

**QUEENSLAND SCHOOLS ANIMAL ETHICS COMMITTEE
RESPONSE TO APPLICANT**

Name of Animal Ethics Committee:

Queensland Schools Animal Ethics Committee

Application Activity Leader:

Beryl Roberts – EQ Animal Ethics Officer

Name of Registered Legal Entity applying:

Education Queensland

Postal Address:

PO Box 15033 CITY EAST Q 4002

Phone: 07 3235 9966

Fax: 07 3235 4379

Email: beryl.roberts@qed.qld.edu.au

Title of the Application Activity:

Blood Flow in fish tails Years 11-12

Department of Primary Industries & Fisheries Registration No.: 0102

QSAEC Activity Approval No.: 07BF/2006/EQ

Decision on this Activity:

Approved

1. The QSAEC has considered your application and made the following decision:

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Approved as submitted |
| <input type="checkbox"/> | Approved subject to modification during initial assessment |
| <input type="checkbox"/> | Not approved |
| <input type="checkbox"/> | Rejected |

2. The QSAEC has requested modification or further information with respect to the following:

3. Comments:

4. Approval granted for the period:

Term 4, 2006 to Term 4, 2009

5. Approval starting date:

14 November 2006

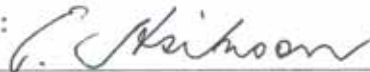
Schools Animal Ethics Committee	Form: AE7
ANIMAL ETHICS COMMITTEE RESPONSE TO APPLICANT	

Please note:

1. **Confidentiality:** The information in this response is confidential and all records pertaining to applications to Animal Ethics Committees are managed in accordance with the requirements of the *Privacy Act 1992*. Disclosure of information to third parties is not carried out without the knowledge of the applicant.
2. **Comply with Conditions:** In commencing this activity the Activity Leader is undertaking to comply with all the conditions set out in this response to applicant and is responsible for ensuring the modifications are met and the additional information requested is supplied to the Committee within 14 days of the date on this response.
3. It is the responsibility of the Activity Leader to ensure:
 - **Labelling:** all enclosures and pens where animals are kept are appropriately labelled. The labels must indicate the start and end dates of the project, name and the phone number of the person to be contacted in case of emergency, and the animal ethics approval number;
 - **Completion form submission:** an animal ethics activity/project completion advice form is submitted within two months of the project finishing;
 - **Amendments:** if changes are required to the initial application, an Amendment Request is forwarded to the chairperson of the relevant ethics committee; and
 - **Provision of Annual Reviews:** new applications on other activities will not be considered unless Annual Reviews and Activity Completion Reports are up to date.
4. **Endorsement:** Approval of your application by the Ethics Committee is not an endorsement of the application by either Department of Primary Industries or the Queensland Government and is not an endorsement of the applicant, its products or its processes generally by the Ethics Committee, Department of Primary Industries or the Queensland Government and no one should assert any such endorsement.
5. **Correspondence:** Any future correspondence in relation to this application must include the name of the project, the application number as provided on this response form and the name of the Activity Leader.
6. **Grievance:** If the applicant feels that the Committee has erred in its rejection of the application, he/she can instigate a grievance procedure. Section 2.2.12 of the Code states that *'Irreconcilable differences between the AEC and an investigator or teacher must be referred to the governing body of the institution for review'*. A process has been developed for assisting AECs and Activity Leaders to reconcile such grievances and details of the process are available from the Schools AEC. The activity must not start unless the grievance process has been carried out and the activity approved by an AEC through the grievance process. The grievance process is final. AECs will not assess applications, which have been rejected by another AEC unless assessed through the recognised grievance process.

Name of Chairperson: MS ELENA ITSIKSEN

Signature of Chairperson:



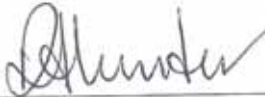
Date: 14 November 2006

**On behalf of
EDUCATION QUEENSLAND**

I, Rachel Hunter, acknowledge that I am the Education Queensland representative who will oversee, in all Education Queensland schools, the conduct of this animal use activity, Blood flow in fish tails, for students in Years 11-12.

In that capacity I agree:

- a) to acquire and maintain a comprehensive understanding of the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes* prepared jointly by the NHMRC, CSIRO and ARMCANZ (the Scientific Use Code) and all Commonwealth and State Legislative and Codes of Practice requirements applicable to this activity.
- b) all work in this activity that involves the use of animals will be carried out in compliance with the Scientific Use Code and all applicable Commonwealth and State Legislative requirements.
- c) no animal will be used in this activity except as described in this application.
- d) to accept, for the duration of this activity, full responsibility for the welfare of all animals used in this activity.
- e) all staff members and students involved in animal use activities are competent to perform the necessary tasks with care and knowledge of their ethical and legal responsibilities.
- f) to put in place systems to ensure all personnel involved in this activity comply with all conditions imposed by the Queensland Schools Animal Ethics Committee.
- g) all other school staff members who will be involved in this activity have read this application form in the version submitted to the Queensland Schools Animal Ethics Committee.

Name: Rachel Hunter
Position: <i>DIRECTOR - GENERAL</i>
Signature: 
Date: <i>13TH DECEMBER 2006</i>

Once this document has approval from the Queensland Schools Animal Ethics Committee, an electronic copy of this complete document will be sent to all Education Queensland schools that undertake or intend to undertake this animal use activity. The declaration on page 5 of this document must be signed by the teacher-in-charge of Science and the School Principal and then faxed or posted to the Education Queensland Animal Ethics Officer. Please refer to Section 1.6., page 5.

On behalf of EDUCATION QUEENSLAND

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Name: Rachel Hunter
Position:
Signature:
Date:

Once this document has approval from the Queensland Schools Animal Ethics Committee, an electronic copy of this complete document will be sent to all Education Queensland schools that undertake or intend to undertake this animal use activity. The declaration on page 5 of this document must be signed by the teacher-in-charge of Science and the School Principal and then faxed or posted to the Education Queensland Animal Ethics Officer. Please refer to Section 1.6., page 5.

SCHOOL: EDUCATION QUEENSLAND
Postal Address: PO Box 15033, City East, Q 4002

**APPLICATION TO USE ANIMALS IN EDUCATION
FOR SCIENTIFIC PURPOSES
(EXTERNAL TO DEPARTMENT OF PRIMARY INDUSTRIES)**

Section 1 Details of the proposed animal use activity

1.1. Activity Title

Blood flow in fish tails

1.2. Objectives of the proposed animal use activity

1.2.1. This activity is proposed for:

Students from Years 11-12 studying Biology

1.2.2. This proposed animal use activity has the following stated outcomes:

To enable students to achieve one of the General Objectives in the *Biology Senior Syllabus - Investigating Biology*, 'Students should be given opportunities to carry out experimental investigations' and to 'develop skills and processes required to collect, organise, interpret, model and present primary data.' (*Biology Senior Syllabus*, 2004, pp.4-5.)

To provide students with suitable learning experiences that allows collecting, analysing and organising information (*Biology Senior Syllabus*, 2004, p.11.)

To provide students with opportunities to participate in Practical Work, integral to Biology and to develop fundamental skills as listed on page 14 of the *Biology Senior Syllabus*, 2004, using specimen material to 'use a microscope to observe specimens'; 'to observe structure and infer function'; 'handle specimens of living material responsibly and ethically'; and to 'record observations of biological specimens, eg. sketch/draw/photograph/video'

1.2.3. Format of the proposed animal use activity:

Activity performed by students with supervision Yes No

Activity performed by students without supervision Yes No

1.2.4. Does the proposed animal use activity offer opportunities for students to discuss the ethical, social and scientific issues involved in the use of animals for scientific purposes?

Yes No

This activity allows for class discussion of a range of ethical and social issues related to animal rights, the principles of reverence for life, stewardship and the use of animals for experimentation.
 Students who do not wish to participate in using animals in this scientific procedure will be provided with alternative tasks that provide them with similar knowledge and do not disadvantage their studies in this topic.

1.3. Status of Application

1.3.1. What is the current status of this application?

New application

1.3.2. What is the total period of approval sought by this application?

Up to 3 years

1.3.3. Has this application been considered by another Animal Ethics Committee (AEC)?

Yes No

1.4. Expected commencement and completion dates of the proposed animal use activity.

Expected Commencement Date	Expected Completion Date
Activity continuous Term 4, 2006	Activity continuous Term 4, 2009

1.5. Details of school/s or college/s seeking approval for the proposed animal use activity.

1.5.1. Name all schools/colleges undertaking this proposed animal use activity.	Education Queensland schools offering Biology for Years 11-12. Refer to Appendix A for contact details for the Education Queensland schools that undertake these Science programs.
1.5.2. Description of school group	Education Queensland
1.5.3. Year Levels	Years 11-12
1.5.4. Area of studies	Biology
1.5.5. DPI&F scientific user registration number.	0102

1.5.6. Is the class teacher/s conducting this proposed animal use activity considered competent with at least two years of practical experience in this observation activity?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.5.7. Anticipated number of Education Queensland schools to be involved in this blood flow in fish tails activity.	100 Education Queensland schools
1.5.8. Anticipated number of Education Queensland students to be involved in this blood flow in fish tails activity.	Approximately 3000 students
1.5.9. Number of times this blood flow in fish tails activity will be performed during the Biology Years 11-12 program?	The option to participate in one blood flow in fish tails observation will be provided to Education Queensland school students as they progress through Years 11 and 12, if this activity is part of the school's Biology program.

1.6. Declaration of authority to perform this proposed animal use activity:

Blood flow in fish tails with students studying Biology in Years 11 and 12.

I, _____, acknowledge that I am the teacher appointed/authorised teacher representative who will conduct this animal use activity at _____.

(School/College name)

In that capacity I agree:

- h) to acquire and maintain a comprehensive understanding of the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes* prepared jointly by the NHMRC, CSIRO and ARMCANZ (the Scientific Use Code) and all Commonwealth and State Legislative and Codes of Practice requirements applicable to this activity.
- i) all work in this activity that involves the use of animals will be carried out in compliance with the Scientific Use Code and all applicable Commonwealth and State Legislative requirements.
- j) no animal will be used in this activity except as described in this application.
- k) to accept, for the duration of this activity, full responsibility for the welfare of all animals used in this activity.
- l) all staff members and students involved in animal use activities are competent to perform the necessary tasks with care and knowledge of their ethical and legal responsibilities.
- m) to put in place systems to ensure all personnel involved in the activity comply with all conditions imposed by the Queensland Schools Animal Ethics Committee.
- n) all other school staff members who will be involved in this activity have read this application form in the version submitted to the Queensland Schools Animal Ethics Committee.

Name:	Name:
Position:	Principal
Signature:	Signature:
Date:	Date:

Fax a signed copy of Section 1.6. (this page) to:

Animal Ethics Officer Fax: (07) 3235 4379

OR post a signed copy of Section 1.6. to the Animal Ethics Officer:

Education House, PO Box 15033, City East Q 4002

When a signed copy of this Declaration is held by the Education Queensland Animal Ethics Officer, your Education Queensland school has permission from Education Queensland to undertake Blood flow in fish tails with Years 11 and 12 students.

Section 2 Mandatory Reporting Elements

<p>2.1. List the scientific purposes to be undertaken with this proposed animal use activity.</p>	<p>Educational outcomes: (See 1.2.2.)</p>
<p>2.2. List the categories of procedure in the proposed animal use activity.</p>	<p><input checked="" type="checkbox"/> Observational studies involving minor interference <input type="checkbox"/> Animal unconscious without recovery <input type="checkbox"/> Minor conscious intervention without anaesthesia <input type="checkbox"/> Minor operative procedures with recovery <input type="checkbox"/> Surgery with recovery <input checked="" type="checkbox"/> Minor physiological challenge <input type="checkbox"/> Major physiological challenge</p>
<p>2.3. Where will the animals in the proposed animal use activity be located?</p>	<p><input checked="" type="checkbox"/> Science laboratory <input type="checkbox"/> School property, including school farms</p>
<p>2.4. During the proposed animal use activity, who will be the contact person?</p>	<p>Name: HOD Science or Science teacher-in-charge Position: HOD Science or Biological Science Teacher, Science Teacher or Scientific Assistant School phone number: Refer to Appendix B. School fax number: Refer to Appendix B. Email address: Refer to Appendix B.</p>
<p>2.5. Who owns the animals during the proposed animal use activity?</p>	<p>The Education Queensland School undertaking this Blood flow in fish tail activity owns and is responsible for the animals.</p>
<p>2.6. What is the source of the animals to be used in this proposed animal use activity?</p>	<p>Fish may be from a school aquarium or purchased from a reputable biological / aquarium fish supplier. The fish are kept live in appropriate aquarium facilities.</p>
<p>2.7. Detail arrangements for the disposal of animals at the completion of this proposed animal use activity.</p>	<p>After the observation activity the fish are returned to the aquarium facilities.</p>

2.8. Description of animals to be used in this proposed animal use activity.	
2.8.1. Species of animal to be used.	Fish (guppies, goldfish, native fish)
2.8.2. Anticipated number of animals to be used in the proposed animal use activity.	Approximately 1000 fish in total for Education Queensland schools.
2.8.3. Indicate the class of animals and how many animals are to be used in this animal use activity.	<p>Pre-natal <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No How many:</p> <p>New born <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No How many:</p> <p>Juvenile/weaner <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No How many:</p> <p>Adults <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No How many: 1000 fish</p> <p>Genetically modified <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No organisms How many</p> <p>Other <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No How many Details:</p>

Section 3 Justification for the use of animals in the proposed animal use activity

3.1. Justify the purpose of your proposed animal use activity.

- To enable students to achieve one of the General Objectives in the Biology Senior Syllabus - Investigating Biology, 'Students should be given opportunities to carry out experimental investigations' and to investigate 'organisation of the anatomy and physiological processes relevant to blood circulation.' (*Biology Senior Syllabus*, 2004, pp.4-5.)

- To provide students with suitable learning experiences that allows collecting, analysing and organising information. (*Biology Senior Syllabus*, 2004, p.11.)

- To provide students with opportunities to participate in Practical Work, integral to Biology and to develop fundamental skills as listed on page 14 of the *Biology Senior Syllabus*, 2004, using specimen material to 'use a microscope to observe specimens'; 'to observe structure and infer function'; 'handle specimens of living material responsibly and ethically'; and to 'record observations of biological specimens, eg. sketch / draw / photograph / video.'

3.2. Replacement considerations for the proposed animal use activity.

3.2.1. Outline the reasons why the use of animals is necessary to achieve the objectives of this proposed animal use activity.

No other currently available alternative can replace the 'hands-on' experience of observing a living specimen to maximise learning experiences for the students involved.

Students will:

- Identify the circulatory vessels in a fish tail.
- Gain an understanding of the movement of blood cells through the capillaries.
- Make connections between the observed capillary blood flow in the fish tail and capillary blood flow in humans.

3.2.2. Have other alternatives to the use of animals for this proposed animal use activity been considered?

Yes No

Alternative activities could include:

- Text book learning
- Class discussion
- Viewing videos
- 3D models
- Internet based multimedia presentations and simulations

3.2.3. Indicate why other alternatives considered are unsuitable for this proposed animal use activity.

While these alternatives broaden the scope of the learning experience and should be incorporated, they do not provide or produce all the required educational outcomes.

In a 'hands-on' observation, students are able to investigate the complexity and organisation of the 'blood circulation' independently in a three dimensional, kinaesthetic mode. (Franklin et al., 2001).

PLEASE NOTE: Students who decide not to undertake studies where real animals are used must be given alternative activities that provide equal learning opportunities. These students are not to be disadvantaged in any way.

3.2.4. Have other alternatives to animal use been used in your school for this activity previously?

Yes

No

Teachers are encouraged to find and use alternatives to using animals in this activity.

3.2.5. What reduction considerations have been incorporated into this proposed animal use activity?

Using a ratio of 1 fish per 3 students provides a compromise between ensuring that the number of animals required is minimised and providing an effective learning experience for each student.

3.2.6. What are the stated number of animals required for this proposed animal use activity?

Approximately 1 fish per 3 students.

3.2.7. Is this proposed animal use activity a repeat of an earlier activity using animals?

Yes

No

3.2.8. Have the animals in this proposed animal use activity been used in a previous scientific or teaching activity?

Yes

No

3.3. What other ethical aspects are to be considered when undertaking this proposed animal use activity?

3.3.1. Alternatives to using animals are to be encouraged whenever and wherever possible.

Yes No

3.3.2. Permits are a requirement?

Yes No

Refer to Appendix A.

3.3.3. Are there any additional features of this proposed animal use activity that require special ethical consideration?

Yes No

The fish will be out of the water for as short a time as possible – for up to 3 minutes and no more than 5 minutes.

PLEASE NOTE: Prior to commencing this activity an efficient and effective timing regime, that all involved can use, is devised for this activity. Students need to be mindful that these fish are out of their natural environment and should be returned to their environment as quickly as possible.

Additional adult supervision should be incorporated with this activity.

If there are fish deaths as a result of this activity, a report needs to be sent to the QSAEC.

3.3.4. Are there any health risks to students, other staff members or other animals due to this proposed animal use activity?

Yes No

Fish purchased from reputable suppliers are reared in conditions which minimise disease transmission. They are supplied to the schools on the understanding that they are disease free.

If using fish taken from a local creek, refer to Appendix A.

The risk of zoonoses is assessed as low. In any case, during the observation, students and staff will wear disposable gloves. At the conclusion of the activity hands must be thoroughly washed using soap.

Section 4 Specific proposed activity details, including refinement considerations using Standard Operating Procedures

Considerations:

This document is a detailed description of what will happen to the animals from the time they are obtained through to the completion of the activity.

Once this Blood flow in fish tails activity is approved as described, teachers **MUST NOT VARY** any aspect of the activity's procedures without approval from the Queensland Schools Animal Ethics Committee.

If any variation to this approved activity's procedure is required, an application detailing the variation is to be submitted to the QSAEC for approval prior to undertaking the activity with variation.

4.1. Checklist:

4.1.1. Ratios minimise animals used are included here:

Student : teacher ratio to be used in this procedure
 30 : 1 or more adults is the preferred minimum.

Student : animal ratio to be used in this procedure.
 3 : 1 is the likely ratio.

PLEASE NOTE: This activity needs to be very well organised and managed so that the fish are not out of their aquatic environment for up to 3 minutes and no more than 5 minutes.

4.1.2. Detailed sequence of activity of events:

Procedure to be used	Full description of procedure	Methods to minimise any distress or pain animals may suffer as a result of this procedure
Obtaining suitable fish.	<input checked="" type="checkbox"/> Fish are purchased from a reputable aquarium supplier. <input checked="" type="checkbox"/> Fish are already available from the school's aquarium/s. <input checked="" type="checkbox"/> Fish are captured from a local creek or pond. Refer to Appendix A.	Fish are kept in well set up and properly maintained school aquariums. Ensure there are systems developed to keep the equipment (such as filtration and aeration systems) functioning if there is a power failure.
Setting up the equipment	Student work areas are set up with microscopes, Petri dishes, cotton wool, stop watch and any other required equipment. Students should be competent at using and focussing the microscope and know the procedures that need to be undertaken prior to removing the fish from the water.	Good management procedures will enable the observation process and the time that the fish are out of water is minimised – up to 3 minutes and no longer than 5 minutes. Fish displaying stress are returned to the aquarium immediately.

<p>Observation of blood flow in fish tails</p>	<p>The fish will be carefully removed from the water and placed on a Petri dish or slide under the lens of the microscope.</p> <p>Cotton wool soaked in water is to be placed around the fish and over the fish's head section so that the fish's tail is exposed to the microscope lens.</p> <p>The fish will be out of the water for as short a time as possible, up to 3 minutes and no more than 5 minutes.</p> <p>Students, supervised by teacher/s, will time the exposure of fish and ensure that the timing is adhered to.</p> <p>Students identify the circulatory vessels in the fish's tail and observe the blood cells' movement through the capillaries.</p>	<p>Catching and removing the fish from the holding tanks should be efficiently done to minimise the stress on the fish.</p> <p>If this process can be displayed onto a screen or recorded by electronic devices, the teaching process will be enhanced. This could also be used as an alternative for students who choose not to use animals.</p>
<p>Fish are returned to the aquarium.</p>	<p>Upon completion of the observation activity all fish are placed into another aquarium. Signage denoting that these fish have been used should avoid confusion.</p>	<p>A fish is only to be used once for this activity.</p>
<p>Fish that die during the process.</p>	<p>If any fish die during this procedure they are not to be returned to the aquarium. Dead fish are to be placed into plastic bags.</p> <p>The plastic bags are sealed and stored in the freezer until the time of disposal.</p> <p>All the plastic-encased animal tissue is placed in the garbage disposal service or medial disposal system used within the schools site.</p>	<p>Fish deaths as a result of this activity must be reported to the QSAEC.</p>

4.2. Details of personnel and institutions involved in the proposed activity with their competence in procedures.

<p>Name of person/s involved in the proposed activity</p>	<p>Person's workplace title eg. Science Teacher, HOD, Science Assistant</p>	<p>Contact Details</p>	<p>Procedure this person is competent in</p>	<p>How many years experience does this person have in performing the procedure?</p>	<p>Relevant University or Technical Qualifications to perform this procedure.</p>
<p>Science teacher Science assistant Contact the schools individually.</p>	<p>Refer to Appendix B for all EQ contact details. Contact the schools individually.</p>	<p>Phone: Refer to Appendix B. Fax: Refer to Appendix B. Email: Refer to Appendix B.</p>	<p>Contact the schools individually for this information. Individual competence is determined by the school.</p>	<p>At least 2 years experience is required.</p>	<p>Contact the schools individually for this information.</p>
<p>Contact details for Education Queensland schools are available through the EQ website. Assistance is also available from the EQ Animal Ethics Officer. Refer to Appendix B.</p>					

4.3. Conditions of housing and handling.

4.3.1. Provide details of the facilities including security measures, where the animals will be kept routinely and where any specific procedures will be carried out.

<p>At home: Not applicable</p>
<p>At school: Kept in the school's aquarium/s.</p>

4.3.2. If your site's management procedures or housing do not meet the relevant Australian Model Codes of Practice for the Welfare of Animals, describe and justify this situation.

Not applicable

4.4. Details of how animals will be monitored.

4.4.1. Provide details of how the animals will be monitored to assess the impact of procedures before and after the proposed activity. Also provide details of how animals will be monitored to ensure the well being of the animal on a day-to-day basis.

Method of monitoring to be used	Frequency of monitoring to be used	Person responsible for monitoring	How many years experience does this person have in monitoring animals?	Is this person competent to recognise sick or injured animals?	Is this person competent to treat sick or injured animals?
Aquarium/s are checked daily and cleaned regularly.	Daily	Science Teachers and Science Laboratory Assistant	Various	Yes	Yes or knows who to contact.

4.4.2. What procedures will be taken if the monitors are unable to treat sick or injured animals?

A procedure is developed to ensure high quality animal care is maintained within the school site. Advice to be sought from experienced staff members or the DPI&F. Veterinary advice sought whenever necessary.

4.4.3. If animals remain on school property over weekends and during holidays, detail here the monitoring program in place to ensure the well-being and security of these animals.

The Science and Agricultural Science sections of EQ schools have a monitoring regime that ensures animals are checked at weekends and during holiday periods or a re-homing procedure is established.

4.5. Withdrawal parameters

Detail the specific parameters to be used to indicate the need for animal withdrawal from the proposed activity.

Procedure	Withdrawal Parameter/s to be used.	Indicate whether treatment or euthanasia will occur for this parameter.
Full records of animals housed, euthanased and disposed of are to be kept and included in the Annual Animal Use Report for your school site.	Any fish displaying disease are taken out of the holding tanks and placed in a separate facility for assessment.	Euthanasia may be used if a fish is deteriorating. Seek veterinary advice if necessary.

4.6. Animal emergency arrangements

Detail the arrangements that are in place to deal with an emergency animal event, both in school hours and outside school hours.

Contact person in the event of an emergency.	Contact details – all hours	What competency and authority does this person hold to treat animal emergency situations, including euthanasia?
Science HOD or teacher-in-charge, science assistant or school principal	Refer to Appendix B.	School principal will authorise relevant staff to respond to emergencies and seek veterinarian assistance when needed.

PLEASE NOTE:

Each school must have in place an emergency management plan which deals with events in school hours and out of school hours. Details of the plan will vary according to the individual school. However all school plans for emergency management must cover at least:

- frequency of monitoring, including weekends and school holidays.
- response plan in the case of animal sickness, escape, death, natural disaster or vandalism.
- list of after hours contact numbers including the Agricultural Science HOD or Teacher-in-charge, or Agricultural assistant, or school Principal and at least one local veterinarian.
- list of person/s competent to euthanase animals if necessary. (This may be the local veterinarian but in many cases will be the Agricultural Science HOD/Teacher-in-charge or assistant).
- staff members must be authorised by the school Principal to use the services of a veterinarian as necessary.

It is also recommended that each school develop a list of community-based animal carers who would be available to assist with transport, feeding and care (particularly after school hours) in the event of an emergency.

Section 5 References and useful resources

Australian Code of Practice for the Care and Use of Animals for Scientific Purposes – 7th Edition, Australian Government National Health and Medical Research Council.

Biology Senior Syllabus, 2004. Queensland Studies Authority, PO Box 307, Spring Hill, Queensland, 4004.

Edith Cowan University. 2003. Care and use of animals: Procedures version 1.0.

<http://www.chs.edu.edu/org/osh/documents/procedures/AnimalWelfare.pdf>

Accessed 17 August 2006.

DPI&F website: www.dpi.qld.gov.au/fishweb/

DPI&F Call Centre: 132523

Australia and New Guinea Fishes Association (ANGAFA): www.angfa.org.au/

Useful teaching resources

Contact DPI&F publications and information sources.

Queensland Fisheries Service Wetlands Education Project: Aquarium Fish module.

DPI&F Note: Native fish as alternatives to the exotic fish, *Gambusia*, for mosquito control.

SDPI&F Notes: Noxious and non-indigenous fish. Commonly asked questions and answers.

www.InterNICHE.org

Check out the Education Queensland website, search Animal Ethics.

Enquiries about Scientific animal use in Queensland Schools to:

Phone: (07) 3235 9966

Fax: (07) 3235 4379

Email: beryl.roberts@ged.qld.gov.au

APPENDIX A

INFORMATION: FRESHWATER FISH

Excellent information on native fish, aquarium fish and pest fish species are available from the Department of Primary Industries & Fisheries.

Australia has 220 species of freshwater fishes, many of which are native to Queensland. They can be found in most natural water bodies, including alpine streams, tropical swamps, subterranean caves and desert artesian springs. Many native fish species are able to live in a variety of habitats and can cope with a range of environmental conditions. Many native fish make great aquarium pets.

(Taken from: 'Native Fish for Aquariums', DPI&F, QI04020 February 2004.)

While their natural hardiness and adaptability makes many native species ideal for life in captivity, most cannot cope well with sharing their natural habitat with feral pest fish (also known as introduced or non-indigenous fish).

Hundreds of exotic fish species have been imported into Australia for aquarium display, aquaculture purposes, as sportfish, for bait and to control nuisance aquatic organisms such as mosquitoes. As a result, the number of accidental and intentional releases of exotic freshwater aquarium fish into natural waterways has increased. Several of these releases have resulted in exotic fish populations becoming established in Queensland waterways.

The aquarium hobby is popular in Queensland cities like Brisbane, Townsville and Cairns. These centres are therefore particularly susceptible to the introduction of exotic fish which have greater local impacts on urban creeks, ponds and streams.

PLEASE NOTE: In Queensland fish are classified as native (indigenous) or exotic (non-indigenous). Some exotic fish have been declared noxious and are illegal to keep.

Non-indigenous fish

The *Fisheries Regulation 1995* lists a number of non-indigenous fish which may be held in aquaria, above-ground ponds or other enclosures that prevent their escape. They cannot be released into the wild. All other introduced fish require a permit. Non-indigenous fish that have established breeding populations in south-east Queensland include: Goldfish (*Carassius auratus*) and Livebearers – swordtail (*Xiphophorus helleri*), platy (*Xiphophorus maculatus*), sailfin molly (*Poecilia latipinna*) and guppy (*Poecilia reticulata*).

Gambusia (see noxious fish), swordtails, sailfin mollies, guppies and platies all belong to a group known as livebearers (Family Poeciliidae) which give birth to live young. These exotic species dominate fish communities in many streams in the Brisbane region, often resulting in either a reduction in native fish numbers or the total elimination of native fish species.

In general, the introduction of one live-bearing species has been shown to have a detrimental effect on small surface dwelling native fish populations. When two or more species of livebearers are present, all surface-breeding native fish species become rare or disappear. For example, where guppies and gambusia are abundant in Brisbane streams, native fish are rare.

PLEASE NOTE: Heavy penalties of up to \$150,000 may apply to people convicted of releasing any non-indigenous fish into Queensland waters.

Noxious fish

Noxious fish are considered to be extreme threats to our aquatic environment and it is illegal to possess them alive or dead.

There are 18 declared noxious fish in Queensland. Noxious fish are not poisonous, but are recognised as being extreme threats to native fish and/or habitats. Included in this list are

tilapia (all species of the genera *Tilapia*, *Oreochromis* and *Sarotherodon*), carp (*Cyprinus carpio*) and gambusia (*Gambusia* spp).

Noxious fish that have established breeding colonies in Queensland include:

Tilapia (*Oreochromis mossambicus* and *Tilapia mariae*)

Carp (*Cyprinus carpio*)

Gambusia or mosquito fish (*Gambusia* spp)

PLEASE NOTE: It is illegal to have a noxious fish, dead or alive, in possession without a permit and heavy penalties apply of up to \$150,000. Noxious fish cannot be kept, hatched, reared or sold. All noxious fish when caught should be humanely destroyed and must not be returned to the water. They must not be used as bait. People guilty of releasing noxious fish may be charged with the costs of eradication and removal of those fish.

(Taken from: 'Ornamental fish can become monumental pests', Queensland Fisheries Service, February 2004.)

PLEASE NOTE: Do not dump your fish in local creek, even if you caught them there. Dispose of them humanely by freezing, or return them to a pet shop.

For more information:

Contact DPI&F publications and information sources.

Queensland Fisheries Service Wetlands Education Project: Aquarium Fish module.

DPI&F Note: Native fish as alternatives to the exotic fish, Gambusia, for mosquito control.

SDPI&F Notes: Noxious and non-indigenous fish. Commonly asked questions and answers.

DPI&F website: www.dpi.qld.gov.au/fishweb/

DPI&F Call Centre: 132523

Australia and New Guinea Fishes Association (ANGAFA): www.angfa.org.au/

APPENDIX B

To obtain a copy of all Education Queensland Schools involved with this activity, contact the Education Queensland Animal Ethics Officer:

Email: Beryl.Roberts@qed.qld.gov.au

Phone: (07) 3235 9966

Fax: (07) 3235 4379

APPENDIX C

QUEENSLAND SCHOOLS ANIMAL ETHICS COMMITTEE Approved Animal Use Activity Completion Report 2007

Once a copy of the 1.6. Declaration of this Blood flow in fish tails Application (p.5) has been faxed to the Education Queensland Animal Ethics Officer, your school has approval from the Queensland Schools Animal Ethics Committee (QSAEC) to undertake:

Blood flow in fish tails with students from Years 11-12 in your school.

As part of the QSAEC Application Approval requirements, **YOUR SCHOOL MUST REPORT EACH YEAR** to the QSAEC once the approved animal use activity has been completed.

Simply fill in this form on completion of the approved Blood flow in fish tails activity and email, fax or post it to:

Animal Ethics Officer
Education House
PO Box 15033, CITY EAST Q 4002
Email: Beryl.Roberts@qed.qld.gov.au
Fax: (07) 3235 4379

When this Report is received by the Animal Ethics Officer it will be presented at the next QSAEC Meeting where it will be signed by the QSAEC Chairperson and filed.

School Name:	
School Postal Address:	P/code
Activity Leader's Name:	
Position in this school:	
Phone:	Fax:
Email:	
Title of this Activity: Blood flow in fish tails – Years 11-12	
DPI&F Registration Number: 0102	
Approved Activity Number: 07BF / 2006 / EQ	
Was Blood flow in fish tails undertaken as part of your school's Science program in 2007?	
YES	NO
With what Year Levels?	

List the purposes of this Approved Blood low in fish tails activity:	
Were the required aims of this activity achieved?	YES NO
If NO, briefly explain.	
Total number of fish used with this activity during 2007 in your school?	
What measures were taken to reduce the number of fish used in this activity?	
Were there any unforeseen or adverse impacts on the welfare and wellbeing of the animals during this activity?	YES NO
If YES, provide details.	
Can the results you have obtained from this Blood flow in fish tails activity help replace animals, reduce the numbers used and / or refine procedures for similar activities?	
YES NO	
List any alternatives to using animals for this activity that you have found and are now using with your students.	
Principal's Name:	
Principal's Signature: Date: / /	
Activity Leader's Name:	
Activity Leader's Signature: Date: / /	
QSAEC Chairperson's Name:	
QSAEC Chairperson's Signature: Date: / /	

Thank you for completing this Report.

APPENDIX D

QUEENSLAND SCHOOLS ANIMAL ETHICS COMMITTEE Approved Animal Use Activity Completion Report 2008

Once a copy of the 1.6. Declaration of this Blood flow in fish tails Application (p.5) has been faxed to the Education Queensland Animal Ethics Officer, your school has approval from the Queensland Schools Animal Ethics Committee (QSAEC) to undertake:

Blood flow in fish tails with students from Years 11-12 in your school.

As part of the QSAEC Application Approval requirements, **YOUR SCHOOL MUST REPORT EACH YEAR** to the QSAEC once the approved animal use activity has been completed.

Simply fill in this form on completion of the approved Blood flow in fish tails activity and email, fax or post it to:

Animal Ethics Officer
Education House
PO Box 15033, CITY EAST Q 4002
Email: Beryl.Roberts@qed.qld.gov.au
Fax: (07) 3235 4379

When this Report is received by the Animal Ethics Officer it will be presented at the next QSAEC Meeting where it will be signed by the QSAEC Chairperson and filed.

School Name:	
School Postal Address:	P/code
Activity Leader's Name:	
Position in this school:	
Phone:	Fax:
Email:	
Title of this Activity: Blood flow in fish tails – Years 11-12	
DPI&F Registration Number: 0102	
Approved Activity Number: 07BF / 2006 / EQ	
Was Blood flow in fish tails undertaken as part of your school's Science program in 2008?	
YES	NO
With what Year Levels?	

List the purposes of this Approved Blood flow in fish tails activity:	
Were the required aims of this activity achieved?	YES NO
If NO, briefly explain.	
Total number of fish used with this activity during 2008 in your school?	
What measures were taken to reduce the number of fish used in this activity?	
Were there any unforeseen or adverse impacts on the welfare and wellbeing of the animals during this activity?	YES NO
If YES, provide details.	
Can the results you have obtained from this Blood flow in fish tails activity help replace animals, reduce the numbers used and / or refine procedures for similar activities?	
YES NO	
List any alternatives to using animals for this activity that you have found and are now using with your students.	
Principal's Name:	
Principal's Signature: Date: / /	
Activity Leader's Name:	
Activity Leader's Signature: Date: / /	
QSAEC Chairperson's Name:	
QSAEC Chairperson's Signature: Date: / /	

Thank you for completing this Report.

APPENDIX E

QUEENSLAND SCHOOLS ANIMAL ETHICS COMMITTEE Approved Animal Use Activity Completion Report 2009

Once a copy of the 1.6. Declaration of this Blood flow in fish tails Application (p.5) has been faxed to the Education Queensland Animal Ethics Officer, your school has approval from the Queensland Schools Animal Ethics Committee (QSAEC) to undertake:

Blood flow in fish tails with students from Years 11-12 in your school.

As part of the QSAEC Application Approval requirements, **YOUR SCHOOL MUST REPORT EACH YEAR** to the QSAEC once the approved animal use activity has been completed.

Simply fill in this form on completion of the approved Blood flow in fish tails activity and email, fax or post it to:

Animal Ethics Officer
Education House
PO Box 15033, CITY EAST Q 4002
Email: Beryl.Roberts@qed.qld.gov.au
Fax: (07) 3235 4379

When this Report is received by the Animal Ethics Officer it will be presented at the next QSAEC Meeting where it will be signed by the QSAEC Chairperson and filed.

School Name:	
School Postal Address:	P/code
Activity Leader's Name:	
Position in this school:	
Phone:	Fax:
Email:	
Title of this Activity: Blood flow in fish tails – Years 11-12	
DPI&F Registration Number: 0102	
Approved Activity Number: 07BF / 2006 / EQ	
Was Blood flow in fish tails undertaken as part of your school's Science program in 2009?	
YES	NO
With what Year Levels?	

List the purposes of this Approved Blood flow in fish tails activity:	
Were the required aims of this activity achieved?	YES NO
If NO, briefly explain.	
Total number of fish used with this activity during 2009 in your school?	
What measures were taken to reduce the number of fish used in this activity?	
Were there any unforeseen or adverse impacts on the welfare and wellbeing of the animals during this activity?	YES NO
If YES, provide details.	
Can the results you have obtained from this Blood flow in fish tails activity help replace animals, reduce the numbers used and / or refine procedures for similar activities?	
YES NO	
List any alternatives to using animals for this activity that you have found and are now using with your students.	
Principal's Name:	
Principal's Signature: Date: / /	
Activity Leader's Name:	
Activity Leader's Signature: Date: / /	
QSAEC Chairperson's Name:	
QSAEC Chairperson's Signature: Date: / /	

Thank you for completing this Report.