

James Cook University
MARINE AND AQUACULTURE RESEARCH FACILITIES UNIT (MARFU)

The Aquarium Complex

Researcher / User Protocols

The Aquarium Complex is a multi-disciplinary facility that is reliant upon Users/Researchers strictly observing and adhering to the following:

1. **Prior** to the start of any experiment/project, the prospective users should consult with the Manager of The Aquarium Complex before fully completing an “Application for Use” form. This form is available through the Aquarium Complex (MARFU) office (building DB067). The researcher must complete the first page, fill in the project description, period requiring facility and have it signed by their Supervisor before submitting it to the Aquarium Complex management for approval. The Facility Manager can approve applications; however the MARFU Management Committee may be required to discuss the application before it is approved. These meetings are only held when required and approvals of some research applications may be held up. A copy of the experiment methodology is helpful for our technical staff to understand what the researcher is trying to achieve and assist us in the design and setup. It is therefore advisable to provide as much notice in advance as possible of research requirements.
2. **All water usage, for example filling or emptying tanks especially on week-ends may only be performed after consulting an Aquarium Technical staff member first. The filling of any algal culturing tanks also needs to be authorised by the Staff first.**
3. Any problems associated with the system being automatically shut down usually means a tank has overflowed or a tank filled outside work hours, the water pumps shut down immediately and a technician is called out to fix any problems and reset the system. At present, the set fee for after hours CALL OUT is \$392 per call out and 5 cents per litre of seawater lost or wasted.
4. Main recirc system water quality is monitored once a week (salinity, temp, nitrate, pH, etc.). If any further tests are required or testing of individual recirc systems charges may apply i.e. Nitrate tests are charged \$4.00ea.
5. Every experiment shall be **Risk Assessed** by the User to identify any safety hazards or health risks related to the experiment. Users must attach a copy/complete on RiskWare before the experiment can commence.
6. The Aquarium Complex Management must be notified if time extensions or changes to an experiment are necessary and an amendment form filled out and signed by the supervisor of the researcher prior.
7. **Unauthorised usage of the system in any way, even by our regular users, will result in the immediate removal of animals from the system.** This includes breaches of WH&S requirements including electrical equipment.

Only JCU equipment is to be used inside the MARFU compound. No equipment from home, eg Desk lamps are to be used.

MARFU staff must be consulted when selecting equipment for purchase and installing any equipment within MARFU.

All Researchers are required to make arrangements for any extra space/aquaria **PRIOR** to introducing animals to a system or tank.

8. JCU Animal ethics protocols are to be followed within the Aquarium Complex. Approval to start the project **will not** be granted without the written approval from the JCU Animal Ethics Committee for that particular project. The management of animal ethics issues is outlined in the “Animal Ethics Protocols” (attached at the end of this document). All users will be supplied a copy of these protocols upon receiving a User form or they are also available from our website. Failure to comply with these protocols will result in the expulsion or suspension of the User from using the facility.
9. All animals introduced into the Aquarium Complex are to be prophylactically treated and cleaned to prevent/limit the introduction of disease. All animals transferred between systems are to undergo the same treatments to prevent the translocation of disease. The protocols for disease prevention and management are detailed in “Disease Prevention and Treatment Protocols” available from the MARFU office. No equipment is to be moved between systems prior to being adequately sterilized.
10. Any animals required to be returned to the wild are entirely the responsibility of the researcher and almost certainly require authorization from either DPI or GBRMPA through the original collection permits.
11. If animals used in a research project are required to be sacrificed as part of the analysis process or permit, then the remains should be placed in the special freezer at the wet lab in Biological Sciences Building ready for disposal.
12. It is the responsibility of the User to dispose of all bio-hazardous waste such as gloves, needles, pipettes, scalpel blades and plastic bags using the proper disposal methods.
13. **Users are NOT to borrow, remove or alter equipment belonging to others without their permission. This includes turning off valves to observe the animals of another researchers experiment.**
14. Cleaning of tanks, sumps, equipment or research space is the responsibility of the User to whom they were allocated to - this applies throughout the duration of the projects and at completion. Details regarding system cleanliness protocols follow. All users will be supplied with a copy of these protocols upon receiving Users Approval. Failure to comply with these guidelines will result in suspension of User Approval and a charge of \$150 per hour cleaning could apply.
15. Promote personal safety by:
 - ❖ Working to JCU’s WPH&S regulation (located on JCU web page).
 - ❖ Removing broken glass and dispose of it in the specially marked containers.
 - ❖ Do not using unsafe electrical leads, power boards etc. All electrical equipment brought into
 - ❖ No smoking, drinking or eating inside the compound fence.
 - ❖ Wear safety glasses or face shields where appropriate.
 - ❖ Please roll up freshwater hoses after use.
 - ❖ Keeping your area clean and tidy,
 - ❖ securing electrical appliances and leads away from water
16. No changes are to occur to the animal population within the Aquarium Complex without notifying to the Aquarium Staff. All changes **must** be within the guidelines of the original Users Approval.

17. The Aquarium Staff must be notified in the absence of any approved researcher and brief us on the arrangements that have been made for a competent person to look after the animals, whilst the researcher is away.
18. Any costs associated with rectifying the system because a Users has not followed protocols, will be charged at the standard rate.
19. A User's authorization will be withdrawn or suspended for any incidents due to carelessness that break animal ethics regulations or endanger the success of other research projects.
20. Visitors or friends of a Researcher are requested to stay within the confines of the Researcher's experiment and supervision unless the facility staff are notified of their visit and given authorisation to view other areas.
21. All persons who enter these Facilities **must** comply with JCU Work Place, Health and Safety regulation regarding footwear, ie. Fully closed in shoes only.
22. Several First Aid kits are located throughout the complex and official University Accident & Incident forms are available from Aquarium Complex staff. Please report any accidents or incidents, no matter how minor they may seem.
23. Above all else **Users must accept full responsibility for their animals.** This means a researcher is 100% responsible for their experiment inc. husbandry, water quality (individual systems), individual system upkeep, etc. Aquarium staff may be available to assist when requested in the general operation of researcher's experiment/systems, nevertheless the researcher always maintains the primary responsibility for their own system.

System Upkeep

The prevention of introduced diseases into the Aquarium Complex will maintain a disease free environment; however, correct system upkeep is also essential to prevent the development of diseases such as *white spot* within the system. A major factor to a healthy system is system cleanliness i.e. the removal of all uneaten food and faeces from the system on a daily basis and the removal of some algal growth on a regular basis. Animals that appear diseased are to be immediately isolated, treated and if necessary euthanasia performed. Any un-healthy or severely stressed animals should be checked every few hours. These duties are the responsibility of the researcher running the experiment and ultimately the responsibility of the project leader/supervisor of the research.

What is a clean system?

Different animal and feeding regimes result in different levels of waste and different amounts of waste materials. Uneaten food, animal excretments should be siphoned to a bucket and dumped to waste. Aquarium Complex management require, regarding system cleanliness, that all animals should be checked and tanks cleaned on a daily basis. If it is obvious that the animals are not being checked and the tanks cleaned daily, action will be taken. In addition, the area surrounding the tanks/rooms should be kept clean and tidy. Rubbish can be disposed of into the skip near the driveway.

What is the action to be taken?

When it is apparent that a system is not being checked daily, and particularly if the system has not been checked for a significant period, the Facility Manager will contact the Aquaculture Representative on the Aquarium Management Committee to assess the issue. If the cleanliness of the system is deemed unsatisfactory by both parties then the Facility Manager and the Aquaculture Representative on the Aquarium Management Committee will contact both the student/researcher and the supervisor/project leader by e mail and if possible by telephone. The system is to be cleaned prior to the next morning. If this does not occur, the supervisor/project leader of the student will be contacted again and given until the end of the day (4.30 p.m.) to ensure the system is cleaned. If the system is not cleaned by this time the system will be cleaned by casual or MARFU staff and charges forwarded to the student/researcher or supervisor/project leader at the rate of **\$150 per hour**. If there is dispute as to the level of cleanliness of the system, then a meeting involving the Facility

Manager and the Aquaculture Representative on the Aquarium Management Committee will be convened. The student/researcher and the supervisor/project leader will be arranged ASAP but no later than 30 hours after the initial notification to discuss the situation.

If the same student/researcher repeatedly requires notification of an unsatisfactory system then the user's rights of that student/researcher will be revoked.

The Aquarium Complex Animal Ethics Protocols.

We are tightly governed by the protocols of the Animal Ethics Committee to ensure that pain and distress are minimised in experimental animals.

Your animal ethics approval must be displayed with your animals at all times;

- If you have a room your ethics must be displayed on the door.
- If you have tanks on a main system i.e. AQ2 your ethics must be displayed in a prominent position on your area. If there are animals on more than one ethics approval in an area the ethics must be displayed on every tank.
- If you have a recirc system your ethics must be displayed in a prominent position on the system.
- If your animals are on a recirc system that contains animals on different ethics approvals every tank must have an ethics approval displayed.

The "Australian code of practice for the care and use of animals for scientific purposes" is available on the Animal Ethics Committee website [LINK](#) and it is recommended that all Researchers read the code prior to accepting responsibility for animals. These protocols are to ensure that pain and distress are minimised in experimental animals and it is these protocols that govern care of animals in the Aquaculture Aquarium Facility. It is the AEC's responsibility, in conjunction with the Researcher, to ensure these protocols or breaches to these protocols are dealt with immediately. According to the "Australian code of practice for the care and use of animals for scientific purposes" Section 2.2.28

"The Animal Ethics Committee (AEC) must ensure that any activity in breach of the Code ceases immediately and appropriate action is taken."

A moderator represents biological Sciences on the AEC and all Researchers should be aware of the identity of this person.

Minimisation of pain and distress in animals is often difficult to quantify, however according to the "Australian code of practice for the care and use of animals for scientific purposes" Section 3.3.1

"Pain and distress cannot be easily evaluated in animals and therefore investigators or teachers must assume that animals experience pain in a manner similar to humans. Decisions regarding their welfare in scientific and teaching activities must be based on this assumption unless there is clear evidence to the contrary."

The responsibilities of the investigator are defined in the "Australian code of practice for the care and use of animals for scientific purposes" with relevant sections detailed below:

"Section 3.3.2:

The Researcher must anticipate and take all possible steps to avoid or minimise pain or distress, including:

- (iii) Ensuring all animals are adequately monitored for evidence of pain or distress
- (iv) acting promptly to alleviate pain or distress
- (vii) using appropriate methods of euthanasia

Section 3.3.6:

The monitoring of animals must at all times be adequate to prevent the occurrence, or allow prompt alleviation, of pain or distress.

Section 3.3.7:

If animals develop signs of severe pain or distress despite the precautions outlined above, they must have the pain or distress alleviated promptly or must be killed humanly and without delay. Alleviation of such pain or distress must take precedence over the continuation or finishing the study.”

When animals are found to be showing signs of severe pain or distress then it is the responsibility of the responsible Researcher to act. When the responsible Researcher is not present according to the “Australian code of practice for the care and use of animals for scientific purposes” Section 2.2.31:

“In cases of emergency, before an animal is treated or killed, all reasonable steps must be taken to consult with the responsible Researcher and the Chairperson of the AEC. Any such action must be reported in writing to the responsible Researcher and the AEC, including reasons for the action being taken. “

It can be seen from the Sections of the “Australian code of practice for the care and use of animals for scientific purposes” that the Researcher must act responsibly in the care of their animals. The protocols do not make allowances for the size, age or cost of animals, nor does it take into account the length or stage of the experiment. When animals are found to be in pain or distress the action as deemed appropriate by the “Australian code of practice for the care and use of animals for scientific purposes” will be taken. Any costs arising from such action will be passed on to the responsible investigator.

Any student/researcher found to ignore requests; to not monitor their animals appropriately or not promptly alleviate pain or distress in animals will immediately have their users rights revoked.

Thank you, happy researching!

The Aquarium Complex Management