UC Berkeley

Parks Stewardship Forum

Title

The vital role of rangers in conservation

Permalink https://escholarship.org/uc/item/9mc777pm

Journal Parks Stewardship Forum, 37(1)

ISSN 2688-187X

Authors

Singh, Rohit Galliers, Chris Appleton, Mike <u>et al.</u>

Publication Date 2021

DOI

10.5070/P537151745

License

https://creativecommons.org/licenses/by-nc/4.0/ 4.0

Peer reviewed

eScholarship.org

IMPLEMENTING THE CHITWAN DECLARATION OF THE 9TH WORLD RANGER CONGRESS: NEXT STEPS FOR THE GLOBAL RANGER COMMUNITY ROHIT SINGH, GUEST EDITOR



The vital role of rangers in conservation

Rohit Singh, WWF; Chris Galliers, International Ranger Federation;

Mike Appleton, IUCN World Commission on Protected Areas; Mike Hoffmann, Zoological Society of London; Barney Long, Global Wildlife Conservation; Joanna Cary-Elwes, Fauna and Flora International; Camilla Fritze, Panthera; Jamie McCallum, Force for Nature; Rob Parry Jones, WWF International

Corresponding author Rohit Singh WWF C/O WWF Singapore 354 Tanglin Road, #02-11 Tanglin Block Tanglin International Centre Singapore 247672 rsingh@wwfnet.org

Abstract

Global biodiversity is declining at an unprecedented rate. The majority of the protected and conserved areas (PCAs) that are the core elements of protecting the world's biodiversity, and the ecosystem services it provides, are not under sound management. Adequate numbers of competent, well-resourced, and well-led rangers are the foundation for effective management of these PCAs. However, the majority of rangers are unrecognized, under-appreciated, and under-resourced. Rangers operate under poor and dangerous working environments with inadequate employment conditions. The International Ranger Federation (IRF), as a global representative body of rangers, has been working to connect and recognize rangers through several initiatives, including the triennial World Ranger Congress (WRC). The Chitwan Declaration of the 9th WRC, held in Nepal in 2019, strongly encourages those who manage PCAs that employ rangers to identify shortcomings, and thereafter introduce measures to improve outcomes. The Universal Ranger Support Alliance (URSA) is an alliance of seven conservation organizations to support IRF with the implementation of the Chitwan Declaration. URSA has developed a global five-year action plan to accomplish lasting transformation to create a professional, responsible, and accountable ranger workforce that is properly valued, led, and supported. URSA itself and the action plan provide a global platform for individual conservation professionals, rangers, conservation organizations, and ranger employers to work together in supporting rangers-the first responders responsible for maintaining the health of the planet.

Background

The global decline in nature is occurring faster than ever before in human history. One million plant and animal species are estimated to be threatened with extinction (IPBES 2019), Today, the combined biomass of humans and livestock far exceed that of wild mammals (Bar-on et al. 2018). The Living Planet Index (LPI) shows an average 68% decrease in population sizes of mammals, birds, amphibians, reptiles, and fish between 1970 and 2016 (WWF 2020). Protected areas are core elements of global efforts to conserve biodiversity, ecosystem services, and associated cultural values (Masourian et al. 2008; Scherl and Emerton 2008; Gray et al. 2016; Cazalis et al. 2020). They are a cornerstone of the Aichi Biodiversity Targets (especially Target 11) and have a vital role in achieving the 2030 Sustainable Development Goals (SDGs), especially SDG 14 (Life Below Water) and SDG 15 (Life on Land). Protected areas will also be critical to the effective implementation of the emerging post-2020 global biodiversity framework. In 2020, protected areas cover 15% of the planet's terrestrial surface and 7% of its seas,¹ but there is growing consensus that to keep the planet and its population flourishing, a much higher proportion of Earth needs to be under effective and equitable conservation management by 2030. Beyond the network of officially recognized state-run protected areas, there is increasing recognition of the importance of the substantial but less-well-defined network of "conserved areas" under the stewardship

of Indigenous and local communities, and of protected areas managed by private and other owners (Harry et al. 2014; Kothari 2017; Mitchell et al. 2018).

However, the effectiveness of the protected area network is not matching its expansion: Leverington et al. (2010) found that only 24% of protected areas are under "sound management," while currently only around 5% of terrestrial and 1% of marine protected areas have even had their effectiveness evaluated.² Limited capacity is widely recognized as a major constraint on protected area management and performance (Gill et al. 2017; Coad et al. 2019).

Adequate numbers of competent, well-resourced, and well-led rangers are the foundation for effective management of most protected and conserved areas. The International Ranger Federation (IRF) defines "ranger" as a person involved in the practical protection and preservation of all aspects of wild areas, historic



Brazilian ranger | MARIZILDA CRUPPE/WWF

sites, and other cultural sites (IRF 2019). Generally, the work of rangers focuses on preventing biodiversity loss and ecosystem degradation, but they also play a wide variety of other roles (Schulze et al. 2017), including biological monitoring, habitat management, human–wildlife conflict mitigation, tourism management, community engagement, and education.

Rangers work for national and regional government agencies, non-governmental organizations (NGOs), private conservation bodies, communities, and as volunteers. We do not know how many there are around the world (a global survey will be published in 2021), but it is widely accepted that there are not nearly enough to respond to the growing need. We know even less about the representatives of Indigenous people and local communities who fulfil "ranger-equivalent" roles in Indigenous and community-conserved areas (ICCAs) and other traditionally managed territories.

The diverse work of rangers requires exceptional skill and professionalism and demands the highest standards of personal conduct, but is frequently unrecognized, under-appreciated, and underresourced. Many rangers endure inadequate employment conditions and poor and dangerous working environments (Leakey and Morrell 2001; Eliason 2011; Warchol and Kapla 2012; Ogunjinmi et al. 2008; Moreto 2016; Belecky 2019). Threats, violence, injury, disease and death are not uncommon, as reflected in the annual "Roll of Honour" data released by IRF. No fewer than 1,157 rangers lost their lives in the line of duty between 2009 and 2020 (IRF 2020).

Abuse and misconduct by rangers in some countries, as well as concerns about "militarization" (Duffy et al. 2019), threaten to undermine the dedicated and responsible work of the vast majority of rangers. For them to work effectively, responsibly, and accountably they need to be properly led, supported, and valued within a professionalized sector, recognized as such. A more professional ranger sector will improve the standing of rangers among decisionmakers, communities, and the public, leading to improved resourcing, policies, and support, and ultimately more effective management of protected and conserved areas.

There is widespread expert recognition that harm to the environment jeopardizes human rights, including, at the extreme end of spectrum, the right to life (UNHRC 2018). Conversely, the protection of human rights is also necessary to ensure a safe, clean, healthy, and sustainable environment (Knox 2017; UN 2019). Unsustainable exploitation of natural resources threatens biodiversity, and poses an existential threat to humankind; conversely, a functioning ecosystem protects biodiversity and human health (IUCN 2009). Rangers employed by the state have a duty to respect and protect human rights in communities living in and alongside protected and conserved areas; with responsibility comes accountability. Rangers not employed by the state also have a responsibility to respect the rights of others. As rights holders, rangers are also entitled to fulfill their rights, with their right to decent working conditions being especially relevant.

This relationship between humans and nature, and the interdependencies of a healthy environment and fulfillment of human rights, has become ever more apparent in the wake of the COVID-19 pandemic. Around 30 million people have been infected and close to 1 million deaths were reported as of 15 September 2020 (WHO 2020). Similarly, wildfires are raging across the planet at ever-increasing rates and scales in the face of a changing climate. Rangers have long been the frontline conservation workers safeguarding the planet for the benefit of the human race and all biodiversity, but they are more and more becoming the first responders for maintaining the health of the planet. It is therefore more important than ever to support rangers. Here, we present a framework for how to do this.

The International Ranger Federation and the World Ranger Congress

IRF is the global representative organization for rangers. Founded in 1992, it provides a global

forum for rangers to share their experiences and to exchange information and technology, both between countries in which protected area management enjoys broad public and government support, and countries in which it is less supported (IRF 2020). By supporting the formation of ranger associations, IRF also works to make sure that rangers are "more adequately supported and represented." Within IRF, the role of the associations is paramount, and they are the backbone of the "global forum" that IRF provides to the profession. IRF's membership comprises 103³ ranger associations from 62 countries, representing at least 17,000 rangers.

IRF organizes a World Ranger Congress every third year to bring together rangers and those who support them from all over the world, enabling attendees to learn new skills, share knowledge, and create partnerships. The Congress also issues formal declarations regarding matters that affect rangers (Table 1).⁴

Successive World Ranger Congresses have called for better working conditions and professionalization of rangers, and recommendations from the International Union for Conservation of Nature (IUCN) World Conservation Congresses of 2008 and 2016 have supported this. However, WWF's *Life on the Frontline 2019* report provided evidence that the situation in many places is not improving, and over 100 rangers continue to die in service every year (Belecky et al. 2019; IRF 2020).

The Chitwan Declaration

The 9th World Ranger Congress was hosted by Nepal in November 2019, the first time this event was held in Asia. The congress provided Nepal with the opportunity to showcase the remarkable work it has been doing to achieve zero poaching of tiger, rhino, and elephants (Biggs et al., in press). More than 550 delegates (over half of whom were female) from 70 countries attended, most of them representing a ranger association or conservation organization. Delegates participated in a wide range of events and activities based around seven themes: (1) welfare; (2) capacity; (3) gender balance in the ranger workforce; (4) the role of ranger associations; (5) rangers and communities; (6) Indigenous rangers; and (7) technology.

The congress unanimously passed the Chitwan Declaration, which "strongly encourages those who manage protected and conserved areas that employ Rangers to identify shortcomings, and thereafter introduce measures to improve outcomes, relating to each of the thematic areas of the congress." The following are the desired outcomes identified by the delegates.

- Ranger welfare. Empowered and supported rangers, who are legally recognized, and whose human rights, health, and well-being are respected, will deliver their role to their utmost capability.
- Rangers and communities. Protected areas will be socially relevant once mutually supportive and trusting relationships between

World Ranger Congress	Location	Year	Declaration
ıst	Poland	1995	Zakopane Declaration
2nd	Costa Rica	1997	San Jose Declaration
3rd	South Africa	2000	Kruger Declaration
4th	Australia	2003	Resolution of the Fourth World Ranger Congress
5th	Scotland	2006	Stirling Resolution
6th	Bolivia	2009	Santa Cruz Declaration
7th	Tanzania	2012	Arusha Declaration
8th	USA	2016	Estes Park Declaration
9th	Nepal	2019	Chitwan Declaration

Table 1. World Ranger Congresses.



Kenyan ranger | AMI VITALE / WWF-UK

Indigenous people and local communities and rangers are built, safeguarding all parties, and increasing collaboration, dialogue, and transparency.

- Indigenous rangers. Indigenous people and local communities should be empowered, including through employment as rangers, to manage their own natural resources, build local goodwill for protected and conserved areas, and ensure traditional/cultural knowledge is maintained and applied to the management of these areas.
- Ranger capacity. Adequate capacity (personnel and resources) and competences (skills and knowledge) will ensure ranger capabilities exist to effectively manage protected and conserved areas.
- **Gender equality.** Gender equality and the meaningful inclusion of women in the ranger workforce is an important equality goal

and one that brings different skill sets and strengths.

- Ranger associations and their role. Strengthened ranger associations can provide a united voice for rangers, connect the global ranger community, and advocate for the benefit of all rangers.
- **Technology.** Appropriate technologies will support rangers to effectively and safely perform their duties.

The declaration also called upon the newly elected International Executive Committee of IRF to "work with conservation NGOs and partners to develop an Action Plan for the implementation of the Chitwan Declaration, with that Action Plan to be released in 2020."

The Universal Ranger Support Alliance

Responding to the Chitwan Declaration, seven

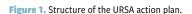
organizations⁵ with an international focus on supporting rangers joined forces with IRF in 2020 to establish the Universal Ranger Support Alliance (URSA).⁶ URSA aims to support implementation of the declaration by mobilizing the combined resources, influence, and expertise of its members at a global scale and by facilitating partnerships and initiatives for action at regional and national scales. By ensuring that the urgently needed investments, tools, reforms, and policy changes are put in place, URSA's purpose is to create an environment for improving the effectiveness, accountability, and well-being of rangers, and specifically to enable and advocate for better training, support, safety, and equality for rangers, as well as a greater recognition of their work.

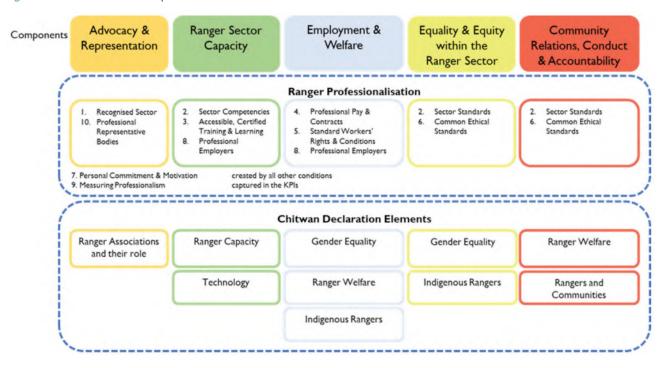
The URSA action plan

To support the implementation of the Chitwan Declaration, URSA prioritized development of the action plan mentioned above, starting with commissioning international specialists to work with over 80 consultees in Africa, Asia, Australasia, Europe, and North, Central, and South America to compile a series of detailed white papers. These are based on the seven main themes of the congress (ranger associations, capacity, communities, Indigenous and community rangers, gender, working conditions, technology) as well as an eighth white paper on ranger professionalization. Authors were asked to include a review of the theme, examples and options for addressing issue associated with it, and recommendations at the global, regional, and national levels. The papers presented in this edition of *Parks Stewardship Forum* are based on these white papers.⁷

URSA members worked together during 2020 to develop an action plan that specifies a clear set of activities to advocate for and implement over a five-year period. The overall vision is of "a network of well-supported, professionally competent, mandated, motivated, responsible and representative rangers working effectively as custodians of biodiversity and the life systems upon which we all depend." The plan encompasses the elements of the Chitwan Declaration and the requirements for professionalization in five main components (see Figure 1).

In implementing the plan over the next five years, URSA will focus predominantly on strategic, sectorwide programs and broadly defined activities that provide an essential global platform for regional





and local action. Alongside its contributions to URSA, IRF will focus on building its own networks and its capacity to represent and speak for a growing global network of ranger associations. IRF will encourage widespread adoption of globally developed tools and standards. National actions will focus on adapting and operationalizing global and regional frameworks to reflect local needs and contexts and will be led predominantly by national ranger associations, working with national partners. The ability of national associations to fulfill this role will vary from country to country, depending upon the capacity of the association and political and institutional factors that may limit options for action and advocacy. In these cases, regional ranger associations will seek to ensure support for national programs.

Conclusion

Rangers have an indispensable role to play in protecting nature and the natural resources upon which we all depend. They also play a crucial role in supporting the communities and cultures living in and around protected and conserved areas. However, a large proportion of rangers around the world are enduring working conditions that threaten their health and safety and limit their ability and motivation to do what is asked of them. The lack of training, support, and effective management, combined with low morale, can leave some rangers susceptible to poor practices that damage the perception of all rangers around the world. Despite this, most rangers continue to show exceptional courage, dedication, and perseverance in their work-but this should not be taken for granted. The recommendations suggested in these white papers and the URSA action plan will help to accomplish lasting transformation to create a professional, responsible, and accountable ranger workforce that is properly valued, led, and supported. Professionalizing the ranger sector will improve the standing of the occupation among decisionmakers, conservation planners, and society more broadly, ultimately leading to improved resourcing, policies, and other support to enable rangers to deliver their critical mission.

Endnotes

- 1. See www.protectedplanet.net.
- 2. See www.protectedplanet.net/target-11dashboard.
- 3. International Ranger Federation membership database, February 2020.
- 4. See www.internationalrangers.org/events.
- Fauna and Flora International, Force for Nature, Global Wildlife Conservation, IRF, IUCN World Commission on Protected Areas, Panthera, WWF, and the Zoological Society of London.
- 6. See www.ursa4rangers.org.
- 7. The white paper on Indigenous and local community rangers is in preparation and will be published in a later issue of *Parks Stewardship Forum*.

References

Bar-On, Y.M., R. Phillips, and R. Milo. 2018. The biomass distribution on Earth. *Proceedings of the National Academy of Sciences* 115(25): 6506–6511. https://doi.org/10.1073/pnas.1711842115

Belecky, M., R. Singh, and W. Moreto. 2019. *Life on the Frontline* 2019: A *Global Survey of the Working Conditions of Rangers*. Gland, Switzerland: WWF.

Biggs, D., W. Moreto, M. Khadka, D. McVey, A.B. Ononino, D. Chapagain, R. Parry-Jones, B. Huijbregt, A. Lyet, and R. Singh. In press. Achieving zero poaching: A theory of change and case studies. Technical report to WWF and the Wildlife Crime Initiative.

Cazalis, V., K. Princé, J. Mihoub, et al. 2020. Effectiveness of protected areas in conserving tropical forest birds. *Nature Communications* 11: 4461.

Coad, L., J.E. Watson, J. Geldmann, N.D. Burgess, F. Leverington, M. Hockings, K. Knights, and M. Di Marco. 2019. Widespread shortfalls in protected area resourcing undermine efforts to conserve biodiversity. *Frontiers in Ecology and the Environment* 17(5): 259–264. https://doi.org/10.1002/fee.2042 IPBES [Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services.] 2019. *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E.S. Brondízio, H.T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K.A. Brauman, S.H.M. Butchart, K.M.A. Chan, L.A. Garibaldi, K. Ichii, J. Liu, S.M. Subramanian, G.F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Chowdhury, Y.J. Shin, I.J. Visseren-Hamakers, K.J. Willis, and C.N. Zayas, eds. Bonn: IPBES Secretariat.

Duffy, R., F. Massé, E. Smidt, E. Marijnen, B. Büscher, J. Verweijen, M. Ramutsindela, T. Simlai, L. Joanny, and E. Lunstrum. 2019. Why we must question the militarisation of conservation. *Biological Conservation* 232: 66–73. https://doi.org/10.1016/j.biocon.2019.01.013

Eliason, S.L. 2011. Death in the line of duty: Game warden mortality in the United States, 1886–2009. *American Journal of Criminal Justice* 36(4): 319–326. http://dx.doi.org/10.1007/ s12103-010-9087-x

Gill, D.A., M.B. Mascia, G.N. Ahmadia, L. Glew, S.E. Lester, M. Barnes, I. Craigie, E.S. Darling, C.M. Free, J. Geldmann, and S. Holst. 2017. Capacity shortfalls hinder the performance of marine protected areas globally. *Nature* 543(7647): 665– 669.

doi.org/10.1038/nature21708

Gray, C.L., et al. 2016. Local biodiversity is higher inside than outside terrestrial protected areas worldwide. *Nature Communications* 7: 12306. https://doi.org/10.1038/ncomms12306

IRF [International Ranger Federation]. 2019. Who is a ranger? https://www.internationalrangers.org/

IRF. 2020. World Ranger Day. https://www. internationalrangers.org/events/

IUCN [International Union for Conservation of Nature]. 2009. *New International Standard for*

Sustainable Wild Collection of Medicinal and Aromatic Plants. IUCN Support. https://www.iucn.org/ content/new-international-standard-sustainablewild-collection-medicinal-and-aromatic-plants

Jonas, H., V. Barbuto, H. Jonas, A. Kothari, and F. Nelson. 2014. New steps of change: Looking beyond protected areas to consider other effective areabased conservation measures. *Parks*. 20(2): 111–127. https://doi.org/10.2305/IUCN.CH.2014.PARKS-20-2. HDJ.en

Knox, J.H. 2017. *Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment: Biodiversity Report.* United Nations Human Rights Council, A/HRC/34/49.

Kothari, A., C. Corrigan, H. Jonas, A. Neumann, and H. Shrumm. 2017. *Recognising and Supporting territories and Areas Conserved by Indigenous Peoples and Local Communities: Global Overview and National Case Studies*. Montreal: Secretariat of the Convention on Biological Diversity, ICCA Consortium, Kalpavriksh, and Natural Justice.

Leakey, R., and V. Morrell. 2001. *Wildlife Wars: My Fight to Save Africa's Natural Resources*. New York: St Martin's Griffin.

Leverington, F., K.L. Costa, H. Pavese, A. Lisle, and M. Hockings. 2010. A global analysis of protected area management effectiveness. *Environmental Management* 46(5): 685–698. https://doi.org/10.1007/s00267-010-9564-5

Mansourian, S., L. Higgins-Zogib, N. Dudley, and S. Stolton. 2008. Poverty and protected areas. In *Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet.* L. Janishevski, K. Noonan-Mooney, S.B. Gidda, and K.J. Mulongoy, eds. Technical Series no. 36. Montreal: Secretariat of the Convention on Biological Diversity. Available at www.cbd.int.

Mitchell, B.A., S. Stolton, J. Bezaury-Creel, H.C. Bingham, T.L. Cumming, N. Dudley, J.A. Fitzsimons, D. Malleret-King, K.H. Redford, and P. Solano. 2018. *Guidelines for Privately Protected Areas*. Best Practice Protected Area Guidelines Series no. 29. Gland, Switzerland: IUCN.

Moreto, W.D. 2016. Occupational stress among law enforcement rangers: Insights from Uganda. *Oryx* 50(4): 646–654. http://dx.doi.org/10.1017/S0030605315000356

Ogunjinmi, A.A., M.O. Umunna, and K.O. Ogunjinmi. 2008. Factors affecting job satisfaction of rangers in Yankari Game Reserve, Bauchi, Nigeria. *Journal of Agriculture and Social Research* 8(2). http://dx.doi.org/10.4314/jasr.v8i2.43332

Scherl, L.M., and L. Emerton. 2008. Protected areas contributing to poverty reduction. *Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet*. Montreal: Secretariat of the Convention on Biological Diversity, pp.4-17.

Schulze, K., K. Knights, L. Coad, J. Geldmann, F. Leverington, A. Eassom, M. Marr, S.H. Butchart, M. Hockings, and N.D. Burgess. 2017. An assessment of threats to terrestrial protected areas. *Conservation Letters* 11(3). https://doi.org/10.1111/conl.12435

UN Human Rights Committee. 2018. General comment, no. 36 (2018) on the right to life.

UN Human Rights Committee. 2019. General comment no. 36, Article 6, paragraph 62: right to life, CCPR/C/GC/36, 3 September.

Warchol, G., and D. Kapla. 2012. Policing the wilderness: A descriptive study of wildlife conservation officers in South Africa. International Journal of Comparative and Applied Criminal Justice 36(2): 83–101.

http://dx.doi.org/10.1080/01924036.2012.669911

WHO [World Health Organization]. 2015. *Loss of Biodiversity Impacts Human Health.* Geneva: WHO. www.who.int/globalchange/publications/phe-pr. pdf?ua=1

WWF. 2020. *Living Planet Report 2020: Bending the Curve of Biodiversity Loss.* R.E.A. Almond, M. Grooten, and T. Petersen, eds. Gland, Switzerland: WWF.

The Interdisciplinary Journal of Place-based Conservation

Co-published by the Institute for Parks, People, and Biodiversity, University of California, Berkeley and the George Wright Society. ISSN 2688-187X

Berkeley Parks, People, and Biodiversity



Citation for this article

Singh, Rohit, Chris Galliers, Mike Appleton, Mike Hoffmann, Barney Long, Joanna Cary-Elwes, Camilla Fritze, Jamie McCallum, and Rob Parry Jones. 2021. The vital role of rangers in conservation. *Parks Stewardship Forum* 37(1): 128–136.

Parks Stewardship Forum explores innovative thinking and offers enduring perspectives on critical issues of place-based heritage management and stewardship. Interdisciplinary in nature, the journal gathers insights from all fields related to parks, protected areas, cultural sites, and other place-based forms of conservation. The scope of the journal is international. It is dedicated to the legacy of George Meléndez Wright, a graduate of UC Berkeley and pioneer in conservation of national parks.

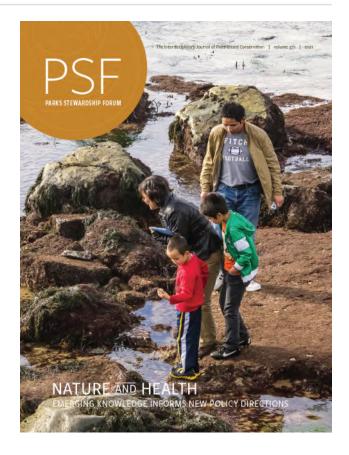
RKS STEWARDSHIP FORUM

Parks Stewardship Forum is published online at https://escholarship.org/uc/psf through eScholarship, an open-access publishing platform subsidized by the University of California and managed by the California Digital Library. Openaccess publishing serves the missions of the IPPB and GWS to share, freely and broadly, research and knowledge produced by and for those who manage parks, protected areas, and cultural sites throughout the world. A version of *Parks Stewardship Forum* designed for online reading is also available at https://parks.berkeley.edu/psf.

Parks Stewardship Forum is distributed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

The journal continues *The George Wright Forum*, published 1981–2018 by the George Wright Society.

Designed by Laurie Frasier • lauriefrasier.com



On the cover of this issue

Family exploring tidepools at Cabrillo National Monument, California. | GEDAPIX

The entire issue is available at https://escholarship.org/uc/psf.