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# **Territories of life as key to global environmental sustainability**

Leila Vaziri Zanjani<sup>a</sup>, Hugh Govan<sup>b & c</sup>, Holly C. Jonas<sup>d</sup>, Theodore Karfakis<sup>e</sup>, Daniel Maghanjo Mwamidi<sup>f</sup>, Jessica Stewart<sup>g</sup>, Gretchen Walters<sup>h & i</sup>, Pablo Dominguez<sup>j, k & l \*</sup>

<sup>a</sup>Concordia University, Department of Geography, Planning and Environment  
Lab: Partners in Indigenous Conservation and Environmental Futures  
Concordia University registered address: Sir George Williams Campus  
1455 De Maisonneuve Blvd. W.  
Montreal, Quebec, Canada.  
H3G 1M8  
[leila.vazirizanjani@mail.concordia.ca](mailto:leila.vazirizanjani@mail.concordia.ca)

<sup>b</sup>Locally Managed Marine Area (LMMA) Network International  
PO Box S-37, Superfresh, Suva, Fiji Islands.  
<sup>c</sup>Adjunct Senior Fellow  
University of the South Pacific (USP)  
School of Law and Social Sciences (SoLaSS)  
Suva, Fiji Islands.  
[hgovan@gmail.com](mailto:hgovan@gmail.com)

<sup>d</sup>Global Coordinator, ICCA Consortium  
ICCA Consortium  
Chemin Très-chez-Roget 1, 1272 Genolier, Switzerland.  
[holly@iccaconsortium.org](mailto:holly@iccaconsortium.org)

<sup>e</sup>Head of the board of directors and scientific advisor of Terra Sylvestris  
Director of the Kalamos Island biological field station  
31081 - Kalamos Island, Levkas, Greece.  
[tedkarfakis@terrasylvestris.org](mailto:tedkarfakis@terrasylvestris.org)

<sup>f</sup>Laboratory for the Analysis of Social-Ecological Systems in a Globalised World (LASEG),  
Institute of Environmental Science and Technology, Autonomous University of Barcelona, Spain.  
[dmmwamidi@gmail.com](mailto:dmmwamidi@gmail.com)

<sup>g</sup>Programme Officer, Conserving Land and Seascapes Programme  
UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)  
219 Huntingdon Road, Cambridge, CB3 0DL, United Kingdom.  
[jessicalilstewart@hotmail.com](mailto:jessicalilstewart@hotmail.com)

<sup>h</sup>Institute of Geography and Sustainability, University of Lausanne, Lausanne, Switzerland (main affiliation)

<sup>i</sup>Department of Anthropology, University College London, London, United Kingdom (secondary affiliation).

[gretchen.walters@unil.ch](mailto:gretchen.walters@unil.ch)

<sup>j</sup>Laboratoire de Géographie de l'Environnement (GEODE), UMR 5602 CNRS - Université Toulouse 2 (France), 5, Allée Antonio Machado, 31058 – Toulouse, France (main affiliation).

<sup>k</sup>Departament d'Antropologia social i cultural (AHCISP), Universitat Autònoma de Barcelona, 08193 – Bellaterra, Spain (secondary affiliation).

<sup>l</sup>Laboratoire Population-Environnement-Développement (USAGES), UMR 151 IRD - Aix-Marseille Université, Centre St Charles, case 10, 3 place Victor Hugo, 13331 Marseille, France (secondary affiliation).

\*Corresponding author

[eco.anthropologies5@gmail.com](mailto:eco.anthropologies5@gmail.com)

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## Abstract

Territories and areas that Indigenous peoples and local communities govern, manage and conserve (hereafter territories of life) are increasingly recognized by scientists, international agencies, non-governmental and grassroots organizations, as central to the future of a healthy and sustainable planet. Hundreds of thousands of such social-ecological systems exist worldwide, covering millions of square kilometers of land and seascapes on all five continents, contributing to the conservation and sustainable use of a significant proportion of the world's biodiversity. Nevertheless, these systems are facing many threats and often have little to no formal recognition or support from nation-state governments. In order to address this growing need, this review provides the most complete, recent and updated global overview of territories of life. The review advocates for a holistic approach of territories of life and identifies key opportunities for researchers to favor action- and policy-oriented research in support of such vital systems for global sustainability.

## What are “territories of life”?

Territories of life is a concept developed for over a decade of partnership and negotiations by the Indigenous and non-Indigenous partners of the ICCA Consortium (<https://www.iccaconsortium.org/>), organization to which all authors of this text are members, and that has been proposed as a more tangible and inspiring term than the more frequently used *Indigenous peoples and local Communities* (here after IPLCs) *Conserved Areas and territories* or its abbreviation ‘ICCA’<sup>1</sup>. It is important to note that Indigenous peoples and local communities

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<sup>1</sup> E.g. [Convention of Biological Diversity](https://www.cbd.int/doc/publications/cbd-ts-64-en.pdf) (CBD: <https://www.cbd.int/doc/publications/cbd-ts-64-en.pdf>), the [International Union for Conservation of Nature](https://www.iucn.org/news/protected-areas/201905/iccas-) (IUCN: <https://www.iucn.org/news/protected-areas/201905/iccas->

were front and center during the process formulating this new wording. In fact, the ICCA Consortium grew out of a movement in support of IPLCs and composed by many IPLC members pushing for greater equity and inclusivity in conservation during the decades around the turn of the Millennium. This organization was officially established in Switzerland in 2010 as an International Association under the Swiss Civil Code, and it is a civil society organization membership-based and supported by an international semi-volunteer secretariat based in twenty-two countries. The ICCA Consortium defines territories of life (or ICCAs) as “territories and areas conserved by Indigenous peoples and local communities”, which share certain commonalities and three key characteristics: (i) a specific community that maintains strong and deep-seated links with a specific territory or area; (ii) this community is a key actor in the process of decision-making relative to the territory or area and its resources; and (iii) this governance system contributes to the responsible and sustainable management of the ecosystems and of the community’s tangible and intangible heritage [1]. The concept refers to age-old, widespread, diverse and dynamic systems that have as many different names as the peoples and communities who sustain them around the world. For example, *wilayah adat, kaw, himas, agdals, tagal, yerli qorukh, faritra ifampivelomana, oran, ili, asang, rumah, qoroq-e bumi, sapari, baldios, comunales, crofts, regole, cayolar, and aschii* among thousands others. In broader contexts, they may be referred to as, or encapsulated within, concepts with clear political and legal connotations such as *commons, ancestral domains, country, territorios autonomos comunitarios, territorios del buen vivir* or *LMMA*s. However, as explained by [1] (p5) “For the custodians of such ‘territories of life’, the connection between their community and territory is much richer than any single word or phrase can express. It is a bond of livelihood, energy and health. It is a source of identity and culture, autonomy and freedom. It is a link among generations, preserving memories from the past and connecting to the desired future. It is the ground on which communities learn, identify values and develop relationships and self-rule. For many, it is also a connection between visible and invisible realities, material and spiritual wealth. With territory and nature go community life and dignity, and self-determination as peoples”.

The concept “territories of life” is by nature generic, and is only intended to provide an ‘umbrella’ for the sake of intercultural understanding and communication about phenomena that are necessarily place-based and context-specific, each with its own name imbued with unique values and practices, while providing more identifiable meanings than most acronyms can. However, Indigenous peoples and local communities are the ones who choose if to use it strategically to advance their self-determined priorities for their people and territories, including in nation-state policy and legal frameworks, both domestically and internationally.

In the worldviews of many Indigenous peoples and local communities, biological and cultural diversity are uniquely linked [2]. Their identities, cultures and ways of life have most often been deeply embedded in their relationships with the environments upon which they depend. For example, Awasis, an Indigenous scholar from the Anishinaabe First Nations of Canada, explains that being Anishnaabe means to be and do simultaneously: “Anishinaabewin is an action, it is embodied *gkendaasowin* (knowledge) that is lived, experienced, and attained through direct interaction with the land” [3]. These interactions and relationships are historic, and most often inscribed in the biodiversity of ecosystems [4] and ever-evolving into continuous diversification

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[biological-and-cultural-diversity](#)), or the [United Nations Development Program](#) (UNDP: <https://sgp.undp.org/about-us-157/partnerships/icca-gsi.html>)

of life and adaptations of sustainable practices [5]. Consequently, Indigenous and local knowledge systems rooted in their collective lands, waters or territories are equally diverse and exclusive to the Indigenous peoples or local communities who produce and sustain them [6]. Governance institutions embedded in such territories are distinctive, time and place based, and generally guided by the holistic values of respect, reciprocity, relationality and responsibility [3]; [7]; [8]; [9]. In fact, the cultural grounding and deep connection of Indigenous peoples and local communities with their territories and ecosystems has proved to equip them with an array of resilience strategies in the face of social and environmental change [10]; [11]; [12]; [13].

Although the term '*Indigenous peoples and local communities*' is widely used (e.g. when talking about ICCAs), there are important differences between these two human groups that should be respected, and they should not be conflated. Indigenous peoples have internationally recognized rights arising from their self-identification as Indigenous peoples (see the UN Declaration on the Rights of Indigenous Peoples adopted by the UN General Assembly in 2007), while local communities are not yet a clearly defined group under international law. However, a growing body of knowledge, policy and law recognizes the rights of non-Indigenous communities whose identities, cultures and ways of life are intimately connected with specific areas and resources. While we fully acknowledge the differences in terms of historical rights and international recognition, in the present article '*Indigenous peoples and local communities*' are both considered in an effort to put the focus on the stewardship role of both groups within the notion of territories of life, as there are or can be many positive synergies between the two, particularly in the context of their links between cultural diversity and global sustainability.

We fully recognize there are evolving concerns from Indigenous Peoples around the complexities and implications of the use of the term '*Indigenous peoples and local communities*'<sup>2</sup> [14] . There is also increasing awareness of the need for better recognition of both Indigenous and community governance and management, and their rights to lands and resources, which are often not legally recognized. There are increasing threats to the lands and waters that are under the care of Indigenous peoples and local communities and both of these diverse groups require support and appropriate recognition for their self-determined practices. Therefore, considering these two groups together in the present article, is a means of highlighting an important research gap that, that if addressed well, could support key custodian communities of much of our planet (independently of if Indigenous or not).

## Aims

A key aim of this review is to provide the most up to date review on the state of territories of life and their values in terms of sustainability. Simultaneously it aims to identify existing key insights into policy, legal and institutional developments, along with threats and challenges to both persistence and recognition of territories of life. A review of this scale with the aforementioned diversity of elements in a sole text is not frequent. Moreover, our review makes a special effort to

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<sup>2</sup> CBD, "Compilation of Views Received on use of the term "Indigenous Peoples and Local Communities," UNEP, Montreal, 2013

open the scope to highly valuable reports and other grey literature in this arena that are less accessible to the public and less considered in previous reviews. We have taken into account over a dozen titles of this kind. At the same time, readers can access more information through the extra grey literature that can be found mostly in the reports we reference in this article. One more novel aspect of our review is that it highlights the outstanding presence of marine territories of life that are frequently overlooked by researchers and policy/decision makers alike. Ultimately, the aim of this review is to identify key opportunities for action and policy-oriented research supporting the contributions of territories of life to conservation of global biocultural diversity and sustainability efforts as reflected at the end of the paper.

## Methods

This article has chosen a “narrative review” methodology due to the diversity of territories of life and the interdisciplinary nature of engagement with them in the past decades, as well as the sheer number, type and language of publications examining these systems directly or indirectly. Narrative reviews describe existing knowledge on a specific idea for examining subjective, dynamic and situated realities [15]. This type of review is generally used to identify gaps in knowledge and to offer insight for future research and policy action [15]; [16]. This review uses territories of life as a conceptual framework and the contents are “separated according to dependent or independent variables and their relationships [16] and has adapted the six-phase narrative review process proposed by Greenhalgh et al. [17]: planning, search, mapping, appraisal, synthesis and recommendations.

This research conducted searches using “Web of Knowledge”, “Scopus”, “Google Scholar” as well as gray literature through specifically selected keywords as described below. Simultaneously, Levac et. al. [18] recommend including stakeholder consultation as part of such narrative review processes. In this sense, direct quotes and inputs from Indigenous peoples and local communities, as well as the consultation step of indirect stakeholder involvement is represented here through the wide networks and well-established relationships of the co-authors with Indigenous peoples and local communities, as well as with some of the main international agencies and organizations that support such systems, who together have over two decades of experience in collaborative research and allyship. In fact, the co-authors of this study include honorary members and the global coordinator of the ICCA Consortium who are by profession academics at different research centers, advisors to different international organizations in this field as well as experts in mapping and registering territories of life in global databases (e.g. <https://www.iccaregistry.org/>).

To develop the search protocol, key words were selected based on the three common characteristics of territories of life described in the introduction. Categorization of the literature identified the following main themes in which territories of life have been examined: spatial coverage, natural realms (terrestrial and marine), culture, policy, development and sustainability. The following sections map evidence related to these themes.

## Evidence base for Indigenous peoples' and local communities' contributions to biodiversity and nature conservation at global scale



Fig 1. Spatial representation of the publications reviewed for this article (a total of 166 titles listed in Annex; the reference list provided in the article's Bibliography section (90 titles) is a summary of the most key, instrumental, and recent sources that have had the major role in shaping the paper). Those in purple (106 titles) correspond to IPLC site-based studies and the remaining 60 titles in yellow correspond to non-IPLC site-based studies that nevertheless focused on territories of life (e.g. global reports, policy publications, etc.).

Indigenous peoples and local communities have developed complex and place-based knowledge and governance institutions that enable sustainable use of resources and conservation of much of the world's biocultural diversity [19]; [20]; [21]. Here we provide some examples. The Kham peoples are situated at the eastern end of the Himalaya between Qinghai-Tibetan plateau and China and they comprise various ethnicities, linguistic ecologies with multiple shamanistic and animistic cultural practices and lived experiences [19]. The eco-spiritual relationships of the *Kham* peoples of southwest China with their sacred natural sites, knowledge of fauna and flora and governance of natural resources are inherently sustainable and unique [19]. Similarly, the Kitasoo/Xai'xais people of the west coast of Canada consider the ocean sacred and their governance structure is based on their laws of "respect, reciprocity, intergenerational knowledge, and interconnectedness" [20]. The hereditary chiefs of the Kitasoo/Xai'xais people take on the responsibility of caring for land and water and to ensure abundance of species as well as territorial health [20]. While Mwanda-Marungu pastoral commons in Taita hills, south-west Kenya, have been managed sustainably for centuries through customary norms that have proved to continually provide ecosystem services to the local communities, wildlife and livestock [22]. Although there is a growing evidence base on the conservation contributions of Indigenous peoples and local communities in specific territories or areas, there are still few studies with a global scope, and even fewer encompassing the two types together (Indigenous peoples and local communities), which the notion of territories of life holistically addresses. In this sense, in an effort to estimate the

potential global extent and conservation values of territories of life, the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and the ICCA Consortium collaborated on a global spatial analysis [23]. This drew on the best available data, including from other spatial analyses, such as the companion report by UNEP-WCMC and several other organizations [24], which itself drew heavily on a pre-existing dataset of Indigenous peoples' lands [36].

This UNEP-WCMC and ICCA Consortium analysis revealed that territories of life could cover at least 28 million km<sup>2</sup>, which is over one-fifth (21%) of the world's land surface, and an area approximately the size of the African continent. At the same time over 17% of the world's land is uniquely covered by potential territories of life, i.e., territories of life that lie outside existing state and privately governed protected and conserved areas [23]. In another estimation, WWF et al. [24] reports that 43 million km<sup>2</sup> of terrestrial ecosystems (approximately 32% of the world's land) is under the *de facto* or *de jure* governance of Indigenous peoples and local communities.

It is important to note that these estimates only cover territories and areas in terrestrial systems. No marine spatial data was used. The engagement of academic research with coastal and marine territories of life is considerably small compared to their terrestrial counterparts. Therefore, there is a relative scarcity of available literature on the spatial coverage of marine and coastal territories of life, as well as their contributions to conservation of biocultural diversity and sustainable use of resources [25]; [26]. Nevertheless, the approach of Locally Managed Marine Areas (LMMAs)<sup>3</sup> are a powerful force in the Pacific Islands, Southeast Asia, Latin America, Western Indian Ocean and East Africa. Despite low government support, the proliferation of LMMAs in the Pacific Islands of Oceania, where community-based protected areas make up 37.5% of protected areas [27], shows the potential of area-based approaches to achieve sustainable management of some of the most biodiverse marine areas on the planet, particularly coral reef ecosystems [28]; [29]. LMMAs are one example of territories of life based management in the Pacific Islands of which the latest survey has counted 662 examples covering 1028 communities [30], which are usually based on customary marine tenure or acknowledged indigenous management rights over nearby coastal areas such as the Fijian traditional fishing grounds, Qoliqoli. Such rights may even be acknowledged in the national constitutions (e.g. Vanuatu). But even where there is legal ambiguity, traditional governance and rights form part of plural legal systems [31]. Consequently, the extent of the planet that is actually governed, managed and conserved by Indigenous peoples and local communities would be in fact even considerably greater than what has been spotted by all these different analyses, and granting so even greater importance to territories of life as key to global environmental sustainability.

In terms of biodiversity value, territories of life could cover at least 33% of Intact Forest Landscapes as defined in footnote<sup>4</sup> and nearly one-third (32%) of areas that are considered key to

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<sup>3</sup> Areas of nearshore waters and coastal resources that are largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area [89].

<sup>4</sup> Following the definition of [90], an Intact Forest Landscape is a seamless mosaic of forest and naturally treeless ecosystems with no remotely detected signs of human activity, and a minimum area of 500 km<sup>2</sup>. They are large enough to maintain all native biodiversity and are crucial for carbon storage and regulating hydrological regimes, as well as other ecosystem functions [90].



reversing biodiversity loss, preventing CO<sub>2</sub> emissions from land conversion and enhancing natural carbon sinks [32]. Given the importance of forests for sustaining livelihoods and climate mitigation, it is crucial to expand support to forested areas conserved by Indigenous peoples and local communities [8]. For example, the Garo people of Bangladesh have been applying their ethnobotanical knowledge in agroforestry since time immemorial. Through their agrosilvopastoral<sup>5</sup> system, the Garo produce sustainable crops while maintaining forest cover and health [33]. Similar practices have been observed in the Bedouin of the Negev Arid Highlands. The role of territories of life in mitigating the effects of climate change and monitoring climate drivers that are modifying landscapes and seascapes has also been recorded by multiple scientists [34]; [35]; [36]; [37]; [38]. The National Adaptation Strategy of Canada (2022), includes key opportunities for national, provincial and non-governmental actors to invest in co-developed and co-implemented (with Inuit, Métis and First Nations) climate resiliency programs and nature-based solutions to mitigate the effects of climate change [39]. Simultaneously, Indigenous peoples and local communities can also act as important monitors for climate change and thereby contribute directly to conservation. A prime example comes from the Arctic with the Inuit, where they observed the significant changes happening and have contributed significantly to the debate about climate change using indicators as diverse as caribou meat and weather patterns to migrations of various animal species [39]. Other examples exist from mountains of Tajikistan and Indian Himalaya that illustrate the value of Indigenous communities in monitoring climate change and its impacts where a diverse array of monitoring variables from animal migration patterns to vegetation changes are reported providing invaluable records for high altitude areas (e.g. [56]; [40] ; [41]).

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<sup>5</sup> As defined by United Nations Economic and Social Commission for West Asia (UN-ESCWA): Multiple land use including livestock breeding, forestry and cultivation, integrated crops, trees, pastures/animal systems.

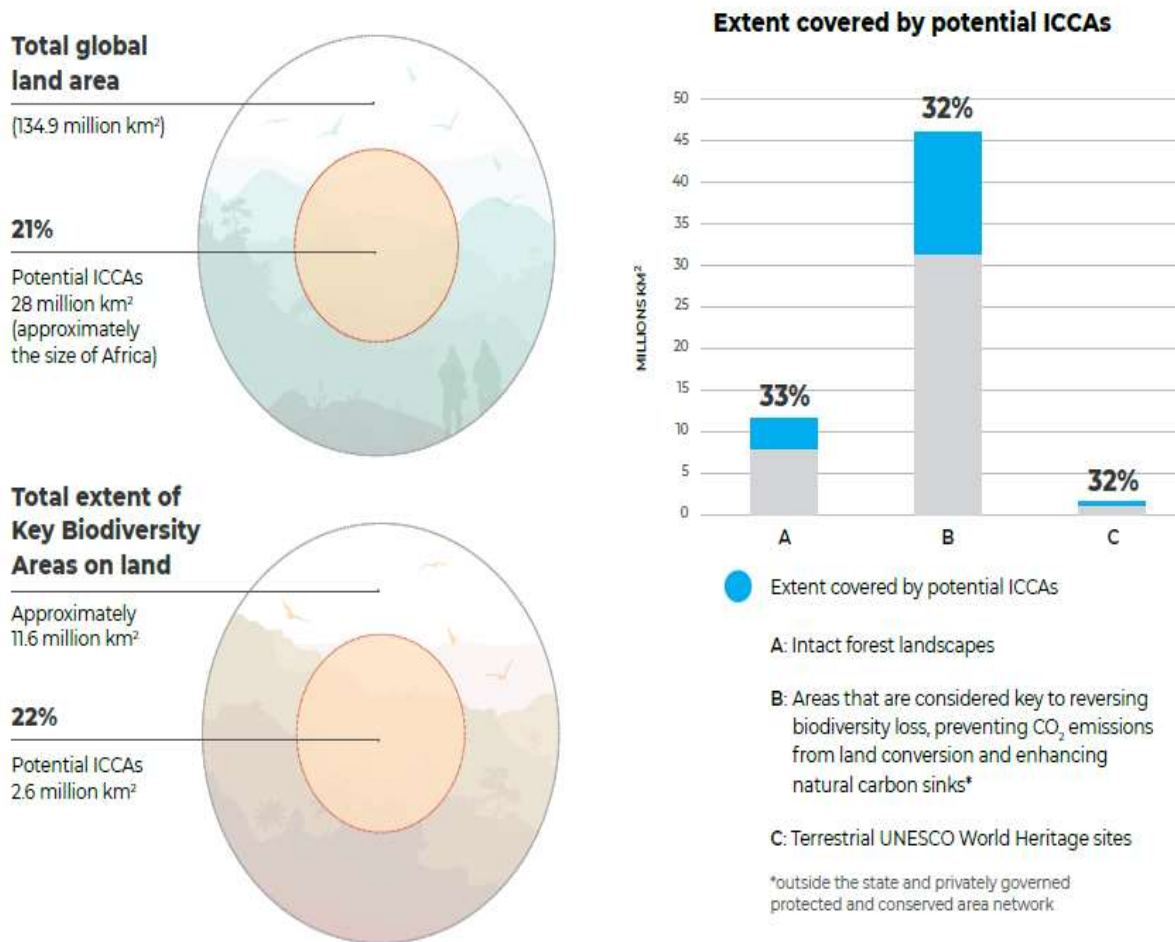


Fig 2 **Graphic depiction of some of the key findings of the global spatial analysis conducted by UNEP-WCMC and the ICCA Consortium** [23]<sup>6</sup>. The graphs on the left-hand side illustrate the estimation that potential territories of life cover more than one-fifth of the world’s land and over one-fifth of the extent of the world’s terrestrial Key Biodiversity Areas. The bar graph on the right-hand side shows that potential territories of life cover at least one-third of intact forest landscapes globally and nearly one-third of areas that are considered key to reversing biodiversity loss, preventing CO<sub>2</sub> emissions from land conversion and enhancing natural carbon sinks.

Also, the notion of ecosystem services, although it could be considered an anthropocentric western-centered framing [42], is increasingly used to measure the effectiveness of protected and conserved areas, including under different governance and management arrangements. In this context, for example, many rice agro-ecosystem of the Benguet and Ifugao peoples in Northern Philippines are managed as sacred sites that lay the ground for provisioning (food, income, etc.) and regulating (purification of water, and climate regulation) while canalizing meaningful cultural practices (ritual purposes, rice wine-making, holy mass offering, educational information, preservation of memories). These systems are sustained through traditional watershed management known as “*Muyong* systems” (woodlot planted with trees which is owned by a clan for generations). The vast contributions of Indigenous ancestral territories to maintaining

<sup>6</sup> The lead author and several other co-authors of this paper are also lead authors and co-authors of this 2021 Territories of Life Report by UNEP-WCMC and ICCA consortium, and are therefore also co-authors of the figure that is now brought into this paper.

ecosystem services have been also recorded in the Colombian, Peruvian and Brazilian Amazon forest, in forested areas of Myanmar (both conserved and degraded), Indigenous territories in northern Australia and Fiji, the Gangetic basin in India, coastal and marine Indigenous territories in Papua New Guinea and Torres Strait islanders in Australia. These are a few examples where Indigenous peoples and local communities sustain ecosystem services that benefit not only themselves but also larger populations on national and global scales [43]; [44]; [45]; [46] [40]; [41].

Territories of life are also key in sustaining cultural practices, such as ceremony, language, and Indigenous technologies and knowledge systems [12]; [47]; [13]. Many Indigenous peoples and local communities consider wellbeing, mental and physical health and good living to be a community issue rather than an individual effort [48]; [49]. Community wellbeing is intertwined with the health of ecosystems, promotion of traditional practices, rituality, traditional medicines and diet, among other aspects of living on a given territory [49]. For example, the Mantheding Community in Limpopo Province of South Africa [50] and the Sakha peoples of Yakutia<sup>7</sup> [51], carefully and collectively manage and harvest medicinal plants and assure that their health is guaranteed by maintaining a diet from native crops.

## Variable policy, legal and institutional recognition statuses of Indigenous peoples' and local communities' contributions to conservation

As local-to-global understanding of the contributions of Indigenous peoples and local communities to biological diversity and nature conservation has grown, so too have different forms of recognition and support. This has occurred both in multilateral and international contexts and within domestic contexts in several countries around the world.

Since 2004, the UN Convention on Biological Diversity (CBD) and the International Union for Conservation of Nature (IUCN) have recognized the rights and roles of Indigenous peoples and local communities, including territories of life specifically, in several decisions of their respective bodies [14], which has led to several countries (such as Malaysia and Senegal) incorporating such language into national and sub-national policy and legal frameworks related to biodiversity and area-based conservation. In the 2011-2020 Strategic Plan for Biodiversity and Aichi Targets and related decisions, CBD Parties adopted and subsequently defined a new term, “other effective area-based conservation measures” (abbreviated as OECMs). OECMs could possibly provide another avenue for recognizing and supporting Indigenous peoples' and local communities' contributions to conservation [14] and for continuing to shift area-based conservation towards genuinely equitable and effective conservation [52]. Some Indigenous peoples and local communities in both marine and terrestrial environments have used the concept of OECMs to strengthen ties to their territories as they offer a venue for diversified governance and management as well as decentralized conservation of natural resources recognised within state systems [53]; [54]. However, given OECMs were only defined by the CBD in 2018, there is still relatively limited

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<sup>7</sup> For more information on the health issues of the Sakha peoples please refer to the publications of Yakut Research Centre for Complex Medical Problems SB RAMS, Yakutsk.

experience in national contexts and there are concerns that some countries might misuse the concept to meet spatial conservation targets without ensuring proper application of the standards and safeguards [52]. There are also concerns about sparse distribution, disconnectedness from officially recognized networks of protected and conserved areas and vague legal language that may lead to governance disputes [53]. Nonetheless, they remain as an avenue for the recognition of Indigenous peoples and local communities' governance. A proposed example is the *section de commune* in France, numbering as many as 40,000. Having a pre-Roman heritage, they took their present form during the Middle Ages when lords ceded land to peasants for management as a common [90]. These collectively managed agricultural and forest lands, are often found in protected areas and biodiverse habitats [55]. In one case governance of a common by a *Commission Syndicale*, in charge of managing forests over centuries, and the presence of a nationally recognized biodiversity zone, clearly demonstrate that when these territories have the right to self-govern, they can effectively manage their resources and so contribute to the Global Biodiversity Framework as an OECM [56]. Multiple marine areas in Indonesia have been identified as potential OECMs including the Kabu Kaya local communities. The Kabu Kaya have “increased harvest rates of mud crab fisheries and protected their forest through temporary fishery closure [57]”.

In the UN CBD process to agree the post-2020 Global Biodiversity Framework, there was a strong push from the Indigenous, youth, women's and civil society caucuses to include clear recognition of Indigenous peoples' and local communities' rights, including to free, prior, and informed consent, Indigenous and local knowledge, customary sustainable use, equity, and a rights-based approach to implementation of the post-2020 framework<sup>8</sup>. The Kunming-Montreal Global Biodiversity Framework, agreed in December 2022, now recognizes<sup>9</sup> the rights of Indigenous Peoples and local communities, including their lands and territories, as well as their roles and contributions to conservation. It also recognizes the integrity and distinct nature of Indigenous and traditional territories to conservation beyond the mainstream categories of Protected Areas and OECMs, and the need for access to justice and protection for environmental defenders.

In several countries, Indigenous peoples and local communities have advocated for policy, legal and institutional recognition and support for their rights in general and in the specific context of conservation law and policy. Simultaneously, Indigenous peoples and local communities have employed diverse and innovative approaches in recovering and protecting their territories as well as in decolonizing research on conservation governance. In Canada, Indigenous Protected and Conserved Areas (IPCAs) and the Indigenous Guardians Initiative are among such programs [58]. For example, the Tongait KakKasuangita SilakKijapvinga – Torngat Mountains National Park was established with the negotiation and consent of Labrador Inuit, Nunavik Inuit and in collaboration with Parks Canada, and is managed through a cooperative management board [58]. In the arctic, to fight against historic loss of tenure, working within the Finnish legal context, some *Sámi* and Finnish villages purchase private land and restore community rights enabling them to manage the land for biodiversity protection [59]. In Italy's autonomous region of Aosta, collective pastures and woodlands known as *consortories* were recognized for their role in protecting the environment, culture, and for collective and intergenerational solidarity [60]. The increasingly favorable legal context appears to facilitate the recognition of territories of life in northern Italy

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<sup>8</sup> (CBD), Convention on Biological Diversity, "Kunming Declaration: Available at: <https://www.cbd.int/doc/c/c2db/972a/fb32e0a277bf1ccfff742be5/cop-15-05-add1-en.pdf>.

<sup>9</sup> Commitment number 10 and 15, P 4, Kunming Declaration (2021)

[61]. Switzerland also recognizes commons institutions as a balancing act of maintaining decision-making power and in working with the state, and in between traditional ways of organizing, and taking on new responsibilities related to land management [62]. In Scotland, after historical enclosures of their commons, and in the interest of austerity, the government initiated the Community Empowerment (Scotland) Act 2015, which since 2017, amongst other things, has created the Community Asset Transfer scheme, allowing communities to buyout publicly owned land to create community woodlands [63]. In Spain, the Valdeavellano de Tera Declaration vigorously called for the recognition of territories of life [64] and Iniciativa Comunes developed an innovative peer-reviewed protocol by local communities for the recognition of such systems in the UN based ICCA Registry, which has integrated many of the practices led by this NGO. However, recognition of community governance is not the same case for other European countries. For instance, commons are generally legally unrecognized and unprotected in most of the EU as well as in countries in accession talks, while they are thought to cover over 9% of its territory<sup>10</sup>, with cases in the Balkans where local communities have co-produced some of the largest mountain pastoral ecosystems in Europe, which have been even recognized as part of a UNESCO Biosphere Reserve, and still are turned into military grounds by simple decree law, with no consultations involving local communities, and not even an environmental, socio-economic or health public assessment (e.g. <https://sinjajevina.org/>). Or other commons in France which are increasingly appropriated by the state for other purposes [65]. These territories have been threatened since the French revolution, with regularly instated laws which favor private over common property [65] and in 2013, reducing the capacity of communities to self-govern, while placing most of these territories under the supervision of the local authorities, without consultation again, and facilitating their transfer to state control. A coalition of elected officials, legal scholars, activists, and researchers collaborate to change this legal framework to favor commons in France [66].

However, protected areas under co-governance, shared governance and governance by Indigenous peoples and local communities are expanding worldwide [67]. Indigenous Protected Areas in Australia and granting personhood to rivers in Aotearoa/New Zealand are a few examples of the diversification of conservation governance and management arrangements that are led by Indigenous peoples [68]. The Ngadju Land Claim received state recognition in 2014 after 2 decades of active engagement of the Ngadju peoples with the Australian legal system<sup>11</sup>. “The Traditional Owners of a large part of the Great Western Woodlands, the Ngadju People, retain their knowledge of and connection to the country<sup>12</sup>” and practice traditional fire management within their territories.

In a number of countries in Africa, and even if the many imperfections they have been object of, governments have recognized community contributions to conservation through decentralization and devolution of certain rights, for example, through communal conservancies in Namibia, wildlife conservancies and beach management units in Kenya, Wildlife Management Areas in Tanzania, and Community Forest Management Areas in Zambia [69]. In Latin America, Colombia is among the leading examples with its *resguardo* system and Mexico with its *ejidos*, although these are more generally rooted in land rights and Indigenous rights, than in conservation outcomes

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<sup>10</sup> Eurostat 2013: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farm\\_structure\\_survey\\_%E2%80%93\\_common\\_land#Statistics\\_on\\_common\\_land](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farm_structure_survey_%E2%80%93_common_land#Statistics_on_common_land)

<sup>11</sup> Government of Australia: <https://www.dcceew.gov.au/environment/land/indigenous-protected-areas>

<sup>12</sup> <https://ngadjuconservation.org/>

as such [70]. The high proportion of community-based (47.6%) and low level of government managed protected areas (13.4%) in the Pacific Islands is partly attributed to countries explicitly recognizing Indigenous tenure and access rights, or similar hybrid arrangements [27]. All in all, each of these country-specific forms of recognition and support comes with potential benefits and opportunities as well as potential risks, gaps and drawbacks. But as international recognition of Indigenous peoples' and local communities' contributions to conservation continue to strengthen, it is likely that pressure will increase on nation-state governments to do the same within their respective contexts.

## Threats and challenges

At least a quarter of Indigenous peoples' and local communities' lands and territories could face a high level of future development pressure, particularly from commodity-based and extractive industries [24]. Extractive industries threaten many resource-rich territories of life, including on Arctic pastoral ecosystems, tropical forests in South America and Africa and highly productive coral reef systems [43]; [71]; [72]. Competing land use pressures and expropriation from both industrial and conservation sectors have made large parts of territories of life functionally unavailable to their custodians, stemming in large part from lack of or insufficient recognition of their collective and individual rights<sup>13</sup> [73]. Entire territories of life or large parts of them are under the increasing threat of irreversible natural and cultural degradation, for example, industrial agriculture encroaching on the wintering grounds of the Shahsevan Nomadic Tribal Confederacy in Iran and reindeer herders in *Sámi* territory, intensive ranching in the Brazilian Amazon, or industrial logging encroaching on the territories in Gabon [68] [74]; [75]; [76]; [71]. The access to wintering grounds of the nomadic *Sámi* reindeer herding peoples of northern Sweden is heavily disrupted by mining activities. In 2018, 11 mining complexes were actively exporting minerals from the wintering grounds while conducting exploratory studies in other grounds that are part of the *Sámi* territories of life [119]. Both *Sámi* and Finnish village territories in Finland have also been threatened by extractive industries as well as a lack of recognition of communal land tenure [59]. For the coastal Indigenous peoples of northwest America, the considerable decline in pacific herring populations, has become synonymous with extreme sadness and depression [4]. These Indigenous communities have long-standing reciprocal relationships with herring and the loss of access to this species, due to prohibition of traditional harvest, large-scale commercial fishing, etc., has resulted in the erosion of their lived cultural experiences. More recently, Indigenous communities have acted to maintain their cultural continuity such as negotiating with governmental organizations and commercial fishing companies, or demanding co-management of fisheries and Supreme Court cases [4].

At the same time, lack, unclear, inefficient or insufficient legal recognition of customary rights of Indigenous peoples and local communities to their land, freshwater and sea territories (and access to and use thereof) has led to many disputes with the private and public sectors. For example, Indigenous peoples in West Papua have had long-held strong claims to forests that are subject to fast land use change in favor of expanding oil palm monoculture plantations. Since 2001, two laws

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<sup>13</sup> <https://ipbes.net/global-assessment>

(Special Autonomy Law) specifically recognized the governance institutions of Indigenous peoples over “Tanah Adat or Tanah Ulayat (customary land)”. At the same time, in 2012, the Constitutional Court of Indonesia of which West Papua makes part, ruled that forests under customary land tenure are no longer under the control of the state. But the insufficient elaboration of customary governance in these laws has led to confusion, land disputes and misinterpretation by different parties in their implementation [77]. Such land disputes have been recorded in multiple other community managed forests across the world. Even though Indigenous groups in Bolivia and Ecuador have formal recognition of territory by state, extractive industries continue being a major threat to Indigenous sovereignty and governance over their territories and communities. This is due to lingering colonial structures and conceptions of sovereignty, resource management, ownership and power imbalance [78]. Clarification of terms related to governance and management of customary lands and waters, and increasing the capacity of state laws and structures to adapt to the many forms of territories of life is essential for their continued existence and thriving as populations and resource-use pressures continue to grow.

## Key opportunities for action- and policy-oriented research

Territories of life are key to equitably governing and sustainably managing biological and cultural diversity for a healthy planet [5]; [23]; [79]; [24]. Researchers in relevant fields may assist communities in a number of key conservation and policy-oriented studies. For instance, research projects that are co-designed and co-created with Indigenous peoples and local communities often offer opportunities for communities in their self-determination and self-strengthening processes. It is important to note the growing diversity of such processes on a global scale such as cultural revitalization and Indigenous resurgence, decolonization and sustainable self-determination [80]. Below some of the key identified opportunities for action- and policy-oriented research in relation to territories of life that we have been able to distill from our review:

- **Support, share knowledge and collaborate with Indigenous peoples and local communities** in various aspects of documenting their territories of life and biocultural diversity to help towards safeguarding Indigenous languages and cultures [81]; [77] and to strengthen self-awareness, mutual recognition and support from other communities, as well as from relevant state authorities, where they wish to seek it [23]; [24]; [79].
- **Support communities to employ innovative approaches to documenting their territories and practices** such as through story mapping [82] or through submitting information to global platforms such as the ICCA Registry hosted by UNEP-WCMC. Mapping of biocultural diversity may also be in the service of safeguarding Indigenous languages [81], decolonizing mapping practices, counter-mapping and spatial justice [83].
- Create and hold equitable and inclusive spaces for **researchers and scholars from Indigenous peoples and local communities** [84] to foster collaboration, co-learning and the reinforcement of community leaders;
- Support Indigenous peoples and local communities to develop **adaptable tools to communicate** the diversity and nuances of their territories of life, governance systems and practices.
- **Explore the holistic views** of many Indigenous peoples and local communities, including reducing the dominance of bio/ecocentric views in conservation [85].

- **Advancing supportive legal, policy and institutional frameworks** at national and international levels including the great conventions deciding on global matters, as well as through support from lawyers, legal practitioners and decision-makers with relevant research and knowledge [86].
- **Advance research on collaborative forms of conservation**, value of Indigenous and local knowledge in sustainable resource management and socio-cultural and economic benefits as well as legalities of cross natural realm governance and stewardship of territories of life [87]; [37].
- Providing relevant information and support **tools for Indigenous peoples and local communities to advocate** for and secure their rights and territories of life on their own terms (for example, in legal claims or court cases).
- **Critically assessing** existing and potential forms of nation-state recognition and support for territories of life [10]; [88].
- **Advancing funding mechanisms** that engage with Indigenous peoples and local communities in conservation and sustainability initiatives, with priority given to understanding how to improve direct funding support for territories of life [10].
- Further the engagement and recognition of the efforts of indigenous and traditional community members in ecosystem and monitoring such as identification of species with respect to decision making for nature conservation and contributions to relevant scientific research.

Although territories of life exist all around the world and their contributions to maintaining biological and cultural diversity have been essential for millennia, nuanced understanding of many of their aspects and dynamics is still very limited, while transmission of their values to decision-makers is only in an emergent state, and scientists can do a lot to revert this situation. Territories of life are not only contributing significantly to global sustainability, but they are also under immense pressures from interconnected global social and environmental changes. It is therefore important, necessary and urgent for the research community to mobilize in solidarity with an active support of Indigenous peoples and local communities who are governing, managing and sustaining their territories of life and to which our global sustainability is linked.

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## Bibliography

- [1] G. Sajeva, G. Borrini-Feyerabend and T. Niederberger, "Meanings and more... Policy Brief of the ICCA Consortium no. 7. ICCA Consortium in collaboration with Cenesta," 2019. [Online]. Available: <https://www.iccaconsortium.org/wp-content/uploads/2019/11/ICCA-Briefing-Note-7-Final-for-websites.pdf>.
- [2] T. Yunkaporta, *Sand Talk: How Indigenous Thinking Can Save the World*. HarperOne., HarperOne, 2020, p. 251.
- [3] S. Aswani, "Perspectives in coastal human ecology (CHE) for marine conservation," *Biological Conservation*, vol. 236, p. 223–235, 2019.
- [4] G. Odonne and M. Jean-François, *Methods in Historical Ecology: Insights from Amazonia*, Routledge, 2020.
- [5] N. Dawson, B. Coolsaet, E. Sterling, R. Loveridge, N. D. Gross-Camp, S. Wongbusarakum, K. Sangha, L. Scherl, H. P. Phan, N. Zafra-Calvo, W. Lavey, P. Byakagaba, C. J. Idrobo, A. Chenet, N. Bennett, S. Mansourian and F. Rosado-May, "The role of Indigenous peoples and local communities in effective and equitable conservation," *Ecology and Society*, vol. 26, no. 3, 2021.
- [6] G. R. Renom, D. M. Mwamidi and P. Domínguez, "Holistic ethnographies of East African customary pastoral commons needed?," *Current Opinion in Environmental Sustainability*, vol. 43, pp. 83-90, 2020.
- [7] K. Absolon, "Indigenous Wholistic Theory: A Knowledge Set for Practice," *First Peoples Child & Family Review*, vol. 5, no. 2, p. 74–87, 2020\* International Conservation Agencies recognizes IPLCs way of governance as sustainable because it is based on collective rights and responsibilities, holistic and all-inclusive management of resources found in their landscapes.
- [8] E. S. Brondízio, Y. Aumeeruddy-Thomas, P. Bates, J. Carino, Á. Fernández-Llamazares, M. F. Ferrari, K. Galvin, V. Reyes-García, P. McElwee and Z. Molnár, "Locally Based, Regionally Manifested, and Globally Relevant: Indigenous and Local Knowledge, Values, and Practices for Nature," *Annual Review of Environment and Resources*, vol. 46, no. 1, p. 481–509, 2021\* IPLCs contributes to managing the health of local and regional ecosystems and thus calling for their involvement in environmental governance through their valuable knowledge based on diverse values of nature, confronting societal pressures.
- [9] B. McGreavy, D. Ranco, J. Daigle, S. Greenlaw, N. Altvater, T. Quiring, N. Michelle, J. Paul, M. Binette, B. Benson and A. Sutton, "Science in Indigenous homelands: Addressing power and justice in sustainability science from/with/in the Penobscot River," *Sustainability Science*, vol. 16, no. 3, p. 937–947, 2021\* The paper advocates for centering indigenous research methods (IRM) and promoting decolonization of academic institutions as well as giving opportunities for Indigenous students as leaders/researchers for sustainable conservation.

- [10] G. Walters, N. Pathak Broome, M. Cracco, T. Dash, N. Dudley, S. Elías, O. Hymas, S. Mangubhai, V. Mohan and T. Niederberger, "COVID-19, Indigenous peoples, local communities and natural resource governance," *PARKS*, vol. 27, p. 57–72, 2021.
- [11] P. Dominguez, A. Bourbouze, S. Demay, G. D and N. Kosoy, "Diverse Ecological, Economic and Socio-Cultural Values of a Traditional Common Natural Resource Management System in the Moroccan High Atlas: The Aït Ikiss tagdalts",," *Environmental Values*, vol. 21, pp. 277-296, 2012.
- [12] S. Caillon, G. Cullman, B. Verschuuren and E. J. Sterling, "Moving beyond the human--nature dichotomy through biocultural approaches: Including ecological well-being in resilience indicators," *Ecology & Society*, vol. 22, no. 4, p. 1–10, 2017.
- [13] E. Palazzo and D. K. Bardsley, "Adaptive mechanisms in a continuing landscape: Assessing biocultural diversity as a form of resilience," *Journal of Cultural Heritage Management and Sustainable Development*, 2021\* The paper argues that understanding human-nature interactions and their interconnectedness in the landscape can inform planning decisions for sustainable conservation.
- [14] H. C. Jonas, "Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs): Evolution in International Biodiversity Law", Chapter 10 in *Biodiversity and Nature Protection Law*, edited by Elisa Morgera and Jona Razzaque," 2017. [Online]. Available: <https://www.e-elgar.com/shop/usd/biodiversity-and-nature-protection-law-9781783474240.html> .
- [15] J. Sukhera, "Narrative Reviews: Flexible, Rigorous, and Practical," *Journal of Graduate Medical Education*, vol. 14 , no. 4, p. 414–417, 2022.
- [16] R. Ferrari, "Writing narrative style literature reviews," *Medical Writing*, vol. 24, no. 4, p. 230–235, 2015.
- [17] T. Greenhalgh, G. Robert, F. Macfarlane, P. Bate, O. Kyriakidou and R. Peacock, "Storylines of research in diffusion of innovation: A meta-narrative approach to systematic review.," *Social Science & Medicine*, vol. 61, no. 2, p. 417–430, 2005.
- [18] D. Levac, H. Colquhoun and K. K. O'Brien, "Scoping studies: Advancing the methodology," *Implementation Science*, vol. 5, no. 1, p. 69, 2010.
- [19] J. Studley, *Indigenous Sacred Natural Sites and Spiritual Governance The Legal Case for Juristic Personhood* (E-book), Abingdon, Oxon; New York, NY: Routledge, 2019.
- [20] N. Ban, E. Wilson and D. Neasloss, "Strong historical and ongoing indigenous marine governance in the northeast Pacific Ocean: A case study of the Kitasoo/Xai'xais First Nation," *Ecology and Society*, vol. 24, no. 4, 2019.
- [21] J. Gould, D. Smyth, W. Rassip, P. Rist and K. Oxenham, "Recognizing the contribution of Indigenous Protected Areas to marine protected area management in Australia," *Maritime Studies*, 2021.
- [22] D. M. Mwamidi, Nunow, A. A and P. Dominguez, "Customary ecological conservation of Mwanda-Marungu Pastoral Commons in Taita Hills, south-west Kenya," *African Journal of Range & Forage*

- Science*, vol. 40, no. 1, pp. 94-106, 2023\* This paper highlights customary norms employed by herders, elders and locals in the management of their communal pastoral landscapes, thus worthy to be considered as key actors and knowledges in environmental conservation, livelihood promotion.
- [23] UNEP-WCMC and ICCA Consortium, Stewart, J; Gosling, J; Corrigan, C; Jonas, H, C; Vaziri Zanjani, L; Rubis, J,, "A global spatial analysis of the estimated extent of territories and areas conserved by Indigenous peoples and local communities. In: Territories of Life: 2021 Report. UNEP-WCMC (Cambridge, UK) and ICCA Consortium (worldwide)," 2021. [Online]. Available: <https://report.territoriesoflife.org/global-analysis/> .
- [24] WWF; UNEP-WCMC; SGP/ICCA-GSI; LM, TNC; CI; WCS; EP; ILC-S; CM; IUCN,, "The State of Indigenous Peoples' and Local Communities' Lands and Territories: A technical review of the state of Indigenous Peoples' and Local Communities' lands, their contributions to global biodiversity conservation and ecosystem services, the pressur," 2021.
- [25] J. Blythe, D. Armitage, G. Alonso, D. Campbell, A. C. Esteves Dias, G. Epstein, M. Marschke and P. Nayak, "Frontiers in coastal well-being and ecosystem services research: A systematic review," *Ocean & Coastal Management*, vol. 185, no. 105028, 2020.
- [26] F. M. Resende, J. Cimon-Morin, M. Poulin, L. Meyer, D. C. Joner and R. Loyola, "The importance of protected areas and Indigenous lands in securing ecosystem services and biodiversity in the Cerrado," *Ecosystem Services*, vol. 49, no. 101282, 2021.
- [27] P. Nimwegen, F. J. Van Leverington, S. Jupiter and M. Hockings, Conserving our sea of islands: State of protected and conserved areas in Oceania (eds), Gland, Switzerland: IUCN, 2022.
- [28] H. Govan and M. Arju, "Pacific nations are on the path of holistic ocean governance: the 30 by 30 campaign may destroy that without major changes," 2021. [Online]. Available: <https://www.iccaconsortium.org/index.php/2021/04/15/30-by-30-may-destroy-pacific-holistic-ocean-governance/> .
- [29] S. Roccliffe, S. Peabody, M. Samoilys and J. P. Hawkins, "Towards a network of Locally Managed Marine Areas (LMMAs) in the Western Indian Ocean," *PLoS ONE*, vol. 9, no. 7, 2014.
- [30] H. Govan and W. Lalavanua, "Status of Community-based Fisheries Management in Pacific Islands Countries and Territories: survey report. Noumea, New Caledonia," 2022. [Online]. Available: [https://purl.org/spc/digilib/doc/H\\_uNgzxUo7kB36r](https://purl.org/spc/digilib/doc/H_uNgzxUo7kB36r).
- [31] J. R. Rohe, H. Govan, A. Schlüter and S. C. Ferse, "A legal pluralism perspective on coastal fisheries governance in two Pacific Island countries," *Marine Policy*, Vols. 100, pp.90-97. , 2019.
- [32] J. E. Fa, J. E. Watson, I. Leiper, P. Potapov, T. D. Evans, N. D. Burgess, Z. Molnár, Á. Fernández-Llamazares, T. Duncan, S. Wang and et-al, "Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscapes," *Frontiers in Ecology and the Environment*, vol. 18, no. 3, p. 135–140, 2020.

- [33] M. H. Rahman and M. J. Fardusi, "Indigenous Plant Utilization and Farming System of Garo Tribe in North-East Bangladesh: A Means of Sustainable Biodiversity Conservation," *Journal of Forest and Environmental Science*, vol. 28, no. 2, p. 84–96, 2012.
- [34] A. Schlingmann, S. Graham, P. Benyei, E. Corbera, I. Martinez Sanesteban, A. Marelle, R. Soleymani-Fard and V. Reyes-García, "Global patterns of adaptation to climate change by Indigenous Peoples and local communities. A systematic review," *Current Opinion in Environmental Sustainability*, vol. 51, p. 55–64, 2021.
- [35] A. Charles, "People, oceans and scale: Governance, livelihoods and climate change adaptation in marine social–ecological systems," *Current Opinion in Environmental Sustainability*, vol. 4, no. 3, p. 351–357, 2012.
- [36] S. Kumari, A. Chauhan and V. Shankar, "Assessment of climate change implications on landslides in mid and high hills of Himachal Pradesh, India," *Arabian Journal of Geosciences*, vol. 14, no. 14, p. 1323, 2021.
- [37] T. K. Loch and M. Riechers, "Integrating indigenous and local knowledge in management and research on coastal ecosystems in the Global South: A literature review," *Ocean & Coastal Management*, vol. 212, no. 105821, 2021.
- [38] R. I. Perry, R. E. Ommer, M. Barange and F. Werner, "The challenge of adapting marine social–ecological systems to the additional stress of climate change," *Current Opinion in Environmental Sustainability*, vol. 2, no. 5-6, p. 356–363, 2010.
- [39] B. Vogel, L. Yumagulova, G. McBean and K. A. Charles Norris, "Indigenous-Led Nature-Based Solutions for the Climate Crisis: Insights from Canada," *Sustainability*, vol. 14, no. 11, 2022.
- [40] I. Haag, K. A. Kassam, T. Senftl, H. Zandler and S. C, "Measurements meet human observations: integrating distinctive ways of knowing in the Pamir Mountains of Tajikistan to assess local climate change," *Climate Change*, vol. 165, no. 5, pp. 1-22, 2021.
- [41] V. Negi, S. Takur, R. Dhyani, D. Bhatt I and S. Rawal R, "Climate Change Observations of Indigenous Communities in the Indian Himalaya," *Weather, Climate and Society*, vol. 13, pp. 245-257, 2021.
- [42] J. N. Paing, L. G. J. Van Bussel, R. A. Gomez and L. G. Hein, "Ecosystem services through the lens of indigenous people in the highlands of Cordillera Region, Northern Philippines," *Journal of Environmental Management*, vol. 308, no. 114597, 2022.
- [43] L. M. Diele-Viegas and C. F. D. Rocha, "Why releasing mining on Amazonian indigenous lands and the advance of agrobusiness is extremely harmful for the mitigation of world's climate change? Comment on Pereira et al. (Environmental Science & Policy 100 (2019) 8–12)," *Environmental Science & Policy*, vol. 103, p. 30–31, 2020.

- [44] N. Kam, "Comparison of Rural Livelihoods between Government-led and Local-led Initiatives under Community-based Forest Management: A Case Study in Chin State, Myanmar," in *International Conference and Utility Exhibition on Energy, Environment and Climate Change (ICUE)*, 2020.
- [45] Watkin, L., "My island home: Re-presenting identities for Torres Strait Islanders living outside the Torres Strait," *Journal of Australian Studies*, vol. 36, no. 2, p. 41–153, 2012.
- [46] A. R. Rasheed, "Marine protected areas and human well-being – A systematic review and recommendations," *Ecosystem Services*, vol. 41, no. 101048, 2020\* The paper advocates for systematic and integrative framework in Marine Protected Areas (MPAs) in future assessments are equipped to capture MPAs' contributions to human well-being more adequately as opposed to focusing on sub-set of stakeholders.
- [47] O. McIvor, "Indigenous Language Revitalization and Applied Linguistics: Parallel Histories, Shared Futures?," *Annual Review of Applied Linguistics*, vol. 40, p. 78–96, 2020\*.
- [48] Stoeckl, N; Jarvis, D; Larson, S; Larson, A; Grainger, D; Ewamian Aboriginal Corporation, "Australian Indigenous insights into ecosystem services: Beyond services towards connectedness – People, place and time," *Ecosystem Services*, vol. 50, no. 101341, 2021\* The paper advocates for focused primarily on connections between and within the human and natural systems when conducting Millennium Ecosystem Assessment as opposed to focusing attention on benefit flows from ecosystems to humans.
- [49] E. M. M. Vélez, J. M. L. Ríos, S. C. Marulanda, M. C. V. Franco, O. D. M. d. L. Rosa and D. M. H. Holguín, "Aproximación a la concepción de la salud mental para los pueblos indígenas de Colombia," *Ciência & Saúde Coletiva*, vol. 25, no. 3, p. 1157–1166, 2020.
- [50] S. A. Rankoana, "Sustainable Use and Management of Indigenous Plant Resources: A Case of Mantheding Community in Limpopo Province, South Africa," *Sustainability*, vol. 8, no. 3, 2016.
- [51] K. Swiderska, A. Argumedo, C. Wekesa, L. Ndalilo, Y. Song, A. Rastogi and P. Ryan, "Indigenous Peoples' Food Systems and Biocultural Heritage: Addressing Indigenous Priorities Using Decolonial and Interdisciplinary Research Approaches," *Sustainability (Switzerland)*, vol. 14, no. 18, 2022.
- [52] H. D. Jonas, G. Ahmadi, H. Bingham, J. Briggs, S. Butchart, J. Cariño, O. Chassot, S. Chaudhary, E. Darling and A. DeGemmis, "Equitable and effective area-based conservation: Towards the conserved areas paradigm," *Parks*, vol. 27, p. 71–84, 2021\* The paper argues how a new conservation paradigm of "other effective area-based conservation measures" (OECMs) promotes good governance, equity and effective conservation outcomes, inclusive conservation within and beyond protected areas.
- [53] H. G. J. Alves-Pinto, H. Jonas, V. Maioli, A. Balmford, A. Ewa Latawiec, R. Crouzeilles and B. Strassburg, "Opportunities and challenges of other effective area-based conservation measures (OECMs) for biodiversity conservation," *Perspectives in Ecology and Conservation*, vol. 19, no. 2, p. 115–120, 2021.

- [54] S. Woodley, J. Jarvis and A. Rhodes, "Ensuring area-based conservation meets the twin challenges of biodiversity loss and climate change," *Parks Stewardship Forum*, vol. 37, no. 3, 2021\* This paper points ways to accelerate the Global Biodiversity Framework of the Convention on Biological Diversity's call on 30% of the land and sea to be conserved in systems of protected areas and other effective area-based conservation measures.
- [55] M. Pouvreau and Q. Ragache, Biens Sectionaux de l'Est Cantal. 8,900 Biens - 21,61 Hectares." Conservatoire Botanique National du Massif Central; Syndicat des Territoires de l'Est Cantal. France., 2022.
- [56] IUCN, "Resolution WCC-2012-Res-077 Promoting Locally Managed Marine Areas as a socially inclusive approach to meeting area-based conservation and Marine Protected Area targets World Conservation Congress, Jeju," 2012. [Online]. Available: <https://portals.iucn.org/library/node/44044>.
- [57] A. M. F. Estradivari, D. S. Adhuri, S. C. A. Ferse, I. Sualia, D. A. Andradi-Brown, S. J. Campbell, M. Iqbal, H. D. Jonas, M. E. Lazuardi, H. Nanlohy, F. Pakiding, N. K. S. Pusparini, H. C. Ramadhana, T. Ruchimat and I. W. V. Santiadji, "Marine conservation beyond MPAs: Towards the recognition of other effective area-based conservation measures (OECMs) in Indonesia," *Marine Policy*, vol. 137, no. 104939, 2022.
- [58] Parcs Canada, "We rise together: Achieving pathway to Canada target 1 through the creation of Indigenous protected and conserved areas in the spirit and practice of reconciliation : the Indigenous Circle of Experts' report and recommendations," 2018.
- [59] T. Mustonen, "Endemic time-spaces of Finland: from wilderness lands to 'vacant production spaces'. Fennia," *International Journal of Geography*, vol. 195, no. 1, p. 5–24, 2017.
- [60] R. Louvin and P. Alessi N, "Un nouveau souffle pour les consorceries de la Vallée d'Aoste," *Revue de géographie alpine*, vol. 109, no. 1, 2021.
- [61] M. Bassi, "Territories of Life in Europe Towards a Classification of the Rural Commons for Biodiversity Conservation," *Antropologia Pubblica*, vol. 8, no. 2, 2022.
- [62] T. Haller, Balancing the Commons in Switzerland: Institutional Transformations and Sustainable Innovations. Earthscan Studies in Natural Resource Management (eds), Abingdon, Oxon ; New York, NY: Routledge, 2021.
- [63] K. Sharma, G. M. M. Walters and J. Ghazoul, "Glocal woodlands – the rescaling of forest governance in Scotland," *Land Use Policy*, In press.
- [64] Iniciativa comunales, "The Valdeavellano de Tera Declaration on the Recognition and Defence of the Commons and ICCAs in Spain," Valdeavellano, Spain, 2013.

- [65] J.-F. Joye, *Communaux: les pérégrinations d'un phénix*,. In “Les “Communaux” Au XXI<sup>e</sup> Siècle : Une Propriété Collective Entre Histoire et Modernité, edited by Jean-François Joye., Chambéry, France: Presses Universitaires Savoie Mont Blanc., 2021, pp. 23-57.
- [66] O. Hymas, J. J-F and G. Walters, *Les communs fonciers peuvent servir de modèle pour relever les défis écologiques* , *Le Monde*. 28 August, 2021.
- [67] G. Reed, N. D. Brunet, S. Longboat and D. C. Natcher, "Indigenous guardians as an emerging approach to indigenous environmental governance," *Conservation Biology*, vol. 35, no. 1, p. 179–189, 2021.
- [68] E. Macpherson and F. C. Ospina, "The pluralism of river rights in Aotearoa, New Zealand and Colombia," 2020. [Online]. Available: <https://doi.org/10.31235/osf.io/rdh4x>.
- [69] F. Nelson, P. Muyamwa-Mupeta, S. Muyengwa, E. Sulle and D. Kaelo, "Progress or regression? Institutional evolutions of community-based conservation in eastern and southern Africa," *Conservation Science and Practice*, vol. 3, no. 1, p. e302, 2021.
- [70] A. Burgos-Ayala, A. Jiménez-Aceituno, A. M. Torres-Torres, D. Rozas-Vásquez and D. P. M. Lam, "Indigenous and local knowledge in environmental management for human-nature connectedness: A leverage points perspective," *Ecosystems and People*, vol. 16, no. 1, p. 290–303, 2020\* This study evidences that involvement of IPLCs in environmental management can lead to stronger human–nature connectedness and thus to more successful conservation policies.
- [71] C. Fohringer, G. Rosqvist, N. Inga and N. J. Singh, "Reindeer husbandry in peril? How extractive industries exert multiple pressures on an Arctic pastoral ecosystem," *People and Nature*, vol. 3, no. 4, p. 872–886, 2021.
- [72] J. J. Scullion, K. A. Vogt, B. Drahota and S. L. M. Winkler-Schor, "Conserving the Last Great Forests: A Meta-Analysis Review of the Drivers of Intact Forest Loss and the Strategies and Policies to Save Them," *Frontiers in Forests and Global Change*, vol. 2, no. 62, 2019.
- [73] Rights and Resources Initiative (RRI), "Rights-Based Conservation: The path to preserving Earth’s biological and cultural diversity? Technical Report. RRI:," Washington, D.C., 2020.
- [74] Cenesta, "Support for Protected and Conserved Areas and Governance in Iran," Centre for Sustainable Development and Environment,, Tehran, Iran, 2017.
- [75] J. T. Betts, G. R. Urquhart, J. Román-Heracleo and J. C. Flores Mc.rea, "Effects of deforestation from cattle ranching over time on protected rainforest streams in the Rama-Kriol Territory, Nicaragua.," *Hydrobiologia*, vol. 849, p. 4547–4568, 2021.
- [76] B. Evine-Binet, ""Ibola Dja Bana Ba Massaha la Réserve Forestière de Tous Les Enfants ," Est Née Au Gabon." Mongabay, March, 2022. [Online]. Available: <https://fr.mongabay.com/2022/03/ibola-dja-bana-ba-massaha-la-reserve-forestiere-de-tous-les-enfants-est-nee-au-gabon/>.

- [77] Y. Y. Runtuboi, "Oil Palm Plantations, Forest Conservation and Indigenous Peoples in West Papua. What Lies Ahead?," *Forest and Society*, vol. 5, no. 1, 2020.
- [78] I. M. Radhuber and S. A. Radcliffe, "Contested Sovereignties: Indigenous disputes over plurinational resource governance. Environment and Planning E," *Nature and Space*, vol. 25148486211068476, 2022.
- [79] ICCA Consortium, "Territories of Life: 2021 Report. Executive Summary," 2021. [Online]. Available: <https://report.territoriesoflife.org/executive-summary/>. .
- [80] A. Papadopoulos, "Exploring governance mechanisms and Mi'kmaw values and aspirations for Indigenous Protected and Conserved Areas (IPCAs) in Nova Scotia. <https://DalSpace.library.dal.ca//handle/10222/80568> diversity, governance and social variation," *Ecosystem Services*, vol. 13, p. 41–56, 2021.
- [81] H. Whaanga, P. Wehi, M. Cox, T. Roa and I. Kusabs, "Māori oral traditions record and convey indigenous knowledge of marine and freshwater resources. New Zealand," *Journal of Marine and Freshwater Research*, vol. 52, pp. 1-10, 2018.
- [82] I. Hirt, "Mapping Dreams/Dreaming Maps: Bridging Indigenous and Western Geographical Knowledge. Cartographica:," *The International Journal for Geographic Information and Geovisualization*, vol. 47, no. 2, p. 105–120, 2012.
- [83] E. Iralu, "Putting Indian Country on the Map: Indigenous Practices of Spatial Justice," *Antipode*, vol. 53, no. 5, p. 1485–1502, 2021.
- [84] S. Wilson, A. V. Breen, L. DuPré and (Eds), *Research and Reconciliation: Unsettling Ways of Knowing Through Indigenous Relationships.*, Canadian Scholars' Press Inc., 2019\*\* Decolonizing conservation research and creating/holding equitable/inclusive spaces for researchers and scholars from IPLC promotes capacity-building, participatory and leadership conservation efforts, and co-ownership of conservation progress.
- [85] S. Clement, *Governing the Anthropocene: novel ecosystems, transformation, and environmental policy*, Cham Switzerland:, 2021.
- [86] H. D. Jonas, A. Kothari and H. Shrumm, "Legal and institutional aspects of recognizing and supporting conservation by indigenous peoples and local communities," 2012. [Online]. Available: <https://www.iccaconsortium.org/index.php/2012/09/30/synthesis-report/>.
- [87] R. Y. Fidler, G. N. Ahmadi, A. C. C. Amkieltiela, G. L. Estradivari, C. Handayani, S. L. Mahajan, M. B. Mascia, F. Pakiding, D. A. Andradi-Brown, S. J. Campbell, K. Claborn, M. De Nardo, H. E. Fox, D. Gill and N. I. Hidayat, "Participation, not penalties: Community involvement and equitable governance contribute to more effective multiuse protected areas," *Science Advances*, vol. 8, no. 18, p. eabl8929, 2022.



- [88] M.-S. Fletcher, H. Rebecca, D. Wolfram and P. Lisa, "Indigenous Knowledge and the Shackles of Wilderness," *Proceedings of the National Academy of Sciences*, vol. 118, no. 40: e2022218118, 2021.
- [89] H. Govan, W. Aalbersberg, A. Tawake and J. Parks, "Locally-Managed Marine Areas: A Guide for Practitioners. The Locally-Managed Marine Area Network. USP. Suva, Fiji," 2008. [Online]. Available: <http://www.lmmanetwork.org/files/Immguide.pdf>.
- [90] P. Potapov, H. Matthew C, L. Laestadius, S. Turubanova, A. Yaroshenko, C. Thies, W. Smith, Zhuravleva, A. Komarova, S. Minnemeyer and E. E, "The last frontiers of wilderness: Tracking loss of intactforest landscapes from 2000 to 2013," *Science Advances*, vol. 3, no. e1600821, 2018.

## Annex

The reference list provided in the article's Bibliography section above is a summary with the most key, instrumental and recent sources that have had the major role in shaping the manuscript (90 titles). However, below we provide as a complement the total list of references consulted for this review (166 titles) and to which the map of figure 1 makes reference to.

- G. Sajeve, G. Borrini-Feyerabend and T. Niederberger, "Meanings and more... Policy Brief of the ICCA Consortium no. 7. ICCA Consortium in collaboration with Cenesta," 2019. [Online]. Available: <https://www.iccaconsortium.org/wp-content/uploads/2019/11/ICCA-Briefing-Note-7-Final-for-websites.pdf>.
- D. A. Posey, Cultural and spiritual values of biodiversity. A complementary contribution to the global biodiversity assessment. In Posey, D. A. (ed.), Cultural and Spiritual Values of Biodiversity, London, U.K: UNEP and Intermediate Technology Publications, 1999, pp. 1-1.
- C. A. Ayers, P. Dearden and R. Rollins, "An exploration of Hul'qumi'num Coast Salish peoples' attitudes towards the establishment of no-take zones within marine protected areas in the Salish Sea, Canada," *The Canadian Geographer /Le Géographe Canadien*, vol. 56, no. 2, p. 260–274, 2012.
- A. M. Gauvreau, D. Lepofsky, M. Rutherford and M. Reid, "Everything revolves around the herring: The Heiltsuk herring relationship through time," *Ecology and Society*, vol. 22, no. 2, 2017.
- T. Yunkaporta, Sand Talk: How Indigenous Thinking Can Save the World. HarperOne., HarperOne, 2020, p. 251.
- S. Clement, Governing the Anthropocene: novel ecosystems, transformation, and environmental policy, Cham Switzerland:, 2021.
- M. Ushigua and T. Zoe, "Of the Forest," Granta, 2020. [Online]. Available: <https://granta.com/of-the-forest/>.
- S. Aswani, "Perspectives in coastal human ecology (CHE) for marine conservation," *Biological Conservation*, vol. 236, p. 223–235, 2019.
- G. Odonne and M. Jean-François, Methods in Historical Ecology: Insights from Amazonia, Routledge, 2020.

- G. Walters, N. Pathak Broome, M. Cracco, T. Dash, N. Dudley, S. Elías, O. Hymas, S. Mangubhai, V. Mohan and T. Niederberger, "COVID-19, Indigenous peoples, local communities and natural resource governance," *PARKS*, vol. 27, p. 57–72, 2021.
- N. Dawson, B. Coolsaet, E. Sterling, R. Loveridge, N. D. Gross-Camp, S. Wongbusarakum, K. Sangha, L. Scherl, H. P. Phan, N. Zafra-Calvo, W. Lavey, P. Byakagaba, C. J. Idrobo, A. Chenet, N. Bennett, S. Mansourian and F. Rosado-May, "The role of Indigenous peoples and local communities in effective and equitable conservation," *Ecology and Society*, vol. 26, no. 3, 2021.
- G. R. Renom, D. M. Mwamidi and P. Domínguez, "Holistic ethnographies of East African customary pastoral commons needed?," *Current Opinion in Environmental Sustainability*, vol. 43, pp. 83-90, 2020.
- K. Absolon, "Indigenous Wholistic Theory: A Knowledge Set for Practice," *First Peoples Child & Family Review*, vol. 5, no. 2, p. 74–87, 2020.
- A. C. Bélisle, A. Wapachee and H. Asselin, "From landscape practices to ecosystem services: Landscape valuation in Indigenous contexts," *Ecological Economics*, vol. 179, no. 106858, 2021.
- E. S. Brondízio, Y. Aumeeruddy-Thomas, P. Bates, J. Carino, Á. Fernández-Llamazares, M. F. Ferrari, K. Galvin, V. Reyes-García, P. McElwee and Z. Molnár, "Locally Based, Regionally Manifested, and Globally Relevant: Indigenous and Local Knowledge, Values, and Practices for Nature," *Annual Review of Environment and Resources*, vol. 46, no. 1, p. 481–509, 2021.
- N. Kurashima, J. Jeremiah, A. Whitehead, J. Tulchin, M. Browning and T. Duarte, "Āina Kaumaha: The Maintenance of Ancestral Principles for 21st Century Indigenous Resource Management," *Sustainability*, vol. 10, no. 3975, 2018.
- B. McGreavy, D. Ranco, J. Daigle, S. Greenlaw, N. Altvater, T. Quiring, N. Michelle, J. Paul, M. Binette, B. Benson and A. Sutton, "Science in Indigenous homelands: Addressing power and justice in sustainability science from/with/in the Penobscot River," *Sustainability Science*, vol. 16, no. 3, p. 937–947, 2021.
- F. Berkes, G. P. Kofinas and F. S. Chapin, "Conservation, Community, and Livelihoods: Sustaining, Renewing, and Adapting Cultural Connections to the Land," in *Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World*, Springer, 2009, p. 129–147.
- P. Dominguez, A. Bourbouze, S. Demay, G. D and N. Kosoy, "Diverse Ecological, Economic and Socio-Cultural Values of a Traditional Common Natural Resource Management System in the Moroccan High Atlas: The Ait Ikiss tagdalts", *Environmental Values*, vol. 21, pp. 277-296, 2012.
- S. Caillon, G. Cullman, B. Verschuuren and E. J. Sterling, "Moving beyond the human--nature dichotomy through biocultural approaches: Including ecological well-being in resilience indicators," *Ecology & Society*, vol. 22, no. 4, p. 1–10, 2017.

- E. Gómez-Baggethun, E. Corbera and V. Reyes-García, "Traditional Ecological Knowledge and Global Environmental Change: Research findings and policy implications," *Ecology and Society : A Journal of Integrative Science for Resilience and Sustainability*, vol. 18, no. 4, 2013.
- E. Palazzo and D. K. Bardsley, "Adaptive mechanisms in a continuing landscape: Assessing biocultural diversity as a form of resilience," *Journal of Cultural Heritage Management and Sustainable Development*, 2021.
- G. Walters, J. A. Fraser, N. Picard, O. Hymas and J. Fairhead, "Deciphering Anthropocene African tropical forest dynamics: how social and historical sciences can elucidate forest cover change and inform forest management," *Anthropocene*, vol. 27, pp. 1-7, 2019.
- CBD, "Compilation of Views Received on use of the term "Indigenous Peoples and Local Communities," UNEP, Montreal, 2013.
- H. C. Jonas, "Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs): Evolution in International Biodiversity Law", Chapter 10 in *Biodiversity and Nature Protection Law*, edited by Elisa Morgera and Jona Razzaque," 2017. [Online]. Available: <https://www.elgar.com/shop/usd/biodiversity-and-nature-protection-law-9781783474240.html>.
- J. Sukhera, "Narrative Reviews: Flexible, Rigorous, and Practical," *Journal of Graduate Medical Education*, vol. 14 , no. 4, p. 414–417, 2022.
- R. Ferrari, "Writing narrative style literature reviews," *Medical Writing*, vol. 24, no. 4, p. 230–235, 2015.
- J.-M. Bae, "Narrative reviews," *Epidemiology and Health*, vol. 36, no. e2014018, 2014.
- T. Greenhalgh, G. Robert, F. Macfarlane, P. Bate, O. Kyriakidou and R. Peacock, "Storylines of research in diffusion of innovation: A meta-narrative approach to systematic review.," *Social Science & Medicine*, vol. 61, no. 2, p. 417–430, 2005.
- D. Levac, H. Colquhoun and K. K. O'Brien, "Scoping studies: Advancing the methodology," *Implementation Science*, vol. 5, no. 1, p. 69, 2010.
- J. Studley, *Indigenous Sacred Natural Sites and Spiritual Governance The Legal Case for Juristic Personhood (E-book)*, Abingdon, Oxon; New York, NY: Routledge, 2019.
- N. Ban, E. Wilson and D. Neasloss, "Strong historical and ongoing indigenous marine governance in the northeast Pacific Ocean: A case study of the Kitsoo/Xai'xais First Nation," *Ecology and Society*, vol. 24, no. 4, 2019.
- J. Gould, D. Smyth, W. Rassip, P. Rist and K. Oxenham, "Recognizing the contribution of Indigenous Protected Areas to marine protected area management in Australia," *Maritime Studies*, 2021.
- E. Estrada-Castillón, J. Á. Villarreal-Quintanilla, J. A. Encina-Domínguez, E. Jurado-Ybarra, L. G. Cuéllar-Rodríguez, P. Garza-Zambrano, J. R. Arévalo-Sierra, C. M. Cantú-Ayala, W. Himmelsbach and

- M. M. Salinas-Rodríguez, "Ethnobotanical biocultural diversity by rural communities in the Cuatrociénegas Valley, Coahuila; Mexico," . *Journal of Ethnobiology and Ethnomedicine*, vol. 17, no. 1, p. 21, 2021.
- G. Borrini-Feyerabend, "Bio-cultural diversity conserved by indigenous peoples & local communities — examples & analysis," October 2012. [Online]. Available: <https://www.iccaconsortium.org/wp-content/uploads/2015/08/publication-ceesp-briefing-note-10-companion-en.pdf>.
  - P. Mühlhäusler, "Linguistic Ecology (1st ed.)," Taylor and Francis, 2002.
  - D. M. Mwamidi, Nunow, A. A and P. Dominguez, "Customary ecological conservation of Mwanda-Marungu Pastoral Commons in Taita Hills, south-west Kenya," *African Journal of Range & Forage Science*, vol. 40, no. 1, pp. 94-106, 2023.
  - UNEP-WCMC and ICCA Consortium, Stewart, J; Gosling, J; Corrigan, C; Jonas, H, C; Vaziri Zanjani, L; Rubis, J,, "A global spatial analysis of the estimated extent of territories and areas conserved by Indigenous peoples and local communities. In: Territories of Life: 2021 Report. UNEP-WCMC (Cambridge, UK) and ICCA Consortium (worldwide)," 2021. [Online]. Available: <https://report.territoriesoflife.org/global-analysis/>.
  - WWF; UNEP-WCMC; SGP/ICCA-GSI; LM, TNC; CI; WCS; EP; ILC-S; CM; IUCN;, "The State of Indigenous Peoples' and Local Communities' Lands and Territories: A technical review of the state of Indigenous Peoples' and Local Communities' lands, their contributions to global biodiversity conservation and ecosystem services, the pressur," 2021.
  - M. Di Marco, S. Chapman, G. Althor, S. Kearney, C. Besancon, N. Butt, J. M. Maina, H. P. Possingham, K. Rogalla-von-Bieberstein and O. Venter, "Changing trends and persisting biases in three decades of conservation science," *Global Ecology and Conservation*, vol. 10, p. 32–42, 2017.
  - J. Blythe, D. Armitage, G. Alonso, D. Campbell, A. C. Esteves Dias, G. Epstein, M. Marschke and P. Nayak, "Frontiers in coastal well-being and ecosystem services research: A systematic review," *Ocean & Coastal Management*, vol. 185, no. 105028, 2020.
  - P. L. H. R. Pert, K. Maclean, A. Dale, P. Rist, J. Schmider, L. Talbot and L. Tawake, "Mapping cultural ecosystem services with rainforest aboriginal peoples: Integrating biocultural diversity, governance and social variation," *Ecosystem Services*, vol. 13, p. 41–56, 2015.
  - F. M. Resende, J. Cimon-Morin, M. Poulin, L. Meyer, D. C. Joner and R. Loyola, "The importance of protected areas and Indigenous lands in securing ecosystem services and biodiversity in the Cerrado," *Ecosystem Services*, vol. 49, no. 101282, 2021.
  - P. Nimwegen, F. J. Van Leverington, S. Jupiter and M. Hockings, *Conserving our sea of islands: State of protected and conserved areas in Oceania* (eds), Gland, Switzerland: IUCN, 2022.
  - H. Govan and M. Arju, "Pacific nations are on the path of holistic ocean governance: the 30 by 30 campaign may destroy that without major changes," 2021. [Online]. Available:

<https://www.iccaconsortium.org/index.php/2021/04/15/30-by-30-may-destroy-pacific-holistic-ocean-governance/>.

- H. Govan and M. Arju, "'30 by 30' is a distraction, keep the focus on Indigenous and locally-led holistic ocean stewardship," 2020. [Online]. Available: <https://www.iccaconsortium.org/index.php/2020/12/18/30-by-30-distraction-indigenous-holistic-ocean/>.
- S. L. Newell, N. Nagabhatla, N. C. Doubleday and A. Bloecker, "The Potential for Locally Managed Marine Area (LMMAs) as a Participatory Strategy for Coastal and Marine Ecosystems-the Global Commons," *OIDA International Journal of Sustainable Development*, vol. 12, no. 04, pp. 47-62, 2019.
- M. Samoily, K. Osuka, N. Muthiga and A. Harris, *Locally managed fisheries in the Western Indian Ocean: a review of past and present initiatives*, iv + 40p. WIOMSA. WIOMSA Book Series 17, WIOMSA, 2017.
- S. Roccliffe, S. Peabody, M. Samoily and J. P. Hawkins, "Towards a network of Locally Managed Marine Areas (LMMAs) in the Western Indian Ocean," *PLoS ONE*, vol. 9, no. 7, 2014.
- H. Govan and W. Lalavanua, "Status of Community-based Fisheries Management in Pacific Islands Countries and Territories: survey report. Noumea, New Caledonia," 2022. [Online]. Available: [https://purl.org/spc/digilib/doc/H\\_uNgzxUo7kB36r](https://purl.org/spc/digilib/doc/H_uNgzxUo7kB36r).
- R. E. Johannes, "The Renaissance of Community-Based Marine Resource Management in Oceania," *Annu. Rev. Ecol. Syst.*, vol. 33, pp. 317-340, 2002.
- J. R. Rohe, H. Govan, A. Schlüter and S. C. Ferse, "A legal pluralism perspective on coastal fisheries governance in two Pacific Island countries," *Marine Policy*, Vols. 100, pp.90-97. , 2019.
- J. E. Fa, J. E. Watson, I. Leiper, P. Potapov, T. D. Evans, N. D. Burgess, Z. Molnár, Á. Fernández-Llamazares, T. Duncan, S. Wang and et-al, "Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscapes," *Frontiers in Ecology and the Environment*, vol. 18, no. 3, p. 135–140, 2020.
- M. H. Rahman and M. J. Fardusi, "Indigenous Plant Utilization and Farming System of Garo Tribe in North-East Bangladesh: A Means of Sustainable Biodiversity Conservation," *Journal of Forest and Environmental Science*, vol. 28, no. 2, p. 84–96, 2012.
- A. Schlingmann, S. Graham, P. Benyei, E. Corbera, I. Martinez Sanesteban, A. Marelle, R. Soleymani-Fard and V. Reyes-García, "Global patterns of adaptation to climate change by Indigenous Peoples and local communities. A systematic review," *Current Opinion in Environmental Sustainability*, vol. 51, p. 55–64, 2021.
- A. Charles, "People, oceans and scale: Governance, livelihoods and climate change adaptation in marine social–ecological systems," *Current Opinion in Environmental Sustainability*, vol. 4, no. 3, p. 351–357, 2012.

- S. Kumari, A. Chauhan and V. Shankar, "Assessment of climate change implications on landslides in mid and high hills of Himachal Pradesh, India," *Arabian Journal of Geosciences*, vol. 14, no. 14, p. 1323, 2021.
- T. K. Loch and M. Riechers, "Integrating indigenous and local knowledge in management and research on coastal ecosystems in the Global South: A literature review," *Ocean & Coastal Management*, vol. 212, no. 105821, 2021.
- R. I. Perry, R. E. Ommer, M. Barange and F. Werner, "The challenge of adapting marine social-ecological systems to the additional stress of climate change," *Current Opinion in Environmental Sustainability*, vol. 2, no. 5-6, p. 356–363, 2010.
- M. Vierros, "Communities and blue carbon: the role of traditional management systems in providing benefits for carbon storage, biodiversity conservation and livelihoods," *Climatic Change*, vol. 140, p. 89–100, 2017.
- B. Vogel, L. Yumagulova, G. McBean and K. A. Charles Norris, "Indigenous-Led Nature-Based Solutions for the Climate Crisis: Insights from Canada," *Sustainability*, vol. 14, no. 11, 2022.
- J. Middleton, C. A. A. Jones-Biton, S. I. W. M. N. Pollock, C. Flowers and L. Harper S, "We're people of the snow:" Weather, climate change, and Inuit mental wellness. *Social Science & Medicine*," *Social Science & Medicine*, vol. 262, no. 113137, 2020.
- J. Sansoulet, M. Therrien, D. J. P. G. J. Desriac, S. N and P. Vanderlinden J, "An update on Inuit perceptions of their changing environment, Qikiqtaaluk (Baffin Island, Nunavut)," *Elem Sci Anth*, vol. 8, no. 1, 2020.
- K. R. S. Erickson and T. Mustonen, "Increased prevalence of open water during winter in the Bering Sea: Cultural consequences in Unalakleet, Alaska, 2022.," *Oceanography*, vol. 35, no. 3-4, p. 180–188, 2022.
- I. Haag, K. A. Kassam, T. Senftl, H. Zandler and S. C, "Measurements meet human observations: integrating distinctive ways of knowing in the Pamir Mountains of Tajikistan to assess local climate change," *Climate Change*, vol. 165, no. 5, pp. 1-22, 2021.
- V. Negi, S. Takur, R. Dhyani, D. Bhatt I and S. Rawal R, "Climate Change Observations of Indigenous Communities in the Indian Himalaya," *Weather, Climate and society*, vol. 13, pp. 245-257, 2021.
- W. V. Reid, H. A. Mooney, A. Cropper, D. Capistrano, R. Carpenter, K. Chopra, P. Dasgupta, T. Dietz, A. K. Duraiappah and R. Hassan, "The importance of protected areas and Indigenous lands in securing ecosystem services and biodiversity in the Cerrado," *Ecosystem Services*, vol. 49, no. 101282, 2021.
- J. N. Paing, L. G. J. Van Bussel, R. A. Gomez and L. G. Hein, "Ecosystem services through the lens of indigenous people in the highlands of Cordillera Region, Northern Philippines," *Journal of Environmental Management*, vol. 308, no. 114597, 2022.

- S. V. Negi, S. S. Thakur, R. Dhyani, D. I. Bhatt and S. R. Rawal, "Climate Change Observations of Indigenous Communities in the Indian Himalaya," *Weather, Climate and Society*, vol. 13, pp. 245-257, 2021.
- I. Haag, K. Kassam, T. Senftl, H. Zandler and C. Samimi, "Measurements meet human observations: integrating distinctive ways of knowing in the Pamir Mountains of Tajikistan to assess local climate change," *Climate Change*, vol. 165, no. 5, pp. 1-22, 2021.
- L. M. Diele-Viegas and C. F. D. Rocha, "Why releasing mining on Amazonian indigenous lands and the advance of agrobusiness is extremely harmful for the mitigation of world's climate change? Comment on Pereira et al. (Environmental Science & Policy 100 (2019) 8–12)," *Environmental Science & Policy*, vol. 103, p. 30–31, 2020.
- N. Kam, "Comparison of Rural Livelihoods between Government-led and Local-led Initiatives under Community-based Forest Management: A Case Study in Chin State, Myanmar," in *International Conference and Utility Exhibition on Energy, Environment and Climate Change (ICUE)*, 2020.
- J. D. Lau, J. E. Cinner, M. Fabinyi, G. G. Gurney and C. C. Hicks, "Access to marine ecosystem services: Examining entanglement and legitimacy in customary institutions," *World Development*, vol. 126, no. 104730, 2020.
- C. L. Martin, S. Momtaz, T. Gaston and N. A. Moltschaniwskyj, "A systematic quantitative review of coastal and marine cultural ecosystem services: Current status and future research," *Marine Policy*, vol. 74, p. 25–32, 2016.
- Watkin, L., "My island home: Re-presenting identities for Torres Strait Islanders living outside the Torres Strait," *Journal of Australian Studies*, vol. 36, no. 2, p. 41–153, 2012.
- A. R. Rasheed, "Marine protected areas and human well-being – A systematic review and recommendations," *Ecosystem Services*, vol. 41, no. 101048, 2020.
- K. K. Sangha, S. Maynard, J. Pearson, P. Dobriyal, R. Badola and S. A. Hussain, "Recognising the role of local and Indigenous communities in managing natural resources for the greater public benefit: Case studies from Asia and Oceania region," *Ecosystem Services*, vol. 39, no. 100991, 2019.
- K. K. Sangha, A. Le Brocque, R. Costanza and Y. Cadet-James, "Ecosystems and indigenous well-being: An integrated framework," *Global Ecology and Conservation*, vol. 4, p. 197–206, 2015.
- C. Gafner-Rojas, "Indigenous languages as contributors to the preservation of biodiversity and their presence in international environmental law," *Journal of International Wildlife Law & Policy*, vol. 23, no. 1, p. 44–61, 2020.
- O. Mclvor, "Indigenous Language Revitalization and Applied Linguistics: Parallel Histories, Shared Futures?," *Annual Review of Applied Linguistics*, vol. 40, p. 78–96, 2020.



- H. Karst, "This is a holy place of Ama Jomo": Buen vivir, indigenous voices and ecotourism development in a protected area of Bhutan," *Journal of Sustainable Tourism*, vol. 25, no. 6, p. 746–762, 2017.
- Stoeckl, N; Jarvis, D; Larson, S; Larson, A; Grainger, D; Ewamian Aboriginal Corporation, "Australian Indigenous insights into ecosystem services: Beyond services towards connectedness – People, place and time," *Ecosystem Services*, vol. 50, no. 101341, 2021.
- E. M. M. Vélez, J. M. L. Ríos, S. C. Marulanda, M. C. V. Franco, O. D. M. d. L. Rosa and D. M. H. Holguín, "Aproximación a la concepción de la salud mental para los pueblos indígenas de Colombia," *Ciência & Saúde Coletiva*, vol. 25, no. 3, p. 1157–1166, 2020.
- S. A. Rankoana, "Sustainable Use and Management of Indigenous Plant Resources: A Case of Mantheding Community in Limpopo Province, South Africa," *Sustainability*, vol. 8, no. 3, 2016.
- Burtseva, T., Uvarova, T., Savvina, M., Shadrin, V., Avrusin, S., & Chasnyk, V. (2013). Health status of Native people living in the Republic of Sakha (Yakutia). *International Journal of Circumpolar Health*, 72. <https://doi.org/10.3402/ijch.v72i0.21166>.
- K. Swiderska, A. Argumedo, C. Wekesa, L. Ndalilo, Y. Song, A. Rastogi and P. Ryan, "Indigenous Peoples' Food Systems and Biocultural Heritage: Addressing Indigenous Priorities Using Decolonial and Interdisciplinary Research Approaches," *Sustainability (Switzerland)*, vol. 14, no. 18, 2022.
- G. G. Gurney, E. S. Darling, G. N. Ahmadi, V. N. Agostini, N. C. Ban, J. Blythe, J. Claudet, G. Epstein, H.-C. A. Estradivari, H. Jonas, D. Armitage, S. J. Campbell, C. Cox and W. R. Friedman, 2021.
- H. D. Jonas, G. Ahmadi, H. Bingham, J. Briggs, S. Butchart, J. Cariño, O. Chassot, S. Chaudhary, E. Darling and A. DeGemmis, "Equitable and effective area-based conservation: Towards the conserved areas paradigm," *Parks*, vol. 27, p. 71–84, 2021.
- H. G. J. Alves-Pinto, H. Jonas, V. Maioli, A. Balmford, A. Ewa Latawiec, R. Crouzeilles and B. Strassburg, "Opportunities and challenges of other effective area-based conservation measures (OECMs) for biodiversity conservation," *Perspectives in Ecology and Conservation*, vol. 19, no. 2, p. 115–120, 2021.
- S. Woodley, J. Jarvis and A. Rhodes, "Ensuring area-based conservation meets the twin challenges of biodiversity loss and climate change," *Parks Stewardship Forum*, vol. 37, no. 3, 2021.
- C. J. Lemieux, P. A. Gray, R. Devillers, P. A. Wright, P. Dearden, E. A. Halpenny, M. Groulx, T. J. Beechey and K. Beazley, "How the race to achieve Aichi Target 11 could jeopardize the effective conservation of biodiversity in Canada and beyond," *Marine Policy*, vol. 99, p. 312–323, 2019.
- IUCN, "Resolution WCC-2012-Res-077 Promoting Locally Managed Marine Areas as a socially inclusive approach to meeting area-based conservation and Marine Protected Area targets World Conservation Congress, Jeju," 2012. [Online]. Available: <https://portals.iucn.org/library/node/44044>.

- N. Vivier, "Les Biens Communaux En France." In *Les Propriétés Collectives Face Aux Attaques Libérales (1750-1914): Europe Occidentale et Amérique Latine*, edited by Danielle Demélas and Nadine Vivier, Rennes, France, Presses universitaires de Rennes, 2003, p. 139–56.
- G.-D. Marillia, *La Section de Commune*. 6ième, Paris, France: Les Editions la vie communale, 2014.
- C. Excoffier, *Mille ans de révoltes paysannes: une histoire d'émancipation et de défense des communs*, Marseille, France: Collection Université populaire, l'Atinoir, 2019.
- M. Pouvreau and Q. Ragache, *Biens Sectionaux de l'Est Cantal. 8,900 Biens - 21,61 Hectares.* Conservatoire Botanique National du Massif Central; Syndicat des Territoires de l'Est Cantal. France, 2022.
- J.-F. Joye, *Communaux: les pérégrinations d'un phénix.* In "Les "Communaux" Au XXIe Siècle : Une Propriété Collective Entre Histoire et Modernité", edited by Jean-François Joye., Chambéry, France: Presses Universitaires Savoie Mont Blanc., 2021, pp. 23-57.
- A. M. F. Estradivari, D. S. Adhuri, S. C. A. Ferse, I. Sualia, D. A. Andradi-Brown, S. J. Campbell, M. Iqbal, H. D. Jonas, M. E. Lazuardi, H. Nanlohy, F. Pakiding, N. K. S. Pusparini, H. C. Ramadhana, T. Ruchimat and I. W. V. Santiadji, "Marine conservation beyond MPAs: Towards the recognition of other effective area-based conservation measures (OECMs) in Indonesia," *Marine Policy*, vol. 137, no. 104939, 2022.
- (CBD), Convention on Biological Diversity, "Kunming Declaration: "Ecological civilization: building a shared future for all life on Earth". Declaration from the High-Level Segment of the UN Biodiversity Conference 2020 Part 1," 2021. [Online]. Available: <https://www.cbd.int/doc/c/c2db/972a/fb32e0a277bf1ccfff742be5/cop-15-05-add1-en.pdf>.
- K. A. Artelle, M. Zurba, J. Bhattacharyya, D. E. Chan, K. Brown, J. Housty and F. Moola, "Supporting resurgent Indigenous-led governance: A nascent mechanism for just and effective conservation," *Biological Conservation*, vol. 240, no. 108284, 2019.
- F. Moola and R. Roth, "Moving beyond colonial conservation models: Indigenous Protected and Conserved Areas offer hope for biodiversity and advancing reconciliation in the Canadian boreal forest," *Environmental Reviews*, vol. 27, no. 2, p. 200–201, 2019.
- Parcs Canada, "We rise together: Achieving pathway to Canada target 1 through the creation of Indigenous protected and conserved areas in the spirit and practice of reconciliation : the Indigenous Circle of Experts' report and recommendations," 2018.
- T. Mustonen and P. Feodoroff, *Indigenous and traditional rewilding in Finland and Sápmi: Enacting the rights and governance of North Karelian ICCAs and Skolt Sámi*. In D. Heath & J. M. O'Brien (Eds.), *Allotment stories: Indigenous land relations under settler siege*, University of Minne, 2021.
- M. Bassi, "Territories of Life in Europe Towards a Classification of the Rural Commons for Biodiversity Conservation," *Antropologia Pubblica*, vol. 8, no. 2, 2022.

- R. Louvin and P. Alessi N, "Un nouveau souffle pour les consortheries de la Vallée d'Aoste," *Revue de géographie alpine*, vol. 109, no. 1, 2021.
- T. Haller, *Balancing the Commons in Switzerland: Institutional Transformations and Sustainable Innovations*. Earthscan Studies in Natural Resource Management (eds), Abingdon, Oxon ; New York, NY: Routledge, 2021.
- E. Ostrom, *Governing the Commons. The Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press., 1990.
- R. Netting, *Balancing on an Alp: Ecological Change and Continuity in a Swiss Mountain Community*, Cambridge: Cambridge University Press, 1981.
- R. Wunderli, *Scopes and challenges of a huge corporation over time. The case of the Korporation Uri (Canton Uri)* pp. 63-104 In *Balancing the commons in Switzerland: institutional transformations and sustainable innovations*, Routledge, 2021.
- *Community Engagement in Decisions Relating to Land*, "Scottish Land Commission," 2019. [Online]. Available: [https://www.landcommission.gov.scot/downloads/5dde684465594\\_GOOD%20PRACTICE%20PROTOCOL\\_web%2019.11.19.pdf](https://www.landcommission.gov.scot/downloads/5dde684465594_GOOD%20PRACTICE%20PROTOCOL_web%2019.11.19.pdf).
- K. Sharma, G. M. M. Walters and J. Ghazoul, "Glocal woodlands – the rescaling of forest governance in Scotland," *Land Use Policy*, In press.
- *Iniciative comunales*, "The Valdeavellano de Tera Declaration on the Recognition and Defence of the Commons and ICCAs in Spain," Valdeavellano, Spain, 2013.
- S. Vanuxem, *La propriété de la terre. Le monde qui vient*, Marseille: Wildproject., 2022.
- O. Hymas, J. J-F and G. Walters, *Les communs fonciers peuvent servir de modèle pour relever les défis écologiques*, *Le Monde*. 28 August, 2021.
- M. T. Farvar, G. Borrini-Feyerabend, J. Campese, T. Jaeger, H. C. Jonas and S. Stevens, "Whose 'Inclusive Conservation'? Policy Brief of the ICCA Consortium no. 5," 2018. [Online]. Available: <https://www.iccaconsortium.org/index.php/2>.
- G. Reed, N. D. Brunet, S. Longboat and D. C. Natcher, "Indigenous guardians as an emerging approach to indigenous environmental governance," *Conservation Biology*, vol. 35, no. 1, p. 179–189, 2021.
- T. C. Tran, N. D. K. S. Authority, J. Bhattacharyya and N. C. (. Ban, "Borders don't protect areas, people do": Insights from the development of an Indigenous Protected and Conserved Area in Kitasoo/Xai'xais Nation Territory," *FACETS*, vol. 5, no. 1, p. 922–941, 2020.
- P. Rist, W. Rassip, D. Yunupingu, J. Wearne, J. Gould, M. Dulfer-Hyams, E. Bock and D. Smyth, "Indigenous protected areas in Sea Country: Indigenous-driven collaborative marine protected areas

in Australia. Aquatic Conservation," *Marine and Freshwater Ecosystems*, vol. 29, no. S2, p. 138–151, 2019.

- E. Macpherson and F. C. Ospina, "The pluralism of river rights in Aotearoa, New Zealand and Colombia," 2020. [Online]. Available: <https://doi.org/10.31235/osf.io/rdh4x>.
- B. Verschuuren, "Indigenous Sacred Natural Sites and Spiritual Governance: The legal case for Juristic Personhood," *Conservation and Society*, vol. 17, no. 2, p. 218, 2019.
- Australian Government: Department of Climate Change, Energy, the Environment and Water, "Indigenous Protected Areas," 23 June 2022. [Online]. Available: <https://www.dcceew.gov.au/environment/land/indigenous-protected-areas>.
- Ngadju Conservation, Australia, "Ngadju Conservation," 2022. [Online]. Available: <https://ngadjuconservation.org/>.
- F. Nelson, P. Muyamwa-Mupeta, S. Muyengwa, E. Sulle and D. Kaelo, "Progress or regression? Institutional evolutions of community-based conservation in eastern and southern Africa," *Conservation Science and Practice*, vol. 3, no. 1, p. e302, 2021.
- A. Burgos-Ayala, A. Jiménez-Aceituno, A. M. Torres-Torres, D. Rozas-Vásquez and D. P. M. Lam, "Indigenous and local knowledge in environmental management for human-nature connectedness: A leverage points perspective," *Ecosystems and People*, vol. 16, no. 1, p. 290–303, 2020.
- S. Augustine and P. Dearden, "Changing paradigms in marine and coastal conservation: A case study of clam gardens in the Southern Gulf Islands, Canada," *The Canadian Geographer / Le Géographe Canadien*, vol. 58, no. 3, p. 305–314, 2014.
- C. Fohringer, G. Rosqvist, N. Inga and N. J. Singh, "Reindeer husbandry in peril? How extractive industries exert multiple pressures on an Arctic pastoral ecosystem," *People and Nature*, vol. 3, no. 4, p. 872–886, 2021.
- J. J. Scullion, K. A. Vogt, B. Drahota and S. L. M. Winkler-Schor, "Conserving the Last Great Forests: A Meta-Analysis Review of the Drivers of Intact Forest Loss and the Strategies and Policies to Save Them," *Frontiers in Forests and Global Change*, vol. 2, no. 62, 2019.
- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), "Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [Díaz S, Settele J, Brondízio ES, et al. (Eds)]," 2019. [Online]. Available: <https://ipbes.net/global-assessment>.
- Rights and Resources Initiative (RRI), "Rights-Based Conservation: The path to preserving Earth's biological and cultural diversity? Technical Report. RRI:," Washington, D.C., 2020.
- Cenesta, "Support for Protected and Conserved Areas and Governance in Iran," Centre for Sustainable Development and Environment,, Tehran, Iran, 2017.

- J. T. Betts, G. R. Urquhart, J. Román-Heracleo and J. C. Flores Mc.rea, "Effects of deforestation from cattle ranching over time on protected rainforest streams in the Rama-Kriol Territory, Nicaragua.," *Hydrobiologia*, vol. 849, p. 4547–4568, 2021.
- B. Evine-Binet, "'Ibola Dja Bana Ba Massaha la Réserve Forestière de Tous Les Enfants ," Est Née Au Gabon." Mongabay, March, 2022. [Online]. Available: <https://fr.mongabay.com/2022/03/ibola-dja-bana-ba-massaha-la-reserve-forestiere-de-tous-les-enfants-est-nee-au-gabon/>.
- H. Philsooph, "Review of Frontier Nomads of Iran: A Political and Social History of the Shahsevan [Review of Review of Frontier Nomads of Iran: A Political and Social History of the Shahsevan, by R. Tapper]," *The Journal of the Royal Anthropological Institute*, vol. 5, no. 2, p. 334–335, 1999.
- B. Pokorny, P. Pacheco, W. de Jong and S. K. Entenmann, "Forest frontiers out of control: The long-term effects of discourses, policies, and markets on conservation and development of the Brazilian Amazon," *Ambio*, vol. 50, no. 12, p. 2199–2223, 2021.
- C. Fohringer, G. Rosqvist, N. Inga and N. J. Singh, "Reindeer husbandry in peril?—How extractive industries exert multiple pressures on an Arctic pastoral ecosystem," *People and Nature*, vol. 3, no. 4, p. 872–886, 2021.
- T. Mustonen, "Endemic time-spaces of Finland: from wilderness lands to 'vacant production spaces'. Fennia," *International Journal of Geography*, vol. 195, no. 1, p. 5–24, 2017.
- Á. Fernández-Llamazares, T. Julien, Michael, G. C, P. Aili, M. O. S. Sacha, C. Mar and S. B. Eduardo, "Reframing the Wilderness Concept Can Bolster Collaborative Conservation," *Trends in Ecology & Evolution*, vol. 35, no. 9:7, 2020.
- Y. Y. Runtuboi, "Oil Palm Plantations, Forest Conservation and Indigenous Peoples in West Papua. What Lies Ahead?," *Forest and Society*, vol. 5, no. 1, 2020.
- I. M. Radhuber and S. A. Radcliffe, "Contested Sovereignties: Indigenous disputes over plurinational resource governance. Environment and Planning E," *Nature and Space*, vol. 25148486211068476, 2022.
- ICCA Consortium, "Territories of Life: 2021 Report. Executive Summary," 2021. [Online]. Available: <https://report.territoriesoflife.org/executive-summary/>.
- A. Papadopoulos, "Exploring governance mechanisms and Mi'kmaw values and aspirations for Indigenous Protected and Conserved Areas (IPCAs) in Nova Scotia. diversity, governance and social variation," *Ecosystem Services*, vol. 13, p. 41–56, 2021.
- J. Corntassel, "Re-envisioning Resurgence: Indigenous pathways to decolonization and sustainable self-determination", 1(1): 86-101 in Decolonization," *Decolonization: Indigeneity, Education & Society*, vol. 1 , no. 1, pp. 86-101, 2012.

- H. Whaanga, P. Wehi, M. Cox, T. Roa and I. Kusabs, "Māori oral traditions record and convey indigenous knowledge of marine and freshwater resources. New Zealand," *Journal of Marine and Freshwater Research*, vol. 52, pp. 1-10, 2018.
- I. Hirt, "Mapping Dreams/Dreaming Maps: Bridging Indigenous and Western Geographical Knowledge. Cartographica;," *The International Journal for Geographic Information and Geovisualization*, vol. 47, no. 2, p. 105–120, 2012.
- E. Iralu, "Putting Indian Country on the Map: Indigenous Practices of Spatial Justice," *Antipode*, vol. 53, no. 5, p. 1485–1502, 2021.
- S. Wilson, *Research is Ceremony: Indigenous Research Methodology*, Fernwood Publishing, 2008, pp. 35-39.
- S. Wilson, A. V. Breen, L. DuPré and (Eds), *Research and Reconciliation: Unsettling Ways of Knowing Through Indigenous Relationships.*, Canadian Scholars' Press Inc., 2019.
- J. E. Krauss, "Decolonizing, conviviality and convivial conservation: Towards a convivial SDG 15, life on land?," *Journal of Political Ecology*, vol. 28, no. 1 Article 1, 2021.
- H. D. Jonas, A. Kothari and H. Shrumm, "Legal and institutional aspects of recognizing and supporting conservation by indigenous peoples and local communities," 2012. [Online]. Available: <https://www.iccaconsortium.org/index.php/2012/09/30/synthesis-report/>.
- R. Y. Fidler, G. N. Ahmadi, A. C. C. Amkieltiela, G. L. Estradivari, C. Handayani, S. L. Mahajan, M. B. Mascia, F. Pakiding, D. A. Andradi-Brown, S. J. Campbell, K. Claborn, M. De Nardo, H. E. Fox, D. Gill and N. I. Hidayat, "Participation, not penalties: Community involvement and equitable governance contribute to more effective multiuse protected areas," *Science Advances*, vol. 8, no. 18, p. eabl8929, 2022.
- R. C. Jones, Rigg and L. Lee, "Haida marine planning: First Nations as a partner in marine conservation," *Ecology and Society*, vol. 15, no. 1, p. 12, 2010.
- M.-S. Fletcher, H. Rebecca, D. Wolfram and P. Lisa, "Indigenous Knowledge and the Shackles of Wilderness," *Proceedings of the National Academy of Sciences*, vol. 118, no. 40: e2022218118, 2021.
- K. A. Artelle, J. Stephenson, C. Bragg, J. A. Housty, W. G. Housty, M. Kawharu and N. J. Turner, "Values-led management: The guidance of place-based values in environmental relationships of the past, present, and future," *Ecology & Society*, vol. 23, no. 3, 2018.
- S. Awāsis, "Anishinaabe time": Temporalities and impact assessment in pipeline reviews., " *Journal of Political Ecology*, vol. 27, no. 1, 2020.
- S. Awāsis, "Gwaabaw: Applying Anishinaabe harvesting protocols to energy governance," *The Canadian Geographer / Le Géographe Canadien*, vol. 65, pp. 8-23, 2020.

- C. Y. Bataille, K. Luke, T. Kruger, S. Malinen, R. B. Allen, A. L. Whitehead and P. O. B. Lyver, "Stakeholder Values Inform Indigenous Peoples' Governance and Management of a Former National Park in New Zealand," *Human Ecology*, vol. 48 , no. 4, p. 439–453, 2020.
- H. Govan, W. Aalbersberg, A. Tawake and J. Parks, "Locally-Managed Marine Areas: A Guide for Practitioners. The Locally-Managed Marine Area Network. USP. Suva, Fiji," 2008. [Online]. Available: <http://www.lmmanetwork.org/files/lmmaguide.pdf>.
- H. Govan, A. Tawake, K. Tabunakawai, J. A. A. Lasgorceix, E. Techera, H. Tafea, J. Kinch, J. Feehely and P. Ifopo, "Community Conserved Areas: A review of status & needs in Melanesia and Polynesia," 2009. [Online]. Available: [https://www.sprep.org/att/IRC/eCOPIES/Pacific\\_Region/422.pdf](https://www.sprep.org/att/IRC/eCOPIES/Pacific_Region/422.pdf).
- Indigenous Circle of Experts, "We rise together: Achieving pathway to Canada target 1 through the creation of Indigenous protected and conserved areas in the spirit and practice of reconciliation," 2018. [Online]. Available: [http://epe.lac-bac.gc.ca/100/201/301/weekly\\_acquisitions\\_list-ef/2018/18-21/publications.gc.ca/collections/collection\\_2018/pc/R62-548-2018-eng.pdf](http://epe.lac-bac.gc.ca/100/201/301/weekly_acquisitions_list-ef/2018/18-21/publications.gc.ca/collections/collection_2018/pc/R62-548-2018-eng.pdf).
- A. Kothari, C. Corrigan, H. D. Jonas, A. Neumann and H. (. Shrumm, "Recognising and Supporting Territories and Areas Conserved By Indigenous Peoples And Local Communities: Global Overview and National Case Studies. Secretariat of the Convention on Biological Diversity, ICCA Consortium, Kalpavriksh, and Natural Justice," Vols. Montreal, Canada. Technical Series no. 64, 160, 2012.
- O. Mclvor, "Indigenous Language Revitalization and Applied Linguistics: Parallel Histories, Shared Futures?," *Annual Review of Applied Linguistics*, 2020.
- D. Smyth, "Indigenous Protected Areas, Australia," in *Managing Protected Areas: A Global Guide: In M. Lockwood, G. Worboys, & A. Kothari (Eds.)*, , Routledge, 2012.
- H. Govan and W. Lalavanua, "The Pacific Way of coastal fisheries management: Status and progress of community-based fisheries management," in press. [Online].
- J.-F. Joye, *Communaux” Au XXIe Siècle : Une Propriété Collective Entre Histoire et Modernité*, edited by Jean-François Joye, Chambéry, France: Presses Universitaires Savoie Mont Blanc., 2021, p. 339–54.
- T. K. Loch and M. Riechers, "Integrating indigenous and local knowledge in management and research on coastal ecosystems in the Global South: A literature review," *Ocean & Coastal Management*, vol. 212, no. 105821, 2021.
- P. Potapov, H. Matthew C, L. Laestadius, S. Turubanova, A. Yaroshenko, C. Thies, W. Smith, Zhuravleva, A. Komarova, S. Minnemeyer and E. E, "The last frontiers of wilderness: Tracking loss of intact forest landscapes from 2000 to 2013," *Science Advances*, vol. 3, no. e1600821, 2018.
- United Nations Economic and Social Commission for West Asia (UN-ESCWA), "Natural Resources," 2022. [Online]. Available: <https://archive.unescwa.org/our-work/natural-resources>. [Accessed 19 01 2020].

