

## Protocols for the Caribbean Waterbird Census

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### Caribbean Waterbird Census – Level 1 Protocols for Counting Waterbirds<sup>1</sup>

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The CWC offers 4 levels of monitoring. These are:

- **Level 1 Site inventory/Basic counts**
- Level 2 Counts with simple detection probability
- Level 3 Counts with distance sampling
- Level 4 Simultaneous/ repeated counts at multiple sites

If you are not familiar with your site and/or you do not yet know what species are using the site, we recommend you start your monitoring program by conducting a Site Inventory. Basically, you visit the site as often as possible or at regular intervals over a year, and carefully identify and record all the birds that you see and hear. The objective is to develop a species list for each season/month of the year (winter, spring, summer, fall) so that you identify which species are breeding residents, which are fall and/or spring migrants and which are winter residents and their relative abundances (e.g., common, uncommon, rare, vagrant). When conducting a Site Inventory, it is not necessary to strictly follow the area search or point count protocol in that you can move around and are free to record and count birds for as long as you wish. However, DO record all species seen and heard, count the number of each species, note the size of the area that you counted, and the amount of time you spent counting. With this information you can enter the data into eBird Caribbean and make your counts maximally useful to analysis.

A Site Inventory/Level 1 count is an invaluable way to familiarize yourself with the site and plan your Level 2 or 3 monitoring program. It will:

- Help you figure out which count methodology is most appropriate for your site (area search or point count, also how you will measure detectability)
- Give you and your assistants time to improve your bird identification and counting skills
- Make you aware of the biases and other issues you need to deal with in counting the site (e.g., time of day, vegetative cover, tides and water levels, possible disturbance, etc.)
- Give you an opportunity to test your count methods, refine your skills, and train observers and recorders
- Decide on what habitat covariates (e.g., water level, salinity, state of vegetation, threats, etc.) you will measure and obtain practice taking these measurements

If you standardize the amount of time you spend counting and the area that you cover, and repeat your counts at least once annually, Level 1 methods can also be used for basic monitoring of waterbirds at a site. The data collected can contribute to our knowledge of species diversity and use of a site over time. In addition, if detection rates are known to be constant across space and time and/or if detection is 100% (e.g., in the case of a small open wetland), Level 1 counts may provide a simple means of estimating abundance and change over time (i.e., provide an index using raw counts) at the site, which may be adequate for certain monitoring objectives. Level 1 monitoring may also be appropriate for citizen scientists and birders who wish to contribute to our knowledge of waterbird populations and participate in the CWC (see Appendix 1: eBird Caribbean and Basic Counts (Level 1 Monitoring) for the CWC), but do not have time or resources to participate in Level 2 or 3 monitoring. Please note, however, the following important points:

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<sup>1</sup> This information is extracted from: Sorenson, L. G., and A. Haynes-Sutton. 2010. Caribbean Waterbird Census Manual: Promoting Conservation of Waterbirds and Wetlands through Monitoring. Society for the Conservation and Study of Caribbean Birds, Arlington, VA. Xx pp. Caribbean Waterbird Census Manual: Promoting Conservation of Waterbirds and Wetlands Through Monitoring, Version 1.0, 1 December 2010.

1) The sensitivity of simple counts to errors and biases limits the usefulness of Level 1 count data for more rigorous statistical analyses and assessments. If your objective is to measure trends in population size over time, you need a well-designed sampling plan and a survey method that accounts for these errors and biases. Level 2 and 3 monitoring, which include measures of detection probability, account for these errors and biases and greatly increase the value of the data to science.

2) Many aspects of the Level 1 Point Count or Area Search methods are utilized in Level 2 monitoring so once a surveyor is familiar with the Level 1 protocols, moving to a protocol which includes detectability is very straightforward and is often as simple as repeating the Level 1 counts across multiple days.

## Site Inventory/Basic Counts - CWC Level 1 Monitoring

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### Objectives

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Possible objectives of Level 1 Area Search and Point Count methods are:

- Conduct a rapid assessment of species presence and raw numbers to identify possible important areas for monitoring, study and protection.
- Test count methods, refine skills, and train observers and recorders, in preparation for use of standard protocols using more elaborated counting methods (Level 2 or 3).
- Compile a seasonally based list of species for the site, i.e., a Site Inventory and species checklist.
- Determine potential importance of a site based on the presence of threatened or endangered species, species diversity or high counts of a species of concern.
- Locate breeding colonies or nesting species.
- Assess species diversity and richness and community composition and how they change throughout the year (note that measures will likely be biased because detection probability is rarely perfect).
- Estimate an index of density and abundance (number of birds in a small area) if detection rates are known to be constant and/or when all individuals can be detected.
- Contribute to our knowledge of waterbird populations by participating in the CWC at a basic level.

### Description of Method – Area Search and Point Count

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The Area Search mimics the process that a birder would use while searching for birds in a given area and is easy to learn and popular with volunteers. A birder's goal is to maximize the number of species they see and the goal of a Site Inventory is much the same. When conducting an area search, the observer should move around the site or search area trying to identify and count ALL the birds in the area. Area Searches are often a good choice for wetlands that have good access such as boardwalks, dikes or which can be accessed by wading or canoe.

Area Searches will often provide a more comprehensive Site Inventory than a Point Count but there are often cases where Point Counts should be used. For example, if a wetland is not easily accessible or if birds will go into hiding because the observer is moving during an Area Search, then a Point Count should be conducted. Point Counts are also very easy to learn but unlike the Area Search, the observer stays at one place throughout the count period. Count stations, fixed locations to count birds, are established at vantage points around the edge of the wetland, and birds are counted for a specific period of time. Whether a Site Inventory is conducted with a Point Count, Area Search or even a combination of the two, the observer gathers and records the same information which includes what species are present and the numbers of individuals of each species. In addition, behaviors of interest or reproductive evidence should also be recorded.

Many wetland birds are most active in the early morning or late afternoon, so Site Inventories should be conducted to match these active times. It's best to conduct an inventory in the first couple of hours after dawn and last 2 hours before dusk. For coastal or tidal wetlands the best times to conduct an inventory will be more related to the tide than to sunrise and sunset. High tides will often concentrate shorebirds in narrower strips of land, which makes for easier counting and falling tides can also be a time of higher bird activity.

If you can repeat these counts, annually, seasonally or more frequently (if resources permit), this will provide not only seasonal species lists, but also show trends and changes across the seasons. To allow for comparison across the seasons or years, it is important that the counts are conducted exactly the same way each time you do the count: use the same protocol, start at the same time based on sunrise or tides, count for the same duration, and cover the same area or survey from the same count station. If the first count was an Area Search that started 1 hour after sunrise and covered 2.2 hectares, all subsequent counts should be conducted the same way.

### *Checklist of Equipment Needed for Level 1 Counts – Site Inventory/Basic Counts*

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Binoculars for all observers	
Spotting scope and tripod	
GPS	
Clipboard and pencils (sharpener, rubber)	
Aerial or survey map/Google Earth image or sketch map of area showing the wetland.	
Field forms – CWC Area Search Form for Basic Counts and Notes	
Country or site checklist of birds (if available)	
Field notebook (preferably waterproof)	
Colored flagging tape (optional)	
Field guide (e.g., Birds of the West Indies)	
Waders or appropriate footwear	
Drab, non-colorful clothing (avoid wearing white), hat, sunscreen and bug spray	
Stopwatch or digital watch with countdown feature	
Clicker counter (optional)	
Digital camera with 7x or greater telephoto lens (optional but recommended)	

### *Selecting the Site*

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Ideally, the sites for both Area Searches and Point Counts should allow relatively easy detection and identification of birds (by sight or calls), and allow the observer unobstructed views of the wetland. In a wetland site, it is acceptable to make use of a boardwalk, trail or dike (or wade/walk through water), or if the water body is large enough and you have a canoe or kayak either an area search or series of point counts can be conducted throughout the wetland. The area covered by an Area Search is generally determined by what can be thoroughly covered in 10-30 minutes. Generally, this is up to 3 hectares but can be a larger area in open wetlands. Where a wetland is large enough and accessible it may be preferable to do several area searches. Search areas should be well defined on the ground and on a map and not overlap.

### *Observers*

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At least one observer should be able to identify by sight and sound all the species likely to be encountered at the site. Conducting Level 1 counts is also a very good way to train new observers in bird identification, counting methods, and to familiarize surveyors with the site. Observers should stay together, act as one observer, and record all observations on the same sheet. Beginning birders and new volunteers should be encouraged to come along and get involved<sup>2</sup>.

<sup>2</sup> PowerPoint presentations are available on the CWC ConserveOnline workspace (<http://conserveonline.org/workspaces/cwc>) to help with training in bird identification and counting techniques.

### *Conducting the Area Search*

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Prior to starting your count, make sure you have your binoculars on and your field form ready to record data on your clipboard. Approach the search area quietly in order to cause as little disturbance to the birds as possible and begin your count as soon as you arrive in the area. If you have a GPS, set it to begin recording your route. Record on your field form the start time of your count and your starting position on the map of the wetland. Identify and count every species you detect during the Area Search and make note of any behavior or breeding evidence you observe. If you flush birds as you arrive at the search area, do your best to record the species and number of individuals, as these should be included in your count. If you encounter a bird that is difficult to identify, make notes on its characteristics, behavior and vocalizations, or better yet, if you have a camera, take a picture and note it on your field form as “Unidentified.” If you are limiting your count time to a specific duration for basic monitoring, then do not spend more than a minute or two trying to identify the bird. If it is still in the area after you have completed your survey, you can spend the time necessary to identify the bird and update your form.

One of the challenges that you often encounter with wetland monitoring is counting large flocks. Instead of counting every single bird in a flock, one good approach is to identify the species composition of the flock, estimate the proportion of each species and finally estimate the entire flock size (e.g., counting by 10s or 20s)<sup>3</sup>. You can then easily calculate good estimates of numbers for each species. Note: If doing the count from a boardwalk, road or dike that is not a loop, count the birds from a start point to an end point one way only to avoid counting birds twice. However, if you do come across a new species on the way back, record the species and number of individuals in your count, noting that it was seen on the way back.

If you are using Level 1 Area Search to monitor a site throughout the year and/or over a period of years, we recommend that you structure your count by following the same protocol each time you do the count, and cover the same area and count for the same duration. Twenty minutes is typical but counts can be shorter or longer depending on the size of the area and number of birds at the site.

### *Conducting the Point Count*

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Prior to starting your count, make sure you have your binoculars on and your field form ready to record data on your clipboard. Approach the point (count station) from which you will be counting quietly in order to cause as little disturbance to the birds as possible and begin your count as soon as you arrive. Record on your field form the start time of your count. Identify and count EVERY species you detect during the Point Count and make note of any behavior or breeding evidence you observe. If you flush birds as you arrive, do your best to record the species and number of individuals, as these should be included in your count. If you encounter a bird that is difficult to identify, make notes on its characteristics, behavior and vocalizations, or better yet, if you have a camera, take a picture and note it on your field form as “Unidentified.” If you are limiting your count time to a specific duration for basic monitoring, then do not spend more than a minute or two trying to identify the bird. If the bird is still in the area after you have completed your count, you can spend the time necessary to identify the bird and update your form.

One of the challenges that you often encounter with wetland monitoring is counting large flocks. Instead of counting every single bird in a flock, one good approach is to identify the species composition of the flock, estimate the proportion of each species and finally estimate the entire flock size (e.g., counting by 10s or 20s). You can then easily calculate good estimates of numbers for each species. How much time should you spend on a point count? When you have counts of all the species you can detect from the count station, spend another 5 minutes searching for birds because some secretive species will begin to re-emerge. Once you complete the Point Count, record the duration in minutes of the survey on the field form and note your exact location, if you have a GPS, record the location as a point.

If you are using Level 1 point count methods to monitor a site throughout the year and/or over a period of years, we recommend that you structure your count by following the same protocol each time you do the

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<sup>3</sup> A Wildlife Count CD is available to provide training with counting large flocks of birds.

count, include the same area in your point count and count for the same amount of time. Six minutes is standard for Level 2 and 3 monitoring. If more time is needed, then use 9 minutes or 12 minutes.

### *Timing of Count/Number of Counts per Year*

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To participate in the Caribbean Waterbird Census, carry out at least one count during the regional CWC Winter Count in January (dates to be set annually by SCSCB)<sup>4</sup>, plus if possible at least once per season in:

- Spring (migration and peak resident breeding) – March – May
- Summer (breeding and post-breeding for residents and summer migrants) – June-August
- Fall (migration) – September-November

### *Recording Data*

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Use the CWC Area Search or Point Count Form for Site Inventory/Basic Counts and notes on completing it below.

### *Analyzing and Storing Data*

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Count data should be entered on eBird Caribbean (<http://ebird.org/content/caribbean>) as soon as possible after the count is completed. Choose the “Caribbean Waterbird Census (CWC) Area Search” option OR Caribbean Waterbird Census (CWC) Point Count” option on the “Submit Observations” page. The data can also be entered on a computer in standard CWC spreadsheets (available for download at: <http://conserveonline.org/workspaces/cwc>) and sent to the CWC Coordinator.

Once these data are entered into eBird Caribbean, you can easily generate a list of the species by season and examine the data by making histogram charts (e.g., in Excel) of the frequency of the more common species (e.g., mean number of birds, maximum number of birds). This will provide information on seasonal changes in species presence/absence as well as changes in abundance. Combined with historic information and records of birdwatchers and others familiar with the site, one can create a checklist for the site, with estimates of abundance categories (e.g., common, uncommon, rare, vagrant) for each season. This information can begin to tell you the conservation importance of a site based on the presence of threatened or endangered species, the diversity of bird species at the site, or the presence of a significant portion of a population.

### *Summary of Important Points*

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When conducting Level 1 monitoring, record the species and number of individuals and make sure to count every species you detect. Remember, the goal of a Site Inventory is to generate a complete list of species for the site. Recording all species also ensures that the data you collect are much more valuable, both currently and far into the future. If your records indicate that you saw 5 West Indian Whistling-Ducks and 4 Ruddy Ducks, but you did not reply “yes” to the question “Are you reporting all species?” in eBird Caribbean then we do not know if the wetland also had Blue-winged Teal or some other species. Even if a species is not of conservation interest today, it may be of interest 20 years from now, and if you collect data on ALL species today, those data will be much more useful in the future (see Appendix 2).

Conducting Level 1 Area Searches or Point Counts annually or seasonally will provide a richer dataset for understanding how a wetland is utilized by differing species throughout the year and over time. Remember that it is important to follow the **same** protocol each time you conduct a repeat survey of an area.

- Count birds at the same time of day.
- Count birds at the same time(s) of year.
- Avoid counting in poor weather (heavy rain, high wind).
- Cover the same search area or point and spend the same amount of time identifying species and counting individuals per species.

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<sup>4</sup> CWC survey dates in 2011 are January 14th to February 3rd inclusive.

Note that if you need to make any revisions to your protocol (e.g., change the starting location of the count, make a change to the survey schedule, size of area, etc.), be sure to keep a record of the change.

**CWC Area Search Form for Site Inventory/Basic Counts**

Date \_\_\_\_\_ Area Name: \_\_\_\_\_ Area Code/# \_\_\_\_\_ GPS Loc: \_\_\_\_\_  
 Observer \_\_\_\_\_ Recorder \_\_\_\_\_ Trainees: \_\_\_\_\_  
 Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Duration: \_\_\_\_\_ Area (hectares): \_\_\_\_\_  
 Temp. \_\_\_\_°C Sky code: \_\_\_\_\_ Wind code: \_\_\_\_\_ Wind direction: \_\_\_\_\_ Noise: \_\_\_\_\_ Total # of spp: \_\_\_\_\_

Species Code or Name	# in group	DT BS TOT			Identification or Behavioral notes
		DT	BS	TOT	

ADDITIONAL NOTES

**Sky codes:** 0 = clear or a few clouds, 1 = partly cloudy/variable, 2 = cloudy/overcast, 3 = fog, 4 = drizzle, 5 = rain (do not survey)  
**Wind codes:** 0 = calm; 1 = light air; 2 = leaves start to rustle; 3 = small branches start to sway; 4 = moderate breeze; >4 Do not survey  
**Wind direction:** N, S, E, W      **Noise factor:** 1 = No noise, 2 = Moderate, 3 = Too much noise, do not survey  
**Number in group #:** indicate sex if known, M = Male, F = Female, and if the bird is an immature, J = Juvenile  
**Detection Type (DT)**      A = Aural, V = Visual, F = Fly over  
**Breeding Status (BS)** (if any) N = active Nest, M = carrying nesting Material, F = carrying Food, D = Distraction display, L = Local young (limited flight or being fed by parents), C = Copulation or Courtship observed, T = Territorial behavior (chasing)  
**Human disturbance near count site at time of survey:** Fishers, Hunters, Tourists, other \_\_\_\_\_  
**Water level - % of wetland covered with water:** \_\_\_\_\_ 0=None, 1-25%, 26-50%, 51-75%, 76-100%  
**Vegetation - % of wetland covered with plants:** \_\_\_\_\_ 0=None, 1-25%, 26-50%, 51-75%, 76-100% **Species** \_\_\_\_\_  
**Photograph taken of the site: Yes/No**      **Unusual species: Yes/No** \_\_\_\_\_





## NOTES ON COMPLETING THE CWC AREA SEARCH FOR SITE INVENTORY/BASIC COUNTS FORM<sup>5</sup>

**Page \_\_\_\_ of \_\_\_\_:** The page number of current page and the total pages for the survey route.

**Date:** Write the date of the survey as Day-Month-Year, using two numbers for month and day and four numbers for year.

**Area Name:** The name of the survey route or site (e.g., Great Pond).

**Area Code/#:** The code or number of the area being surveyed (e.g., GP1, GP2, or GP3).

**GPS Loc:** Coordinates for starting point of search area in UTM or decimal degrees (degrees, minutes and seconds) OR note your location so that you can find the coordinates from Google Earth later

**Observer, Recorder, Trainees:** The full name of the primary observer, the person recording the data, and secondary observers or trainees (if present).

**Start time:** The time (using a 24-hour clock) that you started your 20-minute search.

**End time:** The time (using a 24-hour clock) that you ended your 20-minute search.

**Duration:** Duration of survey in minutes, 20<sup>6</sup>.

**Area:** Size of the Area Search in hectares.

**Temp:** The temperature at the beginning of the survey recorded in degrees Celsius.

**Sky code:** The cloud cover and amount of precipitation at the beginning of the survey.

**0** = clear or a few clouds    **1** = partly cloudy/variable    **2** = cloudy/overcast    **3** = fog    **4** = drizzle    **5** = rain (do not survey)

**Wind code:** The wind at the beginning of the survey using the Beaufort Wind Scale class.

**0** = calm, 0-1 mph, smoke rises vertically and the sea is mirror smooth

**1** = light air, smoke moves slightly with breeze and shows direction of wind

**2** = you can feel wind on your face and hear the leaves start to rustle

**3** = gentle breeze, small branches start to sway, wind extends a light flag.

**4** = moderate breeze, loose dust or sand on the ground will move and larger branches will sway

**>4** = Do not survey, too much wind.

**Wind direction:** North, South, East or West

**Noise:** The noise experienced at the beginning of the count; **1** = none, **2** = moderate, **3** = too much noise, cannot hear birds >15 m away (do not complete the count if there is too much noise). If the cause of the noise is expected to be a continuous problem over time, you may need to move your area search away from the source of the noise.

**Total # of spp:** The total number of species seen during the count.

## COUNTING AND RECORDING BIRDS

**Species Code or Name:** A short clear abbreviation for the bird species common name should be recorded. If you are not using a standard abbreviation such as AOU species alpha codes—four-letter codes formed by using the first letter or two letters of each part of the bird's name (e.g., West Indian Whistling-Duck = WIWD, American Coot = AMCO, Yellow-crowned Night-Heron = YCNH)<sup>7</sup>—be sure to put a key to your abbreviations on the form. Use code *and* abbreviated name if you are not absolutely certain of the

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<sup>5</sup> The CWC Area Search Count Form and Notes can be modified to suit your particular needs and situation (e.g., what variables are recorded, etc.), however, we recommend that you follow the basic Area Search methods described in this protocol in order to maximize the scientific value of the data and capacity to compare monitoring data among sites and locations across the Caribbean.

<sup>6</sup> Although 20 minutes is typical, the length of time for an Area Search can be shorter or longer (e.g. 10 or 30 minutes) depending on the size of the area and number of birds present, however, once set for a site, it should not be modified.

<sup>7</sup> To download standard four letter species codes, visit: <http://www.birdpop.org/alphacodes.htm>

species code<sup>8</sup>. **If you make up codes be sure to record on your data sheet what they are to avoid confusion later.**

**DT (Detection Type):** The first behavioral cue that alerted the observer to the presence of the species; A = Aural, V = Visual, F = Fly over.

**BS - Breeding Status:** Any breeding evidence observed during the count should be recorded.

**N** = Current year's **Nest** found in the study area with eggs or young, in the process of being built, or already depredated or abandoned.

**M** = Adult seen gathering or carrying nesting **Material** to a likely nest site in the study area.

**F** = adult seen carrying **Food** or **Fecal** sac to or from a likely nest site in the study area.

**D** = **Distraction Display** or injury feigning by an adult bird.

**L** = a young bird incapable of sustained flight (a "Local") in the study area or very young (stub-tailed) fledglings being fed by parents in the study area.

**C** = **Copulation** or **Courtship** observed of a species within its breeding range

**T** = **Territorial** behavior observed (calls, chasing).

**TOT – Total** number of individuals counted for each species

**Identification or Behavior Notes:** Details of any behavioral observations of the species or identification notes for "Unidentified" individuals. If you need help with species identification, share the photo with expert birders in the CWC network.

**Human disturbance near count site at time of survey:** Note any human activity that might affect bird abundance, e.g., Fishers, Hunters, Tourists, other – circle one or please describe

**Water Level:** The amount of water present may serve as an index of habitat availability/quality. Give an estimate or circle a category corresponding to the level or amount of water available in the wetland, with zero indicating no water (severe drought) and 4 indicating flooded/maximum water levels.

**Vegetation - % of wetland area covered with plants:** Can give an estimate or circle a category. **Dominant species:** If you know the name of the species write it here.

**Photograph taken of the site:** Note if a photo was taken and where/why.

**Photographs of unusual species:** Try to get a photo of any unidentified or unusual species for the site, note if a photo was taken so that you can remember to examine it later. If you need help with species identification, share the photo with expert birders in the CWC network.

**Additional Notes:** Make notes regarding unidentified birds, birds observed between points, threats to birds or habitats, changes you have observed in the wetland or other useful information. Be sure to write a note explaining any unexpected or rare species detected. When applicable, notes should be labeled with a number so that the note can be entered in the database with the appropriate record.

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<sup>8</sup> AOU species codes should be learned and checked as they can be confusing, for example, White-crown Pigeon is WCPI, while White-cheeked Pintail is WHIP.

**CWC Area Search Site Inventory/Basic Counts Form – filled in with sample data and notes**

Date _____	Area Name: _____	Area Code/# _____	GPS Loc: _____
Observer _____	Recorder _____	Trainees: _____	
Survey Start Time: _____	Survey End Time: _____	Duration: _____	Total # of spp: _____
Temp. ____ °C	Sky code: ____	Wind code: ____	Wind direction: ____ Noise: ____ pH _____

Species Code or Name	# in group	DT	BS	TOT	Identification or Behavioral notes
BNST – Blk-necked Stilt	20	V		20	
SNEG – Snowy Egret	5, 7, 1, 2	V		15	
BWTE – BW Teal	12M, 8F, 14M, 7F, 2M	V		43	
WHIP – White-cheeked Pint.	3M, 1F	V	C	4	
Unident. Sandpipers	12	V		12	small, brown above and white belly, small thin black bill, yellowish-green legs
WIPL – Wilson’s Plover	3, 6, 2	V	N	11	
WILL - Willet	4, 3	V		7	
COMO – Common Moorhen	15, 13, 7	V		35	
OSPR - Osprey	1	V		1	Seen catching and carrying a large turtle
SORA - Sora	1	A		1	
MAGR – Magn. Frigatebird					soaring over survey area.
GRYE – Gr. Yellowlegs	5, 13	V		18	
YCNH – Yellow-cr. Night Heron	1	V		1	

**ADDITIONAL NOTES**

- Upon arrival, flushed ~20 Black-necked Stilts near start of survey route; they did not return.
- 1 Wilson’s Plover nest found with 4 eggs, one of the parents did a distraction display (feigned broken wing).
- Took photo of unidentified sandpipers.
- Took photos of Willets and Greater Yellowlegs to verify ID.

**CWC Point Count Form for Site Inventory/Basic Counts**

Date \_\_\_\_\_ Area Name: \_\_\_\_\_ Point Code/# \_\_\_\_\_ GPS Loc: \_\_\_\_\_  
 Observer \_\_\_\_\_ Recorder \_\_\_\_\_ Trainees: \_\_\_\_\_  
 Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Duration: \_\_\_\_\_  
 Temp. \_\_\_\_ °C Sky code: \_\_\_\_ Wind code: \_\_\_\_ Wind direction: \_\_\_\_ Noise: \_\_\_\_\_ Total # of spp: \_\_\_\_\_

Pt. #	Time	Species Code or Name	# in group	DT	BS	TOT	Identification or Behavioral notes

ADDITIONAL NOTES

**Sky codes:** 0 = clear or a few clouds, 1 = partly cloudy/variable, 2 = cloudy/overcast, 3 = fog, 4 = drizzle, 5 = rain (do not survey)  
**Wind codes:** 0 = calm; 1 = light air; 2 = leaves start to rustle; 3 = small branches start to sway; 4 = moderate breeze; >4 Do not survey  
**Wind direction:** N, S, E, W     **Noise factor:** 1 = No noise, 2 = Moderate, 3 = Too much noise, do not survey  
**Number in group #:** indicate sex if known, M = Male, F = Female, and if the bird is an immature, J = Juvenile  
**Detection Type (DT)**     A = Aural, V = Visual, F = Fly over  
**Breeding Status (BS)** (if any) N = active Nest, M = carrying nesting Material, F = carrying Food, D = Distraction display, L = Local young (limited flight or being fed by parents), C = Copulation or Courtship observed, T = Territorial behavior (chasing)  
**Human disturbance near count site at time of survey:** Fishers, Hunters, Tourists, other \_\_\_\_\_  
**Water level - % of wetland covered with water:** \_\_\_\_ 0=None, 1-25%, 26-50%, 51-75%, 76-100%  
**Vegetation - % of wetland covered with plants:** \_\_\_\_ 0=None, 1-25%, 26-50%, 51-75%, 76-100% **Species** \_\_\_\_\_  
**Photograph taken of the site: Yes/No Unusual species: Yes/No** \_\_\_\_\_



**CWC Point Count Site Inventory Form – filled in with sample data and notes, 6 minute counts**

Pt. #	Time	Species Code or Name	# in group	DT	BS	TOT	Identification or Behavioral notes
1	0630	BWTE-Blue-winged Teal	23M, 19F, 4M, 2F, 24M,10F	V		72	
		BWTE – Blue-Winged Teal	1F	A		1	
		GRYE – Greater Yellowlegs	5, 3, 9	V		17	
		SNEG – Snowy Egret	2	V		2	
		COMO – Common Moorhen	2A, 2J	V	L	4	
		OSPR – Osprey	1	V		1	
		SORA – Sora	1	A		1	
		MAGR – Magn. Frigatebird	5M, 3F, 4J	F		12	soaring over point area
	0636						
2	0647	BNST – Blk-necked Stilt	20	V		20	
		WHIP – White-cheeked Pint.	3M, 1F	A	C	4	
		YEWA – Yellow Warbler	1M	V		1	
		WIPL – Wilson’s Plover	3	V	N	3	
		Unident. Sandpipers	14	V		14	small, brown above and white belly, small thin black bill, yellowish-green legs
		GBHE – Great Blue Heron	3	V	N	3	
	0653						

**ADDITIONAL NOTES**

Pt. #1

- Took photos of Greater Yellowlegs to verify ID.

Pt. #2

- Upon arrival, flushed ~20 Black-necked Stilts near start of survey route; they did not return.
- 1 Wilson’s Plover nest found with 4 eggs, one of the parents did a distraction display (feigned broken wing).
- Took photo of unidentified sandpipers .

## NOTES ON COMPLETING THE CWC POINT COUNT SITE INVENTORY/BASIC COUNT FORM

- Page \_\_\_\_ of \_\_\_\_:** The page number of current page and the total pages for the survey route.
- Date:** Write the date of the survey as Day-Month-Year, using two numbers for month and day and four numbers for year.
- Area Name:** The name of the survey route or site (e.g., Great Pond).
- Point Code/#:** The code or number of the point being surveyed (e.g., GP1, GP2, or GP3).
- GPS Loc:** Coordinates for Point Count in UTM or decimal degrees (degrees, minutes and seconds) OR note your location so that you can find the coordinates from Google Earth later
- Observer, Recorder, Trainees:** The full name of the primary observer, the person recording the data, and secondary observers or trainees (if present).
- Start time:** The time (using a 24-hour clock) that you started your point count survey route.
- End time:** The time (using a 24-hour clock) that you ended your point count survey route.
- Duration:** Duration of time to complete the survey route in minutes.
- Temp:** The temperature at the beginning of the survey recorded in degrees Celsius.
- Sky code:** The cloud cover and amount of precipitation at the beginning of the survey.  
**0** = clear or a few clouds    **1** = partly cloudy/variable    **2** = cloudy/overcast    **3** = fog    **4** = drizzle    **5** = rain (do not survey)
- Wind code:** The wind at the beginning of the survey using the Beaufort Wind Scale class.  
**0** = calm, 0-1 mph, smoke rises vertically and the sea is mirror smooth  
**1** = light air, smoke moves slightly with breeze and shows direction of wind  
**2** = you can feel wind on your face and hear the leaves start to rustle  
**3** = gentle breeze, small branches start to sway, wind extends a light flag.  
**4** = moderate breeze, loose dust or sand on the ground will move and larger branches will sway  
**>4** = Do not survey, too much wind.
- Wind direction:** North, South, East or West
- Noise:** The noise experienced at the beginning of the count; **1** = none, **2** = moderate, **3** = too much noise, cannot hear birds >15 m away (do not complete the count if there is too much noise). If the cause of the noise is expected to be a continuous problem over time, you may need to move your area search away from the source of the noise.
- Total # of spp:** The total number of species seen during the count.

## COUNTING AND RECORDING BIRDS

- Species Code or Name:** A short clear abbreviation for the bird species common name should be recorded. If you are not using a standard abbreviation such as AOU species alpha codes—four-letter codes formed by using the first letter or two letters of each part of the bird's name (e.g., West Indian Whistling-Duck = WIWD, American Coot = AMCO, Yellow-crowned Night-Heron = YCNH)<sup>9</sup>—be sure to put a key to your abbreviations on the form. Use code *and* abbreviated name if you are not absolutely certain of the species code<sup>10</sup>. If you make up codes be sure to record on your data sheet what they are to avoid confusion later.
- Number in group:** Individuals are written down in the order they are observed. The number of individuals is recorded when more than one of a species is detected in a group, cluster or flock at the same moment in the same part of the wetland. As you arrive at the count station be ready to record any birds that are flushed.

<sup>9</sup> To download standard four letter species codes, visit: <http://www.birdpop.org/alphacodes.htm>

<sup>10</sup> AOU species codes should be learned and checked as they can be confusing, for example, White-crown Pigeon is WCPI, while White-cheeked Pintail is WHIP.

**DT (Detection Type):** The first behavioral cue that alerted the observer to the presence of the species; A = Aural, V = Visual, F = Fly over. **N.b.** If you have a lot of birds to record, do not waste time recording age and sex of flyovers.

**BS - Breeding Status:** Any breeding evidence observed during the count should be recorded.

**N** = Current year's Nest found in the study area with eggs or young, in the process of being built, or already depredated or abandoned.

**M** = Adult seen gathering or carrying nesting Material to a likely nest site in the study area.

**F** = adult seen carrying Food or Fecal sac to or from a likely nest site in the study area.

**D** = Distraction Display or injury feigning by an adult bird.

**L** = a young bird incapable of sustained flight (a "Local") in the study area or very young (stub-tailed) fledglings being fed by parents in the study area.

**C** = Copulation or Courtship observed of a species within its breeding range

**T** = Territorial behavior observed (song, chasing).

**TOT – Total** number of individuals counted for each species

**Identification or Behavior Notes:** Details of any behavioral observations of the species or identification notes for "Unidentified" individuals. If you need help with species identification, share the photo with expert birders in the CWC network.

**Human disturbance near count site at time of survey:** Note any human activity that might affect bird abundance, e.g., Fishers, Hunters, Tourists, other – circle one or please describe

**Water Level:** The amount of water present may serve as an index of habitat availability/quality. Give an estimate or circle a category corresponding to the level or amount of water available in the wetland, with zero indicating no water (severe drought) and 4 indicating flooded/maximum water levels.

**Vegetation - % of wetland area covered with plants:** Can give an estimate or circle a category. **Dominant species:** If you know the name of the species write it here.

**Additional Notes:** Make notes regarding unidentified birds, birds observed between points, threats to birds or habitats, changes you have observed in the wetland or other useful information. Be sure to write a note explaining any unexpected or rare species detected. When applicable, notes should be labeled with a number so that the note can be entered in the database with the appropriate record.



