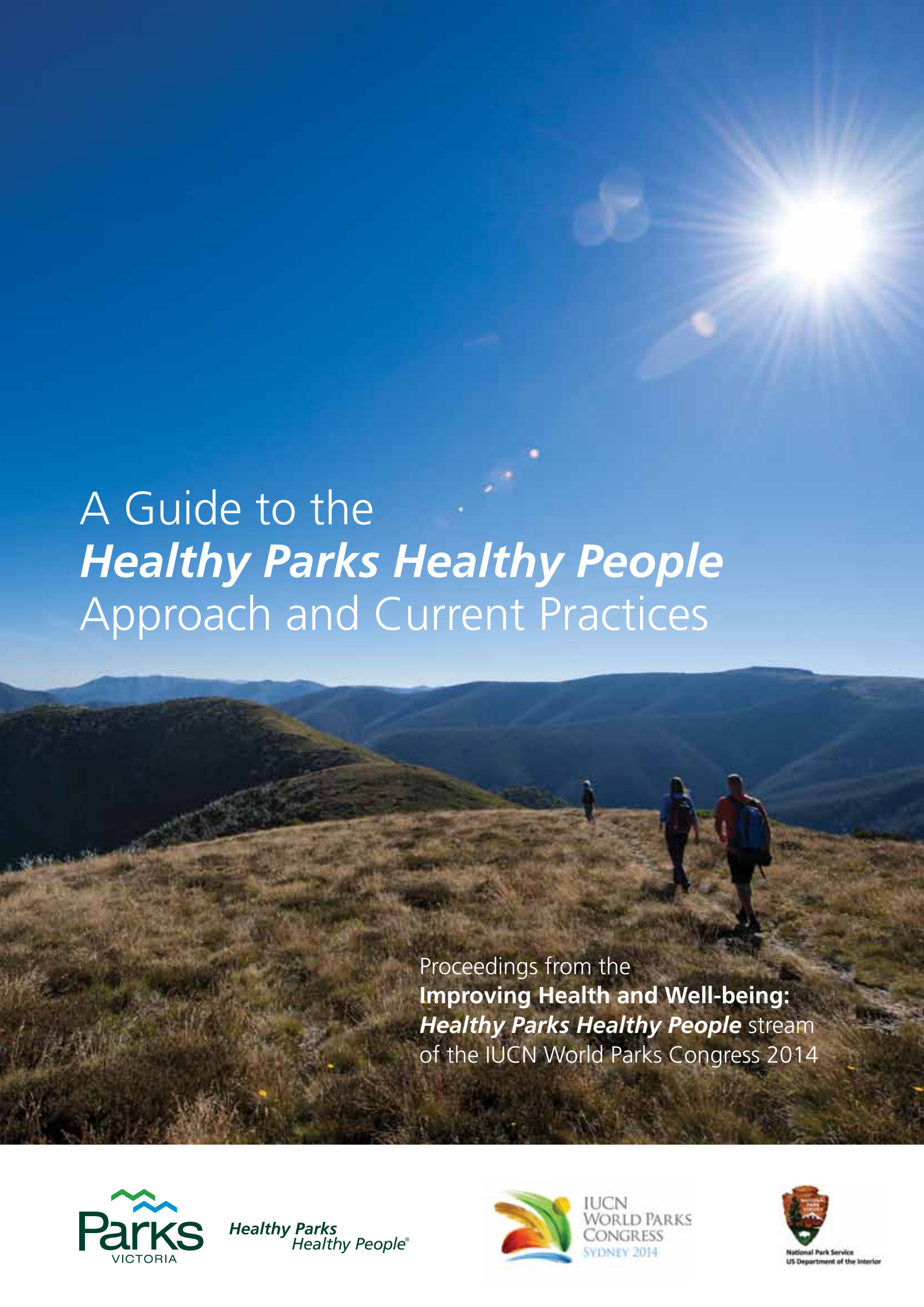




A Guide to the *Healthy Parks Healthy People* Approach and Current Practices

Proceedings from the
Improving Health and Well-being:
Healthy Parks Healthy People stream
of the IUCN World Parks Congress 2014

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Some photos throughout this document have been kindly supplied by Andy Miller, Todd Cody, Geraldine McClure, Stacy Giannini and Tanya Smith.



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IUCN World Parks Congress 2014

The IUCN World Parks Congress 2014 was held in Sydney, Australia, from 12 to 19 November 2014.

A global event, the Congress attracted more than 6,000 delegates from over 170 countries. The Congress is held only once a decade, with the theme for Sydney being '*Parks, people, planet: inspiring solutions*'.

The Congress showcased a wide variety of inspiring solutions based on park and protected area approaches that respect and conserve nature, while benefitting human health and prosperity. Delegates took stock of not just what is challenging us, but how innovative people around the world are implementing protected area solutions to deal with an array of challenges, from climate change to livelihoods and human health and well-being.

The Congress program comprised of eight parallel streams:

- Reaching conservation goals
- Responding to climate change
- Improving health and well-being
- Supporting human life
- Reconciling development challenges
- Enhancing diversity and quality of governance

- Respecting indigenous and traditional knowledge and culture
- Inspiring a new generation

There were also four cross-cutting themes that were integrated into the program:

- Marine
- World Heritage
- Capacity Development
- New Social Compact

For further information see www.worldparkscongress.org.

About this Guide

The Improving Health and Well-being: *Healthy Parks Healthy People* stream at the IUCN World Parks Congress 2014 was co-led by Parks Victoria, Australia, and the United States National Park Service. This stream was targeted at environment and health professionals and others with an interest in the fields of nature, human health and well-being.

This Guide covers the park management approaches, current international practices and projects, as well as the latest research as covered in the Improving Health and Well-being: *Healthy Parks Healthy People* stream program at the IUCN World Parks Congress 2014.

The *Healthy Parks Healthy People* Approach and Stream Content

The *Healthy Parks Healthy People* approach acknowledges that contact with nature is essential for human emotional, physical and spiritual health and well-being and reinforces the crucial role that parks and protected areas play in nurturing healthy ecosystems. It acknowledges the vital importance of conserving and enhancing our natural world so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be improved.

The *Healthy Parks Healthy People* approach offers great potential to deliver better health outcomes for people and to make parks and protected areas more relevant to an increasingly urbanised world. It recognises that we need to make it a priority to provide opportunities for children and young people to experience and connect with nature in ways that are meaningful for them.

The Improving Health and Well-being: *Healthy Parks Healthy People* stream explored the diverse health benefits provided by parks including medicines, disease regulation, livelihood support, mental and spiritual well-being, and as settings for physical activity.

The stream was designed to encourage exchange of ideas, build partnerships, review achievements and develop new alliances between diverse sectors on the role of healthy ecosystems in parks and protected areas for improving human health and well-being.

The stream explored the many ways to describe the relationship between human and ecosystem health. The program highlighted Indigenous communities around the world who often have a deep understanding of the connection between people and the environment. We can all learn from them.

No matter what cultural or social form the expression of improving health and well-being takes, we are confident that the knowledge shared and the commitments made during the stream will help shape the next decade as we work for healthier parks and people.

Parks Victoria, Australia and United States National Park Service

Improving Health and Well-being: *Healthy Parks Healthy People* stream co-leaders

IUCN World Parks Congress 2014





IUCN World Parks Congress 2014 Outcomes – The *Promise of Sydney*

The *Promise of Sydney* collectively represents the outcomes of the IUCN World Parks Congress 2014 and is the foundation for the pathways we can take to ensure that parks and protected areas are considered as one of the best investments in our planet's future. Captured from the boldest thinking of governments, international organisations, communities, civil society leaders and indigenous peoples, the four pillars of the *Promise of Sydney* are:

1. A core **vision** for the future we want to see
2. A set of **innovative approaches** to solving some of the world's most elusive challenges
3. **Commitments** to advancing this change
4. **Solutions** that provide evidence that this change is within our reach.

These pillars emanated from the deliberations of the Congress and collectively represent the direction and blueprint for the next decade of change.

Each of the eight Congress streams and four cross-cutting themes developed a series of innovative approaches that incorporated recommendations based on their respective Congress proceedings.

These innovative approaches will:

- Lead to transformations in decision-making, practice, policy, capacity and financing needed to demonstrate the value of protected areas to humanity
- Motivate and scale up broad sectoral collaboration around protected areas
- Transform a full range of global, regional and local policies to advance towards a future where protected areas are regarded as one of the best investments for our future

To view the *Promise of Sydney* in its entirety, go to: www.worldparkscongress.org/about/promise_of_sydney.html

Innovative Approaches and Recommendations from the Improving Health and Well-being: *Healthy Parks Healthy People* stream

A Promising Future

Nature is essential for human health and well-being. We are all part of the natural world. This has been known by Indigenous peoples for tens of thousands of years. The growing body of evidence on the connections between nature and human health and well-being call for our urgent attention.

Nature provides fresh water, clean air and food, upon which all human life and health depends. It influences disease occurrence and spread, supports sustainable economies and is the source of current and potential medicines. Nature provides places for physical activity, social connection, inspiration and calm contemplation. Nature benefits people's mental, physical, cultural, and spiritual health and well-being. There is no alternative.

We know that when ecosystems are disturbed, biological diversity is often lost. As is human health. Protected areas restore and safeguard



nature. Protected areas are critical for healthy and sustainable communities. In an urbanising world, with a growing population, protected areas are natural solutions for securing our health and well-being while adapting to the impact of climate change. But to realise this opportunity, the protected areas and conservation community need to collaborate with the human health and animal health sectors, and work alongside researchers, governments, businesses, non-government organisations and communities, to create a new approach that ensures healthy protected areas that support healthy people. The *Healthy Parks Healthy People* approach will unlock the values of protected areas for health and well-being, while conserving biological diversity.

We cannot afford to delay taking action. This new approach is essential to achieve the Aichi Biodiversity Targets of the Convention on Biological Diversity and fully realise the universal right to health enshrined in the World Health Organization's Constitution.

The Current Situation

The 1986 Ottawa Charter for Health Promotion described the inextricable links between people and their environment as the basis for health and the resulting global responsibility to conserve natural resources. The 5th IUCN World Parks Congress in Durban, South Africa, 2003, called for a global effort to advance conservation, maintain ecosystems and achieve sustainable development. Yet, in the past ten years, as the world's population has increasingly urbanised and become further disconnected from nature, the gap remains between efforts to mutually advance conservation and sustainable development, while maintaining biodiversity.

Also over this last decade, there has been an alarming global increase in non-communicable diseases such as heart diseases, cancers, chronic respiratory diseases and diabetes. The risk of non-communicable diseases is linked to four factors, including physical inactivity. Whilst urbanisation has brought many benefits to society, it increasingly denies people of opportunities for the mental, spiritual and physical health benefits from nature. The research is very clear about the human need for nature, but this situation is likely to worsen as the global population shifts from 54 per cent of people living in cities today to a forecast 70 per cent by 2050. Almost all of this urban growth will occur in less developed countries.



There has been some progress. The number and extent of protected areas has grown and now covers 15.4 per cent of the Earth's land area and 8.4 per cent of the marine and coastal waters. International approaches such as One Health, EcoHealth and *Healthy Parks Healthy People* are fostering international research, collaboration and actions across sectors. Significant research has deepened scientific understanding of the human need for, and connection to, nature. The understanding of the diverse health benefits of protected areas has deepened to also consider the physical, mental, social and spiritual health and well-being benefits. This was a focus of the 1st International *Healthy Parks Healthy People* Congress in Melbourne, Australia in 2010.

However, greater global action is needed. EcoHealth experts caution that human impacts on the environment lead to the spread of emerging and infectious disease. Health and well-being decision-makers advocate for a greater focus on preventative health care as a way of reducing the disease burden and associated costs. Conservationists are struggling to win the hearts and minds of an increasingly urbanising world to conserve biodiversity, even though protected areas contribute to a range of natural solutions to a range of society's challenges, including health and well-being. There is clearly a convergence of interests and the IUCN World Parks Congress 2014 has provided the incentive for change.

We have set a new health and nature agenda for the world. But to realise this opportunity, we need to mobilise the conservation community and human health and animal health sectors, along with researchers, governments, businesses, non-government organisations and communities; and we need to intentionally scale up the body of evidence on the connection between nature and human health and well-being and incorporate it into policy and practice.

We must further expand protected areas on land and inland waters, and in coastal and marine areas, and integrate nature into our cities. We must adequately resource and build capacity for the effective management of protected areas to safeguard biodiversity with associated ecosystem services and cultural values. And, we must find new ways to communicate with more persuasive voices to new audiences that parks and protected areas are essential for physical, mental, social and spiritual health of current and future generations.

Recommendations

The recommendations that form part of the Improving Health and Well-being: *Healthy Parks Healthy People* stream's innovative approaches are:

1. Continue to build the evidence base on the connections between health and nature through knowledge and research using accepted methodologies and share this widely with the conservation and health sectors, researchers, governments, businesses, non-government organisations and communities.
2. Ensure better access by Indigenous communities to natural places that are special to them for health, spiritual well-being and cultural connections.
3. Learn from Indigenous and local communities, which have multi-dimensional approaches to health and well-being including connection to country and spiritual and traditional knowledge and practices.
4. Integrate the preventative health contribution made by protected areas, including urban parks, into all development planning and accounting processes.
5. Strengthen global, regional, national and local policies to promote nature's role in health and well-being and address the universal right to nature for health.
6. Establish and nurture coalitions of practitioners, policy-makers, change leaders and researchers from diverse sectors to accelerate health and nature approaches at local, national, regional and global scales.
7. Revitalise the establishment, governance and management of marine and terrestrial protected areas, including urban parks, to improve biodiversity and maximise human health and well-being outcomes.
8. Build the skills and capabilities across the health and protected area sectors.
9. Use innovative mechanisms and experiences to connect children and youth to parks and protected areas to engender a love of nature and for the restorative and preventative health and well-being benefits provided by nature.
10. Ensure that parks and protected areas offer diverse and inclusive opportunities for people to access and experience nature to improve their health and well-being.

For the full innovative approaches response from the Improving Health and Well-being: *Healthy Parks Healthy People* stream, go to: www.worldparkscongress.org/about/promise_of_sydney_innovative_approaches.html







Gil Penalosa: creating vibrant cities

Gil Penalosa, Executive Director of the Canadian non-profit organisation 8-80 Cities, will share his enthusiasm for improving the health and wellbeing of the world's people and parks. Having worked in over 150 cities, Gil advises how to use parks and green spaces to create vibrant cities and healthy communities for everyone.

Gil will be appearing at side events, delivering a keynote address in *Great parks and green spaces: creating healthy and liveable cities* on Saturday 15 November 2014 and facilitating the *Why urban parks matter in creating healthy and liveable cities* series on Monday 17 November 2014.

Gil Penalosa: creating vibrant cities					Saturday 15 November 2014			
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					7:00am - 8:00am	Contemplation of Nature: A Panacea for Happy and Healthy Living		
					8:30am - 10:00am	8. Great parks and green spaces: creating healthy and liveable cities	12. Valuing and accounting - the importance of parks for the community	16. Linking traditional medicine, good healthcare access and conservation 
Friday 14 November 2014								
	Hall 3B1 Home Room	Charley Room	Hordern Room	10:00am - 10:30am	Morning tea break			
11:00am - 12:00pm	1. Stream opening — human health and wellbeing depends on nature			10:30am - 12:00pm	9. Sustaining parks and improving human health together 1 	13. Inspiring business solutions for Healthy Parks Healthy People	17. The healing power of nature	
12:15pm - 1:15pm	Lunch break			12:15pm - 1:15pm	Lunch break			
	Stream Welcome Luncheon							
1:30pm - 3:00pm	2. Perspectives on health – current practices and future opportunities for park managers 	4. Valuing diverse knowledge paradigms – science, traditional knowledge and people-parks connections 	6. Contribution of protected areas to the achievement of health related Sustainable Development Goals 	1:30pm - 3:00pm	10. Sustaining parks and improving human health together 2 	14. Connecting people and parks 	18. The nature experience: behaviour change, conservation and technology	
3:00pm - 3:30pm	Afternoon tea break			3:00pm - 3:30pm	Afternoon tea break			
3:30pm - 5:00pm	3. Working together is better: inspiring global park and health partnerships	5. Indigenous and local community perspectives on nature and wellbeing 	7. One Health: Linking human, animal and ecosystem health 1 	3:30pm - 5:00pm	11. Global environmental and health policy: a nexus for change	15. Volunteering in nature benefits humans and ecosystems 	19. The transformational power of nature-based experiences	
6:00pm - 8:00pm	Global launch of New Flagship Publications - Parks Victoria's State of Knowledge on the Links Between Biodiversity and Human Health 			5:30pm - 7:00pm				

Monday 17 November 2014				Tuesday 18 November 2014			
	Hall 3B1 Home Room	Charley Room	Hordern Room		Hall 3B1 Home Room	Charley Room	Hordern Room
7:00am - 8:00am				7:00am - 8:00am			
8:30am - 10:00am	20. Why urban parks matter in creating healthy and liveable cities 1	24. Ecotourism and the health of parks, protected areas and communities  	28. Connecting to Australia: place-attachment bringing people closer to nature and culture and improving their wellbeing 	8:30am - 10:00am	32. Inspiring young people in nature conservation	34. Responding to the effects of climate change on communities, parks and protected areas 	36. Making Healthy Parks Healthy People Real: a workshop on the draft WCPA-IUCN Best Practice Guideline
10:00am - 10:30am	Morning tea break			10:00am - 10:30am	Morning tea break		
10:30am - 12:00pm	21. Why urban parks matter in creating healthy and liveable cities 2	25. One Health: Linking human, animal and ecosystem health 2 	29. Sacred natural sites and human wellbeing	10:30am - 12:00pm	33. Stream outcomes		
12:15pm - 1:15pm	Lunch break			World Leaders' Dialogue Health, Naturally - Managing Healthy Parks for Healthy People Sunday 16 November 2014 5.30pm – 7.00pm Hall 6 How can the positive impacts of nature for human health be accurately measured to influence a broader political agenda? This Dialogue will challenge the health and parks sectors to give the evidence and outline opportunities for managing healthy parks for healthy people. The panel will include: • Dr Bill Jackson, Chief Executive, Parks Victoria • Mr Frank Hugelmeyer, President and CEO, Outdoor Industry Association • Dr Jonathan Patz, Director, Global Health Institute • Ms Victoria Tauli-Corpuz, UN Representative for the Rights of Indigenous Peoples • Dr Cristián Samper, Chief Executive Officer, Wildlife Conservation Society Legend  Stream 3 Session  Stream 3 Congress Event  World Heritage Cross Cutting Theme  Capacity Development Cross Cutting Theme  New Social Compact Cross Cutting Theme			
		Health and Nature regional e-learning network establishment workshop 	The Social and Economic Long Term Monitoring Program for the Great Barrier Reef 				
1:30pm - 3:00pm	22. Diverse parks, diverse communities – parks for everyone 	26. Managing biological pest invasions to keep people and protected areas healthy 	30. Green Justice: the right to nature				
3:00pm - 3:30pm	Afternoon tea break						
3:30pm - 5:00pm	23. Made for each other – connecting children with nature	27. Sustainable livelihoods: balancing conservation and local community needs 	31. Closing the loop – moving management effectiveness evaluations from reporting to adaptive management  				
5:30pm - 7:00pm	Creating and promoting accessible park experiences for visitors with disabilities 		Mystery Disease Outbreak in National Park – solve this crisis tonight! 				





Stream Sessions

Stream opening: human health and well-being depends on nature

An international panel including experts from the health sector, the IUCN, immigration and settlement, sustainable development and the environment sector set the scene for the Improving Health and Well-being: *Healthy Parks Healthy People* stream. They introduced the diverse links between human health and well-being with parks and protected areas.

Discussions covered global issues, regional and national approaches and different perspectives relating to human health, well-being, nature and sustainable development.

The session also gave an overview of the inspiring side events and capacity development workshops available in the stream.

Summary of session and discussion

There is growing recognition by the health sector that the parks and protected area sector are wanting to work together with them and the health sector are now paying more attention to the connections between parks, human health and well-being. The health sector needs data and quantitative evidence about the health benefits of nature, which compared to research on medication, is minimal.



The United Nations is in the process of defining a post-2015 development agenda, with United Nations Member States leading the process, and broad participation from governments, major groups, and civil society. There are opportunities for the new Sustainable Development Goals to address key issues including environmental and human health links as important priorities. (<https://sustainabledevelopment.un.org/>)

The United States National Park Service has more than 100 partnerships with health practitioners. Prescribing outdoor activity as a medical treatment is occurring across the state of California. This is particularly effective for low socio-economic communities with minimal capacity to purchase insurance or medications.

The United States National Park Service has created a Science Plan that is a partnership with universities and medical schools to contribute to research that demonstrates the health benefits of parks.

Parks provide the opportunity for refugees and newly arrived persons to reconnect with nature and the landscape, promoting the development of relationships and ties to their new communities and homeland.

Protected Area managers may benefit from becoming more economically literate so they are able to communicate to the corporate sector the benefits of investing in nature and businesses may further invest in "green" initiatives that improve health of ecosystems and people.

Session managers

Bill Jackson and Kathryn Campbell, Parks Victoria

Session contributors

- Achim Steiner, United Nations Environment Programme, Kenya
- Julia Marton-Lefevre, IUCN, Switzerland
- Jonathan Jarvis, United States National Park Service, USA
- Melika Yassin Sheik-Elden, Australian Multicultural Education Service, Australia
- Pierre Horwitz, School of Natural Sciences, Edith Cowan University, Australia
- Dawn Carr, Canadian Parks Council, Canada
- Damein Bell, Gurdjiti Marring Traditional Owners Aboriginal Corporation, Australia
- Christopher Briggs, Ramsar Convention Secretariat, Switzerland



2 Perspectives on health: current practices and future opportunities for park managers

Experienced park leaders from diverse regions including South America, Asia, Oceania and Africa explored opportunities and challenges for park managers and shared inspiring solutions for improving human and ecosystem health.

These included how park agencies around the world are attracting new supporters and increasing the relevance of parks by highlighting the links between people's health and well-being and nature. The ways in which park agencies are using these links to promote the value of parks and protected areas to communities, policymakers, businesses and researchers was also discussed.

Summary of session and discussion

To achieve health outcomes in protected areas we need to:

- Provide evidence based information to convince health professionals to incorporate parks and protected areas into health portfolios
- Continue international research, including into medicinal plant species

- Include health related messages into park communications
- Incorporate specific health-related activities for visitors to parks
- Include a full range of health-related issues in park management plans

Royalties from protected area 'intellectual property', such as that generated from new medicine development and sales, may be returned for managing protected areas.

In South Africa, one per cent of tourism income is set aside to assist with delivery of social programs in parks. A partnership with the Department of Education established computer science labs and mobile libraries in communities bordering parks.

Korea National Park Service discussed two programs: a health sharing camp for children suffering from environmental diseases (e.g. asthma) and a youth social program aimed at mitigating violence and social issues by connecting people with nature.

In New Zealand, a partnership with international dairy company Fonterra led to the restoration of five wetlands. The restoration had flow-on effects for tourism, improved health of rivers, and connected farmers to environmental outcomes as well as quality of consumer dairy products.

Session manager

Chris Rose, Parks Victoria, Australia

Session contributors

- Jeff McNeely, Department of National Parks, Wildlife and Plant Conservation, Thailand
- Chong-Chun Kim, Korea National Parks Service, Korea
- Lou Sanson, Department of Conservation, New Zealand
- Mvusy Songelwa, South African National Parks, South Africa





3

Working together is better: inspiring global park and health partnerships

Speakers highlighted the lessons learned from innovative partnerships that are encouraging people to get active and improve their health in parks around the world.

The challenges and opportunities came from inspirational case studies from the Canadian – United States border to the jungles of Cambodia, a refugee community near Melbourne, and the streets of San Francisco and Singapore.

There was also a discussion on the purpose and current status of the draft IUCN-World Commission on Protected Areas (WCPA) *Healthy Parks Healthy People* Best Practice Guidelines.

Summary of session and discussion

One of the key insights of this session was the need to respect participants in health programs in parks. They will all have different needs, health concerns and reasons for participating and so programs need to be tailored to suit these needs.

It is critical to engage with health professionals to understand the needs of potential participants and engage the community in identifying the solutions that best suit their needs. For example, at Werribee Park in Australia, Parks Victoria

collaborated with partners to develop a program including a community garden that helped to address isolation issues in new and emerging communities, including refugees. They also started a ranger traineeship program that provided pathways to employment, and have seen visible improvements in the health and well-being of participants.

Activities should be linked to health and well-being of individuals – with professional advice. Health professionals have limited time with their patients so prevention can start outside the clinic walls. The physical, mental, social and community benefits of nature underpin all of these programs.

One of the key approaches is to remove the barriers to participation. The Bay Area case study in San Francisco, United States, insisted on all activities being free, approachable and culturally relevant. They also need to be consistent in delivery so that health practitioners will continue to prescribe the activities to patients. Having an event-based program is a good approach - a day of programmed activities for participation by community members. In Singapore they established 'Every Sunday', and in the Bay Area it was 'First Saturday'. In Singapore, the vision is to make healthy living accessible, natural and effortless, focussing on places, people and price - making the healthy choice the easy choice and the first choice every time.

The other key message from these presenters from their experience in implementing successful programs that use the *Healthy Parks Healthy People* approach was to just get started and do it. Make the connection with partners and ensure the partnership is mutually beneficial.

Collaboration between private, public and people can work successfully if you can align values and objectives to make a collective impact. Link every aspect to work and health initiatives and share the responsibility. Non-government organisations can bring something new to the table, such as a broader perspective, provide distance from politics and the ability to bring in other partners.





A whole of government approach to partnerships is also beneficial, for example by promoting parks with regular health programs, health promotion, healthy food and beverage and smoke-free zones in Singapore.

There can be challenges for park managers trying to connect with the health sector. The IUCN - WCPA *Healthy Parks Healthy People* Best Practice Guidelines will help to address the challenges park agencies face when trying to establish partnerships with the health sector. Park managers need to “think outside the park”, be initiators and innovators, acquire the relevant health and well-being terminology and learn from case studies that illustrate, educate and inspire.

Session manager

Jo Hopkins, Parks Victoria, Australia

Session contributors

- Howard Levitt, Golden Gate National Recreation Area National Parks Service, USA
- Stephan Bogner, Maddox Jolie-Pitt Foundation, Cambodia
- Ruth Pang, Health Promotion Board, Singapore
- Melika Yassin Sheik-Elden, Australian Multicultural Education Service, Australia
- John Senior, IUCN - WCPA *Healthy Parks Healthy People* Task Force, Australia - *Healthy Parks Healthy People* Guidelines for IUCN Best Practice Series
- Christine Tunnoch, Province of British Columbia, Canada - Brains across borders – international trans-boundary partnerships for conservation and health
- James Brincat, Parks Victoria, Australia - Working beyond the boundaries community engagement program
- Kristin Wheeler, Institute at the Golden Gate, USA - *Healthy Parks Healthy People*: Bay area – a regional collaboration that works

4

Valuing diverse knowledge: science, traditional knowledge and people-parks connections

This session explored the diverse knowledge systems that can help us to understand the health connections between people, parks and protected areas.

The presentations included interesting examples of quantitative research; a review of scholarly studies; a community asset mapping exercise teamed with local participatory research; qualitative research and research focused on traditional knowledge and understandings.

The session outcomes will assist researchers and park practitioners to generate and use diverse knowledge sources and research approaches.

Summary of session and discussion

Results of research conducted in United States, Australia and Peru presented during this session all demonstrated the strong connections between environmental and human health and parks and protected areas.



Integration of Aboriginal knowledge into park and protected area management and research design can better contribute to people's health and well-being. The Aboriginal people from Australia are teaching people that caring for the country is key for health and well-being. Some factors have been identified as barriers to caring for country, such as political, access, development, recognition of land, native title, destruction of nature, racism and lack of recognition of culture, to name a few.

Integrating local voices into community resource management and research in protected areas in Peruvian Amazon shows good results so far.

New and emerging information technology is being used to assist with research in several ways. For example, the use of social media platforms including Facebook, Twitter and Instagram and algorithm software can be used to as a way of determining levels of happiness resulting from time in national parks.

Such technologies may augment, rather than replace, the important but more traditional ways of hearing people's views – interviews, conversations, surveys and the like. Together, these approaches allow more comprehensive understandings of the connections between people, parks and protected areas.

Session manager

Mardie Townsend, Deakin University, Australia

Session contributors

- Robert Doyle, East Bay Regional Park District, USA
- Claire Henderson-Wilson, Deakin University, Australia
– Engaging with parks, enhancing health
- Diana Alvira, The Field Museum, USA – Human well-being and conservation: integrating local voices into community resource management in protected areas in the Andes-Amazon region
- Jonathon 'Yotti' Kingsley, Melbourne University, Australia
– Engaging traditional owners in research on the health benefits of land management
- Christopher Golden, Wildlife Conservation Society, USA
– How social media data can be harnessed to understand the effects of national parks on mental health



5

Indigenous and local community perspectives on nature and well-being

This workshop explored the concept of well-being and how understanding the link between nature and well-being can be used to improve the way in which protected areas and natural resources are managed. Well-being was discussed from different perspectives including livelihood dependency; importance to health and healing; maintaining traditional culture and knowledge systems; social empowerment, stewardship, good governance and holistic planning for country.

There were presentations by participants from around the world and interactive discussions that explored the multi-faceted dimensions of well-being in relation to people's interactions with and dependency on nature. Presentations clearly articulated that our natural environment affects individual and community well-being.

Summary of session and discussion

Within the particular focus of exploring well-being in relation to nature from indigenous and local community perspectives, the session started with a broader clarification of two distinct types of well-being – individual well-being and community well-being - and the fact that they

are equally and separately important. A framework that is pertinent to understanding well-being in the context of natural resource management and conservation was presented comprising of three inter-connected dimensions: opportunity, empowerment and security. Within those broader dimensions a number of specific indicators have been developed, tailored and tested through research.

A number of different themes were then highlighted by the other presentations. Extensive cross-cultural research derived a number of learnings and recommendations including, to name just a few, health is more than the absence of illness; individual self-reported illness matched individual objective data on health in the study; and, there is a need to encourage and increase global understanding and acceptance of local worldviews and practices around well-being.

The session took a closer look at a process to develop 'quality of life plans based on community strengths' in the Andes-Amazon region and the importance of those for natural resource management. This approach is based on the notion that citizens have gifts and capacities that need to be tapped into to foster well-being. Listening to community voices, understanding their perspectives on well-being and capacities within communities, and inviting their participation in designing their own road map to sustainability is essential.

A new approach to park planning in Victoria, Australia, and current challenges of managing parks were explored. The well-being outcomes of the approach included: caring for Country; Gunditjmara continuing connection to Country; shared knowledge systems and learning; capacity development for both communities; sustainable development and education; growth of nature based tourism in southwest Victoria; and economic development and prosperity.





The Regional Healthy Country framework highlighted Indigenous Land management in the Kimberley region of Northern Australian – a process that involved adaptive decision making and planning in several locations and community groups. Key messages were: ‘common’ planning approach/planning language at a community level allows for regional-scale aggregation retaining community identity; regional-scale aggregation is essential to link community priorities and national conservation values; holistic planning for Healthy Country needs to incorporate cultural health with natural health; and an holistic planning framework allows communities to be pro-active in developing research priorities.

A holistic view of well-being in connection to natural resources and ‘country’ was a theme across all presentations. The strong overall message was that it is critical to understand the relationship between natural resources and well-being for any effective management.

Session manager

Lea M Scherl, James Cook University, Australia (World Commission on Protected Areas and Commission on Environmental, Economic and Social Policy, IUCN)

Session contributors

- Lea M. Scherl, James Cook University, Australia (WCPA and CEESP, IUCN) -Well-being in natural resource management: a multi-faceted understanding
- Aili Pyhala, University of Helsinki, Finland - Indigenous perceptions of health and well-being: a study of hunter-gatherers in Amazonia, Borneo and the Congo Basin
- Diana Alvira, The Field Museum, USA - Human well-being and conservation: Integrating local voices into community resource management in protected areas in the Andes-Amazon
- Brian Doolan, Parks Victoria and Damein Bell, Gunditj Mirring Traditional Owners Aboriginal Corporation, Australia - Ngootyoong Gunditji Ngootyoong Mara: planning for Healthy Country Healthy People
- Frank Weisenberger, Kimberley Land Council, Australia - A regional healthy country management framework incorporating community priorities with national conservation goals
- David Major, Parks Victoria, Australia
- Kerry Arabena, Onemda Centre for Health and Society, University of Melbourne, Australia

6

Contribution of protected areas to the achievement of health related Sustainable Development Goals

Experts from the World Health Organization, the Secretariat of the Convention on Biological Diversity, IUCN and others shared their knowledge of the process underway for the new Sustainable Development Goals, due to come into force from late 2015. Emerging policy directions on the health of parks, and links between biodiversity and human health were also discussed.

Summary of session and discussion

The Sustainable Development Goals is a framework of 17 goals and 169 targets that addresses key development issues, for example access to health, protection of the environment, eradication of poverty, and elimination of hunger. Although environmental objectives have been included throughout the Sustainable Development Goals, there is still the need to integrate biodiversity and sustainable development outcomes at all levels.

Nature should not be viewed as a risk factor but rather as part of the solution to current challenges. Nature is the natural infrastructure that provides the supply of basic needs. Without nature protection, access to essential needs, including water, food, and energy, cannot be guaranteed.

More than 50 per cent of protected areas are on indigenous peoples' land. Indigenous health is directly related to harmony, nature, happiness and the concept of well-being. There is also a need for holistic approaches to strengthen local capacity.

Regarding indigenous people's health and land management, there are three contentious issues:

1. Unclear and/or not respected land rights – the creation of protected areas can change the way people live such as displacement and change of land use. This causes an imbalance and impacts on health. The loss of spiritual connection to land and loss of control of what is happening in the community is significant and can create social issues such as domestic violence.
2. Loss of traditional practices – such as loss of access to traditional food and medicine. This loss of traditional practice can lead to 'traditional diseases'.
3. Inappropriate government systems – often the government does not recognise Indigenous governance in protected areas. Creation of new systems in protected areas that do not include traditional customs can exclude critical traditional elements. A human rights approach that recognises indigenous knowledge and rights and considers these rights in declaring protected areas is needed. The use of traditional management of protected areas integrates cultural and environmental outcomes. Those working in the health sector should elaborate indicators that address sustainable development and well-being and health of Indigenous people.





There is a need to keep building partnerships to ensure ongoing advocacy by the public to the government resulting in positive change. There is a need to align human security with security of the planet. The One Health EcoHealth interest group website is an example of a platform to share knowledge, best practice and build partnerships on mainstreaming conservation into development to produce positive impacts.

Session manager

Constanza Martinez, IUCN, Switzerland

Session contributors

- Cyrie Sendashonga, IUCN, Switzerland
- Constanza Martinez and Max Mueller, IUCN, Switzerland
– SDGs process – protected areas role in goals related to food security, health and water
- Cristina Romanelli, Secretariat of the Convention on Biological Diversity, Canada – Protected areas contributing to the linkages between biodiversity and health
- Stephan Bogner, Maddox Jolie-Pitt Foundation, Cambodia
– Field experience in linking protected areas - health and sustainable development

One Health: Linking human, animal and ecosystem health – Part 1

How can we maximise the positive impact of protected areas on the health of humans, animals and ecosystems and reduce risk of adverse disease impacts?

This session included a range of speakers who discussed how their work is bridging gaps between theory, research, policy and practice on global and regional scales.

Summary of session and discussion

Our understanding of the links between humans, ecosystems, livestock and wildlife health – also known as One Health or EcoHealth – is being assisted by the increasing sophistication of technology and tools, including those used to identify and monitor wildlife diseases.

Pandemics of new diseases from wildlife, for example Ebola, increase perceptions of wildlife and biodiversity as a human health risk. Novel wildlife diseases are threatening wild animal populations with extinction and destabilising ecosystems. About three quarters of these diseases are from a domestic source (especially agricultural systems) or have a human factor driving them including habitat disruption and permissive natural-human land-use interfaces. Destruction of natural habitats may also be a direct cause of human health risks or the result of poor health and well-being in neighbouring communities.



Expertise and capacity in One Health/EcoHealth and wildlife health - including multidisciplinary teams that explore the ecological stresses that drive health and disease issues - exists and should be engaged to maximise the health of people and all species. Protected area design and management is critical to managing these risks but it needs to be recognised that many of the risks occur outside protected areas in the peri-domestic space but their emergence or impact will have implications for future protected area sustainability. An example in this regard is how studying the environmental drivers of zoonotic diseases from wildlife such as Hendra virus (a recent Australian bat-borne virus that is fatal to horses and humans) provides insights into how we can protect human and livestock health through strategic conservation measures.

Health and development issues of communities in and adjacent to protected areas should be addressed as a priority to reduce pressure on natural systems and reduce opportunities for cross-species disease transmission. Speakers provided examples from Papua New Guinea and the southern African transfrontier conservation areas.

Session manager

Richard Jakob-Hoff, Australasia Network of the IUCN Conservation Breeding Specialist Group, and Auckland Zoo, New Zealand, assisted by Ro McFarlane, University of Canberra.

Session contributors

- Richard Kock, IUCN Species Survival Commission, and Royal Veterinary College, London, England – Disease risks in Parks and Protected Areas, A One Health Perspective.
- Clara Bocchino, South African Development Community, South Africa - There is only One Health in southern African transfrontier conservation areas: the role of collaborative research
- Mikal Nolan, Tree Kangaroo Conservation Program, Papua New Guinea - Healthy Families, Healthy Forests: A balanced approach for the YUS Conservation Area
- Raina K. Plowright, Department of Microbiology and Immunology, Montana State University, USA, and Peggy Eby, School of Biological, Earth and Environmental Sciences, University of New South Wales, Australia - Can protected areas reduce risk of bat-borne zoonotic diseases? Habitat loss, nutritional stress, and spillover of Hendra virus in south eastern Australia



Great parks and green spaces: creating healthy and liveable cities

Parks need to be places that are free to enter and that generate happiness - where everyone feels welcome and feels a sense of belonging.

This session went on a journey to discover great park systems that contribute to healthy, liveable cities. It introduced participants to great city parks around the world and showed how to create a more liveable, sustainable and healthy future.

Summary of session and discussion

Parks and public spaces are a city's symbols of equality and democracy. They should be free and accessible to everyone regardless of age, ability or background. Urban parks can have a profound impact on the health of communities. We need to ensure that communities have equal and equitable access to green spaces.

Planning for public spaces needs to be inclusive of all sectors of the community. Involving a diverse and representative audience in the process of park planning requires broader methods than just traditional public meetings that predominantly attract upper middle class, older members of the community. Sadly, those disengaged in the process - children, youth, minorities, and low-income people - are often groups that would most benefit from parks.



In many cities, space for parks and green space is limited by urban development. Rooftop gardens and vertical greenery can be an important contribution to green space. Remnant spaces such as elevated walkways and former concrete canals can be converted to parks.

Green spaces can be in unexpected locations – in Singapore they use places such as roadside reserves and water easements to enhance green infrastructure, offer recreational opportunities and improve nature conservation. Singapore has developed guidelines for 'skywise' greening – vertical and rooftop gardens, which are used in public housing as gardens to bring residents together and also used for the greening of hospital buildings.

Climate change data is not convincing enough people to change their behaviour – sometimes those in cities are removed from experiencing the changes in natural cycles and therefore lack understanding. Urban parks can provide an important education platform.

Session manager

Gil Penalosa, 8-80 Cities, Canada

Session contributors

- Jerril Retcher, VicHealth, Australia
- Emily Munroe, 8-80 Cities, Canada – *Healthy Parks Healthy People*: 8-80 Cities and the Make a Place for People project
- Dorothy Lim, National Parks Board of Singapore – Optimising urban spaces for greenery and recreation
- Digby White, International Federation of Parks and Recreation Administration (IFPRA), Australia - Introducing the new World Urban Parks Organisation
- Christopher Ryan, Melbourne University, Australia - Resilient cities and thinking of cities as parks



Parks are an equaliser – where everyone is on the same level and there is no difference between economic status.

Gil Penalosa – 8-80 Cities, Canada

9

Sustaining parks and improving human health together – Part 1

Bringing the health and park sectors together, this session explored our collective knowledge base and highlighted opportunities for the health and park sectors to work together. The session considered open space within cities, terrestrial and marine park management, and the links with human health and social impacts.

Summary of session and discussion

The discussions recognised the increasing global trend in urbanisation within developed and developing countries and the need to respond to the increasing disconnect from nature and its benefits. The collaborative responses need to be adapted for different sectors and age groups in the community and flexible in their design and program approach.

There are particular challenges in engaging and being relevant to adolescents. Their declining use of open space correlates with increased participation in the virtual world and therefore less physical activity. Understanding how park agencies engage and connect with this group is being considered in current research related to which improvements to park facilities make a difference to their level of physical activity and through the use of images to test relevance of park characteristics to adolescents.

Park management needs to be more about connecting people to parks and improving health of individuals and communities and the health of parks. There was recognition that parks need to improve their relevance and political support through more sophisticated collaborations and communications about value proposition. The current focus is too much on inputs and not on outputs or outcomes.

A body of research exists about the health benefits of parks as a solid base for action but further detailed, quantifiable research and evaluation needs to continue.

Improving collaboration between the sectors needs to incorporate understanding the language and agendas of different sectors. Creating bridges and bringing together pioneering local level initiatives and top-down approaches are both important. We need to further explore cross sector/discipline education, research programs, design and funding opportunities.

Quality open space is central to healthy liveable cities and planning needs to design for increased visitation and levels of activity. Changes in the governance of public open space may also be needed to enhance community ownership and participation in solutions.





Healthy people need a healthy planet; and healthy marine ecosystems support human health and well-being through food, nutrition, medicines, income and employment. For example, 60% of drugs used for cancer treatment come from natural marine sources, and sunscreen comes from research on coral. There is a need to promote the link between marine protection and health care with far louder voices and ensure a comprehensive understanding of the health benefits of all biodiversity systems.

Research is being undertaken to better understand how marine protected areas can be designed for specific outcomes and benefits to health and well-being for people in both developed and developing countries.

Session manager

Fran Horsley, Parks Victoria, Australia

Session contributors

- Kathryn Campbell, Parks Victoria, Australia
- Jonathon Jarvis, United States National Park Service, USA
- Billie Giles-Corti, McCaughey VicHealth Centre for Community Well-being, University of Melbourne, Australia
- Research perspective; focus on urbanisation
- Colin Sindall, Department of Health, Victoria, Australia
- Developed country health perspective – from policy to practice
- Jenny Vietch, Deakin University, Australia - How park design can increase park visitation and provide greater opportunities
- Marion Carey, Doctors for the Environment Australia, Australia - The importance of marine ecosystems for human health and well-being: a case study of the Great Barrier Reef
- Louise Glew, World Wildlife Fund, Indonesia - Are marine protected areas good for you? Exploring the linkages between marine conservation and human health in Papua, Indonesia

10

Sustaining parks and improving human health together – Part 2

The session focused on inspiring opportunities for partnerships between the health and park sectors in developed and developing countries. The uniting of the health and park sectors has the capacity to create a significant paradigm shift in achieving the goal of improving human health and the quality of life, while conserving nature.

Summary of session and discussion

Building on the previous session, a key message was the power of the paradigm shift and the transformative opportunity to build a new constituency, one that reflects the conservation community and the health community together. This coalition can have a significant political force and hence capability to influence and deliver health outcomes.

To drive this we need to articulate the compelling case that is relevant for developed and developing countries. Health is one element but economic costs and benefits is another driver so the more benefits parks deliver, the better. Shifting from a traditional conservation focus to a broader focus on health, well-being, economic prosperity, ecosystem services, tourism, sports, education and inspiration is required.

Many of the achievements of conservation are driven by disasters. A question to consider: 'Is the health crisis enveloping countries as shown by diabetes, Attention Deficit Disorder, obesity and so on, enough of a crisis to spur political

coalitions of support for parks?' It may be that a financial crisis in response to health becomes the driver for a different focus. Developed society is addicted to technical solutions so the challenge is to make parks part of the solution when machines and drugs are the usual response. Investment is traditionally on critical, not preventative health-care.

The Colombian approach of developing its ecotourism is proving beneficial for the country and also beneficial for people's health. Sporting activities are held in parks and local people are not charged entry. Parks are also places for spiritual revival.

Japan created a new national park as part of the recovery program post-earthquake and tsunami. They are working with local people who survived the disaster to tell stories and educate park visitors. A new 700 km-long coastal trail aims to get people using the area and enjoying the seafood from the area. This was an extraordinary and moving story of landscape and personal recovery entwined.

In Tonga, parks are a new idea. People traditionally lived in harmony with natural medicines but young people have lost this knowledge. As a consequence, Western diseases are now more prevalent. Children must get outside and reconnect with nature. The *Healthy Parks Healthy People* message is also relevant for the developing world.





Sessions 9 and 10 were linked in a final summary that focused on changing our narrative and working together in partnership for a longer term goal. Key themes focused on holistic approaches and collaborations between the health and park sector, shared language and agendas, and new strategies for connecting children and adolescents. Engaging in post disaster restoration highlighted the power of both nature and people and the restorative outcomes when joined.

The paradigm shift will require managers in both sectors to step outside their comfort zones, and it will need recruitment for different skills, as well as a shift in culture that embraces new practises, meaningful community engagement, and innovation.

Session manager

Fran Horsley, Parks Victoria, Australia

Session contributors

- Kathryn Campbell, Parks Victoria, Australia
- Bill Jackson, Parks Victoria, Australia
- Julia Miranda Londoño, Colombia National Parks Service, Colombia
- Taholo Kami, IUCN Oceania, Fiji
- Kerry Arabena, Onemda Centre for Health and Society, University of Melbourne, Australia
- Toshio Tori, Ministry of the Environment, Japan

11

Global environmental and health policy: a nexus for change

Loss of biodiversity, environmental degradation and rising rates of non-communicable, chronic diseases pose enormous challenges to every country in the world. Environmental sustainability and human health are two of the world's most pressing challenges. Despite the fact that environmental health and human health are inextricably linked, there has been little attention given to initiatives that can produce positive results in both these areas.

An extraordinary way to address these twin challenges is to mainstream conservation into development.

Vibrant, thriving ecosystems have a powerful impact on human health, economic vigour, and social vitality. In this session a wide range of experts examined current trends in global health and environmental policies and potential links between them.

Summary of session and discussion

Turning policy into action was a key theme of the session with the introduction of a new term – neglected policy initiatives. This covers the failure to bringing to the forefront effective policies that can address neglected global challenges and implementing them in a sustainable way at global, national and local scales.



Environmental issues are neglected policy initiatives. They are policy orphans and there is a great opportunity to adopt advocacy strategies that connect health outcomes and security with environmental policies and outcomes. Four challenges or gaps were identified to achieve this: the awareness gap, effective advocacy gap, policy gap and implementation gap.

Environmental and health challenges pose significant threats to state security and economic development. This creates an opportunity to frame investments in conservation as opportunities to address both. It is also important to demonstrate the costs of failing to act.

Globally there is a need to focus on specific targets and policies and then educate, advocate and mobilise both the public and political structures. Such targets should include meeting the Aichi Targets; adopting a carbon tax; using ecosystem services valuation in land and marine use decision-making; and incorporating a rights-based approach mechanism for making conservation decisions

In the example of the new draft Sustainable Development Goals, the role of biodiversity and environment is recognised in several of the goals except health. A more integrated approach that includes development may dilute the conservation priority for protected areas but environmental issues must be mainstreamed into development issues to better understand and implement the links between them.

Traditional medicines were a case study where linkages are very vivid at the local level and many policy declarations about traditional medicine have been adopted by governments, but most not put into action.

Scaling up programs that expose children to nature can have a profound impact on both the educational outcomes and health outcomes.

The trade in illegal wildlife trafficking was also addressed. Mainstreaming conservation and development can produce sustainable economic outcomes for communities in rural areas that often harbour extraordinary biodiversity. Protecting these ecosystems must include



improving health and welfare of people who live in and near them. It is also crucially important to reduce the demand for these wildlife products.

Two case studies from Europe looked at bringing the health and environment sectors together to implement policy and practice.

In Scotland, there are several policies that link health and the environment. The nation's key planning tool 'Scotland performs' guides government policy and has targets, outcomes and national performance indicators including increased use of the outdoors. In Finland, there are three major policy approaches and their key elements are cooperation and partnerships, research and monitoring, accessibility and equality.

Session manager

Keith Martin, Consortium of Universities for Global Health, USA

Session contributors

- Jerril Retcher, VicHealth, Australia
- Cristina Romanelli, Secretariat of the Convention on Biological Diversity, Canada
- Keith Martin, Consortium of Universities for Global Health, USA - The nexus between environmental security and human security: a neglected opportunity to save the planet
- Matti Tapaninen, Natural Heritage Services, Finland and Bridget Finton, Scottish Natural Heritage, Scotland - Connecting people with nature at the top end of Europe: developing our natural health service
- Suneetha M Subramanian, United Nations University – Institute for Advanced Studies, Japan - Linking biodiversity, traditional knowledge and community health

12

Valuing and accounting for community well-being benefits of parks

Over the past decade there has been much work undertaken internationally in establishing more consistent frameworks to value and account for 'natural capital' and 'ecosystem services'.

This session explored approaches and directions in quantifying, accounting and valuing the economic and community well-being benefits of parks and protected areas. It brought together experts in ecosystem service valuation, park management and natural and social sciences to demonstrate how we can apply monitoring, valuation and accounting methods to measure the social and economic benefits of parks and protected areas.

Summary of session and discussion

Social research can be used to explore the increasing disconnect between society and nature and its impacts, and then 'tell the story' of the benefits – backed up by the data.

Measuring visitor satisfaction is not the same as understanding what makes a visit enjoyable. Other industries are working at understanding enjoyment and it might be a useful additional metric for protected area agencies to do so as well.



Measuring changes in community perception about the benefits of parks is not only useful for park planning; park agencies can also influence community perception of these benefits. This can be done using simple, targeted messages. These messages are more effective in changing perception when they are provided by rangers or other experts.

Ecosystem services accounting and evaluation frameworks provide the means to manage parks in more business-like manner – that is, expressing the values and benefits of protected areas in the language of other sectors. Using an ecosystem services based approach enables us to measure value and benefits and it enables a more holistic approach to benefits, integrating environmental, economic and community benefits.

Session manager

Tony Varcoe, Parks Victoria, Australia

Session contributors

- Dawn Carr and Bradley Fauteux, Canadian Parks Council, Canada - Connecting Canadians to nature: an investment in the well-being of our citizens
- Penny Davidson, Charles Sturt University, Australia - What happened to enjoying our protected areas? Do we care enough to evaluate enjoyment?
- Brent Moyle, Griffith University, and Betty Weiler, Southern Cross University, Australia - Measuring shifting perceptions of the benefits of park visits
- Nadine Marshall, CSIRO, Australia - Considering the human dimension of natural resources through social and economic long term monitoring
- Tony Varcoe, Parks Victoria and Helen Betts O'Shea, Department of Environment and Primary Industries, Australia - Valuing and accounting for the environmental, social and economic benefits of park services to the community
- Joshua Bishop, World Wildlife Fund, Australia - Panel Member
- David Cochrane Ernst and Young, Australia - Panel Member
- Mark Eigenraam, United Nations Statistics Division, USA - Panel Member
- Carl Obst, Consultant Editor, Environmental Accounting, Australia – Panel Member



13

Inspiring business solutions for *Healthy Parks Healthy People*

Business plays an important role in showing leadership that supports sustainability goals and aligns with the *Healthy Parks Healthy People* approach. Key international businesses and organisations, including the IUCN Global Business and Biodiversity Programme and Harvard School of Public Health, are leading the way in developing financially, ecologically and socially sustainable business solutions to build healthier and more productive workforces and a healthy future for parks and people.

Summary of session and discussion

Healthy ecosystems provide numerous benefits to human life and need to be protected by business and industry. This session explored the ways in which businesses can be encouraged to have a positive impact on ecosystems, and provided case studies where business has successfully leveraged nature to improve both human and environmental health.



Partnerships provide a critical mechanism to support business to meet environmental goals. Successful business partnerships often:

- start with strong commitments from each organisation involved
- align corporate strategy with a commitment to sustainability
- create a connection across people, technology and nature

The IUCN Business Engagement Strategy encourages transformational and demonstrable change in how biodiversity is valued and managed by business at a whole of company or sectoral level. The strategy is divided into four tiers, identifying incremental adjustments through to systemic changes in business behaviour.

The Sustainability and Health Initiative for NetPositive Enterprise (SHINE) at Harvard aims to harness the power of academic and corporate partnerships. Companies are encouraged to positively impact sustainability throughout their operations, employee engagement and corporate philanthropy. Handprints (positive impacts) and footprints (negative impacts) are measured, with SHINE partners aiming to become NetPositive.

Hewlett-Packard's partnership with Conservation International, through its Earth Insights program, is a successful SHINE example. The initiative uses Hewlett-Packard technologies to help scientists and protected area managers to track and study biodiversity loss in tropical forests around the world and communicate findings to policy makers and environmental leaders.

Greenpath, developed by Delaware North, is an innovative environmental management system that helps minimise human impacts on parks' natural resources.



In partnership with the United States National Park Service, Delaware North applies simple measurements to activities in parks such as calories used in walking on trails which raises the awareness of the benefits of parks to the users. The company took the business that it learnt from working in Yosemite National Park, incorporated in into its business model and now operates globally in national parks and World Heritage Areas.

Biomimetics is a science that studies nature as a metamodel to inspire new models and contribute to its implementation in our society. Biomimetics looks to nature to solve unique business problems by mimicking natural systems, processes and elements. Natural ecosystems are also used as a source of inspiration for new models of social and economic organisation. Examples of biomimetics in practice include the use of architecture and engineering that mimics the structure of bamboo, or transport that mimics the aerodynamic shape of a bird.

Session manager

Alannah Gottschalk, Parks Victoria, Australia

Session contributors

- Paul Smith, Department of Environment and Primary Industries, Australia
- Gerard Bos, Global Business and Biodiversity Program IUCN, Switzerland – Keynote presentation
- Eileen McNeely, SHINE, Harvard School of Public Health, USA - Aligning Corporate Strategy with the Sustainability of People and Planet
- Daniel Eichberg, Hewlett-Packard Company, USA – Hewlett-Packard Earth Insights with Conservation International
- David Mihalic, Heritage Resources Group, USA - Lessons from the field: a partnership between park managers and concession visitor service providers
- Purificació Canals, MedPAN, Spain (presenting on behalf of Daniel Fuentes) – Biomimetics: A metamodel for consciousness.

14

Connecting people and parks

Parks, nature and green spaces provide an important link to physical, mental and community health and well-being. There are many examples worldwide where park agencies, non-government organisations and the health sector are working in collaboration.

How can we best connect people to parks to improve their health?

Representatives from Australia, United States, Finland and Scotland discussed innovative programs, collaborative approaches and useful resources that help connect people to parks.

Summary of session and discussion

Structured physical activities in partnership with the health sector are a great way to collaborate, to create programs that get people active in parks.

The United States Park Prescription Initiative by the Institute at the Golden Gate commits that, by the end of 2016:

- There will be 100 park prescription programs in the United States
- All 7 million residents in San Francisco Bay Area will have access to a *Healthy Parks Healthy People* Program



San Francisco is leading the way in park prescriptions - it is fully integrated throughout its public health system.

Other examples include:

- Active in Parks – Australian developed online resource to help people to find information about activities in parks to encourage people to get active in nature
- Heart Foundation Walking – structured programs to encourage Australian people to undertake regular walks to improve their health and well-being
- Branching Out – a 12-week outdoor program developed in Scotland for people suffering from a mental illness
- Outdoors Zone – the inclusion of natural elements in urban areas, for example near hospitals and mental health institutes to prevent social exclusion

Session manager

Sara Mirabella, People and Parks Foundation, Australia

Session contributors

- Greg Moore, Golden Gate National Parks Conservancy, USA
- Rita Marigliani, Medibank Community Fund, Australia
- Shelley Wills, People and Parks Foundation, Australia - Active in Parks, development of the Active in Parks national online resource
- Kyle Schofield, Heart Foundation, Australia – National rollout of a successful State based collaboration between the Heart Foundation and park services
- Matti Tapaninen, Metsähallitus, Natural Heritage Services, Finland and Bridget Finton, Scottish Natural Heritage, Scotland - Connecting people with nature at the top end of Europe: developing our natural health service
- Kristen Wheeler, Institute at the Golden Gate, USA - Prescriptions linking the park and health sectors



15

Volunteering in nature benefits humans and ecosystems

Volunteering in nature has many benefits for people and ecosystems. This session showcased a wide range of successful activities conducted in nature that are creating healthy opportunities for volunteers while also helping to care for the environment.

Summary of session and discussion

Well-being and environmental stewardship can be improved through environmental volunteering and there is growing evidence of this in society. Volunteers play a key role in natural resource management and ecosystem viability, and environmental volunteering influences human health through increased activity, social interaction, enhanced connectedness and improved mental well-being.

Conservation Volunteers Australia considers partnerships critical for conservation volunteers. Conservation Volunteers Australia does not own the land they volunteer on, volunteers do not have specific skills, and they have limited resources as a not for profit organisation, so there is a need to draw on partner organisations, including land owners and park managers. Given limited resources, genuine relationships with

volunteers are key to Conservation Volunteers Australia's success. Some of the beneficial programs Conservation Volunteers Australia runs include: 'Parks Champions' that are located in 125 parks in Victoria, Australia; 'Naturewise' ecotourism; green gyms; and endangered species community programs.

There are barriers to engaging in volunteering and a volunteering project on Kangaroo Island in South Australia was designed to attract volunteers that did not fall into the most common volunteering demographic of well-educated and socially connected people. 78 per cent of the participants in the 'Get dirty feel good' programs were considered marginalised. The results of the project showed a positive shift in the well-being of participants with the social aspect of the volunteering program and learning about the environment considered the most beneficial aspects. In some cases, the volunteering lead to employment opportunities and further training.

Parks Victoria works with a number of marine community groups, including The Friends of Beware Reef. This volunteer community group has undertaken more than 3,000 dives, where they have been photographing, videoing, surveying and observing life on the reef over the last decade. This volunteer group has also assisted with photographing and cataloguing in excess of 90 different fish species in the Beware Reef Marine Sanctuary. This is a good example of an environmental volunteering program that benefits our understanding of ecosystem health.





Another organisation that provides programs to benefit ecosystem and human health is the Victorian National Parks Association. Through its NatureWatch program, Victorian National Parks Association trains volunteers to help monitor and identify wildlife species. To date, NatureWatch volunteers have helped to identify Southern Brown Bandicoots in Bunyip State Park, Brush-tailed Phascogale and Many Plains Yam Daisies at Kalkallo Grassland.

Session manager

Claire Henderson-Wilson, Deakin University, Australia

Session contributors

- Frank Dean, Golden Gate National Park, National Park Service, USA
- Mardie Townsend, Deakin University, Australia – Engaging with parks, enhancing health
- Robyn Molsher, Department Of Environment, Water and Natural Resources, Australia – Improving well-being through environmental volunteering on Kangaroo Island, South Australia
- Leesa Riley, Conservation Volunteers Australia, Australia – Park champions: a cross sector partnership success story
- Mark Rodrigue, Parks Victoria, Australia – Sharing the love for Victoria's marine protected areas
- Philip Ingamells, Victorian National Parks Association, Australia - Community generated nature conservation reviews

16

Linking traditional medicine, good healthcare access and conservation

Large numbers of people in developing and developed countries rely on traditional medicines to maintain health, improve well-being or treat illness. These traditional practices include medicines, foods and ecosystem- or geographically-linked diets, access to sacred and healing landscapes, and practitioners who are aware of the differential benefits of resources and ecosystem types.

This interactive session included case studies, sharing of research and knowledge and discussion. The relevance of traditional medicine, especially in the context of parks and protected areas, was examined along with the benefits of fostering diverse partnerships to help overcome challenges in promoting such practices.

Summary of session and discussion

This session focused on aspects of good health at low cost, especially to populations living in close proximity to natural ecosystems that harbour biological resources.

There is a need to conserve biodiversity by improving implementation of policies and at the same time being sensitive to traditional

worldviews and cultural demands and practices. Linking health and biodiversity is an important domain and the Secretariat of the Convention on Biological Diversity is engaged in strengthening and making visible the multiple dimensions of this linkage.

Presentations examined medicinal plant conservation and traditional knowledge revitalisation and how such activities link to health security and livelihood security of people. The presentations highlighted unique approaches that were in line with the cultural, social and political contexts of the different regions.

While the scale of implemented approaches that were presented was local, the broader goals of individual projects or programs followed national or international policy goals. While the immediate goals were to address threat status of medicinal plants, health security is enhanced as a co-benefit given that the resources and related knowledge are actively used in such cultures.

We need to pay more attention to plants and other species with medicinal properties in our biodiversity conservation actions and ensure action is taken to protect genetic biodiversity. We should consider medicinal plants and other species important for food security when we are creating new protected areas.

The use of medicinal species can create pressure on forests and may not always be sustainable. This was the case in Cape Town where too many people tried to get their traditional medicinal herbs from too few forests. 'Herbanisation' is a project developed with the Khoi (Rastafari traditional healers) in Cape Town suburbs. It consists of an indigenous medicinal street garden that now has more than 30 species, with 1500 plants, all planted and propagated by local communities with the help of conservation professionals and support of donors.

A nuanced and wider discussion was also had highlighting the importance of focusing on different dimensions of health at the local level. There is a need for more community level projects, development of capacities and policy linkages for advancing the agenda.





Session manager

Suneetha M Subramanian, United Nations University, Japan

Session contributors

- Braulio Ferrera Dsouza Dias, Secretariat of the Convention on Biological Diversity, Canada
- Danny Hunter, Biodiversity International, Australia
- Eileen de Ravin, United Nations Development Programme Equator Initiative, USA
- James Compton, TRAFFIC International, Australia
- Cristina Romanelli, Secretariat of the Convention on Biological Diversity, Canada
- Anthony Capon, United Nations University- International Institute for Global Health Malaysia
- Andreas Drews, ABS Capacity Development Initiative, Germany
- Mii Matamaki, National Environment Service, Cook Islands
 - Prompting management and conservation of threatened traditional medicinal plants in Atiu and Mauke Islands, Cook Islands
- Ruchi Pant, United Nations Development Program, India
 - Securing conservation goals in India for medicinal plants through strategic innovative partnerships among government, industry, community and folk healers
- Perumal Ravichandran and V. Manimekalai, Manonmaniam Sundaranar University, Tamilnadu, India - Conservation of red listed medicinal plants of Western Ghats India a success demonstration
- Leif Petersen, Sustainable Livelihoods Foundation, Cape Town, South Africa – ‘Herbanisation’: A collaborative pilot of open-access street gardens of indigenous medicinal plants in Cape Town
- Unnikrishnan Payyappallimana, United Nations University, Japan

The healing power of nature

This session explored the therapeutic effects of nature and how individual and community health can be improved through park and landscape-based activities.

Australian, Finnish, and American speakers explored case studies, the evidence base and proven ways to translate this evidence into practice. Presentations demonstrated the importance of a spiritual relationship and connection to country and how this has a strong influence in maintaining healthy environments and healthy societies.

Summary of session and discussion

People around the world have different understandings of nature. What is considered important for conservation is very human-centred. 'If you can't explain it simply, you don't understand it well enough'. This quote can apply to nature: we need to understand what nature means, but it is complex, and it implies a lot of different cultures and visions.

There are many different approaches trying to explain the connection between nature and health, but often the approaches do not connect with each other. Trans-disciplinary actions are required. We cannot break down silos but we can connect them. Reference was made to being more inclusive of indigenous perspectives in understanding our relationships with nature or 'country'.



The panellists recognised that spirituality and connection to country can have a strong influence in maintaining healthy environments and healthy societies. Examples based in Australia, Europe and Asia were pertinent and highlighted an emerging field of study and practice that provides a profound depth of awareness at a personal level and at a community level.

A remarkable case study was presented: *The Bush Circle*, in Sydney, managed by WEAVE, an Australian youth and community services organisation. *The Bush Circle* is a service offered to young people without adult models dealing with alcohol and drug addictions who are trying to cope with their lives. At *The Bush Circle*, the participants are brought to nature for five days of outdoor activities. The participants mentioned going to this camp in order to find their spirituality, their inner child, to find peace and self-reflection. The participants also described some elements that the experience brought to them including: stress relief, choice, meaning, perspective and inner-connection (opposite to isolation), and improved confidence.

Session manager

Justin Lawson, Deakin University, Australia

Session contributors

- Howard Levitt, Golden Gate National Park, National Park Service, USA
- Jonathan Kingsley, Onemda Centre for Health and Society, Melbourne School of Population and Global Health, Australia
- Justin Lawson, Deakin University, Australia - Reshaping the Worldview: case studies of faith groups' approaches to a new Australian land ethic
- Bahadur Bryson, Weave Youth and Community Services, Australia - The healing power of nature
- Gina O'Neill, Aboriginal Health & Medical Research Council of NSW, Australia - Healthy Country: Healing People
- Riitta Wahlstrom, Taiga-Institute, Finland - Wellness and loving nature
- Julia Africa, Center For Health And The Global Environment at Harvard School of Public Health, USA - Shinrin Yoku: practices in context and translation



18

The nature experience: behaviour change, conservation and technology

Connecting people to parks requires assessment of several factors including individual knowledge, motivation, ability and triggers. It is important to understand behaviours in parks and beyond when designing programs and/or adapting the environment.

This session brought together experts from the fields of technology, design, health and conservation to discuss innovative ways to help people form new habits that support healthy lifestyles and sustainable communities.

The panel and interactive discussions focused on designing effective ways to guide people's behaviour in parks and protected areas.

Summary of session and discussion

No behaviour can happen without a trigger. We have to put "hot triggers" in peoples' lives to ensure they will adopt environmental and healthy behaviour. To design new behaviours that will be adopted, we first need to understand why people are doing what they do, and to understand their needs. Information by itself is not sufficient to create a new behaviour. Education and information are keys to the adoption of new behaviours, but sometimes personal experimentation is needed.



Behaviour can be influenced through the use of innovative technology and by tracking people's moods and reactions to landscapes and the environment.

New technologies, like wearables and remote sensing, can be used to aid health assessments and interventions within parks. This enables people to engage with their environment and offers them valuable feedback on health indicators.

Examining case studies like the transformation of Copenhagen into a pedestrian- and bike- friendly city can help other cities create healthier environments and encourage more sustainable behaviours. The city transformed through small steps, such as creating walking streets one at a time, which steadily encouraged healthy habits like walking and biking over a period of years and ultimately achieved a shift in how residents travel.

Session manager

Diana Allen, United States National Park Service, USA

Session contributors

- Julia Townsend, Independent consultant, USA - Behaviour change and conservation
- Julia Africa, Centre for Health and the Global Environment at Harvard School of Public Health, USA - Harvard Natural Environments Initiative: nature-based solutions for the promotion of health and well-being
- Ash Donaldson, Tobias & Tobias, Australia
- Jason McDermott, Sensorium Health, Australia
- Jodie Moule, Symplicit, Australia



We need to put triggers in the path of motivated people.

Julia Townsend, Independent consultant

19

The transformational power of nature-based experiences

Being in nature can evoke wonder and awe and give people truly transformational experiences that can positively affect our communities and the environment.

This session brought together a variety of perspectives and disciplines that highlight the interplay between ecosystem function and human health. Participants gained new insights into the power of nature experiences — from star parties and night skies, to the psychological benefits of multisensory contact with nature. Methodologies and tools for protecting these valuable resources, and evaluating and monitoring visitor experience, were also explored.

Summary of session and discussion

Well-being is inextricably linked to natural sounds. Natural sounds, such as the sound of songbirds, can have restorative effects; whereas anthropogenic noises interrupt restoration, measured in terms of heart rate and cortisol levels. Natural sounds are vital.

‘Dark sky’ practices should be considered by park managers to reduce pollution from nearby communities, reduce energy use, and enhance visitor experience. Dark skies are considered by some as a symbol of a pristine environment.



Wilderness experience, night walks, night sounds, and stargazing are opportunities for connecting people to nature through various methodologies, such as stories of cultures and lore. Dark skies can also be a new marketing tool to increase visitation to parks.

Ecological impacts of light pollution include interference of natural flight paths, reproductive behaviour, and predator/prey relationships. Dark skies protect Aboriginal and other cultural traditions, past and present. There are classifications of dark skies available, and almost all of the dark sky protected areas are in North America and Europe.

Session manager

Diana Allen, United States National Parks Service, USA

Session contributors

- Julia Townsend, Independent consultant, USA
- Isabelle Wolf, New South Wales National Parks & Wildlife Service, Australia
- Ursula Trewwhitt, Queensland of University of Technology, Australia - An in-depth investigation into how nature-based experiences provide positive psychological health benefits
- Peter Newman and Derek Taff, Pennsylvania State University, USA - Conserving acoustic environments in protected natural areas
- Robert Dick, Royal Astronomical Society of Canada, Canada - Requirements and benefits of dark sky practices
- Jeff McNeely on behalf of David Welch, Dark Skies Advisory Group, IUCN, Canada - Dark Sky Parks: where astronomy, ecology and visitor experiences come together



Nature brings value to the 'experience economy'.

Isabelle Wolf, New South Wales National Parks & Wildlife Service, Australia

20

Why urban parks matter in creating healthy and liveable cities – Part 1

Cities are growing rapidly. Increasing urban populations are a massive challenge but present a great opportunity. How do urban parks help in creating healthy and liveable cities?

Case studies from Australia, New Zealand, United States, Mexico, Singapore and Switzerland were examined and an expert panel discussed how changes to public policy could lay the groundwork for creating better parks and more liveable cities in the future.

Summary of session and discussion

Urban parks and open spaces are important for the health and well-being of people. All neighbourhoods should have an urban park.

There needs to be a focus on connecting children with nature, as they can help educate parents and those around them about the environment, the benefits of parks, and healthy lifestyles in urban settings.

By 2050, 70 per cent of people will be living in urban environments. Many cities do not currently focus enough on wild nature and do not fully understand the city's role in the health of the natural landscape and seascape of which it is a part.



In New Zealand, Biophilic Cities are cities that contain abundant nature; they are cities that care about, seek to protect, restore and grow nature, and strive to foster deep connections and daily contact with the natural world.

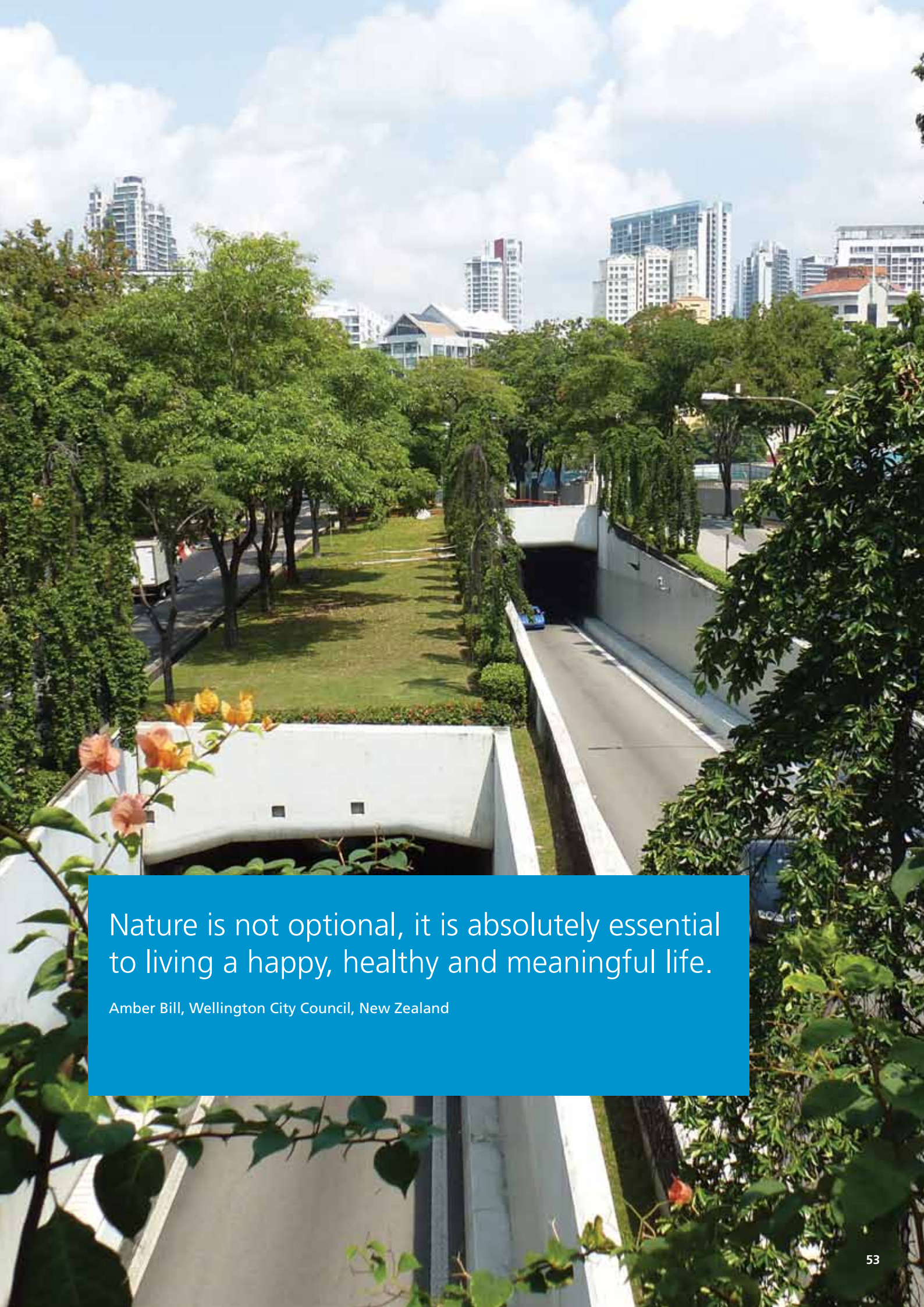
The WILD Cities Project in the United States prioritises the benefits to urban dwellers of wild nature's irreplaceable, life supporting services – such as fresh air, clean water, biodiversity, and resilience to the effects of climate change. The strategy involves facilitating a growing network of city leaders, opinion-makers, and partners from the arts, private sector, and civil society who are developing state-of-the-art criteria and best practice guidelines for the awareness and protection of wild nature in urban areas worldwide.

Session manager

Gil Penalosa, 8-80 Cities, Canada

Session contributors

- Emily Munroe, 8-80 Cities, Canada
- Tobias Volbert, Playscape Creations, Australia - Inclusive design beyond accessibility to improving health and well-being
- Amber Bill, Wellington City Council, New Zealand - Biophilic Cities
- Ms Lee Yi Ling Manager, 3P Networks Regional Health & Community Outreach Division Health Promotion Board of Singapore – The role of parks in health
- Vance Martin, The WILD Foundation, USA - WILD cities: Generating a new concept of urbanism to promote the conservation and restoration of nature in urban areas worldwide
- Frances Horsley, Parks Victoria, Australia - Nature based parks: breathing life into urban spaces



Nature is not optional, it is absolutely essential to living a happy, healthy and meaningful life.

Amber Bill, Wellington City Council, New Zealand

21

Why urban parks matter in creating healthy and liveable cities – Part 2

For urban parks to remain relevant there is a need to look at new ways to manage parks.

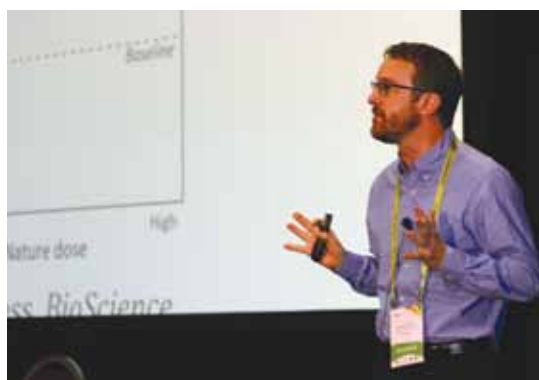
This includes engaging with non-traditional park visitors such as lower socio-economic groups. Consideration also needs to be given to entering public/private partnerships that will make park areas more able to be self-funding.

This second urban parks session continued to examine the important role that urban parks play in creating healthy and liveable cities. Presenters from park agencies, non-government organisations and universities discussed the many benefits of parks and green space in cities.

Summary of session and discussion

We need to find new ways to engage with people that will bring non-traditional users into our urban parks. This is critical if parks are to remain relevant.

There is a difference between preferred landscapes and beneficial landscapes. People might want to see a certain landscape (grass and trees) but the benefits for people and the environment will be greater from a landscape with greater biodiversity.



Greater species richness leads to greater human well-being. More parks closer to where people live do not necessarily increase visitation. Parks with a greater element of nature (more species) will attract more people.

There is a need to design cities to provide interaction with people to produce the benefits (opportunity and interaction leads to benefits).

Landscape design has to involve listening to communities and their needs.

Green corridors through cities - NatureWays - provide biodiversity benefits such as more birds and butterflies and health and wellbeing benefits to people too.

Session manager

Gil Penalosa, 8-80 Cities, Canada

Session contributors

- Emily Munroe, 8-80 Cities, Canada
- Bing Wen Low, National Parks Board of Singapore, Singapore - Habitat enhancement in public parks: restoring biodiversity to urbanised Singapore
- Noel Corkery, Corkery Consulting, and Suellen Fitzgerald, Director of Parramatta Park & Western Sydney Parklands Trust, Australia - Western Sydney Parklands: A decade of human and environmental health benefits provided by the largest urban parkland in Australia
- Myron Floyd, North Carolina State University, USA - Realising the potential of urban national parks to promote health and youth engagement: A case study from Cuyahoga Valley National Park, USA
- Richard Fuller, University of Queensland, Australia - Designing healthy city parks for people and for nature
- Robert Moseley, The Nature Conservancy, USA - Chicago Wilderness: A successful urban conservation alliance that connects people and nature
- Vanessa Trowell, Australian Institute of Landscape Architects, Australia - Creating living places



Urban parks in particular are very special because for many people they are their first entry into nature, and for many more their only contact with nature.

Emily Munroe, 8-80 Cities, Canada

Diverse parks, diverse communities: parks for everyone

A number of innovative programs are being run in parks and protected areas to improve the health and well-being of diverse community groups. These include social inclusion programs for people from culturally and linguistically diverse backgrounds; engaging and empowering communities through place-based education and activation; and universal design of park facilities and providing specialised equipment and detailed accessibility information to encourage people with disabilities to visit parks.

Using all-terrain wheelchairs in parks across Australia and other initiatives are changing people's lives for the better as they enjoy magnificent park surrounds that were previously difficult for them to visit.

Summary of session and discussion

Newly arrived migrants to Australia are often too afraid to venture into parks with their families for a variety of reasons. Park managers, working in collaboration with other organisations, have a role to play in helping these communities to understand and immerse themselves in the natural environment. This can ultimately foster social inclusion, health and well-being, friendship, a sense of community, connections to place, independence and employment pathways.

Society requires a paradigm shift in how it views people with disabilities. Park managers can lead the way by ensuring that parks are accessible to all through applying universal design principles in construction of visitor facilities and walking trails, wherever possible. Park managers also need to provide comprehensive information to park visitors about accessible facilities in parks to assist people with disabilities to plan their park visit.

Innovative thinking is needed to make nature based experiences more accessible to all. Recreation activities and tourism products offered in parks also need to be inclusive. Providing park visitor equipment such as all-terrain wheelchairs (TrailRiders), beach wheelchairs and park managers developing community partnership

programs can greatly assist. People with disabilities wish to access the same visitor experiences in parks and protected areas as everyone else.

By 2020, 25 per cent of the tourism market worldwide will comprise people with a disability. The Destinations for All World Summit 2014 in Canada resolved to create an Accessible Tourism World Body.

Inspirational and innovative partnerships include:

- WOW - Wonders of Waddangalli; a collaborative partnership led by Parramatta City Council in New South Wales, creating a hub of experiential and inclusive learning in an urban parkland setting.
- The all-terrain TrailRider wheelchair and Volunteer Sherpa Program developed by Parks Victoria.
- Walk in the Park – partnership between Parks Victoria and Blind Sports Australia that has enabled vision impaired people to access parks and sense nature through touch, smell and hearing.

Session manager

John Kenwright, Parks Victoria, Australia

Session contributors

- Sam Cuff, Tasmanian Parks and Wildlife Service, Australia - Get outside with community program – fostering healthy experiences in Tasmania's world-class reserve estate
- Aimee Freimanis, Parramatta City Council, Australia - Waddangalli – creating a hub of experiential and inclusive learning in Western Sydney
- Yoon Sang Heon, Korea National Park Service, Korea - Development of the trail classification system and guidelines of the universal design of park facilities at the KNPS
- David Stratton, TrailRider advocate and John Kenwright, Parks Victoria, Australia - Going to wild places I could only dream about
- Bill Forrester, Travability, Australia - Providing detailed accessibility information to encourage park visitation by a growing population of people with disabilities. A case study with Parks Victoria



Almost one in five Australians has a disability. This will increase with an ageing population. Park managers have an important role to play in reducing barriers for visitors with disabilities as nature is good for everyone's health.

John Kenwright, Parks Victoria, Australia

23

Made for each other: connecting children with nature

There is a growing body of research confirming that spending time in nature is vital for children's physical, emotional, intellectual, behavioural and spiritual health. There are a range of practical solutions to encourage and enable children and families to spend more time in nature. A variety of approaches from different international settings has sparked new ideas for collaboration, communication and education.

There is a risk that this generation of children is the last generation with a connection to nature. Society is now more risk adverse and the area that children can roam and play outside has decreased by 80 per cent. The shift to more time indoors has long term consequences such as childhood obesity, mental health issues and behavioural disorders. How can parks and protected areas play a larger role in prevention of these health issues?

Summary of session and discussion

The new cultural norm for children means they have limited time and opportunity to explore the world and may not achieve mental, social and physical development due to not having access to the same outdoor experiences as their parents' generations.



Play spaces in parks do not need to be big, but they do need to:

- be protected so that play can develop naturally without being interrupted by others
- empower children to control their experience
- be challenging and allow an element of risk
- include a microcosm of the whole park, where possible
- to be made of natural materials that evolve and grow naturally, where possible

Connecting nature to a tradition will enshrine nature into the social fabric and become a habit, for example the Cherry Blossom festival in Japan.

It is important to educate children's caregivers, teachers and also park managers in order for them to actively facilitate and empower children to explore and experience nature and take calculated risks.

Play benefits us all, including children and older people, as the benefits are universal.

Session manager

Deborah Prentice, Parks Victoria, Australia

Session contributors

- Maria Zotti, Department for Environment, Water And Natural Resources and Nature Play South Australia, Australia - Case study of a South Australian Government initiative to connect children to nature - Nature Play SA an organisation dedicated to making outdoor play in nature an everyday part of childhood again!
- Robin Christie, Childspace, New Zealand - Bringing nature to life: connecting children to nature, when and where they play
- Deborah Prentice, Parks Victoria, Australia - Connecting kids with parks by connecting the lead agencies with each other
- Linda Lanterman, Kansas State Parks, Department of Wildlife Parks and Tourism, USA - Contribute to an international health solution: prescription play in parks



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Ecotourism and the health of parks, protected areas and communities

Given the great increase in tourism based on natural heritage, and the growing expectations society holds for tourism not only as a source of funding for protected area management but also as a source of income for local residents, it is important we explore the question *“How does ecotourism affect and benefit local communities and ecosystems?”* This session did that.

Summary of session and discussion

Communities and protected areas are linked by political, cultural, utilitarian and economic relationships. Exploiting those relationships through tourism transforms both the community and the protected area. Ecotourism benefits should be equitably shared between community segments. For example some Mexican National Parks have accommodation in commercial tourism ranches outside parks as well as homestays within local communities in the park; others only have ranch stays and locals may miss economic benefits.

While economic benefits are important, the goal of building an ecotourism sector around natural heritage needs to consider how it can contribute to making the community more resilient in the face of accelerating globalisation. By building community resilience, we enhance community health and vibrancy.

In so doing we need to think about 21st century visitor interest and markets, which means that new visitor opportunities and experience—the tourism product—may be needed for a local area to be competitive.

Moving toward resilience as a goal requires rethinking what skills, capacities and policies will be needed. Partnerships that share lessons learned, enhance capacity, and develop and share knowledge are critical to constructing a viable local tourism section.

Some barriers to ecotourism include lack of social and financial capital, lack of management capacity in protected areas, lack of vision and leadership. The conservation sector is usually reticent to introduce new visitor opportunities, but we do need to create new opportunities since visitors and the revenues and political support they bring may be crucial to protected area sustainability.





There have been some inspiring solutions and innovative partnerships. These include:

- In Brazil, US Forests Service and USAID assisting Amazonian park managers with visitor planning
- The Royal Society for the Conservation of Nature in partnership with local communities in Jordan operate ecotourism lodges, hire local people to staff reserve management, and engage women in craft industries at competitive wages
- In Jordan, over 50 percent of protected area costs are covered by ecotourism

Session manager

Stephen McCool, WCPA Tourism and Protected Areas Specialist Group, USA

Session contributors

- Rauno Väisänen, Natural Heritage Services (Metsähallitus), Finland
- Stephen McCool, WCPA Tourism and Protected Areas Specialist Group, USA - Healthy Parks, Vibrant Communities
- Wayne Freimund, University of Montana, USA – Building visitor management capacity in Brazil through impact monitoring and collaborative learning partnerships
- Vicki Bonannan, Great Barrier Reef Marine Park Authority, Australia - Tourism management on the Great Barrier Reef
- Yessica Medina Castro, Universidad Autanoma De Baja California, Mexico – The impact of tourism in protected natural areas - a case study of two national parks in California and Mexico
- Yehya Khaled, Royal Society for the Conservation of Nature of Jordan, Jordan – Engaging communities in nature reserve management and ecotourism development

25

One Health: Linking human, animal and ecosystem health – Part 2

This second session on the One Health approach, which recognises and examines the interconnectedness between the health of humans, animals and ecosystems, examined experiences and lessons learned as work bridges gaps between theory, research, policy and practice at local, regional and global scales.

There were presentations from diverse partners including the Wildlife Conservation Society.

Summary of session and discussion

The session focused on two Wildlife Conservation Society programs: AHEAD (Animal and Human Health for the Environment And Development) and HEAL (Health and Ecosystems: Analysis of Linkages). Conservation can be viewed as a public health intervention as ecosystem alterations can have impacts on human and animal health. These impacts can be felt in myriad ways.

The HEAL consortium focuses on four different domains of health (nutrition, non-communicable diseases, mental health and infectious disease). The focus of this consortium is to create an empirical foundation of understanding connecting the health of ecosystems, humans and animals as a truly dialectical relationship. An overview of the HEAL consortium and past research into connections between wildlife population collapses and increasing rates of food insecurity and malnutrition in Madagascar were presented.



Preliminary results from an ongoing, multidisciplinary investigation into potential environmental determinants of the rapid rise in typhoid cases in Fiji, which appears to show some association with heavy rainfall, were also discussed. The team will be working to identify proactive strategies for watershed management that offer dual benefits to human health and downstream biodiversity.

The AHEAD program has worked to create an enabling environment to resolve the conflicts that arise between the creation of large transboundary areas, like the 5-country Kavango Zambezi Transfrontier Conservation Area, and current approaches to the control of animal diseases. This policy-focused approach is leading to new non-fence-based ways to manage foot and mouth disease, and has the potential to facilitate the realignment of fences in southern Africa, opening up the potential for enhanced large-scale movements of wildlife, including seasonal movements of, and range expansion by, the world's largest population of elephants.

Session manager

Christopher Golden, Wildlife Conservation Society, USA

Session contributors

- Jonathan Patz, Director Global Health Institute, University of Wisconsin, USA
- Richard Jakob-Hoff, IUCN Wildlife Health Specialist Group, New Zealand
- Christopher Golden; Wildlife Conservation Society, Wildlife Health and Health Policy Program, USA - The Health and Ecosystems: Analysis of Linkages (HEAL) Program: an overview
- Shirley Atkinson, Wildlife Conservation Society, Wildlife Health and Health Policy Program, USA - Resolving disease-related conflict at the livestock/wildlife interface in support of transfrontier conservation in Southern Africa
- Stacy Jupiter, Wildlife Conservation Society, Melanesia Program, Fiji, and Aaron Jenkins, Edith Cowan University, School of Natural Science, Australia - Investigating links between environmental change and waterborne bacterial disease in Fiji



26

Managing biological pest invasions to keep people and protected areas healthy

Biological invasions in terrestrial and aquatic protected areas occur when animals, plants or micro-organisms invade an area where they were not previously present and then settle, reproduce, spread and cause damage to biodiversity, human livelihoods or health.

How can we best manage pest invasions in our parks?

Different means of detecting biological invasions and novel ways to prevent new invasions come from experiences from around the world including Mexico, Australia, Fiji, Palau and India.

Summary of session and discussion

Many invasive plants in protected areas are causing problems but they can be controlled by good management systems and they can have benefits to biodiversity as well as people.

Good partnerships can make for healthy ecosystems and healthy people. Partnerships with industry, government, indigenous and local communities can help deal with invasive species.

A program called '*All together now!*' was introduced on Norfolk Island to control invasive predators. There had been a lack of effective rodent control and this program, which involved residents, created a more effective and coordinated rodent and cat control program.

A good example of how pest control brought positive outcomes to many sectors is the Kayangel Atoll case study in Palau where the eradication of invasive rodents and feral cats protected habitats of the rare Palau Megapode bird (Bekai megapode) and recovered the ecosystem to its original state. The success of this project relied on a solid foundation of community support. The Kayangel community was part of the research and local people have been trained and are now implementing monitoring, eradication and biosecurity activities.

Session manager

Geoffrey Howard, IUCN Global Invasive Species Coordinator, USA

Session contributors

- Maria del Carmen, National Commission of Protected Areas, Mexico - Impacts and management of Lion Fish in protected areas in the Caribbean
- Judy Fisher, IUCN Commission on Ecosystem Management, Theme Leader Ecosystems And Invasive Species, Australia - Partnerships with industry, government, indigenous and community for best practice projects to enhance biodiversity knowledge for management, ecosystem services, and healthy environments incorporating an ecosystem approach to invasive species
- Lolita Gibbons-Decherong, Palau - Safeguarding the rare Kayangel Atoll ecosystem and livelihoods, Palau





Sustainable livelihoods: balancing conservation and local community needs

How can natural resources be sustainably managed to benefit livelihood security, improve human health, support community rights and aspirations and enhance the health of protected area ecosystems?

Presenters from Uganda, Guinea Bissau, Zambia, United Kingdom and Cambodia shared their experiences, research findings, partnerships and innovative practices.

Summary of session and discussion

A radically new approach to marine conservation is required. It needs to be applied on a large scale and it needs to deliver quick socio-economic returns. There should be an emphasis on developing livelihood-based catalysts to build local engagement in conservation.

In order to enhance the effectiveness of freshwater Fish Conservation Zones, there needs to be better acquisition of baseline data and a standardised evaluation methodology developed to assess the impacts of Fish Conservation Zones on fish populations.



The work should be about promoting *sustainable* livelihoods, rather than 'alternative' livelihoods and there needs to be a stronger discussion about protected areas and the food security of communities living in, and adjacent to, protected areas.

Empowering participatory learning approaches should be used and be guided by theories of change. Sharing stories is the most effective strategy for scaling up. Community-to-community dialogue is the best mechanism and is far more effective than peer-reviewed papers.

Examples of inspiring solutions include:

- In Madagascar, community-based, periodic closures of octopus fisheries have led to dramatic increases in harvests. Starting with a just a few villages, the approach has now spread widely
- In Uganda, cultivation of chilies has reduced human-wildlife conflict and increased income leading to a number of additional indirect benefits, such as increased retention of children in school and a reduction in domestic violence
- The involvement of local communities in monitoring and collecting fish data has helped to enhance understanding of Fish Conservation Zones and their implications in Vietnam.

Session manager

Tony O'Keefe and Akannsha Nand, IUCN Oceania Regional Office, Fiji

Session contributors

- James Compton, TRAFFIC International, Asia-Pacific
- Aban Marker Kabraji, Asia Regional Director IUCN, Malaysia
- Alasdair Harris, Blue Ventures, Madagascar - Working holistically for marine conservation; making the connections, sustaining real change
- Annet Kandole, Care International, Uganda - Securing lives of households adjacent to protected areas through promotion of chili growing to improve food security
- Harmony Patricio, Australian Rivers Institute and FISHBIO, Australia - Freshwater protected areas in the Mekong: conserving species, benefiting people
- Helen Schneider, Fauna & Flora International, United Kingdom



Connecting to Australia: place-attachment bringing people closer to nature and culture and improving their well-being

How Australians are connected to their local natural and cultural environment and values affects their health and well-being. Place-attachment can translate into community development and be used as a powerful means for encouraging people to care for nature and culture while improving their well-being and support for parks and protected areas.

A range of Australian case studies were presented and discussed, exploring cultural heritage and natural places while highlighting different ways to engage the community through diverse mediums such as art and music.

Summary of session and discussion

There are multiple and overlapping benefits of connecting children and families to nature for a range of physical, social and cognitive benefits.

Place-attachment is the extent to which an individual values or identifies with a particular environmental setting.

‘Postcarding’ nature may be a threat – characterising it as beautiful, glamorous and pristine and as something you want to visit ‘one day’. There is a need to keep nature realistic and not make it too glamorous.



Place-attachment also has a positive benefit on individual well-being. Park managers may foster place attachment by investing in distinctive attributes of the park, sentimental components and activities.

There is a need to advocate against the fear of having children outside – for example, the risk of abduction is no greater today than many years ago.

Generational storytelling is a powerful way of connecting children to places – and to ultimately garner stewardship of protected areas.

On the Mornington Peninsula in Victoria, community art projects such as mosaics, soundscapes and large quilt projects (Earth Blanket) have been used to engage the local community, visitors and school students in the national park, improving connection to place and well-being.

In the Dandenong Ranges in Victoria, a study has shown that place-attachment influences pro-environmental behaviours and well-being. The four dimensions of place-attachment – dependence, identity, affect (emotional bonds), and social-bonding – all impact on pro-environment behaviour as well as both individual and social sense of well-being. The implication is that park managers could use the validated national park well-being scale to assess the effectiveness of their programs.

Session manager

Rod Annear, Department of Parks and Wildlife, Western Australia, Australia

Session contributors

- Griffin Longley, Natureplay WA, Australia - Natureplay: Connecting kids to natural places benefits health, cognition, social and emotional development and builds resilience and stewardship for natural places.
- Stephen Brown, University of Sydney, Australia - Place Attachment: enhancing and supporting connectivity to special cultural heritage places within protected areas
- Jenny Macaffer, Mornington Peninsula Shire, Australia - We are all earthlings (Humans and their relationship to the earth)
- Ramkissoo Haywantee, Behaviour Works Australia, Monash University, Australia - Place Attachment: Pro-environmental behaviour and well-being in national parks



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Sacred natural sites and human well-being

Sacred natural sites and human well-being are closely linked and play a significant role in the cultural identity, spirituality, knowledge and governance of communities around the world. Many sacred natural sites have been the foundation for declaring protected areas and World Heritage sites. This session explored the links between human health and well-being and sacred nature.

Summary of session and discussion

Sacred sites are often the backbone of modern protected areas and World Heritage sites and have high cultural and biological biodiversity but are not managed for their spiritual significance.

The 1972 drafting of the World Heritage Convention does not match current understanding of integration of people and nature and the IUCN is now working to integrate natural and cultural values.

At Great Smoky Mountains in the United States, bilingual wayside signage tells of Cherokee perspectives and includes Elders' quotes from creation stories, tales of removal, rituals and lifestyle. This trail is used by the local Cherokee community to educate and inspire their children and learn language.



Sacred sites can be rediscovered and reinvigorated after a long period of lack of use. In Eastern India, rediscovered sacred natural sites have enhanced the well-being of women in indigenous communities who had been socially marginalised and had low cultural confidence. Active participation in worship and reinvigorated rituals at these sites has increased cultural confidence and empowerment leading to cultural rejuvenation.

Similarly, the Mayan communities of Guatemala are engaged in the process of recovering and reinvigorating sacred sites that have been destroyed and desecrated. Indigenous peoples need to be supported to declare and protect sacred sites and legislation changed to support this work.

Traditional beliefs in a Russian example that was discussed are that the living earth has the same properties as a living organism and that sacred sites play a role like acupuncture points in the human body. Sacred sites play a role in connecting human consciousness with earth consciousness, and everything we do has consequences at a local and global scale. In this way, sacred sites are intrinsically linked to conservation action.

Similarly, Mount Athos in Greece is a cultural landscape managed by self-governed, self-sufficient male monastic communities for the last 11 centuries. Their sustainable organic, agricultural lifestyles are a great example of sacred environmental stewardship.



Session manager

Diana Allen, United States National Park Service, USA

Session contributors

- Tim Badman and Elena Osipova, IUCN World Heritage Programme, Switzerland - Bringing together nature and culture in the nomination, inscription, and management of World Heritage sites in ways that improve the well-being of people and the health of the environment
- Edwin Bernbaum and Jim Gale, IUCN - Cultural and Spiritual Values of Protected Areas Case studies from two World Heritage Sites – Hawai'i Volcanoes and Great Smoky Mountains National Parks – on interpretive programs that have enriched visitor experience and enhanced the spiritual and physical well-being of Native Hawaiian and Cherokee communities and individuals
- Bas Verschuuren; Sacred Natural Sites Initiative, and Danil Mamyev, 'Tengri – Soul Ecology School' and 'Uch Enmek' Indigenous Nature Park - Human rights dimensions of sacred natural sites in World Heritage sites and their implications for human well-being and the conservation of nature in protected areas and World Heritage sites
- Suneetha Subramanian, United Nations University – Institute of Advanced Studies, Japan - Community well-being in bio-cultural landscapes – exploring the wider aspects of human well-being, cultural and spiritual, in relation to sustainable development and the conservation of parks and protected areas
- Felipe Gomez, Mayan Healer and Spiritual Leader - Sacred sites are places of energy that embody a relationship between people and the cosmos
- Radhika Borde, Wageningen University, Netherlands - The role of sacred natural areas protected by indigenous communities in Eastern India in community rejuvenation
- Josep-Maria Mallarach, Silene and Delos Initiative, Spain - Sacred natural sites of mainstream religions for community well-being in World Heritage sites and protected areas: experiences from the Delos Initiative

Green Justice: the right to nature

All people have a right to access nature. There are various legal and policy tools that promote beneficial aspects of parks and protected areas for human health and well-being.

This session examines what kinds of legal and policy tools can ensure that natural ecosystems and their benefits and services are equitably accessible to all members of society.

Summary of session and discussion

Human Rights Law has developed without concentration on the question of the Right to Nature (a clean, healthy, safe environment). The 1948 Human Rights Declaration and 1966 Covenants do not mention the environment.

Over 100 countries now have a right to a healthy environment in their constitutions. These articles can be used by the courts to focus on aspects of environmental degradation. There has also been a call for inclusion of the 'Right to Nature and a Healthy Environment' in the Convention of the Rights of the Child.

New York has implemented a \$130 million community parks initiative and 60 community groups are now working to reconnect to the Bronx River through restoration efforts and rehabilitation. Beavers have returned to the Hudson River.

The Rights of Nature are reflected in international and national conventions. Respect for nature and its inherent value is embedded in the 1982 World

Charter for Nature and the 1992 Convention on Biological Diversity is conscious of the intrinsic value of biodiversity.

Bolivia and Ecuador have specific rights of nature in their constitutions. However, these rights need legislation and court cases to bring them into practice. In one case in the Philippines, the fundamental human right to a healthy environment was used in judgement related to halting logging licences.

In the existing legal system, the earth is treated as a commodity (from medieval times) and there are no limits on consumption or growth. This basis of law needs to change to a more eco-centric view.

English legal language does not describe the relationship between nature and people very well. In New Zealand, the Maori language has been used in legislation to better reflect the true meaning and aspiration of the laws. The courts now have to consider these Maori terms and the judiciary is now undertaking training in Maori language.

Another way of returning control of land and nature is by recognising natural features as tribal ancestors, or making a natural feature a legal 'person' including holding title to land. Co-governance sees guardians appointed to speak for the feature (for example, a river) on a majority-Indigenous Board of Management. The key guiding principle is 'I am the river, the river is me'. The health and well-being of the river is intrinsically linked to the health and well-being of the people.

Session manager

Nick Bryner, IUCN World Commission on Environmental Law, USA

Session contributors

- Gator Halpern, Yale School of Forestry and Environmental Studies, USA - From brownfields to green parks: creating recreation areas in underprivileged communities
- Ben Boer, University of Sydney/Research Institute of Environmental Law, Wuhan University, and IUCN World Commission on Environmental Law, Australia - Protected areas and the right to life, the right to health, and the right to nature
- Peter Burdon, University of Adelaide, Australia
- Michelle Maloney, National Convenor, Australian Earth Laws Alliance, Australia





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Closing the loop: moving management effectiveness evaluation from reporting to adaptive management

Protected area management effectiveness evaluations have become a common tool to inform park management agencies on the extent to which they are meeting their goals for conservation and community use of parks.

This session partnered with Reaching Conservation Goals (Stream 1) to demonstrate how management effectiveness evaluations are moving from a reporting focus to capturing best available knowledge to feed into adaptive management.

Presenters from France, Taiwan and Australia addressed issues such as: (i) how the results of protected area management effectiveness assessments are being integrated and communicated by park and protected area agencies to inform future goals, plans and priorities; (ii) how these assessments can be more effectively integrated with science and knowledge programs to inform park management priorities, and; (iii) how citizen knowledge and new technology can capture, report and integrate the views of both park managers and the broader community.



Summary of session and discussion

Changing management effectiveness from reporting to adaptive management requires adoption of an organisational culture in which knowledge is systematically gathered, interpreted and shared across different levels of the organisation.

Presenting inherently complex information back to managers in easy to understand formats is critical for application to policy and management. A “dashboard” approach using selected indicators represented by pictograms for habitats and colours showing condition or conservation status can be a useful tool for communicating with non-scientist stakeholders and can help make public policies transparent.

Evaluation of the Great Barrier Reef through Outlook Reports has resulted in the systematic evaluation of condition and effectiveness and their interrelationship with policy and park operations.

Evaluation and monitoring of condition or “state” needs to be decoupled from formal protected area management effectiveness reporting processes. For example, despite having a comprehensive monitoring and evaluation process with many criteria and indicators, and a good process for closing the loop and translating actions into strategic and operational plans, key threats had not been addressed because they are socially, biophysically and jurisdictionally complex.

Participatory geographic information system (GIS) tools are an effective way for capturing community values and opinions. The general community experiences parks in a different way to managers. Therefore the community can provide additional knowledge on issues that are not necessarily the key focus of park managers.



Session manager

Tony Varcoe, Parks Victoria, Australia

Session contributors

- Andrew Growcock, New South Wales Office of Environment and Heritage, Australia and Tony Varcoe, Parks Victoria, Australia - Closing the loop in State of the Parks evaluations
- Anne-Sophie Barnay, French Marine Protected Area Agency, France - Towards evaluation and monitoring for adaptive management in all categories of Marine Protected areas in France
- Hung-Yi Chang, Forestry Bureau, Council of Agriculture, Executive Yuan (Conservation Division), Taiwan - Strategies to Achieve Aichi Target 11 - effectiveness, capacity and partnerships, the Taiwan experience
- Prue Addison, University Of Melbourne, Australia - Barriers and opportunities to using biological monitoring data in management effectiveness evaluation and evidence-based management of protected areas
- Kirstin Dobbs, Great Barrier Reef Marine Park Authority, Australia - The Great Barrier Reef Outlook Report - integration into marine park planning
- Delene Weber, University of South Australia, Australia - Application of participatory GIS tools to engage the community in park management
- Fiona Leverington, IUCN World Commission on Protected Areas, Australia

Inspiring young people in nature conservation

This session examined how to inspire the next generation of park leaders through health, conservation and recreation activities.

Topics included how Eco-clubs are being used as a means to ensure future sustainable development, how to incorporate environmental education into school curriculum, how global research is informing park managers about the importance of nature for young people's health and how the Australian Aboriginal connection to country can be used to spark interest in young people and the community in the value of spending time outdoors for their health and well-being.

Summary of session and discussion

The earlier children become involved in nature, the better their long term use and respect for nature. Therefore nature-based education is very important. A global network of universities is being established that provides teacher training at all levels with the aim of including nature, sustainability and health and well-being in their entire curriculum.

A Canadian study on children's use of parks found that:

- Boys are more active in parks than girls
- Rural areas showed more activity than urban areas
- Linear paths were not used much but paths to activities were well used
- Children were more active when other children were active



The Korean National Parks Service has recently been implementing a large program of environmental education for all levels of school. Early evidence suggests it is performing well. The Service provides educational resources such as text books, interpreters and facilities specifically for education. The program has strong support from the private sector.

There are a number of diverse programs in Australia for young Aboriginal people and for recently arrived refugees. The participants are immersed in nature and guided to make healthier choices. Activities include camping, trekking, culture and environmental interpretation, guest speakers, surfing and abseiling. The benefits include receiving helpful information for decision making, work experience, exposure to life opportunities, outdoor skills and community resilience.

Evidence also indicated that empowering women in 'at risk' communities through the provision of education and information can greatly assist in improving the health and well-being of the broader community.

Session manager

Deborah Prentice, Parks Victoria, Australia

Session contributors

- Marie Rutza Flavieene Vincent and Jude Francois, Ecoclubes, Haiti - Ecoclubs: inspiring the next generation of park advocates through health and conservation
- Guylaine Chabot, Universite Laval, Canada - What works - a summary of the performance of interventions designed to promote human health through tourism and recreation in terrestrial and marine parks: a systematic review of research
- Deborah Prentice, Parks Victoria and John Clarke, Parks Victoria, Australia - Meerteeyt Marrang, An Aboriginal cultural program for all youth
- Kim Sang-beom, Korea National Park Service, Korea – Environmental education in national parks alongside school curriculum
- Claire Warden, Mindstretchers, United Kingdom (Scotland) – Embedding nature, sustainability and health and well-being into the education sector

Note: session 33 is the closing plenary for the stream, refer to page 82



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Responding to the effects of climate change on communities, parks and protected areas

How does a changing climate affect the management of parks and protected areas? How will the responses impact on communities and their interaction with nature?

This discussion was led by a panel of business, health, park and protected area leaders. They explored the challenges and innovative ways of managing healthy parks to ensure community safety and explored ways to tackle natural disasters and extremes in a changing climate, including the role of new technologies in improving park management and connection with communities.

Summary of session and discussion

There is a lack of certainty with climate change so the ability to adapt will be more important than the ability to predict.

The impact of climate change on humans is felt through changes in ecosystems and biodiversity. Protected areas are helping society to adapt to climate change by conserving biodiversity and supporting ecosystem services. About 40 per cent of the world's forests are located in protected areas or community conserved areas. Old growth forests are more valuable in storing carbon than new fast growing forests. Therefore, large trees are especially valuable in mitigating climate change.



Understanding, measuring and choosing forms of risk adaptation will be essential. Parks and protected areas can be places to demonstrate and interpret climate change. Climate change is complex and parks can play a role to break it down and make it real for people to better understand. Protected area managers can role model climate change mitigation actions.

The impact of climate change is also being felt by a dramatic increase in natural disasters. For example, we are seeing more serious and major bushfires in many parts of the world. Science is being used to inform values-based decision making where communities are engaged in understanding the risk and developing the solutions.

Climate change also poses risks and opportunities to public health. Climate change will lead to an increase in extreme events such as heat waves and place pressure on the health system. There is the opportunity to consider the health benefits of cleaner energy in offsetting carbon emissions costs.

Now is the time to actively engage with technology as we respond to natural disasters and climate change impacts. Changes in society are already happening and people want to be connected and use technology, such as social media, in emergency situations. There is a challenge for telecommunications and protected area managers in building connectivity in remote areas where many of the disasters will occur. There will be 30 billion devices connected by 2020 so we need to identify the opportunities to connect with people and get information out to the community and make a difference in public safety.



Action priorities for the future may include:

- investing in enhancing the management of protected areas that are providing multiple benefits to society
- exploring possibilities for connectivity of protected areas into larger landscapes that allow species and ecosystems to adapt to climate change;
- improving the understanding of the relationship between biodiversity, development and ecosystem services
- working with telecommunications companies to provide connectivity and solutions for communities affected by climate change
- tapping into emerging sources of funds

Session manager

David Nugent, Parks Victoria, Australia

Session contributors

- Jeff McNeely, Department of National Parks, Wildlife and Plant Conservation, Thailand
- Liam Fogarty, Victorian Department of Environment and Primary Industries, Australia - Land management challenges with a focus on community interaction and ecosystem impact
- Bruce Esplin, former Victorian Emergency Services Commissioner, Australia - Private sector response. How can technology help? How can it be used by park agencies and communities?
- Jeff Mow, United States National Park Service, USA - Parks role in building community awareness around climate change
- Jonathan Patz, Director Global Health Institute, University of Wisconsin, USA - Climate change and community health

Note: there was no session numbered 35.

Making *Healthy Parks Healthy People* real: a workshop on the draft IUCN-WCPA Best Practice Guidelines for *Healthy Parks Healthy People* approach

This interactive workshop involved expert practitioners sharing their knowledge and experience with people interested in using the *Healthy Parks Healthy People* approach.

The workshop outcomes will help in developing the IUCN WCPA *Healthy Parks Healthy People* Best Practice Guidelines. The publication is set to be released in 2015 and will be available online. These guidelines for practitioners will be culturally inclusive and applicable to developed and developing country contexts.

Summary of session and discussion

The evidence to support the use of the *Healthy Parks Healthy People* approach is overwhelming and compelling. It is time to 'just do it' and take action, although there are still some gaps in the evidence base.

This is a call to action for practitioners as unless the links between the health of parks and the health and well-being of people is recognised, it is unlikely that policy makers will incorporate it. A failure to act may therefore contribute to a decline in biodiversity and commensurate decline the health of people and well-being of communities.

There are also opportunities to overcome limited funding and different research methodologies so that we collectively build new evidence and work at overcoming disciplinary separations. This will lead to greater use of parks for health outcomes.



Strategies for the health and parks sectors to use to address these constraints include to:

- address critical gaps in current knowledge and advocate for acceptance of current evidence
- facilitate the active engagement of both sectors in promotion, action and policy
- encourage health sector to use parks as a health resource and parks sector to embrace the contribution of parks to improving people's health and well-being
- work jointly to advocate for provision and management of parks for health benefits, especially in urban areas

The guidelines will assist in all of these strategies.

This workshop posed eight key questions in relation to developing the guidelines. The key contributions from participants for inclusion in the guidelines were:

- an introduction for park managers citing the benefits
- the need for a project framework and online case studies
- developing coursework for first year medical students
- evidence of health benefits packaged for delivery to health sector
- locating health clinics in parks
- funding to improve park condition as well as health infrastructure
- better evidence on the specific 'nature dose' (exposure length and repetition)
- strategies for obtaining inter-disciplinary research funding
- standard evaluation tools for practitioners in terms of quantitative measures pre- and post-exposure to nature
- strategies to ensure cultural inclusiveness
- addressing transport barriers
- examples of outreach programs



The Green Healing Sharing Camp in Korea is an example of a partnership program between the public health sector and the Korean National Park Service. The program involves a range of activities including hiking, meditation and natural experiences. It has had demonstrable improvements to health as measured by indicators such as body mass index, blood sugar, and cholesterol.

Session manager

Ian Walker, Leader IUCN *Healthy Parks Healthy People* Taskforce, Australia with the support of the Korean National Park Service

Session contributors

- John Senior, IUCN *Healthy Parks Healthy People* Taskforce, Australia
- Chong-Chun Kim, Korea National Park Service, Korea - Park perspective
- Mardie Townsend, Deakin University, Australia - Health perspective

Improving Health and Well-being: *Healthy Parks Healthy People* stream Closing plenary session

The closing plenary was a summary of the key approaches and ideas presented throughout the stream at the Congress. The goal was to empower participants to promote relevant approaches that link health, well-being, parks and protected areas, apply it in their daily work and harness the growing support for a new global movement involving park and health sectors that will result in concerted actions to sustain parks and improve people's health.

Summary of session and discussion

Participants gathered in groups to explore key themes of the Improving Health and Well-being: *Healthy Parks Healthy People* stream. Group tables were hosted by individuals who had been identified throughout the Congress as leaders and champions of these themes.

Participants documented their personal and/or organisational commitments to applying these approaches in their own situations and contexts after returning from the Congress.

These commitments were recorded so that participants could recall and recommit to these after the event, as well as sharing them with others in their organisation to ensure action.

Session managers

Bill Jackson, Alannah Gottschalk and Kathryn Campbell, Parks Victoria, Australia

Table hosts

Jonathan Patz, Director Global Health Institute, University of Wisconsin, USA

Constanza Martinez, IUCN Global Policy Unit, Switzerland
Gil Penalosa, 8-80 Cities, Canada

Mardie Townsend, Deakin University, Australia

Eileen McNeely, Harvard School of Public Health, USA

Juleon Rabbini, Stream 3 Youth Representative, USA

David Eichberg, Environmental Progress Initiatives, Hewlett Packard Company

Cristina Romanelli, Secretariat of the Convention on Biological Diversity, Canada

Rod Quartermain and Jim Sharp, Department of Environment and Conservation, Western Australia, Australia

David Stratton and Ros Hart, TrailRider advocates, Australia

Melika Y. Sheikh-Eldin, Australian Multicultural Education Service, Australia





Stream Closing Plenary Commitments

In the closing plenary, delegates made a range of commitments to contribute to the movement. Just some of those commitments, in their own words, were:

- Integrate the *Healthy Parks Healthy People* message as a benefit for the tourism industry in its marketing for tours into national parks
- Expand the capacity of technology to increase connection between parks and younger generations
- Build cross sector partnerships to evaluate the outcomes of *Healthy Parks Healthy People* programs
- That Parks Victoria makes a commitment to become a major positive factor in measurably improving the health and wellbeing of Aboriginal communities through access to Country and being a venue for cultural renewal.
- Engage more Junior Ranger programs
- I promise (over the next year) to share IUCHN Urban Protected Areas profiles and Best Practices Guidelines with our State Department of Parks & Recreation and in Sacramento City and County Parks
- I promise to invite and engage our Church Youth Group and other youth in Orinda, CA to be part of National Geographic BioBlitz and iNaturalist Online tools. Invite youth for a monthly outdoor adventure
- I would like to enhance children's access to mentors to give them a network to work towards nature conservation in their own way - to give them support and resources to make changes and a way to turn their passions into positive action
- I commit to contributing to at least three public health - park partnerships in the next six months by contributing to the written report and being part of the planning committee
- I will talk with maternal and child health nurses about connecting new mums to nature and also to indigenous staff at work about connection to country through pregnancy, birth and babies
- Coordinate with other states to infuse nature based learning into educational curriculum frameworks in our states, using examples from other countries and successful US State models
- Help park staff gain fuller understanding of capabilities of individuals with disabilities and make parks more welcoming to them through physical improvements and innovative programs
- Use some of the lessons from international delegates to connect new residents of Australia
- New learning strategic partnerships across sectors and build on existing and emerging partnerships
- Identify opportunities for access to spiritual health places
- Facilitate and regulate planning in urban areas to ensure an appropriate level of access to green space
- Help preserve the nocturnal environment in parks, protected areas and urban areas
- I pledge to approach health promotion and medical groups working in my community to see how we can assist each other with improving people's connection with our local parks and green spaces
- To undertake research that provides useable, quantifiable data for the health sector and to communicate it to them by publishing that research in publications that are read by people outside of the parks industry
- To continue to work within my son's school with the sustainability program to support and educate teachers for the development and expansions of current programs



- I pledge to further our work to use information technology to improve park management and better connect people with nature
- I pledge to increase research on wildlife, live/tech interplay with disease emergence - particularly infectious disease, driven by people
 - through direct impact, through infrastructure
 - roads, buildings, water management, agriculture, etc. Also work on political economy related driver of disease emergence in relation to protected areas
- I promise to work with stakeholders to figure out ways in which mountain biking can help contribute towards better protected areas and healthier people.
- Conduct five BioBlitz's with Natureplay in Western Australia each year for the next five years
- I'll start conversations with Health's Ministry of Colombia to initiate a Healthy Parks Healthy People program and promote how national parks can improve the health and wellbeing of humans
- I promise to engage business in connecting employees to nature either through business conservation programs or employee volunteer programs
- I promise to further develop the Harvard Wellbeing Index for open source use to measure impacts of *Healthy Parks Healthy People* programs
- Work with politicians to strengthen a sense of urgency to act
- I'm going to explore the idea of a "climb a tree" campaign at my local park
- I will conduct (by designing, implementing) a health needs assessments for communities living around the wetlands that I regularly visit, monitor and manage
- I pledge to promote design of every neighbourhood to be connected to urban parks, via bike, foot or public transport (powered by renewable energy) in every city in every country
- All 7.2 million San Francisco Bay Area residents have access to be prescribed nature for health by the end of 2016



- I will explore with Thai colleagues ways to reach out to the health sector, both public and private. The health insurance industry will be a primary target
- Active in Parks will have engaged health and community organisations in every state and territory to champion the message of the benefits of natural spaces for Australians health and wellbeing
- I pledge to use all forms of media and communications to engage the widest possible audience and bring the story to them in a way that is meaningful to them
- I promise to continue to develop healthy lifestyle of myself and my team and community
- Mainstreaming the messages contained in the Promise of Sydney at the global level by fostering dialogue and collective action among partners and highlighting its importance and relevance in the CDB-WHO State of Knowledge review on biodiversity and human health
- Expand Jane Goodman's Roots and Shoots program into more schools which will increase youth engagement in parks
- Our promise/commitment:
 1. One tree per house
 2. One park per village
 3. More parks per municipality
- I pledge to approach authorities to remove, combat or control invasive species from our National Parks and return some native flora currently eradicated from the parks



Global Call to Action from the Stream Leaders

The *Healthy Parks Healthy People* approach to park management is based on the fact that nature is essential for human health and well-being. Health, land and living are part of the same equation. This is not new knowledge but something that people have known for thousands of years.

We are all part of the natural world. This understanding is deepened by a growing body of evidence on the connections between nature and human health and well-being.

We know that nature provides fresh water, clean air and food, upon which all human life and health depends. It influences disease occurrence and spread, and is the source of medicines. Nature benefits people's mental, physical, cultural, and spiritual health and well-being.

Parks and protected areas are:

- Places of hope and inspiration
- Natural solutions to the impact of climate change
- Stimulators of sustainable economies, and
- Keepers of biological diversity

We know that when ecosystems are disturbed, biodiversity is often lost, as is human health.

Eco-health experts caution that human impacts on the environment lead to the spread of emerging and infectious disease including malaria, Lyme disease and dengue. Health and well-being decision-makers advocate for a greater focus on preventative health care as a way of reducing the disease burden and associated costs. Conservationists advocate, just as strongly, for the role of protected areas in providing natural solutions to a range of society's problems, including health and well-being.

It seems we have a convergence of interests.

For millennia, communities have understood the inherent health benefits gained from nature. However, sprawling urbanisation coupled with shrinking natural spaces has left society disconnected from the natural world.

While urbanisation has brought many benefits to society, it increasingly denies people opportunities for physical activity and enjoyment of the mental, spiritual and physical benefits of nature. People, particularly young people, have become increasingly disconnected from nature and more sedentary. This is cause for alarm and it needs our immediate action.

Over this last decade, there has been a global increase in non-communicable diseases such as heart diseases, some cancers, and Type 2 diabetes. This is likely to worsen as the global population shifts from 54 per cent of people living in cities today to a forecast 70 per cent by 2050. Almost all of this urban growth will occur in less developed countries.

The IUCN World Parks Congress 2014 provided the incentive for change. But to realise this opportunity we need to mobilise partners in all sectors to create a new approach that ensures healthy parks that support healthy people.

One of the challenges for managers of parks and protected areas is to show value and relevance. The research is very clear about the human need for connection to nature. The *Healthy Parks Healthy People* approach to park management is essential if we are to win the hearts and minds of an urbanised world to conserve biodiversity.

The *Healthy Parks Healthy People* approach can also contribute to realising the universal right to health enshrined in the World Health Organization's Constitution and achieving the Aichi Biodiversity Targets of the Convention on Biological Diversity.

Great advances were made during the IUCN World Parks Congress 2014 with the health sector joining the Congress. But we need to do more. The health of parks and the health of people requires urgent attention.

The evidence is there now.

We know enough to act now.



The primary recommendation of the Improving Health and Well-being: *Healthy Parks Healthy People* stream is to:

“Unlock the values of parks and protected areas for health and well-being, while conserving biodiversity.”

We need to work smarter. We need to make more persuasive arguments. We need to communicate with loud voices to new audiences that parks are essential for physical, mental, social and spiritual health.

We need to change the way we manage preventative health and parks and protected areas. We need to build coalitions, alliances and partnerships. We have the arguments – we have to get better at making them.

We need more engagement of the health sector and together with our health colleagues, we need to partner with business and the private sector. We have to rethink our networks and develop new ones.

We cannot afford to delay taking action. It is the most important work many of us will ever do.

It is the right thing to do.

Parks Victoria, Australia and United States National Park Service

Improving Health and Well-being: *Healthy Parks Healthy People* stream

IUCN World Parks Congress 2014



