Canadian Council on Animal Care
Conseil canadien de protection des animaux

Good Animal Practice in Science
Bonnes pratiques animales en science

Canadian Council on Animal Care

Interpretation Bulletin no.1-1

Animal Use Data Form

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For CCAC constituents located in Ontario, please also read Appendix F regarding the production of animal use data for the CCAC and the Ontario Ministry of Agriculture, Food, and Rural Affairs.

A. PREAMBLE

The Canadian Council on Animal Care (CCAC) is responsible for overseeing animal use in research, teaching and testing. In addition to its guidelines and policies, which participants in the CCAC Program must follow, the CCAC also provides information on a variety of topics related to animal care and use, in a variety of formats to assist its constituents and other interested parties.

One of the formats in which information is provided is the new CCAC Interpretation Bulletin. The interpretation bulletin has been created to provide detailed information and assistance for a specific CCAC policy or guideline, or part thereof. It is intended to provide supplementary explanations and resources, not to be a mandatory policy or guideline itself.

The *CCAC interpretation bulletin on: the animal use data form* is the first of a series of such bulletins, which will be revised from time to time. This document is therefore bulletin no.1- 1, i.e. number 1 (version 1) of the interpretation bulletins. It has been produced by the CCAC Assessment Committee to provide information and assistance to CCAC constituents in filling out the *CCAC Animal Use Data Form* (AUDF), which is one of the requirements outlined in the *CCAC policy statement on: terms of reference for animal care committees*.

The CCAC has been publishing national surveys of animal use in science since 1975. This is one of the primary ways in which the CCAC is accountable to the Canadian public - by reporting on the purpose of animal use and numbers of animals used by species. Since 1996, CCAC has collected annual animal use data in the format of the CCAC AUDF, both for the purpose of publishing the annual *CCAC Survey of Animal Use* and for the purpose of pre-assessment documentation prior to a CCAC assessment visit. The AUDF allows the CCAC to publish aggregate information on animal use in science without identifying individual institutions or animal users. It provides not only the numbers of animals used per species, but also the purpose of animal use and the degree of invasiveness of the procedures used on the animals.

Animal use data is important not only for the accountability of the CCAC to the Canadian public, but also to better understand the nature of animal use in Canada. Analysis of the data provides very valuable information that can then be used to help develop better tools for animal care and use and the oversight thereof, at the practical, day-to-day level as well as at the level of guideline and policy development. This type of analysis can be conducted on an international, as well as a national level, and can assist in the harmonization of guidelines and policies on animal care and use from around the world.

This interpretation bulletin describes and explains each element that has to be completed on the AUDF. It provides answers to some commonly asked questions and gives examples on how to submit animal use data.

B. INTRODUCTION

The *CCAC Animal Use Data Form* is available on the CCAC Website at http://www.ccac.ca/en/CCAC_Programs/Assessment/AUDFen.htm (WordPerfect Version and MS Word Version). The *CCAC Surveys of Animal Use* from previous years are also available on the Website, and can be found in the CCAC's newsletter, *RESOURCE*.

Participants in the CCAC Program are required to submit all of their animal use data for a calendar year by March 31st of the following year as stated in Section 5c of the *CCAC policy statement on: terms of reference for animal care committees*.

In cases where two or more institutions are involved in an animal-based project, it is the responsibility of the animal care committee (ACC) of the home institution of the principal investigator to report the number of animals used. This should be clarified with all of the partners when the project begins.

C. TYPES OF ANIMALS TO BE INCLUDED OR NOT ON THE AUDF

Protocols

All vertebrates and cephalopods used for research, teaching or testing, or for display purposes or eventual use in research, teaching or testing must be the subject of a written animal use protocol to be approved by the institutional ACC. However, not all animals need to be included on the AUDF. Please refer to the following lists which indicate which animals should be, and which should not be reported to the CCAC.

Animals to be Included on the AUDF

- all vertebrates (including fish) used for research, teaching or testing;
- cephalopods (octopus and squid) used for research, teaching or testing;
- animals held, even for a short period, if assigned to a protocol (see exceptions below);
- mammals which are tagged in studies that involve some sort of restraint and the taking of measurements or tissue samples;
- fish that are fitted with transmitters;
- animals involved in lethal field sampling for research, teaching or non-routine testing purposes (not including lethal field sampling for population management and monitoring programs); and
- animals that are used outside of Canada by Canadian scientists, who have submitted an animal use protocol form for these animals to their institutional animal care committee.

Animals NOT to be Included on the AUDF

- all animals assigned to category of invasiveness A (see Appendix B);
- all invertebrates other than cephalopods;
- all dead animals that were not killed specifically for a protocol;
- eggs, embryos, larvae (except for fish larvae that have reached a stage where survival can reasonably be expected);
- animals observed (no manipulation or interference of any kind) in field studies;
- animals held in breeding colonies under a breeding protocol and which have not been assigned to a particular research, teaching or testing protocol;
- animals cared for through routine husbandry (except for teaching purposes) under a herd management protocol;
- privately owned animals should not be reported on the AUDF if the primary reason for seeing them is for medical reasons, and not for training opportunities for students. For example, client animals brought into a Veterinary College or an external veterinary clinic are primarily there for veterinary care, and even though students sometimes use these animals as part of their educational training - these animals should not be reported on the AUDF. However, some colleges with a Veterinary Technician program have clinics that are used exclusively as teaching clinics. Animals seen in a teaching clinic, although provided with veterinary care, are primarily used to train students in the Veterinary Technician program. Therefore, these animals should be reported on the AUDF;
- animals which have already been killed as the result of standard commercial practices;
- hatchery fish reared for release, unless specifically used in experiments or displays;
- fish involved in mark/recapture studies for abundance estimates, migration, and other parameters required for assessing stocks;

- fish counted at installations such as counting fences and traps;
- fish which are lethally sampled (such as trawling, gill netting, etc.) for fish inspection procedures, abundance estimates, and other population parameters required for assessing stocks and for monitoring contaminant/toxin levels and disease;
- sentinel animals;
- animals used as source of food for other animals; and
- teasers (teaser bitch for collecting semen).

D. ELEMENTS REQUIRED

Eight fields must be completed on the AUDF (an example of a blank form is shown in Appendix A):

1) Name of the Investigator(s)/teacher(s)
2) Protocol Number
3) Category of Invasiveness (CI)
4) Protocol Description
5) Purpose of Animal Use (PAU)
6) Species
7) Number of Animals Approved (AA)
8) Number of Animals Used (AU/Yr)

1) Name of Investigator(s)/Teacher(s)

This should be the name of the principal scientist or teacher responsible for the protocol (i.e. head of the project). Please note that all information submitted to the CCAC for AUDF or assessment purposes is treated **confidentially** according to the *CCAC policy statement on: confidentiality of assessment information* (1999), and that information associating types of animal use with specific institutions or investigators is **never** released, unless the CCAC has been given explicit permission to do so. The names of scientists/teachers are never released and individual animal use projects are never discussed without specific permission.

2) Protocol Number

Institutions usually attribute a number to each protocol for ease of reference and follow-up of activities. It is important for pre-assessment purposes since panel members visiting the institution might wish to review a particular protocol or it might be necessary to identify a protocol for comments in the assessment report.

3) Category of Invasiveness (CI)

Categories of invasiveness (CI) are to be assigned according to the *CCAC policy statement on: categories of invasiveness in animal experiments* (1991) (see Appendix B). A protocol must be assigned a CI (A to E) before it is approved by the institutional ACC, as stated in Section 3c of the *CCAC policy statement on: terms of reference for animal care committees*. CCAC CIs are based on a **precautionary** approach and animals are assigned a CI according to the **potential** level of pain and distress that they **might** feel.

Protocols assigned a level A of invasiveness are not included in the *CCAC Survey of Animal Use*. CI A is assigned where protocols involve the use of tissue, tissue culture, eggs, invertebrates, protozoa or other animal use where neither vertebrates nor higher invertebrates are held captive or affected. However, if protocols involve the use of tissue from animals that have been euthanized specifically to collect these tissues, then a level B of invasiveness should be assigned and the number of animals euthanized must be reported on the AUDF.

The following **examples** (commonly asked questions) show the level of invasiveness to be assigned for a procedure:

- Procedures that involve **removing an appropriate amount of tissue from the tip of the tail** of an animal to identify its genotype should be assigned a level B of invasiveness;
- Protocols involving **oral gavage** (tube feeding) should be assigned a level C of invasiveness;
- Protocols involving the creation of a **transgenic animal** should be assigned a level D of invasiveness as stated in Section 1b of the CCAC guidelines on: transgenic animals (1997). Once the transgenic animal is created, the CI assigned depends on the resulting phenotype and on the nature of procedures to be conducted on the animal;
- Protocols involving **electrofishing** should be assigned a level D of invasiveness. CCAC encourages institutions to use alternatives to electroshocking.

4) Protocol Description

The protocol description should be brief (about 40 words or less). It must convey, in simple terms, the nature of the procedures conducted on the animals. The use of the procedural keywords given in Appendix C is encouraged.

5) Purpose of Animal Use (PAU)

The CCAC Purposes of Animal Use (PAU) are divided into six specific categories:

- breeding colonies (PAU 0)*
- fundamental studies (PAU 1)
- medical studies, including veterinary medicine (PAU 2)
- regulatory testing (PAU 3)
- development of products (PAU 4)
- educational purposes (PAU 5)

A more complete description of PAUs is given in Appendix D with examples for each purpose.

The following **examples** are commonly asked questions on the purpose of animal use:

- If a project is conducted both for research and teaching purposes, what PAU should be used?

  It is sometimes the case in an academic institution that professors conduct research studies and then invite their students to witness or conduct some procedures on the animals as part of their academic training. However, the primary objective of the study remains research. Accordingly, this should be the only PAU indicated on the AUDF.

- If the purpose of a project is to conduct non-regulatory testing, in which purpose of animal use should the protocol be categorized?

  Non-regulatory testing projects should not be categorized as regulatory testing (PAU 3), but should be categorized according to the nature of the procedures conducted on the animals. For example, if the purpose of a project is to test a new technology (e.g., dispenser of pills for cows) or to test a new anti-inflammatory candidate at an early stage, then the protocols should be categorized as a PAU 4 (development of products) and PAU 2 (medical studies), respectively.

6) Species

All animal species must be clearly identified using their common name. General categories, such as "avian", "small mammals", "various amphibians", "wild rodents", "poultry", or "farm animals", must **not** be used to identify species. Having institutions identify animal species instead of placing them in categories serves many purposes: 1) it helps the CCAC refine its species categories, adding some when an animal species becomes more prominent and deleting some when a species is no longer used; 2) it enables the CCAC to search its database to identify trends in animal use; and 3) it helps the CCAC Guidelines Committee identify species on which to focus for the development of new guidelines (e.g., *CCAC guidelines on: the care and use of fish in research, teaching and testing*). Appendix E lists the categories of species used by the CCAC for the publication of the *CCAC Survey of Animal Use*.

Dogs and Cats

For protocols involving the use of cats and/or dogs, it must be specified on the AUDF whether the animals were acquired from a **random** source (i.e. were not bred specifically for research, teaching or testing, by either a commercial supplier or within your own or another institution; these animals are generally obtained from pounds or humane societies, or are the animals of students or clients) or whether they were **purpose-bred** (i.e. were bred specifically for research, teaching, testing, by either a commercial supplier or within your own or another institution).

If dogs/cats are held over several years, the number of animals used in each year should be reported on the AUDF.

* In addition to PAU 1-5, CCAC recently created a new purpose of animal use, PAU 0. This new category of PAU will be useful to those institutions that report data to the CCAC on the number of animals being held in breeding colonies that have not been assigned to a particular research, teaching or testing protocol. At the present time, CCAC does not require this data, but institutions are free to submit it.

Non-Human Primates

For protocols involving the use of non-human primates (NHPs), one of the following categories should be specified on the AUDF (rhesus, cynomolgus, squirrel, african green). If the NHPs used (e.g., other macaques, baboons) cannot be placed into one of the four categories, the name of the species should then be specified.

Small mammals in field studies

Table 1 illustrates the type of submission that is regularly received by the CCAC.

In this example, the species field does not indicate the number of each species that were trapped. Only the total number of animals used is given. Specific numbers of animals used should be given for each species, e.g., 5 voles, 10 deer mice and 10 shrews (see Table 2).

Fish

In institutions where fish are raised and kept as livestock, to be eventually used for training students (e.g., fish culture techniques) or for research purposes, and are only manipulated for routine husbandry, the fish are considered to be part of a "breeding colony". Therefore, they should not be counted on the AUDF. When fish are used in a specific protocol for teaching or research purposes, then the number of animals used for each protocol should be reported.

Eggs and larvae of fish that have not yet reached the first life cycle in which reasonable survival is expected are not to be included on the AUDF.

Domestic Birds/Poultry

Frequently, the total number of chicken and turkeys used on a protocol are combined when submitted on the AUDF. However, as shown in Appendix E, the numbers of birds used should be specified separately for the two species.

It is also important to specify the type of domestic birds used on a protocol (e.g., doves, cockatiels, etc.). Please see Appendix E for more details.

Farm animals

The general category of farm animals should not be used to identify the animals. Farm animals should be placed in one of the following categories: cattle,

Table 1: Example of a protocol where the numbers of animals are not specified for each species used (incorrect submission)

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
2000-1	Prof Z	B	Field study. Trapping of small mammals and blood collection	1	Voles, wild mice, shrews.	90	25

Table 2: Example of a protocol where the numbers of animals are specified for each species (correct submission)

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
2000-1	Prof Z	B	Field study. Trapping of small mammals and blood collection	1	Voles	20	5
					deer mice	40	10
					shrews	30	10

goats, horses, sheep, swine and others (e.g., mules and donkeys), as shown in Appendix E.

7) Number of Animals Approved (AA)

When approving a protocol, the ACC also approves the number of animals to be used, as stated in Section 3c of the *CCAC policy statement on: terms of reference for animal care committees* and in the 1997 *CCAC guidelines on: animal use protocol review*. If investigators or teachers require more animals, they must consult with their ACC.

In some cases, it is difficult for the investigator or teacher to predict how many animals will be used, such as with field studies and regulatory tests. The CCAC nevertheless encourages the investigator/teacher and ACC to determine a maximum number of animals that can be used in the study before a protocol amendment must be submitted to the ACC.

8) Number of Animals Used (AU/Yr)

This field must contain the number of animals used for each protocol between **January 1st and December 31st** of every year. In cases where the same animals are used over several years, their numbers should be reported on the AUDF each year.

Please find below some **examples** that illustrate how to submit animal use data.

Example 1: The number of animals is missing

In Table 3, the number of animals used per year (AU/Yr) is missing. For purposes of clarity, in cases where no animals are used, a zero should be entered instead of leaving a blank space. Otherwise, it is unclear if no animals were used for this protocol or if the numbers of AU/Yr were simply omitted.

Example 2: Protocols with more than one purpose, species, and/or level of invasiveness

For a protocol with more than one purpose, species, and/or level of invasiveness, details can be given using separate lines starting with the same protocol number and investigator name (as shown in Table 4). The form has been devised to collect information protocol by protocol, so that a specific number of animals used can be linked to a

Table 3: Example of a protocol where the number of animals is missing

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
2000-2	Prof Y	C	Teaching lab, bull castration and calf dehorning	5	cattle	90	

Table 4: Example of a protocol with more than one purpose, species, and/or level of invasiveness

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
2004-5	Prof Y	D	Evaluation of the effectiveness of different experimental drugs on tumor growth in different animal models.	4	Mice	50	50
2004-5	Prof Y	D	Evaluation of the effectiveness of different experimental drugs on tumor growth in different animal models.	4	Rats	50	50

purpose and a category of invasiveness; in this way, it will be possible to determine exactly how many animals are used within each category of invasiveness and for each general purpose.

Example 3: Animals reused

Animals must be counted only once in the *CCAC Animal Use Survey*. If an animal is reused in another protocol within the same year, please add an "R" next to the number of animals that were reused along with the protocol number of the original protocol.

A group of 10 fish were first used for a CI B protocol and were then reused for a CI C protocol. Table 5 illustrates how the AUDF should be submitted.

For practical purposes, institutions usually report animal reuse in chronological order, independently of the category of invasiveness. That's why it's important to refer to the original protocol when animals are reused in another protocol. That way, the CCAC staff can report the animals under the category which reflects the highest level of invasiveness for the procedures that were conducted on the animal.

Example 4: Animals used from a colony

In this example, the institution has an in-house dog colony of 50 animals (with 200 approved originally as a maximum number of animals) covered by protocol 9999. Within a year, some of these dogs are used in a number of minimally invasive studies. Ten dogs are used for a teaching lab (protocol 2000-1). Five of the same 10 animals used in protocol 2000-1 are reused in a second teaching protocol (protocol 2000-2) along with 6 other dogs that have never previously been used that year in a research, teaching or testing project. Table 6 illustrates how the AUDF would look.

Though the dog colony has its own protocol, the protocol should only refer to breeding management practices as such, and not to any research, teaching or testing. Consequently, the number of animals reused in research, teaching or testing pro-

Table 5: Example of a protocol where animals are reused

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
2000-1	Prof X	B	Sturgeon substrate preferences	1	Fish	50	10
2000-2	Prof X	C	Behavioral effects of temperature stress on sturgeon	1	Fish	10	10 (R) (2000-1)

Table 6: Example of an in-house breeding colony protocol

Protocol Number	Investigator/ Teacher	CI	Protocol Description	PAU	Species	AA	AU/Yr
9999	Dr No	B	In-house colony	0	Dogs	200	50
2000-1	Prof X	B	Basic animal handling and restraint for first year students	5	Dogs purpose-bred	20	10
2000-2	Prof X	B	Vaccination, deworming, SQ/IM injections, blood collection, animal restraining lab	5	Dogs purpose-bred	20	6 + 5(R) (2000-1)

tocols should never refer back to the in-house colony protocol.

Example 5: Academic/calendar year

An academic institution acquires 5 cows at the beginning of the teaching year every year from a local auction. The cows are used in a teaching protocol and are then sold back at auction at the end of the teaching year. These cows are thus used from September to May. The cows are never the same from one year to the next. Should 5 or 10 cows be reported on the CCAC AUDF?

Academic institutions function according to the academic year, which normally runs from September to May. The CCAC asks that animal use numbers be submitted for each calendar year from January 1st to December 31st. That would mean that 10 cows are used per calendar year, and the AUDF should show that 10 cows were used during the year.

APPENDIX A

ANIMAL USE DATA FORM

Year:

Institution Name:

Institution Code:

Protocol no.	CI	Investigator/ Teacher	Protocol Description	PAU	Species	AA	AU/Yr

APPENDIX B
CATEGORIES OF INVASIVENESS*

Investigators and teachers who consider it essential to use vertebrates or invertebrates in their research, teaching or testing in the laboratory or in the field, must adhere to humane principles, and take cognizance of the Canadian Council on Animal Care's (CCAC) *policy statement on: ethics of animal investigation* and other CCAC documentation in assigning a category. Protocols must be submitted to an appropriate review committee for all studies and courses which involve the use of vertebrates and some invertebrates in Categories B through E. Cephalopods and some other higher invertebrates have nervous systems as well developed as in some vertebrates, and may therefore warrant inclusion in Category B, C, D, or E. The following list of categories provides possible examples of experimental procedures which are considered to be representative of each category:

A. Experiments on most invertebrates or on live isolates

Possible examples: the use of tissue culture and tissues obtained at necropsy or from the slaughterhouse; the use of eggs, protozoa or other single-celled organisms; experiments involving containment, incision or other invasive procedures on metazoa.

B. Experiments which cause little or no discomfort or stress

Possible examples: domestic flocks or herds being maintained in simulated or actual commercial production management systems; the short-term and skillful restraint of animals for purposes of observation or physical examination; blood sampling; injection of material in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral, but not intrathoracic or intracardiac (Category C); acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness; approved methods of euthanasia following rapid unconsciousness, such as anesthetic overdose, or decapitation preceded by sedation or light anesthesia; short periods of food and/or water deprivation equivalent to periods of abstinence in nature.

C. Experiments which cause minor stress or pain of short duration

Possible examples: cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies, laparoscopy; short periods of restraint beyond that for simple observation or examination, but consistent with minimal distress; short periods of food and/or water deprivation which exceed periods of abstinence in nature; behavioural experiments on conscious animals that involve short-term, stressful restraint; exposure to non-lethal levels of drugs or chemicals. Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, or fecal or urinary output, or in social responses.

Note: During or after Category C studies, animals must not show self-mutilation, anorexia, dehydration, hyperactivity, increased recumbency or dormancy, increased vocalization, aggressive-defensive behaviour or demonstrate social withdrawal and self-isolation.

D. Experiments which cause moderate to severe distress or discomfort

Possible examples: major surgical procedures conducted under general anesthesia, with subse-

* *CCAC policy statement on: categories of invasiveness in animal experiments*, revised 1991

quent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioural stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization; the use of Freund's Complete Adjuvant (FCA) (see *CCAC policy statement on: acceptable immunological procedures*).

Other examples include induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; the production of radiation sickness; exposure to drugs or chemicals at levels that impair physiological systems.

Note: Procedures used in Category D studies should not cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioural patterns or attitudes, the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or disinclination to move, and clinical signs of severe or advanced local or systemic infection, etc.

E. Procedures which cause severe pain near, at, or above the pain tolerance threshold of unanesthetized conscious animals

This Category of Invasiveness is not necessarily confined to surgical procedures, but may include exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress; completely new biomedical experiments which have a high degree of invasiveness; behavioural studies about which the effects of the degree of distress are not known; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on unanesthetized animals; a euthanasia method not approved by the CCAC; any procedures (e.g., the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (e.g., when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint).

APPENDIX C
KEYWORDS

General

- research, teaching, testing;
- regulatory (if the experiments are performed directly in relation to testing regulations in force in Canada and/or the US (FDA, EPA, etc.) and/or elsewhere), type of testing (e.g., cosmetic testing);
- field work, behavioral observation, environmental protection study, wildlife conservation;
- development of techniques, study of the effectiveness of a product (drugs, others) or a method (spectroscopy, others);
- breeding, breeding colony, sentinel program;
- antibody production (monoclonal, polyclonal);
- pilot study;
- palatability test;
- digestibility test;
- reinforcement/motivation;
- staged behavioral encounters;
- primary cell culture, tissue/organ collection, graft, transplant;
- species, transgenic animal; and
- validation of non animal model (*in vitro* test, computational methods...).

Procedures

trapping/netting, marking/tagging, injection (intravenous, subcutaneous, intramuscular, intraperitoneal), blood sampling/testing (small volume), blood removal (large volume), gavaging, physical restraint, infection induction, whole body radiation, physical euthanasia, food deprivation, water deprivation, special diet, altered environmental exposure, physical restraint (duration).

Agents

Radioisotope administration, chemical exposure, infectious agents, immunogenic or inflammatory agents, Freund's complete adjuvant.

Surgery

major surgery, minor surgery, stereotaxic surgery, survival surgery, multiple surgeries, cannulation.

APPENDIX D
PURPOSE OF ANIMAL USE

PAU 0

Breeding Colony/Stock

Animals held in breeding colonies (e.g., fish, rodents) that have not been assigned to a particular research, teaching or testing protocol.

PAU 1

Studies of a fundamental nature in sciences relating to essential structure or function

(e.g., biology, psychology, biochemistry, pharmacology, physiology, etc.)

Possible examples: studies designed to understand the cellular and/or molecular basis of inflammatory reactions or other basic physiological or biochemical reactions; studies designed to understand one or some of the various facets of the role played by a hormone or other compound produced by mammals; studies designed to better understand the behavior of various species; studies designed to better understand the population dynamics of various species

PAU 2

Studies for medical purposes, including veterinary medicine, that relate to human or animal diseases or disorders

These are studies carried out to better understand a specific disease or disorder and to help find therapies for it.

Possible examples: development of a mouse model for a specific type of cancer or other disease; studies to determine which antibodies are the most likely to contribute positively to the therapy of a specific type of cancer; studies to determine which molecule within a particular class of compounds is the most likely to contribute to maintaining stable blood glucose levels in an animal model of diabetes

PAU 3

Studies for regulatory testing of products for the protection of humans, animals, or the environment

Possible examples: safety testing, regulatory toxicology, vaccine efficacy trials, and testing of new therapeutic compounds (if it is to generate data that is going to be used in a submission for an Investigational New Drug Application (IND) or for a New Drug Submission (NDS)); shellfish toxin

PAU 4

Studies for the development of products or appliances for human or veterinary medicine

These are the studies carried out to investigate potential therapies (as determined following studies of PAU 2) for humans or animals, before regulatory testing (PAU 3) is carried out on the most promising therapies.

Possible examples: studies undertaken in animals to investigate the role and effects of a specific drug or immunotherapy candidate for cancer; studies undertaken to develop physical devices to assist heart function; studies undertaken to develop artificial organs

PAU 5

Education and training of individuals in post-secondary institutions or facilities

These are teaching or training programs where animals are used to introduce students to scientific work and teach manual skills and techniques

APPENDIX E
CATEGORIES OF SPECIES

AMPHIBIA	**Includes all amphibians and their tadpoles, whether indigenous to Canada or not. Not to be confused with reptiles.**
• FROGS	Includes all frogs (e.g., *Rana pipiens*, *Xenopus laevis* (African clawed frog))
• SALAMANDERS	Includes all salamanders and newts (e.g., California newt, Mudpuppy)
• TOADS	Includes all toads. (e.g., *Bufo americanus*, *Bufo marinus*)
CATS	**Includes all domestic cats; must be categorized according to their source (random or purpose-bred).**
• RANDOM	Not bred specifically for research, teaching or testing, by either a commercial supplier or within your own or another institution; these animals are generally obtained from pounds or humane societies, or are the animals of students or clients.
• PURPOSE-BRED	Bred specifically for research, teaching and testing, by either a commercial supplier or within your own or another institution.
CEPHALOPODS	Includes all squid, octopus, cuttlefish, and nautilus. **They are the only invertebrates to be counted in the survey.**
CHINCHILLA	**Includes all chinchillas.**
DOGS	**Includes all domestic dogs; must be categorized according to their source (random or purpose-bred).**
• RANDOM	Not bred specifically for research, teaching or testing, by either a commercial supplier or within your own or another institution; these animals are generally obtained from pounds or humane societies, or are the animals of students or clients.
• PURPOSE-BRED	Bred specifically for research, teaching and testing, by either a commercial supplier or within your own or another institution.

DOMESTIC BIRDS	**Includes all birds commonly raised/used by humans.**
• CHICKENS	Includes domestic chickens (hens, broilers, roosters, chicks, layers).
• DUCKS	Includes domestic ducks. Wild ducks are to be placed under Wild Species - Birds.
• PIGEONS	Includes captive/raised pigeons and doves (e.g., *Columbia livia*) Wild pigeons and doves are to be placed under Wild Species - Birds
• TURKEYS	Includes domestic turkeys. Wild turkeys are to be placed under Wild Species - Birds.
• OTHERS	Includes other birds raised/used by humans such as emus, ostriches, geese, swans, pheasants, quail and peacocks. Also includes birds usually sold as pets such as parrots, budgies, and cockatiels.
FARM ANIMALS	**Includes animals usually found on a farm, birds excluded.**
• CATTLE	Includes common breeds of dairy and beef cattle, and calves (e.g., Holstein, Jersey).
• GOATS	Includes all goats commonly raised/used by humans. Wild goats such as the mountain goat are to be placed under Wild Species - Ruminants.
• HORSES	Includes all species of horses and ponies raised/used by humans.
• SHEEP	Includes all species of domestic sheep. Bighorn sheep are to be placed under Wild Species - Ruminants.
• SWINE	Includes all species of domestic swine. Miniature swine are to be placed under the category Miniature Swine. Wild boars are not indigenous to Canada and are thus classified under Other Non-Native Wild Species, unless they are raised on a farm for their meat.
• OTHERS	Includes any farm animals that cannot be classified in the other categories of farm animals, such as mules, donkeys, etc.
FISH	Includes all jawless, bony and cartilaginous fish, including all species of salmonids, trout, eels, lampreys, sharks, skates, hagfish, and seahorses, whether they are indigenous to Canada or not. (e.g., *Salvelinus fontinalis*, *Oncorhynchus mykiss*, *Oncorhynchus nerka*, *Salmo salar*, *Neon tetra*, *Tilapia*, *Walleye*, *Anguilla rostrata*)

FUR ANIMALS • FERRETS • MINK • OTHERS	**Includes species of animals commonly raised for their fur.** Includes fur animals such as the ermine and silver fox. Wild fur animals should be placed under Wild Canadian Species.
GERBILS	**Includes all breeds of gerbils.** (e.g., *Meriones unguiculatus*)
GUINEA PIGS	**Includes all breeds of guinea pigs.**
HAMSTERS	**Includes all breeds of hamsters.**
MARINE MAMMALS • CETACEANS • SEALS • OTHERS	**Includes all mammals living in the sea.** (does not include polar bears) Includes all whales, dolphins, rorquals, porpoises, belugas, narwhals, and orcas. Includes all seals and elephants seals. Includes all other marine mammals such as sea lions, walrus, manatees, sea otters, etc.
MICE	**Includes all common laboratory, conventional and genetically engineered mice.** (e.g., *Mus musculus*, NUDE mice, Balb/c, C57B1/6, etc.) Wild mice are to be categorized as Wild Species - Rodents.
MINIATURE SWINE	Not to be confused with conventional swine breeds (Farm Animals).
NON-HUMAN PRIMATES • RHESUS • CYNOMOLGUS • SQUIRREL • AFRICAN GREEN • OTHERS	**Includes all New and Old World monkeys, as well as other species of primates.** Of the macaque family, Latin name *Macaca mulatta*. Also of the macaque family, Latin name *Macaca fascicularis*. Also known as the crab-eating macaque. A monkey indigenous to South America. Latin name *Saimiri sciureus*. Latin name *Cercopithecus aethiops*. All other primates which may include other macaques, baboons, marmosets, etc.

RABBITS	**Includes all captive-bred breeds and strains of rabbits.** (e.g., New Zealand White) Wild rabbits and hares are to be classified under Wild Species - Others.
RATS	**Includes all conventional and genetically engineered rats.** (e.g., *Rattus rattus*, Sprague Dawley, Long Evans)
REPTILES	**Includes all reptiles, whether indigenous to Canada or not.** Not to be confused with amphibians.
• LIZARDS	Includes all lizards such as geckos, iguanas, anoles skinks, chameleons, and agamas.
• SNAKES	Includes all snakes such as pythons, boas, cobras, vipers, and rattlesnakes.
• TURTLES	Includes all terrestrial, fresh water and sea turtles.
• OTHERS	Includes all other reptiles such as crocodiles and alligators.
WILD CANADIAN SPECIES	**Includes species found in the Canadian wilderness that cannot be classified in another category.**
• BIRDS	Includes all wild birds such as warblers, sparrows, gulls, puffins, herons, cranes, birds of prey, wild geese, owls, woodpeckers, hummingbirds, swallows, etc.
• CANIDS	Includes wolves, foxes and coyotes.
• FELINES	Includes wild cats such as cougars, mountain lions, and lynx.
• RODENTS	Includes a wide variety of wild rodents such as porcupines, voles, field mice, beavers, squirrels, prairie dogs, marmots, and chipmunks. Shrews are not rodents.
• RUMINANTS	Includes all wild Canadian ungulates such as deer, caribou, elk, bison, and wild sheep and goats.
• OTHERS	Includes all other mammals indigenous to Canada such as shrews, moles, bats, bears, raccoons, wolverines, weasels, martens, skunks, opossum, otters, badgers, polar bears, etc.
OTHER NON-CANADIAN WILD SPECIES	Includes all species not indigenous to Canada which cannot be placed in any other category. May include camels, degus, llamas, alpacas, zebras, elephants, penguins, flamingos, marsupials, antelopes, giraffes, etc.

APPENDIX F

ANIMAL USE DATA PRODUCTION BY ONTARIO INSTITUTIONS

All Ontario institutions that use animals for research purposes, and that are not units of the federal government, must be licensed under the Ontario *Animals for Research Act*, administered by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

Section 4 of Regulation 22 of the *Animals for Research Act* requires that the operators of these institutions submit annual animal use data to OMAFRA by March 1st of the year following the year for which the data are being reported. The data required by the Ontario government consists of the numbers of animals used, per category of animals. While the categories of animals and types of animals to be included or not are similar for the Ontario and CCAC systems, they are not identical, and we encourage Ontario institutions to ensure that they follow the most recent guidance from OMAFRA and the CCAC.

OMAFRA and the CCAC have been working together on animal use data production matters, and will continue to work towards ensuring that their requirements for annual animal use data are compatible and facilitate the work of institutions in keeping animal use records.