AMBASSADOR ANIMAL GUIDELINES
LAUGHING KOOKABURRA, *Dacelo novaeguineae*
Created by the Ambassador Animal Scientific Advisory Group in Association with the Laughing Kookaburra Species Survival Plan® Program
Laughing Kookaburra (Dacelo novaeguineae) 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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Appendix A: Ambassador Animal Policy and Position Statement ............................................... 27
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.

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 laughing kookaburras 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 as described above.

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).

It is understood that ambassador animals under human care in AZA institutions will be housed and cared for to a standard that allows for choice and control in the home enclosure. Providing the animal with the ability to display a full complement of natural behaviors in its home enclosure is a guiding principle of modern husbandry. Offering opportunities for ambassador kookaburras to make full use of their home enclosures with species appropriate furniture, perching and hides gives ambassador kookaburras’ choice and control in their environment. It is recommended that ambassador kookaburras be included in institutional enrichment programs and receive enrichment according to institutional safety guidelines and schedules.

Ambassador kookaburra housing should allow adequate space for flight, exercise, and the ability to display natural behaviors. Depending on institutional needs and individual temperaments, kookaburras may serve dual roles as both exhibit animals and ambassadors. Habitat size and type will vary accordingly. Larger enclosures promote a greater repertoire of species-appropriate behaviors and
provide sufficient room for flight/exercise, enrichment and mental stimulation for ambassador kookaburras, which tend to be managed singly. A minimum of 560 ft³ (8’ x 10’ x 7”) per bird is suggested by the SSP. However, as much space as can be offered is generally recommended so birds can display a wider range of natural behaviors.

Kookaburras are classic sit-and-wait predators and spend a great amount of time on prominent, open branches where they survey the ground looking for potential prey. Large diameter (greater than 1½ - 2”), natural branches that have some degree of roughness for traction are preferred. Densely perched spaces that impede flight should be avoided. Several easily accessible perches separated by as great a distance as possible should be provided to offer birds the opportunity for flight and sufficient exercise. Providing several perches of a preferred size will allow for choice and flexibility in the animals use of space. In addition, perching should be offered at several heights in the enclosure (upper, middle, and ground level). Individuals will also commonly utilize logs and other perching on or close to the ground. Larger branches ensure that a bird’s toes will remain in contact with the perching, thus reducing the occurrence of overgrown toenails. Perching should be sufficient distance from parallel enclosure walls to prevent feather rubbing/damage. Heavily planted spaces are not preferred by kookaburras and should be avoided. Open space adjacent to perches will facilitate natural predatory behaviors.

Providing birds with multiple opportunities within an enclosure to display natural behaviors will in turn, provide for the possibility of choice and control. Appropriate perching, a variety of hide spots, bathing spots and the ability to move freely throughout the enclosure are simple features that enhance the welfare of kookaburras. For kookaburras housed indoors, it is also recommended to provide a basking light to offer the bird a warmer area to perch, especially after bathing. Ambassador kookaburras 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.

Privacy barriers are typically not necessary within an enclosure, but they may help mitigate intra-specific aggression, if needed. Acoustic barriers are generally not necessary unless there are novel and disruptive sounds near the enclosure.
Natural substrate is recommended for kookaburras. Natural earth substrate covered by some type of mulch or leaf litter is suggested versus bare ground or concrete. A shallow layer of natural substrate (i.e. mulch) can be applied over concrete flooring with appropriate drainage in order to offer a softer and more forgiving surface. Any natural substrate should be changed with regularity, at least every 6 months, in order to reduce parasite loads, potential pest infestations and mold or algae growth. However, if circumstances occur which heavily soil the substrate before a scheduled routine change, the substrate should be changed out as needed.

While kookaburras are very cold tolerant, it is recommended that individuals housed outdoors have access to a sheltered space with a heat source if the temperature falls below 40°F (4.44°C). Kookaburras housed in this manner can remain outdoors at 20°F (-6.67°C) if afforded sufficient protection from wind, blowing rain, or snow. Back-up housing should be available in the event the bird shows signs of discomfort or stress, or if low temperatures are prolonged. It is recommended that the temperature of the temporary housing not reflect a significant difference to the home enclosure as this may limit the kookaburra’s ability to return to its home enclosure once the weather stabilizes.

Many ambassador birds are housed in indoor spaces adjacent to classrooms or theaters, and do well with temperatures within typical human comfort ranges. Kookaburras will enjoy the chance to sunbathe and can be acclimated to spending time in “sunshine enclosures” for monitored sunbathing.

Periodic maintenance to change perching, plants and/or replace substrate is recommended. Routine substrate replacement should be performed to maintain the health of the environment (i.e., by reducing parasite loads, reducing pest infestations, mold, etc.) and for behavioral enrichment.

Exhibits should be cleaned on a daily basis. Kookaburras often drop uneaten food items and regurgitate castings that may be concealed by vegetation, substrate or exhibit features. These items should be disposed of in order to maintain a healthy environment. Kookaburras do not typically defecate on perching, however, should this occur, feces should be routinely removed to maintain clean surfaces.

The benefits or drawbacks of mixed-species exhibits cannot be assessed or quantified for ambassador kookaburras without further study. However, it is a general assumption that mixed-species exhibits provide added complexity, stimulation, and an enhanced environment, but which species can
be housed together is dependent upon the cross-contamination concerns of the institution’s veterinary department, as well as the temperaments and habits of individual animals.

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: https://nagonline.net/guidelines-aza-institutions/feeding-guidelines/, 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.

At this time there are no known nutritional studies, established daily energy requirements, or energy requirement calculations/equations for kookaburras beyond the general nutrition information and sample diet information provided below.

When consumed whole, vertebrate prey such as mice represent a complete nutritional package that are not deficient in any nutrient, including water (Klasing, 1998). Kookaburras are generalist hunters of animals living on or near the ground (Legge, 2004). Parry (1970) found that approximately 55% of the wild diet is composed of invertebrates, mainly insects, and small reptiles. Depending on the location, other types of prey such as worms, mollusks, crustaceans, frogs, and fish are sometimes consumed. Adult and nestling birds, small mammals, and snakes are rarely taken (Legge, 2004). The diet composition of wild kookaburras from one study site (Parry, 1970) is provided in the following table:

<table>
<thead>
<tr>
<th>Food item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lizards and snakes (mainly lizards)</td>
<td>35</td>
</tr>
<tr>
<td>Insects</td>
<td>32</td>
</tr>
<tr>
<td>Earthworms</td>
<td>15</td>
</tr>
<tr>
<td>Crayfish</td>
<td>8</td>
</tr>
<tr>
<td>Human handouts (table scraps)</td>
<td>7</td>
</tr>
<tr>
<td>Rodents</td>
<td>1</td>
</tr>
</tbody>
</table>

A varied diet should be offered, but this may depend upon the preferences of individual birds. Some individuals are less accepting of certain food types (i.e. commercial meats), for example. Diets of birds in human care vary, but commonly offered items include: mice (hoppers are often preferred by many birds over adult mice), day-old chicks, commercial meat products (e.g. Toronto Feline, etc.), strips of properly supplemented beef heart, crickets (previously frozen), Zophobas spp. or extra-large mealworms, earthworms, small snakes, and lizards. A nutritionally sound, successful recommended diet, reviewed by a nutritionist, is listed in Table 2. Wild kookaburras rarely consume fish, and this component should not comprise a large percentage of the diet. Some institutions, however, offer goldfish and smelt as enrichment items.
<table>
<thead>
<tr>
<th>Food Item</th>
<th>Quantity Per Animal</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mice (hoppers)</td>
<td>10-16g</td>
<td>SM WR S</td>
</tr>
<tr>
<td>Pinkies</td>
<td>14g</td>
<td>F</td>
</tr>
<tr>
<td>Rotational Item</td>
<td></td>
<td>SMTWR S</td>
</tr>
<tr>
<td>Earthworms (RI*)</td>
<td>7.5g – 15g</td>
<td></td>
</tr>
<tr>
<td>Waxworms (RI*)</td>
<td>2.5g - 5g</td>
<td></td>
</tr>
<tr>
<td>Super/giant mealworms (RI*)</td>
<td>7g - 10g</td>
<td></td>
</tr>
<tr>
<td>Crickets (adult) (RI*)</td>
<td>7g - 10g</td>
<td></td>
</tr>
<tr>
<td>Beef heart (strip) (RI*)</td>
<td>10g - 15g</td>
<td></td>
</tr>
</tbody>
</table>

*RI: Rotational Item

Diet amounts for ambassador kookaburras may vary depending on the individual bird and the type of ambassador program in which the bird participates. Appropriate weights and healthy body condition should always be top of mind when working with ambassador kookaburras. It is recommended that regularly scheduled body scoring checks by trained keepers and/or veterinary staff to evaluate body condition be used in conjunction with weights and individual behavior to determine if diet amounts need to be adjusted. Accurate record keeping, behavioral assessments, and individualized body scoring of ambassador kookaburras are preferred methods of weight management and are recommended over the use of generic weight ranges.

Food items with poor calcium/phosphorus ratios (i.e., beef/ox heart, crickets, mealworms, etc.) should be dusted with purified calcium carbonate (CaCO3) prior to feeding. Kookaburras commonly regurgitate pellets, or casts, comprised of un-digestible components in the diet (i.e. exoskeletons, fur, feathers, bones, teeth, etc.). Pellets are formed in the gizzard and are ejected usually once a day.

Kookaburras can be maintained on morning and evening feedings, or a more variable schedule which may promote greater foraging/hunting behaviors and space utilization. Individuals easily learn to anticipate the arrival of food with predictable schedules, and their activity level may increase during those times. Uneaten food items should be removed from the enclosure in a timely manner to prevent spoilage. Locating and removing food which has been dropped in planted areas or other exhibit features is especially important in order to maintain a healthy environment.

Food can be offered in a centralized location or dispersed in multiple feed stations. Food can also be offered by hand, tossed to the animal or offered in tongs or food cup. Food dishes should be shallow (1-2" deep) and made of non-porous material for ease of cleaning and disinfecting. For health and sanitation reasons, diets are typically offered on an elevated food platform. However, some food items can be offered in a manner that may elicit more natural hunting behaviors (i.e. on top of a log, partially concealed under small branches, etc.).

1.3 Enrichment

Novel enrichment or diet items (e.g., small snakes or lizards) will often elicit natural “kill” behaviors (i.e. birds tenderizing or stunning prey with blows to a branch, etc.) that may not be seen with other food items such as commercial meat products, for example. Food items may be strategically located...
throughout the exhibit in order to create less predictable feeding patterns and increased activity. A favored food item placed on the ground will not typically last long once it is located. Spiking food items near favored perches may be less effective since kookaburras are more inclined to approach their prey from above.

Kookaburras typically hunt terrestrial prey from an elevated perch, and when not feeding, individuals will often spend time engaging with inanimate objects on the ground (e.g., rocks, sticks, leaves, etc.). This is especially true of immature birds. Providing such items in the enclosure is recommended as a source of enrichment. Other forms of enrichment include the use of water misters, yogurt cups stuffed with paper, simple puzzle feeders, commercially available parrot toys, holy moly’s filled with hay, cardboard boxes, novel substrates, invert feeders and scattered worms. Some institutions offer small live fish as enrichment items in tubs. Time spent with trainers and opportunity for free flight are excellent means of enrichment. All enrichment items should be institutionally approved prior to use.

Live invert enrichment
Photo courtesy K. Nelson

Water tub enrichment
Photo courtesy K. Nelson
1.4 Animal Training

Though most ambassador kookaburras are hand-reared, parent-reared birds with human interaction early on are also good candidates for ambassador programs. Adult parent reared birds may not be suitable for ambassador use. Kookaburras respond well to operant conditioning with a focus on positive reinforcement. In the beginning stages of training, some degree of weight management may be an option. There is no species-based or sex-based target working weight; rather the initial working weight range (see Section 1.2) should be established based on an individual bird’s behavior in combination with a healthy body condition assessment. However, as early training becomes the maintenance of a learned behavior, birds can often be worked at or very close to their ad lib weight. Though ambassador kookaburras will generally work for a variety of food items in their regular diet, some preferences may emerge, which can greatly help in early training stages and as high value reinforcers for more complex behaviors. Ambassador kookaburras may experience periods of decreased food motivation, and trainers should consider if typical program behaviors need to be adjusted during this time. For example, recalls after a free-flight behavior can become less reliable as the kookaburra may find just perching in a new environment more reinforcing than the food items being offered.

Kookaburras can be trained to willingly step up, or make a short hop to the handler’s hand. This behavior can then aid in training other husbandry behaviors such as a step up or hop to a scale perch, and a voluntary step up or hop into a carrier. Kookaburras can also be desensitized to touch in the chest area in order to assess the keel, also to the feet/toes so that voluntary nail trims can be done.
Kookaburra on scale
Photo courtesy K. Nelson

Keel check, tactile
Photo courtesy L. Evans
Kookaburras can be presented in a wide variety of program type and venues, and the potential for displayed behaviors can be just as varied. Birds may sit calmly on the hand, and are typically presented with a flat hand rather than a “raptor fist”.

Free flight in show setting
Photo courtesy D. Swank
A trained free-flight behavior is a very positive experience for a kookaburra in a program setting; however, care needs to be taken to assess the flight venue for potential dangers and distractions. In an indoor venue, dangers may include windows, light fixtures, ceiling fans, and doors that open directly to the outside. For outdoor venues such as show amphitheaters, trainers should be aware of native raptor presence and strong winds. It is recommended that telemetry be used on a free-flight kookaburra outdoors. Trainers should also consider adding a recall cue that could be utilized in a potential emergency situation, particularly for kookaburra’s free-flying outdoors. Environmental factors should be considered when choosing the cue. For example, if the kookaburra has an opportunity to fly a significant distance away from the trainer, then a cue such as a whistle or bell may be appropriate. For smaller venues, the discriminative stimulus could be as simple as a verbal cue from the trainer. Training for the recall should pair the cue with delivery of high value reinforcement. The reinforcement could be a favored food item that is only presented with the recall cue (i.e. pinkies are a preferred food item of the bird and so reserved only for recall training), or the reinforcement could be a favored food item presented in a different manner (i.e. a whole hopper as opposed to small pieces of hopper). It is also important to note that the recall will be more effective if multiple trainers can establish the behavior. Though the kookaburra is likely to develop a different degree of bonding with individual trainers, in an emergency situation, the bird has the best chance of being returned to safety if the recall behavior has been trained non-discriminately.

Another commonly trained presentation behavior is calling on cue. Trainers can simply scan for the call when the bird produces it naturally and reinforce to capture that behavior. Often birds can be stimulated to call in response to a trainer’s imitation, or an audio playing of an actual kookaburra call.

The prey “tenderizing” behavior is yet another crowd-pleasing demonstration. Many kookaburras will instinctively smack a toy rubber snake or lizard against a perch or stump, and trainers can then
work to have the bird willingly let go of the toy item in exchange for a primary reinforcer. Care needs to be taken, though, if an individual kookaburra is prone to ingesting novel objects, and the snake/lizard toys offered should be large enough to not be swallowed. The toy should also be assessed for any small parts that could be broken off and ingested.

1.5 Social grouping

Kookaburras are a very social species and are most commonly kept in male/female pairs or, to a lesser degree, family groups. There is limited experience with the establishment of single-sex pairings or trios. When isolated from stimuli that may trigger reproductive activity, it appears that same-sex siblings can remain together long-term.

Introducing same-sex kookaburras (related or unrelated) that have not been raised together from hatching should not be attempted due to the territorial nature of this species. Aggression and physical injury will likely occur when introducing same-sex birds. Mal-imprinted individuals used as ambassadors are typically hand-reared and less adjusted to living in a social setting with con-specifics. Introducing hand-reared birds to con-specifics may require more time and effort, and in some cases may be unsuccessful depending on the extent of mal-imprinting.

In the wild, kookaburras are cooperative breeders, and offspring (typically males) often remain within the natal territory and help their parents defend territorial boundaries and assist in the rearing of subsequent broods. Female offspring typically leave their natal territory within their first year or may remain with their parents, but they are often not as active or helpful as sibling males in assisting the adults.

Few zoos have attempted to maintain family groups. Typically, offspring are removed prior to the next breeding season. Offspring gender, exhibit size (the larger, the better) and the temperament of the parents toward offspring are key to the success or failure of establishing a family group, and great care should be exercised when attempting this type of social environment in human care. In order to establish and maintain the social hierarchy within a family group (where the adult pair is dominant over all offspring, and older offspring are dominant over younger siblings), “beak-wrestling” and displacement from perches (between adults and offspring as well as between offspring) are normal, and sometimes common, events. Severe aggression resulting in physical trauma, or constant displacement behaviors towards offspring (or offspring dominating adults), are not normal and may be indications that a pair/family group is incompatible. In this situation, offspring should be quickly removed as those behaviors persist. Once they are removed, offspring should not be reintroduced to the adult’s territory. If possible, juveniles that are removed should be kept within calling distance from the adults. Considering the kookaburra’s social nature, maintaining single birds is generally not desirable except for mal-imprinted, un-socialized ambassador individuals.

Kookaburras are highly territorial, and spend considerable amounts of time maintaining the boundaries of their territory. This is typically achieved by pair or family group chorusing and by physically patrolling territory boundaries to deter encroaching birds (con specifics and other avian species considered to be a threat to the territory). In some situations, however, this behavior may not be seen at all (i.e. indoor exhibits). Both sexes of a pair, and all members of a family group, play a role in defending their territory. When housing more than one pair in close proximity, preventing visual contact may lessen the constant physical patrolling related to territorial defense. Housing established pairs or family groups in enclosures within sight of each other is not recommended, as this will undoubtedly result in pairs or families being overly-active in maintaining their respective territories, possibly resulting in greater stress and anxiety. Maintaining pairs or family groups in exhibits within aural range should not be detrimental and this will likely result in greater chorusing between the two “territories.”
1.6 Signs of stress

When surprised, kookaburras become motionless, open their bills as wide as they can and raise their short crests up, giving the head a peculiar peaked shape. In this position, they look large and menacing to a potential threat. When a predator is sighted, kookaburras often assume a stereotyped “stick pose” and issue a guttural *kooaa* warning call. The bird will immediately become as inconspicuous as possible, point its bill toward the threat (i.e. an avian predator), and watch it until it departs. Other signs of stress while in hand or on a program might include: excessive flightiness, holding feathers slicked down or close to the body, wing-droop, and/or open-mouth breathing.

2. PROGRAMS

2.1 Program types

Ambassador animals are utilized in many ways and many settings to engage, educate and create connections with zoo visitors.

Kookaburras can be presented both on and off zoo grounds in both formal (classrooms or shows) and informal (keeper talks, chats, or walk grounds) programs. Kookaburras are presented indoors or outdoors with proper training and attention to the safety of the animal in each environment. They are a dynamic species that can be enjoyed by audiences of all ages, and have several natural behaviors that are trainable for programming (i.e. flight, prey stunning/tenderizing, calling). In addition, the Laughing Kookaburra SSP collaborates with the ambassador community, thereby providing a sustainable option for the acquisition of the species.

2.2 Temperature guidelines

The temperature guidelines for ambassador kookaburras depend on the individual bird, the environment to which they are currently acclimated, the temperatures/environment where the program is located, and the guidelines set by the management team at the institution where the bird resides. Depending on the situation, special caution should be taken at temperatures above 90°F (32.2°C) and below 40°F (4.4°C). If the kookaburra is being flown, or presented in direct sunlight, overheating may occur even at a temperature lower than 90°F.

Observe individual kookaburra behavior closely in each environment. If the program is not held in a climate-controlled environment, special equipment may be needed to ensure the safety and health of the ambassador (a shade structure or portable heater). The management team in your ambassador department can help to address any logistical needs or potential risks that may arise in each program environment.

2.3 Transport

Consideration needs to be given to the means in which an animal will be transported both within the institution’s grounds, and to/from an off-grounds program. 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).

Kookaburras can be easily trained to enter a transport carrier voluntarily from their home enclosure. They can also be trained to allow keepers to manually pick them up and place them into the carrier (this is typically paired with a verbal “step-up” cue).
The carrier size, perching, and substrate will vary with the preferences of each ambassador kookaburra. Carriers can be purchased from various retailers or can be custom made at your facility. As with any animal, finding the perfect transport set-up can take time, evaluation, and tweaking. It is therefore difficult to recommend transport parameters as they can be very dependent on individual preference. Carriers for kookaburra range from commercially available 100 size vari-kennels to custom wooden boxes.

The use of a transportation carrier is a safe and easy way to transport ambassador kookaburras to and from programs, both on and off grounds. Transport carriers may be covered during transport and while the carrier is in staging for ambassador use. Carrier covers can be as simple as a towel or sheet or as elaborate as custom crate covers. Care should be taken to ensure adequate ventilation is provided while the carrier is covered. Again, each kookaburra is an individual and may react differently to being in a covered carrier. Some birds seem to prefer coverings of light-filtering shade cloth while others prefer to not be covered at all. It is important for handlers to assess each birds’ preferences and modify the transport set-up accordingly.

Substrates used in transport carriers for kookaburra include carpet, reptile carpet, newspaper, and astroturf. Some birds prefer to utilize a perch during transport. A 1” wooden dowel or similar diameter natural perch screwed into the carrier wall works well for this purpose. A covering of astroturf or smooth carpet will allow for more traction for the bird during transport.
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 medical staff to identify the best chemical compounds for your situation. As perches are porous, care needs to be taken to replace, rather than disinfect, soiled perches to avoid chemical irritations to the foot pads.

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.

An animal’s ability to exhibit choice and control in its home environment is believed to be an indicator of positive welfare. Institutional policy on the use of ambassador animals will dictate the use of choice and control and voluntary participation options for individual ambassadors during programs.
It is recommended that ambassador kookaburras be taught to “step-up” from their home enclosures and transport carriers. However, it may be incorrect to assume that, in “stepping up” the kookaburra is volunteering to participate in a particular program. Examples of programs that ambassador kookaburras participate in include off-grounds events, stage shows and pathway chats. Unless a different signal, such as a particular carrier or a specific handler, is used for each kind of event, the bird has no way of knowing for which event it is being asked to participate.

All ambassador kookaburras are capable of showing signs of unease while in hand. Handlers should be fully trained on the stress signals of individual birds. Examples of typical kookaburra stress behaviors are discussed in Section 1.6; however, stress behaviors of an individual kookaburra will be best addressed by the primary trainer of the bird. Handlers should be able to detect signs of stress before the behaviors escalate and return the ambassador to its carrier or home enclosure. In this way, handlers can provide for the positive welfare of the kookaburra while on program.

Some birds are highly anticipatory and may benefit from being uncovered prior to use. Removing the cover may allow for the bird to acclimate to known surroundings, be it stage, pathway or classroom and perhaps better prepare for expected 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 (AZA Accreditation Standard 1.5.5).

The handler of ambassador kookaburras should be aware of visitor interaction 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 kookaburra will help ensure a positive interaction for everyone.

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, and disturbances.

Using hand-washing 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.

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 of 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 visitors and audiences to take action to protect the species and wildlife in general.

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

Outcome 1: Species information

- The laughing kookaburra is native to woodlands and open forests of Australia and is the largest member of the kingfisher family.
- Laughing kookaburras are easily recognized by their distinctive call, which can sound like human laughter. Family groups of kookaburras can be heard using this loud call to establish their territory, primarily at dawn and dusk.
- Laughing kookaburras are sit-and-wait hunters and eat primarily insects, reptiles, frogs and rodents. Presenters can relate the hunting habits and ecosystem role of kookaburras to native kingfishers.
- Although listed by IUCN as a species of Least Concern, laughing kookaburras face a number of threats in the wild, including habitat loss, wild fires, competition from introduced species, human-wildlife conflict, and injuries or fatalities caused by domestic pets.
- Kookaburras are dependent on large tree hollows in which they nest and if that resource is unavailable, pairs will abandon their territory. Habitat loss/modification/fragmentation allows for easier access to available nesting areas by non-native, aggressive species such as starlings and honeybees. Presenters can share the North American example of European starlings introduced in North America having devastating effects on cavity nesting species such as woodpeckers.

Outcome 2: Animals in human care

- Presenters should discuss the importance of training, enrichment, establishing proper handling protocols, and the time dedicated by staff to building relationships with the animals in their care in order to ensure animal comfort and safety.
- It is important to stress the difference between behaviors of animals in their native habitat versus those in human care, emphasizing that wild animals should not be approached, but rather observed and appreciated from a safe distance.
- Visitors and audiences will often want to know how the ambassador kookaburra came to be in human care, so presenters should be familiar with the acquisition history of the bird.

Outcome 3: Empathy development

- Setting visitor or audience expectations before presenting the kookaburra is an opportunity to foster the development of empathy. The presenter should let the audience know what to expect from the interaction with the kookaburra and how it might react to the audience.
- The audience can start to connect with the kookaburra by the presenter demonstrating similarity in how new circumstances may be perceived. For example, just as loud noises and commotion might make some people startle or feel nervous, the same can be said for an ambassador animal. This helps to establish behavior expectations from the audience in order to maintain the comfort level of the animal.
Empathy can also be developed when a presenter draws out behavior traits of the kookaburra that are relatable to the audience. This can be both at the species level (i.e. kookaburras love to take baths, or kookaburras like to hang out with their families), and at the individual level (i.e. Taz the kookaburra loves to play with toys that make noise).

Referring to the kookaburra by name, and explaining how the bird got its name, can also help the audience to feel a connection.

Including natural behaviors of the kookaburra during programming, such as flight or prey tenderizing, can help to instill a sense of awe in audiences and create a memorable experience that may later be shared with others.

Outcome 4: Conservation action

- In areas where wild kookaburras become acclimated to urbanization, they can become a nuisance by stealing food from barbecues or picnickers. This behavior is often complicated in areas where humans intentionally offer food scraps to kookaburras. Parallel stories can be told about nuisance black bears and other wildlife in North America as a result of human feeding and improper trash disposal. Encourage audiences to avoid interacting with or feeding wildlife, and to dispose of and secure trash properly.

- Cats and dogs cause injuries and fatalities to wild kookaburras in large numbers. Presenters can relate this to the millions of birds and small mammals killed by both domestic and feral cats each year in the United States. Encourage audiences to keep their pet cats indoors, and to support humane efforts that work to reduce the number of feral cats.

- Because insects make up a large portion of the kookaburra diet in the native habitat, they are susceptible to poisoning by pesticides, as are many North American species. Encourage audiences to explore natural pesticide options for their home lawn and garden, such as soap oil sprays and diatomaceous earth.

- Visitors can also help by supporting the conservation efforts of AZA zoos and aquariums.

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.

Program use of all ambassadors should be carefully tracked, and assessed side by side with the physical condition, health, and behavioral repertoire of each individual.

The extent of use will be guided by institutional needs and policies. Reported use parameters for this document vary from one 20-minute presentation a day to three 30 minute presentations per day. Time away from home enclosures varies from 2 hours to 5 hours. Weekly use varies from five episodes to fourteen.

As with all ambassador animals, kookaburras will need breaks from presentations; however, the length of that break time is highly variable based on individual bird tolerance and type of behavior employed during the presentation. For example, a kookaburra demonstrating a quick flight in a show may only need minutes to regain necessary food motivation. A kookaburra that has been held on hand for an extended period of time may need 30-minutes or more in order to be ready to work again.
Handlers who know their ambassador animals well and are able to identify signs of stress (Reference Section 1.6) are the key. Trainers need to assess their bird’s behavior and food motivation closely, and decide if modifications to typical program behaviors need to be made. Many kookaburras 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.

Kookaburras are territorial predators. Some ambassador kookaburras may be defensive towards the presence of other birds. Some kookaburras are reported to be reactive against specific triggers. Individual space parameters and known triggers should be discussed during handler training.

3.2 Handlers and Handler Training

Animal care and education staff should be trained in ambassador animal-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 ambassador animals and be 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).

Handlers are responsible for the safety of the kookaburra, the guests, and themselves during a program. It is recommended that injury response protocols be included in animal handling training. If an injury occurs to an animal, it should receive medical attention as soon as possible. The injury may not seem significant, but to ensure continued health, one should seek medical counsel.

Kookaburras have the potential to inflict human injury via bite or striking while in flight. It is important that all those handling ambassador kookaburras receive training on institutional policies regarding injuries to guests. An abbreviated form of an institutional injury response protocol may be included in emergency outreach documents for quick review. Institutional policies and protocols should be followed in the event of an injury to a guest.

Kookaburras that are fed by hand for training purposes are very focused on the hand movements of their handlers. In order to avoid confusion on the bird’s part, and a potential bite, handlers should be aware of their hand motions, particularly if food reinforcement is not being offered.

Institutional policy should be followed in the event of an injury. Relationship building efforts should be made on the part of the handler before utilizing the kookaburra in a program setting. Working the bird on behaviors it is very accustomed to, such as step up and kennel, and being able to deliver reinforcement creates positive first steps in training a new handler. While kookaburras generally work well for a number of different people with basic behaviors, they may discriminate amongst handlers when it comes to more complex behaviors. A primary trainer should always assess a new handler’s progress where complex behaviors are concerned.

Any animal can pose some degree of zoonotic risk to a handler; therefore, proper hand washing and sanitizing protocols should be followed after handling any ambassador animal and/or their food items.

Handling consistency amongst those who work with ambassador kookaburras 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 for handling an individual kookaburra (keeping in mind that handling techniques may differ from bird to bird), 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 kookaburra from home enclosure
• Proper placement and removal of jesses, if applicable
• Removal and return from transport carrier
• Safely handling and presenting the kookaburra for educational programs
• Recognizing the signs of stress for both the species/and individual animal
• What to do in the event of an animal bite or other human or animal emergency
• Response/recovery in the event of fly-off
• Outreach parameters if applicable

Another important aspect of handler training is the proper documentation of animal behavior records. An animal’s welfare can be greatly enhanced if all members of the ambassador animal care team and other handlers adhere to established record-keeping guidelines. Evaluated behaviors should include not just show and/or programming records, but also basic daily husbandry behaviors (i.e. step up, scale, kennel, and tactile). Weight and body condition score should be regularly recorded and evaluated in the context of training and behavioral data. This type of record-keeping, if reviewed regularly by a primary trainer or manager, can help to identify breakdowns in behavior quickly, and determine whether the behavior breakdown is occurring for a majority of handlers, or specific individuals.

If a facility decides not to flight-train an ambassador kookaburra for presenting purposes, it must consider other options for handlers to safely conduct programming with the bird. Kookaburras can be trained to station on hand or a perch during programs. Facilities with non-flight-trained ambassador kookaburras should consider that programming occur only indoors and in environments familiar to the bird, so that should the bird be startled from its station, retrieval can hopefully be safe and quick. Consideration should be given, though, to safety risks both to the kookaburra, and potentially audiences, in this situation. Another option for presenting a non-flight-trained kookaburra would be to use a display carrier of sorts.

Before implementing jesses as a means of flight-management during programming, many factors should be considered. First, the use of jesses on any bird species comes with some risk of injury to the bird. However, non-raptor species, such as kookaburras, are potentially more susceptible to injury in a bating situation due to their relatively weak feet and legs (in comparison to a raptor). Facilities should use sound judgement when making the decision to use jesses on an ambassador kookaburra, and it is recommended that handlers receive specific training on interpreting the use of jesses to audiences.

If using jesses, the first line of defense in reducing the risk of injury lies in the training of the prospective handler. Each handler should be fully trained in the use of jesses. This includes the proper placement and removal of jesses, procedures to follow if the bird should bate, and emergency handling techniques to prevent injury to a spooked or extremely agitated bird. The use of plush toys can be very helpful in the early stages of handler training. Jessing, bating, and emergency protocols can all be practiced utilizing the plush. The use of videos can also be extremely helpful during this early stage of handler training. Once familiar with all protocols and emergency procedures, the handler may advance to working with the bird under supervision until fully trained.

Another risk-mitigating factor when considering the use of jesses is to give serious thought to the temperament of the individual kookaburra. A stoic bird that is not unnerved by noise and commotion would be a more appropriate candidate for jesses. Birds that are high-strung and easily startled will test the jesses and may be more susceptible to injury.

If it is decided that jesses will be used, it is recommended that they be introduced to the kookaburra at a very early age. In addition, it would be ideal to train the bird to accept the jesses being applied/removed. The jesses should be removed when the bird is in its home enclosure, otherwise
there is serious risk of entanglement and injury. A one-strap jess with snaps for securing around the leg is a good option for this type of management. Another option is to use a grommeted anklet through which jesses can be attached/removed for handling purposes. Commercially available bungee leashes may also be considered for use with jesses, as they can help to provide for some stretch and pressure relief if the bird should bate.

Wing clipping could be considered another method of restricting flight if managing a flighted kookaburra is not possible. However, a wing-clipped kookaburra is at greater risk of injury from falls or crashes should it attempt to leave the hand or perch. The Kookaburra SSP does not consider wing-clipping to be a preferred form of flight restriction. Pinioning should never be considered as a means of flight management for kookaburras.

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 annually. Handler competency should be evaluated, and concerns with training performance should be addressed. If re-training is necessary, the ambassador animal manager may decide to revoke handling privileges until re-training is successful. A sample rubric for animal handling certification can be found in Table 3.

Consistency in handling is a critical component in providing for the positive welfare of ambassador animals. There may be multiple handlers handling multiple ambassadors in a wide array of program types and venues. Monitoring and evaluating those who handle ambassadors can become problematic. It is recommended that the manner of evaluation as well as a schedule of evaluation be included in a written animal handling policy.

It is also recommended that the written policy includes the steps to be taken if a break in protocol or a mishandling occurs. For example, a mishandling with no injury to guest or animal may require a simple refresher whereas a blatant break in policy that results in injury may, depending on institutional policy, require retraining from square one, disciplinary action or a removal from the animal handling team. It may prove helpful if these actions are written in the policy and are included as discussion points in the training process.
Table 3. Kookaburra Handling Certification

<table>
<thead>
<tr>
<th>Good</th>
<th>Better</th>
<th>Best</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trainee observes multiple sessions with experienced handler/certified trainer</td>
<td>All of the steps included in “Good”, plus: 1. Trainee given written protocol to review prior to first handling 2. Handler assessed and scored using institutional handling rubric (sample below)</td>
<td>All of the steps included in “Better”, plus: 1. Handler must handle kookaburra a minimum of once/month (or more depending on individual handler and bird)</td>
</tr>
<tr>
<td>2. Trainee then handles kookaburra for multiple sessions with experienced handler</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Trainee assessed yearly on skill and ability by experienced handler</td>
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**Comfort/Confidence**
- **2 = Major mistakes, issues and/or concerns** (does not currently have the handling skills or comfort level currently needed for handling a specific animal or animals)
- **1 = Minor mistakes, issues and/or concerns** (needs more training before moving forward on a specific animal or animals)
- **0 = No mistakes, issues and or concerns** (able to move forward with handling/certification)

**Attitude**
- **Handler demonstrates a lack of respect for animal or safety and is not acceptable to feedback.**
- **Handler shows respect for animal and accepts feedback.**
- **Handler demonstrates great care and respect for animal and seeks out feedback.**
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Difficulty Level</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<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>
<td>Handler had no difficulty properly removing animal from holding.</td>
</tr>
<tr>
<td><strong>Keneling</strong></td>
<td>Handler was unable to properly set up travel carrier.</td>
<td>Handler had some difficulty setting up travel carrier.</td>
<td>Handler had no difficulty setting up travel carrier.</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 handle.</td>
<td>Handler had some difficulty while presenting animal, but followed handling guidelines.</td>
<td>Handler had no difficulty while presenting animal and 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>
<td>Handler had no difficulty properly returning animal to holding.</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 willingly accepts feedback. Handler poses a potential risk to animal/handler/public safety.</td>
<td>Handler has no difficulty understanding and following handling policies. Handler is proficient in this area.</td>
</tr>
</tbody>
</table>
References


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 & 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.

**Acknowledgements**

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Association of Zoos and Aquariums
References


