

Appendix E –
Yellow Chat Research
Proposal



**Gladstone Area
Water Board**

Ecological Drivers of Breeding in Capricorn Yellow Chats

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Background

CQU has been undertaking research into Yellow Chat ecology since 2001. Early studies focussed on their natural history at the then only known population at Curtis Island (Houston *et al.* 2004b). Based on information gained on habitat requirements gained in this study, further populations were found at Torilla Plain and the Fitzroy River delta (Houston *et al.* 2004a; Jaensch *et al.* 2004), thus re-establishing their historical range.

Since 2004, a project aimed at evaluating the extent to which the Capricorn Yellow Chat is dependent on inundation of its habitat for breeding has been in progress at CQU. Reduction of surface in-flows into their breeding habitat was identified as the most important threat to their survival (Houston and Melzer 2008) but evidence is required to confirm this. This component of the research relates to Recovery Actions 2.8 (Undertake research and monitoring of chat ecology) and 2.10 (Research genetic structure, demographics and dispersal of the Capricorn Yellow Chat; identify linkages between chat breeding and productivity including key food requirements).

Sampling is currently undertaken monthly within the lower Fitzroy River delta encompassing Inkerman, Twelve-Mile and Pelican Creeks, with annual monitoring within the Torilla Plain catchment. Both areas provide preliminary evidence of a dependence of breeding on wetland inundation associated with annual surface in-flows derived from the local catchment. However, most of the early part of the study has been typified by relatively dry years. Further monitoring will provide the opportunity to gain data during a wetter cycle (2007-08 had above average rainfall), and provide a longer time series upon which to evaluate correlations between breeding success and environmental factors such as rainfall, salinity and food availability in their breeding habitat. It complements another existing project documenting food availability within

saltmarsh breeding habitat, and thus furthering the links between the proposed research with the recommendations of the Recovery Plan.

Objectives

The objectives of the study are to:

1. contribute to the ecological knowledge base of this little studied species
2. evaluate the extent to which the CYC is dependent on inundation of its habitat for breeding
3. determine the ecological drivers of saltmarsh habitat use by CYCs.

Such information will lead to an improved understanding of threats to survival of this critically endangered subspecies, and key planning information to assist both land management agencies and development proponents.

Research Team

Wayne Houston, Senior Research Officer (client contact) – Chief Investigator, monitoring, data analysis, reporting (client contact)

Robert Black, Research Worker – monitoring, data entry

Leif Black, Research Worker - monitoring, data entry

Methods

Chat numbers and breeding status will be evaluated monthly (approximately 15 surveys of 2 days duration, fieldwork completion April-May 2010) using standardised search effort at a range of sites in the Fitzroy River delta (primarily Twelve-Mile Creek and Cheetham). This will allow another wet season to be monitored in addition to data already available from 2004 to the present. Concurrent measures of wetland inundation extent and salinity of surface pools at standard points will be made along a transect from the upper freshwater influenced saltmarsh to the lower tidally influenced saltmarsh habitat. It is planned to place data loggers at each site to record temperature and relative humidity. This data will provide further data on freshwater availability in the form of dew. Monthly rainfall data will be sourced from local weather stations.

At Torilla Plain, chat numbers will be monitored annually using standardised search effort during the dry season to evaluate abundance and breeding success.

Observations on natural history (behaviour, breeding and foraging ecology) and habitat requirements (nesting, dry and wet season habitat) will be made concurrently with field surveys.

Outcomes

The information gained will be used to inform land managers, government agencies and development proponents, leading to improved conservation standing for this species. Additionally, information obtained regarding the Capricorn subspecies will be contribute to an understanding of the species wherever it occurs in Australia, and thus inform recovery teams working on the other subspecies.

The information gained from this project will be published in scientific journals and other relevant publications. In addition, interim reports will be made to update the funding body as to progress made, including a final report and summary presentation to stakeholders.

Budget

Items	Person days	Cost
<i>Field Work</i>		
Personnel	2 people for 33 fieldwork days (10 hours/day) (30 days at southern Fitzroy delta and 3 days at Torilla	\$37,290.00
Consumables	vials for salinity samples	\$100.00
Vehicle costs	4350 km at \$0.75/km	\$3,262.50
subtotal		\$40,652.50
<i>Data Compilation, Analysis, Reporting</i>		
Data entry/analysis	5 days	\$1,920.00
Reporting	5 days	\$2,590.00
Subtotal		\$4,510.00
Total		\$45,162.50
GST		\$4,516.25
Total – GST incl.		\$49,678.75

In-kind Support: CQU will provide office space, computers and software for data analysis, availability of data loggers and vehicles for field work.

Project and Budget Milestones

The following are based on an 18 month project duration, i.e. March 2009 – August 2010.

- Start-up (30%) at commencement
- 6 month progress report, August 2009 (30%)
- 12 month progress report, February 2010 (30%)
- Acceptance of final report (10%).

References

Houston W. & Melzer A. (2008) *Yellow chat (Capricorn subspecies) Epthianura crocea macgregori Recovery Plan*. Report to Department of the Environment, Water, Heritage and the Arts, Canberra. Queensland Environmental Protection Agency, Brisbane.

Houston W., Porter G., Elder R., Black R. & Sheaves M. (2004a) Rediscovery of yellow chats (Capricorn subspecies) on the Fitzroy River delta, Central Queensland. *Sunbird* **34**, 36-42.

Houston W., Porter G., O'Neill P. & Elder R. (2004b) The ecology of the critically endangered yellow chat *Epthianura crocea macgregori* on Curtis Island. *Sunbird* **34**, 10-23.

Jaensch R., Houston W., Black R., Campbell L., Elder R. & McCabe J. (2004) Rediscovery of the Capricorn subspecies of yellow chat *Epthianura crocea macgregori* at Torilla Plain, on the mainland coast of central Queensland. *Sunbird* **34**, 24-35.

