalloped 99% smooth	Northwest Atlantic	1972 to 2000 <sup>10</sup>
	62%	Mexico	No dates provided <sup>11</sup>
	90%	US Atlantic	1986 to 2000 <sup>1</sup>
	Collapsed Scalloped	Belize	1980s (29)
	>99%	Gulf of Mexico	Since 1834 <sup>10</sup>
<b>Silky Sharks Vulnerable</b>	63%	Worldwide	2000 to 2004 <sup>12</sup>
	85%	Northwest Atlantic	19 years <sup>13</sup>
	91%	Gulf of Mexico	40 years 3 generations <sup>14</sup>
	65%	East Central Pacific	1993 to 2004 <sup>12</sup>
	65%	Southeast Pacific	1993 to 2004 <sup>12</sup>
	90%	Tropical central Pacific	No dates provided <sup>12</sup>
	60%	Costa Rica	1991 to 2000 <sup>12</sup>
<b>Oceanic Whitetip Vulnerable</b>	70%	Northwest and West Central Atlantic	1992 to 2000 <sup>15</sup>
	99%	Gulf of Mexico	40 years <sup>15</sup>
<b>Thresher Sharks Vulnerable</b>	50-80% Common	Northwest and Western Central Atlantic	1986 to 2005 <sup>15</sup>

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	83% Bigeye	Eastern Central Pacific	1950s to 1990s <sup>16</sup>
	70% Common	Eastern Central Pacific	Late 1970s to 1980s <sup>17</sup>
	60-75% Common	Northeast Atlantic	1990s to 2002 <sup>18</sup>
<b>Sandbar Shark</b>	65%	Australia	No dates provided <sup>19</sup>
	97%	Northwest Pacific	1992 to 2004 <sup>20</sup>
	84-97%	Northwest Atlantic	13 to 41 years <sup>21</sup>
	85-90%	South Atlantic U.S.	10 years <sup>22</sup>

<b>Shortfin Mako</b>	>99%	Mediterranean Sea	1950s to 1970s <sup>23</sup>
	>99%	Adriatic Sea	Late 1800s/early 1900s to 1972 <sup>24</sup>
	48%	Northwest Atlantic	1992 to 2005 <sup>25</sup>
	> 50% in CPU	Northwest Atlantic	No dates provided <sup>26</sup>
	40%	Northwest Atlantic	1986 to 2000 <sup>1</sup>

<b>Bull Shark</b>	>99%	Northwest Atlantic	1986 to 2000 <sup>1</sup>
	98.6-99.9%	Lake Pontchartrain, U.S.	1953 to 2005 <sup>27</sup>

<b>Dusky Shark</b>	>75%	Southwest Australia	1970s to 2000 <sup>22</sup>
	62-92%	Northwest and West Central Atlantic	1974 to 2003 <sup>28</sup>
	79%	Gulf of Mexico	mid 1950s to late 1990s <sup>14</sup>

<b>Tiger Shark</b>	>97%	Northwest Atlantic	1972 to 2000 <sup>1</sup>
	65%	U.S.	1986 to 2000 <sup>1</sup>

1 Baum et al. 2003

2 Heuter & Simpfendorfer 2008

3 Ward and Myers 2005

4 Jiao et al. 2009

5 Ferretti et al. 2008

6 Dudley and Simpfendorfer 2006

7 Camhi et al. 2009

8 De Jong & Simpfendorfer 2009

9 Kotas 2004; 2009

10 Myers et al. 2007

11 Soriana et al. 2006

12 Bonfil et al. 2009

13 Baum et al. in press

14 Baum and Myers 2004

15 U.S. Pelagic Longline logbook data

16 U.S. Pelagic Longline research survey

17 Drift Gillnet Fishery landings from the US Pacific

18 Goldman et al. 2009

19 McAuley et al. 2005

20 Japanese Fisheries Agency 2006

21 Myers et al in prep (Analyses of survey data)

22 Musick et al. 2009

23 Boero and Carli 1979

24 Soldo and Jardas 2002

25 Cortes et al. in prep

26 2004 ICCAT Stock Assessment

27 O'Connell et al. 2007

28 NMFS Stock Assessment

29 R.T. Graham pers. obs. 2006



## **Shark Populations Declines: More detail**

### **Blue Shark – Near Threatened – approaching threatened (vulnerable – high risk of extinction) criteria – Trend Unknown:**

- 60% decline in the Northwest Atlantic from 1986 to 2000  
Baum et al. 2003
- 80% decline in males from the mid 80s to the early 90s in the North Atlantic  
Heuter and Simpfendorfer 2008
- 5-6% decline per year since 1995 in the Central Pacific  
Ward and Myers 2005
- 87% decline from the 1950's to 1990's in the Central Pacific  
Ward and Myers 2005

### **Hammerhead Sharks:**

#### **Great Hammerhead – Endangered – Very High Risk of Extinction – Decreasing**

#### **Scalloped Hammerhead – Endangered – Very High Risk of Extinction – Unknown**

#### **Smooth Hammerhead – Vulnerable – High Risk of Extinction - Decreasing**

- Hammerheads: Northwest and Western Central Atlantic: 89% decline since 1986  
An analysis of US pelagic longline logbook - Baum *et al.* 2003; Jiao *et al.* 2009
- Hammerheads: Mediterranean Sea: >99% since the early 19th century  
Ferretti *et al.* 2008
- South Africa: 64% for scalloped hammerhead, 79% for great hammerhead from 1978-2003  
Reliable species-specific catch information from the shark nets set off the beaches of Kwa-Zulu Natal during 1978–2003 show about a 64% decline in CPUE for *S. lewini* and a 79% decline for *S. mokarran* over this 25-year period  
(Dudley and Simpfendorfer 2006)
- Eastern Atlantic: 80% decline of great hammerhead  
The highly vulnerable great hammerhead *S. mokarran* is believed to have undergone an 80% decline in the eastern Atlantic, where fisheries remain largely unmanaged and

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unmonitored (Anonymous 2002). Citation from “The Conservation Status of Pelagic Sharks and Rays” Report of the IUCN Shark Specialist Group. Feb. 2007

- West Africa: landings of great hammerheads have collapsed  
Landings of *S. mokarran* in West African fisheries have collapsed (Anonymous 2002). Citation from “The Conservation Status of Pelagic Sharks and Rays” Report of the IUCN Shark Specialist Group. Feb. 2007
- Hammerheads: Off Queensland coast in Australia: 85% decline over 44 years  
*de Jong and Simpfendorfer, 2009 - CITES CoP15 Analysis*
- Hammerheads: Southern Brazil: 93% decline between 1994 and 2008  
*Industrial landings of the Sphyrna group (mainly *S. lewini* and *S. zygaena*) in Santa Catarina State, southern Brazil underwent an overall decline of 93% between 1994 and 2008. **This was largely driven by rapid expansion in a gillnet fishery that targeted mainly hammerheads for the international fin trade (Ibid).** Steep declines in CPUE (kg/cruise) were also observed for hammerheads caught by longliners and bottom gillnetters based in the same region (Kotas, 2004; Kotas, 2009).*

*More than an 80% decline in Sphyrnid catches and CPUE was observed in a driftnet fishery supplying the fin trade operating along the southern Brazilian coast during the period 1995–2005 (Kotas et al., 2008).*CITES CoP15 Analysis

- Eastern seaboard’s longest continuous shark-targeted survey (UNC), conducted annually since 1972 off North Carolina found a decline of 98% for scalloped hammerhead, 99% or more for smooth hammerhead  
*Myers et al. 2007*
- Mexico: 62% decline in landings of Scalloped Hammerheads is reported from the southern Mexico Pacific coast.  
*Soriana et al., 2006*
- US Atlantic: Pelagic fishery logbook data has shown a decline of Great Hammerheads close to 90%  
*There is probably a lack of reporting of the catch of great hammerheads because this species is routinely finned and discarded, which is illegal in the US Atlantic Federal Waters (Commercial Shark Fishery Observer Program unpub. data). Both the pelagic and bottom longline observer programs have recorded a 2 to 3:1 ratio for *S. Lewini* to *S. mokarran*. **The meat is not valuable but the fins are high grade and bring in a good price, thus finning still occurs in the U.S. fishery.**  
*Baum et. al 2003**

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- Belize: Scalloped Hammerheads have been heavily fished since the 1980s and fishermen have reported dramatic declines, which led to the end of the fishery. Fishery pressure is sustained in Belize by Guatemalan fishermen.
- Gulf of Mexico: >99% decline of scalloped hammerhead since 1834  
“Shifting baselines and the decline of pelagic sharks in the Gulf of Mexico” *Julia K. Baum and Ransom A. Myers, Ecology Letters (2004) 7: 135-145*

## **Silky Shark – Vulnerable – High Risk of Extinction - Decreasing:**

- 63% decline from 2000 to 2004 worldwide  
FAO Catch Data per IUCN Assess. Ref: Bennett, M.B. & Kyne, P.M. 2003. *Carcharhinus dussumieri*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4.  
[www.iucnredlist.org](http://www.iucnredlist.org)
- 85% decline in 19 years in the Northwest Atlantic  
Baum et al. in Prep – per IUCN 2010 assessment
- 91% decline in 40 years (3 generations) in the Gulf of Mexico  
Baum and Myers 2004
- 65% decline from 1993 to 2004 in the East Central Pacific
- 65% decline from 1993 to 2004 in the Southeast Pacific
- 90% decline in the Tropical Central Pacific
- 60% decline in Costa Rica from 1991 to 2000  
IUCN 2010 Assessment

## **Oceanic Whitetip Shark – Vulnerable – High Risk of Extinction - Decreasing:**

- 70% decline from 1992 to 2000 in the Northwest and West Central Atlantic  
US Pelagic Longline logbook data
- 99% decline in 40 years in the Gulf of Mexico  
US Pelagic Longline logbook data

## **Threshers -- Common, Bigeye, Pelagic – Vulnerable – High Risk of Extinction - Decreasing:**

- 50 – 80% decline in Pelagic Threshers in the Northwest Atlantic from 1986 to 2005  
US Pelagic Longline logbook data
- 83% decline in Bigeye Threshers in the Eastern Central Pacific from the 1950s to the 1990s  
Pelagic Longline research surveys

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- 70% decline in Common Threshers in the Eastern Central Pacific from the late 1970s to 1980s  
Drift Gillnet Fishery landings from the US Pacific
- 50 to 80% decline in Common Threshers in the Northwest and Western Central Atlantic from 1986 to 2005  
US Pelagic Longline data
- 60 to 75% decline in Common Threshers in the Northeast Atlantic from the 1990s to 2002  
IUCN Assessment 2010

## **Sandbar Shark – Vulnerable – High Risk of Extinction – Decreasing:**

- 65% decline in Australia  
McAuley et al 2005
- 97% decline in the Northwest Pacific from 1992 to 2004  
Japan Fisheries Agency 2006
- 84 to 97% decline in the Northwest Atlantic in 13 to 41 years  
Analyses of survey data; Myers et al. In prep
- 85 to 90% decline in 10 years in the South Atlantic United States  
IUCN 2010 Assessment

## **Shortin Mako Shark – Vulnerable – High Risk of Extinction – Decreasing:**

- Greater than 99% decline in the Mediterranean from the 1950s to 1970s  
Boero and Carli 1979
- Greater than 99% decline in the Adriatic Sea from the late 19<sup>th</sup> century / early 20<sup>th</sup> century to 1972  
Soldo and Jardas 2002
- 40% decline in the Northwest Atlantic from 1986 to 2000  
Baum et al. 2003
- 48% decline from 1992 to 2005 in the Northwest Atlantic  
Cortes et al. In prep
- Greater than 50% decline in Catch per Unit Effort in the Northwest Atlantic  
2004 ICCAT Stock Assessment

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## **Bull Shark – Near Threatened – Approaching threatened status – Trend unknown.**

- Eastern seaboard's longest continuous shark-targeted survey (UNC), conducted annually since 1972 off North Carolina – decline of 99% or more for bull sharks (*Carcharhinus leucas*)  
Baum et al. 2003
- Analysis of fishery independent data – 1953 to 2005 – Lake Pontchartrain. Bull sharks (*C. leucas*) declined by 98.6% in gillnets and became functionally extinct in beach seines with a decline of 99.9%.  
O'Connell et al. 2007

## **Dusky Shark – Vulnerable – High Risk of Extinction - Decreasing:**

- Greater than 75% decline in Catch per Unit Effort from the early 1970s to 2000 in Southwest Australia  
“Recent stock assessment” per IUCN Red List website – assessment year 2007
- 62 to 92% decline from 1974 to 2003 in the Northwest and West Central Atlantic NMFS Stock Assessment (US National Marine Fisheries Service)
- 70% decline from 1992 to 2005 in the Northwest and West Central Atlantic US Atlantic Pelagic longline observer data analysis - Baum et al. In prep
- 79% decline in the Gulf of Mexico from the mid 1950s to the late 1990's  
Baum and Myers 2004 - US Pelagic longline research surveys and observer data

## **Tiger Shark – Near Threatened – Approaching Threatened status – Trend unknown:**

- Eastern seaboard's longest continuous shark-targeted survey (UNC), conducted annually since 1972 off North Carolina – decline of 97% or more for tiger sharks  
Baum et. al. 2003
- Logbook data from US pelagic long-line fishery targeting tuna and billfish 1986 to 2000 – decline of tiger shark catch of 65% over 15 years  
Baum et al. 2003

## **Evidence of Reduction in size:**

- Comparison of 1950s and 1990s longline data from the Tropical Pacific showed dramatic declines in body mass of large sharks – 50% or more for some species.
- The UNC survey also showed the loss of the largest individuals, with declines in mean lengths of blacktip, bull, dusky, sandbar, and tiger sharks of 17 to 47%, suggesting that overexploitation has left few mature individuals in these populations.