

EDITORIAL

China's Turtles

A recent editorial was concerned with the story of Hong Kong's new airport (*Mar. Pollut. Bull.* 24, 174-175) and of its means of construction upon reclaimed land the fill for which will require the dredging of, it is now estimated, some 400 million m³ of marine sand. To put such a scheme in perspective, the following fact is revealing: three quarters of the world's dredgers are here at the moment. Dredging has commenced, first at a group of islands, the Ninepins, in the south-eastern waters of Hong Kong and, predictably, not only has the sea bed life been destroyed but so too has its rocky fringe of scleractinian and gorgonian corals and their associated marine life. Plates of *Acropora* are covered in a layer of mud centimetres thick and the silt plumes washing over from the dredgers, stretch and join up over many kilometres. New dredging areas are being gazetted by the Hong Kong Government. The marine impact of the dredgers work is going to be catastrophic.

Last week, in my capacity as an Executive Council member of WWF Hong Kong, however, I visited China for a quite different purpose: to visit a marine turtle breeding beach and management centre. We took the train to the Chinese border and were met in the border town of Shenzhen, capital of the Shenzhen Special Economic Zone, by our hosts and driven to the beach and centre. The beach, called Nine Dragons, is located near the town of Gangkou on the tip of a peninsula that forms the eastern arm of Daya Bay, site of China's first nuclear power generator earlier reported upon (*Mar. Pollut. Bull.* 22, 573-575). Though only 50 km from Hong Kong by boat, Nine Dragons Beach can only be reached by car involving a distance of some 160 km and taking 8 h to travel. This is for a number of reasons; first the road, outside Shenzhen, is under construction and yet carries all the east-west bound freight from Hong Kong and Shenzhen and the cities and towns along its route and further east to such places as Xiamen, in Fujian Province and also a Special Economic Zone. It is also intensively used by buses travelling between points on it and progress is further impaired by the incredible (there is no other more appropriate word) development that is taking place beside it, in classic ribbon-style. The development tentacles of Hong Kong and Shenzhen are spreading out into the hitherto rural heartland of Guangdong Province which is, therefore, quite literally, 'booming'. Hong Kong is responsible for more than 50% of all foreign development investment in China, most of it being spent in Guangdong Province. Southern China has experienced quite extraordinary levels of rainfall this year, many times the normal, so that such developments, with no infrastructural provisions for drainage are like a quagmire and excavations and construction sites create, under such conditions, the impression of a war-ravaged country. Unbridled development is perhaps the politest way of describing what is happening.

The turtle is the traditional Chinese symbol for 'longevity' so that the animal has much respect and

devout Buddhists, in particular, may purchase turtles from fishermen for release at sea and, thereby enhance their own chances of 'longevity'.

We eventually arrived at Nine Dragons Beach. What a beautiful place it is. A steep, 500 m long wave-dominated arc of golden sand backed by aeolian dunes stabilized by sea grasses and *Ipomea*: a turtle beach if ever there was one. We were, it was explained, a little too early in the season to guarantee seeing a turtle laying her eggs and, in the event, did not do so. We were, however, briefed by the Station Manager, Mr. Zhang, of the Gangkou Turtle Natural Protection District, who reported to us the following facts. Since its designation and establishment as a Provincial Reserve in 1985, female Green turtles (*Chelone mydas*) have come ashore at a rate of about 100 each season, that is from June-October. Each one has been measured and tagged but they have never had an inter-seasonal recapture so that the population which is possibly capable of returning to the beach is probably well over 1000. To promote conservation of the species, which is protected by State law, the eggs laid by each turtle are dug up and reburied in concrete, sand-filled, incubation boxes, higher up the shore. The station staff have, so far, released over 30 000 hatching turtles, at a sex ratio of 1:7 males vs. females, and improved the successful hatching rate from about 50% on the beach to some 95% in the boxes. Turtles brought to the station by fishermen are either released or, if sick, are held, fed, and treated. A few are kept for display to the 70 000 visitors, the Manager said had so far visited the Station from local schools, community groups and so forth. The Centre has no exhibition, no educational materials, no research equipment; in essence no money—save for salaries and basic running expenses. Its activities are, however, supported by the local people.

On Hong Kong Island there is a beach called Turtle Cove; it is, again, a typical nesting beach but no turtles arrive there now. On remote Lamma Island, the occasional Green turtle staggers up its southern beaches but the nest is plundered by villagers. Hong Kong has prohibited the import of all turtle products, but has yet to try and achieve any protection for its natural turtle visitors, let alone try and ascertain the frequency and location of their visits. Hong Kong's remote south eastern shores have a number of potential turtle beaches; we do not know if they are.

Then came the crunch in our conversation with the Station Manager at Gangkou. As far as he knows, and apart from turtle breeding beaches on the Xisha and Nansha Islands, claimed by China, in the South China Sea, Nine Dragons Beach at Gangkou is the only turtle-breeding beach remaining on the mainland coast of China. His concern was that his work to protect the species here was largely unacknowledged, obviously grossly underfunded and that he was, thus, fighting, ultimately, a losing battle. Nine Dragons Beach at Gangkou is, remember, the eastern arm of Daya Bay home of China's first nuclear power generator. "What", I was asked, "could be the possible effects upon the beach if Guangdong Province developed an oil refinery and an automotive industry around the shores of the Bay?"

Thinking back and looking, apprehensively, forward to the return journey from Gangkou to Hong Kong, I could not, in all honesty, offer any hope for the continued survival of Nine Dragons Beach and its turtles in such an eventuality.

We have recently been engulfed in news from the Rio summit on the Environment and Development (see John Gray's Editorial; *Mar. Pollut. Bull.* 22, 529, for the significance of this change of title from that in Stockholm); some are cheered by the treaties signed. WWF has recently produced a new Mission Statement that is upbeat in trying to convince people that all is not doom and gloom for the environment and that they can try and achieve salvation for the planet and its living resources. The decline in biodiversity will be halted by 2020. Media messages from the Hong Kong Government are similar in tone; ordinary people can help to achieve environmental protection. The latest one thanks local people for, in the past, 'pitching-in' to 'clean Hong

Kong'. It ignores the fact that every year the Marine Development picks up over 5000 t of floating rubbish from Victoria Harbour alone. That, as they say, is another story, but the truth of the matter is that Hong Kong people are quite literally, still pitching in.

I do not know if all this optimism will work its spell. Such pessimism, on my part, is quite alien, since, I am, by nature, an optimist. But I do know one thing, given what is happening to Hong Kong and southern China in terms of development, some of the 'optimists' had better start helping Mr. Zhang and his staff at the Gangkou Turtle Natural Protection District or China's symbol of longevity will soon be a thing of the past. Interested readers can contact me for further details of Nine Dragons Beach and its turtles.

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NEWS

Steep Decline in UK Major Pollution Incidents

UK National Rivers Authority (NRA) figures recently published show that the number of major incidents reported fell from 658 in 1990 to 386 in 1991, a significant drop of 40 per cent. The NRA claim that this is due mainly to its tough and rigorous pollution prevention and control measures and the strong signals being sent by the courts through massive increases in the size of fines being imposed on convicted offenders.

Water Pollution Incidents in England and Wales—1991, the NRA's second annual report of pollution statistics, records significant decreases in the number of major incidents from all main sources of potential pollution.

The report shows that while once again farms account for the largest proportion (25.6 per cent) of major incidents, the number recorded in 1991 was 59 per cent lower than in 1990. Sewage and water related sources accounted for 25 per cent of major incidents (27 per cent down on 1990); industry, 21.5 per cent (24 per cent down); oil, 18 per cent (21 per cent down); and all other sources, such as domestic spillages, illegal dumping, and road and rail accidents, 10 per cent (58 per cent down).

The report also shows that in 1991 there was a total of 29 732 pollution incidents reported to the NRA a slight increase on 1990. Of these, 24 469 incidents were substantiated, most of which caused little or no environmental harm.

The NRA who also claim to be taking a tough line against serious offenders, successfully prosecuted those responsible for 347 incidents over the period, with a further 119 cases to come to court.

Throughout 1991, there was a marked increase in the levels of the highest fines being imposed in both Magistrates and Crown Courts on companies that were persistently polluting the environment. The largest fine imposed during the period was £200 000 for an oil pollution spill in the Severn Estuary. The company responsible, also funded a clean-up operation costing £68 000, as well as a study into migrating birds, costing a further £25 000.

Commenting, after the release of the report, NRA Chief Scientist, Dr Jan Penreath said:

The NRA has, from the beginning, taken a tough, no-nonsense approach to dealing with polluters; it is an approach which is now paying dividends. Both the decrease in major pollution incidents, and the increase in the levels of fines, are extremely encouraging.

We now need to concentrate more on preventing pollution occurring at source, and to deploy better technology to catch polluters out. Anomalies in the discharge consenting system are also being addressed.

Eire Moves to Improve Sewage Safety Standards

Eire will move unilaterally to raise sewage safety standards in ships entering their waters if the International Maritime Organization (IMO) do not act quickly enough to tighten their own world wide regulation. The decision was announced by Eire's Minister for Marine, Dr Michael Woods, at a 3-day International Port State Control Seminar for ship surveyors in Dublin this October. The new regulations he put forward are more severe than the current IMO standards and will be imposed on all ferries sailing in or out of Irish ports. An annual inspection of sewage systems and a check for