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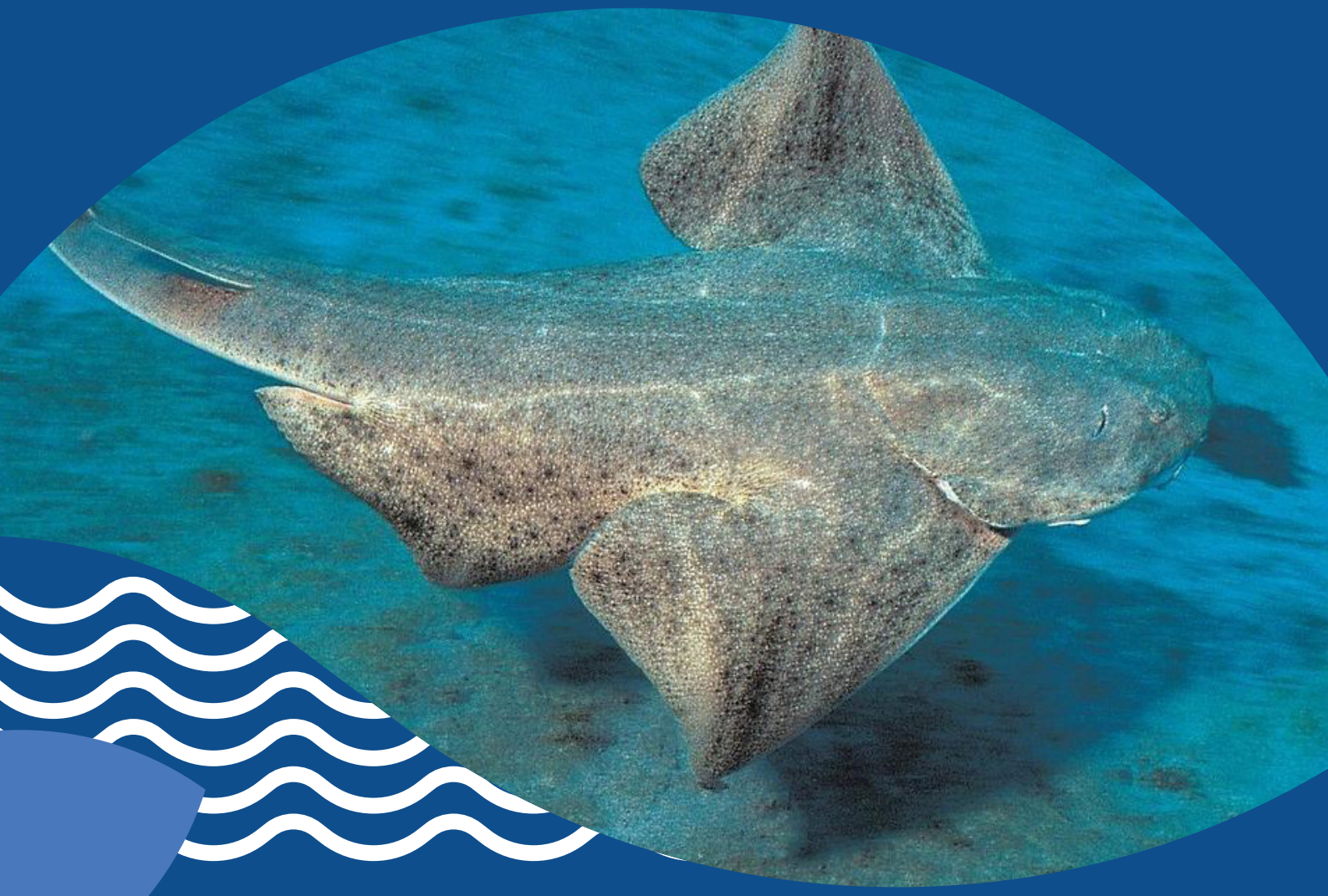
# ACTION PLAN FOR THE CONSERVATION OF CARTILAGINOUS FISHES (*CHONDRICHTYANS*) IN THE MEDITERRANEAN SEA



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# **ACTION PLAN** FOR THE **CONSERVATION** OF **CARTILAGINOUS FISHES** (*CHONDRICHTYANS*) IN THE **MEDITERRANEAN SEA**

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# FOREWORD

Chondrichthyan fishes constitute a class within the zoological classification which includes the cartilaginous fish commonly named sharks, skates, rays and chimaeras. The skates and the rays, or batoids, are flattened shark-like fish.

The Action Plan for the Conservation of Chondrichthyan Fishes in the Mediterranean Sea is in line with:

1) the Barcelona Convention adopted by the Mediterranean countries and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean;

2) the International Plan of Action for the Conservation and Management of Sharks (IPOASharks) proposed by FAO and adopted by the UN member states in 1999 [Note: in the FAO documents 'sharks' is used for chondrichthyans];

3) the UN Fish Stocks Agreement (UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks) in effect since 11th December 2001;

4) paragraph 31 of the Implementation Plan of the Resolution of the World Summit for Sustainable Development adopted in Johannesburg in September 2002.

In the implementation of the IPOA-Sharks, the Mediterranean Action Plan for the Conservation of Chondrichthyan Fishes constitutes a proposal for regional strategies, pointing out priorities and actions to be undertaken at national and regional level, since regional coordination is needed to ensure implementation of conservation measures. The IPOA-Sharks suggests that member states of the FAO should develop national action plans when their fishing fleets conduct target or by-catch fisheries for sharks. With regards to this recommendation, the Contracting Parties to the Barcelona Convention are strongly urged to elaborate national action plans according to the priorities hereindefined, in order to ensure the conservation, management and long-term sustainable use of thechondrichthyan resources in their environment.

Twenty-four species enlisted in the Annex II (list of endangered or threatened species) of the SPA/BD Protocol are already protected which based on Recommendation GFCM/36/2012/1 (now GFCM/42/2018/2) cannot be retained on board, trans-shipped, landed, transferred, stored, sold or displayed or offered for sale, and must be released unharmed and alive to the extent possible.

Also, some Mediterranean countries have taken specific protection measures for these species to reinforce their conservation status. Many species of the list appear on the IUCN Red List and in the appendices to the Bern and Bonn Conventions, and some have been included in the CITES appendices.

Although such conservation measures that focus on particular species have been proving to be useful at species level, they are not sufficient at ecosystem level. That is why habitat and environment parameters should be included in the Action Plan. As a result, the guidelines for elaborating anAction Plan are the following:

- species conservation
- biodiversity maintenance
- habitat protection
- management for sustainable use
- scientific research
- monitoring
- funding for research, implementation and monitoring
- public awareness
- international cooperation for controls in the open sea.

Thus, implementation of the Action Plan should involve a great number of stakeholders and its success requires increasing cooperation between different jurisdictions, professional fishermen, conservation and environmental bodies, recreational and game fishing associations, scientific and research organisations and academic institutions, and military and administrative bodies, at national, regional and international levels.



# 1. INTRODUCTION

The chondrichthyan fish fauna of the Mediterranean is relatively diverse, with at least 48 species of sharks, 40 of batoids and two of chimaeras, even if some of them have to confirmed. All species are fished as bycatch. however, many of them are sold at fish markets, among them some species are very rare and may never have been common. However, there is evidence of the important negative impact of unmanaged and irresponsible fisheries on the populations of these chondrichthyan species.

Chondrichthyan fishes have specific biological characteristics, such as low reproduction productivity due to late sexual maturity and low fecundity, which make them vulnerable to longlasting stresses and disturbances and slow to recover once depleted.

For chondrichthyan fishes, there also exists a close relationship between the number of young produced and the size of the breeding biomass (stock-recruitment relationship) and complex spatial structures (size/sex segregation and seasonal migration) that contribute to their vulnerability to habitat deterioration, environmental pollution, and over-exploitation.

Most sharks and some skates and rays are apex predators and have an important trophic function in the marine ecosystem. Therefore, the ecosystem approach is particularly important to understand the role of these fishes in the structuring and functioning of this system. The integrated effects of irresponsible fishing, pollution, and habitat destruction can result in changes in abundance, size structure and biological features, and in the extreme could lead to extinction. The indirect impacts include changes in species prey/predator composition, with species replacement, since fishing tends to remove larger species and larger individuals from ecosystems. Exploitation of chondrichthyans should respect the principles of sustainability and the precautionary principle as defined in the FAO Code of Conduct for Responsible Fisheries.

Elasmobranches are by far the most endangered group of marine fish in the Mediterranean Sea. The IUCN Red List shows clearly the vulnerability of elasmobranchs and the lack of data; 39 species (53% of 73 assessed species (2016)) are critically endangered, endangered, or vulnerable.13 % are data deficient (DD).

The Contracting Parties to the Barcelona Convention, within the framework of the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Area of the Mediterranean (MAP Phase II), give priority to ensuring the protection of sensitive species, habitats and ecosystems in the Mediterranean Sea.

The decline of some chondrichthyan populations has become a matter for international concern, and a growing number of organisations have expressed the need for urgent measures to be introduced for the conservation of these fish. To this end, SPA/RAC was entrusted (Monaco, November 2001) by the Contracting Parties to the Barcelona Convention with the task of elaborating an action plan for the conservation of the chondrichthyan populations of the Mediterranean. This action plan was adopted within the frame work of the Barcelona Convention for the protection of the marine Environment and the Coastal Region of the Mediterranean in 2003.

Parties to Barcelona Convention requested SPA/RAC during the COP 20 (Tirana, Albania, 17-20 December 2017) to update this Action Plan. The updating, herein presented, was based mainly on:

- New scientific contribution on the ecology, biology and systematic of cartilaginous fish;
- New conservation technics;
- New data, resolutions and recommendations (GFCM…);
- IUCN red list new assessment.

Today, the serious threats to the populations of chondrichthyan fishes are widely acknowledged: mainly unmanaged and irresponsible fishing, pollution and the negative aspects of some littoral development. These threats affect both chondrichthyan biodiversity and abundance. The Mediterranean Sea being a semi-enclosed sea with strongly populated coastal countries, critical habitats have been damaged by some littoral development and pollution. Pollution may harm the marine ecosystem because contaminants, concentrating along the food webs, can alter the physiology and good functioning of individuals and populations.

Although the Mediterranean chondrichthyan fish fauna have been studied for a long time, scientific research still needs to be undertaken to study the biology, ecology, population dynamics and status of stocks of most of the species. These studies are necessary to better understand their ecological role. The taxonomic status of several species is still uncertain. A few species are endemic to the Mediterranean. Some Red Sea species penetrate into the eastern Mediterranean through the Suez Canal (Lessepsian migrants); the progression of the populations of these species, and the effect of these invaders on the Mediterranean ecology, should be carefully studied.

Since many chondrichthyans are wide-ranging and/or migratory, regional coordination is required for research, monitoring and enforcement. Also, information should be widely disseminated amongst the public to make it aware of the threats to chondrichthyans and the urgent need for their conservation and the management of their exploitation.

## 2. OBJECTIVES

The present Action Plan is aimed at promoting:

- The general conservation of the chondrichthyan populations of the Mediterranean, by supporting and promoting national and regional programmes on reducing bycatch and all other kind of disturbance;
- The protection of chondrichthyan species, mainly whose populations are considered vulnerable;
- The identification, the protection and the restoration of critical habitats, such as mating, spawning and nursery grounds;
- The improvement of scientific knowledge by research and scientific monitoring, including the creating of regional standardised databases;
- The recovery of depleted chondrichthyan stocks;
- Public awareness and capacity-building about conservation of chondrichthyans.



## 3. PRIORITIES

The following general priorities are recommended:

- Urgent provision of legal protection status for the species enlisted in the Annex II (List of endangered or threatened species) of the SPA/BD Protocol, which based on Recommendation GFCM/36/2012/1 (now GFCM/42/2018/2) cannot be retained on board, trans-shipped, landed, transferred, stored, sold or displayed or offered for sale, and must be released unharmed and alive to the extent possible.
- Other species are currently data-deficient with inadequate information to assess extinction risk. Thus, there is an urgent need to assess the status of these species: marbled Stingray (*Dasyatis marmorata*), Reticulate Whipray (*Himantura uarnak*), Lusitanian Cownose (*Rhinoptera marginata*), Round Fantail Stingray (*Taeniurops grabata*), bignose Shark (*Carcharhinus altimus*), copper Shark (*Carcharhinus brachyurus*), blacktip Shark (*Carcharhinus limbatus*), dusky Shark (*Carcharhinus obscurus*), spinner Shark (*Carcharhinus brevipinna*), sharpnose Sevengill Shark (*Heptranchias perlo*), longnose Spurdog (*Squalus blainville*), Shortnose Spurdog (*Squalus megalops*), Bigeyed Sixgill Shark (*Hexanchus nakamurai*) and Longfin Mako (*Isurus paucus*).
- Identify further management and technical measures to minimize bycatch and mortality of sharks and develop management programmes for species currently marketed.
    - Primarily for the endangered species: the dogfish (*Squalus acanthias*), the thresher sharks (*Alopias spp*.), the blue shark (*Prionace glauca*).
    - Secondly, for the other commercially important species: the catsharks (*Scyliorhinus spp. and Galeus melastomus*), the hound sharks (*Mustelus spp*.), the requiem sharks (*Carcharhinus falciformis*, *C. limbatus, C. obscurus* and *C. plumbeus*), the skates (*Leucoraja spp., Raja spp*.), and the stingrays (*Dasyatis spp*.).
    - Ensure good practice for handling rays and sharks caught accidentally and encourage fishing practices that reduce chondrichthyan by-catch and/or facilitate live release.
    - Identify critical habitats for their protection and restoration, especially mating areas, and spawning and nursery grounds.
    - Develop research programmes on general biology (feeding, reproduction and growth parameters), taxonomy, ecology and population dynamics, with particular regard to genetic and migration studies.
    - Develop both systems for the monitoring of fisheries and fishery-independent monitoring programmes.
    - Develop training to ensure capacity-building at national and regional level, mainly in the following fields: taxonomy, biology, ecology, monitoring methods and stock assessment.
    - Develop information and education programmes for professionals and public awareness.

# 4. IMPLEMENTATION MEASURES

In order to implement the above-mentioned general priorities, specific measures should be taken at national and regional level:

## 4.1. Protection

Strict legal protection of elasmobranchs species under Annex II (list of endangered or threatened species) of the SPA/BD Protocol to the Barcelona Convention, which concerned by Recommendation GFCM/42/2018/2 on fisheries management measures for the conservation of sharks and rays in the GFCM area of application, amending Recommendation GFCM/36/2012/3 (cf. paragraphs 10.2 and 11.1) in accordance with national and international laws and conventions. The status of Mediterranean chondrichthyans should be regularly reviewed in order to recommend, when necessary, legal protection for threatened species.

## 4.2. Fisheries management

According to the principles of the IPOA-Sharks and of the UN Straddling Fish Stocks Agreement, states that contribute to fishing mortality for a species or stocks should participate in their management.

Existing assessment reports and fisheries management programmes should be adjusted to chondrichthyan fishes or specific plans should be developed within the framework of the IPOASharks and the GFCM recommendation GFCM/42/2018/2.

It is urgent to collect precise fisheries statistics, mainly on catches and landings by species. For this purpose, field identification sheets should be published in appropriate languages, with the vernacular names included, and dispatched to fishery people. Also, data on fishing efforts should be collected, as far as possible.

Capacity building training of statistics collectors should be ensured and statistics categories defined.

Management programmes for chondrichthyan fishes should be based on studies of the assessment of stocks and populations. Management should be also based on by-catch and measures to reduce incidental catches studies.

To this end, guidelines for measures reducing by-catch and good handling practices of caught protected species should be published in the appropriate languages and circulated to all potential users. Protected species must be promptly released unharmed and alive to the extent possible.

Implementing a permanent monitoring of fisheries where chondrichthyans are impacted is a fundamental management measure, useful for the conservation of these species. This action would permit the timely detection of an obvious decline in their biomasses that could be an unequivocal sign of over-fishing. This monitoring could be done through surveys, landing-site observation and the examining of logbooks. This action should also address sightings (strandings and observations at sea).



For most species, cooperative management is necessary at national, regional and international levels. The mechanisms for achieving a cooperative approach may consist of the following elements:

- information on existing exploited resources and management systems;
- the defining and provision of legal instruments;
- the use of a participatory planning approach;
- the defining of clear management agreements;
- the building and development of national groups.

Mediterranean countries shall ban finning following GFCM recommendation GFCM/42/2018/2; it shall be prohibited to remove shark fins on board vessels and to retain, tranship or land shark fins.

## 4.3. Critical habitats and environment

Field studies are needed to inventory and map critical habitats around the Mediterranean.

Legal protection should be given to these habitats, in conformity with the national and international laws and conventions on the subject, to prevent their deterioration due to the negative effects of human activity. When these habitats have deteriorated, restoration programmes should be undertaken. One example of legal protection is the creation, where possible, of marine protected areas in which human activity is regulated.

Such protection measures could be part of fishery management programmes as well as of integrated coastal zone management.

## 4.4. Scientific research and monitoring

Parallel to protection and conservation measures, properly funded and staffed scientific research programmes should be undertaken or developed, mainly on species biology and ecology, emphasising growth, reproduction, diet, geographical and bathymetric distribution, migration, population genetics and dynamics and risk assessment. Regional tagging (conventional, pop-up and satellite tag) programmes should be developed for migratory species. Also, fishing efforts exploratory cruises and the status of resources within the precautionary principle, should be assessed. In the same way, discard should be evaluated in terms of quantity and composition. Research on tools to avoid or reduce by-catch should be fostered.

For the monitoring of fisheries, the standardised collection of data at landing places and fish markets should be supplemented and completed by on-board observation programmes to gather precise data on fisheries and on species biology. Also, logbooks adapted to chondrichthyan fisheries should be distributed to fishermen. The following set of data would be required:

- species composition of the catch with length frequency distribution by sex;
- retained catch by species in number and weight;
- discarded catch in number and weight (+ reasons for discard);

- released species in number (sex, length when possible);
- gear and vessel specifications and cruise characteristics;

Furthermore samples (vertebrae, dorsal spines) should be taken and adequately preserved for age determination, and tissue samples for genetic analysis (DNA).

Mediterranean countries should design, at both national and regional level, specific programmes, or widen existing ones, to cover the whole Mediterranean Sea, and to collect standardised quantitative data to estimate fish density (relative abundance). This would help evaluate the risk status of the various species.

### 4.5. Capacity building/training

The Contracting Parties should promote the training of specialists, fisheries officers and managers in the study and conservation of chondrichthyan fishes. To this end, it is important to identify already existing initiatives and to give priority to taxonomy, conservation biology and techniques for monitoring research programmes (cf. above paragraph on scientific research).

Training programmes should also focus on methods of fisheries data collection and stock assessment, especially data analysis.

### 4.6. Education and public awareness

For protection and conservation measures to be effective, public support should be obtained. In this respect, (1) information campaigns should be directed at national authorities, residents, teachers, visitors, professional fishermen, sport anglers, divers and any other stakeholder (2) Publication materials should be produced to present the life history, and vulnerability, of chondrichthyans and (3) education programme on the issue should be taught for school children.

Also, guidelines for chondrichthyan watching should be published and widely distributed to potential observers such as anglers, yachtsmen, divers, shark-fans, etc, in order to make them actively involved in the conservation of chondrichthyan fishes.

In this process of education and public awareness, the help of associations and other bodies involved in nature conservation should be solicited.

### 4.7. Regional coordinating structure

All the above-mentioned recommended actions related to the protection and the conservation of species and their habitats, and the research and educational programmes, should be monitored and implemented, with as much regional cooperation between all the countries operating in the Mediterranean basin as is possible.

These actions should be undertaken in cooperation with, and with the support of, other regional fisheries organisations (e.g. GFCM, ICCAT), through establishing MoUs where necessary. Nongovernmental organisations, associations and national environmental bodies should also be involved.

Implementation of the present Action Plan will be regionally coordinated by the Mediterranean Action Plan's (MAP) Secretariat through the Regional Activity Centre for Specially Protected Areas (SPA/RAC). The main functions of the coordinating structure shall consist in:

- favouring and supporting the collection of data and publishing and circulating results at Mediterranean level;
- promoting the drawing up of inventories of species and areas of importance for the Mediterranean marine environment;
- promoting transboundary cooperation;
- preparing reports on progress in the implementation of the Action Plan, to be submitted to the Meeting of National Focal Points for SPA/BD and to meetings of the Contracting Parties;
- organising meetings of experts on specific subjects relating to Mediterranean chondrichthyans, and training courses;
- promoting the review of status of species and fisheries by relevant organisations;
- One year after the adoption of the Action Plan, coordinating the organisation of a Mediterranean symposium aiming at defining the state of knowledge on chondrichthyan fishes and taking stock of the progress made in implementing the Action Plan;
- five years after the present updating of the Action Plan, organising a meeting to review the progress of the Action Plan and to propose a revision of the Action Plan if needed.

Complementary work done by other international organisations with the same objectives shall be encouraged by SPA/RAC, promoting coordination and avoiding possible duplication of effort.

Initiatives aiming at ensuring enforcement of the current Action Plan, particularly in international waters, should be promoted.

## 5. PARTICIPATION IN THE IMPLEMENTATION

Implementing the present Action Plan is the responsibility of the national authorities of the Contracting Parties. Parties should facilitate coordination between their national, environmental and fisheries departments to ensure implementation of activities directed at protected and non-protected chondrichthyan species. Organisations or bodies concerned are invited to associate themselves with the work of implementing the present Action Plan. At their ordinary meetings, the Contracting Parties may, at the suggestion of the Meeting of National Focal Points for SPA/BD, grant the status of 'Action Plan Associate' to any organisation or laboratory which so requests and which carries out, or supports (financially or otherwise) the carrying out of, concrete actions (conservation, research, etc.) likely to facilitate the implementation of the present Action Plan, taking into account the priorities contained therein. NGOs can submit their applications directly to SPA/RAC.

The coordinating structure shall set up a mechanism for regular dialogue between the Action Plan Associates and, where necessary, organise meetings to this effect. Dialogue should be conducted mainly by mail, including e-mail.

## 6. TITLE OF ACTION PLAN PARTNER

To encourage and reward outside contributions to the Action Plan, the Contracting Parties may at their ordinary meetings grant the title of 'Action Plan Partner' to any organisation (governmental, NGO, economic, academic etc.) that has to its credit concrete actions likely to help protect chondrichthyan fishes in the Mediterranean. The title of Action Plan Partner will be awarded by the Contracting Parties following recommendations made by the Meeting of National Focal Points for SPA/BD.

## 7. ASSESSING THE IMPLEMENTATION AND REVISION OF THE ACTION PLAN

At each of their Meetings, the National Focal Points for SPA/BD will assess the progress made in implementing the Action Plan, on the basis of national reports and of a report made by the SPA/RAC on implementation at regional level. In the light of this assessment, the Meeting of the National Focal Points for SPA/BD will suggest recommendations to be submitted to the Contracting Parties, and, if necessary, suggest adjustments to the timetable given in the annex to the action plan



**Implementation Timetable for the period 2020-2024**

| ACTIONS | CALENDER | BY WHOM |
|---|---|---|
| **Tools** | | |
| 1. Establish a network, enrich and jupdate directory of national, regional and international experts on chondrichthyan fishes. (cf. § 33 of C.7 "Regional coordinating structure") | Continuous action(2024-2020) | SPA/RAC, CMS Shark MOU Secretariat, IUCN SSG, RFMO Shark Working Groups |
| 2. Promote the use of the existing Field identification sheets (cf. § 15 of C.2. "Fisheries management") | Continuous action (2024-2020) | Contracting Parties & RFMOs |
| 3. Promote the use of the GFCM manual (2019) "Monitoring the incidental catch of vulnerable species in the Mediterranean and the Black Sea: methodology for data collection" (cf. § C.2. "Fisheries management") | Continuous action (2024-2020) | Contracting Parties |
| Formalize/reinforce synchronous submission of catch, bycatch and discard data annually to the GFCM according to DCRF (Data Collection Reference Framework). (cf. § 25 of C.4. "Scientific research and monitoring") | Every year | Contracting Parties |
| 5. Information campaigns and publishing materials for public awareness (cf. § C. 6 "Education and public awareness") | Continuous action (2024-2020) | SPA/RAC |
| 6. Promote the use of existing guidelines for reducing the presence of sensitive species in by-catch and releasing them if caught. (cf. § 16 of C.2 «Fisheries management") | Continuous action (2024-2020) | SPA/RAC and RFMO |
| 7.Update and promote protocols and programmes for improved compilation and analysis of data, for contribution to regional stock assessment initiatives. (cf. § 16 of C2 "Fisheries management" and 25 of C.4. "Scientific research and monitoring") | From 2020 to 2024 | National and regional agencies and advisory bodies, CMS, GFCM and FAO. |
| 8. Training manual on cartilaginous fish eco-biology (Taxonomy, biological parameters determination, identification and monitoring of fisheries and critical habitats, conservation…) (cf. § 29 of C.6 "Education and public awareness") | ASAP | SPA/RAC |
| 9. Training courses on cartilaginous fish eco-biology (cf. § 27 of C.5 "Capacity building / Training") | ASAP | SPA/RAC |
| 10. Symposium on Mediterranean chondrichthyan fishes (cf. § 33 of C.7 "Regional coordinating structure") | One year after adoption | SPA/RAC |
| 11. Meeting to review progress made on the Action Plan (cf. § 33 of C.7 and § F "Assessing the implementation and revision of the Action Plan") | 5 years after adoption | SPA/RAC |
| **Legal processes** | | |
| 12 a. Legal protection established for endangered species, recommended in this Action Plan, identified by country (species enlisted in Annex II of the SPA/BD Protocol)<br>12 b. Urgent assessment of the status of data deficient species, recommended in this Action Plan (assessed by IUCN) (cf. § 11.1. of B "Priorities"; C1 "Protection") | ASAP | Contracting Parties |
| 13. Legal protection for prohibiting "finning" according to the GFCM recommendation (GFCM/2/2018/42) (cf. § 19 of C.2 "Fisheries management") | ASAP | Contracting Parties & RFMOs |
| 14. Critical habitats legally protected and monitored, as soon as they are identified. (cf. § C.3 «Critical habitats and environment") | ASAP | Contracting Parties |
| 15. Establish and promote national, sub-regional and regional plans or strategies for cartilaginous fish species (mainly listed in Annexes II and III). (cf. § 14 of C.2 "Fisheries management") | 2024-2020 | Contracting Parties, SPA/RAC, GFCM, CMS |
| 16. Facilitating the enforcement of legal measures aiming to set up a system for enforcement of monitoring fisheries in international waters such as extending MEDITS programme to all Mediterranean countries (Mediterranean International Trawl Survey). (cf. § 35 C. 7 "Regional coordinating structure") | 2024-2020 | Contracting Parties SPA/RAC, GFCM, CMS and EU |

| | | |
|---|---|---|
| **Monitoring and data collection** | | |
| 17. Establishing research programmes, mainly on the biology, ecology and population dynamics of the main species identified by the countries (cf. § C. 4 "Scientific research and monitoring") | 2024-2020 | Contracting Parties |
| 18. Support the establishing of, or feed the existing, centralised databases (DCRF, MEDLEM…) (cf. § C.7 "Regional coordinating structure") | 2024-2020 | Contracting Parties and SPA/RAC |
| 19. Inventory of critical habitats (mating, spawning and nursery grounds) (cf. § 11.4 of "Priorities" and § C.3 "Critical habitats and environment") | 2024-2020 | Contracting Parties |
| 20. Promote existing research proposals developed under the SPA/RAC Action Plan to funding agencies (cf. § C. 4 "Scientific research and monitoring") | 2024-2020 | SPA/RAC, CPs, AP partners |
| 21.Promote programs on the status of bycatch to propose measures for attenuation of the phenomenon. Such programs should be developed with onboard observers and multispecies approach. (cf. § C. 4 "Scientific research and monitoring") | 2024-2020 | SPA/RAC, CPs, AP partners |
| 22. Increase compliance with obligations to collect and submit speciesspecific commercial catch and bycatch data to FAO and GFCM, including through increased use of observers. (cf. § C. 7 "Regional coordinating structure") | From 2020 to 2024 | Contracting Parties |
| 23. Support expert participation in RFMO and other relevant meetings and workshops, to share expertise and build capacity for data collection, stock assessment and bycatch mitigation. (cf. § C.5 "Capacity building / Training") | As soon as possible | Contracting Parties, RFMO, SPA/RAC |
| **Management and assessment procedures** | | |
| 18. Continuously review data and undertake new studies to clarify the status of Mediterranean chondrichthyan species focusing on endemics and species assessed as Data Deficient or Near Threatened (cf. § 11.2 of B "Priorities"; 12 of C.1 'Protection'; 25 of C.4 "Scientific research and monitoring") | 2024-2020 | International organisations |
| 20. Develop and adopt (where these do not exist) national Shark Plans (cf. § C.1 'Protection', C.2. "Fisheries management", & C.3 "Critical habitats and environment"). | 2024-2020 | Contracting Parties |
| 21. Identify further management and technical measures to minimize bycatch and mortality of sharks in fisheries impacting cartilaginous fishes. (cf. § 11.4 of B "Priorities'") | 2024-2020 | Contracting Parties& RFMOs |

# SPA/RAC WORKING AREAS

*SPA/ RAC, the UNEP/ MAP **Specially Protected Areas Regional Activity Centre**, was created in 1985 to assist the Contracting Parties to the Barcelona Convention (21 Mediterranean contries and the European Union) in implementing the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol).*

POST-2020 SAPBIO

**Strategic Action Programme** for the **Conservation** of **Biodiversity** and **Sustainable Management** of **Natural Resources** in the **Mediterranean Region**

SPAMI

**Specially Protected Areas** of **Mediterranean Importance**

**Marine turtles**

**Cetaceans**

**Mediterranean Monk Seal**

**Cartilaginous fishes**
(Chondrichtyans)

**Marine and coastal bird species**

Listed in Annex II of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean

**Specially Protected Areas**

**Monitoring**

**Coralligenous and other calcareous bio-concretions**

**Marine vegetation**

**Dark Habitats**

Habitats and species associated with seamounts, underwater caves and canyons, aphotic hard beds and chemo-synthetic phenomena

**Species introduction and invasive species**

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