AGRICULTURE VICTORIA

Code of Practice for the Welfare of Amphibians in Captivity

On this page

The Code of Practice for the Welfare of Amphibians in Captivity outlines the welfare needs of amphibians kept in aquaria.

Its purpose is to provide minimum standards of care for the keeping of amphibians in captivity and to encourage the protection of wild populations from illegal take and introduction of disease and genetic contamination.

Please note: the Wildlife Regulations 2013 take precedence over this Code of Practice. Please refer to the Regulations for up-to-date private wildlife licence requirements (including which species can be kept under particular licences).

1. Introduction

This Code of Practice outlines the welfare needs of amphibians kept in aquaria. This has been done with the assistance of the Melbourne Zoo (Herpetofauna Department), the Department of Environment, Land, Water and Planning (DELWP) (Biodiversity and Natural Resources Division), the Amphibian Research Centre, the Australian Veterinary Association and The Royal Society for the Protection of Animals.

Its purpose is:

- To provide minimum standards of care for keeping of amphibians in captivity.
- To encourage the protection of wild populations of amphibians from illegal take and introduction of disease and genetic contamination.

A person in charge of amphibians has a legal obligation under the Prevention of Cruelty to Animals Act 1986 to ensure that each individual animal receives appropriate care to remain in a healthy condition.

Animal welfare considerations are becoming increasingly important in the keeping of animals. This Code is based on established experience, current scientific knowledge and technology.

2. Definitions

'Amphibian' — An amphibian is an exothermic (cold-blooded) vertebrate animal typically living on land but breeding in water, such as frogs and axolotls.

'Sell' — Under the Wildlife Act 1975, 'sell' includes 'barter or exchange and also agreeing to sell or offering or exposing fo sale or keeping or having in possession for sale or sending, forwarding, delivering or receiving for or on sale or authorising directing, causing suffering, permitting or attempting any of such acts or things'.

For the purpose of this code 'sell' also includes:

(a) supply for value (or offer or expose for supply for value)

(b) supply for free (or offer or expose for supply for free) to gain or maintain custom, or otherwise for commercial gain

3. Licences

All frogs, tadpoles and frog spawn are protected in Victoria. The collection of frogs from the wild or the release of frogs to the wild is prohibited. The release of frogs to your backyard or the raising of tadpoles for the purpose of release is illegal.

It is necessary to obtain a licence from the Department of Environment, Land, Water and Planning (Phone 136 186 Customer Service Centre) to keep most species of frogs in captivity.

All species of native amphibians are protected in Victoria under the Wildlife Act 1975. However, a wildlife licence is not required to keep the following amphibians for private purposes, provided they have come from a lawful source.

Common name	Scientific name
Plains Froglet	*Crinia parinsignifera*
Common Eastern Froglet	*Crinia signifera*
Spotted Grass Frog	*Limnodynastes tasmaniensis*

Common name	Scientific name
Eastern Banjo Frog	*Limnodynastes dumerilii*
Southern Brown Tree Frog	*Litoria ewingii*

The following amphibians may be kept for private purposes under a Private Wildlife (Basic Category) Licence, provided they have come from a lawful source.

Common name	Scientific name
Water-holding Frog	*Cyclorana platycephala*
Eastern Dwarf Tree Frog	*Litoria fallax*
Dainty Green Tree Frog	*Litoria gracilenta*
Giant Tree Frog	*Litoria infrafrenata*
Whistling Tree Frog	*Litoria verreauxii*
Peron's Tree Frog	*Litoria peronii*
Green Tree Frog	*Litoria caerulea*
Lesueur's Frog	*Litoria lesueuri*
Blue Mountains Tree Frog	*Litoria citropa*
Leaf Green Tree Frog	*Litoria phyllochroa*
Brown Striped Frog	*Limnodynastes peronii*

Common name	Scientific name
Great Barred Frog	*Mixophyes fasciolatus*
Giant Barred Frog	*Mixophyes iteratus*
Haswell's Frog	*Paracrinia haswelli*
Southern Smooth Froglet	*Geocrinia laevis*
Common Spadefoot Toad	*Neobatrachus sudelli*

The following amphibians may be kept for private purposes under a Private Wildlife (Advanced Category) Licence, provided they have come from a lawful source.

Common name	Scientific name
Water-holding Frog	*Cyclorana platycephala*
Eastern Dwarf Tree Frog	*Litoria fallax*
Dainty Green Tree Frog	*Litoria gracilenta*
Giant Tree Frog	Litoria infrafrenata
Whistling Tree Frog	*Litoria verreauxii*
Peron's Tree Frog	*Litoria peronii*
Green Tree Frog	*Litoria caerulea*
Lesueur's Frog	*Litoria lesueuri*

Common name	Scientific name
Blue Mountains Tree Frog	*Litoria citropa*
Leaf Green Tree Frog	*Litoria phyllochroa*
Brown Striped Frog	*Limnodynastes peronii*
Great Barred Frog	*Mixophyes fasciolatus*
Giant Barred Frog	*Mixophyes iteratus*
Haswell's Frog	*Paracrinia haswelli*
Southern Smooth Froglet	*Geocrinia laevis*
Common Spadefoot Toad	*Neobatrachus sudelli*

A Commercial Wildlife Licence is required to keep any native amphibian species for a commercial purpose in Victoria, such as a dealer, a demonstrator, a displayer or a taxidermist. It is recommended that you contact the Victorian Department of Environment, Land, Water and Planning for the latest information about wildlife licences, entitlements and obligations.

4. Responsible Ownership

Minimum standard

4.1 Owners must maintain the welfare of all progeny produced by their animals.

4.2 An owner must hold the appropriate licence to keep and sell amphibians under the Wildlife Act 1975.

4.3 New owners must obtain and understand information about diet, accommodation, management and general health care relevant to the species they intend to keep.

Recommended practice

4.4 Responsible ownership means providing for the needs of the animal, including adult supervision of children who have amphibians as pets.

4.5 Breeding should be limited to encourage healthy offspring and to reduce the possibility of amphibians for which homes cannot be found.

Guidelines

4.6 Provision should be made for a suitable retreat to minimise stress from excessive sight or sound intimidation from humans and other animals.

4.7 When taking on the responsibility for an animal its potential life span should be considered — for some species of amphibians this can be up to 30 years.

4.8 For some species breeding capacity may be hundreds of offspring per lifetime.

4.9 The Victorian Frog Group website is a useful source of frog keeping information and community contact.

5. Handling

Minimum standard

5.1 Hands must be cleaned, dried thoroughly and then rinsed in clean water before handling frogs.

5.2 Captive amphibians must be handled in a manner to minimise stress, discomfort and accidental injury.

5.3 Gloves must be wet prior to handling an amphibian in order to protect its sensitive skin.

5.4 Gloves must be changed when handling animals housed in different tanks to prevent any possibility of cross-contamination.

Recommended practice

5.5 When handling frogs the animal's abdomen should be supported by the palm of the hand with the other hand placed over its shoulders to prevent escape. Amphibians should be held securely, but not tightly, as their bones are fragile.

5.6 Children under 12 years of age should be supervised and taught to prevent rough or excessive handling.

5.7 Standard hygiene procedures should be followed. The washing of hands should be done just prior to handling frogs to remove any salts and contaminants from the handler's skin. Where detergents are used to clean the hands they must be rinsed off thoroughly with clean water. As frogs breathe through their skin this will minimise transfer of harmful substances.

5.8 When introducing new animals, or handling sick animals, it is recommended to use disposable latex gloves.

6. Quarantine

Minimum standard

6.1 Any amphibians being introduced to an existing colony must be kept in isolation for a period of at least 5 weeks to reduce the risk of introducing disease.

6.2 Sick animals must be removed from a parent colony immediately to reduce risk of spreading illness.

6.3 Preventative measures to ensure that no disease agent is inadvertently introduced to an existing colony must be practised.

Recommended practice

6.4 A quarantine period of 8 weeks should be used if possible.

6.5 Sick animals should be maintained in an isolation tank.

6.6 Any new rock, soil, or gravel material should be thoroughly cleaned, rinsed and dried before introduction to the tank. This can be achieved by either drying the material in direct sunlight until no moisture remains, or heating the material for a period of 2 to 3 hours in a slow oven. For either method, the soil or gravel should be regularly stirred and turned to ensure no pockets of moisture remain. This should prevent disease (including Chytrid fungus) introduction.

7. Housing and environment

Many amphibians are introduced from areas of Australia that may have a vastly different environment. It is imperative for an amphibian's welfare and survival that informed advice be sought as to the correct environmental needs of the given species, and that any enclosure intended to house that species be equipped or designed to provide an artificially controlled environment that satisfies its needs. The needs of each individual species must be taken into account when establishing the holding tank or other enclosure.

Minimum standard

7.1 A captive amphibian must be protected from vermin and household pets.

7.2 An enclosure must be escape proof.

7.3 An enclosure must be safe for the occupants and not have sharp projections or structures that may easily collapse.

7.4 An enclosure must provide continuous access to water.

7.5 An amphibian must be able to avoid direct light in its enclosure and the enclosure must not be placed in direct sunlight.

7.6 The amphibian must be provided with adequate ventilation and be protected from contact with airborne contaminants.

7.7 An amphibian must be protected from extremes of temperature (refer to section 10).

7.8 An amphibian must not be exposed to sudden or excessive noise.

7.9 All amphibians must be provided with adequate space to move around and an environment to explore.

7.10 An amphibian must not be kept in an area without light (refer to section 9).

Recommended practice

7.11 As a general guide, an aquarium with dimensions 60cm by 40cm by 40cm (length by width by height) one-third filled with water will be required to support 20 to 30 small tadpoles, or 6 to 8 large tadpoles providing that adequate food is available and that water quality is maintained.

7.12 The same sized aquarium will be the minimum size required to house 2 adult or 4 half-grown Green Tree Frogs.

7.13 For small to moderate sized species, an enclosure measuring 40cm by 40cm floor area with at least 10cm of suitable substrate will house 2 or 3 adults. Larger species will require larger tanks or aquaria — at least 60cm by 60cm floor area for 1 or 2 adults with at least 10cm of suitable substrate.

7.14 Enclosures for captive amphibians should be constructed of material that is easy to clean and be easily accessible to the handler for maintenance.

7.15 It should be noted that some species are cannibalistic and cannot be kept in close social contact in all circumstances.

7.16 An amphibian should not be kept isolated from social contact appropriate for its species.

Guidelines

7.17 A well fitting wire or nylon mesh cover can be used to prevent animals from jumping from the tank. It will also prevent objects falling in that might cause injury. Completely solid covers should not be used as this will reduce air quality. An overhanging lip on the inside can assist prevention of escapes also.

7.18 A full spectrum UVB-emitting ultraviolet fluorescent tube designed for reptiles, attached to a timer to mimic natural (seasonal) day/night cycles, will provide appropriately balanced light. In addition, tropical species may require an artificial heat source (refer to section 10). UVB output from such tubes diminishes to nil over 12 to 18 months requiring regular replacement.

7.19 Aerosol sprays, smoke, vapours and fumes from chemicals such as cleaning products, insecticides, ammonia from urine, deodorants and hairsprays can be toxic to amphibians.

8. Species recommendations

8.1 Burrowing frogs

8.1.1 A burrowing frog's enclosure should be established with a greater floor space than height. The depth of soil used will depend upon the species of frog being kept and allowance for the depth of the soil should be taken into account when selecting the tank.

8.1.2 The type of soil is important and depends on the species of burrowing frog being kept. Informed advice should be sought on the sand or clay content required.

8.1.3 The only types of burrowing frogs that are commonly kept in Victoria are the Banjo/Pobblebonk Frog (L.dumerilii) and the Spadefoot Frog (N.sudelli). Both of these species do not necessarily require exact replica of environmental aspects of soil. It is recommended to use palm peat, which comes in a brick-like form that is completely dry, as the substrate area for an enclosure. Clean water is added to the brick to provide many litres of soil substrate that is clean, well aerated and allows filtration of water through it. This product is also suitable for the enclosure soil area.

8.1.4 The amount of time a burrowing frog stays within its burrow will vary between species. Some burrowing frogs will burrow daily, returning to the surface at night. Other burrowing frogs only burrow during droughts. If the latter species are kept, further information should be sought on how long the individual frog can stay in a state of torpor (a hibernation-like state) and what environmental triggers they need to stimulate them to return to the surface.

8.1.5 Do not set up the enclosure for a burrowing frog with soil only. Rocks, water and plants should also be included.

8.2 Tree frogs

8.2.1 A tree frog's enclosure should have more height relative to area to allow for climbing. Tree frogs need to have their siz and weight taken into account when furnishing their enclosure with plants. A large tree frog will require suitably sized climbing structures.

8.2.2 Frogs are not to be given roses, or other plants with thorns, spines or sharp edges to climb on. Frogs have soft sensitive skin and thorns will penetrate their skin.

8.2.3 Advice should be sought from experienced advisers as to which plants have toxins or resins that can leach into the enclosure and be toxic to the frog. Artificial plants may be used within the enclosure.

8.2.4 Tree frogs benefit from having a lot of branches within their enclosure for climbing as well as an abundance of fresh green leafed plants for hiding. One suitable variety is Spathiphyllum, a species of plant that can inhabit and tolerate both aquatic and substrate conditions.

8.2.5 Other suitable types of plants that can tolerate both humid and cold environments are Monstera, Mondo grass and some Bromeliads.

8.2.6 If using potted plants it is recommended to wash the soil off them as they are commonly covered with fertilisers and plant fungicides which can be extremely detrimental to frog health. The leaves should also be washed to remove insecticides. A common practice is to soak plants in a bucket of water for 24 hours, after washing them, to ensure no chemicals are left within the plant.

8.2.7 A wooden framed tight-fitting lid with an insert of plastic mesh, secured to the top of the tank with latches is recommended for the enclosure. Some pet shops can supply a purpose made plastic mesh that is used to prevent skin damage, or supply a suitable lid. Tree frogs can be strong enough to push a lid off their tank and escape so lids must be tight fitting and secure.

8.2.8 Care should be taken with wooden lids as they can harbour lacquers and resins, and can rot away over time. Aluminium framed lids with mesh are more durable and safe.

8.2.9 Glass lids are not recommended as they trap in heat, reduce ventilation and block essential UV light penetration. This could predispose the frogs to bacterial and fungal infections as well as metabolic bone diseases. A compromise can be a third glass and two-thirds mesh lid to avoid these problems.

8.3 Stream dwelling frogs

8.3.1 Stream dwelling frogs should be kept in an enclosure that has free flowing water which is pumped from one end to the other. This can be set up as a cyclic system.

8.3.2 The enclosure should have varying sizes of rocks to allow frogs to hide. Care should be taken with the positioning of the rocks to ensure that the rocks can not collapse and trap or injure the frog. Plants should also be included within this environment.

8.4 Axolotls

8.4.1 Axolotls should be housed in a tank with either no gravel, or with gravel large enough that it cannot be swallowed. Standard aquarium gravel can be acceptable as it can pass through the animal. Care should be taken with large gravel as it can conceal the worms fed to them.

8.4.2 The water within the enclosure should be filtered. It should be noted they cannot cope with water movement as it pushes them into objects causing injury and rubbing. Some power filters cause whirlpools that stress the animals. The turnover rate for the water should be approximately 4 to 5 times an hour. Axolotls should only be housed with other axolotls of equal size.

9. Lighting requirements

Minimum standard

9.1 All amphibians must be provided with a 'normal' day/night cycle (12 hours of light in the warmer months with an option of 8 hours a day in winter).

Recommended practice

9.2 It is recommended that light be artificially provided by means of a full-spectrum fluorescent tube light fitting on a timer. (Household light bulbs do not produce the correct wavelengths of light).

9.3 Frogs are particularly sensitive to light and the role ultraviolet radiation provides for normal behaviour patterns. For example, an NEC Blacklight is recommended for tropical frogs. Temperate (Victorian) species of frogs kept in captivity do not require this specific type of UV lighting. It is recommended that a dual batten fitting light be used as this will fit both the UV tube as well as a fluorescent tube suitable for plant growth lighting.

Guidelines

9.4 An essential vitamin, Vitamin D, is produced in the frog skin when exposed to the ultraviolet component of sunlight. Due to the dangers of allowing direct sunlight onto an enclosure and the filtering effect of glass it is necessary to use special 'reptile' ultraviolet fluorescent light tubes as part of the day cycle. Exercise caution and seek professional advice when purchasing UV-lights as some are dangerously strong and do not produce the correct wavelengths.

9.5 A gradual dimming or brightening of lights over 20 to 30 minutes, rather than an abrupt change, is more akin to natural conditions and allows the animals to adapt to the change.

10. Temperature requirements

Minimum standard

10.1 Individual species of amphibians must be provided with their particular temperature requirements.

Recommended practice

10.2 A keeper should seek professional advice on the requirements of the particular species being kept.

10.3 Tropical and semi-tropical frog species will require artificial heating during the cooler months. Tropical species should be kept at a temperature of at least 20℃ and semi-tropical species should be kept at a temperature of at least 15℃.

10.4 The maximum temperature for any species of frog should be obtained from an informed source.

10.5 For tropical frogs: Water heater temperatures should maintain temperatures in winter at 20 to 22℃ and in summer at 24 to 26℃.

10.6 For southern species of frogs water at room temperature is adequate.

10.7 It is highly recommended that a thermostat is attached to any of the heating appliances to maintain a constant temperature. A thermometer should be used regularly for monitoring.

Guidelines

10.8 One or a combination of the following may achieve artificial heating:

- Ambient temperature, (heating the room in which the enclosure is placed keeping in mind that the temperature should remain constant).
- 'Reptile' heat pad placed under or behind the enclosure.
- Aquarium water heater placed in a water section. This will also increase humidity.
- Radiant heat source spot or heat lamp. These sources of heat will require a protective cage to prevent frogs from burning themselves. Spotlights will need to be infra red to maintain a day/night cycle.

11. Humidity requirements

Minimum standard

11.1 The species' particular humidity requirements must be provided to prevent dehydration.

Recommended practice

11.2 Provide sufficient ventilation to prevent 'over-wetting' in an enclosure that will create saturated humidity, (often seen as condensation), which may induce respiratory and bacterial complications.

11.3 Tropical species of frogs should be maintained at 60% to 80% humidity. This is crucial for the successful keeping of tropical species in Victoria.

11.4 Semi-tropical species of frogs should be kept in an environment of between 50% to 70% humidity.

11.5 Cooler climate frogs can be maintained in an environment from 30% to 60% humidity.

Guidelines

11.6 Humidity can be monitored with a hygrometer.

11.7 Humidity can be raised by:

- spraying the enclosure with water
- increasing the number of live plants
- reducing ventilation
- increasing, agitating or heating the body of water

11.8 Humidity can be decreased by:

- increasing ventilation
- reducing the body of water

12. Water requirements

Minimum standard

12.1 All amphibians must be provided with unrestricted access to clean water at all times.

12.2 An amphibian must be provided with a means to get out of deep bodies of water with aids such as aquatic plants or partially submerged objects.

Recommended practice

12.3 The water must be:

- deep enough to submerge their hind legs as this is how a frog drinks
- clean and free of ammonia — small bodies of water may need to be changed daily, larger bodies of water can be filtered or changed every 2 to 3 days
- free of chlorine — chlorine can be removed by allowing it to stand in tubs open to the air for several days or use of dechlorination agents or running the water through carbon filters
- easy to find and access within the enclosure

12.4 Pipes used for transporting water into and around the aquatic system should not be galvanised or copper as toxic levels of such heavy metals may leach from the pipes and be toxic.

Guidelines

12.5 Amphibians can drown if they are unable to get out of the water or when their feet are too wet to adhere to surfaces.

12.6 Water coming out of taps can be saturated with dissolved gases that can cause gas bubbles to form under the skin a in the toe webs of frogs. Incoming water should be left to stand in open tubs for 24 hours to allow excess gas to escape.

12.7 Water quality parameters

Parameter	Guideline Value
Alkalinity	> 50 mg/litre $CaC0_3$
Hardness	= 75 – 150 mg/litre
PH	= 6.5 – 8.5
Salinity	< 0.4 ppm
Conductivity	= 50 – 2000$_{\mu}$S
Un-ionised ammonia (NH_3)	< 0.02 mg/litre

Parameter	Guideline Value
Nitrite (NO_2)	< 1 mg/litre
Nitrate (NO_3)	< 50 mg/litre
Chlorine	= 0 mg/litre
Dissolved oxygen content	> 80% saturation
Carbon dioxide (CO_2)	< 5 mg/litre

13. Substrate requirements

Any material used on the bottom of your enclosure should be:

- easy to clean or replace — it is recommended to use pit peat as this is cheap to replace every 12 to 18 months
- where gravel is used this can be rinsed through and should be thoroughly dried before reuse
- clean
- large enough to not be swallowed and cause constipation
- non-adherent.

14. Community living and compatibility

Minimum standard

14.1 Behavioural needs of particular species must be provided for.

14.2 Where more than one amphibian is to be placed in an enclosure the final size and risk of adverse interaction between them must be planned for.

14.3 Housing frogs of different sizes together must not occur.

14.4 Seek informed advice before mixing species, as their environmental needs will have to match exactly.

Recommended practice

14.5 Some amphibians, such as the Dwarf Tree Frog, are gregarious and need to live within groups.

14.6 Other species do not require companionship.

14.7 Consider the final adult's size as some amphibians can grow to be very large.

Guidelines

14.8 Be aware that some amphibians are cannibalistic and may eat smaller individuals. Most of the species that are on Wildlife Act 1975 schedules should not be housed within groups, particularly if they are of different sizes.

14.9 Species known to eat other frogs and tadpoles are the Bell frogs — *L. aurea* and *L. raniformis*.

14.10 Be aware of overcrowding and the increased wastes produced by greater numbers of frogs.

15. Cleaning

15.1 Small standing bodies of water may need to be changed daily to maintain good hygiene.

15.2 Water filters should be changed as per the manufacturer's advice.

15.3 Cleaning the glass should be achieved without the use of any cleaning agent or disinfectant. A plastic or aluminium paint scraper or simple scourer is suitable for this task.

16. Nutrition

16.1 Tadpoles

16.1.1 A tadpole will feed on decaying plant matter, algae, spirulina and fish flakes.

16.1.2 Tadpoles should be fed every 1 to 3 days. Overfeeding can lead to very dirty water. Underfeeding can lead to cannibalism.

16.1.3 You can provide decaying plant matter for tadpoles by:

- boiling lettuce or endive for 5 minutes and allowing it to cool before introducing it to tadpoles, the boiled lettuce can be stored in ice-cube trays in the freezer and added, once defrosted, to the tank housing the tadpoles when required
- freezing endive — simply break off small flakes of the endive and let it float in the tank

Tadpoles feed off micro-organisms that rot the endive or lettuce.

16.1.4 Water should be left to stand for a 24-hour period, or a chemical aging agent should be introduced to the water to quickly eradicate other chemicals such as fluoride and chlorine.

16.2 Frogs

16.2.1 Frogs are insectivorous (eat insects) and hunt by movement. When offering food it must be alive or physically jiggled about by hand.

16.2.2 Frog species have distinctive feeding behaviours. Some species will gorge themselves on any available tasty morsels regardless of need, while others will only eat occasionally when hungry.

16.2.3 Frogs survive well on a diet of insects that includes live cockroaches, flies (both of which are readily available from pet shops), spiders and moths caught at home provided they are not sprayed with insecticides.

16.2.4 Live mealworms, crickets, bloodworms, grasshoppers and wax-worms are readily available from pet shops and are a suitable diet for frogs in captivity. Some worms may cause intestinal complications if not digested properly so they should be used sparingly.

16.2.5 A frog should be given a variety of insects of varying sizes within their diet. Generally, most frogs will eat all sorts of insects. If the frog is large enough, start by feeding it small cockroaches or flies or crickets then introduce other insects of a similar size.

16.2.6 Tiny frogs and froglets (of approximately 1cm in length depending on the species) will require exceptionally small insects such as pinhead crickets, bloodworms or flightless fruit-flies.

16.2.7 Small frogs (between 1cm and 4cms in length) generally can consume crickets that are approximately 2 to 3 weeks old.

16.2.8 Medium frogs (between 4 cm and 8 cm in length) may also be interested in eating pinkies (dead day old baby mice, available from commercial suppliers) which should only be given occasionally as they are high in saturated fatty acids. It is safe to feed very large (and fully grown) frogs this type of diet, but should only be done sporadically. It is recommended that this is only done with the Green and Giant Tree Frogs (*L.caerulea* and *L.infrafrenata*).

16.2.9 Large frogs (greater than 8cm in length) may also eat pinkies and early stage dead 'fuzzy' mice. A fuzzy mouse is approximately 4 to 8 days of age.

16.2.10 Frogs in particular require additives for healthy growth. When supplementing your frog's diet with vitamin supplements or additives such as calcium, the manufacturer's directions should be followed.

16.3 Axolotls

16.3.1 Axolotls are carnivores.

16.3.2 An axolotl diet should consist of a combination of small fish (for example, frozen whitebait that has been defrosted and soaked to remove the high salt content), worms, insects, commercially produced pellets or commercially produced frozen axolotl dinners, once defrosted. Axolotls should not be fed beef meat.

17. Health Care

Minimum standard

17.1 Frogs must be acquired from a reputable and licensed source to ensure the long-term health of the colony.

17.2 Quarantine procedures must be observed when introducing new frogs to a colony (refer section 6).

17.3 Amphibians should be visually examined daily.

17.4 Do not use an antiseptic on any skin injury that your frog may have sustained.

Recommended practice

17.5 Fresh uncontaminated water is essential owing to the permeable nature of their skin through which water intake occurs.

17.6 Daily observation and visual examination should be undertaken to establish the appearance of a healthy amphibian and at the same time allow detection of changes from normal. Avoid handling during examinations.

17.7 In checking the daily health of an amphibian, consideration should be given to:

- posture and attitude in and out of water
- activity level in and out of water
- response to stimuli including handling
- withdrawal reflex and the ability to right itself
- assessment of body condition
- assessment of state of hydration
- appetite and dietary history
- observing faecal matter for any abnormalities.

Guidelines

17.8 Amphibians are susceptible to toxins and environmental contaminants.

17.9 Young, growing amphibians are particularly intolerant of poor nutrition and attention should be given to advice on nutrition under Section 16.

17.10 The diagnosis of specific diseases in individual amphibians is not easy as sick animals usually show similar symptoms with a variety of causal agents.

17.11 Local herpetological societies, specialised veterinarians, or pet shops specialising in amphibians can be approached to assess any abnormalities that are observed.

17.12 The medicine of amphibians is an evolving discipline. Only those disease symptoms that occur with relative frequency are listed here. In disease situations, amphibian owners should consult with veterinarians and those experienced in amphibian care.

17.13 Diseases

17.13.1 Red Leg

This is not a single disease entity but the result of infection by one or a number of bacteria. Clinical signs include lethargy, skin discolouration, haemorrhages and ulcerations, and sudden death. Control is aimed at isolating and treating affected animals and, importantly, reducing environmental contamination and disease transmission. Saline baths are effective at reducing wound contamination and disease spread. A commercially produced aquarium salt can be used for a saline bath. Use the dosage instructions given for fish.

17.13.2 Chytrid Fungus Infections

Scientific investigations in Australia indicate that Chytrid Fungus is the most important factor in the decline in frog numbers in the wild. Amphibians affected by Chytrid may show abnormal posture, skin ulceration and abnormal sloughing, lethargy and loss of righting reflexes. Sometimes sudden death is the only symptom and laboratory tests are required to obtain a diagnosis.

The key to preventing this disease is scrupulous attention to quarantine procedures and a stable environment with particular attention to water quality.

17.13.3 Nutritional Diseases

Nutritional diseases are quite common in amphibians but are less likely to be seen in adults or animals kept for short periods.

Nutritional bone disease is caused by calcium and/or vitamin D deficiency or calcium-phosphorus ratio imbalance. Symptoms include curvature of the backbone, long bone deformities and fractures. Treatment includes calcium supplementation and exposure to the correct ultraviolet light (see section 9).

Vitamin A accumulation may cause liver degeneration when amphibians are fed exclusively on raw liver diets.

Gout may occur in some amphibian species fed excessive amounts of protein.

Oxalate toxicity with kidney stones has been seen in tadpoles fed high oxalate diets (such as spinach).

18. Transport

18.1 Axolotls are sensitive to sunlight so it is preferable to transport them in a darkened container using their own tank water.

18.2 Do not place heavy rocks or decorations in the tank as they could move and injure the amphibian.

18.3 Frogs require constant moisture to prevent their skin dehydrating. They should be transported in a sealed plastic container with a small amount of cotton wool or paper towelling or damp sphagnum moss soaked in water. Transport time should be kept to a minimum.

18.4 If a brief stop is required during travelling, the vehicle should be left in a shady spot with fresh air circulating. If a longer stop is required, (longer than 30 minutes) remove the animals from the vehicle and keep them in a cool place.

19. Breeding

19.1 Unless specific conditions exist, amphibians will not breed.

19.2 To prevent unwanted tadpoles, and subsequently frogs, remove any unwanted spawn and dispose of appropriately. Contact your local Department of Environment, Land, Water and Planning wildlife licensing officer for further information.

20. Placement of Offspring and Unwanted Animals

Minimum standard

20.1 Captive bred animals must not be released into the wild. This includes captive-bred spawn.

Recommended practice

20.2 It is recognised that there will be times when a person will be unable to keep and/or care for their amphibian. Arrangements should be made to pass the amphibian on to a new owner privately, through a herpetological group, or a pet shop that specialises in the trade of amphibians.

20.3 It is an offence under the Prevention of Cruelty to Animals Act 1986 to abandon or release an animal that is normally kept in captivity.

20.4 Amphibians held under a wildlife licence may only be disposed of in accordance with the conditions of that licence.

20.5 It may be necessary to have the amphibian euthanased. Euthanasia should be performed by a veterinary surgeon.

Please note: The species of amphibians that may be privately kept by holders of a Wildlife Basic Licence and a Wildlife Advanced Licence are listed in Schedules 2 and 3 of the Wildlife Regulations 2013, and have recently been updated.

For more information and an up-to-date list of species of amphibians, please visit the the DELWP website.

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