VABBA2 Variable Radius Point Count Methodology
Developed: 4/16/2017; Michael St. Germain

Bird survey techniques generally follow guidelines established by Ralph et al. (1993).
See Buckland et al. (2001) for detailed discussion of distance sampling methodology and theory.

Be sure you have the following:

- Binoculars
- Lenovo Tablet with appropriate maps (Avenza app)
- Acculon Laser Range Finder
- Binder with sufficient blank data forms
- Watch with timer

Important assumptions to remember:

- Birds directly at point are always detected (look up!)
- Birds are detected at their initial location (do not disturb birds!)
- Distances are measured accurately (take care in your estimations!)
- Distances are measured as a straight line along the ground, not an angular distance to bird.

Morning counts begin approximately 15 minutes after local sunrise and *must* be completed within 4 hours of sunrise.

Each point is surveyed 1 time per season. Timing of the field season will vary by location, but should cover the local breeding season with as little overlap with migration or dispersal as possible. This protocol is from May 15 – June 30.

Do not conduct surveys during weather conditions that likely reduce detectability (e.g., high winds or rain).

Site level Data

Approach the point with as little disturbance to the birds as possible. Take 1-2 minutes to orient yourself and to find landmarks to help estimate distances. Any bird flushed from within 10 m of the point when you arrive should be included in the count. Use this time to fill out the "header" portion of the datasheet and to calibrate distances with the laser range finder (see below)

Observer: Name / Initials
Block ID: 6 digit
Point ID: two digit (01-16), 01-08 are target survey locations 09-16 are alternate points
Date: yyyymmdd
Time: 24 hour clock
Noise: code 0-3
Wind: code 0-5
Sky: code 0-5

<u>Please pay extra attention to labelling the correct Block and Point ID!</u>

Observation Level Data

Counts are 5 minutes duration at each point. Birds are tallied by one minute time intervals (0-4). Record the time the survey begins at each point using the 24-hour clock. If something interferes with your ability to detect birds during the count, stop the count until the disturbance has passed and start over. Cross out the interrupted data and note what happened on your form.

SPECIES
Every bird detected at a point is recorded, regardless of how far from the observer. Use the standardized banding lab 4-letter abbreviation for species codes (http://www.pwrc.usgs.gov/bbl/manual/bandsize.htm) and follow the naming conventions maintained by the American Ornithologists Union (http://www.aou.org/aou/birdlist.html). Species codes along with common names are provided in the Survey 123 digital data entry system. If possible, birds detected but unidentified during the count should be investigated and identified after the count is over. If no birds are detected at a point, write "No Birds Detected" on your form. Use the code NONE in the species list. If an individual is known or thought to have been counted at a previous point, do not record its presence at the current point. This often happens with crows, vultures, and other birds of prey.

DISTANCE
For each individual detected record the distance to the detection in meters. Record the exact distance (e.g. 37 m) using the laser range finder to calibrate your estimations. It is helpful to calibrate distance using target markers with the range finder (e.g, wood line, barn, nearby pole) prior to conducting each survey. It is near impossible to target the individual bird with the range finder. The distance recorded is the distance from the point to the first location an individual was detected, regardless of its behavior. If the bird subsequently moves, *do not change the original distance recorded*. If a bird is flying (but not "flying over" – see below), or perched high in a tree, the distance recorded is to the point at which a plumb line would hit the ground if hung from the point at which the bird was first observed. This distance should be measured as though a tape were laid across the ground. Regarding groups of individuals record the distance to the center of the group. No attracting devices, recordings, or "pishing" is allowed.

TIME
Counts are 5 minutes duration at each point. Tally individual bird observations by one-minute time intervals (0-4). Similar to the distance only record the first time interval for each detection. Regardless of how frequently the bird is detected for the duration of the survey. Observations made after the survey completion should not be recorded, you may make a note of the side of the datasheet as to these observations. Adding additional detections that occurred outside the 5 minute prescribed window violates the survey protocol and biases detection probabilities and density estimates.

SEX
Record the sex of the individual observation if possible "M"=male, "F"= female, "U"= unknown, "J"= juvenile. When in doubt default to Unknown.

DETECTION
Record the behavioral cue that alerted you to the presence of the individual - "S" = song, "V" = Visual, or "C" for call (includes drumming woodpeckers), "F" = Flyover. Multiple codes can be entered (e.g. If a bird sings after it has been visually detected , record both V and S.

Birds that are flying over but not using the habitat on the study area are recorded as Flyover “F”. Birds flying below canopy level, flying from one perch to another, or actively foraging on or above the study area are not considered flyovers and should be recorded with the other detection codes. Flyovers are typically birds using thermals.

NUMBER OF INDIVIDUALS
Record the number of individuals in a group. If the observation is independent (typical) record 1. If there is an observed pair within the same proximity record appropriately. If there is an observed flock of individuals record the number of individuals. Note if there are two males exhibiting territorial defensive behaviors these should be recorded as individual observations.

NOTES
Record any notes you feel appropriate. Additionally if you observe specific breeding behavior that relates to the other portions of the atlas (See: **BreedingCodes.pdf**) please add those here. We will be able to support the other atlas objectives with these observations.

Literature Cited:

Buckland, S.T., Anderson, D.R., Burnham, K.P., Laake, J.L., Borchers, D.L., and Thomas, L. (2001), Introduction to Distance Sampling, Oxford: Oxford University Press.

Ralph, C. John; Geupel, Geoffrey R.; Pyle, Peter; Martin, Thomas E.; DeSante, David F. 1993. Handbook of field methods for monitoring landbirds. Gen. Tech. Rep. PSW-GTR-144-www. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 41 p.

Example field datasheet.

Observer			Species	Distance (m)	Time 0-4	Sex M, F, U, J	Detection S, C, V, F	Number of Individuals	Notes
		1							
Block ID		2							
Point ID		3							
		4							
Date		5							
Start Time		6							
		7							
Noise (0-3)		8							
Wind (0-5)		9							
Sky (0-5)		10							
		11							
Notes:		12							
		13							
		14							
		15							
		16							
		17							
		18							
		19							
		20							

Observer			Species	Distance (m)	Time 0-4	Sex M, F, U, J	Detection S, C, V, F	Number of Individuals	Notes
		1							
Block ID		2							
Point ID		3							
		4							
Date		5							
Start Time		6							
		7							
Noise (0-3)		8							
Wind (0-5)		9							
Sky (0-5)		10							
		11							
Notes:		12							
		13							
		14							
		15							
		16							
		17							
		18							
		19							
		20							