

Flight initiation distances AEC421

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Project AIM:

We aim to develop a database of alert distances (distances at which birds exposed to an approaching human activity exhibit alert behaviour), flush/flight initiation distances (distances at which birds exposed to an approaching human activity initiate escape behaviour), and from this estimate minimum approach distances (distances at which humans should be separated from wildlife).

This will help us understand set-back distances that we need to recommend between, for example, birds and tracks or other development.

Research will take place relatively opportunistically, and because of this will take place at any time of year.

Species will include but will not be limited to:

- Shorebirds and waders, e.g., Tūturiwhatu/New Zealand dotterel, Karoro/black-backed gull, Tūturiwhatu/banded dotterel, Tarāpuka/black-billed gull, Tōrea/South Island pied oystercatcher, Kāruhiruhi/pied shag, Poaka/pied stilt.
- waterfowl, e.g., NZ scaup

What we will do:

Initiated approaches:

For each species we will approach birds by walking at right angles/perpendicular towards them and estimate the distances at which birds exhibit alert behaviour and either fly or move away (are flushed) from the people (and their dogs) or begin injury-feigning distraction displays.

Birds will be provided with an 'escape route'.

We will either

- a. walk towards individual birds or groups of birds
- b. walk with leashed dog(s) towards individual birds or groups of birds

We will record these distances (m) using either a rangefinder or a calibrated estimate.

All dogs to be leashed with any initiated dog approaches.

Each bird or flock to only be sampled three times a day with a two hour 'settling period' between interactions.

Observed approaches:

Same as above, but we will be watching others, who we have not directed and recording information about their approaches and birds' reactions.

For each interaction, please record the following in the datasheet: (number is DOC-7227668):

Column	Explanation/example
Flight initiation distance AEC421: Approach number	1
Grid ref/Address	1 Lovell Place, Taupō lakefront
Habitat type (river, beach, lake front etc).	Lake front
Site description e.g., 25 m from walking track along lake front. Does it have easy access, is a housing settlement nearby?	25 m from walking track along lake front, easy access, adjacent to houses
Is area considered a High/Med/Low pedestrian area? (H/M/L)	H
Number of people passing vantage point in 5 minutes	10
Number of people within 100m radius in 5 min	25
Observer name	Kerry Borkin
Date (dd/mm/yyyy)	15/12/2022
Time start (24 hour)	0630
Day of week (Mon-Sun)	Thursday
Tide height (if applicable)	NA
Initiated (I)/Observed (O)	I
Approacher name (if initiated)	Kerry Borkin
Dog (Y/N)	N
Dog on lead (Y/N/NA) Observed only	NA
Number of people approaching	1
Species name	Black-billed gull
Sex (F/M/Unknown (U))	U
Juvenile (J)/Adult (A)/Unknown (U)	A
Number of birds in flock (1-x)	5
Distance first started walking directly towards the bird (m)	15

Distance bird becomes alert (m)	12
Flush Distance (m)	9
Number of Birds flew off (F)/swam off (S)/moved (M)/began injury-feigning distraction displays(D)	3F, 2M
Other obs. E.g. for observed, people walked parallel to birds and shore	Birds only moved 10m, flew approximately 50m
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Additional explanations:

Distance first started walking directly towards the bird (m): this is recorded because several studies have found that flight initiation distances can be correlated with starting distances¹.

Definitions:

Number of people passing vantage point in 5 minutes: Count and record the number of people observed passing your vantage point in 5 minutes (e.g., 25 people in 5 minutes) – do this each time you visit

(I will then calculate the mean number of pedestrians per hour. This will be used to classify observations as taking place in low/high pedestrian areas. Following Lord et al. (2000), we will classify sites as high pedestrian if they receive 7-20+ pedestrians per hour, noting, for example, and whether sites are on popular beaches with easy access and near housing settlements, and low if they receive 0-3 pedestrians per hour (moderate 3-7 pedestrians per hour).)

Number of people within 100m radius in 5 min: Count all the people within 100m radius within 5 minutes.

Distance bird alert: the distance birds are alert to people as the distance bird exhibit “alert,” “react,” or “agitation” behaviours (e.g., bird raises its head, tenses its body, turns to look at the humans, flaps its wings, takes a few steps) as in Livezey et al. (2016).

‘Flight initiation distance/flush distance’ based on Mikula (2014)² and Lord et al. (2000): the distance, in metres, from the observer to the bird when it first takes flight/moves, or begins an injury-feigning distraction display, upon a direct approach whilst walking.

¹ Blumstein D.T. 2003. Flight-initiation distance in birds is dependent on intruder starting distance. *J. Wildl. Manag.* 67: 852–857.

² Mikula P. 2014. Pedestrian density influences flight distances of urban birds. *Ardea* 102: 53–60.

Please send completed datasheets to: Kerry Borkin, DOC Taupō kborkin@doc.govt.nz

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What we will not do:

Do not initiate approaches to birds whilst they are sitting on nests to minimize the risk of harm/desertion to eggs and/or chicks.

Do not knowingly sample the same individual bird or flock within the same sampling session i.e., no more than three times per day, each interaction separated by two hour 'settling period' as in Lord et al. (2000).