
A road map for African protected areas: act now!

Africa is a continent with a rich, unique and irreplaceable biological diversity. It contains many protected areas whose vocation is to preserve this richness, now and for the future.

Are we succeeding?

Yes, certainly, in some places and in some countries, according to the context, actors, history, partnerships… There are some successes and encouraging initiatives, so there is hope.

No, definitely not, if we look more generally at the results of many recent analyses, and even more so if we consider the challenges that await, the first of which is the significant growth in the human population and a reduction in the area available for biodiversity and natural habitats.

What should we do?

Continue and strengthen conservation programmes and projects at all scales and of all kinds, research and other studies? Certainly. This is a very long-term task that has produced, and will continue to produce, useful and necessary results. We should continue working on – what we have to do – to improve protected area management, because we need more efficient tools, more effective methods, and a better understanding and evaluation of the results.

NAPA

News from African Protected Areas

Nouvelles des Aires Protégées en Afrique

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Professional training course on PA Management: the 7th edition of the University Diploma has started in Lope NP (Gabon)

Direction 4 of the road map for African PAs

Almost twenty students, coming from five different countries (Cameroon, Congo, DRC, Central Africa, and Gabon), have gathered at the WCS training center in Lope National Park, on the 21st October, to launch the 7th edition of the PA management training course, organized by IUCN and WCS in collaboration with the University Senghor of Alexandria, in Egypt. Targeting young professionals working in and around PAs (PA managers, NGOs, private sector…), this training course builds on theory and practice, on the ground, and lasts seven weeks. The next edition of this course should happen in 2014 in Ouagadougou, for West Africa…

Ecological Restoration for Protected Areas

Principles, Guidelines and Best Practices

Prepared by the IUCN WCPA Ecological Restoration Taskforce
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Direction 4 of the road map for African PAs

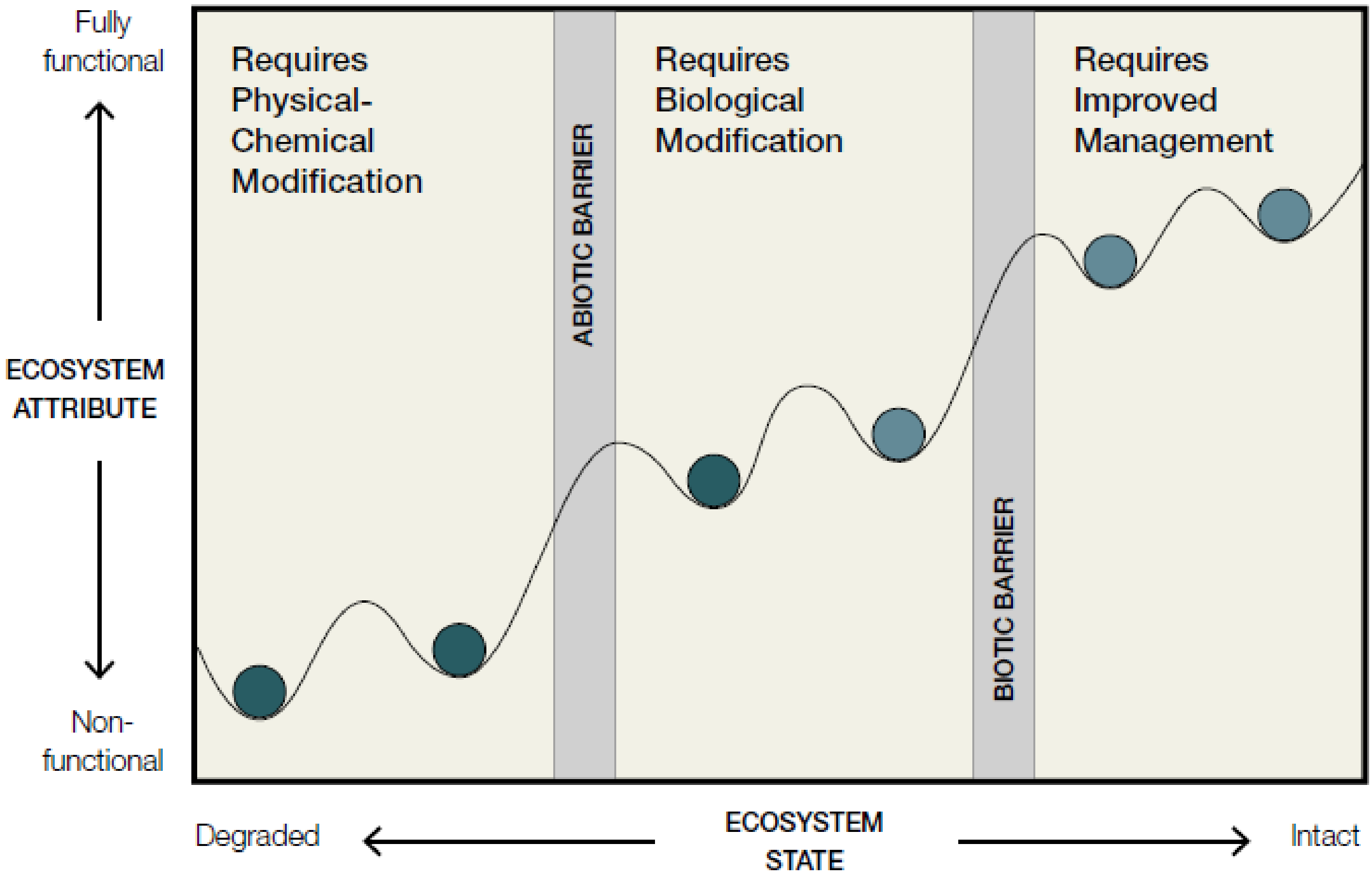
The No. 18 of the Best practice Protected Area Guidelines of the IUCN-World Commission on Protected Areas (WCPA) is about ecological restoration for protected areas. These guidelines present the restoration concept, the principles and best practices to be used and finally detail the process to achieve the restoration. In this NAPA letter, we present a few excerpts (often summarized) of the guidelines. The full report and its many bibliographic references can be downloaded on www.papaco.org or www.iucn.org / pa_guidelines where all other guidelines from the IUCN-WCPA can also be found.

What is ecological restoration?

Ecological restoration is 'the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed'. It is an intentional intervention that initiates or accelerates recovery of an ecosystem with respect to its structure (e.g., species composition, soil and water properties) and functional properties (e.g., productivity, energy flow, nutrient cycling), including exchanges with surrounding landscapes and seascapes. Collectively, these make up general attributes of 'ecological integrity', and ecological restoration thus aims to recover or re-instate ecological integrity, and accompanying resilience, of the ecosystem. The term 'ecological restoration' can generally be taken as synonymous with 'ecosystem restoration', although some restoration projects within protected areas may have narrower aims, such as recovery of a single rare species. Ecological restoration can be confined to reducing pressures and allowing natural recovery, or involve significant interventions, such as planting vegetation, re-establishment of locally extinct species or the deliberate removal of invasive alien species.

Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

In the document, the term 'degraded' refers to any harmful alteration to protected areas (i.e., degradation, damage and destruction), such as the introduction and spread of an invasive species; the loss of important species interactions; the loss of biophysical attributes such as soil structure and chemistry or hydrological processes; and the decline in its potential to sustain livelihoods.



Simplified conceptual model for ecosystem degradation and restoration.
The numbered balls represent alternative ecosystem states, with the resilience of the system being represented by the width and depth of the 'cup'. Disturbance and stress cause transitions towards increasingly degraded states, with 6 being the most degraded. Barriers, or thresholds may also exist between some ecosystem states (e.g., between states 2 and 3) that prevent the system from returning to a less degraded state without management intervention. Restoration attempts to move the ecosystem back towards a more structurally 'intact', well-functioning state, (i.e., towards state 1).

Ecological restoration will often include or build upon efforts to 'remediate' ecosystems (e.g., remove chemical contamination), or 'rehabilitate' ecosystems (e.g., recover functions and services). However, ecological restoration is generally broader in its purpose than either of these activities, as it takes an 'ecosystem approach' to management and can have multiple goals that encompass the simultaneous recovery of ecological, cultural and socio-economic values of the system…

The method of restoration, its timescale, costs and chances of success depend on the threat to be addressed, surrounding biological and social conditions and how far degradation has advanced. For example, overcoming abiotic (non-living) barriers to recovery such as soil contamination or hydrological function can be a critical first step in recovery of biological attributes such as species composition. Conversely, in some situations simply removing a stress factor (for instance, reducing uncharacteristic grazing intensity from livestock in a protected landscape) can be enough to allow an ecosystem to recover. Sometimes a variety of approaches is needed. For example, although deforestation has been the dominant process in tropical forest during the last 20 years there has been a substantial increase in tropical secondary forest due to primarily passive restoration (i.e., natural regeneration), along with active restoration...

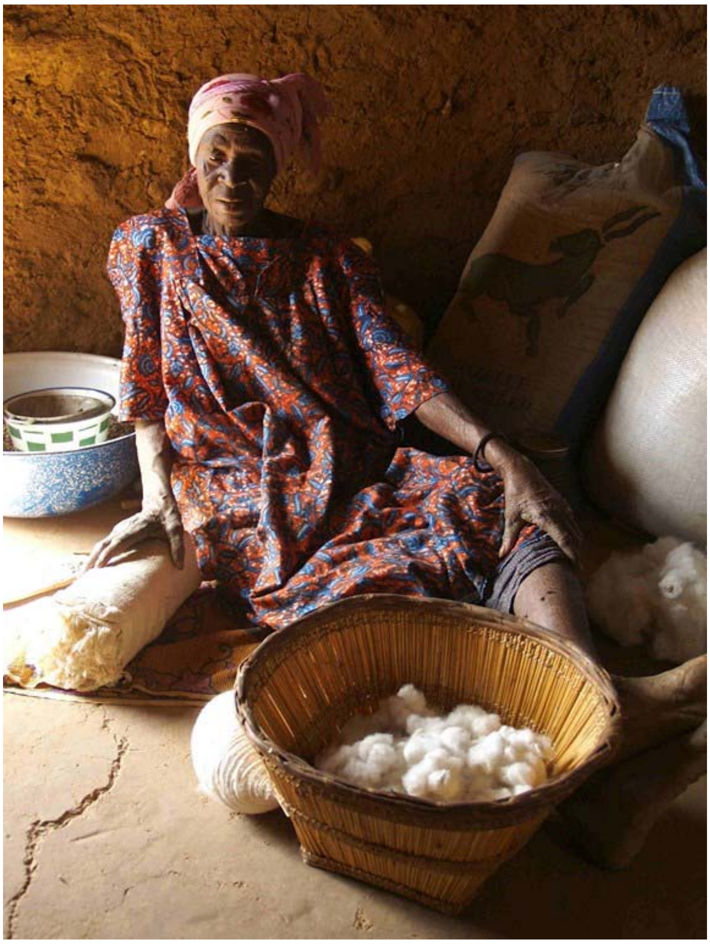
Ecological restoration is a knowledge and practice-based undertaking. It uses natural, physical and social science, other forms of knowledge including traditional ecological knowledge, and lessons learned from practical experience to guide the design, implementation, monitoring and communication of restoration. It needs to be an inclusive process that embraces interrelationships between nature and culture, and engages all sectors of society including indigenous, local, and disenfranchised communities.

In some cases cultural restoration is a necessary precursor to ecological restoration. For example, the re-establishment of taboos on tree cutting in sacred groves in Kenya was necessary for their restoration. The relative ease and speed of ecological restoration differs between ecosystems and with the type and extent of degradation. It also depends on what is considered an 'end point' of restoration.

For example, recovery of a mature ecosystem with a full complement of expected species can be extremely slow, if possible at all.

However, an ecosystem that functions well but does not necessarily have a full complement of native species can sometimes be restored relatively quickly.

Although generalizations are difficult, restoration of wetlands and mangroves is often a relatively quick process; and tropical forests recover more quickly than temperate and boreal forests. Much remains to be learned about restoration of peatlands and corals. The ease with which grassland ecosystems recover depends largely on vegetation history and climate, with restoration in arid areas being more challenging.



Cotton is often the cause of encroachments in savannah African PA and creates important changes in habitat

Why restore protected areas?

Despite a large global conservation effort, biodiversity decline is increasing and losses are also recorded in protected areas.

Previous degradation, climate change, invasive alien species and wider landscape or seascape changes affect even well-managed protected areas, while illegal encroachment of people into the protected area, poaching and weak management may result in serious degradation. While the potential for restoration must not be seen as an excuse or a compensation tool for activities that damage protected area values, it can help to reverse losses that have already occurred.

Restoration of protected areas is fundamental to addressing a number of societal goals related to biodiversity conservation such as those associated with species conservation or human well-being. Protected areas are often the only remaining habitats for vulnerable or specialized species, and restoration may be needed to maintain or recover threatened populations. At a larger scale, protected areas are often the best opportunity to maintain valuable ecosystems within large-scale terrestrial and aquatic networks, which involve both protected and non-protected areas, and ecosystem restoration that also enhances connectivity can help to regain these values. Increasingly, restoration of protected areas is applied to regain lost or degraded ecosystem services, including carbon storage and sequestration and to address issues relating to disaster risk reduction, food security and water supply to both local and more distant communities.

Governments have an obligation to restore protected areas as a result of their commitments under international treaties as well as under domestic policy and legislation. For example, restoration is explicitly referenced in the strategic plan of the United Nations Convention on Biological Diversity—in Aichi Biodiversity Target 14 on ecosystem services and Target 15 on ecosystem resilience and carbon stocks.

Meeting obligations associated with commitments under the United Nations Framework Convention on Climate Change, particularly those related to Reducing (carbon dioxide) Emissions from Deforestation and Forest Degradation, including conservation, sustainable management, and enhancement of carbon stocks (i.e., REDD-plus) will also require restoration activities both inside and outside protected areas.

Restoration of protected areas can have other benefits also, apart from its purpose in achieving the recovery of degraded ecosystems. Protected areas facilitate and provide controlled environments for research, learning and teaching about restoration and provide reference ecosystems for monitoring.

Improved opportunities for visitors to enjoy protected areas through experiencing healthy restored ecosystems can be an additional important ecological restoration goal and well-designed ecological restoration projects can be a tourism attraction and illustrate how management is responding to pressures or previous ecosystem degradation. Restoration can serve as a means of building public support for protected areas through hands-on participation of visitors and volunteers in restoration projects.

Cocoa production is also a main driver of encroachments and ecosystem transformations in forest PAs that become very difficult to restore.

Principles of Ecological Restoration for Protected Areas: Effective, Efficient, Engaging

To be successful, ecological restoration should adhere to the following three underlying principles.

a. It should be effective

Effective ecological restoration for protected areas is restoration that re-establishes and maintains protected area values.

Ecological restoration for protected areas will be motivated primarily by the desire or need to restore natural and any associated cultural values of the protected area related to ecosystem structure and function (i.e., the essential elements of ecological integrity).
The objectives of restoration draw on the original purposes of a protected area and objectives for management, which are often described in management plans, or embedded in traditional knowledge in the case of community conserved areas, and reflected in the protected area management category.

Associated cultural values (e.g., cultural heritage values, recreational, aesthetic, visitor experience, or spiritual values) or practices may be restored simultaneously. Achievement of ecological restoration goals also requires attention to the underlying causes of degradation, opportunities for restoration associated with human knowledge and cultural practices, and careful monitoring to learn from experience and facilitate adaptive management.

Market gardening is also challenging PA's boarders or management zones as more and more space is expected for food production

b. It should be efficient

Efficient ecological restoration for protected areas is restoration that maximizes beneficial outcomes while minimizing costs in time, resources and effort.

Ecological restoration can be complex and costly, and early action to prevent, halt or reverse degradation is more efficient than waiting to act until the degree of degradation is more severe. However, ecological restoration can also achieve significant benefits in addition to its immediate conservation goals. Such benefits may be related to, for example, climate change adaptation and mitigation, cultural renewal and survival, and socio-economic well-being, some of which also provide direct economic benefits. Evidence suggests that if these benefits are taken into account, well-planned, appropriate restoration can have high benefit: cost ratios in terms of return on investment.

Efficient ecological restoration for protected areas thus aims to maximize beneficial ecological, social-economic and cultural outcomes and minimize costs, while not losing sight of conservation goals. This may involve prioritizing restoration efforts according to locally-determined criteria.

c. It should be engaging

Engaging ecological restoration for protected areas is restoration that collaborates with partners and stakeholders, promotes participation and enhances visitor experience.

Collaboration and support among partners and stakeholders is a long-term foundation for restoration success, particularly when protected areas have resident or local indigenous peoples and communities. Some countries have a legal obligation to consult (e.g., SCBD, 2004) and free, prior and informed consent should always be obtained from traditional and indigenous peoples for projects on their territory. Engaging and involving partners and stakeholders in planning, implementation and reciprocal learning can build a sense of ownership and generate trust, thereby creating a constituency of support for restoration.

Traditional ecological knowledge can bring valuable practice and information. Careful listening and a willingness to act on what is heard can help maximize community benefits, identify potential problems and engage people in restoration and monitoring, thus reconnecting them with nature. By inspiring people, including protected area visitors, restoration can build partnerships to reduce degradation and contribute to the achievement of broader protected area and biodiversity conservation objectives.

These principles are supported by a set of guidelines and examples that provide details on how the principles are interpreted in practice.

PRINCIPLE 1: Effective in re-establishing and maintaining protected area values

To be effective, ecological restoration for protected areas should:

Guideline 1.1: 'Do no harm' by first identifying when active restoration is the best option

Decisions about whether, when and how to restore need to be made with caution; ecological restoration projects have high failure rates and sometimes the best choice is not to intervene. Issues to consider include: (a) whether active restoration is needed (e.g., whether simply removing pressure would result in natural recovery; (b) whether it is feasible, from a practical, cost and social perspective; and (c) if there are serious risks of harmful side effects, which implies the need for a careful impact analysis. Ill-conceived interventions can have unintended indirect or long-term consequences. For example, cane toads (*Bufo marinus*) were deliberately introduced to Australia in 1935 in a futile attempt to stop cane beetles from destroying sugar cane crops in North Queensland. Since then cane toads have spread rapidly, as they have no natural predator, and are thought to be responsible for the decline in quoll (a native carnivorous marsupial) and native frogs.

Guideline 1.2: Re-establish ecosystem structure, function and composition

The need to restore will often be identified because a measure of ecosystem structure or function falls below a predetermined threshold. Ecological restoration will generally aim to re-establish an ecosystem capable, as far as possible, of continuing to function, with species diversity and interactions typical of its geographic, geological and climatic situation. The restored ecosystem may reflect historical conditions or may be a culturally-defined mosaic or a novel ecosystem evolving due to climate change. The degree of intervention, timescale and approach will depend on how far degradation has advanced.

Changes in management, such as the frequency of removal of invasive species, may be all that is required to meet restoration objectives. Other cases require dedicated projects, such as habitat recreation or species re-introduction. Where degradation is advanced, abiotic properties (e.g., soil quality) may need to be restored before biological components can be manipulated. The extent to which restoration seeks to return to an historical ecosystem or reflects current and predicted changes must be decided on a case by case basis.

Guideline 1.3: Maximize the contribution of restoration actions to enhancing resilience

Restoration for protected areas will increasingly address the need to re-establish resilient ecosystems that are capable of absorbing and adapting to rapid environmental change, including climate-driven changes; or to reinforce the resilience of ecosystems to prevent them from crossing key biotic or abiotic thresholds—i.e., transitioning to states from which recovery is difficult or impossible—and thus risking collapse.

Objectives may vary from restoring and securing climate change refugia, where resistance to change may be higher, to assisting sites that are transforming to new types of ecosystems. In many cases climate change is taking place alongside other more immediate pressures, such as land conversion, unsustainable resources use and invasive species, which also need to be addressed. A resilience strategy may influence the prioritization of restoration projects at a protected area system scale. For example, historically, a severely degraded system might have been a priority candidate for restoration. However, under conditions of rapid change a more effective use of time, effort, and resources may be to focus on increasing the resilience of less damaged ecosystems.

Guideline 1.4: Restore connectivity within and beyond the boundaries of protected areas

Connectivity is important to increase the functional size of the ecosystem conserved, allow genetic interchange, permit species to migrate to suitable habitats if their surrounding ecosystems change, allow opportunities for species to interact and for evolutionary processes to occur. To enhance connectivity, protected areas should be planned and managed within a matrix of ecosystem-based, environmentally sensitive land and water management strategies. Restoration projects can both enhance the value of core protected areas and also increase connectivity conservation between protected areas by: establishing buffers and easements; reducing habitat fragmentation inside and outside protected areas; reestablishing migration corridors; conserving sources of plant material for propagation and colonists; conserving refugia for sedentary species; reducing edge effects; and increasing opportunities for adaptation to disturbances.

Guideline 1.5: Encourage and re-establish traditional cultural values and practices that contribute to the ecological, social and cultural sustainability of the protected area and its surroundings

Ecological restoration needs to consider cultural values and practices that influence protected areas along with the natural values of these places. These values and practices are often intertwined. Traditional, ecologically sustainable human activities have shaped some ecosystems to the extent that cultural practice and ecological integrity are mutually reinforcing. In such cases, effective ecological restoration may require the recovery of traditional, ecologically sustainable cultural practices. In other cases, conflict may exist between cultural values (including cultural heritage values) and practices and natural values, or even among different cultural values and practices themselves. New pressures such as climate change may result in changes in the demand for, and nature of, natural resource use, placing novel pressures on fragile ecosystems.

Where such conflict exists—for example where ecosystem degradation is being caused or amplified by the subsistence livelihood needs of dependent communities— an understanding of root causes will contribute to conflict resolution and ultimately to the effectiveness of restoration efforts.

Guideline 1.6: Use research and monitoring, including from traditional ecological knowledge, to maximize restoration success

Experience suggests a strong correlation between effective research and monitoring and effective, adaptive management. Accurate monitoring data, collected over time, provides the information needed to measure progress towards achieving objectives and to make necessary changes during the lifetime of the project. Well-documented monitoring data may also help in planning future projects. Climate change makes a strong knowledge base even more important. Monitoring is essential: to detect long-term ecosystem change; help identify potential ecological consequences of change; and help decision makers select management practices. It may be used to define baseline conditions, understand the range of current variability and detect desirable and undesirable changes over time.

Hunting and other "touristic" activities are also creating changes in and around protected areas

PRINCIPLE 2: Efficient in maximizing beneficial outcomes while minimizing costs in time, resources and effort

To be efficient, ecological restoration for protected areas should:

Guideline 2.1: Consider restoration goals and objectives from system-wide to local scales in prioritizing restoration activities

Faced with multiple pressures and the need to accommodate the diverse interests and concerns of multiple partners and stakeholders, protected area managers need a clear vision for prioritizing restoration activities. Prioritization frameworks can include a combination of factors, including: broad scale conservation goals; the need for large scale processes (fire, flooding); whether resources are at imminent risk of permanent loss; determining which actions will save significant effort in future (i.e., avoiding a cascade of negative effects); the need to assess risk from restoration activities at several scales; and opportunities to contribute to social or cultural objectives (e.g., opportunities simultaneously to improve biodiversity and enhance human well-being). Options range from managing to resist deleterious change to managing for change.

Guideline 2.2: Ensure long-term capacity and support for maintenance and monitoring of restoration

Restoration for protected areas will take time, money and commitment; abandoning the process part of the way through can result in much work being wasted and can even exacerbate some problems, such as invasive species. This risk can be minimized by implementing a robust long-term planning process that includes a rigorous assessment of the capacity and support for restoration activities and is also supported by having effective long-term monitoring processes in place.

Guideline 2.3: Maximize the contribution of restoration actions to enhancing natural capital and ecosystem services from protected areas

Major studies such as the Millennium Ecosystem Assessment (2005) and The Economics of Ecosystems and Biodiversity (TEEB)5 have identified the multiple benefits and ecosystem services, of well-managed protected areas. Emphasizing these values can help raise awareness about the benefits of ecological restoration actions and mobilize additional funding for protected area restoration activities.

For example, under climate change mitigation programmes such as Reducing Emissions from Deforest and Forest Degradation plus (REDD+), it is possible that new funds for carbon-focused restoration, afforestation or reforestation efforts could emerge, which could be accessible within protected areas. Including issues related to measurement and valuation of ecosystem services in restoration projects may involve developing markets or other approaches to capture the benefits of ecosystem goods and services products. Related business training and skills development may also be required to foster entrepreneurship. However, although they are important, *restoration objectives related to ecosystem services remain secondary to the overall nature conservation aims of protected areas and care must be taken that a focus on provisioning of ecosystem services does not inadvertently undermine conservation*. Well-designed projects can achieve both.

Guideline 2.4: Contribute to sustainable livelihoods for indigenous peoples and local communities dependent on the protected areas

Well-planned and implemented ecological restoration can contribute to livelihood security by recovering ecosystem services such as a sustainable harvest of natural resources that can be traded or sold, or by providing employment in restoration activities. Ecological restoration projects that support new livelihood opportunities for local communities can reduce pressure on protected areas. Involving communities in restoration activities can increase their own adaptive capacity and skill in determining future options. The traditional resource management practices known to local and indigenous communities can also be very cost-effective.

Guideline 2.5: Integrate and coordinate with international development policies and programming

Ecological restoration in protected areas can yield many social and developmental co-benefits in addition to ecological benefits. Development agencies and NGOs might therefore integrate ecological restoration within and beyond protected areas into projects as a policy option to address a range of development issues including health, waste management, water supply, disaster mitigation and food security. Restoration projects can build in cross-sectoral collaboration to address poverty and other human problems, thereby helping to build support for restoration and for protected areas more broadly.

PRINCIPLE 3: Engaging by collaborating with partners and stakeholders, promoting participation and enhancing visitor experience

To be engaging, ecological restoration for protected areas should:

Guideline 3.1: Collaborate with indigenous and local communities, landowners, corporations, scientists and other partners and stakeholders in planning, implementation, and evaluation

Restoration represents an indefinite, long-term commitment of land/water and resources, and often requires an intentional shift away from activities that have caused the initial degradation. It therefore benefits from collaborative decisions arising from thoughtful deliberations, which are more likely to be honoured, implemented and sustained over long time horizons and across political changes than are unilateral decisions. Collaboration between various interested parties needs to start early on in the planning and decision making of how the process will be implemented. Engagement of partners and stakeholders needs to be legitimate, authentic, and on an equal basis, and fitted to the spatial scale affecting or affected by the restoration. Monitoring programmes should include evaluation of the effectiveness and efficiency of programmes related to partner and stakeholder participation.

Guideline 3.2: Learn collaboratively and build capacity in support of continued engagement in ecological restoration initiatives

A commitment to continuous and reciprocal learning should animate the collaboration between protected area managers, restoration practitioners, partners, and stakeholders. Local communities, partners, and stakeholders may need to learn new knowledge or skills in order to contribute to an ecological restoration initiative. For some communities, an acquisition of transferable knowledge and skills will strengthen commitment to the stewardship of the protected area. Protected area managers and restoration practitioners will also gain new information and understandings through active listening to the perspectives, priorities, and local and traditional knowledge held in these communities. This expanded experience, knowledge and skills will be most valuable if it remains available to the protected area and local community into the future to contribute, facilitate and deliver local insight to similar processes.

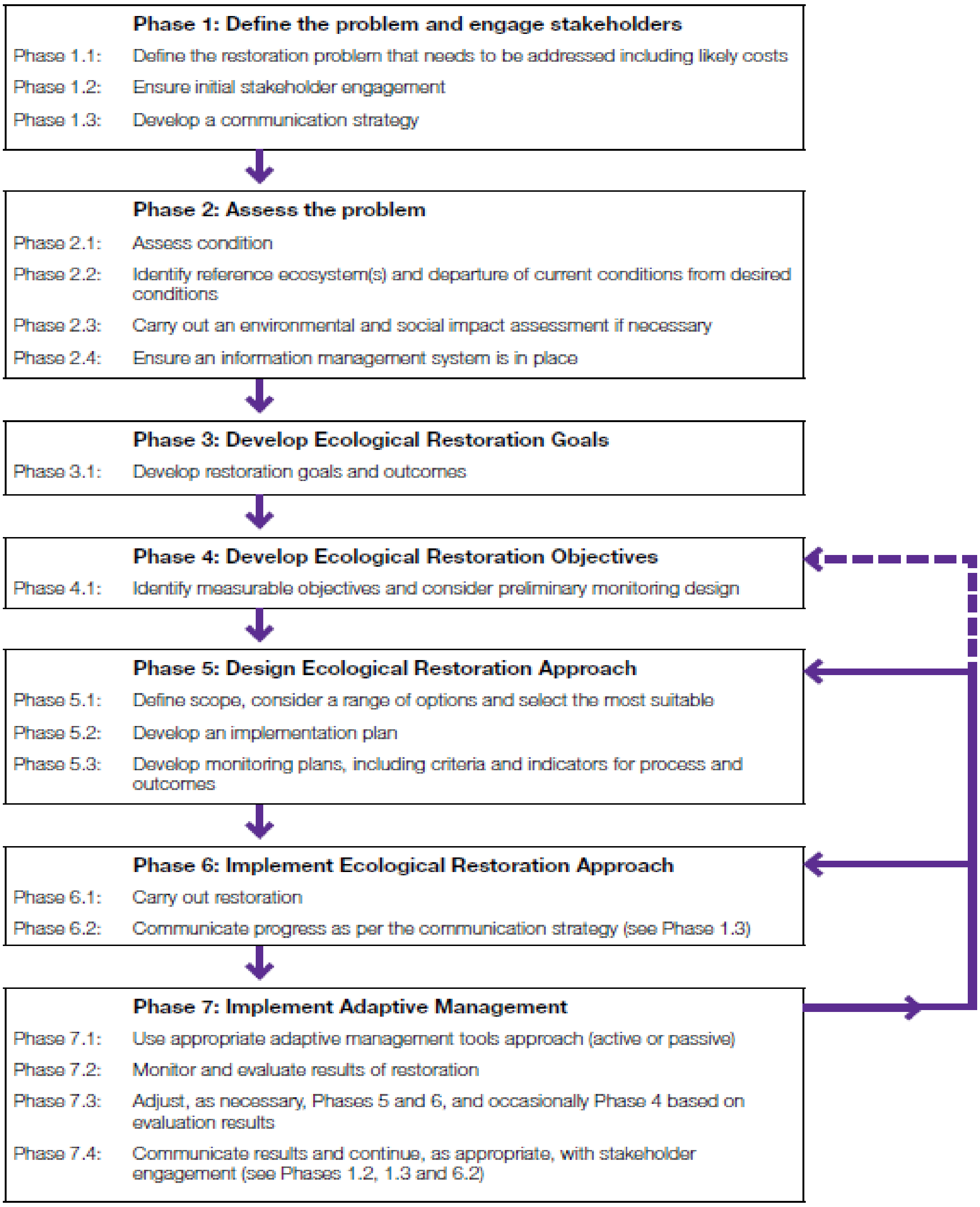
Guideline 3.3: Communicate effectively to support the overall ecological restoration process

Building and maintaining support for restoration can be helped by regular and accurate communication and outreach activities to visitors, local communities and other constituencies interested in the protected area. Communication is strengthened if planned and monitored in conjunction with collaborative engagement (Guideline 3.1) and with direct learning experiences during and following ecological restoration activities (Guideline 3.2).

Guideline 3.4: Provide rich experiential opportunities that encourage a sense of connection with and stewardship of protected areas

Successful ecological restoration activities are based on meaningful public engagement and visitor experiences that connect people more deeply to their protected areas. Ecological restoration initiatives also offer rich opportunities for individuals to explore and experience the potential to reverse ecological degradation, and be inspired. This social learning contributes substantially to social well-being and ecological sustainability through behavioral change, and contributes to improved stewardship of protected areas. Similarly, enhanced opportunities for visitors to discover and experience healthy, restored protected area ecosystems can improve attachment to, and support for protected areas over the long term.

The process for restoration at a glance



When has restoration succeeded?

Restoration has succeeded when the goals/objectives set out at the beginning of the process (and adapted as necessary throughout) have been met. However, because restoration is often a long-term process, deciding when a project has 'succeeded' is challenging. In the case of relatively narrow objectives, such as re-introduction of a species, or elimination of an invasive species, targets may be set, but this is harder for more general ecosystem-scale restoration.

Efforts have been made to address the question of restoration 'success' in a standardized way. For example, it is recognized that: *An ecosystem has recovered—and is restored—when it contains sufficient biotic and abiotic resources to continue its development without further assistance or subsidy.* To illustrate this more precisely, nine generic attributes, listed below, have been developed to help determine whether recovery is on-going and thus ecological restoration is being accomplished. It should be noted, however, that these attributes do not cover the whole range of restoration objectives (e.g., governance, social or cultural objectives). They also do not fully recognize evolving understanding of the key ecological role of traditional resource management in Indigenous cultural landscapes.

It is further important to note that attributes 8 and 9 in particular do not account for the likelihood that many ecosystems will be undergoing rapid climate-driven social and ecological changes and thus may not only need to be resilient to 'normal periodic stress events' but also to extreme events and/or rapidly changing climatic conditions.

1. The restored ecosystem contains a characteristic assemblage of the species that occur in the reference ecosystem and that provide appropriate ecological community structure.

2. The restored ecosystem consists of indigenous species to the greatest practicable extent.

3. All functional groups necessary for the continued development and/or stability of the restored ecosystem are represented or, if they are not, the missing groups have the potential to colonize by natural means.

4. The physical environment of the restored ecosystem is capable of sustaining reproducing populations of the species necessary for its continued resilience or development along the desired trajectory.

5. The restored ecosystem apparently functions normally for its ecological stage of development, and signs of dysfunction are absent.

6. The restored ecosystem is suitably integrated into a larger ecological matrix or landscape/seascape, with which it interacts through abiotic and biotic flows and exchanges.

7. Potential threats to the health and integrity of the restored ecosystem from the surrounding landscape or seascape have been eliminated or reduced as much as possible.

8. The restored ecosystem is sufficiently resilient to endure the normal periodic stress events in the local environment that serve to maintain the integrity or natural evolution of the ecosystem.

9. The restored ecosystem is self-sustaining to the same degree as its reference ecosystem, and has the potential to persist indefinitely under existing environmental conditions. Nevertheless, aspects of its biodiversity, structure and functioning may change as part of normal ecosystem development, and may fluctuate in response to normal periodic stress and occasional disturbance events of greater consequence. As in any intact ecosystem, the species composition and other attributes of a restored ecosystem may evolve as environmental conditions change.

Find the full best practices guidelines on:

www.papaco.org
or
www.iucn.org/pa_guidelines

Job offers

Wildlife Conservation Society is offering several positions in Africa this month. The full offers can be found on www.wcs.org. The list of offered positions is there after:

1. **Conservation and Biodiversity Unit Director, Nouabalé-Ndoki National Park, Republic of Congo:**
https://sh.webhire.com/jobcart/view_job.cart?JOB_ID=2712056&ACCT_NAME=WCS&SITE=I&CCC_DEST=CS

2. **Park Director, Nouabalé-Ndoki National Park, Republic of Congo**
https://sh.webhire.com/jobcart/view_job.cart?JOB_ID=2710167&ACCT_NAME=WCS&SITE=I&CCC_DEST=CS

3. **Technical Advisor, WCS Gabon Program**
https://sh.webhire.com/jobcart/view_job.cart?JOB_ID=2711572&ACCT_NAME=WCS&SITE=I&CCC_DEST=CS

4. **Marine Program Coordinator, Congo Basin Coast**
https://sh.webhire.com/jobcart/view_job.cart?JOB_ID=2710867&ACCT_NAME=WCS&SITE=I&CCC_DEST=CS

5. **Deputy Director, Finance and administration, WCS Africa Program**
https://sh.webhire.com/jobcart/view_job.cart?JOB_ID=2714258&ACCT_NAME=WCS&SITE=I&CCC_DEST=CS

Call for proposals

The French Global Environment Fund is funding small scale projects for conservation of biodiversity in Africa in order to support civil society initiatives. Countries that are priority targeted are Burkina Faso, Côte d'Ivoire, Ghana and Togo in West Africa and Cameroun, DRC and Congo-Brazzaville in Central Africa. Other countries in both regions are also eligible, under certain conditions.

More information as well as proposals templates are available on **www.ffem.fr**. The offers should be sent to ppi@uicn.fr **before the 15th November 2013.**

More information :
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World Park Congress
Sidney – Australia

From 12 to 19 November 2014

Registration is opening on the 15th November 2013

Please see www.worldparkcongress.org

Would you like to be invited to the congress???

Don't miss the next NAPA in December!

NAPA – CONTACTS **www.papaco.org and www.iucn.org**

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