



Australian Government

Australian Transport Safety Bureau

ATSB Bird Information Sheet No.3

Masked Lapwings

Managing bird strike risk at Australian airports



MASKED LAPWING

Vanellus miles

Strike Risk

ATSB rank 14*

Between 1991 and 2001 there were 143 bird strikes reported to ATSB which involved “plovers” (Masked Lapwings). Of these:

- 7% resulted in damage to aircraft
- 2.8% had an effect on planned flight
- 35% involved more than 1 bird

*Ranking and figures were obtained from *The Hazard Posed to Aircraft by Birds* (ATSB 2002).

<http://www.atsb.gov.au/aviation/research/birdstrike.cfm>

Prior to breeding season, Masked Lapwings form flocks. During breeding season Masked Lapwings pair off, become highly territorial and are reluctant to move from their territory even for large aircraft. This makes them particularly prone to being struck.

About Masked Lapwings

Masked Lapwing

Vanellus miles

Other Names

Plover, Masked Plover or Spur-winged Plover

Size

Length 30-37cm; wingspan 75-85cm; weight 230-400g.

Identification

Adults have a black crown head, light brown upperparts, white underneath, reddish legs and a yellow fleshy 'mask' at base of yellow beak. They have bony spurs protruding from their shoulders and emit noisy penetrating calls.

Juveniles are similar to adults except the colouration is duller and mottled on tops of wings.

Distribution

Masked Lapwings can be found throughout eastern states, most of the Northern Territory, the northern part of Western Australia and the eastern half of South Australia.

Preferred Habitat

Masked Lapwings utilise a wide variety of natural and human-made open habitats, often adjacent to wetlands. Due to their preference for short-grassed and barren, rocky areas, Masked Lapwings are commonly observed in farmlands, pastures, grasslands, playing fields, lawns, median strips, golf courses, airports and parks.

Food

Masked Lapwings feed on worms, millipedes, centipedes, crustaceans and a variety of insects. They are also known to eat leaves, seeds and occasionally frogs.

Behaviour

Outside the breeding season, Masked Lapwings form flocks. For the breeding season they form pairs. During this time, both adults exhibit aggressive behaviour toward intruders into their territory. Individuals tend to remain within the same area, rarely moving far from their established territory.

Breeding

3 to 4 eggs are laid in a scrape or shallow ground nest throughout June to October, in southern regions and November to May in the north.

Masked Lapwings at Airports

Masked Lapwings are attracted to the airport environment to either feed or nest.

They prefer barren, rocky ground or short grass to build nests. These surfaces are also ideal for feeding on insects and other invertebrates in the soil.

They tend to be a seasonal problem for airports, particularly immediately before, during and just after the breeding season.

When undertaking bird counts or reporting strikes, it is important to differentiate between Masked Lapwings and the migrating plovers (such as Pacific Golden, Grey, Red-capped, Sand, or Oriental Plover) and dotterels (such as Red-kneed and Black-fronted Dotterel). The reason for their presence at the airport and the means for controlling their numbers will be quite different.



Managing the Masked Lapwing Hazard at Airports

Active Management

Active bird management involves scaring or removing birds from the airport. There are numerous options available for the task, some of which have limited effect in the long term as birds become used to them. Generally, a combination of techniques provides the best results.

For Masked Lapwings active management options can be considered:

- ✓ Disperse Masked Lapwings using pyrotechnics (such as cracker shells), portable distress callers, sirens, lights and/or vehicles.
- ✓ Occasional killing (shooting) may be required (under permit from the relevant state or territory authority) to reinforce the impact of equipment used for dispersal. It should not, however, be considered as the primary solution for airports.
- ✓ Destroy eggs and nests of nesting pairs (permits required).
- ✓ Using trained animals such as birds of prey to disperse birds from airports has been highly successful in North America and Europe. This can be a costly operation, requiring specially trained animals and experienced handlers. Permit requirements for such activities vary between states and territories in Australia.

Note: not all the suggested strategies have been trialed at Australian airports and it may be necessary for each airport to independently trial any particular method before incorporating it into their bird management plan.



Masked Lapwing Nest

The nest and eggs are camouflaged making them difficult to locate and destroy.

Habitat Modification

All bird management strategies should seek to initially make an airport as undesirable as possible to birds through habitat modification. An assessment of the airport should be completed by a person qualified and experienced in identifying bird attractions and recommending site-specific modifications.

Limiting Masked Lapwing attraction at airports may require:

- ✓ Reducing the frequency of mowing or mow at night to limit the availability of invertebrates, such as worms or insects, which may be exposed during mowing.
- ✓ Employing a long grass policy in all non essential areas. Grass maintained at around 30cm makes it difficult for Masked Lapwings to access invertebrates in the ground, to see approaching predators and to build nests. See "Managing Grasslands" next page.

Protected Birds

It is accepted practice to undertake culling and to remove eggs and nests as part of an integrated program to manage birds at airports. All species native to Australia are protected and it is therefore imperative that appropriate permits be obtained from the relevant authority prior to utilising culling and egg removal as airport bird management tools.

Bird managers on airports must be aware of, and adhere to, legislation that affords special protection to certain species. The level of protection may vary at the local level right up to the Commonwealth level, and is usually bestowed on species as a result of their significantly reduced populations, or because they migrate between countries.

One of Australia's guiding environmental acts is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). 102 bird species are listed under this act Australia wide under the following categories:

- Critically Endangered (5 species)
- Endangered (34 species)
- Vulnerable (63 species)

http://www.epa.qld.gov.au/nature_conservation/biodiversity/angered_wildlife/rare_animals/#Birds

The EPBC Act also recognises migratory bird species listed under agreements between Australia and China (CAMBA agreement) and Australia and Japan (JAMBA).

<http://www.deh.gov.au/biodiversity/migratory/list.html#birds>

In addition to the EPBC Act, there are environment and wildlife protection laws enforced by state/territory and local governments. The main legislative mechanisms (but not limited to) for wildlife protection in each state are as follows:

NSW – *Threatened Species Conservation Act 1995*

QLD – *Nature Conservation Act 1992*

NT – *National Environment Protection Council 1994*

WA – *Wildlife Conservation Act 1950*

ACT – *Nature Conservation Act 1980*

TAS – *Threatened Species Protection Act 1995*

SA – *National Parks & Wildlife Act 1972*

Commonwealth leased airports also have a commitment to protecting certain fauna under the Airport Environment Protection Regulations and may be committed to certain protocols in relation to managing birds by their Airport Environment Strategy.

Managing grasslands

Typically, the largest bird habitats on airports are grassed areas. These areas must be managed to limit bird attraction rather than for aesthetics. There are two main approaches to achieving this:

Long Grass Policy

Maintaining a dense grass sward of between 15 and 30cm has been common practice in the United Kingdom since the 1960's. In order to maintain vigorous growth, the grass is cut short and removed in the spring and fertilizer applied. Keeping the grass free from weeds and mowing before the grass produces seeds is also important. Long grass is considered the least attractive for some bird species because:

- It is more difficult to feed from the soil amongst thick grass
- When birds feed at soil level in long grass they can not see predators or other threats and feel less secure
- During mowing, insects and other invertebrates are not as exposed in long grass for easy consumption by birds.
- Mowing frequency also tends to be reduced which reduces bird attraction and can save costs.

Poor Long Grass

In the Netherlands where airports are situated on poor soils, growing thick grass is very difficult; hence a poor long grass policy is adopted. This requires the soil productivity to be gradually diminished by cutting the grass or heath at around 20cm and removing the cuttings. This results in an area which is less attractive to birds.

Australian Airports

Long-term trials of grass heights for Australian conditions have not been done. As Australia tends to have poor soils, perhaps we should be considering a poor long grass policy. Early indications from trials at Gold Coast Airport indicate that mowing at 30cm reduces the attraction of grassland bird species. At Sunshine Coast Airport trials are underway to return some of the areas away from the flight strips to native heath cut at 0.5 to 1 metre. Heath tends to attract small birds rather than larger grassland species.

Where neither a long grass or poor grass policy appears to be effective, consideration can be given to the use of artificial grass or other porous material that can be used to border runways and taxiways.

Warning

It is important that each airport determines its own ideal mowing regime. If a long grass policy is to be adopted some of the cost savings will need to be invested in equipment which cuts neatly at the desired height. Mowing less frequently does not mean "leave and forget". Weeds must be managed and mowing must be frequent enough to avoid seeding of grasses. Taller grass may mean more difficulty in detecting birds and could make access more difficult in wet seasons. It may also encourage mice and other small vertebrates which in turn could attract birds of prey. It is essential that any trial is properly monitored so that one set of hazardous bird species is not simply replaced by another.

Did you know?

- Lapwings are most closely related to plovers and dotterels.
- There are approximately 65 species of lapwings, plovers and dotterels in the world with 19 resident species in Australia.
- On occasions, other species from this bird group (such as Pacific Golden Plover) are struck at Australian airports.
- Many plover species are known to feign injury in order to entice would-be predators away from the nest and the vulnerable eggs and chicks. Masked Lapwing parents will locate themselves a short distance from the nest feigning a broken wing and calling very loudly to advertise this 'injury'. If this predator deterrence is ineffective, the adults will dive and swoop exposing and using their spurs.
- Some individuals have been observed aggressively attacking sheep and cattle as a means of preventing them from trampling the ground nest.
- Due to their preference for human-made grassed environments, such as median strips and sports ovals, humans are also often at the receiving end of the Masked Lapwings aggressive defence.

For further information:

ATSB (02) 6274 7452

www.atsb.gov.au

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