

DRAFT GUIDANCE: NON-DETRIMENT FINDINGS

MODULE 2: PRACTICAL CONSIDERATIONS FOR MAKING NON-DETRIMENT FINDINGS

1.0. What is in this module?

This Module offers information on the "How to" of NDF making. Specifically, it adds to the principles for making NDFs by looking at practical considerations in making NDFs, including in circumstances of low risk, low data, or low capacity. It also provides relevant schemes and templates, practical criteria, and case studies to put the principles for making NDFs into practice.

2.0. How to make a non-detriment finding

There are various ways a Scientific Authority (SA) can make non-detriment findings but the Resolution Conf. 16.7 (Rev. CoP17) does recommend that the NDF is *"based on resource assessment methodologies which may include, but are not limited to, consideration of*:

- A. species biology and life-history characteristics;
- B. species range (historical and current);
- C. population structure, status and trends (in the harvested area, nationally and internationally);
- D. threats;

E. historical and current species-specific levels and patterns of harvest and mortality (e.g., age, sex) from all sources combined;

F. management measures currently in place and proposed, including adaptive management strategies and consideration of levels of compliance;

- G. population monitoring; and
- H. conservation status;"

Three further recommendations in the Resolution are key to making NDFs:

- 1) the making of an effective non-detriment finding relies upon a correct identification of the species concerned and verification that it is specimens of this species that are to be exported (paragraph 1.a) v);
- 2) in making a non-detriment finding, Scientific Authorities should consider the volume of legal and illegal trade (known, inferred, projected, estimated) relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species) (paragraph 1.a) iii)); and
- 3) the implementation of adaptive management, including monitoring, is an important consideration in the making of a non-detriment finding (paragraph 1(a)viii).

There is no requirement for NDFs to be made publicly available, although Parties are encouraged to share their NDFs via a dedicated area of the CITES Virtual College website (<u>https://cites.org/eng/virtual-college/ndf</u>). Where there are concerns with levels of trade for a particular species identified through the Review of Significant Trade (Res. Conf. 12.8 (Rev CoP18), Parties are asked to provide information to the Secretariat and the relevant Committee on how they have assessed trade is non-detrimental.

2.1. Geographical focus of assessment

Understanding the sustainability of harvest should primarily focus on the harvest site and extraction from that site. If this is sustainable/non-detrimental then it should not have a negative impact on other parts of the species' range within the country or beyond. However, harvest area should be considered in relation to the species and its harvest nationally and internationally. A seemingly sustainable harvest from one area may be acting as a sink for the species from other areas. It is important to understand the harvest and reasons for harvest within the context of the species' population and management more widely; for instance, the species may be deliberately removed locally, but the species population overall within the country remains healthy.

Harvest for export should also be considered with harvest for domestic use at the site and in other parts of the species' range at the national level, as well as in relation to the entire species' range (in line with <u>Res. Conf 16.7</u> paragraph 1 a ix C). Non-harvest related mortality/loss (natural mortality, climate change, land conversion, etc.) should also be taken into account when determining sustainability of harvest.

NDFs for harvest of migratory species should ensure that harvest from the area in question does not impact negatively on other parts of the species' range, including in other jurisdictions. See Section 3 of Module 1 on impact on role in the ecosystem, Module 6 on Migratory Species, and the Section ** on areas beyond national jurisdiction (ABNJ) and Introduction from the Sea (IFS) in Module 5 for further detail.

Often, Scientific Authorities make a species-specific non-detriment finding for the whole country - which should take into account all harvest areas and the overall distribution of the species in that country. Offtake is generally assessed at the local level and, where determined to be non-detrimental, quotas can be set at a local scale. These local (or subnational) quotas are often combined to produce a national level annual quota (to be allocated for determined periods of time, as far as possible throughout a calendar year; see <u>Res. Conf. 14.7</u> (Rev. CoP15)). For instance, timber export quotas may be derived from harvest and processing figures from concessions throughout the country where harvests from each concession have been assessed as being non-detrimental. <u>Resolution Conf. 14.7 (Rev. CoP15)</u> on *Management of nationally established export quotas* provides guidelines for management of nationally established export quotas can be a useful management tool used by CITES Authorities to ensure that a species is not exported beyond a level that is determined to be non-detrimental, ensuring that it continues to be maintained throughout its range at a level that is consistent with its role in its ecosystem. When export quotas are established, they should be set as a result of a non-detriment finding by a Scientific Authority, in accordance with <u>Article III, paragraph 2 (a)</u>, or <u>Article IV, paragraph 3</u>.

2.2. Frequency of making NDFs

How often a Scientific Authority needs to make an NDF will depend on the specific characteristics of the species and trade involved, as well as the monitoring systems in place. The frequency may change over time with increasing confidence in the harvest and management.

Some NDFs are developed on an annual basis or may cover more than a year (e.g., K-selected species that are monitored in a bi or tri annual basis), while others are developed on a case-by-case basis when a CITES permit is requested.

A Party may decide that a certain amount of offtake annually will be non-detrimental (based on consideration of parameters in the generic framework below). This may be formalised in an annual quota, nationally or by area. In this case offtake up to this level and export from the harvest can be allowed without having to make a new NDF for each application. Similarly for specific harvest areas or concessions, managers may have calculated annual sustainable offtakes may have been calculated and detailed in management plans. If the SA concurs with the non-detrimental assessment of the proposed offtake, it may only be necessary to make this finding once a year, but to track exports from the area and ensure that harvest is not being exceeded. If the NDF is not made

on a case-by-case basis it may be necessary for the SA to pay attention to external factors (i.e., climatic) or unusual levels of illegal harvest/trade that may impact on the sustainability of the harvest.

For exports of artificially propagated or captive produced specimens (see Source codes below), a one off NDF of the acquisition of the founder stock for a facility is necessary, unless further wild harvest augments the breeding stock, in which case NDFs for the stock introduced from the wild will be necessary. However, monitoring should be in place to ensure that no specimens from the wild are being laundered through these facilities.

2.3. NDFs and Export Quotas

As noted in <u>Res. Conf. 14.7 (Rev. CoP15)</u>, an export quota system is a management tool, used to ensure that exports of a certain species are maintained at a level that has no detrimental effect on the population of the species. The setting of an export quota advised by a SA effectively meets the requirement of CITES to make a NDF for species included in Appendix I or II and, for species in Appendix II, to ensure that the species is maintained throughout its range at a level consistent with its role in the ecosystems in which it occurs. A well-implemented export quota system eliminates the need for an NDF for each individual shipment of CITES specimens, provides a basis for monitoring the trade and may facilitate the issuance of export permits. The fundamental principle to follow is that decision-making regarding the level of sustainable exports must be scientifically based, and harvests managed in the most appropriate manner. When export quotas are established, they should be set as a result of a non-detriment finding by a Scientific Authority, in accordance with Article III, paragraph 2 (a), or Article IV, paragraph 2 (a), of the Convention, and should ensure that the species is maintained throughout its range at a level consistent with its role in the ecosystems in which it occurs, in accordance with Article IV, paragraph 3. Export quotas for wild-taken specimens should be set at a level that takes account of the number or quantity of specimens that are taken from the wild legally or illegally. An NDF should be made whenever an export quota is established for the first time or revised, and reviewed annually.

<u>Resolution Conf. 14.7 (Rev. CoP15)</u> outlines the conditions relating to the establishment of national export quotas. This Resolution states:

- where possible export quota should cover a calendar year;
- when quotas are established, they should be set as a result of a non-detriment finding by a Scientific Authority;
- export quotas should be set on a level that takes account of the number or quantity of specimens that are taken from the wild legally or illegally;
- export quotas are usually established for a set number or quantity of plants;
- quotas may be set for certain types of parts and derivatives- for example sawn wood;
- names used should follow CITES standard nomenclature;
- terms used should follow those in the <u>Guidelines for the preparation and submission of CITES annual</u> reports;
- Parties should inform the CITES Secretariat of nationally established export quotas and updates;
- every Party is responsible for monitoring their export quotas and ensuring that they are not exceeded. Data should be maintained on same.

2.4. How to put adaptive management into practice

This section describes the sequential steps that a Scientific Authority and others might need to undertake when developing an adaptive management approach to an NDF or to the management of a wildlife harvest. Box A additionally provides a case study to illustrate the overall process of adaptive management for Saker Falcon (*Falco cherrug*).

Not all steps will be needed for all NDFs, depending on the complexity of the harvest regime and the degree of risk, but some are likely to be essential when making any or all NDFs. Full adaptive management programmes / plans are unlikely to be needed for occasional trade in specimens judged to be low risk.

1. Review & plan

- collate all relevant/available information, review and analyse the current situation, state of knowledge and define or refine the conservation problem to be addressed. It is rare to be starting a harvesting regime afresh – there is normally a history of previous or current harvesting;
- consider the biological vulnerability of the species, its current conservation status globally and nationally (and where relevant in specific harvest areas), and determine what is known about current harvests (legal and illegal) and any impact on the population;
- consider the social-ecological system within which the harvested species sits, any potential feedbacks or unintended consequences of management decisions whether for the target species or for other species, consider which policy levers are realistic to influence, and the relationship between those levers and the status of the harvested population;
- analyse risks, whether biological, social, economic or political, for their likely impact and probability of occurrence, and judge overall risk accordingly
- consider uncertainties and gaps in knowledge, including through horizon scanning: what events might possibly have an impact on achieving non-detriment for harvests of the species or influence the management programme?
- record or tabulate risks (and uncertainties), perhaps using a RAG (red-amber-green) coding system to flag up the greatest risks and how these risks relate to changes in population status;
- identify key gaps in knowledge, skills or capacity that are needed to achieve non-detriment and how these might be addressed;
- undertake appropriate stakeholder consultation, both <u>internal</u> (other government departments, agencies and sub-national governments) and <u>external</u> (traders, harvesters, IPLCs, NGOs, academia).
- set <u>long-term</u> objectives or goals for the management regime including, if appropriate, for the expected socio-economic benefits to be derived from any harvest
- set desired <u>shorter-term</u> **outcomes** for the intended period of the management plan or adaptive management cycle (for example, this might be for a 3 or 5-year period).
- outcomes might be set in terms of the expected harvest from a population; the level at which a population should be maintained or not fall below; the level to which the population is meant to increase; and/or the expected socio-economic or other benefits which might accrue over the period;
- design and develop a plan with the relevant management actions including a timeline, a budget, and an indication of who is responsible for specific actions and how they'll be undertaken;

- based on the risk analysis, identify and put in place any precautionary management measures (such as very low quotas) or other safeguards that are needed to mitigate any identified risks;
- where desirable or risks are high, plan experimental management within limited areas to test predictions before implementing them in the complete harvest area;
- decide <u>at the outset</u> the initial monitoring methodology, its frequency and sensitivity, and suitable **performance indicators** to inform whether outcomes are being achieved; be clear over what is going to be measured, how it will be measured, why it is being measured, and how the resulting data will be stored, managed and analysed, including any technical needs for the analysis and any potential biases that will need to be addressed;
- ensure the plan and management measures take account of populations that might be migratory or shared between Parties, and those which also occur in waters beyond national jurisdiction (the 'high seas') – and so where the effects of harvests or management by other Parties might be cumulative - and seek international coordination and cooperation on NDFs for shared populations;
- ensure a suitable management framework and governance regime is in place, including establishing who has overall lead for the plan or NDF, and which bodies lead on individual elements of the plan; develop the plan and management measures in collaboration with other relevant parts of government, sub-national governments, IPLCs and other stakeholders;
- identify priorities for, and means of, addressing the gaps in knowledge identified earlier (which might be, in part, through monitoring).
- continue to communicate with stakeholders over the outcome of the planning process and the implications for harvesters, traders and others;
- o if appropriate, seek independent peer review of the draft plan and amend if appropriate;
- make the final plan or plans, and/or NDF if it differs, publicly available;
- at this stage, a **non-detriment finding** can be considered to have been made thus enabling trade derived from the harvest to be permitted (subject to any agreed conditions).

2. Implement & monitor

- implement the harvest and management actions with its agreed safeguard measures noting that these and other management actions might vary across different jurisdictions or governance regimes within a Party.
- ensure any necessary compliance and/or incentive measures are in place and are being applied effectively and equitably; take steps to minimise / prevent illegal harvest and trade;
- implement approaches to filling gaps in knowledge or information that won't be provided through monitoring;
- continue to build the capacity of the relevant authorities to implement the management programme and to interpret results;
- issue permits, with suitable conditions, to enable international trade of specimens derived from the harvest;
- undertake appropriate monitoring of agreed metrics at defined intervals (NB this step is an essential part of adaptive management);
- collect and collate harvest-dependent and /or harvest-independent data (or both if feasible) and any other information required;
- o calculate, produce and share indicators at appropriate intervals;

• share information where appropriate – for example with other Parties who share the same cross-border or migratory population.

3. Evaluate & adjust

- at defined period(s), prepare, analyse, synthesise and evaluate data collected through monitoring, prepare performance indicators, and review progress against planned outcomes for the period;
- some measures might require a review every year but others, where data cannot be gathered annually, might only be reviewed at longer intervals;
- use the process to incrementally improve knowledge of the impact of the harvests, the best measures to regulate it, and how effective the process is at achieving management objectives;
- o in consultation with stakeholders, identify lessons learned and scope for improvement.
- based on the above, revise, refine and adjust management measures or other elements of the plan / NDF as required to keep it on course to achieve the planned outcomes and long-term goals;
- for example, it might be necessary to adjust the length of closed seasons, to amend harvest and export quotas, and / or to amend governance arrangements to increase effectiveness;
- o share any amendments to the plan with relevant stakeholders and make any changes public.

Return to steps 1 & then 2 and then implement the plan as revised.

BOX A: Adaptive Management Framework for the sustainable use of the Saker Falcon (Falco cherrug)

The saker falcon *Falco cherrug* is listed in the International Union for Conservation of Nature (IUCN) Red List as Endangered. Its range spans over 7,000 km from Central Europe to Western China, and 3,000km north to south. Most populations are migratory and a number of different routes have been confirmed. One of the principal threats affecting its global population is unsustainable trapping / harvest on the breeding grounds and along the migration routes.

The saker falcon is listed in CITES Appendix II, which permits trade subject to the development of an NDF. Under the Convention on Migratory Species (CMS), the species is listed in Appendix I, meaning that, in CMS Parties, take or harvest is generally prohibited (with the exception of the Mongolian population which is listed in Appendix II).

The Saker Falcon Global Action Plan (SakerGAP¹) was adopted by CMS Parties in 2014 and a Saker Falcon Task Force (STF¹) established to oversee implementation. A key aim of the STF is to develop an Adaptive Management Framework (AMF) that moves the current illegal, and presumably unsustainable trapping activity, into a system that is legal, controlled, and sustainable and conforms CMS and CITES requirements. To develop such a framework the STF established an Adaptive Management Framework Discussion Group to use an AMF to assist the decision-making of stakeholders, especially international partners, and national authorities, on the sustainable use of the Saker Falcon.

The objective is to design an international AMF which integrates nine modules:

- a. global governance and data management, including effective sustainable use models and a sustainable, international quota scheme,
- b. internationally harmonized policy and law-making that ensures sustainability,
- c. reinforced law enforcement,
- d. effective awareness raising,
- e. effective monitoring and research schemes,
- f. complementary ex situ conservation measures,
- g. compensatory in situ conservation measures,
- h. effective stakeholder engagement, cooperation, and networking to respond to the socio-economic and cultural drivers of Saker Falcon use, and
- i. the involvement of rural communities in the conservation management of the Saker Falcon.

Currently, a significant degree of uncertainty and speculation accompanies the population estimates for certain key Range States, especially in Asia. Therefore, the STF is seeking to find a careful balance between the benefits of an internationally coordinated sustainable use framework and the inherent risks of taking Saker Falcons from the wild in large numbers. Safeguards can help ensure that management decisions are based on the best available science, in the context of the precautionary approach and, ultimately, that any legal use is sustainable and exerts minimal adverse impact on decreasing non-target populations.

The draft AMF suggests that legal harvest may conditionally be allowed in larger, stable or increasing Saker Falcon populations in parts of its global range, only if safeguards for sustainability are met and the origin of falcons is identifiable. Depleted or decreasing breeding populations should not currently be considered suitable for any harvest. However, the illegal taking of wild falcons along the flyways and in wintering areas must be mitigated.

This would require an international harmonization of alternative policies, legal and wildlife management tools. As well as a concerted international data sharing to ensure that harvest that is assessed as non-detrimental at the Range State level does not affect negatively the Saker Falcon populations of other Range States.

This case study demonstrates how adaptive management can be used as a tool to achieve shared objectives for a species across multiple range States with a range of measures being proposed to achieve sustainable use and boost populations.

3.0. A generic framework for making NDFs

This framework, and the guidance provide, is intentionally generic. This guidance needs to be useful to many Parties, each with different situations, limitations, and opportunities. The generic framework is intended as a starting point and different emphasis may be placed on different parts of the assessment. Different Parties will have different tolerances to risk. It is highly unlikely that any Party will have "perfect" information on which to make their decisions. Where there is uncertainty, it is recommended to be precautionary (see Section 5 in Module 1 on the Precautionary Approach). Scientific Authorities should consider working through the NDF framework even when the NDF is likely to be negative. Doing so helps in communicating the decision to stakeholders. It also helps Authorities and stakeholders understand what is needed to move toward sustainable exports in the future and improve species management. The diagram below illustrates the steps that can be taken to complete the NDF Framework (see Figure 2A and Table 2A).



Figure 2A: Overall flow diagram of the process for making NDFs.

Table 2A: Ov	verall steps for making NDFs.
Step 1	Complete pre-NDF checks to ensure basic information is known about the specimens and its trade, and whether completion of an NDF is necessary
Step 2	Undertake a Simple NDF using a Simple NDF Tool (see below) to easily establish whether or not the risk that harvesting for trade is threatening, or may threaten, the species with extinction.
Step 3	If after the Simple NDF it is not possible to satisfy non-detriment, then a more complex NDF is needed. This incorporates new data, if available, or results obtained from monitoring and management procedures.
Step 4	Where revised monitoring and management procedures are required to satisfy non-detriment, but are not yet implemented, they should describe which monitoring and management interventions are planned, and how the results are going to be interpreted in terms of non-detriment.
Step 5	If after Steps $1 - 3$ have been completed there is sufficient information to determine that trade is non- detrimental then exports can commence or continue as usual. However, if there is sufficient reason for the Party to believe the harvest may be detrimental, it may be appropriate to issue a negative NDF and voluntarily restrict exports until the non-detriment requirement can be satisfied.
Important additional step	NDFs are not single events. Situations change for a variety of reasons, and NDFs should be regularly repeated and updated to reflect these changes.

4.0. STEP 1: Pre-NDF Checks

If NDFs are being made on a case-by-case basis when an application is received, much of the information that are relevant for Pre-NDF checks (Figure 2B) will be available on the permit application.

Pre-NDF Checks

Is the specimen correctly identified? Is the species Listed in Appendix I or II? Is the specimen listed in the Appendices (may be excluded by annotation or listing)? Quantity of specimens. Specimen description (age and sex) Source of specimens (See guidance for source codes). Purpose of export Where were the specimens harvested from? National Legislation - are there reasons behind national regulations that could help understanding of detriment and extinction risks.

Figure 2B: Aspects of making Pre-NDF checks.

4.1. Is the specimen correctly identified?

The Convention Text in Article II and IV states that the Scientific Authority of the State of export should advise "that such export will not be detrimental to the survival of that species"; with species having been defined in Article I as meaning "any species, subspecies, or geographically separate population thereof". Resolution Conf. 16.7 Paragraph 1. a) v) recommends that "the making of an effective non-detriment finding relies upon a correct identification of the species concerned and verification that it is specimens of this species that are to be exported". Therefore, the focus of the NDF is on species as a whole, the subspecies (if relevant) or geographically separate population of the species of which the relevant country makes up part or all of the range. However this is interpreted, the SA is directed to make a NDF based on **the species**, not at a higher level.

However, this potentially poses a challenge for some species that have been listed at the genus level or higher because of taxonomic uncertainty, relevant data being generic due to difficulties of identifying specimens to the species level, and trade under common or generic terms where it is difficult to determine which species are included without more rigorous testing. Furthermore, there are some exceptions (see <u>Res. Conf. 12.3</u>) where trade identified at the genus level is acceptable, for example, for stony corals (see <u>Notification to the Parties No. 2013/035</u>). There may be cases where making the decision at the genus level is the only practical option for a Scientific Authority; **this should be the exception and not the norm.** If the genus contains species known to be at different risks of extinction, or has some species more vulnerable to harvesting than others, then suitable precautionary conditions (see <u>Section 5 of Module 1 on Precaution</u>) will need to be applied to reduce the risks.

Possible approaches to making an NDF depending on the circumstances include:

- 1) Assume that all harvest is of the most threatened species that may be included in the trade (most precautionary approach); or,
- 2) Make a NDF for the species for which most information is available and then take an approach proportionate to the risk to the other species that could also be included in the export; or
- **3)** Assume most harvest is from the species that is most common in the area and make and NDF for this species (least precautionary).

4.2. Is the species listed in Appendix I or II?

This will guide the level of risk and precaution that may need to be applied. Also see guidance on making NDFs for imports of Appendix I-listed species.

4.3. Is the specimen listed in the Appendices?

Some specimens are excluded from the Convention by annotation or the listing and therefore an NDF is not needed.

4.4. Have recommendations to suspend trade relevant to the species being exported been issued by the Secretariat?

Recommendations to suspend trade in specimens of species listed on the Appendices of CITES may be issued by the Conference of the Parties via the Standing Committee. These recommendations are communicated to the Parties via a notification from the CITES Secretariat. Recommendations to suspend trade are withdrawn when the impacted Party adequately addresses the issue(s) that led to the recommendation and thereby returns to compliance with the terms of the Convention.

The reasons behind a recommendation to suspend trade include inadequate domestic legislation, the need to reduce illegal trade, a failure to submit annual reports or significant detrimental trade in CITES Appendix II (thereby contravening the terms of Article IV of CITES) (CITES, 1973, 2023a).

The Scientific Authorities for the affected Parties would presumably be aware of these recommendations and should factor them into the NDF process. The list of recommendations to suspend trade is maintained by the CITES Secretariat on the CITES website (CITES, 2023a).

If the user is confident that trade in the specimens to be traded are not subject to any recommendations to suspend trade, proceed to Step 2.3 of this guidance. If a relevant recommendation to suspend trade is in force, then it is the responsibility of the exporting country to abide by the recommendations of the Secretariat and proceed to Conclusion 3.2.2 in Step 3.

4.5. Quantity of specimens

How many specimens are included in the application for export? Calculation of whole individual equivalents may be necessary if specimens are being traded as parts or derivatives. It is necessary to understand any loss or wastage likely in obtaining quantities for export.

Low quantities of specimens for export relative to population numbers or a one-off export are likely to be low risk (although this will also depend on numbers, population numbers and whether this could be the start of a new trade trend). This needs to be considered in relation to the whole harvest for domestic use and export as well as mortality rates and other sources of threats. Even if the export makes up a very small percentage of offtake or is not the primary purpose of the offtake, if the whole offtake is detrimental, then the export should be considered to be detrimental too. The NDF process may have the benefit of improving harvest management overall by flagging the issues with the Management Authority.

4.6. Specimen age, sex, and size

Offtake of a particular age or sex of individuals may have a different impact on the population e.g., harvest of post reproductive individuals is likely to have a lower impact on the population than reproductive aged individuals.

4.7. Source of specimens (source code)

Source codes determine whether NDFs need to be made. All exports of Appendix I and Appendix II-listed species, apart from source codes I and O, require an NDF to be made. As NDFs assess the impact on wild populations, NDFs for sources codes W, R, X, U assess the wild offtake directly for trade, whereas for sources A, C, D, F, Y assess the acquisition of parental breeding/propagating stock taken from the wild and any additional wild stock introduced into management system. Differences in the approach to making the NDF for specimens originating from different source codes are detailed in Table 2B.

NDFs for captive produced animals (source codes C, D and F) or plants from artificial propagation (source code A) require that an NDF is made for the acquisition of the founder stock harvested from the wild for production. Where the founder stock is closed cycle (i.e., maintained without the need for additional specimens from the wild to augment the breeding stock), it should be possible to make an NDFs only once, for the original harvest from the wild. Assuming there are no other impacts of production on the wild population, it should be simple to make a positive conclusion that the trade can proceed. Where ongoing harvest from the wild is necessary to maintain the production, updates to the NDFs will be required, the frequency of which will depend on how often any additional wild harvest takes place. Captive-bred or artificially propagated exports may be considered low risk. The SA needs to be confident that no wild harvested specimens are being laundered through facilities. Plant specimen from well managed agroforestry or other mixed cultivation under source code Y may also be considered lower risk, as long as proven that no remnant trees or saplings of natural populations are included. Non-native or introduced species could also be considered as low risk as no native population would be impacted.

Generally, specimens of source code I are not exported. However, in exceptional circumstances, Res. Conf. 17.8 (Rev CoP19) on *Disposal of illegally traded and confiscated specimens of CITES-listed species* recommends that if the Management Authority has satisfied itself that sale of the specimens would not be detrimental to the survival of the species can sell the specimens which can also be exported or re-exported (see paragraph 8c). Given it is unlikely that the exact location of harvest is known, a good understanding of the harvest of the species and impact at the national level would be needed.

Table 2B	: CITES source codes and respective needs for	making NDFs.	
Code	Short description	NDF needed	Notes for Guidance on NDF
A	Plants that are artificially propagated	YES	PLANTS: NDF to be made on "cultivated parental stock" removed from the wild and
С	Animals bred in captivity	YES	any harvest of additional wild specimens for augmentation.
D	Appendix-I animals bred in captivity for commercial purposes and Appendix-I plants artificially propagated for commercial purposes	YES	ANIMALS NDF for harvest from the wild of breeding stock used to establish breeding operation including any additional wild stock introduced.
F	Animals born in captivity (F1 or subsequent generations)	YES	NDF made on harvest of breeding stock.
ļ	Confiscated or seized specimens (may be used with another code)	NO	No NDF needed.
0	Pre-Convention specimens	NO	
R	Rearing in a controlled environment of animals taken as eggs or juveniles from the wild, where they would otherwise have had a very low probability of surviving to adulthood.	YES	NDF for life stage of wild harvest required to produce exports.
U	Source unknown	YES	Treat as wild sourced. Harvest location likely unknown, therefore precaution needed/treat as higher risk.
W	Specimens taken from the wild	YES	NDF on (total) harvest for exports for App II and exports and imports for App I.
x	Specimens taken in "the marine environment not under the jurisdiction of any State" (i.e. Introduction from the Sea)	YES	NDF on (total) harvest (including discards) for quantities to be landed/re-exported. See WG outputs
Y	Specimens of plants that fulfil the definition for "assisted production".	YES	NDF for any material sourced from the wild to establish production or ongoing health of the production system.

4.8. Purpose of export (Purpose code)

What is the purpose stated? The Scientific Authority may consider different purposes are likely to have different risks or benefits. It may be that specimens for scientific purposes or for breeding/propagation stock are viewed differently to commercial trade.

4.9. Where were specimens harvested from?

This will determine the area(s) of primary focus of the NDF assessment.

4.10. National Legislation

It is the role of a Party's CITES Management Authority to make a legal acquisition finding, however information behind national regulations could help understanding of detriment and extinction risks, e.g., minimum cutting diameter for timber may relate to the age of maturity of trees.

5.0. STEP 2: SIMPLE NDFs

The first step in undertaking a non-detriment finding is to establish whether international trade in a certain species from a specific country can be considered non-detrimental using basic information, or whether a more detailed assessment is required. The Simple NDF Template (Table 2C and Figure 2C) is particularly useful for cases where trade volume and harvest level is determined to be low. High volume, or significant trade in threatened species typically has a higher likelihood of negative impacts on wild populations, and such cases would naturally require more elaborate NDFs with greater substantiation of harvest levels.

The simple NDF is not a "pass or fail" Non-Detriment Finding. Scientific Authorities may not be able to grant a positive NDF using the Simple NDF Template alone, but that does not automatically mean that harvesting and trade is therefore detrimental. It simply means that more information is required to determine if trade is non-detrimental. The utility of the Simple NDF Template is that many species can essentially be "ruled out" of requiring complex NDF evaluations, allowing Parties to focus energy and resources on species that are in genuine need of more sophisticated assessment.

The simple NDF template includes the provision of scores for four basic criteria:

- 1) Annual harvest Level;
- 2) Life history traits;
- 3) Area of Distribution;
- 4) Illegal trade and Threat status;

The template can be used for all species, but specific thresholds for each criterion should be tailored to the taxa involved (e.g., See Modules XX). The maximum score for categories one to three is three and the minimum score is one. For criterion four a maximum score of one can be given.

In this way, the *Simple NDF Template* assessment subscribes to a precautionary approach, in that any species that scores a three (3) in any category listed in **Table 2C** will automatically qualify for a more complex NDF evaluation. Regardless of the score assigned, for each criterion of interest a justification must be provided for why a particular score was given. If a species scores below five overall, then it is highly unlikely to be threatened by trade, and does not require a more detailed NDF evaluation to be completed.

Nevertheless, even if species-country combinations pass the simple NDF and trade is assumed to be nondetrimental, the simple NDF process should be repeated regularly to keep abreast of potential criterion changes (such as reductions in area of occupancy due to habitat loss). Species that do not require a more detailed NDF evaluation in the first year may require one in the future.

Table 2C. Scoring criteria for the four variables of interest in the Simple NDF template.

	Number of points			
Criteria	1	2	3	
Annual Harvest level	Low	Medium	High	
Area of distribution	Large	Medium	Small	
Life-history	Fast	Medium	Slow	
Illegal trade and	If levels of illegal trade a	re known, they should be	included under "Annual	
IUCN Threat	harvest level". If unkno	own, and suspected to	be detrimental, give a	
status	maximum score of 1 po	int. Similarly, if the statu	is of the species is listed	
	as VU, EN or CR in the IL	JCN Red List Of Threatene	ed Species, or in national	
	lists, give a max score o	f 1 point		

Figure 2C: Interpretation of table 2C.

Evaluating Detriment Using the Simple NDF Template

Simple NDF Tool score lower than five (5) = **trade is non-detrimental** (record the score and justification in the worksheet provided).

If the Simple NDF score is equal to or greater than five (5) then the non-detriment requirement cannot be satisfied, warranting additional information based on other indices to

Practical steps for completing a Simple NDF

Step 1: Refer to general and taxon-specific guidance on how to assess and attribute scores to each of the four criteria within the Simple NDF Template.

Step 2. When a species' harvest volume, area of distribution, life history traits and additional threats have been established, a Simple NDF Template score can be assigned to determine if trade may be detrimental.

Step 3. Record the Simple NDF scores for each criterion in the worksheet provided (see Module XX), together with justification about why the particular score was attributed to each criterion.

Step 4. Based on the score from the step above, establish whether a detriment can be rejected or is suspected. If non-detriment cannot be confirmed, a more complex NDF is required.

5.1. Guidance for assigning Simple NDF criteria

This section provides detailed guidance on how to assess the four criteria within the Simple NDF Tool. Importantly, it does NOT attempt to the criteria related to assessing area of distribution or life history. These criteria will be specific to their taxonomic groups and information on how to assess these should be sought from the relevant modules.

5.2.1. How to score harvest level

The level of harvest per year experienced by a population of any species is an important variable to consider when considering risk of detriment in a Simple NDF. If harvest levels are very low, then it may not matter that it has a small area of occupancy or a slow life history. For example, for many species (with the possible exception

of micro-endemic or highly threatened species), a harvest of a few hundred individuals each year in the country of export is not going to threaten the survival of the species in the wild. The harvest level includes both the number of individuals collected for local use as well as for international trade. To determine such numbers, information on harvest quotas and/or export quotas, if available, can give a first proxy. Besides, reported annual exports in the CITES trade database (such as from most previous years) can be used to estimate current harvest volume if there is no domestic consumption. If the species concerned is also domestically used it can be assumed that the harvest level is greater than the export level.

As a guide, the Review of the significant trade process¹ has assessed trade as High volume if the volume of direct exports in the three preceding years of available trade data averaged higher than 20 units/ year of trade, *or* for Endangered or Critically Endangered species if trade exports amounted to more than 1 unit/year over the preceding three-year period. Module 1 provides additional guidance in circumstances in which the export of parts and derivatives does not remove the individual from the population.

5.2.2. How to score geographic distribution

Knowing the geographic distribution of a species is important for understanding the spatial intensity of harvesting. Generally, the smaller a species' distribution the easier access for harvesting might be and the greater the proportion of the population that may be impacted by the harvest. Such species often have smaller population sizes as abundance is often density dependent. Montane or island endemics are commonly considered to have small areas of occupancy. Conversely, species with larger areas of occupancy tend to have larger absolute populations, and the distribution of multiple populations across the area of occupancy means impacts of trade are lower. However, this principle does not hold true in all situations, especially for genetically-distinct sub-populations. For example, the White-rumped Shama (*Copsychus malabricus*) is an important example of this. Though the species occupies a wide-range, distinct subpopulations such as the subspecies Barusan Shama (*Copsychus (malabaricus) melanurus*), have the same characteristics as small-island endemics and are at serious risk of extinction from over-trapping.

5.2.3. There are several ways to determine a species' geographic distribution

Area of occupancy (AOO) is defined as the area within a species' 'extent of occurrence' which is occupied, reflecting the fact that a species will not usually occur throughout the area of its extent of occurrence, which may contain unsuitable of unoccupied habitats. It is a subset of the area of distribution *or* extent of occurrence, which is defined by CITES as:

'The area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred or projected sites of occurrence of a species, excluding cases of vagrancy and introductions outside its natural range.'²

Where genetically-distinct populations are known, Area of Occupancy should ideally be considered at the subpopulation scale, and in the absence of this information given due consideration in the weighting against the other criteria in the NDF report.

In cases where area of occupancy has not been calculated information on the Area of Habitat can be a useful proxy. Area of Habitat (AOH) is defined as *"the habitat available to a species, that is, habitat within its range"* (see Figure 2D)³. Area of habitat maps complement geographic range maps for species by showing potential occupancy. They provide an estimate of the upper threshold of a species area of occupancy by using data on each species associated habitat in km² (Lumbierres *et al* 2022)⁴.

Table 2D provides an example of how to score this criterion using data on (i) Area of Occupancy, *or* ii) Area of Habitat, *or* iii) Extent of Occurrence, using km² estimates. Scores are based on the IUCN Red List Categories criterion B relating geographic range⁵. An AOO less than<2000km² or an EOO less than <20,000km² are the

¹ RST AC32 Doc 14.02

² CITES glossary <u>https://cites.org/eng/node/130905</u> [Definition adapted from Resolution <u>Conf. 9.24 (Rev. CoP17), Annex 5]</u>

³ Brooks et al (2019) Measuring Terrestrial Area of Habitat (AOH) and Its Utility for the IUCN Red List

⁴ Brooks et al (2019) Measuring Terrestrial Area of Habitat (AOH) and Its Utility for the IUCN Red List

⁵IUCN Red List categories and criteria, version 3.1, second edition <u>https://portals.iucn.org/library/node/10315</u>

triggers for considering a species 'Vulnerable'. Taxon specific distribution thresholds can be found in Modules 6 - 10.



Figure 2D: Hypothetical example of the relation of between Extent of Occurrence, Mapped Range, Area of Habitat, and Area of Occupancy.

Table 2D: Example of how to score the	able 2D: Example of how to score the criterion of area of distribution in the simple NDF template.		
Qualifier	Large	Medium	Small
Area of Occupancy / Area of Habitat	>20,000km ²	2,000 km ² – 20,000km ²	<2,000 km ²
Extent of Occurrence	>200,000km ²	20,000 km ²⁻ - 200,000km ²	<20,000km ²
Primary Evaluation score	1	2	3

5.2.4. How to score life history

Life history concerns the intrinsic vulnerability of a species or population based on life history traits (including reproductive capacity) and biological characteristics (i.e., niche breadth). The biological attributes or life history traits of an organism determine in part to what extent it can sustain a level of wild-take or harvest. Understanding the basic biology of a species, and its vulnerability to harvest, helps you to assess the degree of risk (see Section 4.4 of Module 1).



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Figure 2E: Population size as a function of reproduction, immigration, mortality and emigration.

Population Size is ultimately determined by births, deaths, immigration and emigration (Figure 2E). All these factors vary over time and space. Species' life history traits are co-evolved and shaped by natural selection to allow populations of species to persist over the long-term.

<u>Life History Trait Gradients</u>-- Species' traits that are linked to growth, reproduction, longevity, habitat affinity, foraging mode, and other aspects of their biology are commonly called life history traits. Life history traits are co-evolved by natural selection and these suites of life-history traits, sometimes referred to as "life history strategies", enable populations to persist in their environment over the long term. Populations grow or decline based on the balance between births and immigration and deaths and emigration (Figure 2E). How fast a population may recover from decline, for example, is influenced by species' life history, available habitat, immigration, and the population density of the species itself and other species.

There are myriad reproductive and biological modalities among plants and animals that include degrees of parental care and investment, nutrient gathering, life span, and other attributes that are part-and-parcel of their suite of life history traits. For example, species with short lifespans typically reach maturity quickly and invest a lot of their lifetime reproductive effort early on. Species with late maturity and infrequently have small numbers of offspring have long lifespans. Many ecologists refer to this as the *Slow-to-Fast Continuum* of life histories, with K-strategists and r-strategists at the extremes (see Section 4.4. of Module 1).

For the purpose of the Simple NDF, it is useful to narrow down this variation in life history into three major life history trait gradients that strongly influence population biology for the: **time to maturity**; **number of offspring per reproductive event**; and **frequency of reproduction** (yearly, biannual, sporadic). All of these are associated with life span. Even coarse knowledge of these traits allows for scientifically defensible placement of species on the slow-fast continuum. These three life history gradients also give insight into the interplay between life history traits and population growth and resilience.

5.2.4.1. What if a species has not been studied?

If these traits have not been described for a species in trade, they can be estimated by looking at the range of traits in closely related species. Managers can examine samples of specimens that have been harvested and take advantage of local ecological knowledge. Much information is available in published species descriptions and in books on turtles, crocodilians, lizards, and snakes of the world. Nevertheless, Scientific Authorities should endeavour to increase their knowledge of a species' biology by studying reptiles as they are collected for trade, and commissioning biological field studies – where possible. In many cases, data on reproduction biology has been only reported from captive specimens. When using such information, it has to be taken into account that the reproductive potential may differ between specimens kept in captivity and wild specimens. For example, specimens raised and fed well in captivity can reach maturity earlier than specimens in natural habitats.

5.2.4.2. Using generation length as a proxy for assessing the life history criteria

In the absence of some life history information, a useful proxy is generation length. Generation length is a good proxy for biological scaling of rates in declines in many species, and their incorporation in conservation assessments supports understanding the impact of population declines on conservation status. Longer generation lengths are associated with K-selected species (those with 'slow' life histories), those which are long-lived, mature late, with few offspring and are specialists. The reverse is true for r-selected species (those with 'fast life histories'). K-selected species are considered at higher risk.

Generation length is defined in Resolution Conf. 9.24 (Rev. CoP17) on Criteria for amendment of Appendices I and II as: 'the average age of parents of the current cohort (i.e. newborn individuals in the population). Generation length therefore reflects the turnover rate of breeding individuals in a population. Generation length is greater than the age at first breeding and less than the age of the oldest breeding individual, except in taxa that breed only once. Where generation length varies under threat, the more natural (i.e. pre-disturbance) generation length should be used.'

5.2.5 How to score Illegal trade and IUCN Threat Status

CITES Non-Detriment Findings should take into account all offtake that is occurring for both international trade and local use. This criterion can be used as part of the Simple NDF to take into account suspected or estimated levels of illegal trade. If levels of illegal trade are known, or can be estimated approximately, then Scientific Authorities should include illegal trade levels under the Harvest Level criterion in the Simple NDF template. If volumes of illegal trade are unknown, but are suspected to be detrimental, then a "1" score can be given. If illegal trade is suspected, but the likelihood that illegal trade is detrimental to the survival of the species is low, then the criterion should be left blank, or given a "0" score.

Similarly, species that are already threatened by other process (e.g., deforestation, invasive species) or by intrinsic factors (e.g., island endemic, small population) may be more susceptible to the impacts of harvesting than species that are not. To account for this when completing the Simple NDF Template, as a precautionary measure, Scientific Authorities should consult the IUCN Red List of Threatened Species or any national Red List, if available, to determining the current threat status for the species. If the species is listed as threatened at the national level, or if no national assessments available, by IUCN as Least Concern or Near Threatened, then a "0" score can be given. If the species is listed as Vulnerable, Endangered, or Critically Endangered, then a "1" score can be given. Scores for the illegal trade and threat status criterion should be added to the scores for the other criteria to determine the final Simple NDF Template score and inform the NDF evaluation. Species with red-list categories such as DD, NE, and O will necessarily have to rely on proxy information on life history and expert knowledge.

6.0. STEP 3: MAKING MORE COMPLEX NDFs

If establishing non-detriment easily using basic information is not possible, a more complex NDF must be undertaken. Complex NDFs examine much greater levels of information and are suitable for trade in those species occurring at high volumes, with slower life-histories, small distributions, or susceptible to other threats.

Completion of complex NDFs can be broken into two steps. The first is an evaluation of risk to determine the data requirements needed for a second step focused on impact evaluation.

Similar to the Simple NDF Tool, in low-risk situations it may be possible to make a relatively straightforward decision that trade is non-detrimental. For high-risk scenarios a more detailed/complex NDF is be needed. High risk should not automatically result in a decision not to export, but the Scientific Authority may require more information to be satisfied that the management measures in place are robust enough to ensure that harvest remains sustainable. This section provides guidance on how to complete both the Risk Evaluation and Impact Evaluation.

6.1. Step 3A. Risk Evaluation

As a first step when completing a more detailed NDF it is important to expand upon the Simple NDF process and undertake a more comprehensive assessment of risk. This section diagrammatically defines the criteria that should be assessed and offers supporting text for completion of that assessment (Figure 2F).

Risk Evaluation

Data requirements for a determination that trade is not detrimental to the survival of the species in the wild should be proportionate to the vulnerability of the species concerned 16.17 para 1 iv)

factor	Assessment may	Evaluation examples		
	consider	(Taking into account the source of the specimens)		
Species' biology and life-history characteristics	Intrinsic vulnerability of species or population (reproductive capacity, niche width)	r-selected species (early maturity, short-lived, more offspring), adapts to various habitat types		K-selected species (late maturity, long-lived, few offspring), specialist
Species' range (historical and current)	Distribution and trends	Widespread, stable distribution over time, connected populations		Endemic, restricted, fragmented, declined over time, shared stocks
Population structure, status and trends	Population size / structure/ density and trends (harvest area and nationally)	Population size large, stable or increasing. Representative inventories/surveys over time		Low population size, declining trend, skewed populations (age classes or sex).
Conservation status	Status and trends (global, national, and local scales)	LC	VU, NT	CR, EN, DD / Ap. I
Threats	Other threats and threat trends	No other significant known threats		Subject to multiple threats (habitat loss, climate change, IAS)
Harvest overview	Levels and trends in harvest of the species/ types of specimens	Low harvest/export levels relative to population size; non-lethal harvest that does not imply removal of individuals from the wild#		High levels of harvest relative to population size/ within taxonomic group; sharp increase in harvest/trade; harvest done at critical life stages for reproduction
Trade trends	Levels and trends/ types of specimens in trade.	Low export levels relative to population. Trade level constant over many years		High levels of trade, sharp fluctuations in trade;
Benefits to local livelihoods	Do benefits to local people provide an incentive for using the species sustainably	Local people use and trade the species.		No benefits form harvest of trade to local people
	_	IOW	MEDIUM	HIGH
	<u>/</u>			
	Sim	ple NDF/Lower data Data/o	detail require	ements Complex NDF/higher

Figure 2F: Risk evaluation phase for making more complex NDFs.

6.2. Factors to consider for determining risk

A number of key factors help determine the level of risk and therefore the data requirements needed to determine with confidence that trade is not detrimental.

6.2.1. Species' biology and life history characteristics

The biological attributes or life history traits of an organism determine to what extent it can sustain a level of wild-take or harvest. Understanding the basic biology of a species, and its vulnerability to harvest, helps Scientific

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Authorities to assess the degree of risk. For example, slow-growing species with low fecundity (few offspring produced) are likely to be more susceptible to over-exploitation than a species that grows and matures rapidly and produces numerous offspring. These different characteristics are often described by the concepts of 'K-selected' and 'r-selected' species (see Module 1) some and are generalised respectively as high risk (red) and lower risk (green) in the NDF Framework diagram.

The life-stage of the harvested species will also influence the life-history characteristics of a species and its vulnerability to harvesting, and this may vary within species. For example, in some species such as crocodiles and sea turtles reproduction has some r-selected traits (many eggs produced with low survival), but adults show K-selected traits (long-lived, high survival but strong density-dependence). Hence harvesting 100 eggs is significantly lower risk than harvesting 100 adults.

Also see Module 5 on Migratory species, which may make a species more vulnerable due to increased exposure to a greater range of threats and make monitoring populations more challenging.

6.2.2. Species' range (historical and current) and trends

Scientific Authorities should take into account the national distribution range of the species, and the national distributional trend over time (e.g., is it stable, contracting, expanding). A species that is widespread across the country with no evidence of range contraction could be a low-risk scenario. If the population is scattered, it should be considered whether populations are connected or isolated. For additional guidance, see Modules 5 and 6 on Aquatic Species (shared stocks) and Migratory Species, respectively.

6.2.3. Population structure, status and trends

Population data should be included in the NDF; global population sizes as well as regional and national populations sizes if known, as well as sub-national scale where feasible. Population data relating to size classes may be particularly important for some species (e.g., queen conch, timbers). Comprehensive inventories are always better but other indices such as Catch Per Unit Effort (CPUE) are also useful.

6.2.4. Conservation Status

Conservation status is an assessment of the likelihood that a species (or local population of the species) will become extinct in the near future. The definition of assessment criteria and categories describing extinction risk also varies among assessment systems. Conservation status assessment systems have a variety of forms (e.g., Red Lists, Red Data Books, threatened species listings) and a range of geographic scope (sub-national, national, regional, or global). A national or sub-national assessment may be more relevant to assessing the impact of harvest than a global conservation status assessment although the latter can give a useful indication of risk. It is important to consider how up to date and current information is in assessments. Note that not all described species are assessed by IUCN and some assessments may be out of date.

6.2.5. Threats / other pressures

A species or population of a species could be subject to threats or other pressures that may impact its vulnerability to harvesting. Multiple threats to a species or population may increase the risk. Threat information is often available through conservation assessment which reflect these pressures on the likelihood of extinction.

6.2.6. Harvest overview

A general understanding of overall harvest trends for the country will be useful for the context of the harvest assessed in the Impact Evaluation stage. Total harvest for international trade and for domestic use should be considered including legal and illegal harvest. Harvest of critical life stages for reproduction might all indicate

higher levels of risk. Harvest may or may not remove the individual from the population. Some examples of low risk:

1) **Export of parts that do not remove the individual from the population**. Non-lethal harvest is likely to be lower risk. Non-lethal harvest indicates instances where individuals are not removed from the population, but parts are harvested, without killing the individual plant or animal. Examples of such harvests include fruit, resins, or partial bark removal (e.g., *Prunus africana*) from trees, wool sheared from live vicuña (*Vicugna vicugna*), and baobab fruit (*Adansonia grandidieri*). However, the harvest may still have impacts on the population affecting reproductive success of the individuals or the population overall. Non-lethal harvest does not include harvest that removes whole live individuals (e.g., for the pet or ornamental trade), which effectively removes the individuals from the wild population even if the individual is not killed during harvest.

2) **Products from secretion or natural mortality.** These specimens do not deliberately remove individuals from the population, such as sperm whale (*Physeter macrocephalus*) teeth or ambergris that have washed up on shore. Resolution Conf. 9.6 (Rev. CoP19) on *Trade in readily recognizable parts and derivatives* stipulates that urine, faeces and ambergris, that has been naturally excreted, are waste products and are therefore not covered by the provisions of the Convention. However, it would be important that exports did not stimulate further killing for international trade.

3) **Removal of certain life stages**. Removal of high mortality or post-reproductive life stages can represent a lower risk situation, in terms of impact on the population for some species. For instance, Res. Conf 11.16 (Rev CoP15) *Ranching and trade in ranched specimens of species transferred from Appendix I to Appendix II* notes that ranching of crocodilians on the basis of controlled collection of eggs or hatchlings can be potentially a valuable and positive conservation tool, whereas taking of wild adult animals needs stricter control. The Resolution defines the term ranching as "the rearing in a controlled environment of animals taken as eggs or juveniles from the wild, where they would otherwise have had a very low probability of surviving to adulthood" and that "ranching for some species has proven to be a 'safe' and robust form of sustainable utilization relative to wild harvests of adults". Similarly, the harvest of older, post-reproductive males is a strategy used to ensure the sustainability of some species exported as hunting trophies.

6.2.7. Trade Trends

A general overview of trade trends is a useful indicator for the species overall. International trade trends and national exports over the past years can easily be obtained from the CITES Trade Database (<u>https://trade.cites.org/</u>); the different sources (source codes) of specimens should be considered. An understanding of illegal trade trends should also be taken into account as well as domestic consumption (both legal and illegal). Data on illegal trade can be gathered from annual illegal trade reports, which will soon be made publicly available online. High risk would be indicated by e.g., high levels of export relative to population size/ within taxonomic group and sharp increases trade, or high levels of illegal trade.

6.2.8. Benefits to local livelihoods

(To discuss during workshop – to be removed from diagram if workshops considers it should be removed here and included in impact evaluation).

6.3. Step 3B: Impact Evaluation

As a second step when undertaking a more complex non-detriment finding, Scientific Authorities should conduct an impact evaluation. Contrary to the risk evaluation step, which focuses on inherent aspects of a species and its trade, the impact evaluation considers the impacts of harvesting for trade, management and monitoring measures in place. Finally, in situations where the risk and impact evaluation is considered to be high, the Scientific Authority should consider the impact of trade on the ecosystem (Figure 2G).

Factor	Assessment may consider	Evaluation		
Harvest impacts *	Impact of harvest on harvest area, national population and internationally. Consider total volume of harvest (both for domestic and export) and legal and illegal harvest	Low impact (e.g., Non-lethal harvest that does not imply removal of individuals from the wild; Harvest of life stages with low survival rate (source R); Harvest is in post-reproductive stages only - (e.g. older males). Harvest not impacting other areas		
Trade impacts *	Impact of trade on harvest area, national population and internationally. Consider total volume of trade (domestic and export) trade (known, inferred, projected, estimated).	Low levels of trade relative to population. Little illegal trade known.	High levels of trade in comparison with population. Illegal trade known.	
Population monitoring *	Is a monitoring program in place? Frequently of monitoring depending on species characteristics. Methods for monitoring.	Regular, using robust methods (changes in density, distribution, demography considered)	No/infrequent monitoring, unreliable methods	
Management measures in place/proposed including adaptive management *	Harvest management/ compliance / land tenure	Measures in place (e.g. quotas, size/sex limits, protected/no-take areas, limits on effort/ gear. Tenure: strong long-term control	No or inadequate management measures in place. Tenure: Open access e.g. fisheries in ABNJ, no harvest controls	
	Ecosystem Impacts	LOW/MED No need for ecosystem Impact evaluation	HIGH	
Role of harvested species in ecosystems – impact ** [Ecosystem impacts ***	Does the harvest impact the species' role in the species ecosystems resulting in: (Consider in detail only if high risk/ complex NDF needed) Does harvesting cause mortality of other species or damage to habitat from harvesting practices resulting in:	 Evaluate the following for impacts on role in ecosystems and direct impact on the ecosystem: reduction in the abundance of another native species; an increase in the abundance of a non-native species or over-abundance of another species; a reduction in a demographic rate in any life stage of another native species (e.g., germination, seed production, nest success, natal dispersal, etc.) that has the potential to decrease its abundance or otherwise reduce its viability; change in any ecosystem process or structural feature; change in the typical patterns of behaviour (e.g., social interactions, patterns of aggregation, movement) among individuals of the species being assessed or other species; change in genetic structure or variability of the population 		
		that indicates that one o the species' are, or will b	or more of the ecological functions of become, impaired.	

Figure 2G: Aspects relevant for impact assessments in more complex NDFs. **Note:** non-lethal harvest indicates instances where individuals are not removed from the population, this does not include harvest that removes whole **live** individuals (e.g., for the pet or ornamental trade), which effectively removes the individuals from the wild population even if the individual is not killed.

6.3.1. Harvest impacts

The most important harvest impact to consider will be on extraction at the harvest site (or sites) for the specimen to which the NDF applies. Harvest impact at the national level and international level should also be assessed; a seemingly sustainable harvest from one area may be acting as a sink for the species from other areas. Total offtake should be assessed, not just harvest for international trade (i.e., for domestic use/consumption, and including bycatch). Legal and illegal harvest should be considered even if inferred, projected or estimated. Impacts may depend on the life stages of specimens harvested (see Section 4.4. of Module 1). Non-harvest related mortality/loss should also be taken into account when determining sustainability of harvest.

6.3.2. Trade impacts

Impact of trade should be assessed on the harvest area, national population, throughout its range (including internationally). Conversion factors may be necessary to understand the quantities of harvest for different products in trade. Consider total volume of export vs domestic trade and legal and illegal trade (known, inferred, projected, estimated) and what levels of offtake might be needed for production of quantities in trade. Fluctuations in trade may indicate issues with supply or demand.

6.3.3. Population monitoring

Population monitoring is fundamental to understanding the impact of harvest. Regular monitoring should ensure that management (including harvesting) can be adapted. How and how often the harvested population should be monitored will depend on the species (see taxonomic working group reports for guidance on monitoring), how established harvest is, and other threats and pressures on the population. Methods of monitoring and what is monitored (e.g., sampling strategy, metrics - numbers, stratified numbers, density, distribution etc.) need to be appropriate in order to give reliable results and to allow for management to counteract any negative impact.

Infrequent or no monitoring will be of high concern. Inappropriate methods of monitoring would also lower the confidence in results of monitoring. Regular long-term monitoring with appropriate robust monitoring methods is the ideal (see Section 7 of Module 1 for more on different data/ indicators that can be obtained through monitoring).

6.3.4. Management measures in place/proposed including adaptive management

Harvest and trade management measures (in place or proposed) should be reviewed to assess whether they are adequate to ensure harvest and trade are non-detrimental and that risks identified are mitigated.

Key questions:

- Are management measures effectively implemented/ complied with? Does land tenure (see below) increase the likelihood of compliance with management regulations in the longer term?
- Is management adaptive, based on appropriate population monitoring (see section XXX)? A harvest with
 a long history of effective management is more likely to be sustainable than an unmanaged harvest. A
 managed harvest, with adaptive management based on reliable monitoring of how harvest affects the
 population is the optimum situation.

6.3.5. Additional guidance for assessing harvest impacts and impacts on the role of species in their ecosystems

Direct impact of harvest on the ecosystem, i.e. mortality of other species or damage to habitat from harvesting practices was included as it is in line with Target 5 of the Kunming Montreal Global Biodiversity Framework⁶: "ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spillover, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities".

Where there is little available information on roles in ecosystems and no particular concern to this effect, the most pragmatic approach is to assume that if there is a viable population (above minimum viable population⁷) of the species distributed over as much of its range as possible and it is being sustainably harvested, this is a good enough proxy to accept that the species is maintaining its roles in the ecosystem(s); i.e., if harvest and export is non-detrimental to the species, you can assume that its roles in the relevant ecosystems are maintained.

However, **in higher risk situations** (as evaluated as part of the NDF process) further consideration/more rigorous assessment could be made (in line with Res. Conf. 16.7 para 1.a)4), using the framework proposed by Akçakaya *et al.* (2020). In cases where the SA has concern that the role of species in their ecosystem could be impacted, it should consider whether harvesting changes the species role in the ecosystems such that it has any of the following impacts:

a reduction in the abundance of another native species;

b. an increase in the abundance of a non-native species or over-abundance of another species;

c. a reduction in a demographic rate in any life stage of another native species (e.g., germination, seed production, nest success, natal dispersal, etc.) that has the potential to decrease its abundance or otherwise reduce its viability;

d. a change in any ecosystem process or structural feature;

e. a change in the typical patterns of behaviour (e.g., social interactions, patterns of aggregation, movement) among individuals of the species being assessed or other species;

f. change in genetic structure or variability of the population that indicates that one or more of the ecological functions of the species' are, or will become, impaired.

Where there is significant concern, the SA could advise MA on measures to take e.g., which features of ecosystem function linked to the species would be the most essential to monitor.

For additional guidance on assessing the role of species in their ecosystem, see Section 3 of Module 1.

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⁶ *Note*: Not all Parties to CITES are Parties to the Convention on Biological Diversity

⁷ Science direct defines *minimum* viable population size as an estimate of the number of individuals required for a high probability of survival of a population over a given period of time. A commonly used definition is a higher than 95% probability of persistence over 100 years.

7.0. STEP 5: CONCLUSION OR DECISION

Conclusion/decision

Yes – Positive – NOT detrimental

No – Negative – IS detrimental, or Insufficient information (more information required)

Precautionary NDF (trade can go ahead, but with conditions or restrictions)

Conditions/Remedial Actions/Management Advice

Conditions or advice to MA on management

Changes that would be needed for a positive NDF.

Figure 2H: Considerations for Step 5 of making more complex NDFs.

7.1. Types of NDF Decisions

Non-detriment decisions can be either

- Positive; meaning that export will be non-detrimental and the Scientific Authority advises the Management Authority as such;
- Negative; meaning exports may be detrimental, or more information is required, and thus should not be approved; or
- Conditional; meaning a positive NDF is made subject to certain conditions being in place, which are intended to mitigate defined risks and ensure sustainability of harvests. See module one for additional details of potential conditions.

Terminology may differ between Parties; for instance, one Party that submits "partial" NDFs where the number of specimens is adjusted to limit an export to sustainable levels as those requested to be exported are considered unsustainable/detrimental; this makes sense for NDFs submitted before the harvesting of the species occurs, and thus inform the harvest authorization to avoid negative impacts since the harvesting occurs. Others would consider this to be a "Conditional NDF" (see Figure 2H for an overview of relevant considerations in Step 5 of making more complex NDFs).

7.2. Preparing a Non-Detriment Finding Report

An NDF report should detail the steps taken to establish non-detriment (through step 1 to step 3). For many species this may simply be a completed Simple NDF Evaluation, but for others requiring a complex evaluation it may include basic analyses of harvest trends through to detailed monitoring and management protocols. The results and explanation of monitoring protocols or management systems used to complete the complex NDF evaluation do not need to follow a specific format. There is not a template for this, though a document appending the Simple NDF template, which takes each factor into account and concludes based on the resulting analysis, should be sufficient to assess detriment. The report should also include any management interventions and associated monitoring protocols.