

**Project No.: 100015**

## **Lord Howe Island Freshwater Crayfish Research 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. The aim of this project is to survey the whole of Australia to find and identify every species of freshwater crayfish. Freshwater crayfish will be found, taxonomic examined, DNA tested, photographed and recorded. Every species in Australia will be found. The project started in 2005 and will continue to 2012 or beyond. So far large numbers of new unidentified species have been uncovered. The project covers all Islands and Territories of Australia, hence the Lord Howe Island Project.

#### **Aims**

The aim of Project No.:100015 is to survey the whole of Lord Howe Island to ascertain if there are any species of freshwater crayfish on the Island. At this stage preliminary information received to date indicates that there are not any freshwater crayfish species on the Island. Our aim is to specifically target freshwater crayfish and confirm or deny the assumption that they are not in existence.

If a freshwater crayfish species is found then the aims of this project are to gather information on the biology and ecology of the newly discovered crayfish species, in order to protect and conserve it into the future and increase the knowledge base on Australian freshwater crayfish.

#### **Research Team**

The project team has been working on the *Australian Crayfish Project*, finding and identifying freshwater crayfish species across Australia. The team consists of three experts on freshwater crayfish.

- 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 7<sup>th</sup> 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.

- Dr Jason Coughran - Associate Lecturer, Southern Cross University, PhD in freshwater crayfish biology, ecology and taxonomy. >10 years research experience in freshwater biology.

- 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*.

## **Research Outline**

Research would be conducted by a team leader Rob McCormack with the support of local government and community volunteers.

We intend to survey the whole of Lord Howe Island to identify potential habitat areas. These identified areas will then be closely scrutinised to ascertain if any crayfish are present. Investigation of these areas is basically a three part exercise.

1. Visual inspection. Just walking through the area to visually look for crayfish or signs of crayfish. This will include looking in the creeks to see if crayfish are in the streams. Looking for signs of crayfish, this may be pieces of shell or moult shells. Look for signs of habitation, generally burrows or signs of burrows under rocks, etc.
2. Excavation of burrows. Many crayfish species on the Australian mainland live the majority of their lives within a burrow system and thus can only be found if you excavate that burrow and dig them out. If burrows are found we will dig and see.
3. Meat on string. Just a piece of meat tied to a piece of string is a very effective way of luring crayfish from a burrow or ledge in the streambed.

These simple methods would be used to find and capture freshwater crayfish on Lord Howe Island.

## **Comment.**

If freshwater crayfish are found then they will be photographed, DNA sampled and vouchered for intensive taxonomic examination. At least 12 specimens would need to be captured of each species to allow a description to be completed on the species. Any specimens collected would be vouchered in ethanol and returned to AAB. Some would be included in the Australian Aquatic Biological collection, the majority would be sent to both the Australian Museum and Carnegie Museum for lodging as type material.

## **For Further Information**

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