

## Biology 3R's Examples

- This document will assist with answering the 3R's question (Replacement, Reduction & Refinement) in the Biology Animal Ethics Application Form.

Topic	What the Applicant Says	What the AEC Might Prefer to See
Ethical aspects of work	There is no alternative to using animals	As above, Wrong answer and could never be the right answer to this question. This should actually be a pretty easy question to answer in this context, because so much of the wildlife research done is aimed at helping to conserve the species or their habitat. So making sure the impact of your work is minimised makes ethical justification simpler. However, it is essential that you consider the potential impacts of methods you will be using from the animal's perspective. Whether it is the stress of confinement or restriction of feeding opportunity, describe them from the animal's perspective and consider how you will minimise the effects.
Replacement	There is no alternative to using animals	This is probably true but think about how you are using those animals. Do you really need to trap / capture / restrain the animals or can your aims be achieved by observation? Can you use camera traps, collect scats, use fur / hair / feather sampling traps as an alternative to capturing animals?
Reduction	We don't know how many we will catch	OK, this is an honest answer but not really one that aligns well with the operating practices of many / most AECs. Is there some 'middle ground' position that works for both the AEC and the applicant? For example, is there a target number of animals that might or are anticipated to be used? Whatever measure might be agreeable (even a ludicrous guess), the critical aspect here is to ensure that annual reports have accurate numbers listed so the AEC knows what is going on and the researchers can get some reasonable idea of animal species and numbers in the area for future applications.
	These are only by-catch so we don't know what we might catch or how many.	Again, an honest answer but the dismissive attitude does not leave a great impression about your compassion for animals. I think most people would concede that by-catch is by its very nature, more difficult to predict. So irrespective of whether the animals concerned are fish or native terrestrial animals again, either a predictive list of potential animals and possible numbers or an undertaking to accurately report by-catch in the annual reports would be preferable.
	These are an endangered species, so the more we catch, the better.	While the AEC would share your excitement about greater than expected numbers of endangered animals being caught, it is the kind of scenario that makes them nervous in case anything goes wrong and the animals are put at risk. Is it possible to work with a related (and not endangered) species or to use camera traps / fur traps or other non-capture techniques?

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	We are unsure of total numbers as we need to trap at particular times of the year.	AEC members are generally very receptive to the need to undertake seasonal trapping work when it is explained well. However, they may still get nervous about the idea of issuing a 'blank cheque' approval. Can you indicate a desirable number of animals to trap each trip / season to get statistically valid data? Or could there be a compromise like agreeing to trap over the course of a week (or appropriate timeframe), or until x animals are caught in each area?
Refinement	We have been doing this for 20 years so we are the experts...	Again, a lot has changed during that timeframe. Are you still using the same equipment in the same way or have you adapted techniques over the years? If not, why not?
	Traps will be closed when not in use.	How will you be ensuring all permanent or semi-permanent traps like pit fall traps are secured between trapping trips? Will they be checked at regular intervals to make sure they have not been interfered with by either animals or humans in a way that might leave them open again without being checked properly.
	Traps will be checked regularly	This is good, but more information would be better. For example, when and how often will they be checked? How many traps will need to be checked and how many people will be doing the job, leading to a genuine indication of how long the process will take?
	Nets will be checked regularly	As both birds and bats can get tangled in mist nets and alike very quickly and risk injury, most AEC members prefer to hear that nets will be monitored constantly and get some indication of how long it will take researchers to get from the observation point to the net. It is also good to know how many staff will be on site relative to the number of nets deployed. Similar issues may be faced by those using nets in aquatic environments.
	Trapping will be suspended during adverse weather conditions	Excellent, but please define 'adverse weather conditions' more specifically. For example, what maximum / minimum temperatures would trigger suspension of activities? Are traps set under shade (either natural or artificial that might protect from frost or direct sunlight / heat? Would forecast rain / heavy rain be a trigger for suspension? Do you have some kind of floatation device in pitfall traps that might prevent drowning of trapped animals?

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	Animals will be released at the site where captured.	This is excellent, but will they be released immediately or will they be held for any period of time? Will they be released in a time appropriate manner – ie. Will nocturnal animals be released before daylight or held and then released after dark?
	Animals will be marked for long – term identification	How will this be done? Care must be taken to ensure that normal camouflage is not compromised as this can impact on predation / survival. Techniques such as toe clipping always raise a bit of concern and need special justification. Noting of course that such techniques are not appropriate / acceptable with arboreal species for example. Can natural markings be used to identify individuals? Can they have electronic chips safely implanted? What other options might be possible and why or why not use them?