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CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA



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IMPLEMENTING APPENDIX II LISTINGS FOR MARINE FISHES – IMPORTANT CONSIDERATIONS WHEN MAKING NON-DETRIMENT FINDINGS

1. This document has been submitted by the Secretariat on behalf of the IUCN, in relation to agenda item 78 on Sharing existing written science-based rationales and scientific information for non-detriment findings made for trade in CITES-listed species, and 88: Proposals to amend Appendices I and II.

The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

This document summarizes key advice for making non-detriment findings (NDFs) for marine fishes¹ listed on CITES Appendix II². It highlights the importance of, where possible: (i) making NDFs before removing specimens from the wild; (ii) making NDFs at an appropriate geographic scale; (iii) considering all types of wild extraction, and all sources of mortality, across all life-stages; (iv) ensuring fisheries and trade management is effective (i.e. appropriate for the pressures, complied with and/or enforced); (v) considering costs / benefits of export quotas; and (vi) monitoring populations and exports as part of adaptive management. The document then summarizes key sources of information and suggests five steps that could be taken to improve NDFs for marine fishes. These include updating the NDF material on the CITES Virtual College, sharing information on NDFs among Parties, asking Regional Fisheries Bodies to coordinate scientific and technical advice, supporting a second NDF workshop, and preparation of a discussion paper from this workshop.

This document is intended to help Parties appreciate the context, challenges and resources for making NDFs for marine fishes listed on CITES Appendix II. Such understanding will help address Parties' concerns about availability of data, challenges of implementing existing marine fish listings, and concerns about how to make NDFs for marine fishes (Vincent *et al.* 2014³). This should, in turn, further help Parties understand the implementation aspects of the listing proposals for marine fishes at the 17th meeting of the Conference of the Parties.

This document draws primarily from the report of the Fishes Working Group at the International Workshop on CITES Non-Detriment Findings⁴ (Cancun, Mexico, 2008) and NDF guidance for humphead wrasse (*Cheilinus undulates*, Sadovy *et al.* 2007⁵), sharks (Mundy-Taylor *et al.* 2014⁶) and seahorses (*Hippocampus* spp., Foster & Vincent 2016⁷). It is, of course, up to CITES Parties to decide on how to make an NDF.

Regulation of trade in Appendix II species – Article IV

The export of any species listed on CITES Appendix II requires a permit from the designated national CITES Management Authority (MA) (Article IV⁸, paragraph 2). The Convention is clear that an export permit should only be granted when certain conditions have been met: two conditions for dead specimens (Article IV, paragraphs 2(a) and (b) of the Convention), and three conditions for live specimens (Article IV, paragraphs 2(a), (b) and (c) of the Convention). This Information Document (Inf Doc) responds to the first of those conditions:

Article IV, paragraph 2(a) – a Scientific Authority of the State of export has advised that such

- ⁴ <u>http://www.conabio.gob.mx/institucion/cooperacion_internacional/TallerNDF/Links-Documentos/WG-CS/WG8-Fishes/WG8-FR.pdf</u>
- ⁵ Sadovy et al. 2007. FAO Fisheries Circular. No. 1023. Rome, FAO. 71 pp. <u>http://www.fao.org/docrep/012/a1237e/a1237e/00.htm</u>
- ⁶ Mundy-Taylor et al. 2014. Report prepared for the Germany Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN). Version 2.0. 142 pp. <u>https://cites.org/sites/default/files/eng/prog/shark/docs/Shark%20NDF%20guidance%20incl%20Annexes.p</u> <u>df</u>
- ⁷ Foster & Vincent 2016. Project Seahorse, Institute for the Oceans and Fisheries (formerly the Fisheries Centre), The University of British Columbia. Version 4.0. 72 pp. <u>www.projectseahorse.org/ndfs</u>

¹ This refers to fish that spend some or all of their life-history in the marine environment.

² Trade in Appendix I listed species for primarily commercial purposes is not allowed, so NDFs are not relevant; there is no NDF requirement for Appendix III species.

³ Vincent et al. 2014. Fish and Fisheries.15: 563–592. DOI: 10.1111/faf.12035.

⁸ <u>https://cites.org/eng/disc/text.php#IV</u>

export will not be detrimental to the survival of that species (in the wild). *Informally, this means that the export must not harm wild populations of the species.*

The introduction from the sea (IFS)⁹ of any specimen of a species included in Appendix II also requires a certificate from the national MA of the State of Introduction (see Article IV, paragraph 6 and Resolution Conf. 14.6 (Rev. CoP16)). **An IFS certificate should only be granted when two conditions have been met** (Article IV, paragraphs 6(a) and (b) of the Convention). **This Inf Doc responds to the following restriction**:

Article IV, paragraph 6(a) - a Scientific Authority of the State of introduction advises that the **introduction will not be detrimental to the survival of the species involved**¹⁰; *Informally, this means that introduction must not harm wild populations of the species.*

A non-detriment finding (NDF) is the "determination" of the Scientific Authority that advises that export will not be detrimental to the survival of the species, as per the permit conditions set out in Article IV, paragraphs 2(a) and 6(a), and should be the result of a science-based assessment (Res. Conf. 16.7¹¹).

NDFs can take many forms, but to be robust they are ideally based on an understanding of five things: (i) geographic distribution of the listed species across its life history; (ii) pressures the species experiences across its distribution; (iii) sub-population/stock structure of the species; (iv) management being implemented to address these pressures across space and time; and (v) whether the management is effective in reducing pressures and securing sustainable wild populations. This last is particularly important. Evaluating effectiveness requires well designed monitoring and associated analysis to inform adaptive management, whereby management is improved (e.g. quotas adjusted, MPA coverage expanded) by learning from management outcomes.

In addition to its contributions to Article IV, paragraph 2, this Inf Doc responds to the condition in Article IV, paragraph 3 – that national **Scientific Authorities (SAs) should monitor both export permits and actual exports**, and advise the Management Authority (MA) if measures need to be taken to limit exports to maintain the species throughout its range at a level consistent with its role in the ecosystems in which it occurs, and well above the level at which that species might become eligible for inclusion in Appendix I.

i. NDFs are best made before the animals are removed from the wild

To support conservation of the species, NDFs are best made before animals have been removed from the wild (i.e. before capture and/or landing). This would help ensure that exports do not damage wild populations, because Parties may choose to invoke management measures that affect extraction, such as catch limits or protected areas. Such measures may be deployed in a precautionary way to help reduce risks to the species even as gaps in management are addressed and quality of information is improved (often in an iterative process known as adaptive management). Making NDFs before removing the animal from the wild may be particularly important in contexts where the CITES listed species are caught incidentally (e.g. non-selective fisheries that catch seahorses, shark fisheries).

ii. NDFs need to be made at an appropriate geographic scale

⁹ defined to mean "transportation into a State of specimens of any species which were taken in the marine environment not under the jurisdiction of any State" (Resolution Conf. 14.6 (Rev. CoP16))

¹⁰ Clarification on IFS and which Authorities should issue the required findings can be found in Resolution Conf. 14.6 (Rev. CoP16).

¹¹ <u>https://cites.org/eng/res/16/16-07.php</u>

Where sub-population/stock structure is known, then an NDF assessment at that level is most robust¹²**.** For many species included in the CITES Appendices, a **sub-population** – defined by CITES as a geographically or otherwise distinct group which has little exchange with other groups in the population¹³ – is the appropriate unit of conservation management. In fisheries, however, the focus is commonly on the **stock**. A stock amounts to sub-population of a particular fish species, often occupying a well-defined geographical range and regarded as an entity for management and assessment purposes. Its population dynamics are defined by its intrinsic parameters, with extrinsic factors considered to be insignificant¹⁴. We here use both **sub-population** and **stock** in order to bridge the worlds of CITES and fisheries.

Some NDFs need to reach beyond national boundaries. When undertaking NDFs for species or subpopulations/stocks that occur within the waters of more than one State and/or on the high seas (straddling stocks), **CITES encourages an NDF to be developed and issued at a regional level** (see AC28 Com. 9 (Rev. by Sec.)¹⁵; Mundy-Taylor *et al.* 2014⁶). Such an approach should help ensure a biologically meaningful integrated assessment of the entire sub-population/stock and all sources of take and mortality. Generating a regional NDF can also encourage and help facilitate cooperation among Parties¹⁶. CITES Parties that are also Parties to relevant Regional Fisheries Bodies (RFBs), including Regional Fisheries Management Organizations (RFMOs), should consider working with the Scientific Committees of the relevant RFB in the issuance of CITES NDFs. This is particularly the case where CITES-listed species are taken in RFB or RFMO-managed fisheries (either as directed or incidental take), including but not exclusively when the RFB in question has adopted conservation and management measures for the species in question.

iii. NDFs need to consider all sources of loss of wild individuals

NDF assessments should consider all sources of loss of wild individuals for a species or subpopulation/stock – and not just that resulting from, or intended for, international trade¹⁷. Even conservative export volumes could pose a problem – and potentially need constraining – if a species or subpopulation/stock were threatened in other ways. For example, even small exports might be unsustainable if the species were also experiencing substantial domestic or illegal trade, and/or suffered from severe habitat damage or degradation, *inter alia*.

The following are sources of loss of wild individuals that should be incorporated as information allows, taking into account **historic and current loss** in both **domestic and international waters** (i.e. loss throughout the species or sub-population/stock's range), and that incurred **at all stages of a species' life history** (and not just the stage being exported/introduced from the sea):

- **Natural mortality** from predation, disease, or old age.
- **Fishing** (*legal and illegal*) from targeted, secondary and/or incidental capture whether taken dead or alive, discarded or landed (including capture in ghost fishing gear).
- **Habitat related mortality** from habitat loss and degradation, including that induced by fishing activities (e.g. from harmful or destructive fishing gear), pollution, climate change, coastal development, barriers to migration, invasive species etc.

¹² note that CITES defines **population** as the total number of individuals of a species¹².

¹³ https://www.cites.org/eng/resources/terms/glossary.php

¹⁴ Mundy-Taylor et al 2014⁶

¹⁵ <u>https://cites.org/sites/default/files/eng/com/ac/28/Com/E-AC28-Com-09-Rev.%20by%20Sec.pdf</u>

¹⁶ It would be an added benefit to the 126 CITES Parties who are also a member of CMS, which has listed many shark and ray species, and requires the cooperation of its members.

¹⁷ Res. Conf. 16.7 paragraph (a)(ix)(E); <u>https://cites.org/eng/res/16/16-07.php</u>

• **Culture** – take of wild individuals for aquaculture (production of source code¹⁸ F, C), ranching operations (production of source code R), grow-out operations (source code W), and/or as well as for restocking programs.

iv. Making positive NDFs depends on ensuring effective management

For marine species included in CITES Appendix II, sound management is usually a necessary precursor for granting an export permit or IFS certificate. Without effective management, it is generally very difficult to be confident that export or IFS will not harm wild populations, as required under Article IV, paragraphs 2(a) and 6(a). The corollary is that sound management can enable wild species or sub-populations/stocks to persist and thrive even under considerable exploitation and other pressures.

Many management options can be implemented to regulate exploitation of a species or sub-population/stock, in support of sustainable wild populations and sustainable trade. Management options should first be evaluated as to whether they are **appropriate** to mitigate the pressures on the species. Not all options are appropriate for all situations. For example, export quotas are unlikely to reduce mortality for species captured incidentally. It is also vital that the management be **implemented** – management that does not generate compliance, or is not enforced, is of little to no value. Finally, the management must be **effective** at mitigating the identified risks. Merely implementing appropriate management is not enough. The vital metrics are the trend in population numbers and demographic parameters (e.g. size, structure, sex ratio), which are determined by monitoring (see below). If population numbers are declining or other indicators of adverse impacts are observed, then the management needs to be adjusted. It is either not the right management for the pressures, is not enough management (e.g. need to lower a quota, increase MPA coverage), does not have good enough implementation (e.g. inadequate enforcement), or is not addressing the right pressures.

Useful management measures for fisheries (that affect persistence of trade) may be species-specific or they may be more generic. **Species-specific management measures** might include a targeted and tailored quota or a minimum size limit. **Generic management measures** might be directed at influencing the overall catch or effort of a fishery or trade, but also confer some benefit on the particular species of concern. Examples would include spatial or temporal restrictions on fishing activities.

The following is a non-exhaustive list of possible options for managing the exploitation of Appendix II listed CITES species. Parties need to consider which may be most appropriate to address the exploitation pressures on their species; each measure will have variable costs-benefits depending on the species and/or situation¹⁹. These management responses are mostly concerned with fishing, but some will also relieve pressures on marine habitats. Parties may wish to choose measures that can address multiple pressures simultaneously.

Input controls (regulating fishing effort)

- Limited entry
- Permanent, no-take Marine Protected Areas (i.e. reserves)
- Gear restrictions spatial
- Gear restrictions temporal
- Tenurial ownership

¹⁸ https://www.cites.org/eng/res/12/12-03R16.php

¹⁹ For example, the seahorse NDF guidance (Foster & Vincent 2016)⁷ reviews the appropriateness of the listed measures for mitigating fisheries and habitat pressures on seahorse populations.

Output controls (regulating fisheries take)

- Catch quotas
- Minimum size limit
- Maximum size limits
- Slot size limits
- Sex selective fishing
- Stage selective fishing

v. NDFs need to incorporate an understanding of the costs / benefits of export quotas

A common approach to making NDFs for CITES Appendix II listed species is to set export quotas, including zero quotas as appropriate. Setting an export quota as advised by a Scientific Authority effectively meets the CITES requirement to make an NDF²⁰. Export quotas for Appendix II marine fishes can be an effective means of ensuring sustainable levels of trade (non-detriment) where there is a direct feedback loop that generates a reduction in catches. However, export quotas can be problematic in some circumstances or for some species/Party combinations.

The following is a non-exhaustive list of concerns that should be considered before setting export quotas for Appendix II marine fishes:

- Export quotas in one country might increase demand for the species from another range State. This is particularly worrying if the country with new or increased pressure is one with weaker management (e.g. humphead wrasse²¹, sturgeon²²).
- Export quotas for one species might result in increased exploitation and/or export of another species, potentially one with weaker management (e.g. anguillid eels²³).
- Export quotas (especially zero quotas) might lead to increased domestic consumption of the species that more than compensates for reduced export and so results in no conservation benefit. (e.g. sturgeon)
- Export quotas might lead to more illegal, unreported and unregulated (IUU) export. Trade that is banned often moves underground, becoming more difficult to monitor and/or manage. (e.g. humphead wrasse²⁴, seahorses²⁵).
- Export quotas may have little effect on species that are caught incidentally, as bycatch in nonselective (or minimally selective) fisheries (e.g. seahorses⁷).
- Export quotas on an export product will have little effect on species if that part of the animal was not driving the fishery (e.g. sharks²⁶).

For marine fishes, any use of export quotas should be combined with other precautionary measures and be accompanied by robust enforcement and monitoring. Monitoring allows for adaptive management and adjustment of quotas as necessary to achieve management goals.

- ²³ Crook 2011. TRAFFIC Bulletin 23(2): 71-74; Crook & Nakamura 2013. TRAFFIC Bulletin 25(1): 24-30. <u>http://www.traffic.org/Bulletin</u>
- ²⁴ Wu & Sadovy de Mitcheson 2016. TRAFFIC 32 pp. <u>https://wildopeneye.files.wordpress.com/2016/03/humphead-wrasse-hong-kong-trade.pdf</u>

²⁰ Annex of Resolution Conf. 14.7 (Rev. CoP 15)

²¹ Yvonne Sadovy, IUCN SSC Grouper and Wrasse Specialist Group, pers. comm.

²² Phaedra Doukakis, IUCN SSC Sturgeon Specialist Group, pers. comm.

 ²⁵ e.g. O'Donnell et al 2012. Coastal Management, 40(6), 594-611. DOI: 10.1080/08920753.2012.727734; Lawson 2014. MSc thesis, The University of British Columbia. <u>http://hdl.handle.net/2429/50198</u>

²⁶ e.g. hammerhead shark meat is consumed domestically in Mozambique – a zero export quota of their fins would have no impact on levels of exploitation; Glenn Sant, TRAFFIC, pers. comm.

vi. Making positive NDFs depends on monitoring and adaptive management

Monitoring of populations, fisheries and exports, with associated analyses and feedback, are essential components of a robust NDF process. Adaptive management is only possible with monitoring that assesses the status and demographic parameters of the wild populations or sub-populations/stocks, which may be inferred from fisheries and trade metrics/indicators²⁷. With monitoring, making NDFs becomes an iterative process, with an ever-improving level of confidence in the findings.

Monitoring for adaptive management should take place over both space and time, and must collect information on effort – monitoring data are only truly useful and dependable if they are accompanied by a measure of effort. Monitoring can occur on four levels:

- **Population monitoring** using fisheries independent approaches (e.g. underwater visual census, research trawl surveys). Monitoring must collect information on survey effort.
- **Fisheries monitoring** monitoring catches, including discards where possible or at least landings. Monitoring must collect information on fishing effort.
- Trade surveys monitoring domestic and international trade volumes and characteristics. Monitoring
 must collect information on trade effort, such as the number of buyers or the catchment from which each
 buys.
- **Stakeholder interviews** although directly monitoring populations or fisheries is ideal, it takes time to get results. For an immediate (and generally cheaper) assessment, one can survey stakeholders (e.g. fishers, buyers, exporters) for information about the populations, fisheries and trades.

To make monitoring tractable, **Parties may choose to set up specific "sentinel" or indicator populations and/or fisheries.** Frequent monitoring of these populations or fisheries, in a consistent manner, will allow Parties to evaluate impacts of fisheries on wild species or sub-populations/stocks. Parties will want to evaluate the feasibility of different sampling protocols, trying for high frequency and consistency over time.

A document for CITES Parties on the approaches, challenges and ways forward with data collection for Appendix II marine species is available at <u>www.iucn-seahorse.org/citesmarine</u>.

²⁷ E.g. <u>http://www.fao.org/docrep/w4745e/w4745e0f.htm</u>; advice in Mundy-Taylor et al. 2014⁶ and Foster & Vincent 2016⁷.

Sources of information

Material for making NDFs is increasingly available, including voluntary guidelines/frameworks to assist Parties²⁸. When using any framework, it will be important to (i) provide the evidence that guides decision making and (ii) remember that uncertainty about any information should prompt a more precautionary approach to an NDF, one that includes provisions for increasing confidence in the information.

Information can be marshalled from many sources: primary (published, peer-reviewed) literature, grey (management, non-refereed) literature, unpublished data, other Parties, RFMOs that may collect data on CITES-listed species, local ecological knowledge (LEK)/traditional environmental knowledge (TEK), citizen science initiatives, and more. Much of this information is available through the IUCN Red List of Threatened Species (<u>www.iucnredlist.org</u>), and national conservation assessments (e.g. <u>www.nationalredlist.org</u>). It is vital also to draw on expert advice, from knowledgeable people in country, regionally and globally. Such expertise may be found within other national agencies and organizations, regional scientific or management bodies, academia, non-governmental organizations, and the relevant IUCN SSC Specialist Group for a taxon²⁹. Uniting these experts to work through the relevant NDF frameworks will reveal how much is already known, and what gaps need to be filled to understand populations and pressures.

NDF advice for marine fishes in general

- Fishes Working Group report at the International Workshop on CITES Non-Detriment Findings (Cancun, Mexico, 2008): PC18 Doc. 14.1 – <u>www.cites.org/eng/com/pc/18/E-PC18-14-01.pdf</u> and <u>www.conabio.gob.mx/institucion/cooperacion_internacional/TallerNDF/wg8.html</u>
- A risk assessment framework for fisheries species, and application of the framework to fished shark species: jncc.defra.gov.uk/page-6120 and http://bit.ly/2bcJY56
- NDF Guidelines for Aquatic Species by the Fisheries Agency of Japan: AC28 Inf. 10 cites.org/sites/default/files/eng/com/ac/28/Inf/E-AC28-Inf-10.pdf

NDF frameworks / tools for specific marine fish taxa (in alphabetic order):

- European eel: ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WKEELCITES/wkeelc ites_2015.pdf and www.ices.dk/community/groups/Pages/WGEEL.aspx
- Humphead wrasse: www.fao.org/docrep/012/a1237e/a1237e00.htm
- Seahorses: www.projectseahorse.org/ndf
- Sharks: cites.org/sites/default/files/eng/prog/shark/docs/Shark%20NDF%20guidance%20incl%20Annexes.pdf and cites.org/eng/prog/shark/Information_resources_from_Parties_and_other_stakeholders#NDFs%20and% 20NDF%20guidance
- Sturgeons: <u>cites.org/eng/prog/sturgeon.php</u>

Recommendations

The following five recommendations would help advance and enhance NDFs for marine fishes, while also supporting other taxa.

²⁸ many of those available for marine fish are collated at <u>www.iucn-seahorse.org/citesmarine</u>

²⁹ https://www.iucn.org/theme/species/about/ssc-specialist-groups-and-red-list-authorities-directory

- i. That the Secretariat should review the information currently available in the CITES Virtual College on making NDFs for species in Appendices I and II and update it by adding material that has become available more recently including, *inter alia*, guidelines on making NDFs for sharks, seahorses and perennial plants.
- That Parties should share their written science-based rationales and scientific information on NDFs for all CITES listed species, including marine species (Cop17 Doc.78³⁰; see also draft Decisions 17.AA b) and 17.FF c) of CoP17 Doc. 56.1 Annex 1³¹). We recommend discussion of a Decision of the CoP calling on Parties to do so.
- iii. That Parties that are Members of Regional Fisheries Bodies or other relevant intergovernmental arrangements should request them to coordinate the scientific and technical advice necessary to inform (i) adaptive management of shared stocks of commercially exploited species listed in the CITES Appendices and (ii) NDFs for exports of specimens derived from such stocks – whether the CITES-listed species is managed by the RFB in question, or is taken in the RFB fishery.
- iv. That Parties should work with the Secretariat to find financial support for an international expert workshop on NDFs for marine species, with the principal goal of enhancing CITES Scientific Authorities' and Regional Fisheries Bodies' capacities to formulate NDFs. The workshop will gather and provide guidance and information on methodologies, tools, information, expertise and other resources used to formulate NDFs on specific taxa. We recommend a Decision of the CoP on convening such a workshop.
- v. That the Animals Committee and Plants Committee should review the Proceedings resulting from the proposed expert workshop on NDFs and prepare, for consideration at the 18th meeting of the Conference of the Parties, a discussion paper and, if considered appropriate, revise the existing Resolution on NDFs (Res. Conf. 16.7³²).

This Information Document was prepared by Project Seahorse (<u>www.projectseahorse.org</u>), acting as the IUCN SSC Seahorse, Pipefish and Stickleback Specialist Group (SPS SG) (<u>iucn-seahorse.org</u>), with generous support from the Paul G. Allen Family Foundation (<u>www.vulcan.com/areas-of-practice/philanthropy</u>) and Guylian Chocolates Belgium (<u>www.guylian.com</u>).

PLEASE NOTE: If the web-links (urls) do not work, please copy and paste them into your browser.

³⁰ <u>https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-78.pdf</u>

³¹ <u>https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-56-01.pdf</u>

³² <u>https://cites.org/eng/res/16/16-07.php</u>