

building. The developer owns about 1,000 acres of the 10,000 acre area, and he is negotiating to buy more of the mostly government-owned property. To build on just part of the wetland, the developer would have to drain most of it. The conservationists fear that construction and urbanization will pollute any remaining marsh area.

The wetland defenders have been busily convincing resource agencies that the Cano Frontera is worth saving. The U.S. Fish and Wildlife Service surveyed the area and cited a long list of benefits the wetland provides. The Puerto Rico Department of Natural Resources pronounced it the most valuable wetland on the island and is trying to establish a wildlife refuge there. The local environmental quality board opposed the housing project.

The Corps of Engineers, however, initially refused to recognize the area as a natural wetland, thus denying it legal protection under section 404 of the Clean Water Act. The Environmental Protection Agency (EPA) argued in favor of restoring the marsh for its intrinsic values and to prevent resuspension of the toxic sediments. The Corps finally agreed that the area was a wetland under its jurisdiction.

EPA recently issued a "cease and desist" order to the contractor, stopping construction. He promptly filed suit, with the matter now in the hands of a circuit court judge.

Efrain Archilla-Diez, ramrod of the Cano Frontera protection movement, predicts a long court fight. "We will persist," he says, "and eventually we will win. Meanwhile, the Cano is full of fish, and bird species have returned that we have not seen in many years."
Wildlife Digest (NWF)

No fledgling bustards in UK programme

Although 1981 provided the Great Bustard Trust, UK, with no fledgling bustards, our seven adult birds are well, having survived a spell of heavy snow in April during the lek period.

Ever since we netted the central plot it

has been impossible to work inside with a tractor and last season we left the plot uncultivated. Natural re-seeding took place and the hens made use of the plot for feeding throughout the winter. The low pop-holes, designed to admit hens only, proved no barrier to the cocks who were seen to squeeze under the bars, so complete separation of the sexes was not possible until these holes were closed. The strips ploughed outside the plot to encourage the growth of a variety of herbs, have become ragwort gardens to the exclusion of other species and the birds have not used them.

This year we were advised by Anthony Parsons, our veterinary surgeon, that in all probability Arthur would not need a further implant in the spring. He proved to be fertile without artificial aid, and this is a big step forward. We decided against catching up one of the wilder males for a hormone implant, although this might be considered in the future.

In 1979 we planned to leave our first fertile eggs to be hatched naturally. However, predatory rooks caused us to take the remaining egg of a possible four laid, to be hatched artificially. Following a difficult hatching the weakened chick died on the fourth day.

In 1980 three eggs were collected. All proved to be fertile and were hatched in an incubator. Once again weakness in the chicks resulted in their death, but not until one had lived for a week under intensive care. In 1981 it was considered wise to take all eggs laid and to hatch them under hens. Three eggs were set under broodles, one to each bird. The eggs, laid by two different bustard females, were all fertile, but the last one taken on 29 May never hatched, the chick dying in the shell when almost fully formed. Of the other two eggs of the one clutch, the first hatched on 5 June, 15 hours after chipping, and the second on 6 June, 7½ hours after chipping. These chicks both died after two days having been too weak to respond to any efforts to feed them.

The post mortems showed no skeletal defects in the birds and no calcium, phosphorus or magnesium deficiencies. What has shown up, however, is that the

egg measurements and weights fall well below the normal, the shell of the unhatched egg being 74.2 mm in length and 50.2 mm in breadth. The mean dimensions quoted in *Birds of the Western Palaearctic* are 80.0 mm in length and 57.0 mm in breadth. 1981 being the third year in which the hens have produced fertile eggs it would appear that this deficiency in egg size is governed by the hen's condition and not by immaturity. The Trust now has to consider every way of persuading the hens, reluctant to come to the feeders, to accept any improved diet provided for them.

Once again the hens rejected goose eggs given them as replacements and our aviculturist advisors are not sure how often bustard nests can be plundered without it being detrimental to their breeding urge. The third hen showed no sign of breeding and was, most probably, the bird which received an operation for an infected knee-joint in August 1980. The bird had been very lame prior to the operation but has recovered in a remarkable way and now shows no sign of limping.

Sperm whale research in sailing boat

Hal Whitehead, sailor, mathematician and biologist, is captaining a 10-meter sloop across the Indian Ocean in the first "benign" research study of sperm whale ecology and behaviour. Mr Whitehead's three-year study aboard the "Tulip", funded by WWF, is the first of some twenty proposed projects which are aimed at investigating the population levels, ecology and behaviour of the 43 cetacean species found in the recently created Indian Ocean Sanctuary.

Thirty-six of the world's leading whale experts from 14 countries reviewed the basic state of "benign" research on whales to date (benign research being that which does not disturb the animal), and prepared new research plans for the Sanctuary at a workshop held September 28 - October 2 at Zeist, Netherlands. The workshop, convened under the auspices of the Governments of the Seychelles and the Netherlands, was funded by WWF and the IWC (International

Whaling Commission).

The Indian Ocean Sanctuary was established as a result of a July 1979 decision of the IWC which prohibits commercial whaling for ten years in a vast area that stretches from the coast of Africa west to Australia; from the Red and Arabian Seas and the Gulf of Oman, south to 55° latitude.

Hal Whitehead's project follows a similar study he did on humpback whales in the West Indies. After sailing through the Red Sea in November, an area in which pirates are still found, Mr Whitehead, 29, assisted by scientists Jonathan Gordon, 24, Abigail Alling, 22, and Nicola Rotton, 26 embarked on the first six-month leg of a projected three-year study of the animal immortalized in Melville's *Moby Dick*.

"Until now almost all research on sperm whales has been done on dead animals killed by whaling ships, and virtually no behavioural studies have been attempted," Mr. Whitehead noted. "Our boat will enable us to stay with a community of sperm whales for an extended period — the first time this has been attempted. We're keeping one bunk free for a visiting scientist and are expecting a Dutch, an Omani, and perhaps an Indian scientist will join us on various legs, together with well known cetologists like Dr Roger Payne."

Sumatran rhino killed in eastern Sabah

The existence of the Sumatran rhino in Sabah, Malaysia, was confirmed recently when forest guards stumbled across the carcass of a freshly-killed rhino. Poachers had hacked off the head and removed all its toenails.

The decapitated rhino was found at the side of a logging road in the Silabukhan Forest Reserve near Lahad Datu on Sabah's East Coast. It is believed that the poachers snared the rhino with a nylon rope and dragged it several hundred feet to the roadside.

The few remaining rhinos — if there are any — face a greater danger than poachers: the Silabukhan Forest Reserve is scheduled to be cleared for timber

over the next five years. The owner of the timber rights, the Sabah Foundation, has reportedly agreed to set aside 8492 sq km (out of its total holding of 427,35 sq km) in a place called the Danum Valley. But this area is about 160 kms from where the rhinos are thought to survive.

Blackbucks face diseases and stray dog predation

India's blackbucks, already on the protected list, are dying in hundreds from various diseases in the Rajasthan Thar desert area, according to agency reports. I.K. Sharma, a member of IUCN, was quoted as saying in Jaipur, capital of Rajasthan, that about 400 blackbucks had already perished. Heavy predation by stray dogs was another danger to these animals, said Sharma.

Tiger flehmen behaviour investigated in UK

Tigers are reported to use spray urination as a means of territorial scent marking (Schaller, 1967; McDougal, 1977; Van den Brink, 1977; Brahmachary & Dutta, unpublished). Spray urination is quite distinct from urination and may sometimes be accompanied by it. During spray urination, a tiger presents its hind quarters at an object, raises its rump and tail vertically and from a range of about 0.7 m ejects up to 6 bursts of spraying. The liquid ejected is a mixture of fatty anal gland secretion and urine.

Tigers respond to spray marks by sniffing and sometimes licking. Occasionally the mark will be over sprayed and frequently flehmen behaviour is expressed. The precise function of flehmen behaviour is unclear but it is thought to be used in the detection of oestral state, at least in herbivores (Schaller, 1967). Cats have a functional Jacobson's organ, and work by Knappe (1964) and Verberne (1970) indicate that flehmen serves to bring odours into contact with it. The objective of a recent paper by N. Whittle is to report the results of a series of simple experiments carried out on a small group of captive tigers in an attempt to examine the function of flehmen and other olfactorily mediated behaviour.

Although the data presented are few, they reveal some insight into the function of flehmen. Since flehmen is exhibited by males to the odour of other males and by females to the odour of males, it cannot be restricted to the assessment of oestrus. Whether or not it involves Jacobson's organ is unclear, but if it does this organ must be used in the general reading of the odour signal and perhaps enhances sniffing.

The paper — "Reactions of tigers to the scent of conspecifics" — appeared in the *Journal of Zoology*, Vol 194, Part 2, 1981.

International Pheasant Symposium

The second International Pheasant Symposium will take place in Kashmir from 19-22 September 1982. Those joining the symposium from Europe will leave on 14th September and have a few days holiday in Delhi and Kashmir prior to the symposium, which will be followed by a choice of four different holiday options. Namely, a visit to Ladakh, a week's trout fishing, a week's wildlife trekking in the Dachigam Sanctuary, or a trip to Bharatpur, and a visit to the Taj Mahal. The return to London will be on the 29th September.

Kouf National Park

We are currently looking for select animals to use in a reintroduction program in the formation of a new national park in Libya. Listed below are the animals in which we are interested. We would appreciate it if you can supply us with the names and addresses of zoos in Europe and/or America where surpluses of these species might be purchased. Barbary sheep (*Ammotragus lervia*), dorcas gazelle (*Gazella dorcas*), mountain gazelle (*Gazella cuvieri*), wild ass (*Equus asinus*), barbary ape (*Macaca sylvantus*), addax (*Addax nasomaculatus*), oryx (*Oryx dammah*), wild boar (*Sus scrofa*), eland (*Taurotragus derbianus*).

Contact: Harry John Herbert, Wildlife Biologist, Kouf National Park, PO Box 1302, Beida, Libya.

Indian Ocean environmental programme

A major new sea programme involving eight East African and Indian Ocean countries was launched in October, the Regional Seas Centre of the United Nations Environment Programme (UNEP) has announced. The ambitious environmental project covers a vast coastal and marine area stretching from Somalia in the Horn of Africa, Kenya, Tanzania, to Mozambique in the south of the continent. It will also include the islands of Madagascar, Mauritius, the Seychelles and the Comoros.

Relatively little investigation of the resources and the environmental problems of the region has been carried out, so a fact-finding mission of seven scientists and experts set out on 5 October and spent almost two months visiting all eight countries. Among other things they will report on oil pollution control, the conservation of coastal and marine resources and ecosystems, pollution levels and hazards to human health, marine and coastal area development, and pollution from industrial sources.

Spain bans whaling

Conservationists are jubilant over the decision in December by Spain to close down its whaling industry. The call to ban whaling in Spain, proposed by the Socialist party, was accepted by the Spanish commission of agriculture and fisheries and passed in Parliament with a big majority.

The approved motion also included a decision for Spain to vote in favour of a commercial moratorium on whaling at the annual meeting of the International Whaling Commission.

The ban will close down Spain's whaling industry within a year, and comes as the climax to three years of direct action campaigns lobbying and research. During this time the Greenpeace vessel, Rainbow Warrior, was held for five months at El Ferrol, Spain's premier naval base, before making its audacious escape.

The decision by Spain is expected to have far-reaching consequences at the 1982 International Whaling Commission

meeting, when the pro and anti-whaling factions discuss a commercial moratorium.

Spain's whaling fleet has dwindled in recent years but was still killing a yearly quota of up to 220 fin whales.

Disoriented turtles

The young of many species of marine turtle have an unfortunate tendency to be attracted to onshore lights, often with fatal results. For that reason the construction of tourist facilities near hatching areas can threaten the existence of the local turtle population.

The results of a campaign in one such area, Heron Island, off the coast of Queensland, Australia, suggest that the human interlopers can be trained to reduce the risk to the turtles. The Queensland National Parks and Wildlife Service devised a sticker last year asking for unnecessary lights to be switched off. It was placed beside every light switch on the island likely to influence the "light horizon" of the hatchlings.

Visitors and residents responded with unexpected enthusiasm to the campaign; not only were unnecessary lights switched off, but in many cases lights were removed from the beach, lowered, shaded, reduced in intensity, or connected to time switches.

There was a substantial decrease in numbers of disorientated hatchlings being recovered from among the buildings and pathways during the 1981 hatching season.

The Times, London

Philippine dog scandal exposed by IFAW

Their limbs bound at grotesque angles, dogs offered for sale for human consumption in the Philippines are kept in appalling conditions. The International Fund for Animal Welfare (IFAW) was made aware of this situation through photographs taken in a marketplace. The photos (which we are sparing the readers of *IJN*) show the dogs awaiting sale with front legs pulled around and tied behind their backs, hind legs tightly bound, and tin cans shoved over their muzzles to