Overview

Mindanao State University – Maguindanao envisions excellence in education, research, and extension services for sustainable peace and development. Moreover, the MSU-Maguindanao aims to develop an Institution that creates the safe and humane use of animals for research and development in accordance with the Animal Welfare Act of 1998. A committee was created to come up with the necessary rules and regulations for the strict implementation of the Institutional Animal Care and Use for Research Committee (IACUC) protocols.

Committee Composition

The IACUC is directly under the Office of the Chancellor, Vice Chancellor for Research, Extension and Development, and the Director for Research. The Chancellor appoints the Chairman, preferably a Veterinarian (Fig. 1). The IACUC is composed of the following:

1. **Chairman/Veterinarian**

   The Chairman/Veterinarian, appointed by the Vice Chancellor for Research, Extension and Development, must have a training or an experience in laboratory animal science and medicine, or in the care of the species being used. In case the Chairman is a non-licensed veterinarian, there should be at least one member who is a licensed veterinarian.

2. **Co-Chairman**

   The Co-Chairman/Director must be knowledgeable and effective leader, who will co-chair the IACUC in implementing the protocols of the program together with the veterinarian.

3. **Members**

   The members of the committee who will help the Chairman in implementing the protocols of the program according to their line of expertise are as follows:

   - Researcher/Faculty from the College of Agriculture
   - Researcher/Faculty from the College of Fisheries

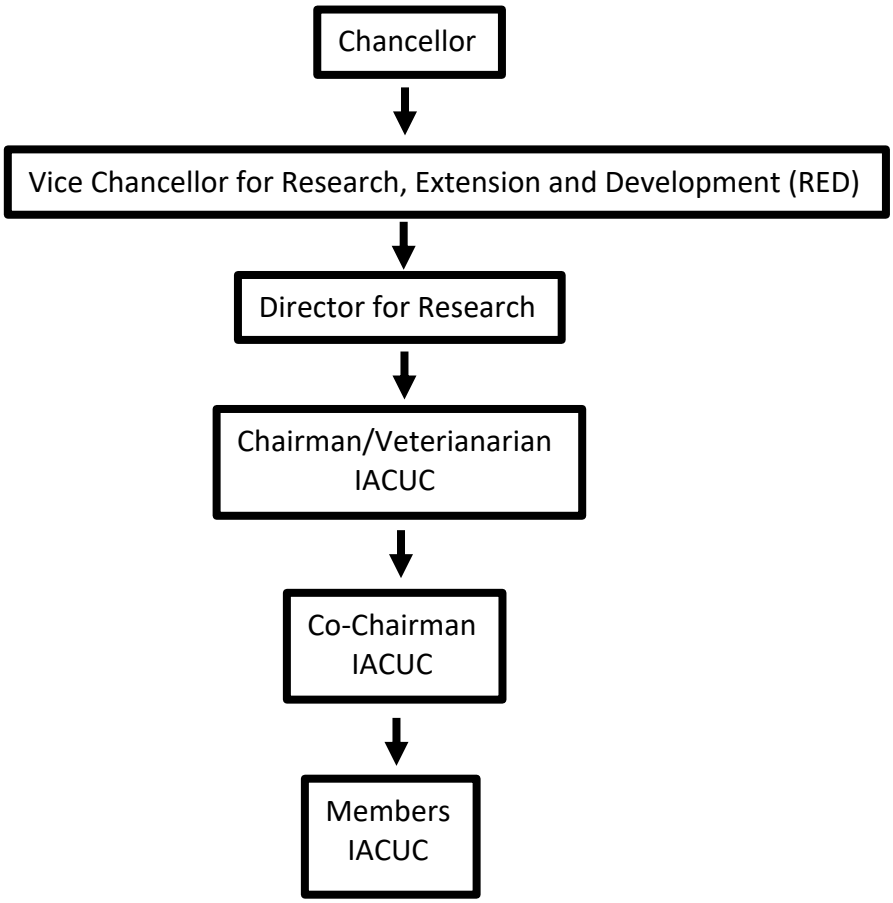


Fig. 1. Composition of the members of IACUC under the office of the Chancellor, Vice Chancellor (RED) and Director for Research

Operation and Administration

Institutional Responsibility for Animal Welfare

The Institution must ensure animal welfare for research by investigating in accordance with the Animal Welfare Act of 1998. The accountability for assuring humane care and use of animals resides with the institution.

Roles and Responsibilities of the IACUC Staff

Administrative duties include:

- Data entry;
- Evaluation of protocols for appropriateness and completeness;
- Preparation of agendas and distribution of the protocols and other materials to IACUC members;
- Sending out of reminders of protocol on the expirations, approval letters and other communications;

- Preparation of minutes, correspondences and reports, such as the Department of Health (DOH) assurance document, and DOH annual reports, Department of Agriculture (DA)/Ministry of Agriculture, Fisheries and Agrarian Reform (MAFAR) and Bureau of Animal Industry (BAI) reports
- Serve as an information resource for investigators and IACUC members regarding regulatory issues and status of protocols
- Maintenance of records of the minutes of meetings, policies and procedures, program reviews and facility inspection reports
- Coordination and scheduling of the IACUC meetings, inspection of facilities and laboratory site visits

Professional staff duties include:

- Provision of orientation and training of new IACUC members
- Review of proposal to ensure consistency in the animal care and use, and the protocol submitted to the IACUC
- Pre-review of protocols for government assurances, scientific and statistical validity
- Review of literature searches
- Preparation of draft of institutional policies

A. Oversight of the Animal Care and Use Program

A.1. Program and Facility Review

The BAI stipulates that the IACUC must review the program for humane care of animals in accordance with the Animal Welfare Act of 1998 as the basis for evaluation.

Program Evaluation

Prior to the conduct of research, the following must be evaluated:

● IACUC membership, functions, and procedures
● Facility inspection process
● Provisions for review and investigation regarding animal care and use
● Record keeping practices
● Methods employed to meet reporting requirements
● Occupational health and safety program
● Veterinary medical care program
● Personnel qualifications and training

Facility Review

Animal facilities must be inspected during the review, which includes the following

● Satellite facilities
● Surgical facilities
● Animal study areas/Laboratory areas
● Quarantine facilities
● Holding facilities

A.2. Animal Environment, Housing and Management

A.2.a. General

Animals must be kept within a facility where the environment, housing and management are suitable based on their behavior, and must minimize the stress-induced behavior.

A.2.b. Animal Environment

Housing

Proper animal husbandry practices and health maintenance are facilitated by well-constructed and maintained caging or housing systems. This can be achieved by following the proper management protocol indicated by the BAI.

Temperature, Ventilation, Illumination and Noise

Temperature, ventilation, light intensity and photoperiod affect the health and wellness of the animals. Moreover, noise can be a source of stress to the animals. Hence, these parameters must be considered during the review so as the researchers will provide the required environment for the animals.

A.2.c. Husbandry

Sourcing

Animals should be obtained only from licensed dealers or other legitimate sources. One of the prime mechanisms for ensuring high quality laboratory animals is to purchase them from commercial vendors who produce specific pathogen-free stock and maintain rigorous health monitoring programs to ensure high quality.

Animal Identification

It is imperative that animals be adequately and appropriately identified, and that records pertaining to individuals or groups of animals be maintained. A wide range of acceptable identification methods can be employed, such as cage cards, ear notches and tags, collars, colored stains, and individual animal tattoos.

Animal records may consist of a cage card or may involve detailed individual animal information, depending on the species and research requirements. Cage cards should include:

- source of the animals
- strain or stock
- names and locations of responsible investigator
- pertinent dates (date of arrival in the facility, date of use, etc)
- protocol number

Feeding

To maintain good health, all animals should be given food items that are:

- palatable
- free from contamination
- nutritious and sufficient quantity

Specific diets should be selected based on the needs of each species, with special consideration on the requirements for vitamin C by guinea pigs and some species of nonhuman primates. Animals should be fed at least once a day except under conditions of veterinary treatment, pre-procedural fasts, or other justified circumstances. In some species, varying the diet by providing "treats" can improve animal health and well-being. However, caution should be exercised that animals do not give up eating their nutritionally balanced diet for treats.

It is known that standard commercial dry bulk foods retain their nutritional value for six months (generally three months for those containing vitamin C, unless a stabilized form is used) when stored properly.

To help ensure the freshness of the food, the following should be observed:

- bags of feed stored on the floor with slat-bottom wooden or plastic platform
- milling and expiry dates on each bag
- feed types and main components on each bag
- first in - first out policy of feed stock

Small quantities of food may be kept in animal rooms if stored in tightly covered, leak- and vermin-proof containers. These should not be moved from room to room.

Watering

Potable drinking water should be available continuously or provided as often as necessary considering the animal's species, age, condition, and any research requirements. Water may be provided in receptacles (e.g., bowls, bottles, or via automatic watering systems). Whatever method is used, care should be taken to ensure that water does not become contaminated. Water may be treated or purified to eliminate contaminants; however, some water treatments may cause physiological changes, alter the microflora, or affect the experimental results. Nipple drinkers and automatic watering devices should be checked daily for patency and cleanliness. Animals occasionally need to be trained to use automatic watering devices. Water bottles generally should be replaced and sanitized rather than refilled.

Bedding

Bedding may be used in some laboratory animals. Bedding material should be absorbent and free of any substances that might harm the animals or alter research data.

Animals may be placed directly on bedding material, or bedding may be placed under a slat-bottom cage. It should be used in sufficient amounts and changed as often as necessary to keep the animals clean and dry. The animal room should be odor free. Bedding should be stored off the floor. Care should be taken to keep the bedding from contacting water tubes as this may lead to leakage of water into the cage. The frequency of bedding change depends on the number of animals and species, and type of caging and bedding.

A.2.d. Facility Maintenance and Mortality Pits for Animals

Cleanliness is essential to the operation of an animal facility. The BAI set forth recommended frequencies and methods for cleaning and sanitation of facilities, equipment and accessories. In general, the frequency and methods should ensure that animals are maintained in a clean and dry environment, free from exposure to harmful contamination and excessive animal odors. Cleaning agents that mask animal odors should not be used as a substitute for good sanitation practices. Mops, buckets and other cleaning implements should not be moved from room to room to prevent cross-contamination.

The most efficient and effective method of cleaning and sanitizing cages and accessories (e.g., feeders, water bottles, sipper tubes) is the use of a mechanical washing machine that provides rinse water temperature of at least 82.2^{o}C for a time adequate to achieve sanitization. Alternatively, portable high pressure spray washing and disinfection may be used. Hand washing is the least efficient and effective. In general, enclosures and accessories (e.g. cage tops) should be sanitized at least every two weeks. Solid bottom cages, water bottles and sipper tubes should be sanitized weekly. The supply lines of automatic watering systems should be flushed and disinfected regularly.

Waste Disposal and Mortality Pits

A research animal facility generates a significant amount of wastes that must be removed and disposed of frequently. Waste containers should be readily accessible throughout the facility, and should be leakproof and equipped with tight-fitting lids. Disposal methods, including incineration and removal to land-fill, must conform with the requirements of the local government unit. Some jurisdictions consider all soiled animal beddings from a research facility to be "medical wastes," with consequently more stringent disposal requirements.

If wastes must be stored while awaiting disposal, the storage area should be outside the animal holding and clean equipment areas. Animal carcasses and tissues require a separate cold storage area and a regular schedule for disposal. Hazardous wastes, including carcasses of animals exposed to radioactive or biohazardous agents must be adequately sterilized and / or contained prior to disposal.

Disposal of animals used for research must follow the requirements set forth by the BAI, DOH and the local government unit (LGU).

Mortality Pits

An excavated pit is provided to dispose dead animals. The carcasses are spread compacted and covered with layers of soil excavated from the pit. Carcasses need to manage immediately in order to protect human and animal health. Composting is a quick and economical disposal of dead animals.

Pest Control and Biosecurity Measures

The research animal facility is an active place, with frequent movement of personnel, animals, equipment, containers, food, and beddings, creating ideal conditions for the introduction of pests, including arthropods, birds and rodents. However, pest control programs may pose harm to animals and personnel, as well as interference with research data by many commonly used pesticides. A regularly scheduled, documented pest control and monitoring program should be implemented, which effectively combines elimination of all entry and harbor sites with good waste disposal and personnel training. If traps are used, methods should be humane.

A.2.e. Emergency, Weekend and Holiday Care

Laboratory animals must be observed by qualified personnel every day, including weekends and holidays to ensure their health and well-being, as well as to promote sound research practices. Veterinary care must be readily available at all times. Names and contact numbers of those assigned with these responsibilities should be prominently displayed in the facility. A disaster plan should be part of the overall facility safety plan which takes into account both personnel and animals.

A.2.f. Behavioral Management of Laboratory Animals

There are varying requirements for the behavioral management of laboratory animals, depending on the species and the reference document.

The Department of Agriculture (DA) provides recommendations for:

- increasing the complexity of the structural environment
- addressing the social environment of animals
- promoting the expression of species-typical activity in a cohesive behavioral management program for all vertebrate species

Exemptions from some or all of the environment enhancement plan for scientific reasons must be documented in the protocol, approved by the IACUC, and reviewed not less than annually. The veterinarian may exempt individual primates from the plan. All exemptions must comply with the Animal Welfare Act of 1998.

The Animal Welfare Act of 1998 further requires that research facilities develop, document, and follow a plan for providing dogs with the opportunity for exercise. This plan must stipulate specific exercise opportunities for dogs housed individually as well as in groups based on cage or pen/run floor space; and identify the methods, frequency and duration of the opportunity for exercise. Provisions for exemptions from exercise may be made by the veterinarian in certain instances and the IACUC in others, and must be in accordance with the Animal Welfare Act of 1998.

A.2.g. Animal Traceability

Traceability is a crucial factor in preventing the spread of diseases, and there are strict movement regulations to adhere to.

Animals used for research must have its own tracking device for traceability and documentation for the safety and wellness of the public and environment.

A.3. Role of the Veterinarian

Adequate veterinary medical care is an essential component of an Animal Care and Use Program and is required by the BAI. Institutions with smaller programs may opt for a part-time veterinarian as a consultant. The overall responsibilities of the veterinarian are described in the following section.

It is the institution's responsibility to support the ongoing improvements in the Animal Care and Use Program through the development and implementation of procedures and policies (e.g. IACUC guidelines) that enhance the health of the animals. Clear provisions should be made to give the veterinarian appropriate authority to execute a program of adequate veterinary care, including access to all animals.

Responsibilities

The major responsibility of the veterinarian is to provide care for the health and welfare of animals and to protect public health. The report of the BAI in the use of animals for research and teaching purposes provides a detailed description of adequate veterinary care. The details of a veterinary care program depend on the species of animals and their use, but in all cases, the program and care provided must comply with the standard veterinary practices.

The introduction of new animals is an important aspect of the veterinary care program with considerations on the stabilization or acclimation periods, isolation and quarantine. Generally, most animals are bred for laboratory use. Random source or wild caught animals are not bred by the supplier, but are obtained from a variety of sources including pounds, shelters, or farms that may not conform to the same standards of animal husbandry and health as the research facility.

Prior to use, clinical evaluation and conditioning of the animals are required to ensure that they do not carry diseases that can be transmitted to other animals, including humans, or do not introduce uncontrolled variables into research. Research facilities that obtain dogs and cats from sources other than the dealers, exhibitors, and exempt persons must hold the animals for five full days, excluding the day of acquisition after acquiring the animals and time in transit, before they may be used by the facility. Research facilities must comply with the identification requirements of the animals.

Although selection of high-quality laboratory animals has reduced the prevalence of infectious diseases in research animal colonies, preventive medicine programs under the guidance of the veterinarian continue to be important for maintenance of healthy animals. These programs include:

- isolation and quarantine of incoming animals
- immunization against infectious pathogens
- surveillance of colonies for specific infectious microbial agents
- prophylaxis against diseases utilizing pharmaceutical agents
- provision of separate housing of animals according to species, source or different background microbial floras

While preventive medicine programs are successful in reducing the incidence of disease, illness, and injury may still occur in laboratory animal colonies. The veterinarian is responsible for monitoring animal health, providing adequate diagnostic support through clinical assessments, laboratory diagnosis and necropsy when required. Likewise, treating animals when ill or injured requires veterinary medical care. Using a documented process, the veterinarian may delegate responsibility for care to trained technical staff but must always be available to provide rapid diagnosis and treatment.

The BAI stipulates that the veterinarian attend to the physical health of animals psychological well-being of nonhuman primates, and exercise for dogs. The plan for canine exercise must be approved by the Attending Veterinarian (AV) before it can be implemented. Moreover, those animals that are not included in the screening of psychological and physical health evaluation must be documented by the AV and reviewed every 30 days, unless a permanent condition already exists.

Specific areas requiring the veterinarian's guidance are as follows:

- selection and utilization of suitable anesthetic and analgesic agents, and methods of euthanasia
- selection of species for research projects
- proper surgical procedures and adequate pre-operative, surgical, and post-operative care

The veterinarian should discuss the design and implementation of the research proposals with investigators and may provide written guidelines dealing with these and other issues. Collegial exchanges between the investigator and the veterinarian before the submission of a proposal to the IACUC may address many of the Committee's concerns and expedite the review process.

In some institutions, the veterinarian or his/her staff may participate directly as a co-investigator in activities involving animals by providing clinical, surgical or other scientific or technical expertise to the study. Veterinarians sometimes also serve as principal investigators with responsibility for their own research and training programs. In such situations, the IACUC has the same obligation to review and approve the proposed activities similar to other investigators. When the veterinarian is personally involved in a research project, he/she must excuse himself/herself from the IACUC review and vote on the project. IACUC may consider consulting a veterinarian to assist in the review of such projects.

The BAI requires institutions utilizing animals in research and teaching purposes to provide training and instruction to personnel on humane methods of animal maintenance and experimentation. The veterinarian and the animal resource program staff, in conjunction with the IACUC, are usually responsible for providing such training.

The DOH requires institutional occupational health and safety programs to ensure that personnel who have laboratory animal contact are included in a risk assessment process and action plan that addresses workplace safety through appropriate educational and industrial hygiene, and medical interventions. The veterinarian, in cooperation with appropriate health and safety officials at the institution, is often responsible for the implementation and execution of aspects of the program concerned with animal health and safety issues.

Veterinarian and IACUC

The veterinarian occupies an essential position in the IACUC with specific functions according to the DOH and BAI. Institutions employing several veterinarians may appoint more than one to the IACUC, but all institutions regardless of size must have at least one veterinarian with direct or delegated program authority and responsibility as a member of the IACUC. A strong veterinary presence in the IACUC has proven beneficial in many institutions. However, veterinarians should not dominate the IACUC activities as this may foster disengagement of other members resulting in a less cohesive and effective IACUC.

The veterinarian should keep abreast of current literature on comparative medicine and laboratory animal science. The knowledge gained often leads to suggestions for alternative techniques, models or species that may enhance animal well-being, augment the study design and help ensure the completion of the proposed study.

A.4. Occupational Health and Safety

The health and safety of individuals working in animal care and use programs is an area of institutional concern requiring commitment from the senior officials of the institution. The goal of the occupational health and safety program is to prevent occupational injury and illness by avoiding, controlling or eliminating hazards in the

workplace. The emphasis of such a program is the prevention of illness and injury, and provisions for early diagnosis and treatment when necessary.

A.5. Personnel Training and Education

All staff working with laboratory animals must be qualified to do the job to ensure the humane treatment of animals. Training is a classic performance standard where the emphasis is on the outcome (e.g. all personnel qualified to do their jobs). Although the DOH and BAI do not specify a particular program or the frequency in which a program should be offered, the requirement for competence is mandatory.

A.6. Emergency Preparedness

A.6.a. Security, Risk and Crisis Management

Since the IACUC has responsibility for the welfare of animals at its facility, it shares responsibility for the security of the animals and personnel who care for and use these animals with other units within the institution, such as the units responsible for security, public information, and governmental relations. Institutions receiving government funds have an obligation to protect the government investment in research by exercising due diligence in this area. The IACUC can serve a key role in advising the institutional officials and the institution of potential risks and vulnerabilities, and in developing a plan for responding to potential or real threats.

In all cases, the IACUC must consider allegations of non-compliance or animal welfare issues as concerns that must be addressed in accordance with relevant DOH and BAI provisions.

A.6.b. Disaster Planning

As a fundamental component of the operational plans for most animal facilities, the Disaster Plan is a detailed, site-specific compilation of critical resources that are helpful in a variety of crisis events. The DA recommends that all animal facilities have a Disaster Plan as part of their overall program and that the veterinarian or animal facility manager be part of the official institutional response team. While the DA does not outline the elements of a Disaster Plan, it does suggest that facilities maintain sufficient emergency power necessary to maintain critical services (e.g. heating, ventilation and air conditioning system) and support functions (e.g. freezers, ventilated racks, isolators). Unique components of the facility may require special considerations. The proper institutional authority should approve the final plan so that appropriate resources can be committed during an emergency event. The IACUC does not have primary responsibility for emergency preparedness, but because emergency events could have significant impact on animals and the animal facility, the committee may choose to assess their site's preparedness during regular semi-annual program reviews.

B. Review of Proposals

B.1. Fundamental Issues

The IACUC is responsible for overseeing and evaluating all aspects of animal care and use, and is in charge in the review of proposals that involve animals to ensure that the criteria established by the DOH and BAI are implemented. In the review of proposals, the Committee's primary goal should be to facilitate compliance with applicable laws, regulations and policies consistent with the performance of appropriate and productive scientific endeavors.

B.2. Protocol Review Criteria

The criteria in the review of Animal Care and Use Program are listed in the Rules and Regulations on the Conduct of Scientific Procedures Using Animal by the DA through the Animal Welfare Act of 1998. Each review criterion of the Animal Welfare Act of 1998 along with the applicable DA principles is listed in the *Appendix A*.

If the IACUC does not have the scientific and technical expertise to evaluate the proposal, it may bring in outside expert as consultants to assist in the review. Such consultants may not vote. In all cases, the burden should be on the investigator to justify his/ her proposed experiments to the satisfaction of the IACUC.

B.2.a. Alternatives – Replacement, Reduction and Refinement

There is significant interest in the application of alternatives to animals used in research, education and testing purposes. The DOH and BAI require research institutions to ensure that investigators have appropriately considered alternatives to procedures that can cause more than slight or momentary pain or distress in animals, consistent with sound research design.

Alternatives are framed within the context of the "3 Rs" articulated originally by Russell and Burch in 1959 as follows:

1. Replacement or utilizing non-animal models
2. Reduction of numbers of animals used
3. Refinement, elimination or reduction of unnecessary pain and distress in animals

B.2.b. Euthanasia

Euthanasia is the humane destruction of an animal accomplished by a method that produces rapid unconsciousness and subsequent death without evidence of pain or distress, or a method that utilizes anesthesia produced by an agent that causes painless loss of consciousness and subsequent death. The choice of a method depends on the species, age, availability of restraint, skill of the

individuals performing euthanasia and other considerations. In a research setting, the method of euthanasia must be consistent with the research goals.

B.2.c. Humane Endpoints

Animals used in research and testing may experience pain from induced diseases, procedures, and toxicity. The procedures that cause more than momentary or slight pain or distress should be performed with appropriate sedation, analgesia, or anesthesia. However, research and testing studies sometimes involve pain that cannot be relieved with such agents because they would interfere with the scientific objectives of the study. Accordingly, government regulations require that IACUC determines that discomfort to animals will be limited to that which is unavoidable for the conduct of scientifically valuable research, and that unrelieved pain and distress will only continue for the duration necessary to accomplish the scientific objectives.

B.2.d. Reduction of Pain and Distress

The IACUC is mandated to review protocols to ensure that pain and distress are minimized in laboratory animals. The Animal Welfare Act of 1998 stipulates that the IACUC determines that the principal investigator has considered the alternatives to procedures causing more than momentary or slight pain or distress to the animal. Likewise, the principal investigator has provided a written narrative description of the methods and sources used to determine that alternatives are not available.

B.2.e. Personnel Qualifications

In evaluating proposed research projects, the DOH and BAI require the IACUC to assess whether personnel conducting the procedures are qualified and trained. A checklist of procedures may include proficiency in the following:

- handling specific species
- pain-relieving methods
- surgical manipulations,
- aseptic techniques
- pain management
- euthanasia
- pre- and post-operative care
- Philippine Drug Enforcement Administration (DEA) license

In addition, a checklist of institutional requirements that need to be satisfied as a component of protocol review may include the following:

- completion of occupational health and safety risk assessment
- proficiency on the relevant rules and regulations
- enrollment in occupational health and safety program
- attendance at compliance training session

Classifications of employees whose qualifications and training may require assessment include:

- investigators
- research technicians
- animal husbandry personnel
- veterinarian and veterinary technicians

B.2.f. Veterinary Review and Consultation

Each IACUC is required by the DOH and BAI to have as one of its members a Doctor of Veterinary Medicine with direct or delegated program authority and responsibility for animal activities at the institution. The DOH and BAI require that the veterinarian be trained or experienced in laboratory animal science and medicine for the species used at the institution.

B.3. Other Protocol Review Considerations

B.3.a. Agricultural Research

Farm animals are used in a variety of research studies, including:

- vaccine trials
- basic biological processes
- pharmacokinetics and organ transplantation
- nutritional, breeding and management methods to increase the supply and quality of food and fiber

Unlike typical laboratory animals, farm animals used for research and teaching purposes may be housed in different kinds of environment, ranging from traditional laboratory to enclosed or extensive farm settings. Because of these, as well as the regulatory complexity surrounding farm animal oversight, determining the standards for the evaluation of research, teaching and testing purposes using farm animals is more complicated than for other laboratory animals.

Applicability of Animal Welfare Act (AWA.)

Farm animals used for improving animal nutrition, breeding, management, production efficiency, or the quality of food and fiber are specifically excluded from the definition of "animal" in the AWA. Furthermore, farm animals used in research, teaching or testing purposes may be covered by the AWA *(Appendix C.11.)*.

B.3.b. Antibody Production

Antibodies are important tools for research. Depending on research needs, antibodies may be produced by polyclonal or monoclonal technique. Each

technique requires that specific issues be addressed in animal protocols. IACUC should ensure adequate training of personnel in the use of proper technique when any method of immunization is proposed. The advantages of a centralized service utilizing skilled technicians to meet multiple research groups' needs for polyclonal and monoclonal antibodies is another refinement, which may enhance animal welfare in larger research programs. There are also many commercial sources of antibodies made to order.

B.3.c. Breeding Colonies

A breeding colony may be required for an established animal model because the animal model is not commercially available. Young animals have very specific age or weight requirements that cannot be fulfilled by a commercial breeding colony, or physiological status of the mutant animal is too severely affected for it to survive shipment.

Investigators developing a new spontaneous or induced mutant animal model need to maintain their own breeding colony because there is no alternative source for this mutant. While trying to establish a breeding colony for a new mutant model, the investigator should also simultaneously determine the phenotype to identify affected physiological system(s) and define inheritance pattern.

To review standard operating procedures for breeding colonies, the IACUC will need information about colony management. Information may include:

- number of breeders and young per cage
- breeding system including the ratio of male and female, or continuous versus interrupted mating
- weaning age
- separation of animals at weaning
- methods for identification of individual animals

Large numbers of animals may be required to maintain a breeding colony. The exact number of animals can only be estimated because it is impossible to predict in advance the exact number and sex of offspring. The estimated number of animals should be clearly distinguished between breeders and young that cannot be used in experiments because they are of the wrong genotype or sex, and animals that will be subject to experimental manipulations.

Colony management practices should be briefly described in the investigator's animal protocol, and justification provided for departure from standard institutional practices.

Determining which animals to include in the estimated number of animals in the protocol can be challenging to the investigator and the IACUC in the absence of IACUC-developed guidelines. The estimated number of animals that are kept for

breeding purposes and not subject to any experimental manipulations should be part of the animal protocol.

B.3.d. Field Studies

Application of the requirements and guidelines often pose unique challenges to the investigator and the IACUC because of the nature of field research. For example, field sites are often at a distance and may be remote, making it impractical for IACUC inspections. One solution is to require the investigator to provide photos, videotapes or other information that can help the committee evaluate the use of animals. For some projects, the committee can find a consultant near the field site to perform an inspection and report to the IACUC. If the studies fall under the animal welfare regulations, at least two members of the IACUC must conduct the site inspections.

Professional field biologists in organizations devoted to the study of fish, amphibians, reptiles, birds, and mammals have prepared guidelines for field work with these populations (*Appendix C. 3.*); these guidelines form a useful reference and can assist the investigator in planning, and the IACUC in reviewing, field research using vertebrate animals.

The proposed study can be assessed by the IACUC in a manner similar to laboratory studies if the protocol prepared by the project investigator addresses the relevant items, such as species selection, site selection and methods employed:

B.3.e. Hazardous Materials

The IACUC must pay particular attention to proposals employing potentially hazardous materials, such as:

- radioactive substances
- infectious microorganisms
- biological toxins
- hazardous chemicals
- recombinant DNA

All of these have the potential of causing harm to animals in the facility and the personnel caring for and using them. An act is listed in the *Appendix C. 14* which provides the legal framework to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use, and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their disposal into the Philippine territorial limits for whatever purpose; and to provide advancement and facilitate research and studies on toxic chemicals.

B.3.f. Instructional Use of Animals

The applicability of the AWRs depends upon the species used. Most institutions have chosen to require that all instructional use of animals, regardless of funding source or species, be reviewed by the IACUC.

It may be appropriate for students, undergraduate and graduate levels, to participate in the conduct of experiments involving laboratory animals for the purpose of education. All instructional proposals should clearly identify the objectives and justify the particular value of animal use as part of the course, whether it is demonstration of a known phenomenon, acquisition of practical skills, or exposure to research. Moreover, in the manner of using animals in the instruction, one must consider alternatives to reduce the use of animals while attaining the desired educational objectives.

Adequate supervision and training are especially important as the techniques learned by students may be carried into subsequent research careers. It is recommended that students receive instruction in the ethics of animal research and applicable rules and regulations prior to undertaking any experimentation. When students work in an investigator's laboratory, the IACUC must ensure that the students receive appropriate supervision and training in animal care and use. Student projects involving protocols different from those approved for the instructor's laboratory must be reviewed and approved on their own merits by the IACUC.

Experiments sometimes entail behavioral observation with no intervention or minor painless interventions, such as choices of food or living accommodations. Such projects teach the rigors of conducting a research project and the variability inherent to biological or behavioral systems. These exercises generally involve little or no distress to the animals, but still require IACUC approval.

B.3.g. Surgery and Other Medical Procedures

IACUC is often called upon to assess the details of surgical procedures, which are common component of animal research activities. Further, the IACUC is responsible for determining that the personnel are qualified and trained in the procedures to be performed.

Reviewing Protocols for Surgical Procedures

Some of the aspects of a surgical procedure that the IACUC reviews are:

- details of the procedure (e.g., pre- and post-operative care, aseptic technique, sequence of multiple procedures)
- appropriateness of the procedure proposed for the species
- qualifications of the personnel performing the surgical procedure
- species-specific and procedure-specific facility requirements
- patient monitoring practices in the surgical and post-surgical periods

- personnel occupational health and safety issues

B.3.h. Transgenic Animals

If a project uses a spontaneous or induced mutant model and the mutant animal can be purchased from a resource or commercial colony, review of this project is similar to the review of any other project. If a project uses an induced mutant model and only breeders are available from the source, review of this project is similar to review of any other breeding colony**.** In either case, the IACUC should determine if the mutant gene will result in a severely debilitating phenotype, if anything can or will be done to ameliorate such phenotype, and what endpoints will be used to determine when a mutant animal will be euthanized. Simple husbandry measures can modify the severity of some mutant phenotypes.

B.4. Monitoring of Approved Protocols

After the IACUC has approved a protocol, it has a responsibility to ensure that procedures are carried out in the laboratory or classroom as described in the protocol. This section will briefly review ways that the IACUC can monitor the conduct of approved protocols.

Acquisition and Tracking

Animals should be obtained only from licensed dealers or other legal sources. It is incumbent upon an institution to establish mechanisms to monitor and document the number of animals acquired and used in approved activities. This is best accomplished if animal purchases may be made only through the institution's animal resource facility or other appropriately designated office. Once animals have been acquired, they should be included in a tracking system. Many institutions have automated systems that will alert an appropriate individual when an investigator has reached a preset percentage (e.g., 80 to 90%) of the number of animals approved for a specific project, and can prevent ordering animals in excess of the numbers approved. Institutions with small programs using limited numbers of animals may choose to maintain a manual log of IACUC approved activities and numbers of animals acquired.

Tracking of animals becomes more complicated when investigators maintain breeding colonies. Keeping track of animal usage may be accomplished by requiring that investigators with breeding colonies maintain accurate records. Investigators can be required to report the number of animals born, weaned, or used in studies to the designated office at a regular interval. This report can be tallied against the numbers in the approved protocol.

C. Monitoring and Evaluation of Animal Care and Use

To help ensure that laboratory animals receive humane care and use or treatment in accordance with the highest ethical standards, laws, regulations and policies governing animal research, the IACUC must review and, if warranted, address any animal-related concerns raised by the public or institutional employees. Procedures must be established to ensure that concerns are communicated to the IACUC. The Committee must review each concern in a timely and systematic manner and, when necessary, take prompt, appropriate corrective actions.

D. Record Keeping and Communications

The BAI includes record keeping and reporting requirements. Usually, the IACUC office is assigned with this task. The individuals responsible should understand the animal use requirements and the institution's program. Many of the reports written may be accessible under such laws, and care should be taken to use language that is clear and precise to ensure accurate interpretation.

APPENDICES

Appendix A

Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Office of the Secretary
Elliptical Road, Diliman, Quezon City

August 2, 1999

Department of Agriculture
Administrative Order No. **40**
Series of 1999

Subject: RULES AND REGULATIONS ON THE CONDUCT OF SCIENTIFIC PROCEDURES USING ANIMALS

Pursuant to Republic Act No. 8485, otherwise known as the "Animal Welfare Act of 1998", the following rules and regulations are hereby promulgated for the information, guidance and compliance of all concerned:

Section 1. INTRODUCTON

1.1 The purpose of these rules and regulations is to institute the basic systems, organizations and practices in all laboratory animal care and use establishments to safeguard the welfare of animals used in scientific procedures. The intention is to grant authorization to conduct scientific procedures using animals to any concerned entity based mainly on the acceptability of their Animal Care and Use Program and the existence of an Institutional Animal Care and Use Committee (IACUC). There is no intention to evaluate or review individual scientific procedures or protocols at the Animal Welfare Committee level. Such evaluation or review is best assumed by the IACUC in adherence to the principles of self-regulation.

1.2 Applicable guidelines and principles including: 1) Guide for the Care and Use of Laboratory Animals, Institute of Laboratory Animal Resources, National Research Council, USA; 2) PALAS Code of Practice for the Care and Use of Laboratory Animals in the Philippines, and 3) The International Guiding Principles for Biomedical Research Involving Animals, Council for International Organizations of Medical Sciences, are considered as support documents. From time to time, additional guidance may be issued on specific issues. A Guide for Institutional Animal Care and Use Committees (Annex A) is an integral part of this document.

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1.3 The following shall be exempted from the requirements:

1.3.1 A clinical test on animals for evaluating a veterinary product in accordance with regulatory requirements or standard procedures.

1.3.2 The conduct of recognized veterinary procedures such as any therapy, prophylaxis, diagnostic or disease surveillance procedures directly necessary or desirable for the welfare of the animal or animal population. Examples are:

- giving established medicines (e.g., antibiotics, anthelmintics, analgesics) orally or by injection
- anesthetizing or sedating prior to further therapy (e.g., surgery) or diagnostic evaluation (e.g., x-ray)
- performing corrective surgical procedures
- vaccinating against rabies, distemper or other infectious diseases
- taking blood or other tissue samples for diagnosis/ disease testing

1.3.3 The conduct of recognized agricultural practices such as castration, genetic engineering or embryo manipulation, unless they form part of an experiment.

Section 2. DEFINITION OF TERMS

For purposes of these rules and regulations, the following definitions shall apply:

2.1 ***Animal*** refers to any live vertebrate animal, whether in a domestic or wild state, which is used or intended for use in scientific procedures.

2.2 ***Scientific Procedures*** refer to any activity which entails manipulation of animals for the following purposes:

a) biomedical researches, experiments, studies, or investigations
b) teaching and instruction
c) product (food, drugs, agrochemicals and cosmetics) testing
d) production of antisera or other biologicals

2.3 ***Manipulation*** refers to interfering with the normal physiological, behavioral or anatomical integrity of the animal by deliberately:

a) exposing it to any parasite, microorganism, drug, chemical, biological product, radiation, electrical stimulation, or environmental condition;

b) subjecting it to enforced activity, unusual restraint, abnormal nutrition or surgical procedures;

c) depriving it of usual care.

These may have the effect of causing an animal pain, suffering, distress or lasting harm. These terms include death, disease, injury, physiological or psychological stress, significant discomfort or any disturbance to normal health, whether immediately or in the long term.

Section 3. AUTHORIZATION/REGISTRATION/CERTIFICATION

3.1 Any private or government entity (i.e., person, partnership, organization, establishment, firm, cooperative, corporation, association including medical, dental, allied, research, academic and/or scientific institutions) must secure from the Bureau of Animal Industry, Department of Agriculture, Authorization to conduct scientific procedures using animals.

3.2 Application for Authorization or renewal thereof shall be made by the entity in such form and manner as may be prescribed from time to time by regulations.

3.3 A processing fee of P100.00 shall be paid upon application.

3.4 The revocation of the Authorization of any entity may be appealed to the Animal Welfare Committee.

Section 4. REQUIREMENTS FOR AUTHORIZATION

The entity shall be required to submit a duly accomplished "Application for Authorization" form (Annex B) accompanied by the following documents:

4.1 Description of the Animal Care and Use Program (ACUP) (Annex C) signed by the duly licensed veterinarian representing the entity.

4.2 Animal Care and Use Program Accreditation Certificate issued by a duly recognized body or association such as the Philippine Association for Laboratory Animal Science (PALAS).

4.3 Animal Technician Training Program on laboratory animal care and use.

4.4 Certification of Assurance that an Institutional Animal Care and Use Committee (IACUC) is in existence in the establishment.

The IACUC shall be composed of at least three (3) members:

- a licensed veterinarian (preferably with sufficient training and experience in laboratory animal science or medicine or in the use of the species in question)
- one experienced in scientific procedures involving animals
- a public member not affiliated with the institution and preferably with concern for animal welfare
- any additional member may be appointed provided he/she possesses the aforementioned qualifications.

The functions and obligations of the IACUC shall be to:

- evaluate and approve the ACUP and the protocols of scientific procedures
- monitor and review the implementation of the ACUP and scientific procedures through the conduct of facility inspections
- submit an annual report on the status and implementation of the ACUP to the BAI.

Section 5. RENEWAL OF AUTHORIZATION

5.1 The Authorization shall be valid for 2 years and is renewable thereafter. Renewal shall be based on a Compliance Evaluation of the entity.

5.2 Application for renewal of the Authorization shall be made at least 1 month prior to the expiration of the Authorization.

Section 6. EUTHANASIA

Euthanasia is defined as the process of inducing painless death to pets. It has rapidly gained acceptance in many aspects of scientific procedures. It should be done rapidly and humanely and must occur with the least fear, anxiety, pain and distress to the animals. Consideration must be given to how the animal is handled immediately prior to and during the procedure.

The euthanasia of animals should always be done away from public view.

6.1 Carbon Dioxide (CO_2)

- satisfactory for several species if used in an uncrowded chamber → safe, humane, economical, rapid
- relatively safe for operator but must be used in a well-ventilated room
- favored when investigators want to avoid the use of chemicals on animals and if a large number of animals are to be sacrificed
- available locally/commercially; initial expense may be high since the gas cylinder may have to be purchased but some companies loan out the cylinders; gas gauge not necessary but cylinder must be fitted with valves for control of gas release
- should be at least 40% concentration (commercial grade is 99%)
- since CO_2 is heavier than air, opening should be on top; container may be a specially constructed lethal chamber or a simple plastic bag
- filling container first before placing animals inside may improve efficiency
- dry ice may also be used but contact between the animals and the ice must be avoided

6.1.1 Small rodents (mice, rats, hamsters, guinea pigs)

- CO_2 is ideal for rodents since several animals can be euthanatized at the same time

- animals are placed in a large chamber or plastic bag which is subsequently filled with CO_2
- newborn may be more resistant than adults

6.1.2 Rabbits

- concentrations of 40-100% are safe and effective

6.1.3 Dogs and Cats

- concentration should at least be 40%, preferably 70%
- some stress may be encountered depending on the means of delivery and the concentration within the chamber
- very suitable for cats which become unconscious within 90 seconds and die in 5 minutes in concentrations less than 60%
- animal(s) should remain in the container for 20 minutes after respiratory arrest to ensure death
- only one adult cat or dog should be euthanatized in the enclosure at one time

6.1.4 Primates

- euthanatized in a lethal chamber or with mask or cone
- CO_2 may be used alone or following ketamine and/or general anesthetic agents

6.2 Other Inhalation Anesthetics

6.2.1 Halothane, Methoxyflurane – may be too expensive

6.2.2 Ether – inexpensive but flammable/explosive cotton is soaked with ether then placed inside an ether jar or other suitable tightly sealed container; wire mesh is placed over the cotton to prevent contact between animal and ether; animal is then placed in the container which is then tightly shut. Unsatisfactory because death is prolonged.

6.2.3 Chloroform – NOT recommended any more: CARCINOGENIC.

6.3 Barbiturates

- sodium pentobarbital (pentobarbitone) most commonly used
- controlled substance

6.3.1 Rodents

- intraperitoneal (IP) route easier and faster; intravenous (IV) route more difficult and time-consuming
- intrathoracic and intracardiac methods may be painful and are recommended only in animals already sedated

6.3.2 Rabbits

- IV route is first choice if aural veins are to be used
- Intracardiac may be painful or slow if injection is made into pericardial space; may be useful if animal is already under anesthesia
- sodium pentobarbital is humane, safe, and efficient but consideration should be given to the chemical burden

6.3.3 Dogs and Cats

- sodium pentobarbital at three times the anesthetic dose should ensure respiratory and subsequent cardiac arrest in dogs and cats
- this drug by the IV route is the most recommended means of producing in dogs and cats
- premedication with sedative drugs by intramuscular (IM) or subcutaneous (SC) routes facilitates restraint for intravenous injection
- IP injection is reserved for fractious animals

- intracardiac injection can be used in dogs already anesthetized, or by skilled personnel in unanesthetized animals

- some euthanatizing agents (T-61[R] or Buthanasia[R]) may be available commercially

6.3.4 Primates

- injected by IP or IV route while animal is being held or restrained in squeeze cage

- premedication with IM or SC administration of ketamine hydrochloride facilitates the procedure

- may be combined with other anesthetic agents

6.4 Cervical or Cranial Concussion (Stunning)

- requires skill to be effective and humane

6.4.1 Rodents

- guinea pigs may be stunned with a sharp blow to the back of the neck; this procedure is usually followed by exsanguination, thoracotomy, etc.

- suitable also for mice and other small animals

- rats may be wrapped in a small towel prior to striking them behind the head or against a sink or table; primarily used in young rats

6.4.2 Rabbits

- involves striking the rabbit behind the head with a wooden or metal object or the heel of the hands as in a karate blow (rabbit punch)

- used when drug is contraindicated; avoids exogenous drugs but prevents histological studies of the brain

- objectionable to some individuals for esthetic reasons

- requires skill and does not assure death
- followed by decapitation, thoracotomy, or exsanguination

6.5 Cervical Dislocation

- requires skill to be effective and humane

6.5.1 Rodents

- very satisfactory in mice, can be used for other animals weighing less than 250 gm e.g. young rats; used only if a few mice are to be sacrificed
- thumb, first finger, a pencil, a piece of wood, or metal object is placed against the back of the neck and pressed down against a firm surface such as a table top to produce the dislocation; pressure is applied to the neck at the same time tail is pulled firmly and suddenly; the thoracic vertebrae may also be dislocated
- hamsters and guinea pigs are more difficult to euthanatize by this method due to their short necks, stronger neck muscles, and loose skin over the neck and shoulders; an alternate method consists of grasping them over the head from the cranial direction and/or giving the body a quick snap as a whip.

6.5.2 Rabbits

- rabbits weighing less than 1 kg can be held by the legs at the waist with one hand, while the head is held in the other and the neck is overextended
- the technique may also be used while the rabbit is held in lateral recumbency on a table or flat surface

6.6 Decapitation

- performed with the use of guillotine

- unpleasant and dangerous to the operator but useful for pharmacological studies or for special studies in which drugs are contraindicated
- objectionable to many people
- equipment must be thoroughly cleaned before the next animal is decapitated
- head must be completely served from the body
- more difficult to use in guinea pigs, hamsters, and mice than in rats; also used in rabbits

6.7 Exsanguination

- used in animals (usually rabbits and guinea pigs) that have high titers of antibodies
- performed only AFTER anesthetization
- isolation of the carotid artery or venipuncture via the intracardiac route are means of withdrawing blood

6.8 Air by the Intravenous Route

- 5-50 mL/kg produces rapid death that may be accompanied by convulsions, opisthotonos, pupillary dilatation, and vocalization
- mostly used in rabbits
- NOT recommended in unanesthetized animals

6.9 Chloral Hydrate and Magnesium Sulfate

- given intravenous to cats and dogs to effect; animals MUST be sedated first

6.10 Ethanol 70%

- for use in mice and rats only; 70% concentration is usually used

- initially proposed by Dr. Roger Lord of the Queensland (Australia) Institute of Medical Research, Herston, Queensland (CCAC Research 16(1); 1991,1992- January)

- mode of action: works as a depressant like CO_2

- humane, inexpensive, very simple - - Dr. Lord

- may be utilized in instances where barbiturate drugs are normally used

- readily available

- injected intraperitoneally

Section 7. ADMINISTRATIVE SANCTIONS

7.1 Authorization shall be revoked under the following conditions:

7.1.1 Failure to subscribe to or conduct the Animal Technician Training Program

7.1.2 Misrepresentation of any material fact in the animal care and use program description and the reports of the ACUC

7.2 Re-application after revocation

An entity whose Authorization was revoked can only re-apply for Authorization after one (1) year from the date of revocation.

Section 8. SEPARABILITY CLAUSE

In case any provision of these rules and regulations is declared to be contrary to law or unconstitutional, the other provisions that are not affected shall thereby remain valid and effective.

Section 9. REPEALING CLAUSE

All Administrative Orders, rules and regulations and other Administrative issuance or parts thereof, inconsistent with the provisions of this Administrative Order, are hereby repealed or modified accordingly.

Section 10. TRANSITORY PROVISIONS/GRACE PERIOD

The current conduct of scientific procedures using animals shall be allowed pending the establishment of the infrastructures and mechanisms for authorization/registration/certification and until the issuance of a denial of authorization with reference to the initial application for authorization.

Section 11. EFFECTIVITY

This Order shall take effect fifteen (15) days after its publication in a newspaper of general circulation.

EDGARDO J. ANGARA
Secretary

Annex A

Guide for Institutional Animal Care and Use Committees (IACUC)

1. Objective

This Guide describes the composition, functions and obligations, and the review/inspection process to be followed by Institutional Animal Care and Use Committees (IACUC)

2. General Considerations

2.1 All proposed scientific procedures shall be approved by the IACUC before they can be carried out on live animals.

2.2 The review of the IACUC shall be guided by the principles of the 3R's of Russell and Burch and other pertinent guiding principles such as the International Guiding Principles for Biomedical Research Involving Animals (CIOMS). See attachments.

2.3 In reviewing the protocols, the IACUC shall use a Protocol Review Form which include standard information that focuses on the welfare and use of the monkeys. The review is specifically on animal care and use, not a review or evaluation of the entire merit of the study/procedures. The review must not interfere with scientific objectives. The review must be flexible and not burdensome. It must avoid delaying the conduct of scientific procedures.

2.4 Should recommendations or modifications be suggested, the principal investigator/responsible person must be given the opportunity to discuss/ explain the concerned procedures.

2.5 Because of the commercial nature of some studies/procedures, confidentiality is invoked. Data, protocols, reports and records of discussions must be kept confidential.

2.6 A record of the IACUC meetings, attendance, deliberations, decisions, actions and other relevant review/inspection/approval documents shall be archived for at least five (5) years.

3. Composition of the IACUC

3.1 The IACUC is composed of at least three (3) members:

- a licensed veterinarian (preferably with sufficient training and experience in laboratory animal science or medicine or in the use of the species in question)
- one (1) experienced in scientific procedures involving animals

- a public member not affiliated with the institution and preferably with concern for animal welfare
- any additional member may be appointed provided he/she possesses the aforementioned qualifications.

3.2 The institutional management designates all members.

3.3 The veterinarian usually serves as the chairperson and a secretary is appointed to record the contents of the discussions and prepare the reports.

3.4 If necessary, the chairperson can request any expert to attend the Committee meetings or review protocols.

3.5 A term of membership shall be one (1) year but it is possible for the same personnel to be re-appointed for the following term.

4. Functions and obligations of the IACUC

The functions and obligations of the IACUC shall be to:

- evaluate and approve the Animal Care and Use Program (ACUP) and the protocols of scientific procedures
- monitor and review the implementation of the ACUP and scientific procedures
- submit an annual report on the status and implementation of the ACUP
- revoke any approval on the basis of non-compliance to the approved program/protocol despite repeated appeals on its violations
- provide necessary technical recommendations and guidelines/references (e.g., a list of recommended anesthetics, analgesics, and tranquilizers with dose ranges for monkeys)

5. Protocol Review Process

5.1 The principal investigator/responsible person shall submit the accomplished Protocol Review Form (Appendix 1) at least one week before the commencement date of the study/procedures.

5.2 The Chairperson of the IACUC shall assign the study/procedure under one of the following categories:

Category 1: Procedures of Low or Mild Severity –

including the taking of small or infrequent blood samples; skin irritation tests with substances expected to be only mildly irritant; conventional minor surgical procedures under anesthesia such as laparoscopy, small superficial tissue biopsies or cannulation of peripheral blood vessels; and other procedures which will be terminated before the animal shows more than minor changes from normal behavior.

Category 2: Procedures of Medium or Moderate Severity -

including much of the screening and development of potential pharmaceutical agents, toxicity tests avoiding lethal endpoints, and most surgical procedures, provided that suffering can be controlled by reliable post-operative analgesia and care.

Category 3: Procedures of High or Substantial Severity -

Including procedures that result in a major departure from the animal's usual state of health or well-being. These include acute toxicity procedures where significant morbidity or death is an endpoint; some efficacy tests of anti-microbial agents and vaccines; some models of disease and major surgery where significant post-operative suffering may result.

5.3 Category 1 procedures are for expedited review by the IACUC chairperson.

5.4 Category 2 procedures are for expedited review by the IACUC chairperson and 1 or 2 other members of the committee assigned by the chairperson

5.5 Category 3 procedures are for full review by a quorum of the IACUC, but not by less than 3 members.

5.6 The IACUC members are informed by the IACUC Chairperson of the action taken on the protocol. Copies of the Protocol Review Form (Animal Care and Use Statement) and protocol review comments are attached to the memorandum.

5.7 The principal investigator/responsible person is furnished a copy of the consolidated protocol review comments, which he or she shall act upon for the approval of the protocol to be granted. **No study/procedure can be conducted without prior approval.** In case of revisions, the principal investigator shall submit the revised parts of the protocol to the IACUC Chairperson for evaluation.

5.8 For Category 3 procedures, approval means approval of the majority of the quorum present.

5.9 No member may participate in the review or approval of a procedure in which the member has a conflicting interest (e.g., direct involvement in the project) except to provide information requested by the IACUC.

5.10 Regardless of category, all IACUC members, except those subject to Section 5.8, shall sign the Certificate of Approval (Appendix 2).

5.11 If the IACUC revoked an approval, based on a majority decision of a quorum of a convened IACUC meeting, the Institutional Official in consultation with the IACUC shall review the reasons for revocation, take appropriate corrective action and report that action and the full circumstances of the revocation to the Animal Welfare Division.

6. Animal Care and Use Program (ACUP) Review/Inspection Process

6.1 The IACUC evaluates the ACUP, at least once annually, according to the following inspection items

- veterinary care
- personnel qualifications and training
- animal environment, housing and management
  physical environment, behavioral management and husbandry
- veterinary medical care
  animal procurement and transportation, preventive medicine, surgery, pain, analgesia, anesthesia, euthanasia

6.2 Each IACUC member shall list down his or her perceived deficiencies (that could be programmatic and facility-related) in the ACUP.

6.3 The IACUC members shall then deliberate on their individual findings, preferably in the presence of the animal facility manager or Institutional Official to establish a mutually agreeable plan and realistic deadline for corrections. A Summary ACUP Evaluation Document (Appendix 3) shall then be prepared. The document shall present the deficiencies classified as Minor or Significant and the corresponding expected Timeline for their correction shall be indicated. A significant deficiency is one which is or may be a threat to the health or safety of the animals, as judged by the IACUC and the Institutional Official.

6.4 The animal facility manager shall acknowledge the receipt of the Document and he shall be given the opportunity to reply in writing to the IACUC.

6.5 The animal facility manager is required to confirm in writing that they have corrected the deficiencies by the date/timeline given.

6.6 A Certificate of Approval of the ACUP (Appendix 4) shall be issued upon confirmation of the outcome of the actions taken.

6.7 If significant deficiencies are not resolved by the set correction dates, the IACUC must notify the Animal Welfare Division, Bureau of Animal Industry, within 30 working days.

6.8 The following references may be used by the ACUC as guidelines for evaluation:

- PALAS Code of Practice for the Care and Use of Laboratory Animals in the Philippines. 1993, Philippines Association for Laboratory Animal Science (PALAS).

- Guide for the Care and Use of Laboratory Animals. 1996, Institute of Laboratory Animal Resources, National Research Council, U.S.A.

7. Protocol Review Process

7.1 The principal investigator or responsible person submits the Protocol Review Form "Animal Care and Use Statement" to the IACUC Chairperson.

7.2 The IACUC Chairperson assigns the protocol to its category. Under Category 3, the principal investigator and IACUC members are informed of the schedule of the full review.

7.3 Review Process: Category 1 – by the IACUC Chairperson only
Category 2 – by the IACUC Chairperson and 1 or 2 members
Category 3 – by a quorum of the IACUC (but not less than 3 members)

7.4 The principal investigator and IACUC members are informed of the r review results:

- Memo to the PI includes copies of the Protocol Review comments
- Memo to the IACUC members includes the Protocol Review comments and the Animal Care and Use Statement.

7.5 When the IACUC reviewers made no significant comments, or after the IACUC Chairperson has been satisfied by the action taken by the principal investigator, the Protocol Review Certification shall be presented to all the members for affixing their signatures.

8. Animal Care and Use Program Inspection Process

8.1 The members of the IACUC conducts the inspection of the animal facility using the ACUP Inspection Checklist where remarks and observations are written.

8.2 After inspection, the IACUC deliberates on their findings together with the Animal Facility Manager or Institutional Official.

8.3 The IACUC prepares the "Summary of the ACUP Evaluation" Document presenting the deficiencies (minor or significant) observed. The other findings that are not necessarily considered as deficiencies are recorded in the minutes of the meeting.

8.4 The Animal Facility Manager is presented a copy of the document for his appropriate action.

8.5 The Animal Facility Manager acknowledges the receipt of the document and is given the opportunity to reply in writing to the IACUC.

8.6 The Certificate of Approval of the ACUP is issued upon confirmation of the outcome of the actions taken by the Animal Facility Manager or Institutional Official.

9. Animal Care and Use Program (ACUP) Inspection Check List

Inspection Date_____

Items	/	Remarks
Veterinary care - Full/part time - Weekend /holiday duty		
Personnel qualifications and training - Names - Credentials - Qualifications - Training - Experience/education		

Animal care personnel - Number - Training - Certification level - Experience/continuing education		
Animal environment, housing and management - Physical environment (housing/cage (barrier aspects), animal space provisions/stocking densities, temperature and humidity, ventilation, pressure gradient, illumination, and noise control, monitoring and documenting - Behavioral management (environmental enrichment-structural/social) - Husbandry - Food (type, source, feeding method, quality control – storage, stock monitoring, nutritional analysis, contaminant analysis, etc.) - Water (source, treatment or purification process, supply method, quality control method - Sanitation (washing/sanitizing frequency and method for primary and secondary enclosures including corridors and support areas, and cage accessories – feeders, watering devices and distribution lines) - Emergency, weekend, and holiday care (procedure, emergency communication system		
Veterinary medical care - Disease preventive management (quarantine, stabilization, conditioning, isolation, surveillance – animal observation/monitoring, diagnosis, treatment and control of disease) - Pain, distress, analgesic, anesthesia (monitoring use of agents, training and experiences of personnel) - Euthanasia (methods, training and experiences of personnel)		

- Additional remarks may be written in another sheet of paper.

_____ Date _____

Annex B

APPLICATION FOR AUTHORIZATION

(For the Conduct of Scientific Procedures Using Animals)

1. Name of Entity: _____

2. Address : _____

_____

3. Telephone Nos. : _____ Fax Nos.: _____

4. Name and Position of Representative Person:

_____

Last Name First Name Middle Name

Position : _____

5. Description/Profile of Entity (attach organizational chart):

6. Purposes of the conduct of Scientific Procedures (encircle one or more):

   a. Biomedical research, experiment, studies, investigation (including pre-clinical research)
   b. Teaching and instruction
   c. Product testing
   d. Production of antisera or other biologicals

7. Identify the Key Institutional Representatives (including the ACUC Chairperson, veterinarians, and researchers):

I certify that the statements made herein are correct and true.

_____ _____

Signature of representative Signature of head of Institution

Date :_____ Date: _____

Note: This application should be accompanied by the requirements stipulated in Section 4 of the Administrative Order.

Annex C

DESCRIPTION OF INSTITUTIONAL ANIMAL CARE AND USE PROGRAM

A. Institutional Policies and Responsibilities

1. Monitoring the Care and Use of Animals

a. Institutional Animal Care and Use Committee (s) (IACUC)

1) State who appoints the committee and who is the institutional official for animal care and use.

2) Describe composition (names, degrees, affiliation), frequency of meetings, and responsibilities of the committee.

3) Describe the frequency with which the committee reviews the animal care and use program and facilities and provide a copy of the last report of this review.

4) Describe other procedures for monitoring care and use of animals.

b. Animal Care and Use Protocols (A blank copy of your institution's protocol review from should be provided as an attachment)

Describe the process for reviewing and approving scientific procedures protocols including the review of research and teaching proposals and ongoing studies. Describe how protocols that have a potential to cause pain or distress to animals are reviewed and controlled or overseen.

c. Multiple Major Survival Surgical Procedures

Note: One survival surgical procedure followed by a nonsurvival procedure is not included in this category

1) Describe the institution's policy regarding multiple major survival surgery on a single animal.
2) Describe the time allowed between procedures on the same animal.

2. Veterinary Care

a. Describe the institutional arrangement for providing adequate veterinary care. Give the veterinarian's name, list responsibilities,

and how the veterinarian(s) is(are) involved in monitoring the care and use of laboratory animals. If employed part-time or as a consultant, note the frequency and duration of visits.

b. Describe others' roles in providing veterinary care.

3. Personnel Qualifications and Training

a. Animal Resource Professional/Management/Supervisory Personnel (including the veterinary personnel named above)

List name(s), credentials, qualifications, training, experience, and continuing education. (*Please do not provide curriculum vitae of personnel).*

b. Animal Care Personnel

Note the number of animal care personnel (a list of names need not be included) and summarize their training, certification level and type, experience, and continuing education opportunities provided.

B. Animal Environment, Housing and Management

1. Physical Environment

a. Housing

Describe the cage and pen environment (include general descriptions of composition (materials), condition, flooring, special ventilation or barrier aspects, access to food and water).

b. Animal Space Provisions

Describe references and considerations used to determine adequate cage or pen size or housing/stocking densities.

c. Temperature and Humidity

Provide method and frequency for assessing, monitoring, and documenting animal room or housing area temperature and humidity.

d. Ventilation (for air-conditioned facilities only)

Provide method and frequency for assessing, monitoring, and documenting the animal room ventilation rates and pressure gradients.

e. Illumination

Describe lighting system, intensity, photoperiod, automatic control (yes/no), windows (yes/no)

f. Noise

Describe design features and methods used to control/reduce/ prevent excessive noise in the animal facility

2. Husbandry

a. Food

1) Describe type and source of food stuffs

2) Describe how food is provided to various species (*ad libitum,* limited amounts, types of feeders).

3) Describe special food quality control procedures including storage condition, procedures for rotating stock, monitoring milling dates, nutritional quality, chemical contaminants, etc.

b. Water

1) Describe source, treatment or purification process, and how provided to the animals (pans, bottles with sipper tubed, automatic watering, etc.).

2) Methods of quality control including monitoring for contaminants.

c. Bedding

Describe type (s), how used, and how selected for various species

d. Sanitation

1) Bedding Change

Describe frequency of contact and non-contact bedding changes for each species and cage type (solid bottom or suspended) or pen.

2) Cleaning and disinfection of primary enclosures

Note the washing/sanitizing frequency and method for each of the following:

a) solid bottom cages
b) suspended wire bottom or slatted floor cages
c) cage tops (wire and, if applicable, filtered)
d) cage pans under suspended cages
e) play pens, floor pens, stalls, etc.
f) corrals for primates or outdoor paddocks for livestock

3) Cleaning and disinfection of secondary enclosures

a) Describe animal room cleaning frequency, procedures (floors, walls, ceilings, ducts, exposed pipes, and fixtures), methods (hose, high pressure washer, vacuum cleaner, hand brushing, mopping, etc.) and cleaning/sanitizing agent(s) (generic name) used.

b) Describe the corridor and support area cleaning frequency and procedures and cleaning/sanitizing agents (generic name) used.

c) Describe the procedures for sanitizing cleaning implements such as mops and mop buckets

4) Sanitation of Cage Equipment

a) Describe sanitation procedures and frequency for feeders.

b) Describe sanitation procedures and frequency for watering devices such as bottles, sipper tubes, bowls, automatic watering systems (distribution lines, connection coils), etc.

e. Emergency, Weekend, and Holiday Care

1) Describe procedures for providing weekend and holiday care. Indicate who (e.g. regular animal care staff, students, part-time staff, etc.) provides and oversees care and what procedures are performed.

2) Describe procedure for contacting responsible animal care and/or veterinary personnel in case of an emergency.

C. Veterinary Medical Care

1. Preventive Medicine

a. Quarantine, Stabilization and Isolation

1) Describe the initial animal receipt and evaluation procedures for each species.

2) Describe quarantine facilities and procedures for each species

3) Describe isolation facilities and procedures for ill animals

4) Describe periods for physiologic, psychologic, and nutritional stabilization followed.

5) Describe program for separation of animals by species, source, and health status. If not maintained separately, describe circumstances where mixing occurs and rationale for mixing.

b. Surveillance, Diagnosis, Treatment, and Control of Disease

1) Describe procedure and identify person(s) responsible for daily observation of animals for illness or abnormal behavior, their training for this responsibility, and procedure for reporting observations (written or verbal).

2) Describe procedure for providing veterinary medical care to ill animals and note the chain of command for and mode of communicating (written and verbal) information to the veterinarian regarding sick animals.

3) Describe preventive medicine and animal health monitoring program

4) Describe clinical laboratory and diagnostic resources/ capabilities

2. Pain, Distress, Analgesia, and Anesthesia

a. Describe how the use of anesthetics and analgesics is monitored and by whom

b. Note training and experience required to perform anesthesia

3. Euthanasia

a. Describe methods used for each species.

c. Describe training and experience of personnel carrying out euthanasia procedures.

D. Physical Plant

1. Functional Areas

a. Describe the general arrangement of the animal facilities (conventional, clean/dirty corridor, etc.)

b. Note specialized types of available animal housing spaces such as barrier or hazard containment (infectious, radioactive, chemical), or facilities designed specially for housing certain species of animals such as pens for dogs, pigs, sheep, nonhuman primates, etc.

c. Note the following necessary support areas of the animal care program, including the number of rooms and total square meters available for each activity.

1) quarantine for rodents and rabbits
2) quarantine for random source animals such as dogs, cats, and nonhuman primates
3) isolation for sick animals
4) aseptic surgery
5) food storage
6) bedding storage
7) cage washing and sanitizing
8) clean cage storage
9) laboratory for diagnosis and control of laboratory animal diseases

2. Construction Guidelines

a. Exterior Windows

Describe presence of exterior windows in animal rooms that allow natural photoperiods or public observation into the room.

b. Floors

Describe composition and present condition of floors in animal facilities.

c. Walls

Describe composition and present condition of walls in animal housing and use areas and in sanitization areas.

d. Ceilings

Describe composition and present condition of ceilings in animal housing and use areas and in sanitization areas.

e. Ventilation and Air Conditioning (VAC)

Describe the performance aspects of the VAC system. Use the form enclosed.

f. Power and Lighting

1) Note if emergency power is provided for the animal facility and if so, what electrical services it maintains in the event the primary power source fails.

2) Give history of power failures to the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to assure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

3) Describe animal losses or health problems resulting from power failures (if any).

g. Noise Control

Describe physical methods for controlling excessive noise (e.g., materials used, location).

Appendix 1.

ANIMAL CARE AND USE STATEMENT
(Protocol Review Form)

I. PROCEDURE(S) OR TITLE OF RESEARCH/STUDY:

II. PURPOSE/OBJECTIVES:

III. DURATION OR TIME FRAME:

IV. RESPONSIBLE PERSON OR PRINCIPAL INVESTIGATOR:

A. NAME
B. QUALIFICATION (degree(s) or training experience)

V. BACKGROUND AND SIGNIFICANCE OF THE PROCEDURE OR RESEARCH:
(include a description of the biomedical characteristics of the animals which are essential to the proposed procedure/research and indicate evidence of experiences with the proposed animal model)

VI. DESCRIPTION OF METHODOLOGIES/EXPERIMENTAL DESIGN:
This section should establish that the proposed procedures/research are well designed scientifically and ethically. The following should be indicated or described:

A. Type of animal to be used (species)
B. Source of the animals
C. Reason/basis for selecting the animal species
D. Sex and number of animals (justify the number of animals)
E. Quarantine and/or acclimation or conditioning process
F. Animal care procedures
    1. Cage type
    2. Number of animals per cage
    3. Cage cleaning method
    4. Room temperature, humidity, ventilation and lighting
    5. Animal diet and feeding and watering method
G. Experimental or animal manipulation methods
    1. General description of animal manipulation methods (including method of conditioning)
    2. Dosing method (including frequency, volume, route, method of restraint and expected outcome or effects)
    3. Specimen or biological agent (blood, urine, etc.) collection method (including frequency, volume, route and method of restraint)

4. Animal examination procedures and frequency of examinations (including restraining method)
5. Use of anesthetics (including drug, dosage, frequency)
6. Surgical procedures (type and purpose)
    a. Where will surgery be performed
    b. Description of supportive care and monitoring procedures during and after surgery
    c. Description of measures for possible post-surgical complications
    d. Name(s) of surgeons and their qualifications and relevant experiences
7. If euthanasia of animals will be done, indicate/describe the method selected

H. Is there a non-animal model applicable for the procedure/study? If so, please provide the reasons for not using it.

I. Indicate the names and qualification of all personnel who will be responsible for conducting the procedures.

VII. DECLARATION BY THE RESPONSIBLE PERSON:

I ACCEPT RESPONSIBILITY FOR ASSURING THAT THE PROCEDURES/ STUDY WILL BE CONDUCTED IN ACCORDANCE WITH THE APPROVED PROTOCOL.

I ASSURE THAT ALL PERSONNEL WHO USE THIS PROTOCOL AND WORK WITH ANIMALS HAVE RECEIVED APPROPRIATE TRAINING/ INSTRUCTIONS IN PROCEDURAL AND HANDLING TECHNIQUES, AND ON ANIMAL WELFARE CONSIDERATIONS.

I AGREE TO OBTAIN WRITTEN APPROVAL FROM THE INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE PRIOR TO MAKING ANY CHANGES AFFECTING MY PROTOCOL. I ALSO AGREE TO PROMPTLY NOTIFY THE IACUC IN WRITING OF ANY EMERGENT RPOBLEMS THAT MAY ARISE IN THE COURSE OF THIS STUDY, INCLUDING THE OCCURRENCE OF ADVERSE SIDE EFFECTS.

Signature of the Responsible Person:

_____ Date _____

Noted by the IACUC Chairman

_____ Date _____

RECOMMENDING APPROVAL OF THE RULES AND REGULATIONS ON THE CONDUCT OF SCIENTIFIC PROCEDURES USING ANIMALS

ENRIQUE T. CARLOS
(PVMA)
Chairperson

NITA HONTIVEROS-LICHAUCO
(PAWS)
Vice-Chairperson

TEODORO A. ABILAY
(BAI)
Vice-Chairperson

MEMBERS:

EDGARDO C. DIMALANTA
National Meat Inspection Commission

ADOLFO R. ACORDA
Philippine College of Swine Practitioners

ABELARDO B. AGULTO
Philippine College of Canine Practitioners

ELEANOR R. JAVIER
Department of Education and Sports

CONRADO A. FRANCISCO
Philippine Society for the Prevention of Cruelty to Animals

FIDEL F. MALBAS, JR.
Agricultural Training Institute

NORMA M. MOLINYAWE
Protected Areas and Wildlife Bureau

JOSE V. VALENZUELA
Philippine Society of Animal Science

ARWINIE A. SERRANO
Veterinary Practitioners Association of the Philippines

EULOGIO R. MAGSAYSAY
by **Manuel M. Pablo**
Department of Interior and Local Government

MENANDRO C. VALERIO
Philippine Animal Hospital Association

AO lab animals/
ETC/eda

Appendix B

Republic of the Philippines
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City
Tel Nos. (632) 929-66-26 to 29 •(632) 929-62-52
929-66-20 to 29 •929-66-33 to 35
929-70-41 to 43

JAN 3 0 2009

DENR ADMINISTRATIVE ORDER
No. 2009- 01

SUBJECT : GUIDELINES IN ESTABLISHING THE WILD FAUNA MARKING AND IDENTIFICATION SYSTEM

Pursuant to the objectives of Republic Act 9147, otherwise known as the *Wildlife Resources Conservation and Protection Act of 2001*, and its Joint DENR-DA-PCSD Administrative Order No. 01, the Implementing Rules and Regulations of RA 9147, and in compliance to Article VI of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), a wild fauna marking and identification system is hereby established for the information and compliance by all concerned.

Section 1. Scope of Application

1.1 The provisions of this Order shall apply to:

1.1.1 All parental stock and progenies of threatened endemic and exotic species of birds, mammals and reptiles held in captivity or confined environments such as farms, zoos, aviaries, rescue centers, conservation breeding centers and other establishments breeding and/or maintaining said species on the basis of either or a combination of a Memorandum of Agreement entered into with the DENR, Wildlife Farm Permit, Wildlife Collector's Permit, Wildlife Special Use Permit and Gratuitous Permit issued by the DENR;

1.1.2 Private collections duly registered with the DENR under a Certificate of Accreditation and Registration or Certificate of Wildlife Registration;

1.1.3 Wild animals intended for trade, public show such as circus and/or release back to their natural habitat as part of the wild population restoration program; and

1.1.4 Wild fauna by-products such as raw hides or skins; leather goods made of wildlife skin; deadstock and/or framed specimens of butterflies; and, other items made of wild fauna parts for commercial use.

1.2 This Order shall not apply to plants, live invertebrates and amphibians.

Section 2. Definition of Terms. As defined under Republic Act No. 9147 and this Order, the following terms shall mean as:

1) **Amphibian** – refers to any of the various cold-blooded, smooth- skinned vertebrates capable of living on land and in water, such as frogs, toads, salamanders and the like;

2) **Avian or bird** - refers to any of the various warm-blooded, egg-laying vertebrates of the class Aves, characterized by feathers and forelimbs modified into wings. This includes jungle fowl, wild ducks and the like;

3) **By-product** - refers to any part taken from wildlife species such as meat, hides, antlers, feathers, leather, fur, internal organs, bones, scales, scutes, carapace and the like, or deadstock specimens of wildlife in its preserved/stuffed state, including compounds indirectly produced in a bio-chemical process or cycle;

4) **CITES** - refers to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, a treaty regulating the international trade of fauna and flora listed in its Appendices;

5) **Critically endangered species** - refers to a species or subspecies that is facing extremely high risk of extinction in the wild in the immediate future;

6) **DA** - refers to the Department of Agriculture;

7) **DENR** - refers to the Department of Environment and Natural Resources;

8) **Deadstock** – refers to preserved adult butterfly specimens;

9) **Dye** - refers to a mixture of soluble material and suitable liquid preferably used to provide color coding for wildlife;

10) **Endemic species** - refers to species or subspecies which is naturally occurring and found only within the specific areas in the country;

11) **Exotic species** - refers to species or subspecies which does not naturally occur in the country;

12) **Identification mark** - refers to any indelible imprint, lead seal or other suitable means of identifying a wildlife specimen, designed in such a way as to render its imitation by unauthorized persons as difficult as possible (e.g. microchip, tattoo, leg band, wing band, metal tag, dye, etc.);

13) **Identification system** - refers to a system establishing the authenticity of the wildlife's distinctiveness, characteristics and ownership;

14) **Invertebrates** - refer to the type of animals that do not have backbones or spinal columns, such as worms, insects, spiders and the like;

15) Leg band :

15.a Closed leg band - refers to a metal or hard plastic ring or band in a continuous circle, without any break or join, which has not been tampered with in any way, of a size which cannot be removed from the bird when its leg is fully grown after having been applied in the first days of the bird's life;

15.b Open leg band – refers to a metal or hard plastic ring or band in a continuous circle, with a break or join worn in either left or right leg of a juvenile or mature bird that was not marked at its early stage of life;

16) **Mammal** - refers to any of the various warm-blooded vertebrates of the class Mammalia, characterized with hair covering on the skin and milk-producing mammary glands (for females), for nourishing the young;

17) **Microchip** – refers to a wireless electronic device, as small as a grain of rice that emits radio signals or radio frequency in alphanumeric or numeric values detected by a scanner;

18) **Paint** - refers to a combination of pigments with suitable thinners or oils forming a closely adhesive substance spread thinly on the covering of wild fauna (e.g. carapace of semi-aquatic tortoise);

19) **Parental Stock** – of a breeding operation means the ensemble of the animals in the operation that are used for reproduction;

20) **PCSD** - refers to the Palawan Council for Sustainable Development;

21) **Progenies** - refer to the offspring produced in a controlled environment from the parental breeding stock;

22) **Reptile** - refers to any of the various cold-blooded, air breathing vertebrates of the class Reptilia, such as snakes, lizards, crocodiles, turtles and the like, having an external covering of scales or horny plates;

23) **Scanner** - refers to an electronic device that retrieves the unique identification code of the microchip;

24) **Secretary** - refers to the Secretary of the Department of Environment and Natural Resources;

25) **Tag** – a device made of metal, plastic, leather or pliable material bearing significant information for the identification of a specific individual or by-product of a specific species of wild fauna. It could be collared around the neck (neck tag) of an animal with elongated neck such as ostrich, emus and the like; attached to the ear lobe (ear tag) of hoofed animals like deer, buffalo and zebra or to the hind flippers or trailing edge of hard-shelled marine turtles, tortoises and land turtles, or simply a label glued on to the wild fauna parts or items with, or made of, wild fauna parts;

26) **Tattoo** - refers to coded permanent mark made on the skin of animals using a specialized instrument for pricking and staining with an indelible ink or pigment;

27) **Threatened species** - is a general term to denote species or subspecies considered as critically endangered, endangered, vulnerable or other accepted categories of wildlife which population is at risk of extinction;

28) **Wing band** – refers to numbered metal clip attached to the wing web of avian/ membrane of mammal species by means of an applicator.

Section 3. Types and Uses of Identification Marks. The following marking and identification systems shall be used to properly identify and monitor individuals of birds, mammals and reptiles, including their progenies, to wit:

3.1 **Microchips**. The microchips are applicable for the markings of mammals, large birds and reptiles with the following minimum requirements:

- The microchip codes should reflect number series corresponding to country code, owner's code, specific animal code, and species code;

- The brand of microchips to be used should be ISO compliant ;

- The process of implanting the microchip should be handled by a licensed veterinarian in the presence of DENR representative;

- The application should not cause any allergic reaction to the wildlife. In case of animal mortality attributed to the microchip itself, the supplier shall be held responsible for such death; and

- The transponder should not be re-used and should be destroyed upon the death of the animals.

3.2 **Tattoo**. The tattoo is applicable for the marking of small to large mammals with the following minimum requirements:

- The tattoo codes should be specific for every individual per species reflecting specific animal code, source and owner's code; and

- The ink for the purpose should be permanent and not cause any allergic reaction to the wildlife.

3.3 **Leg Bands**. The leg bands are applicable for the marking of avian species with the following minimum requirements:

- The leg bands should be specific for every individual per species reflecting the country's code, owner's code, source and bird number;

- For birds 2-3 weeks of age and for very small birds (e.g. finches), closed leg bands must be used; and

- For juvenile and mature birds, open leg bands may be used.

3.4 **Wing Bands**. The wing bands are applicable for the marking of avian/mammal species with the minimum requirement:

- Wing band characters should be numerical and should contain a unique serial number reflecting the country's code, owner's code; source and animal number.

3.5 **Dyes and Paints**. The dyes and paints are temporary markers and may be applied to any bird, mammal or reptile intended for release. Only non-toxic and non-allergenic dyes and paints shall be used for the purpose. Provided further, that prior to the release of subject animal, permanent markings in accordance with this Order shall be used.

3.6 **Tags**. The tags are applicable for the marking of stuffed mammals, birds, reptiles and wildlife parts or items with wild fauna parts.

Section 4. Guidelines in the Use of Wild Fauna Marking and Identification System

4.1 The marking and identification system for wildlife, without excluding the use of other methods duly approved by the DENR, may adopt the use of microchips bearing permanent, non–programmable, unalterable and permanently unique codes for the identification of live animals. The markings and identification system to be used for each taxon are shown in Annex A;

4.2 The use of coded microchip implants shall be adopted for critically endangered species, particularly those subject to international trade;

4.3 Exportation/ re-exportation and/ or importation of wildlife shall be subject to the following:

4.3.1 The export of wild fauna specimens are marked in accordance with Section 3 of this Order. The type and identification number must be indicated in the export permit; and

4.3.2 The import and/or re-export of wild fauna specimens shall bear the appropriate marking system established by the country of origin. In the event that the country of origin has no established wildlife marking and identification system yet, the importer must be required to have his/her imported wild fauna marked/tagged in accordance with Section 3 of this Order, within one (1) month after entry of said wild fauna into the country.

4.4 The marking/tagging costs shall be the responsibility of the facility owner, permit holder and /or owner of wild fauna;

4.5 All holders of Certificate of Wildlife Registration (CWR) and Wildlife Farm Permits (WFP) who have established their own marking system may continue to use such system until the consummation of their available wildlife identification marks/tags. For this purpose, concerned CWR/WFP holders must submit an inventory of their existing wildlife identification tags/marks to concerned DENR Regional Offices for record and monitoring purposes; and

4.6 PAWB shall identify manufacturers of wild fauna marks/tags based on the quality of their products and legality of their operations as proven by SEC Registration, DTI Certification and Mayor's business permit. The PAWB shall provide the DENR Regional Offices the list of manufacturers of said marks/tags for wild fauna. Regular procurement procedure will be adopted.

Section 5. Establishment of Wild Fauna Identification Code System

5.1 The Protected Areas and Wildlife Bureau (PAWB) shall develop the identification coding system and advise the DENR Regional Offices of their corresponding codes within three (3) months from the issuance of this Order;

5.2 In the implementation of this Order, the PAWB and all DENR Regional Offices shall:

5.2.1 ensure that threatened wild fauna species in captivity especially those subject for trade (export, re–export, import) are appropriately marked/tagged based on the provisions of this Order;

5.2.2 prohibit trade in specimens in violation hereof and execute measures against the violators in accordance with Section 7 hereof;

5.2.3 maintain a registry of wild fauna marked/tagged in their respective areas of jurisdiction;

5.2.4 submit to the Secretary: a) compliance report within six (6) months after the issuance of this Order; b) copy of an annual registry of wild fauna marked and tagged; and, c) yearly status reports on the implementation of this Order, including photo-documentation, list of violators and cases filed in Court, if any.

Section 6. Incentive Clause. The users of the marking and identification system may avail of the incentives such as technical assistance from the DENR on matters pertaining to management of wild fauna species in their possession; recognition and acknowledgement by the DENR as legitimate sources of captive- bred wild fauna, among others. Their compliance to the provisions of this Order shall be promoted in the Information, Education and Communication campaign materials of the DENR and serve as one of the bases in the renewal of the permit/s issued by the DENR.

Section 7. Sanctions. Violation of the provisions of this Order shall result to non-issuance of permits for trade purposes and/or suspension or revocation of the Certificate of Wildlife Registration, Wildlife Farm Permit, Wildlife Collectors Permit, Wildlife Special Use Permit or Gratuitous Permit, as the case may be, issued by the DENR, after due process without prejudice to the application of other measures, as may be appropriate and applicable as provided for under existing laws, rules and regulations. All abandoned wild fauna shall be retrieved and placed in the nearest DENR rescue centers.

Section 8. Repealing Clause. All orders, circulars and issuances which are inconsistent herewith are hereby repealed and/or modified accordingly.

Section 9. Separability Clause. If any part of this Order is declared unconstitutional or otherwise defective on any ground, the remaining parts not affected thereby shall remain valid and effective.

Section 10. Effectivity. This Order shall take effect fifteen (15) days after publication in a newspaper of national circulation and upon acknowledgement of a copy thereof by the Office of the National Administrative Registry (ONAR).

JOSE L. ATIENZA, JR.
Secretary

Republic of the Philippines
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

SENR-018568

Publication: Malaya
February 10, 2009
Acknowledgement: ONAR, U.P. Law Center
February 6, 2009

ANNEX A

The markings and identification system to be used for each taxon are as follows:

For Mammals

Microchip - implanted behind the left ear or to the left of the spine between scapula except for:
Elephant - left side of the tail fold
Hyrax and loris - left side of the lumbar area
Carnivores (e.g. cheetahs, wolves) - left tail base

Tattoo - marked behind the ear, wing-membrane (bats), breast or at the upper thigh

Band - collared around the neck, leg or wing membrane

Tag - attached to ear lobe or loose skin at the back

For Birds

Leg band - worn in either left or right leg

Wing band - attached to the wing web

Neck tag - collared around the neck

Microchip - for 5.5 kg adult weight and/ or long-legged birds, to be implanted at the base of the neck
- for <5.5 kg. adult weight, to be implanted intramuscularly in the left pectoral muscle or thigh, except: for ratites: up to four days old- implanted in piping muscle behind the head
for adults – implanted in lateral left neck for penguins and vultures: left base of neck

Dye - part of the tail or wing feathers soaked in dye solution

For Reptiles

Microchip - for lizards: sm. (<12.5cm snout to vent): at the coelomic cavity;
large (>12.5cm snout to vent): lateral left body side anterior to inguinal region for tortoises, terrapins, and turtles (chelonians): left hind limb socket or legs; alternative methods may need to be considered for chelonians less than 10 cm in length
for crocodilians: left side anterior to the nuchal cluster or left hind leg for snakes: left side dorsal to vent

Metal Tag - attached to trailing edge of the front flippers (marine turtles, except leatherback turtle), carapace near the vent leatherback turtle, freshwater/pond turtles), web membrane or hind foot (crocodilians). However, marine turtles with curved carapace length of less than 40 cm should not tagged.

Scute notching - cutting of large scales in the tail region of crocodiles

For wild fauna parts (such as raw hides/skins, leather goods made of wild fauna skin; stuffed, dried and/or framed specimens, and the like)

Tag - attached or glued on appropriate part of the material bearing the owner's or source code, assigned serial number to each of the items and stamp of DENR inspection. The latter shall indicate the date of inspection, and the printed name and signature of the authorized DENR inspector.

For raw and/or finished products derived from CITES Appendix I species, *e.g.* skin of Saltwater Crocodile (*Crocodylus porosus)*, the tagging system shall be in accordance with the standards set by CITES.

For deadstock and/or framed specimens of butterfly species, the tagging system shall be in accordance with DENR Adm. Order No.2002-19.

Appendix C
Policies and Governance of Biodiversity Conservation in the Philippines

Policy	Pertinent Provisions/ Description	Responsible Agencies
1. Philippine Constitution	**Article 2, Section 16.** The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature. **Article 12, Section 5.** The State, subject to the provisions of this Constitution and national development policies and programs, shall protect the rights of indigenous cultural communities to their ancestral lands to ensure their economic, social, and cultural well- being.	
2. NIPAS Act of 1992 (RA 7586)	It provides the legal framework for the establishment and management of protected areas in the Philippines. It identified 202 initial components comprising of proclaimed national parks, game refuge and wildlife sanctuaries, nature reserves, wilderness areas, mangrove reserves, watershed reservations, fish sanctuaries, protected landscapes and seascapes.	DENR
3. Wildlife Resources Conservation and Protection Act of 2001 (RA 9147)	This law aims to conserve and protect wildlife species and their habitats for sustainability. It provides the conditionalities for the collection, possession, transport, export and/or import, registration, and introduction, reintroduction or restocking of wildlife species. It also lays down the basic requirements for the use of wildlife resources for bioprospecting, scientific researches, and commercial undertakings as well as for botanical and zoological parks purposes. It establishes the Wildlife Management Fund; requires the establishment of National Wildlife Research Centers and Wildlife Rescue Centers; and mandates the creation of Wildlife Traffic Monitoring Units and the deputation/designation of Wildlife Enforcement Officers who shall	DENR – covers all terrestrial plant and animal species, all turtles and tortoises and wetland species, including but not limited to crocodiles, waterbirds and all amphibians and *dugong* DA – covers all declared aquatic critical habitats, all aquatic resources including but not limited to all fishes, aquatic plants, invertebrates and all marine mammals, except *dugong* Palawan Council for Sustainable

	have the full authority to seize illegally traded wildlife and to arrest violators of the Act in conformity with existing laws, rules and regulations on arrest and detention. The Act is also the enabling legislation for the implementation of the rules and regulations of the CITES in the country.	Development (PCSD) – covers the province of Palawan
4. National Caves and Cave Resources Management and Protection Act of 2001 (RA 9072)	Caves and cave resources are part of the country's natural wealth. It mandates the DENR to formulate, develop, and implement a national program for the management, protection, and conservation of caves and cave resources. The National and Regional Cave Committees oversee the implementation of the Act and its support policies.	DENR
5. An Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, Amending RA 8550 or the Philippine Fisheries Code of 1998 (RA 10654 of 2015)	The State shall ensure the attainment of the following objectives of the fishery sector: • · Conservation, protection, and sustained management of the country's fishery and aquatic resources; • · Poverty alleviation and the provision of supplementary livelihood among municipal fisherfolk; • · Improvement of productivity of aquaculture within ecological limits; • · Optional utilization of offshore and deep-sea resources; and • · Upgrading of post-harvest technology	DA
6. The IPRA of 1997 (RA 8371)	It recognizes and promotes all the rights of ICCs/IPs of the Philippines. This law recognizes the ancestral land rights of the IPs (see Annex 2.12).	NCIP
7. Philippine Clean Water Act of 2004 (RA 9275)	The law aims to protect the country's water bodies from land-based pollution sources (industries and commercial establishments, agriculture, and community/household activities). It provides for a comprehensive	DENR-Environmental Management Bureau (EMB)

	and integrated strategy to prevent and minimize pollution through a multi-sectoral and participatory approach involving all the stakeholders. Anyone discharging wastewater into a water body will have to pay a wastewater charge. This economic instrument will encourage investments in cleaner production and pollution control technologies to reduce the amount of pollutants generated and discharged.	
8. Philippine Ecological Solid Waste Management Act of 2000 (RA 9003)	It provides the legal framework for the country's systematic, comprehensive, and ecological solid waste management program that shall ensure protection of public health and the environment.	National Solid Waste Management Commission - oversees the implementation of solid waste management plans and prescribes policies to achieve the objectives of the Act National Ecology Center – is under the National Solid Waste Management Commission and provides consulting, information, training, and networking services for the implementation of the provisions of RA 9003 Pursuant to the relevant provisions of RA 7160 otherwise known as the Local Government Code, the LGUs shall be primarily responsible for the implementation and enforcement of the provisions of the Act within their respective jurisdictions.
9. Revised Forestry Code of 1975 (PD 705)	This Act lays down the basic principles of forest management and conservation, makes provision for proper classification, management and utilization of public domain lands to maximize their	DENR-FMB

	productivity, and meet the demands of the country's increasing population. The Revised Forestry Code of the Philippines also covers management of industrial tree plantations, tree farms, and agro-forestry farms, and forest protection of swamplands and mangrove forests. The Act also covers special uses of forest resources, such as grazing, wildlife, and recreation and prescribes criminal offences, including unlawful occupation or destruction of forestlands and grazing lands.	
10. Moratorium on the Cutting and Harvesting of Timber in the Natural and Residual Forests and Creating the Anti-Illegal Logging Task Force (EO 23, s. 2011)	Apart from a number of exemptions to the moratorium on the cutting and harvesting of timber in natural forests, it provides for the implementation of a forest certification system in accordance with UN standards and a convergence program with other national agencies and the private sector to increase awareness, improve livelihoods, and mobilize resources.	DENR-FMB
Amended Animal Welfare Act of 2013 (RA 8485/ 10631)	The purpose is to protect and promote the welfare of all terrestrial, aquatic, and marine animals in the Philippines by supervising and regulating the establishment and operations of all facilities utilized for breeding, maintaining, keeping, treating or training of all animals either as objects of trade or as household pets including birds.	DA
Local Government Code of 1991(RA 7160)	Section 17 states that provinces can enforce forestry laws limited to community-based forestry projects, pollution control law, small-scale mining law, and other laws on the protection of the environment; and mini-hydro electric projects for local purposes.	Department of Interior and Local Government (DILG)
Urban Development and Housing Act of 1992 (RA 7279)	In relation to urban biodiversity, this Act provides for the rational use and development of urban land to bring about reduction in urban dysfunction particularly those that adversely affect public health, safety, and ecology.	HLURB
Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990 (RA 6969)	The Act provides the legal framework to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use, and	DENR-EMB

	disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their disposal into the Philippine territorial limits for whatever purpose; and to provide advancement and facilitate research and studies on toxic chemicals.	
Rules of Procedure for Environmental Cases	In April 2010, the Philippine legislature promulgated the Rules of Procedure for Environmental Cases9, a landmark instrument representing a significant reform in environmental litigation and protection. This laid down procedures governing the civil, criminal, and special civil actions in all trial courts regarding environmental cases, with a view to protecting and advancing the constitutional right of the people to health and to a balanced and healthful ecology, and providing a simplified, speedy, and inexpensive procedure for the enforcement of environmental rights under Philippine law. The Rules of Procedure for Environmental Cases empowers the courts to issue environmental protection orders as an immediate action to protect the environment and the communities affected. This also enables communities to petition for the suspension or stoppage of destructive, environmental, and development activities through the Citizen's Suit provision.	Supreme Court