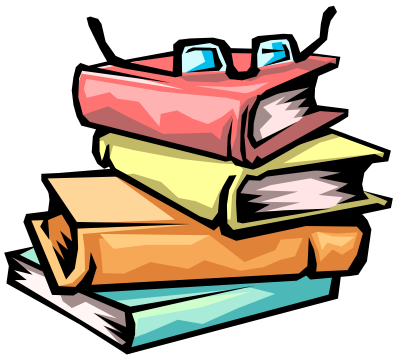
Jill Robinson, founder of Animals Asia Foundation, recently took food to four endangered brown bears in Yulin Zoo in Guangxi province, after reading a *Los Angeles Times* story about the starving bears. The private zoo was supposed to receive a subsidy from the local government for zoo maintenance, which didn't come through. There are 200 private animal parks in China which are proliferating since keeping wild animals is considered prestigious and the situation is made worse by the fact that legislation on preventing cruelty to animals, including endangered species, is lacking. **(SCMP, 11.2.03)**



BOOK REVIEW

Restoring China's Natural Vegetation

by Xie, Yan, 58 pages. China Forestry Publishing House, Beijing, 2002.

The main aim of this small colourful book is obvious – to raise the public's awareness on the importance of natural vegetation in China. The book was supported mainly by the ex-Biodiversity Working Group of the China Council on International Cooperation on Environment and Development and the State Environmental Protection Administration of China. In addition, it was also supported by several international NGOs and the Kadoorie Farm and Botanic Garden in Hong Kong.

The book has three main sections. The first part is a brief account of the vegetation cover in China and the function of natural forests in soil and water protection. It has an interesting table listing the current and potential economic values of various services and products provided by natural vegetation in China.

The next part points out the main problem of forest restoration in China in the past, i.e. monoculture. Of the 16.55 % forest cover in China now, more than 6.55 % is forest plantation, mostly in monoculture. Referred to as "green desert" in this book, monoculture plantation is reported to be weak in soil and water protection, poor in nutrient recycling and enrichment, low in biodiversity and susceptible to pest attack. It then discusses 7 main flaws in vegetation restoration. The most important of these are the overwhelming use of introduced species such as *Eucalyptus* spp. and the ignorance of "diversity" in restoration projects. Traditionally, coverage is the only criterion used to measure the success of reforestation projects, which is somewhat misleading. This section puts forward several other criteria. Firstly, the soil and water protection capability should be determined by measuring the changes in stream flow in dry and wet seasons and the sediment level in watercourses. Secondly, the changes in biodiversity, especially species richness, should be monitored. The third criterion is to monitor the changes in ecosystem function such as nutrient flow and productivity. The last section of the book introduces various principles and techniques for restoring native forests in China.

Although the title of this book implies that it is about vegetation in China, it focuses mainly on forests. It is the first book I have come across in China that has so explicitly highlighted the importance of native species and diversity in forest restoration. This book is inadequate as a resource book for foresters and students, but would be a good book to change people's perception about tree planting and reforestation. Hong Kong has also made some of the reforestation mistakes stated in this book, so it is worthwhile to have it published in Hong Kong. Currently, it is only available in simplified Chinese in China. For those who are interested, I have a few spare copies with me. First come, first served!

Billy Hau

Artificial Reefs and Reef Fish in Hong Kong

by K.D.P. Wilson, 176 pages. Friends of the Country Parks, A.F.C.D. and Cosmos Books

The Agriculture, Fisheries and Conservation Department has placed an increasing emphasis on producing education materials in the past couple of years and this is the latest in the Marine Conservation Series. An attractive little full-colour hardback, it is well priced at $60 and achieves its aims of providing a brief account of the use of Artificial Reefs (ARs) in Hong Kong, and of the fishes inhabiting them. Pages are well laid out and care has gone into making the bilingual text far less obtrusive than is often the case. The first third of the book will be invaluable to anybody interested in AR deployment in Hong Kong with detailed timelines, maps and descriptions of the various types of ARs, including numerous colour photographs. Consultancy studies and relevant scientific literature are also listed.

The latter two thirds of the book are devoted to a guide of some 200 species of fish found around local ARs (including the High Island Dam dollos), with notes on seasonality, abundance, reproduction etc. Keith has put considerable effort into obtaining colour pictures of most species *in situ*,

increasing the appeal of this volume to local divers. He is also to be commended for recording a number of new species for Hong Kong waters such as the Coral hawkfish (*Cirrhitichthys oxycephalus*), Dusky batfish (*Platax pinnatus*), Brassy chub *(Kyphosus vaigiensis*), Saddleback hogfish (*Bodianus bilunulatus*) and Kner's wrasse (*Halichoeres kneri*). More critically, I would question the wisdom of listing the fishes in alphabetical order of the scientific family name as, i) few divers will be familiar with these and, ii) closely related familes such as the wrasses and parrotfishes do not appear together. There are also a small number of misidentifications, a juvenile Moon wrasse (*Thalassoma lunare*) has been identified as another labrid (*Halichoeres tenuispinis*), one of the pictures of Yellowstreaked snapper (*Lutjanus lemniscatus*) is not of that species (*Lutjanus vitta* perhaps ?), and Keith's exciting new record of Alligator pipefish (*Syngnathoides biaculeatus*) is labelled as *Syngnathus schlegeli*. As the latter is correctly identified on an AFCD website (www.hk-fish.net) I assume this is an unfortunate oversight.

Fig.1. *Plectropomus leopardus* (photo: Andy Cornish)

Such quibbles are minor, however, compared with some of the unsubstantiated claims about ARs in Hong Kong made in this book. For the sake of space and to avoid rehashing old debates I'll stick to those on reproduction and comparisons with natural reefs. A significant number of commercially important species are noted as forming "spawning groups" giving the impression that many such species are reproducing all over the ARs. Fishes aggregate for many reasons and it is near impossible to know why without observing spawning rushes and release of eggs and sperm, careful examination of caught fishes or other direct evidence of spawning such as egg masses (as is noted for some damselfishes). Without such evidence, claims for reproduction are premature, especially when some of the species involved are found in schools most of the time anyway. In addition, it is unlikely that aggregations of Leopard Coral trout (*Plectropomus leopardus*) on one AR are a spawning aggregation as is hypothesized. The first juveniles of this species settled on the ARs in May 2000 (Management Services to the Environment Ltd. 2001), but studies from Australia have shown females take at least 2 years to reach sexual maturity and males take at least 3 (see www.fishbase.org for summary) so the first time those individuals could be expected to spawn is summer 2003.

Even more dubious is the claim, based on monitoring carried out within the Yan Chau Tong and Hoi Ha Wan Marine Parks, that "Artificial reefs support higher numbers of medium and high value fish than both rocky shore and mud bottom control sites." In no way can the rocky reef sites used be considered as proper controls. A control site should be as similar in every practical way to the "treatment" site, bar the treatment itself, but the rocky reef "controls" were at different depth (0-5 m compared with 5-16 m on the ARs). The lack of physically similar natural reefs nearby to use as controls for the ARs is acknowledged in the AR monitoring report (Management Services to the Environment Ltd. 2001), "the lack of appropriate control sites ensured that the formulation of unambiguous and testable null hypotheses was not possible" but no mention is made of these misgivings when the monitoring data were analyzed to produce conclusions that are repeated in this book. In reality the "control" sites are so different from the artificial reefs that comparisons are not only meaningless, but worse, misleading. Furthermore, natural reefs in these 2 marine parks are fished by hundreds of licensed fishers, while the ARs are supposed to be unfished under a "gentleman's agreement."

Overall, this book has many redeeming features but I was disappointed by the flimsiness of some of the evidence being put forward to justify this 100 million dollar programme to the public.

Andy Cornish

Management Services to the Environment Ltd. (2001). SCUBA Fisheries Assessment of the Artificial Reefs – Final Report. Contract AFCD/ARD/M/98-2. pp 36 plus Figures.

WILD CORNER

Any sightings of civets, mongooses, ferret badgers, leopard cats, barking deer, pangolins and porcupines – live or dead – should be reported. Rare birds, reptiles, amphibians and fish, or unusual behaviour by common species, are also of interest, as are rare or interesting invertebrates and plants. If you think it is interesting, our readers probably will! Please give dates, times and localities as accurately as possible

MAMMALS

Annika Walters saw a **Porcupine** (*Hystrix brachyura*) at around 6.30 am on the verge of Route Twisk road around mid-February 2003.

On 9 February 2003, at about 5.45 pm, Robert Davison saw a large adult **Barking Deer** (*Muntiacus* sp.) crossing a footpath between Lion Rock and Amah Rock in the south central New Territories. It was moving up the hillside, feeding slowly as it went. This is a wooded area, with dense secondary forest and undergrowth on steep slopes.