1	The contributions of Indigenous Peoples and Local Communities to ecological
2	restoration
3	
4	Running head: Indigenous Peoples for Ecological Restoration
	Running nead. Indigenous reopies for Leological Restoration
5	
6	Victoria Reyes-García <sup>a,b</sup> , Álvaro Fernández-Llamazares <sup>c</sup> , Pamela McElwee <sup>d</sup> ,
7	Zsolt Molnár <sup>e</sup> , Kinga Öllerer <sup>e, f</sup> , Sarah Jane Wilson <sup>g</sup> , Eduardo Brondizio <sup>h</sup>
8	<sup>a</sup> Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain
9	<sup>b</sup> Institut de Ciència i Tecnologia Ambientals (ICTA), Universitat Autònoma de
10	Barcelona, 08193 Bellatera, Barcelona, Spain
11	<sup>c</sup> Global Change and Conservation (GCC), Helsinki Institute of Sustainability Science
12	(HELSUS), Faculty of Biological and Environmental Sciences, University of Helsinki,
13	Helsinki, Finland
14	<sup>d</sup> Department of Human Ecology, Rutgers University, New Jersey, USA
15	<sup>e</sup> MTA Centre for Ecological Research, GINOP Sustainable Ecosystems Group, 8237
16	Tihany, Hungary
17	<sup>f</sup> Institute of Biology Bucharest, Romanian Academy, 060031 Bucharest, Romania
18	g PARTNERS reforestation network, University of Connecticut, CT, USA
19	h Department of Anthropology, Indiana University, Bloomington, USA
20 21 22 23 24 25 26 27 28 29	Corresponding author: Victoria Reyes-García ICREA Research Professor Institute of Environmental Science and Technology (ICTA-UAB) ICTA-ICP, Edifici Z Carrer de les Columnes Universitat Autònoma de Barcelona E-08193, Bellaterra (Cerdanyola del Vallès-Barcelona) Tel: +34 93 586 8976 E-mail: Victoria.Reyes@uab.cat
31	Author contributions: VRG and EB conceived and designed the research; AFL, KÖ,

32 PM, SJW, ZM conducted the literature review. VRG, AFL, KÖ, PM, SJW, ZM, and EB

wrote and edited the manuscript.

#### Abstract

Indigenous Peoples and Local Communities (IPLC) are affected by global environmental change because they directly rely on their immediate environment for meeting basic livelihood needs. Therefore, safeguarding and restoring ecosystem resilience is critical to support their wellbeing. Based on examples from the literature, we illustrate how IPLC participate in restoration activities maintaining traditional practices, restoring land degraded by outsiders, and joining outside groups seeking to restore ecosystems. Our review also provides examples of how Indigenous and local knowledge can be incorporated in the planning, execution, and monitoring of restoration activities. However, not all restoration initiatives engaging IPLC are beneficial or successful, and the factors that lead to success are not fully known. While local involvement in restoration projects is often mentioned as an element of success, this is primarily associated to projects that actively involve IPLC in co-designing restoration activities affecting their territories, ensure both short-term direct benefits to IPLC and long-term support of the maintenance of restored areas, and recognize IPLC local traditions and customary institutions. Based on these examples, we argue that IPLC should be a more important focus in any post-2020 CBD agenda on restoration.

- **Key words:** Co-management; Cultural Keystone Species; Ecosystem Services;
- 53 Indigenous and Local Knowledge (ILK); Traditional management.

## **Implications**

- Actively involving IPLC in restoration efforts i) can help in site and species selection for restoration, ii) can increase local participation in restoration activities and in the monitoring and maintenance of restored areas, and iii) can provide historical information on ecosystem state and management and an understanding of local successional processes.
- The contribution of IPLC and their knowledge systems to ecological restoration could be more successful if restoration initiatives *i*) recognized IPLC customary institutions, *ii*) were built on partnerships with IPLC from their design, and *iii*) ensure both short-term direct benefits to IPLC and long-term support of the maintenance of restored areas.
- IPLC should also be included in any post-2020 CBD agenda on restoration.



# The contributions of Indigenous Peoples and Local Communities to ecological restoration

Indigenous Peoples and Local Communities (IPLC), generally defined as ethnic groups who are descended from and identify with the original inhabitants of a given region, are affected by global environmental change because they often rely directly on their immediate environments (e.g., local resources, water streams) for meeting basic livelihood needs (Angelsen et al. 2014; Pecl et al. 2017). Degradation of natural resources can negatively affect their food and health sovereignty and overall wellbeing (Golden et al. 2016; Pecl et al. 2017), therefore safeguarding and restoring ecosystem resilience is often critical to support IPLC's wellbeing (Sangha & Russell-Smith 2017). In line with previous scholarly work recognizing the values of indigenous and local knowledge for conservation and development (see Reyes-García 2015 for a review), some researchers have argued that IPLC can be more than recipients of restoration activities, playing an active role in restoring ecosystems (e.g., Shaffer 2010; Wangpakapattanawong et al. 2010; Babai & Molnár 2014; Uprety et al. 2012). However, IPLC's contributions to restoration activities continue to be largely absent in national, regional, and global environmental policy fora (Wehi & Lord 2017). For

national, regional, and global environmental policy fora (Wehi & Lord 2017). For example, Aichi Target 15 of the Convention on Biological Diversity stipulates the goal to restore 15% of degraded ecosystems, but decisions on which areas to restore are mainly based on biological importance and restoration feasibility rather than on local

87 concerns (e.g., Tobón et al. 2017).

In this Opinion Article, we argue for the need to increase the engagement of IPLC in ecological restoration pursuits. We substantiate this argument by illustrating *i*) ways in which IPLC are already participating in restoration activities; *ii*) ways in which Indigenous and Local Knowledge (ILK) has been incorporated in restoration activities;

and *iii*) factors that reportedly lead to successful restoration outcomes and increased wellbeing for IPLC. Our examples come from a literature search on IPLC and restoration conducted in the Web of Science. Our search yielded 413 papers. After a review of abstracts, we retained 120 articles containing both case studies and more generalized treatment of IPLC issues for further detailed review to draw lessons from (See Supplementary Material for methodological details).

## IPLC's participation in restoration activities

IPLC are particularly well positioned to contribute to restore and safeguard ecosystems because they have an intimate knowledge of their lands and resources and the dynamics affecting them (Wehi & Lord 2017) and because they have a vested interest in restoring ecosystems from which they directly benefit (Shaffer 2010; Wangpakapattanawong et al. 2010; Babai & Molnár 2014). Although the global percentage of restoration efforts involving IPLC is unknown, there is evidence that IPLC play an active role in restoring a wide range of ecosystems around the world (Storm & Shebitz 2006; Nagendra 2007; Lyver et al. 2016). We identified three main ways in which IPLC participate in restoration activities: (1) maintaining traditional management and practices; (2) restoring land degraded by outsiders; and (3) joining outside groups seeking to restore ecosystems.

Researchers have documented instances when, through traditional practices, IPLC manage, adapt, and restore the land on which their livelihood depends, sometimes creating new types of highly biodiverse ecosystems (Posey 1985; Babai & Molnár 2014; Comberti et al. 2015). Examples of traditional practices contributing to maintaining and restoring ecosystems include 1) anthropogenic burning purposively altering spatial and temporal aspects of habitat heterogeneity to create diversity (Shaffer

2010; Welch et al. 2013; Trauernicht et al. 2015); 2) waste deposition practices resulting in soil carbon enrichment (Solomon et al. 2016); 3) rotational swidden cultivation systems able to maintain forest cover and plant diversity (Wangpakapattanawong et al. 2010; Singh et al. 2014); 4) interplanting useful plants in native forests thereby increasing forest diversity (Garibaldi & Turner 2004; Ford & Nigh 2015), and 5) scattering species-rich hayseed, and weeding and cleaning meadows to maintain grassland productivity and resilience (Babai & Molnár 2014).

Second, IPLC have also engaged in activities to restore their own lands and waters after these areas had been overexploited or degraded by outsiders. For example, traditional fire regimes have been used to restore overgrown broad-crowned black oak tree stands in California (Long et al. 2003). Similarly, in Alaska, the Qawalangin Tribe received funding to restore coastlines affected by pollution (NOAA 2017). In Nepal, the devolvement of state forests into community control in the 1970s slowed deforestation and led many local communities to safeguard and restore communal forests and watersheds, as these activities increased local ecosystem services (Paudyal et al. 2015). Restoration efforts led by IPLC have also helped to stem the tide of landscape change caused by urbanization or encroachment (Horiuchi et al. 2011). In some cases, restoration efforts have resulted in a change in the local political context, creating a space for assertion of Indigenous spiritual and cultural values to be further reflected in their participation in restoration efforts (Fox et al. 2017).

Finally, IPLC have also contributed to restoration activities initiated by other stakeholders. On the one side, IPLC have been key participants in several country-scale forest restoration efforts in Asia, particularly China and Vietnam (e.g., Clement & Amezaga 2009; He & Lang 2015). However, these campaigns have not always successfully involved farmers or impacted afforestation outcomes given the lack of

clarity of the policies designed at the central level (e.g., Clement & Amezaga 2009) or the neglect of local interests (e.g., He & Lang, 2015). On the other side, IPLC have also taken leadership roles in restoring forests (Paquette et al. 2009; Douterlungne et al. 2010), lakes and rivers (Coombes 2007; Fox et al. 2017), grasslands and drylands (Pellant et al. 2004; Stenseke 2009), mangroves and reefs (Selvam et al. 2003; Trialfhianty & Suadi 2017), and wetlands (Selvam et al. 2003; Henwood et al. 2016). Many of these activities have successfully coupled the goals of ecological restoration and increasing participation of IPLC.

### Using ILK to inform restoration activities

Some authors specifically working with IPLC and restoration have noticed that ILK has often been neglected in ecological restoration programs (e.g., Robertson et al. 2000; Mills 2003; Wehi & Lord 2017), arguably because of what Murphy (2011) calls the "epistemological authority" of Western, objectivist thinking among restoration and conservation ecologists. For instance, traditional IPLC-prescribed burning regimes are often dismissed in policy circles (Welch et al. 2013; Mistry et al. 2016), despite increasing evidence that fire management can contribute to wildfire prevention, climate change mitigation, and landscape heterogeneity (Defossé et al. 2011; Russell-Smith et al. 2015). However, as in other areas of natural resource management (Mistry & Berardi 2016; Díaz et al. 2018), examples exist where ILK has been applied to increase the effectiveness of restoration activities (e.g., Senos et al. 2006; Uprety et al. 2012; Wehi & Lord 2017). Our review notes that ILK has been incorporated in restoration activities primarily in three stages: 1) planning of restoration; 2) execution of restoration; and 3) monitoring of restoration.

First, ILK has been used to identify what species to use and which sites to focus on in restoration efforts. ILK can provide baseline ecosystem information on cultural keystone species, i.e., culturally salient species that shape people's identity (Garibaldi & Turner 2004), or cultural keystone places, i.e., particular places that are critically important for the flow of ecosystem service and to people's lifeways (Cuerrier et al. 2015). To date, in the absence of ILK, many reforestation efforts have resulted in monocultures, compositionally simple mixed forests, or the use of non-native species (e.g., Hua et al. 2016). Reforestation efforts aiming to restoring higher levels of biodiversity have thus turned to ILK for the selection of appropriate native species (Garibaldi & Turner 2004; Wangpakapattanawong et al. 2010), or cultural keystone places (Uprety et al. 2012; Cuerrier et al. 2015; Lepofsky et al. 2017), both in terrestrial and marine environments (Comberti et al. 2015; Thornton et al. 2015). Moreover, given the current debate on how to define a reference state for global restoration (e.g., Kotiaho et al. 2016), ILK is being used to estimate natural baselines for species recovery and to inform restoration targets (Nabhan 2000; Eckert et al. 2018), as -despite the fact that IPLCs can be affected by the Shifting Baseline Syndrome (e.g., Fernández-Llamazares et al. 2015)- IPLC historical continuity in resource use and close cultural connection to their environments puts them on a privileged position to contribute to setting local reference states for restoration targets.

Second, ILK has been used to guide actual ecosystem restoration processes. IPLC often have a long-term experience creating ecosystems that support and enhance the provision of ecosystem services (Comberti et al. 2015); in some places, IPLC have a deep understanding of local successional and regeneration processes of the degraded land. Simulating traditional management systems can help promote or accelerate succession (Anderson & Barbour 2003; Diemont & Martin 2009; Douterlungne et al.

2010). Other ILK-based land management practices (e.g., rotational farming, agroforestry, improved crop-fallow systems, hedgerows, grazing enclosures) have also effectively enhanced carbon sequestration, prevented environmental degradation, and combatted desertification (e.g., Wangpakapattanawong et al. 2010; Coughlan 2014; Salick et al. 2014). Emulating Indigenous and traditional land management practices has been a way to incorporate ILK for effective restoration in national parks (Anderson & Barbour 2003; Kis et al. 2017; Varga et al. 2017), restoring plant and bird communities in Swedish oak-hazel woodlands (Hansson 2001), and alluvial meadows in Mongolia (Jamsran 2010). Using Indigenous fire regimes to recover native biodiversity and ecosystem functions has been another way of incorporating ILK in restoration pursuits (Marsden-Smedley & Kirkpatrick 2000; Storm & Shebitz 2006). Oral histories embedded in ILK have produced baseline information for watershed restoration and helped to develop collaborative management in restoration (Mustonen 2013).

Finally, ILK can be useful in designing and implementing restoration monitoring programs (Uprety et al. 2012). Many initiatives engaging IPLCs in community-based carbon monitoring are gaining prominence in the wake of efforts for REDD+ (Reduced Emissions from Degradation and Deforestation) (Danielsen et al. 2013; Brofeldt et al. 2014; Butt et al. 2015; Hartoyo et al. 2016; McCall et al. 2016), although it is currently unknown to what degree these local monitoring projects also make use of traditional ILK. Continuing species shifts due to climate change (Pecl et al. 2017) renders urgent the need to monitor and potentially relocate species and ecosystems for benefits to IPLCs, arguing for further incorporation of ILK in monitoring.

## Factors leading to successful and beneficial restoration projects with IPLC

Much work remains to understand the factors that lead to ecologically successful restoration that also benefits IPLC. Local involvement in restoration projects is often mentioned as an element of success, although the literature shows that engaging IPLC in restoration activities does not always lead to ecosystem restoration nor to benefits for IPLC (e.g., Clement & Amezaga 2009). Thus, despite some restoration projects showing the creation of diversified livelihoods or an increase in smallholder's income or access to natural resources (Xu et al. 2007; Brown et al. 2011), there are also other projects that have had minimal or negative impacts on IPLC wellbeing (Boyd et al. 2007; Reynolds 2012).

The cases examined suggest that top-down planned restoration conducted with low levels of local participation often result in conflicts over landscape visions between the organizations proposing restoration and local inhabitants, potentially undermining long-term restoration success because of the lack of public acceptance (Couix & Gonzalo-Turpin 2015; Heldt et al. 2016). In the same line, projects that involve IPLC only for labor or providing land are economically unsustainable for them, namely because of high opportunity costs of land and labor and delayed and low benefits, and thus are often not locally accepted (Jindal et al. 2012; Aggarwal 2014). Moreover, these projects may mostly benefit households that are already economically better off (Glomsrød et al. 2011).

Alternatively, projects that actively involve IPLC in co-designing restoration activities affecting their territories are reported as successful in that they build partnerships (e.g., for co-management) and address value conflicts over resources (Davenport et al. 2010; Lyver et al. 2016; Fox et al. 2017). Several cases of community forestry, i.e., projects involving local communities in forest management, provide a

useful model for restoring degraded forests and informing restoration efforts (Nagendra 2007; Paudyal et al. 2015).

We found examples of other principles that may improve the success of restoration projects. Some authors have argued that ensuring that restoration projects receive technical and financial support to maintain restored areas (Nguyen et al. 2017), and providing sufficient incentives including short-term (e.g., rapidly providing resources or ecosystem services locally perceived as scarce – Mustonen 2013; Brancalion et al. 2014) and long-term benefits (e.g., sustained employment or 'useful' tree species from restoration – Le et al. 2012; Nielsen-Pincus & Moseley 2013; BenDor et al. 2015) can also help improve restoration project's success.

In a different vein, authors have also argued that including cultural elements, such as revitalizing local traditions or recognizing customary institutions, might promote the understanding of restoration efforts and therefore increase local participation (e.g., Long et al. 2003; Wehi & Lord 2017; de Koning et al. 2011; Godden & Cowell 2016). For example, the creation stories of the White Mountain Apache Tribe reveal the importance and functions of water bodies within the landscape. These cultural traditions can help communicate the foundations of river restoration efforts and thus ensure community support (Long et al. 2003). Similarly, results from a study of 42 reforestation programs in Africa show that the success of such programs largely rest upon the ability of local institutions to monitor, impose sanctions, and distribute benefits (Reynolds 2012), thus highligting the importance of costumary institutions for restoration efforts. Researchers have also argued that in contexts where resource degradation is linked to the loss of cultural values, cultural revitalization linked to restoration provides another incentive and base of support for community-based conservation (Lopez-Maldonado & Berkes 2017).

#### Conclusion

The literature on IPLC and restoration provides examples of IPLC's initiatives and active participation in ecosystem maintenance and restoration, as well as of successful ways in which ILK can be incorporated in restoration activities. While there is not a comprehensive explanation of which factors lead to ecologically successful restoration that also benefits IPLC, the literature provide valuable insights on how i) involving IPLC and their knowledge in co-designing restoration activities affecting their territories, ii) ensuring short-term direct benefits to IPLC and long-term support of the maintenance of restored areas, and iii) building in local cultural elements to promote the understanding of restoration efforts have substantially contributed to the local acceptance of restoration efforts throughout the world.

Thus one major proposal as an outcome of our review is that IPLC should be a more important focus in the current efforts to meet Aichi Target 15 of the Convention on Biological Diversity (CBD) on restoring 15% of globally degraded ecosystems. IPLC should also be included in any post-2020 CBD agenda on restoration.

#### Acknowledgements

KÖ and ZM thank the National Research, Development and Innovation Office (GINOP-2.3.2-15-2016-00019) project. SJW thanks the PARTNERS restoration network. AFLL was supported by the Academy of Finland (grant agreement nr. 311176) and the Kone Foundation. This work contributes to the "María de Maeztu Unit of Excellence" (MdM-2015-0552). The authors declare they have no conflict of interest.

## References

288	Aggarwal A (2014) How sustainable are forestry clean development mechanism
289	projects?—A review of the selected projects from India. Mitigation and
290	Adaptation Strategies for Global Change 19:73-91
291	Anderson MK, Barbour MG (2003) Simulated indigenous management: A new model
292	for ecological restoration in national parks. Ecological Restoration, 21: 269–277
293	Angelsen A, Jagger P, Babigumira R, Belcher B, Hogarth NJ, Bauch S, Boerner J,
294	Smith-Hall C, Wunder S (2014) Environmental Income and Rural Livelihoods:
295	A Global-Comparative Analysis. World Development 64:S12-S28
296	Babai D, Molnár Z (2014) Small-scale traditional management of highly species-rich
297	grasslands in the Carpathians. Agriculture, Ecosystems & Environment 182:123-
298	130
299	Bendor T, Lester TW, Livengood A, Davis A, Yonavjak L (2015) Estimating the Size
300	and Impact of the Ecological Restoration Economy. Plos One 10:e0128339
301	Boyd E, May P, Chang M, Veiga FC (2007) Exploring socioeconomic impacts of forest
302	based mitigation projects: Lessons from Brazil and Bolivia. Environmental
303	Science & Policy 10:419-433
304	Brancalion PHS, Cardozo IV, Camatta A, Aronson J, Rodrigues RR (2014) Cultural
305	Ecosystem Services and Popular Perceptions of the Benefits of an Ecological
306	Restoration Project in the Brazilian Atlantic Forest. Restoration Ecology 22:65-
307	71
308	Brofeldt S, Theilade I, Burgess ND, Danielsen F, Poulsen MK, Adrian T, Bang TN, et
309	al. (2014) Community Monitoring of Carbon Stocks for REDD+: Does
310	Accuracy and Cost Change over Time? Forests 5(8):1834–54.
311	doi:10.3390/f5081834

312	Brown DR, Dettmann P, Rinaudo T, Tefera H, Tofu A (2011) Poverty Alleviation and
313	Environmental Restoration Using the Clean Development Mechanism: A Case
314	Study from Humbo, Ethiopia. Environmental Management 48:322-333
315	Butt N, Epps K, Overman H, Iwamura T, Fragoso JMV (2015) Assessing Carbon
316	Stocks Using Indigenous Peoples' Field Measurements in Amazonian Guyana.
317	Forest Ecology and Management 338: 191–99. doi:10.1016/j.foreco.2014.11.014
318	Clement F, Amezaga JM (2009) Afforestation and forestry land allocation in northern
319	Vietnam: Analysing the gap between policy intentions and outcomes. Land Use
320	Policy <b>26</b> :458-470
321	Comberti C, Thornton TF, Wyllie De Echeverria V, Patterson T (2015) Ecosystem
322	services or services to ecosystems? Valuing cultivation and reciprocal
323	relationships between humans and ecosystems. Global Environmental Change
324	<b>34</b> :247-262
325	Coombes B (2007) Defending community? Indigeneity, self-determination and
326	institutional ambivalence in the restoration of Lake Whakaki. Geoforum 38:60-
327	72
328	Coughlan MR (2014) Farmers, flames, and forests: Historical ecology of pastoral fire
329	use and landscape change in the French Western Pyrenees, 1830-2011. Forest
330	Ecology and Management 312:55-66
331	Couix N, Gonzalo-Turpin H (2015) Towards a land management approach to ecological
332	restoration to encourage stakeholder participation. Land Use Policy 46:155-162
333	Cuerrier A, Turner NJ, Gomes TC, Garibaldi A, Downing A (2015) Cultural Keystone
334	Places: Conservation and Restoration in Cultural Landscapes. Journal of
	- I wood conservation and recoveration in carrier and appear consum of

336	Danielsen F, Adrian T, Brofeldt S, van Noordwijk M, Poulsen MK, Rahayu S,
337	Rutishauser E, et al. (2013) Community Monitoring for REDD+: International
338	Promises and Field Realities. Ecology and Society 18(3): 41. doi:10.5751/ES-
339	05464-180341
340	Davenport MA, Bridges CA, Mangun JC, Carver AD, Williard KWJ, Jones EO (2010)
341	Building local community commitment to wetlands restoration: A case study of
342	the cache river wetlands in Southern Illinois, USA. Environmental Management
343	<b>45</b> :711-722
344	De Koning F, Aguiñaga M, Bravo M, Chiu M, Lascano M, Lozada T, Suarez L (2011)
345	Bridging the gap between forest conservation and poverty alleviation: the
346	Ecuadorian Socio Bosque program. Environmental Science & Policy 14:531-542
347	Defossé GE, Loguercio G, Oddi FJ, Molina JC, Kraus PD (2011) Potential CO2
348	emissions mitigation through forest prescribed burning: A case study in
349	Patagonia, Argentina. Forest Ecology and Management 261:2243-2254
350	Díaz S, Pascual U, Stenseke M, Martín-López B, Watson RT, Molnár Z, Hill R, Chan
351	KMA, Baste IA, Brauman KA, Polasky S, Church A, Lonsdale M, Larigauderie
352	A, Leadley PW, Van Oudenhoven APE, Van Der Plaat F, Schröter M, Lavorel
353	S, Aumeeruddy-Thomas Y, Bukvareva E, Davies K, Demissew S, Erpul G,
354	Failler P, Guerra CA, Hewitt CL, Keune H, Lindley S, Shirayama Y (2018)
355	Assessing nature's contributions to people. Science 359:270-272
356	Diemont SaW, Martin JF (2009) Lacandon Maya ecosystem management: sustainable
357	design for subsistence and environmental restoration. Ecological Applications
358	19:254-266

359	Douterlungne D, Levy-Tacher SI, Golicher DJ, Danobeytia FR (2010) Applying
360	Indigenous Knowledge to the Restoration of Degraded Tropical Rain Forest
361	Clearings Dominated by Bracken Fern. Restoration Ecology 18:322-329
362	Eckert LE, Ban NC, Frid A, McGreer M (2017) Diving back in time: Extending
363	historical baselines for yelloweye rockfish with Indigenous Knowledge. Aquatic
364	Conservation: Marine and Freshwater Ecosystems 28: 158-166.
365	Ford A, Nigh R. (2015) The Maya Forest Garden: Eight Millennia of Sustainable
366	Cultivation of the Tropical Woodlands Left Coast Press., Berkeley
367	Fox CA, Reo NJ, Turner DA, Cook J, Dituri F, Fessell B, Jenkins J, Johnson A, Rakena
368	TM, Riley C, Turner A, Williams J, Wilson M (2017) "The river is us; the river
369	is in our veins": re-defining river restoration in three Indigenous communities.
370	Sustainability Science 12:521-533
371	Garibaldi A, Turner N (2004) Cultural Keystone Species: Implications for Ecological
372	Conservation and Restoration. Ecology and Society 9
373	Glomsrød S, Wei T, Liu G, Aune JB (2011) How well do tree plantations comply with
374	the twin targets of the Clean Development Mechanism? — The case of tree
375	plantations in Tanzania. Ecological Economics 70:1066-1074
376	Godden L, Cowell S (2016) Conservation planning and Indigenous governance in
377	Australia's Indigenous Protected Areas. Restoration Ecology 24 (5):692-697
378	Golden CD, Allison EH, Cheung WW, Dey MM, Halpern BS, Mccauley DJ, Smith M,
379	Vaitla B, Zeller D, Myers SS (2016) Nutrition: Fall in fish catch threatens
380	human health. Nature <b>534</b> :317-320
381	Hansson L (2001) Traditional management of forests: plant and bird community
382	responses to alternative restoration of oak-hazel woodland in Sweden.
383	Biodiversity & Conservation 10:1865-1873

384	Hartoyo APP, Siregar IZ, Supriyanto, Prasetyo LB, Thelaide I (2016). Biodiversity,
385	Carbon Stocks and Community Monitoring in Traditional Agroforestry
386	Practices: Preliminary Results from Two Investigated Villages in Berau, East
387	Kalimantan. Procedia Environmental Sciences 33: 376–85.
388	doi:10.1016/j.proenv.2016.03.088
389	He J, Lang R (2015) Limits of State-Led Programs of Payment for Ecosystem Services:
390	Field Evidence from the Sloping Land Conversion Program in Southwest China.
391	Human Ecology <b>43</b> :749-758
392	Heldt S, Budryte P, Ingensiep HW, Teichgräber B, Schneider U, Denecke M (2016)
393	Social pitfalls for river restoration: How public participation uncovers problems
394	with public acceptance. Environmental Earth Sciences 75:1053
395	Henwood W, Moewaka Barnes H, Brockbank T, Gregory W, Hooper K, Mccreanor T
396	(2016) Ko Tāngonge Te Wai: Indigenous and Technical Data Come Together in
397	Restoration Efforts. EcoHealth 13:623-632
398	Horiuchi M, Fukamachi K, Oku H (2011) Reed community restoration projects with
399	citizen participation: an example of the practical use of Satoyama landscape
400	resources in Shiga Prefecture, Japan. Landscape and Ecological Engineering
401	<b>7</b> :217-222
402	Hua F, Wang X, Zheng X, Fisher B, Wang L, Zhu J, Tang Y, Yu DW, Wilcove DS
403	(2016) Opportunities for biodiversity gains under the world's largest
404	reforestation programme. Nature Communications 7: 12717.
405	Jamsran U (2010) Involvement of Local Communities in Restoration of Ecosystem
406	Services in Mongolian Rangeland. Global Environmental Research 14:79-86

407	Jindal R, Kerr JM, Carter S (2012) Reducing Poverty Through Carbon Forestry?
408	Impacts of the N'hambita Community Carbon Project in Mozambique. World
409	Development <b>40</b> :2123-2135
410	Kis J, Barta S, Elekes L, Engi L, Fegyer T, Kecskeméti J, Lajkó L, Szabó J (2017)
411	Traditional herders' knowledge and worldview and their role in managing
412	biodiversity and ecosystem services of extensive pastures. Pages 57-71 In: Roué
413	M, Molnár Z, (eds) Knowing our Land and Resources: Indigenous and local
414	knowledge of biodiversity and ecosystem services in Europe & Central Asia.
415	UNESCO, Paris
416	Kotiaho JS, ten Brink B, Harris J (2016) A global baseline for ecosystem recovery.
417	Nature <b>532</b> : 37.
418	Le HD, Smith C, Herbohn J, Harrison S (2012) More than just trees: Assessing
419	reforestation success in tropical developing countries. Journal of Rural Studies
420	<b>28</b> :5-19
421	Lepofsky D, Armstrong CG, Greening S, Jackley J, Carpenter J, Guernsey B, Mathews
422	D, Turner NJ (2017) Historical Ecology of Cultural Keystone Places of the
423	Northwest Coast. American Anthropologist 119:448-463
424	Long J, Tecle A, Burnette B (2003) Cultural foundations for ecological restoration on
425	the White Mountain Apache Reservation. Conservation Ecology 8:4
426	Lopez-Maldonado Y, Berkes F (2017) Restoring the environment, revitalizing the
427	culture: cenote conservation in Yucatan, Mexico. Ecology and Society 22:7
428	Lyver POB, Akins A, Phipps H, Kahui V, Towns DR, Moller H (2016) Key biocultural
429	values to guide restoration action and planning in New Zealand. Restoration
430	Ecology <b>24</b> :314-323

431	Marsden-Smedley JB, Kirkpatrick JB (2000) Fire management in Tasmania's
432	Wilderness World Heritage Area: Ecosystem restoration using Indigenous-style
433	fire regimes? Ecological Management & Restoration 1:195-203
434	McCall MK, Chutz N, Skutsch M (2016) Moving from Measuring, Reporting,
435	Verification (MRV) of Forest Carbon to Community Mapping, Measuring,
436	Monitoring (MMM): Perspectives from Mexico. PLoS ONE 11(6): e0146038.
437	doi:10.1371/journal.pone.0146038
438	Mills M (2003) Restoring the Mauri of Oruarangi Creek. Water Sci Technol 48:129-137
439	Mistry J, Berardi A (2016) Bridging indigenous and scientific knowledge. Science
440	<b>352</b> :1274-1275
441	Mistry J, Bilbao BA, Berardi A (2016) Community owned solutions for fire
442	management in tropical ecosystems: case studies from Indigenous communities
443	of South America. Philosophical Transactions of the Royal Society B: Biological
444	Sciences 371
445	Murphy BL (2011) From interdisciplinary to inter-epistemological approaches:
446	Confronting the challenges of integrated climate change research. The Canadian
447	Geographer / Le Géographe canadien <b>55</b> :490-509.
448	Mustonen T (2013) Oral histories as a baseline of landscape restoration - Co-
449	management and watershed knowledge in Jukajoki River. Fennia 191:76-91
450	Nabhan GP (2000) Interspecific relationships affecting endangered species recognized
451	by O'odham and Comcáac cultures. Ecological Applications 10: 1288-1295.
452	Nagendra H (2007) Drivers of reforestation in human-dominated forests. Proceedings of
453	the National Academy of Sciences of the United States of America 104:15218-
454	15223

455	Nguyen TP, Luom TT, Parnell KE (2017) Mangrove allocation for coastal protection
456	and livelihood improvement in Kien Giang province, Vietnam: Constraints and
457	recommendations. Land Use Policy 63:401-407
458	Nielsen-Pincus M, Moseley C (2013) The Economic and Employment Impacts of
459	Forest and Watershed Restoration. Restoration Ecology 21:207-214
460	NOAA (2017) URL http://response.restoration.noaa.gov/about/media/after-pollution-
461	strikes-restoring-lost-cultural-bond-between-tribes-and-environment.html
462	Papworth SK, Rist J, Coad L, Milner-Gulland EJ (2009) Evidence for shifting baseline
463	syndrome in conservation. Conservation Letters 2: 93-100.
464	Paquette A, Hawryshyn J, Vyta Senikas A, Potvin C (2009) Enrichment Planting in
465	Secondary Forests: a Promising Clean Development Mechanism to Increase
466	Terrestrial Carbon Sinks. Ecology and Society 14
467	Paudyal K, Baral H, Burkhard B, Bhandari SP, Keenan RJ (2015) Participatory
468	assessment and mapping of ecosystem services in a data-poor region: Case study
469	of community-managed forests in central Nepal. Ecosystem Services 13:81-92
470	Pecl GT, Araújo MB, Bell JD, Blanchard J, Bonebrake TC, Chen I-C, Clark TD,
471	Colwell RK, Danielsen F, Evengård B, Falconi L, Ferrier S, Frusher S, Garcia
472	RA, Griffis RB, Hobday AJ, Janion-Scheepers C, Jarzyna MA, Jennings S,
473	Lenoir J, Linnetved HI, Martin VY, Mccormack PC, Mcdonald J, Mitchell NJ,
474	Mustonen T, Pandolfi JM, Pettorelli N, Popova E, Robinson SA, Scheffers BR,
475	Shaw JD, Sorte CJB, Strugnell JM, Sunday JM, Tuanmu M-N, Vergés A,
476	Villanueva C, Wernberg T, Wapstra E, Williams SE (2017) Biodiversity
477	redistribution under climate change: Impacts on ecosystems and human well-
478	being. Science 355

Kayapó indians of the Brazilian Amazon. Agroforestry Systems 3:139-158 Reynolds TW (2012) Institutional Determinants of Success Among Forestry-Based Carbon Sequestration Projects in Sub-Saharan Africa. World Development 486 40:542-554 Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306 Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276- 293	4/9	Peliant M, Abbey B, Karl S (2004) Restoring the Great Basin Desert, U.S.A.:
Posey DA (1985) Indigenous management of tropical forest ecosystems: the case of the Kayapó indians of the Brazilian Amazon. Agroforestry Systems 3:139-158 Reynolds TW (2012) Institutional Determinants of Success Among Forestry-Based Carbon Sequestration Projects in Sub-Saharan Africa. World Development 40:542-554 Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306 Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	480	Integrating Science, Management, and People. Environmental Monitoring and
Kayapó indians of the Brazilian Amazon. Agroforestry Systems 3:139-158 Reynolds TW (2012) Institutional Determinants of Success Among Forestry-Based Carbon Sequestration Projects in Sub-Saharan Africa. World Development 486 40:542-554 Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306 Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276- 293	481	Assessment <b>99</b> :169-179
Reynolds TW (2012) Institutional Determinants of Success Among Forestry-Based  Carbon Sequestration Projects in Sub-Saharan Africa. World Development  40:542-554  Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez  Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward  Elgar. Chapter 12: 286-306  Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental  Narratives and the Need for Multiple Perspectives to Restore Degraded  Landscapes in Australia. Ecosystem Health 6:119-133  Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015)  Deriving Multiple Benefits from Carbon Market-Based Savanna Fire  Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-  293	482	Posey DA (1985) Indigenous management of tropical forest ecosystems: the case of the
Carbon Sequestration Projects in Sub-Saharan Africa. World Development  486 40:542-554  Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez  Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward  Elgar. Chapter 12: 286-306  Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental  Narratives and the Need for Multiple Perspectives to Restore Degraded  Landscapes in Australia. Ecosystem Health 6:119-133  Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015)  Deriving Multiple Benefits from Carbon Market-Based Savanna Fire  Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-  293	483	Kayapó indians of the Brazilian Amazon. Agroforestry Systems 3:139-158
Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306 Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	484	Reynolds TW (2012) Institutional Determinants of Success Among Forestry-Based
Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306  Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133  Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	485	Carbon Sequestration Projects in Sub-Saharan Africa. World Development
Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward Elgar. Chapter 12: 286-306  Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133  Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	486	<b>40</b> :542-554
Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276- 293	487	Reyes-García, V. (2015) The Values of Traditional Ecological Knowledge. In Martinez-
Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	488	Alier and R. Muradian (eds), Handbook of Ecological Economics. Edward
Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia. Ecosystem Health 6:119-133 Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015) Deriving Multiple Benefits from Carbon Market-Based Savanna Fire Management: An Australian Example. Plos One 10:e0143426 Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	489	Elgar. Chapter 12: 286-306
Landscapes in Australia. Ecosystem Health <b>6</b> :119-133  Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015)  Deriving Multiple Benefits from Carbon Market-Based Savanna Fire  Management: An Australian Example. Plos One <b>10</b> :e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology <b>34</b> :276-	490	Robertson M, Nichols P, Horwitz P, Bradby K, Mackintosh D (2000) Environmental
Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015)  Deriving Multiple Benefits from Carbon Market-Based Savanna Fire  Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-	491	Narratives and the Need for Multiple Perspectives to Restore Degraded
Deriving Multiple Benefits from Carbon Market-Based Savanna Fire  Management: An Australian Example. Plos One 10:e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-  293	492	Landscapes in Australia. Ecosystem Health 6:119-133
Management: An Australian Example. Plos One <b>10</b> :e0143426  Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology <b>34</b> :276-  293	493	Russell-Smith J, Yates CP, Edwards AC, Whitehead PJ, Murphy BP, Lawes MJ (2015)
Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine  Vegetation, Climate Change and Mitigation. Journal of Ethnobiology <b>34</b> :276-  293	494	Deriving Multiple Benefits from Carbon Market-Based Savanna Fire
Vegetation, Climate Change and Mitigation. Journal of Ethnobiology <b>34</b> :276- 498 293	495	Management: An Australian Example. Plos One 10:e0143426
498 293	496	Salick J, Ghimire SK, Fang Z, Dema S, Konchar KM (2014) Himalayan Alpine
	497	Vegetation, Climate Change and Mitigation. Journal of Ethnobiology 34:276-
499 Sangha KK Russell-Smith J (2017) Towards an Indigenous Ecosystem Services	498	293
	499	Sangha KK, Russell-Smith J (2017) Towards an Indigenous Ecosystem Services
	500	Valuation Framework: A North Australian Example. Conservation & Society
Valuation Framework: A North Australian Example. Conservation & Society	501	<b>15</b> :255-269
Valuation Framework: A North Australian Example. Conservation & Society	501	<b>15</b> :255-269

502	Selvam V, Ravichandran KK, Gnanappazham L, Navamuniyammal M (2003)
503	Assessment of Community-Based Restoration of Pichavaram Mangrove
504	Wetland Using Remote Sensing Data. Current Science 85:794-798
505	Senos R, Lake FK, Turner N, Martinez D (2006) Traditional ecological knowledge and
506	restoration practice. Pages 393-426 In: Apostol D, Sinclair M, (eds) Restoring
507	the Pacific Northwest: the art and science of ecological restoration in Cascadia.
508	Island Press, Washington, DC
509	Shaffer LJ (2010) Indigenous Fire Use to Manage Savanna Landscapes in Southern
510	Mozambique. Fire Ecology <b>6</b> :43-59
511	Singh RK, Kumar S, Jat HS, Singh A, Raju R, Sharma DK (2014) Adaptation in rice-
512	wheat based sodic agroecosystems: A case study on climate resilient farmers'
513	practices. Indian Journal of Traditional Knowledge 13:377-389
514	Solomon D, Lehmann J, Fraser JA, Leach M, Amanor K, Frausin V, Kristiansen SM,
515	Millimouno D, Fairhead J (2016) Indigenous African soil enrichment as a
516	climate-smart sustainable agriculture alternative. Frontiers in Ecology and the
517	Environment 14:71-76
518	Stenseke M (2009) Local participation in cultural landscape maintenance: Lessons from
519	Sweden. Land Use Policy 26:214-223
520	Storm L, Shebitz D (2006) Evaluating the Purpose, Extent, and Ecological Restoration
521	Applications of Indigenous Burning Practices in Southwestern Washington.
522	Ecological Restoration 24:256-268
523	Thornton T, Deur D, Kitka Sr H (2015) Cultivation of Salmon and other Marine
524	Resources on the Northwest Coast of North America. Human Ecology 43: 189-
525	199.

526	Tobón W, Urquiza-Haas T, Koleff P, Schröter M, Ortega-Álvarez R, Campo J, Lindig-
527	Cisneros R, Sarukhán J, Bonn A (2017) Restoration planning to guide Aichi
528	targets in a megadiverse country. Conservation Biology 31:1086-1097
529	Trauernicht C, Brook BW, Murphy BP, Williamson GJ, Bowman DMJS (2015) Local
530	and global pyrogeographic evidence that indigenous fire management creates
531	pyrodiversity. Ecology and Evolution 5:1908-1918
532	Trialfhianty TI, Suadi (2017) The role of the community in supporting coral reef
533	restoration in Pemuteran, Bali, Indonesia. Journal of Coastal Conservation
534	<b>21</b> :873-882
535	Uprety Y, Asselin H, Bergeron Y, Doyon F, Boucher J-F (2012) Contribution of
536	Traditional Knowledge to Ecological Restoration: Practices and Applications.
537	Ecoscience <b>19</b> :225-237
538	Varga A, Heim A, Demeter L, Molnár Z (2017) Rangers bridge the gap: integration of
539	wood-pasture related traditional ecological knowledge into nature conservation.
540	Pages 78-91 In: Roué M, Molnár Z, (eds) Knowing our Land and Resources:
541	Indigenous and local knowledge of biodiversity and ecosystem services in
542	Europe & Central Asia. UNESCO, Paris
543	Wangpakapattanawong P, Kavinchan N, Vaidhayakarn C, Schmidt-Vogt D, Elliott S
544	(2010) Fallow to forest: Applying indigenous and scientific knowledge of
545	swidden cultivation to tropical forest restoration. Forest Ecology and
546	Management <b>260</b> :1399-1406
547	Wehi PM, Lord JM (2017) Importance of including cultural practices in ecological
548	restoration. Conservation Biology <b>31</b> :1109-1118

549	Welch JR, Brondízio ES, Hetrick SS, Coimbra CEA, Jr. (2013) Indigenous Burning as
550	Conservation Practice: Neotropical Savanna Recovery amid Agribusiness
551	Deforestation in Central Brazil. Plos One 8:e81226
552	Xu W, Yin Y, Zhou S (2007) Social and economic impacts of carbon sequestration and
553	land use change on peasant households in rural China: A case study of Liping,
554	Guizhou Province. Journal of Environmental Management 85:736-745



## Supplementary material

The analysis presented is based on a literature review conducted in the Full
collection of the Web of Science. We used the following search terms as 'topic':
("Indigenous Community" OR "Indigenous Peoples" OR "Local Community" or
"Aboriginal") OR ("traditional ecological knowledge" OR "indigenous knowledge" OR
"traditional management" OR "indigenous management") AND ("carbon" OR "carbon
stocks" OR "ecological restoration" OR "desertification" OR "carbon sequestration")
OR ("Aichi Target 15"). We did not limit the time-span for documents published in the
past, but our search only included documents published through December 2017. The
search yielded 413 papers. We reviewed the title and the abstract of all the retrieved
documents and found that many not relevant to our topic. Most of the papers that were
not relevant had to do with the term "indigenous" in our search string or referred to
restoration of "indigenous vegetation", "local bacterial communities," and the like
without any link to IPLCs. Some papers were also dismissed because they were about
archaeology (e.g., formation of Terra Preta) and did not specifically look at
contemporary IPLCs contributions to restoration efforts or about climate justice and had
the word restoration in the Abstract, but referred vaguely to the importance of carbon
restoration. The 120 works listed below provide information on restoration activities
and IPLC. In constructing our arguments, we also used additional papers selected from
our own literature database, which are cited and listed in the main body of the text.

## List of references found in the search

Abate, Randall S, and Elizabeth Ann Kronk. 2013. "Commonality Among Unique Indigenous Communities: An Introduction to Climate Change and Its Impacts on Indigenous Peoples." *Tulane Environmental Law Journal* 26(2): 179–196.

- Adeney, J. Marion, Norman L. Christensen, and Stuart L. Pimm. 2009. "Reserves Protect against Deforestation Fires in the Amazon." *PLoS ONE* 4 (4): e5014. doi:10.1371/journal.pone.0005014.
- Adger, W Neil, Terry P Hughes, Carl Folke, Stephen R Carpenter, and Johan Rockström. 2012. "Social-Ecological Resilience to Coastal Disasters Social-Ecological Resilience to Coastal Disasters Social-Ecological Resilience to Coastal
- 32 Disasters." *Science* 309 (5737): 1–6. doi:10.1126/science.1112122.
- Aggarwal, Ashish. 2014. "How Sustainable Are Forestry Clean Development Mechanism Projects? A Review of the Selected Projects from India." *Mitigation and Adaptation Strategies for Global Change* 19 (1): 73–91. doi:10.1007/s11027-012-9427-x.
- Albrecht, Alain, and Serigne T. Kandji. 2003. "Carbon Sequestration in Tropical Agroforestry Systems." *Agriculture, Ecosystems and Environment* 99 (1–3): 15–27. doi:10.1016/S0167-8809(03)00138-5.
- Alexander, Sasha, Cara R. Nelson, James Aronson, David Lamb, An Cliquet, Kevin L.
   Erwin, C. Max Finlayson, et al. 2011. "Opportunities and Challenges for Ecological Restoration within REDD+." *Restoration Ecology* 19 (6): 683–89.
   doi:10.1111/j.1526-100X.2011.00822.x.
- Al-Subaiee, Faisal Sultan. 2015. "Local Participation in Woodland Management in the
   Southern Riyadh Area: Implications for Agricultural Extension." *Geographical Review* 105 (4): 408–28. doi:10.1111/j.1931-0846.2015.12104.x.
- 47 Anderson, M Kat. 1996. "Tending the Wilderness." *Restoration Management Notes* 14 48 (2): 154–66. doi:10.3368/er.14.2.154.
- Anderson, M. Kat, and Michael G. Barbour. 2003. "Simulated Indigenous Management:

  A New Model for Ecological Restoration in National Parks." *Ecological Restoration*. doi:10.3368/er.21.4.269.
- Araujo, Claudio, Catherine Araujo Bonjean, Jean Louis Combes, Pascale Combes Motel, and Eustaquio J. Reis. 2009. "Property Rights and Deforestation in the Brazilian Amazon." *Ecological Economics* 68 (8–9): 2461–68. doi:10.1016/j.ecolecon.2008.12.015.
- Aronson, James C, Charles M Blatt, and Thibaud B Aronson. 2016. "Restoring Ecosystem Health to Improve Human Health and Well-Being: Physicians and Restoration Ecologists Unite in a Common Cause." *Ecology and Society* 21 (4): 39. doi:10.5751/ES-08974-210439.
- Asiyanbi, Adeniyi P., Albert A. Arhin, and Usman Isyaku. 2017. "REDD+ in West Africa: Politics of Design and Implementation in Ghana and Nigeria." Forests 8 (3). doi:10.3390/f8030078.

- 63 Atela, Joanes O., Peter A. Minang, Claire H. Quinn, and Lalisa A. Duguma. 2015.
- "Implementing REDD+ at the Local Level: Assessing the Key Enablers for
- 65 Credible Mitigation and Sustainable Livelihood Outcomes." Journal of
- 66 Environmental Management 157: 238–49. doi:10.1016/j.jenvman.2015.04.015.
- 67 Awono, Abdon, Olufunso A Somorin, Richard Eba'a Atyi, and Patrice Levang. 2014.
- "Tenure and Participation in Local REDD+ Projects: Insights from Southern
- 69 Cameroon." Environmental Science and Policy 35: 76–86.
- 70 doi:10.1016/j.envsci.2013.01.017.
- 71 Baker, Susan. 2017. "Social Engagement in Ecological Restoration." In Routledge
- 72 Handbook of Ecological and Environmental Restoration.
- 73 doi:10.4324/9781315685977.
- 74 Bardsley, Douglas K., and Nathanael D. Wiseman. 2012. "Climate Change
- Vulnerability and Social Development for Remote Indigenous Communities of
- South Australia." Global Environmental Change 22 (3): 713–23.
- 77 doi:10.1016/j.gloenvcha.2012.04.003.
- 78 Bautista, Susana, Joan Llovet, Anahi Ocampo-Melgar, Alberto Vilagrosa, Angeles G
- Mayor, Cristina Murias, V Ramon Vallejo, and Barron J Orr. 2017. "Integrating
- Knowledge Exchange and the Assessment of Dryland Management Alternatives.
- A Learning-Centered Participatory Approach." Journal of Environmental
- *Management* 195 (1): 35–45. doi:10.1016/j.jenvman.2016.11.050.
- Benayas, José M. R., Adrian C. Newton, Anita Diaz, and James M. Bullock. 2009.
- 84 "Enhancement of Biodiversity and Ecosystem Services by Ecological Restoration:
- 85 A Meta-Analysis." *Science* 325 (5944): 1121–24. doi:10.1126/science.1172460.
- 86 BenDor, Todd, T. William Lester, Avery Livengood, Adam Davis, and Logan
- Yonavjak. 2015. "Estimating the Size and Impact of the Ecological Restoration
- 88 Economy." *PLoS ONE* 10 (6): e0128339. doi:10.1371/journal.pone.0128339.
- 89 Bennett, Michael T. 2008. "China's Sloping Land Conversion Program: Institutional
- Innovation or Business as Usual?" *Ecological Economics* 65 (4): 699–711.
- 91 doi:10.1016/j.ecolecon.2007.09.017.
- 92 Bennett, Michael T, Chen Xie, Nicholas J Hogarth, Daoli Peng, and Louis Putzel. 2014.
- "China's Conversion of Cropland to Forest Program for Household Delivery of
- 94 Ecosystem Services: How Important Is a Local Implementation Regime to
- 95 Survival Rate Outcomes?" *Forests* 5 (9): 2345–76. doi:10.3390/f5092345.
- 96 Bhagawati, Kaushik, Goutom Bhagawati, Ranjan Das, R. Bhagawati, and S.V.
- 97 Ngachanngachan. 2015. "The Structure of Jhum (Traditional Shifting Cultivation
- 98 System): Prospect or Threat to Climate." *International Letters of Natural Sciences*
- 99 46: 16–30. doi:10.18052/www.scipress.com/ILNS.46.16.

- Bikila, Negasa Gilo, Zewdu Kelkay Tessema, and Ebro Gedda Abule. 2016. "Carbon
- Sequestration Potentials of Semi-Arid Rangelands under Traditional Management
- Practices in Borana, Southern Ethiopia." Agriculture, Ecosystems and
- 103 Environment 223: 108–14. doi:10.1016/j.agee.2016.02.028.
- 104 Blackman, Allen, Leonardo Corral, Eirivelthon Santos Lima, and Gregory P. Asner.
- 105 2017. "Titling Indigenous Communities Protects Forests in the Peruvian
- Amazon." Proceedings of the National Academy of Sciences 114 (16): 4123–28.
- doi:10.1073/pnas.1603290114.
- Boissiere, M, D Sheil, I Basuki, M Wan, and Hien Le. 2009. "Can Engaging Local
- People's Interests Reduce Forest Degradation in Central Vietnam?" *Biodiversity*
- *and Conservation* 18 (10): 2743–57. doi:10.1007/s10531-009-9627-1.
- Borda-Nino, Monica, Diego Hernandez-Mucino, and Eliane Ceccon. 2017. "Planning
- Restoration in Human-Modified Landscapes: New Insights Linking Different
- Scales." *Applied Geography* 83: 118–29. doi:10.1016/j.apgeog.2017.03.012.
- Boyd, Emily, Peter May, Manyu Chang, and Fernando C. Veiga. 2007. "Exploring
- Socioeconomic Impacts of Forest Based Mitigation Projects: Lessons from Brazil
- and Bolivia." Environmental Science and Policy 10 (5): 419–33.
- doi:10.1016/j.envsci.2007.03.004.
- Brofeldt, Søren, Ida Theilade, Neil D. Burgess, Finn Danielsen, Michael K. Poulsen,
- Teis Adrian, Tran Nguyen Bang, et al. 2014. "Community Monitoring of Carbon
- Stocks for REDD+: Does Accuracy and Cost Change over Time?" Forests 5 (8):
- 121 1834–54. doi:10.3390/f5081834.
- Brown, D.R., P Dettmann, T Rinaudo, H Tefera, and A Tofu. 2011. "Poverty
- Alleviation and Environmental Restoration Using the Clean Development
- Mechanism: A Case Study from Humbo, Ethiopia." *Environmental Management*
- 48 (2): 322–33. doi:10.1007/s00267-010-9590-3.
- Brown, Michael I. 2013. Redeeming REDD: Policies, Incentives, and Social Feasibility
- for Avoided Deforestation. Routledge. doi:10.4324/9780203123652.
- 128 Buijs, Arjen E. 2009. "Public Support for River Restoration. A Mixed-Method Study
- into Local Residents' Support for and Framing of River Management and
- Ecological Restoration in the Dutch Floodplains." Journal of Environmental
- *Management* 90 (8): 2680–89. doi:10.1016/j.jenvman.2009.02.006.
- Buntaine, Mark T., Stuart E. Hamilton, and Marco Millones. 2015. "Titling Community
- Land to Prevent Deforestation: An Evaluation of a Best-Case Program in Morona-
- Santiago, Ecuador." Global Environmental Change 33: 32–43.
- doi:10.1016/j.gloenvcha.2015.04.001.

- Butt, Nathalie, Kimberly Epps, Han Overman, Takuya Iwamura, and Jose M.V.
- Fragoso. 2015. "Assessing Carbon Stocks Using Indigenous Peoples' Field
- Measurements in Amazonian Guyana." Forest Ecology and Management 338:
- 139 191–99. doi:10.1016/j.foreco.2014.11.014.
- 140 Caillon, Sophie, Georgina Cullman, Bas Verschuuren, and Eleanor J. Sterling. 2017.
- "Moving beyond the Human–nature Dichotomy through Biocultural Approaches:
- Including Ecological Well-Being in Resilience Indicators." Ecology and Society
- 22 (4): 27. https://www.ecologyandsociety.org/issues/article.php/9746.
- 144 Campbelll, Alison, Lera Miles, Igor Lysenko, Holly Gibbs, Adam Hughes, and A
- 145 Campbell. 2008. "Carbon Storage in Protected Areas Technical Report."
- 146 http://old.unep-
- wcmc.org/medialibrary/2010/09/24/d8a43698/Carbon\_storage\_PAs.pdf.
- Caplow, Susan, Pamela Jagger, Kathleen Lawlor, and Erin Sills. 2011. "Evaluating
- Land Use and Livelihood Impacts of Early Forest Carbon Projects: Lessons for
- Learning about REDD+." Environmental Science and Policy 14 (2): 152–67.
- doi:10.1016/j.envsci.2010.10.003.
- 152 Ceddia, M.G, Ulrich Gunter, and Alexandre Corriveau-Bourque. 2015. "Land Tenure
- and Agricultural Expansion in Latin America: The Role of Indigenous Peoples'
- and Local Communities' Forest Rights." Global Environmental Change 35: 316–
- 22. doi:10.1016/j.gloenvcha.2015.09.010.
- 156 Cerbu, Gillian A., Denis J. Sonwa, and Benno Pokorny. 2013. "Opportunities for and
- 157 Capacity Barriers to the Implementation of REDD+ Projects with Smallholder
- Farmers: Case Study of Awae and Akok, Centre and South Regions, Cameroon."
- Forest Policy and Economics 36: 60–70. doi:10.1016/j.forpol.2013.06.018.
- 160 Chen, Cheng, Hannes J Koenig, Bettina Matzdorf, and Lin Zhen. 2015. "The
- Institutional Challenges of Payment for Ecosystem Service Program in China: A
- Review of the Effectiveness and Implementation of Sloping Land Conversion
- Program." Sustainability 7 (5): 5564–91. doi:10.3390/su7055564.
- 164 Cheng, Kaity, Stewart A W Diemont, and Allan P. Drew. 2011. "Role of Tao (Belotia
- Mexicana) in the Traditional Lacandon Maya Shifting Cultivation Ecosystem."
- *Agroforestry Systems* 82 (3): 331–36. doi:10.1007/s10457-011-9379-2.
- 167 Chhatre, Ashwini, and Arun Agrawal. 2009. "Trade-Offs and Synergies between
- 168 Carbon Storage and Livelihood Benefits from Forest Commons." *Proceedings of*
- 169 the National Academy of Sciences 106 (42): 17667–70.
- doi:10.1073/pnas.0905308106.
- 171 Chirwa, Paxie W., Larwanou Mahamane, and Godwin Kowero. 2017. "Forests, People
- and Environment: Some African Perspectives." Southern Forests 79 (2): 79–85.
- doi:10.2989/20702620.2017.1295347.

- 174 Clement, Floriane, and Jaime M Amezaga. 2009. "Afforestation and Forestry Land
- Allocation in Northern Vietnam: Analysing the Gap between Policy Intentions
- and Outcomes." *Land Use Policy* 26 (2): 458–70.
- http://www.sciencedirect.com/science/article/B6VB0-4T4HJK7-
- 178 1/2/bef831b948f3b6a1a8f399648fa966ed.
- 179 Clement, Floriane, Didier Orange, Meredith Williams, Corinne Mulley, and Michael
- Epprecht. 2009. "Drivers of Afforestation in Northern Vietnam: Assessing Local
- 181 Variations Using Geographically Weighted Regression." Applied Geography 29
- 182 (4): 561–76. doi:10.1016/j.apgeog.2009.01.003.
- 183 Conservation of Arctic Flora and Fauna (CAFF). 2013. "Arctic Biodiversity
- 184 Assessment: Report for Policy Makers." Akureyri, Iceland.
- http://www.caff.is/assessment-series/10-arctic-biodiversity-assessment/229-arctic-
- biodiversity-assessment-2013-report-for-policy-makers-english.
- 187 Cook, Garry D., Richard J. Williams, Christopher J. Stokes, Lindsay B. Hutley, Andrew
- J. Ash, and Anna E. Richards. 2010. "Managing Sources and Sinks of Greenhouse
- Gases in Australia's Rangelands and Tropical Savannas." Rangeland Ecology and
- *Management* 63 (1): 137–46. doi:10.2111/08-101.1.
- 191 Coombes, Brad. 2007. "Defending Community? Indigeneity, Self-Determination and
- Institutional Ambivalence in the Restoration of Lake Whakaki." *Geoforum* 38 (1):
- 193 60–72. doi:10.1016/j.geoforum.2006.05.006.
- 194 Couix, Nathalie, and Héloïse Gonzalo-Turpin. 2015. "Towards a Land Management
- Approach to Ecological Restoration to Encourage Stakeholder Participation."
- 196 Land Use Policy 46: 155–62. doi:10.1016/j.landusepol.2015.01.025.
- 197 Cuerrier, A, N J Turner, T C Gomes, A Garibaldi, and A Downing. 2015. "Cultural
- 198 Keystone Places: Conservation and Restoration in Cultural Landscapes." *Journal*
- *of Ethnobiology* 35 (3): 427–48.
- 200 Cuong, Chu Van, Sharon Brown, Huynh Huu To, and Marc Hockings. 2015. "Using
- 201 Melaleuca Fences as Soft Coastal Engineering for Mangrove Restoration in Kien
- 202 Giang, Vietnam." Ecological Engineering 81: 256–65.
- doi:10.1016/j.ecoleng.2015.04.031.
- Damnyag, Lawrence, Olli Saastamoinen, Mark Appiah, and Ari Pappinen. 2012. "Role
- of Tenure Insecurity in Deforestation in Ghana's High Forest Zone." Forest
- *Policy and Economics* 14 (1): 90–98. doi:10.1016/j.forpol.2011.08.006.
- 207 Danielsen, Finn, Teis Adrian, Søren Brofeldt, Meine van Noordwijk, Michael K.
- Poulsen, Subekti Rahayu, Ervan Rutishauser, et al. 2013. "Community
- Monitoring for REDD+: International Promises and Field Realities." *Ecology and*
- 210 Society 18 (3): 41. doi:10.5751/ES-05464-180341.

- Datta, S K, and K J Virgo. 1998. "Towards Sustainable Watershed Development
- through People's Participation: Lessons from the Lesser Himalaya, Uttar Pradesh,
- 213 India." Mountain Research and Development 18 (3): 213–33.
- doi:10.2307/3674034.
- Davenport, Mae A., Christopher A. Bridges, Jean C. Mangun, Andrew D. Carver, Karl
- W J Williard, and Elizabeth O. Jones. 2010. "Building Local Community
- Commitment to Wetlands Restoration: A Case Study of the Cache River Wetlands
- in Southern Illinois, USA." Environmental Management 45 (4): 711–22.
- doi:10.1007/s00267-010-9446-x.
- de Koning, Free, Marcela Aguiñaga, Manuel Bravo, Marco Chiu, Max Lascano, Tannya
- Lozada, and Luis Suarez. 2011. "Bridging the Gap between Forest Conservation
- and Poverty Alleviation: The Ecuadorian Socio Bosque Program." Environmental
- Science and Policy 14 (5): 531–42. doi:10.1016/j.envsci.2011.04.007.
- De La Fuente, T., and R. Hajjar. 2013. "Do Current Forest Carbon Standards Include
- Adequate Requirements to Ensure Indigenous Peoples' Rights in REDD
- Projects?" International Forestry Review 15 (4): 427–41.
- doi:10.1505/146554813809025676.
- Defossé, Guillermo E., Gabriel Loguercio, Facundo J. Oddi, Julio C. Molina, and P.
- Daniel Kraus. 2011. "Potential CO2 Emissions Mitigation through Forest
- Prescribed Burning: A Case Study in Patagonia, Argentina." Forest Ecology and
- *Management* 261 (12): 2243–54. doi:10.1016/j.foreco.2010.11.021.
- der Knaap, M. 2013. "Comparative Analysis of Fisheries Restoration and Public
- Participation in Lake Victoria and Lake Tanganyika." Aquatic Ecosystem Health
- *and Management* 16 (3): 279–87. doi:10.1080/14634988.2013.816618.
- Deur, Douglas, and Nancy Turner. 2006. Keeping It Living: Traditions of Plant Use and
- Cultivation on the Northwest Coast of North America. Seattle: University of
- 237 Washington Press.
- 238 http://ubc.summon.serialssolutions.com/search?s.q=keeping+it+living.
- Dinh, Hoang Huu, Trung Thanh Nguyen, Viet-Ngu Hoang, and Clevo Wilson. 2017.
- "Economic Incentive and Factors Affecting Tree Planting of Rural Households:
- Evidence from the Central Highlands of Vietnam." *Journal of Forest Economics*
- 242 29: 14–24. doi:10.1016/j.jfe.2017.08.001.
- Douterlungne, David, Samuel I. Levy-Tacher, Duncan J. Golicher, and Francisco
- Román Dañobeytia. 2010. "Applying Indigenous Knowledge to the Restoration of
- Degraded Tropical Rain Forest Clearings Dominated by Bracken Fern."
- 246 Restoration Ecology 18 (3): 322–29. doi:10.1111/j.1526-100X.2008.00459.x.
- 247 Duchelle, Amy E., Marina Cromberg, Maria Fernanda Gebara, Raissa Guerra, Tadeu
- Melo, Anne Larson, Peter Cronkleton, et al. 2014. "Linking Forest Tenure

- Reform, Environmental Compliance, and Incentives: Lessons from REDD+ Initiatives in the Brazilian Amazon." World Development 55: 53–67.
- doi:10.1016/j.worlddev.2013.01.014.
- Eden, Sally E., and Sylvia Tunstall. 2006. "Ecological versus Social Restoration? How
- Urban River Restoration Challenges but Also Fails to Challenge the Science-
- Policy Nexus in the United Kingdom." Environment and Planning C:
- *Government and Policy* 24 (5): 661–80. doi:10.1068/c0608j.
- Egan, Dave, Evan E. Hjerpe, Jesse Abrams, and Ecological. 2011. Human Dimensions
- of Ecological Restoration: Integrating Science, Nature, and Culture The Science
- and Practice of Ecological Restoration. Island Press. doi:10.5822/978-1-61091-
- 259 039-2.
- 260 Eil, Andrew, Benoit Bosquet, Megan Brayne, Peter Cooke, Andre Grant, Peter Kuria,
- Sam Johnston, et al. 2009. "A Carbon Guide for Northern Indigenous
- 262 Australians." Yokohama, Japan.
- Evans, Kristen, Laura Murphy, and Wil De Jong. 2014. "Global versus Local Narratives
- of REDD: A Case Study from Peru's Amazon." Environmental Science and
- *Policy* 35: 98–108. doi:10.1016/j.envsci.2012.12.013.
- Fa, John E., Dominic Currie, and Jessica Meeuwig. 2003. "Bushmeat and Food Security
- in the Congo Basin: Linkages between Wildlife and People's Future."
- *Environmental Conservation* 30 (1): 71–78. doi:10.1017/S0376892903000067.
- FAO. 2010. "Global Forest Resources Assessment 2010." *FAO Forestry Paper* 163: 350. doi:ISBN 978-92-5-106654-6.
- Fernández-Llamazares, Álvaro, Isabel Díaz-Reviriego, Maximilien Guèze, Mar Cabeza,
- 272 Aili Pyhälä, and Victoria Reyes-García. 2016. "Local Perceptions as a Guide for
- the Sustainable Management of Natural Resources: Empirical Evidence from a
- Small-Scale Society in Bolivian Amazonia." Ecology and Society 21 (1): 2.
- doi:10.5751/ES-08092-210102.
- Finley-Brook, M. 2007. "Indigenous Land Tenure Insecurity Fosters Illegal Logging in
- Nicaragua." International Forestry Review 9 (4): 850–64.
- doi:10.1505/ifor.9.4.850.
- Ford, Anabel, and Ronald Nigh. 2015. *The Maya Forest Garden: Eight Millennia of Sustainable Cultivation of the Tropical Woodlands*. Berkeley: Left Coast Press.
- Sustainable Cultivation of the Tropical Woodlands. Berkeley: Left Coast Press.
- Forest Peoples Programme, International Indigenous Forum on Biodiversity, and Secretariat of the Convention on Biological Diversity. 2016. "Local Biodiversity
- Outlooks. Indigenous Peoples' and Local Communities' Contributions to the
- Implementation of the Strategic Plan for Biodiversity 2011-2020. A Complement

- to the Fourth Edition of the Global Biodiversity Outlook." Moreton-in-Marsh, England.
- Fox, Coleen A., Nicholas James Reo, Dale A. Turner, Jo Anne Cook, Frank Dituri, Brett Fessell, James Jenkins, et al. 2017. "The River Is Us; the River Is in Our Veins': Re-Defining River Restoration in Three Indigenous Communities." Sustainability Science 12 (4): 521–33. doi:10.1007/s11625-016-0421-1.
- Frey, M., and I. Spellerberg. 2011. "Restoring the Amenity and Nature Conservation Values of Gravel Pits: An Ecological Restoration and Community Engagement Approach." *Australasian Journal of Environmental Management* 18 (1): 33–46. doi:10.1080/14486563.2011.566159.
- Garibaldi, Ann, and Nancy J. Turner. 2004. "Cultural Keystone Species: Implications for Ecological Conservation and Restoration." *Ecology and Society* 9 (3): 1. doi:10.1146/annurev-pharmtox-061008-103038.
- Glaser, B. 2007. "Prehistorically Modified Soils of Central Amazonia: A Model for Sustainable Agriculture in the Twenty-First Century." *Philosophical Transactions* of the Royal Society B: Biological Sciences 362 (1478): 187–96. doi:10.1098/rstb.2006.1978.
- Glomsrød, Solveig, Taoyuan Wei, Gang Liu, and Jens B. Aune. 2011. "How Well Do Tree Plantations Comply with the Twin Targets of the Clean Development Mechanism? - The Case of Tree Plantations in Tanzania." *Ecological Economics* 70 (6): 1066–74. doi:10.1016/j.ecolecon.2010.09.034.
- Golden, Christopher D, Edward Hugh Allison, Madan M. Dey, Benjamin S. Halpern,
  Douglas J McCauley, Matthew Smith, Bapu Vaitla, et al. 2016. "Fall in Fish
  Catch Threatens Human Health." *Nature* 534 (7607): 317–20.
  doi:10.1038/534317a.
- 310 Green, D., and G. Raygorodetsky. 2010. "Indigenous Knowledge of a Changing Climate." *Climatic Change* 100 (2): 239–42. doi:10.1007/s10584-010-9804-y.
- Griffiths, Thomas. 2004. "Indigenous Peoples, Land Tenure and Land Policy in Latin America." *Land Reform* 1: 46–62.
- Hall, A. 2012. Forests and Climate Change: The Social Dimensions of REDD in Latin America. Cheltenham, UK; Northampton, MA: Edward Elgar Publishing.
- Hartoyo, Adisti Permatasari Putri, Iskandar Z. Siregar, Supriyanto, Lilik B. Prasetyo, and Ida Thelaide. 2016. "Biodiversity, Carbon Stocks and Community Monitoring in Traditional Agroforestry Practices: Preliminary Results from Two Investigated Villages in Berau, East Kalimantan." *Procedia Environmental Sciences* 33: 376–85. doi:10.1016/j.proeny.2016.03.088.

- Hayes, Tanya Marie. 2007. "Does Tenure Matter? A Comparative Analysis of Agricultural Expansion in the Mosquitia Forest Corridor." *Human Ecology* 35 (6):
- 323 733–47. doi:10.1007/s10745-007-9117-6.
- 324 He, Jun, and Rong Lang. 2015. "Limits of State-Led Programs of Payment for
- Ecosystem Services: Field Evidence from the Sloping Land Conversion Program in Southwest China." *Human Ecology* 43 (5): 749–58. doi:10.1007/s10745-015-
- 327 9782-9.
- 328 He, Jun, Rong Lang, and Jianchu Xu. 2014. "Local Dynamics Driving Forest
- Transition: Insights from Upland Villages in Southwest China." Forests 5 (2):
- 330 214–33. doi:10.3390/f5020214.
- Heckbert, Scott, Jeremy Russell-Smith, Andrew Reeson, Jocelyn Davies, Glenn James,
- and Carl Meyer. 2012. "Spatially Explicit Benefit-Cost Analysis of Fire
- Management for Greenhouse Gas Abatement." Austral Ecology 37 (6): 724–32.
- 334 doi:10.1111/j.1442-9993.2012.02408.x.
- Heldt, Sonja, Paulina Budryte, Hans Werner Ingensiep, Burkhard Teichgraeber, Ute
- Schneider, and Martin Denecke. 2016. "Social Pitfalls for River Restoration: How
- Public Participation Uncovers Problems with Public Acceptance." *Environmental*
- 338 Earth Sciences 75 (13). doi:10.1007/s12665-016-5787-y.
- Higgs, Eric S. 1997. "What Is Good Ecological Restoration?" Conservation Biology.
- doi:10.1046/j.1523-1739.1997.95311.x.
- 341 Hill, Stephanie, and Brad Coombes. 2004. "The Limits of Participation in Dis-
- 342 Equilibrium Ecology: Maori Involvement in Habitat Restoration within Te
- 343 Urewera National Park." Science as Culture 13 (1): 37–74.
- doi:10.1080/0950543042000193771.
- Hobbs, Joseph J., Knut Krzywinski, Gidske L. Andersen, Mohamed Talib, Richard H.
- Pierce, and Ahmed E.M. Saadallah. 2014. "Acacia Trees on the Cultural
- Landscapes of the Red Sea Hills." *Biodiversity and Conservation* 23 (12): 2923–
- 348 43. doi:10.1007/s10531-014-0755-x.
- Holland, Margaret B., Kelly W. Jones, Lisa Naughton-Treves, José Luis Freire, Manuel
- Morales, and Luis Suárez. 2017. "Titling Land to Conserve Forests: The Case of
- Cuyabeno Reserve in Ecuador." *Global Environmental Change* 44: 27–38.
- doi:10.1016/j.gloenvcha.2017.02.004.
- Holmes, Ignacia, Catherine Potvin, and Oliver T. Coomes. 2017. "Early REDD+
- 354 Implementation: The Journey of an Indigenous Community in Eastern Panama."
- 355 Forests 8 (3): 1–18. doi:10.3390/f8030067.

- Holtgren, J. Marty, and Nancy A. Auer. 2016. "Re-Envisioning State and Tribal Collaboration in Fishery Assessment and Restoration." *Fisheries* 41 (5): 244–57. doi:10.1080/03632415.2016.1162159.
- Horiuchi, Mio, Katsue Fukamachi, and Hirokazu Oku. 2011. "Reed Community Restoration Projects with Citizen Participation: An Example of the Practical Use of Satoyama Landscape Resources in Shiga Prefecture, Japan." *Landscape and Ecological Engineering* 7 (2): 217–22. doi:10.1007/s11355-010-0129-9.
- Hormel, Leontina M., and Kari Marie Norgaard. 2009. "Bring the Salmon Home! Karuk Challenges to Capitalist Incorporation." *Critical Sociology* 35 (3): 343–66. doi:10.1177/0896920508101502.
- Howson, Peter, and Sara Kindon. 2015. "Analysing Access to the Local REDD+ Benefits of Sungai Lamandau, Central Kalimantan, Indonesia." *Asia Pacific Viewpoint* 56 (1): 96–110. doi:10.1111/apv.12089.
- Jackson, Sue, Michael Storrs, and Joe Morrison. 2005. "Recognition of Aboriginal Rights, Interests and Values in River Research and Management: Perspectives from Northern Australia." *Ecological Management and Restoration* 6 (2): 105–10. doi:10.1111/j.1442-8903.2005.00226.x.
- Jindal, Rohit, John M. Kerr, and Sarah Carter. 2012. "Reducing Poverty Through
  Carbon Forestry? Impacts of the N'hambita Community Carbon Project in
  Mozambique." World Development 40 (10): 2123–35.
  doi:10.1016/j.worlddev.2012.05.003.
- Jindal, Rohit, Brent Swallow, and John Kerr. 2008. "Forestry-Based Carbon Sequestration Projects in Africa: Potential Benefits and Challenges." *Natural Resources Forum* 32 (2): 116–30. doi:10.1111/j.1477-8947.2008.00176.x.
- Johnson, Craig R., Rebecca H. Chabot, Martin P. Marzloff, and Simon Wotherspoon.

  2017. "Knowing When (Not) to Attempt Ecological Restoration." Restoration

  Ecology 25 (1): 140–47. doi:10.1111/rec.12413.
- Junker, Berit, Mattias Buchecker, and Ulrike Mueller-Boeker. 2007. "Objectives of Public Participation: Which Actors Should Be Involved in the Decision Making for River Restorations?" *Water Resources Research* 43 (10): 96–110. doi:10.1029/2006WR005584.
- Junqueira, André B., Conny J.M. Almekinders, Tjeerd Jan Stomph, Charles R. Clement, and Paul C. Struik. 2016. "The Role of Amazonian Anthropogenic Soils in Shifting Cultivation: Learning from Farmers' Rationales." *Ecology and Society* 21 (1). doi:10.5751/ES-08140-210112.
- Junqueira, André Braga, Glenn Harvey Shepard, and Charles R. Clement. 2010. "Secondary Forests on Anthropogenic Soils in Brazilian Amazonia Conserve

- 393 Agrobiodiversity." *Biodiversity and Conservation* 19 (7): 1933–61. doi:10.1007/s10531-010-9813-1.
- Kessler, J. J., and P. Laban. 1994. "Planning Strategies and Funding Modalities for Land Rehabilitation." *Land Degradation & Development* 5 (1): 25–32. doi:10.1002/ldr.3400050104.
- Kimmerer, R N. 2000. "Native Knowledge for Native Ecosystems." *Journal of Forestry* 98 (8): 1288–1303.
- Kimmerer, Robin. 2011. "Restoration and Reciprocity: The Contributions of Traditional Ecological Knowledge." In *Human Dimensions of Ecological Restoration:*Integrating Science, Nature, and Culture, 257–76. doi:10.5822/978-1-61091-039-2.
- Kingsley, J., and S. Thomas. 2017. "Ecosystem Approaches to Community Health and Wellbeing: Towards an Integrated Australian Governance Framework in Response to Global Environmental Change." *EcoHealth* 14 (2): 210–13. doi:10.1007/s10393-016-1193-x.
- Laris, Paul, Moussa Koné, Sepideh Dadashi, and Fadiala Dembele. 2017. "The Early/late Fire Dichotomy: Time for a Reassessment of Aubréville's Savanna Fire Experiments." Progress in Physical Geography 41 (1): 68–94. doi:10.1177/0309133316665570.
- Laris, P., S. Dadashi, A. Jo, and S. Wechsler. 2016. "Buffering the Savanna: Fire Regimes and Disequilibrium Ecology in West Africa." Plant Ecology 217 (5): 583–96. doi:10.1007/s11258-016-0602-0.
- Larson, A M, M Brockhaus, W D Sunderlin, A Duchelle, A Babon, T Dokken, T T
   Pham, et al. 2013. "Land Tenure and REDD+: The Good, the Bad and the Ugly."
   Global Environmental Change 3: 678–79. doi:10.1016/j.gloenvcha.2013.02.014.
- Larson, A. M. 2010. "Making the 'Rules of the Game': Constituting Territory and Authority in Nicaragua's Indigenous Communities." *Land Use Policy* 27 (4): 1143–52. doi:10.1016/j.landusepol.2010.03.004.
- Larson, Anne M. 2011. "Forest Tenure Reform in the Age of Climate Change: Lessons for REDD+." *Global Environmental Change* 2 (21): 540–49. doi:10.1016/j.gloenvcha.2010.11.008.
- Larson, Anne M., and Ganga Ram Dahal. 2012. "Forest Tenure Reform: New Resource Rights for Forest-Based Communities?" *Conservation and Society* 10 (2): 77. doi:10.4103/0972-4923.97478.
- Larson, Anne M, Maria Brockhaus, William D Sunderlin, Amy Duchelle, Andrea Babon, Therese Dokken, Thu Thuy Pham, et al. 2013. "Land Tenure and REDD+:

- The Good, the Bad and the Ugly." *Global Environmental Change* 23 (3): 678–89. doi:10.1016/j.gloenvcha.2013.02.014.
- Lawlor, Kathleen, Erika Weinthal, and Lydia Olander. 2010. "Institutions and Policies to Protect Rural Livelihoods in REDD+ Regimes." *Global Environmental Politics* 10 (4): 1–11. doi:10.1162/GLEP a 00028.
- Le, Hai Dinh, Carl Smith, John Herbohn, and Stephen Harrison. 2012. "More than Just Trees: Assessing Reforestation Success in Tropical Developing Countries." Journal of Rural Studies 28 (1): 5–19. doi:10.1016/j.jrurstud.2011.07.006.
- Lee, L S, and K Courtenay. 2016. "Enrichment Plantings as a Means of Enhanced Bush Food and Bush Medicine Plant Production in Remote Arid Regions - a Review and Status Report." *Learning Communities-International Journal of Learning in* Social Contexts 19: 64–75.
- Lefale, Penehuro Fatu. 2010. "Ua'afa Le Aso Stormy Weather Today: Traditional Ecological Knowledge of Weather and Climate. The Samoa Experience."

  Climatic Change 100 (2): 317–35. doi:10.1007/s10584-009-9722-z.
- Lehmann, Johannes, Dirse Kern, Laura German, Joe Mccann, Gilvan Coimbra Martins,
   Adonis Moreira, Wim Sombroek, et al. 2003. "Amazonian Dark Earths: Origin
   Properties Management." Srpinger, Dordrecht, The Netherlands.
- Lejon, Anna G C, Birgitta Malm Renöfält, and Christer Nilsson. 2009. "Conflicts Associated with Dam Removal in Sweden." *Ecology and Society* 14 (2): 4.
- Liu, Jinlong, Ming Liang, Lingchao Li, Hexing Long, and Wil De Jong. 2017.

  "Comparative Study of the Forest Transition Pathways of Nine Asia-Pacific
  Countries." Forest Policy and Economics 76: 25–34.

  doi:10.1016/j.forpol.2016.03.007.
- Long, Jonathan, Aregai Tecle, and Benrita Burnette. 2003. "Cultural Foundations for Ecological Restoration on the White Mountain Apache Reservation." *Ecology and Society* 8 (1): 4. doi:10.5751/ES-00591-080104.
- Lyver, Phil O.B., Ashli Akins, Hilary Phipps, Viktoria Kahui, David R. Towns, and Henrik Moller. 2016. "Key Biocultural Values to Guide Restoration Action and Planning in New Zealand." *Restoration Ecology* 24 (3): 314–23. doi:10.1111/rec.12318.
- Macchi, M, Gonzalo Oviedo, Sarah Gotheil, Katharine Cross, Agni Boedhihartono,
  Caterina Wolfangel, and Matthew Howell. 2008. "Indigenous and Traditional
  Peoples and Climate Change." Gland, Switzerland.
  http://cmsdata.iucn.org/downloads/indigenous\_peoples\_climate\_change.pdf.
- Maikhuri, R K, R L Senwal, K S Rao, and K G Saxena. 1997. "Rehabilitation of Degraded Community Lands for Sustainable Development in Himalaya: A Case

- Study in Garhwal Himalaya, India." *International Journal Of Sustainable*467 Development And World Ecology 4 (3): 192–203.
  468 doi:10.1080/13504509709469954.
- McCall, Michael K., Noah Chutz, and Margaret Skutsch. 2016. "Moving from Measuring, Reporting, Verification (MRV) of Forest Carbon to Community Mapping, Measuring, Monitoring (MMM): Perspectives from Mexico." *PLoS*
- 472 ONE 11 (6): e0146038. doi:10.1371/journal.pone.0146038.
- McDermott, Constance L., Lauren Coad, Ariella Helfgott, and Heike Schroeder. 2012.
   "Operationalizing Social Safeguards in REDD+: Actors, Interests and Ideas."
   Environmental Science and Policy 21: 63–72. doi:10.1016/j.envsci.2012.02.007.
- McDonald, James. 2005. "Cultivating the Northwest: Early Accounts of Tsimshian
   Horticulture." In Keeping It Living: Traditions of Plant Use and Cultivation on
   the Northwest Coast of North America, 240–73.
- Meyfroidt, Patrick, and Eric F. Lambin. 2011. Global Forest Transition: Prospects for
   an End to Deforestation. Annual Review of Environment and Resources. Vol. 36.
   doi:10.1146/annurev-environ-090710-143732.
- Mijatović, Dunja, Frederik Van Oudenhoven, Pablo Eyzaguirre, and Toby Hodgkin.
  2013. "The Role of Agricultural Biodiversity in Strengthening Resilience to
  Climate Change: Towards an Analytical Framework." *International Journal of*Agricultural Sustainability 11 (2): 95–107. doi:10.1080/14735903.2012.691221.
- 486 Mills, M. 2003. "Restoring the Mauri of Oruarangi Creek." *Water Science and Technology* 48 (7): 129–37.
- Mistry, Jayalaxshmi, Bibiana A. Bilbao, and Andrea Berardi. 2016. "Community
  Owned Solutions for Fire Management in Tropical Ecosystems: Case Studies
  from Indigenous Communities of South America." *Philosophical Transactions of*the Royal Society B: Biological Sciences 371 (1696): 20150174.
  doi:10.1098/rstb.2015.0174.
- Montagnini, F., and P. K.R. Nair. 2004. "Carbon Sequestration: An Underexploited Environmental Benefit of Agroforestry Systems." *Agroforestry Systems* 61–62 (1–3): 281–95. doi:10.1023/B:AGFO.0000029005.92691.79.
- Murphy, Brett P., and David M.J.S. Bowman. 2007. "The Interdependence of Fire,
   Grass, Kangaroos and Australian Aborigines: A Case Study from Central Arnhem
   Land, Northern Australia." *Journal of Biogeography* 34 (2): 237–50.
   doi:10.1111/j.1365-2699.2006.01591.x.
- Mustonen, Tero. 2015. "Communal Visual Histories to Detect Environmental Change in
   Northern Areas: Examples of Emerging North American and Eurasian Practices."
   Ambio 44 (8): 766–77. doi:10.1007/s13280-015-0671-7.

- Nagendra, H. 2007. "Drivers of Reforestation in Human-Dominated Forests."

  Proceedings of the National Academy of Sciences 104 (39): 15218–23.

  doi:10.1073/pnas.0702319104.
- Naughton-Treves, Lisa, and Kelly Wendland. 2014. "Land Tenure and Tropical Forest Carbon Management." *World Development* 55: 1–6. doi:10.1016/j.worlddev.2013.01.010.
- Nelson, Andrew, and Kenneth M Chomitz. 2011. "Effectiveness of Strict vs. Multiple
  Use Protected Areas in Reducing Tropical Forest Fires: A Global Analysis Using
  Matching Methods." *PLoS ONE* 6 (8): e22722.
- 512 doi:10.1371/journal.pone.0022722.
- Nepstad, D., S. Schwartzman, B. Bamberger, M. Santilli, D. Ray, P. Schlesinger, P. Lefebvre, et al. 2006. "Inhibition of Amazon Deforestation and Fire by Parks and Indigenous Lands." *Conservation Biology* 20 (1): 65–73. doi:10.1111/j.1523-1739.2006.00351.x.
- Nguyen, Tan Phong, Thai Thanh Luom, and Kevin E. Parnell. 2017. "Mangrove Allocation for Coastal Protection and Livelihood Improvement in Kien Giang Province, Vietnam: Constraints and Recommendations." *Land Use Policy* 63: 401–7. doi:10.1016/j.landusepol.2017.01.048.
- Nguyen, Trung Thanh, Siegfried Bauer, and Holm Uibrig. 2010. "Land Privatization and Afforestation Incentive of Rural Farms in the Northern Uplands of Vietnam." Forest Policy and Economics 12 (7): 518–26. doi:10.1016/j.forpol.2010.05.007.
- Nielsen-Pincus, Max, and Cassandra Moseley. 2013. "The Economic and Employment Impacts of Forest and Watershed Restoration." *Restoration Ecology* 21 (2): 207–14. doi:10.1111/j.1526-100X.2012.00885.x.
- Nolte, Christoph, Arun Agrawal, Kirsten M. Silvius, and Britaldo S. Soares-Filho. 2013.

  "Governance Regime and Location Influence Avoided Deforestation Success of
  Protected Areas in the Brazilian Amazon." *Proceedings of the National Academy*of Sciences 110 (13): 4956–61. doi:10.1073/pnas.1214786110.
- Novotny, Etelvino H., Michael H.B. Hayes, Beáta E. Madari, Tito J. Bonagamba, Eduardo R. deAzevedo, André A. de Souza, Guixue Song, Christiane M. Nogueira, and Antonio S. Mangrich. 2009. "Lessons from the Terra Preta de Índios of the Amazon Region for the Utilisation of Charcoal for Soil Amendment." *Journal of the Brazilian Chemical Society* 20 (6): 1003–10. doi:10.1590/S0103-50532009000600002.
- Paneque-Gálvez, Jaime, Jean François Mas, Maximilien Guèze, Ana Catarina Luz, Manuel J. Macía, Martí Orta-Martínez, Joan Pino, and Victoria Reyes-García. 2013. "Land Tenure and Forest Cover Change. The Case of Southwestern Beni,

- Bolivian Amazon, 1986-2009." *Applied Geography* 43: 113–26. doi:10.1016/j.apgeog.2013.06.005.
- Paquette, Alain, Jessica Hawryshyn, Alexandra Vyta Senikas, and Catherine Potvin. 2009. "Enrichment Planting in Secondary Forests: A Promising Clean
- Development Mechanism to Increase Terrestrial Carbon Sinks." *Ecology and Society* 14 (1): 31. doi:31.
- Pascua, Pua'ala, Heather McMillen, Tamara Ticktin, Mehana Vaughan, and Kawika B.
- Winter. 2017. "Beyond Services: A Process and Framework to Incorporate
- Cultural, Genealogical, Place-Based, and Indigenous Relationships in Ecosystem
- Service Assessments." *Ecosystem Services* 26: 465–75.
- 550 doi:10.1016/j.ecoser.2017.03.012.
- Paudyal, Kiran, Himlal Baral, Benjamin Burkhard, Santosh P Bhandari, and Rodney J
- Keenan. 2015. "Participatory Assessment and Mapping of Ecosystem Services in
- a Data-Poor Region: Case Study of Community-Managed Forests in Central
- Nepal." *Ecosystem Services* 13: 81–92. doi:10.1016/j.ecoser.2015.01.007.
- Pecl, Gretta T., and Et Al. 2017. "Biodiversity Redistribution under Climate Change:
- Impacts on Ecosystems and Human Well-Being." *Science* 355 (6332): eaai9214.
- doi:10.1126/science.aai9214.
- Pellant, M, B Abbey, and S Karl. 2004. "Restoring the Great Basin Desert, USA:
- Integrating Science, Management, and People." Environmental Monitoring and
- Assessment 99 (1–3): 169–79. doi:10.1007/s10661-004-4017-3.
- Pfeiffer, Jeanine M., and Robert A. Voeks. 2008. "Biological Invasions and Biocultural
- 562 Diversity: Linking Ecological and Cultural Systems." Environmental
- *Conservation* 35 (4): 281–93. doi:10.1017/S0376892908005146.
- Phong, Nguyen Tan, Thai Thanh Luom, and Kevin E Parnell. 2017. "Mangrove
- Allocation for Coastal Protection and Livelihood Improvement in Kien Giang
- Province, Vietnam: Constraints and Recommendations." Land Use Policy 63:
- 567 401–7. doi:10.1016/j.landusepol.2017.01.048.
- 568 Phong, Nguyen Tan, Kevin E Parnell, and Alison Cottrell. 2017. "Human Activities and
- Coastal Erosion on the Kien Giang Coast, Vietnam." Journal of Coastal
- *Conservation* 21 (6): 967–79. doi:10.1007/s11852-017-0566-9.
- Pohnan, Erica, Hotlin Ompusunggu, and Campbell Webb. 2015. "Does Tree Planting
- Change Minds? Assessing the Use of Community Participation in Reforestation to
- Address Illegal Logging in West Kalimantan." *Tropical Conservation Science* 8
- 574 (1): 45–57. doi:10.1177/194008291500800107.
- Porter-Bolland, Luciana, Edward A. Ellis, Manuel R. Guariguata, Isabel Ruiz-Mallén,
- Simoneta Negrete-Yankelevich, and Victoria Reyes-García. 2012. "Community

- 577 Managed Forests and Forest Protected Areas: An Assessment of Their Conservation Effectiveness across the Tropics." *Forest Ecology and Management* 268: 6–17. doi:10.1016/j.foreco.2011.05.034.
- 580 RAISG. 2016. "Amazonia 2016. Protected Areas and Indigenous Territories."
- Reyes-García, Victoria, Juan Carlos Ledezma, Jaime Paneque-Gálvez, Martí Orta,
  Maximilien Gueze, Agustín Lobo, Daniel Guinart, and Ana Catarina Luz. 2012.

  "Presence and Purpose of Nonindigenous Peoples on Indigenous Lands: A
  Descriptive Account from the Bolivian Lowlands." Society & Natural Resources
- 585 25: 270–84. doi:10.1080/08941920.2010.531078.
- Reynolds, Travis W. 2012. "Institutional Determinants of Success Among Forestry-Based Carbon Sequestration Projects in Sub-Saharan Africa." *World Development* 40 (3): 542–54. doi:10.1016/j.worlddev.2011.09.001.
- Richards, Anna E., Alan N. Andersen, Jon Schatz, Robert Eager, Tracy Z. Dawes, Kate Hadden, Kelly Scheepers, and Maria Van Der Geest. 2012. "Savanna Burning, Greenhouse Gas Emissions and Indigenous Livelihoods: Introducing the Tiwi Carbon Study." *Austral Ecology* 37 (6): 712–23. doi:10.1111/j.1442-9993.2012.02395.x.
- Richardson, Benjamin J, and Ted Lefroy. 2016. "Restoration Dialogues: Improving the Governance of Ecological Restoration." *Restoration Ecology* 24 (5): 668–73.
- Ricketts, Taylor H, Britaldo Soares-Filho, Gustavo A B da Fonseca, Daniel Nepstad,
  Alexander Pfaf, Annie Petsonk, Anthony Anderson, et al. 2010. "Indigenous
  Lands, Protected Areas, and Slowing Climate Change." *PLoS Biology* 8 (3): 6–9.
  doi:10.1371/journal.pbio.1000331.
- Rights and Resources Initiative. 2014. Lots of Words, Little Action Will the Private

  Sector Tip the Scales for Community Land Rights?
- Robertson, Margaret, Pam Nichols, Pierre Horwitz, Keith Bradby, and David MacKintosh. 2000. "Environmental Narratives and the Need for Multiple Perspectives to Restore Degraded Landscapes in Australia." *Ecosystem Health* 6 (2): 119–33. doi:10.1046/j.1526-0992.2000.00013.x.
- Robinson, Brian E., Margaret B. Holland, and Lisa Naughton-Treves. 2014. "Does Secure Land Tenure Save Forests? A Meta-Analysis of the Relationship between Land Tenure and Tropical Deforestation." *Global Environmental Change* 29: 281–93. doi:10.1016/j.gloenvcha.2013.05.012.
- Roe, Stephanie, Charlotte Streck, Luke Pritchard, and John Costenbader. 2013.

  "Safeguards in REDD+ and Forest Carbon Standards: A Review of Social,
  Environmental and Procedural Concepts and Application." *Climate Focus*: 1–89.

- Rose, Denis, Damein Bell, and David A. Crook. 2016. "Restoring Habitat and Cultural
- Practice in Australia's Oldest and Largest Traditional Aquaculture System."
- Reviews in Fish Biology and Fisheries 26. Springer International Publishing: 589–
- 616 600. doi:10.1007/s11160-016-9448-8.
- Russell-Smith, Jeremy, Cameron P. Yates, Andrew C. Edwards, Peter J. Whitehead,
- Brett P. Murphy, and Michael J. Lawes. 2015. "Deriving Multiple Benefits from
- Carbon Market-Based Savanna Fire Management: An Australian Example." *PLoS*
- *ONE* 10 (12): e0143426. doi:10.1371/journal.pone.0143426.
- 621 Salick, J, S K Ghimire, Z D Fang, S Dema, and K M Konchar. 2014. "Himalayan
- Alpine Vegetation, Climate Change and Mitigation." *Journal of Ethnobiology* 34
- 623 (3): 276–93. doi:10.2993/0278-0771-34.3.276.
- Sangha, Kamaljit K., Andrew Le Brocque, Robert Costanza, and Yvonne Cadet-James.
- 625 2015. "Ecosystems and Indigenous Well-Being: An Integrated Framework."
- *Global Ecology and Conservation* 4: 197–206. doi:10.1016/j.gecco.2015.06.008.
- Sayer, Jeffrey, Gary Bull, and Chris Elliott. 2008. "Mediating Forest Transitions:
- 628 'Grand Design' or 'Muddling Through.'" Conservation and Society 6 (4): 320–27.
- doi:10.4103/0972-4923.49195.
- 630 Schleicher, Judith, Carlos A. Peres, Tatsuya Amano, William Llactayo, and Nigel
- Leader-Williams. 2017. "Conservation Performance of Different Conservation
- Governance Regimes in the Peruvian Amazon." Scientific Reports 7 (1): 11318.
- 633 doi:10.1038/s41598-017-10736-w.
- 634 Seid, M.A., N.J. Kuhn, and T.Z. Fikre. 2016. "The Role of Pastoralism in Regulating
- 635 Ecosystem Services." Rev. Sci. Tech. Int. Epiz. 35 (2): 435–44.
- 636 doi:10.20506/rst.35.2.2534.
- 637 Selvam, V., K. K. Ravichandran, L. Gnanappazham, and M. Navamuniyammal. 2003.
- "Assessment of Community-Based Restoration of Pichavaram Mangrove Wetland
- Using Remote Sensing Data." Current Science 85 (6): 794–98.
- http://www.jstor.org/stable/24109889?seq=1#page scan tab contents.
- 641 Shackelford, Nancy, Richard J. Hobbs, Joanna M. Burgar, Todd E. Erickson, Joseph B.
- Fontaine, Etienne Laliberté, Cristina E. Ramalho, Michael P. Perring, and Rachel
- J. Standish. 2013. "Primed for Change: Developing Ecological Restoration for the
- 21st Century." *Restoration Ecology* 21 (3): 297–304. doi:10.1111/rec.12012.
- Shaffer, L Jen. 2010. "Indigenous Fire Use to Manage Savanna Landscapes in Southern
- 646 Mozambique." *Fire Ecology* 6 (2): 43–59. doi:10.4996/fireecolgy.0602043.
- 647 Sheil, Douglas, Imam Basuki, Laura German, Thomas W. Kuyper, Godwin Limberg,
- Rajindra K. Puri, Bernard Sellato, Meine van Noordwijk, and Eva Wollenberg.
- 649 2012. "Do Anthropogenic Dark Earths Occur in the Interior of Borneo? Some

- 650 Initial Observations from East Kalimantan." *Forests* 3 (2): 207–27. doi:10.3390/f3020207.
- Sheil, Douglas, Imam Basuki, Laura German, Thomas W. Kuyper, Godwin Limberg, Rajindra K. Puri, Bernard Sellato, Meine van Noordwijk, and Eva Wollenberg. 2012. "Do Anthropogenic Dark Earths Occur in the Interior of Borneo? Some Initial Observations from East Kalimantan." *Forests* 3 (2): 207–29.
- Singh, Awani K, Ranjay K Singh, A K Singh, V K Singh, S S Rawat, K S Mehta, A
   Kumar, Manoj K Gupta, and Shailja Thakur. 2014. "Bio-Mulching for Ginger
   Crop Management: Traditional Ecological Knowledge Led Adaptation under
   Rainfed Agroecosystems." *Indian Journal of Traditional Knowledge* 13 (1): 111–
   22.
- Smith, Amelia, Susan H. Yee, Marc Russell, Jill Awkerman, and William S. Fisher. 2017. "Linking Ecosystem Service Supply to Stakeholder Concerns on Both Land and Sea: An Example from Guánica Bay Watershed, Puerto Rico." *Ecological Indicators* 74: 371–83. doi:10.1016/j.ecolind.2016.11.036.
- Smith, Amelia, Susan H Yee, Marc Russell, Jill Awkerman, and William S Fisher.

  2017. "Linking Ecosystem Service Supply to Stakeholder Concerns on Both Land
  and Sea: An Example from Guanica Bay Watershed, Puerto Rico." *Ecological Indicators* 74: 371–83. doi:10.1016/j.ecolind.2016.11.036.
- Soares-Filho, B, P Moutinho, D Nepstad, A Anderson, H Rodrigues, R Garcia, L
   Dietzsch, et al. 2010. "Role of Brazilian Amazon Protected Areas in Climate
   Change Mitigation." Proceedings of the National Academy of Sciences of the
   United States of America 107 (24): 10821–26. doi:10.1073/pnas.0913048107.
- Soares-Filho, Britaldo, Letica Lima, Maria Bowman, and Leticia Viana. 2012. "Challenges for Low-Carbon Agriculture and Forest Conservation in Brazil."
- Soentgen, Jens, Klaus Hilbert, Carolin von Groote-Bidlingmaier, Gabriele Herzogschröder, Eije Erich Pabst, and Sabine Timpf. 2017. "Terra Preta de Índio: Commodification and Mythification of the Amazonian Dark Earths." *Gaia* 26 (2): 136–43. doi:10.14512/gaia.26.2.18.
- Solomon, Dawit, Johannes Lehmann, James A. Fraser, Melissa Leach, Kojo Amanor, Victoria Frausin, Søren M. Kristiansen, Dominique Millimouno, and James Fairhead. 2016. "Indigenous African Soil Enrichment as a Climate-Smart Sustainable Agriculture Alternative." *Frontiers in Ecology and the Environment* 14 (2): 71–76. doi:10.1002/fee.1226.
- Stenseke, Marie. 2009. "Local Participation in Cultural Landscape Maintenance: Lessons from Sweden." *Land Use Policy* 26 (2): 214–23. doi:10.1016/j.landusepol.2008.01.005.

- Sterling, Eleanor J., Christopher Filardi, Anne Toomey, Amanda Sigouin, Erin Betley, Nadav Gazit, Jennifer Newell, et al. 2017. "Biocultural Approaches to Well-Being and Sustainability Indicators across Scales." *Nature Ecology and Evolution* 1 (12): 1798–1806. doi:10.1038/s41559-017-0349-6.
- Stevens, C, R Winterbottom, J Springer, and K Reytar. 2014. "Securing Rights, Combating Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change." Washington, DC.
- Stewart, J., M. Anda, and R. J. Harper. 2016. "Carbon Profiles of Remote Australian Indigenous Communities: A Base for Opportunities." *Energy Policy* 94: 77–88. doi:10.1016/j.enpol.2016.03.036.
- Stone, Kathy, Mahadev Bhat, Ramachandra Bhatta, and Andrew Mathews. 2008.

  "Factors Influencing Community Participation in Mangroves Restoration: A
  Contingent Valuation Analysis." *Ocean & Coastal Management* 51 (6): 476–84.
  doi:10.1016/j.ocecoaman.2008.02.001.
- Storm, Linda, and Daniela Shebitz. 2006. "Evaluating the Purpose, Extent, and Ecological Restoration Applications of Indigenous Burning Practices in Southwestern Washington." *Ecological Restoration* 24 (4): 256–68. doi:10.3368/er.24.4.256.
- Sunderlin, William D, Anne M Larson, Amy E Duchelle, Ida Aju Pradnja Resosudarmo, Thu Ba Huynh, Abdon Awono, and Therese Dokken. 2014. "How Are REDD+ Proponents Addressing Tenure Problems? Evidence from Brazil, Cameroon, Tanzania, Indonesia, and Vietnam." *World Development* 55: 37–52. doi:10.1016/j.worlddev.2013.01.013.
- Suryanto, P, and E T S Putra. 2012. "Traditional Enrichment Planting in Agroforestry
   Marginal Land Gunung Kidul, Java, Indonesia." *Journal of Sustainable* Development 5 (2): 77–87. doi:10.5539/jsd.v5n2p77.
- 713 Tekle, K. 1999. "Land Degradation Problems and Their Implications for Food Shortage 714 in South Wello, Ethiopia." *Environmental Management* 23 (4): 419–27. 715 doi:10.1007/s002679900197.
- Thacher, T, D R Lee, and J W Schelhas. 1997. "Farmer Participation in Reforestation
   Incentive Programs in Costa Rica." Agroforestry Systems 35 (3): 269–89.
   doi:10.1007/BF00044458.
- Thacher, T, D Lee, and J Schelhas. 1997. "Farmer Participation in Reforestation
   Incentive Programs in Costa Rica." American Journal of Agricultural Economics
   79 (5): 1704.

- 722 Thornton, Thomas, Douglas Deur, and Herman Kitka. 2015. "Cultivation of Salmon and Other Marine Resources on the Northwest Coast of North America." *Human*
- *Ecology* 43 (2): 189–99. doi:10.1007/s10745-015-9747-z.
- Throop, William, and Rebecca Purdom. 2006. "Wilderness Restoration: The Paradox of Public Participation." *Restoration Ecology* 14 (4): 493–99. doi:10.1111/j.1526-100X.2006.00160.x.
- Trauernicht, Clay, Barry W. Brook, Brett P. Murphy, Grant J. Williamson, and David M.J.S. Bowman. 2015. "Local and Global Pyrogeographic Evidence That Indigenous Fire Management Creates Pyrodiversity." *Ecology and Evolution* 5 (9): 1908–18. doi:10.1002/ece3.1494.
- Trialfhianty, Tyas Ismi, and Suadi. 2017. "The Role of the Community in Supporting
  Coral Reef Restoration in Pemuteran, Bali, Indonesia." *Journal of Coastal*Conservation 21 (6): 873–82. doi:10.1007/s11852-017-0553-1.
- Tschakert, Petra, Oliver T. Coomes, and Catherine Potvin. 2007. "Indigenous Livelihoods, Slash-and-Burn Agriculture, and Carbon Stocks in Eastern Panama."
   Ecological Economics 60 (4): 807–20. doi:10.1016/j.ecolecon.2006.02.001.
- Tucker, Catherine M. 2004. "Community Institutions and Forest Management in Mexico's Monarch Butterfly Reserve." Society and Natural Resources 17 (7): 569–87. doi:10.1080/08941920490466143.
- Turner, Nancy J., Lukasz Jakub Luczaj, Paola Migliorini, Andrea Pieroni, Angelo Leandro Dreon, Linda Enrica Sacchetti, and Maurizio G. Paoletti. 2011. "Edible and Tended Wild Plants, Traditional Ecological Knowledge and Agroecology." Critical Reviews in Plant Sciences (1-2): 198-225. doi:10.1080/07352689.2011.554492.
- Turner, NJ, MB Ignace, and R Ignace. 2000. "Traditional Ecological Knowledge and
   Wisdom of Aboriginal Peoples in British Columbia." *Ecological Applications* 10
   (5): 1275–87. doi:10.1890/1051-0761(2000)010[1275:TEKAWO]2.0.CO;2.
- Turnhout, Esther, Aarti Gupta, Janice Weatherley-Singh, Marjanneke J. Vijge, Jessica
   de Koning, Ingrid J. Visseren-Hamakers, Martin Herold, and Markus Lederer.
   2017. "Envisioning REDD+ in a Post-Paris Era: Between Evolving Expectations
   and Current Practice." Wiley Interdisciplinary Reviews: Climate Change 8 (1): 1–
   13. doi:10.1002/wcc.425.
- Uprety, Yadav, Hugo Asselin, Yves Bergeron, Frédérik Doyon, and Jean-François Boucher. 2012. "Contribution of Traditional Knowledge to Ecological Restoration: Practices and Applications." *Écoscience* 19 (3): 225–37. doi:10.2980/19-3-3530.

- Uychiaoco, A J, P M Alino, and A L Dantis. 2000. "Initiatives in Philippine Coastal
   Management: An Overview." *Coastal Management* 28 (1): 55–63.
- Van Dam, Chris. 2011. "Indigenous Territories and REDD in Latin America: Opportunity or Threat?" *Forests* 2 (1): 394–414. doi:10.3390/f2010394.
- Vergara-Asenjo, Gerardo, and Catherine Potvin. 2014. "Forest Protection and Tenure Status: THE Key Role of Indigenous Peoples and Protected Areas in Panama."
- 764 Global Environmental Change 28 (1): 205–15.
- 765 doi:10.1016/j.gloenvcha.2014.07.002.
- Vining, J, E Tyler, and B.S. Kweon. 2000. "Public Values, Opinions, and Emotions in
   Restoration Controversies." In *Restoring Nature: Perspectives from the Social* Sciences and Humanities, 143–61. doi:citeulike-article-id:2687785.
- Walker, Wayne, Alessandro Baccini, Stephan Schwartzman, Sandra Ríos, María A.
   Oliveira-Miranda, Cicero Augusto, Milton Romero Ruiz, et al. 2014. "Forest
   Carbon in Amazonia: The Unrecognized Contribution of Indigenous Territories
   and Protected Natural Areas." Carbon Management 5 (5–6): 479–85.
   doi:10.1080/17583004.2014.990680.
- Walters, Bradley B. 2000. "Local Mangrove Planting in the Philippines: Are Fisherfolk
   and Fishpond Owners Effective Restorationists?" *Restoration Ecology* 8 (3): 237–46. doi:10.1046/j.1526-100X.2000.80035.x.
- Wangpakapattanawong, Prasit, Nuttira Kavinchan, Chawapich Vaidhayakarn, Dietrich Schmidt-Vogt, and Stephen Elliott. 2010. "Fallow to Forest: Applying Indigenous and Scientific Knowledge of Swidden Cultivation to Tropical Forest Restoration." Forest Ecology and Management (8): 1399-1406. doi:10.1016/j.foreco.2010.07.042.
- Watanabe, Moriaki, Patma Vityakon, and A. Terry Rambo. 2014. "Can't See the Forest
   for the Rice: Factors Influencing Spatial Variations in the Density of Trees in
   Paddy Fields in Northeast Thailand." *Environmental Management* 53 (2): 343–56.
   doi:10.1007/s00267-013-0206-6.
- Wehi, Priscilla M., and Janice M. Lord. 2017. "Importance of Including Cultural
   Practices in Ecological Restoration." *Conservation Biology* 31 (5): 1109–18.
   doi:10.1111/cobi.12915.
- Welch, James R., Eduardo S. Brondízio, Scott S. Hetrick, and Carlos E A Coimbra.
   2013. "Indigenous Burning as Conservation Practice: Neotropical Savanna
   Recovery amid Agribusiness Deforestation in Central Brazil." *PLoS ONE* 8 (12).
   doi:10.1371/journal.pone.0081226.

- White, Douglas. 2014. "A Perfect Storm? Indigenous Rights within a National REDD+
  Readiness Process in Peru." *Mitigation and Adaptation Strategies for Global*Change 19 (6): 657–76. doi:10.1007/s11027-013-9523-6.
- Wilman, Elizabeth A. 2015. "An Economic Model of Aboriginal Fire-Stick Farming."
   Australian Journal of Agricultural and Resource Economics 59 (1): 39–60.
   doi:10.1111/1467-8489.12038.
- Wilson, Jeffrey S, and Greg H Lindsey. 2009. "Identifying Urban Neighborhoods for Tree Canopy Restoration Through Community Participation." In *Planning and Socioeconomic Applications*, edited by RR Gatrell, JD and Jensen, 1:29–42. Geotechnologies and the Environment. doi:10.1007/978-1-4020-9642-6 3.
- Wortley, Liana, Jean Marc Hero, and Michael Howes. 2013. "Evaluating Ecological Restoration Success: A Review of the Literature." *Restoration Ecology* 21 (5): 537–43. doi:10.1111/rec.12028.
- Xu, W., Y. Yin, and S. Zhou. 2007. "Social and Economic Impacts of Carbon Sequestration and Land Use Change on Peasant Households in Rural China: A Case Study of Liping, Guizhou Province." *Journal of Environmental Management* 85 (3): 736–45. doi:10.1016/j.jenvman.2006.09.013.
- Yamanoshita, Makino Yamada, and Masahiro Amano. 2012. "Capability Development of Local Communities for Project Sustainability in Afforestation/reforestation Clean Development Mechanism." *Mitigation and Adaptation Strategies for Global Change* 17 (4): 425–40. doi:10.1007/s11027-011-9334-6.
- Yang, Xiaohui, Zhiqing Jia, and Longjun Ci. 2010. "Assessing Effects of Afforestation Projects in China." *Nature* 466(7304): 315. doi:10.1038/466315c.
- Yan-qiong, Ye, Chen Guo-jie, and Fan Hong. 2003. "Impacts of the 'Grain for Green' Project on Rural Communities in the Upper Min River Basin, Sichuan, China."

  Mountain Research and Development 23 (4): 345–52. doi:10.1659/0276-4741(2003)023[0345:IOTGFG]2.0.CO;2.
- Zorner, R J, A Trabucc, D A Bossio, and L V Verchota. 2008. "Climate Change Mitigation: A Spatial Analysis of Global Land Suitability for Clean Development Mechanism Afforestation and Reforestation." *Agriculture Ecosystems & Environment* 126 (1–2): 67–80.