

INTERMOUNTAIN BIRD OBSERVATORY

MANUAL FOR FALL LANDBIRD MIGRATION BANDING

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BACKGROUND AND PURPOSE

Intermountain Bird Observatory (IBO; formerly Idaho Bird Observatory) began monitoring fall migration of landbirds on a daily basis at Lucky Peak, Ada County, Idaho in 1997. Capturing and banding migrants using mist-nets in a standardized manner provides data comparable to subsequent years and other migration sites. This manual will act as a guide and a reference for IBO field assistants to ensure that consistent methods will be used from year to year.

Our main goal is to monitor populations of migratory landbirds, largely passerines but including hummingbirds and woodpeckers (hereafter referred to as near-passerines), of the western United States & Canada during migration. While there are no endangered or threatened species of passerines or near-passerines regularly found at our site, there are many species about which little is known, especially during the migratory periods. Therefore, specific research aimed at illuminating the habitat use & stopover biology of these migrants is a major part of this project.

THE BANDING SITE(S)

As of 2012, one banding site operates full-time during the fall season from mid-July through mid-October. This site is located on Lucky Peak, which lies at the southern end of the Boise Mountains on the edge of the Snake River Plain. Lucky Peak is situated approximately 15 miles east of Boise and reaches 5904 feet in elevation. The habitats on Lucky Peak are reflective of this edge between the forested mountains and the sparsely vegetated plains. The four dominant cover types on and around the peak include Douglas fir (*Pseudotsuga menziesii*) forest, mountain deciduous shrub, high desert shrub-steppe, and riparian willow.

Fall weather on Lucky Peak usually consists of warm to hot days and cooler nights, although October can be

cold with daily high temperatures not exceeding 540 degrees F. High pressure and blue skies dominate but storm events occur at intervals throughout the season. High pressure days are often accompanied by an afternoon breeze and/or winds. However, strong winds are sometimes present during the morning hours and can restrict the mist-netting operation.

The active banding site, called 'Lucky', is located on and around the south and east slopes of the peak itself and nets are arranged in mountain deciduous shrub adjacent to Douglas fir forest.

EQUIPMENT

Listed below are items necessary for operating IBO's fall banding stations:

*banding kit:

- bands (sizes OA, O, 1, 1B, 1A, 2, 3, & 3A)
- banding pliers (sizes OA-1A & 2-3 & 3B-4)
- wing rule
- data forms (see appendix for banding data form & example of field notebook format)
- pencils & pens
- band removal equipment

* bird bags (≥ 100 @ each site)

* numbered clothes pins for bird bags (at least 5 for each net)

* nets: 12m x 2.6m and 6m x 2.6m, 32mm mesh (10:12m nets @ Lucky)

* poles: 3/4" aluminum conduit, 12' in length (2/net)

* stakes and parachute chord for pole stabilization

* electronic scales

* Pyle's Identification Guide to North American Birds and standard field guide

* net-lane clearing tools: machete, loppers, saw, hatchet, rake

* chairs, table, shade tent or other suitable banding structure

* thread and scissors for net mending

* bound journals for weather, net effort, capture, and observed species summaries

* see First Aid section for related equipment

BEGINNING THE SEASON

The fun doesn't begin right away. To set up nets, pound a length of rebar into the ground with 8-12" sticking up for the first pole (ideally, rebar from the previous year will remain in place to ensure relatively constant net locations). Then slip the loops of the net around the pole and bring the net to the other end. Tie parachute cord to a branch, fencepost, or stake to stabilize the pole. Use a clove hitch or taut-line hitch on the pole (you may also need a bit of duct tape on the pole to keep the rope from sliding down) and a taut-line hitch to the other end of the guy line to allow re-tightening throughout the day and season. When the net is properly taut (*be sure that each line is not tight like a guitar string – there should be some slack so that the net gives when a bird hits the net*), place the second pole using the above methods. The poles and rebar may need to be moved as the nets stretch, especially at the beginning of the season. Allow 1 day for two people to set up each station. Make sure that the crew arrives the day prior to the established starting date (July 16th). In other words, it's ideal to arrive at Lucky Peak by early evening on the 15th for set-up.

Other details include assembling complete banding kits and binders, getting chairs and tables out of storage, running errands, and getting/making other accessories such as bird bags and journals.

DAILY PROCEDURES

There are 10 nets at the Lucky station. The station will operate most efficiently with a minimum of 3 people (ideally 4+) because on busy days three people will not be adequate to safely operate the site. Fortunately, volunteers will be available to take data on most days; this can help tremendously. Generally, the number of captures is fairly high during July (many dispersing juveniles & early migrants), there is a lull from early August thru mid-August, and then numbers tend to be high from late August on with the highest daily capture totals usually occurring in late September & early October. However, this is variable & days with over 150 captures are possible throughout the season (literally). The biggest days will most likely occur after calm, clear nights preceding a cold front. Try to anticipate big days and enlist hawkwatchers or other volunteers (in addition to the crew) to help ease the strain. Depending on the flow of birds, it may be most efficient to have one or two people band and a volunteer to take data while one or two other people continually clear nets.

OPENING NETS

Open nets at sunrise and keep nets open until five (5) hours after sunrise (unless your are banding on a MAPS day – 6 hours). Below is a table with opening times by date based on the sunrise/sunset table for Boise.

Table 1: Opening times by date

DATE	OPENING TIME
July 16-20	0620
July 21-25	0625
July 26-30	0630
July 31- August 4	0635
August 5-8	0640
August 9-13	0645
August 14-17	0650
August 18-22	0655
August 23-26	0700
August 27-31	0705
September 1-4	0710
September 5-9	0715
September 10-13	0720
September 14-17	0725
September 18-22	0730
September 23-26	0735
September 27-October 1	0740
October 2-5	0745
October 6-9	0750
October 10-13	0755
October 14-17	0800

The goal is to have each net open for the full five hours, totaling five net-hours per net each day. However, if conditions at a net become dangerous to the birds (i.e., too hot, cold, wet, windy or a persistent predator) or the workers (rattlesnake, bear – not expected) then the net must be closed until conditions are safe again.

When to close nets prematurely (important!):

- if temperatures exceed 95 degrees F and net is in direct sunlight

- if birds in a net are becoming heat or cold stressed within the usual ½ hour between net runs
 - you can shorten net runs to 20 min or less as needed
- during constant and/or heavy rain (*light, intermittent rain can be OK in moderate to high temperatures as long as water droplets don't collect on the netting; use your judgement - if your hands are too cold, so are the birds*)
- if temperatures are below 40 degrees F and it's damp or windy
- if direct winds exceed 15-20 mph and/or make net conditions dangerous for birds (i.e., causing excessive entanglement or injury)
- if a predator (raptor, weasel, etc.) is keying in on netted birds

When opening nets, unfurl each net and spread the trammels so that each has about 6" of pocket. Be sure the net is evenly distributed horizontally and vertically and *always* be sure that all pockets are hanging correctly (i.e., the net isn't caught on above trammel lines, etc.). Keep the bottom trammel high enough so that a robin caught in the lowest trammel will not injure itself on the ground. There is an inherent conflict of interest on this subject because *Catharus* thrushes and other skulkers will most likely be flying low through the net lanes. Set the nets to maximize captures without threatening the birds with injury. Use duct tape on mist-net poles to mark the location for the lowest trammel loop. Clear the net lanes to remove debris periodically.

Be sure to make note of holes in nets and mend the holes/replace nets as soon as possible.

CLEARING NETS

Net runs should be made at 20 to 40 minute intervals. This time span will help to minimize disturbance at the nets while also ensuring the safety of the birds. 15-20 minute net checks are required during extreme weather conditions, including extreme heat (> 95 degrees F) and high sun exposure, cold (< 40 degrees F), rain, and wind (>20mph). If two or three people are clearing nets, it is best to divide the net run and meet in the middle (to ensure that all nets are checked and clear – **ALWAYS CHECK IN WITH THE OTHER NET-RUNNER**) and then go to the banding station.

When checking nets, always be certain a net is empty by walking the extent of the net, checking the entire net with binoculars, or moving each trammel line to be sure there are no birds “hiding” in a corner.

Try to use the ‘leg-hold’ grip as little as possible. It increases the chance of injury to birds, especially stronger birds & those with longer legs. When placing birds into bird-bags, it is best to use the ‘bander’s’ grip so birds don’t kick free & cause injury and/or lose feathers. Birds should be placed firmly in the bottom of the bag before letting go to ensure the bird does not think it is free, since this may cause the bird to bolt and drop its tail feathers.

Place birds in bird bags with numbered clothes pins attached so that the bander will know which net & shed (level of the net) a bird came from. When busy, you may need to hang many bags on one clip. Try to keep kicking birds (i.e., towhees) or large birds (e.g. robins, grosbeaks) separate. There should always be enough bags to bag birds individually. However, if the need arises (*extreme circumstances only – this has not occurred yet*), it is permissible to place numerous individuals of docile species (such as warblers, kinglets, and flycatchers) in the same bag. Warn the bander of multiple birds. Do not put feisty or dangerous birds such as chickadees, vireos, large-billed sparrows, icterids, etc. together and always try to avoid mixing species. Never put birds from 2 nets in the same bag. Always carry plenty of bags.

When finished clearing a net, **ALWAYS BE SURE THAT THE NET IS PUT BACK IN ITS ORIGINAL POSITION**. A semi-closed net will not only reduce captures but can also increase entanglement and chances of injury to birds.

PROCESSING BIRDS

Stress-prone species and injured birds (see below) need to be processed first. Towhees seem to stress the most but be aware of other “red flag species” such as hummingbirds, golden-crowned kinglets, and crossbills. Then try to process recaptures next because they’ve been through enough already, especially if they’ve been caught that day. Less data need to be recorded for recaptures, unless the bird was banded in past years or at another banding station - in which case the bird should get fully processed. At a minimum, fat and weight should be recorded for every same-season recapture. **For hatch-year birds**, sex should also be recorded, since young birds initially captured early in the season cannot be sexed until they have not molted into their formative plumage. If a bird is recaptured within three hours of the previous capture, it is unnecessary to process that bird. Try to process smaller birds next and leave the hearty birds for last.

Obvious “families” (adult birds and/or very young birds caught in same net) should be processed together and released together, preferably near the net where they were caught. Solo young fledglings that may still be dependent on parents should be returned near the net. If you are not sure if a young bird is still dependent and you have time, try to get someone to return it to the net, or at least release it in the direction of those nets.

Always pay attention to the molt & feather wear of a bird – these are huge hints to age & should correspond with skull ossification. In general, worn feathers indicate an AHY bird while HY birds have fresher feathers. Also, symmetric FF molt usually points to an AHY bird (although HY woodpeckers replace their flight feathers and a small % of HY towhees replace their tertials). **HOWEVER**, later in the season, once many species have completed their prebasic molt, these differences diminish.

During unusually busy times, it may be necessary to “ring and fling”. In this case, record only age, sex, fat, wing chord, and weight (after banding!!!). A good rule of thumb is that if >30 birds are waiting, ring and fling until the wait-list is reduced (unless many capable banders are present). Exceptions to this rule include rare species, and focal species for studies; these should get the full treatment. If the most recent net run results in very few birds and it appears “the rush” is over, proceed as usual.

See the data sheets for data collected on each bird. Below is a priority list for data collection:

1. determine species (never band an unidentified bird)
2. band bird, also write down bander’s initials and band #
3. age and how aged
4. sex and how sexed
5. wing chord & tail
6. body condition (fat, muscle, molt, and feather wear)
7. weight
8. status
9. date, net #, time
10. other measurements (i.e., additional measurements on *Empidonax* flycatchers or hummingbirds)
11. notes (anything unusual or noteworthy)

Take care when banding a bird and *keep your eyes* on the band & bird during banding. Remember that the bird has to wear this aluminum ring for the rest of its life. Make sure you are using the correct band size and number before putting the band on the bird’s leg (don’t be afraid to ask!). Watch carefully as you slowly apply pressure with the pliers. Make sure there are no toes, skin, or feathers that could get crushed in the band. After gently squeezing the first time, rotate the band 90 degrees and then give the band a good squeeze to ensure that there is no opening that could potentially snag the bird after it is released. If you can see through the seam, it is not closed well enough. Always band the right leg unless it is injured, in which case the left leg should be banded. Apply band so that it may be read without turning the bird upside-down.

BAND REMOVAL

If a band is closed improperly or if we catch a bird with a band that has been crumpled by the bird's bill, etc., we will need to remove the band. The best method for removing songbird bands entails using band removal pliers. For bigger bands, consult Gary ;-) or – *very carefully* – use 2 short segments of the wire that the bands come on. Each stretch of wire is threaded between the bird's leg & the band (one on either side of the leg; one on either side of the band opening) and then twisted to make something for pliers to grip onto. Then, 2 pairs of pliers (banding or otherwise) are used to firmly grasp the twisted section of wire; pull slowly but firmly in opposing directions (*always watching that the leg is not being pulled on*) until the band pulls apart. *Do not do this until you have been shown by your crew leader.*

CLOSING NETS

Most nets remain on the poles overnight. Before closing, be sure to remove all debris (insects, bird poop, grasses, etc.) from the nets. Hornets and grasshoppers especially should be removed as soon as they are noticed, since if they are left in the net will chew holes in it (not to mention that slowly dying in a net is no way to go!). Consult your crew leader on insect extraction methods. Insects should be removed alive when at all possible, however if this is not possible--they are too tangled to remove without pulling off critical limbs (e.g. grasshoppers), or they sting--should be quickly killed with a clothespin and removed. When closing these nets, keep the top trammel open and furl (roll) the rest of the net into the top trammel and gradually furl the whole net. Carefully place clothes pins (or flagging) along the length of the net to keep the net from opening and catching birds and/or bats during non-operating hours

DAILY SUMMARY

In a bound journal, record daily information on weather, net effort, new captures, recaptures, and #'s of other species observed (including higher #'s of species captured) during the day.

Weather information should include, opening and closing temperatures, high and low temperatures and any precipitation. Keep note of any changes in weather during the five hours and of any major weather changes and storm systems during the season.

The net effort summary should include opening and closing times for each net and a daily tally of net-hours.

For each species keep track of the # of new captures (noting escaped, unbanded birds), recaptures, and # observed (especially for seldom seen species and/or species present in #'s but avoiding nets).

BIRD BAG CARE

Clean feathers, poop, dust, etc. out of bags daily by turning them inside out. On 'light' days, it may be easiest to only use a handful of bags; that way you'll only have relatively few to clean at day's end.

Wash bird bags as needed and not less than once a week. We have heard conflicting reports about what to use when washing bird bags. Arm & Hammer is the detergent we have used lately and with success. Do not use conventional detergent with phosphates and use moderation when washing the bags because birds may have reactions to the chemicals we use. Using two rinse cycles may help to reduce residues.

AVIAN DISEASES

Various avian diseases can be transmitted by our hands after we touch infected birds. One such

disease is Avian Pox which appears on birds as wart-like lesions on non-feathered body parts such as legs and facial skin around the beak. **IF YOU TOUCH A DISEASED BIRD**, immediately band and process that bird, noting the abnormality. Then wash your hands with soap (or some kind of hand sanitizer with alcohol - i.e., Purell) **BEFORE** touching other birds or people. Also wash any piece of equipment you used while hands were dirty, including banding pliers, a pen, wing rule, etc. **ALSO**, separate any bird bags that may have communicable diseases and make sure they are washed before use.

MORTALITIES & INJURIES

Unfortunately, unexplainable mortalities may occur during netting and banding, though sometimes the reason is clear. Using caution & respect at all times will reduce these incidences. In the case of a mortality, take all the usual measurements and freeze the bird as soon as possible so it can be used as a study skin. Freeze in a plastic bag with a label that contains the following information: date, location, time, species, age, sex, collector, and cause of death. The bird's bill and neck should be wrapped w/ cotton and the bird should be placed in a paper cone w/in the plastic bag so as not to damage the specimen.

The most frequent injuries that we observe are: wing strain (apparent strained muscle in one wing – often the likely result of hitting the net too hard and/or at a funny angle), broken or dislocated legs, and burst air sacs.

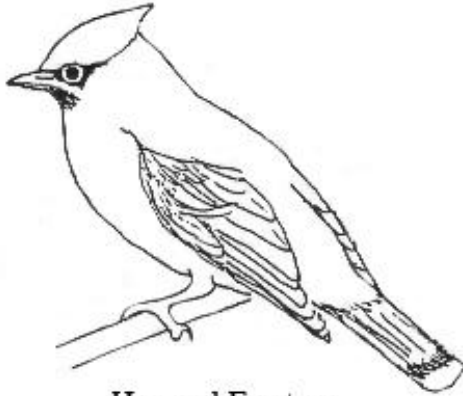
Wing injuries: tend to happen to larger birds (those that hit the nets with more force) but can happen to many species, particularly, it seems, to HY birds that are still developing their musculature (??). In most cases, the injury is likely a strained muscle from impact with the net but see the diagram showing how birds hold their wings with different injuries to rule out the potential for injuries to the wing bones.

We often cannot tell there's a wing injury until we release the bird & it does not fly. Thus, it's best to release all birds low to the ground to minimize exacerbating a birds' injuries. Unless there is a visible injury, we generally release wing-strained birds into areas with thick cover, plenty of fruit (esp. for frugivores), and both shade & sunlight so they can choose their microclimate for recovery. *Check with your crew leader.*

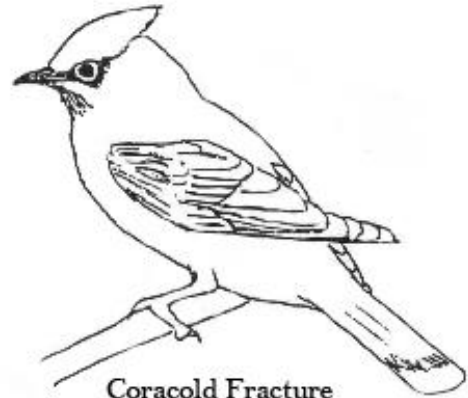
If we can work with a rehabilitation center, then we could try using a box for release which would test if the birds can fly up and out. If not, birds would benefit from some rest on NSAIDs, even for 24 hours (give fluids). This would require a reptarium unit.

Recognizing Fractures of the Wing

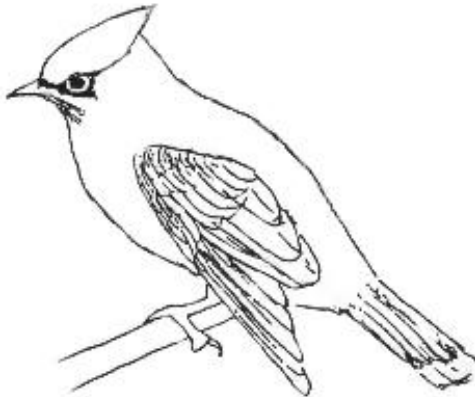
Courtesy of Leah Schimmel



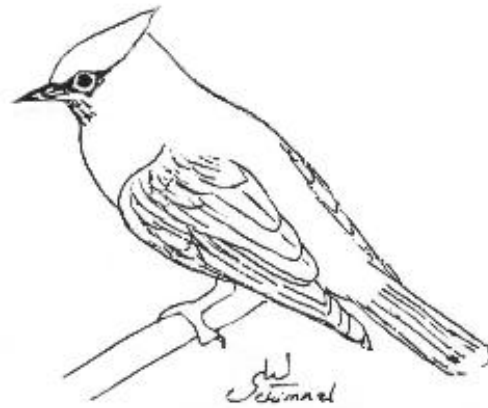
**Humeral Fracture
or injury to elbow joint**



**Coracoid Fracture
or injury to shoulder joint**



**Carpal or Metacarpal fracture
or injury to wrist joint**



Radial /Ulnar Fracture

Burst air sacs often lead to birds that don't fly right away (but not always). First determine if bird is having difficulty breathing. If no difficulty, process and release them as you would a wing-strained bird. If the breathing seems labored, consider puncturing the air sac with a sterilized needle.

From Lynn Miller (rehabilitator who gave workshop at 2010 AOU/Cooper meeting): If you need to puncture the skin, clean the area with an alcohol swab and use a sterile needle – one from a syringe and needle unit is good – simply open the skin to release the air. The main issue here is that leaking air sacs seldom fix over night – you may need to care for this bird for a couple of days – rehabber will be great help. If possible, at least hold the bird for 24 hours. It may be advantageous in these cases to give fluids orally so you don't risk comprising the air sacs with fluids. Simply draw up the needed volume of the fluids you plan on giving over the course of the day (approx 5% body weight) and give it by drops on the beak regularly. Or hopefully, the bird will drink on its own in a comfortable and safe surrounding. Re-evaluate the next morning – is it still like a Michelin man or is the air less?

Bleeding in the mouth (often accompanied by gurgling of blood/ a crackling sound during breathing) might indicate an impact injury to the lungs or other internal organs.

From Lynn Miller: This can indicate something as simple as capillary rupture in the throat or something more worrisome - lung contusion. Rest and reassess is advised. Again – if you are working with a rehabber, then I would consider sending these birds to them. Give fluids.

Leg injuries must be fixed before releasing the bird. Larger birds with longer legs (towhees, white-crowned sparrows) have leg injuries most frequently & they often occur in the net before we even get there. However, it is possible to cause this yourself by using the leg-hold grip without stabilizing the body at the same time or by letting a bird into a bag with the leg-hold grip. Thus, BE VERY CAREFUL and preferentially use the body grab technique, especially on the larger, longer-legged birds!

- **Dislocations** of the tarsal joint are the worst to look at but the easiest to fix (even if the joint is bulging out of then skin & it's bloody): pull on the foot & tarsus until the joint slips into place (may need to use some force). You'll know the joint is back b/c the leg can flex along the joint again. Once in place, hold the joint firmly with your forefinger & thumb and then splint the joint firmly with masking tape (you may need to dry the wound & clear some feathers away first).
- **A break on the tarsus** can be fixed similarly: set the break and splint with masking tape.
- **A break above the tarsal joint** is more difficult but splinting should be attempted for fractures on the femur. You will definitely need assistance for leg stabilization and will likely need to trim feathers away. Best approach would be to wrap the leg to the body and then temporarily house the bird in a reptarium lined with towels (providing water & food).

Ask your crew leader to show you if you have an injured leg. We have recaptured birds that have been injured &, at least in the short time between captures, they tend to regain much mobility & strength. Thus, the birds are not necessarily compromised in the long run, *especially* if we splint the injuries correctly.

Wounds: If a bird has an open wound somehow caused by netting/handling, consider application of

second skin to stabilize the wound. If the wound was pre-capture, release untreated with minimum handling as possible.

From Lynn Miller: Wounds that do not seem to be hindering the bird in any great way will probably heal fast if the bird is released – immune function is depressed with stress – but significant wounds need to be treated. Fluids, NSAIDs and care = rehabber.

Feeding/Hydration: For birds which are compromised from injury or illness, consider a subcutaneous injection of normosol. This should be injected into groin area with care not to puncture air sacs or organs. No more than 5% of bird body weight (roughly 1ml pre gram).

List of Avian 1st Aid equipment for field use:

- Towels (for lining boxes)
- Paper tape or non-stick masking tape
- Vet wrap
- Bandage scissors (curved end)
- Q-tips & alcohol (when needed for bloodwork/needles)
- Normosol (250 ml bags) for re-hydration of stressed birds
- Pedialyte (small units b/c they expire quickly)
- Reptarium units (for temporary caging)
- Mealworms (homegrown, if possible)
- Syringes for subcutaneous rehydration/feeding.
- Second skin or surgical glue

Human saliva is bad for feathers – thus, **do not** lick fingers/use spit for skulling birds!

DOGS & OTHER PETS

There should be no dogs or other domestic animals allowed off-leash during the banding hours, **period**. Dogs could be a hazard at or near nets and can also be a hazard near the banding area. If there is a particular area where an injured bird (see above) has been released, be sure not to let dogs near that area even after banding hours are done.

TROUBLESHOOTING & GENERAL ADVICE

1. Do not make loud or sudden movements around birds. Talk quietly and be respectful; birds are not accustomed to being molested by the likes of us.
2. When approaching a net, survey the situation first and remove birds on a priority basis i.e. raptors, birds hanging by legs or necks, tangled birds, towhees, birds close to the ground, and hummingbirds.
3. Make sure the bird is hanging low enough in the net to remove safely (DON'T reach for birds over your eye-level!). If the net needs to be lowered, gently bring the loops of the upper trammel lines down with a stick, while carefully watching the bird(s) to prevent double-shedding (greater entanglement).

4. Good techniques for removing birds:

* try to use the leg-hold grip as little as possible for all birds but especially for larger birds (see below)

a. start with bander's grip/'body grab' and subconscious reminders i.e., pox? injury? blood? broken bones or joints? Be observant! Switch to bander's grip quickly with strong kickers and bigger birds like towhees, white-crowned sparrows, and robins.

b. if bird is through more than one trammel, carefully remove outer trammel layers first

c. gently remove bird from pocket and proceed to remove net from wing(s). Don't hesitate to use bander's grip to better support the bird's body once netting is off of head or head and one wing. Always support bird as much as possible to ease strain on joints and bones.

d. **Always be aware** of bird's condition. The following conditions should act as a red flag:

-gaping = possible heat stress or being held too tightly

-closing eyes = stress

-limp neck = emergency, depending on situation, bird may need to be immediately released or given fluid and/or other attention to 'wake it up'. I often find that blowing on a bird (sometime repeatedly) helps keep them alert. If a bird is showing signs of a limp neck, reduce pressure in that area (maybe let the bird sit in your hand) and monitor its health – maybe blowing on the bird and/or giving it a small amount of fluid (Gatorade, Pedialyte, or water).

5. In the rare instance when a novice volunteer is removing birds unattended, communicate clearly to her/him to not spend more than 5 minutes on a bird before calling for assistance from a full-time bander.

6. When bringing birds to the banding station, know which birds are recaptures and which birds are stressed/injured so that the bander can prioritize those birds. Use a red clothespin to indicate priority birds. Arrange birds in order of net-runs to minimize waiting time for individual birds.

7. If you hand birds in bags to a volunteer for her/him to carry to the banding station, firmly (but politely) request the person to walk carefully and to avoid running. Most people are not accustomed to Lucky Peak's terrain.

8. We have encountered problems in the past with volunteers having previous banding experience expecting to jump right in (when in actuality they have received poor/insufficient training and/or are simply reckless with the birds). Do not allow these individuals to go immediately for birds in the nets and let them know that Jay (or the current crew leader) has imposed this rule and that they need the crew leader's permission first. Ask them to let you show them your technique first and talk them through what you are doing. Try to have people practice body, leg-hold, and bander's grips at the banding station before they attempt to get birds out. Watch their technique carefully and be ready to give suggestions.

9. Communicate Openly, Freely, and Appropriately with your co-workers.

*discuss openly about technique and share helpful hints

*freely give constructive suggestions or criticisms and be ready to take it in return

--Bird safety is a priority! Speak up if you feel a coworker is doing something unsafe.

*if you notice a fellow bander's bird may not be doing well (gaping, closing eyes, etc) don't be afraid to speak up immediately! The bird may be fine, but don't risk it.

*if you do have a criticism, appropriately speak to the person individually

*compare measurements and data assessments often and discuss it, so that we can all continue to be on par, especially with fat, wing/tail, and skull scores.

DATA RECORDING & ENTRY

Data is to be recorded on to IBO banding data sheets. Record data for each field when possible. At the

beginning of each day, write out the date, status, & time for the first bird. Carrots (<, <) can be used in subsequent lines on that day, only when data are exactly alike (i.e., time is same for consecutive birds. DO NOT use carrots for species code.

Data should be entered into a Microsoft Excel spreadsheet named for the site & year (i.e., Lucky '10 or Lucky 2010). Separate worksheets should be made for each band size as well as recaptures & un-banded birds. Each field assistant is expected to spend 3-4 hrs per week entering and/or proofing data; this should amount to 12-20 pages/week of work on average. After entering a sheet of data, check a couple birds worth of data to be sure there are no major errors (i.e., the fat column could be off by one, etc.). If there are certain pieces of data that can't be read with 100% certainty (*obviously never the case when Jay is writing ☺*) or are very questionable, highlight that data box in yellow so that it can be checked by the crew leader. Once data is entered, it should be proofed by checking each page against the entered data. **Get training from Heidi on entering & proofing techniques.**

ENDING THE SEASON

The last day of banding is to be October 15. Rate the condition of each net, making note of the # of holes. Write this information on a 3x5 note card. Take all the nets down and put all the bags (each with its note card) from each site together in a large plastic bag. Assuming a net is still usable, put numbered clothes pins on the grocery bag to identify each net. If a net is not usable, it may be best to burn it so that it can never be used (even unintentionally) to capture or harm animals (*ask the crew leader or Greg about this*). Remove all poles, cordage, and stakes from the site and put them, along with banding box & other equipment, in one of the storage areas (*ask crew leader*). Do the same with tables, chairs, and other equipment. On the last page in the journal, note any other important details needed in the next year.

Reminders:

- work with caution & respect for birds, nets, co-workers, and volunteers/visitors
- use courtesy when giving data
- always check with each other on birds you are processing; it is better to ask each other than having misID'd birds
- release all birds low to the ground
- be aware of the bird's condition at all times; make sure the head, neck, and wings are never held in unnatural positions
- make sure hands are not too cold, too moist, or too dirty to hold birds
- use the bander's grip when putting birds into bags
- align lowest net trammel with duct-tape on pole (for standardization); in the case of wet or saggy nets, align lowest trammel so that the net is safe & alert others that the net may need to be adjusted
- always be sure all nets are checked during each net run; when done with your assigned nets, call to each other to see if others need assistance. If Owl crew members are sleeping, always walk up to other nets to quietly check in with the other extractors.
 - if you need help (stressed or tangled bird, many birds in nets), always call for help ASAP (the owl crew will forgive you ☺)
- when lowering nets, use a long stick to push down upper trammels from above
 - DO NOT pull trammels from below – this causes damage to nets