

BIRD BEHAVIOR OBSERVATIONS

Introduction

Bird behavior observations are made as often as possible from mid-May through early July. They are confined to mornings to minimize time-of-day effects. To limit observer bias, only the resident scientist and principal investigator make these measurements. They can be made anywhere within the study area, though the observer should stay on grid lines to avoid trampling vegetation. Ideally, the observer covers the entire study area in successive visits.

Procedure

1. At the top of each data sheet, record date, observer, page, weather, and time beginning and ending. Each time a bird is encountered, the parameters listed in the data sheet components are recorded.
2. *Repeat observations.* In any encounter with an individual bird, it is possible to make several observations. A new observation can be recorded each time the bird changes activity, or if it moves to a new tree and repeats the same activity. In encounters with more than one bird, it is preferable to observe as many different birds as possible. Whenever a repeat observation is made, write "Rep" in the species column. If the repeat observation is not immediately below the initial observation, connect them with an arrow. If five minutes elapse between observations of the same individual, it is not considered a repeat.

Data Sheet Components

LOC: (Quadrat) Record the quadrat number.

SPEC: (Species) Record the species using abbreviations or numeric codes from the "Bird Species List" (see Table 4-2). Repeat observations are recorded "Rep" in this column (see procedure 2).

SEX: 0 = male; 1 = female; 2 = unknown; 3 = juvenile.

TIME: Record in 24-hour time.

TREE: Record the numeric code of the species of tree or shrub in which the bird is located (see Table 3-1). If the bird is on slash or on the ground, then record "30" or "33," respectively. Put a "-1" after the species if the tree is dead.

TH: (Tree height) Estimate the height of the tree to the nearest meter (See Figure 4-1a).

BH: (Bird Height) Estimate the bird's height in the tree to the nearest meter (See Figure 4-1a). There are three trees marked at 2m intervals for training purposes. They are located where transect lines 4, 6, and 8 cross the center fence line (F/G).

CROWN: Record the bird's location within the tree as follows:

1=bole;

2=limb (>10cm diameter);

3=branch;

4=outer twigs and leaves; (see Figure 4-1b).

The assignment to a location should be based on where the bird's activity is focused rather than where it is perched. For example, a bird perched on a branch singing would be scored "3," but if it was reaching out to glean insects from leaves, it would be scored as "4." If the bird is on a dead branch, twigs, etc., the number should be followed by a "-1," e.g. 3-1.

CR*: (Crown radius) Estimate to the nearest meter the mean crown radius at the height where the bird is located. This is the mean horizontal distance from the bole to the tips of the branches within one meter above and below the bird (See Figure 4-1a). This should be within a 90° quadrant with the bird along the bisecting radius of this quadrant.

BB*: (Bird-bole distance) Estimate to the nearest meter the horizontal distance from the bird to the bole of the tree.

BEH (Behavior): The following behavior categories (with numeric codes) are recognized:

Forage: (10) Actively searching for food; usually characterized by small movements of the head. Whenever possible, the following subdivisions of foraging (12-16) are recognized.

Glean: (12) Picking insects from the surface of a substrate, usually leaves or bark.

Hawk: (13) Attempting to capture an insect from the air. Record perch from which it flew.

Hover: (14) Hovering in the air to forage, usually from a leaf.

Probe: (15) Foraging under or within a substrate.

Drill: (16) Creating a hole for foraging (e.g., woodpeckers).

Feeding: (20) Manipulating a food item.

Inactive: (25) No overt behavior except very small movements of the body. This must be preceded by a move >1m or must last at least 30 seconds to be recorded.

Sing: (30) Loud, repetitive, complex vocalization usually given by males during the breeding season.

Call: (35) Any vocalization that is not a song.

Flush: (40) When a bird flies in response to the observer or a warning call of another bird. Location is where the bird lands, not from where it flushes.

Preen: (45) Manipulating feathers, stretching, ruffling feathers, and other comfort movements.

Social Interactions. These are subdivided as follows:

Courtship: (51) Male-female interactions related to breeding, e.g., allopreening, displays, courtship feeding.

Parental care: (52) Carrying food or fecal sacs.

Begging: (53) Young birds soliciting food through calls and postures.

Aggression: (54) Fighting, chasing, displaying between species or between members of the same sex within a species.

Miscellaneous: (60) Only rarely will an activity occur that doesn't fit the above categories; in such a case, describe it.

*For both CR and BB distances, if a bird is on a portion of a tree where there is no crown, e.g., on the very top of a spruce, or on the bole below branches, record 0 and 0. If the tree effectively has no crown; e.g., a slender understory maple or a branchless snag, record - and - (dashes).

Equipment

Binoculars	Clipboard
Data sheets	Data sheet component list
Study area map	

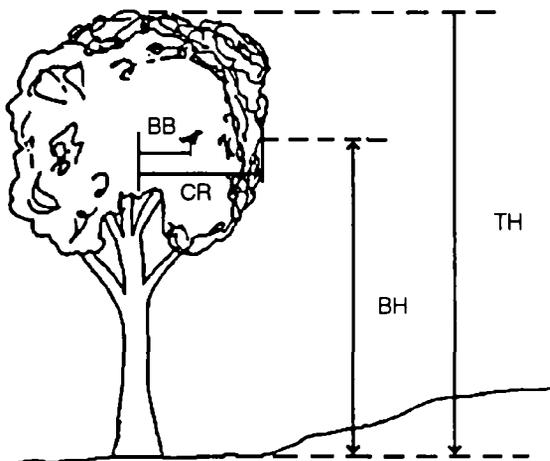
Evaluation

This method requires a lot of time to obtain adequate sample sizes for each species sampled and the number of observations that can be obtained in any single morning is extremely variable. Differences in species visibility is demonstrated by low samples of relatively common species and reflects a bias in numbers for those species that are most easily detected. Restricting walking to lines may decrease the numbers that can be detected. With limited resources, concentrating on a smaller number of species may improve the chances of obtaining an adequate sample size.

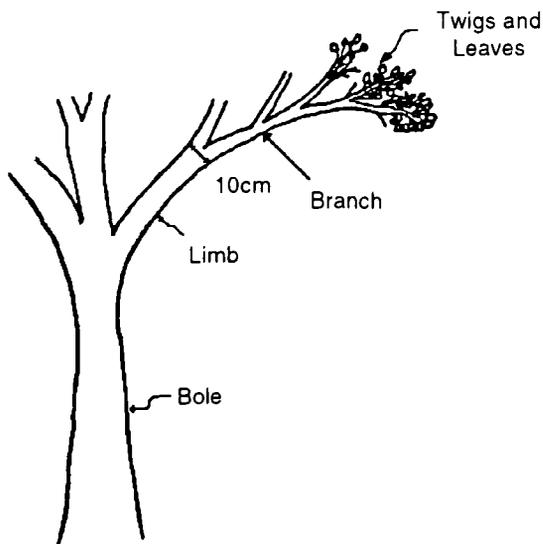
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Figure 4-1. Bird location measurements and crown locations.



a. Bird location measurements



b. Crown locations

