



Science-Ecotourism Program Bidoup-Nui Ba National Park, Vietnam

Introduction

- Located about 30km from the historic city of Dalat in the Central Highlands of Vietnam, Bidoup-Nui Ba National Park (BNB) is a place of outstanding natural beauty (*Exhibit 1*). Established in 2004, it is Vietnam's fifth largest national park and is spread over 70,000 hectares (*Exhibit 2*).
- BNB is one of four natural biodiversity areas of Vietnam, 91% of which is covered by forests of different types. There are almost 2000 recorded species of vascular plants, including 297 orchids, and a number of rare tree species, including *Fokienia* (up to 1300 years old). There are also 422 vertebrate species, including the endangered yellow-cheeked gibbon.
- BNB has applied for UNESCO Biosphere Reserve status (decision expected September 2015).
- The region is home to the indigenous K'Ho people, comprising four ethnic groups.
- Unprecedented social and economic development of the Greater Mekong, coupled with tight linkages between ecosystem and human development in the region makes conservation work urgent, significant and hugely challenging (World Wildlife Fund).

BNB Vision

In 2014 BNB launched its Master Plan for Tourism Development, with a vision to "become a world class national park as the basis for developing the tourism industry in general and eco-tourism in particular of Lam Dong province." The plan is aligned with the national and provincial tourism master plans and the 2010 Convention on Biological Diversity. Multiple stakeholders were involved in its development, including the K'Ho people. The BNB plan divides the park into 3 zones (*Exhibit 3*) to control tourism development. There are various ideas for attractions, including an extended network of trails (multi-day hikes with camping), a zoo, zip-line, tree house, waterfall feature, etc. The government is funding infrastructure development, but money for promotion and capacity building (including workforce training) has yet to materialize. Nevertheless community-based ecotourism remains a top priority and JICA (a Japanese development agency) recently funded a pilot study.

Destination Hub

Exhibit 4 shows the JICA-funded environmental education and ecotourism center, which serves as the gateway to the destination hub now under development (*Exhibit 5*). There's a small lake under construction, villas for rent, a communal dining area/meeting space, and a planned botanical garden. The national park's headquarters is located nearby, along with a fully operational tissue culture lab (funded by Columbia University) that nurtures endemic species, including cancer-fighting orchids. Plans have also been drawn up for an eco-cultural K'Ho museum (*Exhibit 6*) and a headquarters for the International Centre for Tropical Highland Ecosystems Research (ICTHER). A state-of-the-art biodiversity science lab is also planned and will be located a few kilometers from the main site.

Interdisciplinary Curriculum

ICTHER held its inaugural field school in January 2015 (*Exhibit 7*). The seed was planted years ago when Columbia University's Dr. Brendan Buckley began a program of research in the region (*Exhibit 8*). His tree ring analyses revealed that extreme droughts were a major contributor to the collapse of the ancient Khmer civilization. ICTHER envisages a groundbreaking interdisciplinary study abroad curriculum integrating the natural sciences, social sciences and other disciplines, centered around some of the most important issues of our time (biodiversity, climate change, sustainable development, etc.). This initiative is expected to generate valuable knowledge and opportunities for the people of Vietnam, the Greater Mekong, and the global community.

Exhibit 1



Bidoup-Nui Ba National Park

Photo: Nhat Tien

Exhibit 2



Source: brochure available at: <http://bidoupnuib.gov.vn>

Exhibit 3

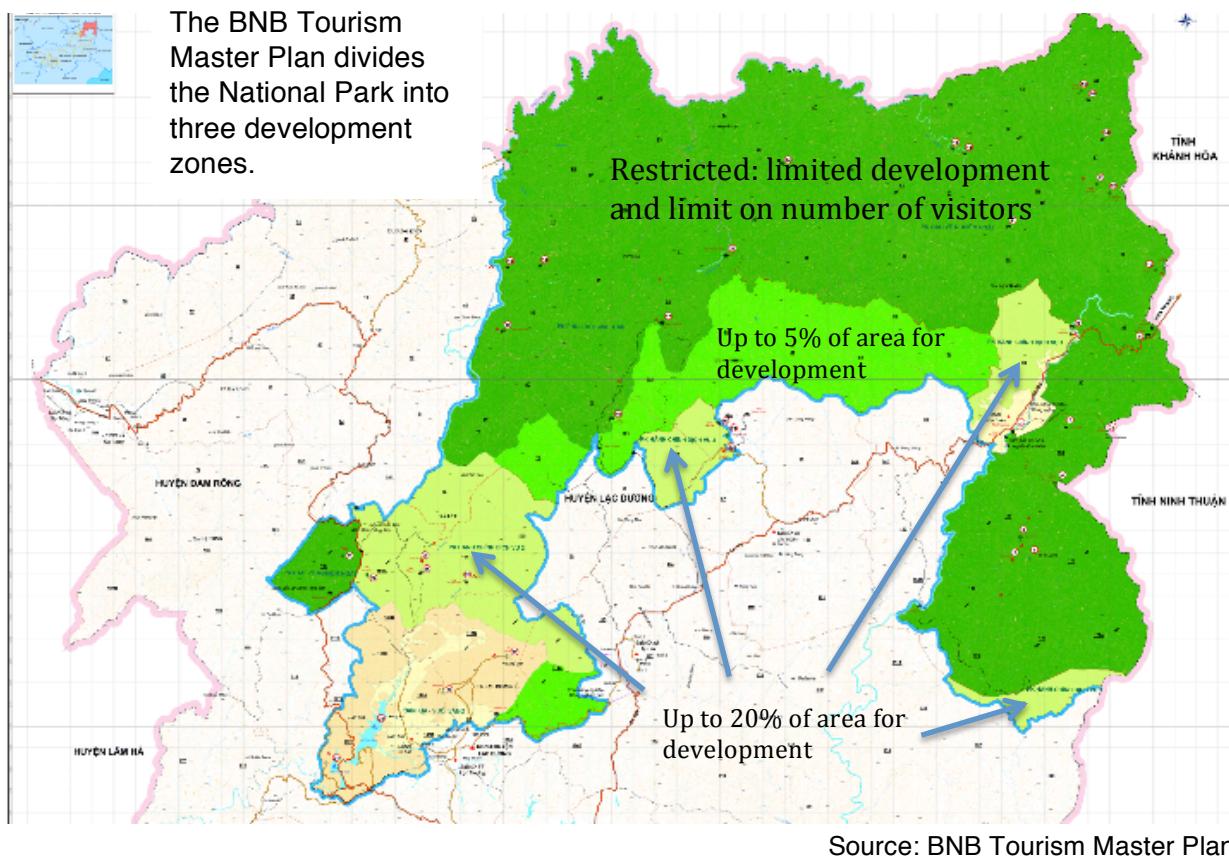


Exhibit 4

Centre for Ecotourism and Environmental Education



Source: <http://bidouptour.com/>

Exhibit 5



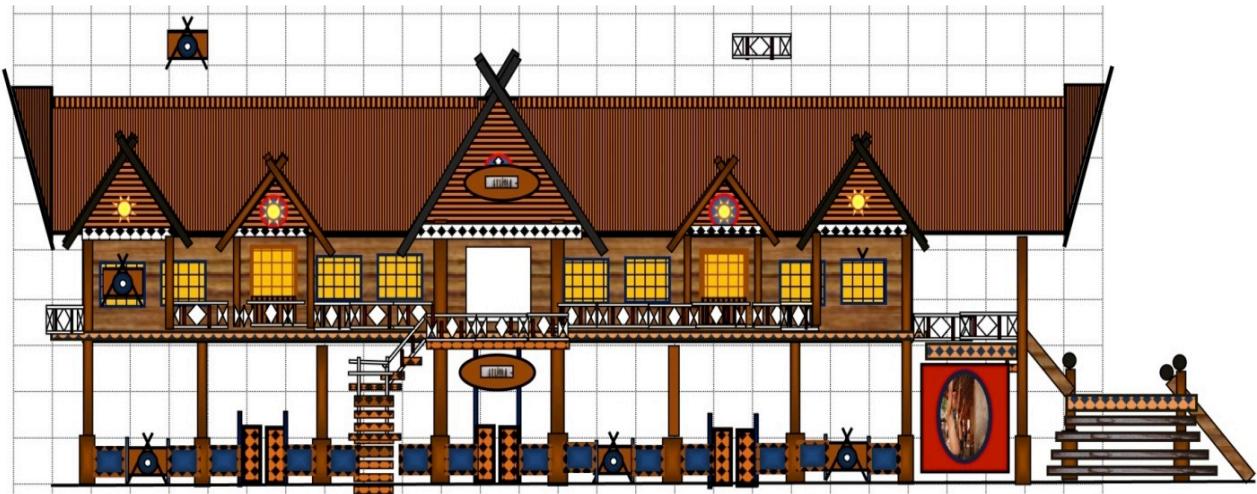
Source: Bidoup-Nui Ba National Park



Photo: Giles Jackson

Exhibit 6

Eco-cultural museum concept, showcasing local K'Ho culture



Source: Technical report of the project "The First NTFP Eco-Cultural Museum in Vietnam", Feb 2014



Traditional K'Ho performance

Photo: Giles Jackson

Exhibit 7



Inaugural ICTHER 2015 field school participants

Photo: Nguyễn Xuan

Exhibit 8

Dr. Brendan Buckley presents highlights of his tree ring research during the ICTHER field school (red arrows indicate historical periods of extreme drought).

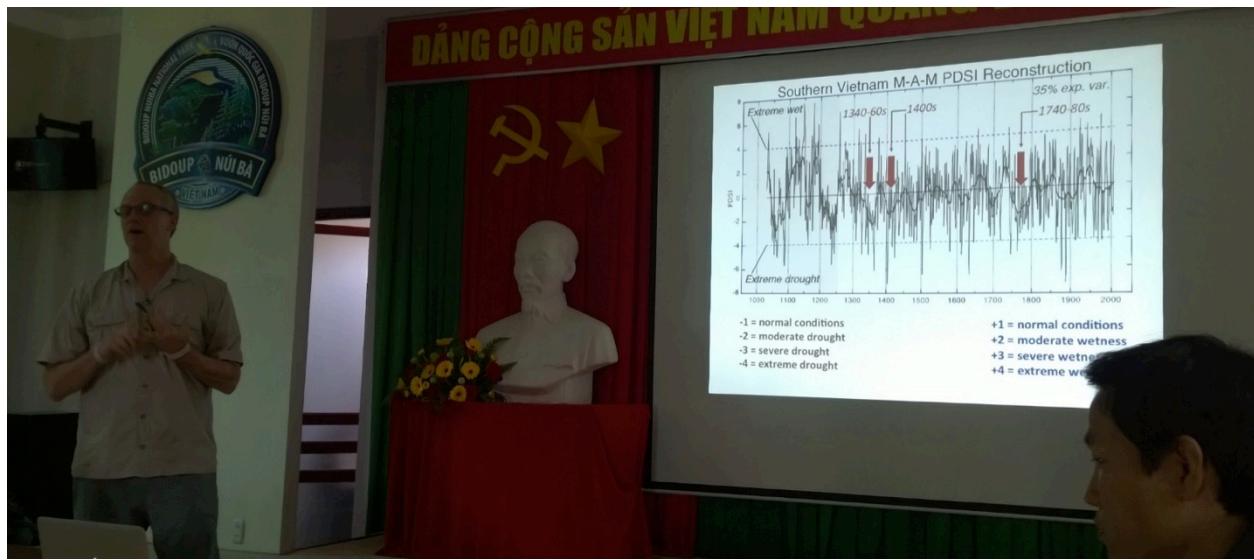


Photo: Giles Jackson

According to the National Science Foundation:

"Brendan Buckley of Lamont-Doherty Earth Observatory of Columbia University and his colleagues have put together a high-resolution record of periods of drought and moisture in Southeast Asia that is over three quarters of a millennium long from 1250 to 2008 AD. Their research was funded by the National Science Foundation's Paleoclimate Program, which is part of the directorate for geosciences.

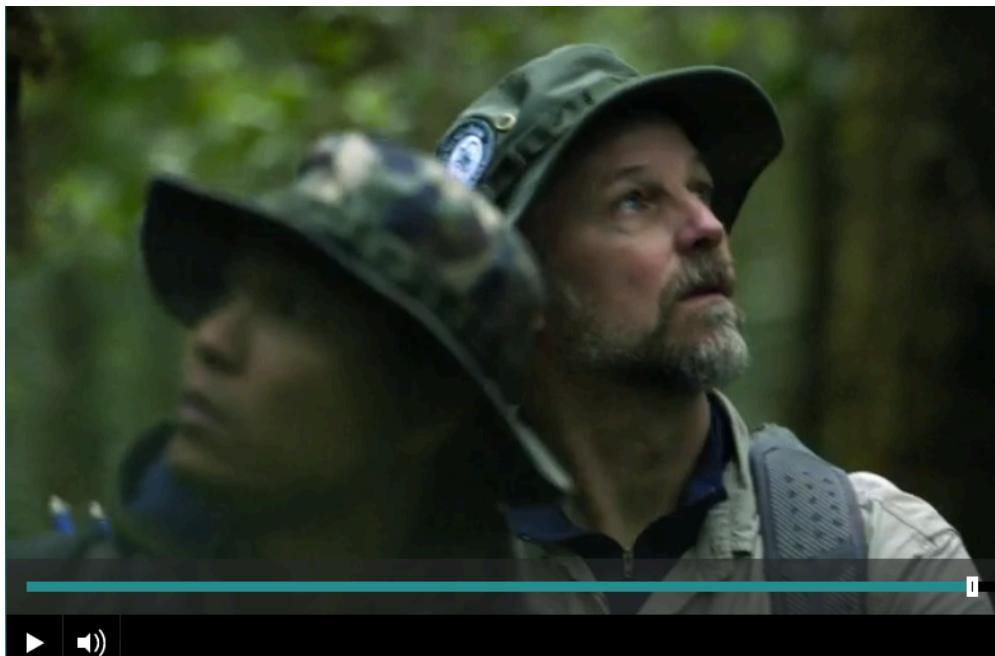
Just as satellite photos do--large sets of information like this tree ring data bring into focus patterns and phenomena that are larger than one lifetime. In fact they are on the scale of civilizations.

A look at tree ring data, and an analysis of rain, drought and temperature can show a remarkable link from climate in the environment to climate in the king's court. And this has been shown to be true for the enigmatic demise of Angkor, an empire that stood strong from the 9th to 13th centuries."

Source: http://www.nsf.gov/mobile/news/news_summ.jsp?cntn_id=116691

Further information: <http://www.earth.columbia.edu/articles/view/2661>
<http://www.nature.com/news/2010/100422/full/news.2010.196.html>

The BBC recently produced a documentary about the collapse of Angkor, incorporating Dr. Buckley's research. He is shown with Dr. Dr. Luu Hong Truong of the Vietnam Academy of Science and Technology.



Source: <http://www.bbc.co.uk/programmes/p027lfq3>

Giles A Jackson, Ph.D.
gjackson@su.edu
(202) 257 4854