AMBASSADOR ANIMAL GUIDELINES

TAWNY FROGMOUTH (*Podargus strigoides*)

Created by the Ambassador Animal Scientific Advisory Group in Association with the Tawny Frogmouth SSP
Tawny Frogmouth, *Podargus strigoides*, Ambassador Animal Care Guidelines
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**Disclaimer:** This manual presents a compilation of knowledge provided by recognized animal and education experts based on the current science, practice, and technology of ambassador animal management and presentation. The manual assembles basic requirements, best practices, and animal care recommendations to maximize capacity for excellence in animal care and welfare. The manual should be considered a work in progress, since practices continue to evolve through advances in scientific knowledge. The use of information within this manual should be in accordance with all local, state, and federal laws and regulations concerning the care of animals. While some government laws and regulations may be referenced in this manual, these are not all-inclusive nor is this manual intended to serve as an evaluation tool for those agencies. The recommendations included are not meant to be exclusive management approaches, diets, medical treatments, or procedures, and may require adaptation to meet the specific needs of individual animals and particular circumstances in each institution. Commercial entities and media identified are not necessarily endorsed by AZA. The statements presented throughout the body of the manual do not represent AZA standards of care unless specifically identified as such.
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AZA recognizes many public education and conservation benefits from ambassador animal presentations. AZA’s Conservation Education Committee’s Ambassador (previously called Program) Animal Position Statement (Appendix A) summarizes the value of ambassador animal presentations. For the purpose of this policy, an ambassador animal is described as an animal presented either within or outside of its normal exhibit or holding area that is intended to have regular proximity to or physical contact with trainers, handlers, the public, or will be part of an ongoing conservation education/outreach program.

Ambassador animal presentations bring a host of responsibilities, including the welfare of the animals involved, the safety of the animal handler and public, and accountability for the take-home, educational messages received by the audience. Therefore, AZA requires all accredited institutions that give ambassador animal presentations to develop an institutional ambassador animal policy that clearly identifies and justifies those species and individuals approved as ambassador animals and details their long-term management plan and educational program objectives. The policy must incorporate the elements contained in AZA’s “Recommendations for Developing an Institutional Ambassador Animal Policy.” If an animal on loan from another facility is used as an ambassador animal, the owner’s permission is to be obtained prior to program use.

Tawny frogmouths have long been unique and popular ambassador animals in AZA-accredited zoos. Currently, standardized care guidelines for husbandry; including housing, training and maintenance do not exist, potentially resulting in situations that are inconsistent with the physical and psychological needs of the species.

Recognizing this shortcoming, in 2016, the Tawny Frogmouth Species Survival Plan® (SSP) Ambassador Animal Advisory Group was established with the objective of working with AZA zoos to promote the physical and psychological welfare of ambassador frogmouths by establishing and communicating best practices related to their management, husbandry and training. Additionally, the group would then serve as a consistent resource for animal managers and Education/Outreach staff who oversee ambassador frogmouths.

In collaboration with the SSP, the Advisory Group helps to define and develop best management practices and recommendations for ambassador frogmouths in AZA-accredited zoos. The outcomes of the Advisory Group will serve in lieu of standardized care guidelines but could contribute to a more holistic Animal Care Manual in the future.

Deliverables for the Advisory Group include:

- Collecting and evaluating current practices regarding Ambassador Frogmouth husbandry and training.
- Ensuring frogmouth husbandry and minimum housing standards, as established by the SSP, are communicated to, and applied within, the Ambassador animal community.
- Establishing guidelines and species-appropriate practices for the handling and training of Ambassador frogmouths.
- Serving as an ongoing resource to the SSP to continually review and adjust best practices and assist new facilities in providing the best welfare for Ambassador frogmouths.

Figure 1. Tawny frogmouth chick
Photo courtesy of M. Myers
1. HUSBANDRY

AZA’s accreditation standards require that the conditions and treatment of animals in education programs must meet standards set for the remainder of the animal collection, including species-appropriate shelter, exercise, sound and environmental enrichment, access to veterinary care, nutrition, and other related standards (AZA Accreditation Standard 1.5.4).

1.1 Housing

Providing ambassador tawny frogmouths with options to choose among a variety of conditions within their environment is essential to ensuring effective care, welfare and management (AZA Accreditation Standard 1.5.2.2). Some of these requirements can be met outside of the primary exhibit enclosure while the animal is involved in a program or is being transported. For example, housing may be reduced in size compared to a primary enclosure as long as the animal’s physical and psychological needs are being met during the program; upon return to the facility, the animal should be returned to its species-appropriate housing.

Careful consideration must be given to the design and size of all ambassador animal enclosures, including exhibit, off-exhibit holding, hospital, quarantine, and isolation areas, such that the physical, social, behavioral, and psychological needs of the species are met and species-appropriate behaviors are facilitated (AZA Accreditation Standard 10.3.3, 1.5.2, 1.5.2.1).

The physical needs of tawny frogmouths utilized as ambassador animals and exhibit animals are identical (Figures 3 and 4). The substrate and perching requirements are similar and the enclosure should provide adequate space for flight, exercise and ability to display natural behaviors. Depending on institutional needs and individual temperaments, frogmouths may serve dual roles as both exhibit animals and ambassadors. Habitat size and type will vary accordingly. The AZA Tawny Frogmouth SSP recommends
that all enclosures should reach the standards of enclosure size, complexity and variety of perching indicated in Tables 1 and 2.

Providing birds with multiple opportunities within an enclosure to display natural behaviors will in turn, provide for the possibility of choice and control. Multiple platforms made of wood or wire, a variety of hide spots, bathing spots and the ability to move freely on appropriate perching are simple features that enhance the welfare of frogmouths. Ambassador frogmouths are often housed in open mesh enclosures. The use of shade cloth to create hide spots and visual barriers on one or more of the enclosure sides is an easy substitute for live trees that are more typically used in exhibits.

The benefits or drawbacks of mixed-species exhibits cannot be assessed or quantified for ambassador tawny frogmouths without further study. However, it is a general assumption that mixed-species exhibits provide added complexity, stimulation and an enhanced environment. Refer to the Tawny frogmouth SSP website for mixed species ideas.

It is recommended that tawny frogmouths housed outdoors have access to a covered space with a heat source. In most cases, it is desirable to have ~1/3 of the enclosure sheltered from the elements and to provide shade and cover. Sun exposure is recommended for sunning opportunities, especially during winter. Attention should be paid to droppings by feral rats and wildlife, as many of these carry parasites that have been documented to be detrimental to frogmouths under human care.

Wild frogmouths use bouts of torpor (a state of lowered physiological activity typically characterized by reduced metabolism, heart rate, respiration, and body temperature) at night as a means of conserving energy during periods of cold temperatures when food may be less available. They are one of the largest birds known to use this strategy. Weight cycles in frogmouth in human care suggest possible use of torpor, but this has yet to be researched and documented.
Table 1. Enclosure Size

<table>
<thead>
<tr>
<th>Good</th>
<th>Better</th>
<th>Best</th>
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<tbody>
<tr>
<td>6’ L x 4’ W x 6’ H (1.82m x 1.21m x 1.82m), minimum space recommended for one frogmouth</td>
<td>12’ L x 8’ W x 8-10’ H (3.65m x 2.43m x 2.43m)</td>
<td>20’ L x 10’ W x 10’ H outdoor enclosure, with access to indoor space of 4’ L x 4’ W x 7’ H (6.09m x 3.04m x 3.04m outdoor; 1.2m x 1.2m x 2.1m indoor)</td>
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Table 2. Enclosure Elements

<table>
<thead>
<tr>
<th>Good</th>
<th>Better</th>
<th>Best</th>
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</thead>
<tbody>
<tr>
<td>• Complex perching of variable sizes (not less than 4 inch [10.2 cm] diameter) throughout, both high and low but not impeding flight to and from ground; basking site</td>
<td>• Complex perching of variable sizes throughout, both high and low but not impeding flight to and from ground. • Nest platform • Basking site • Adjustable light cycle</td>
<td>• Complex perching of variable sizes throughout, both high and low but not impeding flight to and from ground. • Nest platform • Basking site • Access to natural substrate, plants/trees and sunlight</td>
</tr>
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1.2 Diet

A formal nutrition program is recommended to meet the nutritional and behavioral needs of any species (AZA Accreditation Standard 2.6.2). Diets should be developed using the recommendations of nutritionists, including the Nutrition Scientific Advisory Group (NAG) feeding guidelines: (http://www.nagonline.net/Feeding%20Guidelines/feeding_guidelines.htm), and veterinarians as well as AZA Taxon Advisory Groups (TAGs), and Species Survival Plan® (SSP) Programs. Diet formulation criteria should address the animal's nutritional needs, feeding ecology, as well as individual and natural histories to ensure that species-specific feeding patterns and behaviors are stimulated.

Tawny frogmouths are primarily insectivorous, although small mammals are also consumed in the wild. The diet offered to ambassador animals should provide proper nutrition while mimicking their natural diet. Animals used as ambassadors should receive the same diet offered to exhibit animals, including but not limited to small prey/meat (fuzzies/hoppers) (Figure 6) and a variety of invertebrates such as Zophobas mealworms and crickets, etc.

Diet amounts and presentation may vary depending on the bird and enclosure, keeping in mind an appropriate weight and healthy body condition at all times. Regular checks by trained keepers and/or veterinary staff to evaluate body condition should be used in conjunction with behavior to determine if diet amounts need adjustment. Weights should be taken regularly and used to help monitor animal health.
Frogmouths experience natural, seasonal weight fluctuations in the wild, and it is recommended that ambassador frogmouths be given this opportunity to manage their own weights. Typically, food consumption rises significantly post-breeding/molt as individuals begin to gain weight for the winter. Some individuals can come close to doubling their summer weight, and thus winter weights in the 600-700g range should not be alarming (Figure 7). Food consumption decreases mid-winter as birds begin to regulate their weight downwards to, ultimately, achieve a summer weight in the 300-450g range. Body condition should be maintained in a healthy manner year-round. Please note that this seasonal fluctuation in appetite and weight may disrupt motivation for food reinforcers. In these cases, institutions should consider suspending program use of the individual frogmouth for the season if training using positive reinforcement is hindered. Frogmouths are rarely seen drinking water; however, a shallow pan of fresh water should always be offered and presented on or close to the ground.
Figure 7. Mean body mass of Woodland Park Zoo tawny frogmouths over the period January 2009-December 2016. For each month, data were pooled for all birds. Numbers above bars represent number of mass measurements over number of birds for that month. Vertical bars represent ±SEM.

Table 3. SSP Recommended Diet (reviewed by nutritionist Dr. E. Dierenfeld)

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Quantity Per Animal</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>Mice (hoppers)</td>
<td>10 g</td>
<td>Daily</td>
</tr>
<tr>
<td>Zophobas (Super worms)</td>
<td>12 g</td>
<td>Daily</td>
</tr>
<tr>
<td>Crickets</td>
<td>7 g</td>
<td>Daily</td>
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Table 4. Diet Strategies/Presentation

<table>
<thead>
<tr>
<th>Good</th>
<th>Better</th>
<th>Best</th>
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<tr>
<td>• Basic diet presented either hand-feeding or self-feeding (preferred) based on individual animal.</td>
<td>• Basic diet plus select variable items (i.e., hornworms, chunks of beef heart or other meat item) for added variety and enrichment, with ability to both hand feed or present diet in enclosure for self-feeding.</td>
<td>• Basic diet plus variable items presented multiple times daily in enclosure for self-feeding.</td>
</tr>
<tr>
<td>• Amounts should take into consideration seasonal changes based on average consumption for the species.</td>
<td>• Amounts include seasonal changes based on historic trends for the individual bird.</td>
<td>• Diet offered ad lib to allow seasonal weight variations normal for this species.</td>
</tr>
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</table>
1.3 Enrichment

Finding successful enrichment for frogmouths can be challenging. Offering live insects may provide hunting opportunities and stimulate activity. If housed outdoors, the addition of a small porch light will attract local insects and allow ambassador frogmouths to really test their skills. Misters on timers will encourage random bathing opportunities. Contact with primary trainers and keepers can be particularly enriching and should not be underestimated as a positive form of enrichment.

![Figure 8. Frogmouth showering](Photo courtesy of A. Seyfried)

![Figure 9. Hanging enrichment](Photo courtesy of M. Messerly)

1.4 Animal Training

Classical and operant conditioning techniques have been used to train animals for over a century. Classical conditioning is a form of associative learning demonstrated by Ivan Pavlov. Classical conditioning involves the presentation of a neutral stimulus that will be conditioned (CS) along with an unconditioned stimulus that evokes an innate, often reflexive, response (US). If the CS and the US are repeatedly paired, eventually the two stimuli become associated and the animal will begin to produce a conditioned behavioral response to the CS.

Operant conditioning uses the consequences of a behavior to modify the occurrence and form of that behavior. Reinforcement and punishment are the core tools of operant conditioning. Positive reinforcement occurs when a behavior is followed by a stimulus that increases the frequency of that behavior. Negative reinforcement occurs when a behavior is followed by the removal of a stimulus to also increase the frequency of that behavior. Positive punishment occurs when a behavior is followed by a stimulus that decreases the frequency of that behavior. Negative punishment occurs when a behavior is followed by the removal of a stimulus also to decrease the frequency of that behavior. AZA-accredited institutions are expected to utilize reinforcement when possible to facilitate husbandry programming, procedures and behavioral research investigations.

Frogmouths are good candidates for behavioral training programs focusing on basic husbandry and handling tasks, such as stepping up, weighing, entering crates, and accepting tactile stimulus for physical
exams. Standard positive reinforcement behavioral training techniques have been used successfully on frogmouths at several facilities. Habituation, (acclimation), may be used with ambassador frogmouths. Ambassador frogmouths may be introduced to a variety of stimuli with the end result of providing the bird with appropriate coping tools when exposed to stimuli during programs or pathway chats. It is recommended that all novel items be introduced outside the bird’s home enclosure in a careful and controlled manner to prevent flooding. For example, introducing novel items can be accomplished by placing these items in a hallway near the bird’s home enclosure. The proximity of the novel item to the home enclosure can be increased, or decreased, based on the bird’s comfort level. Incorporating positive reinforcement training with desensitization techniques may accelerate the bird’s adjustment to novel items.

All ambassador animals should be trained to step up to the trainer, and remain calm while being presented. Calm behavior can look different in each individual, typically, a calm frogmouth will sit with wings resting at the side of its body and its attention focused on handler. A calm bird may preen or accept food during a program.

Husbandry Behaviors that have been successfully trained using positive reinforcement with tawny frogmouths are:

- Step up to hand
- Step up to scale
- Entering crate/kennel
- Tactile (for physical examinations)

Presentation and handling behaviors that have been successfully trained using positive reinforcement with tawny frogmouths are:

- Step up to hand
- Entering crate/kennel
- Allowing handling equipment (jesses and/or leash) to be put in place.
- Tactile
- Passing to guests for photos (while on equipment)

1.5 Social Grouping

In the wild, tawny frogmouths most commonly occur in pairs and family groups during the breeding season. Hand-reared ambassador frogmouths often socially interact with, and may even court, their caretakers. As long as spatial considerations are appropriate, frogmouths can be housed in pairs (same or different sex), small groups (same sex) or singly.

1.6 Signs of Stress

Stress, including heat stress and over-stimulation, may manifest its presence in a number of ways in frogmouths, although signs may be subtle and difficult to interpret compared with other birds. Some signs of stress may include: sitting in a hunched posture, low spreading wings, gaping/gular flutter, and excessive flightiness/ restlessness during daylight hours, excessive vocalization (low pitched growling) during daylight hours, displaying “stumping” behavior for extended periods of time, or change in color and composition of feces. If the animal is showing heat stress, feel the feet for warmth and isolate the bird in a cool, dark area or return it as soon as possible to its habitat. For stress that appears to be from over-stimulation, remove the bird from the presentation and return it to the transport carrier in a quiet area. Later, gauge if the animal will be able to continue with its performance by judging its attitude. Do not continue if the frogmouth shows continued stress. The animal should be returned it to

Figure 10. Gaping
Photo courtesy of M. Messerly
its exhibit or enclosure as soon as possible and supervisory staff should be alerted of the situation. Veterinary staff should be contacted, if warranted.

2. PROGRAMS

2.1 Program Types

Ambassador frogmouths are utilized in many ways and in many settings to engage, educate and create connections with zoo visitors. This is clearly a win for conservation and demonstrates how these dynamic animals can be successful in a wide variety of situations. Tawny frogmouths are presented both on and off-grounds in formal (classroom) and informal (chats or displays) programs. While typically presented indoors, they are handled successfully outdoors with proper training and attention to the safety of the animals.

![Figure 11. Distance Learning](Photo courtesy of P. Villers)

![Figure 12. Pathway encounter](Photo courtesy of S. Cole)
2.2 Temperature Guidelines

Historically, frogmouths have been managed in a fairly conservative manner during periods of cold weather. However, recent experiences with exhibit birds suggest the species is generally very cold tolerant and can acclimate to temperatures in the teens and low 20s (°F) when provided with protection from wind and rain and provided with supplemental heat.

Temperature restrictions for frogmouths depend upon the individual bird being used in programs, the temperatures to which it has been acclimated, the destination of the program and the policy of the institution’s animal management team. When exposing frogmouths to excessively high or low temperatures, the bird’s behavior should constantly be monitored for signs of thermal stress.

If the program is in a situation where it is not climate controlled, please discuss the logistics and potential risks with your animal management team. There may be times when the physical environment can be modified to maintain the frogmouth in a safe and healthy manner; for example, shade or portable heat can be provided.

2.3 Transport

Consideration should be given to the means in which an animal will be transported for both on-grounds and off-grounds programs. Animal transportation must be conducted in a manner that is lawful, safe, well planned, and coordinated, and minimizes risk to the animal(s), employees, and general public (AZA Accreditation Standard 1.5.11).

Frogmouths can be trained, (employing reinforcement training briefly described above), to voluntarily enter a transport carrier, or to “step up” and be placed in the carrier to go to educational programing events.

There are two basic methods to removing a frogmouth from an exhibit: train the bird to enter a carrier voluntarily or train the bird to “step up” and then place the bird in the carrier. Once at the desired location, the bird may be removed from the carrier using the verbal “step up” cue. When transporting a program bird from one location to the next, it is suggested that the frogmouth remain in the carrier for the duration of the transport. It is not recommended to allow a frogmouth free-run of a van or other transport vehicle.

Transport carriers should be covered during transport and while the carrier is in staging for ambassador use to provide a secure environment during transport and staging. Covers can be as simple as a pillowcase or towel or as elaborate as individual crate covers. Adequate ventilation should be ensured if the carrier is covered.

Transport carrier size, perching and substrate will vary according to the preferences of each individual frogmouth. As with any animal, finding the perfect transport set-up can take time, evaluation and adjusting. It is therefore difficult to recommend hard and fast transport parameters as they can be very dependent on individual preference, and modifications may need to be made during carrier training. A variety of transport options will work equally well based on individual preference, institutional polices and available resources. Transport carriers may vary from commercial pet taxis to custom wooden boxes. These may range from Pet Taxis measuring 14 in. x 15 in. x 23 in. (35.6 cm x 38.1 cm x 58.4 cm) to custom-made boxes measuring 27 in. x 20 in. x 22 in. (68.58 cm x 50.80 cm x 55.88 cm).

Substrates include AstroTurf, indoor-outdoor carpet, rubberized flooring squares or newspaper. The use of perching is also subjective as some birds prefer to perch while others prefer to rest on substrate. If perching is used, it should be of appropriate thickness so the bird can perch securely (i.e. 3 in. to 4 in.) diameter dowel rod or natural perching.

The use of chemical sanitation is important for all transport carriers, presentation surfaces and maintenance tools. There are a variety of sanitation chemicals available for proper hygiene. Consult with your animal management team and/or veterinary staff to identify the best chemicals for your situation. In
most instances, protocols used to sanitize carriers used for carnivorous birds will be sufficient. Abrasive chemicals should be avoided to avoid irritation to the feet.

2.4 Display Options

Careful consideration should be given to the presentation of ambassador animals, including safety of the animal, handler and public as well as the messages associated with the visual display of the animal.

Frogmouths can be displayed on a stand-alone or table top perch, or can be presented directly by the handler. When choosing a method of display, it is important to consider the training and handling history of each individual animal, as well as the skill level and experience of the handlers. All ambassador animals should be properly desensitized to any display perches, and the handler should always be close by for constant monitoring.

The handler of ambassador frogmouths be aware of visitor interactions at all times. Food and beverage consumption for the handlers should be limited to non-animal areas. Monitoring visitor behavior and proximity to the animal, as well as knowing the personality of the frogmouth will help ensure a positive interaction for everyone.

If injuries occur to animals, they should receive veterinary attention as soon as possible. The injury may not seem significant, but to ensure continued health, seek medical counsel.

Disease risk is inherent in all environments and it is impossible to eliminate this risk totally. It is best to review each program event and look at potential risks and try to minimize them. At outreach events, all efforts should be made to prevent exposure to birds or other animals from other institutions/facilities. Additionally, at all events, indoor or outdoor, it is recommended that the ambassador birds have dedicated carriers to hold them anytime they are not needed for a presentation. These carriers should be kept away from visitors, other animals (including wildlife), and disturbances.
Using handwashing stations, wipes and/or gels to limit disease transfer and contamination for all staff involved with program animals is recommended. All transport carriers should be cleaned thoroughly with facility-approved cleansers and disinfectants after each use. Ambassador animals that are taken off zoo or aquarium grounds for any purpose have the potential to be exposed to infectious agents that could spread to the rest of the institution’s healthy population. AZA-accredited institutions must have adequate protocols in place to avoid this situation (AZA Accreditation Standard 1.5.5).

2.5 Messaging

AZA’s policy on the presentation of animals is as follows: AZA is dedicated to excellence in animal care and welfare, conservation, education, research, and the presentation of animals in ways that inspire respect for wildlife and nature. Education and conservation messaging must be an integral component of any ambassador animal demonstration (AZA Accreditation Standard 1.5.3).

The Conservation Education Committee recommends that facilities design educational experiences with ambassador animals with one or more the following outcomes in mind:

1. Species information: Understanding of the species natural history, role in the ecosystem, and/or status in the wild.
2. Animals in human care: Understanding of the commitment of AZA facilities to excellence in animal care and conservation and appropriate pet choices, where applicable.
3. Empathy development: Foster a sense of empathy and wonder by connecting visitors and audiences to the individual animal.
4. Conservation action: Empower audiences and visitors to take action to protect the species and wildlife in general.

Tawny frogmouths presented in an educational setting provide an opportunity to achieve these outcomes in a number of specific ways. Recommendations for messaging with tawny frogmouths are listed below.

Outcome 1: Species information

- **Differences between Frogmouths and Owls**: When presented alongside or after various species of owls, handlers can highlight the anatomical and behavioral differences between the two and also discuss convergent evolution and niche adaptation if appropriate to the audience. Handlers can also point out the similarities to North American bird species such as nightjars.

Outcome 2: Animals in human care

- In contact and behind-the-scenes programs, there is an opportunity to explain more thoroughly the relationship that handlers have with the birds. The handler should discuss the benefits of training, proper ways to handle and train a bird, and the time spent developing the animal/keeper relationship, in order to ensure the bird is comfortable being handled.

Outcome 3: Empathy development

- Every presentation should begin by setting expectations and explaining rules. Sharing what to expect, whether they can touch or hold the bird, and proper techniques to use is also an opportunity to discuss how the bird might react and help the visitors connect with the animal. The presenter can frame the rules in a way that shares similarities between the bird and the audience, for example stating, “many of us don’t like to be surprised by loud noises, and we can help this animal to feel more comfortable by staying quiet.”
- Empathy development can be encouraged by presenting the tawny frogmouth in a way that helps the audience connect on an individual level. Some suggestions include:
  - Sharing information about the individual animal, such as name, preferences, and temperament.
Pointing out ways that tawny frogmouths are similar to humans, and ways that they are different.
During the presentation, allowing the tawny frogmouth to display natural behaviors and show agency.

Outcome 4: Conservation action

- **Human and wildlife interactions:** Tawny frogmouths often hunt by the roadside at night, and can be blinded by headlights from oncoming cards. This can result in injury or death. Although these birds are native to Australia, we can use this example to highlight the prevalence of wildlife-vehicle collisions in the USA ([https://www.fhwa.dot.gov/publications/research/safety/08034/exec.cfm](https://www.fhwa.dot.gov/publications/research/safety/08034/exec.cfm)) and give visitors safety tips on how to help avoid these types of interactions.

- **Overuse of Pesticides and alternatives to their use:** Tawny frogmouths eat many of the insects people often see as pests, and unknown numbers of these birds are poisoned by ingesting pesticides. Sometimes death is delayed, due to the toxins being absorbed into fatty tissue. The birds will store the pesticides with no issues until they begin to draw on their fat deposits in winter months. The stored pesticides then enter the bloodstream, and can cause illness and death. ([Tawny Frogmouth](https://commons.wikimedia.org/wiki/File:Tawny_Frogmouth_by_Gisela_Kaplan.jpg) by Gisela Kaplan). Visitors can help protect wildlife by considering natural or non-toxic solutions to pest management

- **Injuries/fatalities caused by domestic pets:** Cats, dogs, and occasionally foxes cause mortalities to wild frogmouths in large numbers. This can be a starting off point to discuss the millions of birds and small mammals killed by cats each year in the USA, and how they can keep their pets from being a part of the problem. ([http://www.livescience.com/26670-cats-kill-billions-animals.html](http://www.livescience.com/26670-cats-kill-billions-animals.html))
3. HANDLING AND STAFF TRAINING

3.1 Handling Limits

Consideration should be given as to appropriate times for handling ambassador animals during presentations, and rest breaks scheduled accordingly. Program handlers should maintain the animal’s basic husbandry needs and a medical protocol should be in place in case concerns arise.

As with all ambassador animals, frogmouths will need breaks from presentations. The Frogmouth Ambassador Animal Advisory Group suggests a 30-minute on, 10-minute rest schedule for a frogmouth that is working in a program. Each ambassador will have different thresholds for overall use in a given day or week. It is recommended that overall use be tracked while continually assessing the bird’s weight, behavior and food consumption. These parameters should be included in the institutional ambassador animal policy. The Advisory Group does acknowledge that some programs may run somewhat longer and certain individual animals can handle a longer display time. Handlers that know their ambassador animals well, how they react to stress, and are able to watch for signs is the key. Many frogmouths travel well, and overnight outreaches are acceptable as long as the animal’s basic husbandry needs are addressed and a medical protocol is in place in case of concerns.

One thing to consider when handling ambassador frogmouths is the time of day. Frogmouths are nocturnal, so different behaviors may be observed between daytime and evening programming. At night, birds may seem more alert and animated than they typically are during daytime presentations.

![Figure 15. Frogmouth handled without jesses](Photo courtesy of A. Hintz)

![Figure 16. Frogmouth with jesses](Photo courtesy of M. Messerly)
3.2 Handlers and Handler Training

Animal care and education staff should be trained in ambassador frogmouth-specific handling protocols, conservation, and education messaging techniques, and public interaction procedures. Paid and/or unpaid staff assigned to handle animals during demonstrations or educational programs must be trained in accordance with the institution’s written animal handling protocols. Such training must take place before handling may occur (Accreditation Standard 1.5.12). These staff members should be competent in recognizing stress or discomfort behaviors exhibited by the tawny frogmouth and are able to address any safety issues that arise. Additionally, when in operation, animal contact areas must be supervised by trained paid and/or unpaid staff (AZA Accreditation Standard 1.5.13). Training staff and volunteers to properly handle frogmouths is as important to providing positive welfare as enclosure size, husbandry protocols, enrichment and diet.

Frogmouths may try to bite guests, or even handlers, if their hands are placed near or around the bird’s face and head. It is suggested that handlers know the personality of the birds before utilizing them. Handlers should always be aware of the bird’s demeanor and the location of visitors. Institutional policy should be followed in the event of an injury.

Frogmouths do not pose a significant zoonotic risk to handlers. Proper handwashing and sanitizing protocols should be followed immediately after handling any ambassador animal and/or their food items.

Handling consistency and uniformity in technique for those who handle ambassador frogmouths can have a profound impact on the welfare of the birds in our care. Although this is best achieved through careful and species-specific training to handle frogmouths, handlers and their requirements will differ between institutions depending on many variables including staff size, program demands and size of ambassador animal collection.

At a minimum, handlers should be trained and scored on the following criteria:

- Removal and return of frogmouth from home enclosure
- Proper placement and removal of jesses and other equipment, if applicable
- Removal and return from transport box
- Safely handle and present the tawny frogmouth for ambassador programs
- Recognize the signs of stress for both the species/and individual animal
- What to do in the event of animal bite or other human or animals emergency
- Outreach parameters, if applicable

In many cases frogmouth handlers may have previous experience working with jesses and other equipment on raptors. There may be an inclination on the part of the handler, consciously or unconsciously, to fall back on familiar habits and handle the frogmouth in a manner similar to that utilized with raptors. Training to handle frogmouths should include the natural history of frogmouths. Handlers should be aware of the relatively weak feet and legs of the frogmouth in comparison to a raptor. It is recommended that training include specific discussion on the open hand position utilized for frogmouths.

There is much debate about the use of jesses on ambassador birds. Tawny frogmouths are no exception. The use of jesses on ambassador frogmouths should be weighed carefully with consideration given to:

- the bird’s safety
- handler training
- number and type of handler (paid employee or volunteer)
- program venue
- temperament of the frogmouth being handled

The safety of the ambassador frogmouth should be the primary concern. The use of jesses by a skilled handler may serve to safeguard the bird against potential injury. It is recommended that handlers of
jessed birds be familiar with institutional policy on the use of jesses. It is also recommended that handlers receive specific training on interpreting the use of jesses to program participants and guests.

3.3 Handler Certification

Each institution should create an ambassador animal handling policy that conforms to AZA guidelines as well as any local legislation. The program, including species/individual animals, program types/messaging, and all handlers, should be reviewed regularly. Handler competency should be evaluated, and concerns with training performance should be addressed. Any concerns with training performance should be addressed and re-training or additional lessons instituted. Sample rubrics for animal handling certification can be found in Table 5 and 6.

Table 5. Tawny Frogmouth Handling Certification

<table>
<thead>
<tr>
<th>Good</th>
<th>Better</th>
<th>Best</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trainee observes multiple sessions with experienced handler/certified trainer</td>
<td>• All steps included in “Good” plus:</td>
<td>• All steps included in “Better” plus:</td>
</tr>
<tr>
<td>• Trainee then handles frogmouth for multiple sessions with experienced handler</td>
<td>• Trainee given written protocol to review prior to first handling</td>
<td>• Handler must handle frogmouth a minimum of once/month (or more depending on individual handler and bird)</td>
</tr>
<tr>
<td>• Trainee assessed yearly on skill and ability by experienced handler</td>
<td>• Handler assessed and scored using institutional handling rubric</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Animal Handling Rubric

<table>
<thead>
<tr>
<th>2 = Major mistakes, issues and/or concerns (does not currently have the handling skills or comfort level currently need for handling a specific animal or animals)</th>
<th>1 = Minor mistakes, issues and/or concerns (needs more training before moving forward on a specific animal or animals)</th>
<th>0 = No mistakes, issues and or concerns (able to move forward with handling/certification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort/Confidence</td>
<td>Handler lacks confidence OR is over confident in handling abilities. Handler appears uncomfortable handling the animal to the point of animal/human safety could be an issue.</td>
<td>Handler appears to lack some confidence, but is able to handle the animal in an appropriate manner.</td>
</tr>
<tr>
<td>Attitude</td>
<td>Handler demonstrates a lack of respect for animal or safety and is not acceptable to feedback.</td>
<td>Handler shows respect for animal and accepts feedback.</td>
</tr>
<tr>
<td><strong>Removal from holding</strong></td>
<td>Handler was unable to properly remove animal from holding without assistance and/or was unable/or unwilling to follow trainer’s instructions.</td>
<td>Handler had some difficulty properly removing animal from holding, but followed trainer’s instructions.</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Kenneling</strong></td>
<td>Handler was unable to properly set up travel container.</td>
<td>Handler had some difficulty setting up travel container.</td>
</tr>
<tr>
<td><strong>Handling/presentation</strong></td>
<td>Handler lacked confidence OR was over confident while presenting animal. Was unable/unwilling to follow handling guidelines. Animal/handler/public safety was not exhibited by handler.</td>
<td>Handler had some difficulty while presenting animal, but followed handling guidelines.</td>
</tr>
<tr>
<td><strong>Return animal to holding</strong></td>
<td>Handler was unable to properly return animal to holding without assistance and was unable/or unwilling to follow trainer’s instructions.</td>
<td>Handler had some difficulty properly returning animal to holding, but followed trainer’s instructions.</td>
</tr>
<tr>
<td><strong>Understanding of handling policies</strong></td>
<td>Handler is unable/unwilling to adhere to institutional handling polices. Does not demonstrate an understanding or importance of policies. Handler poses a potential risk to animal/handler/public safety.</td>
<td>Handler requires written and/or verbal coaching on polices, but willing accepts feedback. Handler poses a potential risk to animal/handler/public safety.</td>
</tr>
</tbody>
</table>
Appendix A: Ambassador Animal Policy and Position Statement

Ambassador (Program) Animal Policy

Originally approved by the AZA Board of Directors – 2003
Updated and approved by the Board – July 2008 and June 2011
Modified from "Program Animal" to "Ambassador Animal" to avoid confusion with "Animal Programs," approved by the CEC; no change to meaning of these terms - January 2015

The Association of Zoos & Aquariums (AZA) recognizes many benefits for public education and, ultimately, for conservation in ambassador animal presentations. AZA’s Conservation Education Committee’s Ambassador Animal Position Statement summarizes the value of ambassador animal presentations (see pages 42–44).

For the purpose of this policy, an Ambassador animal is defined as “an animal whose role includes handling and/or training by staff or volunteers for interaction with the public and in support of institutional education and conservation goals.” Some animals are designated as Ambassador Animals on a full-time basis, while others are designated as such only occasionally. Ambassador Animal-related Accreditation Standards are applicable to all animals during the times that they are designated as Ambassador Animals.

There are three main categories of Ambassador Animal interactions:

1. On Grounds with the Ambassador Animal Inside the Exhibit/Enclosure
   a. Public access outside the exhibit/enclosure. Public may interact with animals from outside the exhibit/enclosure (e.g., giraffe feeding, touch tanks).
   b. Public access inside the exhibit/enclosure. Public may interact with animals from inside the exhibit/enclosure (e.g., lorikeet feedings, ‘swim with’ programs, camel/pony rides).

2. On Grounds with the Ambassador Animal Outside the Exhibit/Enclosure
   a. Minimal handling and training techniques are used to present Ambassador Animals to the public. Public has minimal or no opportunity to directly interact with Ambassador Animals when they are outside the exhibit/enclosure (e.g., raptors on the glove, reptiles held “presentation style”).
   b. Moderate handling and training techniques are used to present Ambassador Animals to the public. Public may be in close proximity to, or have direct contact with, Ambassador Animals when they’re outside the exhibit/enclosure (e.g., media, fund raising, photo, and/or touch opportunities).
   c. Significant handling and training techniques are used to present Ambassador Animals to the public. Public may have direct contact with Ambassador Animals or simply observe the in-depth presentations when they’re outside the exhibit/enclosure (e.g., wildlife education shows).

3. Off Grounds
   a. Handling and training techniques are used to present Ambassador Animals to the public outside of the zoo/aquarium grounds. Public may have minimal contact or be in close proximity to and have direct contact with Ambassador Animals (e.g., animals transported to schools, media, fund raising events).

These categories assist staff and accreditation inspectors in determining when animals are designated as Ambassador Animals and the periods during which the Ambassador Animal-related Accreditation Standards are applicable. In addition, these Ambassador Animal categories establish a framework for understanding increasing degrees of an animal’s involvement in Ambassador Animal activities.

Ambassador Animal presentations bring a host of responsibilities, including the safety and welfare of the animals involved, the safety of the animal handler and public, and accountability for the take-home, educational messages received by the audience. Therefore, AZA requires all accredited institutions that make Ambassador Animal presentations to develop an institutional Ambassador Animal policy that clearly
identifies and justifies those species and individuals approved as Ambassador Animals and details their long-term management plan and educational program objectives.

AZA's accreditation standards require that education and conservation messages must be an integral component of all Ambassador Animal presentations. In addition, the accreditation standards require that the conditions and treatment of animals in education programs must meet standards set for the remainder of the animal collection, including species-appropriate shelter, exercise, appropriate environmental enrichment, access to veterinary care, nutrition, and other related standards. In addition, providing Ambassador Animals with options to choose among a variety of conditions within their environment is essential to ensuring effective care, welfare, and management. Some of these requirements can be met outside of the primary exhibit enclosure while the animal is involved in a program or is being transported. For example, free-flight birds may receive appropriate exercise during regular programs, reducing the need for additional exercise. However, the institution must ensure that in such cases, the animals participate in programs on a basis sufficient to meet these needs or provide for their needs in their home enclosures; upon return to the facility the animal should be returned to its species-appropriate housing as described above.

**Ambassador Animal Position Statement**

*Last revision 1/28/03  
Re-authorized by the Board June 2011*

The Conservation Education Committee (CEC) of the Association of Zoos and Aquariums supports the appropriate use of Ambassador Animals as an important and powerful educational tool that provides a variety of benefits to zoo and aquarium educators seeking to convey cognitive and affective (emotional) messages about conservation, wildlife and animal welfare.

Utilizing these animals allows educators to strongly engage audiences. As discussed below, the use of Ambassador Animals has been demonstrated to result in lengthened learning periods, increased knowledge acquisition and retention, enhanced environmental attitudes, and the creation of positive perceptions concerning zoo and aquarium animals.

**Audience Engagement**

Zoos and aquariums are ideal venues for developing emotional ties to wildlife and fostering an appreciation for the natural world. However, developing and delivering effective educational messages in the free-choice learning environments of zoos and aquariums is a difficult task.

Zoo and aquarium educators are constantly challenged to develop methods for engaging and teaching visitors who often view a trip to the zoo as a social or recreational experience (Morgan & Hodgkinson, 1999). The use of Ambassador Animals can provide the compelling experience necessary to attract and maintain personal connections with visitors of all motivations, thus preparing them for learning and reflection on their own relationships with nature.

Ambassador Animals are powerful catalysts for learning for a variety of reasons. They are generally active, easily viewed, and usually presented in close proximity to the public. These factors have proven to contribute to increasing the length of time that people spend watching animals in zoo exhibits (Bitgood, Patterson & Benefield, 1986, 1988; Wolf & Tymitz, 1981).

In addition, the provocative nature of a handled animal likely plays an important role in captivating a visitor. In two studies (Povey, 2002; Povey & Rios, 2001), visitors viewed animals three and four times longer while they were being presented in demonstrations outside of their enclosure with an educator than while they were on exhibit. Clearly, the use of Ambassador Animals in shows or informal presentations can be effective in lengthening the potential time period for learning and overall impact.

Ambassador Animals also provide the opportunity to personalize the learning experience, tailoring the teaching session to what interests the visitors. Traditional graphics offer little opportunity for this level of
personalization of information delivery and are frequently not read by visitors (Churchman, 1985; Johnston, 1998). For example, Povey (2001) found that only 25% of visitors to an animal exhibit read the accompanying graphic; whereas, 45% of visitors watching the same animal handled in an educational presentation asked at least one question and some asked as many as seven questions. Having an animal accompany the educator allowed the visitors to make specific inquiries about topics in which they were interested.

Knowledge Acquisition
Improving our visitors’ knowledge and understanding regarding wildlife and wildlife conservation is a fundamental goal for many zoo educators using Ambassador Animals. A growing body of evidence supports the validity of using Ambassador Animals to enhance delivery of these cognitive messages as well.

- MacMillen (1994) found that the use of live animals in a zoomobile outreach program significantly enhanced cognitive learning in a vertebrate classification unit for sixth grade students.
- Sherwood and his colleagues (1989) compared the use of live horseshoe crabs and sea stars to the use of dried specimens in an aquarium education program and demonstrated that students made the greatest cognitive gains when exposed to programs utilizing the live animals.
- Povey and Rios (2002) noted that in response to an open-ended survey question (“Before I saw this animal, I never realized that.”), visitors watching a presentation utilizing an Ambassador Animal provided 69% cognitive responses (i.e., something they learned) versus 9% made by visitors viewing the same animal in its exhibit (who primarily responded with observations).
- Povey (2002) recorded a marked difference in learning between visitors observing animals on exhibit versus being handled during informal presentations. Visitors to demonstrations utilizing a raven and radiated tortoises were able to answer questions correctly at a rate as much as eleven times higher than visitors to the exhibits.

Enhanced Environmental Attitudes
Ambassador Animals have been clearly demonstrated to increase affective learning and attitudinal change.

- Studies by Yerke and Burns (1991), and Davison and her colleagues (1993) evaluated the effect live animal shows had on visitor attitudes. Both found their shows successfully influenced attitudes about conservation and stewardship.
- Yerke and Burns (1993) also evaluated a live bird outreach program presented to Oregon fifth-graders and recorded a significant increase in students’ environmental attitudes after the presentations.
- Sherwood and his colleagues (1989) found that students who handled live invertebrates in an education program demonstrated both short and long-term attitudinal changes as compared to those who only had exposure to dried specimens.
- Povey and Rios (2002) examined the role Ambassador Animals play in helping visitors develop positive feelings about the care and well-being of zoo animals.
- As observed by Wolf and Tymitz (1981), zoo visitors are deeply concerned with the welfare of zoo animals and desire evidence that they receive personalized care.

Conclusion
Creating positive impressions of aquarium and zoo animals, and wildlife in general, is crucial to the fundamental mission of zoological institutions. Although additional research will help us delve further into this area, the existing research supports the conclusion that Ambassador Animals are an important tool for conveying both cognitive and affective messages regarding animals and the need to conserve wildlife and wild places.
References


Myers, M., Tawny Frogmouth Husbandry Resources website: [www.tawnyfrogmouth.org](http://www.tawnyfrogmouth.org) (contact SSP Coordinator for access)


