

Count Type Guide

Count types are the methods used to conduct counts at shorebird nests, seabird colonies, or rooftop sites.

DIRECT COUNTS

Where possible, you should conduct a *Direct Count*

- Use to count adults, nests, and chicks.
- Count every adult, nest, or chick seen.
- Use when counting solitary nest sites, colonies, roving chicks/staging young, or rooftops with an on-roof or above/across vantage point.

Stay outside of the posted area and use binoculars or a spotting scope to conduct your counts. For large colonies, or colonies with vegetation or topography (e.g., dunes) that impede full visibility, you may not be able to count all nests from one observation point. You will need to count part of the colony from one observation point and then move to another observation point, while keeping track of what nests you have already counted. Landmarks in and around the colony can be useful as visual references.

For colony nest counts, report **the average of at least two counts** on your form. If you are the only

observer, count twice and average your counts. If two or more observers are available, each person can count once, and the counts can be averaged together. If the counts are very different, conduct additional counts until you are confident in your numbers.

Use the same method to count chicks, if they are present. **Do not try to count nests and chicks at the same time**; it is best to conduct separate counts for each. If there is more than one observer, conduct your counts simultaneously from the same location and report the average count. However, if you saw chicks taking cover or hiding before another observer could see them, report the higher count instead of the average.

In large colonies that are time-consuming to count, it is helpful to conduct counts with multiple observers. You can divide the colony in half and have some people count nests while others focus on chicks.

Example Colony

Count 1
= 50 nests

Count 2
= 52 nests

Direct Count Example

The entire colony is visible to count. You conduct a *Direct Count*.

$$\frac{\text{Count 1} + \text{Count 2} + \dots}{\text{Number of times counted}} = \text{Direct Count}$$

Step 1: You position yourself so that you can see the entire colony. You may need to move around to count the entire colony, using landmarks as visual references.

Step 2: You count all visible nests at least twice and report the average of the counts as your *Direct Count*. Based on two counts (count 1 = 50 nests, and count 2 = 52 nests), the *Direct Count* for the example colony is 51 nests. For decimal values, round to nearest whole number

$$\frac{50 + 52}{2} = 51 = \text{Direct Count}$$

Step 3: You repeat Step 2 for adults.

Step 4: You repeat Step 2 for chicks by age class.

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EXTRAPOLATED COUNTS

The *Extrapolated Count* type is a calculation.

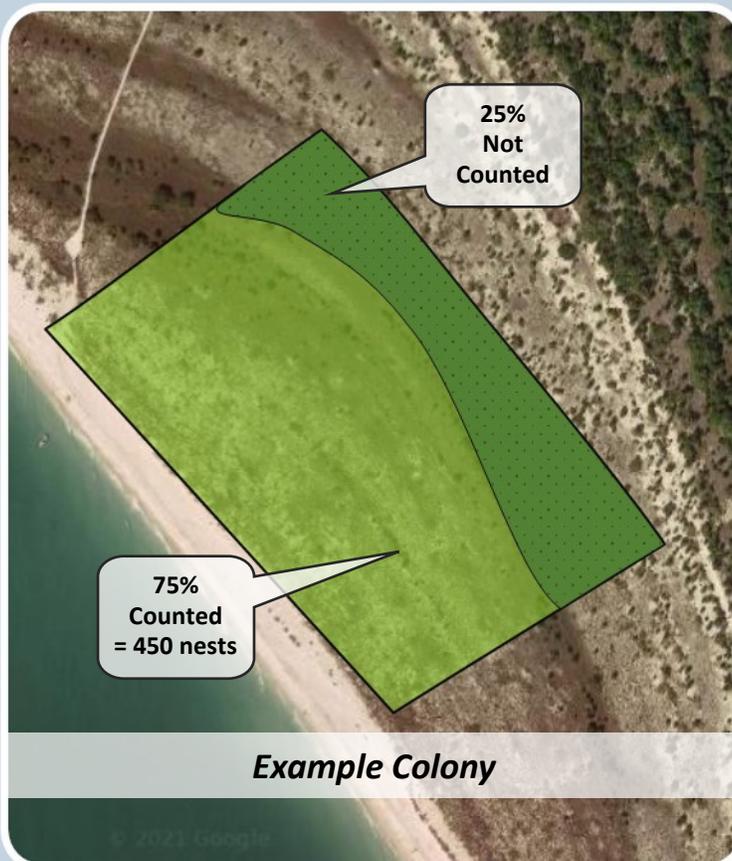
An *Extrapolated Count* is only used when something prevents you from conducting a *Direct Count* for an entire colony. **It is a calculation based on the proportion of the colony where you can conduct a *Direct Count*.** Use when counting ground colonies or rooftop colonies with an above/across or on-roof vantage point.

Use to count adults, nests, or chicks when...

- Your view of a colony is significantly **obstructed** due to topography, vegetation, or structures
-OR-
- The colony is large (e.g., more than 400 nests) and you do not have time to conduct a *Direct Count* for the entire colony.

Calculation Protocol: follow these steps to conduct an *Extrapolated Count* (formerly *Estimate Count*):

- Position yourself where you can view a portion of the colony.
- Delineate this section as your count area, then conduct a *Direct Count* in this area (see previous page for how to conduct a *Direct Count*).
- Determine approximately what percent of the entire colony your *Direct Count* area covers.
- Divide your *Direct Count* by the proportion of the colony you counted to obtain an *Extrapolated Count* that represents the whole colony (see figure below).



Extrapolated Count Example

A dune obstructs a portion of this colony from view. Conducting a *Direct Count* is not feasible as no vantage point or combination of vantage points allow you to view the entire colony. You conduct an *Extrapolated Count* instead.

$$\frac{\text{Direct Count}}{\% \text{ of Colony Counted}} = \text{Extrapolated Count}$$

Step 1: You position yourself where you can see as much of the colony as possible.

Step 2: You delineate the viewable portion of the colony as your count area. You conduct a *Direct Count* and get 450 nests.

Step 3: You determine that your *Direct Count* area covers approximately 75% of the entire colony.

Step 4: You divide your count by the proportion of the colony counted. You counted 450 nests in 75% of the colony, so you divide 450 by 0.75 (75%) for an *Extrapolated Count* of 600 nests. For decimal values, round to nearest whole number. Repeat for adult and chick counts as needed.

$$\frac{450}{0.75} = 600 = \text{Extrapolated Count}$$

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PRESENT/ABSENT & DID NOT CHECK

When you report *Present*, we can only say there was at least one. If possible, please conduct a *Direct* or *Extrapolated* count.

If you see nests or chicks but did not count them, please list them as **Present** on your form. If you have searched the area and do not see nests or

chicks, mark them as **Absent** or enter a count of zero (0). Chicks can be very cryptic, so do not assume that they are absent from a colony unless it is early in the nesting cycle, or you have surveyed the entire colony and can verify that no chicks are hidden in the vicinity. If you cannot verify presence or absence of nests or chicks, please write **Did Not Check** on your form.

FLUSH COUNTS

- Use when surveying a rooftop from the ground.
- Count the number of birds flying to and from the rooftop (*Flush Count* does not necessarily mean the birds are responding to a disturbance).
- Report the highest number of birds flying to/ from the roof, or hovering over it during your survey.

HIGH COUNTS

- Use to count chicks on a rooftop, from a ground vantage point.
- Count the highest number of chicks observed on/near the rooftop during that survey.
- Use when you can see chicks from your vantage point on the ground but cannot determine if you have seen all the chicks on that rooftop.

Flush Counts and *High Counts* are **only** used for rooftop sites.

Returning **fallen chicks** to a rooftop? Record the returned chicks as part of your *High Count*.

