

## **Suggested Guidelines for Bird Enrichment**

Birds are a truly unique and interesting group of animals. They come in a wide variety of shapes, colors, and sizes. Over time they have evolved into formidable creatures that inhabit some of the harshest environments on earth. Creating diverse and interactive exhibits for captive birds can have positive effects on both their mental and physical well being.

### **Exhibit Enrichment**

When designing an exhibit with enrichment for birds or any other animal, one of the most important factors to consider is the species' natural history. Is the bird a predator or a prey animal? What are its feeding strategies? Does it live in large colonies? Will it tolerate other species and if so, which species? Is it capable of flight or has it lost the ability? Does it spend time in or near water? These are just a few questions that one might ask when planning an exhibit. With this in mind one can begin to construct an exhibit best suited for a particular species.

When dealing with pre-existing exhibits, providing new enrichment may be more challenging than building it into a new exhibit. It is important to look at the birds as individuals and how they acclimate to their environments in the wild. Providing flighted birds with perches at varying heights, widths, and lengths is a good place to start. Potted plants and trees can be used for this purpose. They also can be used as screening from the sun, inclement weather and conspecifics. A variety of substrates such as sand, peat moss or dirt can be offered for birds that take dust baths. Water is also an important element to be considered. Pools or shallow pans can be provided for birds that bathe in water. Sprinklers can also be run periodically in the exhibit or the birds can be misted by hand. Providing enough space and areas to retreat to is also essential, especially when dealing with mixed species exhibits.

Nest construction can be a time consuming project for birds during the breeding season. A variety of nesting sites and features such as nest boxes, logs, mud flats, platforms or burrows that can be built into the exhibit can promote natural nest building or excavating behavior. The time spent and experience of building a nest or excavating a nest log can be essential to successful breeding. Slightly damp wood shavings or mulch can be provided before the onset of the breeding season to give the birds the opportunity to perform the natural behavior of preparing the log for nesting.

Enhancing a bird's living quarters is only one aspect of a successful enrichment program. Utilizing the components of a bird's daily diet offers a number of additional enrichment options.

### **Dietary Enrichment**

Incorporating a bird's diet into its daily enrichment is an easy task. One can simply look to the bird's natural feeding strategies and behaviors for ideas. Examining a bird's beak and feet can often be helpful in determining how it finds, catches or obtains its food. Birds use

their beaks to tear flesh, crack open nuts, filter, probe, peck, dabble and drill. Their feet are used to catch, kill, and flush prey from hiding places. Providing live prey items such as insects, fish, lizards and squid will allow birds to exhibit natural foraging behaviors. PVC slow release feeders are an inexpensive and easy way to periodically offer crickets and mealworms in an exhibit. The PVC can be camouflaged by burning the outside with an acetylene torch to give it a more natural "log" like appearance (Caution: the torch should only be used in a well ventilated area or outside). "Live rocks" covered with barnacles, seaweed, mussels and limpets have been used to enhance exhibits housing sea and shore birds which often spend time picking and probing at the rocks and feeding on the creatures hidden inside. Presenting food items in a new and interesting manner is an effective way to increase foraging. Scattering food items throughout the exhibit, piercing produce on tree limbs and breaking up feeding times during the day can be helpful. Offering flowered browse to nectar feeders can achieve the same goal. Rats or fish can be hidden inside PVC pipes, burlap sacks or Kong toys, or frozen in a block of ice for bird of prey species to provide more stimulation during feeding and foraging activities.

Additions to a bird's daily diet should be made only after consulting with the zoo's nutritionist or other appropriate manager. However, it is generally best to work within the framework of the normal daily requirements. Overfeeding can cause obesity and other related health problems. Providing too many "treat" items can also lead to the refusal of essential dietary components.

Utilizing a bird's exhibit and daily diet for enrichment purposes is a fairly simple task. However, they are not the only enrichment options available. Many birds have a curious and even playful nature. To encourage them to display these behaviors, novel items may be introduced in the exhibit.

### **Novel Enrichment/Social Enrichment**

Providing birds with novel items to "play" with, manipulate and investigate can be a simple venture. Items such as snake sheds, feathers from other birds, rubber toys and wooden blocks can be added to the exhibit depending on the type of species housed. This method of enrichment can be taken a step further by burying or scattering items in a variety of substrates, including shaved ice, bark chips or bramble piles, providing a greater challenge for the birds to discover or remove the objects.

Offering a variety of nesting material is another important aspect of enrichment. Some birds may prefer sticks while others may prefer mud; others will use almost anything offered when building their nests. Because nest building is a natural and time consuming activity it may be viewed as a form of enrichment in and of itself. Therefore, it is often a good idea to allow birds go through the process of building a nest even if they may not be allowed to incubate eggs that may be laid.

Housing birds in mixed species exhibits or in colonial groups can be enriching to some birds. Playing recorded vocalizations of other birds is another enrichment option to consider.

In addition to natural social situations, operant conditioning can be a rewarding form of enrichment. Over time, birds can learn to respond to a number of cues and commands. Animal training programs should be well thought out and have attainable goals. Those attempting to train birds should not do so haphazardly. Poor education on the process of operant conditioning can result in a frustrated trainer and an aggressive bird.

Psitticines especially tend to benefit greatly from enrichment. If not mentally stimulated they may begin to display a variety of undesired, often stereotypic behaviors, such as feather plucking, or other forms of self-mutilation. These animals can be easily enriched with cardboard boxes, wooden blocks, or a variety of browse to chew and destroy.

### **Safety Considerations**

There are a number of safety issues to consider in avian enrichment. It is important to examine items that may be placed in an exhibit from many different angles. An item might be intended for a specific use, but the birds might use it in an entirely different manner. Before a new item is placed in an exhibit it is important to determine whether the birds will still be safe if a bird dismantles it or tears it into small pieces.

When using ropes or fibers for nesting material or for hanging novel items it is important to ensure that the birds cannot become entangled. Ground dwelling birds can often get nesting fibers twisted around their feet. If not caught in time, the blood supply can be cut off leading to the loss of appendages.

Veterinarians or other managers should be consulted before new items are added to the diet. Foods that are high fat should typically be avoided (this may not apply during winter or breeding season). It is also important to make certain that any food items offered, including browse, are not toxic to the birds. It is best not to use a questionable item until it has been properly identified as nontoxic. Food items should also be cut to the appropriate size for different species of birds. For example, large mealworms have been known to bite (from the inside) small birds that swallow them without crushing the worms' heads first. If mealworms are offered to small birds such as weavers it is important to first cut the worms into small pieces or crush the worms' heads first.

Novel items such as feathers and snake sheds can be heated in a microwave or autoclaved for a few minutes to kill any parasites that may be present. Freezing items for several days may also have the same effect.

Items that may be chewed on such as wood or rope should be natural and untreated. The same applies to nesting material. When supplying birds with cardboard boxes to tear apart it is imperative that all tape and staples are first removed.

Housing different species together can provide enrichment for many birds but may also create problems. It is important that each species has its own feeding station and areas to retreat from the other birds. Newly introduced birds should be closely monitored for any

signs of aggression toward or from cage mates. It may become necessary to separate birds if serious harassment occurs.

The following are examples of enrichment that may be appropriate for birds, as well as an overview of safety issues that should be considered in the implementation of enrichment.

### **Exhibit Enrichment**

- Areas that promote free flight.
- Variety of perching sizes and locations (re-perching periodically can stimulate activity) and sunbathing perches.
- Live plants.
- Plant trimmings for shade, screening and rain cover.
- Grass flats.
- Water features: deep or shallow pools, running water, moats, sprinklers, etc.
- Variations in ground level (i.e., sentry mounds).
- Variety of substrates.
- Sand, dirt, peat moss for dust baths.
- Nest boxes, logs, platforms, burrows (birds can “excavate” their own nest log if shavings or mulch are placed inside).
- Mud for nest building.
- Variety of feeding stations.
- Areas for escape from aggressive conspecifics or other species in mixed exhibits.

### **Dietary Enrichment**

- Live insects in PVC feeders.
- Fruit fly generator.
- Fruit kabobs.
- Whole fruit.
- Variety of produce.
- Corn on the cob.
- Pinecones or sticks smeared with peanut butter or honey then rolled in seeds.
- Non toxic flowering browse.
- Live fish, squid, lizards, etc.
- Carcass feeding.
- Rawhide.
- Ice blocks with food frozen inside.
- Rat in Kong Toy.
- Several feedings throughout day (unpredictable times).
- Scatter feeding.
- “Live” rocks (covered with barnacles, seaweed, mussels, limpets).

### **Novel Enrichment/Social Enrichment**

- Non toxic flowers and browse.
- Feathers.
- Snake sheds.
- Nesting material.
- TV
- Wooden toys.
- Cardboard boxes.
- Water play: wave machines, misters, running water, pools, etc.
- Rubber toys.
- Behavioral training.
- Group exhibit for colonial animals.
- Mixed species exhibit.
- Recorded vocalizations of same or similar species.
- Scent trails for scavengers and carnivores.

### **Safety Considerations**

- Animals can become entangled in ropes, nesting material or novel hanging items.
- Plants or parts of plants may be toxic to some animals.
- Dietary enrichment can lead to weight gain if not properly managed.
- Animals may become aggressive toward each other in mixed species exhibits.
- Animals can choke on large pieces of food.
- Live insects such as mealworms have been known to bite small birds that swallow them; whole worms should be killed before being offered to small birds.
- Parasites are a potential risk with some enrichment; items such as feathers or snake-sheds should be sterilized (heated, frozen, autoclaved) to eliminate the risk of parasite contamination.
- Foreign items, (pieces of toys, bedding material, etc.) if ingested, can cause impaction.

Bird guidelines compiled by Kristi A. Martin, Keeper, Oakland Zoo

Reviewed by:

Kelly Messenger, Keeper, Tulsa Zoo

Rebecca Schaefer, Keeper, San Diego Wild Animal Park