SHARKS IN THE BALTIC

Distribution, use and conservation of cartilaginous fishes in the Baltic Sea

EXECUTIVE SUMMARY

SHARK ALLIANCE

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The Baltic Sea's low salinity, extreme hydrological circumstances and physical barriers limit but do not preclude the distribution of sharks, rays and chimaeras (cartilaginous fishes). More than 30 such species have been found in these waters, some commonly. These exceptionally vulnerable fish are poorly studied and virtually unprotected in the face of ongoing fishing pressure and habitat degradation. This inattention hampers the understanding and conservation of these species.

Water exchange from the North Sea into the Baltic is greatly slowed by a narrow mixing zone. High density seawater flows in toward the bottom while lower density, low-salinity water leaves near the surface. This brackish sea declines in salinity from west to east and south to north. Vertical circulation is restricted by layering caused by density differences between sea and fresh water. Topographic barriers impede both water influx and species distribution. Baltic currents are highly variable. Strong influx events occur once a decade, half as frequently as in the past. These conditions limit the distribution of marine Baltic flora and fauna.

Specialized organs and processes in sharks and rays allow them to osmoregulate and adapt to the ever-changing salinity levels of the Baltic Sea. Adapting to heavy fishing pressure is a more difficult challenge for these species, due to their tendency to grow slowly, mature late and produce few young.

Considered common in the Western Baltic, Skagerrak and Kattegat are the **thorny skate** (*Amblyraja radiata*), **spurdog** (*Squalus acanthias*) and **small-spotted catshark** (*Scyliorhinus canicula*). The swift and highly migratory **blue** and **porbeagle sharks** (*Prionace glauca, Lamna nasus*) are also found in the Skagerrak and Kattegat and occasionally venture into the Western Baltic. The same is true for the '**common**' varieties of **skate, stingray** and **angel shark** *(Dipturus batis, Dasyastis pastinaca, Squatina squatina)* as well as the **blackmouth dogfish** *(Galeus melastomus),* **thornback ray** *(Raja clavata)* and **bluntnose sixgill shark** *(Hexanchus griseus).*

The waters of the Skagerrak or Kattegat serve as the edge of the range for a diverse array of cartilaginous fishes, from the immense filter-feeding **basking shark** (*Cetorhinus maximus*) to the deep-dwelling **velvet belly shark** (*Etmopterus spinax*) and the distinctive **longnose skate** (*Dipturus oxyrinchus*). In addition, **tope** (*Galeorhinus galeus*), **starry smoothhounds** (*Mustelus asterias*) and **bramble sharks** (*Echinorhinus brucus*), as well as **sandy, shagreen, round and sail rays** (*Leucoraja circularis, Leucoraja fullonica, Rajella fyllae, Dipturus linteus*) and one species of **chimaera (rat or rabbit fish)** (*Chimaera monstrosa*) are found in this area.

The distinctive **Greenland shark** (*Somniosus microcephalus*), **common thresher** (*Alopias vulpinus*) and **angular roughshark** (*Oxynotus centrina*) occasionally enter the region, as do the **spotted ray** (*Raja montagui*), **nursehound** (*Scyliorhinus stellaris*) and two species of **electric rays** (*Torpedo marmorata* and *Torpedo nobiliana*). There are single records of the wide-ranging **oceanic whitetip shark** (*Carcharhinus longimanus*) and **smooth hammerhead shark** (*Sphyrna zygaena*) in the Baltic Sea.

For centuries, fishermen have taken sharks and rays from European waters, including the Baltic Sea. Cartilaginous fishes are sought for meat (primarily for European markets), fins (for the Asian delicacy, shark fin soup) and oil from their large livers (used in cosmetics, lubricants and pharmaceuticals). Hides and cartilage are also used. Sharks and rays are also a source for recreation.

Statistics on cartilaginous fishes taken from the Baltic are scant and yet reveal considerable fishing activity. Landings of these species, usually taken incidentally, have been reported by Belgium, Denmark, Germany, Iceland, the Netherlands, Norway, Sweden and the United Kingdom.

Spurdog is the dominant cartilaginous species in Baltic fisheries statistics. Demand for its meat from European countries such as Germany has fuelled unsustainable fisheries around the world. As is the case in adjacent areas, spurdog landings from the Baltic have generally declined since the mid-1980s.

Tope, porbeagle, blue shark and small-spotted catshark also appear in Baltic catch data, in some cases, enhancing knowledge of species' ranges. Landings of rays (including skates) from the region are negligible when compared to those of sharks. Danish fishermen operating around the Norwegian Deep have in recent years landed rabbit fish, a species once usually discarded.

The IUCN classifies the angel shark, porbeagle, common skate, spurdog, thresher shark, sandy ray, thorny skate, basking shark, tope, oceanic whitetip shark and angular roughshark as *Threatened* with extinction due to overexploitation.

The global, regional and national tools available for conserving Baltic sharks, rays and rabbit fish and their habitats are numerous yet under-utilized. Relevant international agreements include the International Plan of Action for Sharks (IPOA-Sharks), the Helsinki Commission (HELCOM), the Oslo-Paris Convention (OSPAR), the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and the Convention on Migratory Species (CMS). The basking shark is listed under OSPAR, CITES and CMS and protected by EU regulation. OSPAR also highlights the need to protect the common skate. Germany has proposed listing the angel shark and thornback ray under OSPAR and porbeagle and spurdog under both OSPAR and CITES.

The EU and its Member States, which can regulate fishing and protect habitat, govern much of the Baltic. Sweden is the only Baltic country to adopt national rules to protect sharks and rays. Germany has established Baltic nature reserves. The EU Common Fisheries Policy mandates fisheries management for commercial species. Yet, only spurdog, porbeagle, deep-water sharks and some rays are subject to EU

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limits[1]; none is in line with scientific advice. The Baltic was included in regulated areas for spurdog for just one year (added for 2007, removed for 2008). Germany, Denmark and Sweden have spurdog quotas. Porbeagle catch, including that from the Baltic, became regulated by the EU in 2008. Denmark, Germany and Sweden received quotas. The EU has banned shark finning through the best possible means: prohibiting the removal of fins at sea. A derogation, however, allows Member States to issue special permits for removing fins onboard, while retaining the bodies. Germany and Lithuania have issued such permits.

Cartilaginous fishes in the Baltic form the fringe of species' range, rather than separate populations, and yet deserve consideration in terms of contribution to ecosystem health. Further research is needed for a more complete picture of their status and conservation needs. In the meantime, fisheries taking cartilaginous fishes from the Baltic should be subject to precautionary management, if they are allowed at all.

All EU Member States have a role in conserving shark, ray and chimaera populations. Leaving management decisions to States with the greatest economic interest is unlikely to lead to the precautionary management warranted for such slow-growing species.

To improve the outlook for sharks and rays, Baltic country governments are urged to:

- promote scientific advice for shark and ray fisheries management measures;
- collaborate for precautionary regulations in the absence of advice;
- facilitate population assessments and monitoring surveys for sharks and rays;
- require size and species-specific reporting of cartilaginous fish catches;
- investigate appropriate size limits on shark and ray landings;
- facilitate the description of Baltic fisheries and their effects;
- protect key Baltic cartilaginous fish habitats;
- encourage research into the influence of salinity and anoxia on Baltic sharks and rays;
- adopt national protection for shark and ray species of concern;
- promote additional listings and action for sharks and rays under OSPAR, CITES and CMS;
- require that sharks be landed with fins attached, without exception;
- engage in the development and adoption of a sound European Plan of Action for Sharks; and
- encourage shark and ray management proposals at international fisheries bodies.

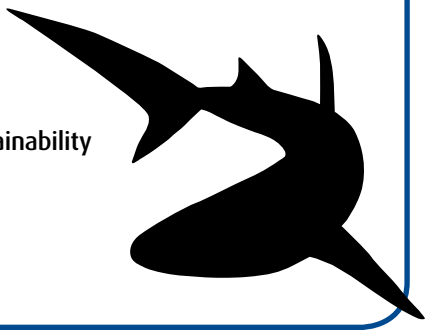
1 White and basking sharks are protected, but not considered commercial species.

THE SHARK ALLIANCE

The Shark Alliance is a not-for-profit coalition of non-governmental organisations dedicated to restoring and conserving shark populations by improving European fishing policy. Because of the influence of Europe in global fisheries and the importance of sharks in ocean ecosystems, these efforts have the potential to enhance the health of the marine environment in Europe and around the world.

The mission of the Shark Alliance is two-fold:

- To close loopholes in European policy regarding the wasteful practice of shark finning;
- To secure responsible, science-based shark fishing limits for long-term sustainability and ecosystem health.



To discover more about the Alliance visit: www.sharkalliance.org