



Problems caused by birds in grape, fruit and nut crops

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Introduction

Fruits such as the wild ancestors of grapes and blueberries function as seed dispersal packages, with the dispersal being carried out by birds and mammals. The fruits contain sugars and other agents that make them attractive to animals.

Our selective breeding has improved some of these attractive characteristics for our own purposes, at the same time increasing the attraction for the "natural" seed dispersal agents - birds

Bird damage is very variable and is a result of a number of largely independent factors (success of the previous breeding season, availability of natural foods when the grapes are ripening, food preferences, foraging strategies, etc.). It is therefore difficult to predict the likelihood of severe damage in any season, but a basic knowledge of the biology and ecology of the bird species concerned will help.

Bird damage assessment

It is very important to determine the level of damage being caused in a crop, since without this knowledge, it is not possible to know what resources to put into damage control efforts. It is clearly false economy to spend more on controlling damage than the actual cost of the damage, but it is also true that bird deterrent methods are a form of insurance. What you do to control the damage may depend on the kind of bird causing the damage. Correct identification of the birds responsible for the damage is important, for several reasons.

- What you do to control the damage may depend on the kind of bird causing the damage.
- Introduced (non-native) birds in your vineyard or orchard are not protected, but all native birds are protected, and a permit is required before they can be legally destroyed.
- Some birds are likely to be commonly found in your vineyard or orchard, but eat insects, not fruits or nuts. These birds provide a useful service.
- Even the birds that eat or damage ripening fruit or nuts are useful to have in the vineyard or orchard at

other times of the year, since most of these birds also eat insects that may otherwise become pests. The one possible exception is the Sulphur-crested Cockatoo. This bird sometimes prunes grapevines and fruit trees at any time of year, and can reduce fruit production.

The use of poisons for bird control is prohibited

There are no poisons registered for bird control, and use of poisons for killing native birds is strictly illegal. Use of poisons for killing introduced birds is likely to contravene the **Prevention of Cruelty to Animals Act 1986**. Any use of poison to kill birds is irresponsible and dangerous, as it places other species, including domestic animals, at risk.

Discussion

In general, all native bird species are protected under the **Wildlife Act 1975**. Where damage is being caused by these species, an Authority to Control Wildlife (ATCW) may be applied for by calling the DSE Customer Service Centre on 136 186. An ATCW allows the destruction of specified numbers of these protected birds, to aid in reducing damage to crops.

Introduced bird species are generally not protected. Exceptions include pheasants, partridges and quail, which are declared as "wildlife".

Flocks of birds attacking grapes and other fruit crops are likely to contain a high proportion of juveniles. Natural mortality of juveniles in their first year is usually very high, often over 80% in some bird species. Attempting to shoot large numbers of common species of birds is expensive and time-consuming and may not result in a significant reduction in damage. Increased nesting success can result from attempts to reduce populations of birds, through reduced competition for nest sites and for food.

Shooting however remains a useful part of a strategy for scaring birds to reduce damage.

Native trees and other vegetation close to vineyards or orchards provide birds with easy access to the fruit and reduce the effectiveness of scaring strategies in that birds have refuge areas nearby and are likely to return sooner than if cover is further away.

With migratory birds, there may be successive groups of birds that visit and cause damage, and destruction of some birds will have no impact on other groups that enter the area, so the potential for damage may be unaffected by killing some birds. In addition, there is less opportunity to train birds that are not present for a long period. Birds that live in the area can be trained, with an integrated scaring program that combines some shooting with a range of other measures, such as gas guns, scarecrows, vehicles moving about, a radio left on, etc. The benefit of some shooting in such a program is that it creates real danger, and teaches most birds to be very wary or to keep away from the vineyard or orchard. Such training takes time and effort.

Birds that travel in groups are usually easier to detect than solitary birds such as Blackbirds, and it is more efficient and more effective to scare flocks than single birds.

Bird damage management

Destruction

The key in any wildlife problem situation is to reduce damage. This is the measure that counts. Killing lots of birds does not necessarily result in an equivalent reduction in damage, and may therefore be a waste of time and money.

Native birds may only be destroyed after you have obtained an ATCW.

Destruction (shooting) should only be used as part of an integrated scaring strategy as described above.

Scaring

Scaring is only likely to be effective if there is alternative food available. Provision of alternative food sources could alleviate a damage problem in some cases. One strategy for achieving this is to plant native trees and shrubs that flower over the period when the grapes, orchard fruit or nuts are normally ripening. This may reduce damage caused by Silvereyes and honeyeaters but will have no effect on damage caused by Common Starlings, Common Mynas, Common Blackbirds, Pied Currawongs and ravens or members of the parrot family, including cockatoos.

A large variety of noise-making devices has been used to scare birds. With most noise devices, there is an initial period when there is some effect – this is the novelty effect created by an unfamiliar noise or object. Almost always, birds then become used to these devices and learn to ignore them. It is possible that gas guns, if not moved frequently and backed up with some real shooting, may act as signals to tell birds where the good food is.

Some growers have reported that a radio tuned to a station that has a lot of talking can be a useful bird scarer.

Some electronic bird scarers use a range of artificial sounds. Such noises are unlikely to have any significance for birds, other than the initial novelty effect. In other words, birds should get used to these noises within a short

period, especially if the noises are played constantly or very frequently.

Electronic bird scarers that produce the birds' own alarm or distress calls should be more effective, and if used in combination with other scaring stimuli, and only played for brief periods when birds are present, may not lead to habituation.

A common question is whether bird of prey calls will scare prey species. This is not likely, because generally when birds of prey are hunting, they are silent; their calls are mainly used for territorial or courtship purposes. One possible benefit of playing bird of prey calls is that they could attract birds of prey to investigate the source of the calls.

Kites and scarecrows

Kites and scarecrows can be an effective part of an integrated scaring strategy, if moved frequently and reinforced with real danger in the form of some shooting.

Natural Predators

Natural predators are usually one of two main types: either predators of eggs and young in the nest, or predators of independent birds. The first group includes a number of animals such as Pied Currawongs, Grey Butcherbirds, Kookaburras and goannas, while the second group is mainly various birds of prey, such as hawks and falcons. Predation on eggs and young in the nest usually has little impact on local populations of birds, as many species re-lay and raise a second or third clutch of young if their first nest fails. This is a strategy designed, in part, to compensate for the usual high mortality of young birds. Predation by birds of prey on independent birds, including newly-fledged young, usually has little impact on populations of pest species, and has little influence on their behaviour, apart from a minute or two of panic when a bird of prey appears while hunting. Birds of prey spend much of their time perching, while not actively hunting, and their presence in the area is not an effective deterrent to other birds, which must still eat.

Electric perches

Where Sulphur-crested Cockatoos attack vines, installation of electrified perches fitted with live and neutral wires placed above the vine rows, powered by a normal electric fence energiser, has been reported to deter these birds. The perches can be made with 25 mm diameter PVC pipe with the live wire running along one side of the pipe and the neutral wire on the other. When cockatoos land on the perch, they bridge the two wires and get a shock. These perches should be placed above the rows of vines, in the area where cockatoos usually first enter the vineyard. One grower has reported that this method has solved the problem she had with cockatoos pruning her vines.

Exclusion (nets)

A large range of net types is available now, from relatively cheap drape-over, seasonal use nets to permanent, suspended netting systems. Netting is the only sure way

to protect fruit crops from birds. A new configuration of netting in vineyards has been trialed in New Zealand and consists of vertical panels of net on either side of each row, with the netting clipped to a wire near the top of the vine, using bread bag clips. These different netting methods all have their advantages and disadvantages.

The critical question is whether netting, or other damage control methods, are cost-effective. This requires a sound knowledge of the extent and cost of bird damage, and of the costs of the various measures used to deter birds, including your time. Armed with this information, you will be able to plan the most cost-effective and practical range of measures to suit your circumstances.

Brief notes on selected bird species that often cause damage to grapes, fruit and nut crops

Introduced species

Common Starling *Sturnus vulgaris*

This introduced species is perhaps the most frequently reported bird pest in grapes, but causes less damage in other fruit crops. More than one clutch may be raised in one breeding season if conditions are favourable. After the breeding season (about August to December in Victoria), large flocks assemble, including a high proportion of juvenile birds. Starlings feed mostly on insects and other small animals, particularly in pastures, but will concentrate on any suitable food source.

Breeding adults tend to be sedentary (stay in the same general area) but some young birds move long distances. Young birds consume a higher proportion of fruit than adults do.

The Common Starling is not protected and may be destroyed without the need for an Authority to Control Wildlife.



Figure 1. Non-breeding adult Common Starling (Photo: Viridans Pty Ltd)

Common Myna *Acridotheres tristis*

The introduced Common Myna (Indian Myna) does not form large flocks, but feeds in groups of up to a dozen or more birds and gathers noisily in large communal roosts at night. It is omnivorous, but possibly has a greater

preference for fruits than does the starling, and can cause significant damage to grapes and other fruits in some areas. It is sedentary and being an aggressive species, will compete successfully with native species for nesting hollows.

The Common Myna is not protected and may be destroyed without the need for an Authority to Control Wildlife.



Figure 2. Adult Common Myna (Photo: Viridans Pty Ltd)

Common Blackbird *Turdus merula*

The introduced Common Blackbird is a common, sedentary species that feeds mostly on the ground and low in bushes, on a range of fruit, worms and insects. It is known to spread weeds such as Blackberry, English Ivy and Pittosporum, after eating their fruits. The Common Blackbird, which does not form flocks, often moves along below grapevines, eating grapes low on the vines. Common Blackbirds find openings under nets and feed quietly along netted rows. In orchard fruit crops Common Blackbirds may cause a considerable amount of damage before their presence is realised.

The Common Blackbird is not protected and may be destroyed without the need for an Authority to Control Wildlife.



Figure 3. Adult male Common Blackbird (Photo: Viridans Pty Ltd)

Native species

Silvereye *Zosterops lateralis*

Another frequently reported pest, particularly in grapes, the Silvereye can also produce multiple clutches in a favourable season. Two to four eggs are laid.

Mainland Silvereyes migrate in some years only, but apparently the Tasmanian population migrates annually and many of the Tasmanian birds may be seen in Victoria.

Food of the Silvereye includes nectar, insects and fruit. When native food is scarce, it will attack fruit in vineyards and orchards.

This species, like all native species in Victoria, is protected.



Figure 4. Silvereye at nest (Photo: Ian McCann)

Ravens *Corvus* spp. (often referred to as crows).

The Australian Raven and the Little Raven both have a single clutch of from three to six eggs. Both species forage in flocks at times; although breeding adult Australian Ravens remain in pairs within their territories year-round. Egg laying peaks in mid August and young are ready to leave the nest some eight to nine weeks later.

The diet of the Australian Raven comprises some 80% animal matter (roughly half insect and half flesh, although these proportions would vary widely with location) and 20% plant matter. The diet of the Little Raven is likely to contain a greater proportion of insect material than that of the Australian Raven.

Because of its large size, a raven can cause a significant amount of damage in a short time; stripping whole bunches of grapes. Ravens may also eat some varieties of almonds.

Ravens are native birds and are protected. An Authority to Control Wildlife is required to destroy these species.



Figure 5. Little Raven (Photo: Mike Carter)

Pied Currawong *Strepera graculina*

The white patches on its wings and tail easily identify this black, raven-sized bird. The Pied Currawong can cause significant losses in some areas, in some years, particularly in grape and cherry crops. It travels in flocks and is nomadic. It is a native species and is protected. An Authority to Control Wildlife is required to destroy this species.



Figure 6. Pied Currawong (Photo: Ian Morrison)

Honeyeaters

Several species of honeyeaters may damage grapes and other fruits in some years, particularly when natural foods (nectar, pollen and insects) may be scarce.

These birds are migratory and vary in size from the small Yellow-faced Honeyeater to the medium-sized Noisy Miner and the large Red Wattlebird.

Honeyeaters are protected. An Authority to Control Wildlife is required to destroy any honeyeaters.



Figure 7. Yellow-faced Honeyeater at nest (Photo: Ian McCann)



Figure 8. Red Wattlebird (Photo: Peter Menkhorst)



Figure 9. Noisy Miner at nest (Photo: Ian McCann)

Parrots and cockatoos

A number of members of the parrot family may attack fruit and nut crops, but seldom damage grape crops. These species include Musk and Rainbow Lorikeets, Crimson, Yellow and Eastern Rosellas, Regent Parrots, Little and Long-billed Corellas, Sulphur-crested Cockatoos and Galahs. All of these species are protected and may not be destroyed unless an Authority to Control Wildlife has

been issued. The Long-billed Corella, Sulphur-crested Cockatoo and Galah have been declared unprotected wildlife under certain circumstances, and no ATCW is required in order to destroy these species where they are causing serious damage to orchards or commercial crops. Relevant details of the Governor in Council Order declaring these species to be unprotected follow.

Long-billed Corella, Sulphur-crested Cockatoo and Galah

These species are declared to be unprotected wildlife throughout Victoria in the Governor in Council Order published in Victoria Government Gazette G26 4 July 1996.

The Order states:

- (1) The species... may be taken or destroyed by-
 - (a) landowners or occupiers, their employees and members of their families; or
 - (b) in the case of recreational reserves, members of committees of management only where serious damage is being done to trees, vineyards, orchards, recreational reserves or commercial crops.
- (2) Persons specified in paragraph (1) may take or destroy these species by-
 - (a) the use of firearms in accordance with the **Firearms Act 1958**; or
 - (b) using trapping and gassing equipment approved by the Department of Natural Resources and Environment- only on the freehold or leasehold property on which the damage is occurring.

Note: The use of firearms in a town or populous place or on a street, road, thoroughfare or place open to or used by the public is prohibited under the **Firearms Act 1996**. Persons intending to use firearms to take or destroy the species in accordance with this Order, must comply with any requirements of the **Firearms Act 1996** and any other relevant legislation.

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