

Project No. 100009.



Crayfish Research Project

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Supervisor: Dr. Robbie Wilson

Brief Research Outline

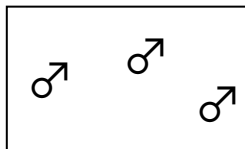
Cherax destructor is an aggressive crayfish species that are important to aquaculture in south-eastern Australia. Crayfish use their enlarged front claws as signals for dominance to reduce the costs of fighting. Recent studies suggest that claw size and strength may be affected by the social environment (i.e. sex ratios). This research aims to investigate the effect of the social environment on claw size and strength as signals in *Cherax destructor*.

Predictions

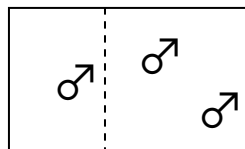
From this research we will expect that the presence of males induce the growth of large claws as they allocate more resources to fighting and signalling for dominance. We also expect that males raised in the presence of females will produce smaller claws, resulting in less aggression and decreased mortality. This may also allow for the growth of larger body sizes due to resource allocations away from fighting characteristics (which is also stressful, inducing lower growth rates) such as increased exoskeleton thickness and increased claw growth.

Methods

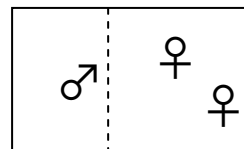
Lab experiments will involve rearing juvenile crayfish under different social conditions, as outlined below. The centre dotted line in each tank represents a permeable barrier allowing visual and chemical cues for social interactions.



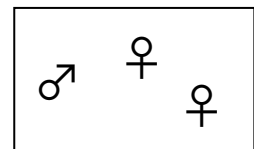
Treatment 1: Focal male will be raised in the presence of two non-focal males. Physical interactions will occur.



Treatment 3: Focal male will be raised in the presence of two non-focal males. Only visual and chemical cues will be available.



Treatment 3: Focal male will be raised in the presence of two non-focal females. Only visual and chemical cues will be available.



Treatment 4: Focal male will be raised in the presence of two non-focal females. Physical interactions will also occur.

Growth rate of body size claw size and claw strength will be measured once a month.

This research commenced in Early February 08 and will conclude in October 08, with laboratory experiments being conducted from May to September.

If you put attention: Greg Walter then there should be no problems as we have a receptionist that handles the packages and live animals.

I am very thankful for your interest in my research and I am looking

forward to producing some good results with your help. Experiments will be set up as soon as the crayfish arrive.

Kind Regards,

Greg Walter
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Update:

10/3/08 600 mixed yabbies supplied by AAB at cost of \$437.00 (Invoice 268), no charge to University of Queensland.

20/6/08 Additional 600 small yabbies supplied by AAB at cost of \$199.80 (invoice 273), no charge to Queensland University,