

IUCN Shark Specialist Group Global Batoid Workshop

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Introduction and Workshop Aims

In September 2004 the IUCN Shark Specialist Group (SSG) convened a five-day workshop in Cape Town, South Africa with the specific aim 'to assess the international conservation status of batoids for the IUCN Red List and to address some of the problems faced, including general lack of data and taxonomic uncertainty'. To date, batoids (the skates and rays) are known to consist of 631 species from 23 families, representing approximately 55% of the world's extant cartilaginous fishes (the Class Chondrichthyes: sharks, batoids and chimaeras). Despite this diversity, the batoid fishes are a little-known group with even the most basic life-history data lacking for most species. Many species are increasingly important in directed or bycatch fisheries, yet species-specific fisheries data on batoids are generally non-existent. Furthermore, taxonomic uncertainty limits the management of these species with ca. 15% of known batoids remaining undescribed while new fauna is continually being discovered.

One of the central aims of the SSG is to complete assessments for all >1,100 species of chondrichthyans for the *IUCN Red List of Threatened Species*. However, due to limited expertise on batoids, previous SSG regional workshops have focused largely on sharks, despite the susceptibility of many batoids to over-exploitation and population depletion. This imbalance in the programme to date inspired a determined effort by the SSG to assess the conservation status of the world's batoids by convening this workshop and inviting the world's experts to attend. Indeed, this workshop was the most important contribution to the SSG Red List programme during 2004. *Specifically, the main aims of the workshop were to:*

1. bring together international batoid experts to share their knowledge and expertise;
2. undertake Red List assessments for as many of the world's batoids as possible in order to assess the conservation status of the group and in order to establish a baseline of information for further work;
3. develop priorities for undertaking the necessary work on research, management and conservation of batoids around the world; and
4. update the global checklist of batoids, an essential prerequisite not only for completing assessments of this taxonomic group, but also for the forthcoming FAO catalogue of *Batoids of the World*.

Workshop Participation

The Batoid Workshop was hosted by Marine and Coastal Management (MCM), South Africa and took place at their facilities at Sea Point in Cape Town from 6-10 September 2004.

Twenty-nine international chondrichthyan fish experts from 15 countries were present at the workshop with representation from Argentina, Australia, Brazil, Chile, France, Germany, Italy, Japan, Malaysia, Namibia, Russia, South Africa, South Korea, UK and USA. Most participants had expertise and knowledge outside of their own country and as such all ocean regions were well represented. Observers from South Africa who attended some of the workshop served to strengthen local knowledge and were a valuable addition to the process and outcomes.

Workshop Outcomes

Preliminary Red List Assessment Results

During the course of the workshop, participants evaluated batoid species using the IUCN Categories and Criteria, resulting in Red List assessments' being drafted for 352 of the world's batoid fishes (~55% of all species). This number, together with the 121 assessments presently on the *IUCN Red List of Threatened Species* or in draft at the time of this workshop (from previous regional SSG workshops), represents ~75% of the global batoid fauna assessed against the IUCN Red List Categories and Criteria. This represents substantial progress towards the overall goal of assessing the conservation status of all chondrichthyan species.

The workshop resulted in assessments being drafted for all species in several of the batoid families. These include: the sharkfin guitarfishes (family Rhynchobatidae); Indo-West Pacific batoids, facing heavy directed and bycatch fishing pressure over most of their range due to their valuable fins; the stingarees (Urolophidae) and round stingrays (Urotrygonidae), small, poorly known rays, most with limited distributions in Australasia and the Americas, respectively; and the river stingrays (Potamotrygonidae), freshwater rays of South America facing numerous threats from habitat alteration, pollution, fishing pressure (including legal and illegal collecting for the aquarium trade) and persecution. Assessment of whole families such as these provides essential baselines for future work and the identification of gaps in the current knowledge of species.

Of the more speciose batoid families, considerable inroads were made in evaluating the conservation status of these groups. Assessments were drafted for the softnose skates (Arhynchobatidae) and hardnose skates (Rajidae), 86% and 66% of species, respectively. The skates are primarily deeper-water species, often with restricted ranges. In some areas, for example the North Atlantic, declines have been documented for these species as the result of demersal fishing activities. The third largest batoid family, the whiptail stingrays (Dasyatidae), are a group of great conservation concern, and a considerable proportion of species have been preliminarily assessed as threatened. These are inshore species whose diversity is centred in the Indo-West Pacific where intensive inshore fishing pressure in Indonesia and other parts of Southeast Asia are severely affecting many populations.

Preliminary results from the draft assessments from this workshop show a striking diversity of species falling into threatened categories (Critically Endangered, Endangered, Vulnerable) and Near Threatened. Those species most at risk are not restricted to one group but include inshore species with limited distributions (e.g., the Java stingaree *Urolophus javanicus* has not been collected since its description 150 years ago); deepwater species affected by expanding fishing at ever-increasing depths (e.g., some large undescribed Australian *Dipturus* skates occur primarily in orange roughy fishing grounds where bycatch levels are thought to have caused population declines); freshwater and estuarine species susceptible to habitat alteration (e.g. the South American Colares stingray *Dasyatis colarensis* inhabits estuarine areas in Amazonia where its large size, restricted range and habitat make it susceptible to overexploitation by artisanal and industrial fisheries); and even wider-ranging species targeted for the international fin trade (e.g., fisheries in Indonesia for shark rays, sharkfin guitarfishes, and guitarfishes, families Rhinidae, Rhynchobatidae and Rhinobatidae, have collapsed due to intense exploitation).

Outcomes were not all negative however, and several species were assigned the Least Concern category, for example, when they occur outside major fishing grounds, in marine protected areas or where efforts to reduce bycatch in fisheries have resulted in reduced catches or reduced mortality.

Other Outcomes

The workshop also served to facilitate valuable discussions on the many challenges facing batoid conservation and sustainable management. The setting was unique in that the majority of the world's batoid experts were able to be together in one place to have face-to-face debates. It was agreed that a major hindrance to effective conservation was the lack of fisheries monitoring and species-specific data. This problem is manifested through the large proportion of species assigned to the Data Deficient category at the workshop. These included many of the freshwater potamotrygonid rays of South America, for which threats have been identified but detailed information is lacking to demonstrate the effects of these threats or population trends. It was recognized that training, resources and collaboration were paramount in addressing these issues, as are education and building awareness both in the scientific (particularly fisheries management) and more widely. Research into basic life-history parameters (to provide biological information essential in management, i.e. fecundity, maturity, age, etc.) and fisheries monitoring were identified as priorities.

The proportion of batoid species which have not yet been assessed is largely due to taxonomic uncertainty concerning the validity of these species. Unresolved taxonomic issues hinder effective management of the group, given that species, stocks and populations are not well-defined. The workshop emphasised the need for additional resources directed at systematics to place names on known species, to document biodiversity and to resolve taxonomic uncertainty. The lack of knowledge concerning batoids, with respect both to biology and taxonomy, is serious when compared to other groups.

Continuing Work

At the time of writing, the assessments undertaken at the workshop are being edited, and preliminary reviews are underway by SSG Red List assistants and Programme Officer in preparation for the SSG Red List Expert Panel Workshop to be held in March 2005. At this meeting, assessments will be critically reviewed by a panel of international chondrichthyan experts to ensure correct application of the IUCN Categories and Criteria, scientific creditability and consistency of assessments across species. All assessments will then be open to review and comment by the SSG network prior to submission to the IUCN Red List Programme for inclusion in the *2005 IUCN Red List of Threatened Species*.

In the longer term, the SSG plans to produce a report of the workshop outcomes to be available as a web-based pdf file. This will provide comprehensive conservation assessments of the global batoid fauna, together with management recommendations and future research priorities. This report will provide an invaluable source of information on this poorly-known group of fishes for researchers, fisheries managers and policy-makers worldwide, and will be a baseline for the much-needed work to follow.