

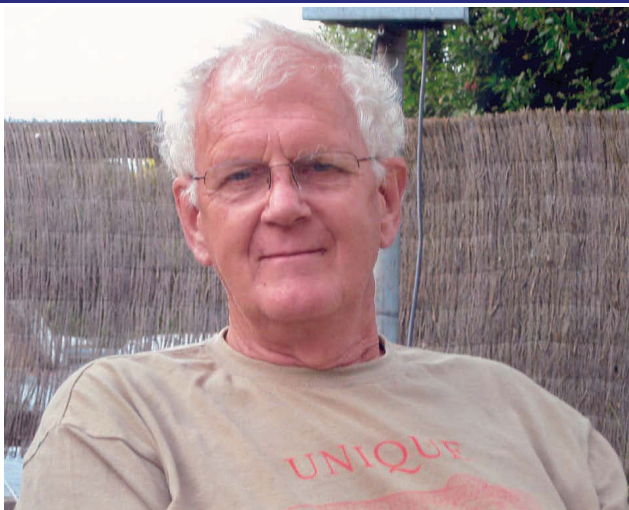
## obituary

## Bob McDowall (September 1939 - February 2011): a key contributor to our understanding of Southern Hemisphere biogeography and the significance of marine dispersal

It is with great sadness that I report the loss of Dr Robert ("Bob") Montgomery McDowall, on February 19<sup>th</sup>, 2011. Bob was a key figure in the study of Southern Hemisphere biogeography and marine dispersal.

After a childhood of fishing and freshwater activities with his parents, both of whom were also scientists, Bob completed a MSc on the ecology of redfin bully (*Gobiomorphus huttoni*) at Victoria University, Wellington, in 1962. Bob subsequently joined the Fisheries Laboratory of the New Zealand Marine Department in 1963, studying *Galaxias maculatus*, the dominant contributor to the New Zealand whitebait fishery, and a species that probably ignited his interest in biogeography, much as its distribution had earlier intrigued the likes of Charles Darwin. Bob was soon awarded a National Research Fellowship to study overseas, and started a PhD on galaxiid systematics at Harvard University in 1965, in an environment that included some of the foremost evolutionary biologists (Mayr) and biogeographers (Darlington) of the time. Bob completed his PhD in 3 years, a timeframe to be much admired even in this age, which enabled him to return to New Zealand via Chile—for galaxiid collections, of course! Back in New Zealand, Bob became New Zealand's foremost freshwater fisheries scientist, outlasting the names of several Government departments, prior to "retiring" from the National Institute of Water and Atmosphere Research (NIWA) in March 2000. However, like many a great scientist, retirement freed Bob from administrative burdens such that he was able to focus entirely on research.

While predominantly employed as a fisheries biologist, Bob somehow managed to regularly publish biogeographic research. In this context, Bob focussed on the Southern Hemisphere "Gondwanan" distribution of galaxiid fishes, and also the influence of diadromy (migration between the ocean and freshwaters) on species distributions. In the period following the acceptance



The late Bob McDowall in December 2010.  
Picture by Ainslie McDowall

of plate tectonics, Bob was a dominant protagonist for the retention of oceanic dispersal as a valid biogeographic hypothesis (McDowall 1978), particularly in taxa such as his diadromous *Galaxias maculatus*, where conspecific populations broadly occupy temperate lowland catchments throughout the Southern Hemisphere, and larvae have been recorded 100's of km out to sea (McDowall et al. 1975). Bob argued his point against several notable opponents within the discipline: Nelson, Rosen, Platnick, Croizat. Much subsequent research has supported Bob's position on oceanic dispersal, with many examples from terrestrial, freshwater, and nearshore marine faunas and floras (McDowall 2002; Sanmartín and Ronquist 2004; de Queiroz 2005). But while Bob could easily be considered a strong proponent of oceanic dispersal, it perhaps best reflects his attention to balanced approaches of scientific inquiry, and in recent correspondence he was keen to highlight that Gondwanan vicariance should not be forgotten (fearing that the pendulum was now swinging too far the other way).

Bob was a frenetic publisher, with (at last count) 267 scientific papers and 232 reports and popular articles. His papers spanned a variety of journals, including those not immediately within

his training (e.g. Bob brought his knowledge of diadromy to bear on molecular diversity of Nearctic and Palearctic fishes; McDowall 1999). His 12 books include the definitive *New Zealand Freshwater Fishes - A Natural History and Guide* (1990), and he also edited a similar book on the southeast Australian freshwater fish fauna: *Freshwater Fishes of Southeastern Australia* (1994). Bob performed editorial duties for several journals, including *Journal of Biogeography*, and his impact in the scientific field was apparent as early as 1984, when he was made a Fellow of the New Zealand Royal Society.

Bob is survived by his wife Ainslie, children Stephen and Susan, and two grandchildren.

### References

- de Queiroz, A. (2005) The resurrection of oceanic dispersal in historical biogeography. *Trends in Ecology & Evolution*, 20, 68-73.
- McDowall, R.M. (1978) Generalized tracks and dispersal in biogeography. *Systematic Zoology*, 27, 88-104.
- McDowall, R.M. (1999) Diadromy and genetic diversity in Nearctic and Palearctic fishes. *Molecular Ecology*, 8, 527-528.

McDowall, R.M. (2002) Accumulating evidence for a dispersal biogeography of southern cool temperate freshwater fishes. *Journal of Biogeography*, 29, 207-219.

McDowall, R.M., Robertson, D.A. & Saito, R. (1975) Occurrence of galaxiid larvae and juveniles in the sea. *New Zealand Journal of Marine and Freshwater Research*, 9, 1-9.

Sanmartín, I. & Ronquist, F. (2004) Southern Hemisphere biogeography inferred by event-based models: plant versus animal patterns. *Systematic Biology*, 53, 216-243.

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**Don Jellyman**

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*Bob McDowall catching galaxiids, small freshwater fishes, to show to other members of the New Zealand Conservation Authority during a visit to the Chatham Islands in mid 2010. Picture by Brian Stephenson*