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Thanks to Vin Fleming and Fred Launay for case studies

Birds on Appendix II

There are 1268 species, six subspecies and one population of birds listed on Appendix II. These contain a wide variety of life histories, significant variation in ecology and diverse data gathering contexts. For example, considering life-history, there are short-lived species and long-lived species that attain reproductive maturity after several years and a wide variety of reproductive strategies; considering ecology there are species that occur at naturally low densities, species that congregate, species that are patchily distributed, species that are very difficult to detect, and species that migrate and some of these characteristics may vary from season to season; and considering data gathering contexts, there are species that occur in habitats that are easy to survey and those that are very difficult to gather data in; and some species inhabit areas that are remote whilst others are in places that are easily accessible.

All of these factors affect the ability to gather data that can be useful in making Non-Detriment Findings. In order to explore these issues in more detail, several case studies were discussed:

- African grey parrot *Psittacus erithacus*
- *Cacatua galerita* and *Platycercus eximius* in New Zealand
- *Cacatua sulphurea* in Indonesia
- *Falco cherrug* in United Arab Emirates
- *Amazona auropaliata* in Nicaragua
- Assessing the status of raptors in Guinea
- Sustainable harvesting of birds in Mexico
- Collecting data in support of Non-Detriment Findings for parrots
- Considerations specific to songbirds

Challenges

Several common challenges emerged from these case studies and consideration of other bird taxa. These were explored both in the context of the need make a

Non-Detriment Finding in response to a specific application and also in the context of a longer term process to enhance a Scientific Authority's ability to make Non-Detriment Findings in the future. The case study that covered raptors in Guinea showed the potential value of the latter. The challenges include:

- The difficulty of locating existing data and having access to them;
- Gathering new data that are reliable and relevant is very difficult;
- Resources required for obtaining data ("cost of obtaining data");
- There is often a perceived lack of expertise available; and
- Having the confidence to interpret available data and making a Non-Detriment Finding. Some Scientific Authorities may find this daunting.

Therefore, there is a real need to make available guidance that shows how effort (and other resources) can be used to best effect. It was noted that making some Non-Detriment Findings can be very straightforward and a way of identifying these would be helpful. In contrast, other cases may be very complex and highlighting the difficulty inherent in making these Non-Detriment Findings (and how they can be tackled) would also be valuable.

These two extremes demonstrate the importance of striking the correct balance in guidance notes between providing prescriptive detail that might be helpful in complex cases and proposing broad steps that would be more generally applicable and would facilitate quick progress in straightforward cases.

Guiding principles

Some principles are common to all analyses of biodiversity data; they should underpin all Non-Detriment Finding processes. Three that were identified were:

1. Be precautionary
2. Be realistic about limitations of data
3. Feedback – learn lessons to improve process

The overall process

Given the large number of bird species contained on Appendix II and the diversity of life-histories, ecology and prospects for obtaining data, a simple scheme was constructed for working through the Non-Detriment Finding process. The purpose of this framework was to indicate stages where the complexity of each case could be assessed.

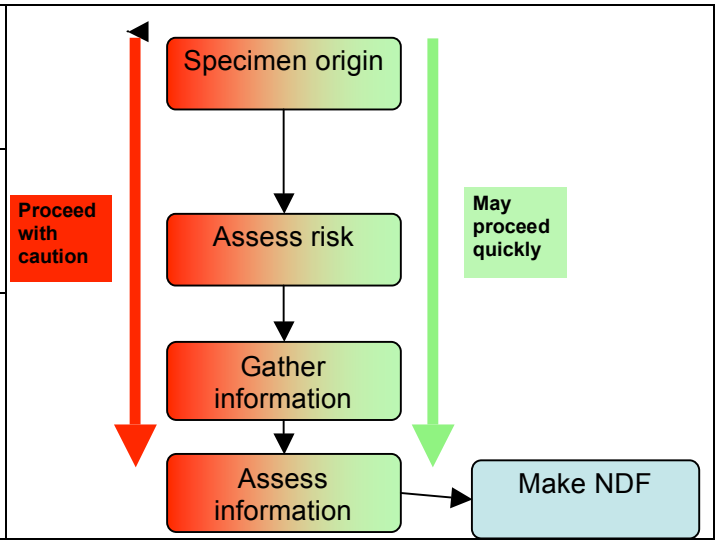
This step identifies cases concerning captive-bred specimens and those from introduced populations of low conservation value. These cases may often be fast-tracked.	
This step assesses the risk that the proposed harvest holds for the population, given the vulnerability of the population and various proposed harvest characteristics.	
These steps considers the challenge of obtaining and analysing relevant data, whether in the short-term (i.e. already gathered) or in the longer-term (i.e. new fieldwork) for regularly traded species	

Table 1: The process of making a Non-Detriment Finding. In the flowchart, the red to the left of each box denotes cases that are more difficult, whereas the green to the right indicates cases

that are more straightforward. Overall, this shows that some cases will be challenging because of where the specimens are from, the high risk of the proposed harvest and challenges in obtaining and analysing data.

Origin of specimens

The case studies and subsequent discussion indicated that there were some cases where Non-Detriment Findings could be quite straightforward. These are cases were the export is not likely to have an impact on the wild population in its native geographical distribution. They arise because of the long history of aviculture and captive breeding of birds and the large number of introduced species that have become established outside their native range. It should be stressed that some cases concerning both captive bred and introduced specimens will have consequences for the wild population in its native range, but this step allows for rapid identification of Non-Detriment Findings that are straightforward.

Risk Assessment

Most cases where a Non-Detriment Finding is being considered for birds have the potential to have an impact on the wild population. A risk assessment is a way to determine quickly where effort is best directed so that the conservation status of Appendix II species in not harmed by exports. This step assesses how big the risk is that the impact will be damaging to the wild population. Based on the outcome, a Scientific Authority can identify cases that should be subject to a relatively high level of attention and where a precautionary approach is especially required.

The following four criteria were considered important to take into account at this stage:

1. Vulnerability of the population;
2. General threats to population;
3. Potential impact of proposed harvest; and
4. Management of harvest.

The basic elements of the risk assessment system are:

1. Within each criterion there are specific factors that should be considered;
2. A simple scoring system, with one indicating a low risk of impact and five representing a high risk. Each of the four principal criteria was, therefore, given a score between one and five.
3. The four principal criteria may be weighted according to their overall contribution to risk of impact.

It must be stressed that whilst the general approach is considered robust, there is a need for refinement and testing of the detailed working of the risk assessment to ensure it achieves its full potential. This should include further consideration of the factors listed within each criterion to ensure that those selected are applicable to a wide variety of cases and identify the main factors to be considered. (It may be worth using terms and definitions from the IUCN Red List [and other global standards] where appropriate to avoid confusion.) It also includes further work on the weightings, scores and formulae used to calculate the overall risk assessment score.

The risk assessment can be created in a spreadsheet for easy use and an example is given in Appendix 2, with examples.

Gathering and assessing information

It is obvious that Non-Detriment Findings require data. Whilst in an ideal world there would be shortage of data, in the real world data are in short supply. The quality and quantity of data that are available influence the conclusions that can be drawn from them and an understanding of the limitations of different datasets may be helpful when making Non-Detriment Findings. This is because some datasets allow only the most basic interpretations to be drawn from them, whereas others may allow sophisticated analyses of varying levels of harvest and their impact on a wild population.

The conclusions of the risk analysis should guide the way that data are assembled and analysed. For bird species that are currently traded regularly it is possible to take a longer-term view about data requirements so that efforts can be made to gather new data in carefully planned and systematic ways. If new data are being gathered, the following should be borne in mind:

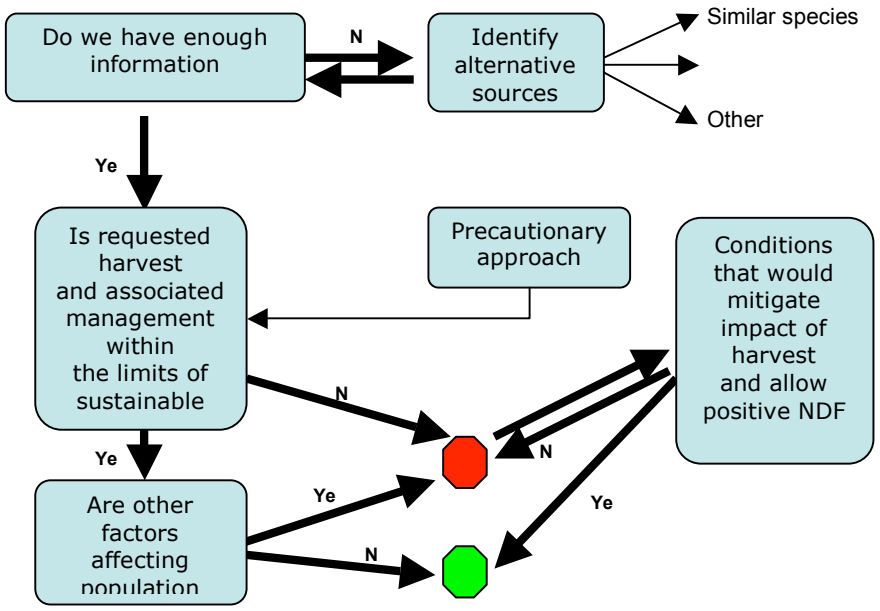
1. Different Non-Detriment Findings have different data requirements;
2. Type of data gathered determines what conclusions can be drawn;
3. Data gathering possibilities vary from situation to situation; and
4. Well-designed data gathering can greatly enhance Non-Detriment Finding process over time.

Because the availability of data is a key limiting factor in the making of Non-Detriment Findings in a wide variety of regularly traded bird species, this is an area that would benefit from detailed guidance. In order to help this process, approaches to bird survey and monitoring methods were identified and their applicability and usefulness in various situations considered. These are presented in Appendix 3 i).

The same issues (requirements, limitations and opportunities) hold true for the assessment of harvest of birds from wild populations. Therefore, approaches to providing appropriate data on harvest are provided in Appendix ii).

Making the Non-Detriment Finding

The flow diagram below depicts a decision-making process that has particular application to birds, though its elements would generally be consistent across most taxonomic groups.



The first step is an assessment of the adequacy of the information provided in support of the application. If it is not adequate, and the shortcomings are not readily redeemable by the applicant, consideration may be given to other sources of information such as readily available information from similar species, or consultation with relevant experts. This may enable the application to proceed to the next step, though, for some high risk species, a high degree of uncertainty may be sufficient grounds for a detriment finding.

The next step, which is the heart of the Non-Detriment Finding process, addresses the fundamental question of whether the harvest and export is within the limits of sustainability for the population and species concerned, in the context of any associated management programmes that may be undertaken. For some species, this may be straightforward, and a recommendation can be made. However, for the majority, other factors such as habitat loss, climate change, invasive species or additional sources of direct mortality such as illegal trade will have to be considered. Some factors may have a positive influence on the decision. For example, export of captive-bred specimens from closed-loop breeding facilities may reduce pressure on wild populations.

Once all of these factors have been assessed then a finding might be made one way or another. It must be stressed that a precautionary approach is desirable for most cases. One way of meeting such an approach is to set a sustainable harvest at the lower confidence interval of the estimated sustainable offtake. There are some situations where the analysis may be able to result in an Non-Detriment Finding if conditions (e.g. reduced quantity exported, or other mitigations of the impact of harvest) are attached to the permit.

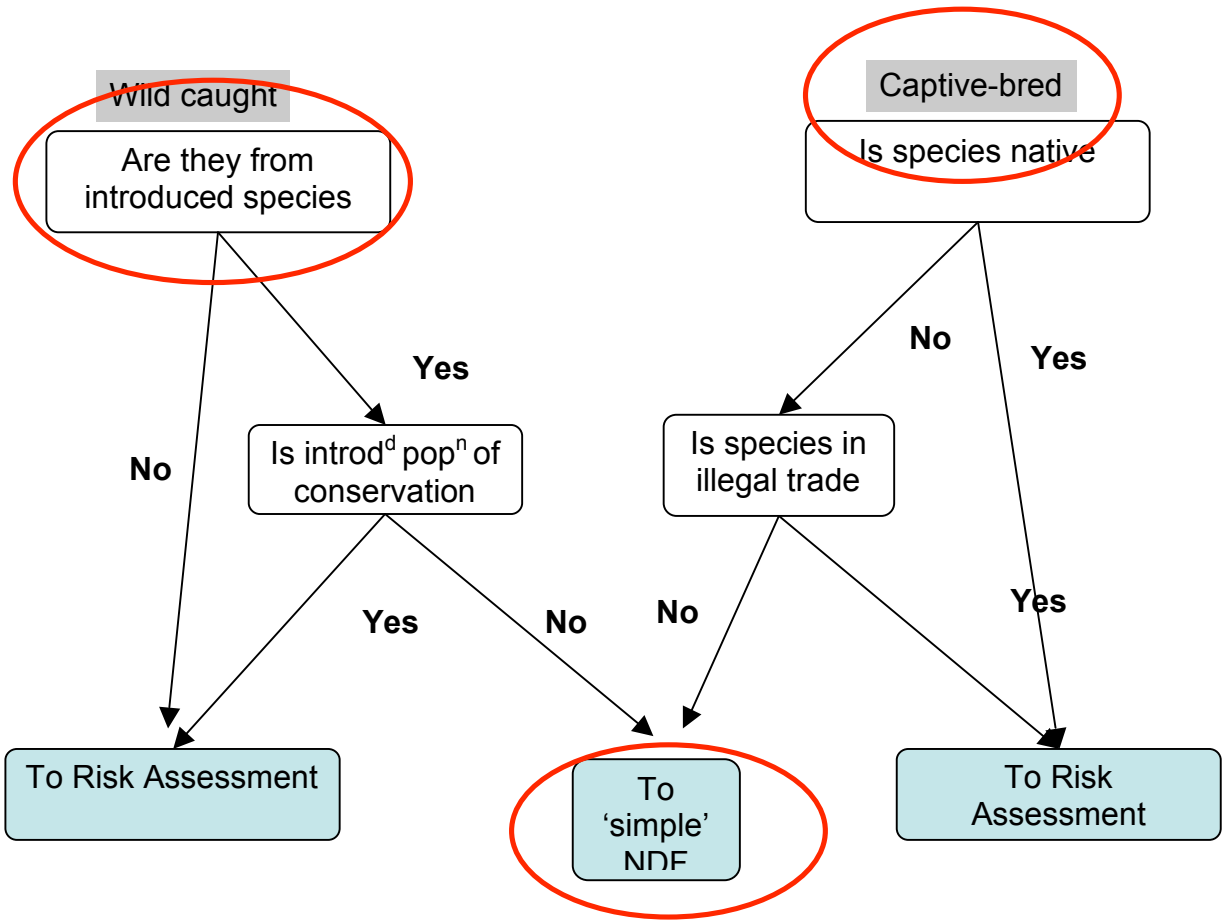
Of key importance, so that knowledge may be cumulative and decisions transparent, is documentation of the decision. The example from the US Scientific Authority provided in Appendix 5 illustrates a simple and standardised format.

Recommendations

1. **Non-Detriment Finding issues:** Examine past Significant Trade Reviews to identify technical issues
2. **Data requirements:** Technical advice from Scientific Committees and other bodies on data requirements for species subject to Significant Trade Review
3. **Data availability:** Provide a database (some publicly available sources already exist) of relevant biological information, e.g life history
4. **Data/expertise sharing:** Encourage sharing of these resources between range States, within regions etc
5. **Data gathering/analysis:** Technical advice from Scientific Committees and other bodies on use of approaches/methods
6. **Encourage bilateral support:** The UK-Guinea raptor assessment provided relevant information
7. **Added value:** Recognise that addressing many of these issues may have significant other benefits

Presentation and packaging of these ideas and guidance will be crucial.

Appendix 1: Origin of specimens



Appendix 2

Risk assessment template and rapid assessments of case study species and selected other cases. It must be stressed that whilst the general approach is considered robust, there is a need for refinement and testing of the detail. Please see text in main report.

Low =1, High = 5	Cacatua galerita	Psittacus erithacus	Lophura eryhtrop	Falco cherrug	Padda	Amazona	MIN	MAX
1. Vulnerability of the population	1	3	3	3	5	3.5	1	5
Weighting = 3 Distribution - geographic range								
Abundance								
Reproductive capacity								
Ability to repopulate								
Habitat breadth								
Pop. Trend								
Complexity of life history								
Other								
2. General threats upon pop	1	5	3	3	5	4	1	5
Weighting = 1.5 Illegal trade								
Invasives, diseases								
Loss and degradation of habitat								
Domestic offtake								
Prop of range that is protected								
Conservation problems in other range States?								
Other threats								
3. Potential impact of proposed harvest	1	3	1	3	2	4	1	5
Weighting = 2 Quantity or proportion of population								
Life stage targeted								
Harvest method								
Will it stimulate further trade?								
Harvest area								
Importance of species in ecosystem								
Endemicity								
Other								

4. Management of harvest (1=good)		2	5	2	3	1	3	1	5
Weighting = 1	Reliability of monitoring								
	Local community support								
	Effectiveness of regulation and management								
	Other								

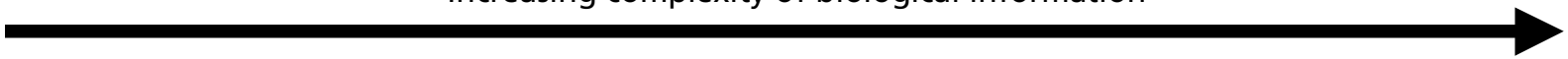
Weighted risk assessment scores

Low	**0 - 2.5**	1.1	3.7	2.3	3.0	3.7	3.7
Medium	**2.6 - 3.5**	Low	High	Low	Medium	High	High
High	**3.6 - 5.0**						

Appendix 3

i) Gathering information on bird populations and applicability making Non-Detriment Findings for birds

Increasing complexity of biological information

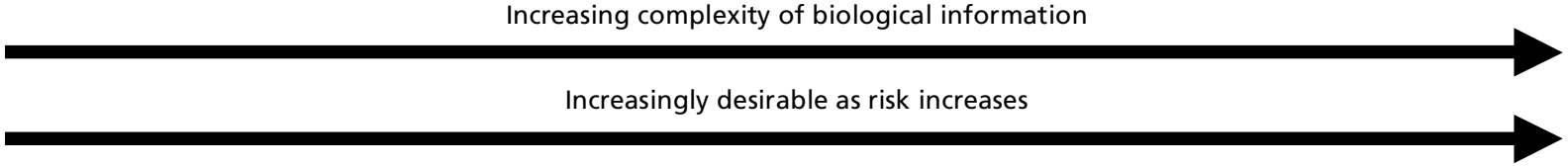


Increasingly desirable as risk increases

APPROACH	**Occupancy and other basic methods**	**Abundance indices and approximate density estimates**	**Reliable population size estimates**	**Harvest models**
AIM/ QUESTION	Have occupancy rates or the range of the species contracted or become patchy due to excessive harvest?	Has the approximate abundance of the species changed at a site/sites due to excessive harvest?	How does the annual harvest of a species relate, as a percentage its overall wild population?	Are current/proposed levels of harvest sustainable based on known population dynamics and productivity?
FIELD DATA REQUIRED	Presence/absence of species at selected sites across range	Encounter rates or approximate population sizes at individual sites	Reliable estimates of actual population density and size across whole range/state	Detailed and reliable information on productivity and other population parameters – usually from selected sites
SUITABLE IN SITUATIONS	Species occurring at low density across huge ranges, in difficult locations	Species occurring at low density, which are difficult to survey, where expertise or resources are lacking	Species with relatively small ranges, occurring at reasonable densities, where quality fieldwork is possible	Relatively well-known species, where resources are available, stable locations
RESOURCES AND EXPERTSE	Possibly low although dependent on range size. Analysis usually simple but could be complex	Generally low level of resources and expertise needed.	Generally high level of effort and expertise needed	High level of effort needed. Modelling requires expertise but dependent on model used.
POSSIBLE FIELD TECHNIQUES	Ad hoc information, atlas-types data, birdwatchers' records, data from interviews with local communities, driving transects	Transect walks, Unbounded point counts, mist-net data, watches from vantage points, questionnaires,	Distance sampling using VCPM or VWTM. Occasionally, actual counts, controlled roost counts or total nest counts (very rare	Dependent on model used – in Potential Biological Removal model, detailed information on population size, proportion

		Roost counts, flyover counts	/localised species)	of population breeding, sex ratio, number of successful nests, fledgling production etc.
WEAKNESSES	Gives very sketchy idea of harvest impact. Other influences on population likely to be present. Tells us little about numerical decline. Serious data quality issues	Does not tell us about actual numerical decline. Open to bias due across observer and major detectability issues	Easy to make mistakes in data collection and analysis. Areas covered by survey small. Important assumptions may mean unsuitable for some species	Area covered small and hence problem of representativeness. Data may be imprecise. Model assumptions may be inappropriate.
STRENGTHS	Maybe the only possible technique. Looks across much of range. Involves stakeholders. New analysis tools available	Easy to perform and more area can b covered. Can be adaptable to individual sites/methods can be mixed.	Allows issues of detectability to be addressed. Actual population figures can feed into IUCN Red List classifications. Proper measures of error incorporated.	The most detailed and only direct test of sustainability of harvest. Data useful for other purposes. Surrogate information can be used in absence of species-specific data.
EXAMPLE SPECIES	Raptors, African grey parrot, rare species with large ranges	Saker falcon, Galliformes, cryptic species, patchily distributed/aggregative species.	Many: except extremely rare or highly clumped species. Not aerial species, raptors, waterbirds etc. Appropriate for many Parrots	Limited by resources. Cacatua, Amazona, raptors and a range of species. Data can be surrogate for some parameters.
KEY REFERENCES	Bibby et al. (1998; 2001), Danielson et al. (2005)	Bibby et al. (2001), Cougill & Marsden (2004)	Buckland et al. (2000) Marsden (1999) Buckland et al. (2008)	Beissinger & Bucher 1992), Bodmer (2004), Robinson & Redford (1991)

ii) Gathering information on harvesting of birds and applicability making Non-Detriment Findings for birds



APPROACH	**Data from UNEP-WCMC Trade Database**	**Market/trade visits**	**Consultation with harvesters and brokers**	**Working with local communities**	**Direct monitoring of trade**

SCOPE	Usually countrywide for export	In some cases regional, can be local, island- or countrywide	Generally local, specific to a defined site or handful of sites. Data collection slow so scope is local	Generally local, specific to defined site. Data relatively quick to collect so can be multi-community study	Generally local, but can include monitoring to fill existing country-wide quota
DATA/METRIC GATHERED	Usually Annual export or import	Numbers of birds entering/leaving market	Numbers of birds collected by individual harvesters over time. Locations of harvest	Numbers and origins of harvested individuals from area by a community	Direct total count of harvested individuals
METHODS	Trade data gathered by scientific authorities	Markets are visited periodically and throughput of specimens estimated	Interviews/information from harvesters and/or brokers. Visits to harvesting areas is important validation	Semi-structured interviews with community leaders and other key figures	On site count of harvest
STAGE OF TRADE	End point – post mortality at all previous stages	Mid-point. Pre-arrival mortality difficult to assess. Can yield data on in situ mortality	Start point to early stages. Mortality and other issues at capture point & early stages of trade can be quantified.	Start point. Mortality and other issues at capture point can be quantified.	Start point. Mortality and other issues at capture point can be quantified.
STRENGTHS	Long time series allowing trends to be examined. Metrics tend to be standardised across countries	Gives local patterns of 'visible' trade. Allows other data to be collected. Can be multi-species. Can be visible conservation presence	Can give reliable estimate of capture rates, methods of capture, effort, locations. Can link data directly with ecological conditions. If more than one stage of trade is studies, numbers can be cross-checked across stages and areas.	Can give reliable estimate of capture rates, methods of capture, effort, locations. Numbers harvested by individual communities can be can be validated through multiple interviews or visiting other communities.	Most accurate assessment of offtake. Most reliable for assessing mortality and management
WEAKNESSES	Coarse-scale disallowing local trends to be identified. Many anomalies/inconsistencies. Difficult to	Requires careful approach to maintain accuracy of information. Seasonal patterns of trade need to be accounted for.	Requires suitable conditions to gain reliable information. Open to bias due to individuality of trappers. Translation, and cultural issues. Relationships can break down. Harvest from a	Requires much caution in building trust – some organisations probably disallowed from collecting data – governments,	May be a very sensitive issue. May require considerable effort

	interpret	Difficult to put data into regional or national context – requires some assumptions. Surveys can be ruined by enforcement actions	defined area can be difficult to estimate unless all catchers are studied and the area can be defined accurately	foreigners. Difficult to assess reliability of data in some cases. Unless survey is complete and multiple communities surveyed it is difficult to estimate an absolute harvest from a geographical area.	

OTHER BENEFITS	Creates international cooperation and information/knowledge sharing	Price analysis may yield useful idea of ease of capture or market issues	Can be integrated with other ecological data to give information on nesting requirements, habitat associations, age structure, productivity etc	Can yield holistic data on livelihoods and aspirations. Can be used to develop partnerships with local communities. Gives information that can help to develop local harvest systems with enhanced benefits to local communities Can help to maximise the returns from the trade to the community	Can yield data on compliance with management procedures, mortality at various phases.
ILLEGAL TRADE	Does not represent well	Can yield data in some cases but this can be unreliable	Can yield useful data dependent on approach.	Can yield useful data dependent on approach	Can yield useful data dependent on approach

U.S. Fish and Wildlife Service
Division of Scientific Authority
Convention on International Trade in Endangered Species of Wild Fauna and Flora
Record of Advice on Export Permit Application

Application number: Date DSA:

Applicant: Name
City, State

Specimens and species:

Recipient: Name
City, State

Type of permit: Appendix II export

ADVICE
After examining the above permit application, we find that the proposed export is likely to be for purposes that are **not detrimental** to the species.

Basis for advice:

1. The applicant requests authorization to export description of specimens.

2. According to Resolution Conf. 12.11 (Rev. CoP13) (Standard nomenclature), species that are listed in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) should have a valid CITES-recognized name, as reported in CITES-approved checklists. Nomenclature for the species included in this application follows [*Checklist of CITES species and Annotated CITES Appendices and reservations* (Inskipp and Gillett 2005), *UNEP-WCMC Species Database: CITES-Listed Species* (UNEP-WCMC 2006), other]. Where appropriate, taxonomic names used in the application have been corrected to conform with CITES taxonomic references as follows: [if changes are too numerous to list here, refer to an Annex with the changes].

3. [Description of origin of specimens.] According to the documentation provided by the applicant, the specimen(s) intended for export was/were harvested by the applicant in (City, County, State)] on [date(s)]; was/were purchased from [name of person(s)/establishment (City, State)] on (date), who harvested the specimen(s) in [(City, County, State)] on [date(s)]. Copies of receipts of purchase / collector's permit / landowner permission / applicable licenses included application.

4. [Brief summary of conservation status of species in the wild and explanation of why this *export* will not be detrimental.]

5. [Qualifications of applicant to harvest/maintain the specimen(s).]

References Cited:

Inskipp, T., and H. J. Gillet. 2003. Checklist of CITES Species. CITES Secretariat, Geneva, Switzerland, and UNEP-WCMC, Cambridge, United Kingdom.

UNEP-WCMC. 2006. UNEP-WCMC Species Database: CITES-Listed Species. <http://www.cites.org/eng/resources/species.html>. [Accessed Insert Date].

BIOLOGIST:_____ CONCUR:_____

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DMA BIOLOGIST:_____

To be filed in: _____

DSA:[Your name]:[date finding was drafted]:[name of file]