

## INTERNATIONAL

**Extinction estimate**

Three scientists from Stanford University, USA, have calculated that up to 1800 genetically distinct populations are lost every hour (16 million annually) in tropical forests. The estimate derives from a crude approximation of global population diversity (in this case the number of genetically distinct populations of species on the planet), which was estimated to total about 220 populations per species or a total of 1.1–6.6 billion populations world-wide. They then estimated the extinction rate at this level of biodiversity. The estimate was based on data from 82 species: 35 vertebrate species, 23 plants, 19 arthropods, four molluscs and one platyhelminth.

Source: *Science*, 24 October 1997, 689–692.

**World's fisheries at maximum capacity**

After 40 years in which landings increased by over 300 per cent, most of the world's fisheries are now considered to be fully or heavily exploited with many needing new management schemes to prevent collapse, according to a compendium of 25 papers (*Global Trends: Fisheries Management*) published in January by the American Fisheries Society.

Source: Wildlife Conservation Society, 12 January 1998.

**Swallows affected by Chernobyl disaster**

Swedish and French scientists have found that radioactive material released into the environment during the

nuclear disaster at Chernobyl, Russia, in 1986 has caused harmful mutations in barn swallows *Hirundo rustica* breeding nearby. Increased frequency of partial albinism in the plumage of swallows, which is associated with a loss of fitness, has been recorded – about 15 per cent of birds hatched at Chernobyl after 1986 were partial albinos, compared with a frequency scarcely above 0 per cent in uncontaminated areas. Mutations in barn swallows from Chernobyl were twice to ten times higher than in birds from control areas in Ukraine and Italy. A significant decline in population size has also been recorded between 1986 and 1996.

Source: *Nature*, 9 October 1997, 593–596.

**Seal products studied**

A study of the trade in pinniped penises has found evidence that legal trade in seal products is a cover for illegal trade. Molecular genetic analysis of penises bought from traditional Chinese medicine shops in Asia and the USA have confirmed the widespread sale of parts from several pinniped species (possibly including the Australian fur seal *Arctocephalus pusillus doriferus* – a protected species), and that the parts of other unidentified species are being sold as pinniped parts. The trade may be encouraging unregulated hunting of seals and other mammalian species.

Source: *Conservation Biology*, December 1997, 11 (6), 1365–1374.

**Polar bear fund**

The US Fish and Wildlife Service and the National Fish and Wildlife Foundation have established a fund to enhance polar bear *Thalarctos maritimus*

conservation research and management programmes in Alaska and Russia. The seed money will come from fees collected by the Service for permits (\$1000 each) to import polar bear trophies from Canada.

Source: *Russian Conservation News*, Fall 1997, No. 13, 43.

**Action for boreal forests**

The boreal forests of the far north cover an area of 1.3–1.5 million sq km, comprising roughly one-third of the world's forests, and yet little attention has been paid to them by conservationists. Timber resources are critical to the economic development of many boreal communities and these forests are increasingly being opened up to exploitation and disturbance, with threats to both the total area of forest and to the quality of the forests that remain. The World Conservation Union (IUCN) has recently established the Temperate, Boreal and Southern Cold Temperate Forest Programme in order to redress the relative lack of attention paid to these forests. The Programme's objectives are to develop policy frameworks that support conservation and sustainable management, compile and disseminate information, and to involve stakeholders in decision-making on temperate and boreal forest management and use.

Source: Dudley, N., Gilmour, D. and Jeanrenaud, J-P. Boreal forests: policy challenges for the future, *Arbovitae Supplement*, January 1998.

**North American trade uncovered**

Traditional Chinese medicines containing, or claiming to

contain, animal parts or ingredients derived from protected species can be readily obtained from specialist shops in North America. Information gathered by TRAFFIC from shops in North American Chinatowns during 1996 and 1997 showed that half of the 110 shops surveyed offered one or more medicines claiming to contain ingredients derived from rhinoceros, tiger and leopard. At least 31 different types of medicines containing rhinoceros or tiger parts, produced by 29–34 manufacturers, were available. A 6-month study by the Wildlife Conservation Society discovered that tiger products are better controlled in China than in New York's Chinatown, and that products illegally manufactured in China are sold more easily in the USA than in their country of origin. TRAFFIC recommends that regional law enforcement is increased, legislation to control trade is strengthened, stockpiles and manufacturers are inventoried and public outreach work is carried out. *Source: TRAFFIC, January 1998.*

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## EUROPE

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### Europe takes action

The European Commission is to take legal action against 10 member states that have failed to submit their contributions to Natura 2000 – a European Union network of sites for the protection of endangered species. Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, The Netherlands, Spain and the UK are 2 years late with their contributions to the list, which is planned to be the cornerstone of the EU's Natura 2000 initiative to

maintain biological diversity. The list is due to be finalized in June 1998.

*Source: European Commission DGXI, 17 October 1997.*

### Wolves breed in Norway

Wolves appear to have bred in Norway for the first time in 50 years. Two litters of at least three pups each are thought to have been produced in the area north of Oslo and on the border with Sweden. It was previously believed that only five to seven wolves survived in Norway. *Source: BBC Wildlife, February 1998, 29.*

### Mussels, cockles and knots

Industrial dredging of blue mussels *Mytilus edulis* and edible cockles *Cerastoderma edule* in 1988–90 around the island of Griend in the western Dutch Wadden Sea appears to have had long-term effects on shorebird populations, according to research by a team of scientists in the Netherlands. Mollusc stocks have not recovered because the dredging techniques and removal of mussel beds in this exposed area altered the intertidal system permanently. Numbers of knots *Calidris canutus*, which are specialized mollusc feeders, on the flats declined dramatically. In less exposed sites in the Wadden Sea both mollusc species have recovered after overfishing.

*Source: Piersma, T. and Koolhaas, A. 1997. Shorebirds, Shellfish(eries) and Sediments around Griend, Western Wadden Sea, 1988–1996. Netherlands Institute for Sea Research (NIOZ), Texel, Netherlands.*

### Hungarian grassland saved

The consortium of UK farmers who threatened to plough

grassland, which is vital habitat for the great bustard *Otis tarda*, they had bought in the Bihar region of Hungary unless they were paid compensation (see *Oryx*, 32 [1], 19) has agreed with the Hortobágy National Park authorities not to convert any more grassland to arable land without permission, even outside the proposed protected area.

*Source: Birds, Winter 1997, 54.*

### Towards restoring a culture

An initial breeding group of five bearded vultures *Gypaetus barbatus* has been obtained towards the reintroduction of this species to the Natural Park of the Cazorla, Segura and Las Villas Ranges (Jaén, south-east Spain). The species was last seen there in 1986.

*Source: Quercus, December 1997, No. 142, 12–14.*

### Ramsar sites in Spain

Embalse de Las Cañas (101 ha) and Laguna de Pitillas (216 ha), both in the Autonomous Region of Navarra, have been designated as Spain's 37th and 38th Ramsar sites because of their importance for nesting and wintering waterbirds.

*Source: The Ramsar Newsletter, December 1997, 5.*

### Portuguese birds threatened by EU

The European Union has granted the Alentejo region of south-west Portugal £134 million for a dam on the River Guadiana, in part to irrigate 1100 sq km of farmland. Seven Important Bird Areas will be affected, including steppe plains that contain breeding populations of great bustards *Otis tarda* and little bustards *Tetrax tetrax*.

*Source: Birds, Winter 1997, 56.*

### Monk seal in Madeira

Madeira has incorporated the Mediterranean monk seal *Monachus monachus* in its coat of arms to reflect its support for the species. Efforts by the Natural Park of Madeira to improve the conservation status of the seal in the Desertas Islands has led to an increase in the population. *Source: Natura 2000 Newsletter*, October 1997, 8.

### Nations co-operate for park

Spanish and Portuguese authorities signed a declaration formally creating the transfrontier park Gerês-Xurés on 31 July 1997 at Portela de Home, on the border between Portugal and Galicia, Spain. At the ceremony the Peneda-Gerês National Park and the Baixa Limia-Serra do Xurés Nature Park announced their formal co-operation, which will include the drafting of guidelines for nature protection, conservation and for the social, economic and cultural development of natural heritage in both parks. *Source: Nature and National Parks*, 1997, 35 (134), 37–38.

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## NORTH EURASIA

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### Sturgeon poached in Volga

The level of sturgeon poaching in the Volga River Delta in Russia is increasing every year. Gangs, who make their living by illegal sturgeon poaching, live on small islands in the Delta and, in 1996, 623 criminal fugitives were caught by police in this area. Many river guards are reported to be working with the poachers and even the legal catch is controlled by racketeers. During the

spawning period gangs take 15–20 of the largest sturgeons caught by the legal fishing teams. This means that the official catch statistics lack at least one-third of the fish captured. *Source: The Sturgeon Quarterly*, June 1997, 5 (1/2), 15.

### Good news for eagles

Surveys throughout the entire breeding range of the imperial eagle *Aquila heliaca* in European Russia up to the Ural Mountains (but excluding the northern slopes of the Caucasus because of military conflict), in 1996–97 found more than 200 imperial nesting sites, including more than 50 active nests. Comparison with previous data suggests that the eagle's range has remained unchanged in 30 years, and most populations are stable or growing. The total population in Russia and the Ukraine probably exceeds 500 pairs, twice as many as previously estimated. The surveys also found local people took pride in the eagles. The Imperial Eagle Project identified several important measures to ensure the eagle's future, including the restoration of prey populations between the Don and Volga rivers, and banning the felling of nest trees.

*Source: Russian Conservation News*, Fall 1997, No. 13, 21–22.

### Duck decline in Moldova

The number of globally threatened ferruginous ducks *Aythya nyroca* has declined in central and eastern Europe. The Republic of Moldova, for example, which had 1000–1300 breeding pairs, now has fewer than 100. The cause appears to be the abandonment of commercial fishponds, which provided breeding habitat for

the species after it had been displaced from wetlands that had been drained for development. Conservationists are recommending a management system for the fishponds that will make them profitable for people and maintain duck habitat. *Source: Birds*, Winter 1997, 56.

### Hope for Siberian wilderness

The Khakasia Republic, Russia, has pledged to create two new protected territories and to expand two nature reserves following a conference – Creation of New Protected Areas in Southern Siberia – in December 1997. A resolution, calling for the establishment of millions of hectares of new protected wilderness areas throughout southern Siberia, was adopted by 47 participants. The area contains Russia's most diverse landscapes, with mountains, forests, steppes, semi-desert and wetlands, and is home to snow leopards *Uncia uncia*, argali *Ovis ammon*, and Pallas's cats *Felis manul*. Southern Siberia also contains old growth Siberian pine forest, one of the world's three boreal-region IUCN centres for plant diversity. It is hoped that the protected areas network is expanded before multinationals increase pressure to exploit mineral and forest resources. *Source: Pacific Environment and Resources Center*, 19 December 1997.

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## NORTH AFRICA & MIDDLE EAST

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### Crocodiles return

Recent reports of crocodile attacks on people in Lake Nasser, Egypt, which include at least one fatality, have added to

evidence that the Nile crocodile *Crocodylus niloticus* is once again present in the Nile delta. The species was eliminated there in the mid-1800s. Since the construction of the Aswan high dam in the 1960s and the creation of potential crocodile habitat there has been speculation that Nile crocodiles would recover, colonizing from upstream in the Sudan. During a visit to Egypt in August 1996, Dr Klaus Kabisch reported that vendors in Luxor were selling live juvenile crocodiles, which they claimed had been caught in Lake Nasser. Stuffed specimens, all said to be from Nasser, were also observed on stalls in the Luxor bazaar, at the Philae Temple and in the Valley of the Kings. There are no confirmed reports of crocodiles coming downstream from Aswan to Luxor and, because of strict military restrictions, direct observation cannot be carried out in Lake Nasser. The regional governor has approached the World Conservation Union (IUCN), for assistance and the Crocodile Specialist Group is developing a crocodile management plan. Source: *IUCN/SSC Crocodile Specialist Newsletter*, July–September 1997, 5–6.

## SUB-SAHARAN AFRICA

### Peripheral source of diversity

New research suggests that conservation efforts should be directed to ecotones – the areas along the fringes of rain forests where trees give way to savannah – because the forces generating new species and increased biodiversity may lie in these areas. Six years of research on the little greenbul *Andropadus virens* at six sites in,

and six along the edge of, West African rain forests showed that individuals from the fringes are significantly different from those in the interior, even though interbreeding occurred. It may therefore be possible for species to develop even when there is considerable gene flow between neighbouring populations, which may have implications for preserving species diversity. Ecotones have tended to be ignored by conservationists, because they appear damaged compared with the heart of the forest. It is generally the edges of forests that are eroded by burning, wood gathering and grazing, and the researchers are concerned that in losing these habitats we may be losing the processes that generate biodiversity.

Source: *International Zoo News*, 1997, 44 (7), 425–426.

### Cameroon tree exploited

Since 1972 the European pharmaceutical company Plantecam has been exploiting the tree *Prunus africana* in Cameroon, first in the North-West and West Provinces, where it is now scarce, and later in the South-West, notably on Mt Cameroon, where it is under threat of extinction. Although the Forestry Administration formulated regulations for sustainable exploitation of the tree's bark, they have not been adhered to. Stricter enforcement and direct involvement of local communities in management of the resource are required.

Source: *Biodiversity and Conservation*, 6, 1409–1412, 1997.

### Beetles battle against weed

More than 6000 *Neochetina bruchi* beetles have been bred

by the Kenya Agricultural Research Institute. The insects are part of an attempt to control the water hyacinth that has invaded Lake Victoria, and 3000 beetles and 30,000 eggs were released in early 1997. Initial reports of beetle damage were encouraging. Local residents will be trained to rear and release beetles. Scientists expect that it will take 4–5 years and millions of beetles before a real impact is apparent; meanwhile, the weed will have to be cleared mechanically. Uganda has proposed a more controversial solution, using the herbicides glyphosate and 2,4-D – both banned in Europe. Source: *Swara*, July/August 1997, 28–31.

### Flufftail in Ethiopia

Since the Endangered white-winged flufftail *Sarothrura ayresi*, a small crane, was 'rediscovered' in Ethiopia in 1995, at Sululta (see *Oryx*, 30 [4], 238), 10–15 breeding pairs have been recorded at the site. A new site with c. 200 breeding pairs was also found in 1997. At this site local people cut the vegetation only in December, giving the birds time to breed undisturbed, and say that the birds are there all year. The species is known only from the highlands of Ethiopia and South Africa with occasional records from Zimbabwe and Zambia. In South Africa there are an estimated 230 birds at 10 known sites.

Source: *World Birdwatch*, December 1997, 19 (4), 2.

### Kenyan forest disappearing...

Kakamega Forest in western Kenya, where 10–20 per cent of the species are found nowhere else in the country, is being destroyed despite legal

protection. A survey in 1991 showed that 50 per cent of the forest timber had been lost since 1965 because of commercial logging. There is extensive illegal extraction of fuelwood, charcoal, timber, grass for thatching and lianas for rope, as well as hunting for bushmeat. Grazing, legalized in 1994, prevents trees regenerating and a recent scheme is granting plots of forest land to local people for agriculture in exchange for looking after trees planted by the Forestry Department. *Source: East African Natural History Society Bulletin*, December 1996, 47–49.

### ... and Kenyan forest saved

President Moi of Kenya has turned down a request from local politicians to have 10 per cent of the Arabuko–Soko Forest near Kilifi on the Kenya coast degazetted. The President has made it clear that the forest should be conserved for future generations and that such sites are important as water catchments. The section of the forest concerned is critical for the conservation of species such as Sokoke pipit *Anthus sokokensis* and Clarke's weaver *Ploceus golandi*. *Source: World Birdwatch*, December 1997, 19 (4), 5.

### Dynamite destroys corals

Dynamite fishing, although illegal, is one of the most common methods used to kill marine fish off the coast of Tanzania. Research carried out by the Frontier Tanzania Marine Research Programme over 7 years has revealed that shallow reefs have been completely destroyed in some areas, supporting few fish and showing little signs of regeneration. Deeper reefs are

damaged in the upper levels, the lower reef escaping relatively unscathed. *Source: Marine Pollution Bulletin*, October 1997, 34 (10), 758–762.

### Zambezi vision

A workshop held from 29 September to 2 October 1997 in Mozambique, on the Sustainable Use of the Cahora Bassa Dam and the Zambezi Valley, involved more than 50 scientists, managers and decision makers from Mozambique, Southern Africa and abroad. Since its completion in 1995, the Cahora Bassa Dam has been managed to release a constant outflow of water, eliminating downstream flood-season flows and increasing dry-season flows, with immense ecological and social consequences. The working group made recommendations for better management of the dam, taking human and wildlife needs into account, and to gain the designation of the delta as a wetland of international importance under the Ramsar Convention.

*Source: The ICF Bugle*, November 1997, 23 (4), 1–2.

### Wild dogs avoid lions

African wild dogs *Lycaon pictus* appear to be adversely affected by the large populations of lions *Panthera leo* and spotted hyaenas *Crocuta crocuta* in Kruger National Park (KNP), South Africa. Dogs are found at their lowest densities where their prey species are most abundant because the areas also attract lions. Lions are a major cause of dog mortality, accounting for about 39 per cent of natural pup deaths and 43 per cent of natural adult deaths. Wild dogs avoid areas with high densities of lions and

spotted hyaenas, potential competitors, although they appear to be more of an irritant than a limiting factor. The KNP has been managed to favour lions and spotted hyaenas, mainly through the provision of artificial sources of water, which has built up unnatural numbers of prey species. Under natural water distribution the KNP may have supported greater populations of wild dogs and cheetahs *Acinonyx jubatus*, and the policy may have led to the extinction of the brown hyaena *Hyaena brunnea* as a breeding species in the KNP through competition with spotted hyaenas. Scientists recommend a more natural water distribution to benefit smaller, less dominant carnivores and suggest that wild dog reintroductions may be more successful in areas with few lions and spotted hyaenas.

*Source: Conservation Biology*, December 1997, 11 (6), 1397–1406.

### Echo parakeets released

In 1997 three young echo parakeets *Psittacula echo* were released into the wild in Mauritius, two reared from wild-collected eggs and one captive bred. The 1996–97 breeding season was the most productive of recent years for the wild population and reached its highest numbers since 1972, with a total of 76–87 individuals. Unfortunately, of 21 chicks produced, only three fledged naturally and the other 18 had to be taken into captivity. The captive population was thus increased to 23 birds, enough to try a release. The three birds selected were surplus to genetic requirements of the captive population and have established well in the wild,



venturing 1 km away from the release sites within 3 months. Source: *Psitta Scene*, November 1997, 3–4.

### Lemurs released

Black-and-white ruffed lemurs *Varecia variegata variegata*, bred at Duke University Primate Centre in the USA, were released into the Betampona Natural Reserve in Madagascar during November 1997 as part of a model programme to manage a small geographically restricted population. The five animals were released into the 2000-ha reserve, which is one of the few remaining fragments of lowland rain forest in eastern Madagascar and is surrounded by rice fields. The lemurs will enhance the gene pool of the small population of c. 30–35 black-and-white ruffed lemurs in the park. The project's international sponsor, the Madagascar Fauna Group, plans to introduce as many as 20 lemurs over the next 3 years. Source: *Wildlife Conservation*, January/February 1998, 14.

## SOUTH & SOUTH EAST ASIA

### Goral killed by mushroom collectors

The Himalayan goral *Naemorhedus goral* is the most frequently encountered mammal in the Great Himalayan National Park, India, and numbers are estimated at c. 600. However, these ungulates are being killed illegally by people and their dogs entering the park to collect wild mushrooms between April and June. Source: *Caprinae* (IUCN/SSC Caprinae Specialist Group Newsletter), August 1997, 5–6.

### Protection follows turtles' failure to breed

The 35-km-long Gahirmatha coast in the Bhitara Kanika Sanctuary, Orissa District, India, is the world's largest rookery for olive ridley sea turtles *Lepidochelys olivacea*. In 1997, however, the mass nesting events, which normally take place in early January and April, failed to occur. Mating aggregations took place off the coast of the sanctuary in October 1996, as normal, but the turtles did not lay their eggs. Offshore fishing is thought to be partly to blame and, despite a ban on fishing within 20 km of the coast between October and April, hundreds of trawlers and gill-netters operated illegally in the area throughout the closed season of 1996–97. Thousands of turtles were entangled in these nets and more than 4000 dead turtles, and several dolphins, were washed ashore during the nesting season. The Orissa Government has recently declared Gahirmatha Beach a marine sanctuary with the hope of providing this endangered turtle with safe habitat.

Source: *Marine Turtle Newsletter*, January 1998, No. 79, 1–4 & 32.

### Fish in the Western Ghats

Freshwater fish populations in the Western Ghats of India have been devastated by an outbreak of disease (Epizootic Ulceric Syndrome). Many species have been affected and *Channa striatus* has been almost wiped-out from the wetlands of Kerala. Fish have also suffered losses due to large-scale deforestation, which has lowered the water-carrying capacity of the forested areas, the use of explosives, poisons and small-mesh nets to catch

fish, and the construction of dams, which are especially damaging to the hill stream fishes. The present status and distribution of freshwater fish in the Western Ghats is unknown and the Bombay Natural History Society has initiated a research project to collect information needed for fish conservation in the area. Source: *Species*, December 1997, 13–14.

### Tiger predation of rhinoceroses

As for rhinoceroses elsewhere poaching is a major threat to the greater Indian one-horned rhinoceros *Rhinoceros unicornis* in Kaziranga National Park, Assam, India. Conservation efforts in recent years have reduced this threat and during 1997 only 12 rhinos were killed by poachers in the park. However, data collected from 1985 to 1995 has revealed that tiger *Panthera tigris* predation is the second largest threat to the rhino population after poaching. In the 11-year period 178 rhinos were killed by tigers in the park, 149 (83.7 per cent) of them calves. Studies on tiger predation are continuing. Source: Bibhab Kumar Talukdar and Nilom Bora, Aaranyak Nature Club, EVER GREEN, Samanwoy Path (survey), PO Beltola, Guwahati-781 028, Assam, India.

### New frogs in India ...

Three new species of frog have been described from India: *Limnonectes orissaensis* from Orissa State, *Nyctibatrachus vasanthi* from Tamil Nadu, and *Philautus sanctisilvaticus* from the headwaters of the Narmada and Sone rivers in Madhya Pradesh State. Source: *Hamadryad*, July 1997, 22 (1), 1–8, 9–12, 21–27.

### ... and a rediscovered frog

The amphibian genus *Melanobatrachus* is endemic to the Western Ghats of south-west India and its only known species, *M. indicus*, was described in 1878. It was recorded only twice since then (in 1928 and 1992) until in July 1996 eight individuals were seen in Vallakadavu Reserve Forest in Kerala State in the Western Ghats. A few months later a specimen was found in Kalakad Tiger Reserve, Tamil Nadu, extending its known range southwards by 150 km. *Source: Hamadryad*, July 1997, 22 (1), 57–58.

### Illegal trade in Shahtoosh

The future for the Tibetan antelope (or chiru) *Pantholops hodgsoni* looks bleak, despite having been protected by law since the 1970s. The animals are hunted for their luxurious wool, known as shahtoosh, and for their horns, used in traditional medicine. Reports from 1992–97 indicate that poaching has been heavy in all areas of China in which the species occurs – Tibet, western Qinghai and southern Xinjiang. Demand is high and profits can be huge. Poachers are using increasingly modern methods to kill the animals and have been seen to shoot into herds of animals from moving vehicles. Law enforcement is difficult in the remote and inhospitable habitat. Shahtoosh shawls have been made in Kashmir for centuries and, despite the ban, there is evidence that they are sold in practically every major city in India and exported illegally to many other countries. A new report has listed several recommendations to try and save the species including the use of alternative fibres, an increase in public

awareness and government support, and more rigid law enforcement.

*Source: Wright, B. and Kumar, A. Fashioned for Extinction: An Exposé of the Shahtoosh Trade.* Wildlife Protection Society of India, 1997.

### Tiger mortalities

The Nagarjunasagar Srisailem Tiger Reserve in Andhra Pradesh, India, has lost 20–30 tigers *Panthera tigris* in the last 3–4 years, due in part to local villagers poisoning them. The 1997 census found only 25 tigers in the reserve.

*Source: TigerLink News*, December 1997, 3, (2), 3.

### Mining threatens wildlife corridors

Uncontrolled coal-mining activities in India are endangering vital wildlife corridors that link tiger habitat in the south Bihar forests through the Palamau Tiger Reserve to Madhya Pradesh, east Maharashtra and western Orissa. The Charhi gap, a 6-km-wide corridor linking the tiger forests of the Konar watershed to the North Karanpura habitats, has already been damaged by the Ashok and Piperwar opencast mines and the forest corridors may soon be replaced by corridors of coal mines. Campaigners against the mines are calling for a moratorium on coal mining until the effects on tiger habitats have been properly considered.

*Source: TigerLink News*, December 1997, 3 (3), 5.

### Pattani Bay at risk

The Government of Thailand is planning an international deep-sea fishing port in Pattani Bay on the east coast of southern

Thailand. Pattani River is a natural harbour and the new plans aim to attract large international fishing vessels and will involve major dredging operations. About 60,000 people around the bay derive their livelihood from small-scale fishing activities, and the bay is an important nursery ground for fish and crustaceans, and an important stopover and wintering site for migratory birds. Local people, who were not informed of the plans, fear the future of their livelihoods and have requested that the dredging be delayed and an alternative proposal for a site, 30 km to the south, be considered.

*Source: Wetlands 4*, November 1997, 10.

### Scandal of party in Thai wildlife sanctuary

Following investigations of allegations that the governor of Thailand's Uthai Thani Province held a raucous party in Huay Kha Khaeng Wildlife Sanctuary, a World Heritage Site, he has been transferred to an 'inactive post' – inspector-general at the Interior Ministry. The governor organized a party involving drinking, gambling and loud music, on 13–14 December 1997 for 400 people. Two army helicopters and 50 off-road vehicles were used to show guests wildlife.

Sanctuaries are subject to strict laws; admission is by permit and restricted to small groups. *Source: Bangkok Post*, 16, 17, 18, 19, 20, 23, 24, 25 December 1997.

### Dam postponed in Malaysia

As a result of Malaysia's financial crisis the Prime Minister has postponed indefinitely several large projects, including the controversial Bakun Dam in

Sarawak. If it were built the 204-m-high dam would flood an area the size of Singapore that is currently inhabited by 9400 indigenous people and dozens of endangered species. *Source: World Watch*, November/December 1997, 10 (6), 9.

### Fires still threaten orang utans

Wildfires are threatening the survival of thousands of rare and protected animals in Kutai National Park in East Kalimantan province, Indonesian Borneo. The fires, detected on 31 January 1998, have spread quickly through the southern part of the 200,000-ha reserve. The park authorities fear for the population of c. 50 orang utans *Pongo pygmaeus*. Last year, at least 120 orang utans were forced out of their habitat by wildfires raging on the islands of Borneo and Sumatra, and killed by local people (see *Oryx* 32 (1), 4–5). Seasonal rains doused most of the fires by December 1997, but some areas have become dry again, allowing flames to take hold once more. *Source: The Associated Press* (Irwan Firdaus) on Gorilla-Line (gorillas@olympus.net).

### New forest skink

A new species of small skink *Parvosцинus sisoni* sp. nov. has been described from seven specimens found in 1992 in the Mt Madia-as region of the Visayan island of Panay. The new species is closely related to *Lygosoma* (*Sphenomorphus palawanensis*) known from only three specimens from Palawan Island in the Philippines, and together the two species appear to constitute a lineage of skinks worthy of generic rank. The skinks inhabit the litter in

closed canopy forest between 900 and 1125 m.

*Source: Journal of Herpetology*, June 1997, 31 (2), 187–92.

### Ancient cephalopod needs protection

*Nautilus pompilius* and *N. macromphalus*, members of a relic order of cephalopod molluscs, may be facing extinction in the Philippines because of the high demand for their shells as souvenirs. Research during the late 1970s and early 1980s concluded that overfishing had reduced populations of these species and there has been little evidence of a recovery. *Nautilus* species are long-lived and have low reproductive rates. They are difficult to culture and so captive breeding is unlikely to be successful. These poorly known species are found in restricted habitat along vertical coral reefs of continental shelves in the tropical south-east Pacific. At night they swim to the surface, allowing easy capture in baited traps. Information is being collected towards proposing *Nautilus* spp. for listing under CITES. *Source: Sea Wind*, September–December 1997, 11 (4), 20–23

## EAST ASIA

### Conserving a camel

German, US and Mongolian conservationists are collaborating in a study of the wild bactrian camel *Camelus bactrianus*. An aerial survey of Great Gobi, Mongolia, found 277 camels in 27 groups ranging in size from one to 55 animals. Computer modelling estimated a total population of 1985 animals, although, because of the small sample

size, it was concluded that the population lies between 909 and 4355. Work is under way to assess population dynamics, migration patterns and develop a conservation and recovery plan for this critically endangered species. *Source: International Zoo News*, 44 (7), (1997), 422–426.

## NORTH AMERICA

### Light danger for birds

Every year at least 100 million birds die after colliding with skyscrapers and other manmade structures while following migration paths across cities in North America. Many birds rely on the moon and stars to guide them at night, but while flying through heavily built up areas, the birds may be drawn to lights shining from tall buildings. Often they fly into windows and may die, or fall to the ground to be eaten by scavengers or swept away by street cleaners. FLAP, the Fatal Light Awareness Program, is a Toronto-based project that enlists volunteers to rescue and release birds before dawn and advises office-building managers on low-tech solutions, such as turning lights off at night, using blinds, curtains and desk lamps, and establishing interior work areas.

*Source: Audubon*, January–February 1998, 23.

### Wilderness protected

A 4-million-ha wilderness preserve is to be created in Canada, in the north-east of British Columbia. The Muskwa-Kechika Wilderness, in the northern Rocky Mountains, will have 1 million ha of fully protected park at its



heart and a surrounding 3 million ha open to limited development. The designation will contribute to the establishment of a network of protected areas, stretching southwards from the Yukon to Yellowstone National Park in the USA, that will ensure the survival of animals with large territories such as the grizzly bear *Ursus arctos*.

Source: *Arboretum*, January 1998, No. 7, 4.

### Toxic loons

Common loons *Gavia immer immer* tested in New England, USA, and the Canadian maritime provinces have been found to carry more than three times more mercury in their blood and feathers than loons tested in Alaska, according to the results of a 5-year study by the Northeast Loon Study Group. Mercury is released by coal-fired power stations and incinerators, and winds from the Midwest, USA, carry the toxin to remote lakes in the north-east USA and Canada. The pollutant accumulates in fish, which are eaten by loons. The birds also face threats from lakeshore development, lead sinkers used by fishermen and dams that can lower lake levels or flood their shoreline nests.

Source: *Audubon*, November–December 1997, 20.

### Avian botulism kills millions of birds

Millions of American waterfowl were killed during the summer of 1997 after serious outbreaks of botulism. Nearly every state in the USA was affected by the disease and among the wetlands badly affected were Great Salt Lake in Utah, where the toll amounted to about 100,000 birds, and Old Wives Lake in Saskatchewan,

where half a million birds were thought to have been lost.

Wildlife managers are attempting to introduce measures that will minimize future episodes, and researchers at the University of Saskatchewan have developed a set of 'predictive models', based on a study of US wetlands, that will indicate susceptible wetlands and allow preventative action, such as altering water flows, and changing pH or salinity, to avoid outbreaks.

Source: *Science*, 7 November 1997, 278, 1019.

### Mute swans spread

The mute swan *Cygnus olor*, which was introduced into the USA in 1919, has multiplied and spread. In many areas the swan has displaced native species such as nesting loons in the Midwest, and shorebirds and waterfowl along the Atlantic coast. In Chesapeake Bay they accidentally trample the eggs and young of native birds, and they have eliminated one of only two colonies of black skimmers *Rynchops niger niger*, and the only colonies of least terns *Sterna albifrons antillarum* nesting in natural habitat. The native, migratory tundra swans *Cygnus columbianus* in Maryland are also suffering from competition for the food that they desperately require after their flight from the Arctic. Public opinion is against any form of population control, however, and the swan population is increasing at a considerable rate. Some states are using control measures, such as shaking eggs and live capture, but any attempts at shooting have been met with public outcry.

Source: *Audubon*, November–December 1997, 26–32.

### Clams displaced by mussel invaders

Freshwater unionid clams in North America have been virtually eliminated from waters colonized by zebra mussels. Near total mortality has been reported in Lake Erie but now S. Jerrine Nichols and Douglas A. Wilcox from the Great Lakes Science Centre, Ann Arbor, Michigan, have discovered a large population of native clams in a Lake Erie wetland that shows little sign of infestation. Field observations and laboratory experiments show that warm summer water temperatures and soft, silt-clay sediments trigger burrowing by clams – this discourages infestation and physically removes any attached zebra mussels. Less than 1 per cent of the unionids found were encrusted with zebra mussels. Results provide promise that at least some brood stock might be available to recolonize Lake Erie. If zebra mussels ultimately decline, wetlands may provide a place for intensive management of native clam stocks, ensuring survival of these animals in the Great Lakes and other regions invaded by zebra mussels.

Source: *Nature*, 30 October 1997, 389, 921.

### Grizzly bear corridors

Conservationists believe that to ensure long-term survival of the grizzly bear *Ursus arctos* in the USA the fragmented populations must be reconnected. They plan to reintroduce them into areas of former range and link these areas with corridors of protected land that would allow migration to ensure genetic variability. Public support is increasing and it is hoped that opposition will

diminish with outreach and educational work. Many loggers are co-operating, eager to ensure that logging operations are not hindered. Many conservationists have criticized aspects of the plan, however, objecting to compromises that will categorize the bears as a 'non-essential, experimental population', allowing a broader range of circumstances under which the animals can be killed. There are also worries about how wandering bears will be dealt with and whether adequate habitat protection is provided – apart from the two existing tracts of federally protected wilderness (Selway-Bitterroot and the Frank Church) the bears would be in predominantly 'mixed-use' national forest land, subject to logging, road building, mining and other public uses. *Source: Audubon*, November–December 1997, 48–51, 102–103 and 106–109.

### Butterfly release

A recent trend for releasing butterflies at weddings in the USA has been criticized by scientists who fear that the release of non-native species may disrupt natural ecosystems. The butterflies – mainly monarchs *Danaus plexippus* and swallowtails Papilionidae – are sold by mail-order and may be released into unsuitable habitat where they are unable to survive, become pest species, compete with native species or transmit pathogens to local populations. Scientists also fear that interbreeding could alter the genetic adaptations of future generations of local butterflies, disrupting migratory behaviour, dormancy and life cycle. *Source: Audubon*, November–December 1997, 24.

### Lions lose out to wolves

A study by the Hornocker Wildlife Institute at the University of Idaho, USA, has shown that the reintroduction of wolves *Canis lupus* into western ecosystems may result in some displacement of mountain lions *Felis concolor*. The study focused on three packs of wolves that began migrating naturally from Canada into prime mountain lion habitat in north-western Montana in the 1980s. Using radio-collars and snow tracking, the biologists found that when a mountain lion encountered a wolf pack or grizzly bear *Ursus arctos*, the cat was often chased away, even killed on occasion. The recolonizing wolves also drove lions away from their kills and grizzly bears frequently usurped both mountain lion and wolf kills. Lions in wolf territory were found starved more frequently and have fewer surviving young. *Source: Audubon*, November–December 1997, 20.

### Kirtland's warbler update

The 1997 Kirtland's warbler *Dendroica kirtlandii* census in the USA recorded 733 singing males, the second highest since counts started in 1951. The total included 19 warblers from Michigan's Upper Peninsula, where breeding was first observed in 1995, and five in Wisconsin but with no evidence of breeding there. *Source: Endangered Species Bulletin*, November/December 1997, XXII (6), 27.

### Otters returned

After an absence of more than 100 years, river otters *Lutra canadensis* have been reintroduced into sites

throughout western New York in the USA. Eighty-one otters, trapped in the Adirondack Mountains, have been released so far, and the project aims to release 270 animals in total with the aim of establishing viable breeding populations. River otters have been extirpated from much of their historic range in the USA following excessive trapping during the 19th century. *Source: Audubon*, January–February 1998, 114.

### New rules for fishermen

In 1996 a federal court complaint was filed in Massachusetts, USA, claiming that fishing practices off the Massachusetts coast violated the Marine Mammal Protection Act and the Endangered Species Act. Many right whales *Balaena glacialis* summer in the waters of Georges Bank and Cape Cod Bay, where they are at risk from fishermen's gillnets, in which they can entangle and drown. A federal judge agreed and ordered the National Marine Fisheries Service to develop a set of rules to reduce the risks. The new rules require seasonal fishing closures of areas where whales congregate, and prohibit the rigging of lines that float on the surface and the storage of unbaited lobster pots at sea. Further rules, such as colour-coded lines that would make entanglements more easily tracked, are being developed. *Source: Wildlife Conservation*, January/February 1998, 101 (1), 12.

### A helping hand for orchids

When, in 1981, it was first noticed that eastern prairie fringed orchids *Platanthera leucophaea* were disappearing from sites in Illinois, USA, it

was concluded that hawkmoths of the family Sphingidae, the species's natural pollinators, were no longer visiting the area. Hand-pollination was attempted and, later, seeds were collected and dispersed at three new sites. By 1993 orchids were growing at all three new areas. Following this success a formal restoration project was initiated and between 1993 and 1995 seeds were dispersed to 28 sites in the state. Positive results have been recorded at many of these locations.  
*Source: Endangered Species Bulletin*, November/December 1997, XXII (6), 4–5.

### California condor reintroduction progress

The California condor *Gymnogyps californianus* reintroduction programme at Vermillion Cliffs, 48 km north of Grand Canyon National Park in northern Arizona, is making good progress. The six captive-bred condors released in December 1996 were augmented by another nine in May 1997. Two condors have been lost: one to a golden eagle and one to a collision with a power line. The remaining 13, all of which carry radio transmitters, have ranged as far north as Bryce Canyon National Park, as far east as Moab, Utah, and as far west as the Kaibab plateau. They have avoided contact with humans and have been successful in locating food. Four more birds are due to be released soon.  
*Source: Endangered Species Bulletin*, September/October 1997, XXII (5), 22.

### Mexican wolf release imminent

Captive Mexican wolves *Canis lupus baileyi* at Seville National Wildlife Refuge in

New Mexico, USA, are thriving. Since November 1996, five young pairs have been held at the facility, which was designed to provide a natural environment and maximum isolation from humans. Two of the pairs produced pups in May 1997. The wolves are candidates for the first release of Mexican wolves into historical range in Arizona and New Mexico, scheduled to take place in early 1998.  
*Source: Endangered Species Bulletin*, September/October 1997, XXII (5), 22.

### Effort for prairie chicken

Populations of Attwater's greater prairie chicken *Tympanuchus cupido attwateri* received a boost by the release in 1996 in Texas, USA, of nearly 70 captive-bred birds at the Attwater Prairie Chicken National Wildlife Refuge near Eagle Lake and the Nature Conservancy's Galveston Bay Prairie Preserve. At least 40 per cent of the birds survived until the 1997 breeding season; biologists found 10 nests built by released birds and six hens successfully hatched chicks. Fewer than 100 individuals of the subspecies remain in the wild in three geographically separated subpopulations.  
*Source: Endangered Species Bulletin*, September/October 1997, XXII (5), 23.

### Loggers turn to southern hardwoods

Environmentalists in the southern USA are becoming increasingly concerned about clearcutting in the southern forests. Loggers are moving their operations away from the cutover and newly protected old-growth forests of the west in order to fulfil the increasing domestic and international

demand for wood fibre. Logging techniques in the southern forests have also changed and selective-cutting, which caused little damage, is being replaced by methods that clear-cut entire landscapes. New chip mills can devour up to three-quarters of a million tonnes of timber annually. In many areas, rather than replanting mixed hardwoods, the industrial foresters are planting monocultures of fast-growing pines. The Dogwood Alliance, an environmental coalition that focuses primarily on the southern-forest issue, is calling for mandatory guidelines for forest management to preserve these valuable and diverse ecosystems.  
*Source: Audubon*, November–December 1997, 40–45.

### Development for swamp

Environmentalists in Georgia are concerned over the future of the Okefenokee swamp, which lies along the Georgia–Florida border in the USA. The swamp is highly sensitive to disturbance, and changes in water level or quality could have an enormous impact on the fragile ecosystem. An American multinational corporation, E.I. DuPont de Nemours & Company, wants to excavate a giant strip mine for titanium ores adjacent to the swamp's eastern boundary, on land now managed mainly as pine plantation. Mining would proceed 1.6 sq km at a time with backfilling and replanting of the pine forests as each mined-out parcel is abandoned. DuPont insists that all environmental rules would be met by the mine but critics worry that a combination of air and water pollution, hydrological disruptions, noise

and bright lights will disturb the Okefenokee's wildlife. In April 1997 the US Secretary of the Interior announced his opposition; work has been postponed but the company intends to continue, planning to be operational by 2002.

Source: *Wildlife Conservation*, November/December 1997, 30–35 & 64.

### Beetle introduction

Snout beetles *Oxyops vitiosa* are being released in batches in Florida in an attempt to control *Melaleuca*, an Australian tree introduced in the early 1900s. The trees threaten the Everglades, already covering 2025 of the wetland's 3 million ha. The beetle feeds exclusively on *Melaleuca* leaves.

Source: *Wildlife Conservation*, November–December 1997, 24.

### New bear crossing

Experts from the Florida Game and Freshwater Fish Commission have designed the USA's first bear underpass to allow black bears *Ursus americanus* to cross a busy road. Every year more than 50 of Florida's black bears are killed by cars. A prototype was constructed in 1994 north of Orlando, on a busy main road known for bear crossings and fatalities. No fatalities have been reported at the crossing since, although they still occur at other sections of the road, and tracks, photographs and radiotelemetry data show that bears are using the underpass. There is evidence that bears will even alter their usual paths to use it. Despite the success of this scheme, the problems of road kill will be solved only by limiting roads and human disturbance in bear habitat.

Source: *Audubon*, November–December 1997, 22.

### Pressure to hunt bears

Black bears *Ursus americanus* are protected in all states in the Mississippi delta region of the USA, including Arkansas, but there has been increasing pressure from local hunters to start a bear season at White River National Wildlife Refuge in south-eastern Arkansas, the largest tract of publicly owned bottomland hardwood left in the lower Mississippi delta. Unregulated hunting in the 1800s and early 1900s wiped out most of the black bears in south-east USA and they were reduced to only 40–50 individuals in the White River Refuge. The remnant population has responded well to protection and they currently number c. 400. The park encompasses 700 sq km and the expanding bear population requires more habitat, but most of the surrounding forest has been cleared for agriculture and what remains is severely fragmented. The animals occasionally venture outside the refuge, causing conflict with beekeepers and farmers. Many hunters also believe that the number of deer has declined as bears have increased.

Source: *Wildlife Conservation*, November/December 1997, 22–29.

### Hurricane damage to turtle beaches

Hurricane Pauline struck Mexico in October 1997, damaging nesting beaches of marine turtles, including La Escobilla, one of the world's most important beaches for the Pacific ridley turtle *Lepidochelys kempii*. It is estimated that 50 per cent of the nests were totally wind-blown, resulting in the loss of 40 million eggs and 10 million hatchlings. The Mexican Center for Sea Turtles

was also damaged but Mexican government authorities have promised support for restoration work.

Source: *Marine Turtle Newsletter*, October 1997, No. 78, 26.

### Dramatic decline of leatherbacks

In 1982 it was believed that Mexico hosted the world's largest nesting assemblage of endangered leatherback turtles *Dermochelys coriacea*. Numbers were estimated at tens of thousands, perhaps half the global total. By 1996, however, the first complete survey of leatherbacks nesting on the Pacific coast of Mexico revealed that fewer than 1000 females nested there in the 1995–96 season. The preliminary results of a study launched to investigate the causes of the decline showed that Mexican-nesting turtles travel to South America after nesting, where it is feared that many are killed by incidental capture in the large and growing commercial fisheries of Chile and Peru.

Source: *Marine Turtle Newsletter*, October 1997, No. 78, 2–7.

### Cycad success

Several nurseries set up during the 1990s for the conservation, propagation and sustainable management of Mexican cycads have been successful at producing plants and are now in need of marketing assistance to find or create regular outlets for sales and export. Many Mexican cycads are threatened by habitat destruction and illegal extraction from the field, and the nurseries were established to enable 'peasant' farmers to conserve the habitats as sources for seed and gain the additional benefit of selling the artificially propagated plants. Experimental reintroductions

have introduced nursery-propagated plants into the habitat and the farmers have profited from the sale of plants. Collecting pressure has been diminished, but not eliminated. *Source: Species*, December 1997, 18–19.

### Marsh gains protection

The largest remaining freshwater wetland in Hawaii, Kawai Nui Marsh, is to be protected following a campaign organized by the Hawaii Audubon Society, the Kawai Mui Heritage Foundation and other NGOs. Funds have been appropriated for ecological restoration at the site and the money will be used to remove alien plant species that have over-run the marsh, and to re-create additional habitat for four endangered waterbird species – the Hawaiian gallinule *Gallinula chloropus sandvicensis*, Hawaiian coot *Fulica americana alai*, Hawaiian duck *Anas wyvilliana* and Hawaiian stilt *Himantopus knudseni*.

*Source: Audubon*, January–February 1998, 114.

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## CENTRAL AMERICA & CARIBBEAN

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### Unsustainable logging in Mayan forests

Logging activities in Maya reservation areas in southern Belize are affecting 39 Mayan villages and two protected areas. Current concessions total over 200,000 ha and the government of Belize has revoked the protected status of the Maya Natural Resources Reservation to allow a timber company access. The local Audubon Society claims that the logging companies are

illegally felling protected sapodilla trees *Manilkara zapota* and that logging has taken place within 20-m restricted zones beside watercourses, increasing erosion. Operations have destroyed drinking water sources and villagers claim that companies are exceeding their concessions. Sustainable forestry is possible in the forests of Belize, demonstrated by the UK company 'Green & Black', who produce organic chocolate grown by Maya indians and flavoured with local spices. A premium is paid to growers who plant mahogany, vedar, mamey fruit or cohune nut trees as part of the shade system to improve the quality of cocoa plantations as wildlife habitat.

*Source: Arborvitae*, January 1998, No. 7, 2.

### Reef resources management

Conservation efforts for coral reef resources will need to be managed on a regional scale if they are to be successful. Some reefs are in a better position than others for receiving copious supplies of pelagic larvae in surface currents and are thus more resilient to overfishing and less dependent on local management to support fisheries or maintain biodiversity. On the other hand 'upstream reefs' need to be managed carefully, and reserves in areas with large areas of reefs downstream would be highly effective at supporting fisheries elsewhere, as long as the distances involved were not too great.

*Source: Roberts, C.M. Science*, 21 November 1997, 278, 1454–57.

### Coral disease increases

Diseased coral has become widespread in the Florida Keys

and throughout the Caribbean, and scientists have expressed alarm at the rate of increase and number of new diseases identified. Between 1996 and 1997 the Environmental Protection Agency's Coral Reef Monitoring Program recorded an increase in the number of areas where sick corals were observed from 25 monitoring stations to 94. Of 44 coral species monitored, 28 were found to be afflicted and 13 diseases have been identified, three of them new to science. The causes of these diseases are largely unknown but it has been suggested that run-off from sewage and pesticides, and light deprivation from turbidity are increasing susceptibility to disease. A soil fungus *Aspergillus* has also been identified as a cause of disease in soft corals known as sea fans. *Source: Science*, 28 November 1997, 278, 1569.

### Paving the way to reduce damage

Rapid development is causing severe damage to reefs and marine resources on 50-sq-km St John Island, US Virgin Islands, in the eastern Caribbean. Fifty-four per cent of the land area of St John and 23 sq km of offshore waters are protected as the Virgin Islands National Park, and the undisturbed coastline and offshore coral reefs led to its designation as an International Biosphere Reserve in 1976. There has, however, been increasingly rapid development of roads, holiday homes and tourist-related businesses on privately held lands on the island, leading to erosion and an increase in sedimentation in the marine environment. Corals may be adversely affected by the increased turbidity and deposition of fine sediment.



Field investigations have identified 50 km of unpaved roads as the primary source of sediment and recommended paving to reduce the problem. *Source: Environmental Management*, November/December 1997, **21** (6), 851–863.

### Rescue plan for Caribbean wildlife

The Montserrat oriole *Icterus dominicensis oberi*, which is endemic to Montserrat and is its national bird, is the subject of an emergency rescue plan being prepared by the Jersey Wildlife Preservation Trust, the Royal Society for the Protection of Birds and the World Wide Fund For Nature. The bird is under threat from the effects of the Soufriere volcano, which has been active for more than 2 years. Eruptions have damaged valuable wildlife habitat, including large areas of forest used by orioles. In the more sheltered Centre Hills the habitat is less damaged and 100–200 orioles may remain there. A plan of action has been agreed by the Montserrat Government. It recommends that veterinary advice is sought, plans are made to establish captive populations of orioles and mountain chickens (a large frog that is found quite commonly on Montserrat), and assessment and monitoring of the oriole population and the forest in the Centre Hills is carried out. Several other species were also identified as at risk including three lizards and a snake. *Source: John Hartley*, 28 November 1997.

### Primates hang on in Nicaragua

Little has been published on Nicaragua's primate species

but information collected by a US team during travels in 1996 and 1997, mainly in the south-west of the country, found that three species expected still occur there. The mantled howler *Alouatta palliata* is present in so many places that it is probably in the category of Lower Risk. In comparison, this species may be extinct in El Salvador. The team members did not see the other two species themselves but the capuchin money Cebus *capucinus* and spider monkey *Ateles geoffroyi* were both reported by local people and occur in at least two and one reserves, respectively. Nicaragua is the largest nation in Central America and has an important role in conservation in the region. The recent election of a new president will probably result in new economic development. For example, there are rumours of plans for a major new railway to transport goods from the Pacific to the Caribbean. This could have a major impact on the relatively large forested areas in eastern Nicaragua and it is important to identify potential areas for protection, and to conduct systematic censuses of primates and other fauna.

*Source: Neotropical Primates*, September 1997, **5** (3), 71–74.

### Crocodile reintroduction

Cuban crocodiles *Crocodylus rhombifer* are being reintroduced on the Isla de la Juventud (Isles of Pines), Cuba. About 600 crocodiles have escaped or been released into the wild from a captive-breeding facility near the core of the species's presumed original range. This occurred without the knowledge, input or approval of the IUCN/SSC Crocodile Specialist Group,

which only recently learned of the full scope of the releases. Information on the natural population of crocodiles is lacking and no wild crocodiles have been recorded there since 1959, although it is rumoured that a small remnant population survives. *Source: International Zoo News*, June 1997, 229–230.

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## SOUTH AMERICA

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### Galápagos funding

The Ecuadorian Government has drafted a 'Special Law' assigning 60 per cent of tourism entry fees for the Galápagos Islands to the management of the Park and Marine Reserve, and to provide finance to settlements for environmental management rather than development.

*Source: World Conservation*, September 1997, No. 3/97, 32.

### Hidrovia project flawed

Independent experts have concluded that the designs and evaluations for the Hidrovia Paraguay–Paraná navigation project in South America are fundamentally flawed. Official studies did not satisfactorily answer queries about the project's environmental and social effects, such as damage to the Pantanal wetlands. The panel recommended additional studies exploring alternative improvements in existing transport networks and involving more consultations with the region's communities. *Source: World Birdwatch*, December 1997, **19** (4), 3.

### Rapid snails extinct in wild

When the Yacyretá–Apipé rapids on the Paraná River on

the Paraguay/Argentina border were flooded by the Yacyretá reservoir, the habitat of a group of Argentina/Paraguay endemic mollusc species was destroyed.

*Aylacostoma guaraniticum*, *A. chloroticum*, *A. stigmaticum* and *A. cingulatum* were discovered and described in the 1950s and were abundant in their limited range. All populations consisted entirely of females, which reproduce by parthenogenesis. In August 1993 a team from the Argentine Museum of Natural Sciences rescued three known, and possibly two unknown, species from the dam site, and are maintaining them in captivity. Surveys have since confirmed that *Aylacostoma* populations are no longer present in the Paraná River and no suitable habitat remains.  
Source: *Tentacle*, July 1997, No. 7, 18–20.

### Protection for Atlantic forest

Conservationists are optimistic that Brazil's first national law explicitly protecting the Atlantic rain forest will be approved, securing the future of 95,000 sq km along the east coast of the country. The geographically isolated forest has many endemic plant and animal species – 17 of the 23 primate species and subspecies are unique to the area. Logging and development have destroyed more than 90 per cent of the original habitat. The proposed law will promote regeneration and sustainable use, and criminalize illegal deforestation.

Source: *Science*, 5 December 1997, 278, 1699.

### Fragmentation causes tree loss

Research, carried out over 17 years in the Amazonian

tropical rain forest area north of Manaus, Brazil, has revealed that habitat fragmentation causes a dramatic loss of above-ground tree biomass in addition to altering forest diversity and composition, affecting ecological processes and altering rain-forest dynamics. Once separated from the bulk of the forest, fragments below a certain size are unable to maintain the structure of the original forest. Large trees are damaged or killed as they become exposed to wind and weather extremes, and biomass declines sharply within 4 years of fragmentation. Recruitment of new trees is inadequate to offset the loss and it is unknown whether the structure will eventually recover. Scientists predict that a new equilibrium will be reached with a lower biomass than the original forest. Complex old-growth forests may be replaced by shorter, scrubby forests. There is also concern that, at the current rate of clearance, the collapse of biomass in forest remnants may become a significant source of greenhouse gases.  
Source: *Science*, 7 November 1997, 278, 1117–1118.

### Mining threat to forests

Industrial mining is to be carried out in the forests of the Toison Range, an area that includes the last remaining stands of cloud forest and rain forest in western Ecuador. The 400,000-ha area is the boundary of the Cotachi-Cayapas Ecological Reserve, which will be at risk from road construction and development. Only 14 per cent of the original forest cover remains in western Ecuador and spectacled bears *Tremarctos ornatus* and jaguars *Panthera onca* are among several threatened species found there.

The NGO Defensa y Conservación Ecología de Intag is appealing for support from the international community to lobby the Ecuadorian government to reconsider its decision.  
Source: *Arborvitae*, January 1998, No. 7, 2.

### Crocodile first for Colombia

The Colombian Ministry of Environment has passed a resolution declaring the Orinoco crocodile *Crocodylus intermedius* a nationally endangered species – the first Colombian species to be officially declared. The main objectives of the resolution are to prepare a national plan for *C. intermedius* conservation that recognizes sustainable use and protected areas as conservation strategies, to adopt or implement actions to diminish or alleviate pressure on the known populations, to work with the Venezuelan authorities and to seek support and advice from CITES and the Crocodile Specialist Group.

Source: *IUCN/SSC Crocodile Specialist Group Newsletter*, July–September 1997, 12.

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## PACIFIC

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### Parks to be joined

Park authorities from Wasur National Park (4000 sq km) in Irian Jaya and Tonda National Park (6000 sq km) in neighbouring Papua New Guinea, have agreed to co-operate in preserving the two parks' wildlife and ecosystems. They are discussing plans to unite the parks, which would result in the largest wetland protected area in the world.

Source: *News & Views Indonesia*, October 1997, 7.

### Relocated lories breed

Translocated ultramarine lories *Vini ultramarina*, captured on Ua Huhu Island and relocated to Fatu Hiva Island, in the Marquesas Islands, French Polynesia, appear to be surviving and reproducing in their new home. Twenty-nine of the birds, whose entire population was restricted to only one island, were translocated between August 1992 and October 1994. Their new home is situated within the historical range of the species and still supports suitable habitat. A survey in January 1997 counted 57 birds on Fatu Hiva including 10 subadults and one fledgling. *Source: Bird Conservation International*, 7 (3), 291–292, 1997.

### Tourism saving forest

The New Zealand organization Forest & Bird has helped the Vanuatu Environment Unit set up a conservation project to save the lowland forest on the island of Espiritu Santo from logging. In 1995 the villagers of Matantas and Sara have assumed control over 40 sq km of forest, known as the Vatthe Conservation Area. A project manager and two conservation staff were appointed, tourist bungalows built, guides, business managers and chefs trained, and in July 1997 the first ever group of tourists arrived, led by Forest & Bird's Conservation Officer. *Source: Forest & Bird*, November 1997, 8.

### Snails captured in Vanuatu

Vanuatu tree snails, believed to be *Partula turneri*, have been taken into captivity for the first time. Five adults and four young collected on the island of

Tanna in October 1996 are now breeding at London Zoo and Nottingham University in the UK. Introduced predatory snails are present on at least one island in the Vanuatu group. *Source: Tentacle*, July 1997, No. 7, 21.

### Snail reintroduction – slow progress

Three species of captive-bred *Partula* snails released in May 1996 into an enclosure on the island of Moorea in French Polynesia have survived and one, *P. suturalis*, is breeding. There have been some problems with the introduced carnivorous snail *Euglandina rosea* invading the enclosure as a result of breakdowns in maintenance of the fence but now the site has been secured and invading snails removed. *Source: Tentacle*, July 1997, No. 7, 20–21.

### Rats removed

Polynesian rats *Rattus exulans* have been eradicated from two of the four Pitcairn Islands and a third will soon be cleared. In 1991 and 1992 expeditions visited the islands and reported that rats were eating large numbers of petrel chicks on Henderson Island – home of the recently described Henderson petrel. Henderson was considered too big for rat eradication but the smaller atoll of Oeno was considered ideal for clearance to provide a safe haven for the birds. The proposal was also expanded to include Ducie and Pitcairn atolls. The petrels have responded well to the eradication, landing on Pitcairn, and it is hoped that they will breed there in relative safety. *Source: BBC Wildlife*, December 1997, 33.

## AUSTRALIA/NEW ZEALAND/ANTARCTICA

### Rare pine for sale

Propagation of the Wollemi pine *Wollemia nobilis* from seed collected at the site where the species was discovered in 1994 (Wollemi National Park, 200 km south-west of Sydney, Australia; see *Oryx* 29 [2], 88) has been so successful that the Royal Botanic Gardens of Sydney is turning over the mass production of the pine to private horticultural companies so that seedlings can be sold internationally. The Gardens will control the rights to the progeny, putting the money earned into research. The move is also designed to help protect the original site for collectors. *Source: New Scientist*, 6 December 1997, 36–39.

### Sharks protected

The great white and the grey nurse shark (*Carcharodon carcharias* and *Carcharias taurus*, respectively) are now protected in a zone of 9 million sq km around the coast of Australia. Fewer than 10,000 mature great white sharks remain in Australian waters and the population of grey nurse sharks is in decline. State laws apply within 3 nautical miles of the coast, however, and so the sharks will not be afforded complete protection. *Source: New Scientist*, 3 January 1998, 5.

### Kaka decline due to stoats

Predation, mainly by introduced stoats *Mustela erminea* of nestlings and breeding females is the main cause of decline and local extinction of the endemic parrot, the kaka *Nestor*

*meridionalis* in mainland New Zealand, according to recent research. While there are other causes of the declines, kaka populations will only survive there if introduced predators, particularly stoats, can be controlled effectively.

Source: *Biological Conservation*, 83 (2), 175–185.

### Breeding success for stilt

New Zealand's Critically Endangered black stilt

*Himantopus novaezelandiae* had the best breeding season for a decade in 1996/97. Eighteen breeding pairs were located, up 64 per cent on the previous year.

Source: *World Birdwatch*, December 1997, 19 (4), 5.

### Move for frogs

Three hundred frogs were translocated from Maud Island to Motuara Island, 25 km away, in Marlborough Sounds, New Zealand, as part of a strategy to help ensure the survival of New Zealand's rarest frog species – Hamilton's frog *Leiopelma hamiltoni*. Populations of the frog were thought to occur on Maud Island and Stephens Island in the Marlborough Sounds.

However, the Maud Island population is now considered to be a separate species, although it has yet to be formally described. As a result of this finding Hamilton's frog is considered to be the rarest in the world having a population of 200–300 on Stephens Island. Source: *Forest & Bird*, August 1997, 14–20.

### Dotterel census

A 1996 census of the New Zealand black-fronted dotterel *Elsayornis melanops* on the beaches of the northern North Island estimated an overall

population increase of 4 per cent since 1989. This threatened population now totals 1400 birds. The results showed that the number of birds on the west coast and in the Bay of Plenty has decreased by about 20 per cent in only 7 years. The reasons for this drop are unknown. On other parts of the east coast numbers were consistently up on the previous survey. The species's range has expanded into the area south of East Cape.

Source: *Forest & Bird*, August 1997, 4–5.

### Reserve opened

Te Angiangi Marine Reserve, south of Hastings, New Zealand, was opened formally in October 1997. It is the only reserve along the east coast south of the Bay of Plenty and is the country's 14th marine reserve. To date, a total of only 0.1 per cent of New Zealand's coastline has been established as protected marine areas.

Source: *Forest & Bird Conservation News*, November 1997, 1.

### Public forest threatened

One thousand sq km of publicly owned beech forest in West Coast, New Zealand, may be under threat from a major logging plan. The forests include: 5000 ha of largely unlogged lowland forest in the Orikaka catchment, north of the Buller River, a stronghold for the great spotted kiwi *Apteryx haastii*; 12,000 ha of pristine silver and red beech forest on the east bank of the Maruia River; and 12,300 ha of mixed podocarp/hard beech forest in the eastern Paparoas, adjoining Paparoa National Park.

Source: *Forest & Bird Conservation News*, November 1997, 1 & 4.

### Deer damage forest

Introduced Sika deer *Cervus nippon* are destroying the red and mountain beech forests in Kaweka Conservation Park, New Zealand. The deer are preventing beech regeneration over large areas of the 60,000-ha park and conservationists recommend urgent action to reduce deer numbers. Scientists estimate that a 90 per cent reduction is required. Various control methods have been suggested, including helicopter searching and shooting, and poison on foliage. The Hawke's Bay Department of Conservation has not supported a proposal for deer control and wants to do more research on the problem.

Source: *Forest & Bird Conservation News*, November 1997, 2.

### Dam causes more problems for wildlife

Developers are planning to divert water from the upper Opihi River in New Zealand through a canal into the south branch of the Opuha River to help fill a storage lake behind the Opuha Dam, currently being rebuilt following its disastrous collapse. The canal diversion would reduce the Opihi's natural flow by more than a third for a 15-km stretch and almost halve the frequency of the flushes that move gravel and sediment, clear algal growths, trigger fish spawning and remove weeds to provide the bare gravels that river-bed birds need for feeding and nesting. Reducing the frequency of flushes will increase sedimentation, with detrimental effects on fish and invertebrates, affecting the river's food chain. The river is valuable habitat for braided-river birds such as black-

fronted dotterel *Elsemyornis melanops* and black-fronted tern *Chlidonias albostrigatus*.

Source: *Forest & Bird Conservation News*, November 1997, 2.

### Longlines reviewed

The New Zealand Department of Conservation and the Ministry of Fisheries are reviewing controls on longline fishing. Although only a small proportion of the longline fleet has official observers, they recorded the deaths of over 350 birds in 1997, three quarters of which were killed in only three months of fishing by five chartered Japanese longliners. Birds killed included

wandering albatross *Diomedea exulans exulans*, New Zealand black-browed albatross *D. melanophris* and grey petrel *Procellaria cinerea*.

Source: *Forest & Bird Conservation News*, November 1997, 3.

### Protection sought for islands

Falklands Conservation hope to purchase two uninhabited islands – Outer and Double Islands – to protect them as nature reserves. The Islands' wildlife includes a large colony of breeding southern sealions *Otaria byronia*, a population of the 'near threatened' striated caracara *Phalacrocorax australis* and a breeding population of sooty shearwaters *Puffinus griseus* (one of 10 confirmed in the Falklands).

Source: *Warrah*, November 1997, 12, 6.

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## PEOPLE

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**Jeremy J. C. Mallinson**,  
Director of Jersey Wildlife

Preservation Trust and **Nancy Czekala-Gruber**, of San Diego, California, both received American Society of Primatologists' 1997 Senior Biology and Conservation Awards. Jeremy Mallinson's award was in recognition of his conservation achievements for New World primates, particularly the four species of lion tamarin, while Nancy Czekala-Gruber's award was for her contribution to primate conservation biology. **Juan Carlos Serio-Silva** received the 1997 American Society of Primatologists' Conservation Award for his efforts to conserve primate habitats in Mexico.

Three marine turtle conservation groups received the J. Paul Getty Wildlife Conservation Award in 1997: **Brazil's Fundação Pró-TAMAR**, the **Philippines' Pawikan Conservation Project** and **Malaysia's Sabah Parks**. All three groups have made outstanding contributions to marine turtle conservation in their countries and will share the \$50,000 prize.

**Keith Howman** has been elected as International President of the World Pheasant Association on the retirement of Professor Cheng Tsu-hsin. A founder member, he has previously held the position of Chairman and Director-General.

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## OBITUARY

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**Professor Dr Nicholas Polunin**, botanist, explorer and conservationist, died on 8 December 1997, aged 88. His distinguished career began as a student of Botany and Ecology at Christ Church, Oxford, and

included extensive research on arctic and sub-arctic flora. He held numerous academic appointments, including Professor of Botany at McGill University in Montreal and, in later life, he held positions at institutions on four continents. He made many scientific achievements, most notably discovering the last major islands to be added to the world map. His efforts were recognized through many awards, and by the naming of several plants and geological features after him in Greenland and the Canadian Arctic. Polunin's holistic approach to science developed into an interest in conservation and environmental issues. He became the founding editor of the journal *Biological Conservation* in 1967, followed by a similar position with *Environmental Conservation* in 1974. He established the Foundation of Environmental Conservation, which organized conferences and produced books on environmental issues.

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## OPPORTUNITIES

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### Sea turtle volunteers

Volunteers are required from mid-May to mid-October on the main sea turtle nesting beaches of Greece (Zakynthos, Crete and Peloponnesus) during the 1998 nesting season and throughout the year at the Sea Turtle Rescue Centre in Glyfada, Athens. Contact: Sea Turtle Protection Society of Greece, 35 Solomou St, GR 106 82 Athens, Greece. Tel/Fax: +30 1 38 44 146; E-mail: stps@compulink.gr.



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**COURSES**


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**Impact Assessment**

A training programme, Impact Assessment for Sustainable Development: Integrating Environmental Assessment with Economic and Social Appraisal, is to be held at the University of Manchester through the Institute for Development Policy and Management and the Environmental Impact Assessment Centre, 21 September–11 December 1998. Contact: Jane Reeves, Programme Administrator, Institute for Development Policy and Management, The University of Manchester, Crawford House, Precinct Centre, Oxford Road, Manchester M13 9GH, UK. Tel: +44 (0)161 275 2800/2808; Fax: +44 (0)161 273 8829; E-mail: idpm@man.ac.uk.

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**PUBLICATIONS**


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IUCN/SSC action plans  
Three action plans have been added to the IUCN/SSC list. *Dragonflies: Status Survey and Conservation Action Plan*, compiled by Norman W. Moore and the IUCN/SSC Odonata Specialist Group, 1997, 28 pp., £8.00/\$US12.00\*; *Asian Rhinos: Status Survey and Conservation Action Plan, New Edition*, edited by Thomas J. Foose and Nico van Strien, £13.50/\$US20.00\*; *Wild Sheep and Goats and their Relatives; Status Survey and Conservation Action Plan for Caprinae*, edited and compiled by David Shackleton, 1997, 390 pp., £26.75/\$US40.00\*. Action plans are available from IUCN Publications Services Unit, 219 Huntingdon Road, Cambridge CB3 0DL, UK.

\*Add postage and packing as follows: + 20% overseas surface, + 30% Europe air, + 40% overseas air.

*Fashioned for Extinction: An Exposé of the Shahtoosh Trade* by Belinda Wright and Ashok Kumar was published by the Wildlife Protection Society of India in 1997. It can be obtained from the WPSI, Thapar House, 124 Janpath, New Delhi, India.

**Seychelles Red Data Book 1997**, published by The Nature Protection Trust of Seychelles in March 1997, classifies the status of indigenous and endemic plants and animals using the latest IUCN Red List Criteria. It includes 100 plants and animals, providing a summary of status, threats and measures taken, and provides specific practical conservation measures for each species. It can be obtained at a cost of £20 from The Nature Protection Trust of Seychelles, PO Box 207, Victoria, Seychelles.

*Cocuyo* is a newsletter about the activities of scientists who study the invertebrates of Cuba. The editors, Julio A. Genaro and Jorge I. Fontenla, invite contributions and exchanges. Contact: Julio A. Genaro, Museo Nacional de Historia Natural, Obispo # 61, Esquina a Oficinas, Habana Vieja 10100, Cuba. Fax: +53 7 62 0353, or E. Hathway, Association of Systematics Collections, 1725 K Street, NW, Suite 601, Washington, DC 20006; Fax: +1 202 835 7334; E-mail: hathway@ascoll.org.

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**MEETINGS**


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**Global Diversity Forum.** 1–3 May 1998, Bratislava, Slovakia. Contact: Caroline Martinet,

IUCN–The World Conservation Union, 28 Rue Mauverney, CH-1196 Gland, Switzerland; Tel: +41 22 999 0001; Fax: +41 22 999 0025; E-mail: ccm@hq.iucn.org.

**Fourth Conference of the Parties to the Convention on Biological Diversity.** 4–15 May 1998, Bratislava, Slovakia. Contact: CBD Secretariat, World Trade Centre, 393 St Jacques Street, Suite 300, Montreal, Quebec, Canada H2Y 1N9. Tel: +1 514 288 2220; Fax: +1 514 288 6588; E-mail: biodiv@mtl.net.

**International Symposium of the Family Magnoliaceae.** 18–22 May 1998, Guangzhou, China. Contact: Symposium Secretariat, South China Botanical Garden, Academia Sinica, Guangzhou 510520, China. Fax: +86 20 87713797; E-mail: gzscib@public1.guangzhou.gd.cn.

**The Third International Conference on Great Apes of the World.** 3–6 July 1998, Sarawak, Malaysia. Contact: The Orangutan Foundation, 7 Kent Terrace, London NW1 4RP, UK. Tel/Fax: +44 (0)171 724 2912; E-mail: redapeuk@aol.com.

**Asia-Pacific Mycological Conference on Biodiversity and Biotechnology.** 6–9 July 1998, Hua Hin, Thailand. Contact: Mr Therapat Prasansarakij. E-mail: mycology@biotec.or.th; Website: <http://www.biotec.or.th/diary/mycology/mycology.htm>.

**14th Working Meeting of the Crocodile Specialist Group.** 14–17 July 1998, Singapore. Contact: The Executive Officer, 420 North Bridge Road, #06-29 North Bridge Center, Singapore 188727. Fax: +65 338 5917/+65 339 4708; E-mail: foreword@singnet.com.sg.

**VII International Congress of Ecology.** 19–25 July 1998, Florence, Italy. *Contact:* Almo Farina, Vice President INTECOL, Secretariat VII International Congress of Ecology, c/o Lunigiana Museum of Natural History, Fortezza della Brunella, 54011 Aulla, Italy.

**The Dilemma of Ecosystem Management: To Extend the Agony or to Address the Cause?** 19–25 July 1998, Florence, Italy. *Contact:* Boris Zeide, School of Forestry, University of Arkansas, Monticello, AR 71656-3468, USA. Tel: +1 870 460 1648; E-mail: zeide@uamont.edu.

**Conservation Biology at the Molecular Level: Identifying Management and Evolutionary Units.** 19–25 July 1998, Florence, Italy. *Contact:* Tim King, US Geological Survey, Leetown Science Center, 1700 Leetown Road, Kearneyville West, VA 25430, USA. E-mail: Tim\_King@usgs.gov.

**World Congress of Malacology.** 25–31 July 1998, Washington DC, USA. *Contact:* Robert Hershler, AMU President '98, Division of Mollusks, NHB-118, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, USA. E-mail: hershler.robert@nmnh.si.edu.

**11th International Bat Research Conference.** 2–6 August 1998, Brasilia, Brazil. *Contact:* Jader Marinho-Filho, Departamento de Zoologia, Universidade de Brasilia, C. Postal 04474, Brasilia, DF 70919-097, Brazil. Fax: +55 061 2741141; E-mail: ibrcell@guarany.unb.br.

**5th World Conference on Birds**

**of Prey and Owls.** 4–11 August 1998, Johannesburg, South Africa. *Contact:* Robin Chancellor, Hon. Secretary, World Working Group on Birds of Prey and Owls, 15b Bolton Gardens, London SW5 0AL, UK. Fax: +44 (0)171 370 1896.

**XVII Congress of the International Primatological Society.** Antananarivo, Madagascar. 9–14 August 1998. *Contact:* Secretariat XVII IPS Congress, Madame Berthe Rakotosamimanana, Faculte des Sciences, Batement P, Porte 207, BP 906, Antananarivo 101, Madagascar. Tel: +261 (03) 80570; E-mail: ralaiari@syfed.refer.mg.

**International Wader Study Group Meeting.** 12–15 August, Langebaan, South Africa. *Contact:* Les Underhill, Avian Demography Unit, University of Cape Town, Rondebosch 7700, South Africa. Tel: +27 21 650 3227; Fax: +27 21 689 7578; E-mail: lgu@maths.uct.ac.za.

**Fifth International Botanic Gardens Conservation Congress.** 14–18 September 1998, Cape Town, South Africa. *Contact:* Professor Brian J. Huntley, National Botanical Institute, Private Bag X7, Claremont 7735, South Africa. Tel: +27 21 762 1166; Fax: +27 21 761 4687; E-mail: bgci98@nbict.nbi.ac.za.

**1998 Annual Meeting of the Raptor Research Foundation, Inc.** 30 September–4 October 1998, Utah, USA. *Contact:* Carl D. Marti, Dept. Zoology, Weber State University, Ogden, Utah, USA.

**Impact Assessment in the Development Process: Advances in Integrating Environmental Assessment with Economic and Social**

**Appraisal.** 23–24 October 1998, Manchester, UK. *Contact:* Debra Whitehead, Impact Assessment Conference Secretary, Institute for Development Policy and Management, University of Manchester, Crawford House, Precinct Centre, Oxford Road, Manchester M13 9GH, UK. Tel: +44 (0)161 275 2800; Fax: +44 (0)161 273 8829; E-mail: debra.whitehead@man.ac.uk.

**Sixth World Wilderness Congress.** 24–30 October 1998, Bangalore, India. *Contact:* M. A. Partha Sarathy, Chairman, 6th WWC, Hamsini, 12th Cross, Rajmahal, Bangalore, India 560 080. Fax: +91 80 334 1674; E-mail: partha@gasbg.01.vsnl.net.in; or The WILD Foundation, ICEC, 2162 Baldwin Road, Ojai, CA 93023, USA. Fax: +1 805 649 1757; E-mail: wild@fishnet.net.

**2nd International Conference on Wetlands and Development.** 14 November 1998, Dakar, Senegal. *Contact:* Wetlands International, Marijkeweg 11, PO Box 7002, 6700AC, Wageningen, The Netherlands. Tel: +31 317474711; Fax: +31 317474712; E-mail: post@wetlands.agro.nl.

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## CORRECTION

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### Iguana releases

In the January 1998 issue of *Oryx* we included a Briefly item about iguana releases in Jamaica. Unfortunately we inadvertently omitted to mention that Fort Worth Zoo and Hope Zoo have played leading roles in co-ordinating the releases. Fort Worth Zoo has been the primary institution responsible for fund-raising for the Jamaica iguana project since 1992. We apologize for this oversight.