

“REALhabilitation: Wildlife Rehabilitation Management, as Nature Intended”

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Abstract

Rehabilitating sick, injured and orphaned wildlife requires a thorough acceptance of one’s duty of care and demonstrated understanding of wild species ecology. This paper recognises the importance of ensuring our rehabilitation methods are species specific and address all ecological aspects of our patients, not only the primary reason for them being in our care.

Three case species have been chosen to demonstrate how foraging ecology, locomotion, parental familiarisation, and seasonal migration influence successful reintroduction.

The Southern Cassowary (*Casuarius casuarius johnsonii*), exhibits influential behaviour between patriarch and his young. Juvenile cassowaries rely on the guidance and behavioural demonstrations of their father particularly when foraging, bathing and defending against predators. Striped Possums (*Dactylopsila trivirgata*) are morphologically unique to other Australian possums. Particular relevance will be drawn to their elongated fourth finger and procumbent lower incisors, responsible for their specialised foraging ecology. The seasonal migration habits of the Torresian Imperial Pigeon (*Ducula spilorrhhoa*) or Pied Imperial Pigeon introduces different limitations to the success of rehabilitating this species. The duration of time in care and the physiological capabilities of pre-release birds must be considered relevant to their migration behaviour.

Once succumbing to a compromising injury or condition, wild fauna has a depleted chance of survival under wild circumstances. Through not aiming to rehabilitate wildlife under the most ‘natural’ conditions we can provide, then survival chances decrease further still.

Our aim as wildlife rehabilitators should be to prepare each of our patients for all aspects of their wild ecology in order to promote maximised re-introductory success.

Introduction

Wildlife rehabilitation, by definition, refers to the restoration of an animal’s condition and fitness for return back to wild living following orphaning, injury or illness. As wildlife rehabilitators, it is critically important to identify and acknowledge the specialised ecological niche that a species fills as the best preparation for rehabilitating the individual animals we care for. Once an individual falls sick or injured, it is lost to conservation regardless of its fate.

Duty of Care

Under section 17 of the Animal Care and Protection Act 2001, a person in charge of an animal during its rescue, care, rehabilitation or release has a statutory duty of care to appropriately provide for the animal’s welfare.

Case Species

1. Southern Cassowary (*Casuarius casuaris johnsonii*)

The southern cassowary is an iconic rainforest bird, well known for its role as a key stone species in tropical rainforest regeneration and patriarchal rearing behaviours. Just like a stay-at-home dad, sire cassowaries are responsible for teaching offspring how to forage and feed, bathe, recognise danger and interact with their environment.

Juvenile cassowaries most commonly come into our care after becoming displaced from their environment and separated from their fathers prematurely. Wild behavioural patterns see primary foraging activity in the morning and afternoon, while the birds are more inclined to rest and bathe during the heat of the day. Birds are creatures of habit, so it is best to imitate these patterns in captivity also.

Although cassowary chicks are precocial and therefore learn rapidly to independently forage and feed, they rely on the provision and identification of food from their father for many months. Sire cassowaries' source and then identify food items by pecking at them until the chicks take notice and follow his lead. He will also break up larger foods and drop it before the chicks, clapping his beak encouraging them to eat.

1.1 Orphaned chicks in captivity

Young chicks (up to 4-5 months of age) feed on a diet much the same as that of adult birds, that being primarily frugivorous with the inclusion of insectivorous foods and small vertebrates. In captivity, this can include any commercially available fruits (diced appropriately, relative to the size of the chick) mixed with Wombaroo Insectivore supplement, wild foods where possible, insects, mealworms and frozen rodents. It is important to note chicks do have a significantly higher protein requirement up to two weeks of age and this can be supplemented in captivity with Wombaroo Insectivore Rearing Mix quite adequately. Chicks should be offered fresh food 2-4 times daily and, with some encouragement, should capably feed themselves.

In addition to an appropriately balanced diet, young birds must get plenty of exercise to prevent the risk of leg deformation by promoting healthy growth and development of muscle and bone structure. Naturally, these birds would be active throughout the day while following the father bird through the dense forest. Chicks in captivity will willingly follow keepers or carers around the enclosure. Scattering food around the enclosure is also a proactive way to simulate wild foraging behaviour. This also initiates physical activity by encouraging the young birds to walk about in search of food, bending and stretching as naturally as wild chicks.

1.2 Artificial simulation

Creating an artificial rearing environment for your cassowary chick can be very simple, and is critical to preventing human imprinting. Firstly, a father bird is essential and components for constructing this can be found at the local hardware or gardening store. The most distinguishing features of a cassowary are the striking red and blue caruncle and glossy black plumage under which a vulnerable young chick can find security and comfort. Suggested materials include a length of blue pool hose, a red gardening glove, a conical plant trainer, a hanging basket liner and some black fly screen

constructed to resemble the general form of a cassowary. Your surrogate father bird can be placed in the enclosure over some dense *Lomandra longifolia* grasses or similar foliage to resemble thick feather plumage. Your enclosure should be adequately planted out with areas of denser vegetation and low shrubs for security and safe hiding.

When feeding young chicks, especially in situations where one bird is housed alone, poultry chickens can be introduced for company and behavioural development. Chooks are active and exhibit similar habits to those of cassowaries, including ground foraging, dust bathing and grooming.

Male cassowaries will identify danger by pecking on or near his chicks' head. You can discourage inappropriate behaviour or signify a dangerous situation to your birds in many ways, including using sound and movements. The key is to be consistent with your methods and do not be afraid to give a firm but harmless wallop on the backside as birds get older and bolder.

2. Striped Possum (*Dactylopsila trivirgata*)

The striped possum is an arboreal marsupial native to north eastern Australia and Papua New Guinea. Unlike any other Australian possum, this species is anatomically distinguished by elongated forth fingers, procumbent lower incisors and a relatively short digestive tract. These morphological adaptations are indicative of a highly specialised and very unique foraging ecology, interestingly exhibited by only one other species, the Aye Aye (a small lemur) of Madagascar. Using their elongated finger, they tap rapidly along tree branches and logs detecting hollow spaces created by boring insects and larvae. Strong jaws and rodent-like dentition facilitate chewing and tearing through the bark, before excavating and extracting whatever crawly morsel may inhabit the hollow. It is clear why this species is not known for being typically elusive or stealthy.

2.1 Striped possums in captivity

Understanding diet is important to better interpret the species' native habitat requirements, socialisation and behavioural ecology. Naturally, striped possums are generalist insectivores, feeding predominantly on wood-boring larvae and other social insects such as native bees and termites. This forms a high energy dense diet, of which nutrients are rapidly absorbed in the short, simple digestive tract. They will eat some fruits, honey and plant exudates however and are considered opportunistic feeders. It is reasonable to assume that a mature adult animal that comes into care is sufficiently capable of recognising wild food and how forage for it. As long as their captive diet is appropriately balanced, the method by which their food is presented to them (during short-term care situations) is less important than ensuring their recovery is prioritised and efficient. Orphaned juveniles however, will require more species specific attention to be paid to their rearing and weaning, including the provision of natural foods and ensuring provocative foraging behaviour is demonstrated and learnt.

2.2 Artificial simulation

Creating a secure and comforting environment for your animals in care is vital for their rehabilitation regardless of the reasons they are in care. Striped possums (stripeys) utilise large tree hollows, lining them with leafy nests, for denning. It is simple to provide this for captive stripeys, using either a natural hollow log or a timber nest box suspended off the ground, and providing appropriate material for nesting.

As these animals forage for borers, they have to learn to identify naturally available food sources. Then, they must be able to identify food within the source and they must recognise how to acquire it naturally. Natural timber, fallen or decomposing and full of insect life is perfect and can be fairly easy and inexpensive to come by. However, if the idea of taking rotting, termite infested timber to your beautiful mahogany clad house makes you nervous, consider artificial forage feeders. Create your own 3 dimensional food puzzles with grubs, wood cockroaches and mealworms scattered throughout to stimulate these active foragers to do just that. Suggested methods include using layers of corrugated cardboard and non-toxic cardboard packing fillers, twigs and leaves, egg cartons, bark strips and other natural timber or fibres. As in the wild, they will likely hear any enclosed insects rustling around and will instinctively seek a method best for extracting them. Initially, you may start by demonstrating the tapping behaviour using your own hand or even a chopstick to tap along a branch or cardboard construction. It is important to remember to reinforce the behaviour by rewarding with the desired outcome with a food item.

Striped possums are a solitary species. If this animal does not understand how to forage, including search for and extract prey items from natural timber and identify wild food sources then it will not survive in the wild.

3. Torresian Imperial Pigeon (*Ducula spilorrhoa*)

Torresian imperial pigeons (torries) migrate seasonally from Indonesia, Philippines and Papua New Guinea to North East and Eastern Australia. The birds arrive to Australian coastal habitats from August to breed and nest throughout the summer when there is an abundance of fruiting food sources here; then return north before winter. These highly communal birds mostly breed on offshore islands, thus travelling back and forth to the mainland to feed daily. However, in recent years, there have been numerous reports this species is nesting more frequently in mainland environments. Pairs alternate nest duties with feeding.

The most common circumstance these birds require intervening treatment or care include window or car strikes and juvenile orphaning. These pigeons are not master nest builders and while it is rare for them to produce a two egg clutch, nests generally are not structurally adequate for one chick, let alone two. Chicks often fall from insecure nests and it is suggested that birds will often evict chicks who are compromised to make way for a more suitably fit offspring. Breeding pairs can produce up to three clutches during the breeding season.

3.1 Juveniles in captivity

Likely a consequence of their migration patterns, Torresian imperial pigeon chicks grow and develop rapidly, fledging at 23-26 days and are independent at 8 weeks of age. They have a high nutritional requirement of insect protein during early stages of development which, in captivity, can be provided with Wombaroo Insectivore rearing mix. Weaning young pigeons can be difficult as they will imprint very readily onto hand feeding from carers. As this species is naturally a communal bird, it is best to capitalise on this by housing multiple chicks together rather than solitarily. This reduces inappropriate imprinting and encourages mutual learning. A self-feeding adult bird housed with the juveniles should help encourage young birds to self-feed and recognise natural food sources placed in the aviary also.

3.2 Adult birds recovering from injury

Adult birds recognise wild food and have learnt to forage for it and while some will readily accept food from a dish, most can be very difficult to encourage self feeding in captivity. Housing birds together is often the most appropriate arrangement for this species, however stubborn adults may still require regular supplement or force feeding. Rehabilitating injured torries requires a thorough understanding of their natural behaviour. These birds have an instinctive body clock that tells them when they are ready to migrate. Preparing for migration requires healthy feather condition, strength and stability of the pectoral girdle and attached muscles and adequate fat stores for the journey. Rehab birds and hand reared chicks must be ready to release with the migrating population. Remember, that fractured wing you've strapped is not just an injury requiring 4-6 weeks of limited activity and appropriate physio; that fractured wing is attached to a whole bird. That whole bird must be simultaneously 'release ready' before the aviary door is opened up for release.

It is important to acknowledge that seasonal migration habits may restrict the practicality of release at the time the bird is sufficiently fit. Each bird that requires care should be independently assessed relative to their case history, clinical presentation and consequent treatment and rehab requirements. This is essential to a carer's duty of care responsibility. Unfortunately, one must concede that euthanasia is sometimes the most appropriate course of management for birds that will not be adequately prepared in time to migrate with the population.

Conclusion

It is our duty of care and responsibility as wildlife rehabilitators to prepare the patients in our care not only for release back to the wild, but for rehabilitation. This, by definition, requires a demonstrated understanding of wild species ecology and the ability to adapt our rehabilitation methods to meet species specific needs. Three case species, being the Southern Cassowary, Striped Possum and Torresian Imperial Pigeon, have been investigated to demonstrate how an animal's foraging ecology, locomotion, parental familiarisation and seasonal migration influence how we rehabilitate different species. Our aim as wildlife rehabilitators should be to prepare each of our patients for all aspects of their wild ecology in order to promote maximal re-introductory success.

Resources and Recommended Reading

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