

Fishing for knowledge in the Pacific

Saskatchewan, Canada, is a long way from the sea — a thousand miles or so — and bitterly cold in winter. That might explain why Dr Bob Johannes, senior principal research scientist with the Division of Fisheries in Hobart, has built a career out of studying traditional fisheries and marine ecology in the tropical Pacific.

Johannes, 57, will soon return to the tropics, having recently been awarded a \$220,000 Pew Scholarship (one of only 20 awarded each year to scientists whose work reflects a commitment to scholarship and environmental conservation) to study the traditional knowledge of tropical small-scale fishermen.

'There are always two elements to a fishery; the fish and the fishermen,' Johannes says. 'All too often the fishermen are forgotten, but if the marine environment is to thrive, we have to understand both fully.'

That kind of synthesis is not only the basis of Johannes's international reputation, but also one he can take much of the credit for discovering and promulgating.

His career began at the University of British Columbia, where he studied zoology. That interest led him to the University of Hawaii, where he gained his doctorate in fisheries and marine biology. In the early 1970s he travelled to the archipelago of Palau in Micronesia, where he began investigating long-established methods of exploiting the region's coral reefs.

Johannes arrived in Palau with the concerns and perspective of a biologist. But he was also aware that, as he writes in his book, *Words of the Lagoon: Fishing and Marine Lore in the Palau District of Micronesia*, 'few people would claim to know as much about how to catch fish as a good full-time fisherman. When it comes to understanding fish behaviour . . . marine biologists must often take a back seat.

'A modern commercial fisherman . . . in a rumbling trawler searches for fish with machines. Isolated in his

wheelhouse, he perceives his prey as abstract shadows on an echo-sounder chart. The native fisherman searches with his eyes and ears . . . more in touch with his prey and their surroundings than his modern, mechanised counterpart.'

Bob Johannes pioneered the science of marine ethnobiology: the study of traditional peoples' knowledge of the marine environment on which many depend for survival. His work in codifying islanders' knowledge of the behaviour and rhythms of fishes and other marine creatures stemmed naturally from the islanders' vast knowledge of the subject.

Learning about traditional fisheries management is not without its hazards. In the words of Johannes, it can involve 'sleeping on bamboo slats, suffering

than depending on it for survival (see 'Looking after the land at Uluru', *Ecos* 71). While attending a conference on wildlife conservation in Saudi Arabia in 1990, Johannes was told by fishermen in the Farasan Islands about a population of dugongs close to a government-run turtle hatchery. Ironically, while the Saudi Arabian Commission for Wildlife Conservation had been searching for dugongs to protect, its aerial surveys had failed to find any.

Johannes intends to use his Pew Scholarship to study the traditional marine environmental knowledge and practices of island fishing communities in such places as Vanuatu, Kiribati, Palau and eastern Indonesia, working with island governments and aid agencies to apply this information in government marine resource programs.



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... Dr Bob Johannes

diarrhoea from spoiled food when the only latrine is an all-too-distant mangrove swamp, eating nothing but boiled fish and starchy tubers for days . . . in areas where the simplest medical care is hours or days away and can only be reached by dugout canoe, trying diplomatically to avoid being dragged into local disputes — these are part of the routine, and one gets used to them'.

Following Bob Johannes's lead, marine biologists have learnt that there is no greater goad to building accurate, detailed knowledge of an environment

Traditional fishermen are, he says, 'responsible for most of the fishing pressure on the world's most biologically diverse marine community complex — coral reefs and associated mangrove, seagrass and soft-bottom communities. Without support from and collaboration with [them] we have little hope of sustaining the diversity, the biological yields, or the beauty of these communities, or the welfare of the people that depend on them.'

Carson Creagh