

National Park International Bulletin



Linking protected areas throughout the world

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MOUNTAIN AREAS OF POVERTY AND INEQUALITY

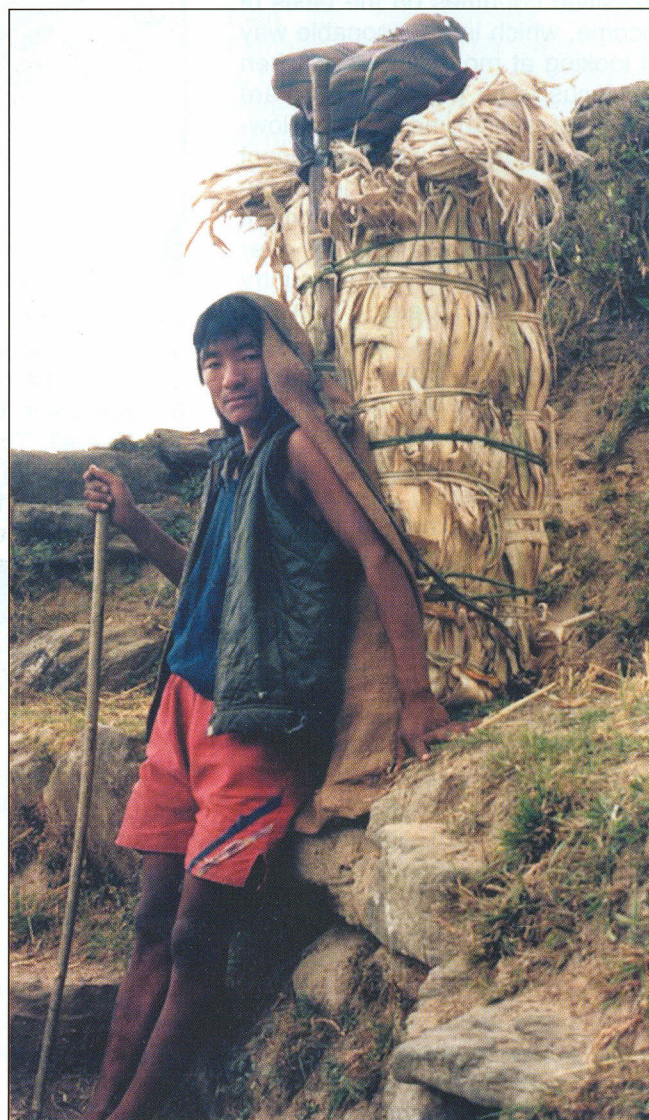
by **DR MAHESH BANSKOTA**,
Country Representative, IUCN Nepal.

WHILE the mountain areas of the Asian continent are highly visible, their peoples remain largely invisible. There is little data on these remote, inaccessible and marginal areas, where development remains — quite literally — an uphill task.

There is always the potential risk for soil, forests, water, people and capital to flow downhill. Given the slow pace of change, the high cost of intervention and the damage already done to environments in the name of progress, will mountain development ever be sustainable? Will mountain societies be able to find the resources, skills and innovations needed to overcome the prevailing conditions of poverty, inequality and deterioration of the environment?

These questions can be partly addressed by examining the mountainous regions within Asia. About 75 per cent of the Asian continent's total surface area consists of mountains and plateaux. These range from cold-dry, cold-wet and hot-dry locations to hot and humid mountain areas; volcanic mountains, desert mountains and island mountains; mountains in developed, developing and land-locked countries; mountains in countries large and small.

The countries with significant geographical areas of mountains are: Turkey, Iran and Yemen in west



Mountain dweller: a Nepalese man carries a dhakar on his back.

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Asia; Tajikistan and Kyrgyzstan, parts of south-east and east Russia in central Asia; Japan, parts of China, South and North Korea in north Asia; Philippines, Indonesia, Papua New Guinea, Vietnam, Laos, Malaysia and Thailand and parts of China in south-east Asia; Afghanistan, Pakistan, India, China, Nepal, Bhutan, Myanmar and Sri Lanka in south Asia.

The World Bank and others have classified countries on the basis of income, which is a reasonable way of looking at mountain areas when the focus is on poverty. There are high (per capita) income and low-income countries with significant mountain areas. According to the World Bank's World Development Report 2001, Japan (with over \$9,361) is a high-income country with mountain areas; Thailand (\$760-\$3,031) is a lower-middle income country; China and India (less than \$760) are large countries with low incomes having sizeable mountain areas; Afghanistan, Kyrgyzstan, Nepal, Bhutan and Laos are landlocked mountainous countries: and then there are the special cases of island highlands in Indonesia, Papua New Guinea and the Philippines.

Japan, highly developed and mountainous, has had a long history of people living in the mountains. Relative poverty in the hilly rural areas of Japan has fallen due to economic growth in the past decades. However, the pace of change is slower there than elsewhere, and this has increased the gap between both urban and rural areas and between mountain areas and plains. In upland areas there has been widespread depopulation — up to 75 per cent in some rural prefectures in the mountains. This is caused by strong push factors but also by even stronger pull factors (from the plains and urban areas) that have also been seen in other mountain areas of the world.

The mountainous northern parts of Thailand cover almost a fifth of the country's total area. Population pressures are relatively low but growing. Although poverty has declined dramatically over the past three decades, the decline in rural areas and uplands is less than in urban areas. Almost a fifth of upland households are considered poor, being larger and more dependent on agriculture. They are also marginalised in terms of opportuni-



Dr Mahesh Banskota: this article is based on a paper presented at the Asia High Summit at Kathmandu earlier this year.

ties — the first to be hit in a crisis are upland people, who are usually the last to be hired and the first to be fired, as in the recent Asian crisis. Overall, Thailand exhibits high growth but also growing disparities.

The Philippines, Indonesia and Papua New Guinea are all island states that are predominantly mountainous. The Philippines has a population of 15.8 million people in its uplands and rapid growth is leading to problems of lowland-upland migration, rapid deforestation, soil loss, falling productivity, flooding and sedimentation. Poverty is widespread, with rural poverty at about 53 per cent, much of it in upland areas. There is widespread underemployment and low productivity.

Papua New Guinea is another significantly mountainous country with high population densities in its uplands; as a result, upland agriculture is under a lot of pressure. Indonesia too is characterised by widespread poverty in its upland areas.

China and India represent large countries in Asia with significant mountain areas and populations. China has about 15 million poor people in its uplands, and the economic changes and development that are seen in other areas are less visible in the mountains. These areas are characterised by adverse conditions, particularly poor human resource development. India has about 51 million people in its hill and mountain states and the incidence of poverty varies from 25 to 41 per cent. Literacy in mountain states appears to be better than

average, although gender and health indicators are lower than the national average.

Armenia, Kyrgyzstan, Tajikistan, Afghanistan, Nepal, Bhutan and Laos are not only almost wholly mountainous but also landlocked. These countries have lower average income levels and lower economic growth than their neighbours in the region. Landlocked mountain states are also smaller than their neighbours in terms of population, surface area and economy, and this has important implications in terms of economies of scale for markets, infrastructure and industries. Smaller nations tend not only to have higher costs per unit of an activity but also fewer activities. Smaller nations are also more dependent on trade and therefore more vulnerable to outside economic fluctuations.

Comparisons of landlocked mountain states with their larger neighbours tend to indicate that inequality remains quite varied. Mountain states do not reveal a consistently higher level of inequality than their larger neighbours; they are about the same. In general, the percentage of people below the poverty line appears to be similar for rural areas in landlocked mountain states and in neighbouring states. This could mean that living in the mountains is just about the same, whether a country is landlocked or not. Relative access conditions and associated problems are quite similar.

Landlocked mountain states have a lower percentage of people living below the poverty line in urban

National Park International Bulletin



DEAR READER,

THE change of publication frequency to a quarterly basis has enabled us to increase the number of editorial pages in this issue.

It is very encouraging to receive articles from our growing readership, particularly contributors whose first language is not English.

On Pages 10 and 11, Adrian Phillips argues the case for protected areas to become exemplars of sustainable development, with future agendas placing more emphasis on certain areas of activity.

These include the need to increase involvement of local communities — as illustrated in an article on Store Mosse National Park in Sweden (Page 13); the importance of partnerships with schools — see profiles on Canada's Bruce Peninsula (Page 19) and Moscow's Losiny Ostrov National Park (Page 24); and sustainable tourism, a concept underpinning the first PAN Parks (Page 4).

I hope you find these features both interesting and informative.

NPIB is now circulated in more than 90 countries, in many cases to protected area personnel and non-profit making organisations who are unable to afford a paid subscription.

I hope that those readers — currently registered in 28 countries — who can afford a paid subscription will continue to help support this policy.

Editor — Stewart Bonney.

stewartbonney@nationalparkinternationalbulletin.com

areas compared to neighbouring states, the only exception being China. If one looks at poverty on an international basis, gaps between south Asian countries and others emerge fairly clearly. Absolute levels of income are much lower in south Asia, including landlocked mountain states, than in China or central Asia. The Gender-related Development Index rank is significantly lower for landlocked states than for neighbouring states. Females have lower life expectancy at birth and the difference between males and females is greater. Adult literacy, both for females and males, is significantly lower in landlocked mountain states than in the neighbouring states, although the gross enrolment ratio does not reveal a very clear pattern.

Another interesting aspect is the estimated earned income (EEI) for females and males. Landlocked mountain states have lower EEI for females. Mountain women do not uniformly fare that badly across the region, although the relative position of south Asian women, particularly in health-related aspects, is quite worrying.

There are major information gaps so a comparison is not easy. Poverty is greater in mountain areas with higher populations that are agriculturally dependent, and these are a part of the weaker national economies. There are also variations in income levels of mountain people — a reflection of the broader economic systems with which they are linked.

However, relative income levels are lower in all mountain areas, and inequality levels, both in terms of income and access to services, are higher for mountain people. Mountain people's lower levels of education, adult literacy and life expectancy, and higher rates of under-five mortality and child malnutrition, have placed them at a severe disadvantage vis-à-vis other groups.

The fact that mountain people are relatively poor — whether their country is large, small, on islands or landlocked — indicates that mountain areas in general tend to be neglected. These areas continue to be remote and inadequately served by a variety of different facilities. There is a great need to increase external links and promote micro-dynamism to promote and sustain mountain development.



Pictures: IUCN Nepal

The Himalayas: spectacular scenery can often mask worrying population statistics.

PAN parks

THREE PARKS GAIN FIRST CERTIFICATES

THREE national parks — Bieszczady in Poland, Oulanka in Finland and Fulufjället in Sweden — have been presented with the first PAN Parks verification certificates by King Karl Gustav of Sweden.

The ceremony took place on the day of the official opening of Fulufjället as a national park and the programme included traditional dance performances, a guided tour to the Njupeskar waterfall and a music concert.

The PAN Parks concept,

started by WWF in 1997, includes both tourism and conservation in its verification principles and criteria. Communities surrounding a PAN Park are expected to have a shared sense of ownership and responsibility towards their natural surroundings, with economic benefits from tourism development providing practical reasons for environmental protection.

PAN Parks has set 20,000 hectares/50,000 acres as the minimum size for a candidate protected area in order to create a net-

work of self-regulating ecosystems with large carnivore and herbivore populations in a park capable of handling large numbers of tourists through effective zoning systems.

The verification team consisted of Juan Herrero (EGA Wildlife Consulting, Spain), Gordon Miller (International Ranger Federation, UK), Jernej Stritih (Oikos Ltd, Slovenia), Rachel Wieting (Europarc Consulting, Germany), and Alexander Zinke (Zinke Environmental Consulting for CEE, Austria).

Bieszczady National Park, which protects the Polish section of the eastern Carpathians, has an area of 29,202 hectares/72,157 acres and is the largest mountain park in Poland.

An 18,425 hectare/45,527 acre strictly protected zone facilitates protection of forest and alpine ecosystems which provide a wildlife refuge for native large mammals and predators including brown bear, wolf, lynx, wildcat, bison and golden eagle.

Unique attractions include horse-

Picture: Ryszard Nater



Bieszczady National Park, Poland's largest mountain park, is one of the three recipients of PAN Parks verification certificates.



Above, summit meeting: the verification team visits Fulufjället.

Right: King Karl Gustav of Sweden hands over the PAN Parks certificate to Stig-Ake Svensson, Director of Fulufjället National Park.



back tourism using Hutsul horses which were re-introduced in 1993 and a century-old narrow gauge mountain railway. Designated as a UNESCO Biosphere Reserve in 1992, it is proposed by IUCN as a World Heritage Site and by the Polish government as a Natura 2000 network site.

Leader of the PAN Parks verification team, Jernej Stritih, reported that the conservation management of the park was of a "very high standard", despite financial difficulties due to the tight fiscal situation in Poland.

Fulufjället National Park, which was only designated in April this

year, has an area of 35,000 hectares/86,500 acres. The large sandstone plateau of the Fulufjället mountain is covered with reindeer lichen, and species diversity is abundant in populations of elk and rare bird species including golden plover and willow grouse.

With one of the highest concentrations of brown bears in Scandinavia, the park — located on the Sweden-Norway border — currently attracts 40,000 visitors annually. A project involving small local businesses is developing a series of new services for visitors including dog sleigh and horse riding facilities.

The verification team was led by Gordon Miller, IRF Executive Director, who reported: "Fulufjället is a new park with the opportunity to set high standards by careful monitoring of change and the use of well-trained staff on the ground."

Oulanka National Park has a long history of combining the area's rich natural values with recreational needs and good management. The 27,500 hectare/67,950 acre park — close to the border with Russia — has a strong flavour of wilderness with rivers, lakes, deep valleys, canyons and gravel plains.

A total of 155,000 people visit the park annually, many using the country's best known hiking trail, Karhunkierros. Co-operation between tourism businesses and the park is based on partnership contracts.

Team verification leader, Alexander Zinke, reported: "Oulanka impressed us with its very diverse landscape of extended western taiga forests and mires interrupted by steep canyons and meandering rivers. Nature tourism is already widely supported and developed, as shown by a young entrepreneur with 80 huskies and rafting companies which have contracts with the park."

netherlands

VELUWE PROJECT ATTRACTS INTEREST

FOLLOWING the establishment last year of the Veluwe Ranger Organisation, the first body of its kind in the Netherlands, several Dutch provinces are holding exploratory talks to consider establishing similar projects in other national parks.

The Ranger Bureau — which helps provide an independent link between various landowners and trustees including local authorities, nature conserva-

tion groups and the Ministry of Defence — has since its formation in June 2001 worked to develop nature experience activities along with environmentalists and recreational entrepreneurs in what is the Netherlands' largest protected landscape.

For further information, contact Wilfried Deelen at Veluwe Ranger Bureau: www.veluweranger@ivn.nl

TURNING THE TIDE FOR ENDANGERED SPECIES

by **ANDREW DONNELLY**

AUSTRALIA'S rich diversity of wildlife includes species that are probably the most recognisable animal symbols to represent any country. Koala and kangaroo are the best examples. They are endemic species — only naturally found in that region.

Ninety per cent of Australian marsupials are not found anywhere else in the world. It is generally recognised that endemic species have a high conservation value and need priority protection.

What is generally less well known is that in recent history, Australia has the world's worst record of protecting its endemic species of mammals. Since Europeans landed at Botany Bay in 1788, 10 species of marsupial mammals have become extinct, representing about a quarter of the total mammal extinctions worldwide in the last 200 years. Thankfully the causes of these extinctions are now being addressed with some success.

South Australia's arid areas have suffered more than most through habitat loss, fragmentation and the action of introduced species like rabbits. One of Australia's most charismatic marsupials, the bilby or rabbit-eared bandicoot (*Macrotis lagotis*), was one of the victims. Bilbies used to occur in about three quarters of the Australian mainland but now only cover approximately 20% of their former range and have been extinct in South Australia since the 1930s.

A new conservation approach in South Australia, together with reintroduction programmes, is aiming to address the causes of the decline in diversity of South Australian wildlife.

John Hill, South Australian Minister for the Environment, recently launched *NatureLinks: Implementing the Wild Country Philosophy in*

South Australia. "Our long-term aim is to have interconnected habitat so that plants and animals are not isolated," said Mr Hill. "This will not be a quick fix: the decline has occurred over generations and recovery will take at least as long. But we need to start now if future generations are to share in the benefits of a healthy natural environment."

The strategy involves managing South Australia's reserve system as "ecological cores" on the land and in the sea, and developing partnerships between resource managers such as farmers and the fishing industry, for the management of surrounding areas. Together with the removal of threats such as vegetation clearance and feral animals in protected areas it is expected the strategy will prove an effective recovery programme for threatened and vulnerable populations.

It is hoped the bilby and another marsupial relative, the brush-tailed bettong that has suffered a similar fate, will be two of many beneficiaries of the new strategy.

Other South Australians to benefit will be the Australian sea-lion — one of the rarest seals in the world which has most of its population in South Australian waters, the osprey and the bizarre-looking thorny devil.

An example of the NatureLinks programme in action is the release of bilbies at Venus Bay Conservation Park on the Eyre Peninsula. To make such releases possible, more than 130 farming families are engaged in conservation activities covering 15,000 sq km/5,790 sq miles to integrate biodiversity and production outcomes. The establishment of viable populations of threatened species like the bilby and the brush-tailed bettong are key objectives of the programme.

Success of the initiative will be a step in the right direction in turning the tide in the favour of Australian mammals and other wildlife. Bilbies have been successfully introduced in trials on an offshore island in the Spencer Gulf, off the east coast of the Eyre Peninsula. The successful captive breeding programme, and the positive results being obtained from the island programme, mean that animals are being provided for other sites.

South Australian bilbies have already been sent to Western Australia to assist in other recovery programmes. Intensive threat mitigation programmes combined with the NatureLinks initiative at sites like Venus Bay Conservation Park, Flinders Ranges National Park and Lincoln/Coffin Bay National Parks mean that the future for native Australian mammals, at least at these protected sites, is brighter.

NEW STATUS FOR OFFSHORE ISLAND

ONE of the most environmentally significant islands in South Australia has become a protected area, 200 years after it was discovered by Matthew Flinders.

The Minister for Environment and Conservation, John Hill, said Pearson Island will now be included in the Investigator Group Conservation Park, which is a group of islands off the west coast of the Eyre Peninsula near Elliston.

"Adding Pearson Island to the Investigator Group Conservation Park will increase the size of the park from 163 hectares to 376

hectares (400 acres to 930 acres) and protect significant plant, animal and bird populations, including species of national significance," said Mr Hill.

"Pearson Island is home to a colony of Australian sea-lion and has the only natural population of the Pearson Island rock wallaby (a sub-species of the black-footed rock wallaby). It is also home to eight bird, two mammal and four plant species of state conservation significance and one bird, one mammal and one plant species of national significance."

usa

AIR QUALITY IMPROVES

THE findings of a 10 year study undertaken by the United States National Park Service show that air quality is improving or remaining stable in more than half the national parks monitored.

Although Congress in 1977 established a national goal of remedying existing and preventing any future-caused visibility impairments in most of the largest national parks, air pollution currently impairs visibility to some degree in every US national park.

Between 1990 and 1999, 28 parks were monitored for visibility impairment and 22 were found to have improving visibility conditions on the clearest days. Acid rain monitoring was conducted in 29 parks of which 25 showed a decrease in sulphate levels and 14 a decrease in nitrate levels. Ground level ozone concentra-

tions were monitored at 32 parks and results indicated that ozone levels in eight parks are improving although levels were found to be degrading in 16 parks.

Best visibility levels were found in Denali National Park, Alaska, and Great Basin National Park, Nevada. The poorest visibility occurred in Kentucky, Virginia and Tennessee/North Carolina; and decreased visibility was monitored on the Texas-Mexico border and in Colorado.

High elevation ecosystems in the Rocky Mountains, Cascades. Sierra Nevada, southern California and the upland areas of the eastern United States were found to be most sensitive to acid rain. Streams in Shenandoah and Great Smoky Mountains National Parks have been affected and small changes monitored at Rocky Mountain National Park, Colorado. Ozone damage to vegetation was identified in Shenandoah, Great

Smoky Mountains, Sequoia, King's Canyon, Yosemite and Lassen Volcanic National Parks.

The NPS is attempting to improve the situation by working co-operatively through partnerships with a variety of stakeholders in developing air pollution control strategies and regulations; promoting pollution prevention practices in parks; and reviewing permit applications for new and modified air pollution sources near parks.

NPS Director, Fran Minella, said: "In most parks, air quality exceeds standards set by the Environmental Protection Agency to protect public health and welfare. Information in this report will help us to protect air quality related values from the adverse effects of air pollution by communicating information about air quality conditions in parks to the public and to state, federal and tribal authorities."

arctic

POLLUTANTS POSE BIG THREAT

A REPORT released by the Arctic Monitoring and Assessment Programme (AMAP) and endorsed by the World Wildlife Fund has highlighted the threat to Arctic wildlife and some indigenous people posed by industrial pollutants such as polychlorinated biphenyls, pesticides and insecticides.

The AMAP report, Arctic Pollution 2002, reveals that Inuit in Greenland and Canada have among the world's highest exposures to certain toxic chemicals as a result of long-range transport.

It also shows that polar bears, Arctic fox, seals, killer whales, harbor porpoises and birds such as glaucous gulls and peregrine falcons are among the Arctic species contaminated with the

highest levels of persistent organic pollutants, (POPs) which are known to damage the nervous system, development and reproduction and are able to travel great distances.

To combat the threat they pose, WWF is calling on Russia and the United States to ratify the Stockholm Convention on POPs, a new international treaty which will phase out and ban some of the most dangerous pollutants. Arctic rim countries including Canada, Norway and Sweden have already ratified the convention.

One alarming issue raised by the report is the increase in levels of organic mercury found in some parts of the Arctic, a trend primarily thought to be due to increased

burning of coal for energy production in South-East Asia.

Samantha Smith, director of WWF's International Arctic Programme, said: "Most of these chemicals are carried to the Arctic by wind and water currents. Without a global ban we cannot protect indigenous peoples and wildlife in the Arctic."

The Inuit Circumpolar Conference (ICC) which represents Inuit in Alaska, Canada, Greenland and Russia, expressed concern at the report's findings. ICC chair, Sheila Watt-Cloutier, called on all Arctic states to "renew and expand scientific programmes on contaminant threats to health and way of life of Inuit and other Arctic indigenous peoples."

uruguay

GREEN, BUT A LONG WAY FROM BEING NATURAL

By **JUAN CARLOS GAMBAROTTA**,
Vice-President, International Ranger Federation

URUGUAY considers itself to be a “natural” country. Three million people share its gentle sloping landscape with 10 million cattle, 20 million sheep and many more horses than are needed for agricultural use. Several small offshore islands are inhabited by some 300,000 sea lions and fur seals. You can see birds everywhere you look.

But while Uruguay may appear very green, it is not so natural. No other country in all the Americas has lost so many big mammals: jaguar, puma, peccary, giant otter and several more. We also hold another record for the Americas: the least developed system of protected areas.

After being involved in nature conservation for many years, I believe our government does not care for protected areas simply because it believes that all the country is green enough.

People are just beginning to learn about our native plants and animals. Everybody here can recognise an exotic eucalyptus or pine, but can seldom identify a native tree correctly, to the point that many people fail to recognise the *ceibo* — our national flower!

This is why it has been so hard to bring the ranger profession to Uruguay. Before we create rangers we need parks, and before that we need to stress the national importance of creating parks: something hard to do in a country which has known better times.

But one park is really successful. El Potrerillo, like all our protected areas, is very small — only 715 hectares /1,765 acres. It was created in 1993 and is managed by

PROBIDES, an institution funded by GEF and DINAMA, the National Directorate of Environment.

The area lies on the eastern shore of a 17,000 hectare/65 sq mile freshwater lagoon, the Laguna Negra (Black Lagoon). As usually happens here in Uruguay, it is very difficult to gain an impression of the size of a protected area because all the land around it looks similar. The main difference is that the cows are grazing outside the park.

If the guidelines used by some European countries were applied here, more than three quarters of Uruguay could be considered perfect for a national park. Roughly half of El Potrerillo is marshland, and the other half comprises grassland with palms and other trees.

When Charles Darwin visited Uruguay in 1832, he wrote: “There is hardly a tree in this country”. He had travelled many miles, seen our woods and found shelter in them, but he hesitated to call them trees because they were so short in comparison with what he had been used to.

The woodlands in the south of the country are a tangled forest where trees seldom grow above a canopy of seven metres/20 feet. The trees belong to several families — *Euphorbiaceae*, *Myrsinaceae*, *Rhamnaceae*, *Santalaceae*, *Phytolacaceae*, *Sapindaceae* — most of them represented by only one species, with the exception of *Myrtaceae* which has several species. There is also the strangler fig — a plant which takes on very strange forms when embracing its host tree, which eventually becomes imprisoned behind the bars of the fig’s roots.

The grassland includes an area of an almost endemic palm species, *Butia capitata*. Even though there

are several million of these trees left, they are endangered as a community — not because of logging, but because any new growth is eaten by cattle. The surviving trees date back several hundred years, and many were already standing when cattle were introduced to the area around 1615. But fortunately many new palms are now growing healthily in the protected land of El Potrerillo.

The prairie almost became a problem after the cattle were taken away, because grass and other herbs grew more than a metre high. The cows and sheep had to be removed to safeguard the exotic plants here, but for two or three years afterwards many native animals avoided this — their natural habitat — because the vegetation had become too tall for them. Rheas, our flightless birds of 30 kilograms/65 lbs, have got long legs, but the chicks couldn’t follow their fathers after hatching (males hatch and care for the chicks for a year). Even tinamous, the South American version of partridges more closely related to rheas, couldn’t penetrate the forest of grass.

You may ask why measures like controlled burning weren’t used to limit the grass growth, but the land has to be managed to preserve its natural state, and unfortunately there are almost no records of how the grassland (*pampas*) looked before the arrival of livestock. One particularly telling fact is that cattle were released in what we now call Uruguay 80 years before the foundation of the first white settlement. By the time the settlers arrived the grassland had already been modified by these new grazers.

But by 1996 something happened: the grass began to be opened up by a network of trails which could be used by those animals that could only live in shorter grass.

When I walked the entire shoreline of the Black Lagoon in 1983, I did not spot a single capybara, only its tracks and dung; but in 1996, in El Potrerillo alone there were no less than 800 of these large rodents. They spend most of the day in the marsh, but at night roam all over the park and create the trails. Now there is a mixture of tall grass and short grass: something that benefits many species.

The presence of more than a



The capybara population of El Potrerillo is helped by its remoteness from prospective poachers.

hundred capybaras grazing at the shore of the marsh provides a rare spectacle, for only in very isolated places are they common enough to form big groups. A fully-grown male capybara can reach 80 kilograms/175 lb, the Uruguayan animal being heavier than its equivalent in neighbouring countries, and as such represents a good source of meat for people in the countryside.

The two factors that helped to restore the capybara population were an agreement of protection signed by all landowners with land around the lagoon, and the relative remoteness of the park. To enter El Potrerillo poachers have to cross several kilometres of private land.

What makes El Potrerillo different from other protected areas in the country is its staff of two rangers, thanks to funding from the GEF. Some other areas only have one person to do everything, but in this park there is always a ranger in the area, and poachers know it.

The brocket deer, a species that lives only in the woods, has also recovered well and can be commonly seen during the day. There was an attempt to reintroduce the endangered pampas deer from a breeding station, but some animals died of brucellosis. Now, five are kept near the ranger station waiting for the best time to be released.

Other mammals in the national park include the vampire bat, Geoffroy's cat, margay (another spotted cat), two species of fox and three of armadillo. Two of the armadillo species are abundant again, having recovered from the cattle breeding era when workers hunted them for their excellent meat.

To date 160 species of birds have been recorded: not much for the country, but the park is very small. Some of the most attractive species for birdwatchers are roseate spoon-bill, southern screamer, the endangered saffron-cowled blackbird that sometimes breeds in a colony in the park, its companion the great monjita — also endangered though not in Uruguay, vermillion flycatcher, limpkin and snail kite.

The only public access to El Potrerillo is by water, across the lagoon. Some fishermen have a concession to transport visitors by flat-bottomed boat. Facilities include walks on two interpretive trails accompanied by well-trained nature guides, two wooden observation towers for watching capybara, a hide for birdwatching, and an interpretive centre.

The area was inhabited at least 5,000 years ago by Paleoindians who constructed "Indian mounds". The mounds are rather flat, the highest being close to five metres/16 feet but usually only

reaching a metre, and many were found to contain buried skeletons. The park protects two of these mounds, in one of which was made a very strange discovery — a woman buried with a big dog. This was the first dog to be found from a time before the arrival of the white men in this area of the continent. Why was the woman found buried with this companion? We will never know.

As in the rest of our protected areas, when people visit El Potrerillo they can see that Uruguay's wildlife deserves just as much protection as the species in other countries they see on TV documentaries.

People are now learning that it is not the case that we do not have wildlife left: rather that we do not permit wildlife to recolonise its natural habitats — and it is a very good idea to free some parts of the country from grazing by cattle and sheep.

Almost all land in Uruguay is privately owned, and the government will never have the huge amount of money needed to buy land for big national parks. Probably our model should be to have as many small parks as possible, and permit the ranching of capybaras and rheas (both good sources of meat and leather) in their natural habitats.

* Juan Carlos Gambarotta
e-mail: jgambaro@adinet.com.uy

europarc 2002

OUTLINING A STRATEGY FOR THE FUTURE

Extracts from the address by Prof Adrian Phillips, IUCN Senior Advisor on World Heritage and Vice President of the UK Council for National Parks, given to the EUROPARC 2002 Conference held in Llandudno, Wales in October, which was hosted by Snowdonia National Park.

ADRIAN Phillips began by stating that post-Johannesburg, protected area managers had to expect to shoulder a still weightier burden, for in the immediate aftermath of the World Summit on Sustainable Development, it seemed clear that the summit had failed in a number of important respects to fulfil the hopes placed in it.

He said that the broad conclusions to be drawn were beyond dispute. On trade, globalisation, poverty and aid, nothing new had been achieved. Regarding water and sanitation, significant progress had been made with a commitment to halve the number of people without basic sanitation by 2015, and to provide clean water to half of those currently without it. But the agreement was not binding and there were no sanctions for failure.

Action to tackle climate change had suffered a major setback. The big aim, to give electricity to two billion people without adding to global warming, had not been achieved, but Canada and Russia's agreement to sign the Kyoto Protocol on CO₂ had tipped the balance towards eventual ratification.

Some modest progress had been made with the decision to set up an international network of marine reserves by 2012, and action agreed to restore depleted fish stocks by 2015; but while the Rio summit had promised to stop biodiversity depletion by 2010, world leaders at Johannesburg had agreed, perhaps more realistically,

the aim only to slow down depletion of the Earth's living resources.

He said that the important lessons to be drawn from Johannesburg were that: "governments have let us down BUT this is no excuse for the rest of us, since the Earth Summit has shown that sustainable development is now everyone's business. The message is particularly relevant to protected area managers who, as far as they possibly can, need to get on with promoting sustainable development themselves, without waiting for a lead from government."

In the light of this analysis and the challenge it presents in particular to Europe's IUCN Category V Protected Landscapes, Prof. Phillips outlined a strategy for the future, first summarising the increased pressures they will face.

He told the delegates, who represented 28 countries: "Of the global influences, climate change will surely be the most pervasive and daunting in its implications. Higher temperatures and more erratic rainfall patterns, with droughts of greater length and storms of greater intensity, will affect both the natural world and human land use. Much familiar vegetation and fauna will be under stress and may not survive in present locations. Established farming systems will need to adapt to the new conditions.

"Governments around Europe are responding to this challenge, for example in support for renewable forms of energy. The consequences of this will be increasingly

apparent in the landscape of the future. Can — should — Protected Landscapes be immune from such developments? And if we draw the line over, say, large wind farms in sensitive landscapes, what kind of contribution should be made to meet renewable targets and live with strategies to combat causes of climate change?

"At the national and local levels, too, our lived-in landscapes will be subject to new forces as social and economic changes further undermine the vulnerable economies and traditional patterns of life of many rural communities across Europe. The conventional response, to boost rural incomes through increased agricultural support, is no longer acceptable politically and in any case has too many environmental and other downsides. Furthermore, as declining protected areas budgets in many European countries have shown, a generalised public sympathy for parks is no longer sufficient to provide adequate funding for our work, even at a time when tourist pressures on such places are rising.

"At first sight, therefore, the prospects look deeply discouraging: more to do and less to do it with. But this challenge tells us that we need to work differently in future, to re-position Protected Landscape in two ways: from being places where we defend the past to places where we advocate the future; and from being places treated as islands apart to places that are connected to the areas around and to the needs of society as a whole.

"In short, Protected Landscapes need to be consciously developed as exemplars of sustainable development, and as models of land and resource management that will have great relevance to society in future.

"Being exemplars of sustainable development has a number of components. In the first place, there are the established roles of Protected Landscapes in protecting natural and cultural values, and helping people to enjoy and understand these.

"But a sustainable development agenda also implies a number of new areas of activity:

- Getting the strategy right. Protected Landscapes need to have environmental, social and economic roles, expressed in terms

CONFERENCE REPORT

that make clear that wherever possible, all three aims should be pursued in a mutually reinforcing way, but where there is irreconcilable conflict, environmental aims should take precedence as they underpin all activity. It may be necessary to revise basic legislation to establish this relationship.

- Working with local communities. Too many Protected Landscapes are still run in a top-down manner, in which local people are informed, or perhaps consulted, but rarely trusted. The challenge is therefore to dare let go a little more — to move from seeking consensus around the agency's proposals to genuine negotiations with local people and sharing responsibility for the area's management with them.

- Making Protected Landscapes models of sustainable agriculture. For example, focus on the protection of agri-biodiversity — that is rare or unusual breeds of livestock or endangered varieties of crops, vegetables and fruit — which is often a feature of traditional farming in Category V protected areas. Encourage organic agriculture. Support local products, food, drink, craft etc. Generally encourage farmers to feel pride and job satisfaction in the quality of their produce and the part they play in landscape and wildlife conservation.

- Making Protected Landscapes models of sustainable resource use. For example, adopt a carbon-neutral target for the area in the longer term. This has implications for energy generation, energy conservation and climate change mitigation. Be models of waste management. This not only relates to issues of waste collection and disposal but also to the adoption of state-of-the-art standards of waste minimisation and recycling.

- Sustainable water management, including integrated management of river basins using green techniques of flood minimisation and flood control; support for innovative domestic and commercial techniques to reduce water consumption and increase recycling; and aiming to recover a proper level of reimbursement from towns downstream that use water resources whose quality and quantity depends on the protection of watersheds in Protected Landscapes.

- Making Protected Landscapes models of sustainable tourism.

Capture, by taxes or other means, some of the tourist wealth generated in Protected Landscapes and recycle it in investment in the local environment. Pioneer schemes to get visitors and locals out of cars and onto public transport, operate pollution-free public transport and impose speed and other kinds of limits over traffic so as to reduce its environmental impact; and generally insist that tourism is based on the sustainable use of the area's particular environmental assets.

- Advocate sustainable development in education programmes. Go far beyond traditional interpretation of conservation values to visitors and set up partnerships with schools and others to promote the messages of sustainability.

- Use Protected Landscapes as a tool of bio-regional planning. Biodiversity conservation cannot be effective if it is focused only on a set of isolated strictly protected areas like national parks or nature reserves. It needs to be undertaken at a larger, bio-regional scale. This creates a new role for Protected Landscapes as buffers and corridors around and between such core areas.

Thus Protected Landscapes of the future may be seen less as islands and more as part of the protection of biodiversity values at a large geographical scale.

"The agenda that is now unfolding requires that Protected Landscapes develop alliances with many partners, with some of whom managers have not always been comfortable in the past. First and foremost are the local communities and individual farmers, fishers and foresters. Another familiar audience is tourists, a source of income and support as well as a management challenge.

"But for the new sustainable development agenda, partnerships are also needed with business, industry and commerce, including resource users such as the water industry and mining companies. An interesting model is represented by the UK's Council for National Parks Corporate Forum which enlists the support of several major national and international companies — oil, mining, water, electricity — that impinge on the parks in a range of schemes designed to promote more sustainable standards.

"If the agenda set out above is to be delivered, then the support of a

range of local or regional government departments, dealing with water, waste, energy, transport, agriculture, education and health, will be required.

"Protected Landscapes need to reach out more to the urban communities whose citizens visit them. How many have a 'shop window' in nearby cities? How many work aggressively with urban politicians and media to explain why their area is important?

"And, depending on the local situation, managers need to develop partnerships with other interests. For example, working with local health officials to establish and promote the benefits to physical and mental health of the recreation and clean air and water provided by the Protected Landscape to people living in nearby cities.

"In less than one year's time the environment movement will be meeting again in South Africa for the 5th World Parks Congress in Durban. The theme will be 'Benefits Beyond Boundaries', the idea that protected areas as a whole bring benefits far beyond the relatively limited areas within their boundaries.

"It is already clear that Category V protected areas will be the focus of much international attention at Durban. It is therefore excellent that EUROPARC is considering how to bring the role that such places play within Europe in promoting sustainable development to the Durban agenda.

"If Protected Landscapes embrace the new agenda of sustainable development, they need to promote the message not only within their boundaries but beyond it too. It is very clear that this agenda is quite different from that which most European protected areas people were engaged in only 10 years ago. Properly addressed, however, these initiatives offer a new direction which will make Protected Landscapes much more relevant to the wider national, European and global societies of which they are part, and on whom their survival depends.

"The challenge is really about winning hearts and minds — beginning with our own, as the agenda requires that we revisit many of our cherished values and overhaul many of our familiar structures and ways of working."



canada

MONITORING OF MOUNTAIN REGIONS NEEDED

THE impact of climate change on alpine environments was a key focus of the Ecological and Earth Sciences in Mountain Areas (EESMA) conference held in the Banff Centre, which was organised by Mountain Culture at the Banff Centre, the Canadian Wildlife Service and the University of Alberta.

Glacier cover in the Canadian Rockies has decreased by 25% during the last century and scientists believe that glaciers have receded to positions last occupied over 3,000 years ago.

A paper presented to the conference by Wilfried Haeberli of the Glacier and Geomorphodynamics Group, Geography Department, University of Zurich, Switzerland — “Glacier and Permafrost Changes in

High Mountain Areas” — highlighted the need for appropriate monitoring programmes.

The paper suggested that a high priority should be given to the survival of high-performance, long-term observation projects in pivotal regions which were in danger of being discontinued. Important glacier observation programmes in the tropics, central Asia and in the South American Cordillera were all under threat.

Monitoring of mountain permafrost was in its infancy, but should be systematically built up in order to give a true global view and to help with local and regional assessments.

The conference, which attracted delegates from the USA, Mexico, Switzerland, Japan and Australia, also examined air quality issues in mountain areas. Deteriorating visibility has been documented

in mountain ranges throughout North America as a result of fossil-fuel consumption and forest and agricultural burning. Emerging air pollution issues in the western mountains include increased concentrations of persistent organic pollutants in snowpacks.

David Welch, Head of Environmental Quality, Ecological Integrity Branch, Parks Canada, told delegates that the principal air issues affecting 17 mountain national parks were climate change, long-range transport of undifferentiated air pollutants, air pollution from local sources and UV-B radiation increases.

In their paper, “Tools for Natural Hazard Identification, Monitoring and Management in High Mountain Areas”, James S. Gardner and Eric Saczuk of the Natural Resources Institute and Department of Geography, University of Manitoba, argued that there were an increasing number of examples where the human use of such environments had contributed to a change in the characteristics, frequencies and/or magnitude of hazardous processes, and that risk and vulnerability could be exacerbated by global and regional climate change.

uk

PARKS HAVE ROLE IN RURAL POLICIES

IN an address to the 2002 annual conference of the UK Association of National Park Authorities, England's Minister for Rural Affairs, Alun Michael, said that national parks had an important role to play in helping deliver new government policy involving open access, rural recovery and diversification, sustainable development and social inclusion.

He told more than 250 delegates attending the conference hosted by Northumberland National Park: “If our national parks are not to become museums of the landscape they must be successful in economic and social terms too.

“We believe passionately in a future in which economic, social and environmental considera-

tions are balanced in harmony. National parks will be our test-beds for sustainable development without losing any of the focus on our most beautiful landscapes as immensely important and valuable national assets to be treasured.

“Our expectation is that they will play a full part in rural recovery and implementing our top priority of public access to open country.”

A review of the role of national parks launched by the minister in July this year is currently at the public consultation stage, and a report outlining a new “radical” vision for the future is due to be published at the end of the year.



Store Mosse National Park: a pattern of wetland surviving in southern Sweden.

sweden

SAVED WETLAND FACES DRAINAGE DILEMMA

by **STEWART BONNEY**

STORE MOSSE National Park was established in 1982 to preserve southern Sweden's largest interconnected mire area. Within an area of 7,740 hectares/30 square miles, it has five elevated mires (bogs) separated by marshes, lakes and sand dune 'islands'.

Sand was transported here by melt water some 12,000 years ago during the retreat of Ice Age glaciers. A large lake which formed at that time later drained away and prevailing winds from the north and east moved the sand remaining on the dry lake bed to form long, narrow sand dunes, known as *rocknar*, which today rise above the mire and are covered with open pine and birch forest.

Peat deposits, now between five and seven metres/16 and 23 feet deep, began to form 8,000 years

ago above the underlying sand. As the climate became more humid and the terrain more boggy, the

area was dominated by fens which gradually rose higher as dead mosses and other plant debris settled and were converted into peat.

Unlike most other landscapes in this part of the country which have been extensively altered by man, much of the natural scenery in Store Mosse is in its original state.

Man's major impact on this landscape came as a result of action by local farmers in the 1840s who, by cleaning out and deepening a creek which flowed into the nearby River Storå, succeeded in lowering the water level of the area's largest lake, Kävsjön, and two smaller lakes, by more than a metre/three feet. This resulted in some 125 hectares/309 acres of marsh meadows and 1,500 hectares/3,707 acres of the lake's shallow perimeter areas being drained to create additional land for grazing and hay-making.

This interference in the natural balance did have the positive side effect of turning the lake margins into a highly attractive habitat for birds. The drainage scheme created what is now the park's largest fen, Stora Gungflyet, and today the park is included on the Swedish list of Ramsar Convention protected wetland sites.

However, by 1950 all farming activity in these lakeside areas had ceased and in the years that followed, with the recolonisation of tall grasses, reeds and rushes, the habitat became less attractive to wading birds and migrating ducks.

This situation posed — and con-



A landscape transformed: Store Mosse under a blanket of snow.



Picture: Folke Lantz

The Friends of Store Mosse at work on the park's wheelchair trail, which opened in 2000.

tinues to pose — a challenge to the Swedish Environmental Protection Agency and the Jönköping County Administrative Board, which is responsible for the running of the park.

The park was established primarily to preserve Store Mosse's basic character in a natural or essentially unchanged state and to preserve for the future ornithological, botanical and other scientific values, together with natural and man-made features of the landscape.

The management plan, while stipulating that most of the land, water, vegetation and animal life would be left to develop naturally, allowed for the maintenance of farmland near the ancient villages of Södra Svänö and Lövä to preserve this special cultivated landscape.

And in order to restore the birdlife that characterised the lake shore areas during the 100 years of farming activity, some grazing and mowing on the bog meadows was reintroduced on a trial basis in the early 1980s which led to improved conditions for birdlife and an increase in the number of species recorded.

Dr Johan Rova, Protected Areas Manager for Jönköping County Administrative Board, said: "The drainage introduced by farming activity created certain cultural values that made this area an important gateway for migratory birds. It is impossible to allow free natural development and keep these values. We have to choose.

"We are supposed to let nature take care of itself in the national park, but if we want the area to be attractive for birds then we may



Above: Dr Johan Rova, Protected Areas Manager for Jönköping County Administrative Board.

Below: park warden Arne Andersson.



have to control the wetland areas — possibly by reintroducing grass cutting and animal grazing on a regular basis.

"I think that we also may need to control the water levels, to flood some areas and then drain them in late summer to maintain the best habitat for birds — as they were one of the main reasons for protecting this area in the first place.

"In a new management plan now under consideration, this option is being examined so that hopefully

we will be able to achieve a correct balance in these wet bog areas."

Less problematic has been the impact on the landscape made by commercial peat extraction in the Kittlakull area of the park between the early 1900s and the 1960s.

At its height, this local industry was producing 1,000 bales of processed peat daily for export to the USA. Digging ended in 1966, drainage channels have slowly silted up and the natural ecosystem is gradually returning.

On the bog fringes, stunted dwarf pines, often more than 100 years old yet only 120 cm/four feet tall, are found alongside grass of Parnassus, common butterwort and hair sedge.

Much of the mire surface is covered by a mosaic of grassy tufts which provide a platform for plants such as crowberry, marsh andromeda, cranberry and cross-leaved heath. Areas between the tufts are usually covered by peat and sphagnum moss where sundew and white beak-sedge can occur.

In the park's wetter fen areas bottle sedge, bog bean and bog asphodel thrive and in drier parts there are hare's tail, bog myrtle and several orchid species including the fragrant orchid, marsh helleborine and narrow-leaved marsh orchid.

Implicit in the original Store Mosse management plan was the need to make the area accessible to the general public by providing simple facilities that did not interfere with the park's natural value.

Apart from two strategically sited bird observation towers which attract many visitors, the park has a total of 40 kms/25 miles of boardwalks giving access to forest and mire areas.

Dr Rova said: "These trails are expensive to maintain and require a continuing programme of renewal, but they have the advantage of keeping visitors to set routes and minimising damage to vegetation".

Attracting around 80,000 visitors annually, Store Mosse is valued and strongly supported by the local community.

A wheelchair trail for handicapped people extending for 1,800 metres/over a mile through pine forest and a bog area to a lakeside picnic area, which has proved extremely popular since it was opened in June 2000, was almost entirely constructed by volunteer labour.



Houses like this one at Kittlakull provide accommodation for visitors to Store Mosse.

Park warden, Arne Andersson, said: "The Friends of Store Mosse suggested building a wheelchair trail. The park administration agreed, and the Friends offered to perform the construction work if the government paid for the timber. On the first day, as we began levelling and broadening the existing trail through the

forest, at least 20 people came along to help.

"Many of them were enthusiastic retired people who continued to come along every weekend for nine months, even on cold winter days when the snow was being blown horizontally by the wind. They had a variety of skills which they enjoyed putting to good use and in return we

were happy to provide them with morning coffee and lunch."

In a reciprocal gesture, the park provides work for a supervised team of mentally handicapped people whose tasks include boardwalk maintenance, grass cutting and waste disposal at three properties which provide hostel accommodation for up to 70 people.

Ironically, it was the death of a brown bear close to the park's boundary that instigated the next partnership project between Store Mosse and neighbouring communities.

Mr Andersson explained: "No bears had been seen in this area for 170 years until this animal appeared, but after it killed 50 sheep a decision was reluctantly taken to have it shot. When it was suggested that its skin should be preserved and mounted, the idea was born that it should be displayed along with a tree trunk bearing its claw marks, in a modern new park visitor centre."

Continuing the story, Dr Rova said: "Local tourist organisations



THE BIRDS OF STORE MOSSE

LAKE Kävsjön has a unique mix of species for a Swedish inland water, as it attracts both northern and southern breeding birds.

In spring and autumn the flooded mire area is a resting ground for many species of waterfowl. A flock of several hundred whooper swans is not unusual on the lake and ospreys are regularly seen.

Attractions for birdwatchers in the spring include 10 nesting pairs of cranes — which can often be seen from the park's main bird observation tower — goosander, smew and dabbling duck, and April sees the arrival of waders including jack snipe, wood sandpiper, greenshank, curlew, whimbrel and ruff.

In late summer, hen harriers begin to arrive, and the first golden and white-tailed eagles make an appearance in late October. Between November and March, a feeding programme is maintained for the eagles and up to 30 of both species have been recorded.

A total of 221 species have been observed in Store Mosse and over 100 species nest there. On woodland paths within the park's 650 hectares/1,606 acres of forest, species include crested tit, black woodpecker, capercaillie and Tengmalm's owl. Black grouse are common throughout the park.

With the decline of farming activity on the lake shoreline, and the loss of suitable habitat, there has



One of the national park's two bird observation towers.

been a decline in the numbers of several wading bird species. Dunlin and little-ringed plover no longer nest near the lake and curlew numbers have fallen.

In contrast, since the 1970s, greylag and Canada geese have returned to the lake and several flatland water birds, including shoveler and pochard, which first came to the area in the early 1900s, have remained as regular nesting species. The lake has also become an important breeding area for tufted duck, teal and mallard.



A network of boardwalks gives access to Store Mosse's forests and mires.

recognise that the national park is an important attraction. Four local communities and several private foundations have agreed to meet half of the 10m kronor/\$1,100,000 US needed to build the new centre, which will replace the park's existing small information centre when it is completed next autumn.

"Usually the Swedish Environmental Agency takes the initiative with such developments. But here, with the initiative coming from people in the area and the County Administrative Board, they were persuaded to supply the matching money needed much sooner than might otherwise have been expected. Without this local involvement and support, it might have taken another 10 years to reach this point.

"This facility will make the area better known and encourage visitors to go out to discover nature and show them why we need to protect areas like this.

"It is also important that the centre should be interesting for local people as well as visitors, and in addition to a permanent exhibition highlighting the history of Store Mosse from Ice Age times, community involvement will be represented with other exhibitions produced by schools and local societies."

wwf

TIGERS TOP THE 10 MOST THREATENED SPECIES LIST

THE World Wildlife Fund has released its biennial list of 10 "most wanted" animal and plant species particularly threatened by illegal or unsustainable trade prior to the 12th Convention on International Trade in Endangered Species (CITES) meeting which takes place this month (November) in Santiago, Chile, involving delegates from 160 countries.

The most wanted list is headed by tigers of which fewer than 5000 may be left in the wild. Among their biggest threats, says WWF, are trade in tiger parts for traditional Chinese medicines and poaching.

Hawksbill sea turtles are at risk due to the illegal trade in their shells, the sole source of "tortoiseshell" used to make curios and jewellery; while habitat loss and poaching are responsible for the listing of Sumatran rhinos. Their horns are used in traditional Chinese medicine and it is feared that fewer than 300 remain in Indonesia and Malaysia.

Fourth on the list is big-leaf mahogany, a keystone species in the Amazonian rainforests which due to illegal logging operations to supply US furniture makers, is likely to be commercially extinct in less than a decade unless stricter controls are placed on harvesting.

Populations of the Patagonian toothfish, which is marketed as Chilean sea bass, and popular in Japan and the United States, are now said to be on the verge of collapse across the Southern Hemisphere due to illegal fishing operations. This species is a new addition to the "most wanted" list along with seahorses. Of the 32 known species of seahorses, at least 20 are threatened by the

unregulated trade in both live seahorses for aquariums and trade in dried seahorses sold as curios and as treatments in traditional Chinese medicine.

The wild population of yellow-headed Amazon parrots is estimated to have decreased by more than 90% since 1970 due to severe habitat loss and their capture for the pet market. The total population is thought to be less than 10,000 birds in Mexico with a few hundred in Guatemala and one small viable population in Belize.

Asian elephants are under serious threat from poaching for ivory and meat in many Asian countries. Illegal ivory seizures have been on the increase since 1998 and it is estimated that the wild population of Asian elephants could now be as low as 35,000.

Whale sharks, the world's largest fish, remain under threat due to overfishing despite the United States, Maldives, Honduras, Australia and the Philippines banning the hunting of whale sharks in their waters.

And the final species on the WWF list is the Malayan giant turtle, which along with many other Asian tortoises and freshwater turtles is threatened largely by unsustainable collection for food, primarily in China and for local consumption in Malaysia and Indonesia.

Simon Habel, director of TRAFIC North America, WWF's wildlife trade monitoring arm, said: "CITES delegates will consider adding a number of marine species to the treaty, including Patagonian toothfish, seahorses and whale sharks, to ensure that they are sustainably caught and traded."

CONSERVATION GROUPS BOOST THEIR PROFILES

by **TERRY HARNWELL**,
The African Conservation Foundation

THE concept of what is now the African Conservation Foundation (ACF) began just over two years ago, when I was living in the UK. Having been brought up in South Africa, I noticed the dearth of information on the internet relating to conservation efforts in Africa.

The uniqueness of Africa's flora and fauna has been a passion of mine since I was a very young child, when the pilot of the Dakota transporting my family from the UK flew low over the ground to give his passengers a bird's eye view of the rich diversity of species and habitats below.

What was then African Conservation was my first tentative effort at making a difference for the benefit of Africa's flora and fauna. As a professional web designer, it was only a short hop from theory to practice and I began the laborious task of attempting to build up an internet directory of all groups working towards conservation throughout the continent.

My original aim was to create a hub, a portal, that everyone could access, which would eventually include facilities at no cost in the form of Interactive Knowledge-base Forums, which I hoped would encourage conservationists and environmentalists to share their information for the benefit of all concerned. I persuaded my partner, IT guru John Parkin, to purchase and install software on the steadily-growing website which would be easily accessible and not require any great IT skills to use; anyone who can cut and paste can publish their material



Terry Harnwell: need for ACF's services grows daily.

on the forums: press releases, articles, papers, talks, job and volunteer requirements, or research.

However, quite soon, I realised that the well had run dry in terms of contact through the internet, and that I was really only touching the tip of the iceberg. Well over 90 per cent of the groups I managed to source for the directory were either European or U.S.-based (with the exception of organisations in South Africa). The international organisations tended to be those with both access to funding and internet facilities, whereas the majority of the African-based organisations were almost devoid of either of these resources. It would require a more radical approach to make contact with most of the ground-based initiatives.

A series of self-funded trips to

Kenya and Tanzania proved that financial support and internet facilities were indeed severely limited. There are many small, highly dedicated groups of scientists and other specialists (as well as non-specialists) working both minor and major miracles in their particular regions and districts, but not managing to acquire any support from the outside world. In fact many of these smaller organisations have virtually no technology or resources at all (some even lack a telephone line) by which to bring in vital attention and funding to and for their projects. In a bid to improve this situation I began offering free websites for those groups – even domain names and hosting were provided free of charge.

More than one group asked for their website to be downloaded onto CD and posted to them as, nine months or so after completion of their site, they had still been unable to leave their projects in the bush, travel to town and view their site on the internet.

In August 2001 our project took on a new dimension and was formed into a UK-registered Non-Profit Education Organisation – the African Conservation Foundation (ACF). This change was partly brought about by a Dutch Geographic Information Systems (GIS) and remote sensing specialist, Arend de Haas, who is also a wildlife ecologist with a great interest in African conservation efforts. Arend approached ACF and offered the project his skills, and our Foundation was then able to offer further assistance to conservation organisations as GIS is an invaluable aid to research for so many on the ground.

The need for the skills offered throughout Africa by ACF is expanding on a daily basis. We can now boast a further three GIS/remote sensing specialists as part of the organisation who are inundated with requests for assistance from all corners of the continent, but realise that we can no longer fund these efforts ourselves; the well has now run dry! ACF is therefore seeking back-up, partnerships, sponsorship and funding.

INVOLVING ENVIRONMENTAL GROUPS

Pictures: ACF



Left: Terry Harnwell with Sebastian Chuwa of Kilimanjaro ECMT Fund, Tanzania.

Right: volunteers at the JEMA project, University of Dar es Salaam, Tanzania (see box below).



ABOUT THE ACF

Mission and aims

The African Conservation Foundation is dedicated to supporting and linking African conservation initiatives, groups and NGOs, with the aim of strengthening their capacity, building partnerships and promoting effective communication and co-ordination of conservation efforts.

Goal

To help conserve the wildlife and flora of Africa through capacity-building, training and education.

Specific aims

- To bring together access to ALL groups working for conservation in Africa in one central access area –

providing the central resource available to all;

- Public education and dissemination of high-quality information about conservation issues and the status of biodiversity, particularly rainforests, wildlife and threatened species, to the (international) conservation community;

- To get the smaller/low funded groups on to the Internet and provide them with a web presence;

- To kick-start some of the important/prime organisations into using the web properly, and to help them work the Internet technology effectively;

- To provide a vehicle for, and access to, the sharing of research, reports and other information;

- To promote and/or create shared community areas and channels to build networks;

- To provide advice, training and support for groups (NGOs etc) on the effective use of the Internet for internal communications, external contact and joint ventures; and

- To help develop direct funding channels for groups both internal and external.

ACF's GIS programme mission

To compose, develop and disseminate spatial knowledge, data and information to facilitate the work of research and conservation groups in Africa.

Specific goals

- To provide technical assistance and support, including lab services, for conservation groups and NGOs, particularly grassroots, in Africa;

- To develop a web-enabled, centralised database of reliable geospatial (meta) information relevant to conservation in Africa;

- To provide access to vital conservation research and (natural resource) management information and enable better informed decisions;

- To contribute to research and support the development of affordable and functionally relevant GIS solutions; and

- To organise workshops, seminars and meetings for the transfer and exchange of spatial knowledge and information.

Anyone wanting to assist ACF financially can either visit our website: www.africanconservation.org — or can e-mail me directly: terry@africanconservation.org

* Terry Harnwell is currently in South Africa. Her personal aim is to open a carnivore rescue and rehabilitation centre in East Africa. If anyone would be interested in this project, please contact her.

HELP ACROSS A CONTINENT

GROUPS which have already benefited from ACF assistance are:

BOTSWANA

Khwai.
Veld Products.

EGYPT

Marine Environment
Awareness Project.

KENYA

African Environmental Film
Foundation.

NIGERIA

The Nigerian Conservation
Foundation.

SOUTH AFRICA

Animal Act.

TANZANIA

Cullman & Hurt Wildlife
Project.

Friends of Ruaha Society.
Joint Environmental
Management Association,
University of Dar es Salaam.
Kilimanjaro Environmental
Conservation Management
Trust Fund.

Southern Highlands
Conservation Project.
Tanzania Wildlife Research
Institute.
Uluguru Mountains Project.

TOGO

AJVPE.

UGANDA

Nature Uganda.

canada

ORCHIDS AND SHIPWRECKS ON ONTARIO'S COAST

by **MICHAEL P. J. CROSSLING**

CANADA may have been called Queen of the Snows for its harsh and snowy winters, but there are 44 species of delicate orchid thriving on Ontario's Bruce Peninsula, in the heart of inland Canada.

The Bruce Peninsula National Park in Ontario is another of those examples of nature well preserved by geography and its own particular geology. "Orchids thrive in humid conditions, on limestone, and with a cool base," says Parks Canada (PC) Visitor Activities Manager, Don Wilkes, "so what more could they want?" He did not add: "protection from mankind", but that constant risk appears well under control at the moment by Don and the rest of his colleagues at the park.

Set close to the extreme tip of the Bruce Peninsula, where the soaring limestone dolomite cliffs of the Niagara Escarpment dip into an inland sea, this area has evolved by being surrounded with the protection of fresh clean water. To the east is the huge Georgian Bay, and to the west the vast expanse of Lake Huron, both part of the Great Lakes watershed system.

This year, for the first time, Ethan Meleg (PC Outreach Co-Ordinator) organised a partnership with the park Friends and various local tourism groups to offer a two-day orchid festival. Nine detailed workshop sessions covered everything from recognition and photography to the celebration of the diversity, beauty, and preservation of wild orchids on the Bruce Peninsula.

Visitors from all over the world have come to discover and photograph the orchids of the Bruce. Over the years enthusiasts have put pressure on popular orchid species, but thanks to the dedication of all concerned some reprieve is slowly being earned.

If it were simply terrestrial and served by only one road touching a small part of the perimeter, the Bruce would be fairly simple to run. However, it operates in tandem with the separate Fathom Five National Marine Park, located in the waters off Tobermory, which is 10 kilometres/six miles north west of Bruce along Highway 6, and extending out into the Main Channel. The same professional staff manages both national parks in a unique combination, particularly in management practices. Each park, however, comes with separate, different and additional challenges.

For example, for cost and management efficiency a central radio dispatcher controls park wardens responding to incidents in both parks from one HQ desk. Wardens' patrol cars for terrestrial parklands are just outside in the parking lot, steps away from patrol boats berthed at the dock ready to respond to marine requirements.

The Bruce Peninsula has been

part of a UNESCO Biosphere Reserve (Niagara Escarpment) since 1990, together with a number of other provincial nature reserve parks and protected areas owned by NGOs in this area. Parks Canada, with their two parks on the Bruce, is justly proud to be a part of protecting core areas where people demonstrate an ability to live in a sustainable relationship with the environment.

These two parks are within a couple of hours' easy driving from some five million Greater Toronto area consumers. There is a decent highway system, and Torontonians are eager for a natural recreational place of peace and quiet in traditional "cottage country". This is not an ideal location for pristine nature to be easily protected from a large volume of human visitors.

Guided by a core of approximately 15 to 20 year-round professional park staff, some 40 to 50 summer contract staff provide PC with dedicated and experienced workers for the publicly accessible areas. The Bruce is also blessed with a large volunteer organisation of Friends.

Don Wilkes explained: "to get the conservation message across efficiently, as well as welcome marketing, the Friends' type of management organisation is invaluable. With a heavy population demand for recreational land use, unprotected wild nature areas, without some form of protection, would soon succumb to final deterioration."

The Friends help make sure that damage to the park's nature areas



The lighthouse on Flowerpot Island, where old buildings are being refurbished to create a museum.



Patrol boats berthed at the Parks Canada dock at Bruce Peninsula.

does not take place. An added advantage is that in times of government funding cutbacks, most large national parks are being obliged to adopt this method of management co-operation if they are to protect natural conservation areas for the future.

Holly M. Dunham, General Manager of The Friends of the Bruce District Parks Association, said: "Area residents fully understand the huge importance of the two national parks to our local community and its financial well-being. The commercial benefits of the increasing number of tourists attracted to the parks enable us to help park professionals preserve the pristine nature of both parks. We fully support and help PC staff in any way we can."

Fathom Five National Marine Park, founded in 1987, was the first marine national park in Canada, and a string of these parks is now being developed across the country.

Scientific evidence of residues of pesticides, herbicides and other chemicals now being found in pristine and remote areas are all causes for concern and careful monitoring. Valuable data is collected, collated, published regularly and freely available for the asking.

Science and education work together in these two national parks. Professional park scientists and local students work together on

many projects. Staff encourage, foster and support the budding scientists of tomorrow, and many staff spend long off-duty hours with other colleagues, students and local residents disseminating information.

The local schools' Bluewater Regional Science and Technology Fair has been established for many years, chaperoned by such local volunteers as OPP Officer John H. Twelves. Some Ontario high schools' science courses require students to participate in research being done in the parks. The parks get the students' data while the students get academic credit for their work, and prospective park employees gain a basic knowledge for a career choice.

John Twelves said: "Many of the schools in Grey and Bruce Counties now travel to the national parks to explore the flora and fauna. Principal Clive Card of the Bluewater Board's Outdoor Education Centre is one who uses the parks as part of his curriculum." Eight students from Grey and Bruce Counties who made up Team Bluewater came home from the 2001 Canada Wide Science Fair with a gold medal, a bronze medal, five honorable mentions, \$1100 in cash awards and \$13,000 in scholarships.

"Tours and study sessions that Don Wilkes set up for them are great," said John. "Most kids would not be interested in the things we saw, but this group isn't anywhere

near average. They all enjoyed seeing what is being done in the park."

As a professional park manager, Don Wilkes is interested in a recent project of colleague Andrew Promaine, an ecosystem biologist, who is leading the park's involvement in the underwater mapping of the marine park floor using multi-beam techniques. Single beam mapping and aerial photography of terrestrial park land was originally sufficient for management, but to peer below water surface, expensive multi-beam 4D produced astonishing scientific results.

It was discovered that in the last 15,000 years the lake level has risen at least three times. Caves have been found over 100 feet below the present water level, with fossilised trees embedded nearby in underwater cliffs. Some evidence of fires has also been found here, but differentiating between man-made and natural forest fires is proving difficult.

Carbon dating is currently being used to confirm that these trees are upwards of 8,000 years old. Some earlier theories of underwater riverbeds are being disproved, and new beds appear where none was known before.

Great importance is given to the strong relationship between Parks



Friends and staff at an information point at Cyprus Lake.



Student research assistant Margie Wilkes with visitors outside the park HQ.

Canada, nearby First Nation (indigenous) communities, and the surrounding population in general. One of the park interpreters (a First Nation member) confirmed that there were strong links between this data and the oral traditions of the First Nations. Further information presentations to nearby First Nation communities strengthened these links.

Visitor use of both parks is high during the short vacation season. While there are a fair amount of overnight camping spots, parking, and picnic places, they are limited to maintain ecological integrity. Camping and hiking on one of the marine park islands, Flowerpot Island, are allowed on a first-come, first-served basis, but it is necessary to register at the dive office in town. The Friends are currently refurbishing the old lighthouse buildings there as a museum.

Protection of fragile plant, lichen, and moss flora is of paramount importance to PC. Capacity is constantly being reached in the most popular time slots for visitors, further adding to management concerns. Cyprus Lake itself welcomes 50,000 campers and visitors a year and the annual total for Bruce and Fathom Five is about half a million visitors.

A further method of maintaining

ecological integrity of the park — hiking on special environmentally sound trails — is allowed and encouraged. Wood foraging for campfires is strictly forbidden, to spare it for natural recycling as part of the ecosystem. Camp firewood is commercially available inside the parks at special collection points, or sold outside the park from left-over parts of trees felled for lumber products. 'No Trace' camping or hiking — once a quaint new trend — is now *de rigueur* anywhere in the bush.

One particular world-famous hiking trail, the Bruce Trail, runs 782

km/486 miles from Queenston Heights in southern Ontario right through to Tobermory. As an added feature it runs through both these national parks and past many campgrounds. This trail also has an effective volunteer management association.

The Bruce provides a natural and traditional refuge for nine different types of Ontario's 15 species of snake. Visitors are warned and constantly instructed not to pick up any snake, or other critter for that matter. Take photographs only — carefully.

PC Research Technician Ron Williams has been working for the park for years in various capacities. Recently, he has been assisting Dan Harvey, a student doing graduate studies on the Eastern Massasauga rattlesnake (*Sistrurus catenatus catenatus*), with support from the park. It is on the Canadian Endangered Species List and protected by law.

A tour of Ron's rattlesnake facilities is a very popular excursion, especially with young students.

Serious research at the Bruce goes into finding, mapping, and examining rattler-preferred habitat. Snakes found (preferably basking in the sun after a large meal) are brought back to the lab, measured and examined, then implanted with a code-recognisable microchip. Their tail rattles are spray-painted with a fluorescent paint (a different colour each year helps not having to physically examine the same snake several times). The code reader can identify them from a safe handling distance — for the snake as well



Signs of erosion on the shore of Flowerpot Island.

as humans. Some are taken to a veterinary clinic in a nearby town to be implanted with tiny radio transponders, to accurately trace their movements. All snakes at the lab are returned to exactly where they were originally captured, as soon as possible.

Out in the HQ parking lot, Margie Wilkes (PC Student Research Assistant) puts on a presentation of the park's black bear (*Ursus americanus*) study. The youngest student is fitted out with one of the signal-emitting radio collars used in the project. Other students are then taught how the triangulation of signal strength can lead to the accurate location of a bear.

Bear bait stations are set up and monitored carefully. Hair samples are automatically collected from visiting bears and removed daily for lab work later in the year. Through DNA analysis, each bear visitor can be identified, tallied, mapped and analysed as it forages through its territory and sometimes further into the park. Movement, health and habitat growth are all monitored to provide hard data as an aid to protecting and managing the overall bear population.

Research, studying, training and just plain recharging human batteries all combine in these two Canadian national parks in ever-increasing volume, together with the primary objective — natural heritage preservation. As the dense southern Ontario population areas continue to grow, park management will be constantly challenged. So far, innovation by dedicated staff, together with strong support from local residents, appears to give confidence for their success — for the time being. The future is less certain.

* *Generous assistance supplied by Ethan Meleg, Outreach Co-ordinator, Parks Canada, and his colleagues.*

Ethan is also well known as an ornithologist and wildlife photographer. Contact him for information on projects or events within these Canadian National Parks, at:

Parks Canada, Bruce Peninsula National Park, Fathom Five National Marine Park, Box 189, Tobermory, ON. N0H 2R0

Telephone: (+1) 519 596-2444, ext. 318

e-mail: ethan.meleg@pc.gc.ca

NEWS REVIEW

thailand

CO-OPERATION IN CROSS-BORDER FOREST AREA

*by Noppawan Tanakanjana,
Faculty of Forestry, Kasetsart University*

THAILAND has several forests designated as protected areas, but few of them at present benefit from specific management plans.

But in the north east of the country, the Pha Taem Protected Forest Complex has become the focus of a project which, it is hoped, will help to conserve forest both in Thailand and neighbouring countries. Its specific objectives are:

- to start a management planning process for Pha Taem, and
- to initiate co-operation between Thailand, Cambodia and Laos for cross-border biodiversity conservation in protected forest areas which straddle international boundaries.

In its first phase, the project activities will consist mainly of gathering data for management planning, installing an information system and a database to support management activities and ecological monitoring, identifying issues of cross-border concern, and initiating a dialogue on co-operation for cross-border biodiversity conservation between Thailand, Cambodia and Laos. One of the results of the project will be a long-term management plan (2000-2025) and a working plan (2002-2005) for the Pha Taem Protected Forests Complex, which will constitute the project document for Phase II.

The Complex covers an area of nearly 130,000 hectares / 500 sq miles, and comprises the national parks of Pha Taem, Kaeng Tana and Phu Jong-Nayoi, and Yot Dom Wildlife Sanctuary. The project is being run by the Royal Forest Department of the Thai Government, and funded by the

International Tropical Timber Organisation and the Government of Thailand.

Full-time Chief Technical Advisor, Watana Kaeokamnerd, is former vice-president of the RFD and a retired government officer. The other technical advisors are a team from the Faculty of Forestry at Thailand's Kasetsart University, consisting of a forest ecologist, wildlife ecologist, socio-economist and recreation planner, and an environmental education and training specialist. This team will help the project until a database system has been set up and the management planning process completed by the end of 2002.

new zealand

AIRCRAFT NOISE WILL BE CUT

AIRCRAFT operators who use Aoraki Mount Cook and Westland Tai Poutini National Parks have agreed to voluntarily change some of their flying practices to minimise noise impact on ground visitors.

A programme to monitor air activity — funded by the aircraft operators — which began in Aoraki Mount Cook in 1998 and in Westland Tai Poutini in 2000 found that at peak times over the Westland glacier valleys the noise from scenic helicopter flights was almost continuous, and that in Aoraki Mount Cook ski-planes which are permitted to land at 14 authorised sites were making up to 300 flights annually.

brazil**LARGEST TROPICAL PARK PROPOSED**

THE Brazilian government has announced plans to create the world's largest tropical national park, protecting an area of 3.8 million hectares/14,670 square miles in the Tumucumaque Mountains.

Brazilian president Fernando Henrique Cardoso has signed a decree to change the status of a virtually uninhabited region of virgin Amazon rainforest in Amapa state along Brazil's northern borders with Surinam and Guyana.

The Tumucumaque Mountains National Park will cover an area larger than Belgium, and Mr Cardoso said: "We are ensuring the protection of one of the most pristine forests remaining in the world. Plants and animals that may be endangered elsewhere will continue to thrive in our forests forever."

Deforestation has destroyed

about 15% of Brazil's rainforest, which now covers 3.5 million square km/1.35 million square miles. Roads have accelerated destruction of the forest by providing access for settlers, prospectors and loggers.

Jose Pedro de Oliveira Costa, secretary for biodiversity and forests at Brazil's environment ministry, has said he has little doubt that new species of fauna and flora will be found in the designated park.

The Brazilian government has expressed the hope that funding promised by the World Bank and the Global Environment Facility will help save Tumucumaque from the ravages of illegal mining and logging. Initially it is planned to only allow scientists access to the park while plans are formulated as to the best way to combine tourism with conservation.

gabon**RAINFOREST TO BE SAVED**

THE Central African country of Gabon, which contains some of the most pristine tropical rainforests in the world, has announced plans to set aside 10% of its land mass for a system of national parks.

The Gabonese government has worked closely with the US Wildlife Conservation Society (WCS) on conservation issues for the past 10 years and the announcement is seen as a major victory for Africa's wildlife.

President El Hadj Omar Bongo said that it was intended to establish 13 national parks comprising more than 10,000 square miles to protect vital habitat for gorillas, chimpanzees, forest elephants and other wildlife species.

Dr Steven Sanderson, president

and CEO of the WCS, said: "This is one of the most courageous conservation acts in the last 20 years. It sets a new standard for wildlife protection in Central Africa - one we hope that other nations will follow."

Much of the land to be set aside for the new parks has been the subject of field research by the WCS, which began in 1985. In 2000, Dr Richard Ouvinet of WCS along with WWF, began a survey of Gabon's remote areas in order to help the government develop a national park system.

Many of the new parks will be developed for ecotourism as an economic alternative to the exploitation of Gabon's forests for timber and US funding has been promised by Secretary of State, Colin Powell.

canada**NEW CHIEF FOR PARKS AGENCY**

ALAN Latourelle has been appointed as the new chief executive officer of the Parks Canada Agency, where for the past three years he has been chief administrative officer.

Current CEO Tom Lee will continue as Special Advisor to the Deputy Minister of Canadian Heritage until January 2003. Paying tribute to his work, Heritage Minister Sheila Copps said: "Tom's commitment to long-term vision and his achievements for the organisation have been tremendous."

Mr Lee has guided the Parks Canada Agency throughout the creation and implementation of a new policy framework including legislative renewal, starting with the Parks Canada Agency Act, the Canada National Parks Act and the recent Canada National Marine Conservation Areas Act. The decisions to focus on the ecological integrity of Canada's national parks and to end commercial development in national parks are among major accomplishments achieved under his stewardship.

10 NEW PARKS PLANNED

PRIME Minister Jean Chretien has announced plans to create 10 new national parks and five marine conservation areas over the next five years, involving the protection of some 100,000 sq kms/38,600 sq miles of wilderness.

Possible locations for the new parks could include British Columbia's Queen Charlotte Islands and the Gulf Islands near Vancouver; Wager Bay or Ukkusiksalik on the west coast of Hudson Bay in Nunavut; the Torngat Mountains in northern Labrador; and the north shore of Lake Superior in Ontario.

The president of the World Wildlife Fund Canada, Monte Hummel, described the proposals as a "terrific commitment".

IN August 2003, Russia's first national park — Losiny Ostrov — will celebrate its 20th anniversary. Directly translated, its name means Elk Island, and it is mentioned in ancient documents as a royal hunting estate. At that time, the Russian word *ostrov* (island) referred not only to the piece of land surrounded by water, but also to a small adjoining forested area surrounded by cultivated land, pastures and villages. Today, it is an isolated location of a very different sort.

The history of the area now occupied by the national park is recorded in documents dating back to the 14th century. It evolved from ancient pre-11th century mixed forest, saw farming activity in the 15th and 16th centuries, was used as a royal hunting estate in the late 16th century, and became a state-owned experimental forest in 1842. It was designated a forest park enterprise in the 1930s, a nature park in 1978 and became a national park in 1983.

Losiny Ostrov is unique in Russia, for while other natural protected areas are remote from large urban centres, it borders directly with residential and industrial districts of Moscow and its satellites. However, despite this unfavourable neighbourhood, the park possesses a high biological diversity. Within a relatively small area of 125 sq km/48 sq miles, it is possible to find almost all the tree species of central Russia within a river valley and wet-

russia

20 YEARS' OF CO-EXISTENCE WITH THE BIG CITY

by **VERA KISELEVA**,
*Head of Research and Co-ordination,
Losiny Ostrov National Park.*

land landscape with fragments of meadows. The list of plant species includes 600 different vascular plants, 90 species of fungi and more than 20 species of lichen.

There are 45 mammal species including elk — the symbol of the park — wild boar, deer, beaver, and weasel; 160 species of birds, eight amphibian, four reptile and 18 fish species.

The first arguments for making Losiny Ostrov a protected area were advanced in the 1900s by scientists who recognised the scientific importance of this natural area. However, crucial social changes made its implementation impossible. Later, the "island" was included into the so-called Moscow forest-park belt with varying regimes of forest management.

But in 1970, a project to develop leisure centres in Losiny Ostrov was proposed. This envisaged the "culturisation" of the natural landscape and forest to create a city park, which would have led to the

destruction of natural ecosystems. As an alternative to this destructive project, Soviet ecologists advanced the proposal to create a national park in Losiny Ostrov which made it possible to reconcile recreational needs with nature conservation. The proposal was supported first by Moscow and then by the Soviet government, and in 1983, Losiny Ostrov became the first Russian natural territory to receive the status of national park. (The first Soviet national park, Lahemaa in Estonia, opened in 1971 — see Issue 6 of NPIB.)

Compared to many of its counterparts across the world, the park is very young, but much has been done during the past 20 years.

First, the legal status of the national park had to be established. As the situation had no precedents in Russia, several years elapsed before the park obtained the documents regulating its activity. The procedure of setting the boundaries also took several years. Its original area of 105 sq km/40 sq miles was increased to 125 sq km/48 square miles to incorporate fragments of forests serving as ecological corridors at its eastern boundaries.

Among land users removed from the area since its designation as a national park were 17 warehouses, four industrial enterprises, a military installation and a firing range, while some sources of toxic emissions were treated. However, many problems remain concerning private owners of smallholdings who do not want to quit their cultivated plots or remove structures such as garages.

PROTECTION REGIME

While the park's periphery remained open to visitors, its central natural nucleus became a specially protected area with a greatly reduced number of permitted activ-



Moscow's green lung: Losiny Ostrov National Park, with the city skyline on the horizon.



Back to nature: a group of Moscow schoolchildren on a visit to Losiny Ostrov.

ities. As a result, this central zone became much less visited. The prohibition of hunting and fishing created favourable conditions for large mammals, birds and fish — at present the legalisation of licensed fishing is under discussion. The number of elks — between 25 and 30 — has remained almost constant, the wild boar population has increased from around 30 to 50, and the beaver population has grown to 12 families, which is close to its optimum number.

One serious problem is that the park's herd of more than 100 deer cannot survive without supplemental feeding. Natural migration to other grazing is almost impossible, and regulation of their numbers by entrapment or transportation to other forested and protected areas is under consideration.

ECOLOGICAL EDUCATION

The first ecological trails were created in the late 1980s. Today Losiny Ostrov has a total of 12, which have a potential to carry up to 100,000 visitors annually, yet only attract between 8,000 and 12,000. Taking into account that the number of visitors to the park can reach tens of thousands daily, this is unsatisfactory and a range of educational programmes for schoolchildren and teachers is now underway. These vary from a two-hour guided visit to serious long-term research projects carried out by the children themselves under the supervision of ecologists.

As a result, many volunteers — both adults and children — support the work of the national park, which has four visitor centres. One of the centres is designated especially for children, while the other three specialise respectively in the history of traditional Russian hunting, tradi-

tional Russian housekeeping, and the history of Moscow's water supply.

Important research work was conducted in the park in the late 1980s to evaluate the level of biological diversity and integrity of natural ecosystems. Historical and archaeological studies initiated in 1990 revealed more than 100 historical and archaeological objects within the park boundaries and its buffer zone.

A programme of geochemical monitoring has been conducted since the late 1980s, and in 1993 a wider programme of complex environmental monitoring was developed. Most attention is paid to monitoring the forest, as 85% of Losiny Ostrov is wooded. The park is also included in a municipal programme of ecological monitoring sponsored by Moscow's city government and has long-

term contracts with high schools and research institutions which each year undertake several major research projects in collaboration with park personnel.

The surrounding city creates a whole range of problems for the national park. On one hand, Losiny Ostrov must be preserved as the last natural forest in suburban Moscow, while on the other hand it is expected to accommodate immense visitor flows. The most serious problems related to the specific location of the national park are:

- Territorial isolation. To the north, west and south, the park is surrounded by an artificial urban environment. Natural ecological corridors remain only to its east. If these are closed as a result of further building, the park's ecosystems will be completely isolated, which may lead to their decline.
- To avoid this, it is planned to enlarge the park's western buffer zone and limit land use and construction work to preserve the ecological corridors. A future prospect is to link the buffer zone with a projected nature park.
- Industrial pollution. About 100 industrial enterprises surround the national park and geochemical research has identified 10 examples of high levels of heavy metal pollution.
- Moscow's ring road. The reconstruction of this road, in 1997-1998, cut the park into two almost separate sections and disturbed the hydrological



The elk is a symbol of the park, and one of its 45 mammal species.

regime of nearby land. The contamination of forest ecosystems by heavy metals can be observed just 400 miles/a quarter of a mile from the highway, and the use of de-icing salts led to the salinisation of snow cover, surface water, and soils. All this has had a harmful effect on park areas bordering the road.

The reconstruction of the highway was essential for the city — a fact which the national park had to accept. In order to protect the natural forest a project to create a newly-planted barrier of protective woodland was formulated in 2000. This envisages the creation of a “green shield” of trees and bushes which are resistant to salinisation as well as to air and soil contamination.

- High recreation pressure. On the park's periphery there are several areas where high visitor numbers result in damage to natural forest ecosystems, disturbance of wildlife, and litter pollution. A particular problem is caused by visitors setting up open-air barbecues deep in the forest.

The city development programme envisages the growth of residential areas around the park, reconstruction of existing roads and creation of new ones. While all this is indispensable to the city, it is likely to further increase recreational demands on the park.

But recreation-induced damage can be reduced. Last year, the effect of recreational activities on forest ecosystems was studied in one of the most visited parts of the national park. Areas of forest degradation were mapped, and ways of redirecting visitor flows and increasing the recreational capacity of other areas were identified. Some of the ecosystems in the park's recreational zone damaged by high winds and the cambium beetle are to be reconstructed to take these needs into account.

- Social problems. People living near the park have to some extent accepted the fact that they live near a specially protected natural area, but they do not understand the importance of the national park for the city as a whole. Despite ecological educational programmes and co-operation between the national park and the media, the level of ecological awareness is still very low. Each year there are hun-



A tranquil corner of Losiny Ostrov: the first Russian territory to achieve national park status.

dreds of registered violations of park regulations — 770 in 2000 and 880 in 2001. The largest groups of violators were illegal land users and fire-lighters. Most of them were penalised, but it is not known how many violations remained undetected.

In the context of the problems examined, it is clear that the national park could benefit from some basic working guidelines. Ecological education should be further intensified and the whole national park be used as an easily accessible open-air museum where those living in urban environments, isolated from nature, can come to study and enjoy it. In addition, the tourism and recreational infrastructure should be developed, but only on the periphery of the park.

Losiny Ostrov is a remarkable

subject for ecological studies, in particular those of the effect of urban environment on the natural world. At the same time, the park itself can be seen as the benchmark standard for environmental quality in the city. In order to record and prevent a decline in the quality of the park environment, the programme of complex monitoring will be developed.

Disturbed forests and wetlands should be gradually replaced by natural habitats corresponding to those that existed in the past. This will be a long and demanding project which demands a complex and detailed investigation of the situation, and a lot of hard work.

The staff and friends of Losiny Ostrov hope that this old forest and young national park can look forward to a long and eventful life.

botswana/south africa

KALAHARI LAND RETURNED TO COMMUNITIES

by **NICOLETTE RAATS**,
Senior Social Ecologist,
Kgalagadi Transfrontier Park

THE Kgalagadi Transfrontier Park was established in April 1999 when South Africa and Botswana came together and decided to manage their adjacent national parks as one ecological unit, making it one of the largest protected areas in southern Africa.

But Kgalagadi is not only exceptional for being the first Transfrontier Park in Africa: another success story relates to the Khomani San and Mier land claim.

The people, soil, animals and plants of the Kalahari are important, exceptional and valuable to the area, to our country and to the world. It is the people of the Kalahari — the Khomani San and the Mier — who will ensure that their communities develop and that their cultural and natural heritage is conserved, and gaining legal status did this. SANParks, as a conservation authority, will provide its resources to conserve and develop the heritage of the land. The contractual park is therefore just one way in which we strive to achieve these goals.

The Khomani San claimed their right to land in 1995, and were followed three years later by the Mier. In March 1999 all three parties signed a mutual understanding regarding the land claim. Negotiations have been taking place ever since.

Kgalagadi is located in the southern Kalahari, an arid region with an annual rainfall of 200 mm/7.8 inches, which falls mainly between January and April. In summer temperatures may exceed 40 deg C/100 deg F. Winter days are sunny with night temperatures often well below freezing point. Kgalagadi covers 3.8 million hectares/14,670 sq

miles and protects and conserves the unique ecosystem of the southern Kalahari.

The park is roamed by gemsbok, and conserves the balance between predator and prey, with predators such as lion, leopard and cheetah endemic to the area. Both hyena species, brown and spotted, are found in the park. Kgalagadi is also known for the wide variety of bird species to be found in the park — 291 in total, including Kori bustard, pygmy falcons and martial eagles.

Main benefits of the Transfrontier Park include:

- guaranteeing the long-term conservation of the valuable wildlife resources in the southern Kalahari, thus helping to maintain the integrity of the entire Kalahari ecosystem;
- pooling of expertise and experience on a good neighbourly basis;
- raising the international profile of this important conservation area through joint promotional campaigns, thereby enhancing its status and potential as a tourist destination;
- maximising the tourism potential of the park and surrounding areas, which will generate economic benefits for both countries, especially to the local communities living nearby;
- strengthening political ties and promoting regional peace and stability through mutual co-operation.

The land that will be given to the communities is inside the Kgalagadi Transfrontier Park and stretches from the south-westerly border of the park up to 10 km/six miles south of the Auob river. The total surface area is 57,903 hectares/223 sq miles, of which 27,769 hectares/107 sq miles belong to the Mier, and 30,134 hectares/116 sq miles belong to the

San. The land within the park will be declassified as a Schedule 1 national park and reclassified as a contractual park.

Within this contractual park the land will be used exclusively and perpetually for conservation and sustainable economical, symbolic and cultural uses that are reconcilable with conservation. No residential or agricultural use will be permitted, and the conservation area will be expanded to encompass areas outside the national park. SANParks will be responsible for the day-to-day conservation management of the two contractual parks.

The planned use of land inside the contract parks is as follows:

- Sustainable economic use including facilities for the pursuit of ecotourism, including accommodation and other infrastructure such as 4x4 routes. This can be done by the community itself or in partnership.



Kgalagadi land is returned to the Khomani San and Mier communities.

- Sustainable use and consumption of plants and animals.
- Sustainable cultural use of the land, such as for educational uses.

The land claim story has been written over a very long time but it is nearing the end, and the Mier, the San and SANParks embrace the future as partners in conservation. The Kgalagadi Transfrontier Park encompasses these successes.

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