

Field Methods for Coastal Bird Census and Beached (dead) Bird Surveys

If you have questions or comments, please contact Doug Forsell at Doug_Forsell@fws.gov.

Objectives: (In order of priority)

1. To determine the number and species of dead birds, mammals, and turtles washed up on beaches.
2. Determine populations of birds on the beaches (gulls and shorebirds).
3. To determine populations of birds in nearshore waters.

Methods

Beached Bird Surveys - The beached bird survey involves driving or walking along beaches and recording dead birds, mammals, and turtles found on the beach. Start the survey as the tide is going out. Look along the wrack line, if there are two wrack lines (due to a recent high tide or storm), drive down and survey one wrack line and back up the beach surveying the other wrack line. We need a starting and stopping GPS position as well as GPS positions of any observations made. Also, record if there is any fishing offshore (i.e. Gillnets (triangular orange flags), pound nets, or fishing boats). Record if you see or smell any oil offshore or on the beach. Be sure to record the number of days since the last survey, as this gives us a rate for dead birds washing up. When you find a dead bird determine the species, if you can't identify the bird take a photograph, best to take a photo of all birds and if digital record the photo number (hint: easy to write tag number in sand so recorded with bird on the photo). Note the condition of the specimen as an indicator of how old it is. Try to note any characteristics or clues as to the cause of death (oil or petroleum products; emaciation - starvation indicated by feeling the sternum - use gloves (if there is very little meat on the chest it probably starved); entangled in fishing line or plastic; or gillnet mortality which may be indicated by lacerations or missing or ruffled feathers on the neck). Mark all birds with an aluminum tag with your initials, a sequential number, and date found (e.g. DJF 004 3/01/98). Put the tag on the bird's right leg so if you find a bird without a right leg, record that information and tag the other leg, so the bird is not double counted. If you don't have any tags you can mark the bird in some way, the easiest way may be to spray paint the bird. Be sure to record the tag number or other marking in the comments section each time you find the bird on successive days.

Depending on sea conditions and the quality of your binoculars stop periodically (every 400m) to observe any nearshore, and or shorebirds (gulls, sanderlings etc). Count and identify anything you see, if you have any idea how far out birds are, note their distance. Note any bird behavior in the comments section. If you only record live birds in the water or on the beaches for part of the survey note the latitude and longitude and record where you change methods.

Beached Bird and Coastal Bird Census Data Forms

The forms are our only records, and as such should be filled out as thoroughly and carefully as possible. After completing the forms check them over carefully to be sure fields are completed and legible. Remember a data entry person has to read these and cannot be expected to decipher poor writing. Retain a copy of all forms and mail originals to:

We think the data forms are fairly self explanatory, but each field is described below in order of the appearance on the form. The field descriptions below with an asterisk are not required although it is best if you can try to document local weather conditions such as wind direction and speed.

Date - Month/day/year

Page Numbers within the same day. New day, start page numbers with 1 of n.

The first row of fields need only be filled out once each day, unless observing discontinuous segments

of beach (if going around an inlet and you were able to count the waters over the inlet, consider it continuous). On successive pages for the same day, you need only fill in observer's name on the first row or use a continuation sheet.

Observer's Name - First initial and last name

Start Time of day - in 24 hour clock

End Time of day - in 24 hour clock

Survey Length - Use start and stop latitude and longitude or track miles using the vehicle odometer

***Sea State (feet)** - This is the measure of small waves and water surface conditions caused by wind and fetch (the amount of distance the wind blows over the water). Use decimal feet (i.e. 0.0 = glass calm, 0.3 ripples; and 1.0 = small waves, 2.0 = med. waves, etc.).

***Swell height (feet)** - This is a measure of the large undulations of the water's surface which creates the surf and usually won't change through the survey. Depending on your height above the water, large swells could affect your ability to detect birds at a distance but may make it easier as birds will ride up on the swells.

***Wind speed** - in knots estimate or get from weather report (use VHF radio on weather station). 1 knot = 1 nautical mile per hour or 1.15 mph. Best if you can document local conditions.

Start and End Latitude and Longitude - this is for an entire day's survey, unless there is a break in coverage, in that case start another form.

Observation Conditions - This is an overall rating of how good you think the data are. This may depend on optics, weather, observers alertness, or bird behavior (the scale is 1-7 with 7 absolutely perfect and you are sure you saw all animals in the count zone to 400 m and 1 or 2 for data only useful for occurrence of birds).

***Distance from shore counted** - Try to count to 400 m, but if unable to count that far list maximum distance counted. If left blank, we will assume that you did not census the water areas and only counted birds on the beach or conducted a beached bird survey.

Beached birds counted? - Check this if you searched for dead birds on the beach.

Days since last beached bird survey - Enter number of days since last survey. Use a "?" if unknown.

Gulls on beach counted? - Check this if gulls on the beach were counted. We listed this separate as some areas have so many gulls that it takes too much time to count. Try to count gulls once a week.

Shorebirds on beach counted? - Check this if shorebirds on the beach were counted.

Species of animal or fishing gear-- Use common name or group name if known (e.g. common loon, unidentified loon, unidentified duck, unidentified scoter, bird, etc.). Four letter codes for most of the birds are listed in Table 1. Note fishing gear also and measure distances. Gear distances need only be measured once unless nets are moved.

***Age** - Some species can be aged and if time permits try to age gulls once.

***Male or Female** - If time permits try to list birds by sex once per week.

Tally - Tally animals and add up at the end and place number in **Total** column.

Total - Add tally and put number in column. People tally differently; don't leave it up to the data entry person, to add them.

***Distance to Shore** - This data will be used to determine if birds are distributed differently, or if detectability changes with distance. It is important for diving birds such as loons and sea ducks and not important for gulls. Use actual estimates or 100 meter bands with bands labeled as follows: 0 m - 100m = "100"; 101m - 200m = "200"; 201m - 300 m = "300"; 301m - 400m = "400", greater than 400 meters = ">400", if you included all birds in one zone counted within 400 meters use "W" for water (distance is above); Use "B" for birds counted on the beach, and D for dead birds on beached bird survey and "F" for flying birds.

Latitude - in degrees and decimal minutes. We are looking for positions to the nearest 500 meters feel free to sum gulls and shorebirds from a couple counts.

Longitude - of shore edge in degrees and decimal minutes.

Comments - Condition of birds, mammals, or turtles observed dead; Tag numbers put on dead birds; Photo number or other observations of interactions of animals and nets such as birds feeding near nets, or large

feeding assemblages. Record any information you think may be useful in interpreting data. Use the back of the form to describe anything you wish, especially descriptions of birds, mammals, and turtles, or any unusual behaviors or feeding flocks.

* Field aren't required

Table 1. The species you are most likely to encounter are listed below with a few clues to identification:

Common Loon (COLO) - Large, if not sure, Two sizes one 5 kg. Should be easy to ID, but smaller form about 2.5 kg just little larger than RTLO. Bill thicker than RTLO and should have heads turning black in spring.

Red-throated Loon (RTLO) - Small loon most common along the coast, head small almost looks like headless bird at a distance

Red-necked Grebe (RNGR) - smaller than red-throated loon & longer neck.

Horned Grebe (HGR) - very small

Northern Gannet (NOGA)- Large white with black wing tips, brown and white, or brown mottled

Double-crested Cormorant (DCCO) - Long neck, adults black, young have buff below

Long-tailed Duck (LTDU) - Variable mix of dark and white heads, usually in pairs to flocks, look for long tail of male

Black Scoter (BLSC) - Males all black with orange on bill, females have buff face

White-winged Scoter (WWSC) - White wing patches, mostly dark

Surf Scoter (SUSC) - Most common scoter, look for male's white head spot

Red-Breasted Merganser (RBME) - Reddish-brown breast band on males, rest is white below, Orange bill and crest on males and females

Sanderling (SAND) - Runs along the beaches at the waters edge, most common shorebird

Ring-billed Gull (RBGU) - most common small gull

Herring Gull – (HEGU) - most common large gull

Greater Black-backed Gull (GBBG) - largest gull, black back

Bottlenose Dolphin (BOPO)- 3" snout, dark gray above, white below, falcate dorsal fin, up to 12 feet

Harbor Porpoise (HOPO)- Blunt snout, mostly dark gray visible, triangular dorsal fin, to 6 feet

Loggerhead Turtle (LOTU)- up to 7 ft., rounded back

Kemp's Turtle (KETU)- relatively flat back, less than 3 feet