Frog Monitoring in the Coorong, Lower Lakes and Murray Mouth (CLLMM) Region

Recommendations

Authors

This document was written by Kate Mason for the South Australian Murray-Darling Basin Natural Resources Management Board (SA MDB NRM Board).

Introduction

This document is one of the outcomes of the *Frog monitoring in the Coorong, Lower Lakes and Murray Mouth (CLLMM) region* monitoring project. Based on the results of this project, the following recommendations are made which will assist the recovery of viable *L. raniformis* populations in the River Murray reach below Lock 1 and increase knowledge of their ecology in the region. They aim to better inform future management decisions that affect the future of *L. raniformis* populations, which in turn influence land and water management practices and the health and diversity of freshwater habitats in the Lower Lakes Icon Site.

Recommendations

- Promote a fluctuating water regime in the Lower Murray which will increase the breadth of the littoral zone, increasing areas of suitable breeding habitat for *L. raniformis*. Incorporating an early spring increase in water level above 0.7 mAHD and a slow decline in water level in summer into a future water regime for the region is anticipated to generate large areas of suitable habitat for spawning. Based on the known timing of tadpole presence, inundation of these shallow fringing habitats for a minimum of three months would increase the probability of hatching and survival of tadpoles. Acknowledging the species is considered to be relatively long-lived (DEC 2005), these proposed fluctuations in water levels may not be an annual requirement. Acknowledging the magnitude of constraints that exist in the management of water levels, opportunities to manage suitable wetlands in isolation to the Lake should be investigated.

- Combine ongoing monitoring with an assessment of the hydrologic connection to the River Murray at Pelican Lagoon with the intention to explain why this site, which has supported high abundance of *L. raniformis* in the past, is no longer being utilised by the species. Ongoing monitoring may assist with statistical analysis in order to determine variables that influence presence/absence of the species.

- Define potential threatening processes affecting egg and larval stages of recruitment focusing on exotic fish species. Where possible/appropriate, removal of introduced fish would likely not only benefit L. raniformis tadpole survival, but tadpoles of other frog species and small-bodied fish.

- Investigate opportunities to provide more complex vegetative habitats through land management practices (such as grazing). Investigate of impact of Common Reed (*Phragmites australis*) dominance on suitable *L. raniformis* breeding habitat. The Common Reed has benefited from previously stable water levels. Investigating the role of grazing and overbank flooding in maintaining *L. raniformis* breeding habitat is an important step to improve management practices to conserve *L. raniformis* populations in the Lower Lakes.

- Continue monitoring known populations (and habitat similar to that of sites where populations are known to occur) to determine the effects of changes in habitat features and future management of water levels. Further use of automated call recording will enable areas inaccessible during night hours to be incorporated. Automated call recording also provides the potential to collect fine-scale information regarding how the species had continued to respond to water levels, particularly if combined with localized water level data loggers.

- Promote better spatial coverage of monitoring locations through further engagement of volunteer input into monitoring events. Provision of volunteer support, training and promotion are considered essential.