Trends of Migratory and Wintering Waterbirds in the Wadden Sea 1987/1988–2013/2014

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Progress Report

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Trend calculations
Erik van Winden (SOVON, The Netherlands) performed the UINDEX and TrendSpotter operations to calculate trends and to provide the imputed numbers for the calculation of maximum estimates and distributions.

Title photo
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Drawings
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Lay-out
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Content

1 Introduction

Monitoring migratory and wintering birds, the JMMB program

The Wadden Sea constitutes one of the world's most important wetlands for migratory waterbirds. It is the single most important staging and moulting area and an important wintering area for waterbirds on the East Atlantic Flyway from the Arctic to South Africa. The Joint Monitoring of Migratory Birds (JMMB) program is carried out in the framework of the Trilateral Monitoring and Assessment Program (TMAP), and constitutes an internationally coordinated long-term monitoring program. It covers a large connected ecoregion stretching from Den Helder in The Netherlands to Esbjerg in Denmark; regular ground counts for most species and areas plus aerial counts for sea ducks involves hundreds of observers and several institutes and agencies.

After the publication of trends, comprehensive species accounts and assessments in the most recent reports (Blew *et al.* 2005 and Blew *et al.* 2007), the JMMB group agreed, that from now on a yearly update of these trend calculation shall be published on this website. Here, trends of 34 waterbird species for the international Wadden Sea and the four regions - The Netherlands, the Federal States of Germany, Niedersachsen and Schleswig-Holstein, and Denmark will be presented.

Details of the "Joint Monitoring program of Migratory Birds in the Wadden Sea" are given in Rösner et al., (1993) and updated in Blew et al., (2005). This program, consisting of international synchronous counts, spring-tide counts and aerial counts (only Common Eider), has been carried out by all Wadden Sea countries since 1992. Some differences between the countries' programs exist, due to different national approaches and older already existing counting programs, but these do not hamper the overall goal for calculating trends. Because many usable counting data before 1992 exist as well, it has been decided to include counts back to the season 1987/1988.

The area considered is the Wadden Sea Cooperation Area. This is, in general terms, the area seaward of the main dike (or, where the main dike is absent, the spring-high-tide-water line, and in the rivers, the brackish-water limit) up to 3 nautical miles from the baseline or the offshore boundaries of the Conservation Area (Essink et al., 2005). The total area covers 14,700 km², with 4,534 km² of tidal flats.

Drawing:
Niels Knudsen

2 Data and methods

Data used in the analyses are a mixture of total counts (two internationally, up to five nationally) and counts of a selection of sites which are counted more frequently (12-25 times a season). At present a total of 594 counting units are defined in the Wadden Sea, which are included in the analyses. For this report, the original counting data, available at the smallest level have been used.

Trends are calculated and presented for 34 waterbird species. These are species which use the Wadden Sea during stop-over on migration or as a wintering area with large parts of their flyway population. For 10 different subspecies of 5 of these 34 species trends are calculated also, since the subspecies can be separated by different periods of their presence in the Wadden Sea area during the year. Trends for subspecies are calculated for Common Ringed-Plover, Red Knot, Bar-tailed Godwit, Redsank and Turnstone. Species which only occur in low numbers or species which cannot be counted with sufficient representativeness have been excluded from the analyses (for a more detailed explanation see Rösner et al., 1994).

Despite a large dataset with lots of real count data available also missing counts are present. A complete dataset involves counts for all counting units in all months of the year. To analyse the waterbird count data, UINDEX (Bell, 1995) was used to account for missing counts in the dataset, and then TrendSpotter is applied to calculate trends (Visser, 2004, Soldaat et al 2007). The program UINDEX is estimating bird numbers for missing counts (imputing) taking into account site-, year- and month-factors (Underhill & Prys-Jones 1994). Sites are grouped in four regional strata representing the four different Wadden Sea "countries". The counted and imputed values for each month are added to yearly averages for the respective "bird-years", covering the period from July to June of the following year (Fig. 2.1). After that with the program TrendSpotter so-called "flexible trends" are calculated. These are particularly suitable for time series data with different periods of decreasing, stable or increasing trends (Visser 2004, Soldaat *et al.*, 2007). A trend line calculated by TrendSpotter hardly deviates from a moving average or a smoothed trend line as calculated by a Generalized Additive Model (GAM) (e.g. Atkinson *et al.*, 2006). TrendSpotter calculates also confidence intervals and differences between the trend level of the last year and each of the preceding years can be assessed (Soldaat et al. 2007). This way trend estimates can be given for any period, as for example the last 10 years and the whole time period, as in the current analyses.

Trend estimates given within the text are used as categories (Fig. 2.2).

This progress report presents data of the period 1987/1988 - 2013/2014.

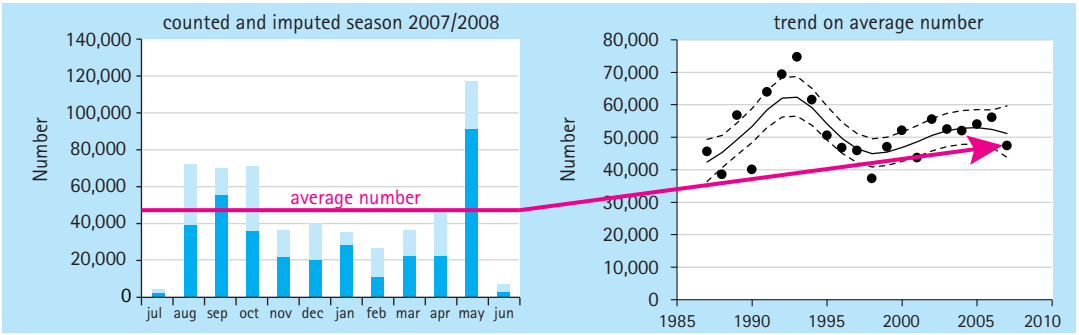


Figure 2.1
Example of the treatment of data for the trend analyses. First the seasonal pattern is reconstructed by using counted numbers and imputed numbers for each month for a certain species (left graph of the figure, dark blue is counted, light blue is imputed). Than the average over all months is taken and this is the 'yearly estimate' to be used in the trend analyses (right graph). The trend line and confidence limits are calculated over all year estimates.

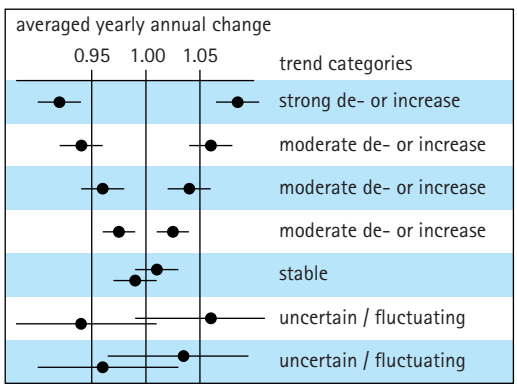


Figure 2.2
Trend classification used to express annual changes in waterbird numbers. Dots represent trend values, horizontal lines their 95% confidence limits.

Acknowledgements

In Denmark the counts were carried out by the National Environmental Research Institute (NERI, University of Aarhus). Aerial counts were carried out by NERI up to 1992, and during the years after they were organized through a collaboration between NERI and Ribe Environmental Center, Ministry of the Environment.

In Schleswig-Holstein the monitoring was initiated by the Ornithological Society Schleswig-Holstein (OAG SH) in the 1960s; regular monitoring was jointly organized by the OAG SH and the World Wide Fund for Nature (WWF) in 1987 and during the first period until 1994 funded by the federal state Schleswig-Holstein and the Federal Ministry of Environment (Federal Environment Agency) as part of an ecosystem research project. Since then it was funded by the National Park Administration Schleswig-Holstein Wadden Sea. The coordination of the project moved from WWF to the Schutzstation Wattenmeer e.V. in 2004. The aerial surveys of Common Eider and Shelduck were separately financed by the National Park Administration Schleswig-Holstein Wadden Sea.

In Niedersachsen and the Hamburg regions the counts were organized by the Bird Conservation Station in the Niedersachsen Water Management, Coastal Defence and Nature Conservation Agency (NLWKN), formerly Niedersachsen Agency for Ecology (NLÖ). The aerial surveys of Common Eider were financed by the Niedersachsen Wadden Sea National Park Authority.

The waterbird counts in the Dutch Wadden Sea are part of the national monitoring program of waterbirds in The Netherlands, which is a cooperation between the Ministry of Agriculture, Nature and Food Quality, the Ministry of Water Management and Public Works, Statistics The Netherlands (CBS), Vogelbescherming Nederland and SOVON Dutch Centre for Field Ornithology. The aerial surveys of Common Eider were carried out under the responsibility of the Ministry of Water Management and Public Works.

Photo:
Bo Lassen Christiansen

3 Overview trends

Table 3.1
Trends until 2013/2014 - The whole 27 and last 10 years time period. The species names in the table are sorted according to the Euring Code.

Species	Long-term 27-years trend 1987/1988 - 2013/2014						Short-term 10-year trend 2002/2003 - 2013/2014				
	WS	DK	SH	Nds/ HH	NL		WS	DK	SH	Nds/ HH	NL
Great Cormorant	↑↑	↑	↑↑	↑↑	↑		↓	↓↓	→	→	↓
Eurasian Spoonbill	↑↑	↑↑	↑↑	↑↑	↑↑		↑↑	↑↑	↑↑	↑↑	↑
Barnacle Goose	↑↑	↑↑	↑↑	↑	↑↑		↑	↑	↑	↑	↑
Brent Goose	↓	↓	↓	↓	→		→	↓↓	→	↓	→
Common Shelduck	→	→	↓	↓	↑		→	→	→	↓	↑
Eurasian Wigeon	↓	→	↓	↑	↓		↓	→	↓	→	↓
Common Teal	→	→	→	↓	→		↑	–	↑	–	–
Mallard	↓	↓	↓	↓	→		↓	–	→	→	→
Northern Pintail	↑	–	↑	→	↑		↑	–	↑	–	↑
Northern Shoveler	→	↑	↑	→	→		→	–	↑	→	→
Common Eider (22y trend)	↓	↓	↓	↓	→		↓	–	–	↓↓	→
Eurasian Oystercatcher	↓	→	↓	↓	↓		↓	↓	↓	↓	↓
Pied Avocet	↓	↓	↓	↓	↓		↓	↓	→	↓	↓
Great Ringed Plover	↑	↑	↑	↓	↑		↑	–	↑	↓	↑
Kentish Plover	↓	–	→	↓↓	↓		–	–	–	↓↓	↓
European Golden Plover	↓	↓	↓	→	→		→	↓	→	–	→
Grey Plover	→	↑	↓	↓	↑		→	→	–	↓	→
Northern Lapwing	→	→	↑	→	↑		→	→	↑	→	↑
Red Knot	↓	–	↓	→	↑		→	–	↓	–	↑
Sanderling	↑	→	→	↓	↑↑		↑	–	–	↓	↑
Curlew Sandpiper	→	–	→	↓↓	↑		–	↓↓	–	↓↓	↑
Dunlin	↓	↓	↓	→	↑		↓	↓	↓	→	↑
Ruff	↓	↓↓	↓	–	↓		–	–	→	–	↓↓
Bar-tailed Godwit	→	↓	↓	→	↑		→	→	↓	→	→
Whimbrel	→	↓↓	↑	–	–		→	↓↓	↑	–	–
Eurasian Curlew	→	↑↑	↓	→	→		→	→	→	→	→
Spotted Redshank	↓	→	↓	→	↓		↓	→	↓	→	↓
Common Redshank	↓	→	↓	↓	→		→	–	↓	→	↑
Common Greenshank	→	↑	↓	→	→		→	–	↓	→	→
Ruddy Turnstone	→	↓	→	↑	→		→	↓↓	↓	↑	–
C. Black-headed Gull	↓	↓	→	↓	→		→	↓	↑	↓	→
Common Gull	→	↓	↓	→	↑		→	↓	→	–	–
European Herring Gull	↓	→	↓	↓	↓		↓	→	↓	↓	↓
Great Black-backed Gull	↓	↓	↓	↓	→		↓	↓↓	→	→	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase ↓ moderate decrease → stable – uncertain

WS - Wadden Sea; **DK** - Denmark; **SH** - Schleswig-Holstein; **Nds/HH** - Niedersachsen/Hamburg; **NL** - The Netherlands

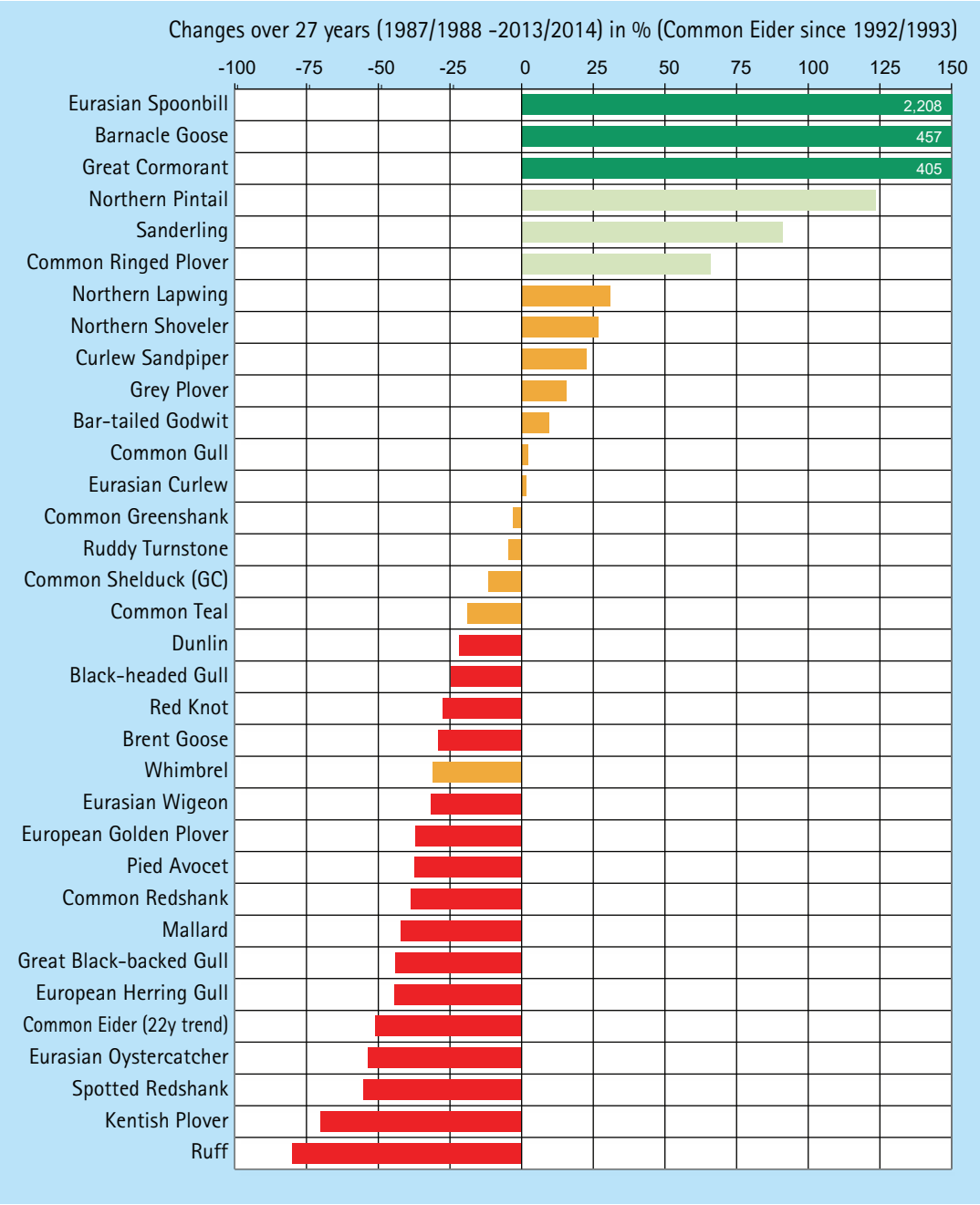
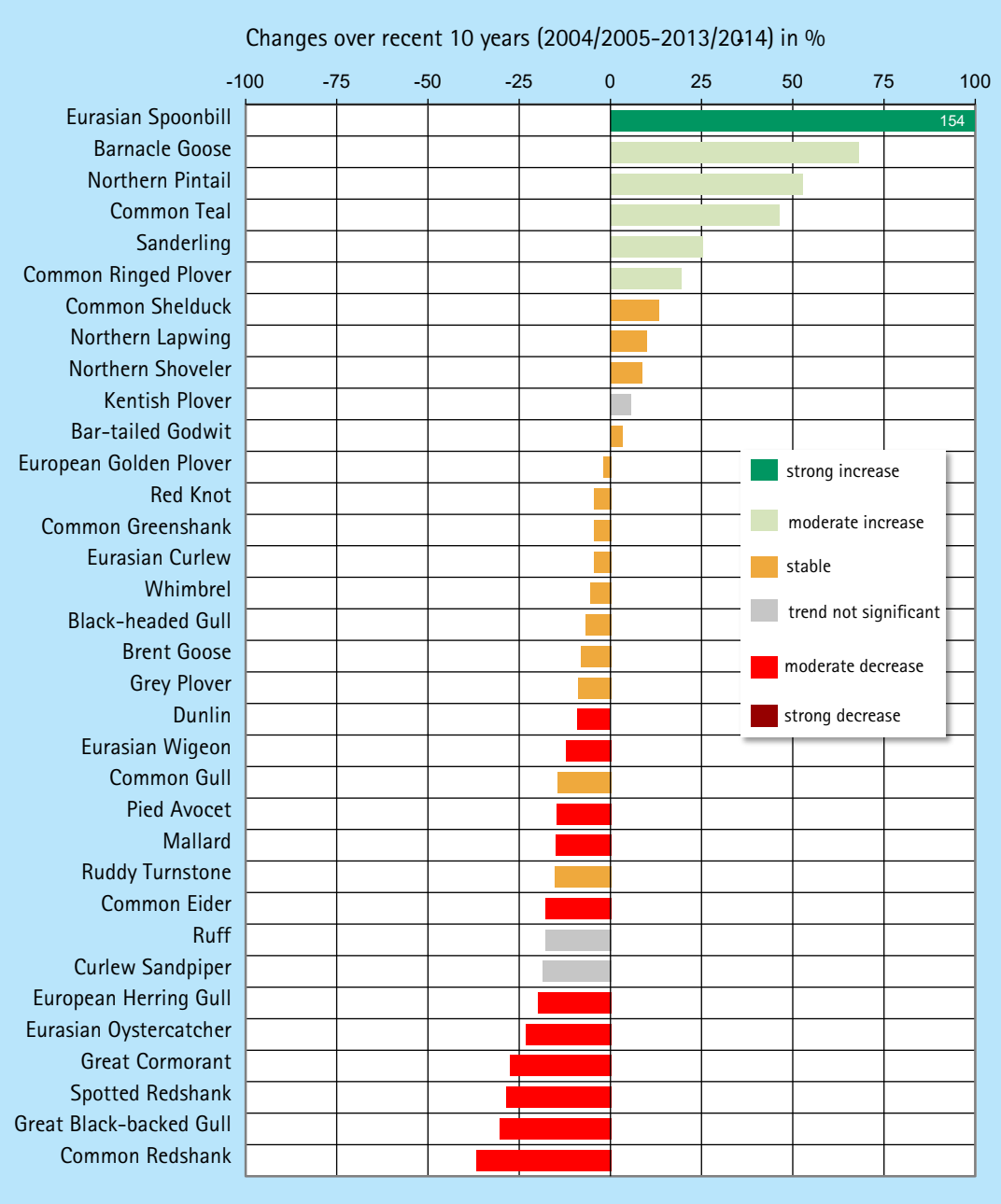


Figure 3.1
Trend categories for the 27-year period for the International Wadden Sea and the four countries, calculated with TrendSpotter on yearly estimates, ranked after trend category and value.

Figure 3.2
Trend categories for the 10-year period for the International Wadden Sea and the four countries, calculated with TrendSpotter on yearly estimates, ranked after trend category and value.



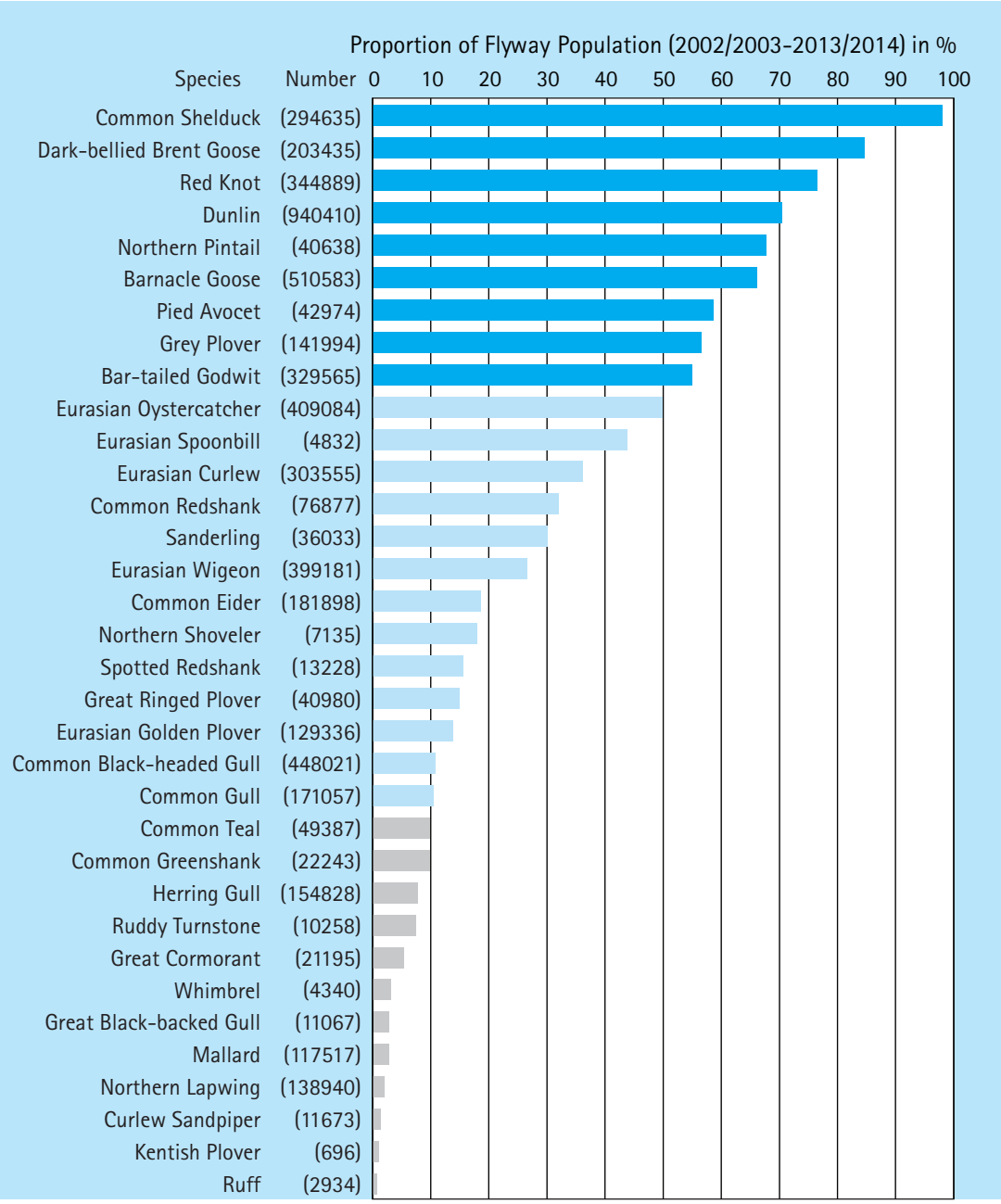


Figure 3.3
Proportion of flyway population with regard to estimated numbers (Wetlands International 2013).

Photo:
Gundolf Reichert

In order to help to identify possible relationships between the species' trends and their ecological traits, trends of single species were combined. Each bird species has been allocated to each of four different guilds, namely food, feeding habitat, breeding and wintering grounds.

The decisions for these allocations have not been clear-cut in all cases; in particular regarding food or feeding habitat, the choice was to pick those which represented the main food or feeding habitat, respectively.

For the combined indices the geometrical mean of species-specific indices have been used.

Results

Food

Species depending on fish show a positive development, while those feeding more or less opportunistically on "other invertebrates" are stable. The herbivorous species seem to decline now after a stable period up to 2000, species feeding on worms or shellfish are on the decline. The only omnivorous species, Greater Black-backed Gull, is also declining.

Feeding Habitat

Species utilizing beaches or tidal areas are stable, and those using the salt marshes have been stable, but are declining during the recent 10 years; the species of the coastal grasslands (European Golden Plover, Northern Lapwing, Ruff) are all on the decline.

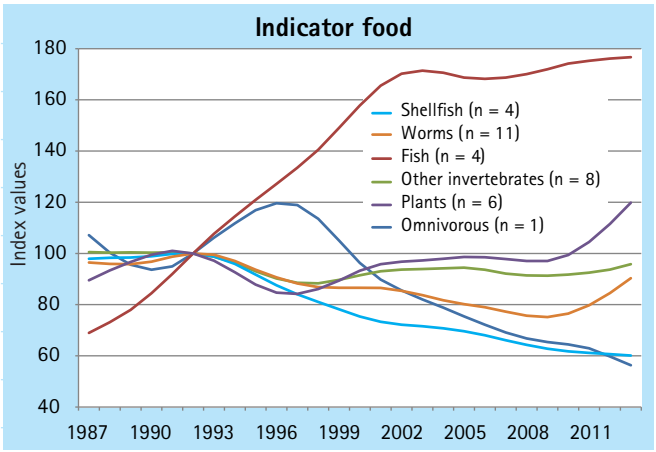
Breeding Range

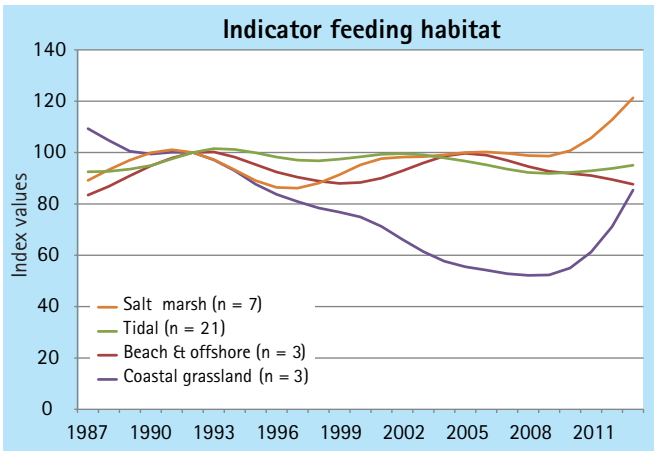
Trends are stable for the arctic breeders and decreasing for the non-arctic breeders.

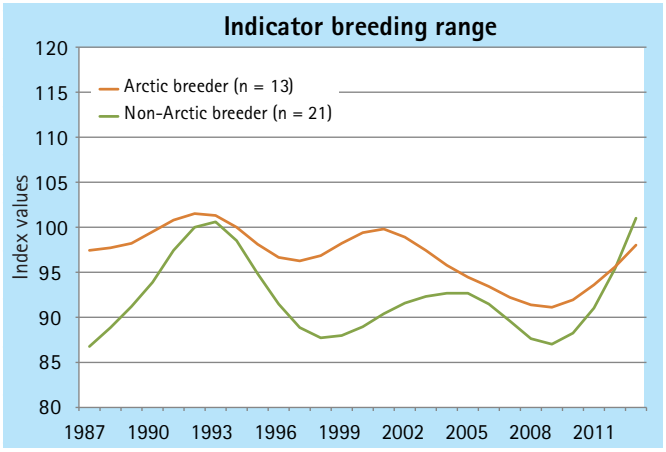
Wintering Range

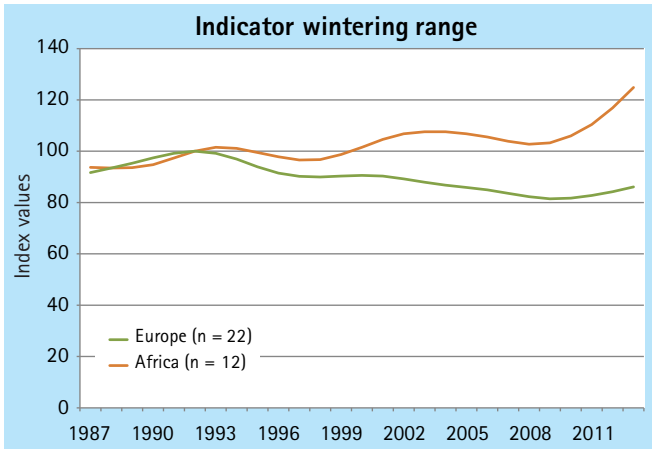
Trends are decreasing for those species wintering in Europe, while those wintering in Africa are even increasing.

Figure 3.4
Combined trends according to food guilds, feeding habitat, breeding range and wintering range (see Table A1.1 & A1.2, p62-63). Trends were aggregated by using the geometrical mean of TrendSpotter trend lines of single species within each category.



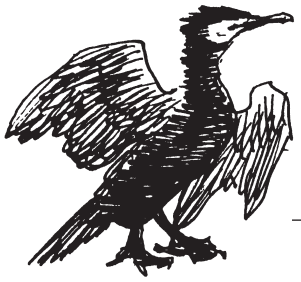






4 Species accounts

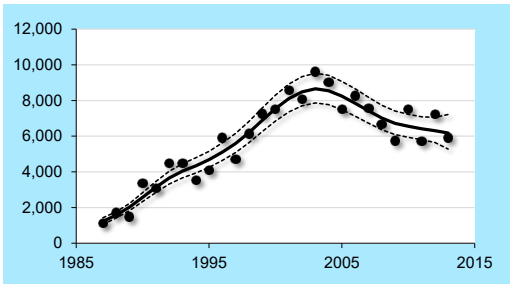
Photo:
Eva Foss Henriksen



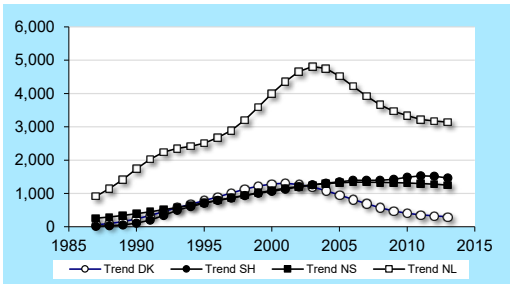
4.1 Great Cormorant

Phalacrocorax carbo 00720

DK: Skarv D: Kormoran NL: Aalscholver



(A) Overall trend in the international Wadden Sea

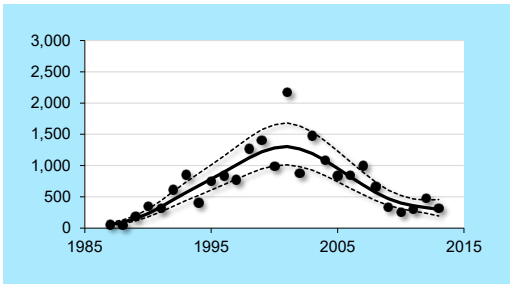


(B) Trends in the different countries compared

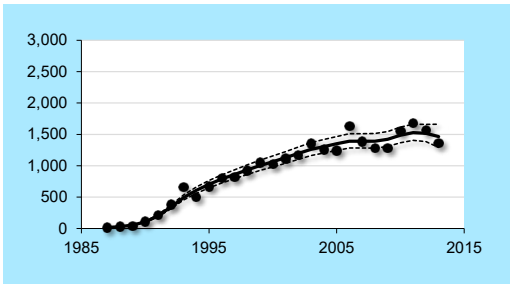
Figure 4.1.1-4.1.6
Trends of Great Cormorant in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

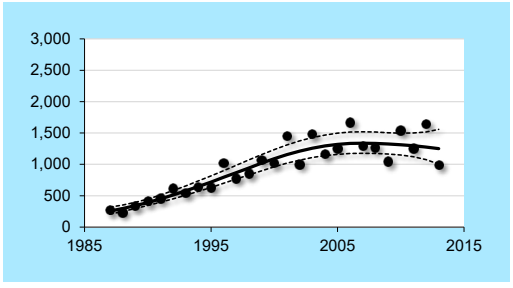
Great Cormorant numbers show a remarkable increase in the Wadden Sea from the 1980s up until 2003 during all seasons, reflecting the increase in the breeding populations in Northern Europe. This long-term increase has recently turned into a sustained decrease mostly in the Netherlands and Denmark, while in Schleswig-Holstein and Niedersachsen/Hamburg trends are stable since. The long-term trend is still an increase.



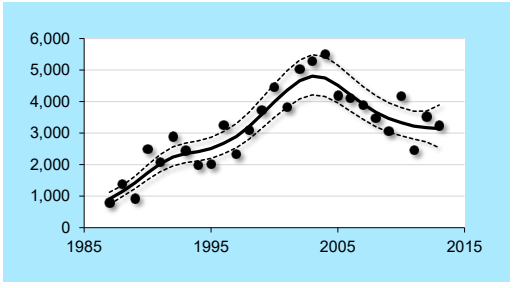
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Great Cormorant in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑↑	↓
(C) Denmark		↑	↓↓
(D) Schleswig-Holstein		↑↑	→
(E) Niedersachsen/Hamburg		↑↑	→
(F) The Netherlands		↑	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

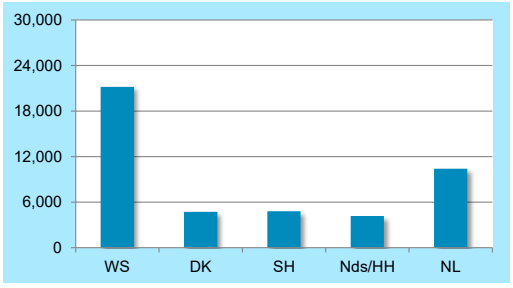
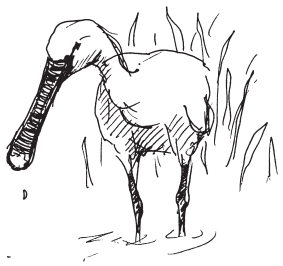


Figure 4.1.7
Absolute numbers of Great Cormorant in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

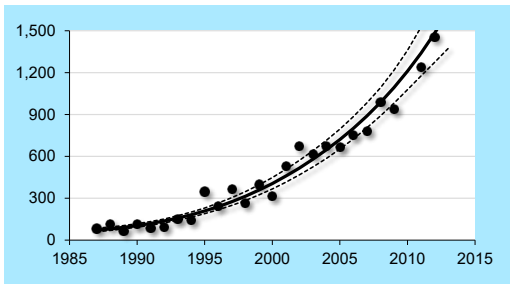


4.2 Eurasian Spoonbill

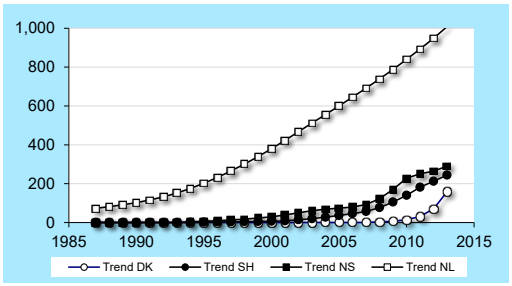
01440

Platalea leucorodia

DK: Skestork **D: Löffler** **NL: Lepelaar**



(A) Overall trend in the international Wadden Sea

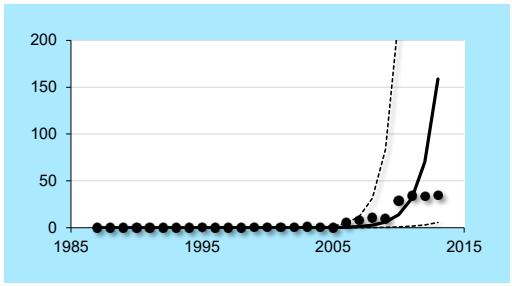


(B) Trends in the different countries compared

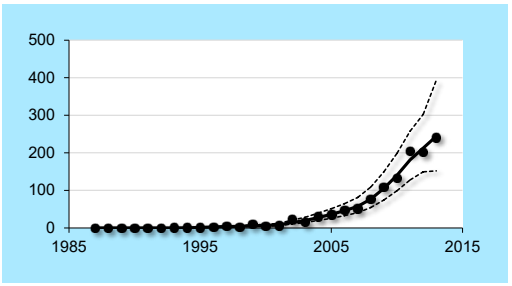
Figure 4.2.1.-4.2.6
Trends of Eurasian Spoonbill in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

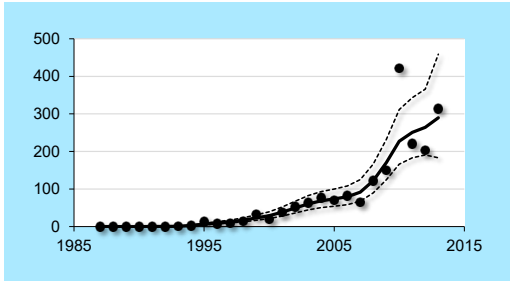
The Wadden Sea is near the northern border of the **Eurasian Spoonbill** breeding range, but numbers increase up to now especially in the Netherlands, but also in Niedersachsen/Hamburg and Schleswig-Holstein. The non-breeding numbers reflect the breeding population and numbers are increasing in all parts of the Wadden Sea. This species is both long and short term the species with the strongest increase.



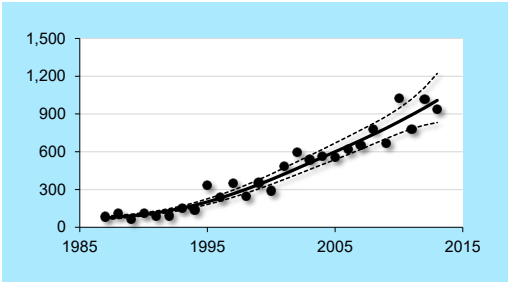
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

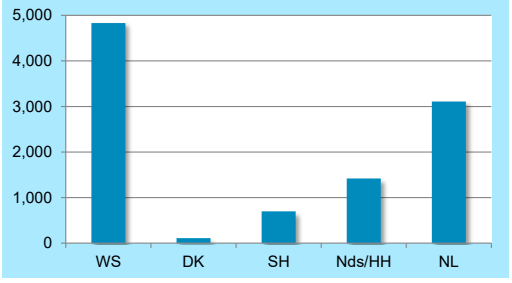
Trends for Eurasian Spoonbill in the Wadden Sea

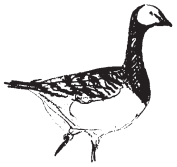
Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑↑	↑↑
(C) Denmark		↑↑	↑↑
(D) Schleswig-Holstein		↑↑	↑↑
(E) Niedersachsen/Hamburg		↑↑	↑↑
(F) The Netherlands		↑↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

Figure 4.2.7
Absolute numbers of Eurasian Spoonbill in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

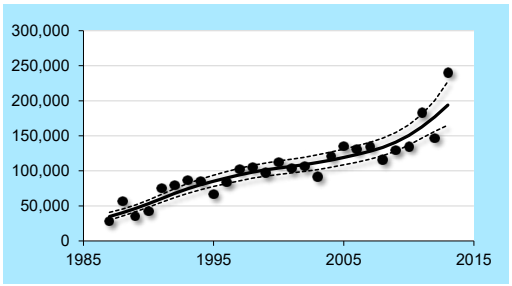




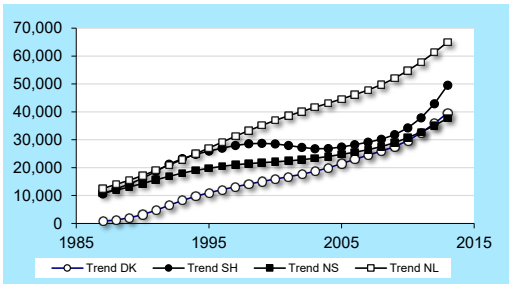
4.3 Barnacle Goose

Branta leucopsis 01670

DK: Bramgås D: Weißwangengans NL: Brandgans



(A) Overall trend in the international Wadden Sea

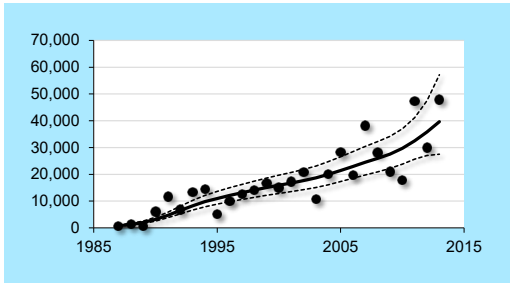


(B) Trends in the different countries compared

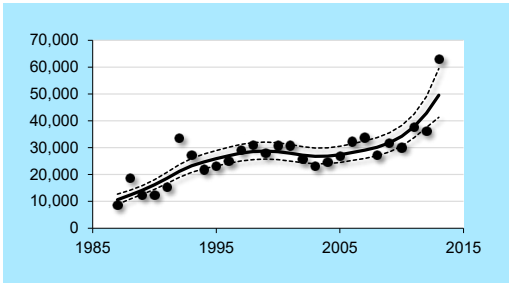
Figure 4.3.1-4.3.6
Trends of Barnacle Goose in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

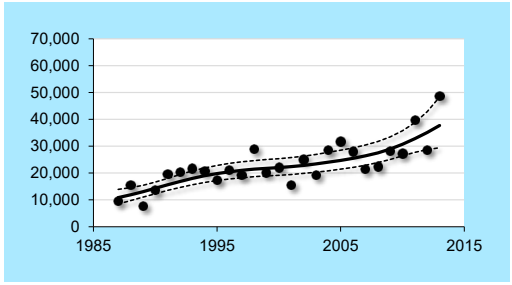
The **Barnacle Goose** flyway population is increasing, and this trend is also clearly reflected by the numbers in the Wadden Sea. Though fluctuations occur in Niedersachsen/Hamburg and the Netherlands, the short-term trend estimate is stable. During the last season 2013/2014 highest numbers ever have been registered in all but Denmark. During the last 10 years the species has prolonged its staging period in spring and its departure has moved into May.



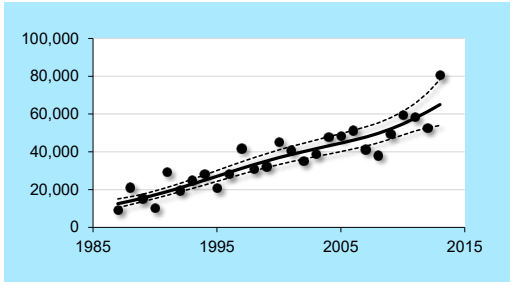
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Barnacle Goose in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑↑	↑
(C) Denmark		↑↑	↑
(D) Schleswig-Holstein		↑↑	↑
(E) Niedersachsen/Hamburg		↑	↑
(F) The Netherlands		↑↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

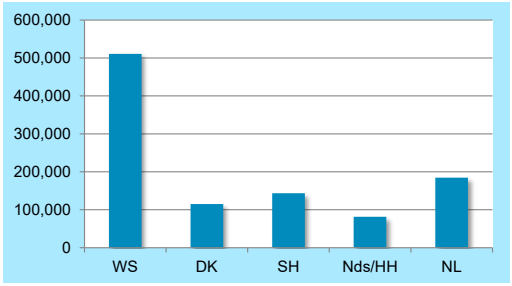


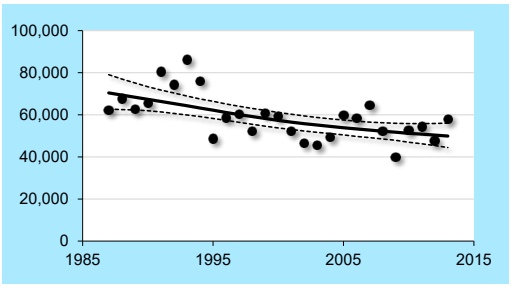
Figure 4.3.7
Absolute numbers of Barnacle Goose in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.4 Dark-bellied Brent Goose

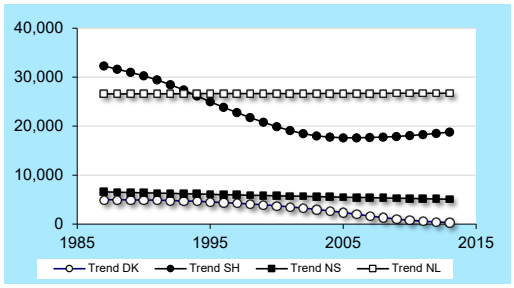
01680

Branta bernicla bernicla

DK: Mørkbuget Knortegås D: Dunkelbäuchige Ringelgans NL: Rotgans



(A) Overall trend in the international Wadden Sea

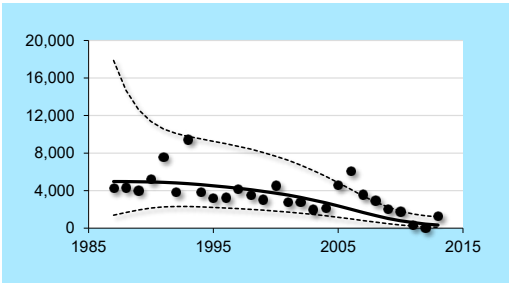


(B) Trends in the different countries compared

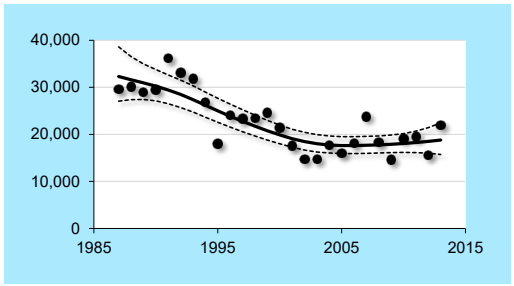
Figure 4.4.1-4.4.6
Trends of Dark-bellied Brent Goose in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

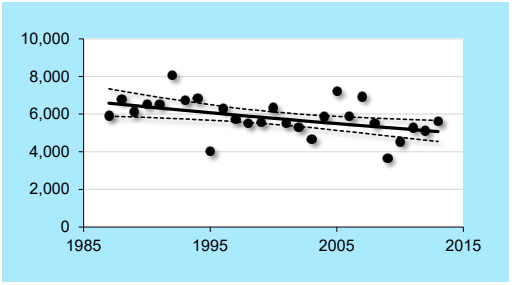
The **Dark-bellied Brent Goose** population has increased until the mid 1990s and decreased afterwards. A slow decrease ensued, but fluctuations resulted in both stable and decreasing trends over the last 20 years. As numbers were higher during the last season, the short-term trend is now stable owing to the Netherlands and Schleswig-Holstein, but the long-term trend is still a decrease.



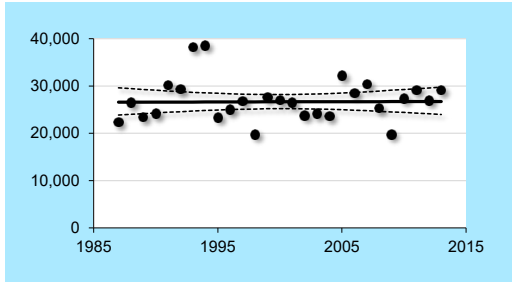
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

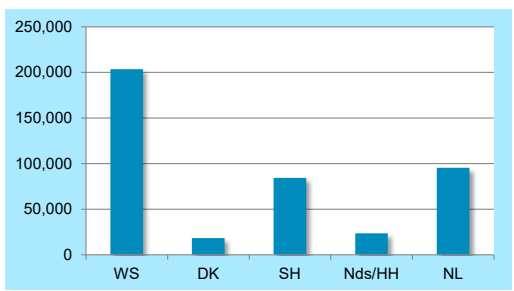
Trends for Dark-bellied Brent Goose in the Wadden Sea

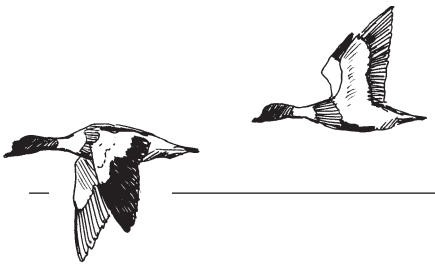
Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		↓	↓↓
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		→	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

Figure 4.4.7
Absolute numbers of Dark-bellied Brent Goose in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

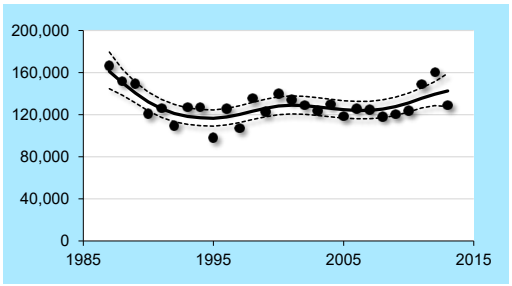




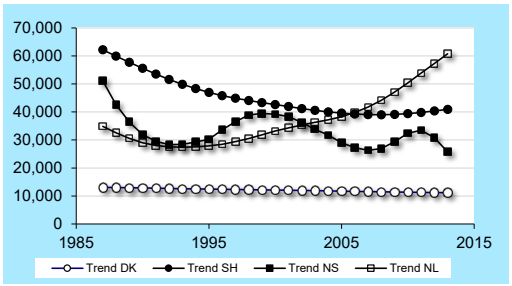
4.5 Common Shelduck

Tadorna tadorna 01730

DK: Gravand D: Brandgans NL: Bergeend



(A) Overall trend in the international Wadden Sea



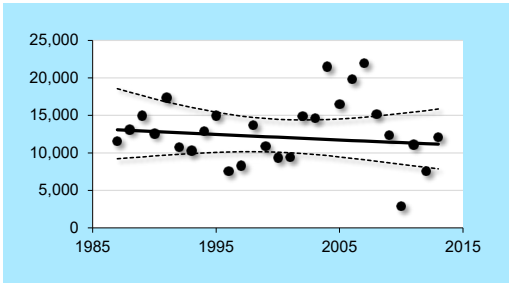
(B) Trends in the different countries compared

Figure 4.5.1-4.5.6 Trends of CommonShelduck in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

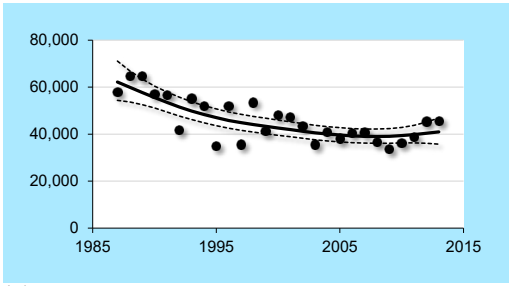
Explanatory Note

Some 80% of the **Common Shelduck** flyway population can be found in the Wadden Sea. Overall numbers – counted from the ground throughout the year - decreased up to the mid 1990´s; from then on slow fluctuations occur. Recent increases mostly in the Netherlands and less clear in Schleswig-Holstein combined with decreases in Niedersachsen/Hamburg and fluctuations in Denmark lead to an overall stable trend.

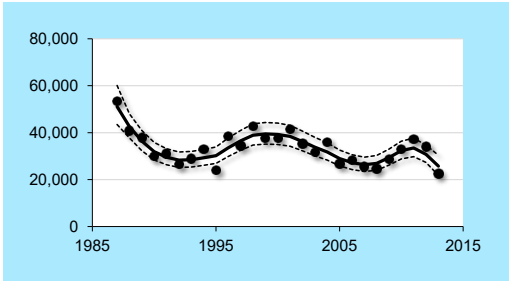
The **Shelduck** moulting population, with its main concentration in the Schleswig-Holstein Wadden Sea, has been increasing up to 2000, and then continuously decreasing up to 2009; ever since numbers fluctuate on a higher level. The long-term trend is now increasing, but the short-term trend stable. A new moulting area has been established in the Dutch Wadden Sea, resulting in overall stable numbers of moulting Shelduck.



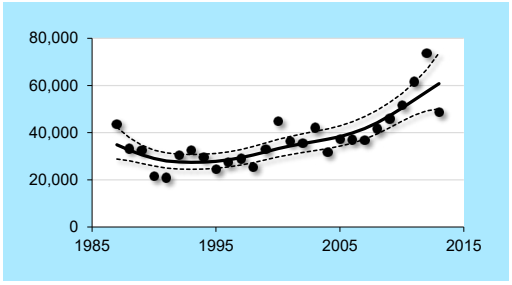
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Shelduck in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		➡	➡
(D) Schleswig-Holstein		↓	➡
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable uncertain

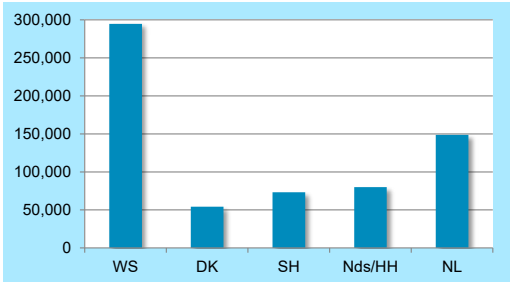
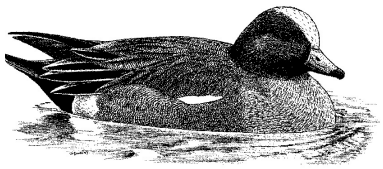


Figure 4.5.7 Absolute numbers of Common Shelduck in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

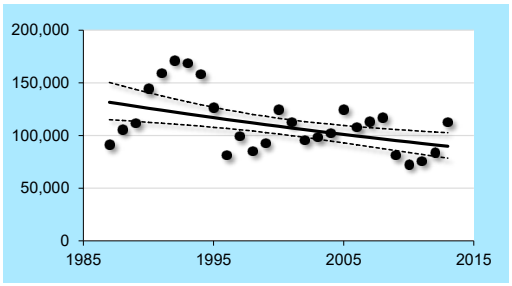


4.6 Eurasian Wigeon

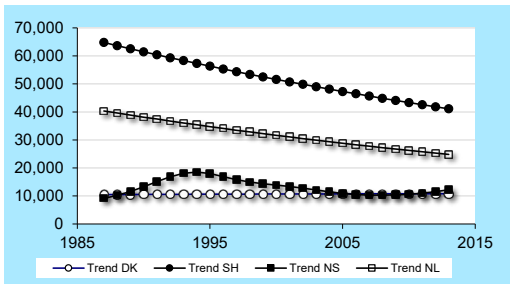
01790

Anas penelope

DK: Pibeand **D: Pfeifente** **NL: Smient**



(A) Overall trend in the international Wadden Sea

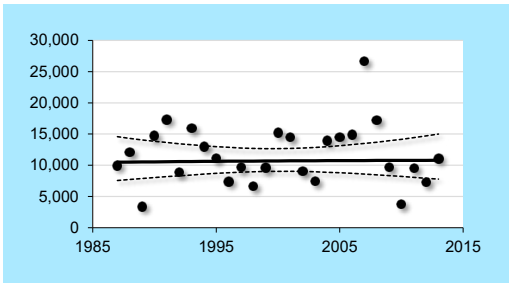


(B) Trends in the different countries compared

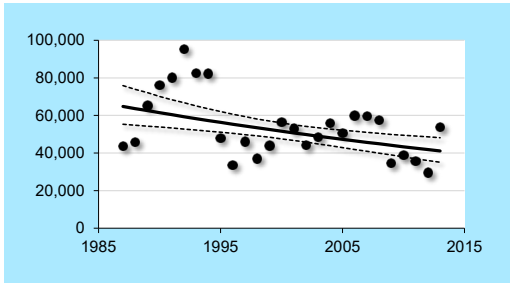
Figure 4.6.1-4.6.6 Trends of Eurasian Wigeon in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

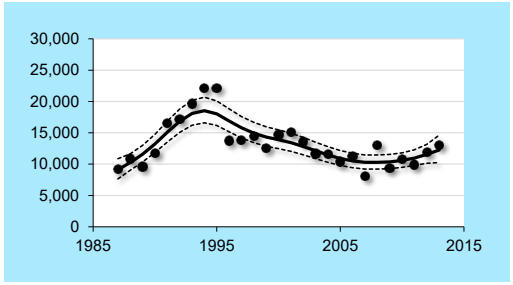
The trend of the **Wigeon** has seen increasing numbers in all regions of the Wadden Sea up to the mid 1990s; following two cold winters in 1996 and 1997 overall numbers never reached the past maximum numbers, but fluctuated at a lower level with an overall decrease mainly in Schleswig-Holstein and the Netherlands, the two regions with the highest numbers. Thus both overall Wadden Sea trends are decreasing.



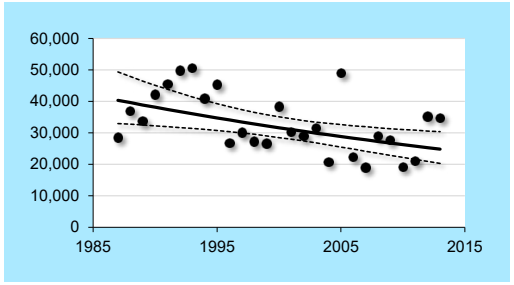
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Eurasian Wigeon in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		→	→
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		↑	→
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

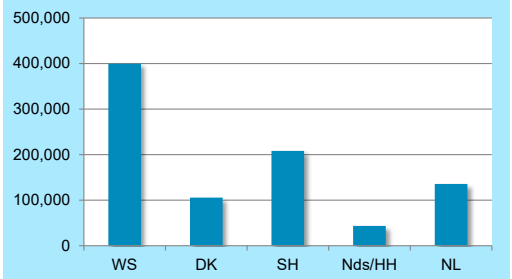
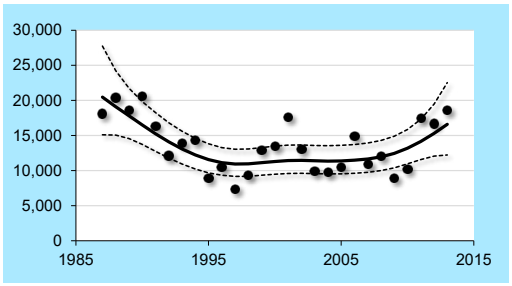


Figure 4.6.7 Absolute numbers of Eurasian Wigeon in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

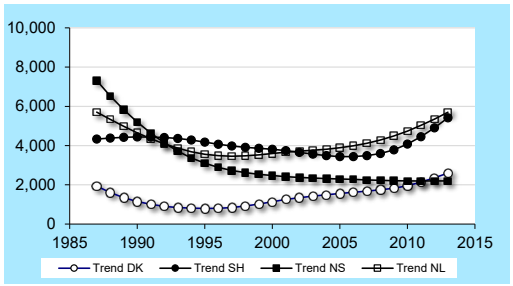
4.7 Common Teal

Anas crecca 01840

DK: Krikand D: Krickente NL: Wintertaling



(A) Overall trend in the international Wadden Sea

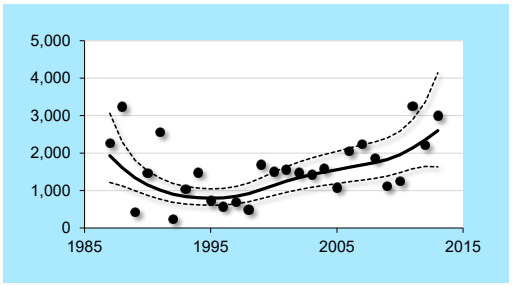


(B) Trends in the different countries compared

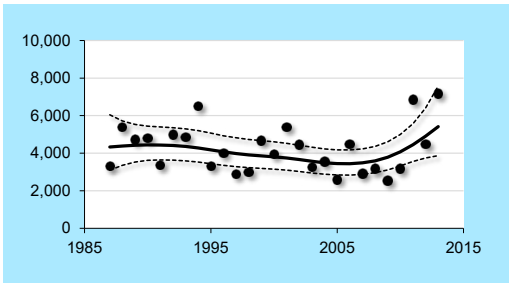
Figure 4.7.1-4.7.6
Trends of Common Teal in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

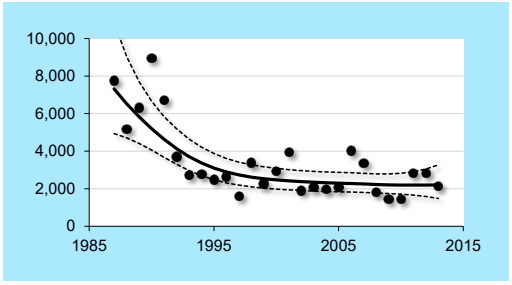
Only fractions of the large flyway population of the **Common Teal** are counted in the Wadden Sea. Thus, trends in the Wadden Sea depend more on climate and habitat availability than on flyway trends. The flyway population is increasing, in the Wadden Sea the current trend, after a decrease up to the mid 1990s, is unclear. High numbers in the recent thre seasons result in an increasing short term and a stable long-term trend.



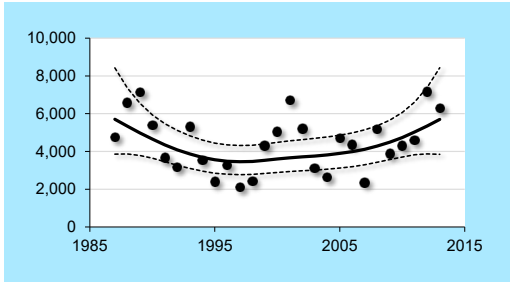
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Teal in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		→	↑
(C) Denmark		→	–
(D) Schleswig-Holstein		→	↑
(E) Niedersachsen/Hamburg		↓	–
(F) The Netherlands		→	–

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

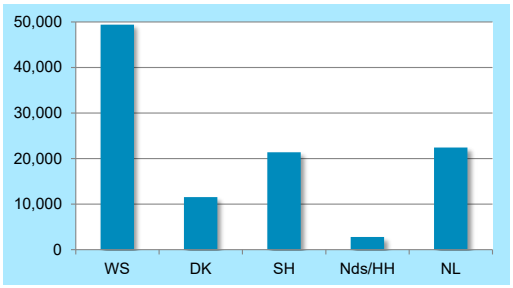


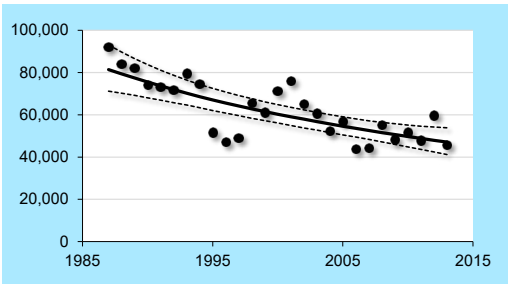
Figure 4.7.7
Absolute numbers of Common Teal in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.8 Mallard

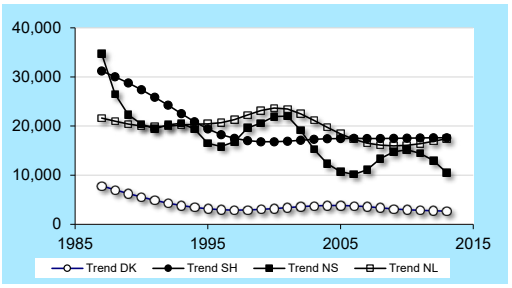
01860

Anas platyrhynchos

DK: Gråand **D: Stockente** **NL: Wilde Eend**



(A) Overall trend in the international Wadden Sea

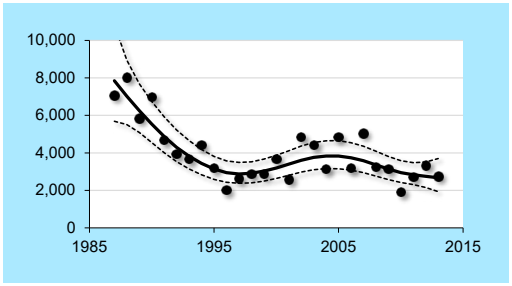


(B) Trends in the different countries compared

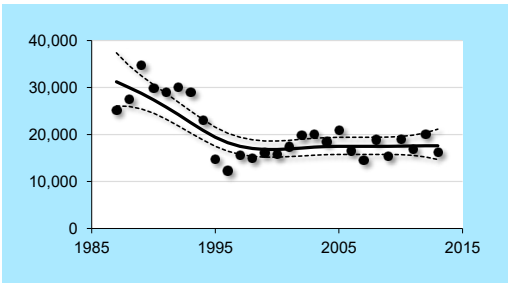
Figure 4.8.1-4.8.6
Trends of Mallard in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

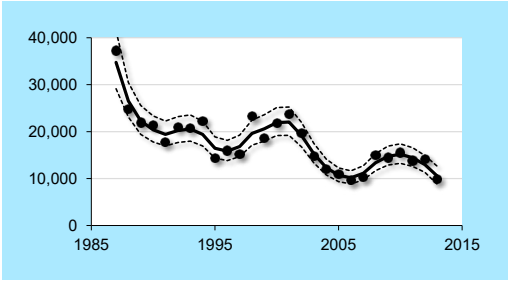
The **Mallard** is counted in the Wadden Sea with less than 5% of its flyway populations. The overall trends are moderate but long-lasting decreases in the entire Wadden Sea; while trends of the northern region (DK, SH) stabilized, in the southern region (LS, NL) the short term trend is stable, though with large fluctuations in LS.



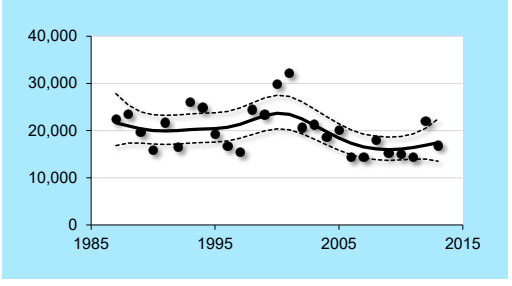
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

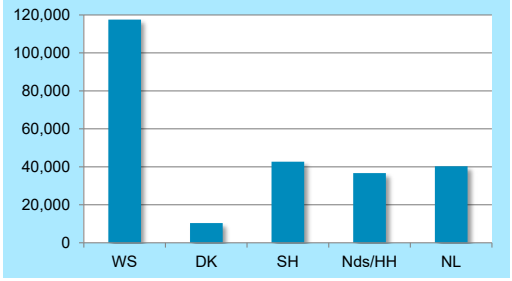
Trends for Mallard in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.8.7
Absolute numbers of Mallard in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		↓	–
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		↓	→
(F) The Netherlands		→	→

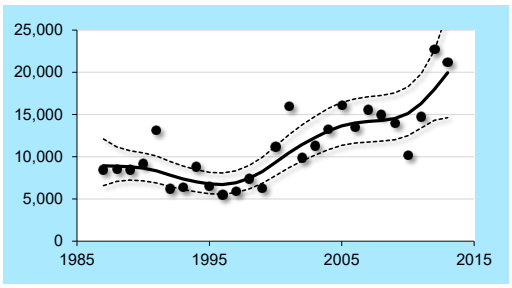
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain



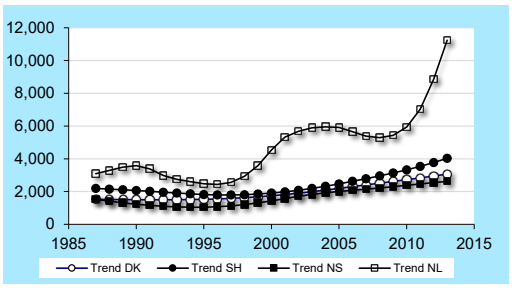
4.9 Northern Pintail

Anas acuta 01890

DK: Spidsand D: Spießente NL: Pijlstaart



(A) Overall trend in the international Wadden Sea

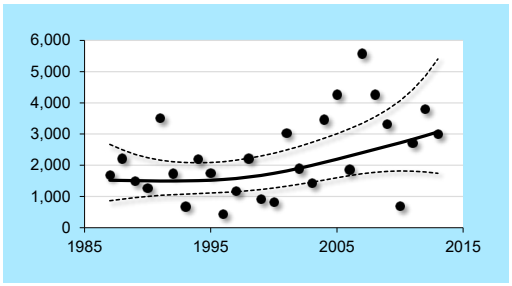


(B) Trends in the different countries compared

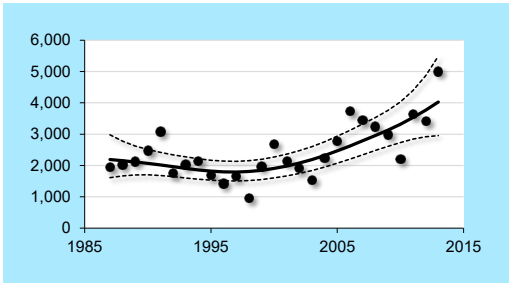
Figure 4.9.1-4.9.6
Trends of Northern Pintail in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

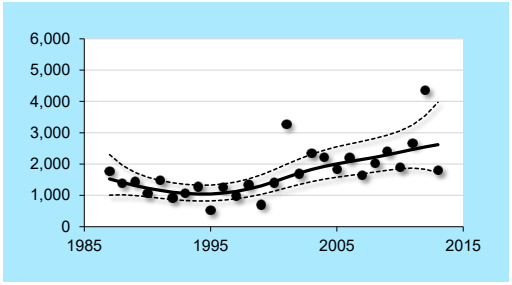
While the **Northern Pintail** flyway population trend is stable, the developments in the Wadden Sea, however, holding up to 50% of the flyway population, show large fluctuations, resulting, however, in long and short-term increasing trends in most regions. With generally higher numbers during the last 15 years compared to the period below, and recent high results in all regions but Denmark an increase – yet not significant – is indicated.



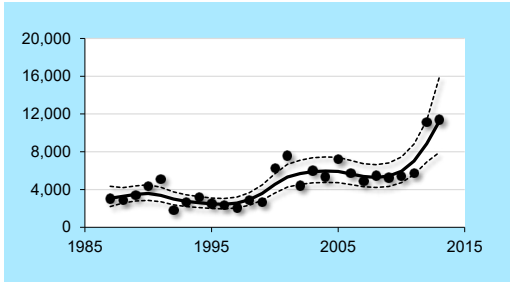
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Northern Pintail in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑	↑
(C) Denmark		–	–
(D) Schleswig-Holstein		↑	↑
(E) Niedersachsen/Hamburg		→	–
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

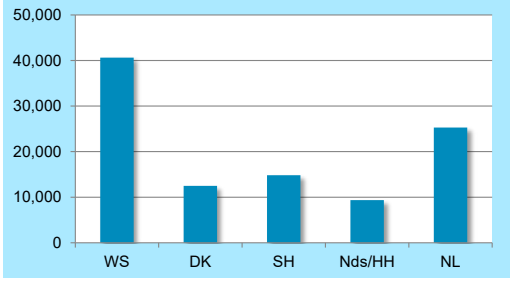


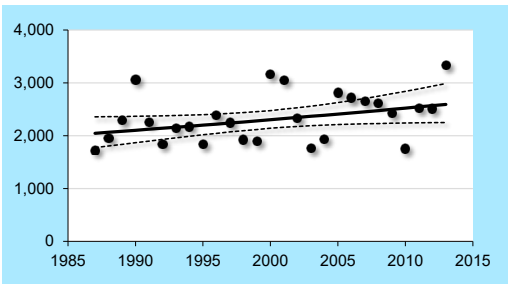
Figure 4.9.7
Absolute numbers of Northern Pintail in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.10 Northern Shoveler

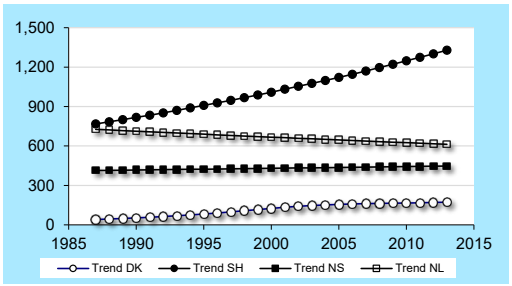
01940

Anas clypeata

DK: Skeand **D: Löffelente** **NL: Slobeend**



(A) Overall trend in the international Wadden Sea

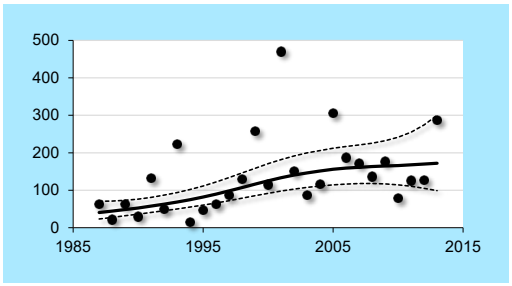


(B) Trends in the different countries compared

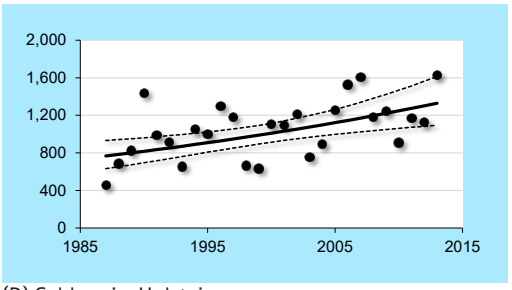
Figure 4.10.1-4.10.6 Trends of Northern Shoveler in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

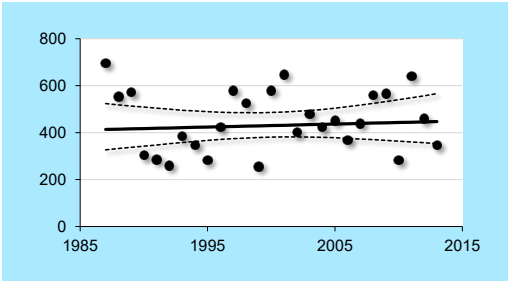
The numbers of **Northern Shoveler** using the Wadden Sea represent some 20% of the flyway population which is increasing. The overall Wadden Sea trend is stable, with a positive indication in particular to Schleswig-Holstein numbers. The Dutch trend looks slightly decreasing, but recent high counts suggest a stable or positive development.



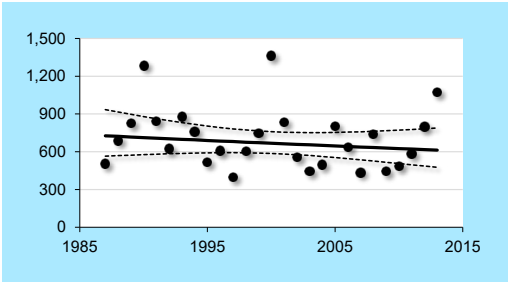
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

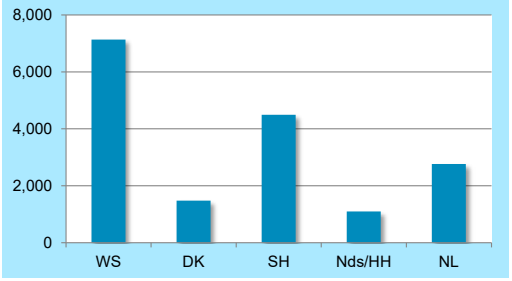
Trends for Northern Shoveler in the Wadden Sea

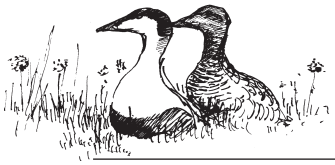
Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.10.7 Absolute numbers of Northern Shoveler in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		↑	–
(D) Schleswig-Holstein		↑	↑
(E) Niedersachsen/Hamburg		➡	➡
(F) The Netherlands		➡	➡

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable – uncertain

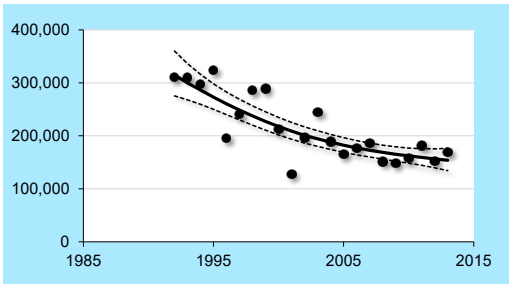




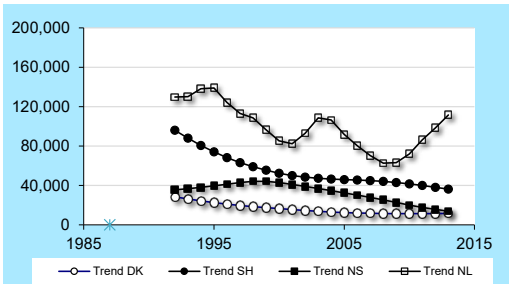
4.11 Common Eider

Somateria mollissima 02060

DK: Ederfugl D: Eiderente NL: Eidereend



(A) Overall trend in the international Wadden Sea

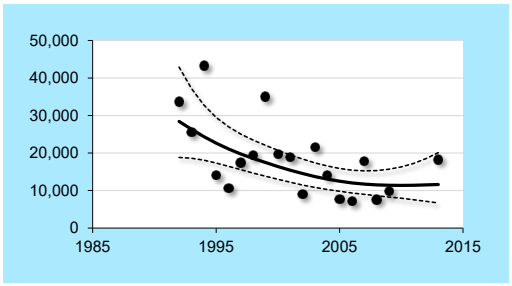


(B) Trends in the different countries compared

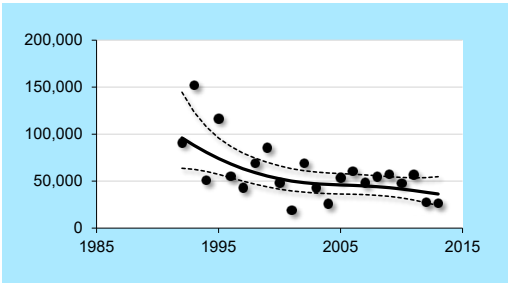
Figure 4.11.1-4.11.6 Trends of Common Eider in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

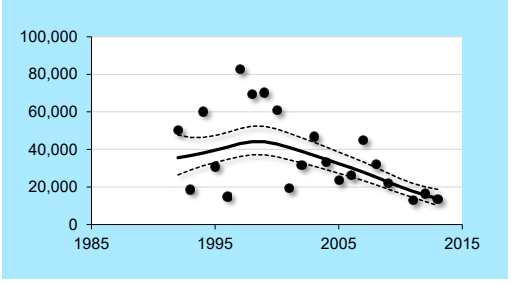
Common Eider numbers counted from the airplane at mid winter (only since 1993) were stable in the Wadden Sea for the first years up to 1995/1996 and continuously decreased thereafter. Since 2005 numbers seem to stabilize overall; while counts in Schleswig-Holstein (particularly low in 2013 and 2014) and Niedersachsen/Hamburg are rather low, increasing numbers in the Netherlands since 2009 seem to compensate for this.



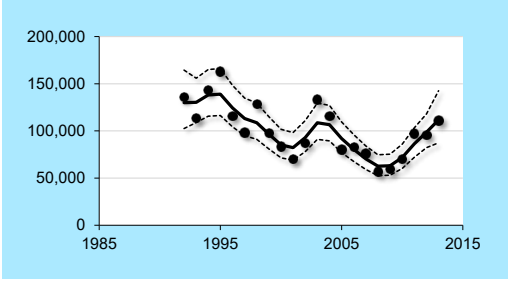
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Eider in the Wadden Sea

Figures represent the trend 1992/1993 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	*1992/93* - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		↓	–
(D) Schleswig-Holstein		↓	–
(E) Niedersachsen/Hamburg		↓	↓↓
(F) The Netherlands		→	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

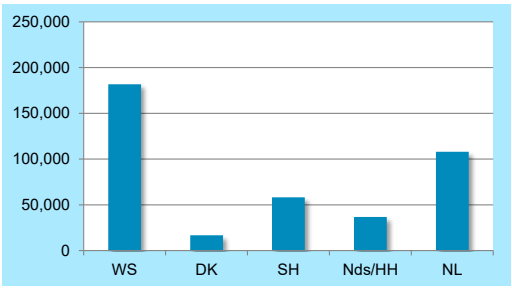


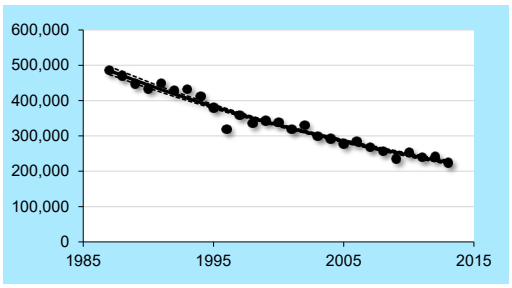
Figure 4.11.7 Absolute numbers of Common Eider in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014. Numbers are derived by aerial counts.

4.12 Eurasian Oystercatcher

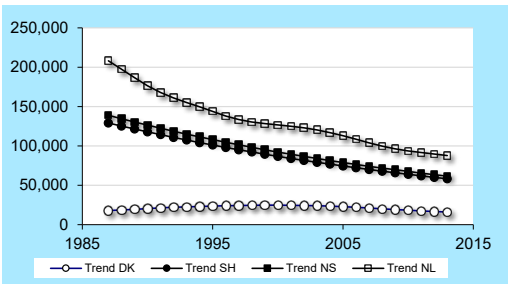
04500

Haematopus ostralegus

DK: Strandskade D: Austernfischer NL: Scholekster



(A) Overall trend in the international Wadden Sea

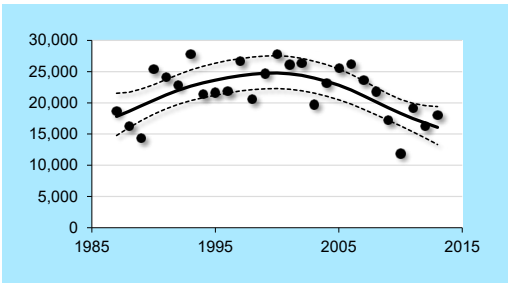


(B) Trends in the different countries compared

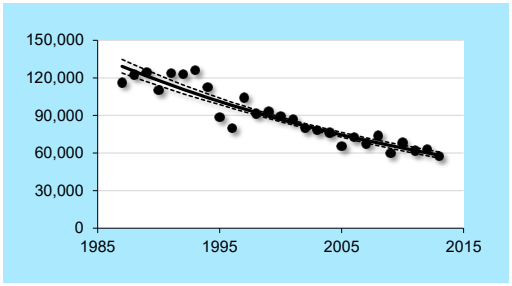
Figure 4.12.1-4.12.6 Trends of Eurasian Oystercatcher in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

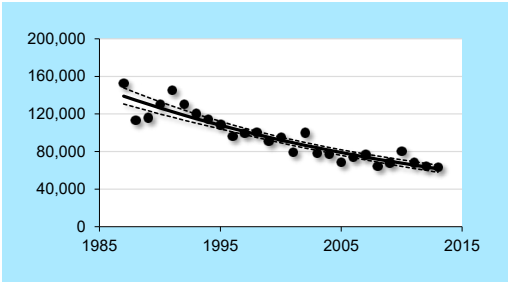
Up to 50% of the **Eurasian Oystercatcher** flyway population can be counted in the Wadden Sea. Like the flyway population, the overall Wadden Sea numbers show a striking continuous and long-lasting decrease also in all regions. The last seasons added lower points to all figures, leading to an estimated decrease of some 50% of the numbers at the start of the monitoring in 1987/1988. This is reflected by the development of maximum estimates in the Wadden Sea; 739,000 Oystercatchers had been estimated for period 1980 – 1991 (Meltofte et al. 1994), 582,000 for the period 1992-2000 (Blew et al. 2005), while the most recent estimate for the period 2004/2005 to 2013/2014 is only 409,000 individuals.



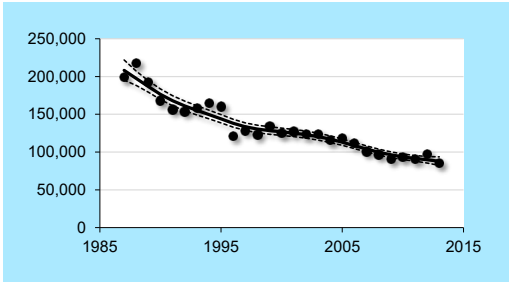
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Eurasian Oystercatcher in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		→	↓
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

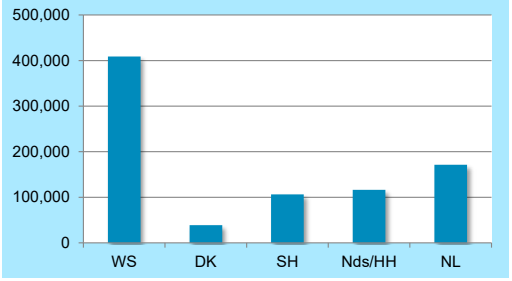
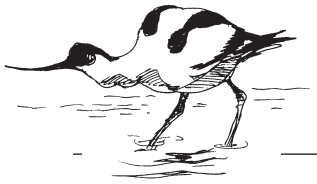


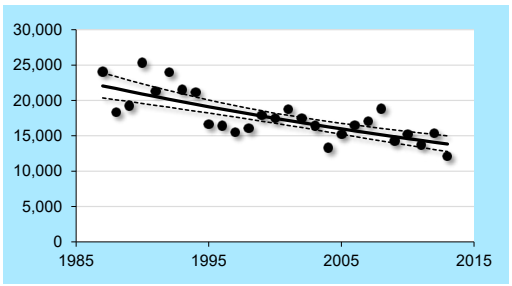
Figure 4.12.7 Absolute numbers of Eurasian Oystercatcher in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.



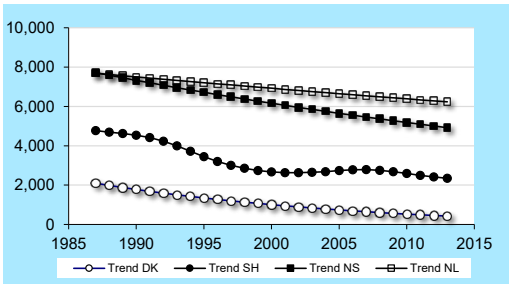
4.13 Pied Avocet

Recurvirostra avosetta 04560

DK: Klyde D: Säbelschnäbler NL: Kluut



(A) Overall trend in the international Wadden Sea

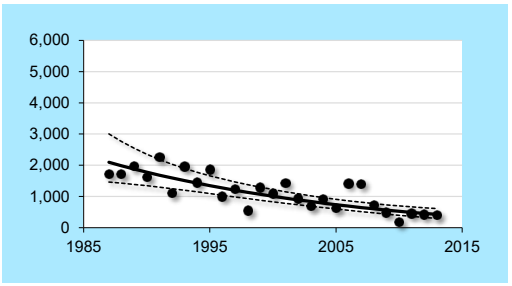


(B) Trends in the different countries compared

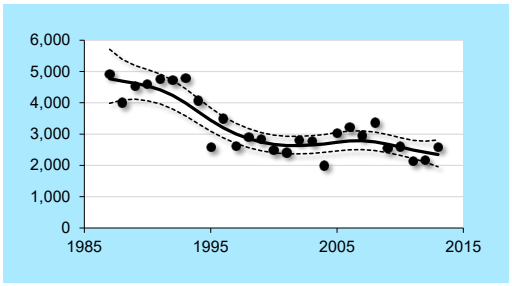
Figure 4.13.1-4.13.6 Trends of Pied Avocet in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

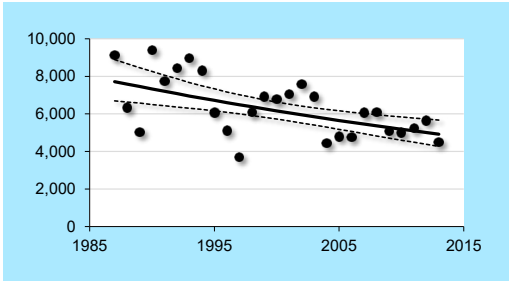
Peak numbers of **Pied Avocet** occur during autumn, when more than 50% of its flyway population can be found in the Wadden Sea. The trend for the flyway population is stable (but this assessment is not certain). The overall trend in the Wadden Sea is a moderate but continuous decrease. Even though results since 1995 indicate a fluctuating but stable situation, recent low estimates lead to a decreasing trend in all but Schleswig-Holstein. As maximum estimates in the Wadden Sea have not changed accordingly, the trend might to represent lower residence time (bird days) in the Wadden Sea region.



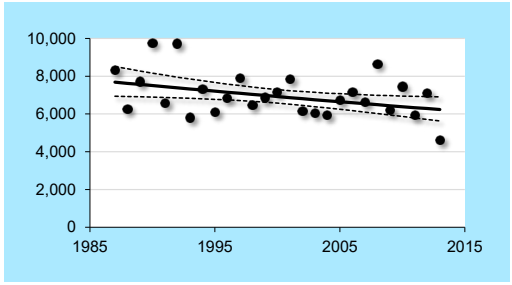
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Pied Avocet in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		↓	↓
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

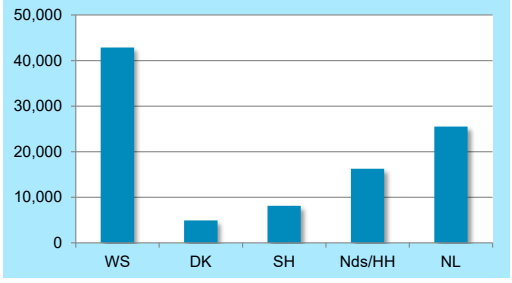
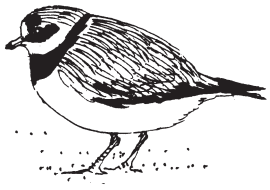


Figure 4.13.7 Absolute numbers of Pied Avocet in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

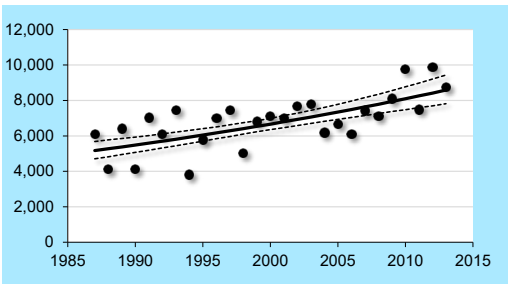


4.14 Great Ringed Plover

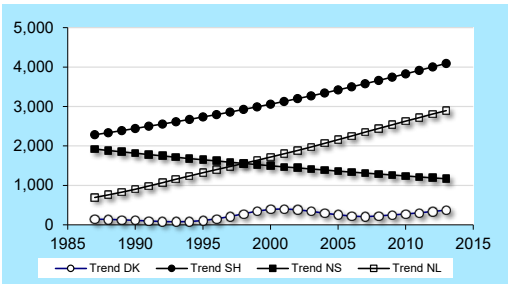
04700

Charadrius hiaticula

DK: Stor Præstekrave D: Sandregenpfeifer NL: Bontbekplevier



(A) Overall trend in the international Wadden Sea

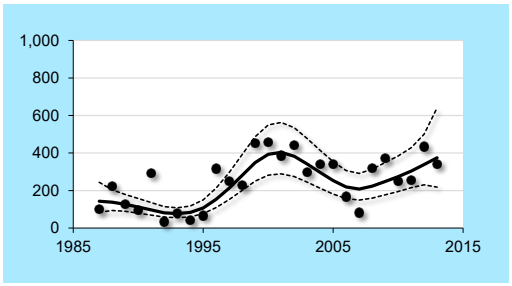


(B) Trends in the different countries compared

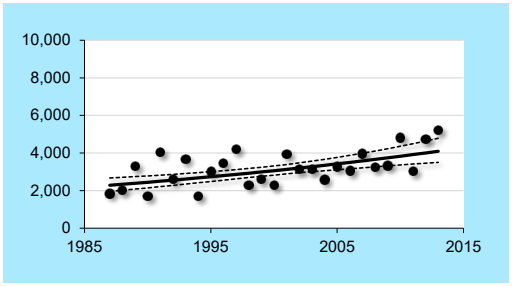
Figure 4.14.1-4.14.6 Trends of Great Ringed Plover in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

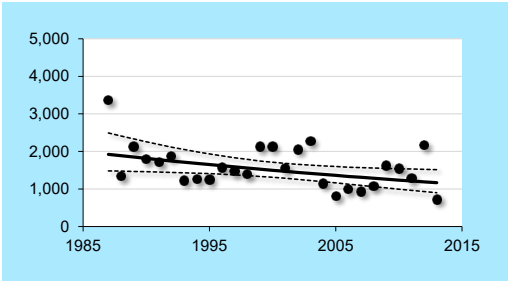
Three populations of **Great Ringed Plover** pass the Wadden Sea during migration, *C. h. hiaticula* being present from October to April, but large numbers of both arctic breeding populations *C. h. tundrae* and *C. h. psammodroma* come through during May. Overall results for the species are showing a moderate increase over the long run for the entire Wadden Sea; the exception is Niedersachsen/Hamburg where fluctuating and decreasing.



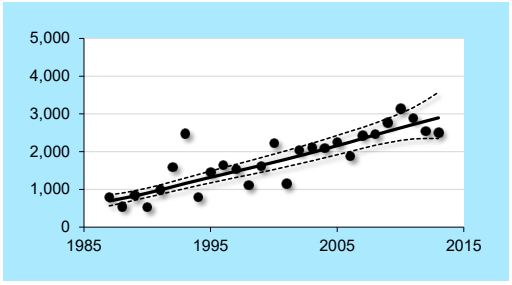
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

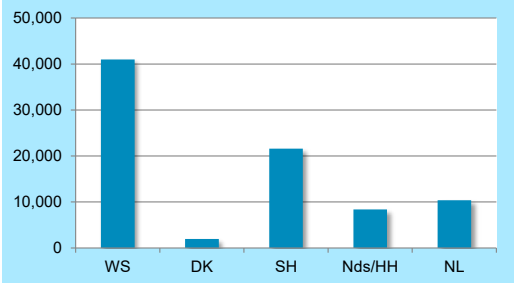
Trends for Great Ringed Plover in the Wadden Sea

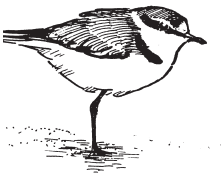
Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.14.7 Absolute numbers of Great Ringed Plover in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑	↑
(C) Denmark		↑	–
(D) Schleswig-Holstein		↑	↑
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

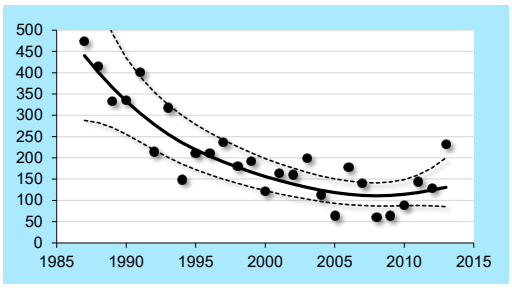




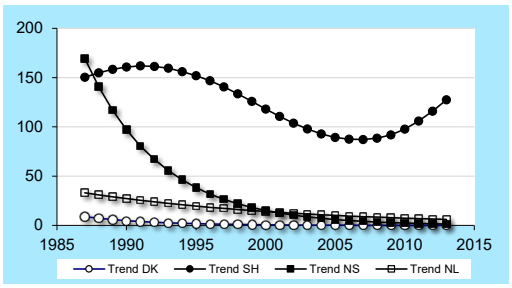
4.15 Kentish Plover

Charadrius alexandrinus 04770

DK: Hvidbrystet Præstekrave D: Seeregenpfeifer NL: Strandplevier



(A) Overall trend in the international Wadden Sea

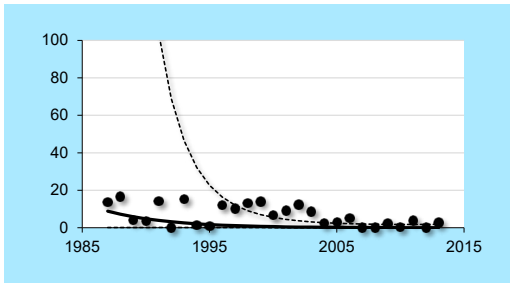


(B) Trends in the different countries compared

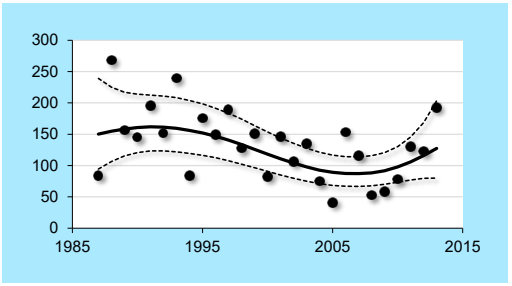
Figure 4.15.1-4.15.6 Trends of Kentish Plover in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

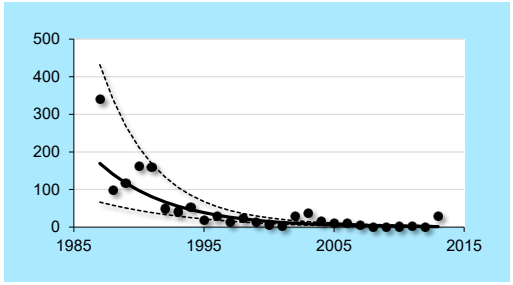
For the **Kentish Plover**, the Wadden Sea holds less than 1% of the entire flyway population, and overall very low numbers are registered during the synchronous counts. Both during spring and autumn these birds represent the local breeding population. Most trends in the overall Wadden Sea and it's regions are decreasing both in the long- and short-term; in Niedersachsen/Hamburg almost no birds are counted recently; in Schleswig-Holstein a recent higher count accounts for a stable trend estimate.



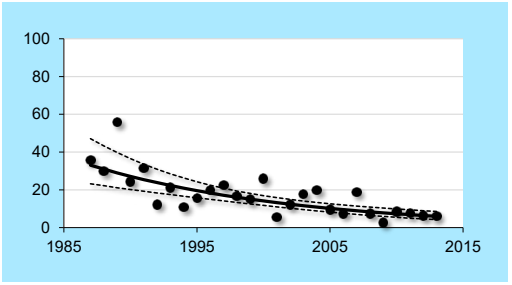
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Kentish Plover in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	–
(C) Denmark		–	–
(D) Schleswig-Holstein		→	–
(E) Niedersachsen/Hamburg		↓↓	↓↓
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

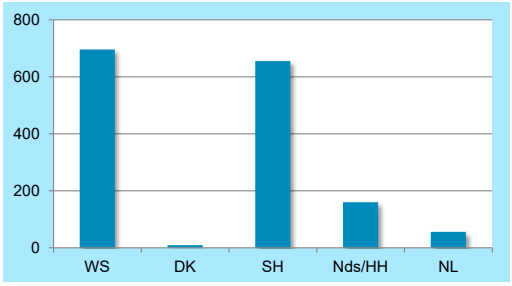


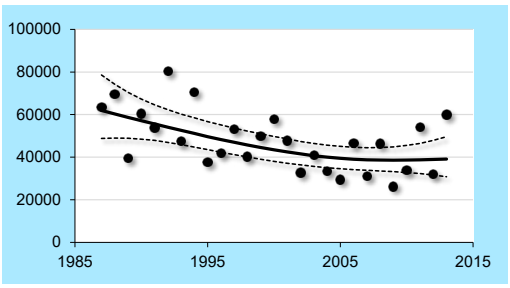
Figure 4.15.7 Absolute numbers of Kentish Plover in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.16 European Golden Plover

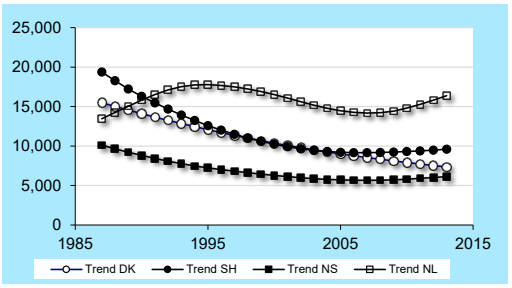
04850

Pluvialis apricaria

DK: Hjejle D: Goldregenpfeifer NL: Goudplevier



(A) Overall trend in the international Wadden Sea

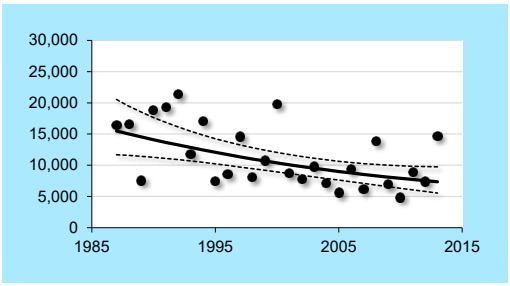


(B) Trends in the different countries compared

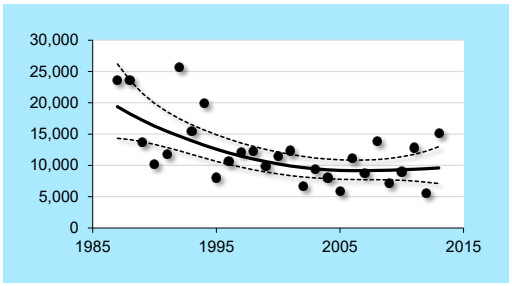
Figure 4.16.1-4.16.6 Trends of European Golden Plover in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

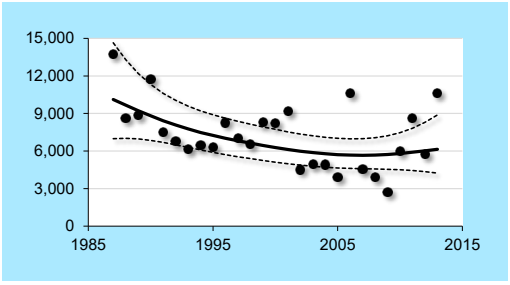
Of the **European Golden Plover**, three sub-populations may occur in the Wadden Sea, with the largest share belonging to the sub-population P. a. altifrons, which breeds in Northern Europe and winters in Central and Western Europe and North-West Africa. No method exists to distinguish Golder Plover populations during the counts (areas, counting month). Only a small part of the Golder Plover populations are covered by the coordinated counts in the Wadden Sea. The overall trend in the Wadden Sea and its regions is decreasing in the long-term trend, but currently stable in the short-term trends due to recent high estimates; consequently, only Denmark shows negative trends.



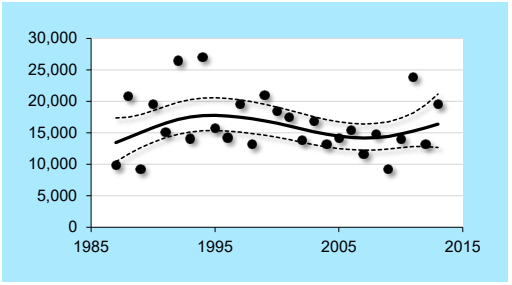
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

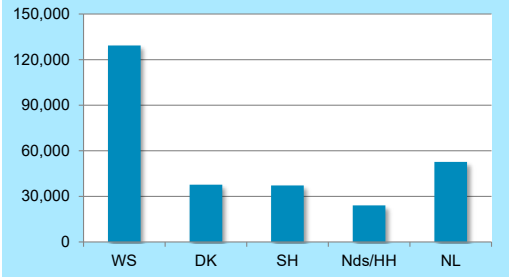
Trends for European Golden Plover in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.16.7 Absolute numbers of European Golden Plover in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		↓	↓
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		→	–
(F) The Netherlands		→	→

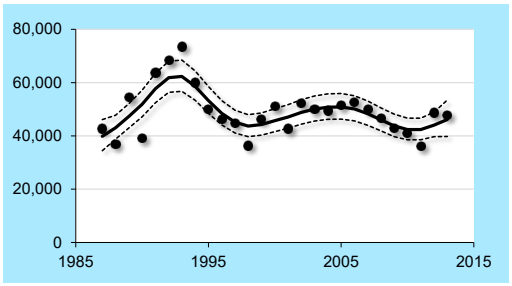
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain



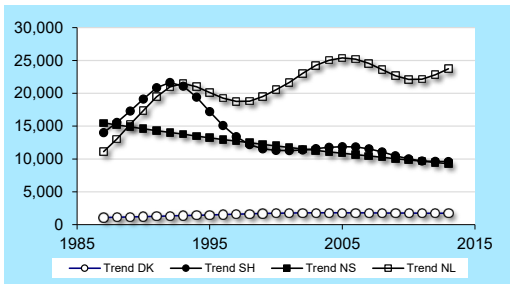
4.17 Grey Plover

Pluvialis squatarola 04860

DK: Strandhjejle D: Kiebitzregenpfeifer NL: Zilverplevier



(A) Overall trend in the international Wadden Sea

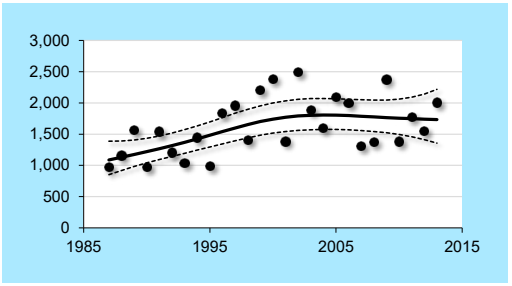


(B) Trends in the different countries compared

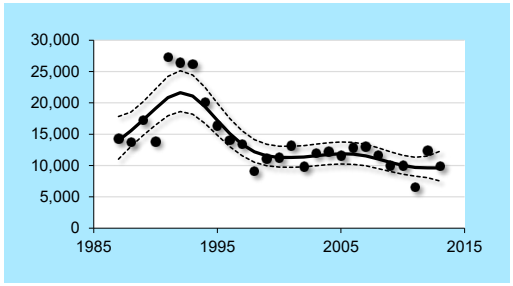
Figure 4.17.1-4.17.6 Trends of Grey Plover in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

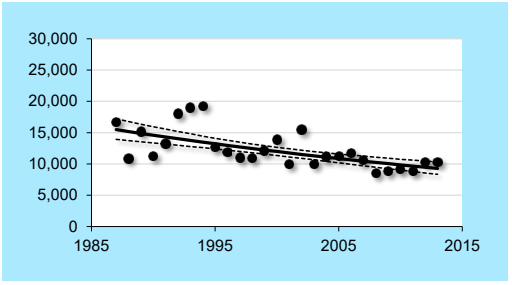
More than 50% of the total flyway population of **Grey Plover** uses the Wadden Sea outside the breeding season, thus this region is of high importance for the species. The total flyway population is reported with an uncertain decrease. In the Wadden Sea the overall trend had shown a short peak during the mid 1990s; afterwards a short decrease was followed by a stable period. Long-term trend increases are registered in the Netherlands and Denmark and decreases in Niedersachsen/Hamburg and Schleswig-Holstein.



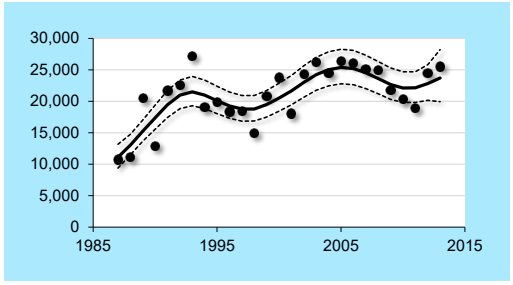
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Grey Plover in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		→	→
(C) Denmark		↑	→
(D) Schleswig-Holstein		↓	–
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↑	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

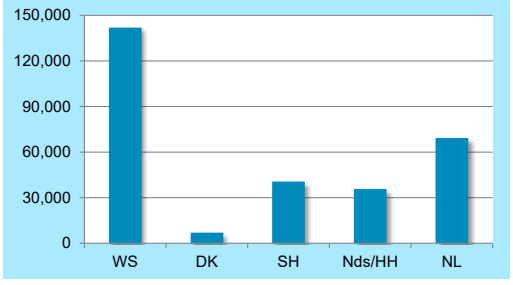


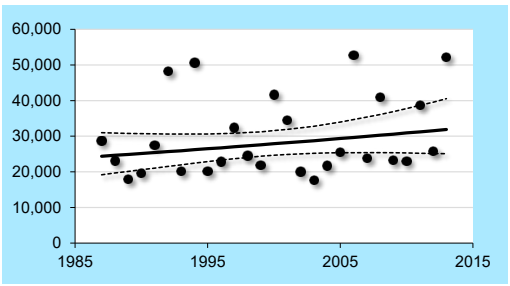
Figure 4.17.7 Absolute numbers of Grey Plover in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.18 Northern Lapwing

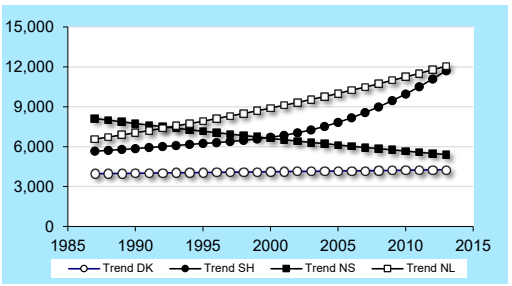
04930

Vanellus vanellus

DK: Vibe **D: Kiebitz** **NL: Kievit**



(A) Overall trend in the international Wadden Sea

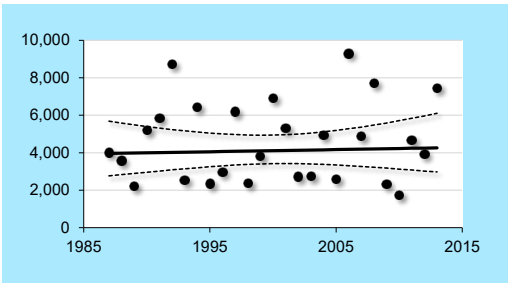


(B) Trends in the different countries compared

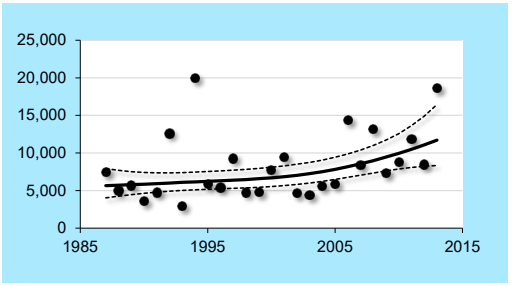
Figure 4.18.1-4.18.6 Trends of Northern Lapwing in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

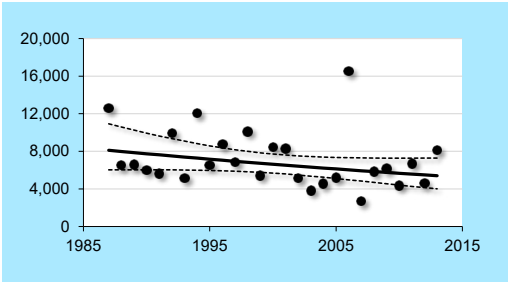
Only a small fraction of the **Northern Lapwing** flyway population uses the Wadden Sea. Like the flyway populations with an uncertain assessment of being stable, the Wadden Sea numbers show considerable fluctuations, but the overall Wadden Sea trends are stable; due to recent high counts, the short-term trends in the Netherlands and Schleswig-Holstein schow increases.



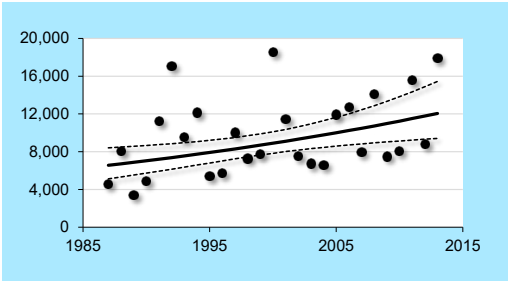
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Northern Lapwing in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		➡	➡
(D) Schleswig-Holstein		↑	↑
(E) Niedersachsen/Hamburg		➡	➡
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable uncertain

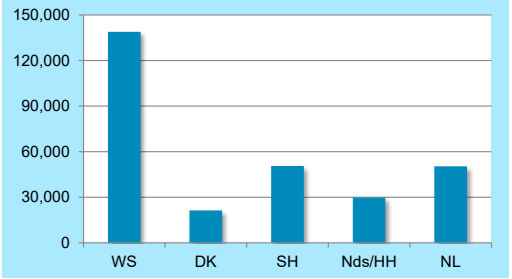
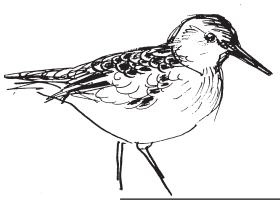


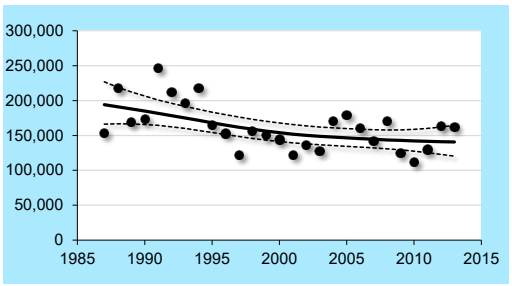
Figure 4.18.7 Absolute numbers of Northern Lapwing in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.



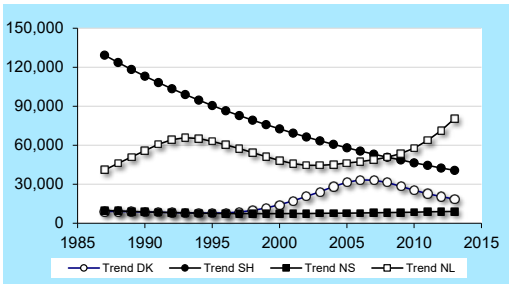
4.19 Red Knot

Calidris canutus 04960

DK: Islandsk Ryle D: Knutt NL: Kanoetstrandloper



(A) Overall trend in the international Wadden Sea



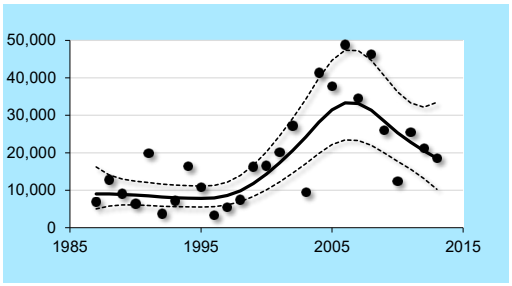
(B) Trends in the different countries compared

Figure 4.19.1-4.19.6
Trends of Red Knot in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

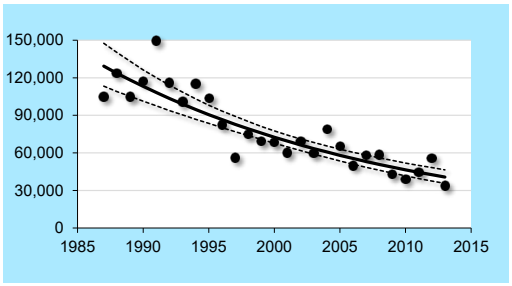
Explanatory Note

Large parts of both flyway populations of the Red Knot, the *C. c. canutus* migrating from Africa to Siberia and the *C. c. islandica* wintering in the European regions and breeding in Greenland and Canada, use the Wadden Sea. Currently, the overall long-term trend is decreasing, dominated by the continuous decrease of the high numbers in Schleswig-Holstein. Recent high counts reinforce the increasing trends in the Netherlands, the situation in Niedersachsen/Hamburg and Denmark is unclear.

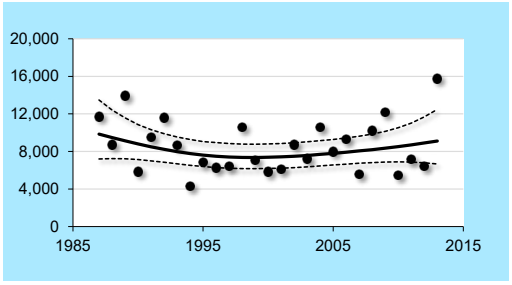
The comparable lower numbers of the *C. c. canutus* population (counted in July and May) have an overall stable trend but differ in the four regions. The higher numbers of the *C. c. islandica* population (counted from September to April) are responsible for the overall trends (see above). Results for this species might have to be assessed regarding recent findings of high counts on outer sands mainly in Schleswig-Holstein.



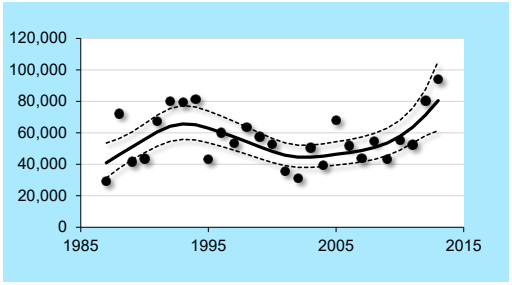
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Red Knot in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		–	–
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		→	–
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

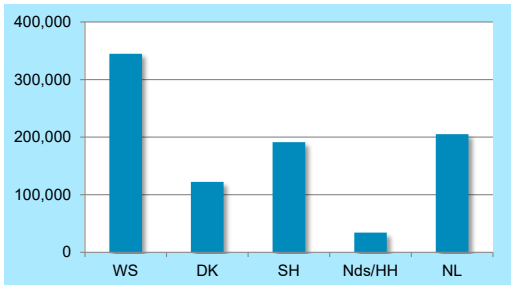


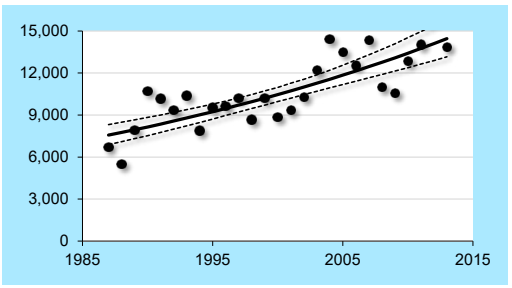
Figure 4.19.7
Absolute numbers of Red Knot in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.20 Sanderling

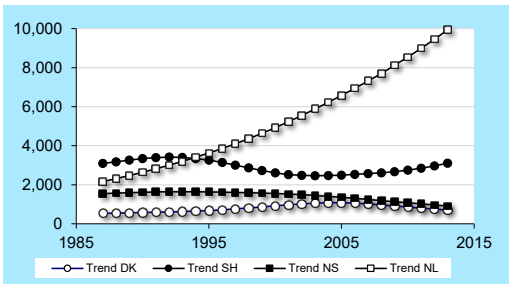
04970

Calidris alba

DK: Sandløber D: Sanderling NL: Drieteenstrandloper



(A) Overall trend in the international Wadden Sea

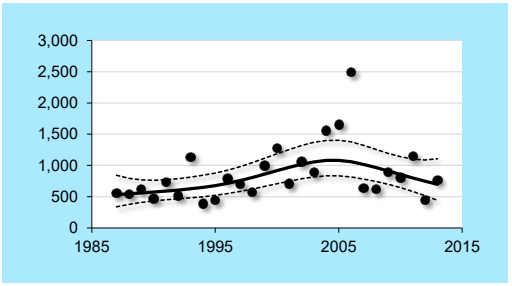


(B) Trends in the different countries compared

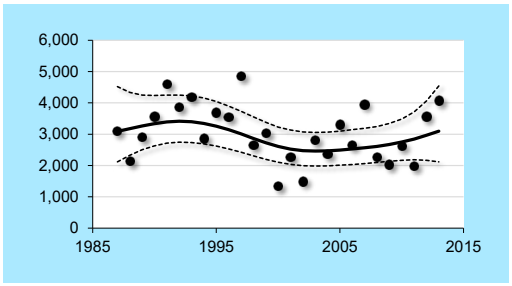
Figure 4.20.1-4.20.6 Trends of Sanderling in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

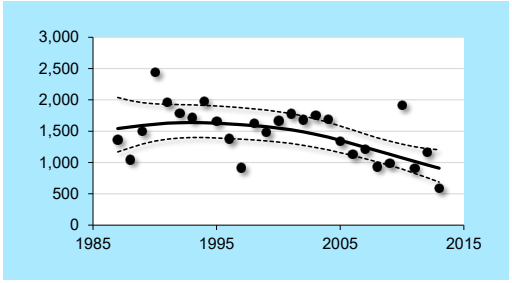
Sanderling numbers are difficult to survey due to high peak numbers during a short time period in spring; if the counts do not occur within this time window the numbers can vary greatly from year to year. The overall trends in the Wadden Sea are increasing, now mostly on account of results in the Netherlands. While trends are stable with fluctuations in Schleswig-Holstein, in Niedersachsen/Hamburg further addition of a low numbers in recent seasons results in a long- and short-term decrease for this species.



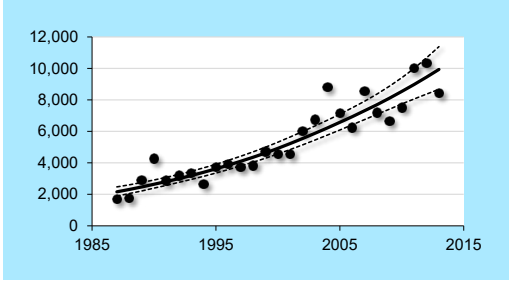
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

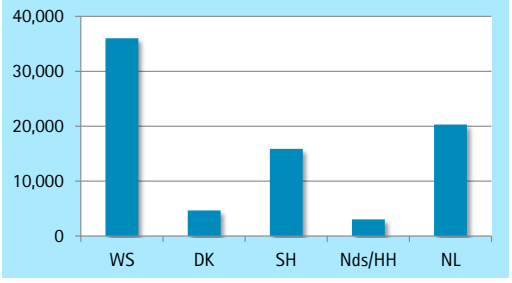
Trends for Sanderling in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.20.7 Absolute numbers of Sanderling in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑	↑
(C) Denmark		→	–
(D) Schleswig-Holstein		→	–
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↑↑	↑

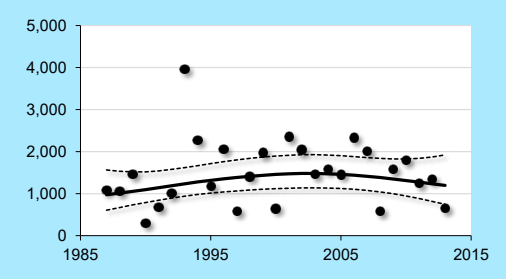
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain



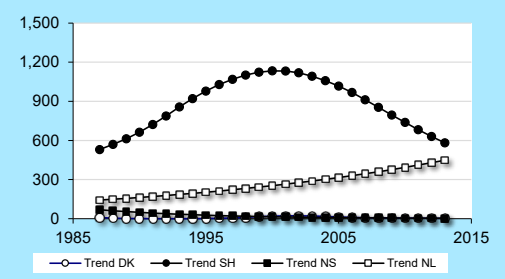
4.21 Curlew Sandpiper

Calidris ferruginea 05090

DK: Krumnæbbet Ryle D: Sichelstrandläufer NL: Krombekstrandloper



(A) Overall trend in the international Wadden Sea

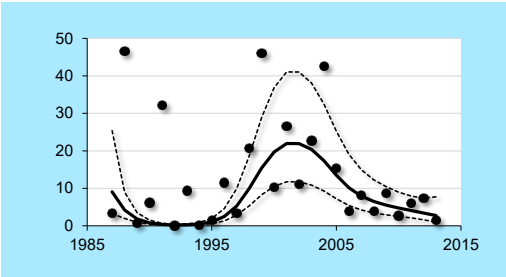


(B) Trends in the different countries compared

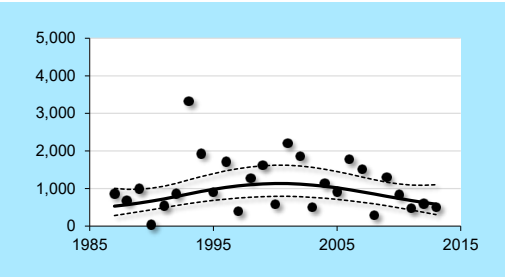
Figure 4.21.1-4.21.6 Trends of Curlew Sandpiper in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

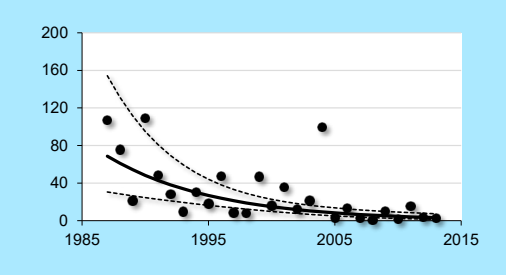
The **Curlew Sandpiper** has a large flyway population of which only 1-2% visits the Wadden Sea during southbound migration in a very short period during July/August in a small number of sites. The majority of individuals is counted in Schleswig-Holstein, and sometimes numbers in the Netherlands may also be comparable. The flyway population is increasing. Due to large fluctuations in counting results, trend estimates in the Wadden Sea and its regions are not very robust. However, increases are indicated in the Netherlands and decreases in Niedersachsen/Hamburg.



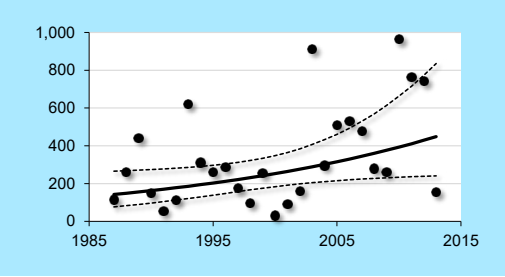
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Curlew Sandpiper in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	–
(C) Denmark		–	↓↓
(D) Schleswig-Holstein		➡	–
(E) Niedersachsen/Hamburg		↓↓	↓↓
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable – uncertain

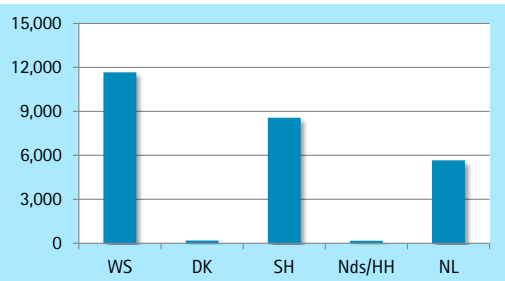


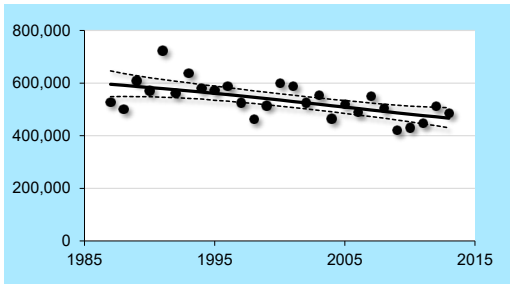
Figure 4.21.7 Absolute numbers of Curlew Sandpiper in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.22 Dunlin

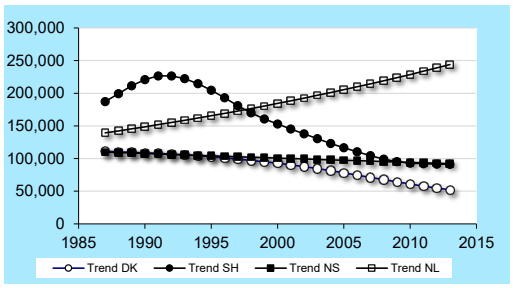
05120

Calidris alpina

DK: Almindelig Ryle D: Alpenstrandläufer NL: Bonte Strandloper



(A) Overall trend in the international Wadden Sea

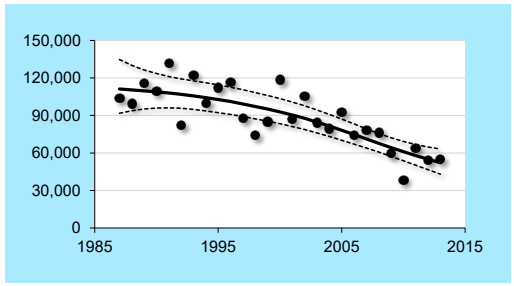


(B) Trends in the different countries compared

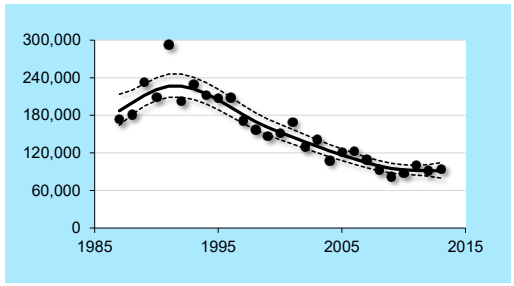
Figure 4.22.1-4.22.6 Trends of Dunlin in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

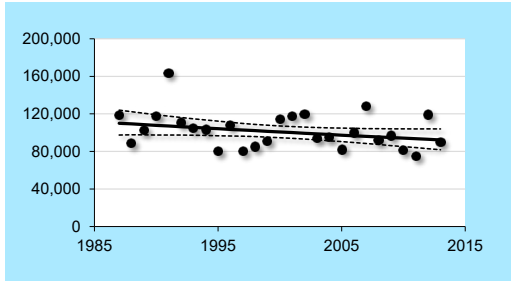
While the trends for the flyway populations of the nominate sub-species of **Dunlin** (*C.c. alpina*) is stable, estimates for the small populations of *C.c. schinzii* are uncertain. The overall long- and short-term trends in the Wadden Sea, where large numbers and most likely large proportions (~ 70%) of these flyway population are present during the yearly cycle, show moderate decreases. Most notable are clear decreases in the Northern region (Denmark, Schleswig-Holstein) and opposite to these increases in the Netherlands, reinforced by the most recent results.



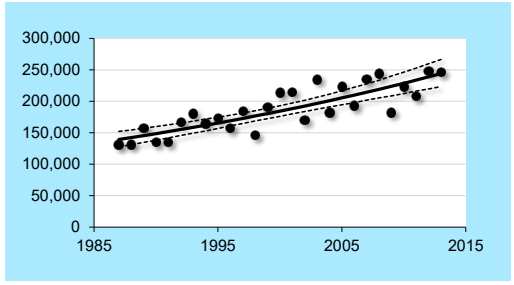
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Dunlin in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		↓	↓
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		→	→
(F) The Netherlands		↑	↑

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

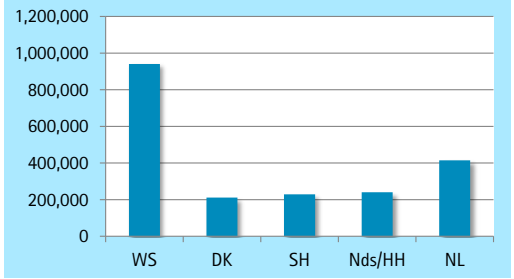
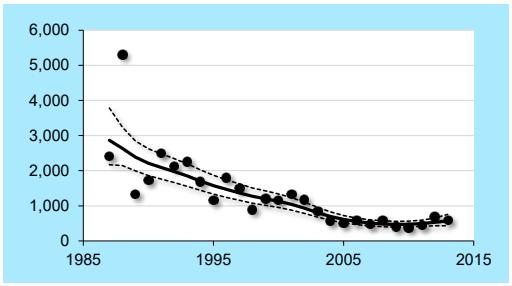


Figure 4.22.7 Absolute numbers of Dunlin in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

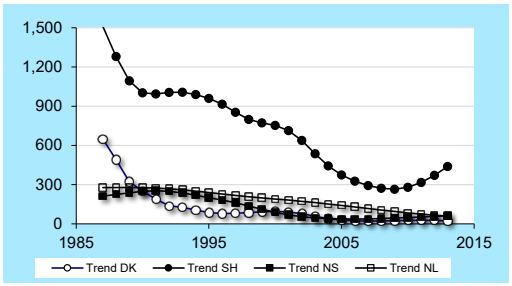
4.23 Ruff

Philomachus pugnax 05170

DK: Brushane D: Kampfläufer NL: Kemphaan



(A) Overall trend in the international Wadden Sea

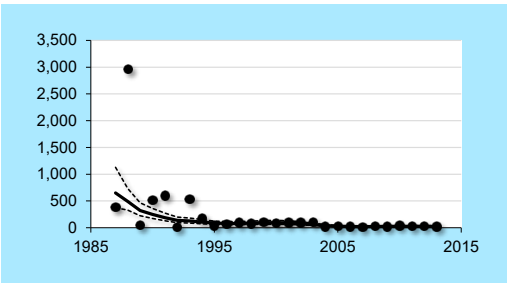


(B) Trends in the different countries compared

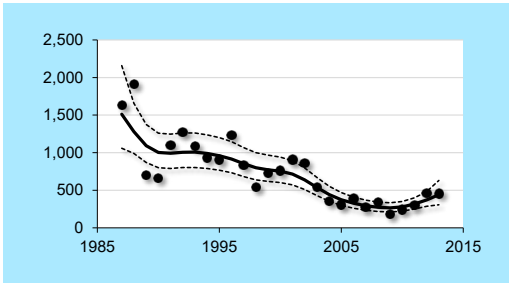
Figure 4.23.1-4.23.6 Trends of Ruff in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

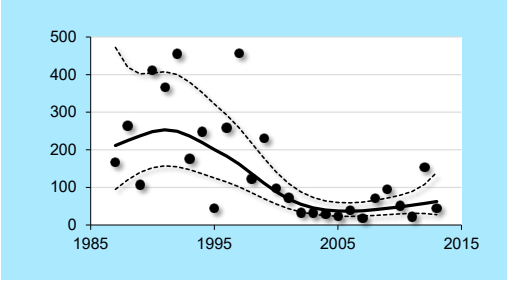
Less than 1% of the **Ruff** flyway population migrates through the Wadden Sea. The flyway population trend is decreasing. In the Wadden Sea the long-term trend is decreasing while a stable situation with very low numbers has established in the recent 10 seasons. A long-term decrease exists in all regions, but remains for the short-term trend only in the Netherslands, while the situation in the other regions is unclear. The species presence depends on feeding possibilities and weather, thus numbers are highly variable from year to year.



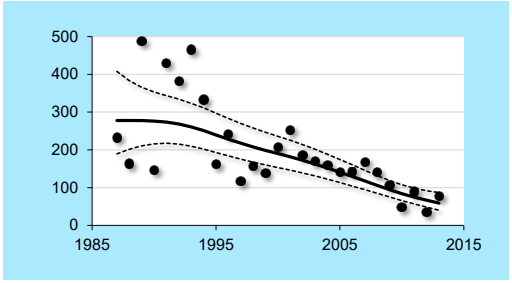
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Ruff in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	–
(C) Denmark		↓↓	–
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		–	–
(F) The Netherlands		↓	↓↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

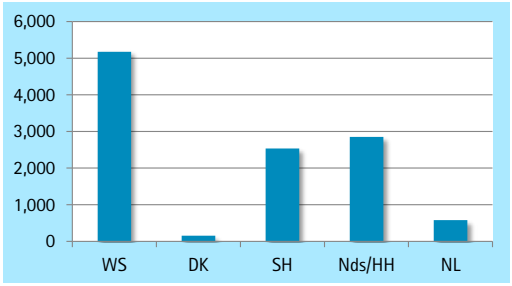
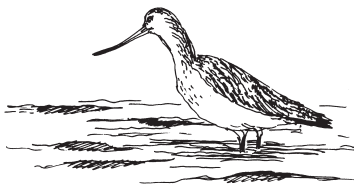


Figure 4.23.7 Absolute numbers of Ruff in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

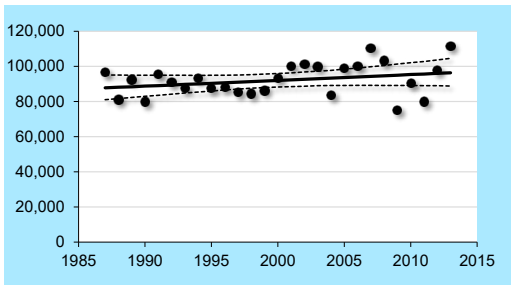


4.24 Bar-tailed Godwit

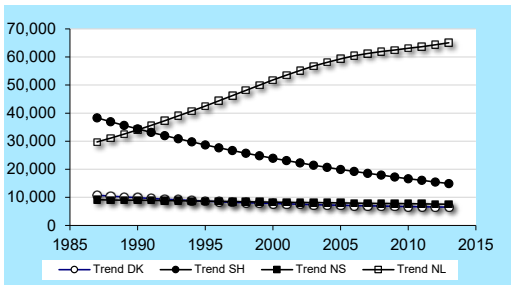
05340

Limosa lapponica

DK: Lille Kobbersneppe D: Pfuhlschnepfe NL: Rosse Grutto



(A) Overall trend in the international Wadden Sea

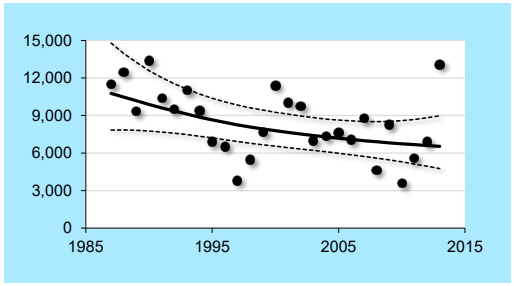


(B) Trends in the different countries compared

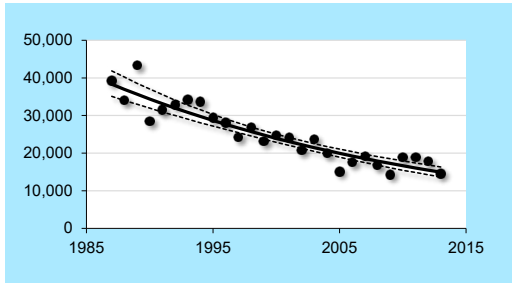
Figure 4.24.1-4.24.6 Trends of Bar-tailed Godwit in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

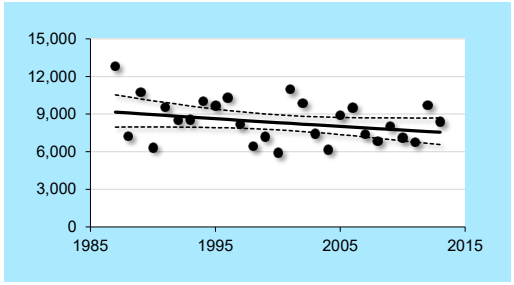
Two populations of the **Bar-tailed Godwit** migrate through the Wadden Sea, both with comparable numbers; the nominate sub-species *L. l. lapponica* breeds in high arctic Scandinavia and Northern Russia, and winters in coastal Western Europe and North-West Africa. It is present in the Wadden Sea most of the year from September to April, from which counts apply. The flyway population counts 120,000 individuals and its trend is stable. The *L. l. taymyrensis* breeds in Western and Central Siberia and winters in coastal West and South-West Africa; individuals of this population will migrate through the Wadden Sea in May and return during July and August. The flyway population counts 500,000 individuals and its trend is an uncertain decrease.
Overall numbers in the Wadden Sea are stable, with recent high counts mostly on account of the Netherlands and Niedersachsen/Hamburg. Most remarkably is the contrast of a long-term increase and a short-term stabilization on high fluctuating numbers in the Netherlands compared to a continuous decrease mainly in Schleswig-Holstein; numbers in Niedersachsen/Hamburg are stable.



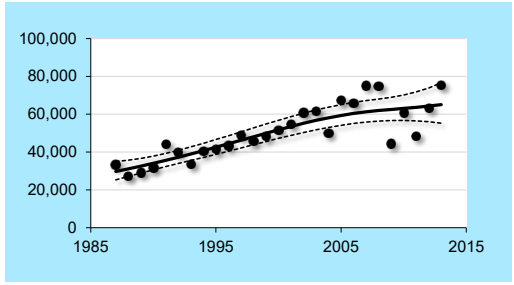
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

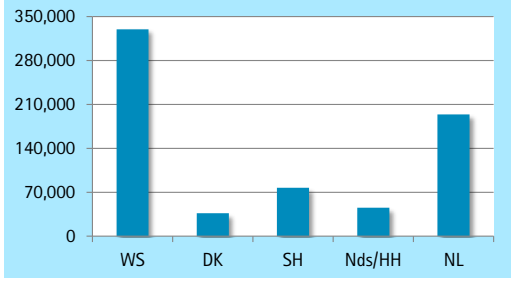
Trends for Bar-tailed Godwit in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.24.7 Absolute numbers of Bar-tailed Godwit in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		⬇	➡
(D) Schleswig-Holstein		⬇	⬇
(E) Niedersachsen/Hamburg		➡	➡
(F) The Netherlands		⬆	➡

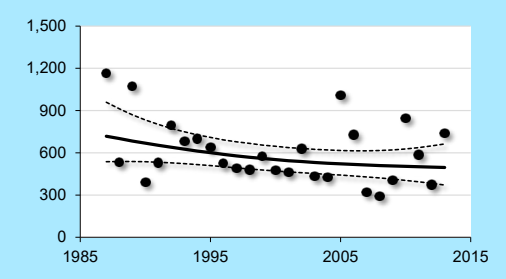
⬆⬆ strong increase ⬇⬇ strong decrease ⬆ moderate increase
⬇ moderate decrease ➡ stable uncertain



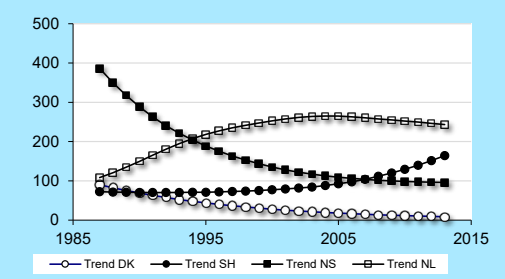
4.25 Whimbrel

Numenius phaeopus 05380

DK: Lille Regnspove D: Regenbrachvogel NL: Regenwulp



(A) Overall trend in the international Wadden Sea

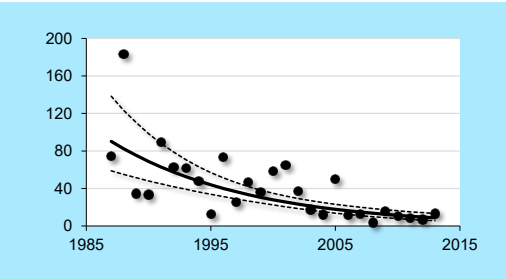


(B) Trends in the different countries compared

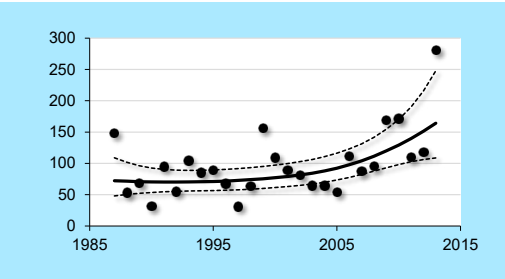
Figure 4.25.1-4.25.6 Trends of Whimbrel in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

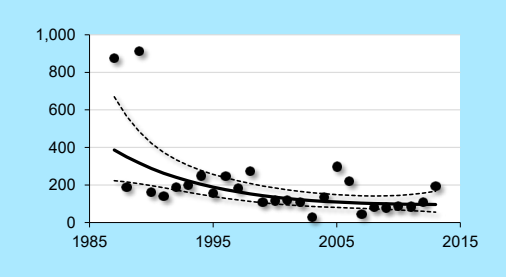
Only 1-2% of the stable **Whimbrel** flyway population is counted in the Wadden Sea region. Long- and short-term trends are currently stable in the Wadden Sea, but fluctuating. In Denmark numbers have been very low during the last decade and lead to a decreasing trend, comparable to Niedersachsen/Hamburg. Schleswig-Holstein has seen some recent high counts and numbers in the Netherlands fluctuate. It must be noted, that overall very low numbers, large fluctuations and single exceptional counts do not allow a clear assessment.



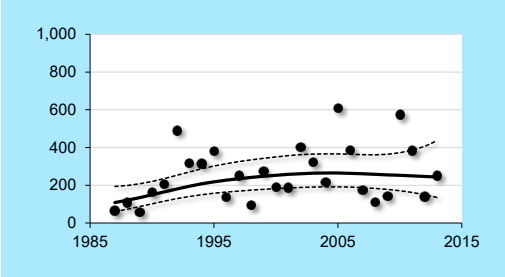
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Whimbrel in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		⬇⬇	⬇⬇
(D) Schleswig-Holstein		⬆	⬆
(E) Niedersachsen/Hamburg		–	–
(F) The Netherlands		–	–

⬆⬆ strong increase ⬇⬇ strong decrease ⬆ moderate increase
⬇ moderate decrease ➡ stable – uncertain

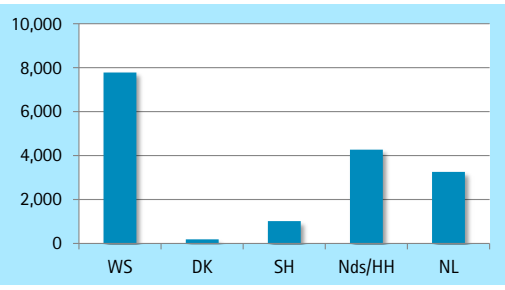


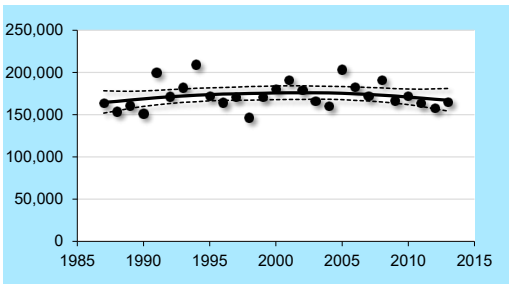
Figure 4.25.7 Absolute numbers of Whimbrel in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.26 Eurasian Curlew

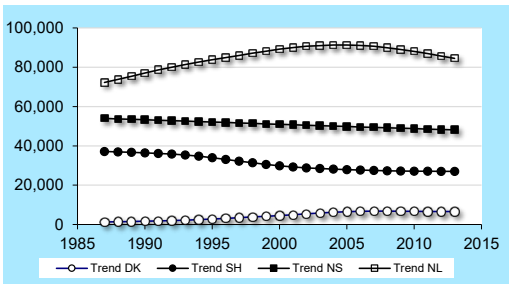
05410

Numenius arquata

DK: Stor Regnspove D: Großer Brachvogel NL: Wulp



(A) Overall trend in the international Wadden Sea

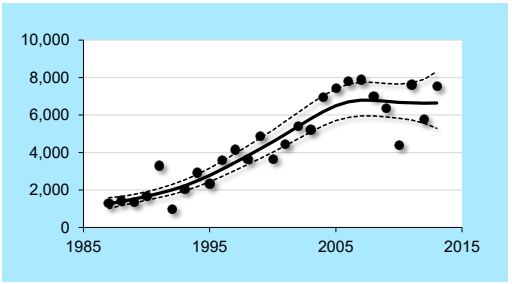


(B) Trends in the different countries compared

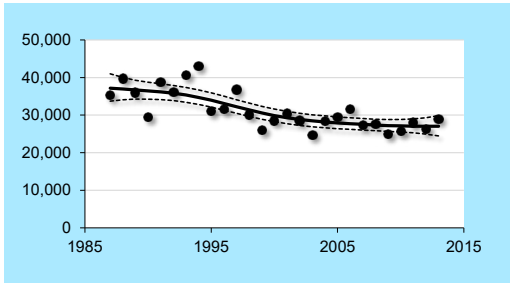
Figure 4.26.1-4.26.6 Trends of Eurasian Curlew in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

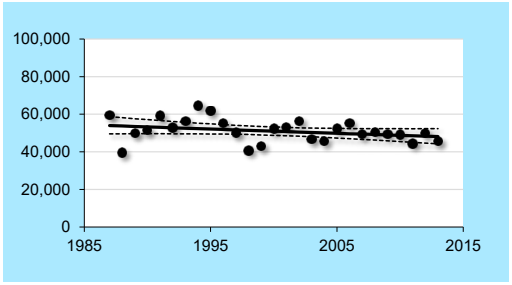
The Eurasian **Curlew** flyway population is decreasing. However, the Wadden Sea population, representing some 35-40% of the flyway population, is stable both in the long- and short-term trends; particularly the last 10 years, estimates in all regions have not changed but stabilised at one level. Of these regions, Denmark has seen an increase from 1987 to 2005, while Schleswig-Holstein seems to have "lost" some birds during that time; thus, the long-term trend is increasing in Denmark and slightly decreasing in Schleswig-Holstein.



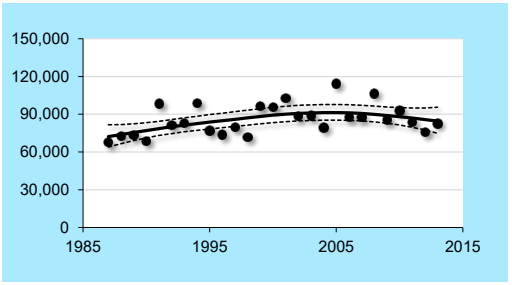
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

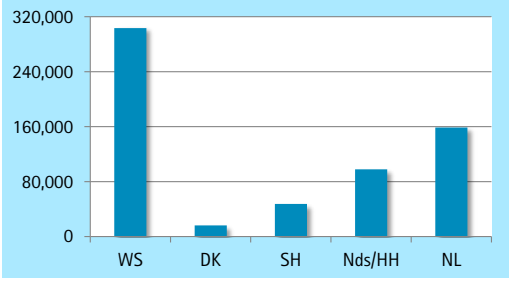
Trends for Eurasian Curlew in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		→	→
(C) Denmark		↑↑	→
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		→	→
(F) The Netherlands		→	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

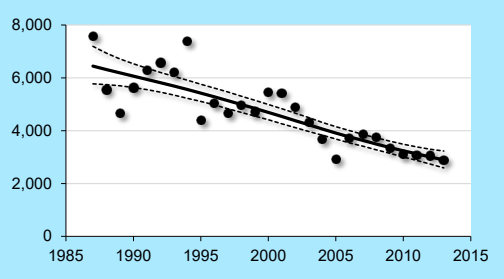
Figure 4.26.7 Absolute numbers of Eurasian Curlew in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.



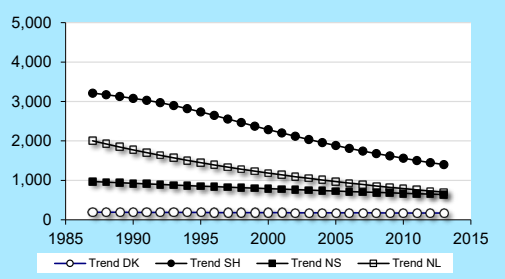
4.27 Spotted Redshank

Tringa erythropus 05450

DK: Sortklire D: Dunkler Wasserläufer NL: Zwarte Ruiter



(A) Overall trend in the international Wadden Sea

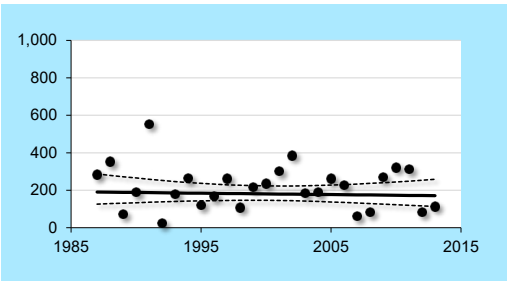


(B) Trends in the different countries compared

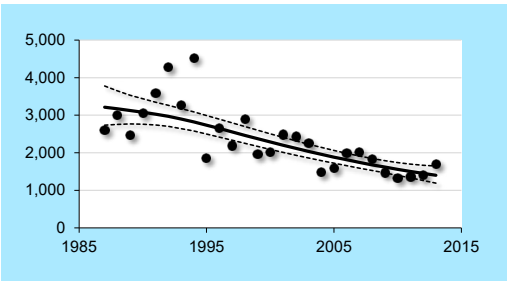
Figure 4.27.1-4.27.6 Trends of Spotted Redshank in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

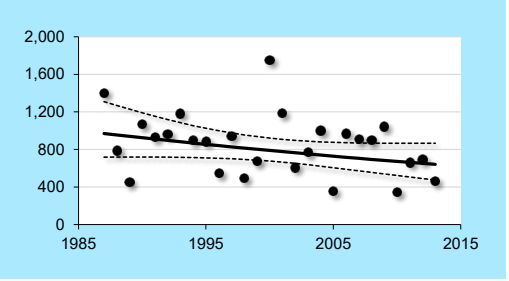
The **Spotted Redshank** is difficult to monitor due to its short passage time period, with large numbers at only a few sites; Wadden Sea numbers represent only some 20% of the flyway population which is assessed to be stable, however with some uncertainty. The overall Wadden Sea trend is a moderate but long and continuing decrease in both the long and the short-term; counted numbers are reduced by 50% during the monitoring period of 27 years. This decrease is manifested in Schleswig-Holstein and the Netherlands; trends in Denmark are stable but fluctuating in low numbers as well as in Niedersachsen/Hamburg but at somewhat higher numbers.



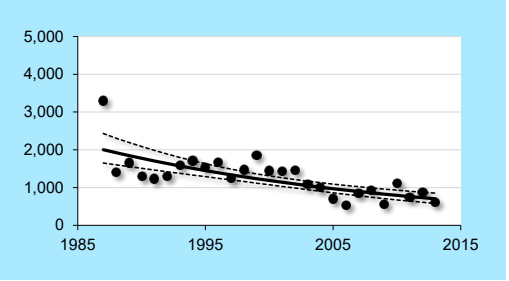
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Spotted Redshank in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		→	→
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		→	→
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

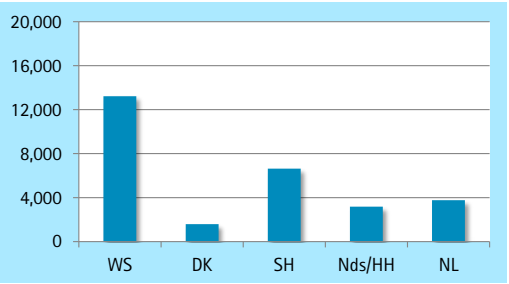


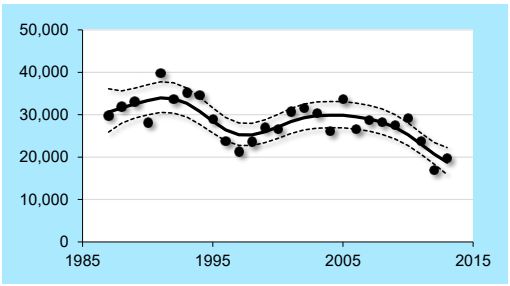
Figure 4.27.7 Absolute numbers of Spotted Redshank in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.28 Common Redshank

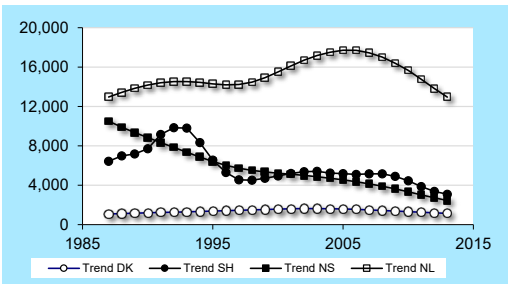
05460

Tringa totanus

DK: Rødben D: Rotschenkel NL: Tureluur



(A) Overall trend in the international Wadden Sea

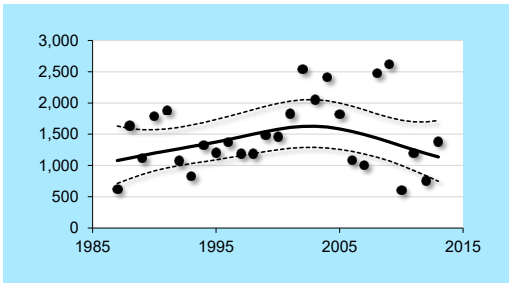


(B) Trends in the different countries compared

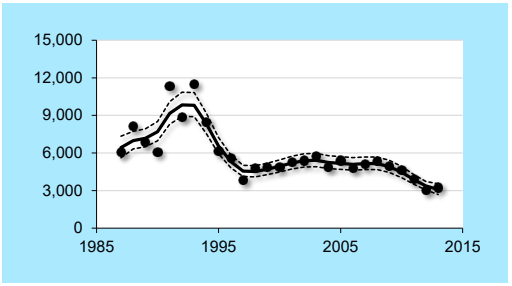
Figure 4.28.1-4.28.6 Trends of Common Redshank in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

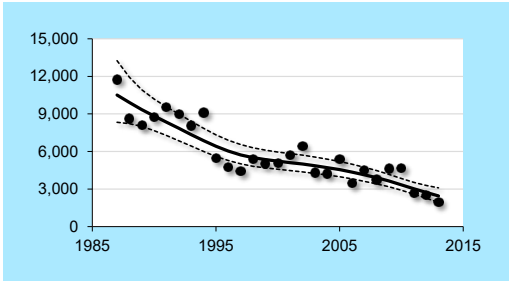
The **Common Redshank** occurs in the Wadden Sea with three populations, thus numbers and trends are not easy to assess in relation to the respective flyway populations. The overall Wadden Sea trend had been stable until the last assessment; now, two years with low counts turn this trend into a moderate long-term decrease. Short-term trends in all regions but Denmark are slightly decreasing, the long-term trends are decreasing in both Niedersachsen/Hamburg and Schleswig-Holstein where higher estimates existed up to the mid 1990s.



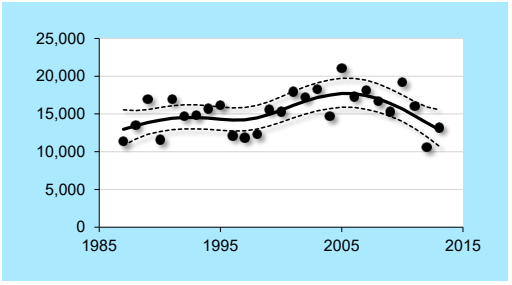
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

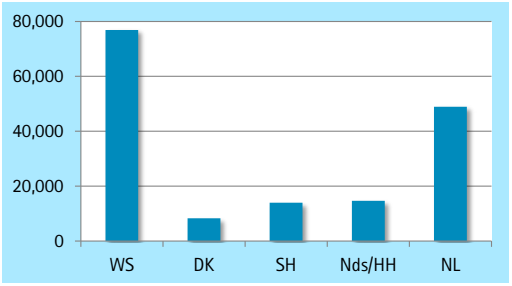
Trends for Common Redshank in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.28.7 Absolute numbers of Common Redshank in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		→	–
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		↓	→
(F) The Netherlands		→	↑

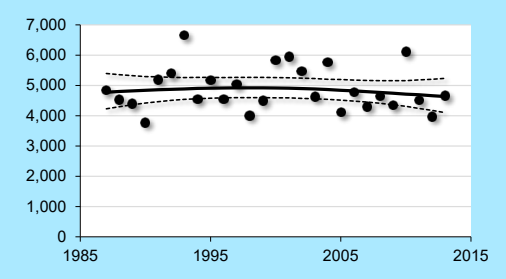
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain



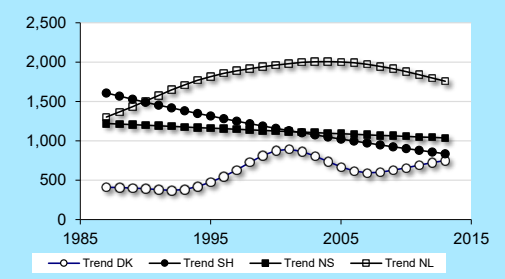
4.29 Common Greenshank

Tringa nebularia 05480

DK: Hvidklire D: Grünschenkel NL: Groenpootruiter



(A) Overall trend in the international Wadden Sea

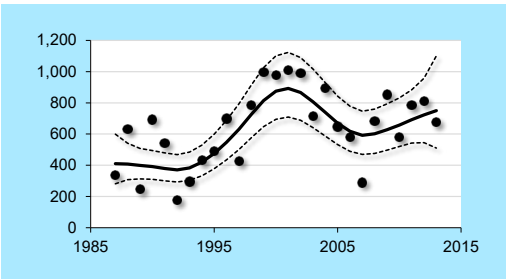


(B) Trends in the different countries compared

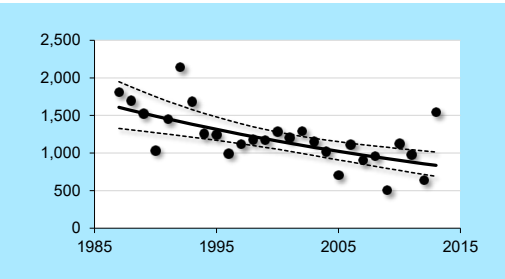
Figure 4.29.1-4.29.6 Trends of Common Greenshank in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

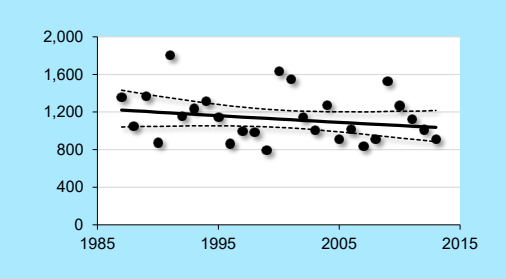
The Wadden Sea plays a minor role for the **Common Greenshanks** with only some 10% of the stable flyway population staging during autumn, and fewer during spring. The overall trends in the Wadden Sea are stable, yet fluctuating largely in low numbers. This can be stated also for most regions in the Wadden Sea, only in Schleswig-Holstein both long- and short-term trends show moderate but regular decreases.



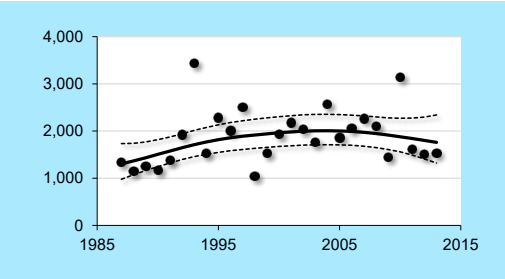
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Greenshank in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		→	→
(C) Denmark		↑	–
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		→	→
(F) The Netherlands		→	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

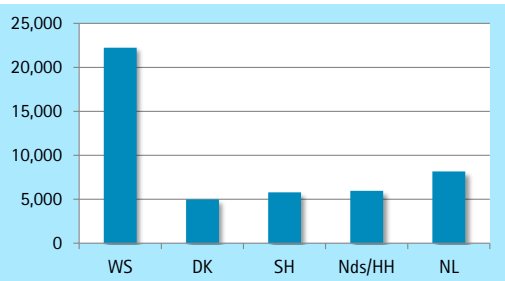
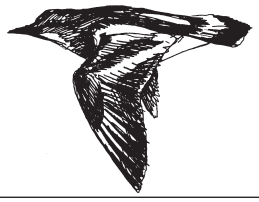


Figure 4.29.7 Absolute numbers of Common Greenshank in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

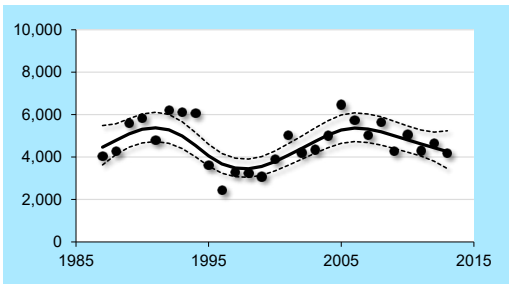


4.30 Ruddy Turnstone

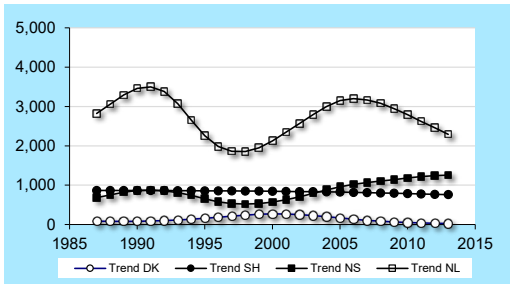
05610

Arenaria interpres

DK: Stenvender D: Steinwälzer NL: Steenloper



(A) Overall trend in the international Wadden Sea



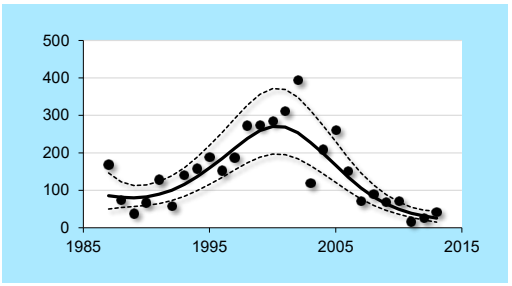
(B) Trends in the different countries compared

Figure 4.30.1-4.30.6 Trends of Ruddy Turnstone in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

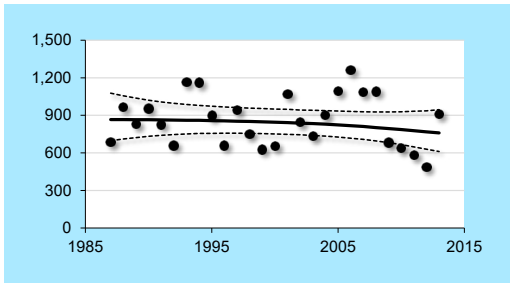
Explanatory Note

Two populations of **Ruddy Turnstone** pass the Wadden Sea on migration. One population, breeds in Canada and Greenland and winters in Western Europe and North-West Africa and is present in the Wadden Sea most of the year from August to April; this flyway population is assessed to be increasing. The other population breeds in Fennoscandia and North-West Russia and winters in Africa, and passes the Wadden Sea mainly during July and May; it is decreasing.

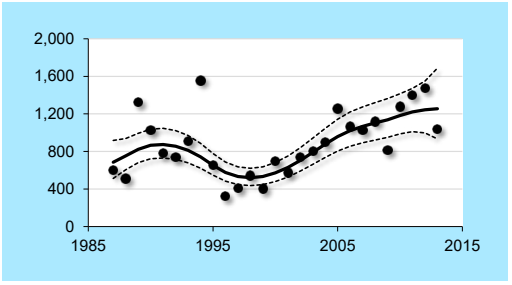
The overall Wadden Sea trend for this species is stable in the long-term as well as during the last 10 years. Increases, in particular during the recent years, are found now mainly in Niedersachsen/Hamburg over some 20 years. In contrast, trends in Denmark are decreasing strongly. Coverage of this species by the Trilateral Monitoring Program is generally poor and low numbers, in particular in Denmark, are registered.



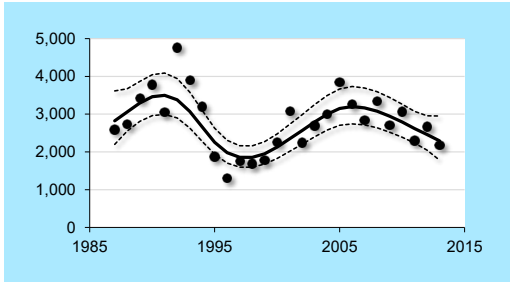
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Ruddy Turnstone in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		⬇	⬇⬇
(D) Schleswig-Holstein		➡	⬇
(E) Niedersachsen/Hamburg		⬆	⬆
(F) The Netherlands		➡	–

⬆⬆ strong increase ⬇⬇ strong decrease ⬆ moderate increase
⬇ moderate decrease ➡ stable – uncertain

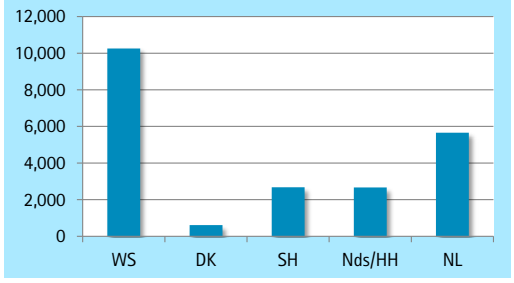
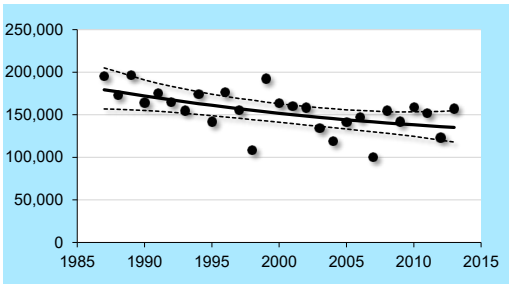


Figure 4.30.7 Absolute numbers of Ruddy Turnstone in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

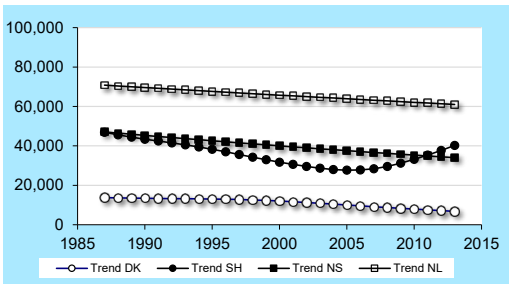
4.31 Common Black-headed Gull

Larus ridibundus 05820

DK: Hættemåge D: Lachmöwe NL: Kokmeeuw



(A) Overall trend in the international Wadden Sea

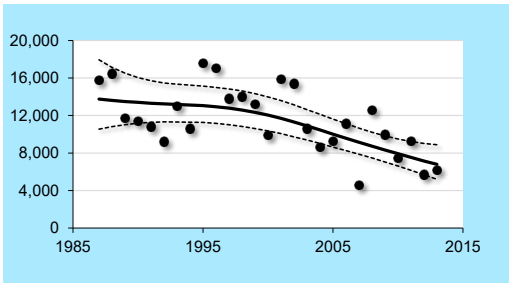


(B) Trends in the different countries compared

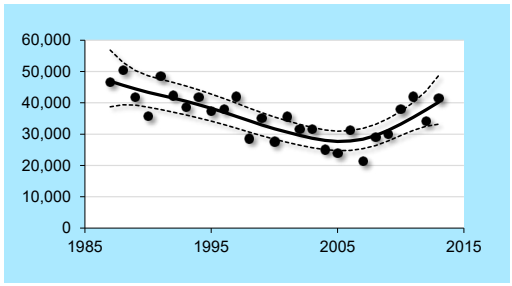
Figure 4.31.1-4.31.6 Trends of Common Black-headed Gull in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

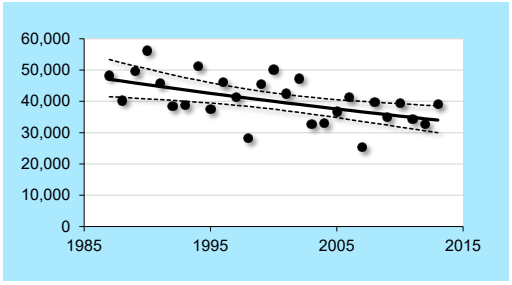
The Trilateral counts only cover a part of the **Black-headed Gull** numbers actually using the Wadden Sea, because many birds occur offshore, inland, at harbours or rubbish dumps. However, for the 20-25 % of the flyway population present in the Wadden Sea, the trend is a moderate decrease in the long-term trend, stabilising in the short-term trend. For Denmark and Niedersachsen/Hamburg short-term trends still show a slight decrease, while numbers in The Netherlands are stable, and in Schleswig-Holstein recently increased, leading to a short-term increasing trend.



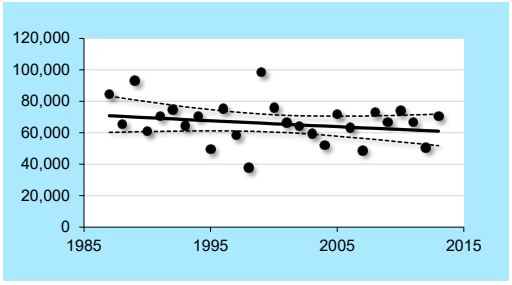
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Black-headed Gull in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		↓	↓
(D) Schleswig-Holstein		→	↑
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		→	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

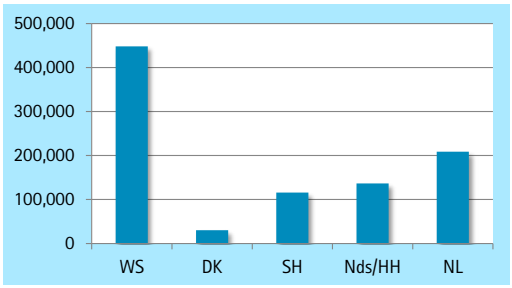
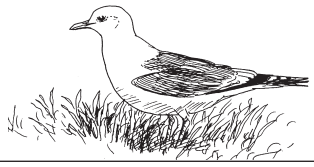


Figure 4.31.7 Absolute numbers of Common Black-headed Gull in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

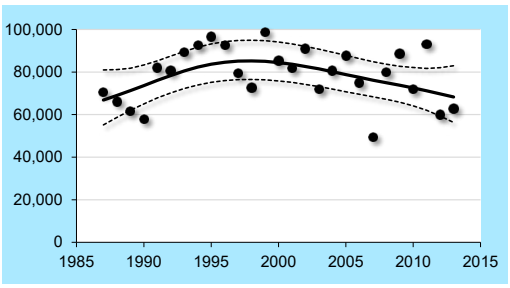


4.32 Common Gull

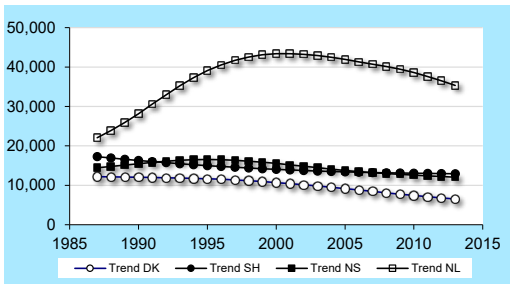
05900

Larus canus

DK: Stormmåge D: Sturmmöwe NL: Stormmeeuw



(A) Overall trend in the international Wadden Sea

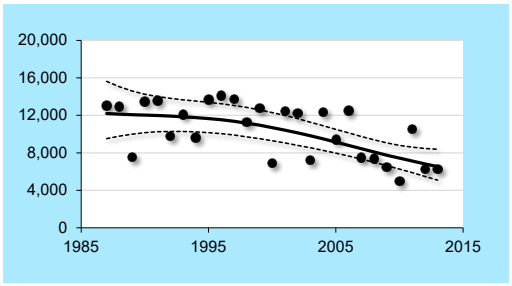


(B) Trends in the different countries compared

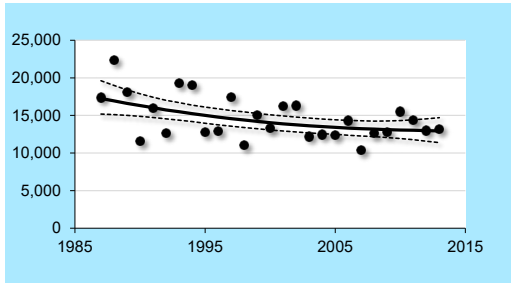
Figure 4.32.1-4.32.6 Trends of Common Gull in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

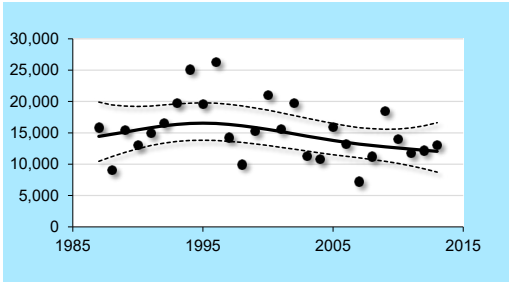
Some 10-15% of the **Common Gull** flyway population use the Wadden Sea, however, many of them feed inland and only rest in the Wadden Sea during night. The overall long- and short-term trends are stable for the Wadden Sea; while numbers fluctuate in all regions, Denmark shows slight decreases, whereas numbers in the Netherlands had started from a low level and thus still indicate an increasing long-term trend, stabilising over the last 20 years.



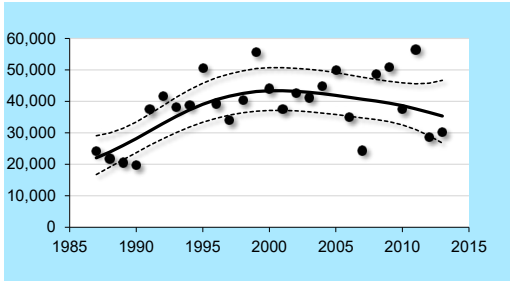
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

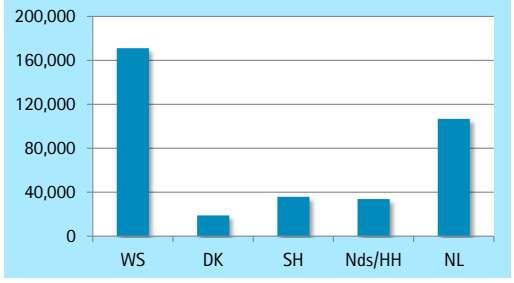
Trends for Common Gull in the Wadden Sea

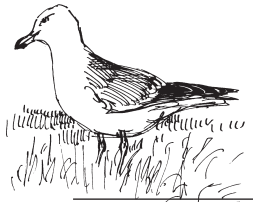
Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.32.7 Absolute numbers of Common Gull in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		↓	↓
(D) Schleswig-Holstein		↓	➡
(E) Niedersachsen/Hamburg		➡	–
(F) The Netherlands		↑	–

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable – uncertain

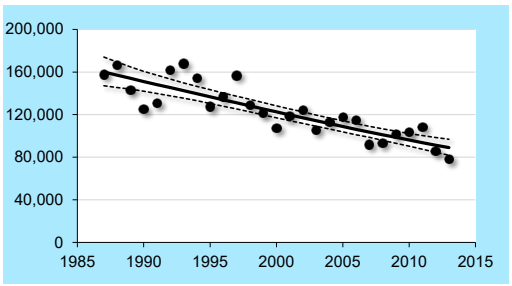




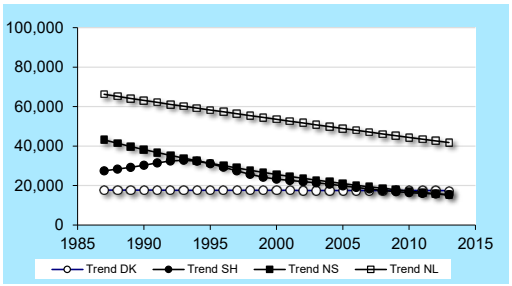
4.33 Herring Gull

Larus argentatus 05920

DK: Sølvmåge D: Silbermöwe NL: Zilvermeeuw



(A) Overall trend in the international Wadden Sea

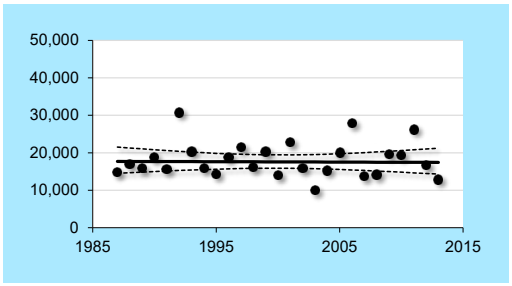


(B) Trends in the different countries compared

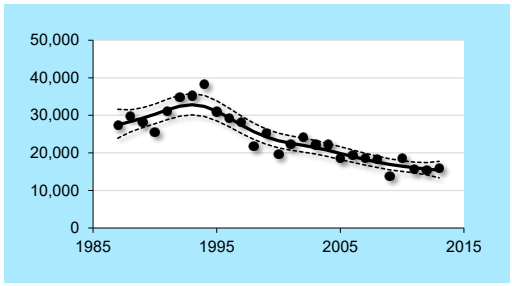
Figure 4.33.1-4.33.6 Trends of Herring Gull in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

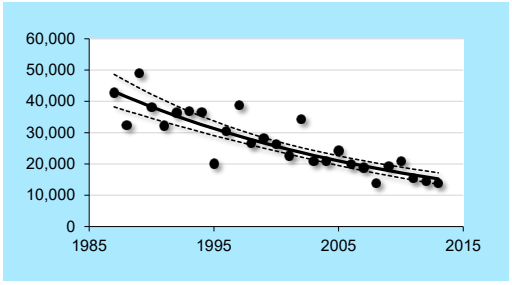
Only a small part of the **Herring Gull** flyway population are registered in the Wadden Sea, however many birds are not covered because birds either feed offshore or inland. The overall long- and short-term trends in the Wadden Sea and all regions are a continuous moderate decrease, most likely leading to an overall loss of some 50% of former numbers. The exception is Denmark, where the population appears to be overall stable.



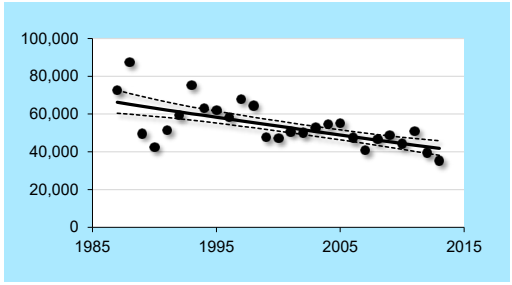
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Herring Gull in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		→	→
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↓	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

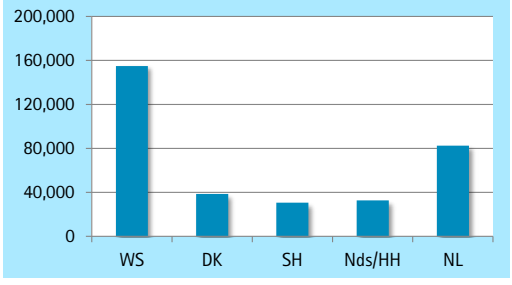


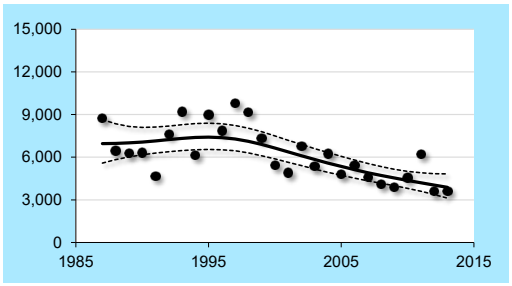
Figure 4.33.7 Absolute numbers of Herring Gull in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

4.34 Great Black-backed Gull

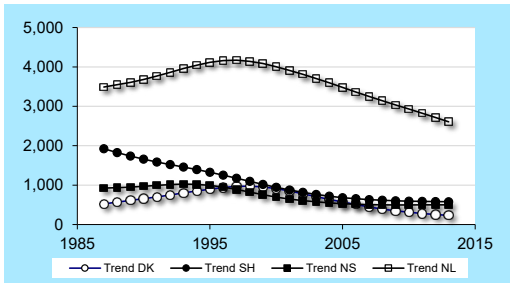
06000

Larus marinus

DK: Svartbag D: Mantelmöwe NL: Grote Mantelmeeuw



(A) Overall trend in the international Wadden Sea

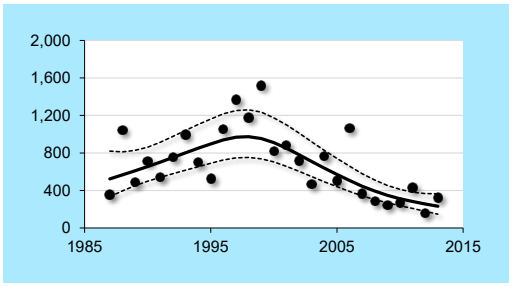


(B) Trends in the different countries compared

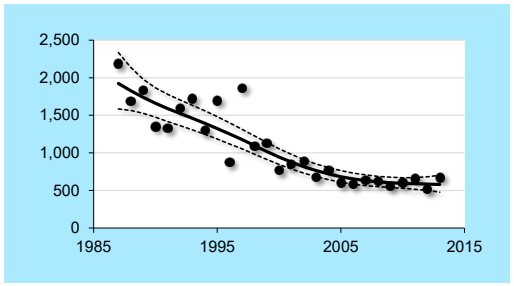
Figure 4.34.1-4.34.6 Trends of Great Black-backed Gull in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

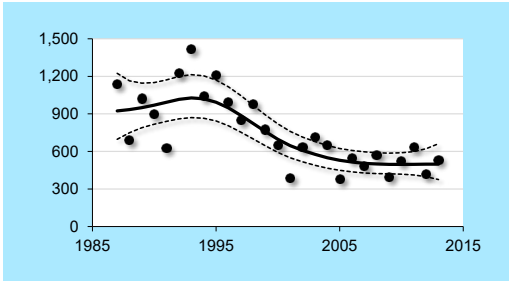
Only a small fraction of the **Great Black-backed** Gulls flyway population is counted in the Wadden Sea, since many birds use harbours and offshore areas. Apart from some peak numbers in the mid 1990s, the long- and short-term trends in the Wadden Sea are decreasing; short-term trends level off in Schleswig-Holstein and Niedersachsen/Hamburg, but turned into a decrease in the Netherlands.



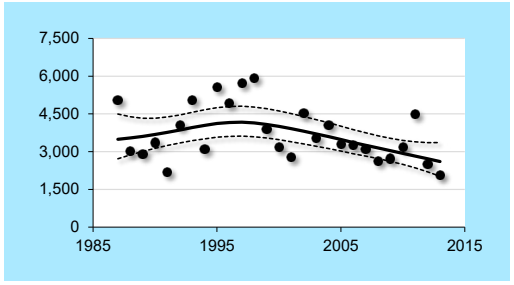
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

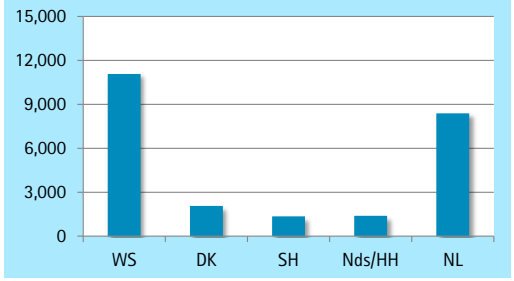
Trends for Great Black-backed Gull in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from all months to express an overall trend for the entire year. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Figure 4.34.7 Absolute numbers of Great Black-backed Gull in the international Wadden Sea and the four regions calculated by average of the 3 maximum numbers in the period 2004/2005-2013/2014.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓
(C) Denmark		↓	↓↓
(D) Schleswig-Holstein		↓	→
(E) Niedersachsen/Hamburg		↓	→
(F) The Netherlands		→	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain



5 Subspecies accounts

Table 5.1
Trends until 2013/2014 - The whole 27 and last 10 years time period. The species names in the table are sorted according to the Euring Code.

Species	Long-term 27-years trend 1987/1988 - 2013/2014						Short-term 10-year trend 2002/2003 - 2013/2014				
	WS	DK	SH	Nds/ HH	NL		WS	DK	SH	Nds/ HH	NL
Great Ringed Plover (*hiaticula*)	→	–	→	↓	↑		→	–	→	↓	–
Great Ringed Plover (*psammodroma/tundrae*)	↑	↑	↑	→	↑↑		↑	–	↑	→	↑
Red Knot (*canutus*)	→	–	↓	→	↑↑		→	–	↓	→	↑
Red Knot (*islandica*)	↓	–	↓	→	↑		→	–	↓	–	↑
Bar-tailed Godwit (*taymyrensis*)	→	→	↓	→	↑		→	–	↓	→	→
Bar-tailed Godwit (*lapponica*)	→	→	↓	→	↑		→	→	↓	↑↑	→
Common Redshank (*totanus*)	↓	↑	↓	↓↓	↑		↓	↑	↓	↓↓	→
Common Redshank (*robusta*)	↓	↓	↓	↓	→		↓↓	↓↓	↓↓	↓	↓
Ruddy Turnstone (Greenland & NE Canada)	→	→	→	↑	→		→	↓↓	→	↑	↓
Ruddy Turnstone (Scandinavia - Western Russia)	→	–	↓	→	→		→	–	↓	–	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase ↓ moderate decrease → stable – uncertain

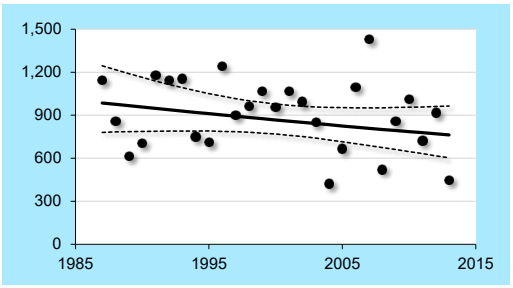
WS - Wadden Sea; **DK** - Denmark; **SH** - Schleswig-Holstein; **Nds/HH** - Niedersachsen/Hamburg; **NL** - The Netherlands

5.1 Great Ringed Plover (*hiaticula*)

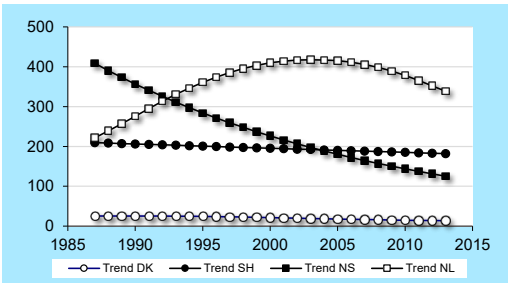
04701

Charadrius hiaticula hiaticula

DK: Stor Præstekrave D: Sandregenpfeifer NL: Bontbekplevier



(A) Overall trend in the international Wadden Sea

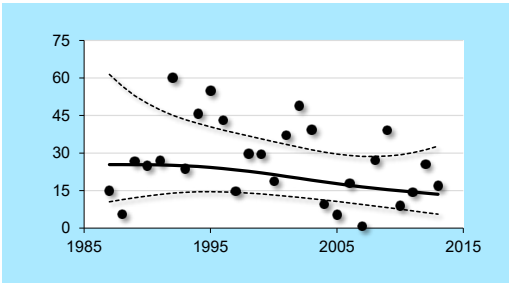


(B) Trends in the different countries compared

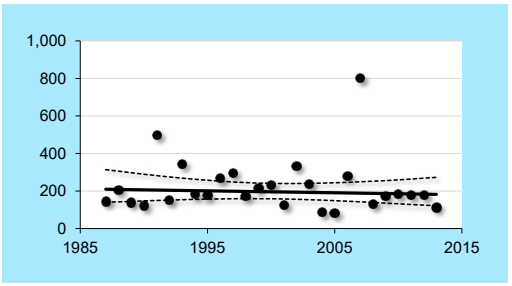
Figure 5.1.1-5.1.6 Trends of subspecies Great Ringed Plover*(hiaticula)* in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

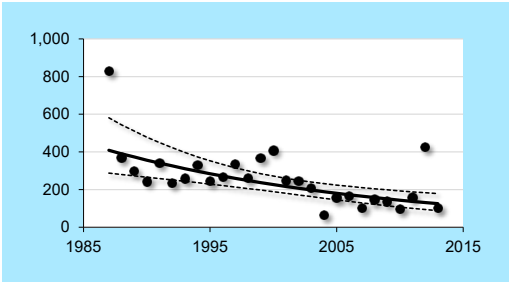
The rather low numbers of nominate sub-species *C.h.hiaticula* (counts from October to April) are stable overall, but show large fluctuations; increasing trends in the Netherlands and decreasing trends in Niedersachsen/Hamburg are not very robust due to low numbers.



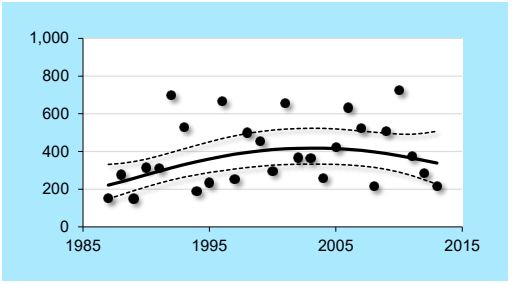
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Great Ringed Plover (*hiaticula*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

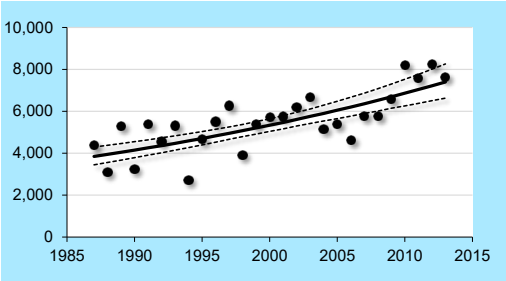
Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		–	–
(D) Schleswig-Holstein		➡	➡
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		↑	–

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable – uncertain

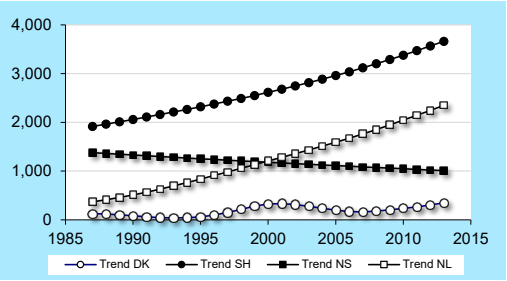
5.2 Great Ringed Plover (*psammodroma/tundrae*)

Charadrius hiaticula psammodroma/tundrae 04702

DK: Stor Præstekrave D: Sandregenpfeifer NL: Bontbekplevier



(A) Overall trend in the international Wadden Sea

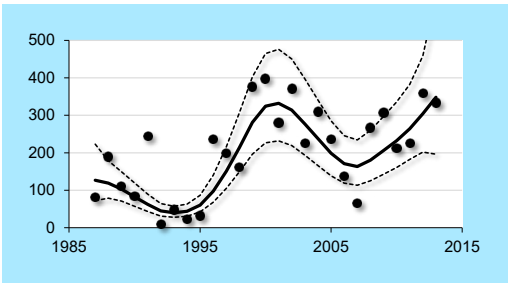


(B) Trends in the different countries compared

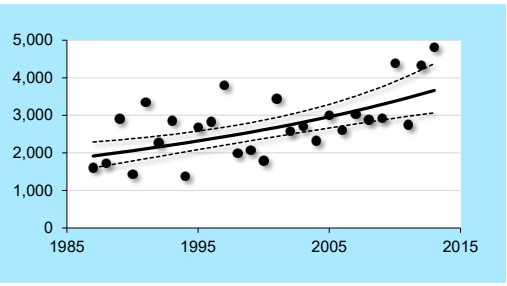
Figure 5.2.2-5.2.6
Trends of subspecies Great Ringed Plover (*psammodroma/tundrae*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

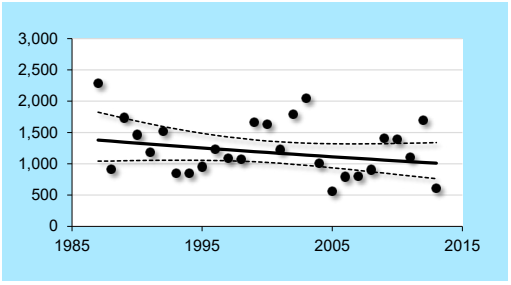
Large numbers of both the arctic breeding *C. h. tundrae* and *C. h. psammodroma* pass through during May and from July to September also. Highest numbers occur in Schleswig-Holstein, half of it in the Netherlands and Niedersachsen and very small numbers in Denmark. Overall results are increasing like in Schleswig-Holstein and the Netherlands, but fluctuating in Niedersachsen and Denmark.



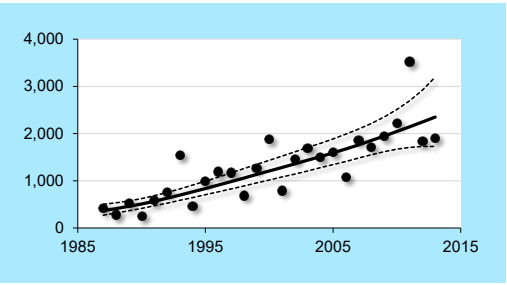
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Great Ringed Plover (*psammodroma/tundrae*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↑	↑
(C) Denmark		↑	–
(D) Schleswig-Holstein		↑	↑
(E) Niedersachsen/Hamburg		→	→
(F) The Netherlands		↑↑	↑

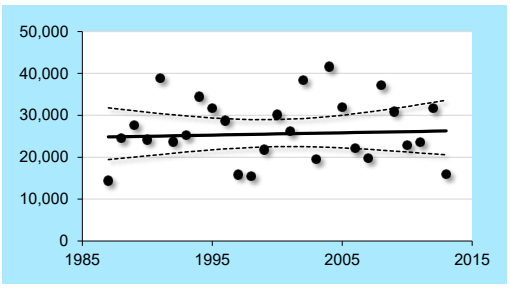
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

5.3 Red Knot (*canutus*)

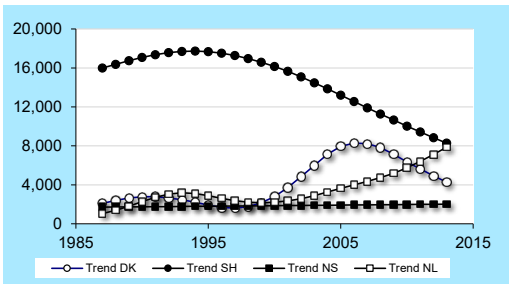
04961

Calidris canutus canutus

DK: Islandsk Ryle **D: Knutt** **NL: Kanoetstrandloper**



(A) Overall trend in the international Wadden Sea

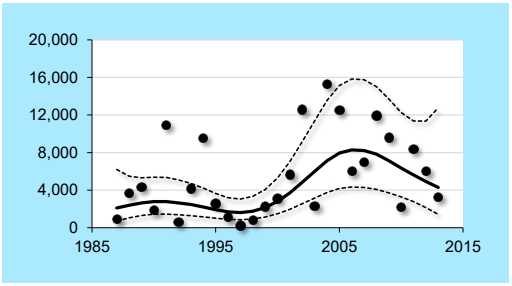


(B) Trends in the different countries compared

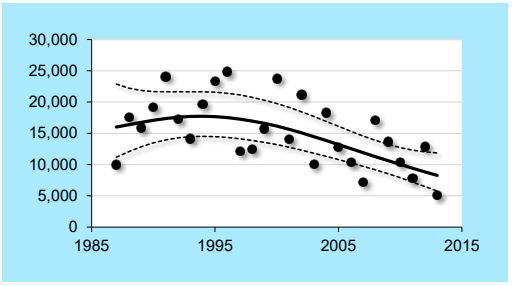
Figure 5.3.1-5.3.6 Trends of subspecies Red Knot (*canutus*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

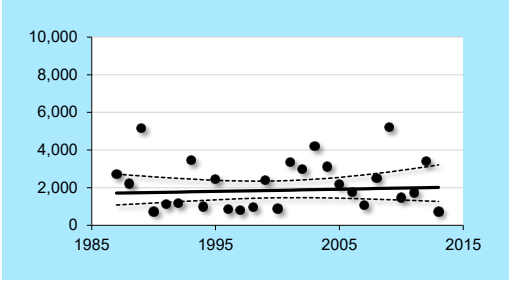
Red Knots of the subspecies *C. c. canutus* migrating from Africa to Siberia are mainly present in the Wadden Sea in May and July-August. The overall trend shows a slight increase, although in Schleswig-Holstein with highest numbers a continuous decrease occurs since the late 1990's while numbers are increasing in Denmark and the Netherlands, almost reaching the levels of Schleswig-Holstein in the latest years, but fluctuating in Niedersachsen.



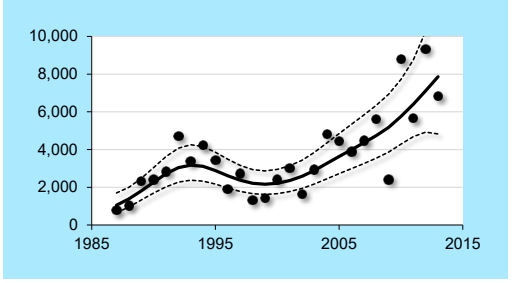
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Red Knot (*canutus*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

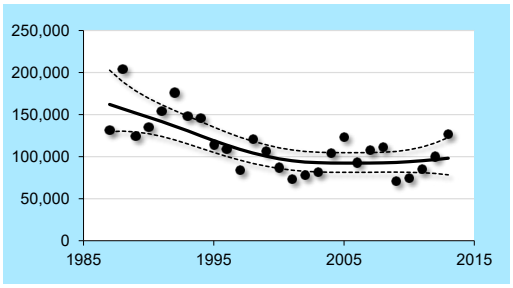
Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		▬	▬
(D) Schleswig-Holstein		⬇	⬇
(E) Niedersachsen/Hamburg		➡	➡
(F) The Netherlands		⬆⬆	⬆

⬆⬆ strong increase ⬇⬇ strong decrease ⬆ moderate increase
⬇ moderate decrease ➡ stable ▬ uncertain

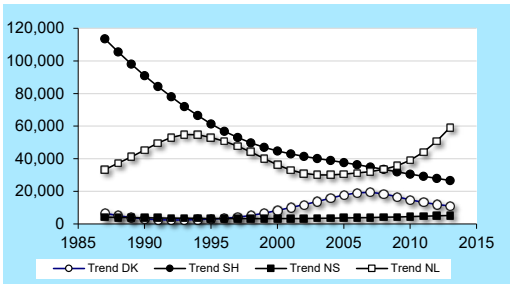
5.4 Red Knot (*islandica*)

Calidris canutus islandica 04962

DK: Islandsk Ryle D: Knutt NL: Kanoetstrandloper



(A) Overall trend in the international Wadden Sea

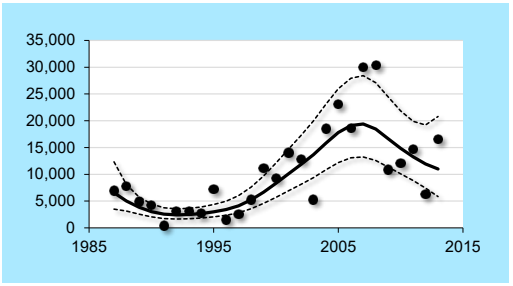


(B) Trends in the different countries compared

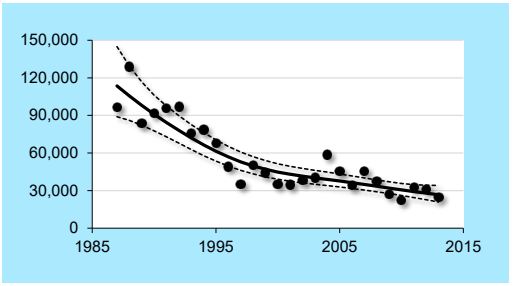
Figure 5.4.1-5.4.6 Trends of subspecies Red Knot (*islandica*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

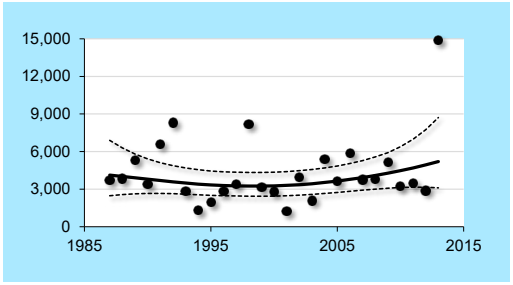
Birds of the subspecies *C. c. islandica* winter in the European region and breed in Greenland and Canada. In opposite to the *C. c. canutus* subspecies the overall trend of *C. c. islandica* shows a strong decrease, mainly in Schleswig-Holstein, but also in the Netherlands, while numbers increase slightly in Denmark and keep stable on very low level in Niedersachsen.



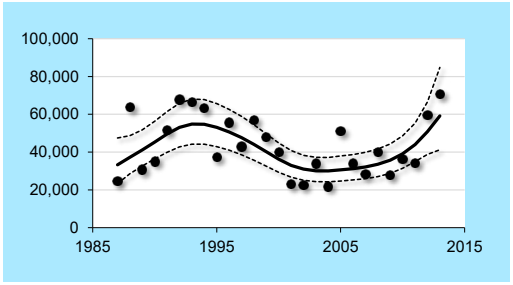
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Red Knot (*islandica*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	→
(C) Denmark		–	–
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		→	–
(F) The Netherlands		↑	↑

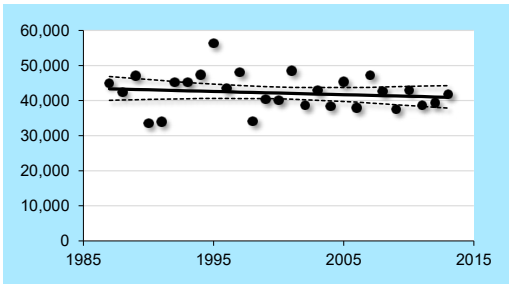
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable – uncertain

5.5 Bar-tailed Godwit (*taymyrensis*)

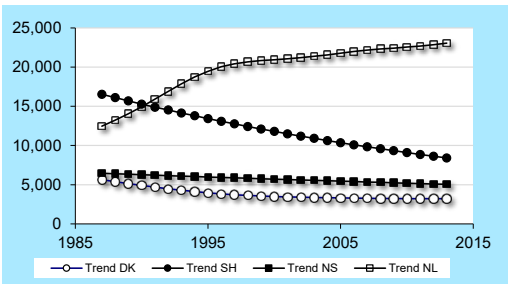
05341

Limosa lapponica taymyrensis

DK: Lille Kobbersneppe D: Pfuhlschnepfe NL: Rosse Grutto



(A) Overall trend in the international Wadden Sea

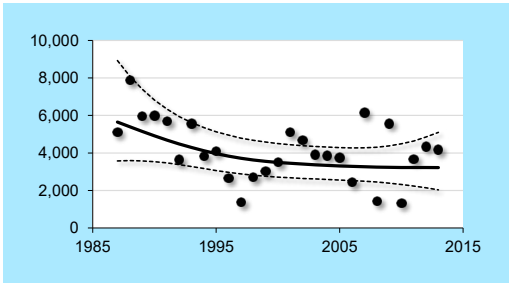


(B) Trends in the different countries compared

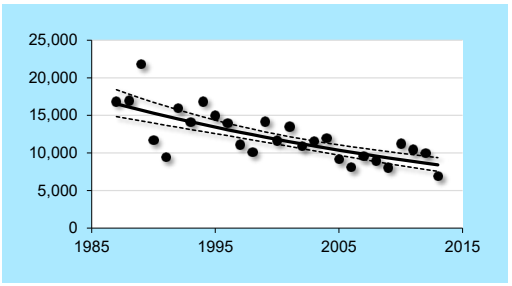
Figure 5.5.1-5.5.6 Trends of subspecies Bar-tailed Godwit (*taymyrensis*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

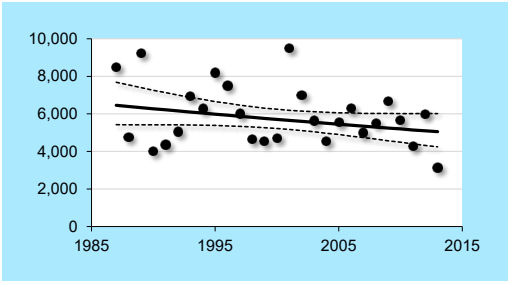
Birds of the Siberian subspecies *L. l. taymyrensis* are mainly present in the Wadden Sea in May and in July/August. The overall trend is stable, but different in the sub regions. Most birds occur in the Netherlands, where numbers increased until the mid 1990's and remained stable since then. In opposite a continuous decrease occurred in Schleswig-Holstein and also in Denmark. Numbers remained stable only in Niedersachsen but on much lower level.



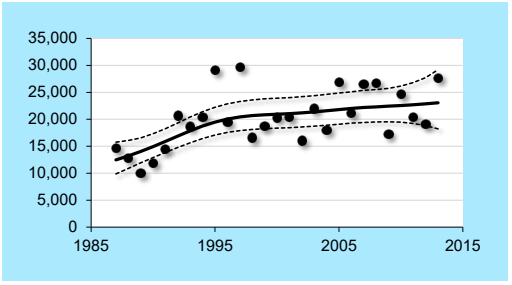
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Bar-tailed Godwit (*taymyrensis*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

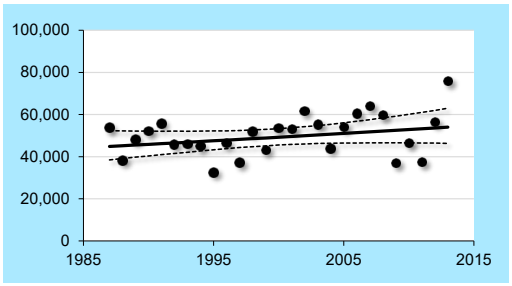
Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		➡	–
(D) Schleswig-Holstein		⬇	⬇
(E) Niedersachsen/Hamburg		➡	➡
(F) The Netherlands		⬆	➡

⬆⬆ strong increase ⬇⬇ strong decrease ⬆ moderate increase
⬇ moderate decrease ➡ stable – uncertain

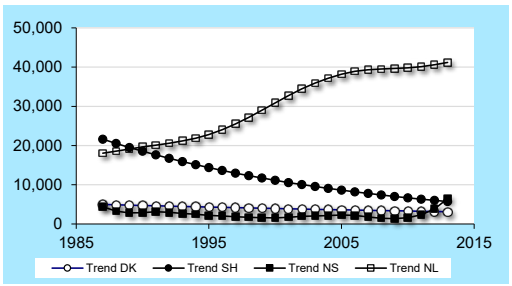
5.6 Bar-tailed Godwit (*lapponica*)

Limosa lapponica lapponica 05342

DK: Lille Kobbersneppe D: Pfuhlschnepfe NL: Rosse Grutto



(A) Overall trend in the international Wadden Sea

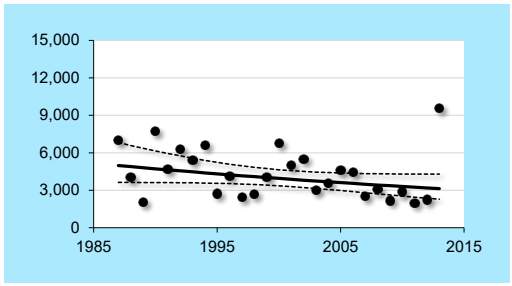


(B) Trends in the different countries compared

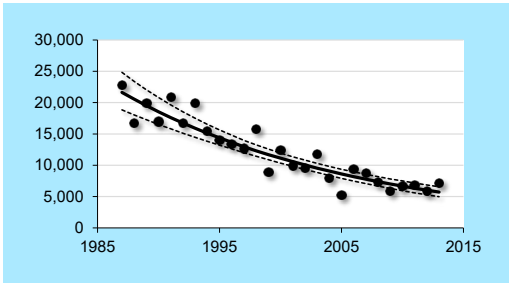
Figure 5.6.1-5.6.6 Trends of subspecies Bar-tailed Godwit (*lapponica*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

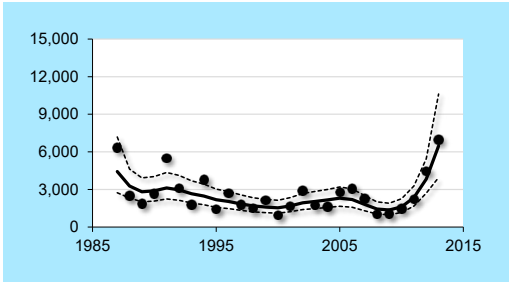
Birds of the subspecies *L. l. lapponica* breed in northern Scandinavia and northern Russia and winter in coastal Western Europe and North-West Africa. From Septmber to April all birds in the Wadden Sea are supposed to belong to this subspecies. The overall trend of these wintering birds is fluctuating with decreasing numbers during the last years. Biggest numbers of 20,000 birds in total were recorded each in the Netherlands and Schleswig-Holstein in the late 1980's. While numbers decreased in Schleswig-Holstein continuously by more than 50% like in Denmark and Niedersachsen on much lower level, the opposite happened in the Netherlands by increasing strongly after the mid 1990's, but dropping again during the last years.



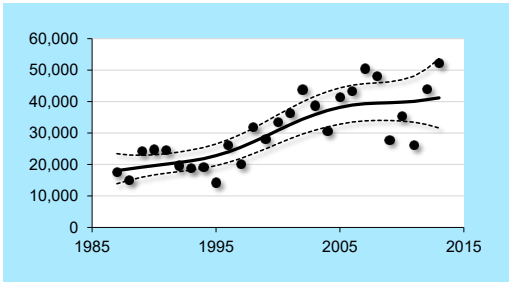
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Bar-tailed Godwit (*lapponica*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		➡	➡
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		➡	↑↑
(F) The Netherlands		↑	➡

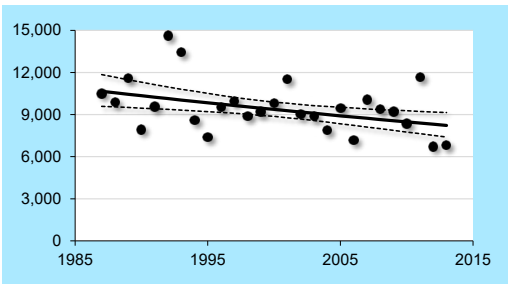
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable uncertain

5.7 Common Redshank (*totanus*)

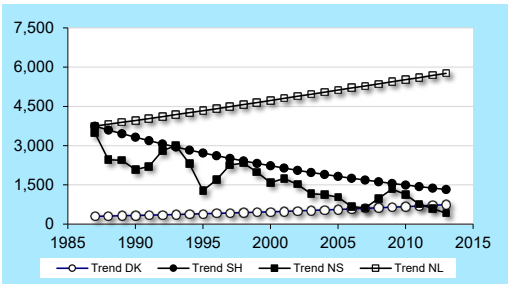
05461

Tringa totanus totanus

DK: Rødben D: Rotschenkel NL: Tureluur



(A) Overall trend in the international Wadden Sea

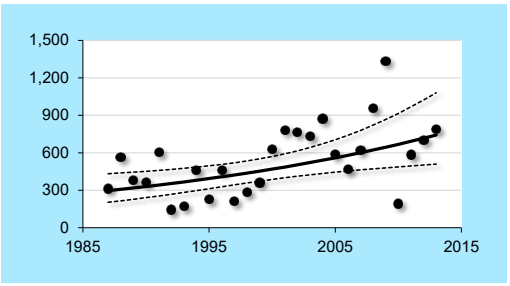


(B) Trends in the different countries compared

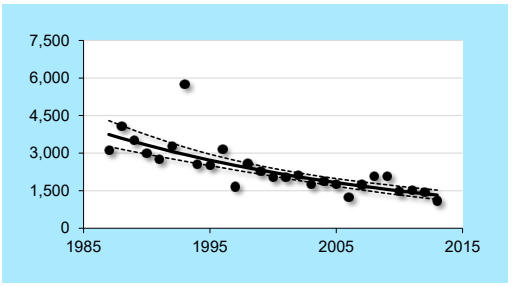
Figure 5.7.1-5.7.6 Trends of subspecies Common Redshank (*totanus*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

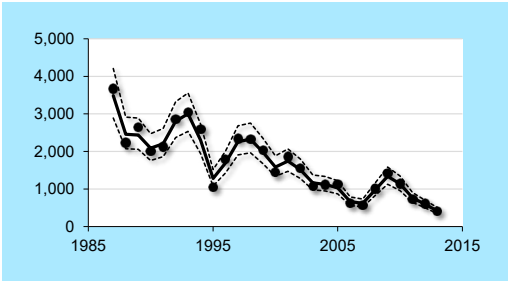
Birds from the Fennoscandia and north-western Russian population *T. t. totanus*, which winter in western Africa, pass through the Wadden Sea in April/May and July/August mainly. The overall trend is stable to slightly decreasing, but very much contrasting within the Wadden Sea regions. Numbers are continuously increasing in the Netherlands and on much lower level in Denmark also, but decreasing strongly in Schleswig-Holstein and Niedersachsen.



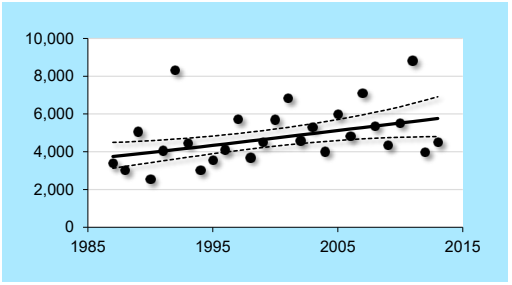
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Redshank (*totanus*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

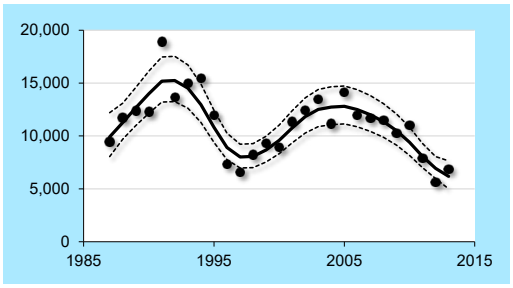
Area / Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea	↓	↓
(C) Denmark	↑	↑
(D) Schleswig-Holstein	↓	↓
(E) Niedersachsen/Hamburg	↓↓	↓↓
(F) The Netherlands	↑	→

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

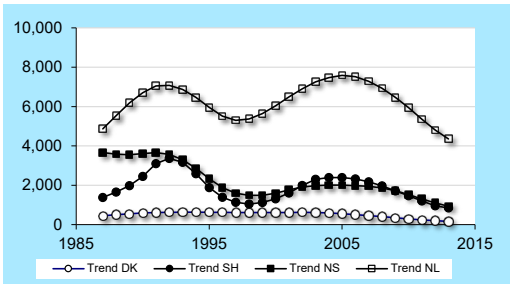
5.8 Common Redshank (*robusta*)

Tringa totanus robusta 05462

DK: Rødben D: Rotschenkel NL: Tureluur



(A) Overall trend in the international Wadden Sea

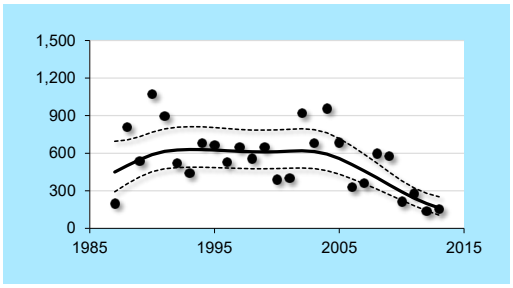


(B) Trends in the different countries compared

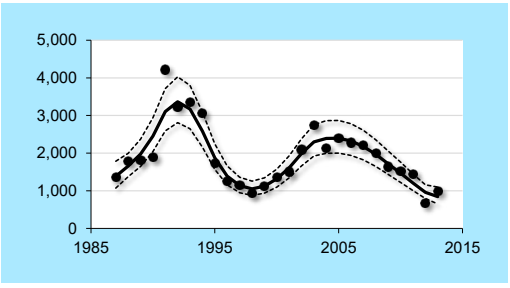
Figure 5.8.1-5.8.6 Trends of subspecies Common Redshank (*robusta*) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

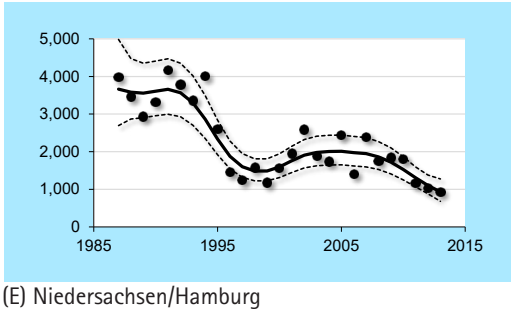
Only birds of the subspecies *T. t. robusta* from islandic breeding grounds winter in the Wadden Sea region. Thus, numbers and trends reflect the occurrence of severe winters. Numbers increased up to the mid 1990's, but dropped rapidly due to the severe winters in the mid 1990's, recovered until 2005/2006 and decreased since then again due to a series of cold winters during the last years. Almost the same pattern appears the same in all regions of the Wadden Sea.



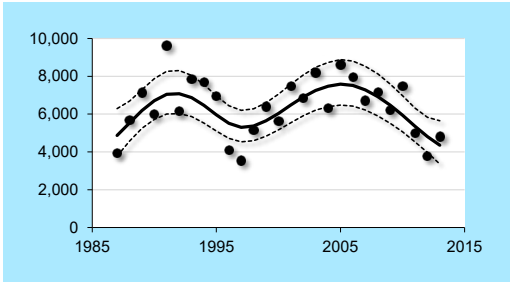
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Common Redshank (*robusta*) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		↓	↓↓
(C) Denmark		↓	↓↓
(D) Schleswig-Holstein		↓	↓↓
(E) Niedersachsen/Hamburg		↓	↓
(F) The Netherlands		→	↓

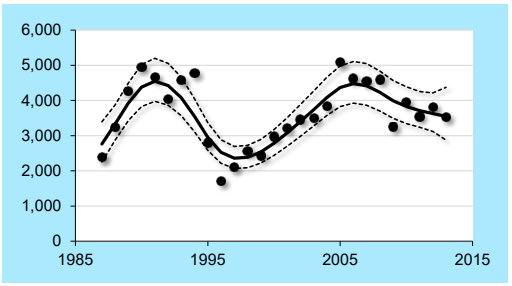
↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

5.9 Ruddy Turnstone (Greenland & NE Canada)

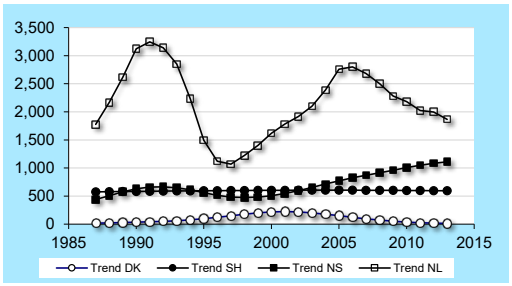
05611

Arenaria interpres morinella

DK: Stenvender D: Steinwälzer NL: Steenloper



(A) Overall trend in the international Wadden Sea

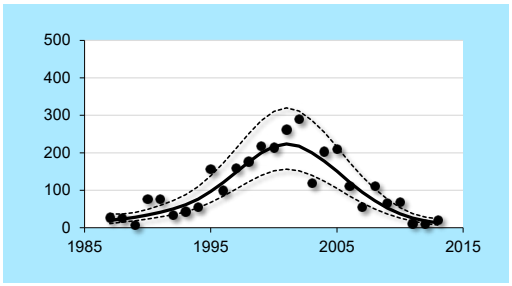


(B) Trends in the different countries compared

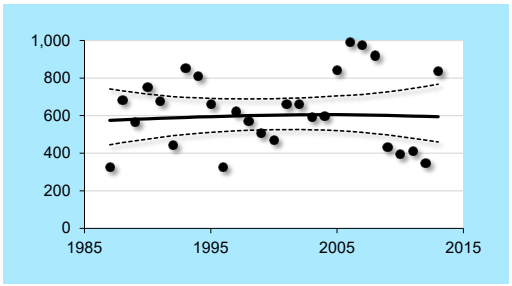
Figure 5.9.1-5.9.6 Trends of subspecies Ruddy Turnstone (Greenland & NE Canada) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

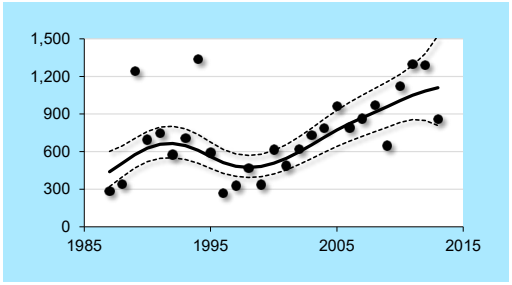
Birds from the Greenlandic and north-eastern Canadian population stay in the Wadden Sea during winter, but also in western Europe and north-western Africa. Like in *Tringa t. robusta* wintering numbers are reflecting the occurrence of severe winters during the last 25 years. Numbers increased after the severe winters in the mid 1980's, dropped again due to the severe winters in the mid 1990's, recovered continuously for several years until 2008 and dropped again during the row of severe winters around 2009-2011. This pattern is most pronounced in the Netherlands and Schleswig-Holstein while numbers are more increasing in Niedersachsen but decreasing in Denmark during last ten years.



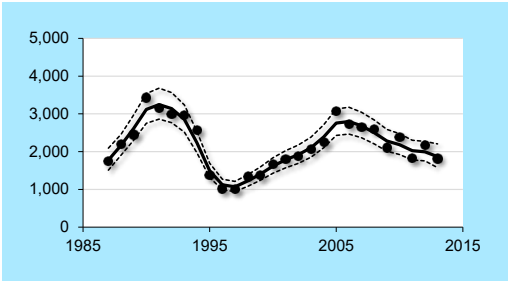
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Ruddy Turnstone (Greenland & NE Canada) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

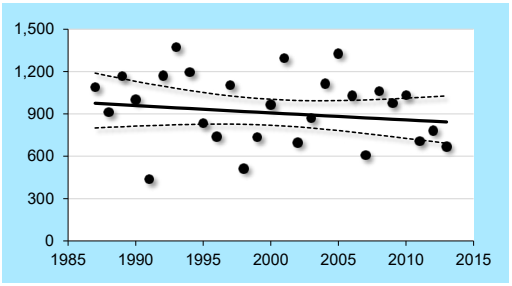
Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		→	→
(C) Denmark		→	↓↓
(D) Schleswig-Holstein		→	→
(E) Niedersachsen/Hamburg		↑	↑
(F) The Netherlands		→	↓

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease → stable uncertain

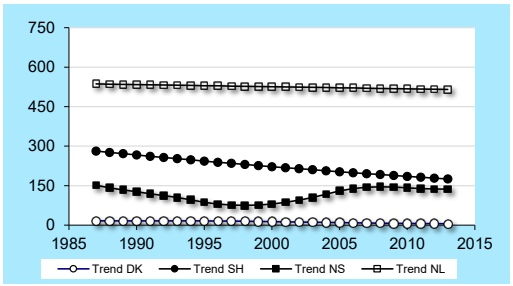
5.10 Ruddy Turnstone (Scandinavia-Western Russia)

Arenaria interpres 05612

DK: Stenvender D: Steinwälzer NL: Steenloper



(A) Overall trend in the international Wadden Sea

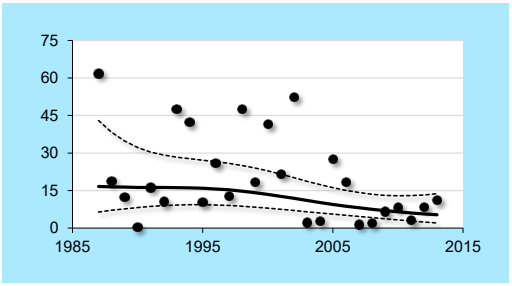


(B) Trends in the different countries compared

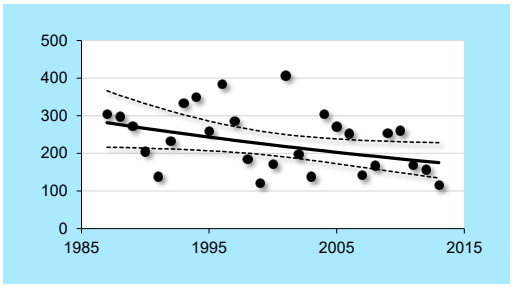
Figure 5.10.1-5.10.6 Trends of subspecies Ruddy Turnstone (Scandinavia - Western Russia) in the international Wadden Sea (WS) and the four regions 1987/1988-2013/2014; dots represent annual averages; trendline calculated by Trendspotter (solid line) together with the ± 95 % confidence limits (dotted line).

Explanatory Note

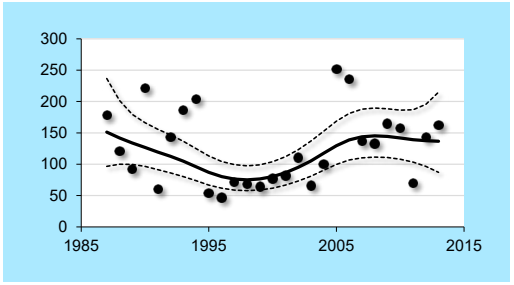
Birds from the Scandinavian and north-western Russian population winter in western Africa and pass the Wadden Sea mainly in May and July. The overall trend is stable with fluctuating numbers. There are small differences within the regions with a slight increase in the Netherlands, a slight decrease in Schleswig-Holstein, a decrease followed by an increase in Niedersachsen and the small numbers in Denmark dropped clearly during the last years.



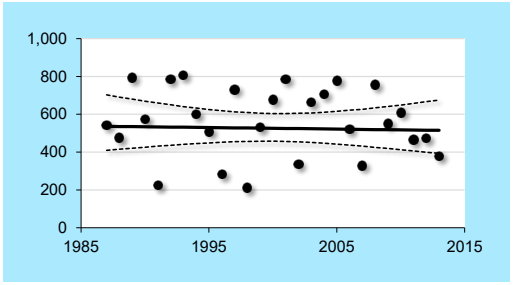
(C) Denmark



(D) Schleswig-Holstein



(E) Niedersachsen/Hamburg



(F) The Netherlands

Trends for Ruddy Turnstone (Scandinavia - Western Russia) in the Wadden Sea

Figures represent the trend 1987/1988 to 2013/2014, taking into account data from those months in which this subspecies dominates counts in the Wadden Sea. Numbers on the y-axis represent monthly mean occurrences. Dots are the individual yearly estimates, solid lines the trend calculated by TrendSpotter, dotted lines the 95% confidence limits of the trend lines.

Area	Period	1987/88 - 2013/14	2004/05 - 2013/14
(A)/(B) International Wadden Sea		➡	➡
(C) Denmark		–	–
(D) Schleswig-Holstein		↓	↓
(E) Niedersachsen/Hamburg		➡	–
(F) The Netherlands		➡	➡

↑↑ strong increase ↓↓ strong decrease ↑ moderate increase
↓ moderate decrease ➡ stable – uncertain

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Annex 1 Assignment of species according to living conditions

Table A1.1
Assignment of species according to food and feeding habitats

	Food						Feeding habitats				
	shellfish	worms	fish	other vertebrates	plants	omnivorous	salt marsh	tidal	dunes	beach & offshore	coastal grassland
Great Cormorant			x					x			
Eurasian Spoonbill			x					x			
Barnacle Goose					x		x				
Brent Goose					x		x				
Common Shelduck				x				x			
Eurasian Wigeon					x		x				
Common Teal					x		x				
Mallard					x		x				
Northern Pintail					x		x				
Northern Shoveler				x			x				
Common Eider	x							x			
Eurasian Oystercatcher	x							x			
Pied Avocet		x						x			
Great Ringed Plover		x						x			
Kentish Plover		x						x			
European Golden Plover		x									x
Grey Plover		x						x			
Northern Lapwing		x									x
Red Knot	x							x			
Sanderling		x								x	
Curlew Sandpiper		x						x			
Dunlin		x						x			
Ruff		x									x
Bar-tailed Godwit		x						x			
Whimbrel				x				x			
Eurasian Curlew				x				x			
Spotted Redshank			x					x			
Common Redshank				x				x			
Common Greenshank			x					x			
Ruddy Turnstone				x						x	
Black-headed Gull				x				x			
Common Gull				x				x			
European Herring Gull	x							x			
Great Black-backed Gull						x				x	
Total number of species	**4**	**11**	**4**	**8**	**6**	**1**	**7**	**21**	**0**	**3**	**3**

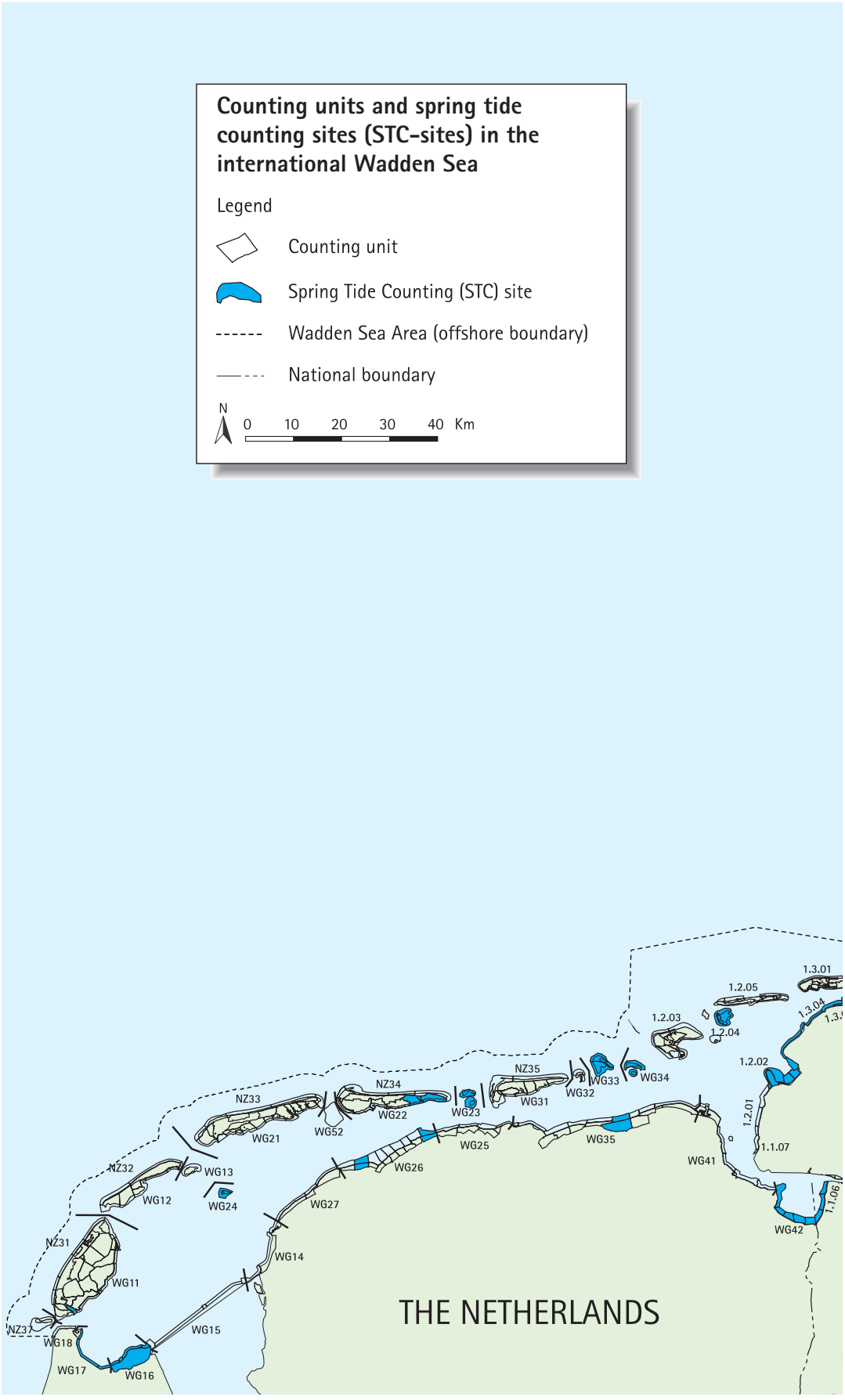
Photo:
John Frikke

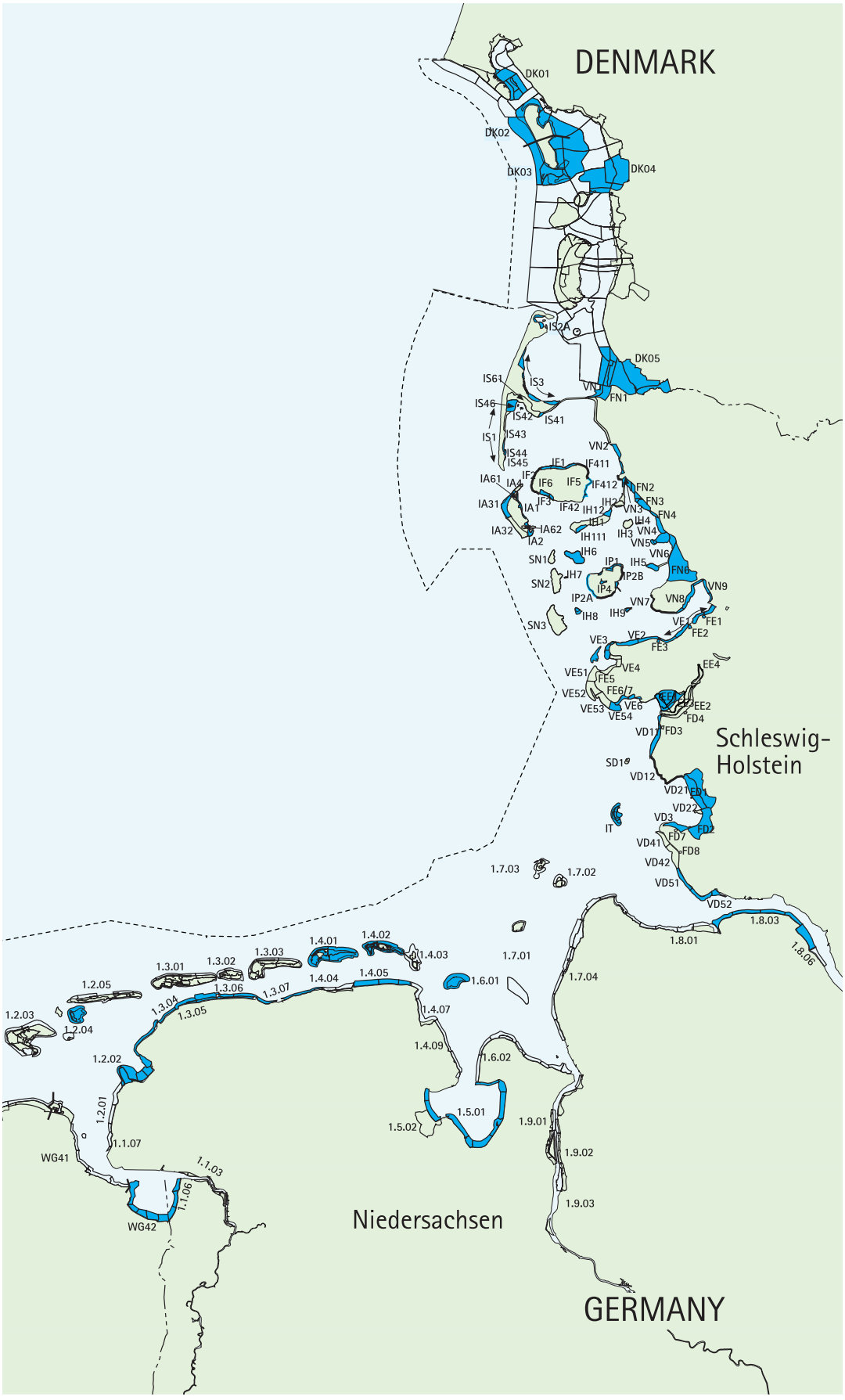
Table A1.2
Assignment of species according to breeding and wintering range.

	Breeding range		Wintering range	
	arctic breeder	non-arctic breeder	Europe	Africa
Great Cormorant		x	x	
Eurasian Spoonbill		x		x
Barnacle Goose	x		x	
Brent Goose	x		x	
Common Shelduck		x	x	
Eurasian Wigeon		x	x	
Common Teal		x	x	
Mallard		x	x	
Northern Pintail		x		x
Northern Shoveler		x	x	
Common Eider		x	x	
Eurasian Oystercatcher		x	x	
Pied Avocet		x	x	
Great Ringed Plover	x			x
Kentish Plover		x	x	
European Golden Plover		x	x	
Grey Plover	x			x
Northern Lapwing		x	x	
Red Knot	x			x
Sanderling	x			x
Curlew Sandpiper	x			x
Dunlin	x		x	
Ruff	x			x
Bar-tailed Godwit	x			x
Whimbrel	x			x
Eurasian Curlew	x		x	
Spotted Redshank		x		x
Common Redshank		x	x	
Common Greenshank		x		x
Ruddy Turnstone	x		x	
Black-headed Gull		x	x	
Common Gull		x	x	
European Herring Gull		x	x	
Great Black-backed Gull		x	x	
Total number of species	**13**	**21**	**22**	**12**

Annex 2 Counting units in the Wadden Sea

Figure A2.1
The international Wadden Sea, including delimitations of all counting units and spring tide counting sites




DENMARK
DK01
DK02
DK03
DK04
DK05
IS2A
IS61
IS3
VN1
FN1
IS46
IS42
IS41
IS1
IS43
IS44
IS45
VN2
IE1
IF411
IA61
IA4
IF7
IF6
IF5
IF412
FN2
FN3
IA31
IA1
IF3
IF42
IH12
IH2
VN3
FN4
IH4
IA32
IA62
IA2
IH111
IH1
IH3
VN4
VN5
VN6
SN1
IH6
IP1
IH5
FN5
SN2
IH7
IP2B
IP4
VN9
IP2A
VN7
VN8
IH8
IH9
VE1
FE1
SN3
VE2
FE2
VE3
FE3
VE4
EE4
VE51
IFE5
VE52
FE6/7
EE3
EE2
VE53
VE6
VE54
FD4
VD11
FD3
Schleswig-
Holstein
SD1
VD12
VD21
FD1
VD22
VD3
IT
FD2
FD7
VD41
FD8
VD42
VD51
VD52
1.8.03
1.8.01
1.8.06
1.7.03
1.7.02
1.7.01
1.7.04
1.4.01
1.4.02
1.4.03
1.3.01
1.3.02
1.3.03
1.2.05
1.3.06
1.3.07
1.4.04
1.4.05
1.6.01
1.2.03
1.3.04
1.3.05
1.2.04
1.4.07
1.4.09
1.6.02
1.2.02
1.2.01
1.5.01
1.5.02
1.9.01
1.1.07
WG41
1.1.03
1.1.06
WG42
1.9.02
1.9.03
Niedersachsen
GERMANY

Annex 3 Species List

List of the species monitored in the Trilateral Monitoring and Assessment Program (TMAP)

Euring	English name	Scientific name	Dansk navn	Deutscger Name	Nederlandse naam
00720	Great Cormorant	Phalacrocorax carbo	Skarv	Kormoran	Aalscholver
01440	Eurasian Spoonbill	Platalea leucorodia	Skestork	Löffler	Lepelaar
01670	Barnacle Goose	Branta leucopsis	Bramgås	Nonnengans	Brandgans
01680	Dark-bellied Brent Goose	Branta bernicla	Knortegås	Ringelgans	Rotgans
01610	Greylag Goose*	Anser anser	Grågås	Graugans	Grauwe Gans
01730	Common shelduck	Tadorna tadorna	Gravand	Brandgans	Bergeend
01790	Eurasian Wigeon	Anas penelope	Pibeand	Pfeifente	Smient
01840	Common Teal	Anas crecca	Krikand	Krickente	Wintertaling
01860	Mallard	Anas platyrhynchos	Gråand	Stockente	Wilde Eend
01890	Northern Pintail	Anas acuta	Spidsand	Spießente	Pijlstaart
01940	Northern Shoveler	Anas clypeata	Skeand	Löffelente	Slobeend
02060	Common Eider	Somateria mollissima	Ederfugl	Eiderente	Eidereend
02430	White-Tailed Eagle*	Haliaeetus albicilla	Havørn	Seeadler	Zeearend
02900	Rough-Legged Buzzard*	Buteo lagopus	Fjeldvåge	Rauhfußbussard	Ruigpootbuizerd
03090	Merlin*	Falco columbarius	Dværgfalk	Merlin	Smelleken
03200	Peregrine Falcon*	Falco peregrinus	Vandrefalk	Wanderfalke	Slechtvalk
04500	Eurasian Oystercatcher	Haematopus ostralegus	Strandskade	Austernfischer	Scholekster
04560	Pied Avocet	Recurvirostra avosetta	Klyde	Säbelschnäbler	Kluut
04700	Great Ringed Plover	Charadrius hiaticula	Stor Præstekrave	Sandregenpfeifer	Bontbekplevier
04770	Kentish Plover	Charadrius alexandrinus	Hvidbrystet Præstekrave	Seeregenpfeifer	Strandplevier
04850	Golden Plover	Pluvialis apricaria	Hjejle; Hedehjejle	Goldregenpfeifer	Goudplevie
04860	Grey Plover	Pluvialis squatarola	Strandhjejle	Kiebitzregenpfeifer	Zilverplevier
04930	Northern Lapwing	Vanellus vanellus	Vibe	Kiebitz	Kievit
04960	Red Knot	Calidris canutus	Islandsk Ryle	Knutt	Kanoetstrandloper
04970	Sanderling	Calidris alba	Sandløber	Sanderling	Drieteenstrandloper
05090	Curlew Sandpiper	Calidris ferruginea	Krumnæbbet Ryle	Sichelstrandläufer	Krombekstrandloper
05120	Dunlin	Calidris alpina	Almindelig Ryle	Alpenstrandläufer	Bonte Strandloper
05170	Ruff	Philomachus pugnax	Brushane	Kampfläufer	Kemphaan
05320	Black-tailed Godwit*	Limosa limosa	Stor Kobbersneppe	Uferschnepfe	Grutto
05340	Bar-Tailed Godwit	Limosa lapponica	Lille Kobbersneppe	Pfuhlschnepfe	Rosse Grutto
05380	Whimbrel	Numenius phaeopus	Lille Regnspove	Regenbrachvogel	Regenwulp
05410	Eurasian Curlew	Numenius arquata	Stor Regnspove	Großer Brachvogel	Wulp
05450	Spotted Redshank	Tringa erythropus	Sortklire	Dunkler Wasserläufer	Zwarte Ruiter
05460	Common Redshank	Tringa totanus	Rødben	Rotschenkel	Tureluur
05480	Common Greenshank	Tringa nebularia	Hvidklire	Grünschenkel	Groenpootruiter
05610	Ruddy Turnstone	Arenaria interpres	Stenvender	Steinwälzer	Steenloper
05820	Common Black-headed Gull	Larus ridibundus	Hættemåge	Lachmöwe	Kokmeeuw
05900	Common Gull	Larus canus	Stormmåge	Sturmmöwe	Stormmeeuw
05910	Lesser Black-backed Gull*	Larus fuscus	Sildemåge	Heringsmöwe	Kleine Mantelmeeuw
05920	Herring Gull	Larus argentatus	Sølvmåge	Silbermöwe	Zilvermeeuw
06000	Great Black-backed Gull	Larus marinus	Svartbag	Mantelmöwe	Grote Mantelmeeuw
09780	Shore (Horned) Lark*	Eremophila alpestris	Bjerglærke	Ohrenlerche	Strandleeuwerik
16620	Twite*	Carduelis flavirostris	Bjergirisk	Berghänfling	Frater
18500	Snow Bunting*	Plectrophenax nivalis	Snespurv	Schneeammer	Sneeuwgors

* Species where data does not allow trend analysis

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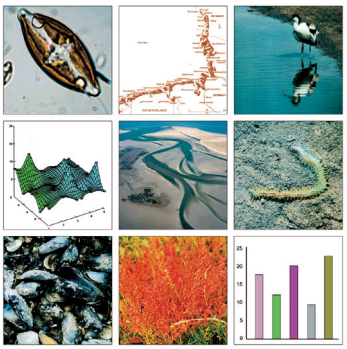

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