

The European Association of Aquatic Mammals



European Association for Aquatic Mammals

Devoted to marine mammal
conservation since 1972.

**Standards and Guidelines for the management of marine
mammals under human care (version February 2016)**

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Preamble

Public display facilities are resource centres that help people to expand their knowledge about: the importance of marine conservation, responsible human behaviour, and the principles of ecology. Increasing public awareness of marine mammals and the marine ecosystem through lectures, exhibits, courses and conservation programs for adults and children makes a contribution to the preservation of marine mammals and their environment. Providing the opportunity for 20 million people to view marine mammals at public display facilities arguably prevents much harassment of marine mammals in the wild. Many facilities have programs to assist stranded or sick marine mammals, which communicate the importance and commitment with conservation.

Much of what has been learned about marine mammal behaviour, biology, and physiology has been derived from scientific research on captive marine mammals, and is important in better understanding how to sustain marine mammal populations in the wild. Greater knowledge about marine mammals improves efforts to help the animals cope with natural and anthropogenic risks and threats. Marine mammals are difficult to observe in the wild, and aquarium settings offer opportunities to develop and adjust field research techniques.

Education of the public about marine mammals has made people feel strongly about protecting the animals and their environment. The various shows, lectures, exhibits, and courses at public display facilities are all part of their education programs. Public display elevates peoples understanding of marine mammals and the marine ecosystem. Many people who live away from the coasts might never be exposed to these animals if they did not have the opportunity to visit a public display facility. You cannot protect what you don't know and respect.

These Standards and Guidelines reflect present-day practices, which are based on current scientific data and the cumulative experience of the membership of this association. They will be updated and improved as the knowledge base expands. **These Standards and Guidelines will be reviewed annually** under the direction of the Board of the EAAM, thereby assuring the goal of the EAAM institutional members to lead the marine mammal display community in the integration of advancing science and technologies.

The Standards and Guidelines reflect the commitment of the EAAM members to hold and display our marine mammal collection under state of the art conditions. They are available on demand in order that our commitment is transparent and controllable.

1. ACQUISITION AND DISPOSITION OF MARINE MAMMALS

1.1. General introduction

Acquisition and disposition of marine mammals by member institutions reflect policies that maximize the educational, research, and conservation potential of the collections. Living animals require a substantial commitment of resources and cannot be managed using strategies based on short-term interests. Furthermore, living animals have intrinsic needs both as individuals and as members of species. These must be of primary concern in animal management.

Each institution should have in place an **Animal Collection Plan**

1.2. Definitions

1.2.1. **Acquisition** is the addition of an animal(s) to a collection through trade, transfer, donation, loan, purchase, collection from wild, rescue, or birth.

1.2.2. **Disposition** is the removal of an animal(s) from a collection through trade, transfer, donation, loan, sale, escape, reintroduction, or death.

1.2.3. **Lawful purposes** refer to purposes, which are in accord with all applicable local, state/provincial, regional, national, and international laws and regulations.

1.2.4. **Qualified marine mammal park, aquarium, marine life park, zoo**, refers to a permanent institution that owns and maintains marine mammals and, under the direction of a professional staff, provides its collection with appropriate care; is open to the public on a regularly scheduled, predictable basis; conforms to all applicable laws and regulations; and whose mission and purposes are consistent with those of the EAAM.

1.3. Standards and Guidelines for Acquisition of marine mammals

1.3.1. Members must only acquire or accept a marine mammal for lawful purposes.

- The animal should be acquired for purposes consistent with the mission, programs, and activities of the member.

- Members should be capable of providing for the animal's proper care and management according to EAAM standards.

1.3.2. All animals must be acquired using humane methods consistent with professional practices.

1.3.3. Acquisitions from the wild through direct collections must only be undertaken under authority from the appropriate governmental regulatory agency managing the source population.

1.3.4. Members acquiring marine mammals from the wild must be able to demonstrate that such removal will not compromise the sustainability of the stock or population from which the animals were taken.

1.4. Standards and Guidelines for Disposition

1.4.1. Members must only remove living animals from their collections to a qualified marine mammal park, aquarium, marine life park, zoo, or comparable institution.

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- Animals should only be placed in an institution or collection whose purposes are consistent with those of the EAAM.

- Members should incorporate as standard practice a determination that the recipient will provide care and management for the animal to EAAM standards.

- Animals should be disposed of in a manner consistent with humane practices and applicable governing law.

1.4.2. Living marine mammals must only be loaned to other marine mammal facilities for purposes of exhibition, breeding, education or research, provided the holding institution is satisfied that the recipient can provide adequate care and treatment.

- Such disposition should not be detrimental to the animal or its species.

- Such loans should be documented by written agreement declaring the nature of the loan and its terms.

1.4.3. Marine mammals maintained as part of a collection must only be released to the wild if part of an authorized and proper, scientifically-based experimental reintroduction program that is anchored in the principles of conservation biology and has the ultimate goal of sustaining a threatened or endangered marine mammal stock and/or population.

1.4.4. Euthanasia is recognized as a legitimate animal management tool but must only be utilized, when appropriate, as recommended by the attending veterinarian in accordance with the member's program of veterinary care, including but not limited to terminating animal suffering caused by illness, injury, or other medical conditions. An euthanasia policy should be established in any member institution, based on their institutional policy and on legislation in force.

1.4.5. In all cases, members must insure that the manner of disposition considers the best interests of the animal and its species.

2. Animal Training

2.1. General introduction

2.1.1. EAAM members recognize animal training as an application of behavioural science that:

- (1) Provides a means to observe, assess and enrich an animal's physical and psychological health
- (2) Assists the animal care staff in providing safe and expedient methods for preventive and clinical medical procedures
- (3) Integrates public display within husbandry regimes
- (4) Facilitates education and research objectives

2.2. Definitions

2.2.1. **Animal Training** is the deliberate application of learning principles, operant and classical conditioning to modify an animal's behaviour in order to facilitate husbandry, public display and research.

2.2.2. **Experienced Competent Trainer** is defined as an individual that has actively participated in the training and husbandry of marine mammals with sufficient knowledge and experience.

2.2.3. **Animal Training Program** is a defined and managed functional activity that is comprised of animals, equipment and personnel who are responsible for developing and administering animal training plans to meet the goals and objectives of the organization.

2.2.4. **Professional organizations** are formal membership associations established to promote the exchange of information among professionals in the field of animal behavioural science, management, training, husbandry, enrichment, or other related disciplines; and wherein progress is monitored and evaluated.

2.2.5. **Professional journals** refer to periodicals, magazines, or other publications, which contain material relevant to animal behavioural science, management, training, husbandry, enrichment or other related disciplines.

2.2.6. **Student trainer** refers to a period of practical experience and training for a student that is supervised by an expert or specialist in a particular field.

2.3. Standards and Guidelines for Training Programs

2.3.1. Members must have a policy on animal training that meets the standardized training guidelines of the International Marine Animal Trainers Association

2.3.2. The animal training policy should describe the organization's view of the animal training program, its role in the organization and how management interfaces with it, typically including:

- a. Focus of the animal program
- b. Philosophy of animal training
- c. Application of animal training
- d. Statements of animal care and treatment principles
- e. Management review and accountability

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2.3.3. Members must have a Behaviour development and Management plan.

The behaviour development and management plan should describe the animal training program and its objectives, methods of accomplishment and success criteria. It should address training oversight, standard *and* emergency procedures, and record keeping, typically including:

- a. Animal training decision authority
- b. Categorized list of behaviour goals and objectives
- c. Animal training plan for individual behaviours
- d. Criteria for measuring success of animal training plans
- e. Schedule of frequency to maintain criteria
- f. Contingency plans

2.3.4. Members must provide for adequate animal training, staff that is appropriately sized and qualified to meet all program requirements.

The on-site animal training staff should be under the direction of an experienced, competent trainer. The size of the staff should be based on the number of animals, husbandry and training requirements, activities with guests, and the physical facility. Animal training responsibilities should be clearly defined and the positions described by proficiency requirements. The organization should have and support a continuing professional development programme, typically including:

- a. Organizational flow chart
- b. Animal training position(s) responsibilities
- c. Requirements of animal training positions
- d. Position descriptions for animal training positions
- e. Qualifications of animal training personnel

2.3.5. Members must participate in animal training information exchange activities.

- The organization should participate in information exchange activities to enhance their program and contribute to the collective knowledge of the community, thereby advancing the science of animal husbandry and training.

Suggested considerations include:

- a. Membership in professional organizations
- b. Animal trainer exchange programs
- c. Internships and student trainers
- d. Subscriptions to professional journals

3. Education standards

3.1. General introduction

EAAM members must conduct educational activities related to aquatic mammals. Such actions will provide information on the biology, physiology, ecology and husbandry of aquatic mammals in zoological parks and aquariums as well as on the role of these institutions regarding nature and biodiversity conservation. Ultimately, these activities will be focused in raising awareness about the threats faced by aquatic mammals in the wild, and inspiring the audiences to reduce their impact on the aquatic environments. Members are encouraged to share and communicate their educational activities within the association and in professional forums.

3.2. Definitions

3.2.1. Educational programmes refer to written protocols, procedures, and guidelines identifying educational strategies, goals, target groups, feed back and the main educational resources of the park. The concept of marine mammal park education programme is broader than a program for schools; it should be targeted at the entire marine mammal park visitation and even beyond the park limits and adapted to the characteristics of the different audiences.

3.2.2. Educational goals might include such topics as: raising awareness about the main global threats affecting the ocean, threats to species, basic information on marine mammals, the role of marine mammal parks in conservation, sustainability and a respect for and appreciation of wildlife and what visitors can do to contribute to it.

3.2.3 Target groups refer to how the visitor audience is constituted in order to target the education programme. Examples might include: general visitors, locals, tourists, families, mixed age groups, friends, school groups, same age groups, teenagers, elderly, handicapped, literate and illiterate people.

3.2.4. Staff with a relevant academic background refers to persons with training in education, preferably with a university degree and/or teacher training qualification.

3.3. Standards and Guidelines for Education

3.3.1. Members must develop and implement an educational programme for the institution that takes into account, at a minimum, goals, target audiences, staff, equipment, activities and funding.

3.3.2. Members are encouraged to prepare yearly activity plans and perform systematic evaluations, in order to check the efficacy of their education, and to help improving the educational programme regularly.

3.3.3. At least one member of the staff (with a relevant academic background) within the institution should be responsible for a professional implementation of the education programme. In smaller marine mammal parks, the education role might be combined with other functions and be carried out by personnel such as: the director, curator, senior keeper and or researcher. Staff involved must be familiar with education practice and ideally have some formal or informal training in education (through education conferences and regional workshops). Medium-sized marine mammal parks should employ at least one member of staff with overall responsibility for education. Larger marine mammal parks should also have additional education staff.

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3.3.4. Animals must be clearly and correctly identified at their enclosures. Threatened species and species in regional, national and international coordinated breeding programmes should be highlighted.

3.3.5. Marine mammal park animals must be exhibited in the best conditions in enclosures that enable them to live as natural as possible and to participate in natural behaviours as far as possible.

3.3.6. Interpretation/education should be an integral part of marine mammal park exhibits, demonstrations and any other animal activities and the educator should be incorporated in the exhibit planning and collection planning process.

3.3.7. A reference library appropriate to the size and complexity of the marine mammal park should be maintained and made available to all staff members, and possibly to the public where practical.

3.3.8. Resource material/education information should be made available to the general public and marine mammal park audience. This might include: leaflets, guide books, teacher's notes, resource packs, work sheets and should be displayed and available for purchase or for free.

3.3.9. Education programs about marine mammals should include institution experts as a marine science resource to professional groups and the education community when appropriate and practicable.

- Public display facilities employ and collaborate with many highly knowledgeable and experienced marine mammal experts, such as animal behaviourists, veterinarians, research scientists, trainers, marine educators, and other specialists. When appropriate and practicable, facilities should encourage and facilitate opportunities for these specialists to serve as marine science resources and share their expertise with interested professional groups and the education community.

4. Scientific Research and Conservation

4.1. General introduction

4.1.1. EAAM members must conduct and/or support scientific research and/or conservation projects related to marine mammals. Such projects provide information important to the conservation of species, habitats, and biodiversity in the wild, as well as help improve husbandry and welfare for animals in zoological parks and aquariums. These projects contribute to the scientific understanding of marine mammals in the wild and under human care and benefit their protection, care and survival, including the rehabilitation of stranded animals. Members are encouraged to facilitate responsible research and conservation projects and to communicate findings in scientific journals and forums.

4.1.2. EAAM members must provide opportunities to scientifically study the various aspects of marine mammal biology that cannot be conducted in the wild, and/or that will primarily benefit the research or conservation of wild populations of marine mammals or the welfare of populations under human care.

4.2. Definitions

4.2.1. Research programmes refer to written protocols, procedures, and guidelines governing the various aspects of a facility's research activity.

4.2.2. Animal Care and Welfare Committee (ACWC) refers to a committee established by a facility for the purpose of evaluating research proposals and the participation of collection animals in research, as well as any other activities that could significantly impact animal welfare including some husbandry or educational activities.

4.2.3. Bona fide research is that which is conducted with earnest intent to advance knowledge through application of the scientific method. It is most convincingly evidenced by participation in the peer review process, such that findings are shared openly through presentation at professional meetings and publications, particularly in refereed texts.

4.2.4. Conservation projects refer to formal, organized projects with goals and objectives designed to support, directly or indirectly, the conservation of marine mammals in the wild. These programs should be scientifically based, including results-oriented evaluation and peer review, and the findings should be shared openly through presentation at professional meetings and publications.

4.3. Standards and Guidelines for Scientific Research and Conservation

4.3.1. Members must develop a research and conservation programme for the institution that takes into account, at a minimum, the wellbeing of the animals and the availability of resources, including animals, staff, equipment, and funding.

4.3.2. Members are encouraged to establish an Animal Care and Welfare Committee that would be supervising any activities requiring the use of animals including research and education programs as well as husbandry decisions that could have significant impact over animal welfare.

- At a minimum, the composition of the committee should include the facility's veterinarian and the marine mammal curator or head of the animal care staff. Ideally an independent external professional expert from the animal care/welfare field (e.g. university professor) should be included in the committee.

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- Meetings should be occurring on a regular basis to approve and/or reject proposed activities/research lines and minutes with the conclusions of the different aspects discussed should be registered and stored.

4.3.3. Members may participate in bona fide research and conservation projects by providing biological samples and/or access to records, animals, equipment, or staff time. Institutional support will be guided by the priorities set forth by the facility's research and conservation programmes.

4.3.4. Members, when possible, should contribute to the body of marine mammal scientific literature by sharing findings from their research and conservation projects through publication in peer-reviewed journals and presentations at professional meetings.

4.3.5. Financial contributions to bona fide research and conservation projects must be guided by a conservation programme, including a mission statement, which describes the facility's goals in supporting, evaluating, and collaborating with outside, marine mammal related studies.

5. Enclosures and Spatial requirements

5.1. Definitions

5.1.1. **Marine mammal parks** shall refer to all establishments open to and administered for the public to promote nature conservation and to provide education, information and recreation through the presentation and conservation of wildlife.

5.1.2. Marine mammal parks situated in EU countries are requested to have a valid license under Council Directive 1999/22/EC of 29 March 1999. All others need valid licenses to operate, if these exist.

5.1.3. **Welfare** shall refer to the physical, behavioural and social well-being of animals through the provision of appropriate conditions for the species involved, including but not necessarily limited to housing, environment, diet, medical care, enrichment and social contact where applicable:

- **Enclosure** means any accommodation provided for animals in marine mammal parks.

- **Enclosure barrier** means a barrier to contain an animal within an enclosure.

- **Stand-off barrier** means a physical barrier set back from the outer edge of an enclosure barrier designed to prevent public access to the latter.

5.2. The Standards

5.2.1. Routine observation of marine mammals

- The condition and health of all marine mammals in the marine mammal park is to be checked daily by the persons in charge of their care for that particular day.

- Any marine mammals which are noted to be unduly stressed, potentially sick or injured, must receive immediate veterinary attention and, where necessary and based on the diagnosis, and adequate treatment.

5.2.2. Accommodation - Space, Exercise and Grouping

5.2.3. Marine mammals must be provided with an environment, space and furniture sufficient to allow the exercise and behavioural activity that is needed for their welfare.

5.2.4. Enclosures to be of sufficient size and marine mammals to be so managed

- To avoid marine mammals within groups being unduly dominated by individuals.

- To avoid the risk of persistent and unresolved conflicts between group members or between different species in mixed exhibits.

- To provide areas and barriers to allow for escaping should it be necessary and to maintain steady groups to promote social stability.

- To ensure that the physical carrying capacity of the enclosure is not overburdened.

- To prevent an unacceptable build-up of parasites and other pathogens.

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5.3. Minimum pool sizes

Pool sizes are set to satisfy the need of marine mammals for physical exercise, opportunity to enrol in natural behaviours and constructive social interaction. The general public needs to experience the holding environment of the animal as spacious and adequate.

The perception of the public of the quality of an enclosure changes rapidly throughout time. In order to combine security for marine mammal parks that their designed enclosures are satisfactory to standards and ensure adequate flexibility of the EAAM to changing public demands the minimum standards are set for periods of five years.

If a facility does not meet newly set standards in already built in pools, it has ten years to adapt. However any new pools should be built under the last approved standards.

Facility designers are therefore well advised not to take minimum standards for new to build enclosures. Inspiration can be obtained from modern facilities.

5.3.1. The Pinnipeds minimum enclosure sizes (Table 1) are based on the 2001 EAZA Regional Collection Plan, compared with US and Canadian legislation. For the walrus the draft Husbandry guidelines is used. The bottlenose dolphins minimum enclosure sizes (Table 2) are based on the 2009 EAAM Standards and Guidelines. The pool depth is determined with help of the Average Sizes of the different species. A show pool that is not available for the animals outside the show, shall not be included in the minimum space calculation.

Table 1: EAAM minimum space (Pinnipeds)

EAAM minimum space (Pinnipeds)			
Number of animals	Land surface (m ²)	Pool surface area (m ²)	Pool depth (m)
Harbour seal basis 1-4 animals	20	60	2
Per additional animal	5	20	
Grey seal basis 1-4 animals	20	60	2,5
Per additional animal	5	20	
Fur seals basis 1-4 animals	40	160	2
Per additional animal	5	20	
Cal. Pat Sea lion basis 1-4 animals	40	160	2,5
Per additional animal	5	20	
Steller Sea lion basis 1-4 animals	40	160	3
Per additional animal	5	20	
Walrus	50	200	3,5 ≥ 20% PS

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basis 2 animals			
Per additional animal	15	40	

PS: Pool surface

Table 2: EAAM minimum space (bottlenose dolphins)

EAAM minimum space (bottlenose dolphins)			
Number of animals	Land surface (m2)	Pool surface area (m2)	Pool depth (m)
Bottlenose dolphin basis (1-6 animals)	N/A	550	3,5 ≥ 50%PS
Per additional animal	N/A	75	

5.4. Accommodation - Comfort and Well-being

5.4.1. Temperature, humidity, ventilation and lighting of the enclosures to be suitable for the comfort and wellbeing of marine mammals at all times, and in particular:

- Consideration to be given to the special needs of pregnant and newly- born marine mammals.
- Newly arrived imported marine mammals to be fully acclimatized bearing in mind that this may be only a gradual process.

5.4.2. Marine mammals in outdoor enclosures to be provided with sufficient shelter from inclement weather or excessive sunlight where this is necessary for their comfort and well being.

5.4.3. Marine mammals not to be unnaturally provoked for the benefit of the viewing public.

5.4.4. Marine mammals in visibly adjoining enclosures to be kept in a way they do not interact in an excessively stressful way.

5.4.5. Separate accommodation for pregnant marine mammals and marine mammals with young has to be available, if necessary, in the interests of avoiding unnecessary stress or suffering for mothers or calves.

5.4.6. Only isolate marine mammals (specially cetaceans) when strictly necessary, and in that case always provide appropriate accommodation and attention while being temporarily separated from a group.

5.5. Enclosure requirements

5.5.1. At least one lifting platform, or another way to approach a sick, a new born or young cetacean quickly, should be available for each cetacean enclosure.

5.5.2. There should be at least 3 connected pools available (primary, secondary and medical).

5.5.3. Enclosures and barriers to enclosures to be maintained in a condition that presents no

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likelihood of harm to marine mammals, and in particular:

- Any defect noted in a marine mammal barrier or in any appliances or equipment within marine mammal enclosures to be repaired or replaced without delay.

- Any defect likely to cause harm to marine mammals to be rectified at once or, if this is not possible, the marine mammals to be removed from the possibility of any contact with the source of the danger.

- Any vegetation capable of harming marine mammals to be kept out of reach.

5.5.4. All plants and fixed equipment, including electrical apparatus, to be installed in such a way that it does not present a hazard to marine mammals and its safe operation cannot be disrupted by them.

5.5.5. Rubbish in marine mammals enclosures to be cleared regularly to avoid any possibility of harm to marine mammals.

5.6. Prevention of Stress or Harm to marine mammals

5.6.1. Marine mammals to be handled only by, or under the supervision of, competent trained authorised staff; and this to be done with care, in a way which will avoid unnecessary discomfort, behavioural stress or actual physical harm to animals.

5.6.2. Smoking is prohibited in marine mammal enclosures, in any areas of the buildings where marine mammal's enclosures are located and in areas where food is stored or prepared.

5.6.3. Any direct physical contact between animals and the visiting public only to be under the control of the parks staff and for periods of time and under conditions consistent with animal welfare and not leading to their discomfort.

5.6.4. Any external workers accessing marine mammal facilities with direct access to the animals should be informed about pertinent animal care and safety operational rules and policies and supervised at all times by marine mammal park staff.

6. Husbandry

6.1 Definitions

6.1.1. **Enrichment** is a dynamic process for enhancing animal environments within the context of the animals' behavioural biology and natural history. Environmental changes are made with the goal of increasing the animal's behavioural choices and drawing out their species-appropriate behaviours, thus enhancing animal welfare.

6.2. Nutrition

Nutrition standards refers to the 1998 USDA document *Handling Fish Fed to Fish-Eating Animals*, found in appendix I and the EAAM *Fish quality parameters*, found in appendix II.

6.2.1. The food for marine mammals must be wholesome, palatable, and free from contamination and must be of sufficient quantity and nutritive value to maintain marine mammals in a state of good health. The diet must be prepared with consideration for factors such as age, species, condition, and size of the marine mammal being fed.

6.2.2. Food, when given to each marine mammal individually, must be given by an employee or attendant responsible to management who has the necessary knowledge to assure that each marine mammal receives an adequate quantity of food to maintain it in good health. Such employee or attendant is required to have the ability to recognize deviations from a normal state of good health in each marine mammal so that the food intake can be adjusted accordingly.

6.2.3. Public feeding may be permitted only in the presence and under the supervision of a sufficient number of knowledgeable identified employees or attendants. Such employees or attendants must assure that the marine mammals are receiving the proper amount and type of food.

6.2.4. Food preparation, handling and analysis must be conducted so as to assure the wholesomeness and nutritive value of the food. Minimum analysis should include organoleptic and caloric values, as well as microbiology and physicochemical parameters as listed in Appendix II.

6.2.5. Frozen fish or other frozen food must be stored in freezers that are maintained at a maximum temperature of -18°C (0°F). The length of time food is stored and the method of storage, the thawing of frozen food, and the maintenance of thawed food must be conducted in a manner that will minimize contamination and that will assure that the food retains nutritive value and wholesome quality until the time of feeding. Thawing temperatures on refrigeration should ideally not go over 5°C and for a maximum of 24h to minimize bacterial overgrowth.

6.2.6. Storage programs, thawing procedures and food preparation processes should be designed to prevent loss of nutrients and bacterial contamination.

6.2.7. Vitamin supplementation and other medication prescribed by the attending veterinarian must be individualized for each marine mammal.

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6.3. Sanitation

6.3.1. Enclosures:

- Animal and food waste in areas other than the pools must be removed from the primary enclosures at least daily, and more often when necessary in order to provide a clean environment and minimize health and disease.
- In particular animal and food waste, trash, or debris that enters the primary enclosure (pool) must be removed at least daily, or as often as necessary, to maintain the required water quality and to minimize health and disease hazards to the marine mammals.
- The wall and bottom surfaces of the pools must be cleaned as often as necessary to maintain proper water quality. Natural organisms (e.g. algae or molluscs) that do not degrade water quality, prevent proper maintenance, or pose a health or disease hazard to the animals are not considered contaminants.

6.3.2. Food preparation:

- Equipment and utensils used for food preparation must be cleaned and sanitized after each use.
- Food preparation areas and other food handling areas where animal food is prepared must be cleaned at least once daily and sanitized at least once every week. Sanitizing must be accomplished by washing with hot water and soap or detergent in a mechanical dishwasher, or by washing all soiled surfaces with a detergent solution followed by a safe and effective disinfectant, or by cleaning all soiled surfaces with steam.
- Substances such as cleansing and sanitizing agents, pesticides, and other potentially toxic agents must be stored in properly labelled containers in secured cabinets designed and located to prevent contamination of food storage preparation surfaces and food itself.

6.3.3. Housekeeping:

- Buildings and grounds, as well as exhibit areas, must be kept clean and in good repair.
- Fences must be maintained in good repair.
- All enclosures housing marine mammals must not have any loose objects or sharp projections and/or edges which may cause injury or trauma to the marine mammals contained therein.

6.3.4. Pest control:

- A safe and effective program for the control of insects, ectoparasites, and avian and mammalian pest must be established and maintained. Insecticides or other such chemical agents must not be applied in primary enclosures housing marine mammals except when deemed essential by an attending veterinarian.

6.4. Enrichment

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6.4.1 EAAM members must provide appropriate environmental and behavioural enrichment for all animals of the collection.

6.4.2. An enrichment plan needs to be established and evaluations done on a regular basis, followed by readjustments should those be deemed necessary.

6.4.3. The enrichment plan should be in writing and plans and evaluations stored for at least 5 years.

7. Veterinary care

7.1.1. Members must have in place a comprehensive program for veterinary medical care that is integrated with husbandry, research and management functions.

7.1.2. Each facility must have a qualified attending veterinarian who oversees a program of preventive medicine and clinical care, and who supports all other programs to ensure the health of the facility's marine mammals.

7.1.3. Animal health assessment program should include:

- Regular veterinary rounds.
- Daily monitoring by husbandry staff of each animal's physical appearance, activity, temperament and changes in behaviour. Any significant change must be immediately communicated to the attending veterinarian.
- Complete physical examinations must be performed at regular intervals on each marine mammal in the collection. Physical examinations should include:
 - a. Determination of weight change.
 - b. Comparison of food intake and body weight.
 - c. At least one complete physical exam including one blood work per year.
 - d. Other laboratory tests as needed.
 - e. Parasite screening and treatment must be conducted where indicated by the attending veterinarian for each marine mammal in the collection.

7.1.4. Animals can be kept in a smaller enclosure if compelling veterinary reasons justify such holding. A written statement of the attending veterinarian explaining the temporary keeping of an animal under different conditions should be available which:

- Outlines the veterinary reason for the different holding condition.
- Clarifies what actions are taken to end this situation.
- Clarifies how long this exceptional situation is expected to persist.

7.1.5. Members must have a euthanasia policy.

7.1.6. Marine mammals that die must be subjected to a post-mortem examination as determined by the attending veterinarian, with a permanent record generated indicating the disposition and/or results of the necropsy.

- Maximum use should be made of dead marine mammal specimens with priority given to those that enhance animal husbandry or conservation of the species in the wild.

- Second priority should be given to placing dead specimens in suitable museum collections or other bona fide scientific research programs, or in an educational facility.

- Dead marine mammals not disposed of by any of the above-named methods should be destroyed by incineration, burial, or in a manner deemed suitable by the attending veterinarian and curator in accordance with law.

8. Breeding

8.1. General introduction

7.1.1. The EAAM is committed to the goal of increasing the contribution of captive breeding to groups held in all institutions. The continued development and improvement of current breeding techniques by EAAM members will substantially benefit these efforts. It will also benefit rare and endangered species whose populations are increasingly threatened by diminishing habitat and other anthropogenic factors.

8.2. Definitions

8.2.1. **Current breeding techniques** refer to up-to-date methods and strategies utilized to maximize the potential for successful breeding efforts.

8.2.2. **Comprehensive breeding plan** is participating in cooperative breeding programs within the spatial possibilities of the exhibits.

8.2.3. **Studbook** refers to the genealogical register established to track lineage of marine mammal offspring.

8.3. Participating in breeding programs

8.3.1. Members must prioritize, through strategic planning, the selection of species for reproductive management based upon biological, demographic and conservation needs of the species.

8.3.2. Members must optimize the genetic diversity within their managed collections of marine mammals, in cooperation with the global breeding program.

8.3.3. Members should participate in regional, national and/or international studbook and breeding management programs to serve present and future needs for conservation, education, and potential reintroduction of genetic material into natural populations should the need arise in the future.

8.3.4. Members should contribute to a better understanding of marine mammal reproductive biology and physiology by developing techniques and models that can be applied to rare and endangered species.

8.4. Marine mammal breeding

8.4.1. Members must develop a comprehensive institutional breeding management plan maximizing the potential for success before actively pursuing marine mammal breeding.

8.4.2. Personnel should possess or have access to expertise concerning marine mammal reproduction.

8.4.3. Members should provide maternity pools that are of a size and configuration to facilitate nursing, calf rearing, and separation from other animals if necessary.

8.4.4. A plan to monitor calf delivery and rearing should be in place.

8.4.5. Consideration should be given to the daily activity level of pregnant and nursing

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females.

8.4.6. Members should consider the reproductive and physical condition of participating animals.

8.4.7. Breeding, pre-parturient and lactating animals should be maintained in social environments encouraging successful rearing of offspring.

8.4.8. Contingency plans should be developed, protocols recorded, and resources for implementation should be in place for: emergency intervention before, during, and after delivery; weaning; illness; pathological examination of mortalities.

8.4.9. Consideration should be given to species-specific needs.

8.4.10 The required breeding management plan must clearly reflect the goal of minimizing the need for collecting marine mammals from the wild.

- The plan should prioritize acquisition of marine mammals for their collections through managed breeding programs; loans, exchanges or purchases from other qualified marine mammal park institutions; or, programs providing non-releasable orphaned or injured and rehabilitated individuals from wild populations.

- The plan should include a commitment to partnerships for future maintenance and, wherever possible, breeding of the collections.

- The plan should include species-specific rationale for situations where breeding of wild-caught animals is not part of the long-term plan for their management.

9. Water and Environmental Quality

9.1. General introduction

Wild marine mammals live in a medium in which organic and inorganic waste is quickly diluted or readily dissipates. In most zoological settings, pool water is recycled through filtration and water treatment systems, with only a small percentage replenished daily to make up for losses due to splash-over or filter backwash discharge. To ensure optimum quality, marine mammal pool water is usually subjected to biological disinfection, mechanical filtration, and chemical treatment of both dissolved and particulate organic matter. These processes are not exclusive and the efficacy of one method of treatment is usually dependent on that of another, as well as the physical and chemical parameters of the medium. The design of water treatment systems varies considerably between member institutions. In all operations, however, the establishment of optimum water parameters must be based on both the physiological needs of the animals and the efficiency of the water processing techniques involved.

The quality of marine mammal's environment can have significant effects on its physical and behavioural health and welfare. The exhibit setting must be designed to meet species-specific needs as well as the physical condition of the individual animals.

Regardless of the design of the water treatment systems, in all operations, to ensure optimal water quality and animal welfare, an effective program must be in place for monitoring physical, chemical and biological parameters, with multiple sampling points along the system.

9.2. Definitions

9.2.1. **Marine mammal pool** refers to any structure or enclosure containing water designed to house marine mammals, including natural lagoon, bays and tidal basins, as well as man-made structures.

9.2.2. **Laboratory techniques listed in standard methods** refers to analytical methods as outlined in standards for water quality.

9.2.3. **Adequate ventilation** refers to an ample flow of fresh air necessary to minimize the accumulation of chlorine fumes, other gases, and noxious odours.

9.2.4. **Vertical air space** refers to the space between the surface of a marine mammal pool and the overhead ceiling or canopy, usually pertaining to an indoor facility.

9.2.5. **Acoustic monitoring** refers to a system for detecting sounds and noise audible to marine mammals.

9.2.6. **ORP: Oxygen Reduction Potential or Redox Potential** is a measurement of water's ability to oxidize contaminants.

9.2.7. **Life support systems: (LSS)** constitutes the configuration of the system, type of filters, type of disinfection system, whether the system is automated or manually controlled. The components and materials of construction may vary considerably.

9.3. Standards and Guidelines for Water Quality

Marine mammal pool water must be monitored for selected physical, chemical and biological parameters of water to ensure a healthy aquatic environment as appropriate for closed or open circulation systems.

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9.3.1 Marine mammal pool water should be tested and recorded at least daily and treated as necessary to maintain pH values not less than 7.2 or more than 8.4.

9.3.2. Marine mammal pool water should be tested minimum twice daily for concentration of chlorine and/or other oxidizing agents. Free chlorine should not exceed 0,8mg/L, Combined chlorine should not exceed 0,2 mg/L and Total chlorine should not exceed 1,0 mg/L.

9.3.3. Marine mammal pool water, whenever applies, should be free of residual dissolved ozone. ORP should be maintained within a relatively narrow zone range to minimize the risk of producing excess residual oxidants. Multiple sampling points along the system are recommended.

9.3.4. Cetaceans and preferably all other marine mammals maintained in closed water systems should have the water treated with sodium chloride or a combination of sodium chloride and other naturally occurring sea salts so as to maintain a salinity of not less than 22 ppt.

9.3.5. For closed water systems, whatever the system of water treatment, it is important to discard and replace some water at regular intervals.

9.3.6. Members should test the concentration of bacteria in marine mammal pool water as an indicator of disinfection capacity. As reference total coliform counts should not exceed 500 colonies/100 ml. E. Coli counts are also an adequate indicator for water quality. Other bacteria, fungi and yeast can also be measured routinely for water quality evaluation.

9.3.7. Members should minimize disinfection by-products through flocculation, foam fraction, etc.

9.3.8. Food waste should be regularly removed from the water body, to maintain water quality and pool hygiene as well as to minimize contamination.

9.3.9. Members should implement a program of daily facility cleaning and maintenance that minimizes the risk of animal exposure to pathogenic microorganisms.

9.3.10. Water quality records should include: maintenance logs, added chemicals controls, bacterial culture and filtration operating log. All records should be maintained on site for at least 5 years.

9.3.11. Pool surfaces should be constructed of non-abrasive materials impervious to liquid penetration and resistant to disinfection.

9.3.12. Water temperature should be monitored at least daily. Where conditions outside of the ranges noted in 9.4 occur for longer than one contiguous week, members should take protective actions so as to prevent adverse animal health consequences.

9.3.13. Members with facilities incorporating water that is open to the ambient sea environment must monitor their water source to be sure that conditions remain compatible with updated animal management.

9.3.14. For keeping marine mammals, salinity should not fall below 2.2% salt (22

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ppt) for a period of longer than one contiguous week. Salinity should be monitored daily.

9.3.15. If salinity falls below 22 ppt for a period of time longer than one week, animals should be maintained under enhanced veterinary supervision and an expanded schedule of water quality monitoring should be in place to assess environmental impact associated with increased freshwater runoff or other causes.

9.3.16. Bacteria should be monitored at least weekly for total coliform. Additionally, it is recommended that total bacteria/100 ml of water be tested as an indicator of overall bacterial concentrations within the water body. Evaluations of total bacteria concentrations are made on a relative scale utilizing a baseline standard for the test of the water body itself.

9.3.17. Members should be aware of, and be prepared to test for, potential sources of water borne toxins that could adversely impact animal health. Potential toxin sources include pollutants from agricultural and industrial sources, as well as naturally occurring toxins.

9.4. Standards and Guidelines for Environmental Quality

9.4.1. Bottlenose dolphins should not be maintained in water temperatures less than 10°C or more than 32°C. Bottlenose dolphin calves should be maintained in water temperatures between 14°C and 28°C.

Seals should be maintained in water temperatures between 0-25°C

Sealions should be maintained in water temperatures between 5-26°C

Manatees should be maintained in water temperatures between 20-32°C

Provide access to shelter to afford protection from adverse weather and direct sunlight. Members must provide adequate heating or chilling for pool systems, whenever extreme temperatures are achieved.

9.4.2. All marine mammal pool waters should be free of ice, except for seals and walruses.

9.4.3. For indoor facilities provide ample lighting by either natural or artificial means or both.

9.4.4. All marine mammal enclosures must be provided with adequate ventilation.

9.4.5. Indoor housing facilities should be ventilated by natural or artificial means to provide a flow of fresh air that minimizes the accumulation of chlorine or other fumes and noxious odours. The ventilation should be ≥ 10 air changes per hour.

9.4.6. A vertical air space averaging at least eight foot (2.5 meters) should be maintained in all primary enclosures, including pools of water.

9.4.7. Members must minimize exposure of marine mammals to noises of such high intensity or type to cause auditory discomfort or distress.

9.4.8. A plan of acoustic monitoring for marine mammals enclosures should be in place. Efforts should be made to acoustically isolate sound-generating mechanical equipment

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located in close proximity to marine mammal enclosures.

9.4.9. A contingency plan needs to be written that ensures emergency sourcing of water and electric power in the event of failure.

10. Interactive programs

10.1. General introduction

An interactive program must comply with all requirements for the care and maintenance of marine mammals as defined by relevant laws and regulations

10.2. Definitions

10.2.1. **Interactive Program** refers to a program in which members of the public participate in an activity that includes close contact with a marine mammal under trainer control.

10.2.2. **Controlled Interaction** refers to an interactive program in which the movements and interactions of both marine mammals and public participants are maintained under stimulus control.

10.3. Standards and Guidelines for marine mammals Interactive Programs

10.3.1. Primary enclosures used for interactive programs must meet relevant government regulations, must have an area of the enclosure established for animals participating in interactive activities that the public may not enter, and have the restricted area not configured in any way that is uninviting to the animals.

10.3.2. Interactive activities programming must include educational information about the marine mammal species and promote an improved understanding of and an appreciation for the conservation of the animals and their ecosystems.

- Such educational presentations should include oral and written procedures and rules outlining appropriate behaviour for the protection of both the animals and the guests.

- All programs should include information that feeding wild marine mammals is not advised, that it is illegal in some countries, and that swimming with wild marine mammals can be harmful to both the animals and the people involved.

10.3.3. Marine mammals participating in interactive programs must be properly trained and conditioned, and appropriate action must be taken to maintain a controlled interaction.

- If a member of the public refuses to participate responsibly in an activity, that guest should be immediately removed from the interactive session.

10.3.4. A facility must have a behaviour development and management plan specific to each type of interactive activity offered to the public and must meet the standardized training guidelines of the International Marine Animal Trainers Association.

- The behaviour development and management plan should describe the animal training program, its objectives, and methods of accomplishment.

- The amount of time each marine mammal is asked to participate in interactive activities should be specific to the individual animal and based on behavioural criteria compiled for that animal.

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- Ratios of public participants to animals should be appropriate to the type of interactive activity offered. Approval of the ratio by the ACWC (including at least both the attending veterinarian and the supervising trainer) is required, based on their observations of the specific interaction.
- Marine mammals undergoing medical treatment may only participate in interactive programs with the approval of the facility's attending veterinarian.
- Supervisory staff overseeing interactive programs must have actively participated in the training and husbandry of marine mammals in interactive programs for at least three years accumulated over a period of no longer than five years prior to current employment.
- Each animal must have one period of at least 12 continuous hours without public interaction within a 24-hour period.
- All incidents resulting in injury to either marine mammals, trainers, keepers or the public as a result of an interaction, as defined above, requiring veterinary or medical care must be recorded and kept at the facility for at least ten years.

11. Record Keeping

11.1. General introduction

The EAAM recognizes the need to maintain standardized, comprehensive and accurate records concerning the humane and healthful care of the marine mammals in our collections. Whereas certain record maintenance is required by various laws, up-to-date records will: (1) assist all members in providing the latest in appropriate care for the animals; (2) enable all members to share their collective knowledge about health and behaviour concerns; and, (3) facilitate reproduction programs through accurate recording of activities and with appropriate management of related animals through studbooks. The EAAM therefore recommends that members maintain the following data in each category. It is recognized that individual members may collect and maintain more data, where appropriate, based on individual member circumstances and needs.

11.2. Standards and Guidelines for Record Keeping

11.2.1. Records must be protected from fire, flooding and other natural or human created hazards.

11.2.2. Duplicate records, as appropriate, must be kept in either a separate location or a fire proof case.

11.2.3. It is recommended that all records are kept indefinitely to allow retrospect analysis.

11.2.4. Acquisition and disposition records must include: date and location of acquisition; method of acquisition (wild caught, captive birth, transfer, loan, temporary holding); sex; genus and species; progeny; identification (genus, species, sex, id #. For example: TT-M1562, name); date and location of disposition; method of disposition; all applicable CITES documentation relating to the animal; transportation records. Acquisition and disposition records must be kept indefinitely.

11.2.5. Food and nutrition records must include: type, and/or species of food; caloric value; analysis; freezer rotation; dates on food packets; and, freezer temperature. Food and nutrition records must be kept for at least five years.

11.2.6. Health and medical records must include: date of examination; veterinarian's name; reason for examination; action taken; medications; supplements; individual nutritional requirement; body measurements; blood test results; necropsy findings; photographs (when appropriate), physical characteristics; subjective and objective findings. Health and medical records must be kept indefinitely.

11.2.7. Health and medical records should always remain with the individual animal. Duplicate records must be kept indefinitely at the originating facility.

11.2.8. Environmental quality records must include: test parameters for water quality; tests for added chemicals; microbiological culture test results; amount of added chemicals; facility maintenance log; and, filtration operation log. Environmental quality records must be kept at least five years.

11.2.9. Daily records must include: behavioural observations; anomalies and patterns;

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outside factors; types and quantities of food consumed; and, amount and type of interaction. Daily records must be kept at least five years.

11.2.10. Facility descriptions must include: enclosure dimensions and location; water system/filtration type.

11.2.11. All incidents resulting in injury to either marine mammals, trainers, keepers or the public as a result of a training session, demonstration or interaction, as defined in section 9 of these standards and guidelines, that require veterinary or medical care must be recorded and kept at the facility at least for ten years.

11.2.12. Inspection records of any professional or governmental organisation should be kept at least ten years.

12. Transportation

12.1. General introduction

EAAM members must ensure that marine mammals under their care are transported between facilities in a manner that is both safe and humane. Implicit in the transport of an aquatic or semi-aquatic mammal is the fact that the animal will be restricted from access to its normal environment, an environment that provides physical support, protection from extremes of temperature, and freedom of normal postural adjustments. For this reason, the movement of a marine mammal between facilities must be executed in an efficient manner by experienced staff.

12.2. Definitions

12.2.1. **Marine mammal transportation** refers to the relocation or movement of marine mammals by any method or mode of transport that requires more than two hours from the time of removal from current housing until arrival at destination housing.

12.2.2. **Initial health assessment** refers to a preliminary physical exam including review of animal records conducted by attending veterinarian or other qualified veterinarian in order to determine that the animal is of sufficient health and physical condition necessary to be safely transported.

12.2.3. **Transport plan** refers to a thorough, written plan of action designed to insure a safe, humane, and efficient move of a marine mammal from one location to another.

12.3. Standards and Guidelines for marine mammal Transportation

12.3.1. An initial health assessment must be conducted by the attending veterinarian or another experienced marine mammal veterinarian on each animal between three to ten days preceding transport. The health assessment will include the evaluation of behavioural, feeding, and medical records.

12.3.2. A transport plan must be in place.

12.3.3. A final transport planning meeting should be held by a designated transport coordinator not more than 24 hours prior to transport to ensure the marine mammal's health and well being. Emergency contingency plans should be outlined and approved at this meeting.

12.3.4. Marine mammals should be fasted for between 8 and 24 hours prior to transport. However, animals can be reinforced with limited amount of fish if voluntarily accepting food during transport.

12.3.5. If transported via air, the transporting crate should follow container requirement of the IATA Live Animals Regulations. By land either the IATA LAR or the Cites guidelines for the Non-air Transport of Live Wild Animals and Plants should be followed.

12.3.6. A facility must have an emergency plan including transporting animals e.g. in case of filtration emergency, fires, tornados, flooding's or other natural hazards.

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12.4. **specific guidelines for cetacean transport**

12.4.1. Cetaceans must be transported and positioned so as to avoid contact with hard or abrasive surfaces, to prevent harmful restrictions in blood flow, and with sufficient attendants to provide for physical and medical needs.

12.4.2. Cetaceans should be transported, whenever possible, within properly secured, open-top containers with sufficient water to provide body support and to facilitate thermoregulation.

12.4.3. When transporting cetaceans in aircraft, cabin pressure should be maintained at less than 8,000 feet (2,400 meters), with 6,000 feet (1,800 meters) or less being optimal for most individuals.

12.4.4. Cetacean transports should always be accompanied by the attending veterinarian or another licensed veterinarian experienced in cetacean transports.

12.4.5. One attendant per each bottlenose dolphin is recommended on transports of four or less animals with a minimum of two attendants per transport. On transports of five or more bottlenose dolphins, additional attendants may be added at the discretion of the veterinarian and/or transport coordinator.

12.4.6. Cetaceans must be monitored throughout transport.

12.4.7. If transported via air, the transporting crate should follow container requirement 55 of the IATA Live Animals Regulations.