
Tenuibranchius glypticus (Riek, 1969) is a little studied freshwater crayfish with a distribution restricted to acidic wallum (sedge-heath) swamps along the southeastern coast of Queensland. This report describes the physical conditions and habitats in which T. glypticus are found.

Observations were made at 38 sites on Bribie Island in southeastern Queensland from February to March of 2001. Bribie Island is a low-lying sand island with many areas dominated by wallum heath vegetation and characterised by pools of tannin-stained water. Sampling sites were swamps and small artificial dams, and pools and gutters occurring beside and across sandy vehicular tracks. Sampling was conducted with dip nets using standard sweeps and all animals captured were identified, enumerated and released at point of capture. A range of physical parameters were recorded (pH, substrate type, turbidity and presence of vegetation) in order to ascertain whether T. glypticus was associated with any pool characteristics.

T. glypticus was caught at 20 of the 38 sites sampled (19 of 34 temporary pools and 1 of 4 permanent pools). Most pools were tannin-stained (n = 35) and pH ranged from 2.6-5.65. T. glypticus were found in pools with pH ranging from 3.2-4.80, and were not found in any of the three pools with clear water. T. glypticus were more likely to be found in pools with a sandy substrate (62% of 29 pools) than in pools with a thick layer of organic matter (22% of 9 pools; Fishers Exact test, p=0.058).

More pools with vegetation in the middle contained T. glypticus (85% of 13 pools) than pools without vegetation in the middle (36% of 25 pools; Fishers Exact test = 6.28, p=0.012). T. glypticus were more common in pools with the sedge Rastio pallens (80% of 24 pools with R. pallens v 44% of 14 pools without; Fishers Exact test, p=0.035). T. glypticus presence was positively associated with the presence of insect predators (Anisopteran odonate nymphs and/or Nepid hemipterans) (100% of 11 pools with insects v 33% of 27 pools without; Fishers Exact test = 11.4, p<0.001), and the crayfish Cherax robustus (76% of 17 pools with C. robustus v 33% of 21 pools without; Fishers Exact test = 5.39, p=0.020), but these associations were most likely due to common habitat requirements of these species. The only fish species found in samples was the Striped gudgeon (Gobionomorphus australis) (6 pools, 2 with T. glypticus).

In 7 of the 20 pools in which T. glypticus were found, catch rates (number/standard sweep) were compared between sweeps through sedges (24 sweeps) and sweeps over bare substrate (50 sweeps). Catch rate was significantly higher in sedges (mean sedges = 1.12, s.d= 0.39, n=7; mean non sedges = 0.00, s.d=0, n=7; Wilcoxon z = -2.46, p=0.014).

Of the 20 sites where T. glypticus was collected, all were within wallum heath areas containing tannin-stained pools. T. glypticus was only captured within vertical standing sedges. This may indicate that sedges provide protection from predators, or provides a food requirement. The data suggest that T. glypticus has specific habitat requirements within the wallum areas in which it is found. These habitat characteristics need further investigation in order to understand the ecology of this unique crustacean.

Acknowledgements

Animals were collected under Queensland Parks and Wildlife Service Permit E6/0000/01/SAA and Queensland Fisheries Permit PRM00491J. We are grateful to the people that helped in the collection of field data, and assisted in plant and animal identification and finding sampling sites.

Literature Cited


Douglas Harding & Ian Williamson, School of Natural Resource Sciences, Queensland University of Technology, Gardens Point 4001, Australia.