

Howell, S.N.G., C. Corben, P. Pyle, and D.I. Rogers. 2003. The first basic problem: A review of molt and plumage homologies. *Condor* 105:635-653.

Jenni, L. and R. Winkler. 1994. Molt and ageing of European passerines. T&AD Poyser, United Kingdom.

Pyle, P. 1997a. Identification guide to North American birds, Part 1, *Columbidae to Ploceidae*. Slate Creek Press, Bolinas, CA. 732 pp.

Pyle, P. 1997b. Molt limits in North American passerines. *North American Bird Bander* 22:49-90.

Pyle, P., S.N.G. Howell, R.P. Yunick, and D.F. DeSante. 1987. Identification guide to North American passerines. Slate Creek Press, Bolinas, CA. 278 pp.

Sakai, W.H. and C.J. Ralph. 2002. A tabular format of Pyle's ageing and sexing methods for landbirds. *North American Bird Bander* 27:77-90.

News, Notes, Comments

ERRATA-Omission: NABB Jan-Mar 2014 Vol. 39 No. 1, page 27, 2nd column last line of ACKNOWLEDGMENTS should be as follows: Dan Anderson, and Walter Sakai for helpful reviews of earlier drafts of this manuscript. This is Point Blue Conservation Science contribution #1964.

Guidelines for Prioritizing Bird Safety during High Capture Events.

As responsible bird banders, we must anticipate, mitigate and minimize any potential danger to the birds we capture and process. The purpose of most banding operations is to sample a population, which does not necessarily include capturing every possible bird. There is always the potential to catch large numbers of birds and contingency plans should be in place to ensure that bird safety is never compromised. Certainly large numbers of birds can be caught and banded safely, but there is a fine line between a safe operation and a potentially harmful one. Ensuring bird safety requires training, constant vigilance and assessment of our actions.

The purpose of this article is to provide a synopsis of strategies and methods used to help banders manage potentially busy situations that may be outside an operation's normal comfort zone. Our most important recommendation is that banders use the information within to help prepare and develop their own strategies for handling potentially high volume events.

BE PREPARED

Know the limits of an operation and work within them - Being prepared to handle large numbers of
Apr. - Jun 2014

birds can drastically improve efficiency and overall safety of birds on both the busy and not so busy days. It is important that banders know their own limits and strive to work within them. Every banding site is different, but the size and skill level of the team will always be two of the greatest limiting factors to an operation. Knowing the limits of a team is essential to maintaining a safe operation. Having lots of help is not necessarily an invitation to band more birds, as a lot of inexperienced help is far worse than few experienced assistants. Short-handed situations may require modifications to protocols, such as opening *fewer* nets and banding *fewer* birds.

The greatest Bander-In-Charge (BIC) is not measured by how fast they can band or extract a bird, but by the quality of their team and the level of explicit focus on bird safety and data quality in every aspect of the operation. Banders should never be placed in a situation that they cannot handle, and they should not be afraid to tell the BIC that this is so. BICs may wish to reassure less experienced team members that, although they are extremely busy, the situation is under control and offer advice on how to improve efficiency. Depending on the site, it may be important for protocols to address specifically preferred methods or deviations in busy situations to maintain data integrity while prioritizing bird safety.

Importance of Protocols - General practices and guidelines of bird banding on a busy day are no different from a normal day. However, the potential consequences of not following them are amplified significantly on busy days. Guidelines

for banding operations are well covered in the North American Banders' Study Guide (NABC 2001), group-specific manuals provided by the North American Banding Council, and Guidelines on the Use of Wild Birds in Research (Fair et al. 2010). These topics should also be covered in most banding program and animal care protocols. Readers may wish to review these materials and their own protocols and assess how simple day-to-day activities might be altered when busy.

Training - Adequate training of all station personnel is by far the most important method in preparing a team to handle potentially busy situations. Regardless of experience level, all trainees should be prepared to handle unexpected situations and understand the risks and consequences of ill-preparedness. The more time and care spent on training people, especially on slower days, the better prepared they will be for the busy ones. Even on the slowest days, it is important to emphasize the importance of time, efficiency, and adherence to station protocols.

Be aware of the weather - Being intimately aware of the weather at all times can help one foresee potentially busy situations before they happen. Most busy banding days are the direct result of changes in local weather conditions. The impact of weather largely depends on the location and time of year. Weather will obviously have the largest impact during the height of migration at any location, but tends to be inflated at coastal locations, particularly along the Gulf of Mexico, the Great Lakes, and the eastern seaboard. Cold fronts in fall, warm fronts in spring, any type of precipitation, fog, and sudden onshore breezes can all produce greater-than-average numbers of birds. It can be helpful to investigate and bookmark the best local hourly weather forecasts and radar locations on a computer or handheld device. If in a remote area without internet or phone access, look up. Paying particular attention to the weather and responding proactively to any change in conditions by decreasing time between net rounds or closing nets will always protect the well-being of the birds.

Know the study area - Know the study area and the birds within them. The number of birds seen and heard during the opening net/trapping round, or any trapping round, can provide a good indication of how busy a trapping round or day will be, but it is just as important to monitor bird activity constantly in and out of the trapping area. Net rounds, censuses and area searches provide excellent opportunities to evaluate bird activity and behaviors throughout the day. It is important to keep an eye/ear out for species that are more prone to be captured readily, and situations that may cause concentrations of birds near the nets, such as quick changes in weather, ant swarms, feeding frenzies, roaming mixed species flocks, and distressed or particularly vocal species that tend to attract attention.

JUST KEEP EXTRACTING!

Catching and extracting birds from nets or traps are the riskiest parts of any banding operation and deserve unequivocal respect and attention. Conducting net rounds at regular and short intervals and getting birds out of the nets should **always** be the priority. Clear the nets, or close them if necessary, and then focus on the backlog at the banding site. The sooner all birds are out of the nets the better. The longer the birds are in the net, the more tangled they may become, thus extending net round length. It is essential that an experienced extractor is always available. The most important thing to remember when one is faced with a busy net round is to stay calm and just keep extracting. Getting distracted, excited, or panicked during extractions will only increase the time it takes to clear the nets and the risk of injuries to the birds; just take a deep breath and keep extracting. If overwhelmed at the nets, one should never hesitate to get help or send the least experienced person for help. The use of mobile technology, such as cellular phones or walkie-talkies is a quick and easy way to recruit extra help.

Decisions made at the nets will alter the course of an entire banding operation and it is important never to put the safety of birds at risk for the "glamour" of high numbers. For example, if a large (50-100) wave of birds hits the nets within a couple of net

rounds, an operation has the option to extract, transport and band them all, which will almost certainly cause a backlog and could potentially create an unnecessarily busy situation for the rest of the morning. The situation could be immediately defused by keeping a sample that can be managed easily and releasing the rest.

Net rounds are also a perfect opportunity to organize birds before they get to the banding site. This may sound like a chore, but there are often far more extractors and assistants than proficient banders. For example, separating dominant species or recaptures from the rest of the birds during a net round takes no extra time whatsoever, just a little bit of diligence. The few seconds it takes to separate species, types, or band sizes will save significantly more time for the bander.

Prioritizing species - Guidelines for prioritizing birds during busy times are no different than any other time and are largely similar during both extraction and banding. Each situation is different, but generally one may want to prioritize sensitive species (e.g., hummingbirds, kinglets, flycatchers, todies, manakins, goatsuckers), followed by more hardy insectivorous and omnivorous species (warblers, wrens, woodcreepers, thrushes, tanagers) and leave typically granivorous and frugivorous sparrow and finch-like birds to last. There are, however, many exceptions. For instance, large and/or very active birds in a net should be removed first because they tend to cause other birds to struggle and get more tangled. Active species that do not calm down once placed in a bird bag may exhaust themselves quickly and may also be prioritized. Species at risk may also be prioritized ahead of all others during extraction and banding. Prioritization of species should be assessed by the BIC depending on the mix of species occurring at a site and time of year.

Some techniques to maximize bird safety on net/trap rounds during high volume events:

- a. make more frequent net checks.
- b. use 'runners' (but do not actually run) to move birds back and forth between the nets and banding site.

- c. attempt to separate species or groups as they are being extracted
- d. separate recaptures from new birds (for more efficient processing later)
- e. close the most distant nets or traps to reduce the length of net rounds
- f. close nets (and/or traps) temporarily
- g. make sure there are plenty of bird bags, net sticks, and other necessary equipment on each net round
- h. ensure everyone is hydrated and nourished properly

AT THE BANDING SITE

Banding - Maintaining flow and order while banding is essential to reducing the amount of time birds are held. Be quick, but do not hurry. Take the time to root out the inefficiencies in banding routines as seconds count and add up surprisingly fast. Intuitively, the best bander(s) should be banding, the best scribe should be scribing, and the best extractors, extracting. The more organized the banding process, the safer birds will be. On a busy day, an experienced bander will rarely appear to be rushing and although they are most often very skilled and knowledgeable, above all else they are exceedingly efficient.

All other distractions aside, three things tend to slow down the banding process—diversity, rarities or unusual situations, and recaptures. This is where having extractors pre-sort recaptures from new birds, priority and dominant species from others can make a huge difference in banding efficiency. In a one bander situation, it can be beneficial to deal with the diversity (which typically contains more sensitive species) first and then catch up with the dominant species afterward. If a second bander is available, one bander can process dominant species and recaptures while the other deals with the diversity, or vice versa. A bander dealing with a dominant species does not necessarily have to be an expert, as learning the intricacies of one or a few species can be relatively straightforward. Some stations also set aside strings of bands for one particular species to improve processing time.

Some techniques to maximize bird safety while banding during high volume events:

- a. clearly label the time of net rounds as birds arrive at the banding site
- b. avoid clutter at the banding site
- c. make sure all necessary equipment is readily accessible; e.g., extra bands, batteries, bird bags, blank forms
- d. have a chart with every common species banded, their band sizes, and reference to page numbers in identification guides in a very visible location at the banding site
- e. avoid unnecessary people and noise at the banding site
- f. sort the birds and prioritize species
- h. minimize handling and unnecessary steps; e.g., use release methods that do not require handling after weighing
- i. look for inefficiencies and remove them
- j. delegate duties to the scribe or other assistants; e.g., scribe can release birds from weighing container
- k. no pictures or ogling – except for rarities or special situations that warrant documentation

All hail the scribe! - During busy situations, the scribe is the most important person in maintaining a smooth operation at the banding site. It is critical for the scribe to maintain proper and accurate data collection and order. The scribe can help by monitoring progress and ensuring that net rounds remain on schedule and that all birds are being released within a reasonable amount of time. Making use of a kitchen timer to measure progress can be incredibly useful. The scribe and bander should never have any problems communicating and it is the scribe's responsibility to ensure that this is so. A good bander will usually be one step ahead of the scribe, but a good scribe will always be two steps ahead of the bander!

WHEN IS IT TOO BUSY?

Birds should generally not be held for more than one hour from time of capture to release and less than 30 minutes for breeding birds (NABC 2001). It can be easy to fall behind or get caught off guard.

The minute a bird hits the net, the clock is ticking. Respect the clock and live by it. If the birds captured cannot be processed safely with *full data* within that hour, the operation is probably catching too many birds and it is time to consider contingency plans. The easiest time to defuse potentially busy situations is at the net! Failing that, there are a number of actions one can take during the banding process to speed things up.

Take fewer measurements - The old ring-and-fling approach tends to be viewed poorly, but aside from letting birds go un-banded, it is a quick and safe way to get through a backlog of birds. The only data required by the Bird Banding Laboratory/office is band number, species, age, sex, location and date. Collecting minimal data is least disruptive to data quality when the majority of birds being banded comprise only a few species. If conditions and resources permit, a lot of time can be saved by banding birds, particularly bulk species, at the net, recording essential information, then letting them go, eliminating the entire net round process. Again, collecting full data is extremely important, especially for less frequently captured species, and if there is not enough time to collect full data, it is a clear sign that there are probably too many birds.

If all else fails, let birds go - The majority of busy days are largely comprised of one or more dominant species. Variability within a species tends to be very low so all that is necessary for most basic analyses is a sample of 30-50 birds per sampling period. Once a threshold is reached for that day, many birds can be released un-banded (and documented within unbanded or effort data), or with minimal data collected. For constant-effort stations, changing effort to accommodate busy days may affect the consistency of data quality over time. This can be accounted for if effort is documented carefully, including a precise record of net hours and capture rate for each net or trap. Stations may also wish to have a busy day protocol for reducing effort in a consistent fashion each time.

There are times when an operation simply catches more birds than it can band safely. In this situation letting birds go un-banded is the best approach. If

birds are to be let go it is in their best interest to be released at the net. This requires a good sense of the operation's limitations, and good communication among team members. Birds can also be released, especially the dominant species, from the banding site if the operation is falling behind. Depending on the protocol, it may be very important to keep track of data, such as numbers released, time captured, or net number so that statistics, such as the number of birds captured/100 net hours or daily estimated totals are not skewed.

Debrief - Clear and regular communication among all members of a banding team is essential during any banding day, but particularly important on busy ones. It can be very useful to have a discussion with the team following a big day to find out what did and did not work; were birds at risk, was everyone comfortable, were people working within or outside their limits, and discuss and act on ways to improve plans or protocols.

CONCLUSION

No matter how many birds one has banded or extracted, it is important not to let confidence overshadow natural and ethical limitations. Remember that there is no reward for banding large numbers of birds. It never was or ever will be a competition. Maintaining proper ethical boundaries becomes even more critical when large numbers of birds are involved and minor decisions can have a substantial impact. With the adrenalin pumping, it is easy to get caught up in the birds, the excitement and the rhythm. The trick is to remain calm, organized, efficient and proactive, and train everyone else the same. Above all else, remember **bird safety first** – at the end of the day nothing else matters.

We hope that this article is useful to novice and experienced banders alike, and encourages banders to think about how they would handle potentially busy situations before they occur. What would you do?

Admittedly this article is limited in scope to landbirds, but there are undoubtedly parallels to

other groups. We encourage banders of other groups of birds, particularly shorebirds, colonial or gregarious species, to publish similar guidelines or strategies.

We acknowledge the North American Banding Council, their Code of Ethics, and the following individuals and Council members for providing useful comments that greatly improved this manuscript: Betsy Brooks (Braddock Bay Bird Observatory), Jay Carlisle (Idaho Bird Observatory), Manuel Grosselet (Tierra de Aves, Mexico), Lesley-Anne Howes (Canadian Bird Banding Office), Bruce Peterjohn (US Bird Banding Laboratory), C.J. Ralph (US Forest Service, Redwood Science Lab), Josee Rousseau (Klamath Bird Observatory), Mark Shieldcastle (Black Swamp Bird Observatory) and Jared Wolfe (Bluebonnet Bird Monitoring Project, Louisiana Bird Observatory). A special thanks to Walter Sakai, Peter Lowther and Bob Pantle for their editorial prowess.

LITERATURE CITED

- North American Banding Council. 2001. The North American banders' study guide. 66pp. Available from: <http://www.nabanding.net/other-publications/>
- Fair, J., E. Paul and J. Jones, Eds. 2010. Guidelines to the use of wild birds in research. Ornithological Council, Washington, D.C.

Stuart A. Mackenzie
Long Point Bird Observatory
Bird Studies Canada

Marcel Gahbauer
McGill Bird Observatory
Migration Research Foundation

