



Development of a procedural Framework for Action Plans to Reconcile conflicts between large vertebrate conservation and the use of biological resources: fisheries and fish-eating vertebrates as a model case



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Policy Summary

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Meeting the challenges of human-wildlife conflict reconciliation

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Conflicts arising from the competition of humans and wildlife for biological resources are as old as mankind. Changes in civil society's attitudes towards wildlife and the success of conservation management have resulted in wildlife prospering again and returning to areas from where they had disappeared and even spreading to new habitats. This is reigniting old conflicts between humans and wildlife. To reconcile such conflicts we need ecologically effective, economically efficient, and socially acceptable means to manage human-wildlife conflicts. It is an arduous task that requires time, commitment, and knowledge to achieve. It is most successful if management and policy have adequate tools in place well before a conflict becomes virulent.

Against this background, researchers from the natural and social sciences from 9 European countries have joined in a project to develop a generic framework for the reconciliation of human-wildlife conflicts. The project FRAP, Framework for Biodiversity Reconciliation Action Plans, funded by the EU, used fisheries and fish-eating vertebrates (seals, otter, and cormorants) as model cases to assess and illustrate successful approaches for conflict reconciliation. Like for many other human-wildlife conflicts, the relationship between fisheries and the conservation of these vertebrates differs strongly across Europe and among species, ranging from no conflict to escalation at the local, regional, or European level.

The generic framework provides guidelines for how to analyse and evaluate the ecological and socio-economic basis of conflicts. The guidelines further contain recommendations for how the results of these assessments can be used to develop ecological and technical mitigation measures, policy instruments, and participatory decision strategies to reduce or solve the conflicts. Above all, the guidelines and the case studies show that conflict management needs interdisciplinary and participatory approaches. This policy brief summarizes important messages that were learnt in the development of the generic framework.

Successful conflict reconciliation requires an identification of the ecological and socio-economic factors that play a key role in the conflicts. On the ecological side assessments of conflicts so far focused on the consumption of contested resources, in the case of the FRAP model species economically valuable fish, and almost always neglected landscape factors. However, the presence of conflicting wildlife and the potential for conflicts is not evenly distributed across the landscape or the sea. For example, the impact of cormorants on fish depends on the distance to major breeding colonies. The generic framework provides guidelines for how to identify key landscape factors. Recommended methods are illustrated using the model species of FRAP. Since landscape approaches have not yet been well developed in the context of human-wildlife conflicts, a major challenge for scientists remains in this field.

Diet studies are essential whenever humans and wildlife compete for the same resources. Though they are fairly straightforward in well-delimited environments, such as inland fishponds, they pose major challenges in open systems, such as coastal areas or the open sea. The generic framework outlines the conditions that diet studies must fulfil to provide convincing results and suggests new methods, which have been successfully tested within the FRAP project for cormorants and seals.

On the socio-economic side, it became clear that conflict perceptions by stakeholders can differ immensely from country to country, even in the presence of comparable policy instruments (e.g., damage compensation schemes). Similarly, the perceptions of the same conflict can vary widely among stakeholders depending on their specific interests in the conflict. The generic framework provides guidelines for approaches that allow a systematic description of the facts, values, and interests that the different stakeholder groups bring to the process of conflict reconciliation. It further outlines approaches to assess the importance of the conflict in terms of regional economics, and to identify the role of relevant past and current policy instruments which have been used to deal with the conflict. Regarding the legal framework, it is important to realize that EU state aid rules inhibited in some countries the application of policy instruments that could be effective for conflict resolution. Furthermore, structural funds provided by the EU are used to reduce the conflicts, but none of the countries investigated in FRAP uses them to the extent possible because of their complexity.

Classic ecological mitigation strategies in wildlife management, such as lethal and fertility control, wildlife translocation, or repellents, usually work only under restricted conditions. Typical conflict species tend to be highly adaptable, skilful, and clever and thereby counteract the efficacy of the chosen mitigation strategy. Moreover, any manipulation of the wildlife species to reduce its impact on the competed resource can have adverse effects on the species. Thus, monitoring must be implemented as an integral part of wildlife management. Modelling the effects of management alternatives on the viability of the wildlife species can greatly help evaluate alternative management options. A generic model and software have been developed in the FRAP project to allow practitioners the use of the model. The generic framework also

outlines the advantages and limitations of modelling for human-wildlife conflict management.

Single instruments are rarely adequate to solve conflicts. Rather, a combination of different instruments is usually asked for and their selection must be based on the key factors identified in the assessment of the ecological and socio-economic basis of the conflict. Suitable instruments must be ecologically effective and economically efficient. They help to distribute, more equally, the benefits and costs among various stakeholder groups. In addition, one must take into account that civil-society action is an essential ingredient of socially acceptable conflict management. Participatory approaches are particularly asked for when there is a shift from species conservation to species management, when new actors emerge in the conflict, or when the conflict escalates due to environmental change or changing human and/or animal behaviour.

In summary, if human wildlife conflict reconciliation strategies are to work, they must use truly interdisciplinary approaches, involving all relevant stakeholders, and be based on sound scientific principles. Reconciliation takes time to achieve and needs research that combines different governmental levels and ecological scales from the local to the European. Reconciliation approaches are most successful if they are already in place before a conflict becomes salient.

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