BOOK OF ABSTRACTS

I. SESSION DESCRIPTION

ID: S8c

The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Hosts:

	Title	Name	Organization	E-mail
Host:	Dr.	Miguel A. Cebrián-Piqueras	University of Göttingen, Germany	cebrian@uni-goettingen.de
	Dr.	Anna Filyushkina	Vrije Universiteit Amsterdam, the Netherlands	anna.filyushkina@vu.nl
Co-hosts:	Dr.	María Dolores López-Rodríguez	Universitat Oberta de Catalunya, Barcelona, Spain	mlopezrodrigu@uoc.edu
	Dr.	Rose Keller	Norwegian Institute for Nature Research, Norway	rose.keller@nina.no
	Dr.	Veronica Lo	Swedish University of Agricultural Science, Sweden	veronica.lo@slu.se

Abstract:

Protected areas are an essential strategy to preserve and enhance biodiversity at local, regional and global scales with contested impacts on human well-being. Despite the increasing efforts on protecting more area of marine and terrestrial ecosystems, biodiversity and associated ecosystem services are seriously threatened. Common challenges for protected area networks include: low stakeholder awareness of protected area benefits, low or declining local interest in conservation, difficulties balancing conservation goals with economic and social outputs, and challenges associated with processes to facilitate an effective stakeholder participation in protected area management. In this era of habitat loss, conservation of unique places and the resources they embody and provide might rely now more than ever on active stewardship of protected areas by the human communities that border them. A call for inclusive conservation approaches emphasizes the potential of inter- and trans-disciplinary research for developing, testing and validating novel scenarios and other innovative approaches for engaging multiple stakeholders and local communities in protected area management and biodiversity decision-making at multiple scales. We specifically ask 1) to what extent is balancing diverse visions possible, 2) how can strategies based on collectively defined visions be translated into protected area management

at multiple scales, and 3) what variety of methods and tools can be used to engage diverse groups of stakeholders in conservation initiatives. We propose that by identifying and balancing these different perspectives and visions, and by understanding the importance of different human values and relationships with nature, we can move towards outcomes which are expected to equally improve social and conservation outcomes in protected areas. This session aims at presenting and discussing current research related to inclusive conservation approaches at site, regional and international levels. Specifically, we encourage the submission of work related to the visions for the management of protected areas and their consequences; the role of social learning and co-production of knowledge, different knowledge systems, including local ecological knowledge; governance arrangements and social networks to facilitate stakeholders' engagement in decision-making; power relationships and measuring of uncertainty and resilience in protected areas.

Goals and objectives of the session:

To discuss and further develop current research related to an inclusive conservation approach and to identify challenges and potential research directions relevant to this approach.

To better link and promote a network of research working around the topic to generate synergies in future research.

Planned output / Deliverables:

We will explore the interest in and commitment to a Special Issue composed of the session contributions for an Open Access Journal.

Related to ESP Working Group/National Network:

Sectoral working group: SWG 8 – ES in Conservation

II. SESSION PROGRAM

Date of session: Monday, 7 June 2021
Time of session: 13:30 – 17:00

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
13:30 13:45	Anna	Filyushkina	Vrije Universiteit Amsterdam	Protected areas in a peri-urban mosaic: what can we learn from visions of local residents and stakeholders?
13:45 14:00	Marc	Metzger	The University of Edinburgh	Developing a shared vision for sustainable regional land use in the Southern Ayrshire and Galloway Biosphere in Scotland
14:00 14:15	Geethanjali	Mariaselvam	University of Helsinki	How can we bring back the lost spirit of conservation? – A study in Abohar Wildlife Sanctuary, India

Time	First name	Surname	Organization	Title of presentation
14:15 14:30	Veronica	Lo	Swedish University of Agricultural Sciences	How stable are visions for protected area management? Stakeholder perspectives before and during a pandemic
14:30 14:45	Aurelija	Armoskaite	Latvian Institute of Aquatic Ecology	What are we protecting against? Ramifications of the spread of a non-native fish species on protected benthic stony reefs in the eastern Baltic and the services they supply
14:45 15:00	Irene	Mestre	University of Québec in Outaouais	Taking into account Nature's contributions to people in the management of protected areas: a leverage for integrated land-use management
15:30 15:45	Tanja	Šumrada	University of Ljubljana	Novel approaches to grassland conservation in the remote protected areas of Central and Eastern Europe
15:45 16:00	María Dolores	López-Rodríguez	Universitat Oberta de Catalunya	A boundary object approach for collective action in conservation governance: case study from Sierra de Guadarrama National Park (Spain)
16:00 16:15	Kate/Matilda	Negacz/Petersson	Vrije Universiteit Amsterdam	The role of international cooperative initiatives in enhancing biodiversity in protected areas
16:15 16:30	Melissa	Marselle	University of Surrey	Conceptualising the pathways linking biodiversity to human health and well-being: An interdisciplinary framework
16:30 16:45	Miguel A.	Cebrián-Piqueras	University of Göttingen	Tracking inclusive conservation: A systematic review of the challenges of and opportunities for social inclusion in current protected area management using correlation network analysis
16:45 17:00				Discussion

III. ABSTRACTS

Abstracts are ordered based on the session program. The first author is the presenting author unless indicated otherwise.

1. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Protected areas in a peri-urban mosaic: what can we learn from visions of local residents and stakeholders?

Presenting author: Anna Filyushkina
Other author(s): Franziska Komossa, Peter Verburg
Affiliation: Vrije Universiteit Amsterdam, Netherlands
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Protected areas often do not exist isolated from the rest of the world. In fact, they are often embedded in highly multifunctional landscapes. One of such landscape types is the peri-urban mosaic, where farming, nature conservation, recreational, residential, energy production and other functions co-exist together. Such multifunctionality could result in tensions and conflicts between different interests and users, and have a negative effect on nature conservation. Governance of peri-urban landscapes and management of protected areas lodged in them therefore needs to navigate these diverse interests, requiring a better understanding of them. Employing socio-cultural approach, this study aims to contribute to this by eliciting visions residents and different stakeholders have for this landscape. In the process we also identify tensions between uses known to respondents and areas different groups of stakeholders consider to be multifunctional. Data were collected using individual semi-structured interviews guided with an interactive, visual canvas tool to elicit perceptions and conduct participatory mapping. We identify four main visions held by residents and stakeholders for the area: (A) Inclusive cultural landscape for sustainable living, (B) Productivity-oriented landscape, (C) A peri-urban landscape of convenience and (D) Environmentally-friendly landscape. All of them acknowledge multifunctionality of the landscape, but different emphasis is placed on different landscape

functions. Participants are aware of a wide range of conflicts between uses, provisioning vs biodiversity or recreation being named most often. Intensity maps of areas seen as multifunctional produced from participatory mapping demonstrated differences in perceptions between stakeholder groups. Location of heatmaps was then compared to that of protected areas and potential for tensions and conflicts was discussed.

Keywords: conservation, human-nature relationship, values, ecosystem services

2. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Developing a shared vision for sustainable regional land use in the Southern Ayrshire and Galloway Biosphere in Scotland

Presenting author: Marc Metzger
Other author(s): Darren Moseley,Louise Sing, Anastasia Yang, Lana Coste
Affiliation: The University of Edinburgh, United Kingdom
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Climate change and evolving societal demands emphasise the need to manage our landscapes to be more resilient and adaptable, and the importance of restoring and improving our ecosystems. However, getting agreement on which elements of the landscapes should or shouldn't change can be difficult as conflicting views and tensions may arise if people feel that their voices have not been heard. We tested a visioning approach in the Galloway and Southern Ayrshire Biosphere. Located in in South West Scotland, the Biosphere aims to promote a more sustainable, balanced and sustainable use of the natural, cultural and social assets of the region. The Biosphere comprises of a mix of landscapes highly valued for their cultural and ecological importance, alongside large areas of productive conifer plantations and intensive dairy farming. Through a collaborative process with a diverse group of stakeholders we identified a shared vision that combined social, economic and environmental aspirations. The future vision is for a varied, mixed and integrated living and working landscape that provides an excellent place to live and work with a strong identity and a respected and celebrated natural and cultural heritage. The vision

narrative was used to develop spatial criteria to identify where changes in land use of land management could potentially take place, e.g., improving habitat quality by planting trees alongside riparian areas and close to communities or restoring peatlands. Maps identifying the areas of potential land use change were shared and discussed with stakeholders at the Biosphere and landscape scale to support discussions on how and where land use and land management should change in the Biosphere to achieve the vision. Despite challenges due to COVID-19, the approach worked well and could be replicated to develop regional land use visions elsewhere to support land use planning and reconcile tentions over competing land use.

Keywords: visions, land use change, rural development, ecosystem restoration, decision support

3. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

How can we bring back the lost spirit of conservation? – A study in Abohar Wildlife Sanctuary, India

Presenting author: Geethanjali Mariaselvam
Other author(s): Ritva Toivonen, Dalia Damato, John Sumelius, Anil Bharadwaj
Affiliation: University of Helsinki, Finland
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Abohar wildlife sanctuary (WLS) in Punjab, India is a unique protected area where the history of conservation is entwined with the culture and ethos of the Bishnoi community. Most of the area in this WLS are farmlands, owned by the local people. When the area was declared as a sanctuary in 2001, there were a lot of sand dunes with wild vegetation, which were habitats of the black bucks and other animals like nilgai and jackal. The peaceful coexistence which the Bishnois had once upon a time with the blackbucks, and sustainable organic farming practices, are now a tale of the past. Increase in area under agriculture by flattening of sand dunes, introduction of horticultural crops like kinnow (a citrus species/ mandarin hybrid), is reducing the natural habitat of the black bucks. This has been supplemented by habitat fragmentation due to fencing of crop

fields. Hybrid cattle and stray dogs are also threatening the existence of wild animals. In this study, we attempt to document the traditional practices, religious values and the cultural ethos of a community which once helped in conservation of nature and environment. People may support conservation if they are benefitted due to the conservation activities. Through focus group discussions, semi-structured interviews and reviewing archive literatures, we intend to gather the present attitude of local people towards conservation, and to find new ways to motivate them for conservation. Ways of restoration of the ecosystem services are explored to reconcile people's present aspirations and expectations. Possibilities for revival of organic farming and introduction of ecotourism are to be explored. The findings can evolve some strategies for sustainable development and conservation of the area in the future with the participation of the community and active support from the Government.

Keywords: Bishnois, ecosystem services, traditional practices, conservation, religious values

4. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

How stable are visions for protected area management? Stakeholder perspectives before and during a pandemic

Presenting author: Veronica Lo
Other author(s): María D. López-Rodríguez, Marc J. Metzger, Elisa Oteros-Rozas, Miguel A. Cebrián-Piqueras, Hug March, Isabel Ruiz-Mallén, Christopher M. Raymond
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Envisioning processes enable protected area managers to chart a course for future management to reach desired goals, but unexpected changes that could affect future visions are not usually considered. The COVID-19 pandemic enabled an exploration of changes in individual stakeholder visions, perceived landscape values underpinning visions, and perceptions of landscape changes and drivers of change (e.g. climate change, mass tourism, and demographic trends). Through a mixed-methods exploratory approach, we gathered comparative data on these issues from

stakeholders in the Sierra de Guadarrama National Park, Spain, between July 2019 and October 2020. Pre-pandemic, differences in visions for protected area management were largely driven by different perceptions of the drivers of change, rather than differences in perceived landscape values or landscape changes, which were similar across different vision themes. One year later, in the midst of the COVID-19 pandemic, stakeholder perceived values, visions and drivers of change were somewhat resistant to change despite this large-scale wildcard event. Where visions in the protected area management did change, they often shifted towards greater prioritization of biodiversity and nature conservation as a result of heightened perceptions of the impacts of drivers of change including mass tourism, mountain recreation, lack of environmental awareness, and change in values and traditions. Our findings reinforce the call towards adaptive and inclusive management of protected areas, including enhancing transparency and communications regarding factors driving change in the landscape, and integration of local and traditional knowledge and stakeholder perceptions of changes and drivers. A stronger consideration of shocks and wildcards in scenario planning processes, and uncertainties in drivers of change in the near and far future, will also enhance the relevancy of visions and scenarios in conservation and land-use planning in this era of global change.

Keywords: vision, scenario, protected area, pandemic, landscape values, drivers of change, recreation, national park, biodiversity, future

5. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

What are we protecting against? Ramifications of the spread of a non-native fish species on protected benthic stony reefs in the eastern Baltic and the services they supply

Presenting author: Aurelija Armoskaite
Other author(s): Juris Aigars, Henning Sten Hansen, Ingrida Purina, Lise Schrøder, Solvita Strake
Affiliation: Latvian Institute of Aquatic Ecology, Latvia
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To preserve and restore biodiversity and sustain ecosystem service (ES) supply an international goal was set to protect at least 10% of the global coastal and marine area by 2020, which has been achieved mainly through the designation of marine protected areas (MPA's). At a time of increasing sea use, MPAs are an important instrument for restricting human activities affecting ecologically vulnerable or important areas. However, experience has shown that whilst MPAs can effectively manage local pressures, the protected habitats and species are still exposed to stressors that originate outside the MPA borders (e.g., non-native species, eutrophication). This study investigates how the spread of a non-native fish species – the round goby, has affected the composition of protected benthic habitats in the eastern Baltic sea and what this has meant for the service supply. We employed a tailor-made, expert judgement-based ES supply assessment method and tool to quantify service supply before and after the spread of the round goby in three case study sites situated within MPAs in Latvian marine waters. The assessment results were used to identify associated benefits and estimate loss and increase in value using literature, expert opinion, and nationally representative focus group discussions. The results show that the non-native species have affected the quality and the spatial distribution of protected benthic marine habitats and changed the type of ES supplied within the area. Further, the study highlights that reefs are ecologically important and have economic, social, and cultural value.

Keywords: marine protected areas, non-native species, marine benthic habitats, marine management and planning, ecosystem service supply assessments

6. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c – The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Taking into account Nature's contributions to people in the management of protected areas: a leverage for integrated land-use management

Presenting author: Irene Mestre
Other author(s): Raphaëlle Fréchon
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Following the definition of protected areas of the International Union for Conservation of Nature which includes the provision of ecosystem services (ES) as one of the objectives of protected areas (PA), the government of Quebec is developing an approach to include them in the management and governance of PA. We conducted an embedded case-study which considers simultaneously the provincial level and a local case-study, the extension process of protected area along a river in the Outaouais region. This research was conducted using the conceptual framework of Nature's contribution to people (NCP) and social interdependencies in order to take into account the diversity of stakeholders' perspectives and to analyse the role of institutions. Our results show that the integration of NCP in the management and governance of PA could bring three types of benefits. Firstly, it would create a framework to organise knowledge of natural structures and biophysical processes and to enhance the comprehension of feedback loops. Secondly, using NCP could act as leverage to overcome management fragmentation. While stakeholders recognise the importance of integrated ressource and use management to preserve the ecological functionality and use multifonctionnality, institutions are limited by their mandates on specific natural resources or land tenure. Thirdly, the NCP offers the opportunity to rethink the relationship between Humans and their Environment and in particular to reconsider the role of the forestry industry. The assessment of plural values highlighted the identity values related to the inheritage of forestry as well as the relational values emanating from ecosystems co-created by forestry interventions. The most important aspect is nevertheless the crucial role of forestry entreprises in building infrastructure which are necessary to enjoyment of NCP in the forest ecosystems.

Keywords: institutions, values, integrated land-use management, forestry, Quebec

7. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Novel approaches to grassland conservation in the remote protected areas of Central and Eastern Europe

Presenting author: Tanja Šumrada
Other author(s): Emil Erjavec
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Grasslands are now considered to be among the most endangered ecosystems in the European Union. Consequently, conservationists have been struggling to establish suitable approaches to preserve their extensive use and integrate it into modern farming systems. In recent years, some European countries have introduced result-based schemes (RBSs), which remunerate farmers for the achievement of conservation outcomes, such as the number of plant species or conservation score. Despite many advantages of RBSs, however, it is not yet clear, whether this approach can also be successfully applied in marginal regions in Central and Eastern Europe with a large share of small farm holdings, high land fragmentation and widespread abandonment of farming, which still support high levels of biodiversity. We address this gap by exploring the potential of RBSs in supporting the extensive use of dry grasslands in the two Natura 2000 sites in Slovenia and identifying obstacles to their development and implementation. We conducted a mixed method analysis of a survey with 521 farmers as well as interviews and focus groups with researchers, public officials and agricultural advisors. Most of both farmers and experts supported the introduction of RBSs. However, their large scale implementation may be hampered by a lack of ecological data and qualified staff in the advisory service and monitoring agencies. Like other voluntary conservation measures, RBSs also do not seem to effectively address the specific needs of small farmers, difficult access to land and insufficient knowledge of suitable management practices. We conclude that better integration of nature conservation into rural policies is needed to prevent land abandonment and promote biodiversity-friendly farming models. This would require a strategic and holistic approach to developing socially and ecologically sustainable farming systems in remote rural areas, in which measures like RBSs would be but one of the necessary instruments.

Keywords: result-based schemes, grassland conservation, farmer preferences, institutional support, Natura 2000 network

8. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

3rd ESP EUROPE CONFERENCE Tartu, Estonia 2021 7-10 June
Ecosystem Services Science, Policy and Practice in the face of Global Changes

A boundary object approach for collective action in conservation governance: case study from Sierra de Guadarrama National Park (Spain)

Presenting author: María Dolores López Rodríguez

Other author(s): Elisa Oteros Rozas, Hug March, Concepción Piñeiro, María Heras, Isabel Ruiz Mallén

Affiliation: Universitat Oberta de Catalunya, Spain

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Within participatory scenario planning (PSP), backcasting has proven useful to collaboratively develop potential management strategies to achieve desirable socio-environmental paths while avoiding undesirable ones. However, research on how to translate these strategies into action is limited. To bridge this gap, we designed and tested a boundary object approach within the backcasting of a PSP process in the Sierra de Guadarrama National Park (Spain). The PSP exercise involved a two-day online workshop (due to the covid19 pandemic) with 12 people in the facilitation team and 45 participants, including decision-makers, researchers, local users, non-governmental organizations, and other social actors. The boundary object approach was implemented through a graphical tool using a hexagon divided into 6 sections concerning different stakeholder groups: state administrations, education and research centers, environmental NGOs, local users from the primary sector, local users from the tertiary sector, and other local entities and actors. For 12 potential strategies, participants assessed the willingness and commitment of the social actors to be involved in putting the strategies into practice, by using a predefined scale of 6 categorical levels. The graphical representation of the results allowed the visualization of comparatively different patterns of partnerships, the degree of collaboration needed and a proxy of the potential willingness to move from theory to practice. We examined the role of this tool as a boundary object in facilitating collective action through participatory observation techniques during the PSP exercise, a post-workshop survey and a second workshop including local decision-makers. Our findings reveal that the graphical tool proved it had the ability to simultaneously elucidate opportunities for cooperation across actors and guide collective action. We argue that the use of this boundary object approach in PSP is an innovative and complementary method to backcasting, helping to catalyze local action in management strategies engaging multiple actors for conservation governance.

Keywords: boundary object, collective action, knowledge co-production, participatory governance, scenario planning

9. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

The role of international cooperative initiatives in enhancing biodiversity in protected areas

Presenting author: Kate Negacz / Matilda Petersson
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Despite the ambitious goals and targets set in the Convention on Biological Diversity (CBD), national governments have largely failed to halt global biodiversity loss, which is essential to maintain ecosystems' functions and services. At the same time, scholars and policy-makers alike have proposed that the rise of international cooperative initiatives might enhance our capacity to address biodiversity loss by engaging thousands of non-state and sub-national actors (e.g. cities, regions, indigenous peoples and local communities, companies, and civil society organizations). The main aim of this study is to identify functions of the initiatives, their focus in terms of ecosystem services and accountability procedures in place. This paper identifies and maps nearly 300 existing initiatives and assesses their performance in relation to the CBD's overarching objectives related to conservation and sustainable use of biological diversity, and fair and equitable benefit sharing. By employing automated content analysis, we select initiatives related to biodiversity which are further validated via expert interviews. Our preliminary results suggest that the number of hybrid initiatives is increasing, their focus areas are mainly located in Africa and Europe, and a majority of initiatives have monitoring and report mechanisms in place. These initiatives are often the first candidates to engage in the promising voluntary commitment-process. Therefore, the outcomes of our analysis are particularly interesting for exploring biodiversity governance arrangements and stakeholders' engagement in decision-making in biodiversity.

Keywords: biodiversity, international cooperative initiatives, area-based conservation, monitoring and reporting

10. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Conceptualising the pathways linking biodiversity to human health and well-being: An interdisciplinary framework

Presenting author: Melissa Marselle
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While all we know that biodiversity forms our central human life-support system, the precise connections to our health and well-being are poorly defined. As such, it is difficult to align nature conservation with public health policies. The Covid-19 pandemic has highlighted the severe public health consequences of unsustainable biodiversity management, as well as the importance of urban greenspaces and protected areas for fostering physical and mental health and wellbeing. By linking the nature conservation and public health agendas, we can improve both our health and protect our environment. For this, however, we need to better understand how biodiversity matters for human health and well-being. Here, we present an integrative biodiversity and health framework, that explores the pathways linking biodiversity and human health from the natural, social and health sciences. Four domains of pathways—both beneficial as well as harmful—link biodiversity with human health: (i) reducing harm (e.g. provision of medicines, decreasing exposure to air and noise pollution); (ii) restoring capacities (e.g. attention restoration, stress reduction); (iii) building capacities (e.g. promoting physical activity, transcendent experiences); and (iv) causing harm (e.g. dangerous wildlife, zoonotic diseases, allergens). In a world with accelerating declines in biodiversity, profound land-use change, and an increase in non-communicable and zoonotic diseases globally, greater understanding of these pathways can reinforce nature conservation as a strategy for the promotion of health for both people and nature. This framework can aid the development of natural 'health treatments' in which protected

are used to reduce stress, depression or encourage physical activity. Investment into biodiversity conservation could therefore form a globally important (natural) health service.

Keywords: biodiversity, ecosystem services, nature, mediation, public health, human well-being

11. Type of submission: Abstract

S. Sectoral Working Group sessions: S8c - The role of inclusive conservation approaches for enhancing biodiversity, ES and human well-being in protected areas

Tracking inclusive conservation: A systematic review of the challenges of and opportunities for social inclusion in current protected area management using correlation network analysis

Presenting author: Miguel A. Cebrián-Piqueras

Other author(s): Christopher Raymond, Veronica B. Lo, María D. López-Rodríguez, Anna Filyushkina, Tobias Plieninger

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Protected areas are challenged not only by the global change affecting conservation values but also by balancing trade-offs for local communities within and around sites. Previous research revealed that protected areas that explicitly integrate local people and stakeholders tend to be more effective at achieving joint conservation and socioeconomic outcomes, specifically when protected areas adopted co-management regimes, empowered local people, reduced economic inequalities, and maintained cultural and livelihood benefits. For example, because of the interconnection between cultural and biological diversity, the loss of local and indigenous knowledge is likely to critically threaten effective conservation of biodiversity, particularly in community-based conservation local efforts. A call for an inclusive conservation approach highlights a need to embrace diverse values, voices, and knowledge systems for further advances in conservation science, practice and policy (e.g. Zero Draft of the post-2020 global biodiversity framework). Yet, we identify a lack of research that explores the role and potential of inclusive conservation dimensions and consequently a lack of guidance about how to operationalize

inclusivity in protected area management. We ask to what extend inclusive conservation dimensions can support both conservation and socioeconomic outputs within the context of exemplary solutions for protected area management. What is the specific role of inclusive dimensions within these protected area solutions? And how do they relate to other protected area traits? Here we aimed at answering these questions, exploring previous assumptions, and advancing in the understanding of the status, trends, challenges, and opportunities of inclusive conservation in protected area management based on (1) a systematic review of the database of exemplary conservation solutions in protected areas provided by the IUCN platform PANORAMA; (2) a subsequent correlation network analysis aiming at identifying the relevance of inclusive solution traits. Insights from the contexts of promising models of inclusive conservation and current gaps are given.

Keywords: inclusive conservation, protected areas, social-ecological systems, conservation outputs, human well-being, biodiversity conservation, community-based conservation