

Conservation news

Global importance of Nicaraguan freshwater island recognized by UNESCO

A recent designation by UNESCO has underlined the biological and cultural value of one of the world's largest freshwater islands. Ometepe Island, in Lake Nicaragua, comprises two volcanoes, Maderas and Concepción, joined by a wetland isthmus. The 276 km² island has a dramatic range of altitudinal, topographic and climatic conditions, resulting in a range of habitats representative of all major vegetation types in Nicaragua: dry, transitional, moist and cloud forests and lowland wetlands. As a consequence Ometepe is home to a unique range of species including a recently discovered population of the endemic and threatened tree *Ardisia ometepensis* and the endemic salamander *Bolitoglossa insularis* first described in 2008. The island's wetland and forest habitats are also of importance for resident and migratory birds, with Maderas Volcano recognized as an Important Bird Area by BirdLife International. The island's ecosystems also contribute towards the maintenance of the 8,264 km² Lake Nicaragua, a major freshwater reserve.

The island's economy is largely dependent on its natural resources, particularly agriculture, fisheries and tourism, with c. 40,000 visitors each year attracted by Ometepe's exceptional biodiversity and archaeological wealth. Poverty is high and, although the majority of the island's c. 30,000 inhabitants live around the base of Concepción, the forested slopes of both volcanoes have been affected by agricultural encroachment, firewood collection and poaching for bushmeat, and also by illegal trade in wildlife and archaeological artefacts. Dry forest areas on the lower slopes have been particularly affected by land-use change, mainly conversion to banana and coffee plantations. Uncontrolled tourism and the development of coastal properties are putting pressure on natural resources. Balancing the need for development with the protection and management of the island's unique biodiversity and critical ecosystem services is crucial.

Dual protected areas for Maderas and Concepción were first established in 1983 when the slopes of each volcano above 850 m were designated as Natural Reserves. In 1995 the Government of Nicaragua declared the whole island a Natural Reserve and National Cultural Heritage Site. However, it was not until 2006 that the first guards were appointed and a management plan implemented for Maderas Volcano Natural Reserve. In September 2009 the Government, through the Ministry of the Environment and Natural Resources, nominated Ometepe and 245 km² of the surrounding lake as a Biosphere Reserve under the UNESCO Man and the Biosphere Programme. This initiative came from the commitment of local communities, municipal government and civil society, all of whom iden-

tified the need for a broader landscape management approach with a clear legal and governance framework within which to develop economic activities whilst sustainably managing the island's natural and cultural assets. Local and international organizations including Fundación Entre Volcanes, Fauna & Flora International and the German Development Service have been supporting the initiative.

In June 2010 UNESCO announced the designation of Ometepe Island as Nicaragua's third Biosphere Reserve. The declaration is a turning point for conservation on the Island. The proposed island re-zoning plan is of particular significance because it includes the expansion and upgrading of the Protected Areas network and the delimitation of extensive buffer and transition areas based on biological, cultural and socio-economic values. Preparations to upgrade the status of the Island to a Biosphere Reserve under Nicaraguan law are also underway and will require approval by the National Assembly. Such a change in status will help establish a legal framework for integrated land-use planning and the development of sustainable financing mechanisms, both of which are crucial for the long-term sustainability of biodiversity conservation on the Island.

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Saiga antelope suffers three blows

The saiga antelope *Saiga tatarica* has been categorized as Critically Endangered since 2002 because of a 95% population decline following the collapse of the Soviet Union and subsequent heavy poaching (Milner-Gulland et al., *Oryx*, 35, 340–345). The species is nomadic over a wide area in Central Asia, with four populations of the nominate subspecies *S. t. tatarica* and one of the Mongolian subspecies *S. t. mongolica*. Over the past 5 years the outlook for the species has improved, with substantial conservation investment in some populations, an internationally agreed Medium Term Work Programme under the Convention on Migratory Species, and stable or increasing numbers. However, the past few months have seen separate catastrophes in three of the four *S. t. tatarica* populations, suggesting that we should not be complacent about the future of this species.

The pre-Caspian population in Russia suffered a particularly hard winter this year. Many saigas probably died, both from malnutrition and poaching, as they are easier to catch in heavy snow. Recently the population has been apparently stable at c. 20,000 animals but since January

2008 local conservation efforts have been hampered by budget cuts and uncertainty following governmental re-organization. It is likely that the pre-Caspian population has been severely affected by these events but it is difficult to be certain as no robust censuses have been carried out.

The Ural population in western Kazakhstan was hit by a mass mortality event in May 2010 in which c. 12,000 died in one area over a few days. The cause is officially assigned to pasteurellosis, an opportunistic pathogen that can cause acute respiratory illness when the immune system is weakened. The triggers for this outbreak are unclear but the victims were mostly females who had just given birth and so it may be linked to post-parturition stress following malnourishment in a hard winter. Other triggers, including ingestion of a toxin or infection, are also possibilities. An aerial survey in April estimated the population at 39,000 and thus the losses represent 31% of the population. Mass mortality of saigas is not uncommon; in 1988 many thousands were lost in this population at the same time of year but currently the population is less resilient because it is small.

The Ustiurt population is shared between Kazakhstan and Uzbekistan and is subject to heavy poaching, the effects of which are seen in its continuing downward trend. The aerial survey in April showed a 47% decline since last year, from 9,200 to 4,900. As saiga populations decline, population size is increasingly underestimated by aerial surveys because herds become less detectable (McConville et al., *Endangered Species Research*, 6, 231–237) but, even so, this is a catastrophic decline in one year.

The Mongolian population appears to be stable and is the subject of a well-funded conservation programme. The Betpak-dala population in Kazakhstan is recovering fast, aided by an internationally-supported conservation programme. In 2003 the population estimate was 1,800 and this year it is 53,900. This is an average growth rate of 76% per annum, which is impressive even bearing in mind that it is likely to be an overestimate due to biases in the population estimates, and shows how resilient the saiga is, with the potential for rapid recovery once protected.

It is instructive to revisit the Medium Term Work Programme of the Convention on Migratory Species, drawn up in 2006, in the light of these events. Disease was not mentioned, despite having been a major cause of mortality in the past. Public engagement was listed as a top priority action for the Ural population but the population still has no international conservation programme. A planned response to the mass mortalities in Ural is to turn the tragedy into an opportunity by instituting a community-based conservation programme while people are sensitized to saiga conservation. Poaching was recognized as the major threat to the Ustiurt population but lack of funds delayed the response. An ambitious, landscape-scale conservation programme is now starting, which will hopefully lead to a reversal in fortunes for this population. The next meeting of the parties to the

Convention on Migratory Species' Memorandum of Understanding for saiga is upcoming. The Medium Term Work Programme will be updated during the meeting, informed by the dramatic events of the last few months.

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Road proposal threatens existence of Serengeti

Recently the Tanzanian government has proposed to develop a main trunk road for commercial traffic through the northern Serengeti to link the Mara region next to Lake Victoria with regions in the east that have access to the coast. This road would run from Arusha to Monduli, Loliondo, the Serengeti Park and into the Mara region. Over time this will result in major commercial traffic between the coast and interior Africa, including Uganda, the Democratic Republic of Congo, Rwanda and Burundi. The feasibility study will be completed by end of 2010 and funds will be solicited in 2011 for construction to begin in 2012. A 100-m strip will be degazetted from the Park, thus removing it from National Park regulations and UNESCO obligations as a World Heritage Site. Serengeti will be divided into two.

The current government Environmental Impact Assessment, although mentioning possible environmental consequences, concluded that they could be mitigated but without saying how. The consultants have not talked with anyone who knows about Serengeti ecology, and environmental problems have still to be addressed by the government. Environmental concerns derive from over 50 years of study in this ecosystem. Firstly, the northern Serengeti and the adjacent Maasai Mara Reserve in Kenya constitute the only refuge area for the migrating herds of wildebeest and zebra during the dry season, the difficult time of year when food and water is limiting elsewhere. The animals reside in this area for 4–6 months. If the migration is prevented from reaching this area the migratory populations will collapse.

Secondly, development and urbanization inevitably follows the construction of a commercial route of this sort. This will create a major human–animal conflict zone as the numbers of wildebeest encroaching on developed areas will be in the hundreds of thousands. There will be pressure to build a fence along the Park boundary to exclude the migration, which currently moves unhindered. Wildebeest do not understand fences. Stampedes and mass movements result in massacres along fence lines where these have been erected in other areas.

Thirdly, northern Serengeti is the wettest part of the ecosystem, which is why the wildebeest use it as a refuge. The soils are largely silt and cannot take heavy vehicle traffic. Although the road may initially be of gravel, the increasing flow of heavy vehicles will inevitably lead to a tarmac road.

This will result in road accidents, with fatalities of both people and animals when as many as one million wildebeest will be settled, not just crossing, along this road. Experience in other areas such as Banff National Park, Canada, and Mikumi Park in Tanzania shows that once a tarmac road is in place there will be pressure to construct fences, perhaps 20–50 years from now. With fences, the migration will be stopped before it reaches its refuge area and so the population will collapse. Since the Serengeti ecosystem depends on the impacts of this massive migration the ecosystem itself will change completely. Essentially Serengeti as we know it will no longer exist.

Economic losses will follow from this development. Serengeti is unique, the last major migration system in the world that is relatively undisturbed. This is the reason that it is the main tourist attraction and foreign currency earner for Tanzania. To lose Serengeti will be to lose this foreign income, which also supports all other National Parks.

The rationale for the road is development of the Mara region. There is, however, a better, alternative route south of the Serengeti ecosystem that has even greater socio-economic benefits. This route has already been examined and shown to service a much larger population and provide greater economic development without any environmental impacts on the Serengeti ecosystem. What is now urgently required are bilateral discussions to develop this alternative, find funding, and help the Tanzanian Government.

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New livestock project in Colombia to improve biodiversity conservation

The Colombia Mainstreaming Sustainable Cattle Ranching Project, which is being implemented by the World Bank, began its work in July 2010. The project builds on the experience of the successful earlier Regional Silvopastoral Ecosystem Management Project, which was implemented in Colombia, Costa Rica and Nicaragua during 2002–2008. The Silvopastoral Project had piloted the use of payments for environmental services to induce the adoption of silvopastoral practices in areas of degraded pasture. It has proven highly effective, inducing participants at the Colombia site to

convert almost 44% of their land to improved practices, compared to only 13% in a control group. Intensive monitoring has shown that the practices contained substantially higher levels of biodiversity than previous land uses.

The new Project scales up the lessons of the Silvopastoral Project, aiming to convert over 50,000 ha of pasture to silvopastoral production systems in five project areas, thus helping to improve productivity and farmers' incomes and to create a more biodiversity-friendly landscape. The five project areas were selected for their high levels of biodiversity and their proximity to strategic ecosystems and protected areas. The Cesar River Valley and Magdalena River regions, for example, contain the last remaining fragments of dry tropical forest, considered one of the Neotropical zone's most endangered ecosystems—degraded in 98.5% of its area in Colombia.

The project is being financed by a USD 7 million grant from the Global Environment Facility and an additional USD 12.9 million from the Colombian livestock association, several non-governmental organizations including CIPAV (Centre for Research on Sustainable Agricultural Production Systems), the Environmental and Childhood Action Fund, The Nature Conservancy, and by in-kind contributions from producers and local cattle ranching organizations.

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The Press and the gorilla: biking for biodiversity

In July a team of cyclists from Oryx's publishers, Cambridge University Press, were joined on a bicycle ride from London to Cambridge by Fauna & Flora International's tame gorilla, more familiarly known as Rob Harris. Rob took 6 hours to complete the 96-km route, and wore the gorilla suit throughout, an impressive feat particularly given the sunny conditions. Together the team raised over GBP 1,000 in donations, which will go towards FFI's work to conserve biodiversity. FFI and gorillas go back a long way, as the organization has been involved in protecting the remaining 700 mountain gorillas through the International Gorilla Conservation Programme for a number of years.