INTERNATIONAL

Skate on edge of extinction

While depletion of populations of marine fishes through overfishing is now common and world-wide, actual extinctions have not occurred. The elasmobranch fishes (rays and sharks) are particularly vulnerable to the effects of overfishing because they take a long time to mature, grow slowly and have low reproductive rates (see *Oryx*, **32** [3], 170–171). The first reported local extinction, in 1981, was of the Irish Sea population of the common skate (ray) *Raja batis*. Now, not long after a commercial trawl fishery for rays started in the north-west Atlantic, the largest species, the 'barn door skate' *Raja laevis* is nearly gone. Commercial fishing for rays started in the north-west Atlantic because of depletion of traditional fish populations, such as cod. As numbers of cod and other ground fishes declined, populations of rays and smaller sharks increased at first, presumably because common food species had been released, and this made the rays economically attractive.
Source: Casey, J.M. and Myers, R.A. 1998. *Science*, **281**, 690–692.

Dangers of fishing low in the food chain

As top-level predators such as cod and tuna become depleted, the fishing industry is progressively targetting species lower in the food chain. The maximum sustainable yield of species at lower trophic levels should be higher than that at higher trophic levels, but in fisheries for species low in the food chain, the proportion of the catch discarded is higher because much of it is not considered suitable for human consumption. In addition, juveniles of many higher level predators are caught. Current fishing policy is unsustainable – at least 60 per cent of the world's 200 most commercially valuable fish are overfished or fished to the limit, and drastic action is needed to salvage vanishing ecosystems. Complete fishing bans apply to only 1 per cent of the world's fishing grounds, and many more marine protected areas should be established where all fishing is excluded.
Sources: Science, **279**, 809.

Disease causing amphibian declines identified

A new fungal disease has been shown to be the cause of death in amphibians found dead at pristine rain forest sites in Australia and Central America. Results of an international collaboration headed by scientists from the CSIRO and James Cook University (Australia), Kingston University and The Institute of Zoology (UK), and Maryland Animal Health Laboratory (USA) suggest that the fungus, found in the keratinized cells of the skin of adult amphibians, appears to be the same pathogen on both continents. The disease was shown to cause mortality in an experimental group of amphibians, probably by interfering with supplementary water uptake or respiration through the skin. The disease was identified as the cause of death of frogs and toads belonging to nine genera, including *Taudactylus acutirostris*, an Australian species, which may now be extinct.
Source: Proceedings National Academy of Sciences, 1998, **95**, 9031–9036.

Conserving parasites

Sometimes conserving a species involves destroying its parasites. For example, attempts to conserve the black-footed ferret *Mustela nigripes* by bringing the last remaining 18 individuals into captivity for captive breeding and reintroduction may have inadvertently destroyed any host-specific parasites because of the treatment the ferrets were given to minimize the risk of disease. A recent paper says that many of the arguments advanced for conserving biodiversity and saving individual species also apply to species of parasites. For example, the medical and research uses of parasites may directly serve humans. In addition, parasite community ecology suggests that the loss of one parasite species can deter competitive interactions among remaining parasitic species, possibly to the detriment of the host. Maintaining populations of host-specific parasites may be important for the continued health or survival of the host population.
Source: Gompper, M.E. and Williams, E.S. 1998. *Conservation Biology*, **12** (3), 730–732.

EUROPE

Arctic foxes in Norway

Despite being protected legally in Norway since 1930, arctic foxes *Alopex lagopus* have failed to recover from overhunting in the early part of the century. There are only 100–150 animals scattered across 2000 km (north to south) of naturally fragmented habitat but much suitable habitat is unoccupied. J. Linnell and O. Strand of the Norwegian Institute for Nature

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Research believe that the problem lies in a breakdown in the spatial dynamics of the population. Overhunting in the past left the fox in small isolated populations with few opportunities for exchange of individuals. Captive-breeding using wild-born animals from surviving relict populations could be used to supplement populations and restore the links that used to connect them.
Source: Reintroduction News, No. 15, March 1998, 7–8.

Beetle conservation in Sweden

The Swedish Government is carrying out a conservation project for the hermit beetle *Osmoderma eremita*, focusing on 45 sites in southern Sweden. This beetle, which depends on old oak trees in pastures, may have only 150–200 populations left, with half of these in Sweden. The project is determining management needs of the species, protecting and restoring the 45 sites in which it is known to occur, and raising awareness among farmers and local communities.
Source: Natura 2000, June 1998, 4–5.

Woodpecker as umbrella species

A study of the breeding habitats of the white-backed woodpecker *Dendrocopos leucotos* in Finland and Russian Karelia found that they contained 16 threatened beetle species in a total of 39,485 identified individuals. These inconspicuous threatened beetles might be protected by using the white-backed woodpecker as an umbrella species to define suitable sites. If the woodpecker can be saved in Finland, a suite of threatened saproxylic beetles will probably be saved as well.
Source: Martikainen, P., Kaila, L. and Haila, Y. 1998. *Conservation Biology*, **12** (2), 293–301.

Sea trout decline linked to sea lice

The dramatic decline of wild sea trout *Salmo trutta* in north-west Scotland, UK, is largely due to commercial salmon farming according to government scientists. Sea lice from caged salmon have spread to sea trout, weakening and killing them. While other factors have been blamed for the decline, none is as clearly linked as the effect of sea lice.
Source: New Scientist, 4 July 1998, 23.

Reintroducing capercaillie into Scotland

The capercaillie *Tetrao urogallus* was the first bird to be successfully reintroduced into the UK after extinction of natural populations in the 18th century. However, Scottish capercaillie populations are in decline and their numbers and the extent of their range should be increased to reduce the risk of a second extinction. A population viability analysis gave an estimate of a minimum viable population of 60 individuals in 5000 ha of habitat in order for the population to have a 95 per cent chance of survival for 50 years. This number could be reduced to 10 individuals by supplementing the population with two unrelated individuals every 5 years. Assessment of areas of suitable habitat identified two potential release sites in southern Scotland.
Source: Marshall, K. and Edwards-Jones, G. 1998. *Biodiversity and Conservation*, **7**, 275–296.

New UK reserve

England's newest National Nature Reserve (NNR) was officially opened at Elmley on the Isle of Sheppey, Kent, on 19 May 1998. The reserve covers 930 ha of grazing marsh on the edge of the Swale estuary. It has been managed as a reserve for over 10 years and contains a mosaic of habitats. This is the first time that a farming estate has been allowed to manage a NNR.
Source: Habitat, **34** (6), 4.

Moving habitats

Valuable wildlife communities that are to be destroyed by a change in land use are often moved to another location. A review of 24 translocations in the UK showed that changes in plant and animal communities after the moves were common. Many communities, particularly those of invertebrates, showed major changes, which were linked to disturbance during translocation, environmental differences between receptor and donor sites, and poor aftercare and management. It seems that this technique cannot be regarded as a replacement for *in situ* conservation but could mitigate the loss of the original community by creating one that retains many of the species found at the donor site.
Source: Bullock, J.M. 1998. *Biological Conservation*, **84** (3), 199–214.

Hungarian wetland going under

Kis-Balaton at the mouth of the River Zala, the oldest nature reserve and internationally recognized wetland in Hungary, and an Important Bird Area for breeding herons, spoonbills and other water

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birds, will soon be submerged unless a decision by the Hungarian Government is reversed. Because of its position it was deemed ideal by water engineers to filter agricultural run-off and industrial waste water before the river enters Lake Balaton. However, this meant flooding the reserve, which has caused large areas of reed and sedge to die. Poisoned birds have also been found. BirdLife Hungary is campaigning to have the project suspended.
Source: World Birdwatch, **20** (2), 3.

Rabbits and red kites

In Spain, the European rabbit *Oryctolagus cuniculus* is an important game species. Its decline as a result of viral haemorrhagic disease has caused an increase in the illegal and extensive persecution of predators, especially the red kite *Milvus milvus*. Around 90 per cent of red kite populations in Spain have declined during the last 3–10 years, and the species range has been reduced since 1980, particularly in high rabbit density areas. Red kites are not important predators of rabbits, but they are suffering disproportionally the effects of human persecution because of their susceptibility to shooting and poisoning, and a lack of understanding among hunters. Studies on the real effect of predators on game populations and information campaigns to prevent misconceptions among hunters are urgently required.
Source: Villafuerte, R. *et. al.* 1998. *Biological Conservation*, **84**, 181–188.

Dalmatian pelican disaster

The world's most important colony of Dalmatian pelicans *Pelecanus crispus* has suffered disastrous losses. On 3 April 1998 a fisherman on Small Prespa Lake in Greece fired shots into the air to force the pelicans off their nests. He remained in the area for more than 3 hours attempting to fish before being ordered to leave. By then up to 200 pelican nests – 80 per cent of those present – had been lost because the eggs had cooled. The Prespa Protection Society has launched an official complaint and the fisherman has been sued.
Source: BirdLife in Europe, **3** (2), 1.

Monk seal deaths due to toxins

The deaths in 1997 of one-third of the world's Critically Endangered Mediterranean monk seals *Monachus monachus* may have been due to paralytic toxins produced by high concentrations of toxic dinoflagellates in coastal waters, which contaminated the fish that the seals ate.
Source: Nature, **393**, 28–29.

NORTH EURASIA

A first for Russia's forest protection

On 17 February 1998, for the first time in the history of Russia, a lawsuit in defence of public ecological interest was won in the Russian Supreme Court. Twelve directives of the Russian Government granting permission to transfer plots of First Group forests (ecologically important forests where industrial logging is banned or restricted) to a category of non-forested land for economic uses other than forestry, were declared illegal. The directives had been issued without Environmental Impact Assessments, and organizations and citizens throughout Russia appealed against them. Russia has lost 330 sq km of First Group forests since 1995 as a result of government directives.
Source: Russian Conservation News, No. 15, 11–12.

New Russian protected areas

On 2 February 1998 Norski Zapovednik (strict nature reserve) was officially recognized in the Amur Region of the Russian Far East. It covers 211,168 ha between the rivers Nora and Selemdja, and contains breeding grounds for the world's largest population of Siberian roe deer *Capreolus pygargus*. This brings the total number of zapovedniks in Russia to 99 with an overall area of 331,470 sq km – 1.56 per cent of the territory of the Russian Federation. Two more national parks have also been created, bringing the total to 34. In October 1997 Nechkinski National Park was established in the Kama River basin in the Republic of Udmurtiya (Central Russia). This 20,753-ha park is situated at the junction of taiga, coniferous–broadleaf forest and forest steppe, and contains more than 50 threatened species. Alania National Park was established in February 1998 in the Severnaya Osetiya Republic in the Caucasus Mountains: 90 per cent of the park's 54,926 ha is high mountain landscape.
Source: Russian Conservation News, No. 15, 4–5.

Fight to stop flower trade

Each spring thousands of people in the cities of Russia and Ukraine buy bunches of wildflowers to celebrate the new season. Many of these contain endangered species. The wildflower business is lucrative, extensive and illegal

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but until recently little has been done to stop it. Members of the Druzhina Student Nature Protection Corps had been battling against the trade for 15 years but could achieve little on their own. In 1995, under the name Operation Spring Flower, they enlisted the help of government agencies and have had more success. They are active at all stages of the trade, from the collecting sites through transport routes to the street sellers, confiscating wildflowers and donating them to hospitals. In 1998 flowers worth more than $US4 million were seized: confiscating the shipments is a serious blow for violators because it deprives them of income.
Source: Russian Conservation News, No. 15, 30–31.

NORTH AFRICA & MIDDLE EAST

Harbour threatens potential Ramsar site

Turkey has declared that the Gediz Delta will become a wetland of international importance under the Ramsar Convention. However, the Chamber of Commerce and Industry of Izmir is planning to build a large harbour and dockyard complex in the southern part of the delta, and has asked the Minister of the Environment to stop the process of declaring the delta a Ramsar site. The construction would affect more than half the critical habitat for breeding birds. The delta holds the largest of the two breeding populations of Caspian tern *Sterna caspia* and the third largest population of common tern *S. hirundo* in the Mediterranean, as well as the only known breeding site of Sandwich tern *S. sandvicensis* in Turkey. The delta is also an important feeding area for the Mediterranean monk seal *Monachus monachus*.
Source: Sandgrouse, **20** (1), 4–5.

Introduction techniques for captive-bred houbara

In Saudi Arabia, conservation measures for the houbara bustard *Chlamydotis undulata macqueenii* have included the experimental release of captive-bred birds into the wild. Between 1992 and 1994, at Mahazat as-Sayd Protected Area, chicks, feather-cut subadults and flying subadults were radio-tagged and released into an enclosure, free from mammalian predators, from where they could fly into the main reserve. Predators in the main reserve were either controlled (through translocation) or uncontrolled. Survival rate was best (48 per cent) among flying subadults, with chicks next (36 per cent). Avian predators killed both chicks and feather-cut subadults, and mammalian predators took 50 per cent of birds, but predators ceased to be a problem once birds learned to avoid them. At the end of 1994, 35 introduced houbara (from an initial total of 94) were free-ranging in the reserve, some having been so for as long as 27 months. In 1995 four offspring fledged.
Source: Combreau, O. and Smith, T.R. 1998. *Biological Conservation*, **84**, 147–155.

New areas for bustards

Saudi Arabia has created three new refuges – At-Taysiyah, Al-Jandaliyah, Nafud Al Uraiq – for houbara bustards *Chlamydotis undulata* and extended one of the four existing reserves – Saja/Al Humar/Umm Al Rimth. The aim is to protect migrant and resident bustards from hunting and to provide safe sites for the release of captive-bred birds.
Source: Sandgrouse, **20** (1), 3–4.

Oil spill in Persian Gulf

On 7 January 1998, 4000 tonnes of smuggled Iraqi fuel oil on its way to a United Arab Emirates port leaked from a barge, which sank after colliding with its tug. *c.* 20 km off Umm al Quwain. Most of the oil washed on to the beaches or entered the mangrove-lined lagoons during a strong on-shore wind, causing significant environmental damage. The complex of lagoons and islands at Umm al Quwain form an Important Bird Area, being home to several rare and locally endangered species, including the country's largest wintering flock of crab plover *Dromas ardeola* and one of the only known wintering flocks in Arabia of great knot *Calidris tenuirostris*. The area has been recommended for protection as a wildlife sanctuary but the Umm al Quwain Government has not acted on this.
Source: Sandgrouse, **20** (1), 6.

SUB-SAHARAN AFRICA

News of the western giant eland

The Endangered western giant eland *Tragelaphus derbianus derbianus* survives in a few small isolated populations in the savannah woodlands of West Africa, some 2500 km to the west of the range of the more numerous eastern giant eland *T. d. gigas*. The main surviving population occurs in the eastern part of Niokolo-Koba National Park in south-

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east Senegal, where the park guards say that there are *c.* 100. A mission to Senegal and Mali by Bertrand Chardonnet in December 1997 confirmed the continued presence of small numbers in the Faleme Hunting Zone in south-eastern Senegal and several parts of south-west Mali. These findings enhance the possibility of establishing protected populations in addition to the one in Niokola-Koba.
Source: Species, No. 30, 43.

Oil spill off Nigeria

On 12 January 1998, 40,000 barrels of crude oil were spilled into the sea when a pipeline ruptured at the Idoho platform *c.*13 miles off the Qua Iboe River in eastern Nigeria. The oil slick affected 90 per cent of Nigeria's coast and penetrated rivers and creeks all around the Niger delta. Large fish kills were reported, and the oil affected up to 500,000 people in 120 fishing/farming communities.
Source: Marine Pollution Bulletin, **36** (2), 115–116.

A new population of Ethiopian wolves

A new population of Ethiopian wolves *Canis simensis* was discovered in the largely unexplored South Wollo mountain range in northern Ethiopia in February 1998 by a team led by Claudio Sillero-Zubiri. Southern Wollo was closed to visitors during Ethiopia's recent civil war and only one small part of the mountain range, the Denkora Forest, is legally protected.
Source: African Wildlife News Service.

Dibatag survives

The dibatag *Ammodorcas clarkei*, listed as Vulnerable by IUCN, is a gazelle-like antelope restricted to the arid plains of the Ogaden region of eastern Ethiopia and parts of adjoining Somalia, an area severely affected by war, political unrest and insecurity in recent decades. The first detailed survey of the Ogaden region for 20 years has found that the dibatag persists in viable numbers, occurring locally in dense bush over a reasonably large area.
Source: Species, No. 30, 42.

Giraffes translocated

Two female and one male giraffes *Giraffa camelopardalis rothschildi* were successfully translocated 800 km by aeroplane from Lake Nakuru National Park in Kenya to Kidepo Valley in Uganda in 1997. The translocation was conducted because, from a population of 200 in 1967–72, only one female and five male giraffes survived in Kidepo, as a result of poaching and civil war. The three giraffes were accepted by the resident giraffes but the translocated male was killed by a lion 6 weeks after release.
Source: Reintroduction News, No. 15, March 1998, 8–10.

Tanzania increases anti-poaching action

The Tanzanian Government has stepped up anti-poaching activities following evidence of steep declines in animal populations in protected areas. In an 8-month operation to curb poaching and illegal trade, which started in March 1997, the Wildlife Division Anti-Poaching Unit arrested and prosecuted 255 poachers, eight of whom were found with elephant tusks.
Source: TRAFFIC Bulletin, **17** (2), 64.

New reserve in Tanzania

The Tanzanian Government has legally gazetted the Amani Nature Reserve in the East Usambara Mountains. The reserve covers 8380 ha, including forest owned by private tea companies and Amani Botanical Gardens. It is home to seven threatened bird species including the endemic Usambara eagle owl *Bubo vosseleri* and dappled mountain-robin *Modulatrix orostruthus*.
Source: World Birdwatch, **20** (2), 7.

New reserve in Gabon

The government of Gabon has classified 3320 sq km of rain forest at Monts Doudou as a wildlife management area, where hunting and logging are banned. The area contains elephants, gorillas, chimpanzees, and Ogilby's white-footed duiker *Cephalophus ogilby crusalbum*. It is adjacent to three existing reserves: Moukalaba, Ngove-Dogo and Setté-Cama. Together they cover 13,000 sq km – the largest contiguous reserve area in Central Africa.
Source: Arbovitae, The IUCN/SSC Forest Conservation Newsletter, April 1998, 4.

East Africa's dugongs disappearing

The last viable population of dugongs *Dugong dugon* in East Africa, in the Bazaruto archipelago in Mozambique, fell from 110 in 1993 to *c.* 21 in September 1997. Gill-nets set in seagrass habitats for sharks kill dugongs despite attempts to have them banned. Under Mozambique law, killing a dugong incurs a 7.5-million meticais ($US600) fine and 3 months in prison, even if it is an accidental gill-net fatality. Law enforcement is poor,

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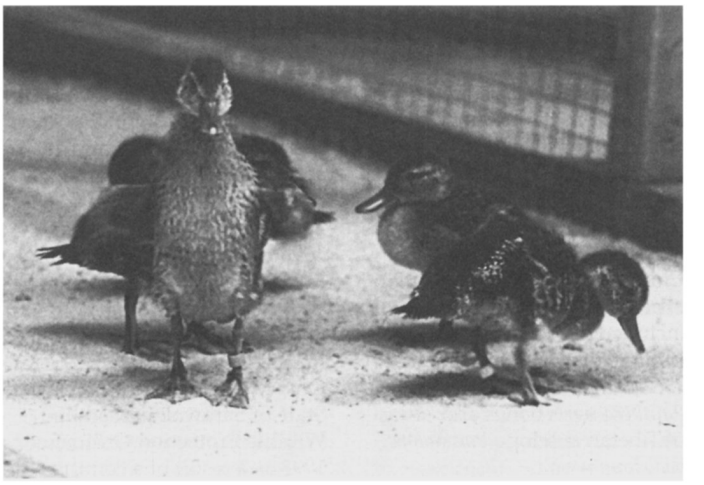
however, and tourists often see dugongs being butchered near Inhassôro.
Sources: Sirenews, April 1998, 4; *Zimbabwe Wildlife*, April–June 1998, 12–13.

Botswana rolls back fences for wildlife

Botswana is to remove some cattle fences, which were erected in 1995 in an attempt to contain an outbreak of cattle lung disease, and realign others to allow wildlife to regain access to seasonal feeding grounds and water-holes. The move affects over 100 km of fences in northern Botswana between the Okavango Delta and the Caprivi Strip in Namibia. More than 30 km of fence along the Caprivi border will be removed, allowing wildlife greater access to the Kwando River.
Source: Conservation International, 22 May 1998.

Succulent rediscovered

Gibbaeum esterhuyseniae, a succulent plant in the family Mesembryanthemaceae, was discovered in 1940 on the coastal plain of South Africa near Stormsvlei, south of Langeberg. For many years it was known only from four herbarium collections made between 1940 and 1951 in a triangle bounded by MacGregor, Bonnievale and Stormsvlei. Extensive searches since the early 1970s failed to find it, and in 1980 it was listed as Extinct in the wild. In 1996 botanists Peter Bruyns and Bruce Bayer found several hundred plants of a *Gibbaeum* species in the Stormsvlei area. Checks with herbarium specimens and growing plants from seed to compare with plants in a botanical garden in the USA confirmed that *G. esterhuyseniae* had been rediscovered. It has been classified as Critically Endangered because the land on which it occurs has been earmarked for development as a timber plantation.
Source: Endangered Wildlife, March 1998, 30.



Madagascar teal chicks, the first to be bred in captivity (*Jersey Wildlife Preservation Trust*).

Madagascar teal breeds in captivity

On 8 July 1998 a clutch of six eggs of the Madagascar teal *Anas bernieri*, one of the rarest ducks in the world, was hatched artifically at Jersey Zoo, the first recorded breeding in captivity. The species was first described in 1860 but was virtually unknown to science until the late 1960s. A survey in 1973 by the Wildfowl and Wetlands Trust (WWT) showed that the teal was under threat and a joint JWPT (Jersey Wildlife Preservation Trust)/WWT expedition in 1992 found that it was approaching extinction. A captive-breeding programme started at Jersey Zoo with six males and two females captured in 1993 and 1995. The parents of the first clutch hatched laid another six eggs, which hatched on 14 August; the other pair also laid six eggs, which hatched in an incubator on 1 August.
Source: Jersey Wildlife Preservation Trust, 18th August 1998.

SOUTH & SOUTH EAST ASIA

Managing tigers

R. Tilson and P. Nyhus have urged tiger range states to develop and implement proactive policies to manage tigers that kill or injure people or livestock. They argue that it is essential to conserve habitat and prey, and to control poaching and trade in tiger parts, but that tiger–human conflicts may overshadow those efforts. Unless a systematic process is developed for dealing with problem individual tigers, the tiger will be perceived as a dangerous species and conservation support will disappear.
Source: Conservation Biology, **12** (2), 261–262.

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Nepal burns confiscated animal parts

On 22 March 1998 animal skins and other parts seized from poachers in Nepal over a period of 7 years were burned at the order of the Nepalese Government. The stock, which had been stored at Royal Chitwan National Park, was expensive to protect, and included 187 leopard *Panthera pardus* skins, 874 rhino hides, 1363 rhino hooves, 144 kg tiger *Panthera tigris* bones and 33 kg of Tibetan antelope *Pantholops hodgsonii* wool.
Source: TRAFFIC Bulletin, **17** (2), 64.

Rhinoceroses in Vietnam

A census of footprints in Cat Loc Nature Reserve, Vietnam, revealed that the area hosts 5-7 individuals of a subspecies of Javan rhinoceros – *Rhinoceros sondaicus annamiticus* – that was believed to be extinct. The only other surviving population of the species is *Rhinoceros sondaicus sondaicus* in Java's Ujung Kulon National Park.
Source: New Scientist, 20 June 1998, 25.

Status of the river lapwing in southern Laos

The southern Lao population of the river lapwing *Vanellus duvaucelii* may represent 1.5–3 per cent of the world population. The species favours wide, slow rivers with sand or gravel bars and islands, which are also favoured by humans for settlement. The birds suffer from human disturbance: there is an inverse correlation between numbers of river lapwings and villages per km of river. Populations remote from humans are threatened by hydropower development. The loss of habitat is causing the lapwing and four other species of birds of sandbar habitats to approach extinction in Laos. Conservation should include protecting a substantial portion of a major catchment and setting up a monitoring programme for the birds.
Source: Duckworth, J.W. *et al.* 1998. *Biological Conservation*, **84** (3), 215–222.

New wildlife law in Sarawak

On 5 May 1998, the Malaysian State of Sarawak passed the Wildlife Protection Ordinance 1998 as a result of a comprehensive policy for wildlife conservation developed by the Sarawak Forest Department and the USA-based Wildlife Conservation Society. The new law makes it easier to create wildlife sanctuaries and to involve local people in their protection. It bans all commercial sales of wildlife and their products, which is a vital to curtail the unsustainable trade in meat from wild species. Stopping the trade will help conserve dwindling wildlife populations and ensure a continuing supply of wild meat for subsistence hunters.
Source: Wildlife Conservation Society/State Government of Sarawak.

Nightjar rediscovery

The satanic eared-nightjar *Eurostopodus diabolicus* has been rediscovered in primary forest in Sulawesi, Indonesia. First described in 1931, there had been only three possible sightings since 1980.
Source: World Birdwatch, **20** (2), 3.

Fires in South East Asia

Extensive fires in Borneo (Kalimantan), Sumatra and other parts of Indonesia have continued to destroy forests. Over 30,000 sq km burned between January and May 1998. Almost all of the Kutai National Park has been destroyed, as well as the Wein River Orang-utan Sanctuary and limestone forests in the north of the province. Most of the fires appear to be spread by illegal burning to clear vegetation for oil-palm plantations. On the island of Palawan in the Philippines 5000 ha of rain forest burned. In Thailand, *c.* 3000 ha of the Huay Kha Khaeng National Park, a World Heritage Site, were destroyed.
Sources: Plant Talk, July 1998, 11 & 30; *New Scientist*, 25 July 1998, 13.

Philippines closes whale shark and manta ray fishery

On 25 March 1998 the Government of the Philippines announced a ban on the killing and sale of whale sharks *Rhincodon typus* and manta rays *Manta birostris*. Fishing for whale sharks for export to Taiwan, where their flesh is prized as a delicacy, has increased dramatically in the past 7 years but catches have declined. The dried meat of manta rays is consumed locally but the dried gill rakers are exported.
Source: TRAFFIC Bulletin, **17** (2), 63.

EAST ASIA

Hong Kong wetland polluted

A very large discharge of sewage into Inner Deep Bay in Hong Kong's Mai Po wetlands in 1996 is thought to have caused widespread mortality of marine organisms. Two years later, pollution is still having an

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effect. The 1500 ha of wetlands provide sanctuary for 60,000 overwintering water birds. Since the pollution incident this number has been reduced by 19 per cent. Two of the species that winter at the reserve are of particular concern – Saunders's gull *Larus saundersi* and black-faced spoonbill *Platalea minor*. The latter species is reduced to 500 world-wide, of which 130 visit the reserve. Their main wintering site, in Taiwan, is about to be destroyed by industrial development.
Source: Marine Pollution Bulletin, **36** (5), 320.

Black-faced spoonbills

With currently only *c.* 550 black-faced spoonbills *Platalea minor* world-wide, efforts to prevent the extinction of the species are increasing. The largest known wintering area is in Taiwan, where more than 300 birds arrived in late 1997. Around 50 birds are known to breed in South Korea but little is known about the bird's ecology and migration. On 19 February 1998, a satellite transmitter was attached to a black-faced spoonbill in Taiwan as part of a tracking project involving conservation groups and researchers from Japan, Hong Kong, Korea, Malaysia and Taiwan.
Source: International Conservation Newsletter, **6** (1), 5–6.

Japan defies tuna agreement

In defiance of an agreement with Australia and New Zealand, Japan is catching the Critically Endangered southern bluefin tuna *Thunnus maccoyii* outside the normal fishing season and outside the normal quota, claiming that it is collecting data on stocks. The Commission for the Conservation of Southern Bluefin Tuna allows Japan to catch 6065 tonnes of the fish in the Indian Ocean each year. At the fourth annual meeting of the Commission, which started last September and adjourned in February 1998 without reaching agreement, Japan wanted to increase its quota by 25 per cent, which could make the tuna extinct by 2020. Australia has now banned Japanese long-line vessels from its ports and its 320-km economic zone.
Source: New Scientist, 18 July 1998, 15.

NORTH AMERICA

Loggers cease clear felling

In June 1998 one of the world's largest logging companies, MacMillan Bloedel, announced that it will no longer clear-fell old-growth forest on Canada's western seaboard. The company has logging rights to over 1 million ha of British Columbia and has suffered financial losses, partly from an international campaign by environmentalists aimed at its customers, and partly because of falling markets in South East Asia. The company now proposes to protect 70 per cent of its old-growth holdings and to restrict felling to blocks no larger than 1 ha.
Source: Plant Talk, July 1998, 30.

Problems of lichen protection

Erioderma pedicellatum, a conspicuous foliose lichen, which grows on the bark of coniferous trees, is known from only two areas in the world: Norway and Sweden, where it is possibly extinct; and on the Canadian coast from Newfoundland to Nova Scotia and New Brunswick. In the last 20 years the species has suffered dieback and losses in New Brunswick and Nova Scotia but still occurs at a number of Newfoundland sites. The major threats are destruction of old-growth oceanic coniferous forest and air pollution. A report from the International Committee for the Conservation of Lichens to Newfoundland's Premier led to conditional protection of the single most important habitat for *Erioderma* – there were plans to clear-cut it. Because of the lichen's dependence on over-mature trees for its reproductive phase and its need to migrate between generations, its long-term conservation depends on a sufficient number of source populations over several sq km with a 1-km-wide buffer zone.
Source: Species, No. 30, 68–69.

Beluga whale numbers rise

There are nearly 1000 beluga, or white, whales *Delphinapterus leucas* in St Lawrence River, Quebec, Canada, compared with 300 in the 1970s. The increase is due to pollution controls and hunting bans, but recovery is far from complete: in the late 1800s there were more than 20,000.
Source: Audubon, May–June 1998, 14.

Curbing illegal caviar trade

On 1 April 1998 the USA introduced stringent import regulations for caviar to try and curb the illegal trade. All caviar imports are being examined by US Fish and Wildlife Inspectors, who ensure that CITES permits are valid. If the type of caviar in the shipment does not match that listed on the permit the shipment is

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confiscated; DNA analysis enables caviar to be identified to species level. The techniques are being made available on the Internet so that other countries can use them.
Source: Marine Pollution Bulletin, **36** (4), 254–255.

Telephone towers kill birds

Towers built for transmitting television programmes and cellular phone calls are causing the deaths of thousands of birds every year. Migrating birds are often decapitated by the thin, taut wires. In one study, in Wisconsin, USA, between 1957 and 1994, a single 305-m television tower caused the deaths of 121,560 birds of 123 species. With an estimated 75,000 towers across the USA, annual kills of songbirds caused by towers may soon exceed 5 million.
Source: Audubon, May–June 1998, 16.

Cormorants to be killed

Fish farmers in the USA are to be allowed to kill cormorants that prey on fish stocks now that non-lethal methods to protect stocks have been shown to be ineffective. The population of double-crested cormorants *Phalacrocorax auritus* has increased by 6–7 per cent annually in recent years to 1–2 million birds, causing an estimated $20 million annual revenue loss to the aquaculture industry. Aquaculturists may now use lethal control techniques when an established non-lethal harassment programme has failed.
Source: Marine Pollution Bulletin, **36** (3), 179–180.

Old-growth forest saved

The Lummi Indian Nation and the US Nature Conservancy, with financial backing from Microsoft co-founder Paul G. Allen, has bought Arlecho Creek Forest from the Crown Pacific timber company. It is the largest (907 ha) privately owned old-growth forest in Washington's Puget Sound area.
Source: Audubon, May–June 1998, 14.

Mud to restore wetlands

The problem of how to dispose of mud dredged from San Francisco Bay's shipping channels has been solved by the Sonoma Land Trust and the California Coastal Conservancy, who are using it to restore former wetlands. The mud was used to restore the original level of 130 ha of former farmland that had sunk below sea level near the mouth of the Petaluma River. Saltmarsh species are now colonizing. Two threatened species are expected to benefit – the California clapper rail *Rallus longirostris* and the salt-marsh harvest mouse *Reithrodontomys raviventris*.
Source: Audubon, May–June 1998, 19.

Otter deaths linked to TBT

Analysis of 35 dead southern sea otters *Enhydra lutris nereis* found on the California coast between 1992 and 1996 found that many had high levels of tributyl tin (TBT) in their livers. Tributyl tin is used in marine paint to keep boat hulls clear of barnacles but, since 1989, has been banned in the USA for use on vessels under 25 m because it was found to be a potential immunosuppressant. The researchers say that TBT must still be in the marine sediment, although concentrations should have dropped since the ban.
Source: Environmental Science and Technology, **32**, 1169–1175.

Shrimp hunt on

Scientists are searching for the Critically Endangered Stone Mountain fairy shrimp *Branchinella lithaca*. The only known habitats of this species are ephemeral rock-depression pools on top of Stone Mountain, Georgia, USA. The last record was in 1951.
Source: Species, No. 30, 50.

Mexican wolves released

Three captive-bred families (11 individuals) of Mexican grey wolves *Canis lupus baileyi* were released at the end of March 1998 into the Apache National Forest in eastern Arizona, USA. Before the release Mexican wolves had not existed in the wild in the USA since 1970. Reintroductions will continue for 3–5 years with the goal of establishing a wild population of 100 wolves in the 18,000-sq-km Blue Range recovery area in eastern Arizona and western New Mexico. All the released wolves are being tracked through the use of radio collars and any that stray outside the recovery area will be captured and returned to the area or to captivity. On 28 April one of the released wolves was shot by a camper. Its mate was recaptured for safekeeping and in early May gave birth to its first litter.
Source: Endangered Species Bulletin, **XXIII** (2–3), 12–13.

Re-establishing fish

An 11-year project to re-establish four species of Endangered and Threatened fish species – smoky madtom *Noturus baileyi*, duskytail darter *Etheostoma percnurum*, yellowfin madtom *Noturus flavipinnis* and spotfin chub *Cyprinella monacha* – into Abrams Creek, Great Smoky Mountains National

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Park, Tennessee, USA, is beginning to have success. In 1957 the fish were eliminated from the creek by the use of chemicals to improve the trout fishery. While some fish have since returned naturally, others were prevented from doing so by a dam. Some fish were reintroduced using wild-collected fish from other watercourses and others using captive-reared fish. All four species are now surviving in Abrams Creek and three species are breeding.
Source: Endangered Species Bulletin, **XXIII** (2–3), 30–31.

US Navy causing problems for whales

The US Navy is projecting dangerously loud, low-frequency sound into the ocean off the northern Kona coast of Hawaii, as part of a test programme for a low-frequency, active sonar system (LFAS). The test site is close to a newly established humpback whale *Megaptera novaeangliae* sanctuary. Environmentalists claim that whale and dolphin deaths and injuries are occurring as a result of the Navy's activities. In order to minimize the impact on whales the LFAS is not used until a passive acoustic surveillance system indicates that there are no marine mammals within 3 nautical miles. However, a medical expert on LFAS says that the system could potentially cause cell and tissue damage in marine animals.
Source: Marine Pollution Bulletin, **36** (3), 178–179.

The disappearing snails of Hawaii

The native land snail fauna of the Hawaiian Islands was once extremely diverse, with over 750 species, more than 99 per cent of which were endemic. Most of these species are now extinct or severely threatened, largely due to the introduction of predatory carnivorous snails. Introductions began in the 18th century (before western discovery), but were at a low level, reaching a peak in the 1950s when many species were introduced as biological control agents. To date, 81 species of snails and slugs are recorded as having been introduced, with 33 becoming established. Carnivorous snails are still considered elsewhere as potential biological control agents despite their total destruction of entire endemic faunas. In the Hawaiian Islands the process of species introduction continues and is just part of the homogenization of the unique faunas of tropical Pacific islands.
Source: Cowie, R.H. 1998. *Biodiversity and Conservation*, **7**, 349–368.

Carbon credits to protect Mexican forest

Conservation plans for El Carricito, Mexico's first Important Bird Area, involve the local Wixarika community in an initiative to market 'carbon credits' to North American companies. Under the scheme, rather than cut carbon emissions, polluters will be able to pay developing countries to fix carbon by not felling their forests.
Source: World Birdwatch, **20** (2), 4.

CENTRAL AMERICA & CARIBBEAN

Belizean villagers guard manatees

Belizean villagers and environmentalists are trying to stop the illegal hunting of manatees *Trichechus manatus* by carrying out patrols to deter hunters, and reporting manatee sightings and any suspicious activities to the authorities.
Source: Marine Pollution Bulletin, **36** (2), 117.

Illegal logging in Nicaragua

Rain forest in the North Atlantic Autonomous Region of Nicaragua is being felled by a logging company, Solcarsa, a subsidiary of the Korean-based transnational company Kumkyng, despite the fact that Nicaragua's Supreme Court ruled that the logging was illegal because the company had failed to consult regional advisory councils about the project's environmental impact. The loggers have relocated indigenous people in the path of the logging, and are still building roads and cutting old-growth trees. Toxic chemicals from the company's wood treatment plants run directly into watercourses.
Source: Sirenews, April 1998, 6–7.

Bellbirds aid tropical tree recruitment

A study of seed dispersal of a Neotropical montane tree, *Ocotea endresiana*, by five species of birds in Monteverde Cloud Forest Preserve, Costa Rica, found that four of the species dispersed seeds to sites near the parent trees, whereas the fifth species, a bellbird, *Procnias tricarunculata*, dispersed seeds under song perches in canopy gaps. Seedling survival was higher for seeds dispersed by bellbirds because there were fewer fungal pathogens in gaps. Thus, bellbirds are important for dispersing seeds to favourable sites and may

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influence plant recruitment patterns and species diversity in Neotropical forests.
Source: Wenny, D.G. and Levey, D.J. 1998. *Proceedings of the National Academy of Sciences USA*, **95**, 6204–6207.

Farmers to manage conservation area

Twelve farming communities in Costa Rica and Panama's La Amistad Biosphere Reserve took over the management of the AMISCONDE Conservation Project in January 1998. The project is a binational partnership between these communities, US-based Conservation International, corporate partners and local institutions. It carries out a range of projects to protect La Amistad's biologically rich rain forest. The communities span 14,580 ha and two watersheds in the reserve's buffer zone.
Source: Conservation International.

SOUTH AMERICA

Suriname protects forest

One of the world's largest and most undisturbed tropical forests has been permanently protected as a result of Suriname creating the 16,200-sq-km Central Suriname Wilderness Nature Reserve, covering some 10 per cent of the country's land area. The area is uninhabited by humans and is largely unexplored. Much of the forest was recently targeted by Asian logging companies. USA-based Conservation International has secured private sector funding to establish a $US1 million trust to manage the protected area and is assisting Suriname to develop a strategy for conservation-based investment in ecotourism, bioprospecting, non-timber forest products and agroforestry.
Source: Conservation International, 17 June 1998.

Venezuelan parrot success

A parrot conservation programme on the Macanao Peninsula on Margarita Island, Venezuela, resulted in an increase in the Vulnerable yellow-shouldered Amazon *Amazona barbadensis*, from 750 individuals in 1989 to 1900 in 1996. Techniques included confiscating illegally captured chicks and either hand-rearing and releasing them, or reintroducing them through a cross-fostering nest programme. The project, which also included public awareness and education components and studies on the parrot's biology, involved an overall expenditure of *c.* $US2800/parrot.
Source: Sanz, V. and Grajal, A. 1998. *Conservation Biology*, **12** (2), 430–441.

Brazil's fires quenched

The fires that spread out of control in Brazil's north-eastern state of Roraima in November 1997, as cattle ranchers and small-scale farmers cleared land, were quenched by heavy rain in early April 1998. By then the fires had spread deep into the protected reservation of the Yanomani indians and had engulfed some 30,000 sq km, almost one-quarter, of the state's species-rich forests and savannahs.
Source: Plant Talk, July 1998, 11.

Lear's macaw threatened by illegal collectors

Lear's macaw *Anodorhynchus leari*, down to 130 individuals in the wild in its only location in Bahia, north-east Brazil, is still threatened by illegal collection, despite increased security and ongoing efforts to control poaching. Poachers have been arrested but birds are still being smuggled out of Brazil. In 1996 two birds were confiscated from Lawrence Kuah Kok Choon at a French airport. One bird died but the other was returned to Brazil. Singapore authorities recently confiscated two Lear's macaws from Choon's private collection and UK government authorities confiscated three birds from a private collector in Yorkshire in 1998. The Brazilian Government is hoping that Singapore and the UK follow France's example by returning these birds, and that all governments that find undocumented Lear's macaws confiscate them and return them to Brazil for release to the wild or for the captive management programme.
Source: Brazilian Institute for Environment and Natural Renewable Resources, 14 July 1998.

New marmoset

A new species of marmoset *Callithrix humilis* has been described from the west bank of the lower Rio Aripuanã, Amazonas state, Brazil. It has been placed provisionally in the genus *Callithrix* but is quite distinct from other known marmosets and may represent a separate genus. It is atypical among callitrichids in being non-territorial. The species was observed in dense terra firme rain forest and secondary forest near the edge of plantations and manioc fields. It does not appear to be be endangered – local people consider it too small to hunt (its head–body length is only 150 mm) and there is no large-scale develop-

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ment planned in the area. Its known distribution (250–300 sq km) is by far the smallest for any Amazonian primate.
Source: Roosmalen, M.G.M. *et al.* 1998. *Goeldiana Zoologica*, No. 22, 1–23.

Tanager rediscovered

The cherry-throated tanager *Nemosia rourei* was rediscovered in Brazil in February 1998, 47 years after the last sighting. Up to four birds were seen during field work on a private property in Espírito Santo State.
Source: World Birdwatch, **20** (2), 3.

Mahogany listed

Bolivia and Brazil requested that their populations of big-leaf mahogany *Swietenia macrophylla* be listed in Appendix III of the Convention on International Trade in Endangered Species (CITES). The listings entered force on 19 March and 26 July 1998, respectively. The controls are limited to logs, sawn wood and veneer sheets. The species is already included in Appendix III at the request of Costa Rica.
Source: TRAFFIC Bulletin, **7** (2), 64.

New bird in Bolivia

A new spinetail *Cranioleuca henricae* has been described from the dry Andean valleys of La Paz, Bolivia.
Source: Ibis, **139**, 606–616.

Tourists threaten sea-lions

Sea-lions *Otaria byronia* in a nature sanctuary in the Cobquecura community, 140 km from Concepçion in Chile, are suffering from tourism. Improvements to roads in the area have enabled easy access to the spectacular coast, and low tides in late January/February allow tourists to clamber over the rocks to approach the sea-lions. The disturbance has caused stampedes in which sea-lion pups have been injured. Sanctuary workers are trying to educate local people and tourists about the problem but are having to resort to fencing some sites.
Source: Marine Pollution Bulletin, **36** (2), 116–117.

PACIFIC

Cause of *Partula turgida* extinction identified

A protozoan disease of the digestive gland is thought to have been responsible for the extinction of *Partula turgida*, the last individual of which died at London Zoo on 1 January 1996 (see *Oryx*, **30** [2], 81). The disease is caused by a microsporidian parasite of the genus *Steinhausia*, and was identified as the cause of death in the last five individuals of the species to die. Numerous field surveys have failed to find extant populations of this species in the wild (the South Pacific island of Raiatea). Currently over 10 species of *Partula* snail occur only in captivity and it is unknown whether the parasite is capable of infecting these populations.
Source: Conservation Biology, October 1998.

Ant record in PNG

A biological assessment of the Lakekamu Basin, Papua New Guinea, has found 22 new species of ants, bees and wasps, 11 new frogs, 7 new reptiles and three new species of fish. More than 250 species of ants were found in a 1-sq-km area, making the Basin a record-setting site for ant diversity outside South America. The Lakekamu Basin is one of the largest remaining pristine lowland rain forests in PNG covering *c.* 2525 sq km in Gulf Province. Virtually uninhabited by people, it offers excellent opportunities for conservation.
Source: Conservation International, 30 June 1998.

Flycatcher numbers rise

The Critically Endangered Rarotonga flycatcher, or *kakerori*, *Pomarea dimidiata* breeds only in the 155-ha Takitumu Conservation Area in south-east Rarotonga, Cook Islands. The ship rat *Rattus rattus* is a major threat because it preys on nestlings, and a rat eradication programme has had results: kakerori numbers rose from 29 individuals in 1989 to 144 by August 1997.
Source: Aliens, No. 6, 20.

Action against a snake

In an attempt to keep brown tree snakes *Boiga irregularis* (native to Australia, New Guinea and the Solomon Islands) from invading the island of Rota in the Pacific, scientists have developed a barrier made of metal mesh that can be attached to existing chain link fences around the port. The snake invaded nearby Guam *c.* 50 years ago and has extirpated nine of the island's 13 forest birds. Snake-blocking barriers will also be used to create snake-free areas on Guam in which reintroduction projects can be conducted.
Sources: Aliens, No. 6, 7–8; *Wildlife Conservation*, June 1998, 16.

Alien ants spreading

Alien ants are spreading throughout the Pacific, wiping out native species. The ants are

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'tramp' species that are spread by human commerce, and more than 35 species have invaded the Pacific. Several have had dramatic impacts. The big-headed ant *Pheidole megacephala* and the long-legged ant *Anoplolepis gracilipes* have been implicated in extermination of endemic fauna. In Tonga long-legged ants swarm over and kill hatchlings of the native Tongan incubator birds. The little red fire ant *Wasmannia auropunctata* poses perhaps the greatest threat. It has recently invaded New Caledonia and the Solomon Islands where it attacks native vertebrates, including the incubator bird of Savo Island. When these ants invade, the entire biological community is transformed as native invertebrate species are replaced by an impoverished set of ant-tolerant species, many of which are also aliens. The loss of native invertebrates that have key functions in the natural community may have cascading effects leading to loss of additional plant and animal species.
Source: Aliens, No. 6, 3–4.

AUSTRALIA/NEW ZEALAND/ANTARCTICA

Monitoring marine invaders

A number of organizations in Australia are funding a pilot community monitoring programme for introduced marine pests. It is co-ordinated by the Centre for Research on Introduced Marine Pests and aims to facilitate early detection of new invasive species and to develop knowledge about introduced species already present, by assisting community and other groups to be active watchdogs in marine and coastal environments. Over 150 introduced marine species have been discovered in Australian waters and eight are considered to be pests: northern Pacific sea star *Asterias amurensis*, Japanese seaweed (*wakame*) *Undaria pinnatifida*, giant fan worm *Sabella spallanzanii*, European green crab *Carcinus maenas* and four species of toxic dinoflagellates.
Source: Aliens, No. 6, 14.

Managing the orange-bellied parrot

The Endangered orange-bellied parrot *Neophema chrysogaster* is one of Australia's most threatened species, with a population of fewer than 200. Population modelling and sensitivity analysis found that the winter survival of birds was more important than their reproductive success in summer, and that qualitative features of the habitat, such as vegetation composition, were more important than quantitative features, such as habitat size. Sensitivity analysis of various management options for the winter habitat, which extends along the coast from Victoria to South Australia, found that management in Victoria had a stronger influence on the population than management in South Australia.
Source: Drechsler, M. *et al.* 1998. *Biological Conservation*, **84** (3), 269–282 & 283–292.

Hector's dolphin endangered by isolation

Analysis of mitochondrial DNA has shown that Hector's dolphin *Cephalorhynchus hectori*, endemic to New Zealand's coastal waters, occurs as three virtually isolated populations, in North Island, and on the west and east coasts of South Island. The marked segregation of matrilineal lineages across a small geographic range is unusual among cetaceans and the low rate of female dispersal, indicated by the mitochondrial DNA structure, could increase the vulnerability of local populations to extinction as a result of fisheries-related mortality. Given the direct threat from fisheries, the fact that only 3000–4000 of the species remain, and the poor ability to recover via recruitment of non-indigenous females, separate conservation management plans should be developed for each population.
Source: Pichler, F.B., Dawson, S.M., Slooten, E. and Baker, C.S. 1998. *Conservation Biology*, **12** (3), 676–682.

Virus in Antarctic penguins

Antarctic penguins appear to be relatively free of infectious diseases but an infectious agent is suspected in a mass mortality of Adelie penguin *Pygoscelis adeliae* chicks. Antibodies of the avian pathogen Infectious Bursal Disease Virus have been found in both emperor penguins *Aptenodytes forsteri* and Adelie penguins from colonies near human activity but not in isolated colonies. Possible sources of the virus in Antarctica could be humans disposing carelessly of poultry products, allowing access to scavenging birds, or contaminated footwear, clothing or vehicles.
Source: World Birdwatch, **20** (2), 7.

PEOPLE

Planta Europa Awards

The Second Planta Europa Conference in Uppsala, Sweden, 9–13 June 1998, presented environmental lawyer and amateur field

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botanist **Cyrille de Klemm** with its top prize, the Jean-Paul Galland Award. Co-founder of the International Council for Environmental Law in 1969, Klemm suggested the idea of the Biodiversity Convention in 1981 and 1992, and was the architect for the IUCN draft for the Convention. Planta Europa Silver Leaf awards went to: **Andy Byfield** (of FFI) for his pioneering work in identifying key plant sites in Turkey; **Tetyana Andrienko** for her work in plant conservation in Ukraine; and **Tomas Hallingbäck** for his work on the conservation of mosses, lichen and fungi in Europe.

Whitley Awards

The Whitley Animal Protection Trust, the Iris Darnton Foundation and the Royal Geographical Society (with the Institute of British Geographers) have established an annual award scheme for leaders of projects that make a pragmatic, substantial and lasting contribution to the conservation of animals in their habitats. **Dr Claudio Sillero-Zubiri** won the £15,000 1998 Whitley Award for Animal Conservation for his work with Ethiopian wolves. Three other people short-listed for the Award were given Iris Darnton Foundation Awards totalling £10,000: **Sharon Matola**, campaigning to save the scarlet macaw in Belize; **Dr Lynn Clayton**, working in Sulawesi to save the babirusa and **Stephen Earsom**, studying giant tortoises in Galápagos.

OBITUARY

Byron Antipas (1909–1997), was a central figure in Greek conservation. In 1951 he was one of the founders of the Hellenic Society for the Protection of Nature, and was its General Secretary for many years. He left his job in the Bank of Greece to devote himself to conservation, among other achievements playing a pivotal role in setting up the national parks of Samaria in Crete and Prespa in Epirus.



Sir David Attenborough and Richard Fitter (both Vice-Presidents of FFI) at the renaming of a Berkshire, Buckinghamshire and Oxfordshire Naturalists' Trust nature reserve at Oakley Hill in Oxfordshire, in memory of the late Maisie Fitter, former editor of *Oryx* (*Christopher Love/RPS*).

OPPORTUNITIES

Sea Turtle Rescue Centre

The Sea Turtle Rescue Centre in Athens, Greece, needs volunteers to assist with sea-turtle rehabilitation. Training will be given on site, accommodation is in a four-berth railway wagon, and a small financial stipend is given. Requirements include basic veterinary knowledge, a current driving licence and computer skills. Minimum stay 3 months. *Contact:* Dimitrios Dimopoulos, STRC Co-ordinator, Sea Turtle Protection Society of Greece, Solomou 35, GR-10682, Athens, Greece. Tel/fax: +30 1 3844146; e-mail: stps@compulink.gr.

Volunteering in Guatemala

A Guatemalan non-governmental organization, ARCAS, which works for the conservation of endangered species and their habitats, needs volunteers at its Hawaii Sea Turtle and Caiman Conservation Project on the

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Pacific coast of Guatemala (June–December) and at its Wild Animal Rescue Center in Peten. Charges are $US50/week for the Rescue Center (food and lodging) and $US35 at Hawaii (lodging only). *Contact:* Colum Muccio, ARCAS, International Mail: Section 717, PO Box 52-7270, Miami, FL 33152-7270, USA. Tel/fax: +1 502 591 473; e-mail: arcas@pronet.net.gt.

Sea turtle work in Sri Lanka

The Turtle Conservation Project in Sri Lanka is seeking volunteers to assist with field research and nest protection, input and analysis of computer data, and general project administration, including fund-raising and report writing. Volunteers must be self-funding but accommodation is provided. Daily living costs are *c.* $US1.5. Please send a CV and covering letter to The Secretary, Turtle Conservation Project, 73 Hambantota Road, Tangalle, Sri Lanka. e-mail: tcp@sri.lanka.net.

Volunteers in Thailand

CHELON, Marine Turtle Conservation and Research Program, in collaboration with the Phucket Marine Biological Centre, will carry out the third turtle survey at Phra Thong Island, southern Thailand, from December 1998 until April 1999. Volunteers are needed to monitor beaches and conduct conservation awareness activities for tourists and the local community. A minimum stay of 2 weeks is preferred. Accommodation is in huts by the sea. *Contact:* CHELON, Marine Turtle Conservation and Research Program, Viale Val Padana 134/B, 00141 Rome, Italy. Tel/fax: +39 6 812 5301; e-mail: chelon@tin.it.

MEETINGS

1st International Conference on Cacti and Other Succulents. 5–9 November 1998, Gibraltar. *Contact:* Brian Lamb, PO Box 561, PMB 6152, Gibraltar. Fax: +350 42465/74022: e-mail: wildlife_gib@compuserve.com.

2nd International Conference on Wetlands and Development. 8–14 November 1998, Dakar, Senegal. *Contact:* Maria Pierce, Wetlands International, Marijkeweg 11, PO Box 7002, 6700 AC Wageningen, The Netherlands. Tel: +31 31 747 4711; fax: +31 317 474712; e-mail: post@wetlands.agro.nl.

Assessing the Ecological Integrity of Running Waters International Conference. 9–11 November 1998, Vienna, Austria. *Contact:* Michael Kaufmann, Department of Hydrobiology, Fisheries and Aquaculture, University of Agricultural Sciences, Max Emanuel-Strasse 17, A-1180 Vienna, Austria. Tel: +43 (1) 47654 5226; e-mail: confer@mail.boku.ac.at.

Ecosystem Health and Sustainable Development: Are they Compatible? 15–19 November 1998, Santiago, Chile. *Contact:* David J. Rapport, Faculty of Environmental Sciences, University of Guelph, Guelph, Ontario, Canada N1G 2W1. Fax: +1 519 7634686; e-mail: drapport@envsci.uoguelph.ca, or Richard H. H. Moll, Environmental Statistics Program, Statistics Canada, 7th Floor, R.H. Coats Building, Tunney's Pasture, Ottawa, Ontario, Canada K1A 0T6. Fax: +1 613 951 0634; e-mail: rick@statcan.ca.

Primate Society of Great Britain Winter Meeting (contributions of zoos to primate biology and conservation). 2 December 1998, London. *Contact:* Dr Miranda Stevenson, Marwell Zoological Park, Colden Common, Winchester, Hants SO21 1JH, UK. Tel: +44 (0)1962 777407; fax: +44 (0)1962 777511; e-mail: mirandast@email.msn.com.

19th International Symposium on Sea Turtle Biology and Conservation. 2–6 March 1999, South Padre Island, Texas, USA. *Contact:* Jane Provancha, Symposium Secretary, Aquatics Ecological Program, DYN-2, Kennedy Space Center, FL 32899, Florida, USA. Fax: +1 407 853 2939; e-mail: jane.provancha@ksc.nasa.gov.

ICES/SCOR Symposium: Ecosystem Effects of Fishing. 16–19 March 1999, Montpelier, France. *Contact:* Professor Henrik Gislason, Danish Institute for Fisheries Research, Charlottenlund Castle, DK-2920 Charlottenlund, Denmark. E-mail: hg@dfu.min.dk.

7th World conference on Breeding Endangered Species in Captivity: Linking Zoos and Field Research to Advance Conservation. 22-29 May 1999, Cincinnati, Ohio, USA. *Contact:* Edward Maruska, Executive Director Cincinnati Zoo & Botanical Garden, 3400 Vine Street Cincinnati, OH 45220, USA. Tel: +513 916 2739; fax: +513 569 8213.

3rd European Congress of Mammalogy. 30 May–4 June 1999, Jyvaskyla, Finland. *Contact:* ECM3, Jyvaskyla Congresses, POB 35, FIN-40351, Jyvaskyla, Finland. E-mail: congresses@cone.jyv.fi.

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