

Karst landscape and site conservation of PHKB and HNCA as a trans-boundary natural heritage property

**Elery Hamilton-Smith, AM, D App. Sci.
Chair, IUCN WCPA Task Force on Caves and Karst**

Introduction

My intention in this paper is to establish a set of basic principles upon which conservation of both Phong Nha Ke Bang and Hin Namno should be based. These are based upon both current best practice (all too rarely seen) and research-based understandings of the people-environment relationship.

However, I will talk about principles through citing practical examples. This is not because I want to provide real recommendations but because I want to emphasise the way in which principles must be expressed in essentially practical action.

Governance

I recommend the paper on Conservation of Protected Areas that was prepared by the Canadian Institute on Governance for the World Parks Congress in Durban (Graham, Amos & Plumptre 2003). I also recommend a paper by Adrian Phillips prepared as a lead-in to the same congress that provides an overview and summary of changes in direction in park management.

[Digital copies of both these papers are made available with this paper]

I refrain from any detailed recommendations, as I believe the two papers noted above will give very adequate guidance to assist both state parties to develop patterns of governance that are most appropriate to the circumstances.

The groundwater issue

One of the most basic requirements of conservation in karst areas is the issue of groundwater. However, it is unlikely that this area will suffer a shortage of groundwater in the foreseeable future. Further, much of the groundwater will be derived from on-site rainfall, and so quality issues are unlikely to present any major problems.

A small amount of groundwater does originate from the buffer zone and is fed into the limestone by relatively small streams. Care should be taken to ensure that there are no activities allowed within the watershed that might be a source of solution or sediment.

Rocks and soil

The very ancient rock of the plateau is extremely stable and unlikely to give rise to problems. Any problems that do arise, e.g. landslides, are likely to be self evident and relatively easy to manager.

The soil is a very different story. Soils on tropical limestones are relatively thin, easily mobilised and liable to severe erosion. Once broken down restoration is often difficult and sedimentation may persist for some time.

There are a variety of obvious precautions. Clearance of vegetation, particularly ground cover should be avoided at all times. More importantly, any provision of infrastructure or other engineering action must be undertaken in a way that will minimise breaking of the soil cover.

Regrettably, there are already an excessive number of roads on the Karst of the Phong Nha Ke Bang Protected Area. Hopefully no more will ever be built on the karst protected areas.

- If walking tracks are necessary elevated boardwalks should be constructed. These should be constructed of timber with maximum resistance to rot or other deterioration; of appropriately tested recycled plastic; or pre-cast concrete slabs. Neither concrete nor bitumen should be laid on the ground surface.
- If it is decided that any further roads must be constructed, their construction demands extreme care to minimise breakaway or other erosion. Heavy earth-moving equipment should not be used and all construction should be carried out by manual labour. There should not be any onsite camping, as this would be a source of pollution. Any points where water runs off should be fitted with sediment traps to stop the spread of sedimentation. On completion of work, natural vegetation, particularly the ground cover should be restored as soon as possible.
- Any installed infrastructure must be designed so that it can be readily removed and leave no evidence of its former existence.

Importance of the forest

In a tropical rainforest site maintenance of forest quality is the basis of all other biological conservation. Any damaged area of forest should be restored as soon as is practicable.

At least Phong Nha Ke Bang has been subject over the years to considerable illegal timber harvesting. The residual damage as noted above should be repaired. More importantly, governments should ensure that adequate steps are taken to prevent further theft. Given the high value of illegally felled timber in the market place, this may present a major challenge. Forest rangers are not generally equipped either by training or equipment to deal with this problem. Provision should be made for intervention by the army where necessary. Those responsible for such damage should be very heavily penalised by the legislation and the courts that enact the legislation.

Natural death of trees is simply part of the processes of nature. Dead trees should not be removed from the park but allowed to rot which returns the nutrients they contain to the soil and so it sustains new growth.

Understanding of the fauna may well reveal that some species are dependent upon the availability of appropriate microhabitats (e.g. tree hollows or cupules in the limestone). Also if any predator species undergo a major increase in numbers, they may upset the natural balance and over populated sites may demand capture and relocation of the species. Again this is extremely unlikely but awareness of it is an important part of proactive forest management.

Litter along roads or left behind by walkers is not only an ugly intrusion upon the quality of the natural environment but it may also have negative impacts. Visitors should be encouraged to always remove any rubbish that they generate (and even other people's rubbish which they happen to see). One of the processes often used by experienced park staff is that when they are accompanying a group of visitors, or in sight of a group of visitors, they will be particularly meticulous to pick up even a very minor fragment of rubbish and put it in their pocket to be discarded later. It not only removes the rubbish but also serves as a very important lesson for visitors.

Fauna

Over the last fifty years there has been a major decline in the populations of most Asian animals. This is the result of various factors, including habitat fragmentation and other damaging human activities. In turn, the loss of populations is also underpinned by the extent to which much of the Annamite fauna appears to consist of relictual species that are naturally prone to continuing loss and even extinction.

The most dangerous and damaging species on earth is, of course, human beings. They not only damage the habitat but also commonly hunt and kill mammals and other vertebrates. The current fashion and enthusiasm for “wild meat” is doing untold damage to natural populations. This demands both a strong program of public education and strict enforcement of protective legislation.

Some hunting might well arise amongst families living in poverty, who will hunt in order to survive. If this is still happening there should be a concerted effort to develop new employment opportunities so that poverty is minimised.

Blaming poachers is simply failing to face up to the simple facts of increased hunting. However, it remains as a real problem and it must be treated very seriously. Fortunately, both the reputation for improved law enforcement in Vietnam and the declining prices offered for such things as tiger parts had a positive effect but it is still far from preventing poaching altogether.

Visitor management

One often hears concern being expressed about the impacts of tourists. In fact, the real cause of damaging impacts is not the tourists, but the managers who fail to properly plan and provide the necessary infrastructure and services for visitors. The major infrastructural issues have been summarised above. Whatever is provided must support and not downgrade biodiversity protection. Details of design and maintenance cannot be adequately dealt with here, but there is a great deal of available information and expertise.

Services include welcoming and hosting of visitors, providing appropriate information when required, providing access and visibility to places of special interest, and distributing visitor movements to avoid overcrowding. Regulations are a very blunt instrument, usually only

called upon when proper services are not adequately provided. Signs are generally useless, especially where there is a multitude of languages.

Access particularly means establishing a network of walking tracks that visit places of interest. It may include the restored Ho Chi Minh trail, but others would be added to other selected places of interest. Places for rest stops or for meals should be provided at key nodes. They should be as simple as possible having tables and seats for meals and composting or other appropriate toilets.

Smoking while walking in the Park may provide some difficulty in public relations. This would mean cigarette butts would almost certainly be dropped on the ground. They are poisonous to some soil bacteria and they result in both breaking down soil consolidation and the death of some plant species. Every effort should be made to discourage and even totally eliminate smoking in the protected area. This is now being done in an increasing number of parks around the world, including in Thailand.

Some broader policy issues

The central broad policy issue is that of sustainability. The Park should be managed on the basis of sustainability and this should be visible to the public. It then provides a demonstration of sustainability that is invaluable for public education. It may be expressed in a wide range of ways including changing from petrol or other fuel driven boats to boats driven by electric motors. This not only increases the sustainability of Park practice but the silence of the boats and the absence of exhaust fumes increases the quality of the visitor experience.

Further, although the importance of buffer zones is widely recognised, it is of fundamental importance that specific management plans be prepared to ensure that their value is optimised.

One of the important elements of policy should be an acceptance of and use of the Precautionary Principle (Cooney 2004, Cooney et al 2004) as defined in the decision of Rio Declaration:

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measure to prevent environmental degradation.

In practice, this may mean, in the absence of clear and precise prediction of outcomes, rejecting the approval of new initiatives that may cause damage to the environment.

There is also great potential in encouraging visitors and others to adopt minimum-impact codes of practice. At the smaller scale, examples include the honour code of the Swiss Speleological Society and the minimum impact code of the Australian Speleological Federation. On the larger scale the World Sustainability Initiative of the Cement Industry provides one of the best examples.

Continuing vigilance

There are always unforeseen changes or problems that may demand a new response. New and hence unfamiliar agricultural chemicals or other technology may be introduced and have drastic effects upon one or more elements of the environment. Invasive species similarly may arise without any notice and may spread much more quickly than the response to them proceeds. Vietnam already has a number of such species that are doing very significant damage in some areas. Parks staff must always look carefully at pathways and roadsides as potential points of introduction.

References

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