Stress myopathy in captured waders

Clive Minton

Minton, C.D.T. 1993. Stress myopathy in captured waders. *Wader Study Group Bull.* 70: 49–50.
C.D.T. Minton, 165 Dalgetty Road, Beaumains, Melbourne, Victoria 3193, Australia.

INTRODUCTION

The use of the tranquiliser valium as a possible cure for stress myopathy (leg cramp) in waders was outlined by Piersma et al. in a recent *Bulletin* (63: 39–41). An ancillary objective of the 1988 N.W. Australia Wader Expedition was to examine the factors which contribute to stress myopathy in waders caught for banding and to determine optimum procedures for minimising the problem. The following note summarises a document prepared for the Australian Bird Banding Office in 1989 and summarises recent Australian experience in the avoidance of stress myopathy.

OBSERVATIONS

Some signs of stress myopathy were observed in most of the catches containing large waders out of the 13 cannon net (5,852 birds) and four mist net (774 birds) catches made at Broome, 80 Mile Beach and Port Headland saltworks between 19 March and 9 April 1988.

This was only in a mild form apart from 15 birds in 3 catches (mist net: 19 March, 210 birds in a night; cannon nets: 24, 29 March, 559 and 457 birds respectively) which showed severe symptoms of stress myopathy. Three Red–necked Avocet died (out of a mist net catch of 27). Of the 12 Bar–tailed Godwits Limosa lapponica severely affected (three out of 25, six out of 196 and three out of 44), some may have died or been preyed on and three from a cannon net catch were seen two days after the catch but were unable to fly.

The procedures adopted for banding and, particularly, for release (detailed below), are considered to have contributed significantly to the amelioration of the problem and the quick recovery of birds temporarily showing some signs of stress myopathy.

FACTORS CONTRIBUTING TO STRESS MYOPATHY

- Bigger birds are generally most affected, especially if they have long legs. 'Worst' species (in decreasing order of severity) are Bar–tailed Godwit, Red–necked Avocet, Great Knot and Red Knot. Broad–billed Sandpipers, which had previously been though to be a problem, showed no signs this time. Eastern Curlew are known, from banding in Victoria, to be a problem – probably worse than Bar–tailed Godwits.
- Birds with large pre–migratory fat deposits are more affected. However, very thin birds are also susceptible.
- Mist netting causes proportionately more problems than cannon netting. For example, no problem has been experienced with cannon netted Red–necked Avocets in Victoria.
- The longer the bird is struggling uncovered in a net, the more likely the occurrence of stress myopathy. This probably accounts for the differences observed between mist netting and cannon netting.
- The problem seems to be accentuated at high temperatures – probably above 35o C.

RECOMMENDED PROCEDURES FOR MINIMISING STRESS MYOPATHY

Cannon netting

a. Keep the catches of susceptible species to a modest size.The exact size will depend on many variables (experience of team, weather conditions, time of year etc.).In N.W. Australia in late March/early April we tried to limit the number of Bar–tailed Godwits in a cannon net catch to five per person. It is also necessary to limit the total catch so that the delay before the Godwits are banded, processed and released is not too long.

b. Cover birds in cannon nets with hessian as quickly as possible to minimise time struggling in the net.

c. Wherever possible extract susceptible species from the net first.

d. Carry susceptible species to the keeping cages with legs dangling (NOT in bags or boxes).

e. Keeping cages should be tall enough for birds to stand comfortably. Do not overcrowd in compartments.

f. Band, process and release susceptible species first. Reduce/eliminate processing if stress myopathy appears significant. Deal first with any birds sitting in the cages.

g. Release birds:
1.on clear ground
2.facing into the wind
3.OUT OF SIGHT OF PEOPLE
4.not too near the water's edge (so as to allow for a long take-off if required).

This can best be achieved by erecting a hessian screen close to the banding team on the upwind side. The releaser should remain crouched behind the screen. Birds should be put round the edge of the screen, gradually allowing the dangling legs to take weight of the bird before release.

Released in this way, most birds will fly off immediately. Some will walk a little before flying. Any birds showing signs of stress myopathy will walk off less well, often stopping to sit. The presence of other birds taking off close to them seems to be the best possible tonic to quick recovery – and the fact that the banding teams are hidden from view is essential to minimise stress.

The worst thing one can do when releasing is to stand towering over a bird, or to chase and recapture a bird with stress myopathy (unless it is susceptible to predation). Recovery is most likely given time away from human pressures and in the presence of "normal" birds.

Mist netting

a. Do not set up too many mist nets if susceptible species are likely to be caught.

b. Visit mist nets more frequently if susceptible species are expected.

c. Extract susceptible species first, place single in LARGE bags and get to the keeping cages as quickly as possible.

d. When extracting from the net do not hold the bird upside down by the legs in the manner normally used for smaller waders/passerines.

e, f and g as above.

CONCLUSIONS

It is considered that the field operating procedures adopted on the 1988 expedition reduced the occurrence of stress myopathy to a level which is reasonable given the considerable scientific and conservation value of the data generated from the catching and banding operations.

It is recommended that these guideline procedures are used by wader ringers in situations where wader species susceptible to stress myopathy are likely to be captured.