Ketterson / Nolan Research Group Collection

This document is part of a collection that serves two purposes. First it is a public archive for data and documents resulting from evolutionary, ecological, and behavioral research conducted by the Ketterson-Nolan research group. The focus of the research is an abundant North American songbird, the dark-eyed junco, *Junco hyemalis*, and the primary sources of support have been the National Science Foundation and Indiana University. The research was conducted in collaboration with numerous colleagues and students, and the objective of this site is to preserve not only the published products of the research, but also to document the organization and people that led to the published findings. Second it is a repository for the works of Val Nolan Jr., who studied songbirds in addition to the junco: in particular the prairie warbler, *Dendroica discolor*. This site was originally compiled and organized by Eric Snajdr, Nicole Gerlach, and Ellen Ketterson.

Context Statement
This document was generated as part of a long-term biological research project on a songbird, the dark-eyed junco, conducted by the Ketterson/Nolan research group at Indiana University. For more information, please see IUScholarWorks (https://scholarworks.iu.edu/dspace/handle/2022/7911).

PROCESSING BIRDS IN EARLY SPRING, updated April 17,1996

When and where:

We need to implant males as simultaneously *as possible*, which requires that we rotate regularly through the various sub-areas of the study area. It is not a good idea to treat all the birds on WPR and then move to the Hotel, etc.

We need to avoid over-investing in areas that appear productive early in the year but tend to dry up later. The prime area where this is true is Jungle Trail, which becomes almost unworkable because, at least in some years, the birds disappear and the nests are so difficult to find.

Our nets and traps are placed in traditional sites, which tend to be productive and allows us to compare samples across years. It is important to keep a record of net hours and trap hours, so we will have some index of the effort expended.

Traps will lose their effectiveness after the chipmunks emerge and warm weather and experience with being caught will erode the effectiveness of the nets. Usually things go smoothly until 1 May, we may get a little extra time this year because the spring is so late. Once we stop processing en masse, we will need to turn to targeted catching on individual territories.

General info on how to process birds in early spring:

We must standardize the data we collect on birds, both in terms of the variables we measure and the way we make the measurements. **As always, we need to measure wing, tail, tarsus, mass, fat class, condition, covert molt, eye color, presence or absence of a brood patch, and cloacal protuberance** (after, Tuttle, length, depth, width, with calipers see diagram below**).** The data sheets prompt you for some of these items, but not for all of them, so you need to stay alert to be sure that you have collected all these data.

As always, decisions need to be made regarding each bird's sex (M, F) and age (N, J, A,Y, A,O). Andy, Erin, and Steve should make conscious efforts to confirm that their methods are identical and that their data match Tracey's and Ellen's. So at first you should measure one another's' birds, calibrate an object of known mass against one another's pesola balances, fat class the same bird independently, etc. This will take a little while, so please keep at it, and continue to calibrate yourself against other people.

New people, PLEASE point out when you have been given conflicting instructions - this will help us recognize where we are differ among ourselves and allow us to clarify.

Each time you handle a bird, you need to note whether you have done anything to harm it. If you think you have done something that makes it unlikely that the bird will be caught again - to take an extreme example, broken its heel - you must indicate this on the banding sheet at the time of capture. These decisions are very much harder to make later.

If we go out to catch a particular bird "on purpose," e.g., because we needed to bleed it or to know its mass at nest-leaving, or whatever, then we must make a note to that effect. This is so we can eliminate such birds from the sample when we later analyze data for seasonally varying population structure. Birds we set out to catch on purpose cannot be treated as 'caught at random.'

Please put newly captured (previously unbanded birds) and recaptured birds on separate banding sheets. This hugely simplifies the task of reporting our activities to the banding office. It also makes it easier to enter the data into the computer and to check for errors.

It is also important to record **ALL** encounters with birds on the banding sheets, even if the encounter is recorded in some other way. That is, if a bird is bled, then that fact is noted on a bleeding sheet, but that does not relieve one from the responsibility of recording the encounter on a banding sheet. I can't stress this one enough.

Sightings are one of the most difficult categories to deal with. Some birds may be sighted in early spring and never seen again; others are seen on a near daily basis and we grow weary of recording the fact. Sightings should be recorded on banding sheets that contain only other sightings, not captures, and recording them is essential in the early spring and late summer. These sightings allow us to estimate rate of disappearance during the breeding season.

Sightings should have some statement regarding how certain the observer was about the identity of the bird seen, e.g., "perfect view of bands in excellent light," or "certain of left foot, but the red of the right foot could have been orange."

Specific data to collect:

I. First Capture of spring

1. If conditions permit, (morning, able to process immediately after capture), get a hormone sample, either for T or for cort and stress. Early spring is the time of year at which we have the least information about plasma hormone levels, so early spring mornings are the time to get hormone samples. Steve Schoech will be our primary resource person on this.

2. Band (if necessary) and process bird to obtain all info specifically requested on the banding sheet, plus a measurement of clo pro (males only) and condition (all birds).

3. Get measurements that will allow us to determine whether testosterone is 'costly.'

   (a) quantify tail white with the 'tail-white measurer.' We will attempt to do this without removing feathers, but if necessary we will pull the third rectrix on the right-half of the tail.
   (b) hold bird for a fecal sample (Steve Hudman will be in charge here).
   (c) collect blood for smear and hematocrit (1 or 2 tubes, hematocrit from freshly caught birds only]
   (d) describe feet for presence/absence of foot pox (get photos of interesting cases)
   (3) describe molt (complete or evidence of suppression - get photos of interesting cases)

4. Bleed for DNA and blood profiles. First of three tubes is for a smear and hematocrit, next two for DNA. [If you bled for hormones, you can spin that blood, keep the plasma for hormones, and use the packed rbc for DNA.]

5. If it 's a male, implant it.

II. All later captures

1. Consider whether capture appropriate for a hormone sample.

2. Process bird on a recapture sheet. You can re-measure everything as time permits, which will allow us to compare our measurements. But even if time is short, for each capture you MUST write down date, location, and both the band number *and* the colors. With intermediate amounts of time, the next most important measures are body mass and a fat class.

4. **CHECK TO DETERMINE THAT THE IMPLANTS ARE PRESENT AND MARK ON THE BANDING SHEET THAT YOU SAW THE IMPLANT!** (e.g., write "implants ok"). **If the implants have come out, bring the bird back for re-implanting.** [imagine doing a two hour nest watch on a T-male who has lost his implant! It's very discouraging.]

5. When you return to the lab, enter the capture onto the implant log sheet. This allows us to see whether birds have moved and confirms the presence of the implant at the date of the later capture. [Once nesting has begun, the capture can be recorded on the implant log sheet.]