

## METHODS OF BIRD NETTING IN JAPAN APPLICABLE TO WILDLIFE MANAGEMENT PROBLEMS

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Austin (1947) reported on the art of bird netting in Japan and its early history. Historically, bird netting was a privilege and pleasure of royalty and nobility. In the latter half of the 19th Century, during the Meiji Era, restrictions were relinquished and netting was widely practiced with resultant reduction of indigenous bird populations. At present it is under strict government control, but it is still a very interesting art. During the past three years I have had opportunity to work with netters actively engaged in catching birds for market. The methods that they use have excellent possibilities if applied to wildlife conservation or bird banding problems. Three of these will be described: (1) netting the shorebirds with the aid of inanimate decoys and a whistle, (2) netting of songbirds and hawks by use of live decoys, and (3) netting of nocturnal and roosting species without the use of decoys.



Fig. 1. The method of placing a shorebird net and the decoys.

### NETTING WITH INANIMATE DECOYS

For shorebirds the operator employs a black or white silk net with about two-inch interstices, 25 to 50 feet long by four to six feet wide. On a sand spit or mud flat frequented by the birds he builds a blind by sticking bullrushes in the mud. The net is attached to two bamboo

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poles and laid flat on the sand or mud parallel to the water's edge (Fig. 1). The bases of the poles are tied loosely to stakes driven into the mud or sand. The outermost pole is tied to a guy line also attached to a stake. From the top of the inner pole a line leads to the netter. Ten to 20 decoys on bamboo stilts are arranged before the net so they appear natural in the shallow water, and the netter sits on a small stool in the blind. When a flock of birds appears, he imitates their calls with a small two-noted bamboo whistle. If the birds drop to feed among the decoys, he deftly throws the net over them with a quick jerk of the line. I have seen an expert netter sweep curlews and whimbrels out of the air with his net as they circled low over the decoys. The largest catches are usually made when the birds feed in early morning with a falling tide, but if conditions are right, large catches may be made later in the day even with a rising tide.

One of our netters dispensed with the blind and sat quietly on his stool at the end of the net. He was so dexterous with his whistle that Wandering Tattlers or plovers would alight at his feet. (Fig. 2.)



Fig. 2. Netter seated at the end of a cord by which he operates a shorebird net where the birds come to his calling.

In Japan decoys for this work were usually made from the birds themselves. The several species were skinned and stuffed with straw, into which were thrust short pieces of bamboo to serve as the legs. Obviously, decoys made of bird skins would attract others of their kind. The success of this method lies in the skill of the whistler and the placement of the decoys. As the tide rises or falls the net and decoys must be moved so that both are at the water's edge where the living birds would normally feed.

### NETTING WITH LIVE DECOYS

The use of live decoys in Japan is mainly limited to thrush and small bird netting although the falconer may employ this method, too.

Commercial netting of songbirds for the market involves more equipment and time than the average American bird bander could hope to employ, but for extensive problems of migration or dispersion under governmental supervision the method has great possibilities. For the average bander, a few decoys and a few nets would double or treble his take of many species.

The nets employed are of several kinds and lengths. The usual one is of one- or two-inch mesh of fine, black silk, 15 to 25 feet long and six feet wide. Hundreds of such nets may be used by one operator. The usual site of a netting operation is a slope intercepting a migration route, preferably with draws leading up to it. Along the crest of such a slope are cut paths parallel to contour lines at intervals of about six to 10 feet. As shown in Fig. 3, these parallel the crest and fan out from it. Along each path for distances of 100 to 200 feet the nets are stretched between bamboo poles and caged decoys placed at intervals. It is important that the path be cleared so that no twigs or branches will snag the nets.

A very important part of this method is the selection and training of decoys. If the object is to take many species of migrating birds, the netter will have several species for decoys. If he is specializing, he will limit his decoys to males of the species he wishes to capture. Males of local or migrant songbirds are captured and housed in small, rectangular cages about 10 by 6 by 8 inches in which they live in health for as long as twenty years. A netter takes good care of his decoys, seeing

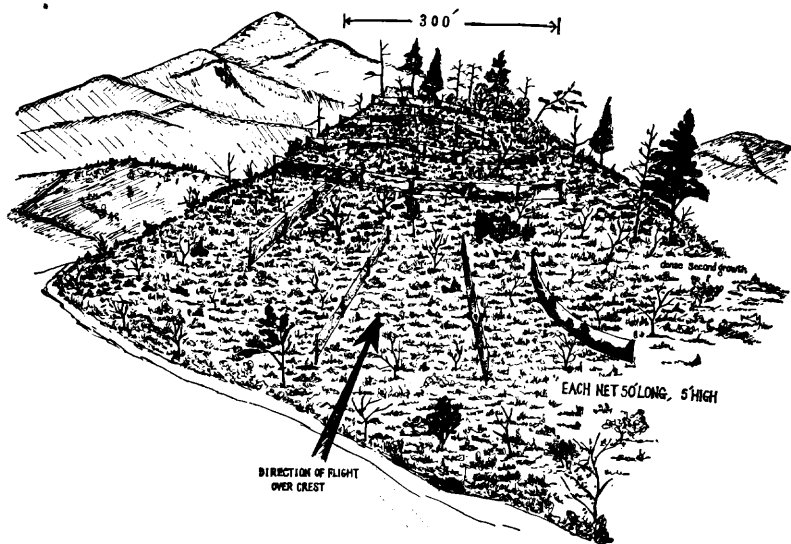


Fig. 3. Method of arranging mist nets on a hillside.

that they are fed, watered, allowed to bathe and are placed in the sunlight every day. The diet of all insectivorous species is a commercial mixture of powdered shrimp, rice, and grain which is prepared in a mortar with ground spinach leaves and water. The birds thrive on this organic paste which is altered from season to season in its protein content. This is accomplished by the addition or reduction of the amount of shrimp used. The exact percentages of each ingredient used for specific purposes such as moulting, bringing to song, etc., vary with each netter and are jealously guarded secrets. In general, increasing the protein content will help to bring the decoys to full song.

Training the decoy consists of reversing its diurnal rhythm. During late summer the cages are placed in a lighted room so that the hours of light are increased instead of shortened, bringing the birds to full song by fall migration.

Since the decoys are placed among the nets an hour or so before dawn and their singing soon attracts migrants, the nets must be tended every thirty minutes to an hour and the catch removed. During a heavy flight several operators are kept busy disentangling the birds from the net with care to prevent injury to the birds or the mesh. If the birds are for market only, they are killed before removal from the net by a sudden pressure of the thumb on the thoracic vertebrae which breaks the back and results in almost instant death. If a bird cries out while being removed from the net, its warning notes will frighten away those that are approaching and thereby reduce the take. By 9:00 or 10:00 a.m. the catch diminishes and the decoys are returned to the netter's hut, where the cages are cleaned, the birds are allowed to bathe and are given fresh food. For the rest of the day they are kept

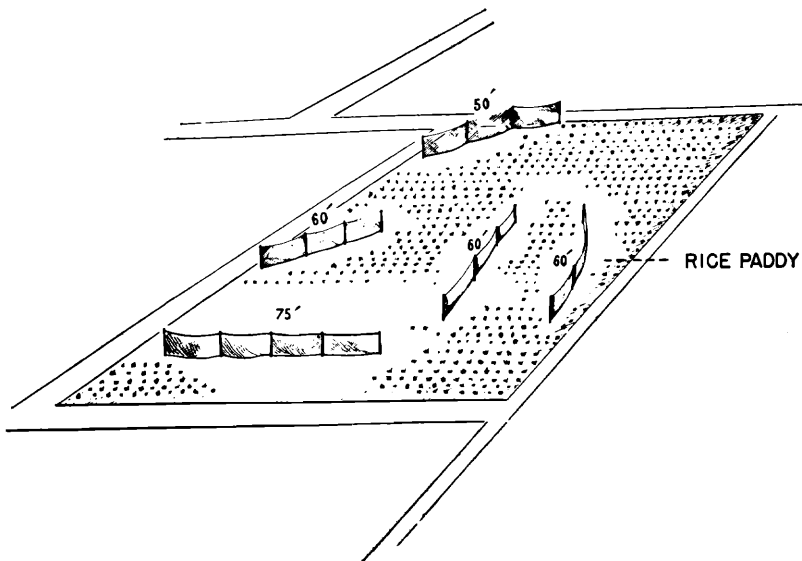


Fig. 4. The arrangement of mist nets in an open rice paddy.

inside the hut in subdued light. At the convenience of the operator a light in front of the cage is turned on all night or several hours before dawn. Working with 25 to 50 decoys takes patience and skill on the part of the operator, but the birds thrive under these artificial conditions.

We have not explored the possibility of using recorded bird songs in the place of live decoys, but this offers a potentially fruitful field of study, for the elimination of the decoys would greatly reduce the cost and labor involved. The use of tape, wire, or records with multiple bird songs offers interesting possibilities. The voices of singing males would be attractive to males and females during migration, and the voices of nestlings might be employed to capture breeding species.

#### NETTING WITHOUT DECOYS

Certain species such as woodcock, snipe, plovers and others habitually fly low at night over open fields or rice paddies. Nets for them may be either lightweight, similar to those for thrushes, or the heavier shore-bird types. In late afternoon nets 25 to 50 feet long and seven feet high are stretched between bamboo poles thrust into the soil and are dispersed at intervals and in various directions over the field or paddy where the birds are known to feed (Fig. 4). Since there is no control over the movements of the birds that are coming in to feed, the catch is strictly one of luck. However, we found that we could increase our take of skylarks and plovers by walking through the nearby fields and disturbing the birds feeding or resting there. The nets are tended at hourly intervals until about 10:00 p.m., after which the take is usually very low. If they are left up all night they must be tended again early in the morning when birds resume activity.

Large numbers of such species as the Tree Sparrow, *Passer montanus*, and Grey Starling, *Sturnus cineraceus*, that roost in dense bamboo or heavy bullrush thickets are readily caught by cutting paths through the foliage and extending light nets along these clearings (Fig. 5). The

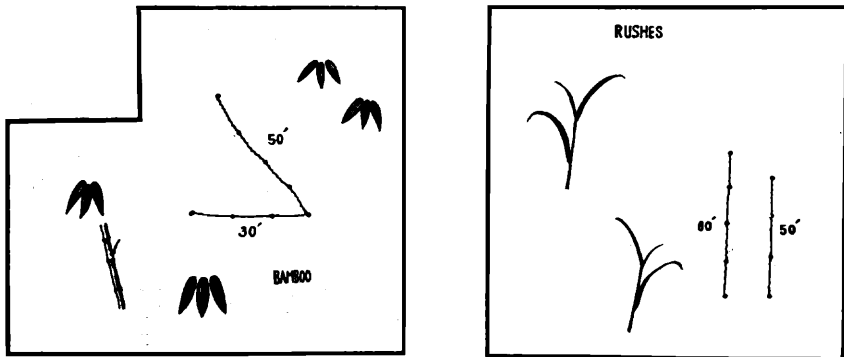


Fig. 5. Methods of placing mist nets in bamboo thickets or rushes.

height at which the net should be placed is that level at which the birds fly through the thicket in seeking a desirable twig on which to sleep. Again, this is a crepuscular or nocturnal netting activity and the nets must be examined often for entangled birds. The catch can be greatly increased by slowly driving the birds through the thickets.

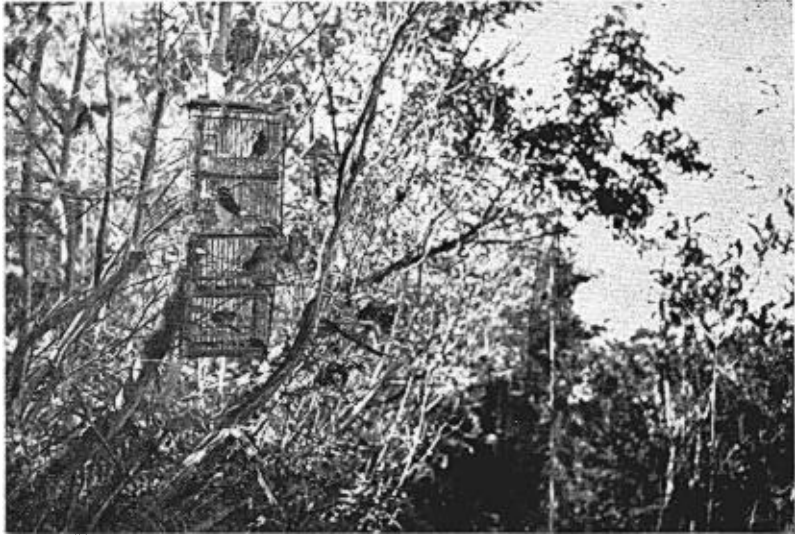


Fig. 6. Decoys by a mist net in deciduous second growth.

### DISCUSSION

As with any method of capturing wild animals, bird netting requires patience, skill, and an appreciation of the problems at hand. Because of the large numbers that may be captured over a short period, netting has usage in wildlife management problems such as removal of undesirable species, capture of species to be planted in depleted areas, migration studies, and studies of avian parasites and diseases.

That properly placed nets with well-trained decoys can bring large yields in birds is well known. At one location where we were collecting blood from migrant thrushes, a single netter with 70 nets in operation took more than 2000 individuals of over 24 species during the six days that we were with him. This was during a period of mild weather when migration was almost at a standstill. Had he been banding instead of killing the birds for market, valuable information might have been gained. The incomplete list of his take is as follows:

Black-faced Bunting, <i>Emberiza spodocephala</i>	1670
Rustic Bunting, <i>Emberiza rustica</i>	145
Pale Thrush, <i>Turdus pallidus</i>	121
White-browed Thrush, <i>Turdus obscurus</i>	61

Japanese White Eye, <i>Zosterops japonica</i>	61
Brambling, <i>Fringilla montifringilla</i>	27
Grey Thrush, <i>Turdus cardis</i>	20
Brown-eared Bulbul, <i>Ixos amaurotis</i>	15
Willow Warbler, <i>Phylloscopus sp.</i>	9
Grey Bunting, <i>Emberiza variabilis</i>	9
Meadow Bunting, <i>Emberiza cioides</i>	6
Dusky Thrush, <i>Turdus naumanni</i>	5
Asiatic Sparrow Hawk, <i>Accipiter nisus</i>	3
Narcissus Flycatcher, <i>Siphia narcissina</i>	3
Varied Tit, <i>Parus varius</i>	3
Greenfinch, <i>Chloris sinica</i>	3
Bush Warbler, <i>Horeites diphone</i>	2
Japanese Robin, <i>Erithacus akahige</i>	1
Tiger Thrush, <i>Zoothera Dauma</i>	1
Mugimaki Flycatcher, <i>Siphia mugimaki</i>	1
Goldcrest, <i>Regulus regulus</i>	1
Great Tit, <i>Parus major</i>	1
Siskin, <i>Carduelis spinus</i>	1
Bull-headed Shrike, <i>Lanius bucephalus</i>	1

## SUMMARY

Three methods of bird netting practiced in Japan are described and their possible application to wildlife management problems are discussed.

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## SONG SPARROWS AT NORRISTOWN

BY RAYMOND J. MIDDLETON

Song Sparrows (*Melospiza melodia melodia*) are present in this area the entire year; Norristown being in Montgomery County is some twenty miles from Philadelphia and in the southeastern part of Pennsylvania. Those present may be divided into three groups, winter residents, summer residents and migratory individuals. The former appear in late November and December after most of the flocks of migrating sparrows have moved on to the south; this group seems fairly stationary through January and December.

The summer residents appear in flocks in March, though a few come the last week in February. No doubt some at this time move on to more northerly nesting sites but most of them remain to nest here. The summer birds, both young and adults, are taken through the spring and summer months until mid-September. At this time there is a decided drop in the population of the species and we have very few captures that show them to remain on into the fall months. Many no doubt depart earlier, but September seems to be the time when