

# **Life – Limosa Schleswig-Holstein**

**Conservation studies of**

**Ruff (*Calidris pugnax* – KAMPFLÄUFER)**

**and**

**Baltic dunlin (*Calidris alpina* – ALPENSTRANDLÄUFER)**

**in Schleswig-Holstein**

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**Reporting field work 2019**

## Introduction:

Ruff and Baltic dunlin are two of the rarest and most threatened breeding bird species in Germany, and both are red listed as critically endangered (*'vom Aussterben bedroht'*) in the most recent red lists for Schleswig-Holstein and Germany (Knief et al. 2010, Grüneberg et al. 2015). In contrast to most other endangered bird species, the level of knowledge of the two species is low, and at the time of the start of the Life Limosa project it had for years even been questioned, whether the two species were breeders in Schleswig-Holstein any longer (LANU 2008, Knief et al. 2010).

There are no monitoring programmes in Schleswig-Holstein directed specifically at ruff or dunlin, and the two species are covered in their key areas by observing presence or absence in pre-described periods during multispecies mappings, only (e. g. Hälterlein et al. 1995). Additional observations of breeding behaviour are collected unsystematically. Furthermore, ruffs have a prolonged breeding season with a peak after most other meadowbirds are being surveyed (e. g. Thorup 2016), their behaviour in the breeding season during the egg and chick phases is very discrete apart from a short period during the early chick rearing, and they tend to breed away from the highest concentrations of other – more conspicuous – meadowbirds. Hence, there is not collected sufficient information from the standard monitoring programmes to evaluate the population status or to identify the exact breeding sites including nest and chick rearing areas, crucial information in order to safeguard proper management in the core breeding areas of the two species.

As part of the Life Limosa project in Schleswig-Holstein, more detailed knowledge about breeding of the two species is collected, in order to obtain better knowledge of their population status and to understand and thereby improve their breeding conditions.

The monitoring programmes in Schleswig-Holstein (as well as e.g. in Denmark and southern Sweden) are primarily based on the assumption that there is a correlation between the presence of ruffs in the period between the northward migration ends and the return of the southward migrants starts, and the numbers of ruffs that are actually breeding. In the Wadden Sea of Schleswig-Holstein this period is approximately 20 May-8 June in males, and 20 May-16 June in females like it is found in Denmark (Holm 2018); Hälterlein et al. (1995) restricted the period further to 28 May-10 June for both sexes. As ruffs are rarely seen in this period away from sites with apparently suitable breeding habitat for the species, the special ruff inventories performed within the Life Limosa project will also collect information that may verify or disprove this assumption and thereby make it possible qualitatively to improve future monitoring of ruff populations.

## Numbers of breeding ruffs in project sites

### Ruff

The standard counting programmes counted ruffs in the project sites Rickelsbüller Koog, Beltringharder Koog and in the Eider Estuary. Within this project, additional surveys directed specifically at finding breeding ruff were performed in Meldorfer Speicherkoog (= Dithmarscher Speicherkoog Nord) and Dithmarscher Speicherkoog Süd and in parts of Beltringharder Koog and Rickelsbüller Koog. Altogether, 27 females and 22 males were found in 2019 (Table 1). As they were all showing breeding behaviour or/and were found in the core breeding season, they were supposedly local breeders.

The size of the breeding population is estimated from the number of ruffs, in particular females, observed in the period between the last northern breeders have left the area and the first returning birds arrive – the so called ‘counting window’. Ruff females are very discrete breeders, above all in the incubation period when they usually flush in front of a visiting observer on a very short distance and sometimes not at all. Therefore, it takes a very intensive fieldwork directed at finding ruff females by criss-crossing meadows repeatedly to count breeding females in this way. This is usually not attainable due to the massive workload it involves. Females have never been shown to perform large-distance dispersal/movement late May or early to mid June, and from the present knowledge of their breeding strategy, the best available method to estimate the number of females that stay and attempt to breed in an area is to count the number of females present in the ‘counting window’.

Regularly, females ‘disappear’ during the breeding season. Usually, it is not possible to separate between females that laid eggs and later gave up due to predation or flooding, females that became invisible because they started incubating, and females that gave up breeding in the season in question, before they started laying eggs. In 2019, the long, dry period from late March till well into June created difficult breeding conditions for such a wet meadow loving species, and in 2019 it is likely that some female ruffs, that were still present after the northern migrants left, gave up breeding due to the unfavourable conditions created by the draught in May and first half of June.

Table 1. Breeding ruffs found in the Life Limosa project sites in the 2019 breeding season.

**Ruff 2019**

Site	Verified breeders		Probable breeders		Birds attempting to breed		Population 'gustimate'
	Females with chicks or chick clutch seen	Additional females with nest	Additional females from nest habitat empty nest bowl found	Additional females in nest habitat	Females seen between 20 May and 16 June	Males seen between 20 May and 8 June	
Rickelsbüller Koog	0	0	0	n/a	18	18	18
Hauke-Haien Koog	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Beltringharder Koog, Arlauer Speicherbecken	0	0	0	0	1	0	1
Beltringharder Koog, central area	0	0	0	0	6	2	6
Beltringharder Koog, northern areas	0	0	0	0	0	0	0
Eiderdammflächen, Katinger Watt	0	0	0	0	0	2	0
Olversumer Vorland-Grüne Insel	0	0	0	0	0	1	0
Oldensworter Vorland	0	0	0	0	0	0	0
Karolinenkoog Vorland	0	0	0	0	0	1	0
Meldorfer Speicherkoog - Wöhrdener Loch	0	0	0	0	0	n/a	0
Meldorfer Speicherkoog - Odinsloch-Nordkoog West	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Meldorfer Speicherkoog - Nordkoog East	2	0	0	0	2	0	2
Dithmarscher Speicherkoog Süd	0	0	0	0	0	0	0
Seether Ostermoor	0	0	0	0	0	0	0
Alte Sorge Schleife	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Project sites total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>22</b>	<b>27</b>
<i>2018 Project sites total</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>60</i>	<i>46</i>	<i>60</i>
<i>2017 Project sites total</i>	<i>5</i>	<i>2</i>	<i>0</i>	<i>9</i>	<i>25</i>	<i>31</i>	<i>31-33</i>
<i>2016 Project sites total</i>	<i>1</i>	<i>3-4</i>	<i>0</i>	<i>3</i>	<i>52-53</i>	<i>46+</i>	<i>49-51</i>
<i>2014 Project sites total</i>	<i>6-7</i>	<i>2</i>	<i>0</i>	<i>1</i>	<i>44-45</i>	<i>38+</i>	<i>43</i>
<i>2013 Project sites total</i>	<i>3</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>18</i>	<i>20</i>	<i>19</i>

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## Special inventories in 2019

My 2019 dunlin and ruff fieldwork within the Life Limosa project consisted of seven inventories:

- A search for breeding dunlins in and around the newly established polder in the S part of Rickelsbüller Koog.
- A search for breeding dunlins on the meadows along the coast of the east side of Lüttmoorse, where dunlins were found breeding in 2017.
- A ruff survey in and around the newly established polder in the S part of Rickelsbüller Koog
- A ruff survey in the Arlauer Speicherbecken in Beltringharder Koog
- A ruff survey in the southern part of Wöhrdener Loch of Meldorfer Speicherkoog.
- Two ruff surveys in the eastern part of Nordkoog of Meldorfer Speicherkoog in order to establish breeding and to identify nesting habitat, breeding success and habitat use of the species in the area.
- A ruff survey in the central and the southern meadows in Speicherkoog Süd.

## **Dunlins and ruffs in the new polder in Rickelsbüller Koog**

The new polder in Rickelsbüller Koog was visited 29 May in the afternoon.

The water table in the polder was very low – only the deepest parts of the ditches held water. In contrast to in 2018, there were very few feeding shorebirds in the polder. Apart from breeders of oystercatcher (one pair), lapwing (six families) and redshank (3-4 pairs, at minimum one with a nest), there were only 6 avocets, 8 ringed plovers and 1 kentish plover. Dunlins were not seen at all in 2019. In 2018, on a visit on 31 May, there were large feeding flocks of shorebirds including 26 dunlins. None of those dunlins showed breeding behaviour, however, but obviously the polder was attractive for the species in 2018, but not in 2019.

Very little grassy vegetation has developed in the new polder. Only in the westernmost part of the polder there is a quite small area with short, open grass, that could possibly attract dunlins for nesting.

Only very patchily there is sufficient vegetation to suit a nest of ruff. 31 May 2018 there were 2 males and 6 females in the by then much wetter polder, and one of the females may have had her nest inside the polder. In 2019, ruffs were not seen at all in the area and also not in the neighbouring grassland.

## **Dunlins along the coast of Lüttmoorse in Beltringharder Koog**

Breeding dunlins were searched for 9 June in the afternoon on the coastal meadows along the eastern side of Lüttmoorse, where a pair of dunlins was found breeding in 2017. This search was unsuccessful.

## **Ruffs in Arlauer Speicherbecken in Beltringharder Koog**

Breeding ruffs were searched for in Arlauer Speicherbecken in the morning of 12 June. All areas in Arlauer Speicherbecken with suitable nest or chick rearing habitat were visited, but no ruffs were observed. Earlier in the breeding season a ruff female was seen at the site, but it may have left the area, or it could have stayed tight on its nest.

## **Ruffs in the southern part of Wöhrdener Loch in Meldorfer Speicherkoog**

Breeding ruffs were searched for in the southern part of Wöhrdener Loch 11 June in the afternoon. These meadows had at least three breeding females of ruff in 2013, but in 2019 the meadows were very dry, and no ruffs were seen. In 2013 there was also a lek at an adjacent wetland with up to ten males in the middle of the breeding season. No males were seen here late May-early June in 2019.

## **Ruffs in eastern part of Nordkoog in Meldorfer Speicherkoog**

Two ruff surveys were performed in the meadows of the eastern part of Nordkoog in Meldorfer Speicherkoog: one in the morning and noon on 11 June and one in the morning and noon on 23 June.

11 June two breeding females of ruffs were observed in the eastern part of Nordkoog, one with chicks and another one flushed from a nest. 23 June the second female was found with chicks not too far away from the spot, where apparently the same bird was flushed from her nest 11 June.

In the years before the Life Limosa project started, ruffs were virtually unknown as a breeding species in Meldorfer Speicherkoog. Despite a fairly limited number of field visits to the area directed at finding breeding ruffs, breeding has been verified here almost annually in the project period.

The Nordkoog east of the Wöhrdener Hafenstrom was surveyed for ruff for the first time in 2016, and this year a ruff with a nest and a ruff with chicks were found on the two visits together with a large lek that was active late in the breeding season after some days with plenty of rain. In 2017, two female ruffs were flushed from nests, and two additional females with chicks were found on the three visits in the area. At the 2018 survey, two females were found with chicks, and as mentioned above, the same was the case in 2019 (Figure 1).

Both 2018 and 2019 were years with unusually dry conditions on the meadows, which in general created poor breeding conditions for ruff in NW Europe. Even in such years, the breeding environment for ruffs in Nordkoog was so favourable, that in both years at minimum two females managed to hatch chicks here. This underlines that this part of the Nordkoog must be a key site for breeding ruffs. All finds of nests and chicks of ruffs here have been within approximately 200 m from the coastline of a shallow coast or a deep gully, which is wet or moist in most situations when the adjacent meadows are dry (Figure 1).

The meadows are likely very favourable for breeding ruffs because they are with a poor soil with slow-growing and open grassy vegetation. This habitat is maintained by a quite light grazing by a mixture of cattle and sheep and a late mowing. Actions during the Life Limosa project have improved the breeding habitat further: a tree line along the eastern edge of the meadows has been removed thereby reducing the predation risk by avian predators on the meadows, and several gullies has been blocked, thereby retaining more water in dry periods and prolonging favourable feeding conditions for the ruffs including in the core area of the species.



Figure 1. The positions of nests and chick families found in Wöhrdener Loch and in Nordkoog in Melderfer Speicherkoog 2013-2019: Pink dots: chick families 2019, green dots: chick families 2013-2018 and yellow dots: nests 2013-2018.

## Ruffs in Dithmarscher Speicherkoog Süd

Breeding ruffs were searched for on a full day visit on 10 June, where large parts of the central and the southern meadows were walked through. The meadows were unusually dry, and not a single ruff was seen in the area.

The dry conditions on the meadows were enhanced by newly dug and deepened drainage ditches draining some of the core wetlands for meadow birds. This is particularly unfortunate for a species like ruff that is dependent on high water tables during its relatively late breeding schedule late May till July. Good habitat management for breeding ruffs is to retain as much winter and spring precipitation on the meadows as possible (e.g. Thorup 2016).

Neither earlier in the breeding ruff 'counting window' in late May and early June were any ruffs seen at the site.

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