

Treating wildlife in the clinic

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Introduction

New Zealand is home to a wide range of avian species, four species of frogs, two types of bat and a long list of geckoes and skinks. These are the native species. There are also three exotic frogs species, lots of exotic birds, a few exotic lizards and a wide range of exotic mammals, some are feral domestic species, and some are pests.

The species you are most likely to see in the clinic are the birds and lizards, and maybe an occasional possum or rabbit. This paper deals with the birds, as these are by far the most common wildlife you will see.

Legalities

The following is a brief summary of the different laws which might apply to wildlife presented at your clinic. In reality, common sense is the best rule to follow – do what is best for the welfare of the bird, and talk to your local DOC office if you need advice or if the bird is a rare species. Make sure the bird has a place to go for rehab after treatment, and make sure it has a home after rehab – either release into the wild as a fully functional bird, or a place in a permitted captive facility approved by DOC.

The Acts

Wildlife is protected under the Wildlife Act 1953. This Act lays out the rules for what can and cannot be done to wildlife without a permit; things such as hunting, holding, selling or taking. It also defines what is and isn't wildlife and it provides different levels of protection for different species of wildlife by listing them in different Schedules of the Act. By default, species are protected, unless listed in a Schedule. For example, some species are listed as 'Game' in Schedule 1 and may be shot during hunting season.

The Wildlife Act also states who can hold wildlife. People who rehabilitate wildlife need a permit from DOC (Authority to Hold Wildlife Temporarily). Individual birds may be held for up to three months during rehabilitation. If longer is needed, a new permit must be issued. Rehabilitators are not allowed to keep birds permanently. In cases where they cannot be released (i.e. treatment and rehab failed to resolve the problem) then the bird must either be found a home in a captive situation approved by DOC, or be euthanised.

The Animal Welfare Act 1999 works to ensure that the physical, health, and behavioural needs of animals are met and that pain and distress of ill or injured animals is alleviated. This applies for domestic and wild animals, so this needs to be considered when any wildlife presented to the clinic.

The Conservation Act 1987 set up DOC as a Department and has rules about what can and cannot be done on conservation land. It is relevant to rehab when animals have either been collected from, or will be released into the conservation estate. A permit is required to release animals into National Parks, so if you or your local rehabber wish to do this, then talk to your local DOC office.

Species identification

It is important to identify the species you are dealing with. This will have implications in which injuries/illnesses you treat and which animals you choose to euthanise, and also how you feed and house them. Bird identification

can be made using bird guides (e.g. Heather and Robertson) or internet searches – check out the DOC website www.doc.govt.nz – or you can refer to your local Ornithological Society of New Zealand group (www.osnz.org.nz), or contact your local DOC office. For other species, you can contact DOC or the herpetological Society for geckoes and lizards.

Important contacts

Local rehabbers: It is important to have someone locally who can take animals after initial treatment is done, but before they are ready to release. These are the people who may continue with bandage changes, or giving medications, while also taking care of the other needs of the animal – housing, nutrition, waterproofing, exercise – all the things needed to keep the animal fit and able for eventual release. Often these are the people who will bring injured or sick wildlife to you. It is important to have a good relationship, and to develop strong and clear boundaries about what the clinic can and cannot do, and what costs might be involved.

WReNNZ – the Wildlife Rehabilitators Network of New Zealand is a new national organisation of wildlife rehabbers. They are developing training and resources for their website (www.wrennz.org.nz) to share information to help rehabbers provide the best care possible.

Bird Rescue is another organisation of rehabbers. It is more localised than WReNNZ, and many of its rehabbers are strongly involved in the development of WReNNZ. Some members will have their own written resources such as diet sheets available (www.birdrescue.org.nz).

Department of Conservation – DOC has the overall responsibility for wildlife, therefore it is important to have a relationship with your local DOC staff. They can help with advice on species identification, placement in captive facilities, release locations, permitting etc. Sometimes decisions will be made based on the overall conservation benefits of saving an individual, and sometimes this may clash with the usual approach in the clinic. It's important to discuss this with DOC to understand why decisions are made, even if you don't agree with them! You can also find out from your local DOC office where your nearest permitted rehabber is.

Health and safety

Always maintain good health and safety procedures when handling wildlife. Remember that the wildlife will be stressed and may have some defences which it will use on you! The general rule is to think about what sharp or biting bits the animal has, and make sure you control them with good handling practices. Employing towels is very helpful, and safety goggles are actually very cool!

Also be aware of zoonotic disease risks e.g. *Chlamydia*, *Salmonella* and *Campylobacter* spp. are commonly found in some wildlife. Undertake good hygiene practices and seek advice from a medical practitioner if you become ill, and make sure you tell them you work with wildlife.

Here are some examples of particular issues with certain species:

- Heron, bittern, shags, gannets – sharp stabbing beak, with sharp edges – control the head and wear goggles. Note that gannets do not have external nares, so never hold their beak tightly closed or they will be unable to breathe.
- Kiwi – strong legs – hold legs firmly to prevent kicking.
- Tui and raptors – very sharp claws – hold legs carefully.
- Parrots – strong sharp beaks and claws – hold the head and legs carefully.
- Seabirds – strong beaks with sharp edges – hold the head carefully.
- Penguins – strong flippers to bash you with and a strong beak to bite you – wrap them in a towel and hold their head.

Outbreaks

MAF operate an 0800 number to report possible disease outbreaks. In cases where more than 3-5 birds are affected in one area, report the incident to MAF for possible further investigation: 0800 80 99 66.

Should we treat and can we treat?

Always at the start of the examination ask yourself should we treat and can we treat?

Should we treat?

We need to assess if the animal is:

1. likely to recover and;
2. likely to be released AND;
3. likely to survive in the wild and contribute to the population e.g. they are able to find food/water/shelter and breed or serve an ecological function such as spreading seeds (e.g. kereru).

If any of these are unlikely, then the decision to euthanise should be made. For rare species, discuss this with your local DOC office in case there are special reasons to save this animal e.g. for display in a captive facility.

Can we treat?

Do we have the equipment, skills and resources to do this work? Are there specialist or equipment skills needed for this case? Consider referral or seeking advice from specialist wildlife vets such as Massey University or Zoo vets.

Also consider if there are the resources to undertake the rehab process – do you have a local person who will do this work, are they available, have they got the right skills, have they got a permit? This can also be weighed up against the type of species it is i.e. if there are limited resources available, it may be better to save a kereru than a thrush.

Cases which should not be treated

Which cases are not saveable depends a lot on the species. The rule of thumb above in 'should we treat' applies here. Think about the animal and how it feeds, flies, breeds and survives in the wild. If the injury or illness will affect any of these, and will prevent the animal living an normal life after release, then euthanasia or captivity are it's only options.

As an option, captivity is an exception rather than the rule. This because wild animals become stressed, there are limited spaces for them in captivity and it requires a lot of resources to maintain them. Only permitted facilities may hold native species, so there needs to be a space available BEFORE you undertake the treatment (except, of course, to provide emergency veterinary care and analgesia).

Welfare is another very important consideration – we don't want to 'save' an animal only to have it live in chronic pain – so be sure to consider this early in the treatment plan.

Here are some examples of cases which are very unlikely to have a good outcome:

- A karearea/falcon or ruru/morepork needs both eyes to hunt, therefore eye injuries in these birds are very serious, and may warrant euthanasia. Compare this with a kiwi which has limited vision already and utilises other senses.
- A kereru needs to be able to fly long distances to search for specialised foods, therefore a wing injury or coracoid fracture may result in a need for euthanasia if treatment is unsuccessful.
- A penguin needs both flippers to successfully hunt fish in the ocean, therefore we would not save a penguin with a broken/damaged flipper if it won't regain full function after treatment and rehab.
- Small birds need flight to avoid predators, therefore injuries to the wings need to be carefully assessed before attempting treatment and rehab.
- A native bird needs to know its own kind to be able to breed, therefore an orphaned baby bird being hand reared is likely to imprint on its carer and fail to breed in the wild after release.

Euthanasia techniques

Euthanasia of wildlife should be undertaken in a humane way. The technique should render the animal unconscious as quickly as possible. Fortunately in a vet clinic we have access to appropriate drugs to do this.

Halothane can be used to euthanise birds. It is administered by mask at 5%. Monitor the heart rate of the bird and continue to supply halothane until after the heart has stopped.

Intravenous pentobarbitone is a highly effective technique. Birds generally have good brachial (wing) veins and medial metatarsal (leg) veins. The jugular can also be used. It may be easier to anaesthetise the bird first using

gaseous anaesthesia. Do not administer pentobarbitone intra-abdominally as birds have air sacs as well as lungs, and this method can lead to the drug being sucked into the lungs, drowning the bird. It is also very painful.

Cervical dislocation can be used when other techniques are not available. Smaller birds can be rendered unconscious by a strong blow to the back of the head, and then the head is manipulated to separate it from the cervical vertebrae.

For more information on humane euthanasia techniques, refer to The Australian and New Zealand Council for the Care of Animals in Research and Teaching Ltd (ANZCCART)
<http://www.adelaide.edu.au/ANZCCART/publications/Euthanasia.pdf>

Admission, triage and first aid/treatment

First stabilise the patient

This may involve admitting it and then placing it in a warm, quiet, dark, humid place while it recovers from the stress of capture, handling and transportation.

Acute cases may require fluid therapy and medications to stabilise.

Obtain the history

Get a good history from the 'owner' about where they found it, what was in the area, and if they want to help with its release. This last point ensures the public feel involved and is good public relations for your clinic – they get to see the outcome of your hard work!

Then assess the patient

Once the bird has settled, observe it from a distance to assess it before any approach or handling.

Preservation reflex in birds

A challenge for diagnostics in birds is the presence of the preservation reflex. A sick or injured bird will pretend to be healthy to avoid attracting attention. In the wild, this helps the bird avoid attracting predators, or being driven out of its flock. For us, this means we have to be prepared to look harder and be clever when diagnosing birds.

Physical examination

This is the most important part of the process for detecting what is wrong. Check the body condition of the bird, and weigh them on arrival to assist in diagnosis and to provide a baseline for measuring progress. Blood tests, radiographs and other diagnostics are useful, but because the most common presentation is traumatic injury, the basic examination will detect a large proportion of the cases presented to the clinic.

At this point stop and ask yourself "what is the likely outcome of this case?" If the prognosis is poor, then consider euthanasia now rather than later.

Treatment

Determine your treatment plan and seek advice from experienced wildlife vets if required. Obviously what you do will depend on your case, so the following points are just generalisations to consider!

Bandaging

Bandaging offers stabilisation of fractures to prevent further damage and relieve pain, and covers wounds to protect them from further damage and exclude infections. Non adherent bandages will avoid feather damage.

Medications

Use an avian formulary to determine appropriate drugs and dose rates for birds. Some drugs, e.g. dexamethasone, have severe effects in birds and are rarely used.

Pain relief is important for birds with fractures or severe wounds.

Prophylactic medications may be warranted e.g. to prevent aspergillosis in seabirds.

Fluid therapy

This is the same in birds as it is in mammals – dehydrated birds need fluid replacement therapy. It is reasonable to assume a bird is 10% dehydrated on arrival – if it is sick/injured enough to be caught, then it is unlikely to have been feeding/drinking.

Fluids can be delivered orally in conscious birds which can stand upright using a ‘crop tube’; subcutaneously in sicker birds; or intravenously or intraosseously in birds which are critically ill. These latter two methods require good knowledge of the anatomy to do safely (i.e. which bones are joined to air sacs and should be avoided?). The fluids used in wildlife are the same as those used in domestic animals.

An excellent resource on fluid therapy is found in the “Kiwi first and veterinary care manual” – see the link at the end of this paper.

Nutrition

What do you feed these birds? What should you keep in the fridge/freezer just in case?

There is a huge range in what NZ native and exotic birds will feed on. WReNNZ and Bird Rescue are two organisations which can offer good advice on what is likely to be found in your area, and what their nutritional needs are. Some foods will have a very short expiry e.g. live food such as meal worms or crickets or fresh fish; others can be stored frozen e.g. ox heart and vegetables. Work out a list of what you see most commonly and plan to have a small supply of food available for these species.

Housing

In the clinic, you will most likely be using your usual cages. This is good because they are easy to clean, but make sure you provide some shelter and perching for the birds – think about their natural behaviours and provide cage furniture as appropriate. Cardboard boxes provide a shelter for them to hide in, and can be thrown out at the end. Perches can be wooden or plastic piping covered in vet-wrap to help the bird grip. It’s important to avoid housing wild birds near dogs or cats – this will reduce their stress levels and also avoid any habituation which might lead to problems after release.

Common injuries

Common things are common. This is very useful to remember when dealing with injured or sick wildlife. In general, traumatic injuries are the most common presentation. Sick wildlife tends to disappear, often due to predation.

This rule also applies to the species you are likely to see in the clinic – common species which inhabit suburban gardens are the most common presentations at the clinic, but depending on where your clinic is located, you may also get animals brought in from the conservation estate by DOC or other conservation workers e.g. kiwi from the wild, or native species from local wildlife parks.

Window strike, tree strike etc

This can happen to any species and has two main presentations. In smaller birds, thrush and smaller, the most common issue is head injuries. Larger birds like the kereru often fracture their coracoid when they hit the window – this is due to their heavy weight. Sometimes your only clue to this is that the bird looks fine, but can’t get any lift when it tries to fly. Radiographs are needed to confirm this.

Hit by car or other impact trauma

Similar injuries to window strike, and also wing and leg fractures, internal injuries. This is a common presentation for Australasian Harriers which feed on road kill, making them vulnerable to passing cars.

Treatment involves stabilising the patient then assessing the injuries and developing a treatment plan. Some fractures can be managed with bandaging, but orthopedic surgery might be required to stabilise more complicated fractures.

Cat attack

This is very common in suburban gardens, particularly areas with native bush nearby. Look for penetrating wounds, internal injuries and fractures. Infected bite wounds are likely. Even if you can't see a wound, it is important to initiate antibiotic therapy as cat saliva subsequently preened off by the bird can cause infections.

Dog attack

Kiwi and penguins seem to be the most common victims of this. Look for crushing injuries as well as more superficial wounds and broken bones.

Shark attack and propeller strike

Penguins frequently present with traumatic wounds which might be from propeller strike or shark attack. Sometimes these are simple cuts requiring cleaning, suturing and bandaging. In other cases severe damage to limbs, tendon and ligament damage or broken bones may occur. Treatment is based on first principles of wound care and orthopedics.

Trap injury

This is seen more commonly in flightless birds such as kiwi, when possum traps are placed on the ground, rather than being set up on the side of the tree. The injuries vary in severity, with broken or severed toe or toes, blood vessel damage leading to ischaemic necrosis of the foot, nerve damage, loss of the entire foot, or broken leg bones. Injuries tend to be worst in smaller birds, due to the force of the trap, and also in cases where the bird has been trapped for an extended period leading to further damage from struggling, stress, starvation and dehydration.

Treatment involves stabilising the patient, then determining the extent of the damage, cleaning and debriding the wound, removing necrotic material, treating infection (sometimes infection will get into the damaged bones) and whatever orthopaedic repairs are needed/possible. Amputations of toes are common and kiwi appear to manage well after this. Foot amputations in kiwi are more problematic and should be discussed with DOC before undertaking surgery.

Miscellaneous trauma

Transmitter injuries occur in species such as kiwi when they become tangled in the undergrowth, or sometimes where the transmitter has failed and stayed on the bird for too long. These require assessment of the degree of damage, and the blood flow to the foot. In some cases contraction of scar tissue can put pressure on the leg like a tourniquet, cutting off blood supply, so this should be watched for during the treatment and rehab stages.

Random traumatic events can occur. Sometimes animals get caught in vegetation and injure wings or legs. Once again, treatment depends on the injury, so careful observation of stance, gait and flight will help determine the best treatment course.

Toxicities

Tui are prone to rhododendron poisoning. Not all rhododendron bushes are toxic. These birds will present when rhododendrons are flowering, and usually the history includes finding sick and dead tui in the garden, but not always near a rhododendron. Treatment is supportive care.

Lead poisoning is seen in waterfowl and harriers which ingest lead shot and also in parrots where they hang around human habitation and chew on lead objects such as lead head nails and flashing on buildings e.g. kea in Aoraki/Mt Cook and Franz Josef/Fox Glaciers; also kaka in Wellington. Generally birds present weak and emaciated. Harriers often present with foot paralysis. Radiographs might reveal pieces of metal in the gastrointestinal tract, and blood lead levels may be elevated. Zinc poisoning is also a possibility.

Botulism occurs usually in hot weather and most cases involve large numbers of waterfowl and waders sick and dead around a body of water. Sick birds will exhibit a flaccid ascending paralysis. Report cases to MAF or your regional council and provide supportive therapy (fluids, nutrition, warmth, quiet) to cases which present at your clinic.

Other toxicities are possible, but usually chemical poisonings are associated with a large number of affected birds. Report the event to MAF and treat any cases symptomatically.

Starvation

Seabirds are commonly presented suffering from starvation. This occurs when individuals go off course, or when groups get caught in weather events. Seabirds will attempt to ride out storms, and are unable to feed in very rough sea conditions. If storms continue for too long, the birds eventually become exhausted and will have burnt off all their fat reserves and will be metabolising muscle mass. They will be presented weak and emaciated and often have high gastrointestinal parasite burdens. Treatment is supportive care and good nutrition.

Be aware that aspergillosis is a common infection in seabirds in care, so consider preventative treatment. Also be aware that waterproofing is vital for seabirds at release otherwise they will sink and drown. Take care to maintain good waterproofing during treatment and rehab, and check it prior to release.

Where do I get more information?

NZVA Wildlife Society Special Interest Branch
<http://wildlife.nzva.org.nz/>

DOC has two publications which contain useful information:

Wild City Neighbours by Christine Mander, Lynn Adams, Annabel Riley
<http://www.doc.govt.nz/upload/documents/science-and-technical/BirdRehabGuide.pdf>

Kiwi first aid and veterinary care by Kerri J. Morgan
<http://www.doc.govt.nz/upload/documents/science-and-technical/sap245entire.pdf>

DOC website

This has pages specifically about wildlife health and links to international websites which contain relevant information. Check out www.doc.govt.nz/wildlifehealth

WReNNZ

WReNNZ have the Minimum Standards for Rehabilitators. These outline what is required to maintain animal welfare and achieve successful rehabilitation. Contact WReNNZ for a copy. www.wrennz.org.nz

Bird Rescue

Members have written their own guides to rehab including housing and diet sheets.
<http://birdrescue.org.nz/>

Other useful contacts

For treatment advice:
 New Zealand Wildlife Health Centre
 Massey University Veterinary Teaching Hospital
 Palmerston North
 Phone: 06 350 5329

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