

THE USE OF MIST NETS IN TRAPPING AND BANDING MIGRATORY BIRDS

By Allen J. Duvall

INTRODUCTION The use of stationary nets as a means of trapping birds dates back more than 100 years. Long before there was any organized bird banding program in North America, Italians were using trammel nets to take birds for food, and Japanese were using mist nets for the same purpose. The Austin Ornithological Research Station on Cape Cod, Massachusetts, was the first North American bird banding station to use nets on a large scale; they have been in use there more than 25 years. Until half a dozen years ago, however, the average bander did not know that such nets existed. The banding manuals carried no mention of stationary nets. The chief reason for this was the danger that nets might fall into the hands of unscrupulous individuals (not banders!) who would use them for illegally trapping birds for food or for the cage bird trade. Half a dozen years ago, however, several other banders obtained permission to use nets, and since that time the banding office has been deluged with requests for authorization to use mist nets.

NEED TO SCREEN REQUESTS Those of you who are familiar with the use of mist nets will immediately see some of the problems which have faced the banding office during these last few years. Many banders, who are well qualified to operate backyard trapping stations, do not meet all of the qualifications for net banding. The three major considerations are: (1) ability to identify correctly all the birds trapped; (2) safety of the birds; and (3) suitability of the proposed netting site.

Prior to using mist nets, the average bander of song birds handled between 10 and 20 species during the course of a year. All but one or two of these species would be common dooryard birds. Now, with the use of one or two nets, the same bander can trap 50 to 75 species in a year, and the bulk of the so-called "new" species will be birds with which the bander is not familiar -- or at least birds which are not familiar in all of their plumages. This automatically creates a serious problem in identification, especially since it is the immature birds in fall and winter that are generally netted in the largest numbers.

In considering the safety of the birds we must think about the frequency with which the nets will be tended and the temperament of the bander -- whether he or she has the patience, the dexterity and the good eyesight to work carefully for many minutes over those few birds that become badly tangled. Furthermore, it is important that a prospective bander acquire considerable experience in using nets before trying to operate one by himself.

Under suitability of the proposed trapping site we must consider whether the birds and the nets will be reasonably safe from predators (including house cats and dogs), from children, and from the well-meaning but blundering public. Furthermore, we are still concerned lest nets fall in the hands of unauthorized persons who would use them illegally. There has been misunderstanding on the part of some banders about the reasons for keeping nets out of sight from the general public. It has even been suggested that we were trying to hide the nets because they are so cruel or injurious to the birds. Actually, a properly operated net is no more injurious to birds than is a properly operated trap! Our principal concern is that if nets should fall into the hands of unauthorized people it would create a tremendous enforcement problem and could well result in curtailment of their use by banders.

With the above considerations in mind, you will realize that the decision to issue a netting permit is not an easy one. Each application must be considered on its own merits, with what information is available to us.

NET TRAINING CENTERS

As already mentioned, generally one of the primary prerequisites for a netting permit is actual experience with the setting up of nets and the removal of birds.

At some of the recent EBBA meetings, and at field meetings of the Northeastern Bird Banding Association, the use of nets has been demonstrated. This has also been done, or will be done by other associations in the near future. It is seldom possible, during such short-time experience, for a netting novice to acquire sufficient experience to enable him to handle difficult cases by himself. One reason that certain banders who have many years' experience with conventional traps consider nets a hazard to the safety of birds is that they have not had sufficient instructions in the use of nets, or that they have watched unskilled hands removing the birds.

Some Western banders have indicated that the Western Bird Banding Association will establish a net training "school", and it has been proposed that similar instruction by qualified net banders be given at several places here in the East.

LIMITATION OF NUMBER OF NETS

Those of you who have authorization to use mist nets will note that this authorization is limited to a specific number of nets. This is for your safety and for the safety of the other banders. Some banders find one net is sufficient for their needs: they may catch more birds in one

well-placed net than other banders can take in 5 or 6 nets. If we had no restrictions, many banders would sooner or later run into some unusual situation where they caught more birds than they could handle. By the time one discovers that some of his nets are loaded with birds,

a few of these birds are bound to be badly tangled -- or at least will become badly tangled by the time the bader finishes removing the other birds in the net. These few badly tangled birds will occupy so much of the bader's time that other birds will continue to get caught in his other nets, and the situation will quickly get out of hand. On a day with little migratory movement a bader might operate 15 or 20 nets and catch no more than a dozen birds. On the following day he might have two or three hundred birds in these same nets -- more birds than he could safely handle, even if he had had considerable experience.

Nets Versus Conventional Wire Traps

NUMBERS

CAUGHT Some banders seem to have the idea that if they can get authorization to use nets half their banding problems will be solved, and that they will be able to trap and band several times as many individual birds as they now handle in the course of a year. Actually, nets are not a replacement for conventional traps, but an additional device for specific purposes. Anyone who has attempted to remove an Evening Grosbeak from a net will tell you that traps are much more satisfactory for taking grosbeaks than are nets. Many other birds that come readily to bait can be handled much more rapidly and efficiently with conventional traps. There is no doubt that a bader who supplements his trapping with a few well-placed nets will increase his total take of birds, but there are also times when the use of several nets over a period of several days will divert many birds from your feeding station and possibly cut down your total catch.

VARIETY OF SPECIES CAUGHT

One of the greatest benefits of the mist net is that it is almost unlimited in the variety of species it captures. It has advantages over the water traps in that it is more readily portable, it can be set up almost anywhere (including places where plenty of water is already present), it captures birds such as flycatchers and vireos, which were not so readily taken with water as bait; and it also takes such birds as goatsuckers, swallows, hawks, small owls, kingfishers, shorebirds and herons. Several net banders now band 75 to 100 or even more species during a single year.

USE AS SAMPLING TECHNIQUE

Another advantage of nets is that they permit sampling of bird populations. In the first place, one can net a large proportion of the total individuals present in many different habitats. Also, this trapping can be done without the use of baits or water, which tend to concentrate birds in the vicinity of the banding station. Furthermore, as many net banders have discovered, repeat records from conventional traps do not give a true picture of the percentage of banded to unbanded birds;

some trap-happy birds are recaptured several times per day or per week, while other birds learn to feed regularly at the bander's station without ever getting trapped.

Nets have been used successfully to measure winter bird populations of large fields in South Carolina by Dr. Eugene Odum and Gordon Hight. They have been used along the Atlantic coast in fall, not only for banding large numbers of birds, but also for measuring the daily turnover of populations and making it possible to correlate migration with weather conditions. They are also in use by banders who are making intensive banding studies of species that cannot be captured in quantity by other methods.

POTENTIAL INJURY The subject of injuries to birds in mist nets has been given considerable prominence in some recent discussions and published articles. The concern of certain banders and non-banders over injuries is justified, and should receive our careful consideration. I doubt if there is a single bander of 1,000 or more birds who knowingly or unknowingly, has not inflicted some injury to a bird, or who has not at least been an unwitting spreader of disease among wild birds. Some banders take greater pains than others for the safety of their birds. Sharp edges to traps, loose wires, or failure to check a conventional trap at dusk can result in injuries. Nearly all traps in use by banders will cause more or less severe head or wing injuries to Bob-white and Mourning Doves. And how many of you take precautions to prevent the spread of foot pox? If we are to take the attitude that anyone who causes an avian injury or helps spread a disease among birds is unfit to hold a banding permit, we may as well give up banding as a research tool. As I see it, it is not a question of whether traps can cause injuries or whether nets can cause injuries; but rather it is the responsibility of each and every bander to strive to keep injuries to the very minimum for we know injuries can and do occur despite our good intentions!

Someone has commented upon the loss of feathers in netted birds. The experienced net operator removes most of his birds without the loss of a single feather, and in no case is there any excuse for a bird losing enough feathers to harm it in any way. The best insurance against pulling out feathers is to be sure that your hands are perfectly dry. You'd be surprised how hard it is to remove a bird in one piece with moist fingers.

It may well be that during the past few years mortality from nets has been higher (per thousand birds captured) than the mortality from traps. As far as minor injuries are concerned, I would guess that more have occurred from traps than from nets. And the spread of diseases

transmitted from feeding areas would be restricted almost entirely to conventional wire-trapping. Mortality from net trapping is due in large part to inexperienced operators, that is, inexperienced net operators. It stems from several sources: operating too many nets; tending them too infrequently (especially in freezing or very hot weather); operating under poor weather conditions such as high wind or a heavy shower; attempted removal of birds by untrained persons; and operating nets where predators will get at the birds. An occasional bird will be strangled if a large, heavy bird gets caught close to it; but this occurs no more often than the tramping of sparrows by a grackle or other large bird in conventional traps. In short, although there may be a greater opportunity for injuries or death in a net, it does not follow that nets are, per se, more harmful to the birds. We all benefit from experience, and it should be the responsibility of every one of us to see that our equipment is operated safely, whether it be nets, traps, or just a feeding station.

WEATHER FACTORS We have said that nets should be checked at least once an hour. If possible, the bander should be in constant attendance. On a calm, hot day, especially if the temperature is near 90, a bird hanging in the sun may not live more than 15 minutes; under these conditions it is the bander's responsibility to see that nets are either tended adequately or taken down. Similarly, when the mercury drops below 40 it becomes increasingly hard to remove birds with one's numb fingers. Experienced banders try to place their nets where they will not be exposed to the wind. The wind not only keeps the nets in motion, but usually blows all the slack netting to one end and leaves the rest of the net too tight to form a pocket if a bird hits it. Any bird that is already in a net when a strong wind comes up is likely to be strangled. As previously mentioned, nets should not be operated during steady or heavy rain; birds hanging upside down in a net do not shed water but become thoroughly drenched and chilled. They may also drown.

TIME OF DAY The best time for netting is generally in the early morning. For this reason many banders leave their nets up all night. Ordinarily this is a safe procedure as long as the net is checked shortly after dark and again within an hour of daybreak. It is a good idea to raise the bottom of your net a foot or so off the ground if there are rabbits or other mammals that might go through it at night. If you set your net in an open location overnight, check the weather forecast and try to orient the net at right angles to what the wind direction will be in the early morning. If there is any appreciable wind at night, go out at or before daybreak and be sure the net is hanging free. Also, if fog is expected, get up early and shake the nets well -- because they will not catch birds when covered with fog droplets.
