ONE of Australia's premier parks, Wilsons Promontory National Park in Victoria, was the venue when some 200 Rangers from over 30 countries attended the International Ranger Federation 4th World Congress.

Elaine Thomas, president of the Victorian Ranger's Association which hosted the Congress, was delighted with the success of the Congress, and in particular the range of countries represented.

"The IRF is continually working on expanding its network," she said. "At this Congress the focus was on attracting Rangers from the Asia-Pacific region. Twenty Rangers from 11 countries, including Fiji, Myanmar, Palau, China and Indonesia were represented. It is the first time that delegates from many of these countries have attended an IRF World Congress."

The Congress was opened in Melbourne by the Governor of Victoria, John Landy, himself a former National Parks and Wildlife Service employee. Federal Government Senator Bob Brown, leader of the Green Party, delivered an impassioned speech about the increasing importance of environmental considerations to the future of society.

The theme of the Congress was "Rangers at Work — Improving the Practice", with topics being addressed under the sub-themes of "Managing the Masses", "Building Healthy Community Support" and "Healthy Habitats".

The Congress was designed so that each session had a theme on which presenters showcased programmes which they and their various park agencies had developed and implemented. Over 70 presentations were given during the week from every continent on Earth. As it was impossible to attend everything, delegates had to choose their journey through the sessions carefully and each delegate had a different experience.

"Building Community Support" was the first theme, which included working across boundaries and working with indigenous communities. Parks across the world are islands in a cultural landscape. If they remain as islands without links with the land and the community in which they are embedded, they are doomed to a slow descent into...
IN 2000 the US National Park Service signed a country-wide agreement with the Hungarian Authority for Nature Conservation-Ministry of the Environment (ANCME) which outlined a two-year action plan to identify sister park relationships.

In summer 2001 Jonathan Putnam, from the NPS Office of International Affairs, escorted three representatives from Hortobágy National Park, vice-director István Gyarmathy and biologists Szilvia Gori and Attila Molnár, on a tour of several parks and protected landscapes in the US Midwest to find a suitable match for the Hungarian park. Hortobágy possesses a mixed steppe and marshland environment supporting a wide variety of wetland and prairie dependent birds, herds of an ancient breed of grey cattle, and small numbers of Przewalsky horses — a relict endangered species.

At Badlands National Park in South Dakota, the visitors were able to review the management and interpretation of a prairie ecosystem with similarities to Hortobágy. Each park has grassland supporting ungulate grazers (bison/cattle) and a rich birdlife, and the Hungarian team expressed interest in learning from the US park.

BLACK-FOOTED FERRET MAKES A COMEBACK

A MEMBER of the Mustela family and a cousin of the European polecat, the black-footed ferret is the only ferret native to North America. Its primary prey species are black-tailed prairie dogs, whose burrow systems are used by the ferrets for breeding and escape cover from predators.

Prairie dogs traditionally followed the range of American bison across the Great Plains and, as bison numbers were decimated by hunters, 90% of the prairie dog ecosystem was lost.

Other factors which led to the further decline of this species in the first half of the 20th century were a government-sponsored prairie dog eradication programme; loss of habitat due to agriculture, road building, railways and the westward expansion of human populations; and the spread of an exotic disease, sylvatic plague, brought to the west coast of America by ship-borne rats.

In many states prairie dogs disappeared completely, leaving only small population pockets in western South Dakota, eastern Wyoming, east Montana, and a small area of Colorado.

This large-scale loss of its all-important prey species resulted in similarly dramatic falls in long-established populations of the black-footed ferret. In the late 1960s, 100 miles west of Badlands National Park, a small population was discovered and monitored over several years. When their numbers were observed to be declining, several were trapped and an unsuccessful attempt at captive breeding was made by the National Zoo, Virginia.

In 1973, when the US Endangered Species Act came into force, the black-footed ferret was considered “possibly extinct”. Numerous surveys were undertaken without success. Then, in the early 1980s in Wyoming, 200 miles west of Badlands, the US Fish and Wildlife Service identified a carcass found by rancher’s dog as a black-footed ferret, and a surviving group was located.

They were intensively studied over a six-year period, biological data was developed, but as the group’s numbers gradually fell from 125 to 50 and then to only 35, a decision was taken in 1987 to capture the survivors and once again try to mount a captive breeding programme.

Eighteen animals were captured, and by the early 1990s the programme, supported by the American Zoological Association, reached its goal of producing a pool of animals which could be released back into the wild.
more about Badlands fire ecology and exotic vegetation control programmes.

They were also very interested to hear about Badlands' key role in national preservation efforts to restore a viable population of black-footed ferret, Mustela nigripes, (see panel below) and the ongoing programme to monitor and manage both this reintroduced population and its primary prey species, black-tailed prairie dogs. Hortobágy has a remnant population of steppe polecat, which is a European cousin to the black-footed ferret, and its staff has a strong desire to characterise and more effectively manage and perpetuate this relict population.

Following this field visit, a series of future objectives were developed between the two parks' staff and endorsed by Mr Putnam, including the execution of a sister park agreement, provision of technical assistance in the review and development of interpretative media and exhibits; and in the development of monitoring protocols and habitat evaluation in support of polecat restoration efforts.

In pursuit of these objectives, a reciprocal visit to Hortobágy was made last year by myself, with chief of resource education Marianne Mills, and wildlife biologist Doug Albertson.

During our stay in Hungary, we met Hortobágy's director, Csaba Aradi, at the park's Debrecen headquarters, were taken on a flight over this 75,000 hectare/290 sq mile biosphere reserve and visited the Ramsar-listed 7,000 hectare/27 sq mile Tiszafüred Bird Reserve.

We also hiked onto the "Great Fishpond", a former ox-bow lake which had been converted in 1915 from an alkali marsh to aquaculture. The Halastó Demonstration Area is also a Ramsar site and provides critical breeding and migratory habitat for waterfowl. As such it is ranked as one of the most important bird habitats in Europe.

We toured the Mata Stud Farm complex, a former state farm during the Soviet era which is now owned by the Ministry of Environment and operated by the Public Company for Nature Conservation and Genetic Preservation. This market-based effort maintains a breeding farm for the Noriusz horse and leases large portions of the steppe for traditional intensive- ly shepherded herds of grey cattle, water buffalo and flocks of Racka sheep.

The first reintroduction site chosen was in Wyoming, close to where the last wild population had been found, and releases were made between 1991-93. A number of ferrets survived in the wild and different forms of release were experimented with to try to achieve higher survival rates.

Feasibility studies were then underway at Badlands National Park to evaluate habitat. A suitable experimental repopulation area for releases was identified lying within Badlands and an adjoining part of Buffalo Gap National Grasslands, where there was a healthy population of black-tailed prairie dogs.

Releases at the Conata Basin/Badlands area began in 1994, and over a four-year trial period it was found that the highest survival rates were achieved when releasing juveniles, aged between 90 and 120 days, at a time of their life cycle when they would naturally disperse from the natal burrow.

Doug Albertson explained: "We introduced active predator management around release areas, using electric fences to protect the ferrets from their biggest predator, the coyote, and prior to release we kept the juveniles for 45 days in pounds where there were prairie dogs and burrow systems to help precondition them.

"Releases continued until we had established a sustainable population of around 100 ferrets, and latest monitoring shows that they have blossomed and appear to have reached carrying capacity for this 6,475-hectare/16,000-acre prairie dog habitat of about 250 animals."

Using the methodology developed at Badlands, further releases of captive-bred ferrets have been made in Montana, Arizona, Colorado, Utah, northern Mexico and on two South Dakota Indian reserves, but at present Badlands is the only site in the country considered to have a self-sustaining population.

Doug added: "We now estimate that the total population of ferrets in the wild and in breeding programmes is approximately 1,000. The goal is to have 15 sustainable populations established by 2010, and that's a lot better situation than when this programme started with just 18 animals."
DEAR READER,
THE big challenge for a small and relatively new magazine like NPIB is to continue growing our readership in protected areas worldwide. We are making progress. We now have subscribers in 30 countries whose support helps us to continue providing free copies of the magazine to colleagues and educational institutions in 79 developing and Third World countries.

FREE INTRODUCTORY OFFER
If you know someone who might be interested in subscribing to NPIB, please forward their name and postal address and we will send them a free introductory copy.

WORLD PARKS CONGRESS
Several reports in this issue refer to the forthcoming World Parks Congress to be held in Durban this September, which I look forward to attending.
I hope this will give me the opportunity to meet some of NPIB’s regular contributors and hopefully many others with ideas and suggestions for future editorial subjects.

SURVEY
Subscribers should find a news survey form enclosed with this issue. Your co-operation in responding to this request for information will be much appreciated.

Editor — Stewart Bonney.
stewartbonney@nationalparkinternationalbulletin.com

RIDERS IN TRADITIONAL COSTUME DEMONSTRATE THEIR SKILLS AT THE ANNUAL HORSEMAN’S DAY AT HORTOBÁGY.

A variety of tourist-related services are provided. We were conveyed by horse-drawn carriage onto the steppe and treated to demonstrations of riding skill and traditional shepherding techniques by horsemen and herdsmen in historic garb.
The fact-finding tour also included visits to areas where wetland restoration programmes are underway, locations where the European souslik (Spermophilus citellus, similar to Badlands’ 13-lined ground squirrel) might support polecat populations, and the park’s raptor rehabilitation centre.

Our Hungarian hosts treated us to a farewell gathering in a restored roadhouse and museum located on the historic Salt Road route from Transylvania to the Hungarian heartland, where we were able to discuss the Hortobágy project with a wide range of local professional and business people and gauge the high level of support it has.

Vice Director Gyarmathy viewed this visit by the USNPS team as one of introduction and orientation, with additional technical and working exchanges arising from our personal knowledge of each other’s administrative site, and operational objectives were agreed.

Following revision, the draft Memorandum of Co-operation for a Sister Parks relationship was signed in November 2002.

This summer, in preparation for the opening of Hortobágy’s new visitor centre, Mariann Olah and Mariann Kiss will spend time in Badlands with Resource Education Chief, Marianne Mills, discussing exhibit planning, media presentation and curriculum-based education programmes.

Badlands National Park’s wildlife biologist, Doug Albertson, was set the task of researching either the availability of a suitable live trap that could be used at Hortobágy to assist research into their Red Book-listed mole rats, or the feasibility of having a prototype fabricated by the company which produces customised traps for the Badlands ferret programme.

Doug, who joined the Badlands team seven years ago specifically to work on its black-footed ferret reintroduction programme, said: "We are looking at ways of using our expertise to help Hortobágy extend their population of the endangered mole rat, possibly by using live traps to relocate them to other habitats. Unlike ferrets, the mole rats constantly dig new burrow systems, which makes them difficult to find."

Referring to Hortobágy’s polecats and their ferret cousins in Badlands, he said: "Both are nocturnal but, unlike the ferret, the polecat is an opportunist which finds food in a variety of habitats. The park administration there has not been able to carry out extensive surveys and they do not know population densities."

"The next step will be to develop a programme using some of the techniques we have developed at Badlands, such as high-powered spotlight surveys. If this shows they have an active population, there may not be a need to have a reintroduction programme, but we possibly can help them develop the population a little more."

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PASSING THE TESTS OF A FIRST DECADE

by STEWART BONNEY

THIS year the National Park Foreste Casentinesi, in central Italy some 50 km/30 miles east of Florence, celebrates the 10th anniversary of its official inauguration. Director Vittorio Ducoli and his 15-strong administrative team can look back on a decade in which difficult challenges have been met and progress made while maintaining an all-important balance between the emerging park structure and the needs of the rural communities inside and bordering the national park.

Split between the two major Italian regions of Tuscany and Emilia-Romagna, the park’s territory spans three separate provinces — Forli, Arezzo and Florence — and as it falls within the jurisdiction of 12 different local municipalities, keeping the competing interests of so many tiers of local government informed and in harmony is a complex task.

The park management is entrusted to an independent body, consisting of representatives appointed by the state, in which the views of local communities are represented by five of its 12 members. They in turn seek the views and agreement of a second body, the Park Community, which comprises representatives of all the local institutions, on major park projects and spending plans.

Vittorio said: “The voice of local communities in Italy, and especially in this region, is very important — they are very proud of the autonomous powers they have concerning land management. We have therefore to be very careful to involve them and make them aware that park projects are not being imposed by Rome, but are linked to local development and conservation plans which balance the needs of communities within the park boundaries and the interests of towns and villages close to the park perimeter.

“One of the most important problems we have to overcome is that the national park is a centralised entity spread across two regions. As a result, we have two headquarters — one at Pratovecchio in Tuscany and the other at Santa Sofia in Romagna, and we inherited a network of 11 visitor centres.”

In the face of a recent 20% reduction in central government funding, the problem of meeting staff costs at these centres was solved in a unique way to the benefit of the community, as Vittorio explained.

“We invited a number of youth co-operatives to put forward working plans to run the centres,” he said. “Following a public selection process, two groups who submitted the best proposals were appointed. The plans recognised that the visitor centres should not just provide information but also be places where local organisations and cultural activities could be promoted.

“Each co-operative receives an annual budget of about €100,000 towards wage costs, but they are then encouraged to manage the centres in a commercial way and to generate other income. Many of the young people involved live in small villages where there are few jobs, so this offers them a real opportunity to work creatively.”

In the decade since the park was established, accessibility to this popular walking area has been greatly improved. It now boasts a 600 km/375 mile network of marked paths thanks to the hard work of park staff, working in partnership with the State Corps of Foresters, who have restored, reconstructed and waymarked centuries-old mule tracks and mountain paths to create 118 num-

Traditional Romagnola cattle graze on upland pasture in Foreste Casentinesi National Park.
THE BIRTHPLACE OF SYLVICULTURE

THE central core of the park is formed by the historic 10,600 hectare/40 sq mile Foreste Demaniali Casentinesi, an ancient complex of forests managed for timber production for over 1,000 years.

From the Middle Ages onwards, the area saw the foundation and growth of many monastic orders. The strong relationship with nature felt by the monks of Camaldoli was expressed by a natural philosophy that regarded the forest as a vital element in monastic life.

The mother house of the order founded by St Romuald in the early 11th century, the hermitage of Camaldoli was consecrated in 1027 and a monastery was completed in 1080.

In that year, the resident prior recorded rules concerning the guardianship of the surrounding forests, and in 1520 Camaldoli monks printed a work known as the Codice Forestale. This contained rules of tree cultivation acquired at the monastery over the previous five centuries that is considered to be the founding work of the science of sylviculture.

Controlled in the Middle Ages by the Opera del Duomo — the Florence (S. Maria del Fiore) Cathedral Board of Works, the Casentinesi forests supplied silver firs of high quality used for roof beams and ships’ masts.

Later aristocratic power struggles saw the lands regularly change ownership, and by the early 19th century over-exploitation of the forests, erosion and land clearance for agriculture had greatly reduced their importance. Then in 1838 the Grand Duke Leopold II brought in a Bohemian forest inspector, Karl Simon, to manage an ambitious restoration programme. In the following half century Simon experimented with new techniques of cultivation and introduced many new species including red fir, larch, cedar and cypress.

In 1866, following the suppression of religious orders, the forest became state property, bringing to an end eight centuries of management by the Camaldoli monks.

Despite man’s interference, many woodland areas in remote valleys remained almost un-changed over the centuries, and one such area, Sasso Fratino, was designated as Italy’s first integral nature reserve in 1959.

Access is strictly restricted to foresters and research scientists. In 1977 it was designated a European biogenetic reserve and in 1985 the Council of Europe conferred a European diploma for environmental conservation on the reserve.

Responsibility for the protection of Sasso Fratino lies with the State Corps of Foresters, whose commanders Gino Gremoli and Claudio D’Amico — head a 40-strong team of forest guards who, in partnership with the national park, assure the safety of the protected area and are helping to realise important projects, such as the creation of a 40 hectare/100 acre wildlife sanctuary with hides for visitors to observe red, fallow and roe deer, and the restoration of an arboretum containing 109 mature species planted by Karl Simon.

bered trails and hiking routes.

Nine nature trails have also been established in accessible areas, and nearing completion is a short woodland experimental path “for all the senses” created for blind and disabled visitors.

Exploration of Foreste Casentinesi’s wild terrain is more rewarding in the company of a walk leader and, with this in mind, the park runs special courses to train part-time tour guides.

Vittorio added: “We have trained 40 guides who now offer a range of themed specialist or educational walks which can be arranged through our visitor centres. This work helps students and other young people to earn a little income during certain months of the year.”

In many areas of the park, visitor levels are extremely light. A number of minor roads and forest tracks which are closed to traffic provide useful cross-country routes for mountain bikers and a growing number of horse riders. Tours are arranged through local agri-tourism enterprises which provide stabling and overnight accommodation.

The park does, however, have a number of acute problems caused by visitor pressure.

The park director said: “While it would have been very difficult to ban mushroom picking we needed to reduce the number of pickers coming here. Now, our management plan allows the practice to continue if people buy permits from us, and these are less expensive for residents within the park or in road congestion in the peak summer tourist season.

Andrea Gennai, the park’s technical services and forestry manager, said: “While the most popular time for walkers visiting the park is spring, early summer and autumn, the main summer months see a huge influx of car-borne visitors. The roads become very crowded and we are currently trying to find areas for new peripheral car parks from which visitors will then be encouraged to catch a shuttle bus up into the mountains.”

Since the 1940s there has been considerable depopulation in many of the high altitude farming areas, but interest in traditional pursuits remains strong. Although all hunting in the park has been banned, there has been compromise in respect of other local customs, such as mushroom picking.

Three main cross-Appennine roads traverse the park, and two internationally-famous religious sites — the hermitage of Camaldoli and the 13th-century monastery of La Verna founded by St Francis — attract more than one million visitors annually, leading to extreme

Park Director Vittorio Duco/i.

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nearby communities. Last year we sold about 20,000 permits which provided useful income for the park.

A key strategy of the park’s management has been the emphasis on support for local business. Strong backing is given to new agricultural enterprises in open upland areas which provide an important habitat for birds, also to local food producers and to accommodation providers through a hotel and farmhouse network.

Vittorio explained: “Our aim is to try to improve standards of accommodation for park visitors, and to date 27 businesses have signed up. They must agree to make better use of water and electricity resources, improve waste disposal and provide their guests with information about the park, and in return we have produced a publicity booklet which helps promote their services.”

Carlo Cipriani, the mayor of Poppi, who represents three quarters of the 2,000 people who live within the park boundaries, confirmed that a majority of the population were park supporters.

He said: “It would be impossible here to have a national park that did not involve the local community. People see it as an opportunity, maybe not for today or tomorrow, but for the long-term future. It is our best hope to attract tourists.

“It also presents us with a challenge. Family-run businesses which in the past attracted older visitors now see they have to change. People who visit the park, walkers and cyclists, are younger and more active. They eat more food and want traditional dishes. Our hotels and restaurants have to adapt to this new kind of tourism linked to nature.”

The 13th century monastery of La Verna, founded by St Francis, is one of the national park’s major tourist attractions.

FORESTE CASENTINESI FACT FILE

National Park Foreste Casentinesi, Monte Falterona, Campigna.

COVERING an area of 36,500 hectares/140 sq miles on either side of the Appennine watershed between Tuscany and Emilia-Romagna, two thirds of this national park comprises the area formerly incorporated in the Crinale Romagnolo Regional Park which opened in 1988, together with forest reserves owned by the state and regional authorities. The remainder of the land within its boundaries is in private ownership.

While under the control of the Ministry of Environment, and receiving 80% of its funding from central government, the park has the legal status of a non-profit, independent authority.

More than 80% of the park is tree-covered, with forests rising up to a long ridge with several 1,500m-1,600m/4,920-5,250 ft peaks which forms the central axis of the protected area. Steep sandstone spurs and deep narrow valleys descend east towards Romagna, while gentler wooded slopes descending to the broad valley of the River Arno characterise the western side of the park.

Streams criss-cross the park feeding both the Arno and a number of Romagna rivers, and a man-made lake formed by the Ridracoli dam within the park supplies drinkable water to almost all of Romagna.

Its geographic position on the border between central Europe and the Mediterranean is subject to particular climatic conditions nurturing rich and varied vegetation, and of the 1,200 recorded species of flora, 100 are categorised as rare or endangered.

Of the 42 mammals in the park, a popular attraction for visitors is the presence in considerable numbers of red, roe and fallow deer, wild boar and mouflon - wild sheep first introduced from Sardinia in 1872. One probable explanation for the now-decreasing mouflon population is the return of the wolf.

Attracted by the park’s large areas of undisturbed forest, inaccessible mountain slopes and an abundance of wild ungulate prey, the first indication of wolves returning to the area came in 1979 when one animal was shot by poachers. Park staff estimate that there are now six productive family groups of wolves in the park, numbering between 30 and 35 animals and forming one of the largest wolf populations in Italy.
AN OASIS OF CONSERVATION

Above: a howler monkey in one of Costa Rica’s conservation areas. Below: Tortuguero, a national park in the country’s Caribbean region.

MINAE, Costa Rica’s Ministry of Environment and Energy (Ministerio de Ambiente y Energía) was created in 1982 and in 1995 the promulgation of the Environment Organic Law defined its responsibility for a more specific range of activities as part of the country’s response to a series of social demands to develop an institutional framework to properly protect the country’s natural resources.

One of MINAE’s main objectives is the consolidation of the national system of 11 conservation areas (SINAC — Sistema Nacional de Areas de Conservación) aimed at developing an integrated institutional effort to carry out the Ministry’s biodiversity-related activities on a national scale.

The conservation areas are territorial units where private and government activities inter-relate in fields such as the use and conservation of natural resources, while sustainable development alternatives are sought as part of a joint effort with the civil society.

In total around a quarter of the territory of Costa Rica has been protected in different management categories ranging from biological and forest reserves, wildlife refuges, protected zones, wetlands and 26 national parks which alone account for 11% of national territory.

NPIB’s award-winning wildlife photographer, Allan Potts, visited three of the country’s national parks — Poás Volcano, Tortuguero and Palo Verde.

POAS VOLCANO National Park was founded in 1971 and expanded to its present size of 6,506 hectares/25 sq miles in 1993.
The most visited park in the country, its principal attractions are the 1,320 metres/4,330 feet diameter main volcanic crater, the Laguna Botos, a rainwater-filled secondary crater, and a network of nature trails through forests of epiphytes and tree ferns.

Eruptions at Volcán Poás are known to have occurred in 1747 and 1834, with the last major period of activity in the early 1950s and the last minor eruption in 1994.

The park has a diverse and abundant population of birds with a total of 79 species identified, including various hummingbirds, black guan, resplendent quetzal, toucan, rufous-collared sparrow, sooty thrush and large-footed finch.

TORTUGUERO National Park is located in the country's Caribbean region, 80 kms/50 miles north of Limón. One of the main reasons for its creation was the protection of green turtles for which it provides the most important rookery (nesting area) in the entire western half of the Caribbean region.

It comprises a land area of 26,156 hectares/100 sq miles containing important remnants of tropical rain forest that only 50 years ago covered all the country's north-eastern area, and a marine zone extending over more than 50,000 hectares/193 sq miles consisting of a vast alluvial floodplain formed by a network of river deltas.

Numerous rivers, channels and lagoons offer visitors the opportunity to explore areas rich in flora and fauna. Within the park are found over 400 species of trees, 2,200 plant species and an immense diversity of fauna including endangered species of mammals such as jaguar, ocelot, manatee, tapir, sloth and tapir, plus large populations of monkeys, macaws, toucans and bulldog bats which feed on fish.
Despite its small size, Costa Rica has a great biodiversity in comparison with its larger neighbours. One example is illustrated by the number of tree species for every 10,000 sq km/3,860 sq miles, which total 35 in Colombia, six in Brazil and 295 in Costa Rica.

However, the nesting activity of sea turtles is one of the park's main visitor attractions. Apart from the green turtle, other species which nest in the park are the critically-endangered leatherback, hawksbill and loggerhead turtles.

The Caribbean Conservation Corporation (CCC) is conducting the longest on-going sea turtle research and conservation programme in Tortuguero. Initiated in 1955, conservation measures have seen the population of green turtles grow steadily in the past 30 years.

PAULO VERDE National Park, which contains dry tropical forest and wetlands, is one of the most important areas in Latin America for aquatic and wading birds, both native and migratory, and was registered as a RAMSAR site in 1992. More than 280 bird species have been recorded.

Dr Eugenio Gonzalez, director of the Palo Verde Biological Station, reports that within the park the Tempisque river basin is under significant threat as a result of land use changes, agricultural irrigation and water extraction.

An area totalling 31,000 hectares/120 sq miles has been irrigated for crop growing, and 250 km/155 miles of canals and 270 km/168 miles of roads have been built to support agricultural production. As a result there have been severe changes to the natural ecosystem of the region. More than 35% of the wetlands have disappeared and more than 60% of the forest along the margins of the Tempisque river have been felled.

An integrated management project for the river basin has identified a number of actions to help preserve its ecological integrity. These include management and monitoring the quantity and quality of water discharged from rice fields, gathering of relevant social and economic information relevant to the integrated management of the river basin, restoration of wetlands and river streams.

AN increase of 11.4% in visitor numbers has resulted in Kruger National Park passing the one million annual visitors mark for the first time.


UNESCO has expressed great concern about damage to the Okapi Wildlife Reserve caused in clashes between rival armed militias. Covering about one fifth of the Ituri Forest in the north-east of the country, Okapi is home to many endangered primate and bird species.

The Okapi reserve is one of five sites in the DRC inscribed on the List of World Heritage in Danger, along with Virunga, Garamba, Kahuzi-Biega and Salonga National Parks.

The Director of UNESCO's World Heritage Centre, Francesco Bandarin, who has called on the UN Mission in the country to help remove the serious threat to the reserve, said: "According to the information we have, these clashes have had disastrous effects. The station at Epulu has been looted and the disarmed rangers forced to flee into the forest which has led to a worrying increase in poaching, especially of elephants, by these armed groups."

UNESCO is taking local and international action to defend the five sites as part of a 2000-2004 project for Biodiversity Conservation in Regions of Armed Conflict conducted jointly with the UN Foundation. The project has a budget of US $4.3 million, most of which is being used to pay the 1,100 rangers who patrol the five World Heritage Sites and for training to help them deal with the crisis.

A NEW mountain protected area, the Cordillera Huayhuash, has been officially designated. Lying south of Huascaran National Park, the area contains Peru's second highest mountain, the 6,634m/21,765 ft Yerupaja, and a further six peaks above 6,000m/19,685 ft.

In recognition of the importance of Andean farming and herding cultures for conservation of the area, it has been given a Reserved Zone status which explicitly recognises the rights and traditional land uses of the eight peasant communities with land within the protected area.
MANY of the world’s turtle species are now a subject of conservation concern. Habitat loss and degradation, increased predation, pollution, harvesting, collecting, and road mortality are implicated as primary threats to populations on a global scale. In human-dominated regions such as southern Ontario in Canada, parks play an increasingly crucial role in turtle survival.

Turtles are incredibly successful organisms from an evolutionary perspective. Ironically, some of the very attributes that may have promoted their success — such as terrestrial nesting, late maturation, longevity and naturally low adult mortality — may now actually be detrimental to their survival in human-altered environments. Because of these traits, the presence of adults in a population can deceive us into thinking that all is well while they mask underlying conservation problems.

As human populations continue to grow and alter natural ecosystems, the role of parks in conserving species such as turtles becomes increasingly important. However, while parks may preserve essential habitats for turtles and other organisms, they are not immune to continuing threats from outside or inside their boundaries. Point Pelee National Park in south-western Ontario forms the southernmost tip of Canada’s mainland. It was the first national park in Canada to be created based on its biological value. Point Pelee is internationally famous for bird watching, but this is not the only attraction with great species diversity in this small park. The combination of a warm moist temperate climate, large deep freshwater marsh (10 sq km/3.8 sq miles), and Carolinian forest (6 sq km/2.3 sq miles) makes this a great spot for turtles. The marsh is considered internationally significant by RAMSAR and is one of the last sizeable coastal wetlands left in the lower Great Lakes.

Point Pelee is functionally an island of natural habitat in a sea of agriculture and urbanisation — losses of wetlands and forest exceed 90 per cent in the surrounding region. Historically it was the location of greatest turtle diversity in all of Canada. A total of 10 turtle species have been recorded — seven native and three introduced.

Early herpetology studies conducted in 1913 and 1920 reported painted turtle, snapping turtle, Blanding’s turtle and spotted turtle as all relatively common at Point Pelee; present but scarce were northern map turtle, stinkpot or musk turtle and spiny softshell turtle. From the 1960s to 1990s the eastern box turtle has been reported on several occasions at Point Pelee, but biologists debate whether this is a native species or if individuals were simply released by pet owners.

Records indicate that a small number of wood turtles, which are native to the region, were introduced but only persisted for a few years. The red-eared slider of the United States — the common pet store turtle — has also been recorded at Point Pelee on numerous occasions, and is still sometimes found today. Individuals of this species are most certainly introduced by pet owners; when found, park wardens remove them for fear that they may compete with native turtles or introduce diseases into the ecosystem.

Recently there have been concerns that turtle populations at Point Pelee may be declining, and some species perhaps even locally extinct. In co-operation with Parks Canada, we initiated a two-year study in 2001 to determine which species of turtles still exist in the park, their population structures, and conservation status. Surveys are made by canoeing, hiking and wading through the entire park in search of any evidence of turtles (visual sightings, nests, footprints, etc.) to determine which species are present and where they occur. A mark/recapture technique is employed to determine population size and population structure of the various species.
Turtles are captured by hand and with the use of three different types of traps - baited hoop, basking, and baited wire-cage. We record species, measurements, weights, gender, habitat, location and weather conditions for all turtles captured; they are then marked and released at the location where they were originally caught.

By the end of the 2002 field season we had caught and marked a total of 1,599 individual turtles of five species, made hundreds of recaptures and found 180 turtle nests. We marked 867 painted, 441 snapping, 179 map, 85 Blanding's and 24 stinkpot turtles. Based on our mark/recapture results we estimate park population sizes of about 7,200 painted and 1,400 snapping turtles. However, population sizes for map, Blanding's and stinkpots range in the low hundreds for each species. These data indicate reasonably large populations exist only for painted and snapping turtles.

The stinkpot, which had not been reported for several years, was found to be present in some of the more remote areas of the Pelee Marsh; at least we now know that a small population still exists. Perhaps the most exciting event during the two years of study was the 2002 sightings of the threatened spiny softshell turtle. One was observed at the north boundary canal, basking on a tyre; the other swimming in Lake Erie off East Beach. The spiny softshell turtle was never considered common at Point Pelee and in fact the only reports before 2002 pertain to one in 1972, one in 1990, and two in 1995. Those observed are most likely part of a small population that exists in the shallow western basin of Lake Erie and individuals occasionally enter the park to bask or nest.

We were unsuccessful in finding any spotted turtles, despite extensive searches. Considering that the last confirmed sighting at Point Pelee was in 1992, it appears the species is now locally extinct. It is unlikely that the spotted turtle could ever recolonise Point Pelee on its own, since it is incapable of either travelling long distances in Lake Erie or crossing human-modified land. Examining the age structure data that we collected, and comparing it to data collected during a 1972 study at Point Pelee, suggests that the painted turtle population is stable, but the populations of snapping and Blanding's turtles are not. Populations of the two latter species had a top-heavy age structure - a greater proportion of adult turtles to young turtles - which was evident in 1972. By 2002, there was a further shift toward older age classes in both populations - which is more extreme for Blanding's turtle than for the snapping turtle. These results indicate that there may be a problem with recruitment of young turtles into the population of these two species.

During the 1972 study, insufficient data was collected for either the map turtle or stinkpot that could be compared to current data; however, a sufficient number of map turtles were captured in 2002, and the data will be available to compare to future studies. Although it is difficult to judge the stability of a population without historical data for comparison, map turtle age structure indicates that this population is likely to be stable at Point Pelee.

There are a number of threats to turtles worldwide which could also be causing declines in the overall populations at Point Pelee - namely predation, road mortality, contaminants, isolation, habitat loss, harvesting and collection. Our study is focusing specifically on the effects of predation, road mortality and contaminants.

Predation rates are greatest on turtle nests, before the eggs have hatched. It is possible that predation rates may be greater today than they were historically, since raccoon and other predators like striped skunk and opossum are now considered to be more numerous at Point Pelee than at any time in the past.

Predation rates on turtle nests along park roadsides and adjacent areas were found to be 100% in 2002, whereas rates in more remote areas of the park ranged from 62 to 64%. These high predation rates can easily explain the low recruitment of young into Blanding's and snapping turtle populations. Snapping turtles are possibly most affected by predation on nests since they prefer nesting along roadsides. Blanding's nests and hatchlings might be more greatly affected than other species by raccoon predation because much of their preferred habitat is adjacent to these areas with high raccoon densities. Additionally, Blanding's turtles and the locally extinct spotted turtle are under an additional threat of predation since adults prefer small shallow ponds, common foraging sites of raccoons. The last remaining spotted turtles may have disappeared as a result of low water levels of Lake Erie during the past decade or so, which caused many sloughs at Point Pelee to dry up; this greatly reduced the amount of available habitat for the species.

We conducted an experiment to determine if nest protection was a feasible conservation action. Nests were either protected by covering them with wire-topped wooden boxes, covered and also sprayed a pepper mixture around the edges, or were left unprotected. The combination of protective boxes and pepper spray virtually eliminated predation on nests. In the autumn these boxes are monitored daily to see if hatchlings are successful.
count the emerging young turtles (hatchlings). Hatching rates were high in the protected nests and almost 1,500 hatchlings were released during the two field seasons.

The protection offered by the turtle shell, which played such an important role in their success, ends abruptly when it meets the tyres of a speeding motor vehicle. Road mortality on turtles can be very detrimental to their populations, even if only a few individuals are killed each year. Turtles are long-lived (over 70 years for some species) and do not mature until a late age (20 years for both Blanding’s turtle and snapping turtle). Since natural mortality rates are extremely low for adults, losing just a single adult turtle per year to road mortality could greatly affect the population’s future. Turtles are especially vulnerable to road mortality as females migrate to nest sites. Unfortunately, the soft shoulders of roads often provide the type of substrate that attract nesting females. The effects of road mortality will be examined by creating computer models using the numbers of turtles killed on the road each year, life history characteristics of the various species, and their population sizes.

The effects of contaminants on turtles at Point Pelee are currently unknown, but a few areas of the park are known to have elevated levels of DDT, DDE and related compounds — a legacy of former agriculture and mosquito control programmes. Even though their use in the park ended by the early 1970s, these persistent pollutants have accumulated in amphibians and other reptiles in the park. We are just beginning to study their potential effects on the park’s turtle populations. To determine some of the effects of contaminants, concentrations in turtles are compared to the hatching success of nests (the percentage of eggs that hatch into young turtles). To do this we search for turtle nests and, when we find one, take three eggs for contaminant analysis; the nest is then protected from potential predators by using a wire screen box.

The relative impacts of collection of turtles for pets and harvesting are difficult to assess because of their clandestine nature, but evidence exists that these activities do occur at least occasionally. The insular nature of the park undoubtedly plays a role in the status of its turtles. Only the two most common species, painted and snapping turtles, commonly occur in the agricultural lands adjacent to the park. The species which are rare in the park are all highly isolated from neighbouring populations. All populations carry a risk of extinction that is positively correlated with population size. Unfortunately, populations that dwindle to small numbers or become locally extinct in highly isolated parks cannot be rescued or recolonised by neighbouring populations.

Many of our analyses are still in progress, but two years of research have revealed much about the ecology and status of Point Pelee’s turtle community. Although high levels of predation are at least partially responsible for the decline of turtles at Point Pelee, it is important that all possible threats are examined for the most effective management and conservation of these turtle populations. Had we not conducted a detailed investigation, the presence of adult turtles may have given the impression that the park’s turtle populations were healthy.

* Many thanks to our field assistants Carol Browne, Lucas Foerster, Jeremy Hickson, and Trevor Zammit, technical assistants Darlene Hecnar and Rene Losier, and project managers Tom Linke and Vicki McKay, and many volunteers. Financial support was provided through Parks Canada and its Species at Risk Recovery Fund, the Ontario Premier’s Research Excellence Award and the Natural Sciences and Engineering Research Council of Canada. Email: browncon@hotmail.com or Stephen.Hecnar@lakeheadu.ca
extinction and decay. Papers delivered suggested a common blueprint for managing across boundaries, which was: engage the whole community, gather stakeholders into a formal group, scientifically evaluate and document the problem, provide equitable solutions, continue to monitor and communicate. Often issues were problems that had never been addressed in a serious, long-term manner.

Albert Mullett, an indigenous Australian who grew up in southern Victoria, spoke of the long history of disrespect shown towards indigenous people, while acknowledging that Parks Victoria was moving towards working with indigenous communities. Albert pointed to problems dealing with bureaucracy, changes of government and ministers, lack of indigenous Rangers at Wilsons Promontory and appealed for governments and agencies to listen to indigenous communities.

In "Managing the Masses", environmental historian Simon Cubitt provided a thought-provoking challenge to the concept of national parks. Simon was critical of the cultural assumptions underlying national parks which had been found wanting, particularly in relation to the rights of indigenous and local people and the emerging focus on biodiversity. There had been a decisive international swing away from national parks towards new bioregional models which recognised the role humans had played in the landscape.

"Protecting the Protector" was a workshop which brought home the dangers faced by Rangers carrying out their duties. IRF Vice President Juan Carlos Gambarotta (Uruguay) presented statistics from a study which he had undertaken regarding the violence perpetuated against Rangers. More than 20 Rangers had lost their lives over the past five years, most of them in Third World countries. The workshop generated many ideas on how to assist Rangers facing these dangers, which were later fused into a resolution then passed at a meeting of the IRF, which will be taken to the World Parks Congress in Durban this September.

A permanent memorial dedicated to those Rangers who had been killed in the course of their duty was installed in Wilsons Promontory, overlooking Tidal River and the sea.

Between workshops, I joined 30 or so colleagues on a field expedition to Sealers Cove on the Promontory’s east coast, walking through windswept tea tree forests, valleys shaded by tree ferns, and across long boardwalks snaking through swamps where Southern toadlets chorused. From the beach at Sealers Cove we were ferried out to a launch and transferred to Port Welshpool.

Taking the theme "Healthy Habitats" the following day, Tim Allen gave an overview of the newly-created system of marine national parks and marine sanctuaries in Victoria, one of which is at Wilsons Promontory. Tim demonstrated that communities’ initial apprehension about marine parks in New Zealand had been converted into strong support for the reserves — something it is hoped will also occur in Victoria.

One stream of the sessions dealt with the massive bushfires experienced in Victoria over the past year. The fires in the north-east of the state were some of the most extensive ever experienced, running over a 50-day period and burning approximately 1.1 million hectares/4,250 sq miles. Fire played a major role in the maintenance of biodiversity and Mike Cusack described a programme which Parks Victoria had undertaken to improve the understanding of the

photographs: Scott Crabtree

Delegates at the International Ranger Federation's meeting at Wilsons Promontory National Park.

"Healthy Habitats" also explored the broad theme of human impact on the environment. As an Australian who has lived in a relatively peaceful continent, it was difficult to fully appreciate Jobogo Mirindi’s story of the impacts of war on primates in the rainforests of the Democratic Republic of Congo (DRC). The nation contained Africa’s largest rainforest, but a combination of military activities and human encroachment on their habitat meant that the primates’ chances of long-term survival appeared poor.

The bonobo is the rare and endemic pygmy chimpanzee found in the DRC’s Salonga National Park. Bernard Lyomi Lyashi spoke of customary laws and beliefs of the Mongo tribe, who lived with the bonobo, that have helped protect the animal. Most of the animals were totems for different local tribes, which ensured that there were people who worked to protect a range of species. One could not kill an animal if it was one’s tribal totem as it was considered to be the incarnation of ancestral spirits. Animals such as elephants were appreciated because of their environmental roles. Wars had caused immeasurable depletion of resources, and effective patrols were not possible until peace came to the war-torn republic.

Tim Russell walked delegates through the landscape of the
Quantock Hills of southern England. Designated an Area of Outstanding Natural Beauty, the hills carried many examples of human use. Woven into the landscape tapestry were the original ancient oak forests, heathlands created by human fire, Bronze Age standing stones, Celtic forts, Norman motte-and-bailey castles with medieval villages standing next to modern sub-divisions. A nuclear power station stood within sight of farmland to complete the picture. Positive human impacts included the re-introduction of hedgerows, replanting with native plant species and landscape restoration — all of which would have pleased the lovers of the poetry by Samuel Taylor Coleridge, who gained inspiration from the Quantock landscape.

Papua New Guinea's fourth National Goal is that its natural resources and environment be protected for the future. Godfrid C. Solmu spoke of the factors which impinged on protected areas — poverty, alienation, little public awareness and poor public relations. Godfrid believed that people would not understand the need for conservation unless there were tangible economic benefits. Education was a key in reaching the community, and the goal was finding a consensus which showed flexibility on issues that accommodated traditional knowledge.

Meg Weesner works at Saguaro National Park in Tucson, Arizona for the US National Parks Service, which has been developing an inventory and monitoring programme. Inventories were undertaken, then parks worked towards identifying 'vital signs', indicators which provided a measure of ecosystem health. Some commonly used monitoring strategies ranged from single indicator species or groups of related species to monitoring species richness. The programme was too expensive to be implemented in all parks but had its rewards — like when a trip-line photographic monitoring point recorded a species of cougar which hadn't been seen in the park since 1905.

Peter Shadie, presently working with the International Union of Conservation Nations (IUCN), spoke of parks being at the crossroads. Biodiversity might seriously be depleted by the end of the next two human generations. Peter is part of the IUCN organising team for the World Parks Congress to be held in Durban.

Juan Carlos Gambarotta enjoyed the Congress, noting: “Many Rangers, especially from the Third World, face many dangers — and when they attend the Congress they get a feeling that the work they do is appreciated all around the world. Maybe in their home towns they are not appreciated, but at the Congress they know that they are doing something for all the world. They share their wisdom and enthusiasm.

“Unfortunately I couldn’t go to many sessions of the Congress because the International Rangers Federation Committee meets only once every three years at the Congress, and we still have many things to do. I was worried because many of the founding members of the Federation are standing down, but importantly new people have arrived, so the Federation will be alive for a long time.”

There were many other vivid presentations, such as Youping Chen on China's Wangling Panda Reserve, Pedro Prieto from Argentina on sustainable firewood management, Tin Aung on biodiversity of Myanmar — but altogether too many more to mention. The presentations largely demonstrated that Rangers and park management were managing across boundaries, working with their communities to find sustainable and equitable agreements.

I fully enjoyed the many wonderful social events, in which connections were made which spanned around the world. Phillip Ainie from Papua New Guinea was telling me of educational posters made for his community regarding the weed Mimosa pigra. I knew of the weed from Kakadu National Park in Australia’s Northern Territory. Dharanidhar Boro overheard the conversation and was soon wrapping up Phillip’s poster for use in the villages of Assam in India where he works. There was so much badge and uniform swapping that by the end of the Congress it was almost impossible to tell who worked where in the world.

This was my first Congress and for me it was an exciting experience, at times almost euphoric, meeting so many people who each had their own inspiring story and experience to share.
INDIA

TRIBAL CLAIMS AROUSE CONFLICT

REPORTS estimate that at least two people were killed and many more injured when police opened fire on local residents who had forcibly occupied the Wynad Wildlife Sanctuary in Kerala. Those leading the protest claimed that state government promises to allocate them land following their forced removal from the sanctuary had not been met. Writing in the Protected Area Update (no. 41-42), editor Pankaj Sekhsaria observed:

"The one thing that seems to increasingly characterise the protected area network of India today is conflict, and conflict that is getting more violent. The conflict in protected areas does not occur in isolation. It is reflective of our larger socio-economic-political reality. "If indeed the rights of tribal communities to their natural resources had been ensured, and if promises made to reverse the historical process of their land alienation had been met, would they still resort to such extreme and violent measures? "How will these islands of our protected areas survive amidst a sea of growing hostility in the marginalised and alienated local communities? "An important role can be played by those who fight on behalf of our beleaguered wildlife — a role that moves beyond simply demanding state action to save wildlife and one that includes a look at the historical and social factors that cause these conflict situations in the first place. Unless these factors are tackled, more Wynad incidents cannot be prevented."

Referring to another potential conflict situation, involving the Chail Wildlife Sanctuary in Himachal Pradesh, he said that more than 15,000 people whose rights to the lands extended back to the 1950s faced forcible eviction from a town inside the sanctuary. "They are facing severe problems and have been petitioning authorities for many years but nothing has happened. "Another example (of conflict) is that of Pench National Park, on the Madhya Pradesh/Maharashtra border, where some time ago police were used to remove alleged encroachers and "fishing mafia". Recently the chief ministers of both states announced that a tourist project would be developed there with water sports facilities — the first in any Indian national park. "Isn’t it futile even to ask if this is needed? Are there not more important issues to be dealt with first?"

Other conflicts or potential conflicts reported in PA Update included:

Assam. 700 families resettled in forest villages near the Laokhowa Wildlife Sanctuary forced their way into the park and cleared vegetation on land where they wanted to farm.

Himachal Pradesh. 15,000 residents in Chail have appealed to the President of India asking for the denotification of their lands from the Chail Wildlife Sanctuary. Despite being resident in the area for many decades, the residents claim that since 1999 when the sanctuary was notified, they have been denied their rights to gather fodder and firewood from the forests in the sanctuary.

Maharashtra. Plans have been announced to rehouse 16,500 families, who were recently evicted from the Sanjay Gandhi National Park in Mumbai, in a new township.

Uttaranchal. More than 500 families who were forcibly removed from the Rajaji National Park more than a decade ago have said they will return to forest areas inside the park if the government fails to act to improve their "deplorable" housing in a resettlement area where there are no cattle sheds, electricity or water.

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POACHING and hunting by local communities in protected areas is having a major impact on wildlife in India, and reports in the current issue of PA Update cite numerous recent incidents.

In Assam, in the Kaziranga National Park, where the use of casual employees to assist forest guards was ended in 1998 due to financial constraints, there is now an insufficient number of forest guards to combat poaching. This has led to a rebel political group, the United People’s Democratic Solidarity, mounting security patrols around the fringes of the park and threatening to execute poachers and flog and fine anyone involved in killing rhinos.

In Goa, it has become common practice for poachers to use crude bombs to kill wild boar in and around the Mahavir Wildlife Sanctuary to meet demand from local hotels for wild boar meat. While a mysterious disease was officially said to be responsible for three elephant deaths in the Betta National Park, Jharkhand, observers say that at least one of the victims was seen to have a bullet wound to its head. Also, one of two elephants found dead in the Palamau Tiger Reserve had its trunk, nails and jaws removed by poachers.

In Karnataka, the Bangalore-based group Wildlife First claimed that 77 elephants had died or been killed in the Nagarhole National Park in the 34 months between January 2000 and October 2001, and claimed that autopsy reports which said that at least a quarter of the deaths were due to “inter-fighting” between the elephants was very unlikely.

A gang of poachers who were operating in the Meghat Tiger Reserve, Maharashtra, and using power lines running through forests to electrocute deer, have been arrested for causing the death of a tigress and her four cubs.

In Manipur, two poachers were apprehended after killing a number of sangai deer in Keirul Lamjao National Park and, in another disturbing incident in the same area, a reprisal attack carried out by members of the Revolutionary People’s Front resulted in two alleged poachers being shot in the legs as a public warning to other illegal hunters.
RARE PLANT IS FLOURISHING

By DES WILLIAMS
Waikato Conservancy Journalist, Department of Conservation.

THE flourishing of New Zealand's rare parasitic flowering plant, Dactylanthus taylorii near the 959 metre/3,150 foot summit of Mount Pirongia is a sure sign that recent pest control operations in the 14,000-hectare/54 sq mile forest park have had a huge impact, especially on possums and rats.

Department of Conservation Waikato Conservancy staff returned from a monitoring survey on the mountain at the end of January, astounded at the discovery of several new flowering plants outside the wire mesh protective cages.

Waikato Conservancy plant ecologist Andrea Brandon said most of the caged plants were found to be flowering and in good health, with no sign of possum or rat browse. But the finding of those new plants outside the wire provided a welcome and positive indicator that aerial and bait station poisoning and trapping of pests on the mountain last September had succeeded above all expectations.

"Possums are drawn to the dactylanthus flowers by their sweet-smelling nectar and usually destroy each and every flower they come across, often eliminating the entire flowering effort of a population," explained Dr Brandon. "The fact that we have found these new plants outside the wire provided a welcome and positive indicator that aerial and bait station poisoning and trapping of pests on the mountain last September had succeeded above all expectations.

"In its favour for long-term survival is the fact that dactylanthus plants (both male and female) do flower profusely when the pests are kept away, so a large supply of seeds for dispersal are produced if the flowers are pollinated."

Dr Brandon says New Zealand's native short-tailed bat (Mystacina tuberculata) is known to pollinate dactylanthus flowers in Pureora Forest Park, but a recent survey for the presence of short-tailed bats on Pirongia had proved unsuccessful.

"We haven't yet discovered how the Pirongia plants are pollinated, though it may be by mice or large insects, which would have easy access to the plants through the 50 mm/two-inch mesh cages. The successful protection of this dactylanthus population will, hopefully, allow us to focus on that question in future and improve its chances of long-term survival."

Nationally, management of the species is co-ordinated by a recovery group, made up of representatives from each of the conservancies where the species occurs. Recent genetic research pointing to the uniqueness of each population supports such a co-ordinated approach and allows management effort to focus on populations of national importance.

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SUTJESKA National Park is one of only two national parks in Bosnia-Hercegovina, and is located 110 km/68 miles by road south-east of Sarajevo. The combination of the area's scenic grandeur and its biological and historico-cultural assets has for decades established Sutjeska as a national treasure. Sadly, Sutjeska is little known outside the Balkan region and its cause has not been helped by the recent hostilities in Bosnia-Hercegovina. Since 1995, with the Dayton Peace Agreement bringing a degree of confidence to the country, the situation has become more settled and the number of regional and international visitors is on the increase.

During the 1970s and 1980s, Tjentiste, Sutjeska National Park's administrative centre just inside the park's northern boundary, attracted thousands of visitors a year. Yugoslavia's national sports teams from Belgrade used the specially-provided facilities at Tjentiste for training, and even workers' groups came for their annual holidays. But with the break-up of the former Yugoslavia and accompanying pockets of regional conflict, fewer and fewer people visited Sutjeska and the park's facilities and infrastructure gradually fell into disrepair.

In 2001, as part of the World Bank's support for the national forestry programme in Bosnia-Hercegovina, a new management plan for Sutjeska was agreed, one that would revitalise the park's image and enhance its role in the regional economy.

It was anticipated that people who were displaced during the 1990s conflict would eventually return to their homes and set about returning to their former lifestyles, and would look upon the park as a potential source of economic benefit. A stakeholder analysis conducted at the beginning of the plan's preparation clearly showed that
many sectors of the park’s peripheral communities had either no interest in whether the park continued to exist or not, or saw little way in which the park’s presence could contribute to an improved lifestyle for them. The only people who did have a vested interest were the pastoralists who for generations had, and will continue to have, access to the alpine meadows for grazing their livestock.

Coincident with the idea that the park needed to take a more proactive role in the local economy was the need to review the role of forestry in Sutjeska. Forestry activities and the management of Sutjeska have been inextricably linked since the park came into existence in 1962. Access to the park is based largely on a network of forestry roads, and although clear-cutting is not a policy adopted by park authorities, the effects of selective cutting are still all too clear for visitors to see.

Forestry as an economic activity had to be critically reviewed during the process of preparing the new management plan. It was recognised that for the immediate future at least, forestry was to continue as the mainstay of the park’s finances, but that emphasis should be placed on diversifying revenue-generating mechanisms so that forestry could be gradually phased out, or at least reduced to a minimum.

Eco-tourism development was an obvious option because firstly it would make better use of all the park’s resources, and secondly — and just as importantly — it would provide opportunities for local communities to participate in, and benefit from, the park’s activities. Local NGOs, interest groups, national tour operators and community development groups were brimming with ideas at meetings held specifically to discuss this issue. Plans for new hiking trails, camp sites, mountaineering activities and the renovation or construction of visitor facilities, including an information centre and museum, were all incorporated into the tourism development component of the new plan.

Pastoralists in particular were keen to share their lifestyles with visitors, offering them traditional accommodation in their summer alpine cabins — katuns — and providing them with locally-produced food and drink. This kind of ‘alternative lifestyle’ experience for tourists is very much in vogue and could prove very successful in Sutjeska. If visitor numbers to the park increase, opportunities will arise for local residents to provide low-cost accommodation and guiding services, and for producers to sell locally-grown fruit, vegetables and meat to the park to meet its catering needs.

**SUTJESKA FACT FILE**

- Sutjeska National Park is 17,250 hectares/67 sq miles of rugged, scenic, mountainous terrain in southeast Bosnia-Hercegovina, part of the Dinaric massif on the border with Montenegro. Park HQ at Tjentiste lies in the Sutjeska river valley with its magnificent vertically-sided limestone (dolomite) canyon through which passes the main road from Sarajevo to Dubrovnik on the Dalmatian coast in Croatia. Magic mountain, which straddles the Montenegrin border, is the highest point in Bosnia-Hercegovina at a height of 2,386 m/7,828 feet and attracts hundreds of climbers for a special annual event at the end of June.
- Established in 1962; Sutjeska National Park is renowned for protecting one of the oldest tracts of ancient beech, spruce and fir forests (known as Perucica) in Europe. Some trees are estimated to be 300 years old and grow to 60 m/196 feet. Botanical diversity in the park is impressive, with over 2,600 plant species so far identified, 21 of which are endemic.
- The park also supports important Balkan populations of brown bear, wolf and chamois, which are now recovering after several years of uncontrollable, illegal hunting during the internal 1990s conflict.
- Forest covers 60% of the park. Beech, oak and hornbeam forest at lower levels gives way to beech, spruce and fir higher up, to almost pure coniferous forest at the tree-line (1,800 m/5,905 feet), where mountain pine (Pinus mugo) is common. On rocky outcrops with thin soils, Pinus nigra is characteristic.
- Forestry is inextricably linked to the management of the national park. Ten-year forest management plans have formed the basis of the management of all aspects of Sutjeska’s activities — 70% of revenue required for the park’s annual operating budget comes from forestry.
- Spectacular scenery, wildlife, forests and diverse plant life make up only part of Sutjeska’s pool of assets. The area is steeped in a rich historico-cultural tradition as well. Bronze and iron age tumuli, a Roman road, remains of medieval and 15th century churches — and later Turkish settlements — are all present.
- Sutjeska was the site of an important Second World War battle in which a numerically superior and armed German force was repelled by partisans. The Battle of Sutjeska is commemorated by an impressive memorial complex at Tjentiste; scattered throughout and around the park are numerous monuments to fallen heroes. Tradition continues today with the annual arrival of summer pastoralists who bring their sheep and cattle to the park’s alpine meadows to graze.
BALKANS PEACE PARK PLANNED
by CAROLIN KARNATH, IUCN

A NUMBER of international and local organisations are pressing forward with a proposed plan, first initiated in 1999, to establish a Balkans Peace Park in the Alps of northern Albania, Montenegro and Kosovo.

The proposed location of this transboundary protected area, in one of the most beautiful mountain wilderness regions in Europe, contains three different cultures, religions and ethnicities and has seen continuous conflict throughout the centuries.

In the years of war and hardship of the 1990s, forests were felled, fish stocks decimated and wild animals widely hunted for food by desperate local populations. And this exploitation of natural resources has continued since fighting ended.

Anthropologist Antonia Young who, together with her husband Nigel Young, Director of the Colgate University Peace Studies Program, New York State, is one of the originators of the proposed peace park, will span the Montenegrin Prokletija National Park, the Thethi National Forest Park in northern Albania, and the Rugova region of western Kosovo.

The Youngs, together with Dritan Shala, founder of the Kosovar environmental protection association, Aquila; the Young Intellectuals of Albania (IRSH) and other NGOs took the lead in exploring the benefits the projected park could offer to the sustainable development of the region by forming the international Balkans Peace Park Support Committee.

In July, Antonia Young and others involved in the support committee are planning a transboundary pilot trek through areas of the proposed park led by local guides from all three countries with participants being accommodated in a Peace House rebuilt by Aquila in a village which was totally destroyed in 1999.

In anticipation of an increased flow of foreign tourists into Bosnia-Hercegovina in the near future, tour operators based in Sarajevo and Banja Luka are looking towards Sutjeska as a prime destination and are beginning to pressure the park authorities to improve the visitor facilities in the park.

One problem facing the authorities is the difficulty of judging at what pace tourism development ought to proceed without compromising other management objectives. The new management plan provides both short-term and long-term options for tourism development, based on the levels of funding available. Initially development funds will be scarce, unless higher levels of forestry activity are sanctioned, but this flies in the face of the management plan’s recommendations.

Park authorities will need to consider whether the best strategy is one that encourages tourism development to proceed according to demand, or follow the more financially risky route that the tour operators would like to see, one that creates demand by developing facilities and infrastructure to attract more visitors. In a sense, the latter strategy has already been decided upon.

Sutjeska wants to become fully incorporated into a regional network of national parks which provides the visitor with a taste of the natural history, scenic splendour and historico-cultural tradition of the south-east Balkans. Plans are afoot (and strongly endorsed in the new management plan) to extend the boundary of Sutjeska eastwards to the Tara river and incorporate the Bosnian side of the Tara river canyon into Durmitor National Park in Montenegro to create a trans-frontier national park.

Perucica forest, an ancient tract of beech, spruce and fir in Sutjeska.
This male Gouldian finch has a transmitter fitted to its back.

australia

HOPE FOR ENDANGERED FINCH SPECIES

by ANDREW DONNELLY and MILTON LEWIS

AUSTRALIA'S bird life includes examples of some of the most colourful birds in the world — and as a result its parrots, budgies, lorikeets and finches have been exported around the globe to meet the demand from the avairy trade.

More than 700 species occur on the Australian continent, of which arguably the most colourful and desirable for the captive market is the Gouldian finch, Erythrura gouldiae.

A small, grain-eating bird, the Gouldian finch is only found in Australia's Northern Territory savanna woodlands and was once among the area's most common finches. Large flocks of Gouldian finches were a prominent feature of the northern landscape but populations are now sparsely distributed and sightings of even small numbers of birds are rare in most parts of their former range. Large numbers were harvested for the local and international captive bird trade until the early 1980s, but other factors may have contributed to this slide towards extinction.

In an effort to reverse the fortunes of this iconic and beautiful bird it was listed as endangered in 1989 and a recovery plan put forward in 1993. Implementation of the plan is now the responsibility of a multi-agency team of scientists including representatives from Commonwealth, state and territory conservation agencies, non-government organisations and an aboriginal association co-ordinated by the Parks and Wildlife Commission of the Northern Territory. The objective is to save the endangered Gouldian finch from extinction by finding the cause of the decline and implementing an immediate pro-active stance in promoting the recovery of the species.

To date the team has concentrated on learning as much as possible about the finch's ecology and remaining distribution, particularly in the wet season. This is traditionally a time of plenty for the birds as they move down from the hills to feed on the drainage areas of new grasses. However, research to date has suggested that understanding what happens during this time may be the key to understanding the bird's problems.

The team has found that there are periods of low seed availability between the first heavy rains and the first seed produced by perennial grasses. That same period is also the time when Gouldian finches moult into a totally new complement of body feathers, unlike any other finch species in the region. Analysis of body condition in finches throughout the year indicated that species such as masked finch and long-tailed finch increase their body mass during the wet season. Gouldian finches, however, did not display significant increases in body mass. This absence of seasonal conditioning may have direct consequences resulting in decreased immunity to parasitic infections, lower survival during the next dry season and lower reproductive output.

Environmental change, leading to decreased food availability, is now thought to be the major cause of the bird's population decline. The team's work suggests that the two most important factors resulting in environmental change and decreased seed availability are grazing animals and fires. Grazing animals, particularly feral pest species such as horses and pigs, destroy large tracts of wet season Gouldian finch feeding areas. The destruction is caused in two ways, firstly by pigs digging up perennial tussocks and eating the roots and secondly by horses eating both the leaves and immature seed stems before seed has been set.

The Australian bushfire phenomenon or 'fire regime' also appears to play a major role in determining
the yield of seed that plants are able to produce, but this is difficult to observe because the effects may not be apparent for several years.

Firstly, fires may directly reduce the number of surviving plants and plant species within an area. This does not necessarily occur in the first year but may be a gradual process where the nutrient reserves held by the plant are continually used as a result of successive annual burns. Eventually these reserves are depleting to a point where the plant dies. Unfortunately while these nutrient reserves are being used the plant is also producing less and less seed.

Secondly, annual burning over many years can reduce the available nitrogen in the soil, which could reduce the seed yield. It has also now been observed that some grass species such as soft spinifex do not set seed the year after a fire. The combined effects result in a scarcity of food for the Gouldian finches. The team is now working on ways to control these factors. Experiments into manipulating nutrients, fire and grazing on plants in both field trials and laboratory controlled conditions are underway. At the same time the team is monitoring the success of different Gouldian populations living with different fire regimes. They have also begun an extensive programme of protective fencing to save crucial areas of grassland from pig and horse damage.

The project is one of the most ecologically comprehensive studies into the recovery of an endangered bird population. The Gouldian finch has a much greater chance of survival as a result of the work and it seems, given resource, scientific expertise and a willing public, there may yet be hope for one of Australia’s most iconic birds.

* For more information on the recovery programme see www.nt.gov.au/ipe/pwcint/index or contact Milton Lewis (milton.lewis@nt.gov.au) or David Hooper (david.hooper@nt.gov.au) PO Box 344, KATHERINE NT Australia ph: (+61) 8 89738857 or 8 89738849 fax: (+61) 8 89738899

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**South Australia**

**Ponies Removed**

The state government recently monetised visitor numbers to the state's national parks which were within the Coffin Bay National Park. The remaining herd of Coffin Bay ponies, made up of 20 mares (plus suckling foals) and one stallion, will be moved from the national park to 400 hectares/1,000 acres of nearby SA Water land, known as One Tree Hill. "The ponies were only able to survive in the she-oak woodland within the Coffin Bay National Park because artificial watering points have been established in this area," said minister John Hill. "This has resulted in the area being grazed by the ponies and artificially high numbers of kangaroos."

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**Tasmania**

**Visitors Increase**

The state government recently released visitor numbers to the state's national parks. The number of visitors to Tasmania's national parks during the 2002-2003 financial year was 60 per cent higher than last year. "Visitation figures at all of our parks from September 2002 until February 2003 are showing an average 13 per cent increase," said Jim Bacon, Minister for Tourism Parks and Heritage. "We know that 60 per cent of visitors to Tasmania visit a national park." Mr Bacon announced the figures at the opening of Doherty's Cradle Mountain Eco-Resort. He ascribed the higher visitor numbers to greater accessibility to Tasmania through an increased ferry service from mainland Australia.

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**New South Wales**

**Penguins Protected**

The area that supports a population of little penguins (Eudyptula minor) in Manly, northern Sydney (see NPIB, Issue 1) has been declared a critical habitat. It is the only known breeding colony on mainland NSW.

The penguins nest in rock falls and rocky shorelines, mostly on land that is outside conservation reserves, and are threatened by predation by dogs, cats and foxes, loss of suitable breeding habitat and disturbance around nest sites. It is hoped the declaration will allow better protection of the habitat that is vital to the survival of the little penguin population.

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**Victoria**

**Grassland Acquired**

PARKS Victoria has acquired two areas of the threatened Western Plains basalt grassland habitat from private landowners. Both areas are in western Victoria and are intact examples of the habitat, the vast majority of which has been overtaken by agricultural practices since European colonisation of Australia. The areas are home to a number of threatened plant and animal communities, including the rare eastern barred bandicoot.
western australia

NESTING TURTLES
A NEW research and interpretation centre has opened on the Jurabi Coast, a prime site for turtle nesting interaction.

“Green, loggerhead and hawksbill turtles, which are protected under wildlife conservation legislation, excavate their nests in the sand and lay about 120 eggs,” said Environment and Heritage Minister Judy Edwards. “However, nesting turtles are vulnerable to disturbance from inappropriate interaction such as driving along beaches and introduced predators such as foxes.

“The new facility will assist in raising awareness of appropriate nesting turtle interaction, the need to avoid driving on the beach when the turtles are nesting, and fox control programmes.”

queensland

HANDS-ON TRAINING
PARK rangers have been learning that marine mammals can be a handful. As part of an initiative to increase the survival rate of stranded whales, dolphins and dugongs along the Queensland coast, rangers are being trained in rescue techniques.

Course co-ordinator, QPWS Principal Conservation Officer Malcolm Turner, said the unique wildlife stranding course included a practical exercise to provide participants with an opportunity to handle awkward slippery items which offer nothing to hold on to.

“The exercise involves 200-litre plastic drums, partially filled with water, to provide some weight so that they can be treated as if they were a ‘live plastic whale’,” said Mr Turner.

brazil

10-YEAR PLEDGE INCLUDES LARGEST FOREST PARK

AS reported in Issue 7 of NPIB, the Brazilian government has announced plans to create the world’s largest tropical forest national park. Located in the state of Amapa, in the northernmost part of Brazil’s Eastern Amazon Region, the Tumucumaque National Park will cover an area of 38,867 sq kms/14,670 square miles.

More impressive is the fact that the park’s creation is only the first step in a far more ambitious 10-year strategy that will enable the Brazilian government to fulfill a pledge made in 1998 to protect at least 10 per cent of the entire Amazon rainforest.

The new Amazon Region Protected Areas Programme (ARPA), unveiled at the Johannesburg World Summit, has the goal of tripling the amount of Amazon rainforest under federal protection over the next decade. This will assure the conservation of 12 per cent of the total forest, equivalent to an area almost twice the size of the United Kingdom.

With the support of the Global Environment Facility, the World Bank and the World Wildlife Fund, ARPA involves setting aside 500,000 sq kms/200,000 sq miles that will include samples of all 23 Amazonian eco-regions with their various types of landscapes and genetic resources.

It is estimated that this will require US $395 million to be spent over the next 10 years, and the partners signed a joint declaration securing US $81.5 million for the programme’s first four-year phase with the Brazilian government providing US $18.1 million, a GEF/World Bank grant of US $30 million, US $14.4 million from the German bilateral agency Kreditanstalt fur Wiederaufbau; and US $2.5 million from other donors.

The World Bank and WWF have also given commitments to raise a further US $70 million each to help meet the long-term funding required.

Last month WWF-Brazil contributed a sum of US $11.5 million
The Jari river runs through the Amazon forest in the Tumucumaque mountain chain.

to help fund three lines of activities in phase 1 of the ARPA Programme over the next four years. These are the identification of new forest areas to be placed under federal protection as protected areas; design of management plans for the new protected areas; and basic infrastructure requirements.

Phase 1 of the ARPA programme, to be completed by 2006, will create a total of 90,000 sq kms/34,750 sq miles of new strict-use protected areas, such as national parks and biological reserves, plus another 90,000 sq kms/34,750 sq miles of new sustainable development areas helping to establish viable livelihoods for local communities.

The actual number and location of these new areas will be defined based on conservation priorities established by the Brazilian National Biodiversity Programme.

This first stage of ARPA will also implement 70,000 sq kms/27,000 sq miles of already existing protected areas, benefiting 20 parks and reserves.

ARPA’s Phase 1 will result in increasing the forest area under protection from four to 8.4 per cent and later phases will attain the 12 per cent target by 2012.

Wolfensohn, said: “This is an act of global significance. Saving the rainforests is essential to sustainable development and we need to scale up our efforts to an unprecedented level. The World Bank is proud to be an active partner in this initiative to balance protection of the Amazon’s environmental riches with the quality of life of the Amazonian people.”

The costs involved in implementing the Tumucumaque National Park will be met by a partnership involving the Brazilian government and the ARPA partners, among others.

THE new park, which is located in the north-western part of the Brazilian state of Amapa, bordering French Guiana and Surinam, will protect a priority area for biodiversity conservation. It has been set up on land granted by INCRA, the Brazilian Institute for Rural Settling and Land Reform.

The word Tumucumaque means “the rock on top of the mountain” in the language of the Apalai and Wayana tribes who inhabit the region, and is an apt name for a landscape where dense tropical forest blankets an undulating terrain broken in places by steep, granite rock formations up to and over 700 m/2,300 feet high.

PROTECTING A PRIORITY AREA

According to FUNAI, the Brazilian Indigenous People’s Agency, there are no indigenous settlements within the park, a fact that was confirmed during aerial survey flights. With no roads and local rivers impossible to navigate for most of the year, access to the area is difficult and, as a consequence, it contains one of only a few primary forests essentially unaltered by humans.

Scientific studies indicate that the area is rich in diversity of landscapes and species and it is believed that the park’s fauna could include a great number of still unknown and also endemic species, particularly in terms of fish and aquatic species.

Following the appointment of a park director and the establishment of a base of operations, work will begin on a detailed scientific survey of the area with emphasis on the collection of biological data on flora and fauna. A management plan will then be prepared and the basic infrastructure of the park will be implemented, including the building of surveillance posts at points of possible access, although initially park visitation will be restricted to scientists.
African communities, except for some empowerment and actions of local and community-based organisations, as well as with rural people and community-based organisations, private sector, non-governmental and government systems needed will require both human and financial resources, which are presently unpredictable and often insufficient. The incorporation of conservation ideas into national economic planning and development policies, and the programmes of donors, is a serious challenge. The development of coherent approaches for protected areas within each country, which will also reflect the importance of trans-boundary ecosystems and reserves, requires communication and collaborative strategies within and among governments.

The workshop participants strongly recommended that:

- A national and international labelling process should be established to reward success in terms of community and co-management. This should lead to the listing of relevant non-classified areas, which could be subsequently labelled and a transparent listing and de-listing process put in place.
- IUCN, through the World Commission on Protected Areas, should assume this responsibility at the international level.
- A multi-disciplinary and multi-institutional ad hoc group at the Pan-African level — co-ordinated by WCPA — should be designated which would involve representation from local communities and make proposals for an African ecological network to provide guidance on facing change in these areas.
the region, the preservation of the ecological integrity of terrestrial and aquatic ecosystems within multi-functional landscapes had to be considered, fostering their wise use for maintaining their ecological, socio-economic, historical and cultural functions now and in the future.

Presentations highlighted the need to improve regional dialogue and develop partnerships to bridge the north-south and east-west sectors of the Mediterranean, and the need to develop an adequate legal framework to support the establishment of new protected areas.

A key issue raised was that adequate funding was essential for effective management, and this was inevitably linked with governance. There was therefore a need to demonstrate the positive impact of protected areas on the economy. Financing options mentioned included investment loans and grants, revenue generation projects involving the private sector, NGOs, international organisations, bilateral co-operation, land stewardship and eco-certifications.

It was noted that the number of people who staffed protected areas in the region now numbered between eight and ten thousand, but while some countries - France, Italy and Jordan - had developed substantial national training initiatives, other smaller

NEW TASK FORCE

THE World Commission on Protected Areas (WCPA) has announced the formation of a new Wilderness (IUCN protected Area Category 1b) Task Force.

Its three main responsibilities will be to promote dialogue on the importance and role of wilderness in protected areas and cultural constructs; to work towards integration of wilderness-related issues in WCPA publications, proceedings and meetings with special reference to the World Parks Congress; and to serve as the liaison between WCPA-IUCN and the World Wilderness Congress.

high seas

PRESSURE ON ‘CRADLE OF NEW SPECIES’

THE High Seas Marine Protected Areas Task Force of the IUCN-WCPA, IUCN and WWF will be presenting details of an action plan for a Marine Protected Areas (MPA) High Seas network at the World Congress.

Graeme Kelleher, Senior Advisor to the WCPA, who earlier this year chaired an international workshop hosted by the IUCN Centre for Mediterranean Co-operation in Malaga, Spain, described this as a vital step towards protecting some of the world’s most threatened and biologically fragile areas before they were lost forever.

Attended by 40 world experts, the workshop agreed the set of actions necessary to enable the establishment of the MPA network in the High Seas — those parts of the world’s oceans which lie outside the terrestrial sea and exclusive economic zones and above the outer continental shelf of coastal nations.

Covering an estimated 50% of the Earth’s surface, they represented the largest habitat of life on the planet, and were the cradle of new species, habitats and undiscovered ecosystems, said Carl Gustaf Lundin, head of IUCN Global Marine Programme; yet these areas were now under increasing pressure.

Dr Simon Cripps, WWF Endangered Seas Programme Director, said that High Seas protected areas and marine parks were now urgently needed as less than one per cent of the entire oceans’ surface was declared as protected, and only a small portion of this effectively managed.

*For more WPC information, check the IUCN World Parks Congress website: http://www.iucn.org/wpc2003
The two reports on this page are extracts of presentations given to delegates at the recent European seminar 'Interpreting our Mountain Heritage', held in Zakopane, Poland.

**Sweden**

**INTERPRETING AND MARKETING NATURE TRAILS**

by Anna Avilov and Joakim Norgren

The 900 km/560 mile Skaneleden trail system, which links four main footpaths in the southernmost part of Sweden, attracts over 100,000 walkers annually — and the Internet has become the most important medium for communicating with and supplying information to hikers, both in Sweden and abroad, who plan to use the trail.

The body with overall responsibility for the trail, the Foundation for Recreational Areas in Scania, was formed in 1967 and employs an independent forestry and estate management company to implement decisions regarding Skaneleden's upkeep.

The trail is divided into 70 one-day walking stages, each of which has a night shelter with a toilet, water for washing and drinking and firewood, and in the past two years it has experienced a nine-fold increase in visitors.

In Sweden, the right of public access (Allemansrätt) gives freedom to roam rights.

Most of the trail crosses privately-owned land involving more than 1,000 landowners who have agreed to let the trail pass through their territory without requesting compensation. Normally agreements are reached between local councils and landowners, who in some cases also give their consent for rest stops or overnight facilities.

The Internet website provides hikers with the latest information on trail status and they can also send e-mails with questions, comments, or even complaints. Some stories of the experiences of walkers are published on the website, which also provides links to places of interest along the trail and information on bed and breakfast accommodation, private guided tours and handicraft shops.

To encourage youngsters living in towns and cities to participate in outdoor recreation and appreciate their natural environment, the Foundation has — with the financial support of local businesses — organised day activities for more than 20,000 school children which include guided walks, lunch and free transportation. Last year 800 handicapped children participated in a hiking project.

**Romania**

**MOVING TOWARDS ECOTOURISM**

by Mihai-Iancu Zotta

The administration of the Piatra Craiului National Park, which extends over an area of 14,800 hectares/57 sq miles in the Carpathian Mountains, was established in 1999 as part of an international Biodiversity Conservation Management project which is 60% financed by the GEF through the World Bank, 25% by the Romanian government and 15% by the National Forest Administration.

While two of the park's main objectives is the promotion of eco-tourism and education, a survey of visitors carried out in 2002 found that of the 80,000 annual visitors, 54% were young people who were not part of organised groups and only 9% of visitors used accommodation provided by local communities.

At least half of all visitors questioned planned to climb to the park's mountain ridges without guides and 25% were camping outside designated areas. In order to minimise the impact of this uncontrolled tourism on the biodiversity and landscape and to help local communities, the park administration decided that an important first step was to attempt to organise the tourist flow by establishing guided walks and to diversify the tourism programme.

Action has included a new training course for mountain guides, the provision of more environmental interpretation on mountain trails, designing a guide book for flora and fauna identification on specialised trails, and promoting guided park tours through tour operators.

Education programmes, involving NGOs and volunteers, have been organised to help promote responsible behaviour and give a better understanding of the values of this protected area. Ecological clubs have been set up at 10 schools in communities around the park. An ecological manual has been supplied to each school and they receive a magazine containing eco-stories and children's games.

Members of the school eco-clubs have taken part in art exhibitions dedicated to the environment, projects to clean up areas of the park, trail repair work and summer camps involving environmental education activities.

Additional funding has now been approved to expand the education programme to include a further 700 children from the community of Brasov, and other plans include school lessons at the park visitor centres and a junior ranger club.
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