Breeding biology of the Wood Sandpiper *Tringa glareola* in eastern Finnish Lapland

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Although the Wood Sandpiper *Tringa glareola* is one of the most abundant waders in Finland (von Haartman et al. 1963–72, Hildén & Hyytiä 1981), its breeding biology is poorly known (Kirchner 1963, Glutz von Blotzheim et al. 1977, Cramp & Simmons 1983). Particularly poorly documented is its habit of occasionally breeding in the nests of other species, as is regularly done by the Green Sandpiper *Tringa ochropus* (e.g. Glutz von Blotzheim et al. 1977).

Results

Twenty-six Wood Sandpiper nests were found in the surroundings of the Värriö Subarctic Research Station (67°44′N, 29°37′E) in eastern Finnish Lapland in 1970–1987.

The mean date of first arrival in our study area was 18 May (SD ± 5 days, range 6–25 May, n = 16). The mean date of nest finding (including one newly hatched brood) was 16 June ± 9 days (range 3 June–7 July, n = 27). The mean date of hatching (including the above - mentioned brood) was 27 June ± 7 days (range 20 June–12 July, n = 15). If the incubation period is assumed to be 22–23 days and the laying interval 1–2 days (e.g. Cramp & Simmons 1983), the clutches were commenced on average about 1 June. Only one clutch in our study area was found in the laying stage: on 5 June 1977 at 12.20 hrs it contained 2 eggs, on 7 June at 15.30 hrs it still contained 2 eggs (one adult bird left the nest), on 8 June at 11.20 hrs and on 12 June it contained 3 eggs (in both cases the incubating bird sat tightly and left only after the nest tree was shaken), and on 16 June the nest was robbed, probably by a Siberian Jay *Perisoreus infaustus*. In this case the laying interval was c. 3 days, but it is possible that the bird flushed on the second visit was about to lay and was forced to lay its egg somewhere else. Incubation probably starts after the last egg has been laid, judging from the fact that all the young may hatch and leave the nest within 24 h. The last clutches to hatch were recorded on 11 and 12 July, both in the expectionally cold year 1982.

Most of the nests were found on various kinds of swamps, or on the shores of small lakes or rivers. Seven nests were found in trees in either spruce or mixed spruce-birch forests, 18 on the ground (for one additional nest the nest site was not recorded but according to the habitat, it was most probably on the ground, too). Thus at least 27 % of the nests found were in trees, in the Värriötunturi area at least 35 % (7/20). The tree nests were built by the Song Thrush *Turdus philomelos* (twice), Redwing *T. iliacus* (once), Fieldfare *T. pilaris* (once), Pine Grosbeak *Pinicola enucleator* (once) and an unknown species (twice). The case of the Redwing nest is

interesting, since on two visits it contained four Wood Sandpiper eggs and one Redwing egg (in the centre of the clutch), but the nest was later robbed. In this case the Wood Sandpiper probably evicted the Redwing from its nest. All the tree nests were found in spruces, on average 3.0 ± 0.8 m (range 2.2–4.0, n = 7) above ground level.

The clutch size in 16 completed clutches was 3×3 and 13×4 eggs, mean 3.81 ± 0.40. One completed c/4 had an extra egg beside the nest during the whole incubation period. Including all the nests found and one recently hatched brood of 5 young, the mean was 3.89 ± 0.42 (n = 27). Three nests were robbed and in the successful nests 3×3, 11×4 and 1×5 (the brood above) young hatched. The average brood size at hatching was thus 3.87 ± 0.52 (n = 15); when the unsuccessful nests are included, it was 3.22 ± 1.56 (n = 18). Of the eggs incubated for the full time, only one (2%) failed to hatch. When Mayfield's (1975) method is applied to our data, the overall nesting success was 64 % (3 nests lost in 151 nest-days, incubation period assumed to be 22 days). Two nests lost were in trees (44 % nest survival, 54 nest-days), one on the ground (80% nest survival, 97 nest-days). Owing to the small sample sizes the differences are not significant.

Discussion

The habit of breeding in old nests of other species has not been well documented earlier for the Wood Sandpiper. Near Värriötunturi, roughly one third of the Wood Sandpiper nests were recorded in trees, which is a surprisingly high proportion. However, our results are likely to be biassed in favour of tree nests, since these are easier to find than nests on swamps. In the main study area the swamps are small and not very numerous, and consequently the ability to breed in nests of other species, especially in those of thrushes, increases the number of suitable nesting sites.

To our knowledge, data on the breeding success have not been published previously for the Wood Sandpiper. About two thirds of the clutches incubated in our study area survived till the young hatched. The nesting success in tree nests may be smaller than in nests on the ground, but our data are insufficient for a detailed analysis. The predation on ground nests is usually low in our study area, whereas the predation is higher on nests in trees, the most serious nest predator being the Siberian Jay (E. Pulliainen & L. Saari, unpublished).

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Selostus: **Liron pesimäbiologiasta Itä-Lapissa.**

Liron pesimäbiologiaa tutkittiin Itä-Lapissa etupäässä Värriön tutkimusaseman (67°44N' 29°37'E) maastossa. Kevään ensimmäiset lirot havaittiin keskimäärin 18.5., muninta alkoi 1.6. ja poikaset kuoriutuivat 27.6. Pesyeiden keskikoko oli 3.81 ± 0.40 (n = 16) munaa.

Mayfieldin menetelmällä laskien 64 % pesistä säilyi haudonta-ajan yli. Yllättävin piirre liron pesimisbiologiassa oli yleinen pesiminen puissa, Värriötunturin maastossa 35 % löydetyistä pesistä oli muiden lintujen, etupäässä rastaiden, pesissä. Tulos lienee kuitenkin jossain määrin harhainen, sillä pesien löytäminen puista on helpompaa kuin mättäiltä. Alueilla, joilla soita on vähän, pesiminen rastaiden pesissä lisää käytettävissä olevan elinympäristön määrää.

References

Cramp, S. & Simmons, K. E. L. (eds.) 1983: The birds of the western Palearctic. Vol 3. — Oxford University Press, Oxford. 913 pp.

Glutz von Blotzheim, U. N., Bauer, K. M. & Bezzel, E. 1977: Handbuch der Vögel Mitteleuropas. Band 7. — Akademische Verlagsgesellschaft, Wiesbaden. 893 pp.

von Haartman, L., Hildén, O., Linkola, P., Suomalainen, P. & Tenovuo, R. 1963–72: Pohjolan linnut värikuvin. — Otava, Helsinki. 1092 pp.

Hildén, O. & Hyytiä, K. 1981: The population changes and present status of waders in Finland. — Proc. Second Nordic Congr. Ornithol. 1979:19–37 (In Swedish with English summary).

Kirchner, H. 1963: Der Bruchwasserläufer. — Neue Brehm-Bücherei 309. Wittenberg Lutherstadt. 86 pp.

Mayfield, H. F. 1975: Suggestions for calculating nest success. — Wilson Bull. 87:456–466.