PAPACO

Newsletter from African protected areas

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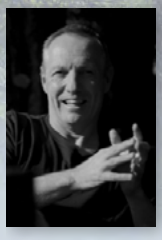


Editorial

GEOFFROY MAUVAIS
IUCN-PAPACO COORDINATOR

AN HONEST YEAR!

2022 is here. Will it once again be a year confiscated by Covid-19? Or will we manage to recover some wisdom and return our lives to a semblance of normalcy?

But what is « normalcy » exactly?

Every year over the past decade, following the flow of conferences and summits, we have been told that we are living through a key moment – our last chance, the time to make brave decisions that will return our planet to a sustainable equilibrium. 2022 is no exception to this rule. Expectations are already huge, and will probably be passed on to 2023, and the following years.

What are we trying to fix in reality? It is impossible to pin it down in a few lines, but we can probably highlight some of the issues at hand, at various scales.

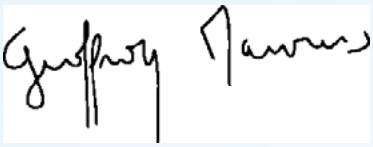
Globally, our population keeps growing unsustainably. The United Nations estimate we will be around 10 billion in 2050*. In Africa, the population will practically double, growing tenfold compared to its 1960 level. Who seriously believes that we will manage to decrease our footprint on earth even as the number of "consumers" (small and large) keeps growing? Where will we find water, energy, food which are already starkly limited in many places?

Mechanically, demographic growth comes with an explosion in infrastructure needs – and more. In Africa, the impact of obviously needed projects to create new means of circulating, exploiting resources, transporting energy or materials is worsened by the massive theft of the continent's resources. A recent study tried to predict which new routes would be developed to support human "development"**. Unsurprisingly, these routes cover most ecologically important areas, leaving basically nothing to biodiversity. We will be everywhere across the continent, and we will be there alone.

Locally, at last, successes are meagre – probably drowned out by the destruction carried out at a larger scale. Even when we do our most to flag and put forward encouraging initiatives, few resist when subjected to long-run data analysis. Namibia is often taken as an example in Africa : community-led natural resources management projects***, which started in the nineties, have however turned out to be less fruitful than expected. Results – for the environment as well as for human developments – are lacking, although these projects remain celebrated. What can we say about the country's decision to push forward an oil project that threatens the entire Okavango?

Therefore, in 2022, we should focus on one priority: honesty. Discussing our problems in the open, naming their causes and those responsible in full honesty, sketching out solutions realistically when they exist and accept in good faith the necessary changes and sacrifices required.

Can we do this ? Honestly, I doubt it.•



* blogs.worldbank.org

** global-roadmap.org

*** africanelephantjournal.com

MOOC Conservation

MOOCS

Registrations open. A new session of all our courses will starts on January 17. Registrations are already open.

Next session: 17 January - 12 June 2022 (midnight).

MOOC registrations: mooc-conservation.org.

MOOC conservation

THE ESSENTIALS

Exams reset. Every MOOC session we reset Essential scores. So you can have another go at trying to obtain the attestation of participation.

What are they? They are short courses geared to a specific profile of protected area conservation actors.

Four options are possible: Rangers, Managers (involved in Research R or in Law enforcement L) and Leaders.

The Essentials are open throughout the year.

Inscriptions : mooc-conservation.org

RANGER ESSENTIAL
For protected area (PA) professionals who apply decisions and ensure the implementation of activities inside the PA.

MANAGER ESSENTIAL
For protected area professionals who need to plan, manage and assed the work carried out by field agents.

➔ **MANAGER LAW**: focuses on law enforcement and the valorisation of the PA and its natural resources.

➔ **MANAGER RESEARCH:** focuses on research activities, monitoring-evaluation and ecological monitoring.

LEADER ESSENTIAL
For actors who are influencing the protected area context at a larger scale, without necessarily working directly inside a protected area.

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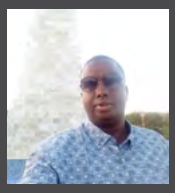
Papaco.org
GPAP newsletter (IUCN Programme of PAs)

Ambassadors etc.

PRESENTATION AT BRAINFOREST, GABON

A meeting that took place at the headquarters of the NGO Brainforest was the opportunity for four MOOC-Conservation students to present the MOOCs to the NGO team.
At the end of this meeting, the executive secretary of Brainforest, Marc Ona Essangui, thanked the students for their initiative, saying that it was very useful to those who, like his staff, are often in the field. He also expressed his interest in seeing future trainings developed. Photos from the event can be viewed on this Brainforest Facebook post.

A NEW AMBASSADOR IN DJIBOUTI



A new member has just joined the group of MOOC-Conservation ambassadors: Omar will help the MOOC-Conservation team to promote its courses in Djibouti and will assist students from this country who reach out to him when they need help.

PROMOTING MOOCS THROUGH UNIVERSITIES IN ANTANANARIVO

A month before the end of the session, MOOC-Conservation's ambassadors in Antananarivo launched a final initiative to promote the MOOCs in the region.
To reach a large number of students they turned to universities and went, among others, to the University Es.Des (École Supérieur de Développement Économique et Social) and Infotour (Institut de Formation en Tourisme). It was according to them «a wonderful experience» during which the students expressed a great interest in MOOC-Conservation.
A great final effort in a country where registrations continue to rise!

AMBASSADOR ? An ambassador is a designated Papaco MOOC student who volunteered to help students in his/her city or region.

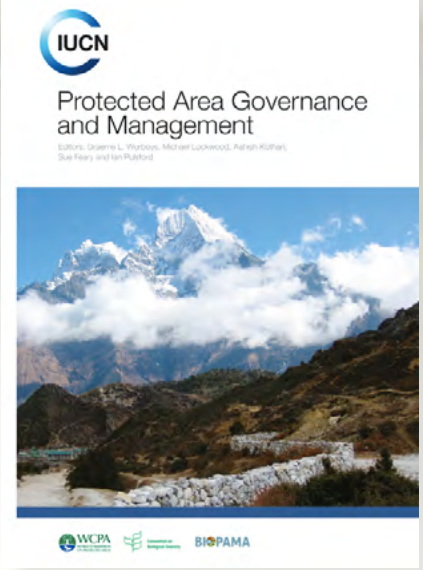
Website with all ambassadors: here.

List of ambassadors (click on the name to send them an email):

- Benin, Kévin
- Bouaké, Bernadette
- Burkina Faso, Valéry
- Burundi, Léonidas
- Comoros, Humblot
- Côte d'Ivoire, Mamadou
- Douala (Cameroon), Mathias
- Gabon, Brice
- Guinea (Conakry), Moussa
- Haïti, Talot
- Kara (Togo), Yenhame
- Kenya, James
- Kindu (DRC), Ohm
- Kinshasa (DRC), Emmanuel
- Kisangani (DRC), Richard
- Mali, Seydou
- Lomé (Togo), Valentin
- Lubumbashi (DRC), Albert
- Madagascar (Tana), Raymond
- Morocco, Rachid
- Mauritania, Fall
- Niger, Oumarou
- Nigeria, Michael
- Pointe Noire, Charmand
- Rwanda, Leonard
- Senegal, Thiam
- Chad, Seid
- Tunisia, Moadh
- Yaoundé (Cameroon), Pascale
- Zambia, Chewe
- Zimbabwe/South Africa, Fanuel
- Diffa (Niger), Omar
- Sierra Leone, James
- Dossa (Niger), Hama

IUCN PAPACO MOOC conservation

Featuring this month



'PROTECTED AREA GOVERNANCE AND MANAGEMENT'

Protected Area Governance and Management presents a compendium of original text, case studies and examples from across the world, by drawing on the literature, and on the knowledge and experience of those involved in protected areas. The book synthesises current knowledge and cutting-edge thinking from the diverse branches of practice and learning relevant to protected area governance and management. It is intended as an investment in the skills and competencies of people and consequently, the effective governance and management of protected areas for which they are responsible, now and into the future.

The global success of the protected area concept lies in its shared vision to protect natural and cultural heritage for the long term, and organisations such as International Union for the Conservation of Nature are a unifying force in this regard. Nonetheless, protected areas are a socio-political phenomenon and the ways that nations understand, govern and manage them is always open to contest and debate. The book aims to enlighten, educate and above all to challenge readers to think deeply about protected areas—their future and their past, as well as their present.

The book has been compiled by 169 authors and deals with all aspects of protected area governance and management. It provides information to support capacity development training of protected area field officers, managers in charge and executive level managers.

The entire book is freely accessible online in English on the Australian National University's website: https://press.anu.edu.au/node/372/download.

CHAPTER 18 - GEOCONSERVATION IN PROTECTED AREAS

Roger Crofts and John E. Gordon

Introduction and definitions

It is vital that geodiversity and geoheritage are fully integrated into the management of protected areas and accorded a level of importance equivalent to biodiversity as part of an ecosystem approach that recognises the value and integrity of both abiotic and biotic processes in nature conservation.

This reasoning has been accepted by the International Union for Conservation of Nature (IUCN) with the passing of Resolutions 4.040 at Barcelona (2008) and 5.048 at Jeju, Korea (2012), which both clearly state that geodiversity is part of nature and geoheritage is part of natural heritage.

Geodiversity

Geodiversity is a relatively recent term; its first use in English was in Tasmania, Australia. Despite some initial resistance and concerns about the validity of implied parallels with biodiversity, the term is now widely accepted. Geodiversity is the abiotic equivalent of biodiversity and therefore is a natural complement to biodiversity rather than a separate and unassociated subject. It covers past and present Earth processes, embraces static features that have a range of ages and reflect the variety of processes during the Earth's history, and includes modern processes that significantly influence biodiversity.

Geoheritage

Geoheritage comprises those elements of the Earth's

geodiversity that are considered to have significant scientific, educational, cultural or aesthetic value. They include special places and objects (specimens in situ and in museums) that have a key role in our understanding of the abiotic and biotic evolution of the Earth. A site or area of high geoheritage significance can comprise a single feature of value, and does not need to have a diversity of features present.

Geoconservation

Geoconservation has been defined as 'the conservation of geodiversity for its intrinsic, ecological and (geo)heritage values'. A broader definition is 'action taken with the intent of conserving and enhancing geological, geomorphological and soil features and processes, sites and specimens, including associated promotional and awareness raising activities, and the recording and rescue of data or specimens from features and sites threatened with loss or damage'.

The need for geoconservation in protected areas

Geoheritage values

Many protected area managers and staff, and their advisers, will be familiar with the fundamental importance of biodiversity conservation. As this subject is the basis of the Convention on Biological Diversity (CBD) 1992, and has an associated program of work on protected areas, biodiversity conservation is seen by many as the raison d'être of protected areas and their management. The underlying rocks, sediments and soils, their evolution and the recent and current Earth processes to which they are subject are, however, also vital. Why?

Many protected areas are designated because of their geoheritage values, including one of the world's first national parks: Yellowstone, USA. Some are global or regional type sites for critical stages in the history of the Earth and the marker horizons in rocks representing the boundaries between different geological periods. Others are examples of past geological processes representing major events in the evolution of the continents and oceans, such as the collision between the Indian and Eurasian tectonic plates to create the Himalaya and the Tibetan Plateau. Yet others are designated for their research significance, such as the inverted rock sequences resulting from tectonic plate collisions and the thrusting of older strata above younger strata, displayed, for example, in the Moine Thrust Zone in Scotland. Many are significant because their fossils exhibit key stages in the evolution of life on Earth, such as the Burgess Shale in Yoho and Kootenay National Parks, British Columbia, Canada.

Others are significant for the type of minerals found there, reflecting complex geochemical evolution. And some are significant for their current geological processes such as tectonic plate separation in Iceland, or the development of glacial landforms on the Antarctic Peninsula.

Furthermore, many protected areas are designated because their geological and geomorphological features are visually and scenically dominant in the landscape, and quite often have an iconic significance in the cultural history of the area and the nation. The Golden Mountains of Altai in the Russian Federation, Bogd Khan Mountain in Mongolia and Triglav National Park in Slovenia are examples. Many components of geodiversity also have direct cultural significance, such as caves that preserve the paintings and inscriptions or other sacred values from earlier periods of human occupation.

Geoheritage in protected areas can exist at a number of scales, from small individual features, such as wind-sculpted stones (ventifacts) in desert environments and rocks (erratics) transported long distances by glaciers, to whole mountain chains and large river basins. All scales are important, and geoconservation needs to take into account features and processes across the whole continuum, from site to landscape scale. But areas need not exhibit high geodiversity to qualify for protected area status. For example, a thick sequence of deep-water limestones may represent an important part of basin history and exhibit the evolution of life. The apparent low geodiversity in the rocks may hide a rich biodiversity that is not so evident to the naked eye, but is crucial as a type section or reference locality for a particular evolutionary phase or change.

Links to biodiversity, ecosystem functions and services

Geoconservation in protected areas delivers many important contributions to biotic nature and to society. It supports landscape and biodiversity conservation, economic development, climate change adaptation, and sustainable management of land and water, historical and cultural heritage, and people's health and wellbeing. Perhaps most significantly, geodiversity underpins or delivers most of the

ecosystem services identified in the Millennium Ecosystem Assessment. It is a key component of supporting services, and contributes significantly to provisioning, regulating and cultural services. Without the contribution of geodiversity, many of the ecosystem services essential to supporting life on Earth would simply not exist or would require vastly more expensive technological alternatives—for example, provision of fresh water, regulation of water and air quality, and soil formation and nutrient cycling for food production. Geodiversity also provides additional, indispensable goods and services (for example, minerals, aggregates and fossil fuels) that are non-renewable capital assets, as well as substantial 'knowledge' benefits (for example, records of past climate changes, understanding of how Earth systems operate and ecosystem service trends).

Relevance of the IUCN definition for geoconservation in protected areas

The revised IUCN definition of a protected area refers to abiotic nature for the first time by substituting the narrower term 'biodiversity' with the broader term 'nature': 'A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'.

The use of the word 'nature' is quite deliberate for a number of reasons. It allows specific recognition of the abiotic elements in protected areas that were excluded in the previous definition referring only to biodiversity. It recognises that many protected areas exist to conserve abiotic nature in some form or other. It also recognises that abiotic nature is important for its own sake, as it is an intrinsic element of any definition of nature.

In the elaboration of the guidelines, 'nature' is explained as always referring 'to biodiversity, at genetic, species and ecosystem level, and often also refers to geodiversity, landform and broader natural values'.

The use of the term 'nature' is further elaborated in IUCN Resolution 5.048, 'to ensure that, when reference is made in the IUCN Programme 2013–2016 to nature in general, preference be given to inclusive terms such as "nature", "natural diversity" or "natural heritage", so that geodiversity and geoheritage are not excluded'.

Principles of geoconservation

This section sets out general principles for geoconservation in protected areas.

The role of IUCN management categories and geoconservation

Geoconservation in protected areas applies to all of the IUCN protected area management categories and it specifically applies to Category III. The 2008 guidelines set out the situation in both cases and are quoted below.

Relevance of all categories

The IUCN protected area management categories have a wide application to the management of geoheritage. This reflects the linkage between abiotic and biotic conservation, as well as cultural values. As a result, geoconservation can apply to the management of protected areas assigned to any one of the six management categories as well as to those assigned to Category III.

Establishing new geoheritage protected areas

Within the systematic frameworks for identifying protected areas for geoconservation (see above), opportunities will arise for new sites to be designated. These will result from a number of circumstances, such as new knowledge and understanding of features and processes, new exposures arising from natural erosion or from quarrying, new site surveys in areas previously overlooked, and the formation of new territory with associated mineral deposits on land and below sea-level as a result of tectonic and volcanic activity. In judging whether to add new protected areas, the fit within the existing systematic framework should be considered and any adjustments made to the site network to take into account the new knowledge or interpretations.

Managing specific threats to geoheritage in protected areas

Inevitably, there will be interactions and potential conflicts between geoconservation in protected areas and biodiversity and cultural conservation, as well as conflicts with other activities, particularly those seeking to exploit natural resources for human use, legitimately or otherwise. Some of the main threats are dealt with in turn and build on the general guidance provided above.

Mineral exploitation

Interaction with mining and mineral extraction at the surface and below the surface has been a longstanding issue. Dialogues between the IUCN WCPA and industry, represented by the International Council on Mining and Minerals (ICMM), have resulted in a protocol by the industry and the IUCN's position statement for World Heritage sites.

There is a still a view held particularly by some mining interests and shared by some members of the WCPA that mining is prohibited in IUCN Categories I–IV protected areas, but can be allowed in Categories V and VI protected areas. This position has created problems in many Category V landscape protected areas in Europe. For example, approval exists for goldmining in the Loch Lomond and The Trossachs National Park in Scotland and stone quarrying in the Peak District National Park in England. In contrast, a joint resolution by indigenous peoples and the IUCN Commission on Environmental, Economic and Social Policy states that mining should not be allowed in protected areas, World Heritage sites, indigenous territories and sacred natural sites.

It should be recognised that not all extractive activity has a negative impact on the geoheritage interest, as new exposures provide the opportunity for investigation and bring new understanding of Earth evolution both at the site and of more general application. Care must be taken, however, that new exposures or valuable specimens are not lost in the commercial imperative to remove as much material as possible as soon as possible. If extraction is consented for the site, therefore, legally binding agreements should be made between the managing authorities and the resource owners, including the placing of financial bonds for restoration of the site or for maintaining certain exposures for research and teaching as part of the restoration plan. Decisions will also need to be taken about how much of the resource it is permitted to extract. Often, it will be valuable from a geodiversity perspective to leave some of the resource in the ground to allow for future investigations and for teaching and demonstration.

When applications are made for mining beneath protected areas, such as for coalmining or oil and gas extraction, including fracking, detailed assessments need to be undertaken of the potential effects on the geoheritage interests—the features and forms at the site and most especially the processes operating there.

Legal mining under protected areas remains a vexed issue. The removal of a non-renewable resource is not sustainable, can cause the surface to collapse and can have wider impacts. If approval is given, it should be accompanied with regulations, including robust legal agreements with compliance monitoring and enforcement of the agreements.

Artisanal and small-scale mining can have profound effects on protected areas and care needs to be taken in assessing potential effects and defining solutions. A methodology has been devised and tested in Africa and provides a toolkit of six elements focusing on assessing the extent of the problem, and working with relevant stakeholders to identify solutions and alternative approaches.

Once extraction is complete or in long-disused quarries, there is often a demand to use them as sites to deposit waste materials from industrial, residential or other sources. This will especially be the case where there are few other locations locally where waste material can be disposed. It is essential that the local, national and international importance of the exposures and their value for teaching and research purposes are assessed before decisions are reached.

Development and development planning

Development of infrastructure of all types—transport, commercial buildings, houses, and so on—will have an impact on geoheritage conservation in protected areas.

The most sensitive will be in existing protected areas or adjacent to them, where the effects will transfer across the protected area boundary. Key issues to be addressed before any decisions are made about actual development or before development proposals are written into plans are to consider the potential loss of features and the loss of natural processes that secure their conservation.

Large commercial, industrial and residential developments will affect the natural processes and could lead to permanent loss of protected areas. Attempts should be made to retain these areas within developments and ensure an adequate buffer zone is designated to safeguard their integrity.

Culverting and canalisation of water courses and flood prevention works along riverbanks are, for example, too damaging to be allowed where the natural processes of water flow and the features and forms created are the reason for protection. Similarly, these works will also hide key protected exposures in riversides, and should not be

permitted unless there are exposures of equal value to be preserved nearby.

Coastal protection

Exposure of sections along the coast can reveal new sources of information about the evolution of life on Earth and about the processes that have operated in the past. Attempts to stop coastal erosion by construction of barriers will automatically conceal these interests and the rationale for the protected area status will be lost.

Many natural coastal systems are large in scale and highly dynamic and their perpetual protection is justified. Attempts to remove materials, especially sands, gravels and pebbles, for use in construction, and the placement of barriers made of wood or stone on the beach to halt the natural flow of sediments will inevitably undermine the rationale for protection and should be avoided.

Rising sea-levels and increased storminess in some parts of the world raise demand for greater protection of developed coastlines by the construction of hard engineering structures such as seawalls. These will irreplaceably damage adjacent protected area interest.

Attempts should be made to use new solutions, such as allowing the coastline to retreat naturally inland and at the same time to relocate activities from the coastal edge to sites further inland so they are likely to be less affected. Where that is not an option, an alternative may be to utilise 'green infrastructure' (for example, through stabilisation of existing barrier islands by planting natural vegetation) or to develop artificial bars at or near the shoreline. These are challenging issues, as protection against potential loss of property is likely to be regarded

landmark legal case in England, however, on an eroding coast where property was threatened, the fundamental principles of site designation and geoconservation, including allowing natural processes to take their course, were upheld by the courts.

Biodiversity conservation

Interactions between geoheritage and biodiversity conservation can be both positive and negative. The positive elements have been described earlier in this chapter. The negative elements need to be recognised and solutions found by protected area managers. The essence of the resolution should be recognition of the interconnections between the biotic and abiotic features and the processes that brought them into existence and those processes that maintain them. Taking a one- dimensional approach, favouring either geoheritage or biodiversity conservation is unlikely to result in a resolution benefiting conservation as a whole.

Geoheritage education and interpretation

Alongside site protection and management, raising wider awareness and involvement through education and interpretation is a key part of geoconservation. The purpose should be to inform and entertain as well as to educate, as recognised in the far-sighted aspiration of James Hutton (1785) that study of the Earth 'may afford the human mind both information and entertainment'. Education spans a broad spectrum, from learning through formal didactic education and informally by experience provided through interpretation. It also spans a broad spectrum of audiences from those simply wishing to 'be there' to those actively seeking education as a primary focus. Much of the conventional geoheritage interpretation is aimed at a broad sector in the middle. Effective geoconservation will ultimately depend on better public awareness, understanding and support.

Interpretation of geodiversity and geology-based tourism (geotourism) are not new, as demonstrated by the longstanding appeal of and cultural interest in show caves, glaciers, sacred mountains and other natural wonders. In the 18th and 19th centuries, people engaged with the physical landscape in an experiential way, and natural features, places and past events inspired a sense of wonder through connections with landscape, literature, poetry, art and tourism. Traditional geological interpretation, however, has been based on a didactic approach providing information rather than interpretation, with geologists using explanatory boards and leaflets. The problem has been that these are not aimed at the needs of the visitor as they are too detailed and use far too technical language, so the general user cannot understand them. Unfortunately, there are too many examples of this approach. Lessons could be learnt from the approaches taken by indigenous peoples and traditional local communities who have lived with and interpreted landscapes or landscape elements (or seascapes) in many

different ways. They have integrated them into their daily lives, often according them spiritual, cultural and other significance, and often using them for crucial livelihood and ecological functions.

Recent developments have been a more experiential approach in geo-interpretation, embracing the cultural dimension of geodiversity and resulting in more effective communication, through partnerships and the production of more appropriate materials, presented in stimulating ways using a range of media and based on the best interpretative practices and sound educational principles. Protected area managers can learn from these best-practice developments in interpreting and promoting geoheritage in a sustainable way. Innovative approaches include more integrated interpretation, linking, for example, geology, landscape, cultural heritage and industrial archaeology. The UNESCO-supported geoparks initiative has emerged as an important driver for innovation in geo-interpretation, with an agenda to engage with a wide and varied audience through promoting geotourism and related activities.

Monitoring and evaluation

Measuring and monitoring the condition of geoheritage protected areas are essential to establish their condition and state, and how these are changing.

The key attributes measured and the targets based on the classification are:

1. protected area attributes to be monitored

- 'visibility': factors to be monitored will be lack of concealment from vegetation/soil/talus build- ups/ engineering constructions
- quality of appearance or lack of disturbance to the internal structure of features: the physical condition of rock, sediment, landform, spoil heap (for example, lack of disruption of sediments in a landform that are not yet visible); lack of fragmentation of exposure, no physical damage to important parts of rock faces, sediment stacks and landforms; quality and visibility are intimately linked attributes
- extent of features: for example, the quantity of geological material such as the volume of important spoil material in a mine dump, or area of rock face in an exposure site where it is advantageous to have a greater amount of rock exposure to study
- process dynamics: freedom of geomorphological processes to evolve naturally and unimpeded.

2. key indicators of favourable conservation condition

- landform elements remain unconcealed
- physical composition, morphology and internal structure of the key landforms and sediments remain intact and undisturbed by anthropogenic interventions
- extent of key geomorphological features is not diminished through physical damage or fragmentation
- natural geomorphological processes are unimpeded: the levels of activity of the geomorphological processes and their spatial domain retain the capacity to operate across their full range of natural variability
- geological exposure remains unconcealed, intact and unmodified by anthropogenic intervention
- extent of key geological features has not diminished: both vertical and lateral extent of features constant or increasing.

Geoconservation expertise requirements and opportunities in protected area management

The variety of geoheritage protected areas and the amount and variety of knowledge required to identify and manage them effectively mean there is a great need for specialist geoconservation expertise. Geological and geomorphological scientific knowledge is essential if the protected areas are to be robustly identified and placed within wider Earth heritage systems and if the networks of areas are to be kept up to date with new knowledge and new interpretations. The safety of workers and visitors is of paramount concern in geoconservation protected areas, so expertise in risk assessments and management prescriptions is essential. Predicting and coping with the effects of floods, tsunamis, earthquakes, volcanic eruptions and active geothermal sites, slope failures, cliff instability, and glacial and permafrost melt are all examples of the need for technical knowledge. There should be scope for employing local experts to undertake specialist jobs as well as ensuring that local and traditional knowledge is pursued to best effect.

Management of specific types of geoheritage protected areas, such as sites with moveable heritage (fossils, minerals) or with active processes (coastal areas, rivers, and so on), is needed to ensure the key values are maintained, and that external actions and changes do not deleteriously affect the key features and processes. The ability to communicate the importance of the features and processes of protected areas in a manner the public can understand and be inspired by is also an important requirement of specialist staff.

Protected area management teams should progressively incorporate Earth science expertise with the aim of achieving an integrated approach to nature conservation. Bringing together geological, biological and cultural heritage specialists in teams will help to ensure full comprehension and conservation of natural resources.

Conclusion

The Earth's geodiversity is an essential consideration in protected area management, particularly in the context of managing for nature, both abiotic and biotic. Geoheritage is constituted by those elements of geodiversity that have significant scientific, educational, cultural or aesthetic values. Such special geoheritage may be systematically categorised according to key stages in Earth's history; structural features; formation of minerals; evolution of life; Earth process; surface and subsurface features and records of past environmental condition. Key examples of geoheritage phenomena need to be protected, such as in geoparks, as IUCN Category III protected areas, or within other IUCN protected area categories. Once established, active responses by protected area managers are needed to address threats such as mineral exploitation and infrastructure development. Responses incorporate planning and on-ground works, while guiding principles of management establish a framework for such action. As with other natural phenomena, monitoring condition, and trends in condition, form an integral part of active management. •

To read the full chapter, click here.

University diploma

18th edition of the University Diploma on protected areas' management - «fight against environmental crime» (October 25 to December 10, 2021)

On Friday December 10, 2021, the closing ceremony of the UD 18 took place in Ouagadougou, Burkina Faso. Eighteen students from five countries (Benin, Burkina Faso, Côte d'Ivoire, Guinea and Togo) strengthened their capacities on various themes such as environmental crime, management and governance of protected areas, planning, conservation economics and received a certificate at the end of their training.

This UD combined online and face-to-face teaching. The particularity of this edition is its specialization on a topical theme for the region: environmental crimes. This UD is based on the needs expressed by stakeholders in the region, consulted over the past few months. Indeed, after 10 years of running UDs on protected areas management, it appeared important to carry out an evaluation and to request feedback from all the actors in the region. This is why IUCN, through component 2 of the Support Program for the Preservation of Biodiversity, Environmental Governance and Climate Change (PAPBioC2) entitled «Regional Governance of Protected Areas in West Africa» commissioned a study to assess possible improvements of its UD. More than 200 stakeholders from 9 countries were interviewed. These included managers of PAs, former UD participants, Master graduates, teachers from University Senghor, employers of former students, etc. Following this process, solutions to update the UD were proposed and validated during a regional workshop. It then appeared judicious to establish a second thematic UD on the fight against environmental crime: surveillance, security and management of conflicts related to the use of resources, etc.

It consists of a virtual phase and an on-site phase:
Phase 1: Modules to be followed online by the participants: two MOOCs, including the MOOC «Law Enforcement».
Phase 2: Seven modules participants had to participate to on site, in Ouagadougou.
A field trip to Nazinga was also organized during the training, in order to allow participants to apply the theory they had learn on security and surveillance techniques for protected areas.

All the participants received their certificate at the end of the training.

CONTACTS - PAPACO

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