

## MCBBA2 Block Survey Guide

### Surveying the Block

**Strategy vs tactics.** For the purpose of conducting a single block survey, as well as for planning the arc of your survey season, it is important that you consider questions of strategy and tactics. That is, you should plan a day's outing with the larger goals of the survey season in mind. Conversely, the success of a full season can be measured by summing up the gains of each visit you've made. Make every block visit count, especially if your opportunities to return are limited. One job of the Regional Coordinators is to 'ride herd' on the progress of each volunteer putting in survey hours in the various regions. But RCs cannot be expected to intervene constantly or give minute guidance, so a goodly measure of the planning is up to the BL (and to some extent the AO). With this in mind, we urge you to put your thorough preparation to good use in setting out on a particular day's work. (See also the chapter, 'Preparing for the Block Visit'.)

**BL or AO?** Will you be conducting a block visit in the capacity of a Block Leader or an Additional Observer? (See the 'Introduction' for the duties and obligations of each.) Both make a thoughtful and well-planned visit each time, striving to sample all key habitats and fill in gaps as they are detected. A block's array of habitats should be sampled as thoroughly as possible over the course of a season, not necessarily on a single visit. The BL will know to seek help in covering those portions of the block that are not easily surveyed: private property, rough or dangerous terrain, etc. The AO makes block visits too, but (for a variety of reasons) has accepted the role of contributing atlasser, rather than Block Leader. The AO is still conducting his or her visits according to MCBBA2's field protocols, but is not always working in close collaboration with either the BL or the RC. We would certainly like to encourage AOs to be in touch with BLs, so as to contribute as much as possible to the BL's larger strategy for achieving adequate coverage of the block. This, we realize, will not always prove practicable; for example, an AO may make sporadic visits to a particular birding location without being able to plan in advance the details of that visit. But when lines of communication between AO and BL are open, we do hope that you craft your visits to a particular block so as to complement other work being done there. If you have signed up as an AO and wish to step up to a BL role by adopting a block, please get in touch with the RC in the region where you'd like to work.

**Timing the block visit.** [Please see the chapter of this Block Survey Guide with that title.]

**Field ethics and personal safety.** [Please see the chapter of this Block Survey Guide with that title.]

**Survey – Field Card – Database.** From the inception of this project, an effort has been made to develop survey methods that both reflect and are reflected by the field card, which provides a graphic summation of the questions we are asking and striving to answer. Together, our survey methods and field card have in turn determined the architecture of our database. This means that when you are surveying a block, you are answering the questions put by the overall study. What

species are present? How many individuals of each species can be detected given the documented parameters of an observer's coverage? What breeding behaviors have been noted for each species? With which particular habitats are the higher behaviors of particular species associated? Knowing the larger goals of our project will help you understand the place that your own findings take in the grand scheme.

**Surveying vs Birding.** Searching for breeding behavior promises different rewards than ordinary birding. The two ways of knowing avifauna are not mutually exclusive, of course, but the emphasis of atlas surveying is somewhat different from list-driven birding. Rather than striving for a high species count on the day, as we often do when out birding, it may be useful to think of scoring a high count of breeding codes – even if a single species accounts for several of the forms of behavior you record. A high overall species count for your block is of course desirable – but that goal is best sought in the long run, over an entire season; and reaching it means sampling various habitats. Another point. Birders often move quickly past common birds, such as Bushtits, whereas atlasers pause to watch them. We all want to achieve rare records – nothing wrong with that. But the path to those rarities leads through more familiar terrain. Learn to expand your sense of diversity to include diverse behaviors in species you may already know well.

**Breeding codes and the abundance measure.** The general remarks on method found in the “Introduction” explain the rationale behind our field protocols, including the gathering of raw abundance data. Since we are setting out to establish a base-line for abundance (in hopes that future studies might turn to ours for a basis of comparison), we are having block surveys record all birds located and identified. Because not all birds you find in your block are there to breed, we have adopted three codes (E, O, F) that describe the presence of birds known – or strongly suspected – not to breed within the block in question. (We have grouped these three codes under the confidence level ‘Observed’.) Now, since a count is already taken of all Possible, Probable, and Confirmed records, your counts at the Observed level will make it possible to record raw numbers for all birds detected on a survey. As we have noted in training materials, this is very similar to using eBird to record birding observations. (See further, “Breeding Behavior and Breeding Codes”.)

**Absolute abundance.** Over the years, many atlases have derived abundance estimates from block-level surveys. MCBBA2 is making an unusual attempt to establish a sound base line for absolute abundance. By that term, we understand an estimate of actual numbers that is based on systematic sampling of the habitats of Marin County within the date parameters we have settled on (the ‘peak season’ during which the entire scale of codes is recorded). Other atlases have published qualitative estimates (‘rare’, ‘common’, ‘abundant’, etc.) or estimates expressed along some variation of a logarithmic scale (1, 2-10, 11-100, 101-1000). We are confident that a meaningful estimate of absolute abundance can be arrived at by systematically linking numbers observed to effort data that places raw counts in spatio-temporal context. Accordingly, your task in the block survey, with respect to this abundance base line, is 1) to record your effort data responsibly and accurately; 2) to strike a sober balance, in your ‘count’ entries, between a precise census and reasoned estimate.

**The idea of sampling.** You will not find everything in your block, nor should you feel driven to plant your soles in every square foot of the block. Indeed, some atlas studies have been designed to search for breeding evidence in selected blocks only; others have run out of time before reaching all their blocks. Field biology almost never attempts exhaustive documentation, since simple (at times, sophisticated) statistical measures can compensate for inexhaustive coverage, provided that the data gathered are deemed representative, thanks to appropriate and consistent field methods. It is therefore important to embark on a study with a clear view of the practical limitations that will circumscribe its findings. These limitations will not only inform the design of the study, but ultimately its interpretation. By linking effort data to the other data points you collect, we are taking a first step towards casting your results in terms of sampling. Knowing this should enable you to distribute your visits by habitat, so that your data represent a reasonable maximum of knowledge about the blocks you have surveyed.

**Deciding how much terrain to cover.** The outcome of a day's block visit should ideally be a representative sampling of one (or more) habitats in your block. This means that you are not necessarily striving to cover some predetermined distance or area of terrain. It is unlikely that your overall results (by the end of the season) will benefit from, for example, chopping your block into a number of identical segments that corresponds to the number of visits you will make that season. Instead, you should come to know the habitat types represented in your block and endeavor to sample each one as thoroughly as your time (and access) permits. In sum, then, a single block visit should be designed to acquire for you, in the time you have set aside for that survey, a comprehensive sense of the species using the habitat(s) you have visited. Your visit should not be driven by a distance goal – any more than it is by a species count – but by a larger, season-long strategy of knowing what you can about the landforms, watercourses, and plant communities offered by your block.

**Moving vs stationary observation.** The block leader's goal of sampling each of the habitats found in a given block will necessitate movement – sometimes covering considerable distances. Certain blocks call for covering long distances on foot, by bicycle, or even by car. In certain situations, however, a prolonged 'sit spot' is best. Considerations of habitat aside, non-colonial species seem to choose nesting locations that are at optimal distances from other nesters. Building too close to others might attract hungry predators. But it is equally noticeable that few species nest at a distant remove from other birds. The availability of water and cover have something to do with this, as does the occasional need to summon intra-specific alliances for mutual defense – against cats, owls, jays, and so on. Atlassers often notice that they can record a few points of behavioral data at a single set of coordinates. This may be true at a bend in a stream, a cluster of dying or dead trees, or a wooded edge that provides good shade on a hot afternoon.

**Birding by event.** The block survey often feels like a series of discrete events that are strung together by the individual observer walking a single route. This may be explained by the clustering phenomenon mentioned in the previous section. You may find you have walked quite a

distance without recording much; then suddenly, you are presented with a busy cluster of activity that may take twenty minutes to sort through and record. A skilled observer can find these nodes of activity and improve her or his chances of efficiently accumulating a copious haul of higher codes. (You will notice this skill improving with practice.) Therefore, when taking coordinates in the field (as above), do not be reluctant to record multiple codes (for the same or different species) at a single location.

**General principles of seeking breeding behavior.** For more detail at the species level, please consult the bibliographical recommendations on our website; in particular, Shuford's *Marin County Breeding Bird Atlas* (1993) and the encyclopedic *Birds of the World* (Cornell University) website.

**Keep your eye on the females.** Sonoma County birder Lisa Hug offers this excellent advice. It is often tempting to look for males, who tend to display territoriality more conspicuously. But if you learn to look for the subtler but more telling movements of females, you will greatly enhance your ability to detect breeding evidence. Look for females' focused concentration centered around a hidden site; for their cunning misdirection as they draw closer to a covert; for their bursts of unusual energy when foraging. Of course, this advice is easiest to take in the cases of sexually dimorphic species. For sexually monomorphic species, keep your eye on closely associating pairs.

**Misdirection: a word more.** Birds often make evasive maneuvers while approaching their nests. A female Northern Harrier may seem to spiral aimlessly near the ground before dropping down into her nest; a Pacific-slope Flycatcher may jump nervously from perch to perch (say, carrying food or nesting material) before giving a last glance and darting suddenly under an overhang or bridge plank. Colonial nesters, for obvious reasons, seem less concerned with fooling potential predators, having strength in numbers if a hue or cry is called for.

**Watch the edges!** Many of our landbirds prefer habitat edges, or 'ecotones', for foraging and nesting. Even within heavily wooded areas, it is often useful to seek out glades and meadows and explore their edges. Western Bluebirds favor open grassy areas – with woody cover at their back. When they are not using nest boxes, you can often find them in dying snags near open fields. Another good example is Dark-eyed Junco, which is often found nesting in the understory at forest edges, though it frequently forages on open ground. Some of the factors that influence this phenomenon are 1) the easy availability of refuge from predators; 2) the role of sunlight in stimulating insect activity; 3) water retention, such as fog drip, found in shaded boarders; etc.

**Going off-trail.** It is obviously easiest, fastest, and safest to stay on trails, roads and sidewalks. Where there is heavy automobile traffic, you may also find that birds sing loudly, so that their voices can carry over the constant din and easier to identify at a distance when the noise drops. These are important advantages. In this kind of survey, however, there are also a number of drawbacks to limiting one's survey to such thoroughfares. To birds that nest near the ground, for example, domestic dogs, even small ones, are dangerous predators to be avoided if possible;

where dogs have their walks, then, you are less likely to find ground-nesting species such as California Quail. Some species do seem to be more spooked by the presence of humans and their domestic counterparts than others, but in general it is wise to find less-frequented paths. Where you can safely, legally, and ethically step off trails, we recommend that you do so, especially in the case of extensive grass- or scrublands. Do so with forethought, however, taking care to walk slowly, scanning the ground before you; also, avoid tramping over the same ground out and back. (For important ethical guidelines, please see the chapter, “Field Ethics and Personal Safety.”)