GEOFF MOON

about three-quarters the size and little more than half the weight of the far more common Australasian harrier.

The falcon is a variable species with three distinct forms. The bush falcon (smaller, dark bird), frequents the North Island's and northwest South Island's native forest. The South Island's eastern falcon (a larger, paler form), is a bird of the tussock and farmland in the hills along the eastern side of the Southern Alps. The southern falcon, intermediate in size and colour between the eastern and bush falcons, is found in the southwest of the South Island, on Stewart Island and the Auckland Islands.

Dr Holland became involved in researching the New Zealand falcon after working 'a lot' with falcons in Africa.

'I found that there was a need for work to be done in New Zealand, and the fact that the falcon was a species in trouble meant that I wanted to get involved,' he explains.

The Department of Conservation lists the New Zealand falcon as a threatened species — its second-highest priority for conservation. The eastern falcon is listed as 'in gradual decline'. The more-threatened bush falcon and southern falcon are respectively 'nationally vulnerable' and 'nationally endangered'.

Raptor expert Dr Nick Fox did the 'most recent work' on falcon population levels, back in 1978. He estimated there were around 3100-3200 pairs of eastern falcon, 450-850 pairs of bush falcon and 140-280 pairs of southern falcon. Today population levels of the New Zealand falcon are not well understood, but its continued existence is certainly vulnerable.

The New Zealand falcon is under threat for some of the same reasons as many of our native birds — disappearing native forest and predation by pest species. Also, according to New Zealand's leading raptor conservation organisation, Wingspan Birds of Prey Trust, deliberate shooting by farmers to protect poultry, and by pigeon fanciers to protect their birds, remains the biggest cause of injured falcons delivered to them.

Dr Holland introduced the idea of using satellite tracking with falcons when he met Steve Lawrence, chairman of the Raptor Association of New Zealand, and Noel Hyde of the Wingspan Birds of Prey Trust.

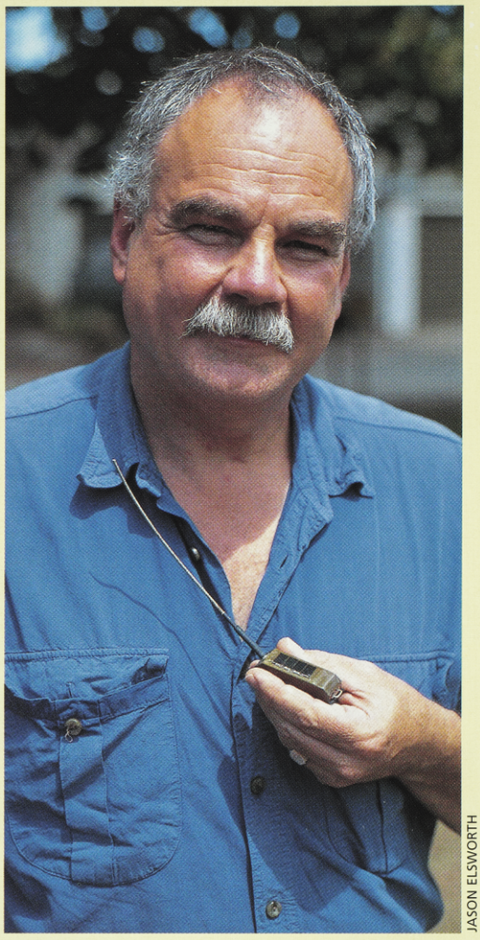
'We got together and thought what can we do? Banding is relatively useful, but would still leave us with a big gap in our knowledge about the falcon.'

Satellite tracking seemed to be the ideal method to fill this gap — Dr Holland was already using it with elephants in Africa. But a much smaller transmitter was needed for a highly manoeuvrable bird like the falcon.

'What I had in my mind was that the bird had to have the equivalent of Nike Airs, not tramping boots,' Dr Holland says.

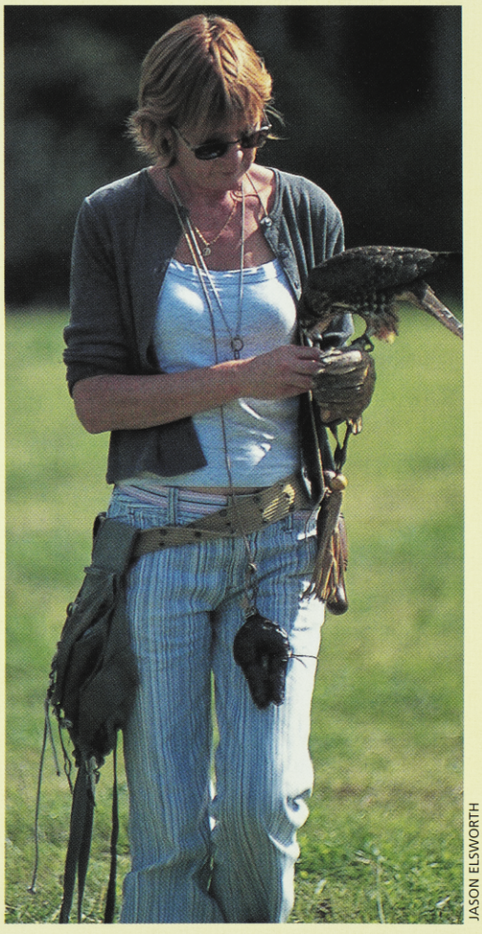
Eventually he found those 'Nike Airs' in a transmitter the size of his thumb, solar powered and weighing only 18 grams, about the weight of one and a half twenty cent coins. It was perfect for the job, but this kind of technology isn't cheap.

Luckily 2001 was the tenth anniversary of the company that made the transmitter and to celebrate they were encouraging schools worldwide to submit a proposal to win one. Massey University and Palmerston North Girls' High School put a proposal together and came in first. Since



JASON ELSWORTH

Dr John Holland of Massey University with a model of the transmitter used to track Icarus by satellite.



JASON ELSWORTH

Debbie Stewart with a female bush falcon, Diamond, at the Wingspan Birds of Prey Trust, Rotorua.