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

Sixty-second meeting of the Standing Committee
Geneva (Switzerland), 23-27 July 2012

Interpretation and implementation of the Convention

Trade control and marking

USE OF TAXONOMIC SERIAL NUMBERS

1. This document has been submitted by Canada as Chair of the Use of Taxonomic Serial Numbers Working Group[*].

2. At its 15th Meeting (Doha, 2010) the Conference of the Parties adopted Decisions 15.67 to 15.69 on *Use of Taxonomic Serial Numbers* (TSNs). Decision 15.68 is directed the Standing Committee as follows:

   The Standing Committee shall, at its 61st meeting (SC61), establish a working group, in consultation with the nomenclature experts of the Animals and Plants Committees and the UNEP World Conservation Monitoring Centre, to:

   a) investigate the usefulness and feasibility of incorporating taxonomic serial numbers as an element of CITES data sets;

   b) report its findings at SC62; and

   c) if necessary, prepare a draft resolution for submission and consideration at the 16th meeting of the Conference of the Parties.

3. At its 61st meeting (Geneva, 2011) the Standing Committee established the Working Group on the Use of Taxonomic Serial Numbers (TSNs) with terms of reference as contained in Decision 15.68 and extended the terms of reference to include recommendations in paragraphs 9 and 10 of document SC61 Doc. 36.2 *inter alia*:

   d) should the working group agree that the idea of incorporating TSNs into CITES data sets has merit, investigate if an existing system, such as the Integrated Taxonomic Information System (ITIS) could provide a source of TSNs, in consideration of dynamic and hierarchical needs associated with CITES-agreed nomenclature.

4. The Working Group on Use of Taxonomic Serial Numbers is composed of the following members: Australia, Canada (Chair) China, France, Japan, Mexico, Nigeria, Switzerland, the United States, the nomenclature experts of the Animals and Plants Committees, UNEP-World Conservation Monitoring Centre and Conservation International.

5. During the intersessional period, the Working Group engaged in discussion by e-mail, focusing particularly on parts a) and d) of the working group's terms of reference.

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Usefulness and Feasibility of Incorporating Taxonomic Serial Numbers as an Element of CITES Data Sets

6. The Working Group considered general and specific arguments for and against CITES incorporation of the TSN (a unique numeric identifier assigned to the scientific name of a species). In support, it was generally acknowledged that the lack of a comprehensive mechanism to capture taxonomic trade data and the inadequacies of harmonized system codes for capturing information on wildlife species in products suggests a system using coded species data has potential utility. Arguments supporting TSNs however, were often less applicable to CITES-related trade than to wildlife trade in general, where standard nomenclatures are not consistently used and where data are not systematically collected.

7. The Working Group recognized that regulatory capacity and the distinct perspectives of customs and regulatory officials were fundamental aspects of the discussion. If successful, inclusion of TSNs in customs data sets would enhance customs and wildlife authority capacity to monitor CITES and non-CITES species in trade, to increase provision of notice regarding regulatory status of goods and to facilitate sharing of information with other regulatory agencies.

8. It was also agreed that successful utilization of TSNs could facilitate legal wildlife trade by (for example) providing traders unsure as to current taxonomic usage a clear link between scientifically accepted and superseded but legally registered species names. This in turn would increase the level of responsibility held by importers or exporters to accurately account for and describe wildlife in trade and to provide assurance of legal acquisition and harvest.

9. If applied outside of the regulatory scope of CITES (e.g. in customs data sets) use of coded species data would provide insight into volumes and net flows of bio-resources moving between world regions. As the custodian of a unique subset of global wildlife trade data, CITES could lead internationally and encourage broad adoption of coded species information by including TSNs in CITES species and trade databases.

10. However, the Working Group identified numerous complicating factors that limit the usefulness and feasibility of TSN incorporation in CITES data sets. An underlying lack of clarity as to the ultimate purpose of TSN incorporation was noted. As CITES permits already include binomial species names, the inherent value of incorporating TSNs was considered unclear. The argument in favour of TSN adoption focuses largely on strengthening linkages between CITES nomenclature and trade data with the broad wildlife trading system outside of CITES.

11. An overriding concern of the Working Group was the capacity of a coded species data system, in the absence of universal taxonomic agreement, to reconcile differing species treatments and taxonomic concepts. Understanding of valid taxonomic nomenclature among regulatory bodies is frequently controversial and taxonomic classification is subjected to constant revision. Successful incorporation of TSNs would require a system that could both encompass global biodiversity and rapidly reconcile evolving taxonomic concepts and synonymies.

12. While coded data were thought by some Working Group members to be more resistant than text data to errors in transmission or storage and better suited to data validation and verification, many members of the Working Group considered that a miss-entered species code would be less obvious than a misspelled scientific binominal and that a miss-entered species code could result in incorrect species, genera, families or orders and the associated trade data to be entered into a database.

13. It was noted that TSNs provide information only on taxonomic status and as such, do not provide sufficient support to Parties needing information on species in trade. It was suggested that if adopted, TSNs should convey additional information required by border agencies to respond effectively to wildlife exploitation. To the enforcement officer, a taxonomic name means little unless relevant conservation information is appended to it. Development of coded species information that could signal species conservation status, IUCN Red List status and potentially, natural and jurisdictional distributions was suggested.

14. Potential negative impacts on regulatory officials associated with TSN requirements were noted. Wildlife in trade comprises only a small fraction of customs duties and it may be unrealistic to require customs officials to preferentially recognize, register and verify all shipments involving wildlife species. Were TSNs to be incorporated into the CITES database system, meaningful comparison of CITES data with non-CITES data sets would only be possible if Customs authorities universally adopted TSNs.

Investigation of the Integrated Taxonomic Information System (ITIS) as a provider of Taxonomic Serial Numbers for CITES Data Sets

15. The structure of the ITIS database and its ability to automatically link accepted taxonomic entities and synonyms was considered a useful attribute, particularly as legislative instruments focus on fixed, legally defined taxonomic entities whereas taxonomic treatments and concepts shift over time. Ability to track the changing status of a taxon back to an original or legally significant status was seen as a great advantage of ITIS TSNs. Similarly, as a TSN is never reassigned or deleted, an invalid name used by an importer or exporter could potentially be traced to a legally valid name.

16. It was noted that many Custom and Border agencies require taxonomic information but typically cannot afford to maintain such databases. In such cases, access to taxonomic information could be made available through the ITIS database. ITIS construction would accommodate and rapidly disseminate taxonomic and nomenclatural changes to users. As ITIS TSNs are relatively short strings (e.g., *Swietenia* – TSN: 29025) they are likely to prove more user friendly than systems such as the Catalogue of Life, which employ relatively long species codes. Broad adoption of ITIS TSNs could facilitate establishment of permanent links with appropriate species databases contain information regarding conservation status of species potentially of interest to the CITES Parties.

17. While noting the positive attributes associated with the ITIS system, several concerns and operational questions were raised by Working Group members. Of particular concern was the capacity of ITIS to maintain CITES taxonomic information in its database. It would be necessary for Parties to receive a firm commitment from ITIS that it could operate and maintain such a database on a long-term basis. Detailed information on the funding and maintenance model of the database operation would require clarification.

18. Working group members expressed caution regarding a potential institutional dependency and the implications thereof should CITES adopt ITIS as a source for TSNs. While ITIS is a regional entity, CITES is a global process with priorities and taxonomic approaches that should remain independent. Should a conflict arise regarding the priorities and taxonomic approaches of CITES and ITIS, it is not clear how such differences would be resolved.

19. A need for further discussion was noted regarding the means by which ITIS develops and maintains TSNs. ITIS TSNs are sequentially assigned numbers that do not reflect taxonomic hierarchy, a design that increases the potential for significant data entry errors, particularly by an individual unfamiliar with taxonomy. Questions were raised relating to ITIS management of taxonomic information including, for example, the method by which ITIS differentiates between taxonomic concepts (e.g. *sensu stricto* and *sensu lato* taxa), and the logic used to assign a TSN in such cases. It was noted that the function of ITIS is not to track concepts but, instead to “anchor” names with a permanent TSN and as such, differentiation of taxonomic concepts is reflected in the links between synonymous names. However, the mechanism that would be used to reconcile fundamental differences in taxonomic references used by ITIS and CITES remains unclear.

20. Ultimately, Working Group members voiced concern with the capacity of ITIS to reflect the entirety of the CITES species list, to keep pace with CITES nomenclatural changes and, in particular, to preferentially reflect CITES standard references for CITES species. Substantial discrepancies currently exist between CITES and ITIS nomenclature for certain species groups including mammals, reptiles, arthropods, molluscs corals and plants. The process of maintaining currency of CITES nomenclature with ongoing scientific taxonomic development is in itself demanding and laborious. Doing so for TSNs would require resources that may not be available under the direction of CITES Parties.

Alternate Model for the Application of TSNs

21. In considering arguments for and against adoption of TSNs by CITES, the Working Group acknowledged that irrespective of current feasibility, the TSN (or something similar) could serve as an important coordinating link for sharing international trade data between the CITES Secretariat, the World Customs Organization (WCO), CITES Parties and their corresponding Customs agencies. Availability of species-specific international trade data in CITES and non-CITES wildlife and plant species would be a great asset to CITES, as knowledge of the volume of international trade in non-CITES species is a key component in determining whether species not currently listed under CITES warrant listing based on their levels of trade.

Conclusions

Regarding the usefulness and feasibility of incorporating taxonomic serial numbers as an element of CITES data sets;

22. The Working Group concludes that at present, significant barriers exist to the incorporation of the TSN as an element of CITES data sets and as a result, it is not currently useful or feasible to do so. The Working Group emphasizes its belief that the TSN concept has merit and should be the subject of further consideration in an appropriate CITES forum. Barriers to TSN incorporation identified by the Working Group include:

    i) absence of a compelling rationale for inclusion of TSNs as an element of CITES datasets. Arguments in favour of TSNs relate to wildlife trade in general (including trade in non-CITES species) where standard nomenclature is inconsistently used and data are not systematically collected. While TSN incorporation could facilitate monitoring of trade data and links to regulatory mechanisms outside CITES, the priority for CITES authorities remains implementation of CITES regulations for CITES listed species;

    ii) the dynamic and variable nature of taxonomic systems, which complicates the assignment of TSNs. Accommodating periodic taxonomic revision and reflect changing concepts within CITES while providing adequate linkage to external taxonomic concepts and approaches is unfeasible, at least for the present;

    iii) the demands that TSN adoption would place on CITES management authorities who would be tasked with maintaining agreement between their databases and relevant TSN listings. While advanced and automated database systems could accommodate automatic updates, for the present this approach would benefit only a limited number of Parties. Taxonomic information held by many Parties is not in a structured digital form and incorporating TSNs would require updating databases manually.

Regarding the potential for an existing system such as the Integrated Taxonomic Information System (ITIS) to provide a source of TSNs, in consideration of dynamic and hierarchical needs associated with CITES-agreed nomenclature.

23. The Working Group concludes that for the immediate future, it is not useful or feasible to incorporate ITIS TSNs as an element of CITES data sets, or on the face of CITES permits and certificates. The rationale for this conclusion is as follows:

    i) While the ITIS database design presents a useful model, it is not sufficiently populated with CITES-listed species to justify its adoption as a source of TSNs. At present, the ITIS database includes species records and TSNs for approximately 80% of animal species and 6% of plant species on the Checklist of CITES species. ITIS depends on taxonomic experts willing to provide taxonomic data sets and it is likely to require several years for ITIS to address the entire CITES species list. The Working Group notes that ITIS has committed to including all CITES-listed species of wildlife and plants in its database. On completion of this work, an appropriate forum within CITES should re-evaluate the potential for using ITIS TSNs.

    ii) ITIS is a regional entity that would be required to assume and fulfil an international role should inclusion of TSN's in standard CITES permits be pursued. The Working Group notes the potential for development of an institutional dependency on ITIS by CITES for provision of TSNs. However, institutional relationships between CITES and independent agencies do exist, in particular through memoranda of understanding. Thus, a long-term commitment between CITES and ITIS for provision and application of coded species data could be considered after careful consideration of institutional requirements and capacities.

Regarding the necessity of preparing a draft resolution regarding taxonomic serial numbers for submission and consideration at the 16th meeting of the Conference of the Parties:

24. The Working Group concludes that, based on its discussions, preparation of a resolution on the adoption by CITES of taxonomic serial numbers for consideration at the 16th Conference of the Parties would be premature.

25. The Working Group concludes that the terms of reference for the group as set out in Decision 15.68 have been fulfilled.

Recommendations

26. The Standing Committee may wish to consider:

    a) directing the TSN Working Group to continue its e-mail discussions until CoP16, in order to consider technical aspects of database design and data sharing and to develop criteria for potential TSN providers, with results of these discussions to be provided to the Chair of the Working Group on Information Technologies and Electronic Systems;

    b) a recommendation that the Conference of the Parties at its 16th meeting expand the terms of reference of the Working Group on Information Technologies and Electronic Systems to:

        consider the relevance and utility of including taxonomic serial numbers in data sets of CITES and as a new field in CITES permits and certificates;

    c) a recommendation that the Conference of the Parties at its 16th meeting, direct the Secretariat to adapt and extend Decisions 15.67 and 15.69 as follows:

        Decision ~~15.67~~ 16.XX

        Directed to Parties

        The Parties, particularly those engaged in the development of single window systems, are encouraged to consider the usefulness of incorporating taxonomic serial numbers in their domestic data systems, alternative options they might use or may be using, and provide comments to the Secretariat.

        Decision ~~15.69~~ 16.XX

        Directed to the Secretariat

        The Secretariat shall, subject to external funding, compile information voluntarily provided by the Parties regarding the usefulness of incorporating taxonomic serial numbers in their domestic data and alternative options they may be using and make this information available to other Parties.

    d) encourage the CITES Plants and Animals Committees and the CITES Secretariat to consider the usefulness of the Intergovernmental Platform on Biodiversity and Ecosystem Services as a focal point for development of standard references for biodiversity and broadly shared taxonomic and nomenclatural understanding.