



Procedure - Oil/Chemical Spill Wildlife Response – Rehabilitation of Wildlife

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1. Application / Scope

The aim of a wildlife response following an oil or chemical spill is to return as many healthy animals as possible to their natural environment, providing the habitat is free from contamination.

Once animals affected by a spill have received initial first-aid treatment and have been cleaned and dried, a further period of rehabilitation is required before they are released. The purpose of the rehabilitation process is to restore animals to a healthy condition in order to give them the best possible chance of surviving in their natural habitat after release.

This procedure assists personnel involved in the rehabilitation of affected wildlife only and does not address any other aspects of a wildlife response which are covered in separate procedural documents. Refer to other procedures listed at the end of this document.

2. Abbreviations/ Definitions

- Cetaceans – marine mammals of the order *Cetacea*, comprising whales, dolphins and porpoises
- Pelagic species - birds that spend a significant portion of their life on the open ocean

3. Resources / Equipment

- access to laundry facilities – for washing towels and cloths used to line animal cages; and separate facilities for washing personnel clothing
- animal food preparation and storage areas(including mobile cool rooms and freezers)
- exercise pools - appropriate to animal species
- facilities for personnel – admissions areas, dining facilities, toilets and showers
- first aid kits for personnel
- food and medical supplies for animals
- garbage bins and access to waste disposal services
- personnel (including veterinarians) to feed, administer required care/medications and monitor progress of animals in care
- refrigerators, freezers and airtight containers (some animals will need fresh food)
- shelves to store buckets, medications, food dishes, knives and serving utensils
- sinks with cold and hot running water
- storage facilities for several days worth of food, unless daily supplies can be guaranteed
- suitable indoor and outdoor housing for animals
- suitable personal protective equipment
- tables for food preparation
- for more detail see [Oil Chemical Spill Wildlife Response - Set up and Use of Wildlife Treatment Facilities](#)

4. Warnings

- Spread of disease is possible from animals to humans when large numbers of animals are confined in close proximity to each other, and at any other time wild animals are taken into captivity.
 - Any animal that is suspected of carrying an infectious disease should be immediately quarantined from others.
 - All personnel should be informed of quarantine requirements and appropriate signage installed.

- Facilities for disinfecting clothing and equipment should be provided.
- Footbaths with antiseptic (such as Halisept®) should be set up outside buildings housing wildlife. These areas should be restricted to authorised personnel only and should display appropriate signage to that effect. Separate and dedicated clothing, gum boots, gloves and other personal protective equipment should be also available.
- Personal hygiene facilities for staff, such as portable toilets and hand washing areas are required. It is essential that all staff wash thoroughly before eating, drinking or smoking. These areas should be set up away from the wildlife quarantine, cleaning, treatment and rehabilitation areas.
- Human intervention can be stressful to wildlife and should be minimised wherever possible.
- Wildlife can be aggressive and may bite or scratch. Rehabilitation personnel required to handle animals should be trained in animal handling. Refer to [Handling of animals](#) Safe Work Method Statement.
- Dead animals pose a contamination risk to other wildlife and to humans. Immediate refrigeration is recommended so that samples and specimens may be taken for pathology studies. After necropsy and sampling have been undertaken, carcasses may be frozen until disposal. Museums and universities may be interested in obtaining specimens for research. If there is no scientific interest, carcasses must be disposed of in consultation with the combat agency's Waste Management Unit.
- Precautions should be taken in wet areas, such as the installation of rubber mats, to reduce the risk of personnel slipping on wet surfaces
- Personnel may experience back strain, overheating, dehydration and exhaustion and should be rostered to take adequate rest breaks and provided with regular drinks.

5. Rehabilitation procedure

During rehabilitation, wildlife will be provided with the required food, water, shelter and other conditions needed to assist their recovery and preparation for eventual release. The rehabilitation process begins after the animal has received initial medical treatment and has been cleaned and dried. Rehabilitation is the longest part of the process which typically takes up to 2 weeks but can extend to months. This will depend on the animal's species and condition, and restoration of its habitat.

Animals admitted for rehabilitation must receive initial assessment and ongoing monitoring by a veterinarian to ensure they are healthy or receiving the correct ongoing treatment.

Care must be taken not to tame or humanise wildlife during the rehabilitation phase or successful release back into the wild will be difficult.

5.1. Rehabilitation of birds

Husbandry guidelines within these procedures should be followed to avoid injuries (such as Bumblefoot) or disease outbreaks (such as Aspergillosis). During the rehabilitation period birds must:

- be re-acclimatised to normal outside temperatures
- regain full waterproof status and feather structure
- be restored to the correct body weight and body condition
- return to normal behaviour
- be examined by veterinary staff and assessed as being ready for release

The rehabilitation period may last days to weeks depending on the condition of the casualties. On average, birds will remain in care after cleaning for about three to 14 days.

There is a risk of individuals becoming tame and therefore unsuitable for release if kept in captivity for long periods.

5.1.1. Indoor housing

Once birds have been cleaned and dried (see Procedure – Oil/Chemical Spill- Wildlife Response - Cleaning and Drying Wildlife) they should be housed indoors and provided with drinking water and appropriate food, and slowly acclimatised to outside temperatures.

- Pens should be placed in areas with limited human access; human traffic past pens should be minimised and if possible visual barriers should be present to minimise stress to the birds from seeing humans.
- Hiding places such as boxes or curtained areas should be available in large pens.
- Gregarious species should be group housed, but not overcrowded (suggested area 1 square metre per bird).
- Birds of aggressive or solitary species need to be housed individually. Care should be taken not to place natural predators and prey or competitor species close to one another.
- Consideration should be given to housing males and females separately from one another, for example if females show stress and reduced feeding behaviour in mixed groups.

For details of indoor housing requirements for different species see Section 5.4.1 of procedure [Oil Chemical Spill Wildlife Response - Set up and Use of Wildlife Treatment Facilities](#).

5.1.2. Outdoor housing

Housing birds outdoors is essential for a period prior to release to ensure they are acclimatised to external temperatures, are properly weatherproof and have regained fitness. Acclimatisation should be done gradually and birds that have been indoors for an extended prolonged period should not be moved outside during extreme temperatures.

- Initially birds should be given access to outdoor enclosures only during the day. They should be kept under close supervision and returned to an indoor enclosure if found shivering or showing distress. Several days are usually required before birds can be left outdoors overnight.
- Outside holding areas must provide access to water for swimming and exercising. For details of outdoor housing and pool requirements see Section 5.4.3 of procedure [Oil Chemical Spill Wildlife Response – Set up and Use of Wildlife Treatment Facilities](#).
- Access to water for swimming is important for full return to waterproof status for all aquatic and semi-aquatic birds. Once on water, birds will preen and restore feather alignment which makes the plumage water repellent. Swimming also stimulates appetite and motor activity.
- Birds must be able to access the water easily and have access to haul-out platforms and perches at all times except when being tested for waterproofing.
- Not too many birds should be placed on one pool, as some individuals may prevent others from using the water.
- Waterproof aquatic birds should be housed on outdoor pools at all times from cleaning through to release.
- Water must be kept clean, especially for pelagic species, since dirty water will result in decreased waterproofing. A complete water turnover at least every four hours is suggested. Water should test at 30-50 mg of calcium carbonate per litre. Local water authorities can provide a hardness reading. Water softeners can be fitted to taps if needed.
- Pools for aquatic birds should have a constant water flow with surface skimming (i.e. water drains out of the pool by overflow from the surface) to ensure that any oil or detergent contamination of the water, and any surface debris, is removed rapidly.
- A filtration system may be used instead of or as well as constant overflow.
- For marine species to reactivate the salt glands, water salinity should be gradually increased to about 3% (similar to sea water) by adding sea salt. Alternatively, salt can be provided using salt tablets; the maximum daily dosage being 100 mg per kilogram of body weight. Supplementation should begin 1-2 weeks prior to release, starting at a quarter of the maximum dose and gradually increasing the dose every 3 or 4 days.
- Water should be deep enough to allow normal wading, swimming and diving behaviour for the species.

- Pools need to be at least two to three metres square and 0.4 m deep for medium-sized birds such as penguins.
- The pool should have a shelf around the edge to allow hauling out.
- Pools at least 4 metres in diameter will be required for the larger pelagic species.
- Deep water is required to encourage large birds to flap their wings, swim and dive, increasing their general fitness and muscle tone even if there is insufficient room for large birds to fly.
- Terrestrial and wading birds should be given access to fresh water for drinking and bathing.
- Misting birds with water e.g. using a spray bottle or a fine mist attachment for a garden hose) two or three times daily will stimulate preening and is also useful for evaluating waterproofing in terrestrial and wading birds.

5.1.3. Feeding birds

- Birds must be fed enough food to regain lost body weight. The amount and type of food required will vary depending on the nutritional value of the food, and the bird's metabolism, body condition and health status. Generally, a bird will require 10% of its body weight per day but this should be checked with technical experts.
- Careful calculation of the daily calorie and specific nutrient needs for the bird species is required.
- Some weight loss may occur when birds are first moved outdoors, probably due to increased exercise and to external temperature variations. With adequate, good quality food, this lost weight should be regained in a few days.
- Once on outside pools birds generally become self-feeding within a few days.
- Shallow trays of fish may be provided - away from the water to reduce contamination of the pool with fish oils.
- Food should be provided two to four times throughout the day.
- Spilled food must be cleaned up daily and not left to dry out or become mouldy.
- Care should be taken to ensure that all the birds within a pool or enclosure have the opportunity to feed.
- Some seabirds may not feed themselves while in captivity and gavage (tube)-feeding or force feeding may be required until such time as they self-feed.

Salting of pelagic birds:

- Pelagic birds must be salted prior to release if they have been kept off salt water for more than a week or 10 days. If kept in fresh water, the salt gland of these species atrophies and if a bird is released with the gland non-functional the bird will rapidly dehydrate and die. Salt tablets or granular sea salt can be given in food, at a maximum dose of 100 mg/kg body weight per day per bird. Supplementation should begin 1-2 weeks prior to release, starting at a quarter of the maximum dose and gradually increasing the dose every 3 or 4 days.
- Sea water can be used in pools or, if fresh water is used, salinity can be gradually increased to about 3% (similar to sea water) by adding sea salt.

5.1.4. Food storage and preparation

- Food must be properly stored in airtight containers, refrigerators, freezers etc. as appropriate to avoid spoilage and contamination, and kept separate from food for human consumption.
- Personnel handling foods should wash their hands before starting work, at each rest break and when their work shift finishes.
- All containers, utensils etc. should be thoroughly washed and disinfected between uses. Wash in warm soapy water to remove gross contaminants, soak in dilute disinfectant for at least twenty minutes then rinse after disinfection before reusing.
- Food should usually be used on the day it has been prepared/thawed.
- Gavage mixes should be made fresh each day and used on the day of preparation only. The time and date of mixing should be noted and written on the container, and any unused slurry discarded after 24 hours.

- Frozen fish, stored frozen for at least six weeks, may be preferred to fresh fish, since this treatment kills parasites.
- Fish diets must be supplemented with vitamins; commercial tablets designed for this purpose are available. Addition of thiamine at 25 to 30 mg/kg fish is recommended
- Care should be taken to avoid over supplementation with vitamins A, D or E, and resultant toxicity.

5.1.5. Monitoring behaviour and recovery

- It is important that rehabilitation personnel monitoring birds are experienced in observing bird behaviour.
- Birds in each pen should be observed daily, with condition, activity level, quantity and quality of droppings, amount of food eaten observed. The first observation should take place early in the day.
- Any bird that appears unwell must be isolated, particularly if a contagious disease is suspected.
- Birds should be monitored for general behaviour, including feeding activities and social interactions, and for continued waterproof status.
- Fit birds should be active and alert, eat well, preen actively, swim, dive and interact with conspecifics (as appropriate for the species).
- Stressed or unfit individuals will not show normal behaviour.
- Confident movement around the enclosure should be seen, without any signs of neurological deficit.
- Sufficient size and depth of pool are required for observation of diving behaviour, feeding habits and waterproof status.
- Shivering, tremors/convulsions, head drooping, listing, panting, wings not held normally tight to the body, unusual activity or inactivity and changes in the colour and consistency of droppings should be noted.
- Observations should be recorded on the individual's Wildlife Rescue and Release and Rehabilitation Observation Forms, including notes of activities such as self feeding and swimming. Unusual findings should also be recorded.

5.1.6. Assessment for suitability for release

Before they are released all birds must be given a thorough clinical examination and must meet the following criteria:

- haematological and biochemical blood values are within normal range for the species (if known)
- there are no signs of disease and no remaining significant injuries
- respiration is normal
- eyes are normally responsive to light and do not show any inflammation
- no neurological signs such as ataxia, twitching or paralysis are present
- the skin is not cut, abraded or inflamed
- mucous membranes are normal
- droppings are normal - parasite screening should be carried out to ensure that the released individual will not introduce disease to the wild population.
- body condition, fitness and weight are normal - the bird should be of normal weight, or within 10% of normal, for the species and subspecies/type; sex; time of year and its age. It must have sufficient pectoral (breast) muscle development to be able to fly normally.
- behaviour is normal for the species - including normal feeding, preening, flying, swimming and diving habits, and ability to catch their own food
- plumage is fully waterproof - both the covert and the down feathers should remain dry in a properly waterproof bird:
 - water birds must have full waterproofing as indicated by withstanding 24 hours on water without any loss of waterproofing. The bird should remain buoyant on the water

- diving birds must remain waterproof after spending a period of time in a pool with a depth three times their body length, to show that they can remain waterproof when underwater
- For pelagic species:
 - salt tolerance must be present in pelagic birds, with nasal gland secretions visible (salt excretions on the nostrils and/or the bill tip) (see 5.1.3).

5.1.7. Cleanliness and hygiene

A high standard of cleanliness and order should be maintained throughout the rehabilitation area.

- Strict adherence to adequate hygiene and quarantine principles must be observed by all personnel, including minimising audio and visual disturbances to wildlife.
- Hygiene and quarantine protocols should be prominently displayed in the bird holding areas and in other appropriate areas such as lunch rooms.
- Washed birds should be handled with clean hands or using powder-free gloves, to avoid disturbing waterproofing.

It is preferable that all affected wildlife is kept at facilities established specifically for rehabilitation purposes although the use of professional carers may also be considered.

Further information

- Accurate and complete records of treatment, death or other information must be maintained for future reference
- Professional keepers may be required for large incidents

For more detailed information on the cleaning, drying and rehabilitation of oiled birds refer to the Field manual – Rescue and Rehabilitation of Oiled Birds, Erna Walraven, June 2004, copies of which are available in the [Oiled Wildlife Response Kit](#) which will be made available for the response.

5.2. Rehabilitation of mammals and cetaceans

Prior to considering the rehabilitation of any marine mammal, a risk assessment should be undertaken to assess the relative dangers involved versus the likelihood of a successful outcome. Biologists and veterinary experts should be consulted before a decision is made.

5.2.1. Cetaceans

Cetaceans becoming stranded as a result of impacts from an oil or chemical spill will, where possible, be treated at the stranding site.

A veterinarian should be called to the stranding site but in the meantime it is important to provide the animals with supportive care to prevent further injury, to make the animal more comfortable and to reduce stress. The following action should be taken:

- Determine whether the animal is alive or dead by observing the animal's blowhole for signs of breathing or by gently rubbing the area around the blowhole and checking for skin movement. If there is no response, gently rub the skin around the eye and if there is still no response, gently touch the eye itself.
- If the animal is dead, secure the carcass and make arrangements for scientific examination and sampling before disposal.
- If the animal is alive, monitor condition, including heart and respiration rates and body temperature, in consultation with experts. For further details see the section entitled, 'Physiological Effects of Strandings' in the NPWS Marine Wildlife Management Manual.

For animals in the surf zone:

- Do not attempt rescue under hazardous conditions
- Keep clear of the tail fluke area and avoid sudden movements
- Be aware that the animal may make sudden thrashing movements
- Keep the animal upright
- Orientate the animal perpendicular to the shore; head facing inland
- Move the animal out of the surf zone into calm water as soon as possible

For animals on shore:

- The weight of the animal's body makes it uncomfortable when it is beached and the first priority is to place the animal upright (on its belly) with its head facing inland
- If two animals strand together position them so they can see each other
- Be aware that the animal may make sudden thrashing movements
- Move the animal above high tide level, if possible
- If the animal is on rocks, move it to sand or other soft substrate, if possible
- Do not attempt to lift the animal by its pectoral fins, dorsal fins or flukes
- Try to minimise abrasions. Dig trenches in the sand under the pectoral flippers and flukes and remove any sharp objects, such as shells
- Protect the animal from the wind and the sun and ensure it is kept wet
- Wash sand off skin, flush eyes with clean salt water or eye wash and protect the animal from wind-blown sand
- Only wash around the blowhole when it is closed

As soon as possible, the beached animals should be assessed by a vet and decisions made about management options. These decisions must be approved by the Wildlife Coordinator. Options include:

- Immediate release – this is not the favoured option other than for very large whales, which should be returned to the sea as soon as possible to improve chances of survival since their weight will cause severe internal damage if they remain out of water for any length of time.
- Rehabilitation at a temporary holding site (eg a small, calm, enclosable inlet). Rather than being returned immediately to sea, stranded cetaceans may be held, in water, for a period of rehabilitation. The Organisation for the Rescue and Research of Cetaceans recommends 4 hours of rehabilitation for every 1 hour stranded) before release, so that condition can be monitored and treated. This may be possible at the stranding site or could require transportation to a more suitable site. For details on the rehabilitation and release of stranded cetaceans see the NPWS Marine Wildlife Management Manual.
- Rehabilitation at a care facility (eg Taronga Zoo) - some animals may require more intensive or longer term treatment that can only be provided at a care facility with appropriate resources. Movement to a treatment facility will not be considered for larger cetaceans (ie over 5 metres long).
- Euthanasia - if the animal cannot be rescued or rehabilitated, it should be euthanised. Euthanasia will be considered on the advice of the veterinarian when there is obvious evidence of severe or debilitating injury which would otherwise prolong an animal's suffering, or where the site does not allow access for treatment. Euthanasia may only be undertaken by a veterinarian and with the approval of the Wildlife Coordinator after consultation with the Coordinator, Marine Fauna Program, NPWS and relevant NPWS Director.

5.2.2. Rehabilitation of cetaceans in the water at a temporary holding site

When returned to the water at the holding site, the animals will need to be supported before they are able to swim and breathe freely.

Flotation devices may be suitable but more often the animal will be supported by teams of personnel on a roster system.

- As a guide, two or three personnel will be required for a dolphin/pygmy sperm whale
- Personnel should have full wetsuits including booties/suitable footwear
- Crews should work in shifts of 15-20 minutes in the water; longer shifts may be suitable in warm conditions
- Crews should not do more than four shifts without a two hour break
- A safety officer should always be present on land to keep watch on crews in the water
- Activity, including boat traffic and onlookers should be excluded from the rehabilitation area and crowd control is important.

When supporting animals in the water:

- Approach animals from the front only
- Position yourself between the pectoral flippers and the tail section (keeping clear of the tail)
- Keep hands clear of the animal's mouth
- Hold the body of the animal and avoid holding the flippers or dorsal fin
- Keep the animal upright with the blowhole above water
- Gently rock the animal from side to side to assist restoring circulation and ease muscle stiffness. **Note** seek expert advice as some species may react violently to this method – eg Striped Dolphins)
- Walking the animal through the water may assist in rehabilitation
- Standing at the front may help calm an agitated animal
- Water temperatures in winter and spring can be as low as 16°C and personnel should not remain in the water longer than 15 minutes at these temperatures. With sufficient protective clothing and warm drinks and food, a crew of three may be able to work three to four 15 minute shifts in two hours. After this period crew members should be rested for two hours. This will require at least 12 personnel per animal per 12 hour period.

In warmer water, longer periods may be spent in the water but a risk assessment should be done which takes into account conditions such as water depth, water temperature and the type of personal protective equipment being worn. Personnel should be rotated and monitored for fatigue, re-hydration and exposure.

5.2.3. Seals

Some seals that come ashore may be seriously injured and/or emaciated. Careful assessment is required before any decision is made to intervene. Seals have remarkable recuperative powers and can recover from what may appear to be serious injuries.

Oiled seals should be treated as soon as possible following risk assessment.

Seals can inflict serious bites and should only be handled by personnel trained in animal handling.

If there is doubt about whether a seal requires rescue, the animal should be monitored for at least 24 hours before making a decision to intervene.

Live seals are to be assessed by a vet when determining management options which include:

- For live beached seals:
 - Monitoring - occasional checks are sufficient if the seal appears healthy and is away from disturbance. People other than incident personnel should be kept away from the area. Temporary barriers and signage may be required.
 - Relocation - do not attempt to force the seal back into the sea or relocate unless absolutely necessary. Where there is danger to the seal and/or the public relocation may be necessary.

- Capture and treatment – if rehabilitation facilities have been established as part of the incident response. Alternatively, arrangements may be made to transport animals to a specialist care facility such as Taronga Zoo.
- Euthanasia - if an animal is severely incapacitated and assessed as untreatable, the vet may recommend euthanasia.

Decisions about management options will be made by the Wildlife Coordinator following discussion with the Coordinator, Marine Fauna Program, NPWS.

5.2.4. Housing seals

- Housing should provide sufficient room for the less sociable species to maintain normal distances between individuals.
- Adult males should not be housed together in the breeding season.
- Observation is recommended when individuals are first put into the same pen, with changes of pen mate if any appear incompatible.
- Access to water, preferably with a depth of at least 1 m, should be provided if possible for swimming and grooming.

5.2.5. Feeding seals

- Herring is recommended for feeding, due to its high fat level allowing maximum weight gain.
- Fish should be supplemented with vitamins (multivitamins at one tablet per 70 kg bodyweight once daily, plus additional vitamin E at 400 IU per 150 kg bodyweight, once daily).
- Salt supplements should also be given, at 3 g salt per kg fish, once to three times daily.
- If an individual is anorexic, gavage feeding may be required, using fish blended with water for adults and appropriate milk formulae for pups.
- Reduced regularity of feeding may be beneficial in the days just before release to decrease dependence on humans for food.

For more information on seal haul-outs, see the NPWS Marine Wildlife Management Manual.

5.2.6. Assessing marine mammals for release

Before they are released all mammals must be given a thorough clinical examination by veterinary staff and must display the following characteristics:

- normal haematological and biochemical findings
- no evidence of infectious disease or other abnormal findings.
- weight within 10% of normal range for the species and age class.
- pelage in good condition.
- normal behaviour for the species including feeding, swimming and diving habits
- Additional tests may be carried out (e.g. faecal checks, urinalysis, tests for particular infectious diseases) depending on particular concerns for the individual animal and the population.
- Sub-Antarctic species will not be rehabilitated to the wild – refer NPWS Marine Wildlife Management Manual.

5.3. Rehabilitation of marine turtles

- A veterinary assessment should be obtained to determine the probability of a successful rehabilitation attempt prior to rescue.

For turtles in the water:

- Bring the animal to shore, keeping hands away from the animal's mouth, as turtles will bite
- Beware of flippers as they can hit hard which may cause the handler to drop the animal

For turtles on the beach:

- Keep the animal upright (turtles should not be placed on their backs)
- Provide shelter from wind and sun
- Cover the turtle's carapace with wet towels to keep it cool in warm/hot weather

- Turtles may need to be restrained to prevent movement or injury
 - Observe animal for signs of breathing and movement (respiration may be slow and irregular)
 - Reduce noise and unnecessary activity around the animal
 - Blood samples should be taken to determine required treatment
 - Charcoal-containing compounds may help reduce the absorption of hydrocarbons if ingestion of oil is suspected but antibiotic treatment may be required for lung and gastro-intestinal damage
 - For animals with low blood glucose levels, several low-volume tube feedings per day may be required until levels return to normal and weight stabilises
 - The output of the salt glands should be monitored to ensure this has returned to normal before the animal's release
- Seriously affected animals may require euthanasia or intensive care and a long period of rehabilitation prior to release.
 - The decision to euthanise or take turtles into care will be made by the Wildlife Coordinator based on the veterinarian assessment.

5.3.1. Housing turtles

- Turtles unable to swim, or weak turtles that cannot lift their head to breathe should be placed on moist foam pads and covered with wet towels, or placed in a shower box.
- Turtles that can swim must be held in a pool that allows plenty of room to swim and dive. Marine turtles can cope well with exposure to freshwater (at the right temperatures) for up to 6 days, but long term (months) exclusion from salt water results should be avoided (Limpus, 2000). Where possible, marine turtles should be kept in salt water. Chlorine can be added at less than 1ppm to reduce bacterial and algal growth but higher levels will irritate the eyes.
- Any substrate on the bottom of the tank must be of sufficient size that it cannot be ingested. Gravel should be avoided for hatchlings. Hatchlings may need to be provided with rafting material so they can trap food. This rafting material should not be ingestible. Abrasions from rough sides on cement tanks have been reported
- Water temperature must be maintained between 25-29.5°C. Even though this temperature may be higher than local waters, it is the optimum range for rehabilitation. Fluctuations in temperature should be avoided; necessary changes of more than 1-2° should take place over several days. Prior to release, turtles should be gradually acclimatised to the temperature of local waters.
- Overcrowding can lead to biting among turtles. Loggerhead and Hawksbill turtles will bite other turtles when confined, so separation is required. Green turtles are not usually aggressive to other turtles.

For detailed information on catching, transporting, rehabilitation, release and euthanasia of marine turtles, refer to the NPWS Marine Wildlife Management Manual.

5.4. Rehabilitation of sea snakes, water rats & other fauna

Sea snakes are venomous and should only be handled by experienced reptile handlers. These species should be transferred without delay to a facility capable of housing venomous snakes and staffed by experienced reptile handlers. A decision on whether to clean the snakes should be made at that time carefully balancing the need for human safety against the wellbeing of the snake.

Water rats can be handled like any native mammal that is capable of biting and scratching. Housing can be provided indoors and an ambient temperature not exceeding 25C in an enclosure without water until after the cleaning is completed. After cleaning the animal can be given access to an ambient temperature enclosure with a small pool. Prior to release the animal should be checked for signs of maintaining a good body temperature after expose to water at ambient temperatures.

Rehabilitation of other fauna should be managed according to advice from specialists. Seek this advice through Liaison Officers.

6. References

Policies

- [NPWS Policy for Translocation of Threatened Fauna in NSW](#)
- [NPWS Rehabilitation of Protected Fauna Policy](#)

Procedures

- [Wildlife Response – Cleaning and Drying Wildlife](#)
- [Wildlife Response – Pre-emptive action](#)
- [Wildlife Response – Release of Wildlife](#)
- [Wildlife Response – Scaling Down and Demobilisation Response](#)
- [Wildlife Response – Search and Rescue](#)
- [Wildlife Response – Set up and Use of Wildlife Treatment Facilities](#)
- [Wildlife Response - Transporting Wildlife](#)
- [Wildlife Response – Triage and First Aid](#)

Forms

- [Wildlife Rescue and Release Form](#)
- [Rehabilitation Observations Form](#)

Safe Work Method Statements / Job Safety Analysis

- [Handling of animals](#)

Role Descriptions

- [Rehabilitation Division](#)
- [Rescue Division](#)
- [Wildlife Coordinator & Logistics Support](#)

Information

- [Code of Practice for Injured, Sick and Orphaned Protected Fauna](#)
- Field manual – Rescue and Rehabilitation of Oiled Birds, Erna Walraven, June 2004
- NPWS Marine Wildlife Management Manual
- [Oiled Wildlife Response Kit](#)

Legislation

- [Environment Protection and Conservation Act 1999](#)
- [National Parks and Wildlife Act 1974](#)
- [Threatened Species Conservation Act 1995](#)
- [Work Health and Safety Act 2011](#)
- [Work Health and Safety Regulation 2011](#)

7. Appendices