EURING TECHNICAL CONFERENCE ON RINGING RECOVERY ANALYTICAL METHODS

This conference, held at Wageningen, the Netherlands, from 4 to 7 March 1986, aimed to bring together ornithologists and statisticians who are personally involved with the analyses of ringing recovery data. EURING, under whose auspices the conference was held, is an umbrella body for all the European ringing schemes and has achieved a remarkable level of standardization between the schemes. For example, in the coding of age at ringing, and in the format and content of recovery records. The 40 participants were thus mainly European, the exceptions being three North Americans and two South Africans (Steve Piper and myself).

A total of 16 papers was presented in three sections, and the generous 45 minutes per paper allowed more time for discussion than seems usual.

Readers of the Journal of Animal Ecology will be aware of recent papers (Lakhani & Newton 1983, Anderson *et al.* 1985), both challenging some of the standard techniques which have been used for some 40 years to estimate survival probabilities from recovery data, but proposing conflicting remedies to overcome the problems.

The first morning was devoted to papers by Ken Burnham and David Anderson (U.S. Fish and Wildlife Service) in one corner, and Ken Lakhani (Institute of Terrestrial Ecology, England) in the other. The Americans sparred for an hour-and-a-half before coffee. Ken Lakhani, lawyer turned mathematician, gave a superb performance and with a carefully planned build-up of blows, quickly floored the opposition but battered on until lunchtime, reducing them to pulp. The Americans pleaded for two days' recuperation before responding.

The Americans' argument was that in order to estimate survival probabilities it is necessary to ring both nestlings and adults. Ken Lakhani pointed out that in ringing adults (birds of unknown age) it is obligatory, for mathematical reasons, to make the assumption that survival probabilities are independent of age. He demonstrated that even if this assumption is slightly untrue (e.g. birds going 'senile' in their old age), the estimates of survival probability can be extremely misleading. He argued that at least one survival probability needs to be estimated independently, and suggested that first-year survival could be estimated using radio tagging. However, there was no dogmatic final answer on this issue.

From these papers, and the remaining papers in the survival section, one thing was abundantly clear: in order to estimate survival probabilities reliably it is essential to know the number of birds of each species, subdivided by age class (and sex), that have been ringed in each year. The EURING schemes left the conference seriously contemplating the introduction of a daily ringing report, not unlike the Expedition Report that the Western Cape Wader Study Group (WCWSG) has used since 1972 (refer to Figure 1 overleaf). I believe that SAFRING should seriously consider adopting such a report as well. There can be no doubt whatsoever that with this detailed breakdown of the number of birds ringed in as many age classes as can be recognised, the statistical analysis of survival probabilities can be vastly improved.

The next section of the conference grouped together papers, including my own, which dealt with the estimation of survival probabilities from retrap data. The method I proposed is applicable in situations where the population size is known. I demonstrated the method using WCWSG's Curlew Sandpiper *Calidris ferruginea* retrap data from Langebaan Lagoon, where independent estimates of the population sizes each summer are available from the Wader Group's surveys.

Steve Buckland and Stephen Baillie discussed how the data generated by the 'Constant Effort Sites' project of the British Trust for Ornithology would be analysed. At these sites ringers undertake to place the same nets in the same location at least ten times each summer, for several years. This style of ringing might appeal to some local enthusiasts.

In the same section, Barwolt Ebbinge, a Dutch ornithologist, reported on his 578 individually colour-marked Darkbellied Brent Geese *Branta bernicla*, a migrant to western Europe from the Taimyr Peninsula in Siberia (where the Curlew Sandpiper also breeds). Flocks of these geese are examined by a team of about 60 observers who gather nearly 17 000 sightings of colour-marked birds per year. Each individual bird is reported on average about 30 times per season and unless a bird is reported more than once, it is regarded as a misreading of the colour codes and discarded. He estimates that, on average, 88% of the geese survive each year - previous survival estimates, based on ringing recoveries only and using the methods slated in the first section, were 74%.

The third major section, and the one that I found the most fascinating, dealt with the analysis of the spatial distribution of recoveries. The major advances in this area have been made by Poles; their work has remained largely unknown because it has been published in Polish (Busse & Kania 1977). Once again, in order to apply these methods it is essential to know how many birds have been ringed in each area. With this

WESTERN CAPE WADER STUDY GROUP - EXPEDITION REPORT

PLACE _____ DATE _____ NO. _____

MEMBERS _____ [FULL/PART] REPORT

NETS [ ] WADER [ ] 60x3sh [ ] cannon

CATCHING PERIOD [ ] hrs to [ ] hrs [ ] CLOUD COVER [ ] eighths

MOON: PHASE _____ POSITION _____ TIDE _____

WIND: [calm/breeze/fresh/gale] DIRECTION [N E S W N]

MOVEMENTS AND SIZES OF FLOCKS _____

SPECIES		2Y+	2Y	1Y+	1Y	FG	TOTAL	M/C
	ring							
	R/T							
	ring							
	R/T							
	ring							
	R/T							

DETAILS OF RINGS USED: _____

RETRAPS Species	Ring No.	Ringer	Ringing information

FIGURE 1: SAMPLE OF EXPEDITION REPORT USED BY THE WESTERN CAPE WADER STUDY GROUP

information and data on the numbers of birds from each ringing area recovered in each recovery area, it is possible to estimate the percentages of birds from each ringing area that migrate to each recovery area. It would be fascinating to apply Busse & Kania's method to, say, European Swallow *Hirundo rustica* recoveries, but unfortunately the numbers ringed in southern Africa are not accurately known.

On the last evening of the conference there was an outstanding dinner. The Dutch cooks at the International Agriculture Centre were masters of Chinese fare. Between courses we were shown a fascinating film detailing the breeding behaviour of a pair of Starlings *Sturnus vulgaris* - they fed their young a mixture of worms from a nearby field (which took an average of 90 seconds to fetch) and caterpillars from a more distant polder (which were harder to find and took seven minutes to fetch). The reason that they did not feed their progeny exclusively on worms was that when they did, the young got graphically-depicted diarrhoea. This film, together with Steve Piper's superb vulture slides before the sweets (he was requested not to show any necks inside carcasses), contrasted sharply with the meal.

The entire conference was excellently organised by Rinse Wassenaar, Terry Oatley's Dutch counterpart. The proceedings of the conference are being edited by Dr P.M. North at the Universtiy of Kent, and will be published in the Polish journal Acta Ornithologica. I am grateful to the Foundation for Research Development, CSIR, and the Bremner Travel Fund of the University of Cape Town for travel grants that enabled me to attend.

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