

Our current understanding of the ecology and fisheries of Blue and Porbeagle Sharks in Southwest waters

Porbeagle Shark © Richard Peirce



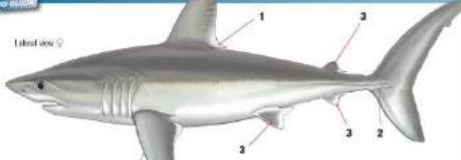

Blue Shark © Charles Hood



John Richardson & Cat Gordon

Porbeagle v. Blue Sharks

- Comparative life-histories
- Commercial fisheries
- Recreational angling
- *No Limits?*

Porbeagle Shark
Lamna nasus

SCIENTIFIC NAME
Lamna nasus (Linnaeus, 1758)


COMMON NAME
PORBEAGLE SHARK, Antares Maculatus Shark, Bottle-nosed Shark, Unguiculate Shark, Requin-Taupes Commun (Fr), Manxpa Sardiniens (It), Tikuna Sardiner (Es), Tintorea (Cs).

DISTRIBUTION
Circumpolar in temperate seas, including the North Pacific, Northwest Atlantic from Iceland and Russia to Morocco and Madeira, including the Mediterranean.

IDENTIFICATION
1 Large first dorsal fin with white line near tip.
2 Secondary keel on caudal fin.
3 Very small pelvic, anal and second dorsal fins.

COLOR
• White line near tip of first dorsal fin.
• Dark blue to grey dorsally.
• Pale to white ventrally.
• Adults are smaller and can be darker ventrally in the southern hemisphere.

BIOLOGY AND SIZE
• Born: 38-47cm. Mature: 200-230cm ♀, 150-170cm ♂. Max TL: 300cm.
• Maintains its body temperature through a heat-exchange system allowing it to range into temperate regions.
• 1-5 pups in each litter, average of 4. Gestation period is 8-9 months.
• Primarily a pelagic, preferring pelagic fish and cephalopods where abundant.






Blue Shark
Prionace glauca

SCIENTIFIC NAME
Prionace glauca (Linnaeus, 1758)

COMMON NAME
BLUE SHARK, Star Grog, Blue Whale, Piano Shark (Fr), Tikuna Aul (Es), Tintorea (Cs).

DISTRIBUTION
Circumpolar in temperate and tropical waters, Norway to South Africa in the East Atlantic.

IDENTIFICATION
1 Pectoral fins long and curved.
2 First dorsal fin closest to pelvic fins than pectoral fins.
3 Second dorsal fin equal in size to and directly above anal fin.
4 Caudal fin asymmetrical.

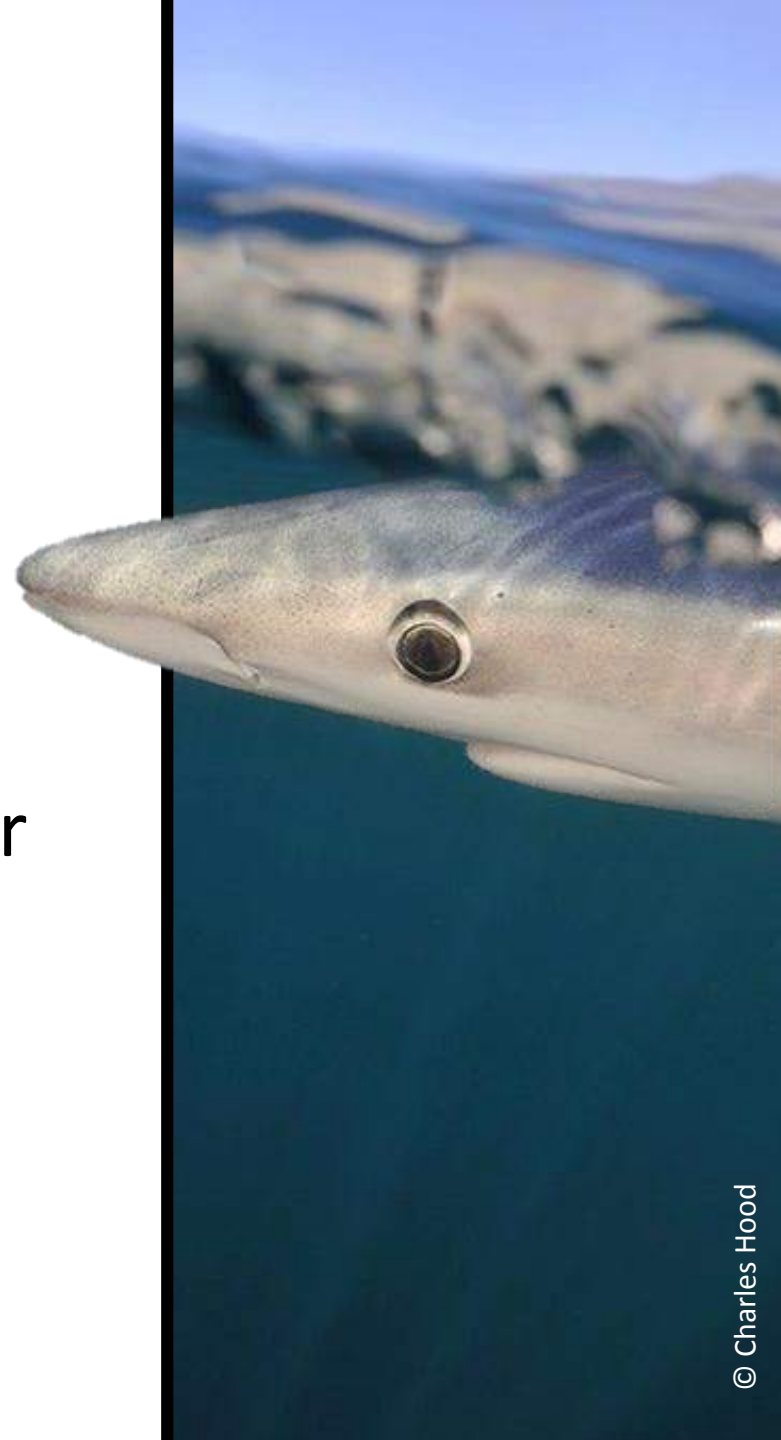
COLOR
• Dark blue dorsally.
• Metalic blue on flanks.
• Pure white ventrally.

BIOLOGY AND SIZE
• Born: 35-50cm. Mature: 221-323cm ♀, 128-293cm ♂. Max TL: 360cm.
• Litters of 4-135 pups have been recorded. Pups remain in mothers' uterine areas for the first few years of life.
• An opportunistic feeder preying predominantly on pelagic teleost fish and cephalopods, although elasmobranchs, seabirds and odontocetes (possibly cetaceans) have been reported in diet.



Playing catch up...

- Fisheries management has historically focused on teleosts
- Aggregated reporting e.g. *'Skates and Rays'* *'Sharks'* or *'DS Squal'*
- Intrinsic vulnerability



Porbeagle v. Blue Shark: biology

	Porbeagle	Blue Shark
Max. length	365cm	383cm
Sexual maturity	F: 245cm (~13yrs) M: 195cm (~8yrs)	F: 221cm (~5-7yrs) M: 218cm (~4-6yrs)
Longevity	26 years (may be as high as 46 years in unfished pop.)	20 years
Fecundity	1-5 pups (average - 4)	4-135 pups (average - 35)
Gestation	8 – 9 months	9-12 months

Porbeagle v. Blue Shark: ecology

	Porbeagle	Blue Shark
Distribution	Wide-ranging; temperate & cold-temperate waters	Widespread; tropical & temperate waters
Population	Distinct NE and NW Atlantic sub-populations with little genetic mixing	North Atlantic Blues considered to be single sub-population
Habitat	Coastal & oceanic Surface – ~550m 1 - 18°C	Oceanic & pelagic Surface – 1,160m 12 - 20°C
Diet	Primarily a piscivore - teleosts (pelagic and demersal); also cephalopods. Forage away from sea surface during the day	Opportunistic: pelagic teleosts; cephalopods; other elasmobranchs; seabirds; cetaceans. Feed throughout 24hr period but reported to be more active at night

Porbeagle v. Blue Shark: movement

	Porbeagle	Blue Shark
Migration	<p>Strong seasonal migrations.</p> <p>During winter, Porbeagle move southward taking them out of the range of the UK fishing fleet.</p> <p>Migration linked to formation and breakdown of oceanographic fronts.</p>	<p>Clockwise trans-Atlantic migrations</p> <p>Trans-equatorial migrations noted</p> <p>Summer migrants to UK & Irish waters (mainly sub-adult females), from core population further south.</p>
Segregation	Aggregate by size & sex	Aggregate by size & sex
Status in NE Atlantic	Critically Endangered	Near Threatened

Commercial fisheries

Wider scope

Knock-on impacts of high-seas fisheries

Different trajectories

Porbeagle Shark



Porbeagle © Richard Peirce

- low volume
- high value

Blue Shark



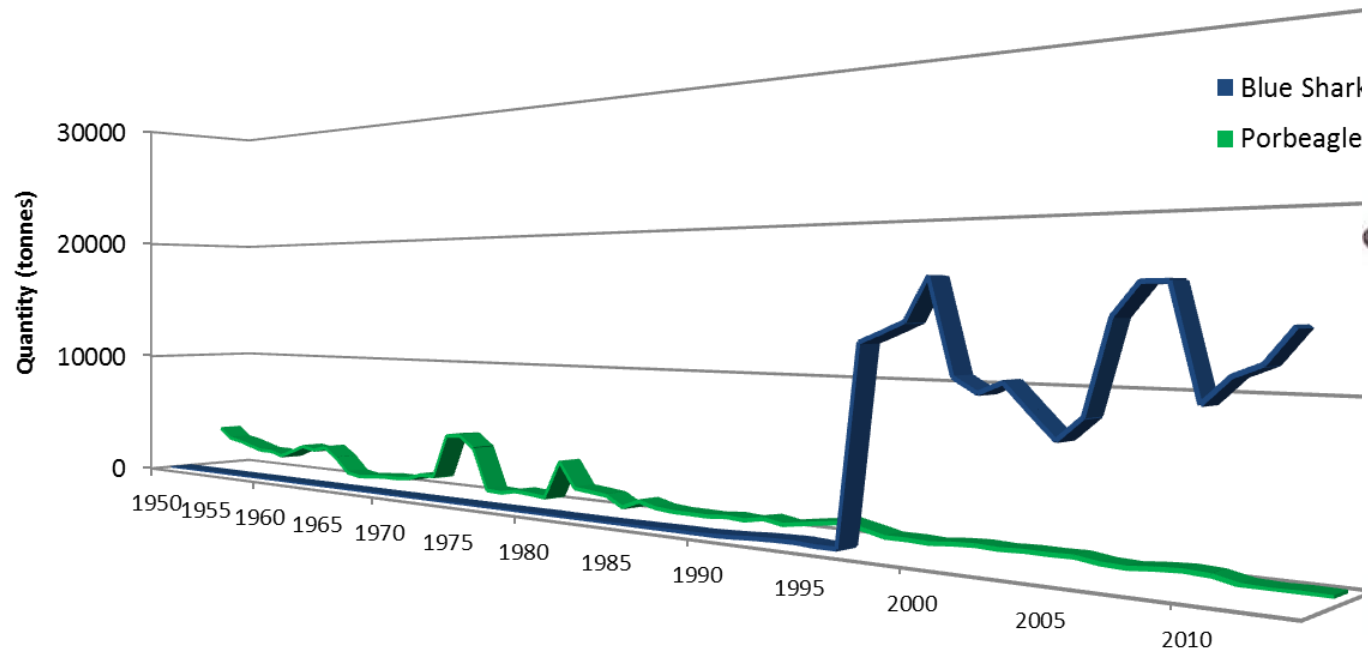
Blue Shark © Charles Hood

- high volume
- low value



Fishing vessel, Newlyn © RPM (CC BY-NC-ND 2.0).

Commercial landings



Reported landings (t): 1950-2013

Northeast Atlantic

All fleets

Source

FAO FishstatJ: *Global Capture Production*



Porbeagle fishery

Low volume – high value

Pre-2008: no management

2006 | IUCN Red List

2008 | TAC introduced Total Allowable Catch

2009 | Maximum landing size

2010 | Zero-TAC

2015 | *Prohibited Species*
sharktrust.org/advisories



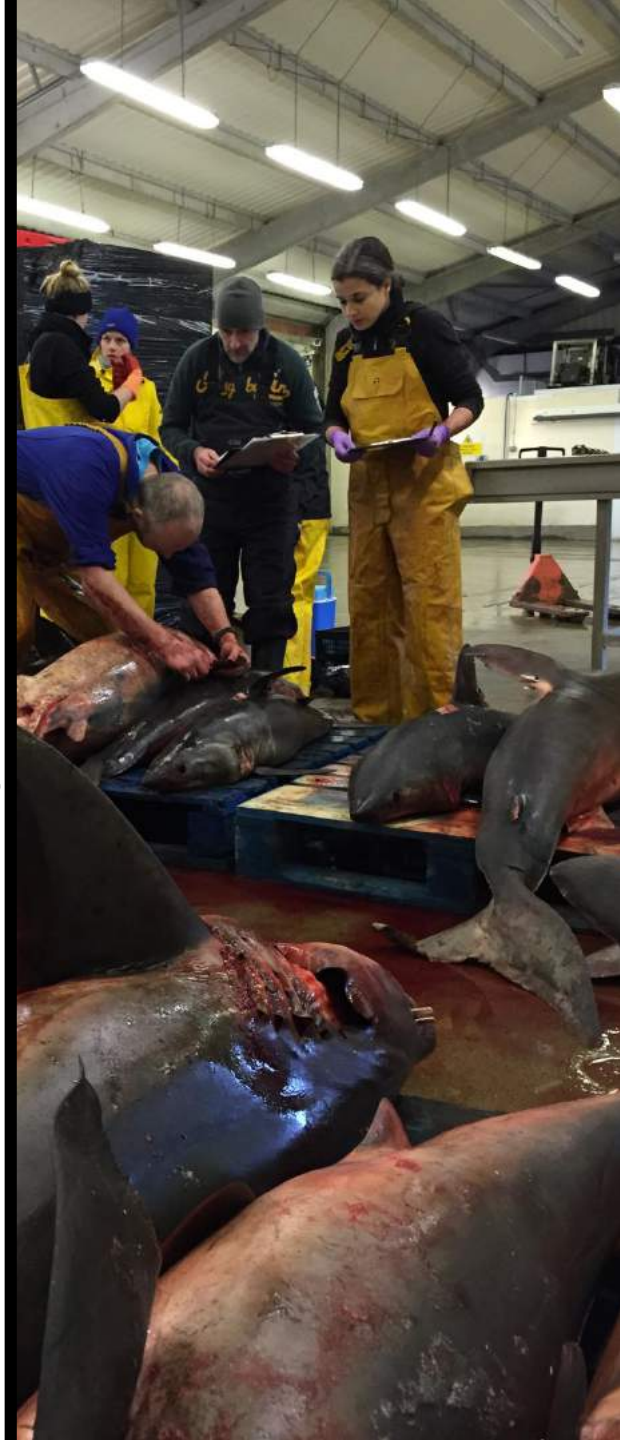
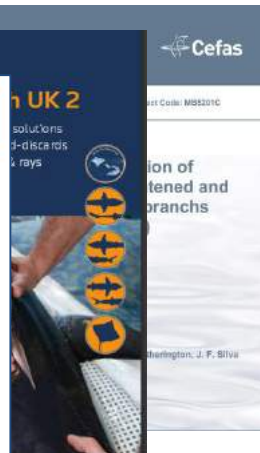
Porbeagle on Newlyn fishmarket 2007 © Rory Goodall



Porbeagle: 2016

Key issues

- 1 | *Prohibited* ≠ zero mortality
- 2 | No bycatch sampling
- 3 | Sale of non-EU caught Porbeagle
- 4 | Angling



Recreational angling

Target species

Catch and release

No management

Post-release mortality

Targeting **CR** species

Responsible angling

sharktrust.org/anglers



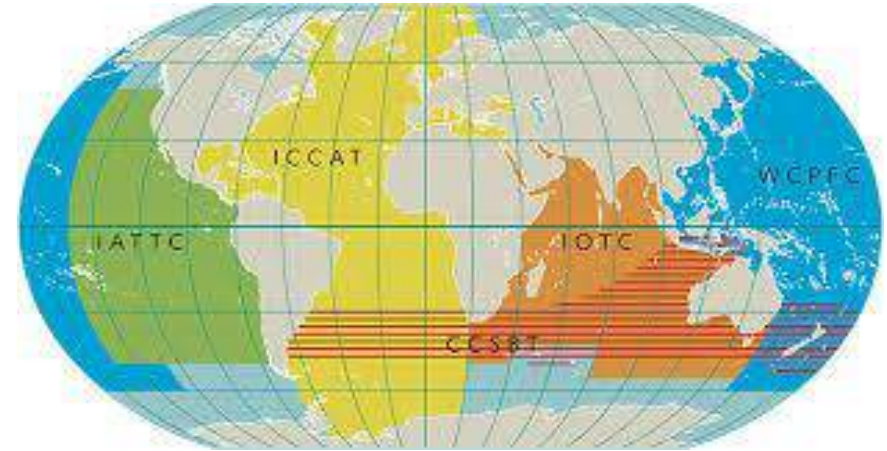
shark
conservation
on your smartphone



search: ST Angler

Blue Shark fisheries: the bigger picture

- High-seas
- Highly migratory
- Need management on an international scale
- RFMOs (remit for tuna and 'tuna like' fish)
- ICCAT



Blue Shark fisheries: the bigger picture

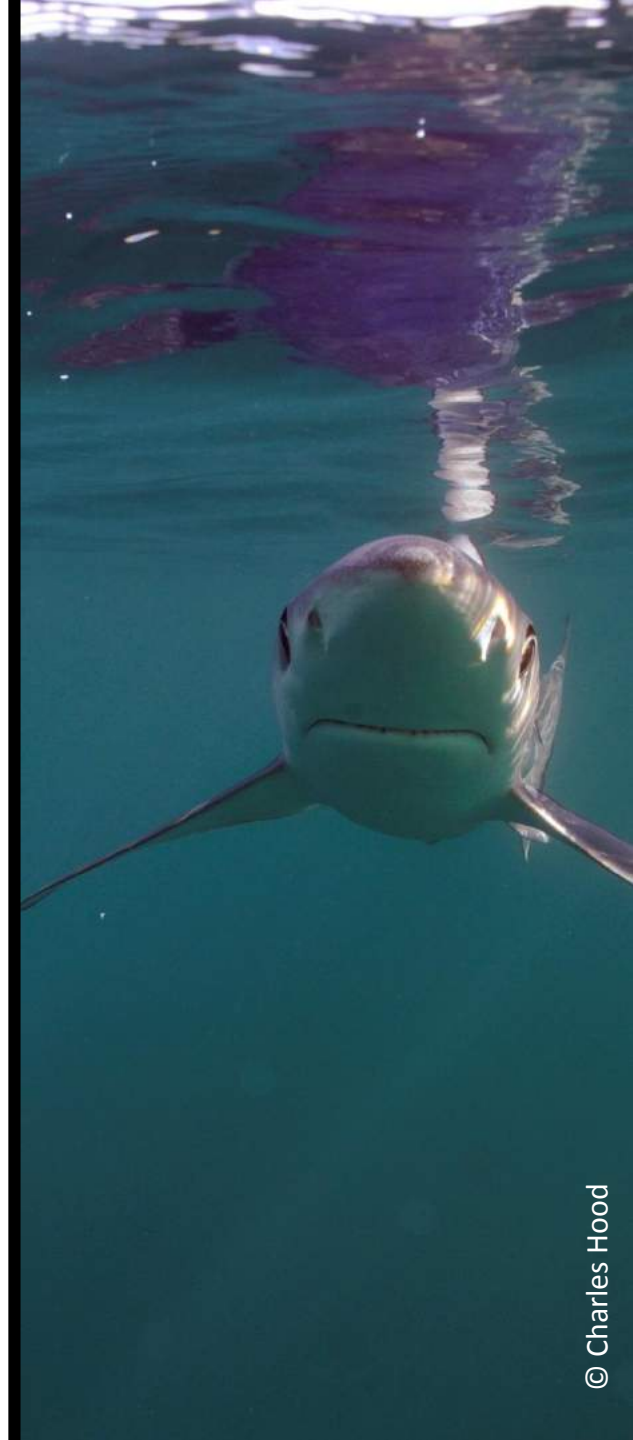
- Tuna and billfish longline fisheries
- Spanish & Portuguese vessels
- 80% of longline catches can be sharks
- *Wanted* bycatch
- Central to profitability of longline fleet
- **“indispensable to the profitability of the fleet.”**
- Drivers – fins and meat



Blue Shark fisheries: the bigger picture

...no management!

- EU landings have tripled since 2002
- Estimated 13 million Blues reported landed from Atlantic & Med between 2000 – 2012





- Unlimited and escalating shark fishing pressure
 - Highlights urgent need for science-based catch limits
 - Species open to unchecked exploitation and unrestricted trade
 - A pragmatic request to underpin sustainability
-
- Calls on UK Govt, European Commission, RFMOs to acknowledge that management is urgently required for commercially exploited species
-
- **Stop uncontrolled shark fishing now.**

ICCAT: the asks

- Establish precautionary caps on Blue Shark & Shortfin Mako catches
- Prohibit retention of Porbeagle (currently only *Prohibited* by EU and Uruguay)





“...current regional assessment is Near Threatened, however based on the previously mentioned decline of close to 30% it is suspected that following more extensive assessment that the status of Atlantic Blue Shark will be increased to Endangered.”

IUCN 2015



**< NEAR
THREATENED >**
NT

VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
VU	EN	CR	EW	EX

“...If fisheries with no effective management can be certified then we must seriously re-evaluate our position and our future engagement with the MSC system.”

WWF July 2015



In summary

PORBEAGLE

- Strict management \neq zero mortality
- Continued collaboration crucial
- Recreational fisheries

BLUE SHARK

- Atlantic's most heavily fished shark
- No catch limits
- *Porbeagle* as an example
- Knock-on effects for the Southwest





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