

Nutritional Guidelines for Rehabilitation

Since birds have lost the use of forelimbs to the amazing ability of flight, their beaks have evolved into a unique multifunctional tool. Beaks help the bird gather and capture food, communicate, groom themselves, defend territories and to attack rivals just to name a few.

All birds have certain characteristics in common such as feathered wings (even though not all birds are flighted), laying eggs and all birds have beaks. Bird beaks are an extension of their skull. They are made of keratinized skin (similar to human fingernails) that forms the outer covering of the beak. The tip and edges of the beak wear down with use, but is constantly renewed.

Different types of birds eat different types of food. The length, thickness and shape of the beak is indicative of the birds' diet and method of eating. **The shape and size of birds beaks can give us a clue to its main source of food and to the type of dishes that should be used in feeding and watering them while in rehabilitation.**

Fish eating birds (piscivores) that hunt by stalking and striking or by surface diving and spearing their prey have a long sharp beak, i.e. Herons and Egrets, that might be serrated, i.e. Anhingas and Mergansers, or hooked like the Cormorants to grip slippery fish.

The Pelican's method of eating fish is diving from great heights using their momentum and weight to go deeper into the water. They have developed a net-like hooked beak system with a large skin fold attached to the mandible which expands into a deep pouch to hold the fish it scoops up.

Flamingos and some ducks which filter feed have rows of horny plates inside their beak to strain tiny water plants and animals from the water. Other ducks that feed in murky water have touch receptors in the edge of their bills to help them detect their food.

A short, strong, cone shaped beak is found on birds that feed primarily on seeds (granivorous). The beak is used to crack seeds, the size of the beak indicating the type of seeds that the bird eats. For example Grosbeaks that eat large, hard seeds will have a very large and heavy cone shaped bill while Finches who feed on small weed seeds will have a small cone shaped beak.

Thin, slender, pointed beaks are found mainly on insect eaters. They are used to pick insects off leaves, bark and the ground; i.e. warblers and chickadees.

Birds that eat flying insects by means of aerial foraging have wide gaping beaks with bristles which they use like a net to catch prey while in flight; i.e. Nighthawks, Whip-poor-wills and Swallows.

Hummingbirds have a needle-like beak that is needed for nectar feeding. The length of the beak determines the size of the flower the birds feed on. Some of these birds' beaks are specialized even further and are curved to fit a specific flower.

Aquatic invertebrates in the sandy substrate of shallow waters are the main food of shorebirds such as Sandpipers, Snipes and Curlews. This feeding method requires a long, slightly narrow beak. The tips of these beaks are very sensitive so the bird can feel when it touches food.

Birds of prey such as Hawks, Owls, Kites and Eagles have sharp curved beaks paired with very powerful feet and long curved talons for seizing prey. Their beaks are strong enough to bite into the skull or neck and tear the prey into smaller pieces for easier swallowing. Snail Kites have an even more specialized hook at the end of their beaks that is utilized for pulling out their specific prey of apple snails from their shells. Falcons have an added "tooth" on the side of their beaks to add cutting power.

Omnivorous birds such as Grackles, Jays and Ravens, have a beak that is a mixture of the insectivores and granivores; Long enough to probe the ground for insects but stout and strong enough for feeding on seeds and small invertebrates.

Feeding during rehabilitation should be as close to the animal's natural diet as possible. If the diet is not presented the way the animal would find it in nature it may not be recognized as food. An example is feeding whole rather than cut up prey. Shrikes, for example, should be fed whole mice rather than cut up mice when they first arrive. Barbed wire or another sharp object should be placed in with the prey so the bird can feed as it does in the wild by spearing the prey on the sharp object while they use their beaks to tear it up. Live fish should be fed when fish eating birds first arrive then weaning gradually to dead fish. Live fish are fed until the bird is eating well, then offer dead and live fish together. When the bird is consuming both live and dead you can give only dead fish. When feeding only dead fish it is important to monitor the bird to make sure the fish are continuing to be eaten. With animals that feed both in and out of the water, such as Coots and Moorehens, it is important to provide both a wet dish and dry dish of food. When feeding insectivores, feed mealworms, wax worms and frozen crickets along with a high quality/high protein dog food (i.e. Purina Hi Pro and Eukanuba). This high protein dog food is to gut load the worms, to indirectly benefit the animal being fed. Mealworms and crickets are low in protein and calcium. These insects are typically not fed by the distributors. Potatoes found in the boxes of insects are placed solely for maintaining moisture so the insects do not dry up before they reach you. The potatoes do not get eaten by the insects. The insects need to be fed at least 48 hours to properly gut load prior to feeding them to the animals.

Size of dishes for feeding and watering is very important for the ability of the birds to get the food and for the safety of the birds as well. Fish eating birds such as Anhingas, Cormmorants, Pelicans and Green Herons will perch on the dish to catch their food. The dish should be broad bottomed, non-tipping, wide and deep enough for the long beak. Herons, Egrets, Storks, Ibises, Cranes and Limpkins all have very long beaks and the dish

should be deep accordingly. Ducks that are dabblers or use surface foraging techniques, need their food in water. The dish should be non-tipping and another dish with only clean water should be provided as well. Doves and pigeons which feed almost exclusively on seeds, need a shallow tray for food and a shallow dish for water. They must be provided with a dish of grit to aid in the grinding of seeds in their gizzards. Tree climbing birds such as Woodpeckers, Nuthatches, Creepers and Sapsuckers should be provided with hanging bark smeared with a mixture of one part peanut butter with two parts wheat germ in which insects can be adhered to. Songbirds range in sizes from tiny 3-4" Wrens, Warblers and Hummingbirds all the way to Crows standing at 17-20" high. All small sized birds should be fed and most importantly watered in shallow dishes according to the birds' size in order to prevent drowning. **NEVER give water or food in dishes that are broad in the bottom narrowing toward the top such as soup cups.** The animal will get trapped and drown in these types of containers.

Reptiles do not chew their food. Food needs to be cut into very small pieces or shredded and mixed thoroughly to prevent the reptiles from picking out and eating only their favorite foods. Fruits given to animals should never be more than **15%** of the diet. Most fruits have a poor Calcium/Phosphorous ratio and if given in large amounts will result in severe medical problems. Also fruit fed in excess can cause very soft feces or even diarrhea which can dehydrate the animals to the point of death. All dishes given to reptiles should be shallow and large enough for the reptile to get in and out easily. Water dishes and the amount of water in them should be suitable for the size and species of the reptile.