Breeding Bird Protocol for Florida's Shorebirds and Seabirds

For use with the Florida Shorebird Database

Created By: Florida Fish and Wildlife Conservation Commission (FWC)

Questions? Contact FLShorebirdDatabase@MyFWC.com

Revised March 2020

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Introduction

Shorebirds and seabirds nest on Florida's beaches, spoil islands, and artificial habitats such as gravel rooftops. They lay their eggs in small depressions in the sand or gravel called **scrapes**. Shorebirds nest individually, or in very loose aggregations, while seabirds generally nest together in large groups called **colonies**. The Breeding Bird Protocol (BBP) provides instructions for how to count **solitary-nesting shorebirds** and **colonial-nesting seabirds** in Florida using standardized methods. By following this protocol, your counts can be combined with others' statewide, providing valuable insight on population status and trends and helping to guide management for these species. Data collected using this protocol should be entered online in the Florida Shorebird Database (FSD): www.FLShorebirdDatabase.org.

There are twenty species of shorebirds and seabirds that nest in Florida (listed at right). We are interested in the statewide numbers of breeding pairs, nest locations and outcomes, and locations of brood-rearing habitat for these species. Data can be entered in the FSD for any of these species. However, we are especially interested in tracking populations of the species listed in **bold**. These species regularly nest on beaches and gravel rooftops, which are the key habitats monitored under this protocol. Some of these species *(italicized)* are also listed as *State Threatened* due to population declines.

Photo: FWRI

SPECIES	GROUP
American oystercatcher	Shorebird
Black-necked stilt	Shorebird
Black skimmer	Seabird
Bridled tern	Seabird
Brown noddy*	Seabird
Brown pelican	Seabird
Caspian tern	Seabird
Eastern willet	Shorebird
Gull-billed tern	Seabird
Killdeer	Shorebird
Laughing gull	Seabird
Least tern	Seabird
Magnificent frigatebird*	Seabird
Masked booby*	Seabird
Roseate tern	Seabird
Royal tern	Seabird
Sandwich tern	Seabird
Sooty tern*	Seabird
Snowy plover	Shorebird
Wilson's plover	Shorebird

*Nest only in the Dry Tortugas

Key Concepts — Route and Route Survey

Important Note Before You Survey

- When conducting your surveys, **stay far enough from the birds to avoid flushing them** (making them fly up or move away from their nests/chicks).
- **Never enter a posted area** (an area with "Do Not Enter" signs) **or climb a rooftop** to confirm nests or conduct counts. A permit from the Florida Fish and Wildlife Conservation Commission is required to access these areas.
- Always **be aware of potential nest predators** nearby (e.g. coyotes, ghost crabs, crows, gulls). Flushing the birds when predators are nearby may result in egg or chick predation.

Key concepts important for understanding the Breeding Bird Protocol: **Routes** and **route surveys**

Route

- **Path surveyed** in search of breeding birds.
- Has designated start and end points.
- Should be short enough to survey in a single day.

Report all breeding birds, nests, and young seen along route. Routes vary in distance and how they are surveyed.

There may be **designated routes** in your area. Check with your **local partnership** or contact FLShorebirdDatabase@myfwc.com.

Route Survey

When you survey a route, you are conducting a route survey.

- Conduct route surveys **at least monthly** throughout the breeding season (March to August; see count windows).

Weekly surveys are preferred when birds are nesting.

Key Concepts - Site and Site Visit

Remember - All solitary/colony/chick sites are associated with a route.
All solitary/colony/chick site visits are associated with a route survey.

Key concepts important for understanding the Breeding Bird Protocol: **Sites** and **site visits**

Site

- **Specific location** where birds are nesting on ground or rooftop.
- A single route can have multiple ground sites (shorebird nests and seabird colonies) as well as chick locations.
- Rooftop visits should not be reported along a route. **Rooftops are considered independent sites.**

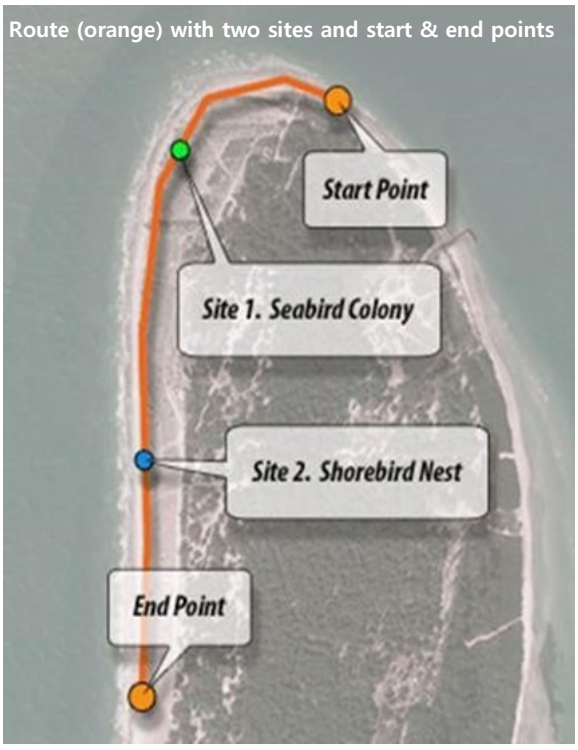
TYPES OF SITES

- Single shorebird nest
- Seabird colony comprised of multiple nests
- Building whose rooftop is used by nesting shorebirds and/or seabirds

Site Visit

- **Each time you check on** a shorebird nest, seabird colony, or rooftop site, you are conducting a site visit.
- Report a site visit when you discover a nest site, and each subsequent time you check it.
- **At a minimum, we ask that you check all sites** (along your route and rooftop sites) **once a month during the specified count windows** and report your all your site visits.

However, once birds **start nesting** along your route or on your rooftop, we recommend **weekly** monitoring.



Count Windows (When to Survey)

In Florida, the shorebird nesting season generally starts in mid-February and continues until mid-August, though nesting may begin earlier or end later in some years. **We recommend surveying routes and checking sites (ground and rooftop) weekly as soon as birds start nesting until chicks become flight-capable.** However, the minimum survey requirements are once a month, during specific count windows. Please survey your route(s) and check all of your sites at least once a month, during each of the count windows below:

These count windows occur on the same dates every year. Counts of breeding birds, nests, and young conducted during these windows provide information on distribution and minimum population estimates of Florida's shorebirds and seabirds. However, **more frequent (weekly) surveys are recommended** for better tracking of population numbers and nesting outcomes. The purpose for each count window is provided in the table below, but we ask that you report all nesting birds and young, regardless of when they are observed.

COUNT WINDOW CALENDAR

Count	Dates	Primary Purpose	Reason
1	March 18-24	Locate early shorebird nests.	Many shorebirds are on nests by mid-March.
2	April 15-21	Locate early seabird colonies; check status of shorebird nests.	Some seabird colonies begin forming in early April. Shorebird chicks begin to appear.
3	May 13-19	Locate new nests & colonies and check status of existing sites. Locate shorebird chicks.	May and June represents the peak of nesting season. Seabird chicks present at most colonies by June.
4	June 10-16	Check status of all nests & colonies. Count shorebird and seabird chicks.	
5	July 8-14	Locate new nests & colonies and check status of existing sites. Count chicks and flight capable young.	Often second clutches and re-nesting attempts are initiated in July.
6	August 5-11	Count chicks and flight capable young.	Tail end of nesting season in August. Recently fledged young are most apparent.

Time of Day

Depending on the species you expect to see, you may want to adjust the time of day of your survey. If you are looking for shorebird nests, you should conduct your survey during the early morning or evening. Adult shorebirds will likely run off their nests as soon as they see you, so surveying during the cooler parts of the day minimizes exposure of their nests to the sun and heat.

For seabirds, the best time to conduct counts depends on their nesting stage. Early in the season while adults are incubating eggs, the best time to count nests is during the hottest part of the day (~9 A.M. to 4 P.M.) when the birds are more likely to be shading their eggs. Later in the season when chicks hatch, it is best to conduct counts during early morning or evening hours when chicks are more active and visible.

If you are monitoring rooftops, the best time of day to conduct site visits is in the early morning or early evening, when you are most likely to see shorebird or seabird activity.

Conducting Route Surveys

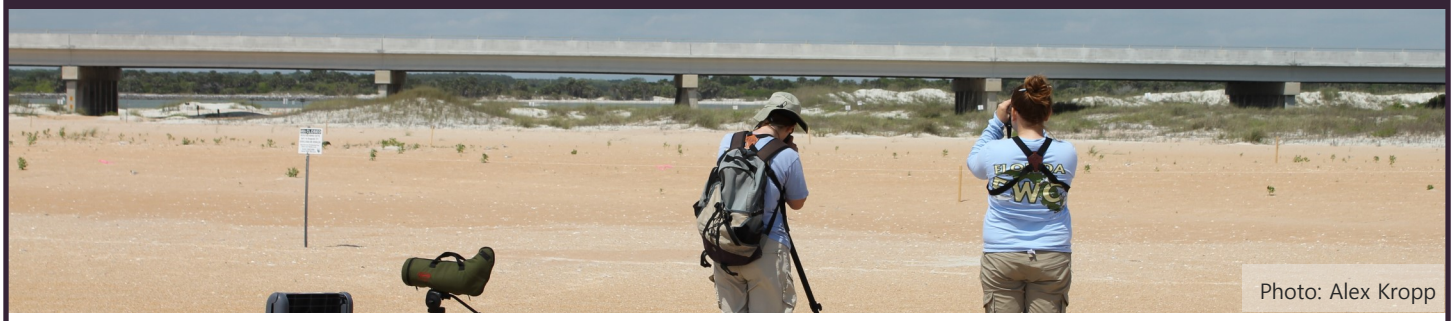


Photo: Alex Kropp

Note: If you monitor **rooftop sites only**, skip ahead to the Rooftop monitoring protocol.

Survey your route from the start point to the end point, searching for breeding birds, nests, and young along the way. Each time you survey your route, complete a Route Form and enter your data in the FSD — even if you do not observe nesting birds or young. It is important for managers to know where birds are absent, as well as where they are present. If you cannot complete the entire route survey (for example, due to bad weather), indicate on the Route Form that the survey was partial.

We are interested in the breeding populations of American oystercatchers, snowy plovers, and Wilson's plovers that you observe along your route.

★ On the Route Form, please report the number of **potential breeding adults** that were **not counted** at a nest site or with a brood (e.g., territorial adult or pairs, nesting birds away from their nest, or birds that recently lost a nest or brood). ★

Breeding adults associated with nests or broods will be reported as part of your site visits (i.e., nest or roving chick form) and should not be reported on the Route Form.

If you find a new nest or colony, record the latitude and longitude using a GPS unit if possible. Set your GPS unit to the "WGS 84" datum (this is the default for most GPS units). You need one GPS point (coordinates) to record a shorebird nest and at least four GPS points to outline the boundary of a colony.

If you do not have a GPS unit (or smart phone with a GPS app), you can create the site in the FSD using the satellite imagery. **Do not disturb the birds:** take the GPS point from a location far enough for the birds to remain settled on their nests.

Give the site a descriptive name with the location, species, and nest sequence (e.g., Bird Island AMOY 1, Honeymoon Island State Park Colony 2). If multiple people are surveying the same route, please coordinate site names and numbers for consistency. A county code and number (e.g., BA12) are automatically appended to the site name when the site is entered in the FSD.

Take a GPS location whenever you see a shorebird roving chick (chick that has left the nest) or juvenile (flight-capable) seabirds at a staging area *(more information in the* Chicks and juveniles *section)*.

If you previously found shorebird nests or seabird colonies along your route, you should check on those sites every time you complete a route survey and fill out a Shorebird Nest Form or Seabird Colony Form, respectively, for each site. If the birds have completed nesting or abandoned a site, please indicate that the site is *No Longer Active* on the relevant form. You can use the optional "Site Checklist" on the bottom of the Route Form to help you keep track of sites located along your route.

More information on monitoring shorebird nests, seabird colonies, and chicks along your route is provided in the following sections.

Shorebird Nests (Solitary Sites)

Photo: Britt Brown

Looking for shorebird nests? We suggest you survey during the early morning or evening. Adult shorebirds will likely run off their nests as soon as they see you, so surveying during the cooler parts of the day minimizes exposure of their nests to the sun and heat.

Photo: Margo Zdrakovic

Shorebird Nest Form

Fill out a Shorebird Nest Form when you find a shorebird **nest with eggs or nestlings** (small chicks *inside* the nest). Each shorebird nest must be recorded on its own form — even if the nest occurs within a seabird colony. Each shorebird nesting attempt must be reported as a new site. If the same pair re-nests, or if one adult in a pair re-nests, it is considered a new nest site and should be reported on a new Shorebird Nest Form.

Photo: Britt Brown

Finding shorebird nests can be challenging, as adults can be very secretive, and the nests are often hidden behind dunes, vegetation, or other protected areas. Please do not enter these areas and disturb the birds. Instead, observe the birds from a distance and watch for behaviors which indicate that a nest may be present.

Photo: Janell Brush

Shorebird Nests (Solitary Sites)

Report the site status as **Active** if you see:

- A shorebird **nest,** or
- An adult exhibiting **nesting behavior** (i.e., incubating, brooding, or broken-wing displays) - note which one you saw

You can verify a shorebird nest from a distance by looking for adults in **incubating posture** (see top picture to the right). Incubating adults sit down in the nest scrape, below the level of the sand. Adults may also be **brooding** (shading or warming) chicks in the nest. Watch the bird through your binoculars or scope and examine the area closely if the bird stands or leaves. You may be able to see eggs or nestlings in the scrape. Even if you cannot see the inside of the nest, you can still confirm a nest if the adult returns to the scrape to incubate or brood.

Snowy plover incubating

Wilson's plover exhibiting broken-wing display

If you are too close to a nest, adult shorebirds may attempt to lure you away by feigning an injury (**broken-wing display,** see bottom picture to the right). Shorebirds often avoid approaching their nest until you leave the area, so back away from the birds and wait to see if they return to the nest.

If adults are not displaying these specific nesting behaviors, but they are exhibiting other behaviors (alarm calls, etc.) that suggest that a nest may be nearby, please record the site status as ***Probable nesting*** on the form. It is not necessary to confirm nesting if it will disturb the birds. It is preferable to record the site as a probable nest site than to risk stepping on eggs.

Chicks usually leave the nest within a day of hatching, so it is rare to see nestlings still in the nest. If you do find nestlings, record them on the Shorebird Nest Form. However, once they leave the nest (even if they remain near the nest site), they must be reported on the Roving Chicks/Staging Young Form *(see details in the Chicks and juveniles section)*.

Once the nest is empty, mark the nest status as ***No Longer Active*** on the Shorebird Nest Form. Final outcome is determined by whether at least one chick made it out of the nest alive. If the nest failed to produce chicks, please note the cause of failure, if known. It helps to be aware of the incubation periods for the species you are monitoring, so that you can visit the nest site during the anticipated hatch date and improve the likelihood of determining its final outcome.

Each shorebird nesting attempt must be reported as a new site. However, if you know that the nest is a re-nesting attempt, select re-nest = 'yes' and specify the original/previous nest name if known. If you know the site is a re-nest but are unsure from which original nest, select re-nest = 'yes' and choose 'I don't know' for original nest name. Refer to the Re-nesting Quick Guide for more information about determining re-nesting.

Seabird Colonies (Colony Sites)

Photo: Bobbi Carpenter

Seabird colonies are usually more obvious than solitary shorebird nests. If you see seabirds dive-bombing, calling, or circling overhead, a colony with active nests is likely nearby. Please back away until the birds settle back down on their nests and record your observations on the Seabird Colony Form.

When is the best time to survey a colony?

It depends on their nesting stage. Early in the season while adults are incubating eggs, the best time to **count nests** is during the hottest part of the day **(9 A.M. to 4 P.M.)** when the birds are more likely to be shading their eggs. Later in the season when chicks hatch, it is best to conduct **chick counts** during **early morning or evening** hours when chicks are more active and visible.

You can count the nests in a colony by counting adult birds in **incubating posture** (similar to incubating posture in shorebirds). **For the nest count, only count adults in incubating posture, and not those standing around in the colony.** Each incubating adult is counted as one nest. If birds are flying up above their nests, you must back away and wait for them to settle back onto nests for an accurate count.

Least terns in incubating posture often have crossed wings that point upwards. Incubating black skimmers can be more difficult to identify, because they dig scrapes in which to rest, so birds sitting in a scrape are not necessarily nesting. Look for black skimmers sitting in their scrapes with an upright posture and an elongated neck. A detailed guide on black skimmer nesting behavior is available online.

A bird in incubating posture is sitting down, just below the surface of the sand.

Black skimmer in incubating posture (Photo: Bobbi Carpenter)

Least tern in incubating posture (Photo: Alex Kropp)

For Count Types, refer to Conducting Counts section

Seabird Colonies (Colony Sites)

Photo: Britt Brown

If you see birds that are **pre-nesting** (courting, scraping, or territorial displays) within the colony, **do not** report the colony as *Active*. A colony is only *Active* once nesting is observed. If you would like to document the birds present, you can record this information on the Route Survey Form in the comments section.

As eggs hatch, adults begin to brood (shade) their young. When seabird chicks are very young (2-3 days old) and still in the nest, it can be difficult to tell whether an adult is incubating or brooding, so an adult exhibiting either behavior is counted as a nest. Most chicks will move away from the nest 2-3 days after hatching and may seek cover inside the colony or walk to the water's edge. Not all nests will hatch at the same time, so you may be counting nests and chicks in a colony at the same time. *See the Chicks and juveniles section for information on chick age classes.*

All incubating adults, chicks, and juveniles **within sight of the colony** boundaries should be counted on the Seabird Colony Form. A colony is considered *Active* as soon as any nest (of any species) is present, and until all nesting adults, chicks, and flight-capable juveniles have left the area. Once juveniles move out of sight of the colony, they should be reported on the Roving Chicks/Staging Young Form *(see details in the Chicks and juveniles section).*

If more than a quarter (25%) of the nests or chicks have been lost to predators, storms, or other causes, please report it as a **Major loss** on the Seabird Colony Form (note the cause, if known). Even if nesting has finished, a colony is still considered *Active* if chicks or flight-capable juveniles are within sight of the original colony location.

Once all the birds have left the area, the colony site can be marked *No Longer Active*. If the birds re-nest in the same area later in the season, the colony site can be marked *Active* again.

Conducting Counts (Count Types)

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, 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 a few people count each half, or have some people count nests while others focus on chicks.

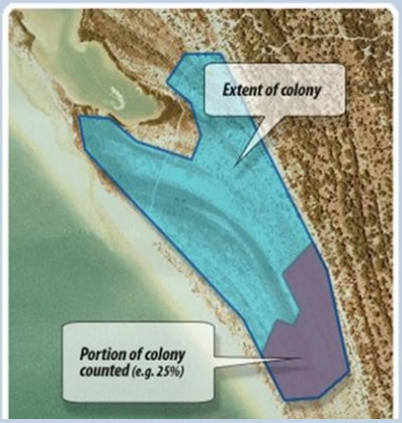
Estimate Counts

The estimate count type is a calculation

- Use to count adults, nests, or chicks.
- Count a portion of the colony.
- Use at a ground colony, or at a rooftop colony with an on-roof or above/across vantage point.
- Use at a large colony (e.g., more than 400 nests), if you do not have time to conduct a *Direct Count*, or if part of the colony is obstructed by vegetation or topography.

To conduct an *Estimate Count*, position yourself where you can view a portion of the colony and delineate this section as your count area. Conduct a *Direct Count* in this area (as described above).

Determine approximately what percentage of the entire colony is encompassed by your count area and multiply your count by the appropriate value to estimate the size of the colony (see figure below).



Total of 400 nests

If you counted 100 nests in the 25% of the colony, you would multiply your count by 4 to get an estimate count of nests.

Conducting Counts (Count Types)

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

Present/Absent & Did Not Check

When you report *Present,* we can only say there was at least one.

If possible, please do a *Direct* or *Estimate* 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.

If you are returning fallen chicks to a rooftop, report the count type as a *high count*. Then record the number of chicks in the appropriate age classes.

Returning fallen chicks to a rooftop?

Record the returned chicks as a *high count*.

Flush counts and *high counts* are **only** used for rooftop sites.

Chicks and juveniles

Age classes

This protocol classifies shorebird and seabird young into three age classes: **Downy chicks, feathered chicks,** and **flight capable juveniles** (fledges). Downy chicks are covered in a fuzzy down, resembling cotton balls. Approximately one week after hatching, the chicks become feathered. Feathered chicks are usually easier to detect, as they are larger and more active than downy chicks. Three to four weeks after hatching, chicks fledge and become flight-capable juveniles. Chicks that are mostly covered in down are considered **Downy**, chicks that are mostly feathered can be counted as **Feathered** and fledges/juveniles that can fly short distances are considered **Flight-capable**. We recommend that you familiarize yourself with the age classes of species that you may encounter. Aging guides are available for several species online.

Downy *Wilson's plover chick*

Feathered *Wilson's plover chick*
Plover photos: Britt Brown

Wilson's plover **Flight-capable juvenile**

Downy *Least tern chick*
Photo: Britt Brown

Feathered *Least tern chick*
Photo: Maxis Gamez

Least tern **Flight-capable juvenile**
Photo: Britt Brown

Special note on second-year birds: If you can identify second-year birds (yearlings that fledged the year before), count them as adults and note the distinction in the *Comments* section of your form (e.g., "4 of 55 adults are second-year birds").

Where to report chicks and juveniles

Shorebird and seabird young are reported differently. Shorebird chicks *inside* the nest cup (**nestlings**) should be recorded on the Shorebird Nest Form. Once chicks are observed *outside* the nest cup, they should be recorded on the Roving Chicks/Staging Young Form. Enter the **natal nest name** (nest from which the chick hatched) if known, or 'I don't know' on this form if unknown.

If you are confident that a pair has a brood based on behavior, but you are unable to visually confirm, you can report the brood by entering zero in each chick category, then entering an adult count. Be sure to indicate in the comments that you were unable to see a brood but are confident the pair has chicks and describe the behavior observed.

Seabird young should be counted on the Seabird Colony Form if they are **within sight** of the colony. This is because they tend to stay near the colony (or nearby shoreline) after they leave the nest. The colony status is *Active* as long as any nesting birds, chicks, or flight-capable juveniles remain within sight of the colony. Juvenile seabirds eventually leave the area and congregate in **staging areas** along the beach. At this point, you can report these juveniles on the Roving Chicks/Staging Young Form.

Rooftop Monitoring Protocol

Photo: Jeff Liechty

In Florida, shorebirds and seabirds often nest on flat, gravel rooftops. Rooftop nesting has been documented in six species: **Least terns, black skimmers, roseate terns, gull-billed terns, American oystercatchers,** and **killdeer**. Rooftop nesting has been reported at hundreds of sites throughout coastal and inland Florida. Each breeding season, volunteers are needed to check these historical rooftop sites for nesting birds. The list of suitable Historical Rooftops is maintained online. Contact FLShorebirdDatabase@myfwc.com to coordinate rooftop surveys.

If a building is re-roofed or torn down, it is no longer suitable for nesting and will not need to be checked. However, partners may wish to check nearby buildings with flat, gravel roofs in case the birds relocate to a new roof. If you discover a new rooftop nesting location (or a historical rooftop has changed), fill out a Rooftop Site Details Form.

For each rooftop site that you are monitoring, follow these steps:

1. Early in the season, introduce yourself to the building's owner or property manager, provide contact information for your regional FWC office, and explain what you are monitoring. Please verify that the rooftop is still gravel. If so, encourage property owners to conduct any planned rooftop or air conditioner maintenance before the birds arrive. If emergency repairs are needed while the birds are nesting, the regional FWC office should be contacted immediately for assistance.

2. Gravel rooftops should be checked at least once a month during each of the six count windows. Once you see shorebirds or seabirds at the site, weekly monitoring is preferred. **If chicks fall off the roof or down drain-spouts**, please contact the regional FWC office immediately and consult the Chick-checking Manual for instructions.

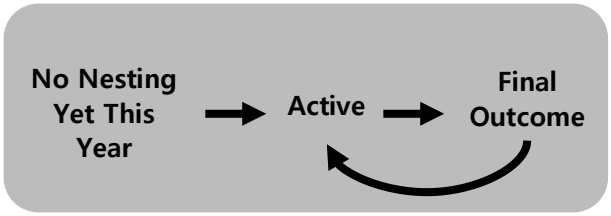
Rooftop Monitoring Protocol


Photo: Carly Fankhauser

3. During each visit, observe the roof for any of the six species outlined above. All shorebird and seabird species seen at a single rooftop location can be reported on one Rooftop Visit Form. Fill out a Rooftop Visit Form and enter your data online each time you check the site, even if birds are absent.

4. Record your **vantage point** on the Rooftop Visit Form. Most of the time, you will be observing the roof from the ground or parking lot below. However, sometimes a higher vantage point is available, such as a taller building nearby with a good view of the roof. **Do NOT go onto any roof with active nesting unless you are accompanied by an FWC Biologist.** If you see birds flying to or from the roof or hovering over it, you can assume that birds are nesting on the rooftop even if you cannot see nests or chicks.

5. Record the rooftop **status** on the Rooftop Visit Form. If no shorebirds or seabirds were seen at the rooftop yet this (current) season, the status is *No Nesting Yet This Year*. As soon as any of these species are seen on the roof, the site is considered *Active*, and remains *Active* as long as any birds are present. Sites are *No Longer Active* when birds that nested this season are not currently present on rooftop. Once a site is *No Longer Active*, indicate the **final outcome** (whether the rooftop colony produced flight-capable juveniles of any species). If there was a **major loss** event (25% or more of the nests or chicks were lost to predation, weather, etc.), indicate the cause, if known.



Once a rooftop colony is indicated *Active*, it cannot return to *No Nesting Yet This Year*. Sometimes, nesting begins again after a rooftop has already been assigned a Final Outcome. If a rooftop begins a second round of activity, observers should report the rooftop as *Active* and continue to monitor the rooftop. When it becomes *No Longer Active again*, a Final Outcome must be assigned for the second round of activity.

Rooftop Monitoring Protocol


Photo: Carly Fankhauser

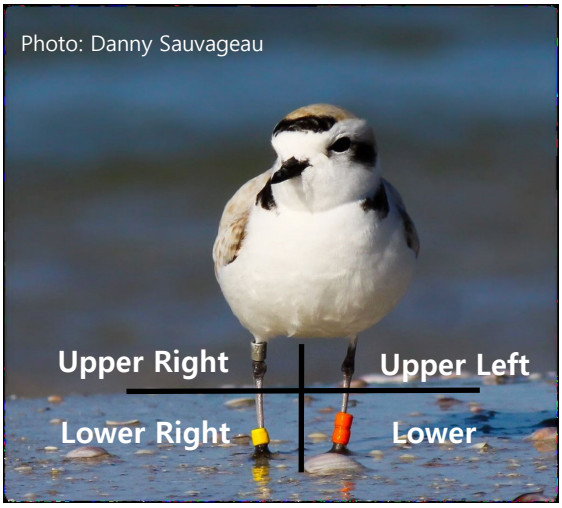
6. Count adults, nests, and chicks of each species that you can see from your vantage point. For a detailed definitions of count types go to the Count types section.
   - If you can see the rooftop from a high vantage point, conduct ***Direct*** or ***Estimate Counts*** of all nests, chicks/juveniles, and adults on the roof.
     ⇒ *Remember, the FSD defines an Estimate Count as a number derived from a calculation when you can only see and count a portion of the area.*
   - If you are observing from the ground, you will most likely be conducting a ***Flush Count***. Watch the roof for at least 15 minutes and report the highest number of birds flying to/from the roof or hovering over it. Note that a *Flush Count* does not necessarily mean that all the birds flew up in response to a disturbance. If you hear birds but never observed any flying, report adults present on the Rooftop Visit Form.
   - If you see chicks on the edge of the rooftop or you return a fallen chick(s) to a rooftop, select the count type as a ***High Count*** and enter the number of chicks in the appropriate age class.

Banded Birds

Photo: Ezra Thompson

You may see birds with leg bands or flags during your surveys. Each sighting of a banded bird is important because it helps track movement and survival of that bird. If you observe a banded bird, please report the band combination to the appropriate researcher at http://flshorebirdalliance.org/resources/bandedbirds.aspx and in the *Comments* section of your form.

Note the color and position (right or left leg, upper or lower leg) of each band. If one band is stacked on top of another, note which color is on top. If you see a flag or band with letters and numbers, please record its color and the alphanumeric code.



Reporting leg bands: In the picture to the left, the leg bands should be reported as follows:

LEFT: Upper leg- no band, Lower leg– orange over orange

RIGHT: Upper leg- USFWS band, Lower leg- yellow

Photo: Lorraine Margeson

Route Form

Route Name

Observers:

Date: MM DD YY

Start Time: ☐ AM ☐ PM

End Time: ☐ AM ☐ PM

Route surveyed by: ☐ Walking ☐ Motorboat ☐ Personal watercraft ☐ ATV ☐ Car/Truck ☐ Non-motorized vessel

Other

Survey Coverage? ☐ Entire Route ☐ Partial Route

Potential Breeding Adults*:

*Breeding adults that were not counted at a nest site or with a brood during survey (e.g. territorial adults, nesting birds away from their nest or birds that recently lost a nest or brood

American Oystercatchers:

Snowy Plovers:

Wilson's Plovers:

Optional Information

Site Checklist

Fill out the checklist before your survey to ensure all sites along your route are counted.

Colonies (Seabirds)		Solitary Nests (Shorebirds)	
1	☐	1	☐
2	☐	2	☐
3	☐	3	☐
4	☐	4	☐
5	☐	5	☐
6	☐	6	☐
7	☐	7	☐
8	☐	8	☐
9	☐	9	☐
10	☐	10	☐

Comments:

Shorebird Nest Form

Nest Name

New Sites Only

Re-nest? ☐ Yes → *Original/Previous Nest Name* ☐ No ☐ I don't know

GPS Coordinates: Latitude Longitude

Observers:

Date: MM DD YY Start Time: ☐ AM ☐ PM Posted? ☐ No ☐ Signs Only ☐ Signs & Rope

Status:
- ☐ **Probable nesting:** Strongly suspect that a nest is present but did not find it
- ☐ **Active:** Brooding, incubating, broken-wing display (Nest with eggs or nestlings found, or adults exhibiting nesting behavior)
- ☐ **No longer active:** No viable eggs or nestlings remain in the nest; adults no longer exhibiting nesting behaviors

Final Outcome: *(If 'No longer active')*
- ☐ **One or more chicks** left the nest (Please fill out a *Roving Chick* form)
- ☐ **No chicks** left the nest → *Describe cause of loss (e.g. weather event). If uncertain, write "unknown."*
- ☐ **I don't know** the outcome of this site

Counts: In the table below, please indicate the species, nesting behavior, and number of eggs, nestlings, and/or adults.
Opportunistic observations only. Do not disturb the birds. If you cannot count eggs or nestlings, you can write Present *or* Unknown.

SPECIES	NESTING BEHAVIOR		EGGS	NESTLINGS *	ADULTS
	Incubating/ Brooding	Broken-wing Display			
	☐	☐			

Only record nestlings observed **inside the nest scrape on this form. Chicks seen outside of the nest should be recorded on the* Roving Chicks/ Staging Young *form. Do NOT report the same chicks on both forms.*

Optional Information

Disturbance: *(Caused birds to flush)*

☐ Walker/Runner/Cyclist ☐ Kite surfer/landboarder ☐ Powered watercraft ☐ Aircraft
☐ Dog — leashed ☐ Vehicle ☐ Ghost Crab ☐ Unknown
☐ Dog — unleashed ☐ Non-powered watercraft ☐ Avian predator *Other:*

Tracks? *(Within 30 ft of nest)*

☐ Dog/Canid ☐ Raccoon ☐ People ☐ Cats *Other:*
☐ Vehicle ☐ Snake ☐ Ghost Crab ☐ Unknown

Number of dogs: *(Within 200 ft of nest)* *# Leashed* *# Unleashed*

Beach raking? *(Within 300 ft of nest)* ☐ Yes ☐ No

Wet Wrack? *(Within 300 ft of nest)* ☐ Yes → ☐ Abundant ☐ Sparse ☐ No

Comments:

Seabird Colony Form

Colony Name

GPS Coordinates: *(New sites only)* Latitudes Longitudes

Collect coordinates for at least 3 points to map the colony in the database)

Observers:

Date: MM DD YY Start Time: ☐ AM ☐ PM Posted? ☐ No ☐ Signs Only ☐ Signs & Rope

Status: ☐ **Active:** Nests, chicks, or juveniles of any seabird species are present (within sight of the colony)

☐ **No longer active:** No nests, chicks, or juveniles remain in sight

Final Outcome: *(If 'No longer active')*

☐ **One or more flight capable juveniles** of any species produced at the site

☐ **No flight-capable juveniles** of any species were produced at the site

☐ **I don't know** if any flight-capable juveniles were produced at the site

Major Loss? *(Did 25% or more of the nests fail or chicks die since last visit?)*

☐ Yes → If *Yes*, describe cause: *E.g. weather event. If no cause is certain, write "unknown"*

☐ No

☐ I don't know

Counts: In the table below, write the number of nests, chicks/juveniles, and adults of each species (within sight of the colony).

Count type options: Direct, Estimate, Present, Absent, Did Not Check, Flush Count, High Count (see definitions in Breeding Bird Protocol)

SPECIES	NESTS		CHICKS/JUVENILES				ADULTS
	Count Type	Number	Count Type	Downy	Feathered	Flight-capable	

Optional Information

Disturbance: *(Caused birds to flush)*

☐ Walker/Runner/Cyclist ☐ Kite surfer/landboarder ☐ Powered watercraft ☐ Aircraft

☐ Dog — leashed ☐ Vehicle ☐ Ghost Crab ☐ Unknown

☐ Dog — unleashed ☐ Non-powered watercraft ☐ Avian predator Other:

Tracks? *(Within 30 ft of nest)*

☐ Dog/Canid ☐ Raccoon ☐ People ☐ Cats Other:

☐ Vehicle ☐ Snake ☐ Ghost Crab ☐ Unknown

Number of dogs: *(Within 200 ft of nest)* # Leashed # Unleashed

Beach raking? *(Within 300 ft of nest)* ☐ Yes ☐ No

Wet Wrack? *(Within 300 ft of nest)* ☐ Yes → ☐ Abundant ☐ Sparse ☐ No

Comments:

Roving Chicks/Staging Young Form

This form is specifically for shorebird chicks found away from the nest, or for juvenile seabirds at staging areas.

Observers:

Date: MM DD YY

GPS Coordinates: Latitude Longitude

Start Time: ☐ AM ☐ PM **Posted?** ☐ No ☐ Signs Only ☐ Signs & Rope

Counts:

SPECIES	NATAL NEST NAME (Solitary nest name or 'I	CHICKS/YOUNG			ADULTS	HABITAT (See below)
		Downy	Feathered	Flight-capable		

Optional Information

Disturbance: *(Use codes below)*

Tracks? *(Use codes below)*

Number of dogs: *(Within 200 ft)* # Leashed # Unleashed

Beach raking? *(Within 300 ft)* ☐ Yes ☐ No

Wet Wrack? *(Within 300 ft)* ☐ Yes ☐ No → ☐ Abundant ☐ Sparse

Comments: Route name:

GPS Coordinates: Latitude Longitude

Start Time: ☐ AM ☐ PM **Posted?** ☐ No ☐ Signs Only ☐ Signs & Rope

Counts:

SPECIES	NATAL NEST NAME (Solitary nest name or 'I don't know')	CHICKS/YOUNG			ADULTS	HABITAT (See below)
		Downy	Feathered	Flight-capable		

Optional Information

Disturbance: *(Use codes below)*

Tracks? *(Use codes below)*

Number of dogs: *(Within 200 ft)* # Leashed # Unleashed

Beach raking? *(Within 300 ft)* ☐ Yes ☐ No

Wet Wrack? *(Within 300 ft)* ☐ Yes ☐ No → ☐ Abundant ☐ Sparse

Comments: Route name:

Disturbance Codes: *(Caused birds to flush)*
Walker/Runner/Cyclist (**WALK**), Dog-leashed (**DOG-L**), Dog-unleashed (**DOG-U**), Kite surfer/Landboarder (**KITE**), Vehicle (**VEH**), Non-powered watercraft (**NPWC**), Powered watercraft (**PWC**), Ghost crab (**CRAB**), Avian predator (**AVPR**), Aircraft (**AIR**), Unknown (**UNK**), Other (**OTH**)

Tracks:
Dog/Canid (**DOCA**), Vehicle (**VEH**), Raccoon (**RAC**), Snake (**SNA**), People (**PEO**), Ghost crab (**CRAB**), Cat (**CAT**), Unknown (**UNK**), Other (**OTH**)

Habitats:
Artificial (**ART**), Shoreline (**SHORE**), Flats (**FLAT**), Tidal/ Ephemeral pond (**TIDE**), Beach/ Dunes (**BEACH**), Shell rake (**SHELL**), Spoil island (**SPOIL**)

Rooftop Site Details Form

Rooftop Name

Building/Business Name:

Building Contact Notified? ☐ No ☐ Yes →

Name | Phone number

Title | Email

Building Address:

Street Address | City | Zip Code

Building Type: ☐ Warehouse ☐ Residential ☐ Government Building ☐ Supermarket ☐ Store ☐ Hotel

Other

Optional Information

Chick-checking program in place for this rooftop? ☐ Yes ☐ No

Building Information:

Is there an edge (parapet) around the **entire** rooftop preventing chicks from falling off?

☐ Yes ☐ No ☐ Unknown

Have **all** drains on the roof been covered to prevent chicks from falling in?

☐ Yes ☐ No ☐ Unknown

Site Description:

Describe the location of the site and/or how to access it, if necessary.

Rooftop Visit Form

Rooftop Name ☐

Observers: ☐

Date: MM ☐ DD ☐ YY ☐ Start Time: ☐ ☐ AM ☐ PM Survey Duration: ☐

Vantage Point: *(From where did you view the rooftop?)*
- ☐ **Ground:** viewed rooftop from the ground below
- ☐ **Above/Across:** viewed rooftop from an adjacent building or structure
- ☐ **On rooftop:** accessed rooftop to view birds *(special cases only!)*

Status:
- ☐ **No nesting yet this year:** No birds have been seen on this rooftop yet (in current year)
- ☐ **Active:** Nesting birds (of any shorebird/seabird species) are present on, flying to/from, or hovering over the rooftop
- ☐ **No longer active:** Birds that nested here this season are no longer present on the rooftop

Final Outcome: *(If 'No longer active')*
- ☐ **One or more flight-capable juveniles** (any species) were produced at the site
- ☐ **No flight-capable juveniles** (any species) were produced at the site
- ☐ **I don't know** if any flight-capable juveniles were produced at the site

Major Loss? *(Did 25% or more of the nests fail or chicks die since last visit?)*
- ☐ Yes → If *Yes*, describe cause: *E.g. weather event. If no cause is certain, write "unknown"*
- ☐ No
- ☐ I don't know

Counts: In the table below, write the count type and number of nests, chicks/juveniles, and adults of each species observed.
Count type options: Direct, Estimate, Present, Absent, Did Not Check, Flush Count, High Count (see definitions in Breeding Bird Protocol)

SPECIES	NESTS		CHICKS/JUVENILES				ADULTS	
	Count Type	Number	Count Type	# Downy	# Feathered	# Flight-capable	Count Type	Number

Optional Information

Disturbance: *(Caused birds to flush)*

☐ Crows ☐ Wading birds ☐ People
☐ Raptors ☐ Gulls ☐ Aircraft

Other: *If no cause is certain, write "unknown"*

Chicks falling off roof? *(Since last visit)*
- ☐ Yes →
- ☐ No
- ☐ Unknown

Description: *Number of fallen chicks, survival, etc.*

Chicks returned to roof? ☐ Yes ☐ No → *If no, where taken?*

Comments: ☐