

FOLLOWING his animal instincts

By Howard Spencer

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> Thirty years of wildlife management and research has shaped Dr Jim Shields's view of the management of flora and fauna. 'I have come to the conclusion that active, adaptive management that embraces diversity is the best path for natural resource management,' says Shields, wildlife manager for Forests NSW. This approach, he says, is preferable to 'attempts to maintain selected age classes deemed to be "better" than others'.

Hailing from Kansas, Shields's first exposure to forest wildlife management came when he received a grant to compare the bird life of wilderness areas in Wyoming in the US to that of areas used for forest production. His studies found that more bird species were found in forest production areas than in wilderness areas. 'The forest openings created by disturbance were used by a wide variety of insectivores, birds of prey and game birds while the wilderness was home to a limited suite of mainly kinglets, chickadees and the grey jay,' he says. 'This fitted with ecological theory: diverse habitats support greater species richness.'

In 1977, Shields received an offer from his old friend Walter Boles. 'Walter, a technical officer at the Australian Museum, asked if I would be interested in looking for a new species of bird, a honeyeater, in Queensland,' Shields says. 'In November 1979, we found the undescribed species on private property and in Eungella National Park. The Eungella honeyeater (*Lichenotomus hindwoodi*) is now well known from a limited area.'

The same year, he joined the then Forestry Commission of NSW to work on a collaborative project with the Australian Museum and the NSW National Parks and Wildlife Service to study the effects of logging on fauna in the coastal forests near Bega. These initial investigations documented the distribution and abundance of birds, reptiles, amphibians and arboreal marsupials in the forests of south-east NSW. The effects of logging were found to be severe in the short term, with a relatively rapid recovery for most species - although arboreal marsupials were a notable exception.

'Our recommendations were to spread the operations in time and space, such as to log alternate areas with a return cycle of 20 years, put in place wildlife corridors, and cease conversion of native forests to pine plantations,' says Shields. 'Other recommendations were taken up more slowly. These included that ecologists should be part of routine management. Surveys for species particularly

> An ecologist has made it his life's work to investigate how fauna, flora and forest activities can co-exist <

affected by logging, such as the arboreal marsupials, were recommended to occur ahead of operations so that management initiatives could be undertaken.

'My interest in ecology and birds, and an interest in making forest management work, led me to investigate how one could maintain populations of vertebrates in areas where the population size was severely reduced.' This led Shields to research the presence of the greater glider (*Petauroides volans*) in buffer strips left mainly for hydrological purposes in pine plantations at Bombala in NSW. The greater glider needs to eat eucalypt leaves. 'Individuals could not survive in the young pine plantations adjacent to the buffer strips,' Shields says. 'But analysis revealed that buffer strips of native forest of 80 metres or wider had populations of greater gliders that were not significantly different to those in similar areas of native forest in high-quality habitat.' The results were used to develop prescriptions for riparian vegetation that are still used today.

As Shields studied for his PhD in Seattle in the 1980s, he remained unaware of the increasing controversy surrounding native forest management in Australia. When he returned to Australia he presented his PhD results, which showed there was little effect on bird communities one year after logging at a 50 per cent intensity level, but a significant effect over the same period from normal logging treatment. 'At that seminar, my findings were not accepted at all by the ecologists in the audience,' Shields recalls. It was a revealing moment for him: a new dogma had arrived. Wildlife had become an issue that had to be addressed in legal, social, environmental and economic terms.

The federal government and other state governments were dealing with similar controversy, and needed to develop a national forest policy. Shields's growing profile was noted. He was seconded to a group of scientists to help develop the policy. The outcome was the comprehensive, adequate and representative reserve system. 'The 30 years I have described have often been highly charged,' says Shields. 'Forest managers have often learned slowly and argued hard for points that, in hindsight, might have been best conceded at the outset. Yet learning and change have occurred.'

Shields serves on the scientific committee that administers the schedules of the Threatened Species Conservation Act for NSW. He has also been an important contributor to the Katoomba Group.



Forests NSW wildlife manager Jim Shields, top right, during a typical work day in the bush, where he studies the habits of animals such as the greater glider, above.

Biography

Howard Spencer was a journalist and editor for more than 30 years on newspapers such as *The Sydney Morning Herald*, the *Cairns Post*, the *Newcastle Herald* and the *Gold Coast Bulletin*. He now works for the NSW Department of Primary Industries' public affairs and media branch.

THE KATOOMBA GROUP

Global interest in markets for environmental services from forests is driven by a growing recognition of two fundamental issues. Firstly, forest degradation and the conversion of forest to alternative land uses is often more profitable, at least in the short run, than forest stewardship. Secondly, markets generally do not recognise or reward forest owners for the environmental services generated by forests that are beneficial to society, including carbon storage, watershed protection and biodiversity conservation. If some of the value of these benefits could be returned to forest owners, there would be a double benefit: additional incentives for forest stewardship and conservation, and new sources of income for forest landholders.

Although there are many new incentives across the world to develop new markets and market-based instruments for forest services, these initiatives are dispersed and often isolated within particular disciplines, sectors or countries. The valuable lessons generated from these initiatives are not readily accessible to the growing number of stakeholders around the world interested in this topic.

Recognising the potential benefits of markets for forest services - for communities, companies and forests - and the value of exchanging information across disciplines, sectors and countries, the Katoomba Group was formed to spur development of markets and market-based instruments for forest ecosystem services. Its purpose is to build collective understanding of how these instruments are constructed and the conditions in which they can work, to help build partnerships, and to provide support to pilot projects of broad relevance. The group includes experts from forestry, finance, environmental research and policy, government and other private and non-profit sectors from around the world.