

Wildlife in Captivity:
An Examination of Legal Requirements
in Canada and Around the World

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INTRODUCTION

Many jurisdictions in the world have comprehensive, established, regulatory regimes in place which address the basic issues that arise when wild animals are kept in captivity. In other jurisdictions, the development of a regime is underway. The following report describes requirements for the possession of captive wildlife in many of these jurisdictions. The requirements described relate to a range of considerations that are fundamental to the keeping of captive wildlife, for the welfare of the animals themselves as well as the safety of the people, and the indigenous wildlife, who may intentionally or unintentionally come into contact with them.

This report should not be read as an acknowledgment of the appropriateness of keeping wildlife in captivity in given conditions; rather, it is an analysis of the manner in which different jurisdictions have already approached the task which the government of Ontario has set for itself: to establish a meaningful regulatory scheme which will ensure, among other things, that wild animals that are kept in captivity receive the best possible care in the circumstances.

There are many areas to be addressed in the establishment of a new licensing and regulatory scheme. Fortunately, because so many other jurisdictions have already done so, reference can be made to their schemes and this need not be a daunting task.

To that end, in preparation of this report, we have examined the legal requirements established, or being established, in the following 14 jurisdictions, some of which are national, others are provincial or state: British Columbia, Alberta, Saskatchewan, Manitoba, Nova Scotia, Newfoundland, United States, California, Florida, United Kingdom, New South Wales (Australia), New Zealand, Papua New Guinea and India. In addition, we have examined the voluntary standards of the Canadian Association of Zoos and Aquariums (“CAZA”).

We have also included relevant references to a 1999 Directive of the Council of the European Union (“EU”) which provides for the mandatory adoption of measures by member states for the licensing and inspection of zoos within the EU. The Directive establishes certain requirements that must be contained, at a minimum, in each country’s own zoo legislation by 2002. As this is a Directive rather than actual legislation, its terms are not specific, however, its provisions are cited below to give an indication of the guiding principles that must be respected throughout the EU.

Eight distinct areas of concern emerged in our review of the existing regimes and therefore eight categories of standards are addressed in this report, with a description of the requirements as they exist in the above-noted jurisdictions. They are:

1. Licensing Requirements
2. Accommodation
3. Nutrition
4. Sanitation and Disease Control
5. Veterinary Care
6. General Welfare
7. Safety and Security
8. Operations

As will be seen below, some considerations cross categories, as different jurisdictions classify them under different headings. It also ought to be noted that for various practical reasons, not all categories of standards are described for each of the listed jurisdictions. Further, what follows is a summary description, not replication of all of the particulars which are, in some cases, quite elaborate. Reference to the full text of the legal documents referred to below is recommended.

THE JURISDICTIONS

Each of the jurisdictions referred to in this report has created requirements for the possession of captive wildlife either in the form of a statute, regulation, policy document or other type of binding measure. They are as follows:

British Columbia

- ◆ Wildlife Act
- ◆ Wildlife Act Permit Regulations
- ◆ British Columbia Policy Manual Regarding Captive Wildlife
- ◆ British Columbia Policy Manual Regarding the Possession of Captive Wildlife

Alberta

- ◆ Wildlife Act
- ◆ Wildlife Regulations

Saskatchewan

- ◆ Wildlife Act
- ◆ Captive Wildlife Regulations

Manitoba

- ◆ Wildlife Act
- ◆ Captive Wild Animal Regulation
- ◆ Manitoba Guidelines for Keeping Wildlife in Captivity, 1984

Nova Scotia

- ◆ Wildlife Act
- ◆ Nova Scotia Standards for Wildlife Parks and Zoos (proposed)

Newfoundland

- ◆ Wildlife Act
- ◆ Guidelines for Facilities Holding Captive Wildlife
- ◆ Captive Wildlife Project Register

United States

- ◆ Animal Welfare Act

California

- ◆ California Code of Regulations

Florida

- ◆ Regulations Governing the Importation, Transportation, Sale and Possession of Wild Animals

United Kingdom

- ◆ Zoo Licensing Act 1981
- ◆ Secretary of State's Standards of Modern Zoo Practice

New Zealand

- ◆ Animals Act 1967
- ◆ Zoological Gardens Regulations 1977
- ◆ Code of Recommendations for the Welfare of Exhibit Animals; Code of Animal Welfare No. 14

New South Wales (Australia)

- ◆ Exhibited Animals Protection Act 1986
- ◆ Exhibited Animals Act Regulation 1995
- ◆ General Standards for Exhibiting Animals in New South Wales
- ◆ Standards for Exhibited Carnivores in New South Wales

Papau New Guinea

- ◆ General Standards for Exhibiting Animals in Papau New Guinea
(note, these are draft standards at the moment, prepared in 1998; they were modelled on, and are virtually identical to, the mandatory standards of New South Wales)

India

- ◆ Wildlife Protection Act 1972
- ◆ Recognition of Zoo Rules 1992

CAZA

- ◆ C.A.Z.P.A. (now C.A.Z.A.) Standards of Animal Care and Housing, 1994

European Union

- Council Directive 1999/22/EC

EXECUTIVE SUMMARY

The review of many different jurisdictions' standards revealed some recurring themes. First, a facility which keeps live wild animals is a unique type of operation which raises specific concerns in terms of animal welfare and human safety. Second, species and individuals have very different needs, therefore all standards/requirements are tailored to meet those particular needs. Third, records of various aspects of the facility's operations are kept and provided to the government authority, generally on an annual basis. Fourth, the government retains authority to access all parts of the facility and its written records, on both an announced and an unannounced basis. Fifth, comprehensive schemes emphasize preventative behaviour while retaining sufficient authority to inspect facilities and mandate solutions to problems when they do arise.

More specifically, the following issues emerged in each of the 8 categories:

1. Licensing Requirements

Some jurisdictions have established thorough licensing schemes which anticipate problems that might arise and seek to prevent them from occurring, as opposed to emphasizing enforcement powers after the fact. While it would appear that both are important, prevention of problems is obviously preferable to taking enforcement and other measures after problems have occurred. These requirements address how applicants (a) obtain and (b) maintain a licence.

(a) Several key requirements emerged as essential to the application process:

- ◆ documented evidence that the applicant has training and expertise in the care of the particular wildlife proposed to be kept
- ◆ documented evidence that the applicant has adequate resources to preclude escapes
- ◆ documented evidence that the applicant has adequate resources to keep the facility operational (i.e. Manitoba requires a business plan, Newfoundland requires detailed information regarding all aspects of the facility's operations, New Zealand requires a

5-10 year animal collection plan and a contingency plan, India requires a copy of the facility's budget for the last 3 years, an annual report and a master plan)

- ◆ evidence of sufficient liability insurance to indemnify against any claim for loss of life, bodily injury or property damage that may be caused
- ◆ preliminary on-site inspections by qualified people, such as veterinarians but also consultants with particular expertise as needed
- ◆ identification of all animals that will be kept and evidence of records that will be kept of vital information relative to each individual
- ◆ minimum age requirement of 18 in some cases
- ◆ documentary evidence that local municipality does not oppose licence being issued
- ◆ government authority keeps register of all facilities, important information and information from annual filings

(b) Typically, licences are valid for one year subject to reissuance upon compliance with requirements concerning documentation to be filed and inspections. Certain licence conditions or relevant requirements were common:

- ◆ periodic inspections, announced and unannounced
- ◆ annual documentation to be filed, such as veterinary reports, animal stock and transfer records
- ◆ authority to order improvements and seize animals in appropriate circumstances and authority over any exhibits being altered or added
- ◆ penalties which include suspension or revocation of the licence as well as fines

2. *Accommodation*

Jurisdictions differ in their approach to setting the standards of accommodation in that some are objective (enclosures must be cleaned “daily”) and others are subjective (enclosures must be cleaned “regularly”). In order that facilities understand clearly what is required of them, and in the interest of appropriate enforcement, objective standards are preferable where possible. These standards address what have been categorized in New Zealand as the behavioural, physical, psychological, zoographic and reproductive requirements of species and individuals.

The series of relevant issues that are addressed in the jurisdictions we reviewed include:

- ◆ space (size of enclosure taking into account vertical and horizontal space)
- ◆ shelter from inclement weather
- ◆ lighting and lighting cycles
- ◆ drainage
- ◆ temperature
- ◆ ventilation
- ◆ noise
- ◆ dens and nest boxes for species who use them

- ◆ sleeping boxes for nocturnal species
- ◆ water, in sufficient quality, quantity and manner, for swimming and dry areas for resting, for aquatic and semi-aquatic species
- ◆ prevention of injury to animals
- ◆ animals to be able to remove themselves from public view
- ◆ comfortable and safe distance between animals and the viewing public
- ◆ natural bedding, furniture and equipment in enclosures according to species
- ◆ simulation of natural habitat as much as possible
- ◆ no overcrowding
- ◆ no inappropriate mixing of species
- ◆ no inappropriate contact of species (keeping predator and prey beyond each other's view)
- ◆ social groupings where possible which avoid dominance of individuals
- ◆ separate accommodation for sick and pregnant animals and those with young

3. *Nutrition*

This category addresses the feeding of animals at the facility with a view to ensuring that nutritional requirements are met but also that the animals' quality of life is protected by providing food that they naturally eat. Consideration is given to:

- ◆ fresh and wholesome food daily
- ◆ food to be prepared in hygienic conditions
- ◆ clean and safe food storage
- ◆ food appropriate to the age, species, condition, size and type of animal
- ◆ feeding in appropriate manner so all animals in the enclosure can access it
- ◆ daily observation of feeding by staff
- ◆ clean receptacles for food and water
- ◆ fresh and clean water to be available at all times
- ◆ water provided in appropriate manner so all animals in the enclosure can access it
- ◆ special diets for sick and pregnant animals
- ◆ veterinary advice in preparing diets and regarding use of supplements
- ◆ public feeding generally prohibited or restricted

4. *Sanitation and Disease Control*

These requirements provide for the protection of animals kept at the facility, people and indigenous species the animals may come in contact with in the event of an escape, as well as zoo staff and visitors. Consideration is given to the following factors:

- ◆ all areas of the enclosure to be accessible for cleaning
- ◆ floors to be made of material that can be properly cleaned

- ◆ enclosures to be cleaned daily or more often if necessary
- ◆ enclosures to be sanitized regularly
- ◆ excrement and food debris to be removed daily or more often if necessary
- ◆ food and water containers to be cleaned daily or more often if necessary
- ◆ good drainage to prevent standing water from collecting
- ◆ measures in place to prevent infestation
- ◆ food handling areas to be cleaned daily and sanitized regularly
- ◆ veterinary advice following any infectious disease
- ◆ requirement to report contact with any infection that could affect animal health

5. *Veterinary Care*

As with other aspects of care, most jurisdictions have taken steps to require preventative veterinary care in addition to requirements regarding the treatment of health problems when they do arise. The American legislation requires facilities, along with an attending veterinarian, to establish and maintain an animal care program, to be reviewed at least once annually, that meets 5 requirements, which are also addressed in other jurisdictions:

- ◆ appropriate methods to prevent, diagnose, treat and control diseases and injuries and availability of emergency, weekend and holiday care:
 - some jurisdictions require veterinarians to be on staff, others that arrangements be made with designated veterinarians to be available 24 hours per day
 - regular general health examinations
 - some jurisdictions specify that only veterinarians may perform veterinary procedures (i.e. CAZA)
 - announced or unannounced inspections by government appointed veterinarians and consultants with expertise
- ◆ availability of appropriate equipment, personnel, services and facilities to comply with these requirements
 - hospital holding area
 - surgical facilities
 - quarantine areas
 - areas for animals that are pregnant or with new babies
- ◆ daily observation of all animals to assess their health and well-being which, if not accomplished by the attending veterinarian, must be supplemented by direct and frequent communication of the veterinarian
 - thorough records to be kept
- ◆ adequate guidance to staff involved in the care of animals regarding handling, immobilization, anesthesia, analgesia, tranquilization and euthanasia
 - staff must be properly trained
 - post-mortems generally required to be conducted and report must be kept with the animal's records
 - manner of disposal of dead animals also prescribed

- ◆ adequate pre- and post- procedural care in accordance with established veterinary practices

6. *General Welfare*

In addition to welfare concerns addressed elsewhere, some jurisdictions, like the United States, specifically require facilities to develop, document and follow an appropriate plan for environmental enhancement adequate to promote the psychological well-being of animals in accordance with their social grouping, environmental enrichment, special considerations and restraint devices. Enrichment plans must be tailored to the particular species.

In New Zealand, effort is made to ensure that a facility is capable of meeting all the animals' physical, psychological and physiological needs before it can obtain its licence in the first place. Facilities must seek to promote a responsible, caring environment in which animals are allowed to exhibit their natural behaviours. In many jurisdictions, such as New South Wales and Papua New Guinea, animals may not be handled in a way that causes undue discomfort or distress or physical harm.

7. *Safety and Security*

As with requirements for sanitation and disease control, these provisions are designed to protect the animals kept at the facility, indigenous animals that they may come in contact with in the event of an escape, as well as zoo staff and visitors. Consideration is given to items under 5 basic categories: (1) physical barriers; (2) warning signs for dangerous animals and equipment; (3) escape prevention and contingency plans; (4) specific animal handling procedures; and (5) general public safety. Both the United Kingdom and New South Wales have established particularly thorough safety standards. Considerations include:

- ◆ sufficiently high perimeter fencing enclosing the entire facility
- ◆ fences to be secure
- ◆ double fencing for dangerous animals
- ◆ double-gated or safety entrances/gates and doors to be securely locked
- ◆ sufficient fences, guard rails or moats to keep public away from the animals
- ◆ enclosures designed to ensure children cannot get in
- ◆ staff training to preclude escapes
- ◆ notice requirements in the event of an escape
- ◆ regular inspections of enclosure barriers
- ◆ exits to be capable of being easily opened by a person from the inside
- ◆ warning signs for dangers posed by animals and for areas to which the public is not admitted

8. *Operations*

Because of the unique nature of facilities which keep live wild animals and the unique risks they present, each of the jurisdictions has implemented measures to require facilities to ensure they are capable of meeting their responsibilities. These include requirements with respect to such matters as:

- ◆ public liability insurance
- ◆ records related to each animal in the facility (age, sex, birthdate, health, source, history)
- ◆ records related to the totality of animals kept at the facility (numbers, sex, species)
- ◆ records and requirements regarding the disposition of surplus animals
- ◆ breeding policy and records
- ◆ records to follow the animal and be saved for several years after death
- ◆ records to be protected from fire and other forms of loss or destruction
- ◆ transportation of animals
- ◆ transfer of animals to other facilities
- ◆ business plans to ensure the facility will be able to meet the animals' requirements and contingency plans in the event they cannot
- ◆ emergency plans
- ◆ staffing and administration

LEGAL REQUIREMENTS IN CANADA AND AROUND THE WORLD

1. LICENSING REQUIREMENTS

The licensing of a captive wildlife facility by a government body is the principal method of regulating the members of the industry. The licensing scheme itself is of fundamental importance because the conditions and requirements of how to (1) obtain and (2) maintain a license must be clearly established in order to ensure an enforceable and effective program which is fair to the facilities and individuals to be governed by it.

Most Canadian provinces have some sort of licensing scheme in place, though the manner in which the scheme is administered (whether by way of statute, regulation or policy to assist in the interpretation and enforcement of these) varies from jurisdiction to jurisdiction. The American and British systems are useful to examine, since they have been in place since 1970 and 1981 respectively, and address a number of detailed concerns. Of particular assistance is New Zealand's regime where the initial registration of a captive animal facility is very thorough.

It is noteworthy that some jurisdictions, like British Columbia, take a variety of factors into account in deciding whether or not to issue a licence, such as the number of similar facilities already in the area.

The licensing provisions of the regulations must set out the various details associated with the licensing scheme, such as, for example, who issues a license, the duration and terms of re-application, requirements for submission of an application, conditions, fees, inspection, enforcement, and penalties. A strict application process, by which a facility is closely scrutinized on site and in its documentation, would appear to make for a far more efficient regulatory regime, as efforts are made to prevent problems before they occur.

Canada

Most Canadian jurisdictions (Manitoba, Saskatchewan, British Columbia, Alberta, Northwest Territories and Newfoundland) presently require that a permit or license be obtained to hold wildlife in captivity. Nova Scotia is now in the process of incorporating standards of accommodation and care. Failure to have a licence, to comply with its conditions or the relevant regulations leads to penalties including licence suspension, revocation, fines or both.

In British Columbia, an applicant must be sufficiently trained and knowledgeable in the care of wildlife and have adequate resources to preclude any escapes. British Columbia also considers the number of similar facilities in the area before approving a new one.

Similarly, in Saskatchewan, one is prohibited from applying for a licence without written proof that the local municipality is not opposed to the licence being granted. An applicant must have sufficient public liability insurance. Annual licence renewals must include a complete list of dispositions and numbers of each species of wildlife held during the past year that are no longer in the possession and when each was disposed of, as well as a complete list of the number and species of wildlife presently held and where, from whom and when each was obtained.

In Alberta, a written zoo plan must be submitted with a licence application.

In Manitoba, each permit holder must have the premises inspected periodically by a Crown representative (Natural Resources Officer) who can recommend permit termination or re-issuance. Grounds for seizure of animals or permit revocation arise after a suitable warning and time to make alterations has been provided. Permits may be terminated for a variety of reasons including unsanitary conditions, health problems, overcrowding, inhumane treatment, inadequate pens, inaccurate records, or a lack of specific facility or area requirements.

Newfoundland's guidelines describe the conditions under which any species, regardless of whether it is indigenous to Newfoundland and Labrador, can be kept in captivity. The province's Captive Wildlife Project Register stipulates that a document evidencing a

“business plan” must be provided to the Ministry before it will entertain an application for a park/zoo permit. Detailed information regarding each of the following items must be provided pursuant to the terms of the Captive Wildlife Register:

- ◆ project overview
- ◆ description of the project
- ◆ physical features
- ◆ overall facility design
- ◆ animal enclosure design
- ◆ construction
- ◆ operation
- ◆ animal collection
- ◆ staffing
- ◆ schedule
- ◆ funding

In order to maintain a license, a facility must adhere to all of the standards in the Newfoundland policy or become compliant within a set period of time.

United States

In the United States, the Animal & Plant Health Inspection Service (APHIS) enforces the *Animal Welfare Act* (AWA) which is federal legislation governing human behaviour in respect of captive animals, including wildlife. Individuals who display warm-blooded animals to the public must be registered or licensed as exhibitors with APHIS which ensures that exhibitors comply with the AWA and its standards through licensing and regular inspections.

Upon receipt of an application for an initial licence, APHIS must send a copy of the applicable standards and regulations to the applicant who must acknowledge and agree to comply with them before the license is issued. The applicant's facilities, premises, animals, vehicles, and other equipment must demonstrate compliance with AWA standards and regulations before APHIS will issue a license. To this end, the applicant, who must be 18 years of age, must make the premises available for unannounced inspections. If the facilities do not meet existing requirements, APHIS will advise the applicant of all deficiencies and corrective measures that must be completed so as to come into compliance with the AWA standards.

A license is valid for one year.

APHIS conducts searches for unlicensed facilities and makes unannounced inspections, as well as inspections in response to public concern, at licensed facilities in order to ensure continued compliance with AWA standards. If an inspection reveals deficiencies in meeting the AWA standards, the inspector instructs the exhibitor to correct the

problems within a given time frame. If the problems remain, APHIS documents the deficiencies and may take legal action, including revocation of the license or imposition of fines.

U.S. exhibitors, where applicable, must not only register under the Federal AWA but also under state legislation. The two states which supplement the federal act to a notable extent are California and Florida. In California, a permit is necessary to import, transport, or possess restricted animals which include species of birds, mammals, reptiles, crustaceans, gastropods, and bivalves. Similar to the federal act, the California Department of Fish and Game will not issue a permit unless facilities have been inspected and approved. Inspectors may enter an applicant's facility unannounced in order to do so.

The qualifications required of applicants are more extensive under state legislation. California requires that applicants must be 18 years of age, possess at least 2 years of full-time paid or volunteer hands-on experience caring for animals at a facility engaged in an activity that is similar to that for which a permit is being sought, and possess at least one year of full-time hands-on professional experience working with species in the same or similar taxonomic family as each species requested for under the permit application.

Each application must also include written certification from an accredited veterinarian that s/he has observed each of the applicant's animals at least twice during the prior year and that each animal has been immunized and is being cared for as required by law. A copy of the facility's current license from the USDA and a copy of the most recent USDA facility inspection form must also be included with the application to the California Department of Fish and Game. Permits issued are valid for one year.

Florida does not allow the possession of any native or non-native wildlife in captivity except as authorized by state permit. It also shares aspects of the federal license application procedure, such as prior unannounced facility inspections and it is similar to California in its stringency regarding an individual applicant's qualifications.

In order to hold Class I wildlife (i.e. primates, large cats and elephants) applicants must have no less than 1 year or 1000 hours of "substantial practical experience in the care, feeding, handling and husbandry of the species for which the permit is sought, or other species, within the same biological order." This experience must be documented by the references of 2 individuals having personal knowledge of this experience. Documented educational experience in zoology obtained at the college level or above may substitute for 6 months of 500 hours of the required experience.

In order to hold captive Class II wildlife, (i.e. wolves, alligators, and crocodiles) the applicant must have 1 year or 1000 hours of experience as described above or may take a written examination for the particular species or family to be contained, together with the documentation of at least 100 hours of substantial practical experience as described above, in substitution for the 1 year or 1000 hour requirement. Applicants must score at

least 80% correct on the exam in order to meet the requirement for possessing the particular species or family of wildlife.

United Kingdom

The *Zoo Licensing Act* makes it unlawful to operate a zoo except under the authority of a licence. Original licences are granted for four years, and renewals for a further six years after that. All are subject to such conditions as the local authority thinks are “necessary or desirable for ensuring the proper conduct of the zoo” including conditions regarding: escape of animals, records to be kept and liability insurance. To decide which conditions to attach to a licence, the licensing authority must have regard to standards specified by the Secretary of State, a very detailed and elaborate document. The standards may be varied from time to time after consultation with a series of experts designated by the legislation.

“Periodical inspections” of all facilities are mandatory, with 28 days notice, at least twice during the course of the licence. The inspection includes health, welfare and safety issues as they relate to animals and the visiting public and includes a review of the facility’s records. The facility must also prepare a report for the authority which may include recommendations for improvement. “Annual inspections” are also required in the years during which there is no “periodical inspection”. “Special investigations” may also be carried out at any time in circumstances which call for it in their opinion. The government authority may appoint persons who appear to them to be competent for the purpose and authorize them to conduct these inspections.

With notice to the operator and an opportunity for the operator to make representations, licences may be (1) altered at any time if necessary or proper for ensuring proper conduct on the part of the zoo or (2) revoked, if the circumstances so justify. Provisions for fines are also in place.

New Zealand

** New Zealand’s licensing requirements are elaborate and address a variety of issues*

This is an example of a jurisdiction that takes the initial registration of a captive animal facility very seriously and undertakes a very thorough investigation of the applicant before “registering” a facility. All aspects of the facility are checked at the outset. Registration of all facilities is required to ensure that all groups of exhibit animals are identified, centrally registered and acknowledged as being governed by the Code. Registration and the inspection which accompanies it are annual processes. Further periodic inspections also occur, the frequency varying with the facility’s history of compliance.

In order to be granted a registration, applicants must provide extensive evidence, including evidence demonstrating that, for all species it intends to hold, the facility will

comply with standards and management practices. It must submit a 5 - 10 year animal collection plan as well as a contingency plan establishing measures to be taken in the event of the failure of the facility. Documentary evidence of local government approvals for the proposal must be provided.

A veterinary officer must review the application and then inspect the facility to verify the applicant's contention that the requirements can be met. Suitably qualified consultants may assist in this process and all costs are to be borne by the facility. If a veterinary officer needs more advice, a consultant may be retained with the consent of the facility operator and at its expense. If consent is withheld, permission to keep a particular animal or species will be refused.

Registration will be approved if the application and inspections described above are successful, and if the zoo would not be contrary to the public interest, or likely to create unacceptable effects on the health and well-being of the animals to be kept. Registration is on a species by species basis.

New South Wales (Australia) and Papua New Guinea

An "authority" is required to display animals. Failure to have one or to comply with its conditions may lead to imprisonment or fine or both. A licence is not to be issued unless the government authority is satisfied that the display conforms to and will be conducted in accordance with prescribed standards. The government keeps a register of information including, for example, the addresses of all authorized facilities, the name and address of each licensee and the terms and conditions of each licence.

Approval to exhibit animals of a species will not be issued unless the government authority is satisfied that the applicant has the appropriate qualifications or experience or both, regarding the particular species and that the animal will be exhibited in accordance with standards prescribed in respect of that species. New exhibits may not be built, nor can existing exhibits be altered or extended without prior government approval.

An authorization may be suspended or cancelled on notice with an opportunity for the licensee to meet the standard if, for example, the facility fails to comply with the terms and conditions of its licence.

Inspectors have broad authorities in appropriate circumstances, including the right to examine any animal, equipment, material on the premises and to seize and remove animals.

India

India's Recognition of Zoo Rules, 1992 set out specific requirements for the obtaining and maintaining of "recognition" to keep animals in zoos. The Rules specify the

application that must be made, fees, documents which must be filed with the application and particulars that must be contained therein. These include such particulars as stock records of animals exhibited (showing the number of species exhibited, births, acquisitions, deaths and disposal of animals during the year), the number of enclosures, list of endangered species bred in the last three years, veterinary and other facilities, sanitary care and disease control measures, safety and other visitor amenities; and, the zoo's budget for the last three years. The facility's annual report and other publications and master plan of the zoo must also be included for the consideration of the government authority.

India classifies its zoos into four classes, depending on the size of the zoo in terms of animals kept there and physical space occupied by the facility, and the requirements for compliance with a license vary according to size.

CAZA

As CAZA is a voluntary body, it has no licensing requirements.

European Union

Under the EU directive, every zoo within member states must have a licence, (with a limited exception where the objectives of the Directive are being met by a system of regulation and registration). Compliance is to be monitored, among other means, by way of regular inspection and appropriate steps must be taken to ensure compliance. Before granting, refusing, extending or significantly amending a licence, an inspection by competent authorities must be carried out to determine whether or not the conditions or proposed conditions are met. If not, the zoo can be closed or ordered to comply with appropriate requirements as imposed to ensure the conditions are met. If the conditions are not met within a period to be decided by each authority but not to exceed two years, the licence must be withdrawn or modified and the zoo, or the relevant part thereof, closed.

2. ACCOMMODATION

In every jurisdiction reviewed, particular attention is paid to delineating the type, size and quality of the accommodation provided to captive wildlife within a facility. Standards of accommodation address not only the needs of the species of animals but the requirements of each individual animal. Accommodation requirements address space (both vertical and horizontal), equipment (natural objects such as branches, and features such as dens and swimming areas), comfort (temperature, ventilation, lighting and shelter) and location (keeping social species in groups, keeping predator and prey out of each other's view). It is the attention to detail and a recognition of the fact that within each species of

animal, and even as between individual animals, there is a set of distinct personal accommodation needs, that sets certain standards apart from others.

Canada

In terms of space requirements, British Columbia, Saskatchewan and Manitoba set out specific minimum dimensions required for enclosures for captive animals by species or groups of species.

British Columbia's policy manual sets out a number of minimal standards related to the comfort of the animals in their accommodation including such areas as heat, drainage and shelter from the elements. Some examples are as follows:

Temperature: animals which are native to regions having warm climates and which cannot adopt to cold temperatures must have heated facilities maintaining temperatures above 15 C during periods when outside temperatures are below 10 C.

Drainage: no person may provide pen floors without good drainage. More specifically, the guidelines require that: "...Pen floors or shelters shall be free of mud, standing or running water, and feces older than one day, and shall otherwise be suitably constructed to ensure adequate runoff during heavy rains or during snowmelt periods."

Shelter: dens (defined as a resting place within a cage) must be provided to give animals shelter from the weather elements. Minimum dimensions are provided for the den as well as the requirement that it be "ventilated so as to provide free circulation of air without drafts."

The Newfoundland standards provide general guidelines of a very high calibre and also stipulate detailed specifications that must be met in connection with accommodation. The standards describe various different categories of accommodation. In addition, they list over 80 different species and assign each one to a specific category of accommodation with detailed specifications to meet its biological needs. The policy includes a table that stipulates the requirements of each species with regard to the following items:

- ◆ height of the enclosure
- ◆ surface space in square metres
- ◆ volume in cubic metres
- ◆ surface space for each additional animal
- ◆ volume for each additional animal
- ◆ indoor requirements
- ◆ den or nest box requirements
- ◆ non-drinking water requirements

- ◆ exercise equipment requirements
- ◆ miscellaneous other welfare requirements

As an example of the specificity considered to be necessary, five different categories of “den and nest boxes” are used:

type a - Den enclosed on all sides except for openings large enough to allow entry and exit and large enough to hold all animals in the enclosure but not so large to allow excessive loss of body heat. Den must be at least one foot off the ground or, if not, then positioned to prevent water drainage into it.

type b - As type “a” but at least two metres off the ground with appropriate means of access.

type c - Three sided paddock, den or form with back against prevailing winds and weather which must be large enough or in sufficient number to protect all animals in enclosure.

type d - Nest boxes as per standard use in professional practice.

type e - Special materials, for individual species' needs (i.e. material for nest).

General standards for various broadly defined groups of animals are also provided. For example, with regard to nocturnal species, a facility must provide complete and free access to sleeping boxes at all times. For aquatic and semi-aquatic wildlife, facilities must provide water in sufficient quality, quantity and manner for swimming and for semi-aquatic animals dry areas for resting.

In Nova Scotia, the standards which are currently being developed take into account the physical, behavioral and psychological needs of the captive animals with regard to accommodation. In particular, the standards provide that the demonstrated needs of each and every individual species must be met by the facility. In addition to the foregoing, the proposed Nova Scotia standards stipulate that accommodation must include the following important factors: prevent injury to the animals; lend itself to sanitization; allow the animals to remove themselves from public view; provide shelter from the elements; and, establish a comfortable distance between the animals and the public.

Additionally, Saskatchewan requires that a person holding wildlife in captivity must keep the wildlife in a humane manner. Wildlife may not be tethered in any way and all enclosures must consist of an outside run and a shelter.

United States

The federal AWA uses a number of methods to determine cage size. For animals other than primates or marine mammals, cages must have “sufficient space to allow each animal to make normal postural and social adjustments with adequate freedom of movement”. According to this legislation, inadequate space may be evidenced by: malnutrition, poor condition, debility, stress, or abnormal behavior patterns.

The federal act has more specific space requirements for primates and marine mammals. Minimum space provided to each primate is determined by the typical weight of each species and follows a mathematical formula. When multiple primates are housed together, the minimum size of the enclosure is the sum of the minimum floor space for each individual plus the minimum height for the tallest primate. The space required to hold marine mammals is somewhat more complicated. For those species that live only partially in the water, such as polar bears or sea otters, there must be a pool, dry resting or social activity area and for some, a den.

In determining the minimum pool size, the federal act requires that the following four factors must be considered: (1) minimum horizontal dimension (2) depth (3) volume and (4) surface area. Some of these factors are determined based upon animal size. The guiding principle behind the calculations is that there must be sufficient space “both horizontally and vertically so that [animals] are able to make normal postural and social adjustments with adequate freedom of movement”.

State legislation is much more specific regarding minimum enclosure sizes as well as the materials that must be used in constructing enclosures. For example, the *California Code of Regulations* dictates minimum square footage for each individual species in terms of solitary animals as well as those housed together. The Code also outlines specific spatial requirements that are unique to each species beyond square footage. For instance, animals that climb trees in the wild, such as gibbons, must be given sufficient vertical space for this activity.

With regard to materials and equipment, the state legislation is also specific. The Code proscribes the materials from which the enclosures must be made, depending on species. For instance, platypus enclosures must have a floor made of natural substrate such as earth, as opposed to concrete. Florida's regulations require that all enclosures must have “gnawing or chewing items” which are defined as “natural or artificial materials that provide for the health of teeth, so as to keep teeth sharp, wear down enamel and promote general oral hygiene”.

In terms of comfort and well-being, U.S. legislation is quite specific regarding temperature, ventilation, lighting and shelter. For example, in reference to primates, the federal AWA requires that the ambient temperature must not rise above 85 F (29.5 C) nor fall below 45 F (7.2 C) for more than 4 consecutive hours. Another example of the specificity of U.S. legislation in regards to animal comfort comes from California which requires that amphibians must be kept at a temperature between 60 - 80 F.

In general, however, there are similar guiding principles for the maintenance of animal comfort and well-being within both the federal and state legislature. Temperatures must not be allowed to rise above or fall below levels compatible with the health and comfort of the animal, as determined by the attending veterinarian. Ventilation must be provided by either windows, doors, vents, fans or air conditioning so as to minimize drafts, odours, and moisture condensation. Lighting, by either natural or artificial means, of good quality, duration, and distribution must be provided as appropriate for the species, and so as to permit routine cleaning and inspection of the facilities. For instance, primates must be provided with a regular diurnal lighting cycle, according to the AWA and, in California, nocturnal primates must be provided with privacy during the daylight hours. Shelter must be provided from the elements at all times.

In terms of housing animals in differing climates, the AWA provides that: “(o)nly those that are acclimated, as determined by the attending veterinarian, to the prevailing temperature and humidity...and can tolerate the range of temperatures and climatic conditions known to occur at that time of the year without stress or discomfort, may be kept in outdoor facilities”.

United Kingdom

The British standards with respect to space, accommodation and equipment are high. They provide that animals must have sufficient space and furniture to allow exercise as needed for the welfare of the particular species. Enclosures must not be over-crowded, must avoid animals within herds or groups being unduly dominated, avoid risk of persistent conflict between herd or group members or between different species and prevent build-up of pathogens. Animals which interact in an excessively stressful way should not be in visibly adjoining enclosures. Separate accommodation must be available for animals that are pregnant or with young.

Temperature, ventilation and lighting must be suitable for the comfort and well-being of the species at all times, with consideration to be given to pregnant and newborn animals, newly-arrived animals (who must be fully acclimatized over time), and aquatic animals (who must have adequately aerated and heated tanks in accord with the species). Outdoor enclosures must have sufficient shelter from the weather and sunlight.

All enclosures must be equipped with such items as bedding material, branches, burrows, nesting boxes and pools to aid and encourage normal behaviour patterns, according to species.

New Zealand

Accommodations must provide for the basic physical and psychological needs of the species and be of such quality that displacement activity is avoided. Sufficient space

must be provided to enable exercise and rest. High standards for hygiene and specified. Numerous particular conditions must be met or exceeded, including, for example:

- ◆ behavioural requirements of individuals (i.e. swimming, climbing, grooming, territoriality);
- ◆ behavioural requirements of social groups (i.e. size/sex ratios, seasonal changes, hierarchies, compatibilities, need to escape conflict);
- ◆ physical requirements (i.e. exercise, shelter, individual cover, territories, ventilation);
- ◆ psychological requirements (i.e. intellect, adaptability, timidity, aggressiveness);
- ◆ reproductive requirements (reproductive control must be incorporated);
- ◆ zoographic requirements (i.e. expected life span, rate of population increase)

New South Wales (Australia) and Papua New Guinea

Each animal must be exhibited in a naturalistic setting resembling the animal's habitat (including naturalistic furniture and bedding, branches, burrows, nesting boxes and pools, where appropriate to encourage normal behaviour), and providing for his/her behavioural and physical well-being. Enclosures must provide means for enrichment of the animal's behavioural activities and, where several are held together, must allow for normal patterns of group behaviour. Dens for carnivores must be weatherproof and kept dry.

The size and shape of the enclosure must provide freedom of movement vertically and horizontally, and not be below the established minimum requirements. Several of the many requirements include that enclosures must: protect animals from abuse and harassment by visitors; have shaded covered or sheltered areas appropriate to protect the animals from adverse environmental conditions (carnivores must have access to an area where they can bask in the sun); have sufficient space for exercise; avoid undue domination of a herd or group and the risk of conflict between herd or groups or their members, or between different species in the same enclosure; meet social, breeding and husbandry needs; be structurally sound and in good repair; allow animals to avoid or withdraw from contact with other animals or people; not exceed their carrying capacity; encourage and permit exercise and behavioural enrichment.

Nocturnal animals must have free access to sleeping quarters at all times; semi aquatic and aquatic animals must have water for swimming and dry areas for resting. Certain species must have scratching posts or logs, or climbing structures, as appropriate.

Lighting and ventilation must be sufficient to maintain health and minimize undue draughts, odours and moisture. These must be of quality, intensity and duration which disturb the animal's normal behaviour as little as possible.

India

In India, enclosures must be designed to meet the full biological requirements of the animals they contain. In particular, the following are required: space for free movement and exercise; no undue domination by individuals within herds or groups; no unnatural provocation for public benefit; no stress caused by visibility of others in adjoining enclosures; to endeavor to simulate conditions of natural habitat; trees for shade and shelters to be constructed to merge with the environment. All enclosures must be designed to simulate the habitat of the animals in them as closely as possible. They must have resting and exercising facilities tailored to meet the biological needs of the species. They must also have proper ventilation and lighting. Animals must be kept in viable social groups. Facilities may not acquire a single animal of any species with an exception related to specific breeding issues.

CAZA

CAZA standards make reference to the need for substrates to be nontoxic, in good repair and of texture and design which does not predispose the animal to injury. They suggest that the animal's environment should provide adequate ventilation and "acceptably toxin-free air", although that term is undefined. Also vague is the suggestion that the environment should "not adversely affect the animals considering its auditory, olfactory and light or visual sensitivities". Animals should have access to structures, cover or adequate areas to enable them to remove themselves from contact with the public.

Enclosures should be of a size which enables the animals to exercise natural behaviours, achieve a distance from the public and other animals to prevent stress, achieve a full range of body movements and physical movements normally performed. Furniture and shelter are also called for.

European Union

Generally, member states' legislation must include measures to accommodate animals under conditions which aim to satisfy the biological and conservation requirements of the individual species, among other ways, by providing species specific enrichment of the enclosures and maintaining a high standard of animal husbandry.

3. NUTRITION

Nutrition standards speak to the basic need to nourish the animals in a manner that ensures their continued physical health. Access at all times to clean water, for example, is essential. Equally important, however, and widely acknowledged, is the requirement that a diet be tailored to the species and include a broad variety in the types of food provided to enhance the captive animal's quality of life.

Canada

The Newfoundland policy includes provisions regarding both the quality of the nutrients provided to the animals as well as the manner in which the animals are to be fed. All diets must be prepared according to the age, species, condition, size and type of animal. Meat, fish, fresh fruit and vegetables to be fed to wildlife must be refrigerated to prevent spoilage. The feed preparation area must be kept clean to prevent contamination of feed and feed preparation utensils.

The policy stipulates that feeding must be conducted in a manner that is suitable for the particular species. For example, feed must not be placed on the floor or substrate for ungulates. All vessels used to hold feed must be capable of being sanitized and all uneaten perishable food is to be removed daily. The policy indicates that, generally speaking, the public should not feed captive wildlife.

The Saskatchewan standards require that a person holding wildlife in captivity must keep a fresh and adequate water supply available at all times and provide a fresh, nutritive, uncontaminated and adequate food supply at least once daily.

Both the quality of nutrition and the manner in which it is provided to the animals is addressed in the proposed Nova Scotia standards. Food must be wholesome and consistent with the specific requirements of each species. Standards for food storage are also articulated.

In addition to the foregoing basic items, consideration is also given to the following factors: the manner in which food and water are presented to the animal; the question of whether and under what conditions the animals may be given food by the public; and daily observation of feeding by facility staff to help assess the health of the individual animals.

United States

The U.S. federal and state laws (California and Florida) provide clear principles regarding the feeding of animals. Whether the individual in question is a primate, marine mammal, or some other animal, the diet must be “wholesome, palatable, and free from contamination, of sufficient quantity and nutritive value to maintain a healthful condition, prepared with consideration for age, species, condition and size” (AWA). Food receptacles must be accessible to all animals and if dominant animals are fed with others, multiple feeding sites must be provided. If self-feeders are used, measures must be taken to prevent contamination, deterioration, molding or caking of food.

According to the federal AWA, primates must be fed at least once per day with infants and juveniles being fed as often as necessary, as determined by an attending veterinarian.

The food receptacles for primates must be kept clean and sanitized at least once every two weeks and before use by another group of animals.

United Kingdom

UK standards set out the nutritive value and quantity required for species and individual animals, including the need to allow for special circumstances (i.e. fast, hibernation) and special diets (i.e. pregnancy, veterinary care).

The UK also mandates particular requirements that must be met. Veterinary or other specialist advice must be obtained and followed regarding aspects of nutrition. Food and water supplies must be kept and prepared under hygienic conditions. Food and drink must be protected against dampness, deterioration, mold and pest contamination. Perishables must be refrigerated. Preparation of food and maybe drink must be in a separate unit designed for that purpose. Staff must be instructed to observe strict hygienic standards personally and for equipment. Food and drink receptacles must not be used for any other purpose. Food and drink, including receptacles if used, must be accessible to every animal and must be in a position which minimizes the risk of contamination from soiling by animals. Receptacles other than self-feeders must be thoroughly washed following use. Self-feeders must be regularly inspected to ensure they are working effectively and have no caked or unfit food. Feeding by visitors may be on a selective basis only, with suitable food sold, provided or approved. Water and drinking receptacles must be regularly cleaned.

New Zealand

A continuous supply of good quality food is required for all animals. Facilities must have on-site storage to ensure the food's quality and wholesomeness. An adequate supply of clean, fresh drinking water must be available to all animals. Food and water must be presented in a manner suited to the species and the number of animals in the enclosure. It must also be presented in a manner that decreases faecal contamination.

New South Wales (Australia) and Papua New Guinea

Each animal must be offered a variety of wholesome and palatable food and water sufficient for good health and normal growth. Veterinary advice must be obtained and followed regarding the use of food supplements with the normal diet. Food must be unspoiled. Water must be reticulated or changed daily in each enclosure and must not become stagnant. Clean, potable water must be available to all animals at all times. Equipment within enclosures must be placed so that each animal has easy access to

sufficient food and water. High standards, established by specific requirements, are set out regarding cleanliness in food preparation and storage.

India

Each animal must receive a timely supply of wholesome and unadulterated food in sufficient quantity, according to the requirement of each individual. Potable water must be available around the clock in each enclosure.

CAZA

CAZA notes that references should be available for the nutritional requirements and feeding practices of animals kept. Daily observation and records of feeding should be maintained. Food should be wholesome, stored in a manner which preserves nutrition and prevents contamination, public feeding should be monitored by staff and be only of food prepared by the facility. Food and water should be offered in a way that is accessible to each animal. Potable water must be available to all animals.

4. SANITATION AND DISEASE CONTROL

Sanitation and disease control are so obviously fundamental to the proper sustenance of any animal that most jurisdictions have provided basic standards in relation to this area. Others, however, are much more specific and elaborate, owing to the importance of this matter to all animals in the facility and all people and other animals who might come into contact with them.

Canada

British Columbia policy requires generally that “no person shall exhibit a captive animal unless adequate facilities and sanitation for the health and well-being of exhibited animals are provided”. Thereafter, detailed specifics are stipulated. For example, a facility must provide dens which are accessible for cleaning and which must receive clean litter once every two days. All paper, cartons, tin cans, bottles, garbage of any kind, animal excrement or other debris must be removed from within 30 metres of any pen, except when waste material is contained in a suitable covered garbage container which must be emptied daily. All pens must be cleaned daily, or more often if necessary. Spilled food, excrement, or other offensive material must be removed or flushed from pens regularly with running water when necessary.

Precise specifications are contained in the Newfoundland guidelines in connection with sanitation and disease control. All enclosures must be kept free of trash, spilled food and

feces. Bedding must be changed as often as necessary to remain dry, clean and free of noxious fumes. Outdoor enclosures must be well drained to prevent standing water from collecting. In addition, the facility must have measures in place to address any vermin infestation.

The Saskatchewan standards require that a person holding wildlife in captivity must keep the enclosure sanitary and in an attractive and presentable condition, clean the enclosure regularly as required and clean the bathing pool and change or filter the water in the bathing pool regularly as required. Any incidence of disease must be reported immediately. Where dead wildlife is found and disease may possibly have been the cause, the animal must be examined by a veterinarian the findings reported.

The proposed Nova Scotia standards include provisions for sanitation and disease control in connection with buildings, substrate food preparation areas and food/water containers. The standards also stipulate that areas will be cleaned and disinfected to prevent the accumulation of dangerous organic and inorganic materials and organisms. Certain critical items, such as food and water containers, must be cleaned daily at a minimum. In addition, pest control programs must be implemented and documented to protect the animals as well as the staff and public.

United States

U.S. regulations are quite comprehensive and specific with regard to the frequency and methods by which animal enclosures must be cleaned and sanitized. For instance, the AWA outlines different sanitation requirements for primates, marine mammals and other warm-blooded animals.

For non-human primates, hard-surfaces must be spot-cleaned and sanitized daily, floors made of dirt or absorbent material such as sand must be raked with sufficient frequency to ensure the avoidance of contact with excreta, and contaminated material must be removed or replaced whenever raking does not eliminate insects, pests, vermin, odor, or disease. If species scent-mark, all surfaces must be spot-cleaned daily.

Food and animal waste must be removed from enclosures daily. Bedding, debris, water or any other fluids or wastes must be collected, removed or disposed of on a regular and frequent basis that minimizes disease and contamination. Drainage systems must keep animals dry.

Enclosures must be sanitized once every 2 weeks or as often as necessary to prevent any excessive accumulation of fluids or waste by one of three methods: (1) live steam under pressure; (2) washing with hot water (at least 180 F / 82.2 C) and soap; or (3) washing with appropriate detergent solution. When water or steam is used to clean enclosures via flushing or hosing, primates must be removed unless the enclosure is large enough to prevent animals from being wetted, harmed, or distressed. Bars or perches must be cleaned and replaced when worn.

Food handling areas and kitchens must be cleaned daily and sanitized weekly.

State regulations on sanitation and disease control pertain to all captive wildlife and are similar to those required under the federal AWA for primates and marine mammals.

United Kingdom

The UK standards address many of the same points as are dealt with in the comprehensive American statutes. Additionally, reference is made to the availability of non-toxic cleaning agents along with supplies. Veterinary advice must be obtained and followed regarding all cleaning and sanitation requirements following the contraction of an infectious disease in any animal. A safe and effective pest control program, involving predators where necessary, is mandated. Drainage is addressed, as is refuse, which must be regularly removed and disposed of. Animal waste must be cleared regularly. Also noteworthy is the fact that facility staff is to report immediately if they come in contact with any infection that could affect the health of animals. Further, facility staff must report in confidence any other disability which might affect their capacity to care for the animals.

New Zealand

New Zealand standards provide means for ensuring proper cleaning and drainage, waste disposal and adequate ventilation. Servicing facilities must maintain a high standard of hygiene.

New South Wales (Australia) and Papua New Guinea

Excrement and left over food must be removed daily in carnivore enclosures; for other animals, waste must be removed as often as necessary to minimize infestation and disease risks, decrease odours and prevent ingestion of harmful objects. Contaminated substrate material must be removed and replaced as necessary. Surfaces must be disinfected under veterinary instruction. Enclosures must be well drained and regularly cleaned. Facilities must have a safe, effective and regular program for control of pests.

India

All facilities must have a proper waste disposal system. All left over food, excreta and garbage must be removed from each enclosure regularly and disposed of properly. Each enclosure must be periodically disinfected.

CAZA

Buildings and substrate to which animals have access should be kept clean, washable surfaces should be washed and disinfected as required. Animal waste must be used or disposed of, and sewage must be disposed of, in a fashion that complies with “all applicable regulations”. Toxic or hazardous waste must be handled according to “occupational and public health requirements”. Pest control programs must be effective.

5. VETERINARY CARE

When an animal is healthy at the outset, it is easy to overlook the fact that only preventative health practices and effective treatment will ensure that the status quo is maintained. Veterinary care is an expense and can be time consuming; hence it provides little in the way of readily apparent “audience satisfaction”. Quickly, though, neglect in this area of animal care becomes obvious as the animal population begins to deteriorate. What a facility does not spend to protect the ongoing health of the animals it keeps, will likely be spent treating them after the fact or replacing them once they have died.

Veterinary care is also vitally important because of the effect that neglect in this area has on the animals themselves. There is no doubt as to the undesirable physical and psychological effects that illness or disease can have. With their natural lives denied them and the increased stress of life in captivity, it is essential that the animal’s physical health be carefully protected. In light of these facts, jurisdictions have mandated certain minimum standards of veterinary care for animals kept in captivity.

Canada

In Manitoba, the standards contain provisions for both veterinary care and facilities. With respect to facilities, the Guidelines provide that where a facility has more than ten animals, a hospital holding area, surgical facility and quarantine area must be available. In addition, special holding facilities must be available for animals of a size or type which cannot easily be restrained when dealing with treatment and health. With regard to veterinary care, the Guidelines provide that a veterinarian must be designated, in writing, as being immediately available for consultation and animal care. As well, a veterinarian from, or recommended by, the Manitoba government must annually inspect the condition of the all of the animals in the facility.

Animal health and veterinary care are governed according to strict standards in Newfoundland. Facilities are required to practice preventative medicine. To that end, a veterinarian must give each animal a general health examination every six months and records are to be kept of each such examination. In addition, a fecal test for internal parasites must be done and recorded for each animal every three months. A veterinarian must be on staff or be available at any given time.

United States

The federal *Animal Welfare Act* outlines specific requirements with respect to adequate veterinary care. Each licensed exhibitor must have an attending veterinarian under formal retainer. If the attending veterinarian works on a part-time or consultancy basis, there must be regularly scheduled visits to the facility and a written program of veterinary care.

Each facility must establish and maintain, with the attending veterinarian, a program of care that meets five requirements: (1) the use of appropriate methods to prevent, diagnose, treat, and control diseases and injuries, and the availability of emergency, weekend, and holiday care; (2) the availability of appropriate equipment, personnel, services, and facilities to comply with these requirements; (3) daily observation of all animals to assess their health and well-being which, if not accomplished by the attending veterinarian, must instead be supplemented by direct and frequent communication with the veterinarian; (4) adequate guidance to staff involved in the care of animals regarding handling, immobilization, anesthesia, analgesia, tranquilization, and euthanasia; and (5) adequate pre- and post-procedural care in accordance with established veterinary practices. The attending veterinarian must review this animal care program at least once annually.

United Kingdom

The condition and health of all animals must be checked daily. Routine veterinary attendance is mandatory and examinations as well as preventative medicine, as recommended by the veterinarian, must be carried out. Where full veterinary services are located on site they must include the following items: examination table, various equipment, full range of surgical instruments, anesthetic facilities, diagnostic instruments, sufficient power outlets, facilities to take blood and other samples, and a comprehensive range of drugs. Where full veterinary service is not available there must at least be a clean, ventilated treatment room for routine examinations. Rooms for care of unduly distressed, sick or injured animals and for hand rearing and nursing animals must be available.

New arrivals to the facility are to be isolated as long as is necessary to be examined and become acclimatized. Particular attention is to be given to hygiene in new-import quarters.

All drugs, vaccines and other veterinary products are to be kept under lock and key. Facility staff are not to administer or even possess controlled drugs except under veterinary direction. The facility is to make an arrangement with the veterinarian regarding the holding of supplies of antidotes. Facilities must be available for collecting, restraining and administration of general anesthetics, and for animals recovering from sedation.

Unwanted, contaminated veterinary equipment is to be disposed of safely and needles and other sharps are to be disposed of in rigid containers or incinerated.

In addition, provision must be made to deal with all aspects arising in a post-mortem situation. Facilities must be available to destroy animals; deceased animals must be handled in a manner that does not jeopardize the facility's living population through the transmission of infectious disease. The cause of death is to be determined on the premises if possible. Thereafter, the carcass is to be removed swiftly and disposed of safely.

New Zealand

In New Zealand, the emphasis is on preventative health measures rather than emergency treatment. All facilities must have a contractual arrangement for veterinary service with a veterinarian who has expertise appropriate to the species. Complete notes and records must be maintained for all animals, including the condition(s) treated, clinical signs, treatment applied, results and full post-mortem details where relevant. These must be made available to inspectors.

Provision must be made by all facilities to separate individuals. All staff responsible for care must receive training in the species under their care to help them recognize poor health. The facility must have a reporting system to record staff observations daily. Health records must be kept with particular detail. Appropriate action to consult with a veterinarian or arrange treatment must be done immediately or within 12 hours, depending on the seriousness of the problem.

Euthanasia is permitted under certain conditions, by a veterinarian wherever possible, by intravenous lethal injection. In all cases, the animal must be kept free from distress.

New South Wales (Australia) and Papua New Guinea

In these jurisdictions too, the health of each animal must be checked daily with reports to be prepared on any distressed, sick or injured animal (such as animals showing under-nourishment or weakness, bare spots in fur or feathers, sores or open wounds, persistent diarrhea, unusual nasal discharge, broken bones or other physical injury). All reasonable steps must be taken to restore animals to good physical health.

Regular veterinary inspections and care of each animal is mandatory. All facilities must maintain quarters for routine examinations in a clean, well-ventilated area, for the restraint of animals, for the administration of anesthetic and euthanasia. There must be a treatment area for care of distressed, sick, injured and recovering animals.

Provision is made for handling dead animals, to decrease the risk of disease transmission. For certain facilities, unless arrangements are made to quickly remove dead animals to veterinary offices, there must be quarters to conduct a post mortem in a safe, hygienic manner, including an efficient drainage system, washable floors and walls, an examination table and dedicated equipment. In a variety of circumstances, a veterinary examination is required to determine the cause of death.

India

India has implemented very detailed and sophisticated standards to enable the authorities to ensure that the health of captive animal populations are promoted and maintained. To begin with, large zoos must have at least 2 full time veterinarians; medium zoos must have at least one; and mini zoos must have an arrangement with an outside veterinarian to conduct a daily visit. The condition and health of each animal must be checked daily by the individual in charge of care. This allows any incidence of sick, injured or unduly stressed animals to be reported immediately to the veterinarian for treatment.

Regular routine examinations including parasite checks and measures to ensure practices consistent with preventative medicine are mandated. For example, medical history and treatment cards for each animal are stipulated. Every large and medium sized facility must have full veterinary facilities as well as isolation and quarantine wards for new arrivals and sick animals. The veterinary hospital must have a facility to restrain and handle sick animals, including tranquilizing equipment, and a reference library on animal health care and upkeep. Smaller facilities are required, at a minimum, to have a treatment room for routine examinations and immediate treatments.

Every facility must have a post-mortem room and conduct a detailed post-mortem examination on any animal which dies at the facility; with records to be kept for six years. Every facility must have a post-mortem facility and a graveyard; with large and medium facilities required to have an incinerator.

CAZA

CAZA standards require veterinary services to be available for the animals and indicate that they should comply with another document, the Guidelines for Zoo/Aquarium Veterinary Medicine Programs and Veterinary Hospitals. A contract providing consultation for preventative health care and describing clinical veterinary services including 24 hour emergency service should be in place. Facilities should be available for isolation and treatment of sick or injured animals and for quarantine of newly arrived animals. Only licensed veterinarians may perform veterinary procedures.

European Union

Generally, member states' legislation must implement measures to accommodate animals under conditions which aim to satisfy the biological and conservation requirements of the individual species, among other ways, by providing a developed program of preventative and curative veterinary care and nutrition.

6. GENERAL WELFARE

Bearing in mind that the physical, psychological and social well-being of captive animals is entirely dependent on the quality, or lack thereof, of care provided by the facility that keeps the animal, an emphasis on the animal's general welfare is evident in the scheme of all the jurisdictions reviewed in this analysis. The general welfare of animals requires regulation in the areas of accommodation, nutrition and sanitation, but also in the areas of psychological enrichment, social contact, and the general prevention of harm or stress to the animals. In most cases, these considerations are included under the other headings in this report, however, some additional requirements bear mentioning here.

New Zealand is noteworthy in the effort it makes to address these concerns at the outset by requiring evidence that animal welfare needs will be met to accompany the licence application.

United States

Federal legislation acknowledges the necessity of social contact between animals for psychological health. For example, the AWA requires that "individually housed non-human primates must be able to see and hear non-human primates of their own or compatible species unless the attending veterinarian determines that it would endanger their health, safety, or well-being". The compatibility of different individual primates or different species must always be determined by the attending veterinarian before animals are housed together, so as to prevent any physical harm or psychological stress to the cohabitants.

California legislates social contact for animals including primates and marine mammals. Any compatible animals may be held in the same enclosure if the required floor space is provided, however, common walls must be constructed so that non-compatible animals cannot gain access to each other. Socially dependent animals must be allowed visual and olfactory contact. Florida's regulations also acknowledge that "most captive wildlife need socialization with others of the same species" and accordingly many standard cage sizes require sufficient space for two or more animals.

U.S. legislation addresses the issue of psychological enrichment beyond that of social contact. With regard to non-human primates for instance, the federal AWA requires exhibitors to "develop, document, and follow an appropriate plan for environmental enhancement adequate to promote the psychological well-being of non-human primates"

as in accordance with “currently accepted professional standards as cited in appropriate professional journals, or reference guides and as directed by the attending veterinarian”. The plan, at a minimum, must address four areas:

Social Grouping: exhibitors must include provisions for those species known to exist in social groups in the wild.

Environmental Enrichment: exhibitors must provide means for animals to express species-typical behavior by providing, for example, perches, swings, and other cage complexities such as foraging or task-oriented feeding methods.

Special Consideration: for infants, juveniles, those showing psychological distress, individually housed animals that are unable to see or hear others of their own or compatible species, and great apes weighing over 110 lbs. (50 kg) which need to have additional opportunities to express species-typical behavior.

Restraint Devices: exhibitors must not use such devices unless necessary for animal health, if they are required they must only be used for the shortest possible period of time.

In Florida, environmental enhancements are required for most species. According to the Florida's regulations, these are items “that will stimulate the animals' natural foraging and activity behaviors to provide for their psychological well-being”.

United Kingdom

Animals must be handled only by or under the supervision of authorized staff; all handling must be done with care, to avoid unnecessary discomfort, behavioural stress or actual physical harm to animals. Smoking by staff is prohibited when in close proximity to animals or when preparing their food. All other aspects of general welfare mandated in the United Kingdom have been summarized elsewhere in this report.

New Zealand

In order to get its license in the first place, a facility must provide evidence that provision will be made to meet all the requirements of animal welfare; consideration must be given to all of the animals' physical, psychological and physiological needs. An assessment of those needs must be based on an understanding of the species in the context of its natural history and captive husbandry. The facility must seek to promote a responsible, caring environment in which the animals displayed are allowed to exhibit their natural range of behaviours. No abnormal pressure (i.e. overcrowding, conflicts) which subjects animals to chronic stress is permitted. No public demands for attention may be permitted to overrule animal welfare requirements.

New South Wales (Australia) and Papua New Guinea

Animals may not be handled in a way that causes undue discomfort or distress or physical harm. Physical contact by the public must be supervised, limited and under conditions consistent with the welfare of the animals.

India

All facilities must be closed at least one day per week. Animals must be handled only by staff with experience and training, with a requirement that they avoid causing discomfort, stress or physical harm to the animals. Animals that are seriously sick, injured or infirm may not be exhibited.

CAZA

All animals or groups should be observed by staff at least once daily and as often as required in the circumstances of the environment, animal condition and behaviour of the animal or group. Hibernation and periods of particular sensitivity may preclude daily observation and a suggestion is made to consider remote audio and/or video monitoring in such conditions. Standard husbandry references should be available. Staff or management responsible for housing, husbandry, nutrition and transport should have access to resources to enable them to perform these functions safely and humanely.

European Union

Generally, member states' legislation must implement measures to accommodate animals under conditions which aim to satisfy the biological and conservation requirements of the individual species.

7. SAFETY AND SECURITY

As revealed by our review, any complete standards regarding wildlife in captivity will have regard to the safety and security of the human patrons and employees of a facility, the animals kept at the facility and ecological threats posed by escaped animals to indigenous species. Typically this is accomplished by addressing five main elements: (1) physical barriers; (2) warning signs for particularly dangerous animals; (3) escape prevention and contingency plans; (4) specific animal handling procedures; and (5) general public safety.

Canada

The standards of British Columbia require that all animals be kept in cages and, where animals are dangerous, the cage must be equipped with a double-gated entrance. In order to further prevent physical contact between the public and the animals, the standards also require the construction of fences, guard rails, or moats to keep members of the public away from the animal cages.

The British Columbia guidelines require that an applicant for a license be sufficiently trained and knowledgeable in the care of wildlife and have adequate resources to preclude escape of wildlife. More specifically, a permittee must immediately notify a conservation officer or other peace officer of the escape of a wild animal from the facility. Newfoundland policy requires all enclosures to be key or combination locked, as well as to be constructed with sufficient strength to prevent escape.

Nova Scotia is proposing a barrier or perimeter fence of at least two metres in height to surround entire facilities, with double fencing for particularly dangerous animals, in order to protect the non-visiting public. The proposed policy also addresses the need for remote monitoring of the confines when the facility is not open to the public.

In Saskatchewan, a person holding dangerous wildlife must post signs in conspicuous places warning the public that the wildlife is dangerous. Enclosures must be surrounded by a secondary fence so the public cannot enter within one metre of the enclosure. All enclosures must be securely locked. Any escapes must be immediately reported to a resource officer. Similarly, in Newfoundland, warning signs of any known or suspected problem behavior that may be dangerous to the public must be posted.

United States

With regard to barriers and fences, the AWA only lists specific requirements with regard to non-human primates. Such animal enclosures must be surrounded by a perimeter fence that is of sufficient height to restrict animals the size of dogs, skunks, or raccoons from going under or through it. The distance between the perimeter fence and the primary enclosure must be sufficient to prevent physical contact between animals inside the enclosure and outside the perimeter fence.

In California, all animals must be housed in enclosures that have double doors or a similar perimeter fence. In Florida, that a fence a minimum of five feet in height and sufficient to deter entry by the public must be present around Class I or II wildlife enclosures. Further, all such enclosures must be equipped with a “safety entrance” which is defined as “a protected, secure area that can be entered by a keeper that prevents animal escape and safeguards the keeper, or a device that can be activated by a keeper that prevents animal escape and safeguards entry”. Enclosures must be anchored to prevent escape by digging or erosion and cages must be of sufficient strength for the

species in question. If, upon inspection, caging is considered unsafe, it must be reconstructed within 30 days after notification or, if there is an immediate threat of safety to the public, the wildlife contained therein must be removed and placed in an approved facility at the expense of the exhibitor until the unsafe condition is remedied.

In case of animal escape from enclosures, the California Department of Fish and Game may require an applicant to provide proof that he or she will be able to immediately cover all expenses incurred by the department in locating, capturing, housing, and caring for captured animals.

United Kingdom

**the safety standards in the UK are very elaborate and detailed; what follows is a summary*

Any defects in the enclosure barrier or equipment must be replaced or repaired at once and animals must be removed if such defects are likely to cause physical harm.

Animals must be kept in enclosures at all times, however, if they are free-running or non-hazardous, they may be kept within the general perimeter. Hazardous animals which can climb or jump must be kept in completely fenced and roofed enclosures, or enclosures with fences which prevent animals from getting over the top, or surrounded by a wet moat of adequate depth so as to prevent escape. Moats must be surrounded by fences, walls, hedges, or shrubbery to prevent visitors from approaching too closely. Each enclosure with a hazardous animal must be observed continually. Animals that can dig or burrow must be kept in enclosures with concrete or galvanized metal mesh floors or with walls extending at least one metre below the ground with an extension inwards of one metre of galvanized metal mesh or concrete floor. Venomous animals must be kept in enclosures with solid walls and a roof or with walls of an adequate height and design to prevent escape.

Perimeter barriers may not have electrical sections less than two metres from the ground. All fences must be suitably secure with posts that are firmly fixed in the ground and the fence material must be secured to ensure that the weight of the animal cannot detach it. All gates and doors where the public is not admitted must be securely locked and animals must be unable to lift gates or doors from their hinges or to unfasten security devices. Gates and doors must also not allow the visiting public to become trapped inside any enclosure. Stand off barriers must be provided sufficiently far from enclosures to prevent contact between the visitors and hazardous animals. Barriers must be designed to prevent children from getting through, under, or over them and must also discourage children from sitting on them. In general, enclosures must have exits that are clearly posted and capable of being easily opened from the inside, but discourage the escape of animals.

Drive through enclosures with dangerous carnivores must have double gates with sufficient space to allow gates to be securely closed in the front and rear of any vehicle. These double gates must be designed and maintained so that one gate cannot be opened

until the other is securely closed, but also maintain provision to override this feature in the case of an emergency.

Hoofed or grazing animals can be contained by a cattle grid while all others are to be provided with single entry or exit gates which are to be supervised at all times. Access points between adjoining enclosures must be controlled to prevent animals from entering adjacent cages.

Gates that are controlled by electrified pressure pads must be designed so as to ensure that if they fail, the gate will close automatically or otherwise ensure the security of animals. In the event of power failure, mechanically operated gates must also close automatically and have an alternate method of control.

All facilities must have a one way road system with stopping to be permitted only at places where the road is at least six metres wide. Enclosures with dangerous carnivores, primates, and other hazardous wild animals must have no vehicle access with the exception of that for emergency rescue vehicles. Vehicles without a solid roof are prohibited.

Enclosures with hazardous animals must have warning signs of adequate number with words or symbols which are clearly visible. Electrified fences must also have warning signs of adequate number on both sides. Facilities which permit visitors to drive through the exhibit must have readily visible and easy to read notices which warn patrons to remain in the vehicle at all times with windows and doors locked and to sound their horn or flash their lights in the case of an emergency and to remain in the vehicle until help arrives.

Each facility must have a written procedure to be followed in the event of animal escape and the procedure must be familiar to all staff. It must outline the tasks to be followed by all staff in various situations. Senior staff at the facility must be notified immediately in the event of an escape and the likely escape route must be immediately assessed.

Weapons to tranquilize or kill animals must only be used by licensed and trained operators. Such weapons must be cleaned and maintained as recommended by the manufacturer and must be kept with ammunition under secure lock. Trained weapon operators must undergo periodic practice and training sessions and emergency drills must be performed by the staff at least four times per year.

Removal of animals from enclosures is closely regulated with a number of particular requirements.

All buildings and structures must be maintained in a safe condition. Specifically, areas where visitors walk must be even with a non-slip or grass surface. Edges where a person might fall must be guarded by a barrier capable of restraining children and warnings must be posted of all such areas. Handrails are required where there are steps. Walkways over animal enclosures must be constructed and maintained to withstand considerable weight

and contact by animals. In general, the public must not be permitted in any area which could prevent unreasonable risk to health and safety. All non-public areas must be locked and clearly defined with warning notices.

New Zealand

By way of appropriate exhibit design, supervision by trained staff and high standards of management, facilities must ensure that animals, staff and visitors are protected from injury and that all reasonable precautions to prevent accidents and the spread of disease are taken. Staff must be trained in methods to prevent and control hazards. Zoos must be completely enclosed by an animal-proof outer perimeter fence, at least 1.8 metres high to deter entry of unwanted animals and escape of zoo animals.

New South Wales (Australia) and Papua New Guinea

**the safety standards in these jurisdictions are very elaborate, addressing many of the areas covered in the UK, as summarized above; what follows is a brief summary*

These jurisdictions have extensive and specific safety requirements including such requirements as a mandatory outer perimeter fence; gates on perimeter fences must open inwards; gates and doors to enclosures must be designed so that the animal cannot lift it off its hinges or tracks; the entrance to enclosures of dangerous animals must be by safety entrance through successive gates or doors; warning signs must be posted of dangerous animals and electrified fences. For carnivores, further particular safety requirements are proscribed.

India

Every zoo must have a perimeter wall at least 2 metres from the ground. All enclosures must be designed to fully ensure the safety of animals, keepers and visitors; stand off barriers and adequate warning signs are required to keep visitors at a safe distance.

CAZA

A complete perimeter fence must exist around the enclosures which protects animals from direct exposure to the nonvisiting public and feral or domestic animals. The level of security required will vary according to the species kept and the proximity of the facility to populated areas, agricultural land and sensitive wildlife habitat. Reasonable facilities must be in place to enable containment of an escaped animal within the property. Some method (undescribed) of remote or manual monitoring of the security of the facility should be in place. The public should be prevented from directly contacting potentially dangerous animals by use of double fencing or other barriers. Barriers should be maintained in areas which are not accessible to the public.

European Union

Member states must ensure that legislation prevents the escape of animals in order to avoid possible ecological threats to indigenous species and to prevent intrusion of outside harmful outside animals.

8. OPERATIONS

This heading encompasses a variety of operational matters which affect facilities keeping animals in captivity. They ensure accountability of the facility and the government authority to the general public by ensuring that the facility operates smoothly and has contingency plans for various potential problems that are unique to this type of business. Operations comprises such matters as insurance, records, surplus animals, transfer and transportation of animals. Given that such facilities are responsible not for inanimate equipment or items, but for the well-being of a variety of living creatures and the safety of all people who come in contact with them, other jurisdictions have found it necessary to impose requirements to ensure that the business is functional (i.e. will be able to properly provide for its animals and ensure the safety of all people who come into contact with them) and contingency plans are in place.

Canada

In light of the potential dangers posed by the keeping of captive animals, it is considered essential that wildlife holders maintain adequate liability insurance. Both Saskatchewan and British Columbia require this of permit holders within their jurisdiction. In British Columbia, applicants for permits to possess wildlife must have a minimum of \$1,000,000 of public liability and property damage insurance. The permit is invalid unless the insurance is maintained.

In British Columbia, a permit holder must maintain an accurate, up-to-date record of the wildlife held under the permit, which shows any additions and deletions and includes the following particulars: (1) the common name of the wildlife; (2) the number, sex, maturity and condition of the wildlife; (3) the name and address or the person or organization who received or provided the wildlife; (4) the number of the permit under which the wildlife was transported or imported; and, (5) the manner, form, location and date of marking wildlife taken from the wild and the date of the official receipt for the capture fee. These records must be submitted annually to the regional manager and must also be provided to an officer upon demand.

In Saskatchewan, a complete list of the number and species of wildlife presently held and where, from whom and when each was obtained, must be kept. Records must also be kept of the veterinarian's name and the date each animal was tested for disease. Acquisitions of new wildlife must be immediately reported to a resource officer. Records may be inspected by a resource officer on request.

Any imported wildlife that dies within 30 days must be reported immediately to a resource officer.

In Alberta, a written zoo plan must be submitted with each licence renewal application. Alberta also has specific reporting provisions, requiring facilities to record the birth, kind, sex and date of birth of each animal born at and imported to the facility, as well as details of the animal's death and disposal. Records must be retained for 3 years. An annual report must be submitted to the government showing the total number of live animals possessed that year and the information described above.

In Newfoundland, animal transfer may only be conducted pursuant to a permit and in accordance with the utmost regard to the animals' safety and comfort.

In Manitoba, specific transportation guidelines provide that all transport cages must be sufficiently strong to suitably confine the animal and they must also allow the animal to have mobility, fresh air and an opportunity to be fed and watered. In addition, the animal must have sufficient room to stand and turn around inside the cage.

The staffing and administration of facilities are addressed in the Newfoundland policy. The individual in charge of any facility holding captive wildlife must establish that s/he is knowledgeable about natural history in general and wildlife in particular. One staff member trained in first aid must be on duty when the facility is open and, of course, animal attendants must be on duty when the facility is open.

In Nova Scotia, written Emergency Response Plans for the following situations are contemplated by the standards: animal escape; fire; flood/storm; human exposure to venom; human injury; utility failure; animal injury or distress; and illegal entry.

United States

In the United States, federal and state requirements with respect to records are similar in that the main concern is the accessibility and clarity of such records to federal and state inspectors. Under the AWA, no exhibitor may destroy any records pertaining to an animal until one year after the animal's death. Further, each exhibitor must allow APHIS officials to: (1) enter its place of business; (2) examine its records; (3) make copies of the records; (4) inspect and photograph animals, property, and facilities; and (5) have use of a table or other necessary facilities to conduct such matters.

In California, exhibitors must maintain a written log for each animal in captivity which documents each animal's health care. The log, which must be made available to inspectors on demand, must contain the date of acquisition for each animal, the name and address of the person from whom the animal was acquired and any identifying marks or characteristics the animal possesses.

Federal law requires primary enclosures used to transport animals must: (1) be strong enough to comfortably and securely contain the animal and withstand normal rigors of transport; (2) contain no sharp points or edges; (3) be such that the animal cannot put any part of his/her body outside the enclosure; (4) allow the animal to be quickly and easily removed during an emergency; (5) lift without having to tilt; (6) be securely closed; (7) be made of non-toxic materials; (8) be properly ventilated; (9) have openings that are covered with bars or wire mesh; (10) have a solid leak-proof bottom to prevent waste seepage.

Transportation enclosures require the same level of cleanliness and sanitization as do primary enclosures and these standards are described in the Sanitization and Control of Disease section of this report. Depending on the structure of the transportation enclosure, the necessary percentage of wall surface area that must be dedicated to ventilation may range from 8 - 90%. In terms of space, cages must be large enough so that each animal "has enough space to turn about freely and to make normal postural adjustments". Animals that are transported together must be of the same species and of compatible groups with the exception of primates, who may not travel together.

All animals must be offered potable water at least every 12 hours during transit and must be fed at least every 24 hours, although marine mammals may be fed every 36 hours. During transit, intermediate handlers and carriers must also provide certain standards of shelter: (1) shelter from sunlight - animals must have sufficient shade and must not be subjected to air temperatures which exceed 85 F (29.5 C); (2) shelter from rain and snow - animals must be kept dry; (3) shelter from cold weather - animals must not be subjected to air temperatures which fall below 45 F (7.2 C). Carriers must directly observe animals at least every 4 hours to ensure that these standards are being met.

United Kingdom

In the UK, facilities are required to maintain and provide copies to the licensing authority of a public liability insurance policy.

Detailed requirements provide that records must be kept and maintained of all individually recognizable animals and groups of animals, and must be kept for at least 6 years after an animal's death. Records must include: (1) the correct identification and scientific name; (2) the origin (whether wild or captive born, identification of parents (where known) and previous locations, if any); (3) dates of entry into and disposal from the collection and to whom; (4) date or estimated date of birth; (5) sex; (6) any distinctive markings, including tattoo or freeze brands; (7) clinical data, including

details of and dates when drugs, injections and any other forms of treatment were given and details of the health of the animal; (8) date of death and results of any post-mortem examination by a veterinary surgeon; and (9) the reason, where an escape has taken place, or damage or injury has been caused to, or by, an animal to persons or property, for such escape, damage or injury and a summary of remedial measures taken to prevent recurrence of such incidents.

In addition, an annual stock list of animals must be kept and filed, including the following information: (1) common and scientific names of the species; (2) total in the collection on January 1 of each year; (3) number of arrivals into the collection from all sources during the year; (4) number of births into the collection during the year; (5) number which died within 30 days of birth; (6) number which died from other causes; (7) number departed collection, including sales, breeding loans, etc.; and (8) total remaining in the collection as of December 31.

Surplus zoo animals must be passed to responsible persons who have the appropriate facilities and expertise and, where necessary, are licensed for the keeping and management of the species under consideration.

The authority must also be kept apprised of the addition of any dangerous animals to the facility and in fact must be given one month advance notice if the facility is to receive an animal of a taxonomic order not previously kept. The authority must also be kept apprised of the temporary removal of dangerous animals and of the escape of any animal.

New Zealand

At a minimum, records must be kept of all animals held at the facility, showing numbers, species, sex, age, date and source of acquisition, genealogy and breeding records (for the individual animal and groups), health records (for the individual animal and groups), number and cause of death of all animals, details of transfers, individual animal diet sheets. Additionally, the facility must have an Animal Collection Plan for all animals including a schedule of health and husbandry practices, planned program of reproductive control, schedule of routine enclosure servicing and maintenance as well as animal and collection development proposals and schedules.

Before the necessary authority is given for a facility to take a new animal, the facility must provide evidence, and a veterinary officer must confirm, the suitability of the facility and its staff to handle the animal/species. All stock movement must be recorded and records made available to inspectors and registered in all animal records. All records must accompany animals transferred. It is noteworthy that no animals may be transferred to circuses.

Animal safety, health and welfare must be maintained both within the premises and any time the animals are taken outside of it. Travel accommodations should be designed specifically for the species being carried, with attention to ventilation, footing, bedding, projections, water and contingencies.

The number and level of expertise of staff must be sufficient to attend to all welfare needs at all times. Training programs must be implemented to ensure staff familiarity with: health and safety procedures, animal husbandry and care, handling and transport, emergency drills re: animal escape or attack and fire, and the biology of the species under the person's care.

Reproduction must be managed to avoid the problem of surplus animals with no satisfactory future. Each animal or group must be part of a breeding program consistent with the long-term welfare of the animal.

New South Wales (Australia) and Papua New Guinea

Records must be kept of all individual animals. All documents and information regarding each animal from previous locations must be kept safely and must accompany animals moving to new locations. Records must include, at minimum: name and identification of the animal, origin details, dates of acquisition and disposal, date of birth, clinical data regarding health examinations and treatment, breeding and details of offspring, date of death and results of post mortem, and normal diet.

New arrivals must be kept in isolation until examined, acclimatized and in good health.

India

Every facility must prepare a long-term master plan for its development and a management plan, with details of the proposal and activities of development for the next 6 years. This plan must be filed with the government authority.

Facilities must keep records of births, acquisitions, sales, disposal and death of all animals. These records must be submitted annually to the government authority, along with an explanation for the death of any animals based on a post-mortem report and tests. Facilities must publish an annual report of their activities to be made available to the government and general public at a reasonable cost. Large and medium zoos must arrange to record in writing their detailed observations about biological behaviour, population dynamics and veterinary care of exhibited animals for purposes of development of a database maintained by the government and exchanged with other zoos.

In India, zoos must formulate programs for captive breeding of only such animals as are approved by the government authority. Among other requirements, zoos are not allowed to acquire a single animal of any variety except where it is essential for finding a mate or

exchange of blood in a captive breeding program. Stud books must be kept for all endangered species. Zoos must also safeguard against uncontrolled growth in the population, and must implement population control measures like separation of the sexes, sterilization, vasectomy, tubectomy and implanting of pallets. Hybridization between different species or different races of the same species is prohibited.

CAZA

Animal identification and records must provide information to enable current and retrospective investigation of genealogy, life history and medical events, with particular requirements for mammals and birds to be identified individually by number. Records should include date of acquisition, disposition, genealogy and/or source, record of movement of the animal within and outside the facility, significant life events, reproductive history, medical history and necropsies. Records should be protected from fire and other predictable events which may result in loss or destruction.

The facility must be actively involved with objectives and action plans in at least one of public or formal education, research, conservation and species preservation. Written policies and procedures must be established and understood by staff in animal acquisition and disposition, and handling and disposal of hazardous goods. Plans to respond to predictable emergencies must be clearly defined in writing and all staff must be aware of their responsibilities and the overall objective. At least one person with current Cardio Pulmonary Resuscitation certification and at least one person trained in first aid should be on site when the public are on site. Particular requirements also address fire control, firearms and emergency response.

Staff involved in management and maintenance of the animals should have the physical ability, knowledge, access to information, training and equipment necessary to adequately and humanely maintain the animals, provide adequate nutrition, provide environmental enrichment and respond appropriately to predictable emergencies. Training programs must be established for animal husbandry, emergency response procedures, hazardous goods handling and management, animal restraint and hygiene and zoonosis.

European Union

Member states must ensure that up-to-date records appropriate to the species are kept.

CONCLUSIONS

There are five overriding principles which can be extracted from all of the legislation, regulations, policies and standards we examined:

1. a facility which keeps live wild animals is a unique type of operation which raises specific concerns in terms of animal welfare and human safety
2. species and individual animals have very different needs, therefore all standards or requirements must be tailored to meet those particular needs
3. records of various aspects of the facility's operations must be kept and provided to the government authority, generally on an annual basis
4. the government must retain authority to access all parts of the facility and its written records, on both an announced and an unannounced basis
5. comprehensive, regulatory schemes emphasize preventative behaviour while retaining sufficient authority to inspect facilities and mandate solutions to problems when they do arise.

Many of the jurisdictions we examined have implemented thorough requirements with respect to the care that must be given to captive wildlife and the safety of the people who come into contact with them (notably Newfoundland, United Kingdom, New Zealand). For jurisdictions that are in the process of developing their regime (i.e. Nova Scotia, Papua New Guinea) the trend is clearly toward comprehensive regulations. Objective standards are preferred where possible to subjective standards. These have the obvious benefit of clarity to all who have an interest in ensuring compliance. Most significantly, it is clear from an enforcement perspective that emphasis on a stringent, preventative application process is desirable.

The standards of CAZA are helpful in some areas. Under the Operations heading, for example, CAZA standards are quite specific and regard to those particulars could be helpful as Ontario's regulations are being formulated.

In other cases, CAZA standards are vague. No real consideration is given to specific requirements for animal welfare. Rather than establish its own standards in many areas, reference is made to other bodies' standards, such as those of the Canadian Council on Animal Care (CCAC), a body created to address the specific concerns of animals used in experiments, or International Air Transport Association (IATA), or to "local regulations", "standards for construction and fire protection according to relevant codes", "public health guidelines" and "occupational regulations", etc. These may be necessary for CAZA's purposes, given that it is an organization trying to accommodate requirements which vary from province to province in one national policy.

CAZA notes further that consideration should be given to the recommended standards designated under the current government regulations as well as established guidelines of professional groups, so it is clear that these standards themselves admit of a more thorough approach. Hence, where an individual province is implementing its own regime, it is preferable, in the interest of clarity, that specific requirements be set out.

With a number of useful precedents available, Ontario has an opportunity to create a regulatory regime which is comprehensive, consistent with progressive steps being taken in Canada and around the world, fair to licence holders and respectful of the many individual animals whose lives are directly affected by the regime's success or failure.

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