IN their recent paper, Pyke and Read (2002) provide a detailed review of the biology and ecology of the Hastings River mouse *Pseudomys oralis*. The authors should be commended for compiling this information, however, there are some comments I would like to make to provide a contemporary review of this species. The authors note there has been no discussion of geographic variation within *P. oralis* or recognition of a subspecies. However, the recovery plan (NPWS 2003), which has been in draft for many years, emphasises the need to survey populations between the mitochondrial DNA haplotype sites identified by Jerry et al. 1998 to determine whether there are two distinct species. Pyke and Read (2002) also maintain the historical belief that *P. oralis* is mostly found in open habitat associated with riparian features (gullies and watercourses). Based on the studies of Townley (2000), Keating (2000) and new data collected by Meek (2002) and Meek et al. (2003), there is evidence that *P. oralis* is not dependent on riparian habitat. The species has been captured at many ridge and mid-slope sites where sedges and/or grasses are not found in high abundance. High numbers of *P. oralis* trapped and monitored at Marengo State Forest since 2000 have been found living on a ridge top in an open forest habitat dominated by fern (Meek 2002; Meek et al. 2003). Radio tracking and spool-and-line tracking from this forest showed that *P. oralis* did not favour a microhabitat of grasses or sedges and when riparian habitat was available the tagged animals rarely used it. Habitat at known *P. oralis* sites indicate that shelter is an important factor in population size, however emphasising the value of rock shelter as an indicator of capture success (Keating 2000) ignores the value of head and butt residue and fallen timber for the species. In all of the trapping sites described in Meek et al. (2003), none contained large amounts of large or small rock. However, occurrence of the species and trap success does correspond with the amount of hollows in fallen timber and residues from previous logging events and is further supported by tracking observations (Meek 2002, 2003).

Pyke and Read (2002) report that “populations” of *P. oralis* (often based on one trapping event) appear to be very small. Firstly, in all the published work since 2000, there are captures of more than ten individuals; and secondly, there can be no certainty that the whole population is captured by one trapping event. Surveys in Marengo State Forest in 2003 recorded 11 individuals in two nights - many were pregnant females (State Forests of NSW (SFNSW) unpubl. data). I propose that historical surveys recorded low numbers of *P. oralis* because trapping was mostly limited to habitat associated with riparian features (King 1984; Read 1993; Tweedie and York 1993). In addition, traps were often randomly placed at pre-determined distances apart and did not always focus on logs and rocks. Moreover, the belief that *P. oralis* is difficult to trap or the suggestion that testing bait type is necessary is difficult to sustain. Distribution, metapopulation size and capture success of *P. oralis* over the last few years has increased notably (Townley 2000; Meek et al. 2003; SFNSW unpubl. data) with an improved understanding of the preferred habitat and with increased survey effort. Standard small mammal bait together with good trap placement (see Tasker and Dickman 2000; Meek et al. 2003) is all that is necessary to catch *P. oralis* if they are present at a site.

In terms of threats, Pyke and Read (2002) comment that fossil records indicate a larger distribution of *P. oralis* around the Pleistocene. However, based on DNA data, Jerry et al. (1998) proposed that *P. oralis* was in decline prior to the arrival of Europeans. The role/threat of fire in the biology and ecology of *P. oralis* is still to be tested experimentally and the authors correctly mention the uncertainty in our knowledge. However, they cite papers reporting the disappearance of the species following fire and the occurrence of large numbers in areas free of burning for 20 years. In most of these papers there has not been enough rigorous or repeated trapping surveys to test the theory. New records reported in Meek et al. (2003) shows that where there has been a continuous history of burning,
grazing and/or logging, P. oralis survives and breeds successfully. The sites reported have been disturbed at <5 year intervals, particularly by fire. In some of the largest new populations, P. oralis is breeding in areas burnt and grazed every few years (Meek et al. 2003; SFNSW unpubl. data). Moreover, animals have been trapped in sites that were recently logged (Meek et al. 2003) and were spool tracked in burnt habitat immediately after a fire. It is highly debatable in light of data collected since 2000 that P. oralis requires old growth forest or that disturbance negatively affects population abundance.

Other recent findings not included in Pyke and Read’s review are important and noteworthy in this forum. In reference to research techniques, Meek (2002) evaluated the success of hair tubes vs Elliot traps for detection and found that hair tubes did not detect P. oralis at sites where >35 animals had been trapped. This finding supports the belief that the method is probably not highly effective as a sampling tool (Mills et al. 2002). Pyke and Read also mention that studying movements of P. oralis has only been attempted by Townley (2000), emphasising that no other methods (noting spool-and-line) have been used to follow individuals. Radio tracking and spool-and-line investigations have been carried out at Marengo State Forest (Meek 2002). The latter providing some of the most intensive data on habitat use by P. oralis, and providing interesting insights into the behaviour of the species.

In their ‘Conservation and Management’ section, Pyke and Read have not accurately summarised the current Integrated Forestry Operations Approval (IFOA) - Threatened Species License (TSL) conditions. Pre-logging surveys for P. oralis consist of assessing the likelihood of occurrence using habitat models - where habitat is confirmed on-site as suitable, a habitat assessment is required. If habitat is determined to be high or medium, trapping surveys are required (400 trap nights/50 ha). Where an animal is previously reported on the National Parks and Wildlife Service NSW Wildlife Atlas or trapped during the survey, a 200 m radius no logging exclusion zone is applied with a further 600 m exclusion where habitat is rated as suitable. There is no requirement to exclude forestry activities from within 100 m of high quality habitat in the license. Furthermore, burning plans do recognise P. oralis habitat and exclusions and fire regimes are prescribed in order to promote a mosaic pattern with frequencies >5 years. Any reference by Pyke and Read to SFNSW conservation protocols is not appropriate given the IFOA TSL has been in place since 2000, as described above.

Pyke and Read state that their review “indicates the benefits of pooling knowledge from those experienced with a rare species like P. oralis”. I concur and urge future reviews of threatened species to thoroughly explore the literature and converse with researchers to gather contemporary biological information when publishing comprehensive biological reviews.

REFERENCES


