

# News and views

## Will the monarchs be safe next year?

A proposal by the Mexican Government to spray 40,000 ha (99,000 acres) of *Abies religiosa* fir forest could irreparably damage this unique ecosystem and endanger the monarch butterflies *Danaus plexippus* that overwinter there. In November 1986 the Mexican Secretary of Agriculture and Water Resources sought the advice of Professor José Sarukhan of the University of Mexico regarding an imminent programme to spray the forest with DIPEL, asking him if it would endanger the monarchs.

The reason for the spraying is to control the larvae of a tortrix moth (*Evetria (Rhyacionia) hyalinaria*), which is reputed to be causing economic damage to the fir trees. Professor Sarukhan informed Professor Lincoln Brower of the University of Florida, who then sought the opinions of a number of biologists with appropriate expertise. In an open memorandum, dated 11 November 1986, he reported on the responses obtained.

There was unanimous agreement that spraying with DIPEL should not be carried out. DIPEL is a commercially prepared product containing live spores of *Bacillus thuringiensis*, a bacterium that is a natural pathogen of some insects, especially butterflies and moths. When the spray is applied to the food plant, the spores are ingested by the larvae and broken down in the gut, releasing lethal crystals of delta-endotoxin. In addition, the spores can germinate in the decaying remains of dead larvae, thus multiplying the toxin in the wild. DIPEL is claimed to have a narrow range of specific targets: 50 species of lepidopterous larvae are known to be sensitive. The effects on adult lepidoptera, however, are largely unknown and virtually untested. The release of the toxin from the spores takes place only in a highly alkaline solution, which is provided by the guts of the larvae known to be sensitive. Since there appears to be no known published data on the gut pH of adult lepidoptera, the likelihood of ingested spores poisoning monarchs cannot be assessed.

Monarch butterflies drink dew from *Abies* needles and other foliage throughout their wintering period and could therefore ingest spores. They are likely to be attracted to the spray itself because of the sugars it contains. Even if their gut fluids are

not sufficiently alkaline to release the toxin, it is possible that spores could survive in the gut and be passed with faeces on to the milkweed plants when the migrating females deposit their eggs to establish the first spring generation throughout the south-eastern US. If this were to happen, the entire first spring generation of the larvae could be poisoned.

It is apparent that, with so little knowledge of the possible effects of DIPEL on the monarchs, conclusive laboratory tests are essential before any spraying is done. Even if such tests were to show that the monarchs would not be harmed directly, there would be a myriad of possible unknown side-effects of DIPEL on this unique ecosystem, and many biologists would not recommend spraying natural ecosystems except under the most dire conditions.

The last remnant of a once widespread and still poorly understood ecosystem is at stake, as well as the entire overwintering population of eastern North American monarchs. It was only on the 25 August 1986 that the Mexican Government issued a proclamation declaring the monarchs' overwintering sites an ecological reserve. Logging and agricultural development will be prohibited at six sites totalling 5000 ha (12,000 acres) and restrictions will be placed on the use of land in an 11,000-ha (27,000-acre) buffer zone surrounding them. This was a major victory for conservation. It is to be hoped that it will not be rendered meaningless by the spraying going ahead. The spectacle of the butterflies has great potential economic value to Mexico; for this and many other reasons its loss would be tragic.

## British Columbia's disastrous wildlife policies

by Tina Harrison

A survey conducted by British Columbia's Ministry of the Environment in 1983 discovered that 50 per cent of this Canadian province's residents were in favour of increased legislation to protect the environment. Despite this, the BC Government seems to listen only to the demands of special-interest groups such as the BC Wildlife Federation, the BC Outfitters and Guides, and Ducks Unlimited, all of which are motivated to

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conserve game species for sporting purposes.

One of the most controversial government actions has been the authorization of wolf-killing programmes using helicopters, first announced in November 1983. It is significant that not a single independent scientific study has given support or approval to these wolf management schemes. They have been widely condemned on the grounds that shooting from helicopters is inhumane and also a violation of federal regulations. Three professors of ecology at the University of BC have criticized the data used by government biologists who support the kills. Canada's Federal Environment Minister called the programme 'dangerous and ill-considered', while the Chairman of the Canadian Society of Zoologists stated that the BC Government's defence of the wolf hunt was based on flawed experiments and 'indefensible' scientific data. He issued a joint statement with the President of the Wildlife Society of Canada, which read, 'Our concern as professional wildlife biologists is that the science of wildlife biology has been misrepresented in the BC Ministry's news release. Such misrepresentation compromises the role of wildlife biologists in the wildlife management process.' They found 'nothing to support the Ministry's statement that the decline of ungulates corresponds to an increase in wolves'.

As a result of international outrage, the wolf-shooting programme was temporarily suspended in September 1985, but not before more than 700 wolves were exterminated in northern BC. The Environment Minister had threatened to reinstate the programme 'if wolves increase to unacceptable levels', and on 26 April 1986 he announced a three-year wolf-trapping programme on Vancouver Island, which began in the autumn. Its aim is to reduce wolf numbers in order to provide increased prey for human hunters. This kind of programme clearly disregards even a report by its own biologists in 1983, which examined the decline in game populations and concluded that, 'with hindsight, the harvest should possibly have been reduced as soon as a decline was evident'. The report also cited the problem of poaching as a contributory factor.

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The initial funding for the wolf-kill programmes came from a lottery organized by the BC Wildlife Federation. Subsequent funding came from the BC Government, in a time of supposed economic restraint, to appease a small but vocal hunting lobby. Taxpayers' money is also used to exterminate wolves from crown land leased to ranchers, who pay very low rents and have no obligation to provide protection for their livestock. The BC Cattlemen's Association is now calling for 'long-term solutions to the wolf problem', suggesting that the bounty system be reinstated, with high rewards to increase incentives for killing wolves. The cost of such a scheme would be paid for by the public and it is to his credit that the present Environment Minister has resisted this demand so far.

The immense problem of poaching in BC is virtually ignored and it is estimated that the number of illegal kills equals that of legal ones. In 1984 the Province's chief conservation officer estimated that 50,000 big-game animals had been killed illegally that year—the same year that the enforcement staff was cut from 121 to 109. In 1986 the situation was worse. The Environment Minister said that there were 'approximately 104 conservation officers' and 'approximately 150 poaching offences' recorded. A wildlife management programme that does not even begin to address such law-breaking practices has little claim to credibility. Politicians have expediently, and expensively, chosen to make scapegoats of wolves rather than stop the real culprits.

So great is the concern over British Columbia's destructive environmental policies that, in 1984, the Western Canada Wilderness Committee produced a map entitled 'BC/Yukon Environmental Hotspots'. It delineates 60 ecologically ravaged or seriously threatened areas of BC. The Provincial Environment Minister demanded that the map be withdrawn. The Mining Association of BC has recently made a bid to down-grade no fewer than 10 provincial parks to permit both underground and open-cast mining in those areas. Given the total absorption of the BC Government with economic expansion, the bid may be successful.

The continued logging in South Moresby in the Queen Charlotte Islands has been well publicized

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in recent months. Although the Provincial Government had eventually agreed to set aside certain portions of the island chain as a national park, on 8 November 1986 the newly elected Government called for a review of the proposed park agreement. The Environment Minister has been asked to engage in further studies and to report to the Cabinet in October 1987. Meanwhile, logging permits will continue to be issued for Leyell Island despite strong protests from the resident Haida Indians.

A further example illustrates the present Government's negative attitude towards wildlife. In 1985, six permits were issued to guide/outfitters to track black bears out of season—with dogs. The first permit was granted over the objections of the local Director of Fish and Wildlife, who foresaw not only bear and cub killings, but the harassment of other wildlife as well. The BC Government continues to ignore the enormous pressures on black bear populations through habitat destruction, the absence of age or sex restrictions in black bear hunting, forest fires, uncontrolled poaching, and the government policy of killing bears that appear in residential areas (about 800–1000 a year).

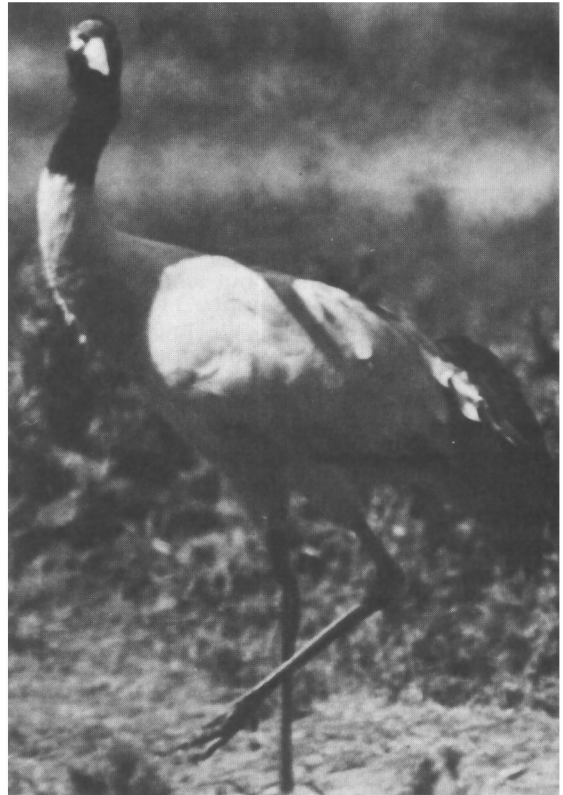
A government that shows so little respect for its living resources will heed public opinion only in terms that it understands. If you believe, as we do, that past and present policies of this Government are unacceptable, you might wish to refrain from visiting British Columbia in 1987–88.

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### Bhutan's black-necked cranes by Paljor J. Dorji

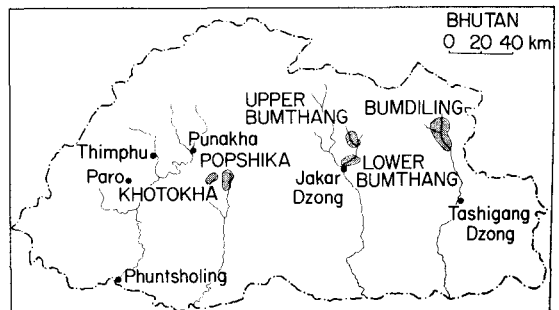
The small mountainous Himalayan kingdom of Bhutan plays host to one of the least-known species of crane, the black-necked crane *Grus nigricollis*. Its world population is estimated to be about 800, of which nearly 500 are believed to spend the winter in Bhutan. They arrive during the last days of October and remain all winter, leaving between late February and mid-March to fly north to their summer breeding grounds on the Tibetan plateau. They spend the winter in

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Black-necked crane (*Paljor J. Dorji*).

Bhutan's beautiful and secluded valleys, where I have been studying them since 1974, principally the Tashi Yangste valley (2000 m), Popshikha valley (2900 m), Khotokha valley (2700 m), and Bumthang valley (2500 m). Their loud, high-pitched calls can be heard for great distances in the mist-shrouded, forested valleys. During the day the cranes stay in groups of two or three, and



Map of Bhutan showing the locations (shaded areas) of the major wintering populations of black-necked cranes.

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occasionally in larger flocks. Towards evening they congregate at a roosting site and then break up into groups of two or more before settling down for the night.

Although the cranes forage in the fields for insects, larvae, worms and roots, they live harmoniously with the local farmers since they do not damage their crops. Their only natural predators are the jackal and the Himalayan fox, which often disturb them but which are rarely successful in their attacks.

Over the past two years we have begun to carry out a more detailed census of the black-necked crane populations. We currently estimate there to be about 230 cranes in the Bumdiling area of the Tashi Yangste valley, 120 in Popshika valley, 30 in the Khotokha valley, 16 in the lower Bumthang valley and 50 in the upper Bumthang valley.

Bumdiling has now been declared a black-necked crane sanctuary by His Majesty King Jigme Singye Wangchuck, and has been incorporated into the Jigme Dorji Wangchuck Sanctuary. In addition, the Popshika valley is being declared a protected area, and steps are being taken to protect the crane habitat.

The conservation efforts for the black-necked crane are just a small part of a new co-operative conservation programme being carried out by Bhutan's newly formed Royal Society for the Protection of Nature, which was established under the patronage of His Majesty King Jigme Singye Wangchuck, the Department of Forests and the World Wildlife Fund. Bhutan wants to ensure that the habitats of all species of flora and fauna are not destroyed and that development in Bhutan is kept in balance with the environment. Bhutan has declared a substantial 20 per cent of its land as protected areas, providing sanctuary for some of the world's most endangered species, including the tiger, Asiatic elephant, snow leopard, takin, blue sheep, pygmy hog, hispid hare, serow, goral, monal pheasant and trogon pheasant, as well as a number of orchids and medicinal plants, and some species not yet described. For a small and developing nation like Bhutan, the continued support by the WWF of conservation projects is essential for our efforts to preserve our natural heritage. With improved techniques, training, equipment and management, our native flora

and fauna will have a greatly improved chance of survival.

*Paljor J. Dorji, President of the Royal Society for the Protection of Nature and Chief Justice, High Court, Royal Government of Bhutan, Thimphu, Bhutan.*

### Park saved from road and gets a plan

Taman Negara, Malaysia's largest national park, protects the last significant bastion of lowland mixed dipterocarp forest in Peninsular Malaysia that is secure from destruction. It will soon be one of the few large examples of this uniquely rich forest type left anywhere in South East Asia,

The park covers 4343 sq km of the interior regions of the states of Pahang, Kelantan and Terengganu. It is rich in wildlife, probably including all of the inland bird species of Peninsular Malaysia and more than half of the specialized endemic mammals of the Malesian region. It is also something of a botanical paradise, with diverse habitats and many rare and endemic plant species.

No wonder that WWF-Malaysia became alarmed when, in January 1986, it learned of a plan for the Army to build a road into the centre of the park! The Trustees acted quickly and within a few days a written submission from the Fund was considered by the Malaysian Cabinet. WWFM was called to an inter-departmental meeting in the Prime Minister's Department and its concerns were discussed thoroughly.

The decision to build the road seemed to be irreversible at that time, but WWFM was asked to undertake an environmental impact assessment (EIA) and to suggest ways of mitigating any negative impacts. The Trustees, under the leadership of WWFM President Tan Sri Khir Johari, faced a crucial decision: should they do the EIA and risk being associated with a potential conservation disaster? Would an EIA by WWFM be seen as an endorsement of the project? In the end, the Trustees decided that they had to try to help and the EIA was carried out in just three months, ending in early August 1986.

The study looked at a whole package of develop-

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ment proposals for Taman Negara, of which the road—or 'jeep-track', as it was being euphemistically called—was a part. In the end it concluded that many of the proposals were excellent suggestions, especially where they related to visitor facilities on Gunung Tahan, the Peninsular's highest mountain, in the centre of Taman Negara. The road, however, was clearly going to do terrible environmental damage to the Tahan River valley, an important part of the park, if it was built as proposed by the Army.

The final EIA report stressed these points and showed that Taman Negara's planning problems stemmed mostly from the lack of a management plan. Only with such a plan could the park be zoned into special wilderness areas, recreational areas, facility areas, and so on, in a logical and scientific manner. Only then could all the park's values be assessed and a coherent development process be carried out to harmonize preservationist and visitor-related objectives in management.

The Prime Minister's Department considered the report, together with the related opinions of voluntary bodies such as the Malayan Nature Society. Finally in October the Prime Minister himself, Datuk Seri Dr Mahathir Mohamad, called for a briefing by two of WWFM's Trustees, Professor Mohd Nordin Hj Hasan and Dr Salleh Mohd Nor. Dr Salleh is also the President of the Malayan Nature Society.

As a result of that meeting, the road plans were temporarily frozen while a joint Government/NGO team, largely funded by WWFM, put together detailed alternative proposals centring on the development of the park headquarters for upgraded tourism. This was done in record time and the report was rushed around to Dr Mahathir's office before the end of November.

On 18 December, banner headlines in the national press announced that the road plan had been scrapped, and the latest news is that WWFM has been invited on to a committee that the Department of Wildlife and National Parks has set up to review its development of the all-important management plan.

'1986 has turned out to be a very important year  
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for Taman Negara—something that none of us would have suspected in January', commented Tan Sri Khir just before Christmas.

*World Wildlife Fund Malaysia.*

### **A last chance to save Spix's macaw** by Paul Roth

Spix's macaw *Cyanopsitta spixii* is the smallest of the entirely blue macaws and the only member of its genus. Little is known about this bird, and now illegal trade has brought it to the brink of extinction. In June/July 1985 and in April and June 1986, with funds from the International Council for Bird Preservation and the Brazilian Forestry Development Institute, we made a survey in its recorded area of distribution to assess its present range and status.

It appears that only three birds are left in the wild. They live in the place where Johann Baptist von Spix collected the first specimen in 1819, in the Juazeiro region in northern Bahia. We were not able to find another population. Spix's macaw is probably the rarest of all Neotropical parrots, and steps must be taken immediately to try to ensure its survival. I propose the following measures: (i) Protection in the wild of the last three birds and of the breeding site. Even if it seems nearly hopeless, we must organize a 'guarding service' with local people for the next breeding season. (ii) A breeding programme with birds already in captivity. There are about 40–50 birds in captivity, half of them in Brazil and the remainder in other countries. All these birds should be registered and every possible effort made to bring at least some pairs together to start a controlled breeding programme. As breeding successes in the aviaries of Ulisses Moraes in the 1970s showed, breeding of Spix's macaw seems to be not too difficult. (iii) A more intensive survey, especially in the southern Piaui and in the Gerais region in north-western Bahia, in the hope of finding a hitherto unknown population.

Unless the proposed or similar measures are taken, one more bird species (and even one more genus) will disappear in the near future.

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