



Workshop Report

Breeding Birds in Trouble

Preparation of an action plan for proper management of
threatened breeding birds in the Wadden Sea

Wilhelmshaven, 18 April 2013



Photo: G. Reichert

Joint Monitoring Breeding Bird Group (JMBB) 2013

Summary

The participants of the workshop were worried about the decrease of 2/3 of relevant breeding bird species in the Wadden Sea caused mainly by low breeding success. As most pressing issues predation and flooding together with food stock depletion, changes of habitats and disturbances were identified. The general lack of habitat dynamics plays an important role in the decrease of breeding birds.

The experts agreed as most promising and practicable measures against further declining of breeding bird species on restoration of the natural water regime in grasslands and saltmarshes, reduction of the negative impact of predators on Wadden Sea islands and limitation of disturbance in important breeding areas. There is also probably not enough experience and information exchange between site and habitat managers and breeding bird experts.

JMBB was requested to develop a matrix with habitats, breeding birds and threats as tool for supporting specific management measures.

JMBB was also requested to develop on basis of the workshop results a management action plan including a number of specific and functional recommendations which should be forwarded to the 12th Trilateral Governmental Conference in Denmark 2014.

Background

The workshop 'Breeding Birds in Trouble' in Wilhelmshaven on 18 April 2013 was initiated by the Joint Monitoring Breeding Bird Group (JMBB) and organized by the Common Wadden Sea Secretariat. The reason was the latest trends in breeding bird numbers which show that half of the trilateral monitored breeding birds have declining numbers.

This shows that despite conservation efforts on local, national and international level coastal breeding birds in the Wadden Sea are threatened. Causes of the decline are low breeding success, depleted food stocks, disturbances, changes of habitats and specific local reasons. The aim of the workshop was to bring conservation managers, breeding bird experts and other relevant conservation organisations together, to present the most pressing issues, discuss reasons, solutions and consequences and take initiative to develop an action plan, which will give practical advice on proper management of specific breeding bird species and habitats.

An Action Plan including specific recommendations will be forwarded to the 12th Trilateral Governmental Conference in Denmark, 2014. The programme of the workshop can be found under ANNEX 1 and the list of workshop participants under ANNEX 2.

Introduction by Peter Südbeck

The chairperson of the workshop, Peter Südbeck, welcomed the participants also in the name of JMBB and gave a short introduction on the objectives of the workshop to develop a set of concrete recommendations as basis for an action plan in view of the Trilateral Governmental Conference in 2014. The following introduction round showed that breeding bird experts and habitat conservation managers of all three Wadden Sea countries were well presented. The workshop was divided in a monitoring part in the morning with presentation on trilateral breeding monitoring and a management part in the afternoon with presentations on habitat management in relation to breeding bird conservation. The closing

discussion aimed on priority species, specific management proposals and the development of an action plan for the TGC 2014.

MONITORING

Breeding bird Targets in the Wadden Sea Plan and Natura 2000 (Gerold Lüerssen)

Gerold Lüerssen introduced the meeting with an overview and the background of the trilateral and European policy on bird protection. The Trilateral Cooperation is following according to the Joint Declaration the guiding principle '*...to achieve as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way.*' The protection of the Wadden Sea officially determined in the Wadden Sea Plan is based on the ecosystem approach '*... to manage the Wadden Sea as single ecological entity for its natural, landscape and cultural heritage values, ...*'. Both statements are important for the conservation as breeding birds closely depend on a whole and healthy ecosystem with intact components and natural dynamic processes.

The Wadden Sea Plan defines the so-called Targets, which are used for assessment of the quality status of the Wadden Sea, which is regularly published in the Quality Status Reports. For the birds following Targets are defined:

- Stable or increasing numbers and distribution taking into account that abundance of species is in line with prevailing physiographic, geographic and climatic conditions.
- Breeding success and survival determined by natural processes.
- Breeding, feeding, moulting and roosting sites supporting a natural population.
- Undisturbed connectivity between breeding, feeding, moulting and roosting sites.
- Fluctuations in food stocks determined by natural processes.
- Habitat, food stocks and connectivity between habitats supporting a favourable conservation status.

But also other Targets for salt marshes, tidal flats and other habitats are taking the favourable conditions for birds into account.

The trilateral monitoring of birds covers several monitoring parameters which are the counting of migratory and breeding birds, monitoring of breeding success and the analysis of contaminants in bird eggs.

Trends of coastal breeding birds in the Wadden Sea Area and breeding success monitoring (Kees Koffijberg)

Kees Koffijberg gave an overview of the latest trends in breeding birds up to 2009 and an introduction into the trilateral breeding success monitoring carried out since 2010. On basis of harmonized guidelines 10 selected breeding bird species are monitored in the trilateral breeding success program. Mainly data on hatching and fledging were collected. In the presentation statements on trends and breeding success were made.

35 selected coastal breeders are part of the trilateral breeding bird monitoring program and are completely counted in a regular 6 years cycle. Colony breeders and rare species are annually counted. Yearly counts of all 35 species in 103 representative Wadden Sea census areas are delivering information for trend calculation and a sufficient assessment of the status of breeding birds. The data on rare species like ruff or common snipe does not allow further trend analysis because of statistical reasons. According to the workshop the assessment of the development of these species should also be part of the annual trend report even if data does not allow trend calculation.

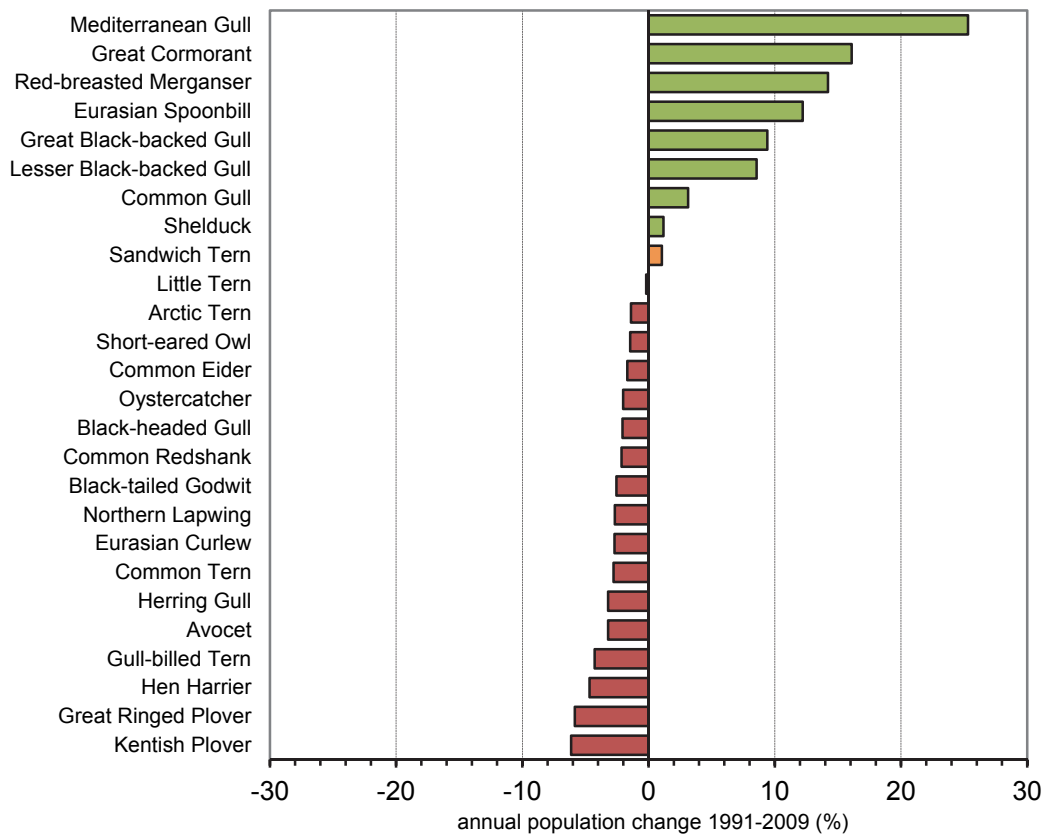


Figure 1: Annual population change of 26 breeding bird species over the last 19 years.

According to the last two QSRs and the latest progress report the number of species with decline increased.

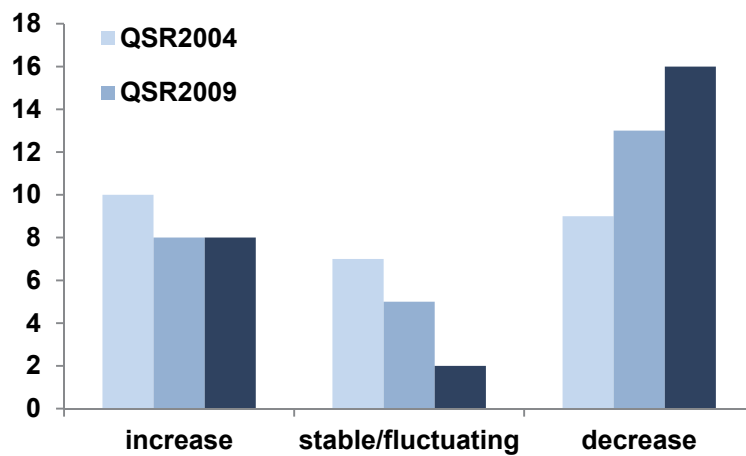


Figure 2: Development of breeding bird species in trilateral reports

Also the rate of decline accelerated in the last ten years, but here the reasons are not clearly known and might be different for single species.

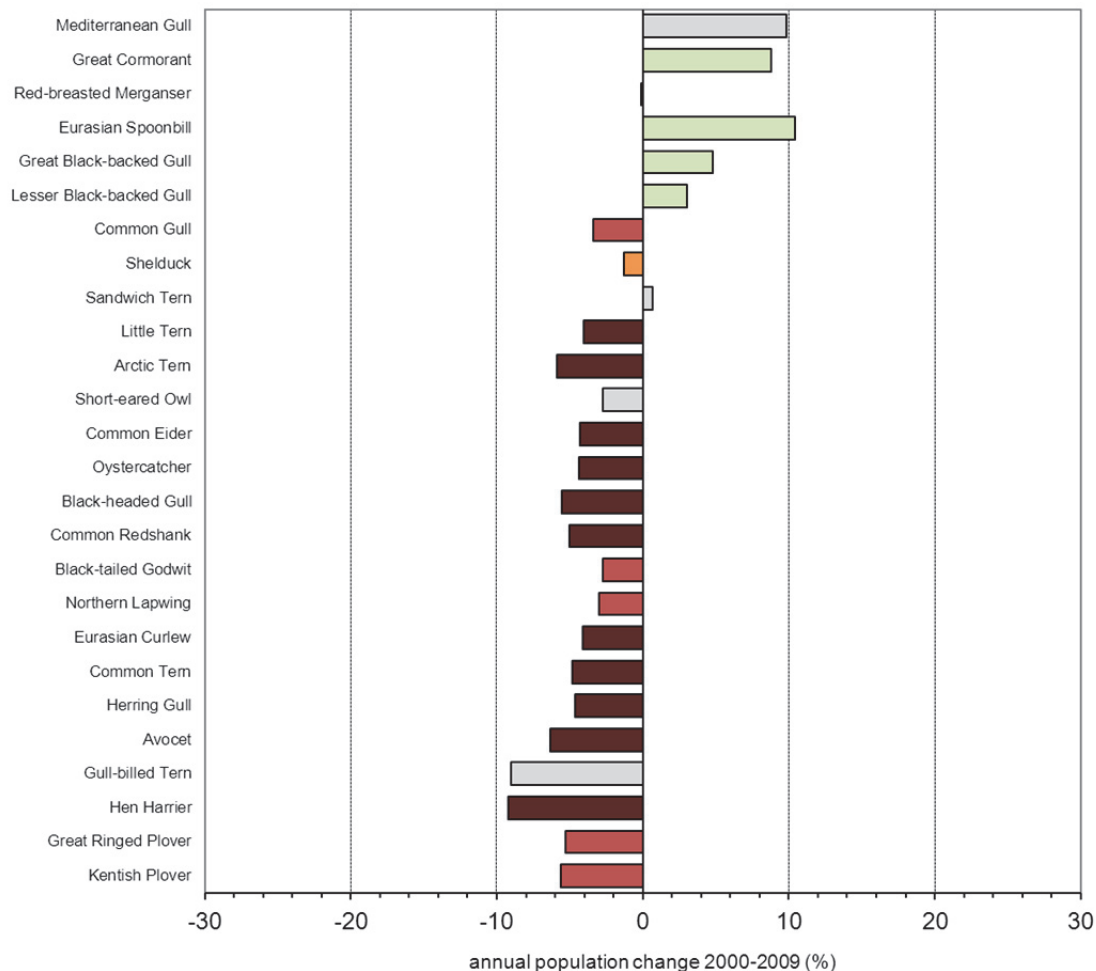


Figure 3: Increase of population change of 26 breeding bird species over the last 10 years.

An analysis of development of species numbers according to food and habitat guilds shows that the group of species feeding on invertebrates suffer the most declines. For habitat guilds these are species depending on salt marshes and coastal grassland.

With a geographical view on the Wadden Sea the general trends of species improves from south to north. More species increase and less species decrease in the north than in the south.

A more detailed presentation on exemplary species showed the heterogeneous problems and troubles breeding birds are facing.

- the number of spoonbills stopped increasing in the Netherlands (Schiermonnikoog), but is still increasing in Germany,
- between 2005 and 2010 the number of sites were breeding success (fledglings/pair) of common eiders is lower than needed for an increasing or stable population exceeds the number of “successful” sites in the Netherlands,
- the number of adult and juvenile hen harriers went continuously down in the Netherlands, but in Niedersachsen as well. The reason can probably found outside the Wadden Sea area. During the last years hen harriers choose wintering areas

located closer to their breeding areas. On the island of Texel agricultural methods and grazing management changed to the detriment of meadow birds and to the disadvantage of hen harriers partly depending on meadow birds. Changing grazing management can also change the interrelation of bird species. Improving the conditions of hen harriers will also improve the situation of other predators.

- the most oystercatcher sites in the Netherlands do not produce enough chicks for population preservation. Between 2004 and 2010 only very few nesting sites could produce enough fledglings to guarantee a stable population. One of the reasons for negative breeding success is the increased number of summer storms. A study on risk of flooding of oystercatcher clutches carried out by Sovon/NAM showed the important aspect of nest height for the species.
- Avocet is declining all over the Wadden Sea with the possible exception of Schleswig-Holstein. The reason might be that avocets migrate here because of beneficial conditions. The salt marsh of the Elbe River provides deep channels and brackish water, which is attractive for avocets. The outflow of fresh water and an intact gully system from dikes to the mudflats is crucial for young avocets. Coastal protection by brushwood groynes are life-threatening barriers for young avocets on their way back from the mudflats to the salt marsh. The vital gullies are mostly vanished in the Netherlands. Breeding success of avocet is in all Wadden Sea countries low and not sufficient.
- Also the lesser black-backed gull has a too low breeding success. Food is the driving factor of breeding success. The birds are feeding in corn fields (worms), on pelagic fish and on fishery by-catch (discard). If the policy on discard should change an impact on population development has to be expected.
- Ruff, common snipe and dunlin nearly disappeared in the Wadden Sea

Are breeding birds in the Wadden Sea faring well? K. Koffijberg summarized that 16 of 26 breeding bird species, where trend calculations were possible, are declining and the number of declining species is still growing. Also for bird species which numbers are increasing the increase is lower now than in earlier years. The too low reproductive rate caused by predation, more and higher flooding events and food shortage can be seen as the primary factor of declining breeding bird numbers.

The workshop proposed that a chapter with the content of the presentation will be added to the next trilateral breeding bird progress report. The output of the breeding bird workshop will be added as an extra chapter as well.

The meeting discussed that the declining in trends might be a natural phenomenon and probably be prematurely seen by bird experts. Contradictory objectives and orientations of the EC Habitats Directive (natural areas) and the EC Birds Directive (favourable conservation status and stable bird population) have to be taken into account.

For some breeding bird species (terns) reasons of decline are not known (probably food shortage). For herring gull the food stock is directly related to breeding success. Nevertheless, the population phenology of herring gull and terns does not match, but the knowledge of food availability and quality is very poor. When breeding bird numbers decline and appropriate management is wanted than reasons for decline should clearly be known.

Contaminants in bird eggs (Peter Becker)

Peter Becker presented results of the trilateral monitoring programme on pollutants in bird eggs, which is implemented in the framework of the Trilateral Monitoring and Assessment Program (TMAP). Insecticides are counted as reason for the strong decline of breeding birds in the sixties, because of the negative effect on reproduction success. The measurement of contaminants in bird eggs started in 1981 and has been adopted by the TMAP in 1998. 10 eggs of common tern and oystercatcher collected from 16 relevant sites in the Wadden Sea are annually analysed. This allows the calculation of temporal and spatial trends in contamination of bird eggs and the identification of hot spots.

The concentration of PCBs and Hg in bird eggs decreased since 1990, but increased again in the period between 2008 and 2012 together with DDTs, HCB and HCHs. The Ecological Quality Objectives of OSPAR on Mercury and Organochlorines in Seabird Eggs were not reached at various sites around the North Sea in the period of 2008-2010. Hazardous substances have still to be seen as big problem and monitoring has to be continued especially in view of the increased pollution in the recent years. The general increasing concentrations of DDT in the Wadden Sea area cannot be explained. Some hazardous substances can be absorbed by birds in other countries, like DDE in Africa by the black stork. Unknown substances and micro plastic particles are also hazardous sources endangering breeding birds and breeding success. Hot spots of pollution are still the estuaries of River Elbe and Ems.

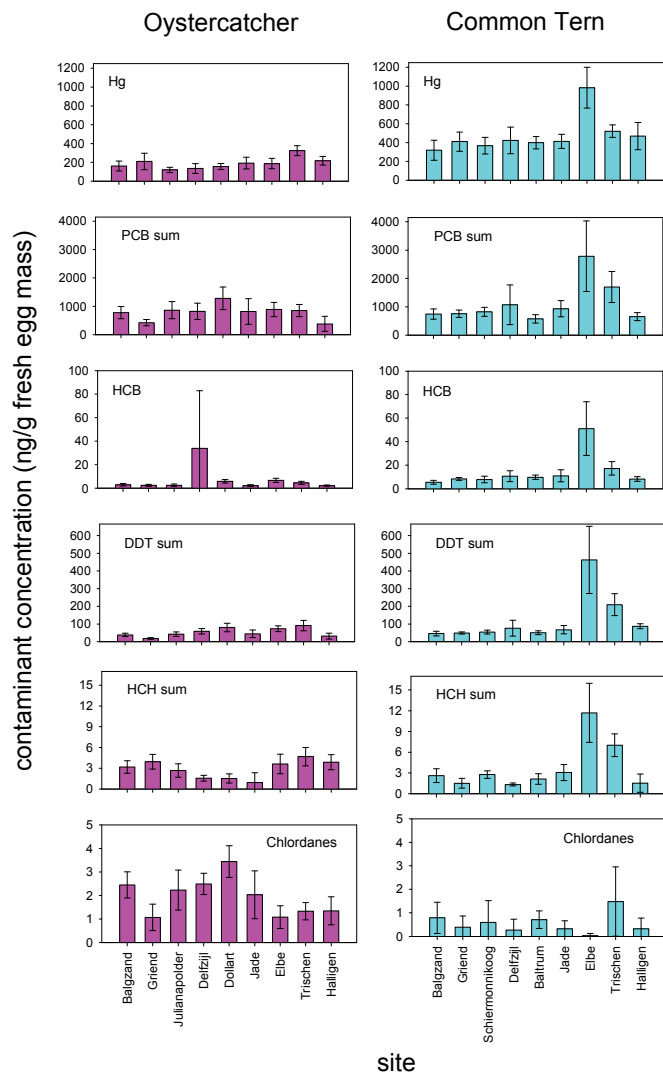


Figure 4: Contaminant concentration in bird eggs (TMAP report 2012)

P. Becker recommended that

- monitoring of contaminants in bird eggs should be continued
- the TMAP parameters “contaminants in bird eggs” and “breeding success” should be combined (e.g., practically by collecting one egg for analysis and observing the rest of eggs for breeding success)
- detailed investigations on chemicals and reproduction are needed to identify dangerous substances

Workshop discussion about definition of criteria, identification and prioritisation of threatened species.

The following points summarize the comments made by the workshop participants.

- The reasons for decline of breeding bird numbers can also be found outside of breeding habitats caused for instance by agriculture. The Wadden Sea is a mix of habitats and it is important to clearly differentiate between the involved habitats. Also the degree of management of a habitat has to be taken into account.
- The reasons for decline in breeding bird numbers have to be clearly explained in an understandable way so that management can act properly. The relation between reason of decline and possible management activities should be comprehensible for policy and management.
- Relevant politicians need a one clear signal from the workshop to get involved. The signal should include what is needed and wanted for bird conservation and how site managers can be integrated. Here the National Parks are playing an important role, because of their core task of species conservation.
- Site managers are often not habitat managers and therefore the integration of the close dependency of species to their habitats is not part of their work area. Site managers need to know if birds are living under good or bad conditions. Otherwise management of sites in view of breeding bird conservation is questionable.
- A great part of the natural hydrology in the Wadden Sea has disappeared and pristine dynamics and processes do not exist anymore.
- Somehow the management mimicked the dynamics and creates with this conservation conflicts. Grazing of salt marshes supports some bird species and means a disadvantage for others.
- For a possible specification of threatened species the criteria of specialist and opportunist species could be applied. The proposal to focus with conservation management on specialists seemed not to be acceptable as some specialist species are too rare or vanished already and because also opportunist species are declining in numbers.
- A habitat approach might also lead to a specification of the most threatened breeding bird species. Severe deterioration in habitats, which are often only visible after years, has a clear negative impact on bird numbers. The threats on habitats are also threats on breeding birds.

The meeting concluded that the development of a matrix would be very helpful to identify and prioritize bird species where a specific and effective management would support enhanced breeding bird conservation. The matrix should not be too complicated and give clear signals. It should contain the parameters habitats, species (according the recent responsibility in the Wadden Sea and grouped according habitats) and most important threats. As tool for further recommendations on breeding bird management and as tool for site managers JMBB should elaborate the matrix and use it as living document by continuously further development. A first draft of the matrix has been compiled by a workshop sub-group.

MANAGEMENT

Salt marsh management and favourable conditions for breeding birds. Aging and water-logging of salt marshes (Martin Stock)

Martin Stock gave an overview on breeding bird species using salt marshes as their habitat and on the trilateral targets for salt marshes and birds.

The results of the QSR 2009 indicated that the marsh types and the kind of grazing management are differently distributed in the countries. For drainage only few and heterogeneous data is available.

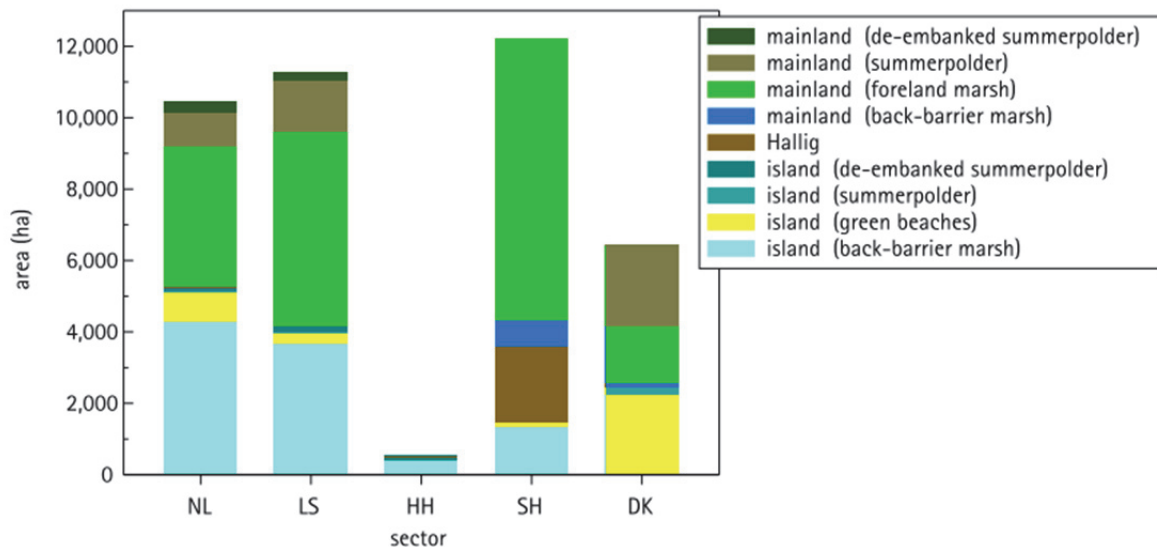


Figure 5: Salt marsh type distribution in the countries (QSR 2009).

The BASSIA project ([link](#)) in Schleswig-Holstein analysed the succession pathways of salt marsh vegetation between 1988 and 2006 including the controlling factors, the diversity of plant species and vegetation types and controlling factors in *Elymus* spreading. The results showed that high marsh is increasing, that un-grazed marsh shows a forward directed succession, that the opposed development could be observed only in few grazed marsh areas and that rewetting by a cessation of draining has so far only little effect on salt marsh development. As controlling factors grazing, elevation, salinity and sedimentation rate and neighbouring of vegetation patches were seen.

The BASSIA project analysed the impact of grazing regime and vegetation diversity on breeding bird numbers as well with the result that

- more breeding bird species can be found on the Halligen then on the mainland,
- there is no direct relation between grazing management/vegetation diversity and breeding bird species.

A specific study on oystercatcher within the BASSIA project showed

- that there is no relation between oystercatcher nest location and vegetation types,
- that oystercatcher prefers locations where grazing has been re-introduced and
- that edge structures have a higher nesting density.

The presentation concluded that water logging and restoring of natural dynamics in salt marshes are very crucial for management. Artificial drainage is still functioning even after decades and will not change simply into a natural system. Aging of salt marsh can be neutralized by a growing pioneer zone. The re-wetting of salt marsh will improve the structural and morphological diversity, reduce mono-specific vegetation and will reduce the occurrence of mammal predators by island like structures. If grazing is be considered as a management tool, it should be practised preferably on elevated high marshes.

Breeding bird conservation in salt marshes requires specific management depending on the species. Specific management should only be applied when a bird species is endangered.

Restrictions in distribution of three vulnerable meadow bird species in Denmark and the possible causes (Ole Thorup)

Ole Thorup came up with a presentation on the breeding situation of black-tailed godwit, Baltic dunlin and ruff in the Danish Wadden Sea.

The black-tailed godwit had stable numbers in Denmark between 1996 and 2012, but a lot of breeding sites are not used anymore. Reasons were the hydrologic works for and from farmers, drainage programs and intensification of land use.

For restoration of godwit numbers the most important breeding sites should avoid unfavourable and intensified land use and lowering of the water table. Former abandoned breeding areas should be restored by higher water tables.

The number of breeding pairs of Baltic dunlin decreased from nearly 60 pairs in 1977 to 9 pairs in 2012. Reasons were overgrowth of vegetation by less grazing and changed hydrology and drainage. It is recommended to avoid unfavourable land use changes and to include extension of areas with favourable habitat management.

Also ruff numbers decreased from 1960-80 to 1991/92 mainly on coastal and fresh meadow sites and decreased again until 2012 with only 6 single breeding sites left. Reasons were intensifying agriculture and changed hydrology with the associated abandoning of breeding sites. Agreements on higher ground water table, late mowing and moderate grazing pressure are needed to restore the breeding habitats and numbers of ruffs in the Danish Wadden Sea.

Effects of agricultural utilization on meadow birds (Herman Hötker)

Nearly all meadow bird species in Schleswig-Holstein are declining. This seems not to be a problem of adult survival but weak breeding success. Black-tailed godwits choose breeding habitats with non-grazed areas, salt water pools and a landscape with general wet features. Godwits are feeding in water, but during their breeding season in May and June on land.

The re-wetting of areas would improve the quality of breeding sites for godwits as well as the management of intensive meadow areas by avoiding farming impact. Here the situation in Eiderstedt is very insufficient in relation to the rest of Schleswig-Holstein.

Three practical management measures supporting avocet breeding success showed good success. Re-wetting of areas, adequate farming with late mowing and low stock density and chick and family protection of avocets. A sophisticated water management does not help alone when mowing and the other factors are not controlled.

A significant and positive impact on 57 sites with black-tailed godwits and lapwing was achieved by habitat management with usage of high human resources included. It is proposed to take care of the vegetation in these breeding areas, but not to stop farming.

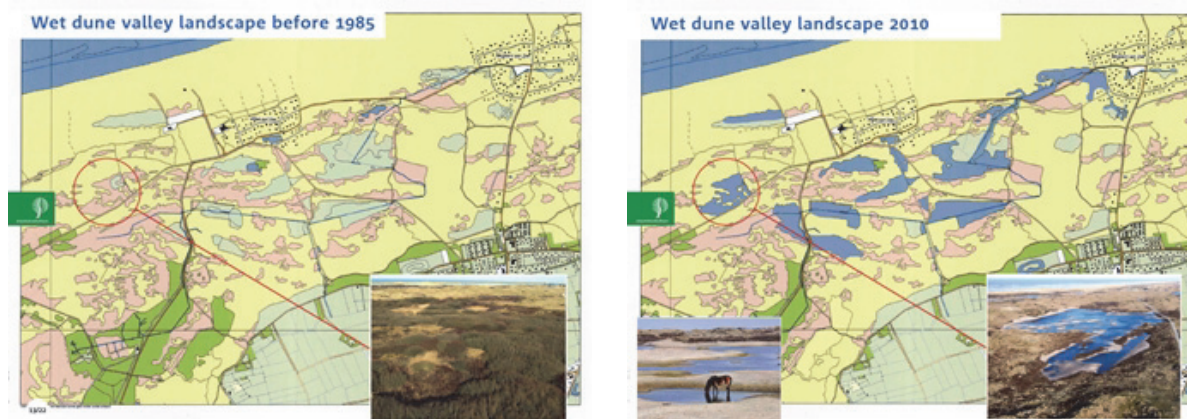
Development of dunes and beaches and management in relation to breeding birds. (Freek Zwart)

In the Netherlands trends for Kentish and great ringed plovers, which are preferring beaches, sands and young dunes for breeding sites, are negative and there are no big differences in trends between un- and inhabitant islands.

Beach nourishment is one of the most important tools of sand management and after a change of coast policy in 1990 a new approach with more natural dynamics in dune management has been applied starting in the mid of the 1990ties. Aims were to reach more wet dunes and to create more

heterogeneity in dune structures. Sand dikes built in the 1930ties prevent dunes from natural dynamic processes and the typical vegetation succession from young to old dunes started.

The new dune management should create more vegetation diversity by introducing natural sand dynamics with the result of a living dune landscape. New dynamics have been created by taking away the complete organic matter from dunes down to the sand. With the restoration of water tables a favourite situation for pioneer vegetation developed. These measurements had also effects on the nearby polders. As result characteristic breeding birds for these restored areas returned or their numbers increased.



People in the Netherlands have free access to beaches over the whole year and stand therefore for a lot of breeding bird disturbances. This situation has been faced by creating zones for the best breeding areas and by using specific management on these areas. For instance, information panels are requesting visitors not to enter breeding bird areas or visitors have the opportunity to watch breeding birds from specially equipped boats to prevent them from walking on breeding bird islands. The whole management on beaches and sands is basing on an integrated approach with coastal protection, improving natural dynamic processes, restoration of hydrology and sand dikes and communication with inhabitants and visitors as main components.

Issues of concern and aspects affecting breeding success. (Gundolph Reichert)

A four years pilot project on the island of Norderney starting in 2009 revealed that a relevant part of clutch losses from avocets, redshanks, little terns, oystercatchers and black-tailed godwits can be traced back to activities of a set of mammal predators, which could be identified by optical monitoring technics like usage of low-light-level cameras. These predators were mainly hedgehogs, feral cats, ferrets, rats and domestic cats.

As active management measure hedgehogs were removed to the mainland, domestic cats were neutered and feral cats, ferrets and rats were killed. The results showed that since 2009 the breeding success increased remarkably. The predation on clutches done by birds is not part of the predation management.

The predation rate on the mainland like in the area of Leybucht is still very high. The surrounding agricultural landscape and the lack of dynamics in the salt marsh with the artificial drainage system are optimal supporting habitats for mammal predators.

G. Reichert concluded that on islands management of predators by control is feasible, successful and sustainable. Other ground breeders and animals will benefit from fewer predators. On the mainland this kind of management can only be carried out on a small scale. More data on predators is needed and only monitoring of breeding success allows an estimate of the efficiency of the predator control measures.

Identification of most pressing issues in management and recommendations for action plan and follow-up.

The workshop discussed the output of the presentations and came up with the following conclusions.

- Improved and specific communication regarding the issues is needed.
- The breeding bird management carried out until now could not prevent breeding bird numbers to decline. Poor breeding success is main reason for declining numbers in species.
- The meeting agreed that hydrology changes, predation and disturbance are the main threats for breeding success.
- More natural dynamic is needed in all breeding bird relevant habitats.
- Moderate (favourable) grazing and late mowing are important management tools in some areas and to some species
- Hydrology problems can be solved by developing more pristine and natural areas. For disturbance only general recommendations can be made. The different habitats of salt marshes, dunes and meadows need specific recommendations. Recommendations only on factors which can be changed.
- Interactions between factors have to be taken into account. Food supply for instance has effect on many other factors.
- Improved hydrology does not make it alone, but in combination with extensive farming (and protection of broods and families) it is very successful.
- An improved hydrology and an adequate agricultural management are important for breeding bird management, but human resources are needed to take care of measures.
- Predation and probably other threats for breeding birds should be listened in the next Joint Declaration.
- Before starting predator control the habitats have to be checked accordingly to that effect.
- A selection of breeding bird species can be chosen for most promising management results.
- A decision list can be very helpful for site and habitat managers.
- The matrix tool can be further developed as instrument for managers. A first draft will be compiled by John Frikke, Peter Südbeck and the secretariat.
- The 'breeding bird in trouble' action plan will be developed by JMBB.
- The workshop has shown problems and possible solutions. The politicians have to decide on appropriate actions, proposed management has to be measurable.

Recommendations to improve breeding success in the Wadden Sea:

- Breeding birds need healthy habitats with a natural water regime and high vegetation diversity. Efforts to restore natural dynamics in salt marshes and dunes should be improved. Natural water regimes in grasslands and salt marshes should be restored by re-wetting and recreation of natural drainage systems. Breeders on agricultural areas can be supported by strategic management.
- Introduced predators are one of the main reasons for poor breeding success on the Wadden Sea islands. A trilaterally agreed predator control can be applied to the Wadden Sea islands and to parts of the mainland when applicable.
- Even with protection and zoning rules for breeding areas visitors, tourists, hiker and boats at sea are still sources of disturbances for breeding birds. Disturbances in important breeding areas should be limited by improved information and awareness policy and strengthening of the surveillance.

MONITORING		
09:30-09:45	Welcome and Introduction Breeding bird Targets in the Wadden Sea Plan and Natura 2000. TMAP breeding bird monitoring programme.	Gerold Lürßen Peter Südbeck (chair)
09:45-10:15	Trends of coastal breeding birds in the Wadden Sea Area Presentation of trilateral and national trends, indicators of population change (food guilds, habitats).	Kees Koffijberg
10:15-10:45	Breeding success monitoring Results from the trilateral programme.	Kees Koffijberg
10:45-11:00	<i>Coffee break</i>	
11:00-11:15	Contaminants in bird eggs The trilateral programme on pollutants in bird eggs.	Peter Becker
11:15-12:30	Discussion Definition of criteria, identification and prioritisation of threatened species.	Peter Südbeck
12:30-13:00	<i>Lunch</i>	
MANAGEMENT		
13:00-13:20	Salt marsh Salt marsh management and favourable conditions for breeding birds. Aging and water-logging of salt marshes.	Martin Stock
13:20-13:40	a. Meadows and grassland Restrictions in distribution of three vulnerable meadow bird species in Denmark and the possible causes.	Ole Thorup
13:40-14:00	b. Meadows and grassland Effects of agricultural utilization on meadow birds.	Hermann Hötcker
14:00-14:30	Dunes, beaches and sand Development of dunes and beaches, management in relation to breeding birds. Short presentation of Danish data	Freek Zwart (John Frikke/Karsten Laursen)
14:30-14:45	<i>Coffee break</i>	
14:45-15:15	Predation, recreation and flooding Issues of concern and aspects affecting breeding success.	Gundolf Reichert Ole Thorup
15:15-16:30	Discussion Identification of most pressing issues in management. Recommendations for action plan and follow-up.	Peter Südbeck

Participant list: Workshop 'Breeding Birds in Trouble', Wilhelmshaven 18. April 2013

ANNEX 2

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