**CRP 10.4/Annex 1**

**IMPORTANT SHARK AND RAY AREAS (ISRAs)**

**~~DRAFT~~ CRITERIA AND PROCESS FOR THE IDENTIFICATION OF**

**IMPORTANT SHARK AND RAY AREAS (ISRA)**

(*Extracted from Hyde et al. 2022*)

The International Union for Conservation of Nature Species Survival Commission Shark Specialist Group (IUCN SSC SSG) has developed below criteria and a process for the identification of Important Shark and Ray Areas (ISRAs), which have been published in **Hyde et al. 2022**[[1]](#footnote-1) and as **"IMPORTANT SHARK AND RAY AREA (ISRA): GUIDANCE ON CRITERIA APPLICATION**” ([CMS/Sharks/MOS4/Inf.5](https://www.cms.int/sharks/en/document/important-shark-and-ray-area-isra-guidance-criteria-application)) on the website of the initiative.

1. **Criteria for the identification of ISRA**

**Criterion A (Vulnerability):** Criterion A refers to areas important to the persistence and recovery of threatened sharks. Threatened sharks are those listed on the IUCN Red List as Critically Endangered, Endangered, or Vulnerable (International Union for Conservation of Nature [IUCN], 2022). Under this criterion, ‘threatened’ could also refer to sharks at risk of extinction as reflected in other available assessments (e.g., national regulatory and legal frameworks that assess the extinction risk of species such as the United States Endangered Species Act [ESA] or the Australian Environment Protection and Biodiversity Conservation Act [EPBC]).

**Criterion B (Range restricted):** Criterion B refers to areas holding the regular and/or predictable presence of range restricted sharks, that are occupied year-round or seasonally.

**Criterion C (Life-history):** Criterion C refers to areas that are important to sharks for carrying out vital functions across their life-cycle (i.e., reproduction, feeding, resting, movement, or undefined aggregations). This includes five sub-criteria to encompass the wide variety and complexity of life-histories. In this work, species occurrence data are compiled, where available, to include information on age structure, reproductive status, sex, and seasonality ([CMS/Sharks/MOS4/Inf.5](https://www.cms.int/sharks/en/document/important-shark-and-ray-area-isra-guidance-criteria-application)) without including in the models the "stage" effect (whether they are young, reproductive, males, females, etc.) or the seasonality (spring, summer, etc.).

**Sub-criterion C1 (Reproductive areas):** Reproductive areas are important for shark mating, birth, egg laying, or providing refuge or other advantages to the young (e.g., predator avoidance or access to food sources), and are therefore critical to reproductive success. These include sites which can be identified as ‘nursery areas’ that are important for newborns, young-of-the-year, or juveniles of viviparous species; or ‘egg nursery areas’ that are important for egg laying and development until hatching and the development of newborns and juveniles of oviparous species.

**Sub-criterion C2 (Feeding areas):** Feeding areas are important for shark nutrition at one or more life-cycle stages. Sub-criterion C2 relates to areas where sharks are known to derive nutrition, and that are supported by the regular and predictable occurrence of prey.

**Sub-criterion C3 (Resting areas):** Resting areas are important for sharks to conserve energy and are often related to environmental conditions or temporal factors. These are areas where an aggregation or assemblage of sharks spends time during daily activity cycles and which can be influenced by environmental conditions (e.g., tidal cycle) or temporal factors (e.g., time of day).

**Sub-criterion C4 (Movement):** This sub-criterion identifies areas used by sharks regularly or predictably during their movements, such as migrations, which contribute to the connectivity of important areas. Sub-criterion C4 addresses the predictable movement of sharks, aggregations, or assemblages from one place to another, often related to a seasonal or vital function such as reproduction or feeding.

**Sub-criterion C5 (Undefined aggregations):** This sub-criterion identifies areas where an aggregation or assemblage of sharks regularly and/or predictably occurs, year-round or seasonally, but the function of the aggregation is currently unknown. Sub-criterion C5 refers to aggregations or assemblages of sharks in an area which engage in, or display a behavior that is known to occur, but is not (yet) attributed to a known vital function (e.g., reproduction, feeding, resting, or movement) or predator avoidance (e.g., schooling).

**Criterion D (Special attributes):** Criterion D refers to areas important for sharks considered for distinct biological, behavioral, or ecological attributes (unique or associated with a unique habitat type) or which support an important diversity of species. It consists of two sub-criteria related to distinctiveness and diversity.

**Sub-criterion D1 (Distinctiveness):** Sub-criterion D1 identifies areas where sharks display distinct biological, behavioral, or ecological characteristics. The variety of sharks, their unique features, and their adaptations could result in distinctive characteristics.

**Sub-criterion D2 (Diversity):** Sub-criterion D2 identifies areas that sustain an important diversity of sharks. These are areas that may host a high diversity of sharks (i.e., the diversity of the assemblage of shark species occurring is high or exceptional for that region) and are critical for the persistence of shark diversity.

1. **ISRA identification process**

ISRAs are identified through regional expert workshops. These are organized by the IUCN SSC Shark Specialist Group after consultation with its Regional Vice-Chairs. Workshop invitations are extended to regional members and non-members who have knowledge and expertise useful for the identification of ISRAs. Sources of information for consideration and assessment during each workshop are actively sought during an engagement period prior to each regional workshop and become part of the ISRA Inventory of Knowledge. Based on expert input, preliminary Areas of Interest (pAoI) are examined for the regular or predictable presence of species to which the criteria can be applied. Qualifying or Supporting Species assessed against each of the ISRA Criteria within a pAoI allow for a candidate Important Shark and Ray Area (cISRA) to be justified. Finally, after the workshop, each cISRA is subject to peer-review through an Independent Review Panel. This panel is composed of recognized shark experts who have not been involved in the regional workshops, but who have an in-depth understanding of the species, habitats, and ISRA Criteria (Notarbartolo di Sciara, 2021[[2]](#footnote-2)).

1. **Hyde CA, Notarbartolo di Sciara G, Sorrentino L, Boyd C, Finucci B, Fowler SL, Kyne PM, Leurs G, Simpfendorfer CA, Tetley MJ, Womersley F and Jabado RW (2022**) Putting sharks on the map: A global standard for improving shark area-based conservation. Front. Mar. Sci. 9 :968853.Doi : 10.3389/fmars.2022.968853

   [https ://www.frontiersin.org/articles/10.3389/fmars.2022.968853/full](https://www.frontiersin.org/articles/10.3389/fmars.2022.968853/full) [↑](#footnote-ref-1)
2. **Notarbartolo di Sciara, G. (2021)** Towards an Important Shark and Ray Area (ISRA) process: implementation strategy (Report to IUCN Species Survival Commission Shark Specialist Group).

   Available at: [https://sharkrayareas.org/ resources/meeting-workshop-reports/](https://sharkrayareas.org/%20resources/meeting-workshop-reports/). [↑](#footnote-ref-2)