



# Convention on the Conservation of Migratory Species of Wild Animals

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## 1<sup>st</sup> Meeting of the Sessional Committee of the CMS Scientific Council (ScC-SC1)

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### Conservation Implications of Non-human Culture

#### Progress Report of the Culture Expert Group to the CMS Scientific Council

##### Summary:

This document has been prepared by the co-chairs of the Culture Expert Group of the Scientific Council. It outlines the progress made by the group, the relevance to CMS and anticipated further work.

It encourages Councillors with expertise for taxa other than cetaceans to join the expert group.

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## Conservation Implications of Non-human Culture

### Progress Report of the Culture Expert Group to the CMS Scientific Council

#### A. Introduction

1. Resolution 11.23 on Conservation Implications of Cetacean Culture adopted at COP11 (UNEP/CMS/COP11/Resolution 11.23) requested the Scientific Council to establish an intersessional expert working group to address the conservation implications of culture and social complexity, with a focus on, but not limited to cetaceans.

2. The resolution invited relevant CMS Scientific Councillors for taxa other than cetaceans to review the findings of the Workshop on the Conservation Implications of Cetacean Culture (UNEP/CMS/COP11/Inf.18) and engage in this expert group. This invitation to the Scientific Councillors is once again extended here.

3. In June 2015 external expert nominated by the Scientific Council were invited to join. At present, 44 scientists of various backgrounds are members of the expert group, with the following expertise:

- nineteen cetacean experts, with a special focus on cetacean culture, social structure, social learning, communication and cultural transmission, demographics, links between genetics and culture, behaviour, disturbance and its population consequences, and ecology
- six bird experts, with a special focus on bird communication, social structure, and evolutionary, ecological and social contexts of tool use
- four elephant experts, with a special focus on social structure, matriarchs as knowledge repositories, and cognition
- three primate experts, with a focus on behaviour and culture
- two reptile experts, with a focus on social learning
- ten experts with other related expertise, such as ecology of information use, social evolution and biodiversity, phylogenetic approaches to culture in humans, culture in non-humans, birds and mammals, and related policy

The experts are affiliated to more than twenty different universities and research institutes, as well as a number of governmental scientific facilities and scientific associations.

4. The resolution also requested the expert group, subject to availability of resources, to:
- a) develop a list of priority species listed on CMS for a comprehensive investigation of culture and social structure and commence more detailed analysis as appropriate, including for example developing a list of key factors that should be taken into consideration for effective conservation; and
  - b) report its findings and any proposals for future work through the Scientific Council to CMS COP12.

#### Definitions

5. The expert group has been working over the Scientific Council workspace, where the following definitions of culture and social complexity have been developed and agreed to be the most relevant to CMS deliberations:

##### Culture

*Information or behaviours that are shared by a community and acquired through social learning from conspecifics*

### Social complexity

Although a common understanding of the term ‘social complexity’ was applied during the April 2014 workshop, no official definition was agreed. A simple definition was suggested on the workspace:

*Individuals possess a diversity of types of social relationships with other members of their population. The more diverse these types of social relationships, the more complex the society.*

## **Methods**

6. The group is currently examining examples where social information use, social learning and resultant cultures may be important to conservation, across a range of taxa relevant to CMS. The method of exclusion, in which culture is inferred as the source of a behavioural pattern if genetic causation, ontogeny, and individual learning in different environments can be excluded, was used during the 2014 workshop and has also been adopted by the expert group.

### **B. Evidence from Across Taxa**

7. Examples of social learning, social complexity and potentially culture are being discussed from a range of taxa. A list of useful references is being compiled. One possible outcome from this work is that the CMS Scientific Council will be able to act as an international repository for this information for a range of migratory species.

### **Social Learning**

8. Following on from the 2014 workshop, the expert working group discussed social learning in a range of taxa potentially relevant to CMS. Examples of social learning have been discussed from a range of species as diverse as whales, elephants, birds and lizards.

9. One issue which was considered to potentially confound observations of social learning was local enhancement, a form of social learning in which an individual is drawn to a certain location due to the presence of conspecifics. It was agreed that this is an important distinction for management, since culling will not necessarily resolve the problem if the same environmental resources remain available, as other individuals may simply initiate the same problem behaviour and their presence may, through local enhancement, stimulate further individuals to take up this same strategy.

10. This case highlights that social learning has implication not only for information transmission within a population and thus potentially conservation, but social learning can also be relevant to conservation issues associated with the interplay between species.

### **Social role, social structure, social information and culture**

11. Evidence for individual social role, the relevance of social structure to conservation efforts, the potential effects of fragmentation of social groups, and the importance of social information are also under discussion. Specifically, the flow of social information may help resilience to environmental change, whereas conservative cultures may inhibit the flow of certain information. Both may have relevance to conservation efforts.

12. During the 2014 workshop, participants noted that the removal of individuals from a

population could represent more than just a numeric loss to its social group. This concept is being explored further in the online discussions, specifically in relation to CMS species.

### **C. Implications for Conservation**

13. Whilst evidence is being gathered by the group across a range of taxa relevant to CMS, the relevance of the emerging science to conservation efforts is also being explored. Culture may have a variety of conservation implications such as: range recovery, anthropo-dependence, vulnerability due to specialization, interaction with climate change, influence on population structure, conflict with human activities and potentially increased ecological resilience. The resolution requests that the group develop ‘a list of key factors that should be taken into consideration for effective conservation’. A list of potential key factors are being collated as the discussions develop and will be assessed by the group.

### **D. Implications for CMS**

14. During the April 2014 workshop, the Chair of the CMS Scientific Council noted that ‘countries had made commitments to preserve biodiversity, which included phenotypic variation which could be due to genetic, environmental and cultural factors’. He further noted that ‘No matter what the cause of the phenotypic diversity, the goal of preserving this variety stayed the same.’ (UNEP/CMS/COP11/Inf.18)

15. The resolution requested the expert group ‘develop a list of priority species listed on CMS for comprehensive investigation’. It is anticipated that this list will become the focus of the work as the expert group moves forward.

16. New insights into the dynamics of social groups requires a refinement of approaches towards managing social species. This is an enormous challenge, but with the expertise within the Scientific Council and the external experts that these deliberations have attracted, this is a challenge to which CMS is well suited. Indeed there is an opportunity for the CMS Scientific Council to become a leader in developing new thinking in relation to the applied features of this aspect of conservation behaviour.

### **E. Conclusion**

17. These discussion so far demonstrate that integration of data on social behaviour for the conservation of some species listed on the CMS Appendices is profoundly multifaceted. The challenge, amid all this complexity, is to determine how best to use all this new knowledge for the benefit of conservation and to distil this into clear management advice.

18. It has been acknowledged that some issues raised as potentially important during these discussions may not easily be resolved as they require deeper technical discussion in an emerging scientific field. Nevertheless, the group is working towards making some practical recommendations and in particular is working on some case studies for CMS relevant species.

#### ***Action Requested:***

- i. Take note of the progress
- ii. Encourage Councillors with expertise for taxa other than cetaceans to join the expert group.