
Territorial relations and population structure of the Redshank *Tringa totanus* during the nesting period in the south of Ukraine

Zhmud, M. Ye

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M.Ye. Zhmud, "Dunaiskiye Plavni" Reserve, Nakhimov Str.,4, Vilkovo, Odessa Region, Ukraine 272626.

INTRODUCTION

The age and sex structure of wader populations during the breeding season are important factors that affect both the size and productivity of nesting colonies. Owing to the need for long-term studies, the number of papers on this topic is rather small.

The subject of this study was an isolated colony of Redshank *Tringa totanus* on the lower reaches of the Tiligul'skiy liman (the north-western Cis-Black Sea Area) numbering about 600 pairs. They nest on eight to twelve small islands totalling about 15 ha within a 2-3 km section of shallow-water in mixed wader colonies.

METHODS

Methods included long-term studies of a local colony with extensive catches of both adult and young birds. The birds were labelled both with standard leg bands and neck rings, including those of original design (Zhmud 1985). Quantitative characteristics of the population were calculated using the methods of Peterson, as modified by Beily (Coli 1979).

Analysis was undertaken on over 7,500 catches yielding about 5,000 Redshanks of different age groups. The nest histories of more than 3,200 nests from 1978 to 1984 have also been examined. Similar data for 1985-1991 are now under analysis.

RESULTS

The overwhelming majority (about 80%) of sexually-mature Redshanks exhibit philopatry during their first nesting season; the number of males among them exceeds that of females (on average, 56.4% of yearling birds; 57.4% of two-year-olds; 71.6% of three-year-olds are males). When the nesting

conditions in the natal area get better, females return to these places in greater numbers, whilst males do not react to such changed conditions.

On average, 14.8% of those birds which return for their first nesting to their natal colony, make their nests on their native small islands; this regularity is more profound in males than in females (18.6% and 10.3% respectively). Among the remaining birds which return to their colony, the one-to-three-year-old males (n=82) were found to settle 60 m closer to their birth-place than females (n=78).

On average 72.4% (75.4% males and 69.4% females) of nesting birds return the following year to nest at the same colony. The mean annual mortality is about 25%. When the colony becomes smaller, natal site fidelity (philopatry) in females decreases, but increases when the colony grows again. In males, this regularity is not so profound. Successful nesting enhances natal philopatry in females, but does not influence this characteristic in males.

The previous nesting location (small islands) attract on average about 60.1% of those nesting males, and 57.8% females, which return to their previous colony; this index varies slightly in different years.

Those individuals recorded breeding over many years reveal at least two basic nesting locations within their colony. Males return to their previous territory in 51.7% of cases, but females return in only 29.0% of cases. Females obviously avoid previously unsuccessful nesting locations and strive for more favourable nesting areas. In males, this regularity is less evident.

In a local isolated colony, the proportion of Redshanks which previously settled and nested in that place, averages 78.9%

