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).

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For additional information, visit the Ketterson/Nolan Lab community on the IUScholarWorks repository
SO YOU’VE CAUGHT A BIRD...
All photos © Nicole Gerlach

If you are processing the bird back in the lab:
- Put it in its own paper bag.
- Clearly mark the net/trap site (check the tree tags if you are not sure) and the time of capture on the bag.
- If the bird is unbanded, put UB on the bag. If it is clearly a male or female, put this on the bag as well.

HANDLING BIRDS
For all measurements, birds are held in bander’s grip (neck between index and middle fingers) in the LEFT hand. For left-handed people… sorry, you’ll have to get used to it. Measurements are made on the bird’s right, and this grip facilitates that.

DATA SHEETS
There are six types of data sheets, each with the same fields, although not all fields will be used for all birds.

If you are holding a______________, it goes on the ____________ sheet:

- Unbanded adult = New Birds
- Banded adult = Recaps
- Unbanded juvenile = New Juvs
- Banded juvenile = Juv Recaps
- Unbanded nestling = Nestling
- Banded fledgling = Trick question! These only go on the nestling weight sheet.

(A) Name / Year / Number – every sheet, every time.
(B) **Band Number** – Be sure to read these off the USFWS band *once it is on the bird*. Be careful – the way several of the numbers are stamped (6s and 0s, 3s and 8s, etc.) means they have a tendency to look alike.

(C) **Date**

(D) **Time** – Time that the bird was taken out of the net/trap (from the bag), NOT the time at which you are doing the processing.

(E) **Location** – Which net/trap was this bird caught at? For targeted birds (birds caught at the nest, etc.), write down the closest tree tag number and/or a description of where you were (WP tag 18 uphill, e.g.)

(F) **Nest ID** – For adult birds and juveniles, this will not be filled in unless you caught the bird at the nest. For nestlings, it is crucial that the correct nest ID gets entered here, complete with any R or II suffix.

(G) **Band Colors** – Every bird we band gets a numbered USFWS aluminum band (called a “silver” band) and a unique combination of colored bands.

Age and sex at banding is indicated by the position of the silver band.

- Females have their silver band on their LEFT leg (Ladies on the left)
- Males have their silver band on their RIGHT leg
- Birds banded as adults have a color band over their silver band
- Birds banded as juveniles have a silver band over TWO color bands
- Birds banded as nestlings have a silver band over ONE color band

Note: The left/right distinction does not apply to nestlings

Band combos are based on the BIRD’s right and left (and over vs. under).

Therefore, this bird has a band combo of lt grn on its right leg, and silver o blk o yel on its left leg. (We can therefore tell that she’s a girl, and was banded as a juv.)

BE SURE you are using the bird’s right and left. When you are holding a bird in bander’s grip, its right leg will be on your left.

The data sheet reflects this (i.e. the first column is for the bird’s R leg, the next column is for the bird’s L leg.)

Therefore, this bird would be entered as dk bl/yel on the R, silver o red o white on the L.

There are two types of color bands: Solid and Slash bands. Writing blk/yel means something different than blk o yel. Blk/yel also means something different than yel/blk. Know which way is up!
KNOW YOUR COLORS! (and their abbreviations)

From L to R:
- ht pink
- red
- org
- yel
- lt grn
- dk grn
- lt bl
- dk bl
- lav
- white (NOT wht)
- blk

From L to R:
- Blk/white
- Dk grn/white (OLD)
- Dk grn/white
- Red/lt bl
- Red/white
- Org/white
- Yel/blk
- Yel/dk bl
- Yel/lt bl
- Red/lt grn
- Lt bl/blk
- White/dk bl

NOTES:

1) Any of these combos can be reversed, depending on which way it’s put on the bird. (i.e. a yel/blk slash band can also be a blk/yel slash band)
2) The second band in the picture above is the old shade of dark green, which has been abandoned due to the fact that it’s impossible to distinguish from black in the field. DO NOT put these bands on any newly-banded birds, but be aware that you might see it on older birds.
3) The yel/dk bl and yel/lt bl bands can be tricky to tell apart. Make sure you’ve got the right one.

To band unbanded birds:
- Observe reproductive condition and/or measure wing/tail/TW to determine sex (adults and juvs). Consult with others if unsure; if it’s really equivocal, a wing of >80mm is a male, and <80 is a female (79mm for juvs). Decide if the silver band is going on the R or the L.
- Use the banding pliers to remove the lowest-numbered silver band from your string, and then use the pliers to gently crimp it shut around the correct leg (the BIRD’s R or L). Make sure it is closed all the way, but do not pinch the bird’s leg. Write the number on your banding sheet.

- Look up the next color combo for whichever sex you have on your sheet. Use the shoehorns to remove color bands from their racks, then to slide them onto the bird’s legs.

**IN GENERAL:** Double check that the band combo that you wrote down is the same as the band combo you put on the bird – especially right vs. left, and over vs. under (for regular and slash bands).

(H) **Mass** – The mass of the bird, estimated to the nearest 0.1 g. Mass should always be the last measurement you make, as birds are most likely to escape from the weighing process.

To weigh a bird, put it head-first into your weighing sock, fold the sock around it, and clip your sock to your pesola scale. Hold the scale by the ring at the top, and make sure that the spring can move freely. Periodically (~once every day or two) make sure your scale is zeroed to the weight of your sock.

(I) **Age** – The bird’s age CATEGORY.

N = nestling
J = Juvenile
J/N = Juvenile that we’d banded as a nestling
AY = first-year adult (adult-young). These can be told by dark brown (instead of gray) covering wing feathers, and brown iris (easiest to see in direct sunlight)
AO = older adult. Older adults have gray wing covers, and darker irises.
If you’re not sure, put a question mark, or just indicate “A” for adult.

(J) **Sex** – The best way to tell sex is based on reproductive condition. Females in reproductive condition will have a brood patch (BP) – a feather-less, vascularized patch of skin on their stomachs, and may look somewhat torpedo-ish, depending on the stage of laying. Males will have a cloacal protuberance (CP) that ranges in size.
If a bird does not have a noticeable BP or CP, wing size and plumage color can also be used to sex birds. In Virginia, most males have wing chords of >80mm, while most females are <80 mm. For birds in the “questionable” range (79-81), plumage characteristics (i.e. degree of brownness vs. darkness of gray, degree of tail white) can be used to make your best guess.

If you’re not sure, put a question mark. It helps to put a little note on how you decided on sex (BP, CP, wing, plumage) under the sex, for use when entering “sexing method” on your data sheet.

(K) **Wing** - The length from the bird’s wrist to the tips of the longest wing feathers, measured to the nearest mm. Using a flexible plastic ruler, hold the edge of the wrist flush with the tip of the ruler. Using your thumb, flatten and straighten the feathers down (be careful not to sprain the wing!), and measure.

(L) **Tail** – The length of the longest tail feathers to the nearest mm. Insert the ruler perpendicular to the plane of the tail between the central two feathers until it is flush with the body. Flattening/straightening the bird’s right tail feathers, measure to the longest point. If the bird is missing/regrowing tail feathers on the right, you can measure the left tail feathers, but be sure to make a note of this.

(M) **Tarsus** – The length of the right tarsus bone, measured with calipers, to the nearest 0.1 mm. For adults, juveniles and nestlings D6 or older, this is measured using calipers from the “notch” at the bird’s heel (not the back-side of the heel) to the top of a folded-over foot. For D0 and D3 nestlings, this is measured with a plastic ruler at approximately the same place.

(N) **Tail White** – The percentage (working in 5% intervals) of a bird’s outer tail feathers (on the right) that are white, starting at the outer feather
(R6) and working your way in. A tail feather that’s completely white is a 1, a tail feather that’s gray except for a smidge of white is a 0.05. If a feather is missing/regrowing on the right, measure on the left, but make a note.

(O) Comments – There are four main things to record for every bird (a-d), and some additional categories (e-g) which will probably not be applicable for most birds:

a. **Fat** – How much fat does a bird have in its furcular notch (and potentially on its abdomen). Fat shows up as creamy white, and fat scores range from F0 (no visible fat), through F1 (a small 1-2mm wide stripe of fat in the furcular notch), up to F5 (fat fills the furcular notch, flush with pectoral muscle).

b. **Condition** – The condition of the bird’s pectoral muscle relative to the keel. C3 indicates a bird’s pectoral muscle is bulging up to either side the keel; C2 indicates the pectoral muscle is flush with the keel, and C1 indicates the keel is sharply protruding. Intermediate measures of 2+ (slightly bulge-ier than flush) and 2- (slightly protruding keel) are common.

c. **Reproductive condition** – Record the state of an adult’s reproductive condition (i.e. full brood patch, partial brood patch, small/med/lrg CP, eggy, etc.)

d. **Pox** – If a bird has active pox or pox scars, record which toe(s) are affected. If the bird has no pox, put “NP”.

e. **Injuries** – Broken legs/feet, strained wings, missing toes, obvious signs of parasite infection (i.e. feather mites), etc.

f. **Molt** – If the bird is molting, describe which feathers are missing/regrowing.

g. **Any other anomalies** – Either about the bird, or about the capture.