



NSWBIR SOP3

Exclusion of pest birds using netting

Background

Exclusion netting is often used over large areas of horticultural and viticultural crops and over fish farms. It is also placed in areas in and around buildings to prevent access by pigeons and other birds. If applied and maintained correctly, exclusion netting can be effective and humane however, it can be expensive and impractical and needs to be checked regularly to prevent injuries and death of wildlife due to entanglement.

This standard operating procedure (SOP) is a guide only; it does not replace or override the relevant legislation that applies in NSW. The SOP should only be used subject to the applicable legal requirements (including WHS) operating in the relevant jurisdiction.

Individual SOPs should be read in conjunction with the overarching Code of Practice for that species to help ensure that the most appropriate control techniques are selected and that they are deployed in a strategic way, usually in combination with other control techniques, to achieve rapid and sustained reduction of pest animal populations and impacts.

Application

- Exclusion netting should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control.
- A management plan that specifically targets the main pest species should be developed. Birds differ greatly in their ecology and behaviour, and this influences the way in which they respond to different forms of control.
- Netting may not be an economic solution for all situations, but it can be justified when the increase in returns exceeds the cost of the netting.
- Control of pest birds must be implemented in accordance with any relevant State and Commonwealth legislation. Permits may be required for the control of some species. Contact the relevant State agency ([LLS](#), [NPWS](#)) for further details.

Animal welfare implications

Target and non-target animals

- Humaneness of exclusion netting as a control technique depends on the type and size of the netting used, how it is applied and maintained and also how often it is checked.

- Older types of netting (such as black or green monofilament netting) and netting that is not used in the correct manner can pose a serious risk to wildlife such as birds, possums, flying foxes. Factors that make the mesh less visible are more likely to increase the risk of wildlife becoming entangled.
- Animals that become entangled can potentially sustain severe injuries including broken bones, lacerations to wings and also mouth injuries caused by trying to escape. If injuries are severe, they can die from strangulation, blood loss, shock, or dehydration. Entangled animals are also vulnerable to predation from both mammalian (e.g., dogs, cats) and avian (e.g., kookaburras, corvids, currawongs, raptors) predators and sometimes ants and reptiles if the birds are in contact with ground.
- Wildlife can also become distressed or injured if they go underneath the netting and then cannot get back out.
- Animals that are entangled or trapped underneath the netting, but not severely injured should be released at the site.
- Animals that have injuries which are untreatable, or which would compromise their survival in the wild should be humanely euthanased using an appropriate method. For further information refer to NSWGEN SOP1 *Methods of euthanasia* and for birds also NSWBIR SOP2 *Trapping of pest birds*.

Workplace health and safety considerations

- Care must be taken when handling live animals and carcasses as they may carry diseases that can affect humans and other animals, e.g., psittacosis (chlamydiosis), aspergillosis, erysipelas, salmonellosis, leptospirosis, Q fever, etc. Routinely wash hands after handling all animals and carcasses.
- Australian bat lyssavirus (ABL) and rabies vaccination is recommended for people who come into regular contact with bats (both flying foxes and microbats). Operators should avoid bites and scratches and use protective equipment when handling all bats. All wounds inflicted by bats or flying foxes should be washed thoroughly with soap and water as soon as possible. Operators should always seek medical advice regarding post-exposure treatment whenever a bite, scratch or mucous membrane exposure to saliva from any Australian bat has occurred. Where the bat is available it should test for the presence of ABL.

Equipment

Netting

- The use of strong, durable, UV stabilised plastic nets or densely woven net (with a mesh size less than 1cm square) is recommended. The more conspicuous the netting the better to prevent entanglements. Although darker netting (e.g., black, tan or dark green) may be more aesthetically acceptable, birds are more likely to become entangled in it.
- Netting thickness and mesh diameter may also influence visibility by birds and therefore the likelihood that they may become entangled in the netting. Small mesh netting is more visible. If the mesh is small, birds will not attempt to get through it.

- Monofilament bird netting (thin nylon type) should be avoided wherever possible to prevent entanglement. If used, it should be installed tightly over a frame and not draped over trees.
- White netting poses more of a visual barrier that birds can avoid as it stands out against the foliage of the fruit trees and produce.

Refer to guidelines for choosing the right netting and application: e.g.,

<http://www.wildlifefriendlyfencing.com/WFF/Netting.html>,

<https://www.greenharvest.com.au/Downloads/WildlifeFriendlyNettingBrochure.pdf>

<https://agriculture.vic.gov.au/livestock-and-animals/animal-welfare-victoria/pocta-act-1986/protecting-fruit-trees-and-wildlife>

Equipment to cut entangled birds out of nets when necessary

- Scissors or seam-rippers are suitable for cutting nets to release entangled or trapped birds.

Other equipment:

- First aid kit.
- Gloves.
- Face mask.

Procedures

Application of netting

- Nets are either permanently installed supported on a pole and cable or wire structure or used as throw-over cover supported by crop foliage and only applied for a relatively short time each year.
- The netting must be pulled tight with no loose or flapping ends to minimise entanglements.
- Where nets are used in horticulture, the nets must be applied carefully to ensure that there are no gaps between the netting and the ground. This will reduce the number of birds that are able to get under the net.
- Full canopy netting should be installed by contractors or under their advice to ensure that it meets standards for safety and efficacy.
- Skilled application of netting and good net maintenance will ensure longer netting life and also better animal welfare outcomes.
- For some applications of temporary netting (e.g., in vineyards), net application machinery or various frames and poles are available to assist in applying and removing the net.

Checking of netting

- It is important to check netting regularly, preferably no less than twice daily.

- The netting should also be well maintained to prevent entanglement or trapping of wildlife.
- Unharmful wildlife found inside the netting should be released as soon as possible.

Extraction of entangled and trapped animals

- If the entangled animal is considered dangerous to safely handle (e.g., flying foxes, bats, owls, hawks, eagles, possums, snakes, goannas), call a registered wildlife carer or rescue organisation for help and advice.
- If an animal is found entangled in netting, it needs to be carefully restrained while the netting is cut away with scissors or an unpicking tool so that it does not escape with some netting material still attached.
- Thick gloves may need to be worn to protect against bites and scratches while restraining the animal, or a pillowcase (or similar) may be used to cover and hold the animal if it is small enough.
- If the entangling material is embedded in the animal's skin or wrapped tightly, do not attempt to remove it yourself as this may cause more damage. Cut away enough material to detach the animal from the netting.
- Entangled or trapped animals must be examined for injuries and signs of illness or distress and dealt with as follows:
 - Animals that are unharmed or have only received minimal injuries such as minor cuts or abrasions should be immediately released at the site of capture.
 - Animals that have more severe injuries or are suffering from thermal stress should receive appropriate attention. An animal suffering from thermal stress can initially be placed in a suitable quiet holding area that provides warmth or shade to allow recovery before release.
 - Animals with treatable injuries that cannot be immediately released or those failing to recover from thermal stress should be presented to a veterinarian or a registered wildlife carer for treatment.
 - Animals with injuries that are untreatable or that would compromise their survival in the wild should be euthanased using a technique that is suitable for the species. For more information on euthanasia techniques refer to *GEN001 Methods of Euthanasia* and for birds also NSWBIR SOP2 *Trapping of pest birds*.

Disposal of netting

- Ensure that netting is discarded appropriately so that it is not a hazard to wildlife. Animals such as snakes and lizards can easily become entangled when discarded netting is left lying on the ground.

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