

PRESS RELEASE

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Many protected areas in Germany are not fit for climate change

Eberswalde University for Sustainable Development presents principles for assessing and improving climate-change robustness of nature conservation

Climate change poses manifold new challenges to society. It is not just human health being affected or land use systems that have to cope with increasing temperatures, change of rainfall regime, as well as the rise of extreme events and the fluctuation of weather conditions. Equally, the endeavour of protecting nature has to consider climate change, as valuable ecosystems are rapidly changing. A team of researchers with Eberswalde University for Sustainable Development and Potsdam University developed criteria for adaptation to climate change in conservation management and analysed selected protected areas in Germany. The results published in PLoS ONE are alarming: despite many years of climate change discourse, conservation management largely is not prepared for climate change. Especially European protected areas (EU system of Natura 2000) show a poor performance.

In the study, climate change-robust conservation management was defined using 11 principles and 44 criteria, which followed an approach similar to sustainability standards. “Actually, our approach is based on universal scientific criteria; it can be used for assessing and certifying performance of protected areas worldwide, and also as a guideline for elaborating management plans”, says first author Juliane Geyer from Eberswalde University for Sustainable Development. The authors analysed management plans of 60 carefully selected protected areas and see enormous deficits. Climate change-robustness of protected areas mostly ranks in the lower quarter of the potential quality. Stefan Kreft, co-author, and chair of the Policy Committee of the Europe Section of the Society for Conservation Biology states: “It is striking that mostly Natura 2000 protected areas, established under conservation legislation of the European Union, belong to the sites with especially poor performance, with lower values in smaller areas”.

The lack of appropriate depth in addressing the principles of climate change-robust conservation management might imply that the necessary competence are still deficient in many protected area administrations and need to be developed. “For more than a decade, we are now trying to put the topic of climate change into the local and national conservation agendas, affirms research supervisor Pierre Ibisch, “Scientific evidence clearly suggest that we have to act. Still, many actors and authorities tend to ignore the clearly difficult challenge. There are simply not enough resources for management responses to environmental change, and threats are concrete and real. For instance, we know protected wetlands that have completely dried out and lost valuable species and ecological functions”.

Further information about the paper: Assessing Climate Change-Robustness of Protected Area Management Plans - the Case of Germany <https://doi.org/10.1371/journal.pone.0185972>

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Principles and recommendations

The 11 principles and 44 criteria suggested in the study also reflect a comprehensive set of recommendations based on literature and best practice, such as the so-called Ecosystem Approach proposed by the UN Convention on Biological Diversity:

1. Even if this seems to be trivial, climate change must be accepted as a challenge and explicitly be addressed in management. In management plans there must be separate goals and strategies for dealing with climate change.
2. The long-term functioning of the ecosystems and their capacity to adapt to disturbance and change shall be prioritized as conservation goal over simply maintaining existing structures and patterns. Atomistic species protection can lead to missing the bigger picture.
3. Planning must look into the wider landscape and strive for connectivity and coherence, consider interactions with neighbouring ecosystems.
4. Planning must be scenario-based, working towards different options of future development. Besides short and mid-term activities, management must also embrace long-term action.
5. Any knowledge - from all sources and disciplines - on the current situation and plausible future changes must be effectively used for management.
6. Management must account for complex interactions and follow a 'systems approach'. Management must not happen in isolation, but protected areas of a given region have to team up, aligning goals and strategies as well as striving for synergies.
7. An adaptive management approach does not just require iterative and flexible planning, but especially a self-critical monitoring and evaluation that checks if actions are effective.
8. An effective risk management shall reduce surprises from future events. Strategies must be designed for being successful under different scenarios. Management must not just react to problems that have already occurred, but respond to plausible scenarios.
9. Institutions must allocate resources to developing capacities by systematic training, but also become more diverse regarding the staff's background and knowledge.
10. Public accountability and acceptance are the fundament of modern conservation management. Effective exchange and participation must go beyond consultations of plans.
11. Management must strive for working into the wider landscape, networking with allies and promoting dialogue with all types of stakeholders, identify common interests and create cooperative strategies for ecosystem-based climate management.