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|  | **JCU SINGAPORE IACUC**  **APPLICATION FOR ANIMAL BASED TEACHING** |

***An electronic copy of the application form and proposed animal usage spreadsheet must be emailed to:*** [**iacuc@jcu.edu.au**](mailto:iacuc@jcu.edu.au)

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| *NParks Animal and Veterinary Service (AVS)*  *Registration Number: VR041*  *Registered User: James Cook University Pte Ltd* | IACUC NUMBER  *(Office Use ONLY)* | A |
| IF YOUR PROJECT TAKES PLACE INVOLVES:  LABORATORY OR ANIMAL FACILITY WORK: COMPLETE THE ORANGE SECTIONS  FIELDWORK: PARKS, COASTAL WATERS, CATTLE or SHEEP STATIONS, EXTERNAL AQUACULTURE ETC  COMPLETE THE GREEN SECTIONS  IF IT INVOLVES BOTH TYPES OF WORK, COMPLETE BOTH GREEN AND ORANGE SECTIONS  ALL RELEVANT SECTIONS OF THE APPLICATION MUST BE COMPLETED  INCOMPLETE APPLICATIONS WILL BE RETURNED TO THE APPLICANT | | |

**PART 1 – ADMINISTRATION, COMPLIANCE AND PERSONNEL**

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| **1** | **Title of project** |  |

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| **2** | **Purpose Category**  **What is the purpose of the project?**  NB. Category 4 applies for teaching applications | 4. Achievement of Educational Outcomes |

**3 Personnel**

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| **3** | **Conflict of Interest**  Does anyone involved in this project have any actual or potential interest, including any financial interest or other relationship or affiliation, that may affect judgements and decisions regarding the wellbeing of the animals involved? If so, please provide details. |
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**Principal Investigator /Academic Supervisor**

If the Principal Investigator is a student, complete the information below for their Supervisor in the project and the Supervisor becomes the person with ultimate responsibility for the oversight of the project, and so must sign in place of the Principal Investigator in the declaration.

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| **3** | **Title first and last names** |  | | | | | |
| **Qualifications** |  | | | | | |
| **Phone** |  | | **Mobile** | | |  |
| **Email** |  | | | | | |
| **Discipline, school or organisation** |  | | | | | |
| **What is your relationship to JCU? 1** |  | | | | | |
| **JC Number (if applicable)** |  | | | | | |
| **Does this project contribute to a higher degree by research?**  If ‘Yes’ provide details of your supervisor and have your supervisor sign the declaration below. | | No | | Yes | If ‘Yes’, which degree (PhD, MSc etc) | |
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| **Role**  What will be your role in the project? | | | | | | |
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| **Experience**  Outline your experience in the role/experience/species used or outline how you will be trained and supervised until competent.  NB: All users of animals for scientific purposes e.g., Principal Investigators, Collaborators, Research Fellows, postdoctoral and postgraduate students, as well as Research Technicians, must first attend and pass this “Responsible Care and Use of Laboratory Animals” course before commencing any work on animals. (NACLAR Guidelines)  All JCU Singapore staff/student researchers must also provide evidence of completion of mandatory training as relevant to animal researchers: <https://www.jcu.edu.sg/research/research-ethics-and-integrity-overview> | | | | | | |
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*Indicate if the investigator is currently an* ***E****mployee or a* ***S****tudent of JCU, or a researcher who is* ***N****ot affiliated with JCU. If not affiliate with JCU, provide details of the organisation’s IACUC Animal Research Registration including registration number below under the signatures.*

**Academic Supervisor Details (if applicable)**

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| **3** | **Title first and last names** |  | | |
| **Qualifications** |  | | |
| **Phone** |  | **Mobile** |  |
| **Email** |  | | |
| **Discipline, school or organisation** |  | | |
| **What is your relationship to JCU? 1** |  | | |

**4 Co-investigators**

Copy and paste more tables if required, or delete tables that are not used.

**Co-investigator 1**

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| **3** | **Title first and last names** |  | | | | | |
| **Qualifications** |  | | | | | |
| **Phone** |  | | **Mobile** | | |  |
| **Email** |  | | | | | |
| **Discipline, school or organisation** |  | | | | | |
| **What is your relationship to JCU? 1** |  | | | | | |
| **JC Number (if applicable)** |  | | | | | |
| **Does this project contribute to a higher degree by research?**  If ‘Yes’ provide details of your supervisor and have your supervisor sign the declaration below. | | No | | Yes | If ‘Yes’, which degree (PhD, MSc etc) | |
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| **Role**  What will be your role in the project? | | | | | | |
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| **Experience**  Outline your experience in the role/experience/species used or outline how you will be trained and supervised until competent. | | | | | | |
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**Co-investigator 2**

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| **3** | **Title first and last names** |  | | | | | |
| **Qualifications** |  | | | | | |
| **Phone** |  | | **Mobile** | | |  |
| **Email** |  | | | | | |
| **Discipline, school or organisation** |  | | | | | |
| **What is your relationship to JCU? 1** |  | | | | | |
| **JC Number (if applicable)** |  | | | | | |
| **Does this project contribute to a higher degree by research?**  If ‘Yes’ provide details of your supervisor and have your supervisor sign the declaration below. | | No | | Yes | If ‘Yes’, which degree (PhD, MSc etc) | |
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| **Role**  What will be your role in the project? | | | | | | |
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| **Experience**  Outline your experience in the role/experience/species used or outline how you will be trained and supervised until competent. | | | | | | |
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**Co-investigator 3**

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| **3** | **Title first and last names** |  | | | | | |
| **Qualifications** |  | | | | | |
| **Phone** |  | | **Mobile** | | |  |
| **Email** |  | | | | | |
| **Discipline, school or organisation** |  | | | | | |
| **What is your relationship to JCU? 1** |  | | | | | |
| **JC Number (if applicable)** |  | | | | | |
| **Does this project contribute to a higher degree by research?**  If ‘Yes’ provide details of your supervisor and have your supervisor sign the declaration below. | | No | | Yes | If ‘Yes’, which degree (PhD, MSc etc) | |
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| **Role**  What will be your role in the project? | | | | | | |
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| **Experience**  Outline your experience in the role/experience/species used or outline how you will be trained and supervised until competent. | | | | | | |
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| **4** | **SOP List**  If any SOPs have been referred to in this application, please list these SOPs below (the reference number is adequate) | |
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| **5** | **Duration of project** | 1 year | 2 years | 3 years |

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| **6a** | **Has this project been submitted to any other animal ethics committee?** | No | Yes |
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| **6b** | **If ‘Yes’, which IACUC was it submitted to and what was the outcome of the submission?** |
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| **7a** | **Approvals, permits and biosafety – Does this project involve:** | Yes |
| Work in a national park? |  |
| Wildlife? |  |
| Endangered or threatened species or populations? |  |
| Any genetically modified animals or vectors? (including knock-out or knock-in animals, transgenic animals, cloned animals or GM bacterial, fungal or viral vectors) |  |
| Release of any genetically modified organisms into the environment? |  |
| Any infectious agents? |  |
| International work? |  |

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| **7b** | **If ‘Yes’ to any of the above, indicate whether any additional licenses, permits or approvals are being applied for** (e.g., OGTR, Biosafety Committee, NParks, etc.) |
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| **8** | **Collaborating Organisation(s)**  Provide the names of any organisations collaborating in the project (if applicable) |
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**PART 2 – JUSTIFICATION**

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| **9** | **Project Outline:**  Give a brief overview of the teaching activity, including the students/learners that it is aimed for. |
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| **10** | **Potential Benefits:**  Outlines how undertaking this activity will benefit the students/learners e.g., help them achieve a credit, degree, professional development (as appropriate) |
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| **11** | **Justification for the use of animals:**  Provide the learning objectives for the activity |
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| **12** | **Replacement:**  Please explain why you need these animals for these activities. Are there any alternatives available? Why are these alternatives unsuitable? |
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**PART 3 – ANIMAL HOUSING, CARE AND HUSBANDRY**

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| **13** | Provide details of every location where living animals will be held or where animal procedures will take place. | |
| Laboratory/Facility Work | | |
| Singapore [\*Licenced Facility – for any variation from specific site, indicate Other] | | |
|  | \*Aquaculture Research and Teaching Facility (JCUS campus), Block E1-09 |  |
|  | \*Aquaculture Research and Teaching Facility (MAC, St John’s Island), Block 8 #02-01 |  |
|  | Other (please specify and provide location) |  |

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| **Name/approx. location**  Provide the name or general location of the site eg Gaslight Station, Rogers National Park, Ashmore Reef etc | **Type of site**  Choose an option from the list that best fits the site (if more than one is | **Specific address or location**  Provide details of the specific location or range eg GPS coordinates, street address, national park | **Country**  If not in Singapore, what country is the site in? |
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| **Laboratory / Facility Work** | |
| **14** | **Source, transport and arrival (Commercially available species):**  If the animals are sourced from a breeder or supplier:  What is the source of the animals (source, suppliers, JCU herds or breeding colonies, private owners)?  How will the animals be transported to the facility/location where they will be housed?  Describe how the animals will be acclimatised to the new housing before the activity begin – including period and any handling undertaken |
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| **Fieldwork** | |
| **14** | **Source and transport (Field work):**  If the animals are sourced from the wild:  Outline where the animals will be captured/sourced and details of their transport (if applicable), and how they will be introduced into their new environment (if applicable) |
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| **15** | **Housing/Holding:**  Describe the type of caging/holding systems to be used for the animals including dimensions, number of animals per unit, bedding, environmental enrichment and environmental conditions.  If the project uses multiple types of housing for different parts of the project, describe each type including the reason for, and duration of holding in each.  If animals are to be housed individually, provide a reason for this and outline measures to be taken to prevent any stress associated with this social isolation.  **OR**  Provide or refer to an SOP containing the above details (provide a link or SOP reference below) |
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| **16** | **Husbandry, care and feeding:**  Describe the husbandry and care of the animals including frequency of cleaning, type of food/water and frequency of feeding/watering, grooming and other aspects that contribute to the wellbeing of the animals.  Describe how the entry of disease will be prevented e.g., infection control or quarantine.  **OR**  Provide or refer to an SOP containing the above details (provide a link or SOP reference below) |
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**Part 4 – METHODS AND EXPERIMENTAL DESIGN**

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| **Animal Details** | |
| **17** | **Justification of choice of animal**  What is the reason for choosing the species/strain/breed of animal(s) used in this project? |
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| **18** | **Welfare issues presented by choice of animal**  Does the animal you plan to use have any underlying animal welfare issues requiring special consideration? If so describe these and outline how their wellbeing will be provided for. |
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| **Course/class design** | |
| **19** | **Describe how the class/course will be run including the approximate number of each of the following:**   1. **Students per session** 2. **Teaching/technical assistants/supervisors or tutors present** 3. **Instructors** 4. **Animals per session** 5. **Times any animal is used per session** 6. **Sessions per year** |
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| **20** | **What has been done to ensure that only the minimum number of animals are being used for this activity?** |
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| **22** | **Animal Numbers – Proposed Animal Use Spreadsheet Must be Attached**  **NB Please provide the total number of animals required over the whole project**  **(not per year or per site)**  A proposed animal use spreadsheet must be completed and attached to the application. The spreadsheet can be found under Animal Ethics Forms on the Animal Welfare and Ethics @JCU webpage. <https://www.jcu.edu.sg/research/animal-welfare-and-ethics-@-jcu>. |
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| **Methods** | |
| **22** | **Provide details of each teaching activity that involves animals and including a step-by-step description (in lay language) of what will happen to the animals in each of the teaching activities**  Include in this description the following:  Details of any restraint, handling, procedures, samples taken and methods of sample collection, measurements made, anaesthesia, time periods for each part of the project, dose and route of any pharmaceuticals and any potential side effects of these.  For field work, include methods of trapping, catching, observation methods, animal handling, number of traps used per session etc |
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| **Fieldwork** | |
| **23** | **Is there a chance that any of the following may occur in the field where it may not be possible to apply for an amendment?**   1. **Taking of voucher specimens** 2. **Collection or use of species not contained in this application** 3. **Use of methods not outlined in this application**   See the JCUA AEC Opportunistic Sampling, Vouchering and Amendments to Projects in the Field Policy |
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| **Refinement** | |
| **24** | Identify and describe each step or procedure in this proposal that may compromise an animal’s wellbeing. State how any potential adverse effects will be avoided or minimised, pain and distress will be avoided and the wellbeing of animals will be maintained.  Details could include treatment with substances, including antibiotics, anaesthetics and analgesics as well as their dose and each route of administration. Provide a brief description of measures taken to prevent any adverse effects the teaching activities may have on the animals involved. |
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| **Animal Monitoring** | |
| **25** | **How will animal wellbeing be monitored at each stage of the project including: post-arrival, during the classes, before the animals are returned to normal husbandry (if applicable)?**  Include the frequency of monitoring, what criteria will be monitored to determine the wellbeing of the animal and whether they are experiencing pain or distress, which aspects of the monitoring will be done by the teachers/trainers and which will be done by animal technicians. |
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| **Please provide examples of the animal monitoring records or checklists when submitting this application.** |

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| **Endpoints and Contingency Planning** | |
| **Laboratory or Facility Work** | |
| **26** | **What criteria will be used to determine the animal use in the teaching activity will end in the following situations?**   1. **Expected end of the animal’s use in the teaching activity** 2. **Humane endpoints (an unexpected end of the animal’s use in the teaching activity, determined when the animal’s involvement must end for animal welfare reasons)** |
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| **Fieldwork** | |
| **26** | **If any animals are injured in the field during the activity, what plans are in place for their treatment or euthanasia it is required?**  E.g., Is there a local veterinarian that can receive the animals |
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| **Fate of animals/method of humane killing** | |
| **27a** | **What will happen to the animals at the end of their time on the teaching activity?**  e.g., returned to its normal husbandry, such as back to the herd/group or to its owner, released into the wild, maintained as a display, euthanised, etc. |
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| **27b** | **Have any of the animals been used previously and/or will any of the animals be reused in other teaching activities in the future?**  If so provide details of their previous and potential future use  Outline how you will ensure the animals have recovered sufficiently in between use |
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| **27c** | **If any animals are to be rehomed/rehoused (returned to normal husbandry conditions) or released following the project, what steps will be taken to ensure the animals ongoing wellbeing?**  See the JCUA AEC’s Rehoming, Sale, Release and Reuse Policy  e.g., ensure the new owners have the appropriate licenses/permits to keep, discuss homing with new owners etc |
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| **27d** | **If animals are to be euthanised as part of the project or because they are seriously injured, how will this be done, where will it take place and who will carry this out?**  Include details of the agent used, concentrations, dose, route of administration  (Refer to the Policy and Guidelines for the Humane Killing of animals use for scientific purposes for acceptable methods) OR  Provide or refer to an SOP containing the above details (provide a link or SOP reference below)  *NB. Non-pharmaceutical grade chemicals should be described, justified, and approved by IACUC.* |
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| **27e** | **Could animal tissues or carcases be shared with or provided to other investigators to replace the use of living animals in their work?** (Replacement/reduction) E.g., samples taken as a part of the teaching activity provided to other researchers, or used in laboratory practicals |
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**PART 5 – DECLARATIONS**

**28 Principal Investigator/Academic Supervisor Declaration:**

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| I declare that:   1. I will provide adequate project supervision, ensure animal health and wellbeing and oversee the conduct of all staff participating in the project such that I will take overall responsibility for all aspects of the conduct of the project. 2. Adequate resources are available for the conduct of the project. 3. I have read the most recent Singapore Guidelines on the Care and Use of Animals for Scientific Purposes. I am aware of and agree to meet the responsibilities set out in these documents. 4. All staff involved in this project have been read this application and appropriate legislation and Guidelines and agreed to meet their responsibilities and directions from the IACUC. 5. I will ensure that the scope of monitoring the wellbeing of the animals at all stages of their care and use in the project is clearly outlined and communicated to all parties. 6. I undertake to inform IACUC of any changes to the proposed procedures or details given in this form subsequent to its submission (including change of contact details) by submitting an Amendment Application. 7. I agree to submit the mandatory IACUC Report that is due annually and provide a final report upon completion of the project. 8. This project complies with the policy on Animal Research Ethics within James Cook University. 9. The purpose of this project cannot be achieved by alternatives to the use of animals. | | |
| Name - Principal Investigator OR student’s supervisor) | Signature | Date |
| Name – Academic Supervisor (if PI is a student) | Signature | Date |
| If the Principal Investigator/Supervisor named above is not affiliated with JCU, provide the IACUC Registration number: | |  |

**APPENDIX 1 - DETAILS OF ANIMALS TO BE USED:**

**Please read the list below to determine the category and purpose of use for the animals in your project.**

**Purpose Category**

**Scientific Purposes for which the Animals will be Used:** Pick ONE category that BEST describes the main purpose of your project and use the dropdown box in **Question 4** to choose the appropriate category. Use the brief guide and the examples given to help categorise the procedure.

**YOU DO NOT NEED TO HIGHLIGHT CATEGORIES HERE**

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| **Cat.** | **Description** | **Examples** |
| **1** | **The Understanding of Human or Animal Biology**  Using animals for activities that aim to increase the basic understanding of the structure, function and behaviour of animals and humans, and processes involved in physiology, biochemistry and pathology | Molecular biology studies, studies of hormone levels for reproductive physiology |
| **2** | **The Maintenance and Improvement of Human or Animal Health and Welfare**  Activities that aim to produce improvements in the health and welfare of animals, including humans. | Animals used to develop a new diagnostic test for a disease; Development of a painless method of spaying cattle; Developing a new vaccine for animals or humans; Production of biological products such as anti-sera, hormones and antibodies |
| **3** | **The Improvement of Animal Management or Production**  Activities that aim to produce improvements in domestic or captive animal management or production. | Developing an improved molasses/urea based supplement for cattle; Determining optimum stocking rate for a pasture; Evaluation of a calcium supplement for layer hens |
| **4** | **The Achievement of Educational Objectives**  Activities carried out for the achievement of educational objectives. The purpose of the activity is not to acquire new knowledge, rather to pass on established knowledge to others. This would include interactive or demonstration classes in methods of animal husbandry, management, examination and treatment. | Animals used by veterinary schools to teach examination procedures such as pregnancy diagnosis or artificial insemination; Sheep used in shearing demonstration classes for students; Dogs used to teach animal care to TAFE students; Rats and toads used in schools for dissection classes; Animals used in agricultural colleges or schools to teach routine husbandry procedures |
| **5** | **Environmental Study**  Activities that aim to increase the understanding of the animal’s environment or its role in it, or aim to manage wild or feral populations. These will include studies to determine population levels and diversity and may involve techniques such as collection of voucher specimens, radio tracking or capture and release. | Fauna surveys for environmental impact studies; Research into methods to control feral animals |

**APPENDIX 2 - DETAILS OF ANIMALS TO BE USED:**

**Please read the list below to determine the category of the procedure(s) of use for the animals in your project. These imply the degree of impact the project will have on any group of animals.**

**Category of Procedure**: The procedure categories are intended to give some indication of the impact the procedure will have on the animals or a group of animals. Place the categories in the appropriate column in the Animal Use Spreadsheet (Question 22). Use the brief guide and the examples given to help categorise the procedure.

**YOU DO NOT NEED TO HIGHLIGHT CATEGORIES HERE**

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| **Cat.** | **Description** | **Examples** |
| **1** | **Observational studies involving minor interference**  Animals are not interacted with or, where there is interaction, it would not be expected to compromise the animal’s welfare any more than normal handling feeding etc. There is no pain or suffering involved | Observational study only such as photographing whales at close quarters; Breeding or reproductive study with no detriment to the animal; Behavioural study with minor environmental manipulation |
| **2** | **Animal unconscious without recovery** Animal is rendered unconscious under controlled circumstances (i.e. not in a field situation) with as little pain or distress as possible. Capture methods are not required. Any pain is minor and brief and does not require analgesia. Procedures are carried out on the unconscious animal that is then killed without regaining consciousness | No experimentation on living animals e.g., animals killed painlessly for dissection, biochemical analysis, in vitro cell culture, tissue or organ studies; Teaching surgical techniques on live, anaesthetised animals which are not allowed to recover following the procedure |
| **3** | **Minor conscious intervention without anaesthesia** Animal is subjected to minor procedures that would normally not require anaesthesia or analgesia. Any pain is minor and analgesia usually unnecessary, although some distress may occur as a result of trapping or handling | Injections, blood sampling in conscious animals;  Minor dietary or environmental deprivation or manipulation, such as feeding nutrient-deficient diets for short periods; Trapping and release as used in species impact studies; Trapping and humane euthanasia for collection of specimens |
| **4** | **Minor operative procedures with recovery** Animal may be rendered unconscious with as little pain or distress as possible. A minor procedure such as cannulation or skin biopsy is carried out and the animal allowed to recover. Depending on the procedure, pain may be minor or moderate and post-operative analgesia may be appropriate. Field capture using chemical restraint methods is also included here | Biopsies  Cannulations  Sedation/anaesthesia for relocation, examination or injections/blood sampling |
| **5** | **Surgery with recovery** Animal may be rendered unconscious with as little pain or distress as possible. A major procedure such as abdominal or orthopaedic surgery is carried out and the animal allowed to recover. Postoperative pain is usually considerable and at a level requiring analgesia. | Orthopaedic surgery  Abdominal or thoracic surgery |
| **6** | **Minor physiological challenge** Animal remains conscious for some or all of the procedure. There is interference with the animal’s physiological or psychological processes. The challenge may cause only a small degree of pain/distress or any pain/distress is quickly and effectively alleviated. | Minor infection, minor or moderate phenotypic modification, early oncogenesis  Polyclonal antibody production  Antiserum production |
| **7** | **Major physiological challenge** Animal remains conscious for some or all of the procedure. There is interference with the animal’s physiological or psychological processes. The challenge causes a moderate or large degree of pain/distress that is not quickly or effectively alleviated. | Major infection, major phenotypic modification, oncogenesis with pain alleviation  Isolation or environmental deprivation for extended periods  Monoclonal antibody raising in mice |
| **8** | **IACUC Approved ONLY– LD 50; Death as an endpoint** **Death as an end point does not include: death by natural causes; animals which are euthanised on completion of the project; animals which are killed if something goes wrong; animals killed for dissection or for use as museum voucher specimens; or accidental deaths.** | Lethality testing (LD50, LC50)  Toxicity testing with death as a planned end point without euthanasia. |