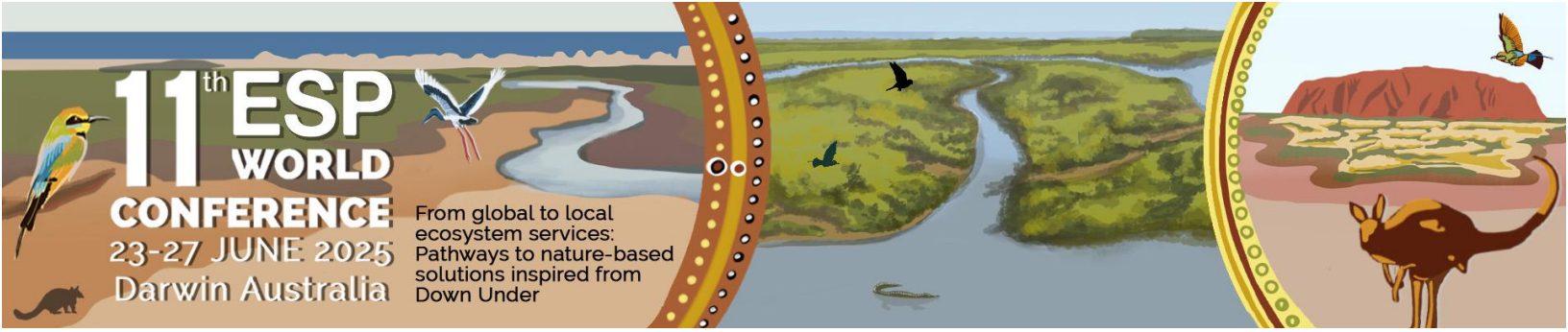


BOOK OF ABSTRACTS

I. SESSION DESCRIPTION

ID: O1

Ecosystem Services Derived from Protected Areas – revealing their hidden value

	Name	Organisation	E-mail
Host:	Simone Maynard	National Parks Association of Queensland and IUCN Commission on Ecosystem Management	maynardsimone@gmail.com
Co-host(s):	Courtney Schupp Nick Conner Kamaljit Sangha	National Park Service NSW Department of Climate Change, Energy, the Environment and Water Charles Darwin University	courtney_schupp@nps.gov nicholas.conner@environment.nsw.gov.au Kamaljit.Sangha@cdu.edu.au

Abstract:

The primary purpose of protected areas is the conservation of natural and cultural resources, yet their importance extends well beyond this to include mitigating and adapting to climate change, pollinating agricultural crops, regulating water flows, ensuring connection to Country for First Nations people, and providing ecosystem services that contribute to human health, well-being, and other social and economic benefits. Whilst the protected area system is pivotal to protecting these important values, generally decisions around funding, identifying, assessing, selecting and prioritising land and resources to/in the protected area estate is narrow. For example, in Australia they are primarily based on the principles of: –

- ecosystems or species habitats that are not represented or not adequately represented in the protected area system.
- rare, endangered or threatened ecosystems or species.
- if the conservation of an ecosystem or species is less likely to be achieved elsewhere in the landscape; and

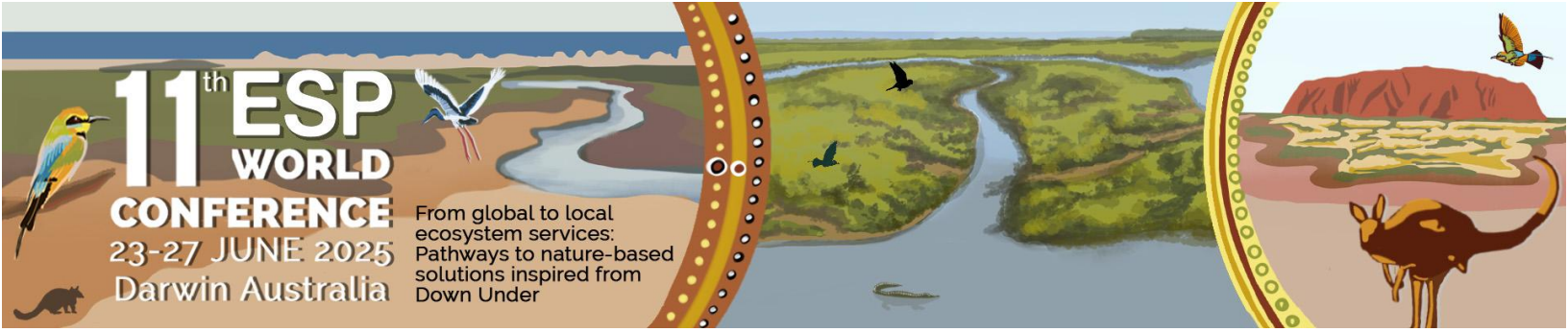
- ecosystems, habitats or species under threat of loss or degradation through competing land uses.

The principles described above are ecocentric and associated assessment metrics are focused on conserving and protecting ecosystems and species for their own sake, rather than those required for conserving and protecting ecosystems and species for people's sake (anthropocentric). Both nature and people have a right not just to survive, but thrive, from the benefits nature provides them. However, metrics focused on rare, endangered, threatened or representative species are not those required to assess for ecosystem services. As biodiversity is central to the production of ecosystem services, we do not suggest an ecosystem services approach should replace traditional biodiversity, but rather, an ecosystem services approach should be additional to such assessments.

Beyond the protection of biodiversity for its own sake, the protection and maintenance of the broad range of ecosystem services is one of the compelling reasons to conserve natural environments and to restore and protect species, ecosystems and biodiversity. By examining the environment through the framework of ecosystem services, it becomes much easier to identify how changes in ecosystems can influence human well-being and the economy. To ensure the continuation of ecosystem services into the future that are important to communities, business and industry and local, regional and state economies, there is a need to extend assessments beyond nature assessments to include in decision making the wider range of things that people value.

This session focuses on the use of ecosystem service approaches in protected area management, specifically to determine funding and identify, assess, select and prioritise land and resources. Also, studies that showcase the types, extent and values of ecosystem services derived from protected areas. Or use ecosystem services as an approach to communicate and influence policy, planning and decision making. It aims to identify across the globe examples of ecosystem service approaches in protected area management, as well as gaps, barriers, opportunities and solutions for ecosystem services implementation. Presentations are encouraged that show how the ecosystem services derived from protected areas:

- are being optimized to provide net benefits to society and the economy.
- are raising awareness of potential social and economic implications and averting unintended negative consequences arising from decision-making.
- are being used to communicate the broader ramifications of decisions, policies, strategies and plans to the community, industry or treasury.
- are broadening the scope of environmental and social impact assessments.
- are being incorporated into conservation and protection through park management plans and hence identifying management options that optimize public benefits.
- are serving as a foundation for better collaborative, cross-jurisdictional management of protected areas.
- are being utilized to better engage local communities in nature conservation, facilitating greater local action and strengthening the connections between people and nature.



- are targeting payments for ecosystem services hence providing economic incentives for conservation in areas where none presently exist (e.g. nature refuges, private protected areas).

- are providing treasury information in a form that decision-makers can weigh alongside other social and economic information.

- are linking ecosystem services information with information on economic and other human activity (e.g. building on the System of National Accounts).

- are being used to influence investment in protected areas within government departments and treasury.

- avoiding potentially significant costs and risks arising from overlooking implications of loss or damage to ecosystem services or expose transparently the social and economic costs implicit in trade-offs.

- are being used to increase the long-term resilience of business decisions, policies and actions, sustaining economic growth.

- are being used to recognise and determine the value of the environment for health outcomes.

Goals and objectives of the session:

- To develop the business case for implementing ecosystem service approaches in protected area management/

- Through knowledge exchange, building the capacity of participants to use an ecosystem services approach to protected area management.

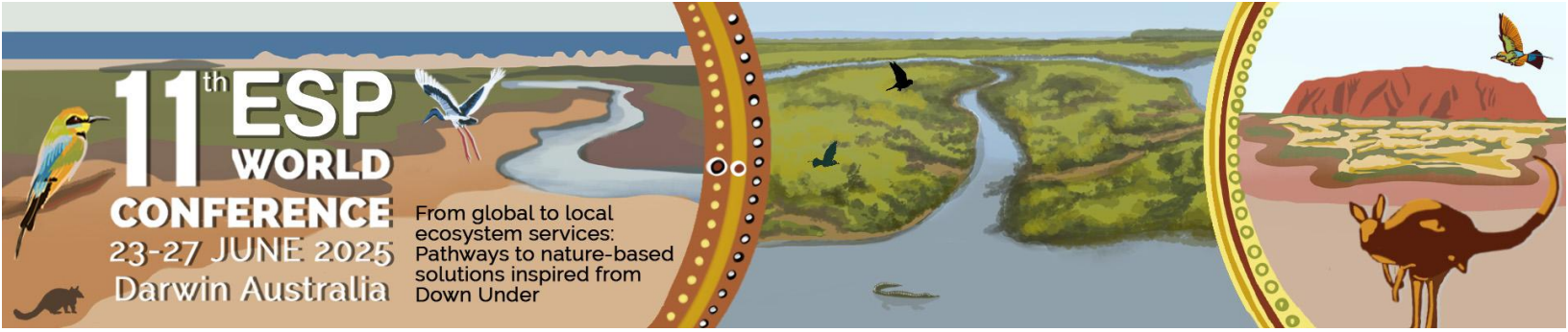
Planned output / Deliverables:

- Journal special issue – case studies show casing ecosystem service approaches to protected area management, with an introductory article providing the business case why an ecosystem services approach is important to protected area management, including gaps, barriers, opportunities and solutions for building on current approaches.

- Short relevant briefs for distribution to governments that present the business case for why an ecosystem services approach to protected area management is important and will add value to current approaches.

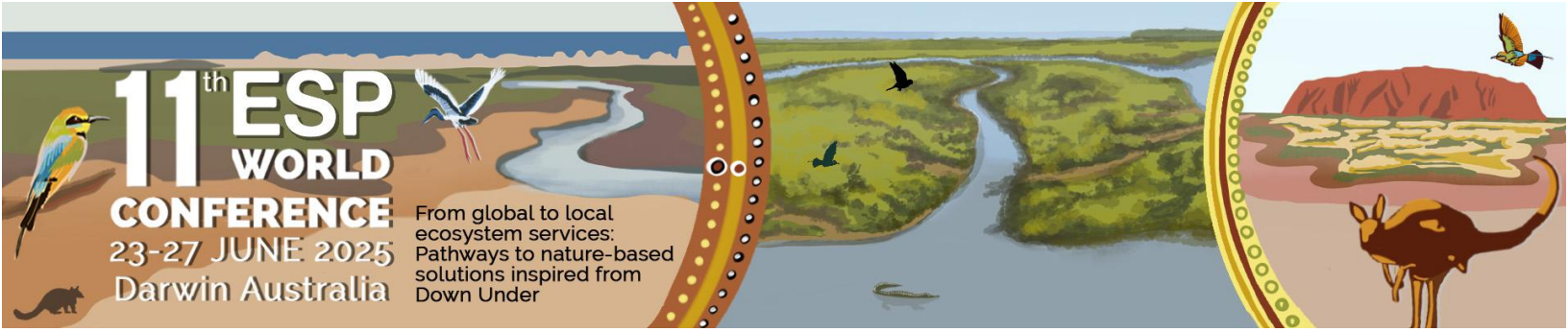
II. SESSION PROGRAM

Room: Bundirrik 4
Date of session: Monday 22nd June
Time of session: 14:00 – 15:30 and 16:00 – 17:30



Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
14:00 – 14:20	Simone Nick	Maynard Conner	Griffith University / IUCN CEM IUCN CEESP	Session Organisers' introduction to workshop – agenda, aim, outputs
14:20 – 14:35	Simone	Maynard	Griffith University	An Assessment and Valuation of Ecosystem Services Derived from National Parks in Queensland (Australia)
14:35 – 14:50	Emmanuel Nii Attram	Taye	University of Ghana	Valuing the ecosystem services of an urban Ramsar site in Ghana; prospects for policy and decision making
14:50 – 15:05	Ben	Fitzpatrick	University of Canterbury | Te Whare Wānanga o Waitaha	Oceania perspectives on Ecosystem Services in Protected Areas: recognising local values and contexts
15:05 – 15:20	Johana	Drlíková	CzechGlobe	Ecosystem Services Derived from Protected Areas [Czech Republic]–revealing their hidden value: Systematic participatory assessment of ecosystem services trade-offs in protected areas
15:20 – 15:30	Courtney	Schupp	US National Park Service	Session wrap-up and prelude to the second stage of the session
Session Break				
16:00 – 16:10	Kamaljit	Sangha	Charles Darwin University	Summary of the first stage of the session, goals and objectives; Introduction to the second stage of the session
16:10 – 16:25	Mary Luz	Moreno Diaz	Centro Internacional de Politica Económica para el Desarrollo Sostenible (CINPE)	The Socioeconomic Value Generated by Protected Areas [Costa Rica]: Beyond Their Own Limits
16:25 – 16:40	Nabila Nur	Septiani	Fisheries Resource Centre of Indonesia, Rekam	Using the Ocean Governance Account to Acknowledge the



Time	First name	Surname	Organization	Title of presentation
			Nusantara Foundation, Indonesia	Benefits from Marine Protected Areas in Indonesia
16:40 – 16:55	Courtney	Schupp	US National Park Service	Nature-based Solutions for Ecosystem Resilience and Community Well-being in the US National Parks
16:55 – 17:30		Session Organizers		Session Organisers wrap-up presentation session and drafting of business case and journal special issue

III. LIST OF ABSTRACTS

The first author is the presenting author unless indicated otherwise.

1. An Assessment and Valuation of Ecosystem Services Derived from National Parks in Queensland (Australia)

First authors(s): Simone Maynard

Other author(s): No

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Keywords: ecosystem services, national parks, Queensland

It is recognised national parks protect a range of ecosystem services (ES). However, the types and extent of ES and their value to people's wellbeing, communities and economies is poorly understood. This research focused on national parks in the state of Queensland, Australia, with a view to illustrating to decision makers and communities the often-invisible values of ES. For the first time, an ES framework was used to identify and evaluate the potential ES in 36 national parks. The framework used was the award-winning and internationally recognised South East

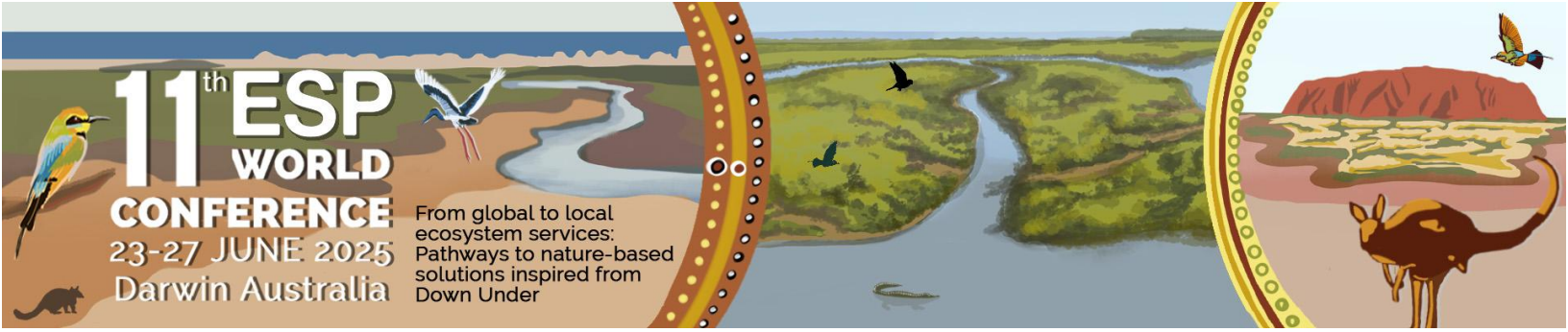
Queensland Ecosystem Services Framework (the framework). The extent in hectares of ecosystem types in each national park was determined. Applying the framework's expert derived scores allowed a potential ES score to be developed and a ranking of each ecosystem area within each park. Also, the total ES potential score for each park. Overall patterns observed were that some parks earned higher ES scores due to the higher scoring of some ecosystems. In addition, the bigger the park the higher the total potential ES. This information points to ES values being a useful complement to traditional Comprehensive, Adequate and Representative approaches to prioritising protected areas. For ES to be actualised as benefits to human wellbeing beneficiaries need to be identified. Three ES in three national parks were chosen to provide tangible examples of actual ES. Dollar values were generated for eight ES, and a descriptive approach for cultural values. Dollar values were generated using benefit transfer. Tourism and recreation services based on a study of Queensland national parks were given a 'high level' of confidence. Other values were estimated using the ESVD database of global studies and labelled 'indicative'. Estimated annual dollar values for the eight ES across three national parks ranged from $0.4 million (pollination) to over $140 million (tourism and recreation). Most estimates are in the millions to tens of millions per annum. These represent the annual flows of services to local or broader communities which come free of charge from national parks. The asset values over 30 and 50 years of retaining these parks to provide ES were also estimated. Notable high asset values include tourism and recreation and habitable climate, each in the billions of dollars, and buffering against extremes and food from fisheries, each in the hundreds of millions of dollars.

2. Valuing the ecosystem services of an urban Ramsar site in Ghana; prospects for policy and decision making

First authors(s): Emmanuel Nii Attram Taye

Other author(s): Yaa Ntiamoa-Baidu

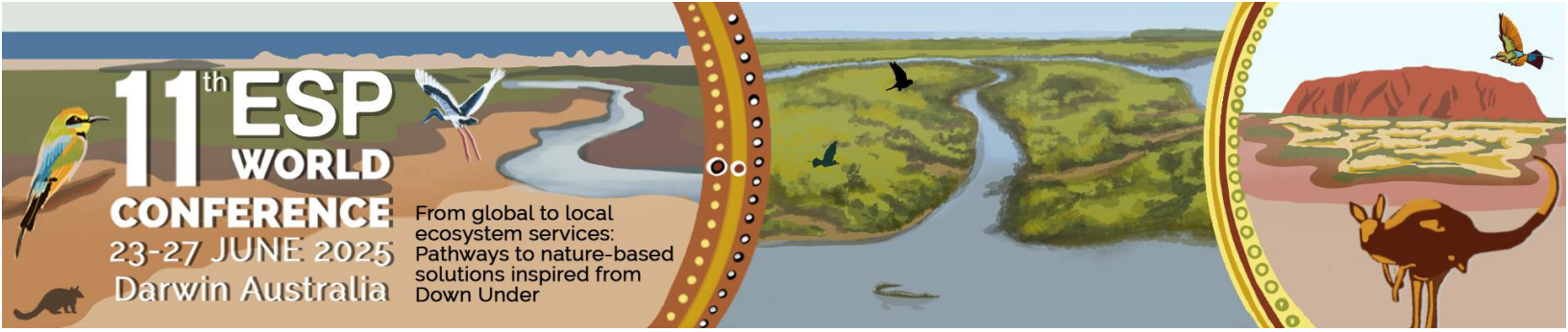
First author affiliation: Centre for Biodiversity Conservation Research, University of Ghana



Contact: e.taye32@gmail.com

Keywords: ecosystem services, valuation, wetland, ramsar, conservation policy

Ecosystems, and their biodiversity, form the foundation of human life by providing essential ecosystem services. Wetlands, recognized as among the most biologically productive ecosystems, are experiencing unprecedented rates of degradation globally. The Densu Delta Ramsar wetland, located on the outskirts of Accra, faces severe encroachment and degradation due to urbanization and private development. These threats have significantly reduced the wetland's core area and threaten its ability to sustain biodiversity and community livelihoods. This study explores the value of the benefits offered by this urban biodiversity hotspot and examines the perceptions of local communities regarding its importance. Employing ethnographic methodologies, semi-structured interviews, and questionnaires, the study quantifies the direct and indirect benefits provided by this wetland system. The benefits include the provision of food such as fish, molluscs, and grains, as well as raw materials like fuelwood that support livelihoods. Regulating services, including flood mitigation, shoreline stabilization, and habitat provision, are particularly noteworthy. The wetland supports internationally significant avifauna populations, including Sterna dougallii, Pluvialis squatarola, and Calidris minuta, and serves as a critical nesting ground for marine turtles. One key finding is the high level of awareness about the importance of this wetland ecosystem among community members. Despite the recognized ecological benefits, the wetland is subjected to extensive anthropogenic pressures, including habitat destruction, and pollution. Barriers to proper management, such as inadequate staffing of the Wildlife Division and lack of political will, further exacerbate the situation. This study underscores the necessity of assigning economic and non-economic value to ecosystem services as a tool to inform policy development. Recognizing the hidden value of the Densu Delta Ramsar site is essential for fostering sustainable management practices, ensuring the preservation of biodiversity, and securing the well-being of dependent communities. The findings advocate for robust conservation strategies to mitigate ongoing ecological decline.



3. Oceania perspectives on Ecosystem Services in Protected Areas: recognising local values and contexts

First authors(s): Shane Orchard

Other author(s): Ben Fitzpatrick, Simone Maynard, Toni Hay, Pete Smith, Hamish Clark, Emily Nicholson, Dave Loubser, Kelvin Passfield, Thomas Dunlop, Shudha Singh

First author affiliation: University of Canterbury | Te Whare Wānanga o Waitaha, IUCN Commission on Ecosystem Management

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Keywords: cultural values, local contexts, traditional knowledge, ecosystem service assessment, Oceania region

While protected areas are among the widely recognised approaches for biodiversity conservation, a range of protected area management categories can be recognised differing in aspects such as the arrangements for access, resource uses and permitting level of anthropogenic modification. This diversity of management models also creates opportunities to embrace a wide range of values and perspectives on natural environments that can, arguably, help to better align protected area approaches with the principles of ecosystem management. Moreover, these same values and their underpinning knowledge systems can be expressed, measured and communicated using the framing of ecosystem services. In this paper we explore this strategic direction with a focus on the potential for ecosystem services framings to recognise local values and contexts in Oceania. The region is characterised by a high diversity of Indigenous Peoples who have a long history of applying traditional knowledge to protect ecosystems and their services. Many of these knowledge systems and cultural practices are highly contextual and operate at relatively local scales. Recognising these existing relationships within contemporary ecosystem service frameworks is therefore a crucial dimension of ecosystem service approaches in Oceania,

particularly where they are used to inform the management of natural areas or resources which are important to local communities, traditional owners and custodians. Using case studies from the region we show how ecosystem services frameworks can be applied to address these needs and opportunities with a focus on recognising and supporting the cultural ecosystem services of protected areas and other effective area-based conservation measures (OECMs). From this standpoint we conclude that ecosystem service assessment will be more useful and meaningful when it is contextualised to local community scales and values. This direction can support the identification of synergies between protected area and ecosystem management concepts and provide a pathway towards more inclusive protected area planning.

4. Ecosystem Services Derived from Protected Areas – revealing their hidden value: Systematic participatory assessment of ecosystem services trade-offs in protected areas

First authors(s): Johana Drlíková

Other author(s): Davina Vačkářová, Blanka Loučková, Eliška Tichopádová, David Stella, Aneta Blažka, Simona Zvěřinová

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Keywords: participatory approaches, ecosystem services, stakeholder engagement, trade-offs, conservation planning, ecosystem service mapping

Participatory approaches are increasingly recognized as essential for revealing the hidden value of ecosystem services (ES), ensuring their integration into decision-making and management strategies. This study explores the role of participatory workshops in identifying ES trade-offs within the European Union's Natura 2000 network of protected areas in the Czech Republic. As part of the LIFE-IP One Nature project, series of 12 structured workshops held in 2022-2024 in

three protected areas engaged diverse stakeholder groups to uncover, prioritize, and map ecosystem services, with the aim to raise awareness about ES and support shared responsibility for conservation.

The workshops played a pivotal role in exposing synergies and trade-offs between ES, revealing overlooked benefits and previously unrecognized dependencies. Freshwater regulation emerged as the highest-priority ES across all study areas. Additionally, Habitat Creation and Maintenance was identified as a foundational service underpinning ecological and economic resilience. These insights underscore the broader significance of protected areas for biodiversity conservation and sustaining critical services that support local economies and communities.

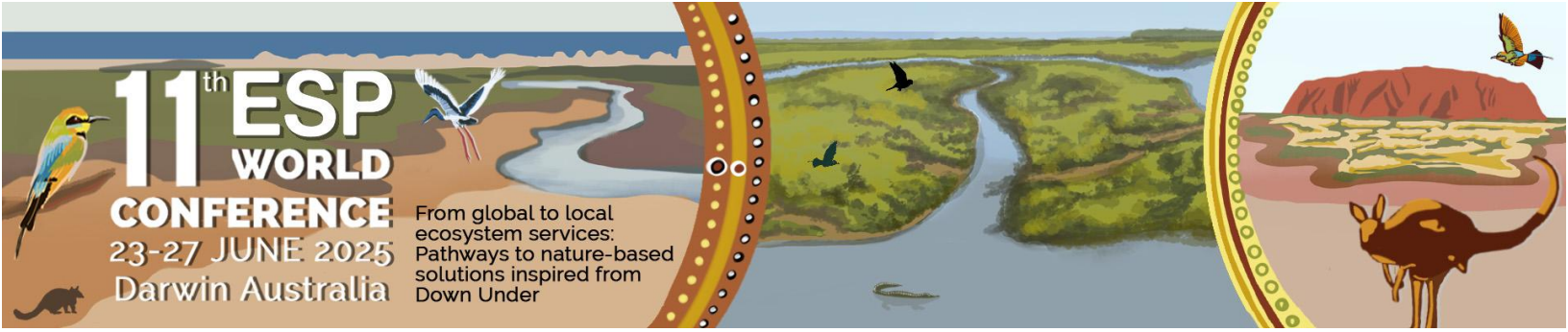
Beyond technical assessment, this study highlights the transformative potential of participatory engagement in raising awareness of ES benefits and their socio-economic implications. We reflect how the ES framework proved instrumental in bridging conceptual gaps and demonstrating the tangible value of ecosystems in real-world contexts by integrating local knowledge with scientific assessment.

This participatory methodology not only enhanced stakeholders' understanding of the ES framework but also demonstrated its practical application in familiar environmental contexts, reinforcing its relevance for local governance and conservation planning.

By uncovering hidden ecosystem values and strengthening collaboration, this approach offers a model for better engagement and communication balancing conservation and public interests. By enhancing understanding and practical application of the ES framework, this participatory methodology offers a roadmap to better decision-making based on taking into account the benefits of nature.

5. The Socioeconomic Value Generated by Protected Areas: Beyond Their Own Limits

First authors(s): Mary Luz Moreno Díaz



Other author(s): No

First author affiliation: Universidad Nacional, Costa Rica

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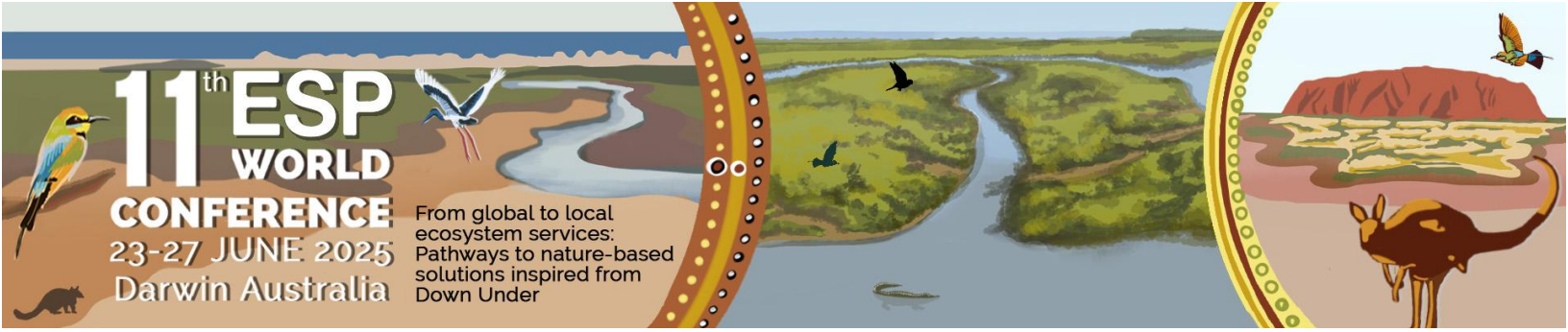
Keywords: Buffer zone, economic valuation, methodological framework, ecosystem services, wild protected areas.

Wilderness Protected areas provide significant benefits to society, not only with the generation of ecosystem services within their geographic boundaries but also with those that are generated in their buffer areas. To assess the value of this ecosystem services, a methodological framework was developed for a buffer zone located in the Braulio Carrillo National Park in Costa Rica. This methodological process seeks to evaluate and emphasize the importance of natural resources offered by different ecosystems and how they contribute to societal well-being.

In the development of the methodological framework, eight ecosystem services (ES) were identified: protection of water resources, climate regulation, biodiversity protection, soil productivity, scenic beauty, erosion prevention, protection against external events, and pollination. Most of these were calculated using the value transfer methodology. The protection of water supply and the production of crops and livestock were estimated based on the market value of household water consumption per cubic meter and market value, respectively. The study concludes that the area is significant as it facilitates the flow of ES between the Protected Area (Braulio Carrillo National Park) and neighboring areas that engage in agricultural production activities and the protection and provisioning of water resources for local communities as well as others. The ES in this zone generate 21 billion colons, with provisioning ecosystem services contributing 88 percent, while supporting services account for 12 percent. This corresponds to an amount close to 4.5% of the GDP of all the cantons where the buffer zone extends.

6. Using the Ocean Governance Account to Acknowledge the Benefits from Marine Protected Areas in Indonesia

First authors(s): Nabila Nur Septiani



Other author(s): Annisya Rosdiana, Agavia Kori Rahayu, Willy Puspa Irawan, Jessica Pingkan, Maria Granada Alarcon Blazquez, Heidi Retnoningtyas, Irfan Yulianto

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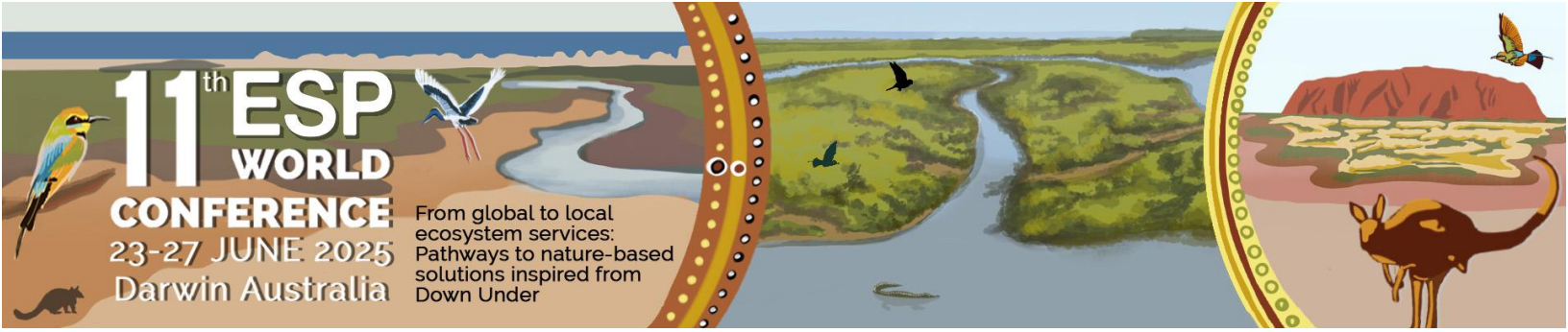
Keywords: coastal management, governance accounts, marine protected areas, small islands management

Indonesia has adopted the Ocean Accounts (OA) framework to measure the relationship between the ocean, society, governance, and the economy, signalling its intent to mainstream natural capital and ecosystem services concepts into decision making. Further, Indonesia is aligned with Decision 15/24 of the Convention on Biological Diversity which urges countries to use OA and economic valuation of ecosystem services for conservation. Indonesia has piloted OA since 2021 to support Marine Protected Area (MPA) management. Here, we explore the OA application, specifically the ocean governance account, to provide an overview of the spatial governance and utilization, and management costs and benefits in the pilot area of Gili Matra MPA.

The spatial governance and utilization were overlaid from the MPA zoning plan and monitoring activities. The cost was calculated based on institutional spendings for management operations, while benefit calculation was derived from the revenues and economic value of ecosystem services. The findings underscore the zones including their spatial boundary, level of enforcement, relevant activities, and institutions involved in the Gili Matra MPA. This account shows that MPA can effectively manage human activities and reduce the risk to the coastal ecosystem. The total cost of MPA and Village management authorities was IDR 640 million per year. The benefits of MPA from the non-tax revenue was IDR 19.1 million per year. In between, the ecosystem services in Gili Matra provide benefits to the communities surrounding the MPA. Fishing and tourism are the primary activities, with the total economic values in 2021 were estimated at IDR 3.13 billion and IDR 30.2 billion, respectively. This pilot provides valuable insights and has been replicated for a national assessment of the cost-benefit analysis of MPAs in Indonesia. It also contributes to the national commitment on harmonizing the environment and economic development.



7. Nature-based Solutions for Ecosystem Resilience and Community Well-being in the US National Parks

First authors(s): Courtney Schupp

Other author(s): Liza Khmara

First author affiliation: US National Park Service

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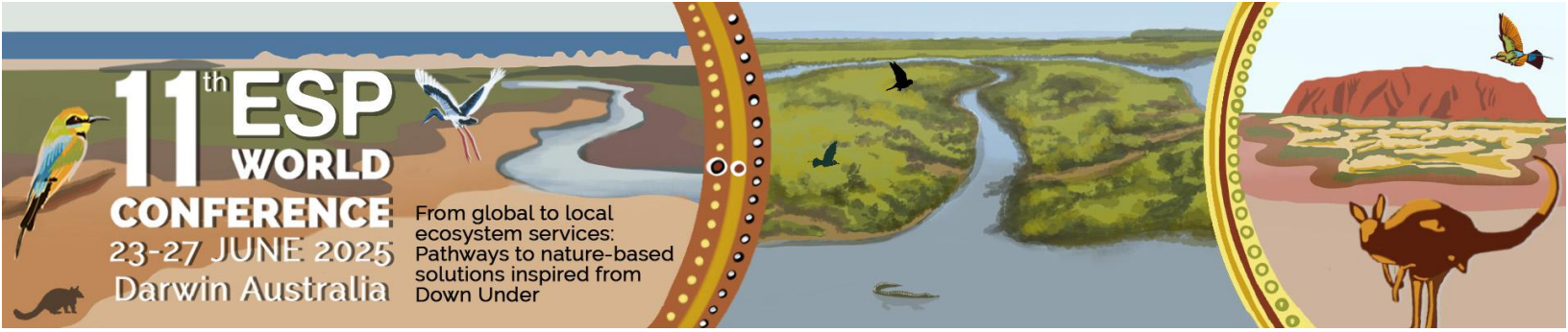
Keywords: nature-based solutions, protected areas

This presentation shares US coastal examples of nature-based solutions that incorporate natural features and processes in ecosystem management to provide multiple benefits to nature and society.

The mission of the US National Park Service is to "preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations." Each national park is created for a unique purpose, which in turn directs the management priorities and strategies.

The NPS mission compels it to consider and provide for human benefit including at parks that are established to protect specific natural resources (e.g., a barrier island ecosystem) or cultural resources (e.g., indigenous and early colonial settlements). The mission is incorporated throughout park management efforts, including strategies for recreation, visitor communication, resource management, infrastructure, and research.

This presentation will include examples of nature-based solutions being implemented to benefit both ecosystems and people in coastal national parks in the southeastern US. These solutions are developed and refined with knowledge from many perspectives, not only scientists and engineers but also maintenance staff who repair flooded facilities, administrative staff who identify opportunities to leverage funding and investments, and visitor services staff who interpret park



resources for the public. The use of ecosystem services models for each nature-based solution allows identification of each project's anticipated natural, social, and economic benefits, and development of associated metrics to measure project performance. The presentation will also introduce new information resources, strategies, and tools being developed to share information and expertise across national parks and other protected areas.

Learning from nature-based solutions design, implementation, and performance is an ongoing process that NPS is embracing as an interdisciplinary opportunity to meet its multi-faceted mission.