

## Brief report

# Trap response of Wood Sandpipers *Tringa glareola*

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*Received 29 December, revised 10 July 2007, accepted 27 July 2007*

We used sightings and recaptures of colour-marked Wood Sandpipers to examine the trap response of this locally abundant migrant in north-east Austria. Birds were caught in selected wastewater pools of the local sugar factory using walk-in traps. According to resightings and recaptures, most birds apparently left the initial trapping site soon after capture. Since the majority of birds moved to another trapping pool instead of any of the non-trapping pools, our findings suggest that the mere presence of traps does not affect the choice of feeding site of previously captured Wood Sandpipers. However, that birds avoided sites of initial capture indicates that results of studies (e.g. on habitat quality) which involve trapping of birds should be viewed with caution.



## 1. Introduction

Studies on waders often include live trapping in order to ring and measure individuals. Once caught, a bird may become trap-shy, i.e., reluctant to enter a trap again (trap avoidance), avoiding its surroundings or leaving the area completely (trapping site avoidance). Even though some studies have dealt with trap responses in birds (e.g. Senar 1988; Gosler 2001; Doligez *et al.* 2004), the little of what is known about this subject in waders is presented in a purely narrative way without any statistical verification (e.g. Pienkowski 1976). We captured Wood Sandpipers *Tringa glareola* in north-eastern Austria during autumn migration in 2003 and during spring migration in 2005 using walk-in traps (Meissner 1998). In this brief note,

we use sightings and recaptures of individually colour-marked birds to investigate the trap response behaviour of Wood Sandpipers.

## 2. Material and methods

The study area (Absetzbecken Hohenau-Ringelsdorf, 48°35' N, 16°55' E) consists of several small pools (total area 38 ha) and a 17 ha pond of the local sugar factory. The nutrient-rich pools represent an important stopover site for waders in Austria (Zuna-Kratky & Rössler 1993). Trapping was carried out from 28 June until 11 August, 2003 (4 days a week) and from 22 April until 17 May, 2005 (7 days a week). Birds were individually marked with metal and plastic colour rings above the tarsal

joint. Altogether, 182 adult Wood Sandpipers were colour-marked (autumn 2003: 39, spring 2005: 143). During the trapping periods, pools were counted every other hour from dawn to dusk and sightings of marked individuals were recorded. First and last resightings of colour-marked birds made in 2003 were not considered in our analyses as trapping and censuses were conducted only on 4 days a week. Due to the small size and the openness of the pools, colour-ringed birds present in the area could be easily detected. In spring, 44% of individually marked birds were resighted (authors, unpubl.). In autumn, 57% of colour-ringed individuals were seen again (Wichmann *et al.* 2004). Migrant Wood Sandpipers usually aggregated at one or two pools which were thus chosen for catching ('trapping pools'). Pools where no traps were set will be referred to as 'non-trapping pools' and accommodated only low numbers of birds.

### 3. Results

Pooling the data from both study years, we found that significantly fewer previously captured birds were seen at trapping sites ( $\chi^2 = 29.1$ ;  $P < 0.001$ ): whereas 59% of 2017 sightings of all unmarked individuals were seen at trapping pools, only 36% of 146 sightings of colour-ringed Wood Sandpipers were observed in the same areas.

Significantly more birds had left the initial trapping site by the time at which they were first resighted (Fisher's exact test:  $P < 0.001$ ): only two birds were seen again at the initial trapping pool whereas 42 Wood Sandpipers had moved to any other trapping or non-trapping pool. Considering the last recording of each colour-marked individual, none of the birds were found at the site of initial capture. 68.7% had moved to the other trapping pool. Significantly fewer birds (31.3%) were seen again at any of the non-trapping pools ( $\chi^2 = 4.5$ ;  $P = 0.034$ ).

These findings are also reflected by the locations at which recaptures occurred: 7 out of 8 previously marked birds were recaptured at a trapping pool different from the initial one. The only bird which was recaptured at its initial trapping site was recaptured a second time at the other trapping pool the next day.

### 4. Discussion

Trap response effects are commonly known to occur in many species across various taxa (e.g. Gehrt & Fritzell 1996; Gilbert *et al.* 2001; Gosler 2001; Bjorndal *et al.* 2003; Wegge *et al.* 2004). Individuals may become trap-happy, especially if traps are baited, or trap-shy. The latter also applied to Wood Sandpipers in our study. Most individuals had abandoned the trapping site when they were first resighted, which suggests that birds left the initial trapping pool soon after capture. Moreover, birds most likely did not return to their original feeding site since all last recordings of marked birds occurred at pools differing from the ones of initial capture. That ringed birds left the original site permanently is further confirmed by the fact that recaptures almost exclusively occurred at trapping pools other than the initial ones. A considerably higher number of ringed birds moved to the other trapping pool instead of any of the non-trapping pools indicating that Wood Sandpipers avoided the initial trapping site but not the traps. Non-trapping pools were presumably less profitable feeding sites because most unmarked birds were observed at those pools where traps were set. After capture, the majority of birds seemed to choose the next best feeding site as indicated by the number of conspecifics present, regardless of the traps inside the pool. Disturbance due to trapping did not appear to influence the distribution of birds in the study area. Once caught, though, birds left the initial feeding site and moved to another, maybe less profitable pool.

In conclusion, our results indicate that Wood Sandpipers avoid trapping sites at which they were initially captured. The mere presence of traps, however, does not seem to have major influences on the choice of feeding sites of previously captured birds. Results of studies, e.g. on habitat analyses, should be viewed with caution when live trapping of birds is included due to the occurrence of trapping site avoidance.

*Acknowledgements.* We thank M. Bierbaumer, M. Hillbrand and H. Klosius for assisting in the field. An anonymous reviewer helped to improve an earlier draft of the manuscript. K.H. Lux, director of the former AGRANA Sugar Factory Hohenau, granted us permission to catch Wood Sandpipers at the Absetzbecken. The study was sup-

ported by the Austrian Academy of Sciences and the German Ornithologist's Society (DO-G).

### **Ansapyynnin vaikutuksia lirojen käyttäytymiseen**

Tutkimme ansapyynnin vaikutusta lirojen käyttäytymiseen Itävallan koillisosissa. Linnut pyydettiin erään tehtaan jätevesilammikoista ansoilla, joihin lirot itse kävelivät sisään. Värirenkastettujen lirojen myöhempien näkö- ja pyydyshavaintojen perusteella useimmat yksilöt lähtivät pyydystämislammikolta pian ansaan joutumisen jälkeen. Useimmat yksilöt vaihtoivat lammikkoa sellaiseen, jossa myös oli ansoja. Tämä viittaa siihen, että ansojen läsnäolo ei vaikuta jo aiemmin pyydystettyjen lirojen ruokailupaikkojen valintaan. Sen sijaan pyydystetyt yksilöt välttivät ruokailupaikkoja, joissa ne olivat aiemmin jääneet ansaan. Tätä johtuen esimerkiksi elinympäristön laadun määrittämiseen pyrkivien tutkimusten tuloksia tulisi tulkita varovasti, jos kyseisissä tutkimuksissa on käytetty ansapyyntiä.

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