

Standard Operating Procedure (SOP) 4.4.1.1

Riparian Bird Count Procedure

Background

Sometimes very little quantitative biological information exists on waterbodies of interest. The Coyote Creek Riparian Station, in cooperation with the Santa Clara Valley Audubon Society and the Santa Clara County Creeks Coalition with funding provided by the U.S. Environmental Protection Agency conducted an assessment of Santa Clara County's creeks, rivers and streams. Through cooperation with the State Water Resources Control Board's Clean Water Team, the protocol used for their study is being made available to Citizen Monitors. From the use of bird studies, information on various beneficial uses can be obtained. These studies also provide a way citizens can learn about and become engaged with watershed stewardship.

Data gathering locations (or points) have been established on various creeks in Santa Clara County. At these locations citizen monitors collect valuable data on stream characteristics, water quality, botanical resources and wildlife use. These points were spaced 500 meters apart and teams of volunteers trained in various aspects of environmental assessment techniques gathered quantitative data at each point. Sites can be located at locations, which will be compatible with your organization's monitoring projects.

The method chosen to collect information on riparian habitat bird uses, is known simply as the "Point Count". This method was first developed and is widely used in Europe. Only recently has it been adopted within the U.S. Currently a number of programs are using point counts to document breeding bird population trends in the U.S. and Canada. The methodological description below was adapted from Dr. David F. DeSante's Monitoring Avian Productivity and Survivorship (MAPS) program. The point count protocol relies in part upon subjective variables such as individual judgment and ability. These issues are understood and accepted as limitations of the study. By using this established approach, we will be able to compare stream inventory data to other studies.

Each point must have at least four point counts conducted at it during the year; one each in the spring, summer, fall, and winter. You may wish to refer to a Bird Census Schedule for the ideal birding period during each "season" for your geographic area. The time volunteers usually give is about 3 hours per season, excluding any training time.

Accessing the Point

Approach the census points with care, as hazardous conditions may be present. Field crews must use their best judgment to ensure their safety. Never attempt to conduct a census alone, the protocol, field procedure, requires the buddy system. If you feel uncomfortable with any aspect of accessing a point, please discuss it with the Field Leader or a Volunteer Coordinator with the sponsoring organization. Before entering the field, please review the Field Protocol, available from your Field Leader or the Volunteer

Coordinator. Be sure to obtain all necessary permission for trespass and to notify land owners/managers prior to accessing land under their control.

Selecting the Observation Site

Once a bird count team has received their census point assignments, they should reconnoiter each point in order to select an observation site. This site must be within 5 meters up- or downstream of the stake and up or down either bank, as long as the team remains within this 10-meter belt transect and in an area that is safe and appropriate for birding year-round. The optimum observation site will be at the outer edge of the riparian corridor facing the stream, with a clear view of the corridor and the water. Unfortunately, this may not always be possible. Select the best possible observation site with consideration for changing seasons and conditions. **Once the point has been selected it cannot be changed.** Both the observer and recorder will remain at this spot for the duration of the census. Either a Bird Field Leader or a Volunteer Coordinator can help the teams determine the extent of the riparian corridor and select an observation site.

Each survey point is staked at or near the edge of the riparian corridor. The riparian corridor is defined as the vegetative community growing in association with the stream. It is generally linear in form and distinct from the adjacent, upland vegetation in both structure and species composition.

The riparian vegetation will generally be comprised of large leafed, deciduous trees with an understory of shrubs, vines and other types of vegetation. As the land slopes up and away from the waterbody, a distinct and often sharp vegetative change occurs. Where man-made structures encroach into the riparian vegetation and significantly divide and/or degrade the habitat (such as a road or a building), the riparian corridor ends at that impact. A large fence or brick wall would meet this criterion, but a low wire fence might not.

Collection and Recording of Data

All point counts must be conducted between sunrise and 11 am. Counts should not be conducted on rainy days, as birds are normally inactive. Before approaching the observation site, the recorder should fill out the weather information at the top of the data form. This information should correspond to conditions at the point. If the weather changes significantly between points, begin a new sheet with updated weather information. Use the chart at the end of this protocol to aid in wind speed estimation.

The censusers should approach each point with as little disturbance to the birds as possible. A bird flushed from the riparian corridor within 50 meters of a point as a censuser approaches or leaves the point should be counted as being at the point provided that no other individual of that species is recorded from that point during the count period. Use the "Arrival Notes" section of the data sheet to record interesting information noted on the approach to the point. Counts should begin immediately when the observer reaches the observation site and should **end exactly ten minutes later.**

Use a digital timepiece, but avoid "beeps" or electronic noises as they may serve to attract birds. During the observation period, keep noise and movement to a minimum. Do not "chase" birds to obtain or confirm ID. Passing birds which were not identified should be recorded as unidentified bird species and noted in "*Which Birds To Tally*" section below. You may move around within a step or two at the observation site, sit, squat or use a stool during the census. **No attracting devices or sounds (including pishing)** should be used at any time during the count period at each point or when traveling between points. Notes recorded from during and after the count can be logged in the "Departure Notes" section of the form. Feel free to note observations in other subject areas in this section as well, such as other wildlife seen or impacts to the creek noted.

Which Birds to Tally

All individual birds seen or heard for unlimited distances **within the riparian corridor** must be tallied. Individual birds thought to have already been counted at a previous point should be indicated as such. Birds not associated with the riparian corridor should be ignored unless and until they move into the corridor. Birds which are observed by call only cannot be tallied unless the censuser is certain that bird is within the riparian corridor. Field staff must use their best judgment in determining birds "associated" with the riparian corridor.

Birds using the stream as a flyway, even at considerable altitude, can be tallied as fly-throughs. This might include ducks, herons, egrets, or belted kingfishers "cruising" along the corridor. Birds flying above the crowns of riparian trees and at right angles to the stream are unlikely to be associated with the corridor and should not be counted. This might include gulls traveling from a distant waterbody to the dump, or morning doves moving from one backyard feeder to another. In either case, these birds were not flying along the contours of the corridor or did not perch on any riparian vegetation.

Birds which are "on the wing" but which stay in the area longer than a simple fly-through should be counted in the column representing the distance where they were first observed. Thus a hummingbird or swallow "working" the area at the point when field staff arrive would be marked down as <50 meters.

Remember, you want to count each individual bird only once at each point. Thus, you must try to keep track of mobile individuals so that you don't count them more than once. On the other hand, you must listen carefully to separate counter-singing or calling birds that often sing or call close to each other, especially near a territorial boundary. Avoid becoming flustered during the first minute or two of the count; ten-minute counts are really quite long and will give you time to sort things out. It is important to remember that most programs are interested in gathering baseline data and are interested in "common" species as well as unusual species.

Individual birds should be tallied separately, depending upon both their location relative to the census point, and the time relative to the start of the 10-minute census period. Thus, individuals detected within the vegetation surrounding the point should be tallied separately for distances from the point of less than 50 meters and greater than 50 meters,

and fly-throughs (at any distance) should also be tallied separately. Individuals should also be tallied separately, depending upon when they are first encountered at a given point, for three different subsets of the count period (0-3 minutes, 3-5 minutes, and 5-10 minutes). If a bird is present throughout the entire census, it is tallied in the first time interval only. As an example all different individuals might be tallied during the first three minutes of the count period, if so only new individuals not already counted would be added during the two subsequent time periods. Birds observed by sight are recorded with a simple tally mark, while birds identified by song are recorded with the symbol of a musical note (please see the sample data sheet).

If you identify an unusual bird or one not on the expected bird list, use the *Unusual Bird Sighting Documentation Sheet* to note identifying attributes of the animal. Notify a Field Leader or a Volunteer Coordinator of unusual or exciting finds

If you cannot identify the species of a bird, record them with a name closest to their phylogenetic categories (i.e. unknown hummingbird sp., unknown crowned-sparrow sp., unknown gull species, or unknown passerine sp.). Do not chase birds to obtain or confirm ID. Also, be careful not to spend too much time trying to ID one elusive bird and miss several others. If after the census you feel confident that you have found and identified one of the previously unidentified birds, document this in the notes. Do not alter your original data.

Troubleshooting

Unforeseen events may occur which make data collection difficult or impossible. A Field Leader or a Volunteer Coordinator should be available to help if the following information does not:

Can't find the stake/point: Occasionally the stakes marking the census point are removed or lost. If you are familiar with the point and are confident you are in the right spot go ahead and census as usual. Please report the missing stake to the Volunteer Coordinator. If you are unsure where the point is, contact the Field Leader or the Volunteer Coordinator for assistance. If possible use a GPS and/or a topo map to record and give directions to the point.

A short-term but severe impact is occurring at the point: When an unusual or severe impact, such as dumping or severe erosion is occurring, you might consider choosing to skip that point and return later in the season for the point count. If the impact seems common to the area, such as a cat sitting on the fence or heavy traffic on the road, the point count should take place as usual. Note any conditions, which could affect bird populations in the comments section of the data sheet.

Something interrupted the count midway: Minor "interruptions" such as a truck or plane going by should not stop the count, but should be noted on the data sheet. Major interruptions may occur, such as the approach of a curious bystander, which could significantly impact the team's ability to finish the count.

If this occurs, you should start over. If it is necessary to leave the point, return to it at the earliest possible time and redo the count.

The homeowner or public land manager is unavailable/unwilling to allow access: Do not attempt to "sneak". Call your Volunteer Coordinator.

The access gate will not open: Call your Volunteer Coordinator.

Dumping or other suspicious behavior: If you observe signs of dumping, encroachment, damage to the creek, or other issues of concern, document the location of the problem and its nature, and provide access information. Do not enter private property to investigate or attempt to confront the perpetrator. Report the incident to a Volunteer Coordinator ASAP.

Data Reporting

All data is recorded in the field on copies of the standardized point count data sheets. Record the data in as neat and legible as conditions allow. Transcribe the data onto a fresh data sheet only if necessary and as soon as possible after you leave the field. **When data have been transcribed, the original data sheet must be turned in with the field data sheet.** This is very important, as occasionally errors can be made in the transcription process, and we need to be able to refer to the original if there are questions. Make a **copy** of the completed data sheet(s) as soon as possible and send the original(s) to the Field Leader. Keep the copy safe in a folder or file in case the originals are lost in the mail. Call the Field Leader to alert them to the arrival of the data, and let them know of any exciting or interesting occurrences ASAP.

Use of Data

The bird census is one of several biological variables that Stream Inventory volunteers collect. All the data should be entered into a database and computerized mapping system (Geographic Information System or GIS) and developed into a comprehensive, watershed level source of information about the presence and condition of wildlife habitat in the watershed/waterbody of interest.

This Guidance Document first appeared as "Santa Clara County Stream Inventory: Bird Count Instructions", Coyote Creek Riparian Station, 1994. This version has been slightly modified/edited by the Clean Water Team, November 2010.

BEAUFORT SCALE FOR DETERMINATION AND REPORTING OF WIND SPEED

NAME	MPH	DESCRIPTION
Calm	less than 1	Calm; smoke rises vertically.
Light Air	4 to 7	Wind felt on face; leaves rustle, vane moved by wind.
Gentle Breeze	8 to 12	Leaves and small twigs in constant motion; wind extends flag.
Moderate Breeze	13 to 18	Raises dust and loose paper; small branches are moved.
Fresh Breeze	19 to 24	Small trees in leaf begin to sway; crested wavelets form on inland water.
Strong Breeze	25 to 31	Large branches move, telegraph wires whistle, umbrellas used with difficulty.
Moderate Gale	32 to 38	Whole trees in motion; inconvenience in walking against wind.
Fresh Gale	39 to 46	Twigs break off trees; generally impedes progress
Strong Gale	47 to 54	Slight structural damage occurs.
Whole Gale	55 to 63	Trees uprooted; considerable structural damage
Storm	64 to 72	Very rarely experienced; accompanied by widespread damage.
Hurricane	73 to 136	Devastation occurs (do not attempt census).

Example of an Unusual Bird Sighting Documentation Sheet

Observer Name: _____ Recorder Name: _____

Other Observers: _____

Date: _____ Time: _____ Weather: _____ Optical Equipment: _____

Location (include description to allow others to find the place, as well as a description of the type of habitat, i.e. riparian or woodland): _____

In order to properly document a rare or unusual bird sighting, please fill the form out to the best of your ability. Fill this form out immediately after the sighting, in the field if possible. Record only the details you are confident in based on your observation -- do not guess or refer to the field guide. Notify the Field Leader or the Volunteer Coordinator soon after you leave the field.

Species: _____ Number, Age, Sex: _____

Distance From Bird: _____ Relative Size of Bird: _____

Head and Neck (describe forehead, crown, auricular, malar region, median line, etc.):

Eye and Lores (describe supercilium, ring, stripe, color, etc.):

Upper and Lower Mandibles:

Upper Parts (describe nape, back, rump, upper tail coverts, etc.):

Under Parts (describe throat, belly, side, flank, crissum, etc.):

Rectrices (describe inner, middle, outer tail feathers, color pattern, shape, etc.):

Wing (describe color, length, shape, linings, bars, coverts, leading and trailing edges, etc.):

Vocalization: _____

Behavior: _____

Other notes on reverse of sheet (include a photo or sketch if possible):