



## NATURE NEEDS HALF: A NECESSARY AND HOPEFUL NEW AGENDA FOR PROTECTED AREAS

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### ABSTRACT

Conservation targets should be based on what is necessary to protect nature in all its expressions. When in 1988 the Brundtland report called for tripling the world's protected area estate (which was then at 3 to 4 per cent of the land area) there was a strong belief that sustainable development would ensure the proper care for nature on the rest of the unprotected earth. This has proven wrong. We therefore must materially shift our protected areas target to protect at least half of the world, land and water, in an interconnected way to conform with what conservation biologists have learned about the needs of nature. Instead we have set goals that are politically determined, with arbitrary percentages that rest on an unarticulated hope that such non-scientific goals are a good first step towards some undefined better future outcome. This has been a destructive form of self-censorship. It is time for conservationists to reset the debate based on scientific findings and assert nature's needs fearlessly.

**KEYWORDS:** protected area targets, expansion, coverage,

### INTRODUCTION

It is well settled scientifically that humanity's relationship with the natural world is in trouble. The Intergovernmental Panel on Climate Change (Parry et al, 2007) stated bluntly: "The resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (e.g., flooding, drought, wildfire, insects, ocean acidification), and other global change drivers (e.g., land use change, pollution, overexploitation of resources)". The human species has become so dominant that some argue we have entered a new geological age dominated not by the chemical and physical workings of the earth as they exist under their own motion from time to time but by us humans and they propose we call this new period the Anthropocene (Zalasiewicz et al., 2011).

This is not new. Our species' troubled relationship with nature has been widely understood for 25 years. In 1988 the United Nations published *Our Common Future*, known widely as the *Brundtland Report* (World Commission on Environment and Development, 1987). It stated "As the century closes, not only do vastly increased human numbers and their activities have that power [to alter planetary systems], but major unintended changes

are occurring in the atmosphere, in soils, in waters, among plants and animals and in the relationships among all these."

A few years later the "World Scientists' Warning to Humanity", which was signed by the majority of the living Nobel Prize winners in science at the time, said starkly: "Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about" (Union of Concerned Scientists, 1992).

The concerned scientists identified the need to bring environmentally damaging activities under control in order: "to restore and protect the integrity of the earth's systems we depend on" and stated that "We must halt deforestation, injury to and loss of agricultural land, and the loss of terrestrial and marine plant and animal species."



Galapagos National Park, Ecuador © Nigel Dudley

### THE FIRST GLOBAL CONSERVATION TARGETS FOR PROTECTED AREAS: 10 OR 12%

Protected areas were identified by the authors of the Brundtland Report as a critical response to the troubled relationship between humanity and the rest of nature. They called them “areas managed explicitly to conserve species and ecosystems” and stated: “Conservation of living natural resources - plants, animals, and micro-organisms, and the non-living elements of the environment on which they depend - is crucial for development. Today the conservation of wild living resources is on the agenda of governments: nearly 4 per cent of the Earth’s land area is managed explicitly to conserve species and ecosystems, and all but a small handful of countries have national parks.” The chapter concluded “a consensus of professional opinion suggests that the total expanse of protected areas needs to be at least tripled if it is to constitute a representative sample of Earth’s ecosystems” (World Commission on Environment and Development, 1987). This led to the first widely accepted goals for protected areas. Depending on who did the math it became the 10 per cent goal or the 12 per cent goal for global protected areas. Note that the goal spoke to representation of ecosystems.

### A GLOBAL TARGET EMERGES FROM THE CONVENTION ON BIOLOGICAL DIVERSITY

The urgency of the scientific declarations in the late 1980s and early 1990s about humanity’s failing relationship with nature led to the Earth Summit in Rio di Janeiro in 1992. Many of the world’s political leaders attended. They signed two conventions intended to confront the integrated problems: the Framework Convention on Climate Change and the Convention on Biological Diversity (UN, 2013). The objective of The Convention on Biological Diversity (CBD) is “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources”. Biological diversity was defined as “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

The CBD’s provisions institutionalized protected areas as a key strategy to protect biodiversity. The CBD defines a protected area as “a geographically defined area which is designated or regulated and managed to achieve specific

conservation objectives". It provides at Article 8 for In-Situ conservation and the first five items speak directly to protected areas: "Each Contracting Party shall, as far as possible and as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
- (d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- (e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas; ...".

In 2002 the parties to the CBD did a strange thing. They set a non-numerical goal that was designed to slow down the bleeding of life from the Earth but did not seek expressly to conserve biodiversity. The goal was "to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth." (SCBD, 2002).

In the Foreword to the *2010 Global Biodiversity Outlook 3*, an assessment of the state and trends of biodiversity in the world, UN Secretary General Ban-Ki Moon summarizes how ineffective this slow the bleeding approach was: "In 2002, the world's leaders agreed to achieve a significant reduction in the rate of biodiversity loss by 2010. Having reviewed all available evidence, including national reports submitted by Parties, this third edition of the Global Biodiversity Outlook concludes that the target has not been met." (SCBD, 2010a).

In 2012 at Nagoya, Japan the failure of this approach was recognized by the parties to the CBD and a more specific Target 11 for protected areas was set: "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected (sic) systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes." (SCBD, 2010b).

While these references to protected areas in the broader landscape and connectivity are important new developments, no scientific rationale is given for the protected area targets of 17 per cent land and 10 per cent marine. Nor was a longer term target set against which these might be considered mileposts.

In 1998, one of the fathers of conservation biology, Michael Soule, and his then student, Sanjayan, published a provocative paper '*Conservation Targets: Do they help?*' in which they demonstrated protecting only 10 per cent of the Earth would not protect biodiversity (Soule and Sanjayan, 1998). No other paper has scientifically defended such low numerical targets.

## WHAT SCIENTIFIC ANALYSIS SUGGESTS PROTECTED AREA TARGETS OUGHT TO BE

In a world where humans were just one species interacting among many we would not need protected areas. This was the case for most of human history. Now we need them.

It is clear from a plain reading of its text that the goal of the CBD (and by extension of the 193 state parties to it) is to preserve nature, defined as biodiversity, with protected areas as an essential tool. It should follow that all the work done in furtherance of that Convention should be based on the best scientific answer to the question 'what does nature need in order to conserve biodiversity and how do we get there given the desires of humans?' Strangely that is not what has happened. Instead, the focus has been 'what are humans willing to spare'. This of course is political, not scientific, and suffers from the basic flaw that it does not seek an effective solution to the problem the CBD was created to address. So what is the best scientific information on how much we should protect?

Noss and Cooperrider (1994) concluded that in most regions 25 per cent to 75 cent (or on average 50 per cent) of an area will need protection to maintain biodiversity and ecological processes. In 2000 a poetic suggestion for the amount of protected areas needed came from biologist and author E. O. Wilson (2003) who called for "Half the world for humanity, half for the rest of life, to make a planet both self-sustaining and pleasant." Tropical ecologist John Terborgh (2006) noted half the world was degraded and called for the protection of the other half. Pressey et al. (2003) noted that "recent comprehensive conservation plans have delineated around 50% or more of regions for nature conservation". Svancara et al. (2005) reviewed 159 articles reporting or proposing 222 conservation targets and assessed

differences between policy-driven and evidence-based approaches. By evidence-based approaches they meant an adequate understanding and mapping of the distribution and viability of the conservation requirements of individual biodiversity features such as species and vegetation types and found that the average percentages of area recommended for evidence-based targets were nearly three times as high as those recommended in policy-driven approaches.

Co-ordinated by the Canadian Boreal Initiative (borealbirds, 2007), 1500 scientists from over 50 countries around the world came together to write to Canadian governments to urge protection of “in the range of half” of that country’s vast boreal forests. Their letter included the following succinct summary of the widely known conservation science: “The relatively intact state of Canada’s northern Boreal region provides an opportunity to implement conservation strategies to protect the region’s ecological integrity. The field of conservation biology identifies four objectives that must be achieved to ensure the long term viability of an ecosystem: 1) all native ecosystem types must be represented in protected areas; 2) populations of all native species must be maintained in natural patterns of abundance and distribution; 3) ecological processes such as hydrological processes must be maintained; and 4) the resilience to short-term and long-term environmental change must be maintained. Achieving these objectives requires an extensive interconnected network of protected areas and sustainable management of the surrounding areas. Reviews of previous conservation planning initiatives provide further direction by indicating that protected areas should cover in the range of half of the landscape to achieve the objectives listed above.” Note that representation, the basis of the 10 per cent or 12 per cent goal that began with the Brundtland Report, remains fundamentally important but is only one of four elements needed to sustain ecosystems over time.

Rodriguez and Gaston (2001) considered the needs of species and found the minimum percentage of area needed to represent all species within a region increases with the number of targeted species, the size of selection units, and the level of species’ endemism and stated that “the 10% target proposed by the IUCN is likely to be wholly insufficient, and that much larger fractions of area are estimated to be needed, especially in tropical regions.” In 2004 the Nature Conservancy, the Nature Conservancy of Canada and other partners concluded their multi-expert driven assessment of an area of mountains and valleys that straddles the Canada-US border. The goal of the conservation assessment was to

identify the suite of conservation sites and strategies that ensure the long-term survival of all native plant and animal species and natural communities in the region. They assessed with a coarse filter 40 terrestrial systems and 77 aquatic systems and with a fine filter 75 rare plant communities, 95 rare plants and 56 animals. They combined target plant and mammal species (both terrestrial and aquatic) in a SITES optimization model. They concluded that 49.7 per cent of the region should be in conservation areas but noted this did not address connectivity needs for wide ranging mammals (Nature Conservancy of Canada, 2004).

Traditional ecological knowledge combined with western science has reached the same conclusion on at least one occasion. Grand Chief Herb Norwegian (2005) described a process in which elders were consulted about their traditional use of the boreal forests and mountains along the Mackenzie River in Canada’s Northwest Territories and developed a land use plan that called for the conservation of more than half of the Dehcho region in an interconnected network of protected areas.

In a 2012 editorial in *Conservation Biology*, Noss et al. (2012) surveyed several studies of the percentage of area needed and compared those results with politically derived targets. They noted that current political and convention targets tended to be much lower than those based on scientific assessment, review and expert opinion where the mid-point of the range of evidence-based assessments was slightly below 50 per cent and called for a precautionary target of 50 per cent. They concluded “Nature needs at least 50% and it is time we said so”.

## THE MEANING OF PROTECTED AREA

The CBD definition of protected area noted above is “a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.” This definition does not provide specific guidance about the range of protected area types that could be adapted to different situations. In the mid-2000s IUCN’s World Commission on Protected Areas engaged in a multi-national expert consultation process to update its guidelines for protected areas that culminated in a summit in Almeria, Spain in 2007 (Dudley and Stolton, 2008). That process came up with a useful definition of protected area that is adopted for the purposes of this paper: “A specifically delineated area designated and managed to achieve the conservation of nature and the maintenance of associated ecosystem services and cultural values through legal or other effective means.” (Dudley, 2008). This includes the six





Nahanni National Park Reserve, Canada © Nigel Dudley

categories of protected area recognized by IUCN for some time: strict nature reserve/wilderness area, national park, natural monument, habitat/species management area, protected landscape/seascape and managed resource protected area. While some of these categories allow some resource extraction for local use, industrial activity is not included. This can be described as the difference between tapping sap from a maple or rubber tree and cutting trees down to feed to a pulp mill. Notably, the governance framework of these protected areas can range from international, national, provincial, regional, municipal, indigenous, community, NGO or individual as long as the area is managed and dedicated by legal or other effective means.

## PROTECTING HALF OF THE EARTH'S LANDS AND WATERS

Conservation targets expressed in percentages can be misleading and will not be effective to protect the full range of life on earth if they are rotely numerical or area-based. In other words, protecting all of Antarctica is an excellent idea and would materially enhance the percentage of the world protected and do great things for life there but would do nothing for tigers, toucans, lions or grizzly bears. To halt and eventually reverse the terrible trend demonstrated in IUCN's Red List of Endangered Species we ought to apply across all ecoregions of the world the four broadly accepted conservation planning principles adopted by the 1500 signatories to the Boreal Scientists' Letter. To recap, those are: represent all native ecosystem types in

protected areas as well as protect sufficient area to maintain populations of all native species in natural patterns of abundance and distribution, ecological processes such as fire and flooding, and resilience to short-term and long-term environmental change.

The idea of protecting half gives a better sense of the order of magnitude of protected areas required than "50 per cent" which might imply a mathematical formula of universal application. What is required is principled study and conservation planning based on each ecoregion's unique characteristics followed by determined implementation of the results. When such rigorous study occurs it usually results in a finding that we should protect about half of any given ecoregion. Some noted conservation biologists have expressed private opinions to the author that that may well be too low a figure. Thus it would be most accurate and precautionary to say nature needs at least half.

## CONNECTIVITY AMONG PROTECTED AREAS

In addition to the question of how much is needed in protected areas is the now widespread scientific understanding that these areas must not only be protected but also connected to each other to allow for gene flow and to adapt to climate change (Dudley, 2008; Locke and Mackey, 2009; Heller and Zavaleta, 2009; Worboys et al., 2009; Nature, 2011; Noss et al., 2012). Hodgson et al. (2009) issued an important reminder that connectivity is a supplement to and not a substitute for core protected areas.

## NATURE ON THE OTHER HALF

Lands outside of protected areas can be valuable for some species and are worthy of attention. They can provide connectivity between habitat patches and support migratory processes for birds and insects. Some species even thrive in landscapes fragmented by humans (e.g. the white-tailed deer - *Odocoileus virginianus*) and a few even thrive in high urban concentrations of humans (e.g. Norwegian rats - *Rattus norvegicus* and rock doves - *Columba livia*). But many species are habitat specialists and human-altered habitats do not support them. Intensely cultivated lands on which chemically supported agriculture is practised have very low value for biodiversity. Humans on pasture lands outside of protected areas tend to have very low tolerance of species that compete with us for meat or forage for domestic animals. Thus we kill them or erect impermeable fences to exclude them that also have the effect of fragmenting the landscape, which can terminate critically important seasonal migrations of large mammals. Humans outside protected areas often make large efforts to suppress inconvenient natural processes like fire and flooding that are vital to the ecosystem dynamics on which many species depend. So while lands intensely used by humans support some threads of nature (and more nature friendly practises should be encouraged on them) they cannot support the full tapestry of life. Simply put, we need to share the world with nature.

## SELF-CENSORSHIP IN THE CONSERVATION COMMUNITY WHEN IT COMES TO TARGETS

The closing session at the World Wilderness Congress, WILD 9 in Merida, Mexico (2009) called for the protection of at least half the world in an interconnected way (Natureneedshalf.org). Many delegates from many countries were wildly enthused (e.g. Harman, 2009). Some of them sought to carry that idea into the negotiations at the CBD. When those enthusiasts returned to other settings censorship set in along these lines 'Of course that is correct, but we will not be taken seriously' or 'We must be realistic about what is politically achievable and that is not'. This self-censorship raises important questions about the role and function of ideas in society and of park professionals as social participants.

Ideas clearly expressed have the most power. We in the parks community have the best product in the world to sell - intact nature with its myriad benefits for our species. We have a rational foundation for our passions. The science is that nature needs about half. Some of our caution can no doubt be explained by the fact that many

park professionals work for governments who set the policy context for their work. There is no mandate to state one's own preferences and goals in such an institutional setting. That is entirely true and right. But this rationale does not apply to non-government organizations whose role in civil society is to say the things that governments ought to do and to help find ways to bring that about.

The explanation for NGO caution could be found in the concern that the expression of ideas too radical will result in exclusion from participating in certain *fora* to the detriment of one's institution's work or one's own career. The concern is that it is better to be there in a less than perfect process than it is to be excluded or humiliated. Fear of the loss of such status or access is the motivation for self-censorship. This is a loser's game.

A different but cynical explanation for self-censorship could be that NGOs are very invested in their programmes and priorities and fear that their donor relations require them to keep inconvenient new ideas away. This would be shameful conduct and requires no further comment than that.

The basic problem with self-censorship in an NGO setting is that it focuses on the actors not the outcome. The agreed outcome sought by the CBD should drive behaviour. Its purpose is 'the conservation of biodiversity'. If no one brings forward the best scientific knowledge of what is needed to achieve the CBD's central goal then we are doomed to fail. AIDS advocates cannot back down when sexual transmission of disease is denied by politicians nor can doctors back down when the health effects of tobacco are denied, for to do so would fundamentally impair their cause. So it is with advocates for nature conservation - we should insist on that which is necessary to keep nature healthy. We can do it politely and thoughtfully but do it we must.

Another possible explanation that does not involve self-censorship is that after assessment, NGOs conclude that there is no possible way that such a goal as nature needs half could be met and therefore it should be discarded. The thinking could be that in some places with huge human populations and vast intensive agriculture such a goal seems so fanciful as to be absurd. Though lower targets are known not to be sufficient they are better than nothing and their deficiencies are better left unsaid. This approach is rooted in pessimism but is called realism by its proponents. The problem is that such 'realism' denies possibilities that are real without first taking the chance to bring them about. Hope is suspended and a dark future guaranteed.



Serengeti National Park, Tanzania © Sue Stolton

## PROTECTING AT LEAST HALF OF THE EARTH IS A VIABLE GOAL

There are several examples from around the world in which the nature needs half goal has already been realized through public policy. In western North America, there are several examples of governmental action to protect at least half of a region. On Haida Gwaii, British Columbia (previously known as the Queen Charlotte Islands) a mix of national park, provincial park and First Nations conservation has resulted on over 50 per cent protection of the terrestrial system and an initial marine conservation area. In Boulder County, Colorado, located in that state's heavily populated Front Range, a combination of national park, federal wilderness areas, city and county parks, and private land conservation has protected over 50 per cent of the County ([natureneedshalf.org/case studies](http://natureneedshalf.org/case-studies)). The Capital Regional District of Victoria, British Columbia has set a goal of protecting at least 50 per cent of its lands and waters after a public process that saw it explicitly "subscribing to the idea that nature needs half" (Capital Regional District, 2012). Note the varied forms of governance types that have achieved the nature needs half goal.

On the Indian subcontinent, the ancient kingdom of Bhutan recently announced that it has achieved 50 per cent protection by putting over 42 per cent of its land in protected areas and over 8 per cent in biological corridors (Bhutan; [natureneedshalf.org/case studies/Bhutan](http://natureneedshalf.org/case-studies/Bhutan)). The Seychelles archipelago is over 50 per cent

protected "as a contribution to fulfilling its obligations under the Convention on Biological Diversity" (IUCN, 2013). The Galapagos Islands of Ecuador are much more than 50 per cent protected.

The Serengeti ecosystem in Tanzania and Kenya is over 50 per cent protected. The Canadian Rockies biome in Alberta, Canada is about 65 per cent protected through a mix of national parks, and provincial parks and wilderness areas. The American portion of the Crown of the Continent Ecosystem in Montana is over 50 per cent protected by national park and wilderness designation and a similarly high percentage of park and wilderness areas is present in the core of the Greater Yellowstone Ecosystem. It is no coincidence that these areas in the Yellowstone to Yukon region and East Africa still support all their native species.

An obvious retort to these examples is that they are areas that have received special attention and are far way from large population centres. As to receiving special attention, yes they have and they should be taken as examples of how we should treat the whole world. As to their distance from population centres, this raises a different concern. Is it impossible to do something like this in the crowded areas of places like Europe, India, China or the east coast of North America? We are unlikely ever to protect half of the best agricultural land that has been in production for centuries. We may not even want to because we like the food it produces. But so



much marginal land has been brought into cultivation in the last 250 years that we could make enormous inroads in restoring it.

In eastern North America most of western Massachusetts, Vermont, New Hampshire and Quebec's Eastern Townships were denuded of forests by farmers, sheep grazers, loggers and charcoal makers. But the land was marginal and largely abandoned as other lands became available. Today there is extensive forest cover across the region and significant species recovery. In upstate New York the 2 million ha Adirondack Park was created in 1895 to recover cut-over lands whose degradation threatened downstream water quality. Today over half it is managed as Forever Wild under the New York State constitution.

The rewilding of Europe has occurred at a remarkable rate as marginal hill and mountain farms are being abandoned by a declining population. The corresponding recovery of large mammals, including brown bears (*Ursus arctos*) western Europe is remarkable. Natura 2000 ([www.natura.org](http://www.natura.org)) was a deliberate pan-European policy that increased Europe's protected areas to 20 per cent and some jurisdictions like Germany are seeking formally to protect wilderness.

The short term feasibility of an idea does not invalidate the idea. It simply shifts to becoming an aspirational goal.

### **A PHILOSOPHICAL MOMENT FOR THE PROTECTED AREAS MOVEMENT**

We in the nature conservation community are at a philosophical crossroads. No one who studies the global state of nature could be satisfied. Indeed things are bad and getting worse with a few happy exceptions (IUCN Red List, 2013). We are not meeting the goals of the CBD.

At moments of philosophical crisis there are two ways one can turn. One is in the direction of deeper determination, higher aspiration and courageous commitment to clear ideals. This is what the persecuted Christians did during the Roman Empire and ultimately converted its rulers to their way. This is what the US Civil Rights movement has done and continues to do and that country now has a second term black president. This is what the Nature Needs Half movement seeks to do: collectively assert a vision in which humanity returns to being one species among many that is humble enough to understand that we must protect all life and the processes it depends on for own well-being and because it is ethically the right thing to do. It is about fixing the

human relationship with nature by recognizing that any relationship needs mutuality to be healthy (Martin, 2010). This is called 'radical hope' because though the idea is clear the course of action that will make it possible is not yet fully clear (Lear, 2006).

The other road to follow is to decide that the goal of biodiversity conservation as set out in the CBD is impossible and to set a new agenda. Thus some post-modern conservationists consider this a time of defeat and that now is the moment to abandon traditional conservation goals based on parks and wilderness areas. Instead the Green Postmodernists would have us embrace the idea that we should convert the Earth to a garden that serves the interests of local people and urban dwellers (Marvier et al., 2012). This of course would mean the end of inconvenient and difficult to conserve species like grizzly bears, tigers, lions and elephants. It would also mean concerted efforts to prevent the natural and necessary but deeply disruptive processes of renewal such as fire and flooding (Locke, in press).

The death of the wild in favour of the garden with *homo sapiens* triumphant is no vision for those who proclaim to love nature. It will also inevitably be disastrous for the human species. We do not know how to run the world. It is time for our species to become humble and wise and to stop being greedy and clever (Locke, 2013).

Philosopher Immanuel Kant summed up the human dilemma with two questions: *What can I know?* and *What ought I to do?*. These are appropriate questions for conservationists in the 21<sup>st</sup> century. And we can answer them. We know that nature needs at least half. We ought to assert it even if it is not clear that we will succeed. Our failure to do so will likely guarantee failure of the conditions that support life on earth.



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## ABOUT THE AUTHOR

**Harvey Locke** is a conservationist, writer and photographer. He is a recognized global leader in the field of parks, wilderness and large landscape conservation. He is a founder of the Yellowstone to Yukon Conservation Initiative, with the goal to create a

continuous corridor for wildlife from Yellowstone National Park in the United States to the Yukon in Northern Canada and of the global Nature Needs Half movement. In 1999 Locke was named one of Canada's leaders for the 21st century by *Time Magazine Canada*.

## RESUMEN

Los objetivos de conservación se deben fundar en lo que sea necesario para proteger la naturaleza en todas sus expresiones. Cuando en 1988 el informe Brundtland pidió triplicar el patrimonio de áreas protegidas del mundo (que entonces representaba entre el 3 y el 4 por ciento de la superficie terrestre), existía el firme convencimiento de que el desarrollo sostenible garantizaría la protección de la naturaleza en el resto de la tierra desprotegida. Esta apreciación demostró ser errónea. De ahí que debemos cambiar sustancialmente nuestros objetivos en materia de áreas protegidas a efectos de proteger al menos y de manera interconectada la mitad de la tierra y el agua del mundo, para adecuarnos a lo que los biólogos conservacionistas han aprendido acerca de las necesidades de la naturaleza. En lugar de esto, hemos establecido objetivos definidos políticamente, con porcentajes arbitrarios que se apoyan en una expectativa desarticulada de que tales objetivos carentes de una base científica son un buen primer paso hacia un mejor aunque indefinido resultado futuro. Esta ha sido una forma destructiva de autocensura. Es hora de que los conservacionistas reanuden el debate fundado en conclusiones científicas e impongan sin temor alguno las necesidades de la naturaleza.

## RÉSUMÉ

Les objectifs de la conservation doivent être établis en fonction de ce qui est indispensable pour protéger la nature, dans toutes ses dimensions. Lorsque les rédacteurs du rapport Brundtland préconisaient, en 1988, de tripler la superficie mondiale des aires protégées (qui était à l'époque de 3 à 4 pour cent de la surface terrestre), ils étaient persuadés que le développement durable aidera à maintenir la nature sur les terres non protégées restantes. Les bénéfices prévues du développement durable n'ont pas été réalisées. Nous devons donc matériellement modifier notre objectif concernant les aires protégées et protéger au moins la moitié du monde, terre et mer, de façon interconnectée, afin de prendre en compte les dernières découvertes des biologistes de la conservation sur les besoins de la nature. Cependant, plutôt que de suivre cette voie, nous établissons des objectifs politiquement déterminés et dénués de fondement scientifique, avec des pourcentages arbitraires basés sur le vague espoir selon lequel ces objectifs seraient un premier pas satisfaisant vers un meilleur futur – qui n'est jamais précisé. Cette forme d'autocensure est destructive. Il est temps que les conservationnistes rouvrent le débat en se basant sur les études scientifiques et qu'ils affirment clairement les besoins de la nature.