

# LIFE Limosa Schleswig-Holstein 2021

Field studies in selected project areas  
on breeding conditions and numbers  
of ruff *Calidris pugnax* and dunlin *C. alpina*

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## 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, Ryslavy et al. 2020). 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 the period when most other meadow birds 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 – meadow birds. 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.

Because it is very time consuming to verify breeding of ruffs in the quite extensive areas with potential breeding habitat by identifying females with nesting behaviour, the monitoring programmes in Schleswig-Holstein (as well as e. g. in Denmark and southern Sweden) rely on additional observations of ruffs present in the central breeding season. The relevance of such observations is primarily based on the assumption that there is a strong 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 (Thorup et al. 2018). 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.

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. In the first project years, extensive surveys directed at finding breeding ruffs and dunlins were performed in proper habitat in all project sites, whereby a quite precise picture was obtained about the breeding distribution of the two species. In the recent breeding seasons, some project areas have been selected where field studies could obtain important knowledge about specific demands that the two species could have to their breeding areas and thereby making use of this knowledge to improve breeding conditions in the project sites and elsewhere.

In this report, results from the field studies in the breeding season 2021 are described in more details.

## Numbers of breeding ruffs in the project sites 2021

Table 1. Breeding ruffs found in the Life Limosa project sites in the 2021 breeding season.

### Ruff 2021

Site	Verified breeders		Probable breeders		Birds attempting to breed		Population 'guestimate'
	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	11	9	11
Hauke-Haien Koog	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ockholmer Vordeichung	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Beltringharder Koog, Arlauer Speicherbecken	0	0	0	0	0	0	0
Beltringharder Koog, central area	0	1	0	1	7	3	7
Beltringharder Koog, northern areas	0	0	0	0	0	0	0
Eiderdammflächen, Katinger Watt	0	0	0	0	1	0	1
Olversumer Vorland-Grüne Insel	0	0	0	0	0	0	0
Oldensworter Vorland	0	0	0	0	0	0	0
Karolinenkoog Vorland	0	0	0	0	0	0	0
Meldorfer Speicherkoog - Wöhrdener Loch	0	0	0	0	0	n/a	0
Meldorfer Speicherkoog - Odinsloch-Nordkoog West	0	0	0	0	1	2	1
Meldorfer Speicherkoog - Nordkoog East	1	1	0	0	3	n/a	3
Dithmarscher Speicherkoog Süd	0	1	0	0	1	n/a	1
Seether Ostermoor	0	0	0	0	0	n/a	0
Alte Sorge Schleife	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Project sites total</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>24</b>	<b>14+</b>	<b>24</b>

Observers:
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Oliver Granke, Ole Thorup, Volker Salewski
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Volker Salewski
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2020 Project sites total	0	0	0	5	10	5+	10
2019 Project sites total	2	0	0	0	27	22	27
2018 Project sites total	2	0	0	1	60	46	60
2017 Project sites total	5	2	0	9	25	31	31-33
2016 Project sites total	1	3-4	0	3	52-53	46+	49-51
2014 Project sites total	6-7	2	0	1	44-45	38+	43
2013 Project sites total	3	3	1	2	18	20	19

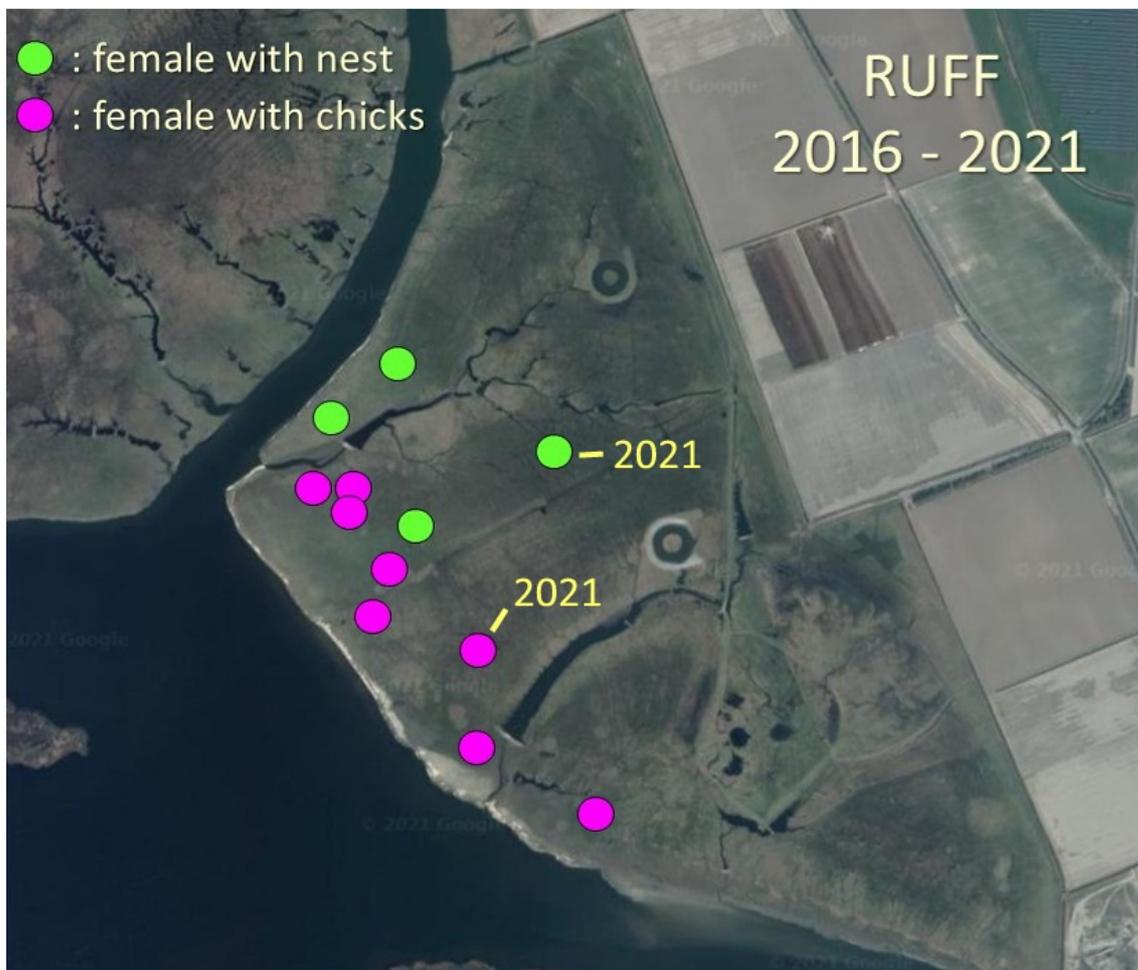
In 2021 standard counting programmes counted ruffs in the project sites Rickelsbüller Koog, Beltringharder Koog and in the Eider Estuary. Additionally, within the LIFE Limosa project we surveyed ruffs in Wöhrdener Loch, Odinsloch-Nordkoog West and Nordkoog Ost in Meldorfer Speicherkoog, and the central areas in Dithmarscher Speicherkoog Süd in two full days mid-June, and additionally the new polder in Rickelsbüller Koog was visited.

Altogether, 24 females and a minimum of 14 males were found in the core breeding season in the project sites in 2021 (Table 1). They were showing breeding behaviour or/and were found in the period between the last northern migrants had left and the first migrants arrived again.

## Field work in 2021

### Ruffs in the eastern part of Nordkoog in Meldorf Speicherkoog

Since we discovered that ruffs were breeding here in 2016 including the find of one female with chicks and another with a nest, this part of Meldorf Speicherkoog has disclosed itself as one of the most constant and successful breeding sites for ruff in the international Wadden Sea. This continued in 2021, when one female with chicks, one with a nest and a third one together with a displaying male were observed at a survey 17 June. One to three annual surveys 2016-2021 have revealed, that no matter how dry the season was, at minimum one breeding female has been detected each year. The locations of the found nests and families are shown in figure 1.



*Figure 1. Locations of found ruff females with a nest and ruff families in Nordkoog East in Meldorf Speicherkoog at annual surveys 2016-2021. One female with a nest and one with chicks observed in 2021 are specifically indicated.*

Not many ruff females with chicks have been observed the last decades in the entire international Wadden Sea. In order to illustrate this, only five ruffs in total were observed with chicks in the Danish Wadden Sea between 1994 and 2021: one in 1994, two in 1997 and two in 2003 (Thorup et al. 2021). That eight ruffs have been observed with chicks on nine surveys in Nordkoog East in 2016-2021 (Figure 1) is therefore quite

exceptional, and points at the fact that Nordkoog East today is a key breeding site for the species in the Wadden Sea. It should be mentioned, however, that ruffs with chicks are in general most likely underrecorded, as the species breeds so late that the majority of breeding surveys are undertaken before ruff chicks start hatching.

The management of Nordkoog East is in many ways optimal for a meadow bird like ruff. The combined grazing by cattle and sheep takes place most years with a moderate grazing pressure. Together with the mowing of the meadow after the breeding season is over, an open and relative diverse vegetation is created (see photo below), that obviously attracts good numbers of meadow birds – in addition to ruffs also redshanks *Tringa totanus*, lapwings *Vanellus vanellus*, black-tailed godwits *Limosa limosa*, avocets *Recurvirostra avosetta* and oystercatchers *Haematopus ostralegus*.

Grazing keeps the vegetation along the fresh water shores at Meldorfer and Wöhrdener Hafenstrom short, and shallow water here makes sure that incubating and chick rearing females always have good feeding opportunities nearby. In addition, blocking of several outlets postpone the drying out of the inland gullies and wetlands. Furthermore, felling of trees and bushes along the edges of the meadows has improved the openness of the area, most likely reducing predation from aerial predators.



*View of the meadows at Nordkoog East in Meldorfer Speicherkoog, showing the relatively short and open vegetation with islets of higher vegetation favourable for tuft-breeders like ruffs. An artificial pond with a breeding island for avocets is seen in the background. Photo: Volker Salewski.*

As a breeding area for ruff, the nature reserve Wöhrdener Loch north of Nordkoog is apparently more sensitive to changing conditions, e. g. weather patterns. At a ruff survey here 17 June, no ruffs were observed. In the first project year 2013, there was a ruff lek in the area with up to 10 displaying males, and five breeding female ruffs were observed of which one was seen with chicks and two with nests. Surveys within the LIFE Limosa project 2019-2021, however, found no ruffs at all in the same area. In 2013 the area was moist or wet in the entire breeding season until at least early July, whereas the area was quite dry in 2019, 2020 and also fairly dry at the date of the survey 17 June 2021.

### Ruffs in Dithmarscher Speicherkoog Süd

The meadows in the central part of the area are mown annually after the breeding season. A ruff survey was performed in these meadows from the early morning till noon on a warm day 16 June together with Volker Salewski.

One female ruff was found that showed nervous nesting behaviour in the northern part of the surveyed area. The 2021 nest was situated 550 to 1400 m north of the nest and chick families previously found in 2013, 2014 and 2017, respectively (Figure 2). The nest site was not checked later, and it is unknown whether the bird had hatching success. At the date of the survey, there was water in some smaller wetlands, and the meadows were not dried out as was the case during the ruff surveys in 2018-2020.

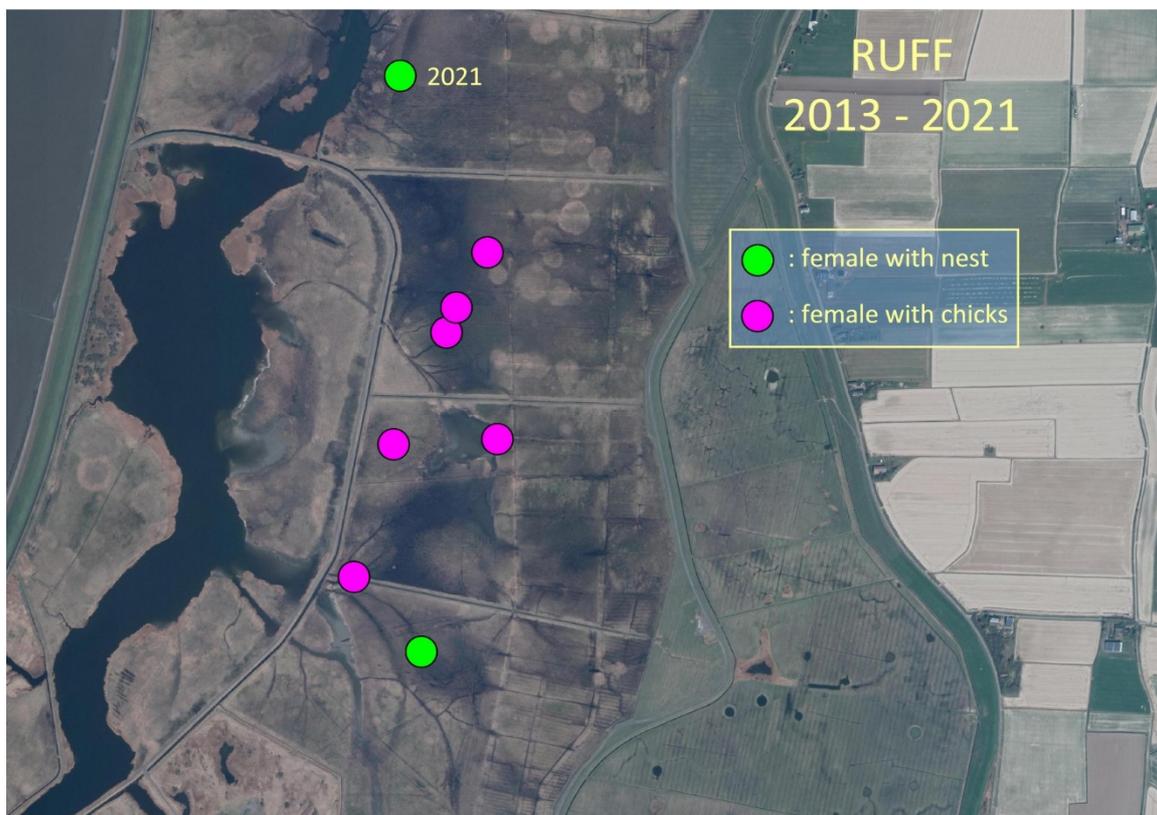


Figure 2. Locations of females with nests and chick families found in Dithmarscher Speicherkoog Süd 2013-2021. The position of the female showing nesting behaviour in 2021 is specifically indicated.

## Presence of breeding ruffs in the Odinsloch-Nordkoog West area

In the western part of Nordkoog in Meldorf Speicherkoog the LIFE Limosa project has improved the breeding conditions for meadow birds by creating a postponed drying out of the meadows, primarily by blocking outlets from the central wetlands. In this rewetted area, two males lekking in front of a female were observed 25 May (see photo), and 27 May the males were still there.

At a visit 17 June, no ruffs were seen in the area. As the exact nesting site of the female was not known, it may have stayed undisturbed at the nest incubating at some distance from the visiting observers, or the bird may have been unsuccessful and had given up breeding. As the site where the female was observed together with two males 25 May is only app. 1 km from the core breeding area of the species in Nordkoog East, it cannot be excluded, that there was an overlap between the female seen in the Nordkoog West area and one of the females seen in Nordkoog East 17 June.



*Two male ruffs displaying in front of a female 25 May in a rewetted area in Nordkoog west, Meldorf Speicherkoog. The present management including combined grazing by cattle and sheep and rewetting, creates an attractive breeding habitat for ruff. Photo: Oliver Granke.*

## Vegetation development and potential for breeding ruff and dunlin in the new polder in southern Rickelsbüller Koog

The newly created polder in the southern end of Rickelsbüller Koog was visited afternoon and early evening of the 15 June, and suitability of the water table for breeding ruff and Baltic dunlin and for shorebirds in general was evaluated together with an evaluation of whether the vegetation development did create potential nest site habitat for breeding ruffs.

In the north-west corner of the polder a fairly large patch of several thousand m<sup>2</sup> of grassy vegetation possessing suitable potential nest habitat for ruffs had developed, and this is a further development compared to 2019 and 2020. Elsewhere there were scattered patches with potential nest habitat – however with the water level present, most such vegetation was in water and was too wet for use as nests for tuft-breeding shorebirds.

No ruffs with breeding behaviour were observed. There were two single ruff males feeding in the polder.

The majority of the polder area was covered with shallow water, and a lot of waterbirds were attracted. The polder did attract a large number of avocet families, and 72 adult avocets alarming for chicks were counted. No doubt many avocet chicks were also present, but the combination of shallow water and open vegetation seemed very favourable for the chicks allowing them to hide away, and only few chicks were actually observed. No less than 13 pairs of redshanks alarmed with chicks inside the polder together with two pairs of late breeding lapwings. In addition, two redshanks flushed apparently from their nests.

This year, quite modest numbers of feeding post-breeding shorebirds were present in the polder. There was a flock with 8 black-tailed godwits, and furthermore 2 green sandpipers and 3 spotted redshanks were seen.

The polder also housed breeding black-headed gulls and common terns; the actual size of the colonies was not checked.

## References

- Hälterlein, B., D. M. Fleet, H. R. Henneberg, T. Mennebäck, L. M. Rasmussen, P. Südbeck, O. Thorup & R. Vogel 1995: Anleitungen zur Brutbestandserfassung von Küstenvögeln in Wattenmeerbereich. – Wadden Sea Ecosystem No. 3, CWSS, TMAG, Joint Monitoring Group for Breeding Birds in the Wadden Sea, Wilhelmshaven.
- Knief, W., R. K. Berndt, B. Hälterlein, K. Jeromin, J. J. Kieckbusch & B. Koop 2010: Die Brutvögel Schleswig-Holsteins. Rote Liste. – Ministerium für Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein.
- LANU 2008: Europäischer Vogelschutz in Schleswig-Holstein. Arten und Schutzgebiete. – Landesamt für Natur und Umwelt des Landes Schleswig-Holstein.
- Ryslavy, T., H.-G. Bauer, B. Gerlach, O. Hüppop, J. Stahmer, P. Südbeck & C. Sudfeldt 2020: Rote Liste der Brutvögel Deutschlands 6. Fassung, 30. September 2020 – Berichte zum Vogelschutz 57: 13 – 112.
- Thorup, O. 2016: Timing of breeding in Ruff *Philomachus pugnax*: a crucial parameter for management and use of wet grassland in Western Europe. – Wader Study 123(1): 49-58.
- Thorup, O., Clausen. P. & Bregnballe, T. 2021. Ynglefugle i Vadehavet 1996-2018. Status for 2018 og bestandsudvikling for udvalgte arter. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. Teknisk rapport nr. 220. [In Danish] <http://dce2.au.dk/pub/TR220.pdf>
- Thorup, O., V. Salewski & H. Hötter 2018: Kann Phönix aus der Asche steigen? – Kampfläufer brüten in Schleswig-Holstein in überraschend hohen Zahlen. – Berichte zum Vogelschutz 55: 11-19.