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Safe use of drones for bird-scaring

This guide covers the use of drones to scare birds or deter birds from gathering. A drone is an unmanned aircraft, sometimes also called a Remotely Piloted Aircraft System (RPAS).

Drones can mimic the behaviour of predators by moving and sounding like a threatening bird.

The guide:

- is for businesses where birds gather – such as farms, vineyards, orchards or similar properties where crops are grown, and airports.
- provides advice on how a person conducting a business or undertaking (PCBU) can manage the risks arising from the use of drones.

Before you read this guide you should read *Bird-scaring methods – an introduction to risk management* on our website. It covers your Health and Safety at Work 2015 (HSWA) duties and related information: [worksafe.govt.nz](https://www.worksafe.govt.nz)

There are risks to people, property, and other aircraft from drones. Drone operations must comply with Civil Aviation Rule Part 101.

Know the rules before you fly

[Civil Aviation Rule Part 101](#) explains the full requirements for flying your drone. Following is a summary of some of the requirements. You should make sure that you are familiar with all the requirements.

The rules include requirements to:

- stay 4kms away from all airports and helipads
 - unless you can comply with the Civil Aviation Authority (CAA) Rule requirements
- check for any airspace restrictions before you fly
- fly only during daylight

- keep your drone below 120m (400ft) above ground level (AGL)
- give way to all crewed aircraft – such as planes, helicopters, hang gliders and paragliders
- obtain air traffic control clearance to fly in controlled airspace
- obtain permission of the administering authority to fly in special use airspace (for example, military operating areas)
- maintain a visual line of sight (VLOS) with the drone aircraft
- not fly over people, unless they agree after you explain the associated risks
- obtain consent from property owners or occupiers
- apply for a permit from the Department of Conservation to fly over conservation land, such as parks and reserves.

How you can manage risks

This section outlines the control measures you should consider to eliminate or minimise risks arising from the use of drones. Give preference to control measures that protect many workers at the same time.

There may be risks and hazards that are not identified in this guide. You should still identify and assess health and safety risks arising from your own work – and you must [engage with workers](#) (and their representatives) when you are doing this. Workers must have opportunities to make suggestions, ask questions or raise concerns.

WHAT COULD GO WRONG	CONTROL MEASURES
Drone is: <ul style="list-style-type: none"> - operated too close to airport - enters other controlled or special use airspace 	<p>Note: Personal protective equipment (PPE) is the least effective control measure. It should not be the first or only control measure you consider.</p> <p>Make sure the drone stays out of controlled airspace.</p> <p>If you need to fly in controlled airspace, make sure you have clearance and understand the rules.</p> <p>Know and follow CAA Part 101 rules for unmanned aircraft: www.aviation.govt.nz</p>
Operator loses sight of drone	<p>Drones must always be operated within the visual line of sight (VLOS) of the operator:</p> <ul style="list-style-type: none"> - the VLOS will vary according to how good the operator's vision is - the VLOS is 300 to 500 metres for a mid-size machine (such as the Phantom 4) <p>Follow the manufacturer's pre-flight instructions, including calibrating the internal compass, to make sure the 'return home' function works.</p> <p>Pre-programme the flight path.</p>
Drone noise affects: <ul style="list-style-type: none"> - operators - workers and other people nearby - neighbours - livestock 	<p>Restrict hours of use/operation.</p> <p>Limit exposure to noise.</p> <p>Check maps indicating where workers are active and avoid operating in these areas.</p> <p>Avoid operating noisy drones:</p> <ul style="list-style-type: none"> - in line with neighbouring properties; direct sound away from properties (especially houses) - in areas where sound could echo. <p>Communicate clearly with neighbours (see Neighbours information below).</p>
Drone flies beyond specified boundaries	<p>Follow CAA rules.</p> <p>Operator must ensure that the drone is operated:</p> <ul style="list-style-type: none"> - within the VLOS of the operator - under 120m (400ft) above ground level (AGL). <p>Pre-programme boundaries into flight path.</p> <p>Comply with local council rules and regulations – such as limits regarding distance from neighbouring properties.</p>
Operator loses control of drone and causes incident	<p>Make sure operators (including any contractors) are:</p> <ul style="list-style-type: none"> - trained and skilled - aware of their legal obligations - aware of how weather can affect their ability to control the drone - familiar with the instruction manual of the drone they are using, especially any limitations for flying in wet or windy weather. <p>Do not fly the drone above people – before a drone operation, check and confirm the presence and position of workers.</p> <p>Make sure the drone is well-maintained and serviced (including structure and casing, motor, compass, and accessories).</p>
Drone hits power lines	<p>Confirm flight paths will avoid power lines before launching the drone.</p> <p>Ensure operators know procedure to follow if the drone hits lines:</p> <ul style="list-style-type: none"> - treat all lines as live - do not attempt to retrieve drone - immediately contact your electricity distributor or your electricity distributor on their emergency number. <p>Include overhead power lines on a hazard map so that drone operators can avoid the lines:</p> <ul style="list-style-type: none"> - get in touch with the line owner to discuss ways to identify the lines, such as installing markers to make lines easier to see - use the map on the Electricity Networks Association (ENA) website to find contact details for your local lines company: www.ena.org.nz - you can also use the map for flight planning and identifying hazards, particularly for low level operations.
Neighbours irritated or disturbed (such as by noise or movement); privacy concerns)	<p>You must get consent:</p> <ul style="list-style-type: none"> - before flying above people - from the property owner, or persons occupying the property you want to fly over. <p>Communicate with neighbours in surrounding properties before operating the drone.</p> <p>If issues arise:</p> <ul style="list-style-type: none"> - discuss and resolve issues together - try to understand their point of view - consider writing down any agreements reached, and sharing a copy with neighbours.

WHAT COULD GO WRONG	CONTROL MEASURES
Unexpected weather events affect equipment or operator	<p>Note: Personal protective equipment (PPE) is the least effective control measure. It should not be the first or only control measure you consider.</p> <p>Check short- and long-range weather forecasts before launching the drone.</p> <p>Have set 'weather minima' (the worst weather conditions under which the drone can be operated) - check Pilot Operating Manual. At best:</p> <ul style="list-style-type: none"> - in wind strength below 15kt - below cloud base - not in rain or fog - able to operate free of obstructions to maintain VLOS.
Insecure or inadequate boundaries (workers/others not aware that drone in use)	<p>Place signs around the area where drones are in use.</p> <p>Share maps indicating where workers are active.</p> <p>Place bright cones at the end of crop or vine rows to warn that workers are in the area.</p> <p>Tell workers when and where drones are in use.</p>
Other harm/damage to people, property (including houses, buildings, pasture, animals, vehicles, and other aircraft)	<p>Provide adequate information, training, instruction and supervision.</p> <p>Confirm clear boundaries that will separate drone operation from people, property, vehicles, and livestock.</p> <p>Set up a launch pad and safe operating area away from vehicles.</p>

More information

[Advisory Circular AC101-1](#)

www.aviation.govt.nz

Airshare hub

[Airshare](#) is a hub for unmanned aerial vehicle (UAV) and drone operators, suppliers and retailers in New Zealand. It provides maps, and information on topics such as where and when drones can fly, maximum altitudes, and the relevant Civil Aviation Rules. The air traffic controller of airspace typically needs to be advised about drone flights within certain distances from an airport. In most cases notifications can be made through the Airshare website.

Operations within controlled airspace

Operations within controlled airspace must be authorised by Air Traffic Control. If you are suitably qualified and can meet the rule requirements then you may be authorised to fly. Lodge an authorisation request through Airshare. See www.airshare.co.nz to find out where you can and cannot fly your drone.

Other bird scaring guidance

Introduction - general risk management

Firearms

Gas guns, gas cannons and pyrotechnic cartridges

Vehicles

Lasers

Netting