

Project No.: 100001

The Australian Crayfish Project

Research Brief

Introduction

Australian Aquatic Biological P/L is an Australian private company that conducts aquatic research around Australia. One of the major projects currently being conducted is Project No. 100001 "*The Australian Crayfish Project*". This project was started in 2005 and will run to at least 2012. The aim of this project is to survey the whole of Australia to find and identify every species of freshwater crayfish and its habitat area. Then use the information gathered to increase the knowledge base and protect & conserve all our freshwater crayfish species and their habitat for future generations.

Background

The Australian Crayfish Project is a research project designed to find and identify every species of freshwater crayfish in Australia. Full biological studies will be conducted over vast areas of Australia. With the help of fellow researchers and volunteers we intend to survey as much of Australia as physically possible. This is not only blatant aquatic environments but also all the marginal and terrestrial areas as well.

Outline

We aim to conduct full biological studies of Australian aquatic, semi aquatic and potential terrestrial environments to identify potential crayfish habitats. Crayfish will be captured from every potential site for identification. We intend to capture, photograph, DNA test and identify every species of crayfish in Australia. The project under the direction of the team leaders and with the assistance of a vast number of conservation volunteers, enthusiasts and researchers will do the following:

- To conduct biological surveys and investigate, every pond, creek, stream, river, swamp, puddle and wet area in Australia in an effort to locate every freshwater crayfish species.
- Physically collect new specimens of every crayfish species. (All original work without reference to existing collections).
- Record each species, habitat, activities, lifecycle and distribution.
- Photograph every species to give a photographic record/description of each species.
- Identify every species via taxonomy.
- Identify every species via DNA testing.
- Compile and complete a full DNA database for all Australian freshwater crayfish species.
- Identify, name and describe all new species collected.
- Investigate and ascertain the distribution of these new species.
- Identify the threats (both current and potential) and the conservation status of all species of freshwater crayfish in Australia.
- Protect and conserve all species of freshwater crayfish and their habitats.
- Produce a full colour field guide to the freshwater crayfish of each state within Australia.
- Produce an Australian guide to the freshwater crayfish of Australia.

- Increase the knowledge base on freshwater crayfish and their fragile habitat areas.

Deliverables

The results of this research project would deliver:

- Development of a full DNA database of all Australian species.
- Discovery of many new species and descriptions of these species.
- Dramatic increase on the general and specific knowledge base on all Australian freshwater crayfish. (Habitats, burrows, life cycles, distributions, morphology and ecology).
- Develop full colour field guides for the crayfish of each State of Australia to increase the knowledge base on our species and their habitats.
- Creation of books on the freshwater crayfish of Australia
- Distribution maps of the species within the aquatic system.
- Population maps and size estimates for each species.
- Creation of databases on all crayfish captured.
- Investigations of conservation status of each species and recommendations of species for IUCN listing.
- Full records of tagged crayfish and the use of this base line information for future researchers.
- Increase of the knowledge base on the species and their habitat to improve the understanding of their requirements for survival and proliferation.
- The information ascertained on the biology and ecology of all freshwater crayfish species would be used to protect and conserve these species into the future and increase the knowledge base.
- Working with other management agencies can ensure that their future environmental, developmental and catchment management plans can consider and include the freshwater crayfish of Australia and their fragile habitat areas to conserve and preserve these species for all time.

Research Team

The project team has been working on the *Australian Crayfish Project*, finding and identifying freshwater crayfish species across Australia. These team leaders with the assistance of a vast number of students, volunteers and other researchers are conducting the core research across Australia. The team leaders consist of three experts on freshwater crayfish.

ACP Team Leader

Robert B McCormack – Managing Director/Researcher Australian Aquatic Biological P/L. 25 years as Aquaculturalist and teacher. Author of numerous books on freshwater crayfish including his 7th book “The Freshwater Crayfish of NSW Australia” ISBN 978-0-9805144-1-4. President of the NSW Aquaculture Association. Serves on various statutory advisory committees. Research Associate with the Carnegie Museum. Experienced in crayfish taxonomy, including the preparation of formal taxonomic descriptions for publication.

ACP Chief Taxonomist

Dr Jason Coughran - Associate Lecturer, Southern Cross University, PhD in freshwater crayfish biology, ecology and taxonomy. >10 years research experience in freshwater biology. Relevant experience in wild crayfish biology including growth and moulting, catch characteristics, reproductive biology, health and ectosymbionts, burrowing ecology and habitat information.

ACP Chief Geneticist

Dr. James W. Fetzner Jr. - Assistant Curator of Crustacea, Section of Invertebrate Zoology Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA. Areas of research include 20 years of experience working on the biology, conservation, population genetics, systematics and taxonomy of freshwater crayfishes at a global level. An additional 12 years of experience in bioinformatics and the dissemination of crayfish related taxonomic information via the internet. Professional crayfish-related activities include: Secretary for the International Association of Astacology, Editor of the *Crayfish News* newsletter, co-editor of the journal *Freshwater Crayfish*.

Volunteers and students working on the project under our supervision.

Research Project duration

Seven years. (Initially)

Budget Estimates

An initial budget estimate of \$750,000.00 would be required to complete this project.

Comments

The ACP is a major project with immense benefits to the community and the crayfish. I hope you all share our passion for the freshwater crayfish of Australia and will help us in our endeavours to increase the knowledge base on all our species and ensure they are protected and conserved for all time.

For Further Information

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