



GOOSE BULLETIN

ISSUE 23 – MAY 2018

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GOOSE BULLETIN is the official bulletin of the Goose Specialist Group of Wetlands International and IUCN.

GOOSE BULLETIN appears as required, but at least once a year in electronic form. The bulletin aims to improve communication and exchange information amongst goose researchers throughout the world. It publishes contributions covering goose research and monitoring projects, project proposals, status and progress reports, information about new literature concerning geese, as well as regular reports and information from the Goose Database.

Contributions for the **GOOSE BULLETIN** are welcomed from all members of the Goose Specialist Group and should be sent as a Word-file to the Editor-in-chief. Authors of named contributions in the **GOOSE BULLETIN** are personally responsible for the contents of their contribution, which do not necessarily reflect the views of the Editorial Board or the Goose Specialist Group.

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ISSN: 1879-517X

Editorial

In 1987 Jesper Madsen took on the role as coordinator of the Goose Specialist Group and passed the job on to Bart Ebbsinge during the 2nd Goose Specialist Group Meeting at Martin Mere (United Kingdom) in 1996. In 2009 in Höllviken (Sweden) the 13th Goose Specialist Meeting decided that a board should be installed, composed of Bart Ebbsinge (chairman), Tony Fox, Thomas Heinicke, Konstantin Litvin, Jesper Madsen, Johan Mooij, Berend Voslamber and Ingunn Tombre. During the 16th Meeting of the Goose Specialist Group 2014 in Beijing (China) the participants elected Petr Glazov as a co-chair of the Goose Specialist Group, who would gradually take over the responsibilities of the chair.

At the end of 17th meeting of the Goose Specialist Group 2015 in Salekhard (Russian Federation) Bart Ebbsinge stepped down and passed the chair of the group to Petr Glazov. Subsequently the composition of the board also changed, which happened during the 18th Meeting of Goose Specialist Group in Klaipėda, Lithuania. There Alexander Kondratyev, Thomas Lameris and Julius Merkunas were confirmed as new members of the board, which means that the new Board of the Goose Specialist Group is now composed of Petr Glazov (chair), Bart Ebbsinge, Tony Fox, Alexander Kondratyev, Thomas Lameris, Jesper Madsen, Johan Mooij, Julius Morkunas and Ingunn Tombre.

On behalf of all members of the Goose Specialist Group, the Editorial Board thanks all former board members and chairs for their engagement for the well-being of the group and wishes the new board good luck and a lot of success leading the GSG.

The new board as well as the whole group will face a considerable number of problems in the near future. All of us know that most goose species are doing well, which is extremely enjoyable for goose-loving people, but at the same time there are growing regional problems with agriculture, aviation, recreation and even conflicts with nature conservation. Based on a decision of the AEWA Contracting Parties in 2015 a platform was created, which “will provide the mechanism for a structured, coordinated and inclusive decision-making and implementation process for the conservation and integrated management, including sustainable use, of goose populations in Europe, thus following in the footsteps of what has been successfully implemented in North America for decades. Species initially to be covered include the Pink-footed Goose (*Anser brachyrhynchus*), Taiga Bean Goose (*Anser f. fabalis*), Greylag Goose (*Anser anser*) and Barnacle Goose (*Branta leucopsis*).”

Whereas a number of stakeholders and land-users embraced the idea of the goose management platform, a number of our engaged goose-count volunteers have a more critical attitude towards this initiative. Another controversial item is the protection status of some goose species; e.g. why is one of the most abundant goose species (Barnacle Goose) still included on Annex 1 of the EU- Bird directive? What do we do with growing populations of a number of alien goose species that cause regional problems? We also have deficits in the coordination of research efforts, including the co-operation between researchers working on similar areas of interest and the exchange of knowledge within the group.

Without doubt many goose researchers are very self-reliant individuals, some of us are even convinced mavericks, but if we want to solve, at least a few of the listed problems and deficits, we have to strengthen the co-operation between researchers, the co-ordination of research as well as the exchange of knowledge.

This was why the Goose Specialist Group was founded, regular meetings of the group are organised and the GOOSE BULLETIN was created.

The GOOSE BULLETIN is an open access Internet journal, accessible by everybody, open for the publication of reliable information, research reports and preliminary results of research programmes, but also for discussions about goose conservation items according to the rules of science. We try to make our small contribution to the aims of the scientific community working with geese and are waiting for your manuscripts!

The next issue of the GOOSE BULLETIN is planned to appear in November 2018, which means that material for this issue should have reached the editor-in-chief not later than the 31st of August 2018.....but earlier submission is, of course, always permitted, if not actively encouraged!

The Editorial Board



Report of the 18th Conference of Goose Specialist Group at Klaipeda University

Rasa Morkune

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The 18th Conference of Goose Specialist Group was held on 27-30 March 2018 at Klaipeda University, Lithuania. It was organized by Klaipeda University, on behalf of the Baltic Valley Association and Goose Specialist Group. The conference was a significant event, bringing together 102 participants from 22 countries. The conference programme, abstracts and photos can be viewed on <http://apc.ku.lt/geese/>



The conference revolved around topics related to wild goose populations, which varied from the assessment of current state of goose populations and their ecology, to the impact of global change and other anthropogenic activities. The keynote speakers Ray T. Alisauskas (Canada) with “Status of the North American Arctic Goose Populations” and Tony Fox (Denmark) with “Status and abundance of Eurasian goose populations: winners and losers” inspired all the participants. Barwolt S. Ebbsing presented a history of all 18 conferences of the Goose Specialist Group.

Scientific committee members Andrea Kölzsch (Germany), Bart Nolet and Thomas Lameris (The Netherlands) and Modestas Ružauskas (Lithuania) competently reviewed abstracts, received before the event, and arranged a programme. The conference included five sessions:

- a) Population dynamics and management;
- b) Reproduction ecology and species interactions;
- c) Eco-physiology and diseases;
- d) Migration and stopover ecology;
- e) Impact of global change and anthropogenic activities.

In these conference sessions, waterfowl ornithologists from Europe, Asia, and America shared their knowledge in 48 oral presentations and 26 posters.

There were three workshops which involved participants in active discussions. The first conference day was finished with presentations and discussions on “Interaction of geese and wind farms” (moderated by Eileen Rees and Anna Harrison). The second workshop was designated to better understanding of current tracking methods (How to answer research questions with tracking devices?“ (moderated by Andrea Kölzsch and Thomas Lameris). The closing workshop discussed the “Coordination of goose monitoring in Europe” (moderated by Gitte Høj Jensen). The speakers and all participants were enlighten about the monitoring efforts needed to estimate goose populations in Europe.

The field trip to the Nemunas River floodplains impressed everyone as it is one of the most important staging area for geese and other waterfowl on their migration route. Participants visited the large flooded areas with thousands of geese and the Bird Ringing station in Ventės Ragas.



This conference was made possible by generous sponsoship. All participants kindly thanked the conference sponsors: Klaipėda University, Norwegian Environment Agency, 4energia, Institute for Wetlands and Waterbird Research, Ecotone, Kowa, Focus Nordic, Raseiniu Žuvis, Ornitela, Municipality of Šilutė, Tadas Ivanauskas Zoological Museum, and Latvijas Tilti. Partners of the event were the Lithuanian Ornithological Society, the Nemunas Delta Regional Park and the IUCN.

We would like to thank our sponsors Focus Nordic for the best presentation awards and prizes (in total two Kowa telescopes and one Focus Nordic binoculars). The best student oral presentation award was presented for Rose Delacroix from the University of Aarhus (Denmark). The best poster presentation award was presented for Karolina Kaziukonytė, a masters student at Klaipeda University on “Using remote sensing methods for evaluation of changes in goose feeding areas in Nemunas delta”. The best overall oral presentation was given by Olga Pokrovskaya (Marine Research Centre of Lomonosov Moscow State University, Russia). These awards were very important to early career scientists and their further research.

All participants gained much knowledge during the sessions, workshops and informal communication. Moreover, as an essential part of the effective goose conservation is knowledge sharing and discussions, the organizers of the conference aimed to give a friendly and relaxed working atmosphere which enabled goose specialists of both very similar and different opinions to be together and discuss issues in a way which is not possible if they never meet.

The 18th conference of Goose Specialist Group strengthened and established new cooperation among scientists and practitioners from different countries. We all believe that this and further conferences provide new perspectives and solutions to challenges in protection and conservation of goose populations.

Let's be inspired by our common passion to explore the world of waterfowl.

The next conference will be held in 2020 in The Netherlands.



Light-bellied Brent Goose *Branta bernicla hrota* at Sruwaddacon Bay, north-west Co. Mayo, Ireland

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Abstract

Sruwaddacon Bay, located on the north-eastern side of Broad Haven Bay in north-west Co Mayo, Ireland, is a constituent part of the wetland complex designated as the Blacksod Bay/Broad Haven Special Protection Area (SPA) under the EU Birds Directive. It and nearby inner parts of Broad Haven Bay have been monitored intensively since 2002 in connection with the Corrib Gas Development. Using these monitoring data, the importance of the study area for Light-bellied Brent Goose *Branta bernicla hrota*, in the context of the wider wetland complex was assessed. This revealed that the study area supports internationally important numbers on occasion, and that numbers have increased over time, in line with trends observed across the wider wetland complex and at national level. Of interest was the pattern of increasing numbers within the study area into March and April. Examination of count data in light of theoretical definitions of staging and stopover sites suggests that the study area, comprising Sruwaddacon Bay and adjacent sections of Broad Haven Bay, may be a staging ground for a proportion of the wintering population of Light-bellied Brent Goose.

Keywords: Sruwaddacon Bay, SPA, Light-bellied Brent Goose *Branta bernicla hrota*, monitoring, wintering population

Introduction

The East Canadian High Arctic population of Light-bellied Brent Goose *Branta bernicla hrota* (hereafter referred to as Brent Goose) consists of c. 40,000 individuals (IRISH BRENT GOOSE RESEARCH GROUP, unpublished data), which stage in Iceland during both spring and autumn migration periods, and spend the non-breeding season (late September to April) largely at sites around the coast of Ireland. The Brent Goose undertakes one of the longest (c. 2,900 km) migrations of any Western Palearctic goose population (GUDMUNDSSON et al. 1995) crossing the 2,700 m-high Greenland ice-cap, staging at sites in Greenland and western Iceland before crossing the North Atlantic to winter in Ireland (ROBINSON et al. 2004). Strangford Lough in Northern Ireland supports over 75% of the population on arrival, usually between August and October. Thereafter, the geese then disperse to other sites around the Irish coastline for the remainder of the winter (O'BRIAN & HEALY 1991). The return migration period lasts around six weeks with the first geese arriving in Iceland in early April, with numbers peaking there during the first week of May, and the birds arriving on the breeding grounds in late May/early June.

Blacksod Bay/Broad Haven Special Protection Area (SPA) (Bird's Directive 2009/147/EC) is a large wetland complex in north-west Co Mayo. A total of ten waterbird species are listed as special conservation interests for this SPA of which the Brent Goose is one of only two that occur in internationally important numbers at this site.

One constituent part of the wetland complex is Sruwaddacon Bay, located on the north-eastern side of Broad Haven Bay. Waterbird monitoring in connection with the Corrib Gas Development in the Sruwaddacon Bay area has been ongoing since 2002, on a near weekly basis during the pre-construction and construction phases and comprising part of the Project's Environmental Management Plan's extensive ecological monitoring programme. The monitoring was carried out to inform an impact assessment for a major gas pipeline route from landfall at Glengad to a terminal site at Bellanaboy.

Using these monitoring data, together with data gathered as part of the Irish Wetland Bird Survey (I-WeBS, Ireland's national waterbird monitoring survey), the importance of Sruwaddacon Bay was assessed for Brent Goose in the context of the wider wetland complex. The increased frequency of data collected as part of the former programme, across both the high and the low-tide, facilitated an in-depth analysis of site usage by Brent Goose at Sruwaddacon Bay. I-WeBS data were used to facilitate interpretation of the data in the context of the wider wetland complex which is also used by these waterbirds.

Survey Area and Methods

Sruwaddacon Bay (54.266 N, 9.783 W) is a small bay, approximately 320 ha in size, located on the north-eastern side of Broad Haven Bay in north-west County Mayo in western Ireland (Fig. 1).

The high-energy (strong currents and wave action) nature of the site has resulted in the sediments being dominated by sand (SEPIL 2014) and characterised by low abundance and diversity of macroinvertebrates (RPS 2010).

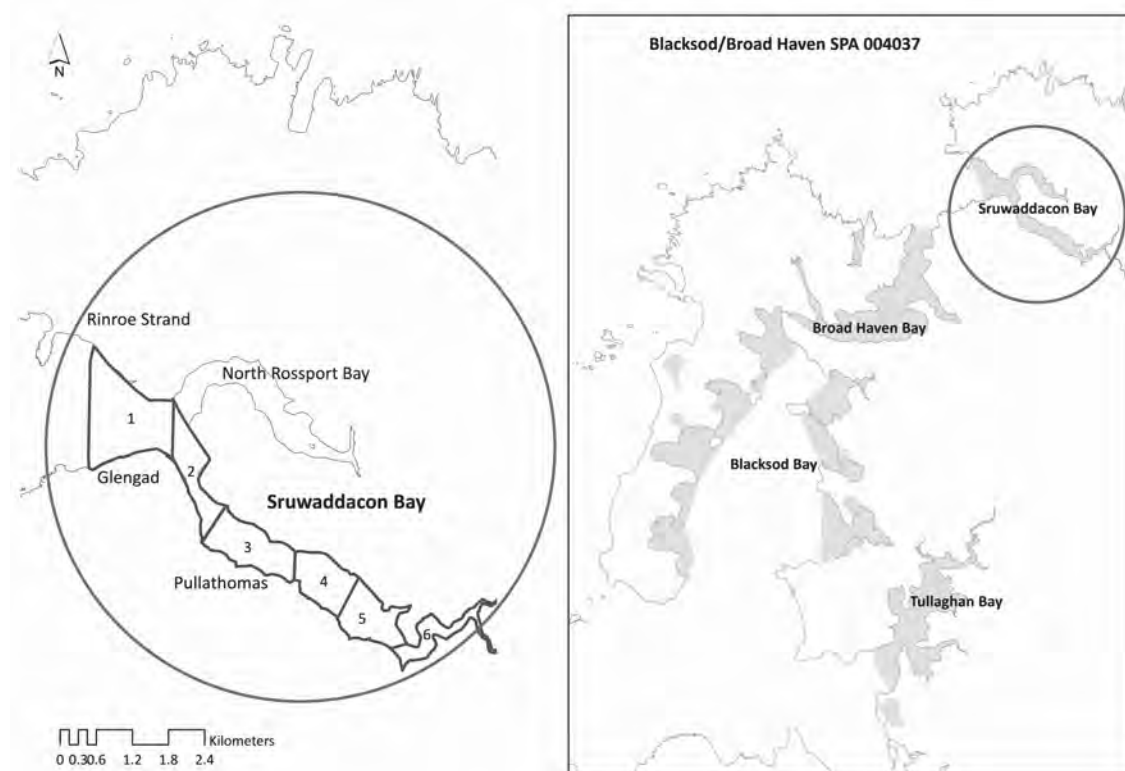


Fig. 1. Sruwaddacon Bay, Co Mayo; map shows the subdivision of count subsites and the main Brent Goose feeding area at Glengad and the location of Sruwaddacon Bay in the context for the wider wetland complex, plus Blacksod/Broad Haven Bay SPA Co. Mayo - showing main bays which make up the wetland complex.

Seaward sections of the bay comprise rippled mobile sand sediments with a sparse benthic infauna while the remainder of the site comprises more poorly-drained sandflats, with gravelly mixed sediments exhibiting varying amounts of mud, being confined to inner estuarine areas and small inlets away from the main channel (RSK 2007). Saltmarsh habitat occurs around the majority of the upper intertidal area and below this zone there is often a wrack zone comprising a mixture of brown and green algae. Of relevance, is a shingle spit in the outer estuary off Glengad that supports extensive algal beds and is subsequently a favoured foraging area for the herbivorous Brent Goose.

Standard waterbird counting techniques were used (e.g. BIBBY et al. 2000) to count Brent Geese within a series of count sections (Fig. 1) that cover Sruwaddacon Bay plus two additional adjacent areas (North Rosspoint Bay and Rinroe Strand). A series of set vantage points were used and the bay was counted in a systematic manner by two field surveyors. Counts were conducted during both low and high water periods (i.e. two hours either side of low tide or high tide respectively) typically on two consecutive days per survey period. Field surveys were scheduled and undertaken where possible when suitable weather conditions prevailed, and using standard optical equipment (i.e. telescope and binoculars).

Both high and low tide site monitoring data were compiled and summary analyses undertaken (e.g. monthly and seasonal peak and mean counts). These data were assessed in relation to data for the wider Blacksod Bay/Broad Haven site complex by accessing the I-WeBS database. Blacksod Bay/Broad Haven site complex has been counted by I-WeBS since the winter of 1994/95. The site complex comprises two separate I-WeBS count areas as follows (1) Blacksod & Tullaghan Bays; (2) Broad Haven & Sruwaddacon Bays (Fig. 1). Count coverage of the Broad Haven & Sruwaddacon Bay I-WeBS subsite has been variable across the years and not as complete as for the Blacksod & Tullaghan Bays subsite, so the latter was used as a proxy to assess how numbers have changed across the wider site complex as a whole.

I-WeBS counts are carried out less frequently (once per month), are typically undertaken during a rising tide or at high tide, and while counts from all months are accepted, the survey is focused on the months between September and March inclusive. Thus, analyses relating to the site in the wider context here were limited to the period between September and March only and do not accurately reflect numbers and distribution of Brent Geese in from late March onwards, prior to their northward migration. In some seasons, colour-ringed Brent Geese were observed and the information submitted to, and ring records received from, the Irish Brent Goose Research Group (IBGRG). Current figures indicate that over 4,000 individuals have been marked (IBGRG, unpublished data).

Results

Count data for Sruwaddacon Bay for the months between September and March (to be comparable with I-WeBS months) show that the annual peak low tide count of Brent Goose increased up to the 2008/09 season (558 individuals), then declined substantially. Peaks of 230 and 157 individuals were recorded in 2011/12 and 2012/13 respectively. In contrast, high tide peak counts remained largely stable before increasing in recent seasons (Fig. 2).

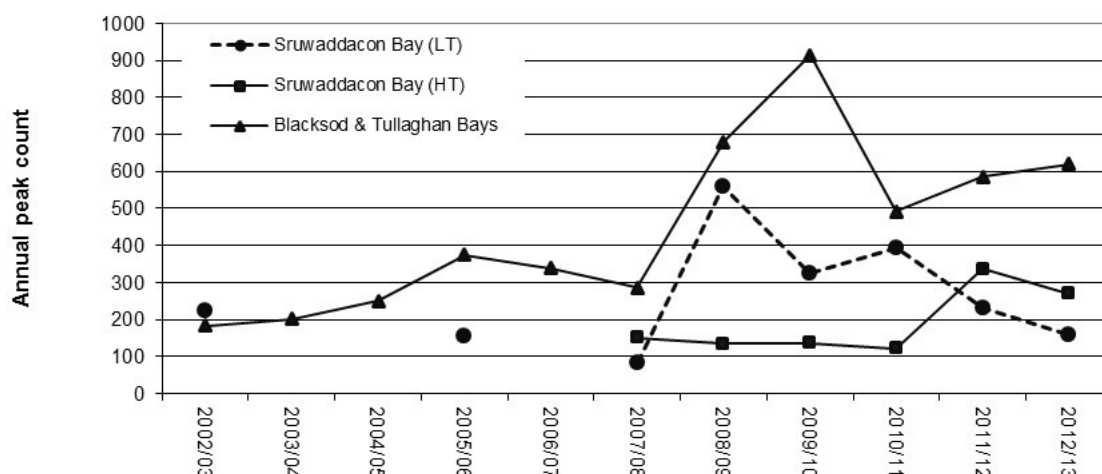


Fig. 2. Annual peak numbers of Brent Goose at Sruwaddacon Bay (low tide and high tide counts) and the Blacksod/Tullaghan Bay I-WeBS count subsite (2002/03 – 2012/12, months October – March).

However, annual peaks have regularly exceeded the international threshold which stood at 260 individuals up until 2012 (WETLANDS INTERNATIONAL 2006) and has since increased to 400 individuals in line with an increasing population (WETLANDS INTERNATIONAL 2012).

The recent five-year mean peak for the Blacksod & Tullaghan Bays I-WeBS count area (658) exceeds the current threshold for international importance. Numbers of Brent Goose at Sruwaddacon Bay have increased in line with the reported population trend for the site complex (NPWS 2014) and the national and all-Ireland trends (CROWE & HOLT 2013) (Table 1).

Table 1. I-WeBS data trend for the Blacksod & Tullaghan Bay count subsite, (b) reported SPA trend and (c) national trend, for Brent Geese.

(a) I-WeBS Subsite Trend			
	5-year Mean Peak 1995/96 – 1999/00	5-year Mean Peak 2008/09 – 2012/13	% Change in numbers
Blacksod & Tullaghan Bays	133	658	+ 395
(b) SPA Site Trend			
Blacksod Bay/Broad Haven Trend 1995/96 – 2009/10 (NPWS 2014)			+ 153
(c) National Trend			
National Trend (1994/95 – 2008/09) (BOLAND & CROWE 2012)			+ 103

The recent drop in annual peak numbers at Sruwaddacon Bay (2011/12 and 2012/13) contrasts to the trends at wider scales (Fig. 2). This can be attributed to a change in the quality and extent of the feeding areas and may explain why low tide peak counts have dropped while numbers recorded at high tide have remained stable/increased. Brent Geese forage, almost without exception, in the outer sections of the study area, with preferred foraging areas off Glengad and at Rinroe that support extensive beds of green macroalgae of the genus *Ulva* (which includes species formerly classified under *Enteromorpha*) (G. FENNESSY, pers. obs.) (Fig. 1).

In 2011/12, the shingle bank at Glengad was covered by a deposition of sand through natural accretion (ECOLOGY IRELAND 2013).

This had a smothering effect on the macroalgae that resulted in not only fewer foraging geese, but in a marked shift in distribution, with the geese observed exploiting previously unused areas along the northern shore of Sruwaddacon Bay. In addition, some late season surveys observed geese foraging in grassland habitat, the first time this behavior had been recorded at this site (ECOLOGY IRELAND 2013).

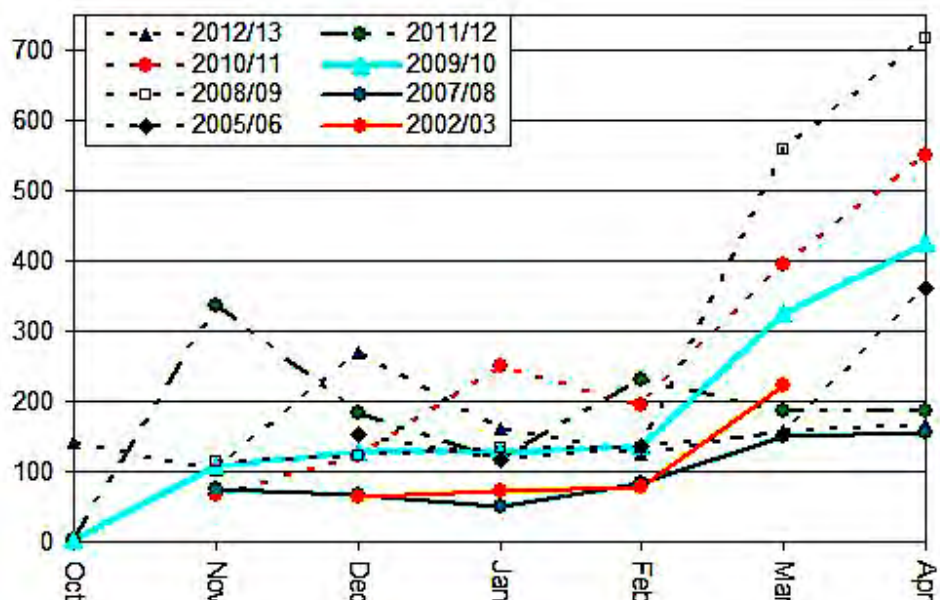


Fig. 3. Monthly peak numbers of Brent Goose at Sruwaddacon Bay 2002/03 - 2012/13 (low and high water counts combined).

Examining monitoring data for Sruwaddacon Bay over its extended time period shows that numbers of Brent Geese have typically increased to a peak in the month of April (Fig. 3); although this pattern was not sustained in the two latter years of the dataset (2011/12 or 2012/13) (as above). With the exception of these two seasons, the largest increase in numbers occurred in March, with a subsequent smaller increase into April (Table 2).

Table 2. Season peak numbers (month), tidal state, monthly percentage change in peak numbers and the last date of sighting at Sruwaddacon Bay (monitoring data); and comparative percentage changes in numbers for Blacksod/Tullaghan Bays (I-WeBS)

Season	Peak Number	H/L	% Change Dec-Jan	% Change Jan-Feb	% Change Feb-Mar	% Change Mar-Apr	Date of last-sighting	% Change Feb-Mar Blacksod & Tullaghan Bays (I-WeBS)
2002/03 (Mar)	222	L	-5	-1	+191	*	31/03/03	-22
2005/06	362 (Apr)	L	-24	+16	+13	+135	11/04/06	-45
2007/08	156 (Apr)	H	-26	+71	+80	+3	10/04/08	**
2008/09	718 (Apr)	L	+9	+1	+316	+29	27/04/09	**
2009/10	426 (Apr)	L	0	+6	+138	+31	22/04/10	+188
2010/11	550 (Apr)	H	+107	-22	+102	+40	22/04/11	-100
2011/12 (Nov)	336	H	-36	+95	-20	-1	02/05/12	-66
2012/13	269 (Dec)	H	-41	-21	+25	+7	24/04/13	-51

* No April counts undertaken.

** No March I-WeBS count undertaken.

Peak numbers occurred during both low and high tide surveys and numbers increased from early in the month of March in some seasons (e.g. 2009/10) or from mid March onwards in others (e.g. 2008/09 and 2010/11). Numbers remained high up until mid-April, after which numbers declined sharply. The latest sighting of a Brent Goose at Sruwaddacon Bay in any one season was on 2nd May, in 2012, although in the same season there was an incidental record on 10th May approximately 12 km southwest of Glengad.

Ring re-sightings data show that some geese recorded at Sruwaddacon Bay during the pre-migration period had over-wintered at key sites in Dublin and Kerry (Table 3). Other geese had no previous sightings during the winter, or have been recorded at Strangford Lough only during autumn staging with no other records until a re-sighting at Sruwaddacon Bay. One unusual record was for an individual TIWR that wintered at Dublin Bay, was sighted in April at Sruwaddacon Bay but then returned to the east coast (Dublin Bay and Baldoyle Bay) prior to migration.

Three individuals (VSRY, C3WB, HFRY) were observed on more than one occasion at Sruwaddacon Bay confirming they remained on site for up to 18 days.

Table 3. Brent Goose Ring re-sightings at Sruwaddacon Bay (data courtesy of the IBGRG)

Season	Ring Number	Details	Date(s) observed at Sruwaddacon Bay	Earlier sightings in same season (excludes obs of staging individuals at Strangford Lough)
2012/13	VSRY	Female, ringed 2009	26 th Feb, 12 th /13 th Mar	None
2011/12	VSRY	Female, ringed 2009	11 th Apr	Malahide Estuary and Rogerstown Estuary (Jan); Tralee Bay (Nov)
2011/12	PCRY	Female, ringed 2008	28 th Mar	Tralee Bay (Dec, Feb)
2010/11	TIWR	Male, ringed 2010	15 th Apr	Dublin Bay (Nov - Apr); Baldoyle Bay (Apr)
2010/11	C3WB	Female, ringed 2008	29 th /30 th Mar, 15 th Apr	None
2010/11	HFRY	Female, ringed 2008	30 th Mar, 8 th Apr, 15 th Apr	None
2010/11	V4YY	Male, ringed 2007	15 th Apr	Dublin Bay (Dec-Apr), Malahide Estuary (Mar)
2010/11	INRB	Female, ringed 2007	15 th Apr	Islay (Scotland) (Oct)
2010/11	F9WB	Male, ringed 2008	30 th Mar	None
2010/11	HPRY	Female, ringed 2008	30 th Mar	Ile de re (France) (Feb)

Discussion

The Blacksod Bay/Broad Haven site complex supports internationally-important numbers and is clearly an important site for the Brent Goose. However long-term intensive monitoring of one part of this site complex has shown that the study area, centred around Sruwaddacon Bay, can itself support internationally important numbers on regular occasions.

Numbers of Brent Goose at Sruwaddacon Bay on the whole, have increased over time in line with the reported population trend for the site complex (NPWS 2014) and the national and all-Ireland trends (CROWE & HOLT 2013).

Intensive monitoring of the bay, however, has revealed that the pattern for increasing numbers into the month of April has not been repeated in recent years, attributed to a natural change in the quality of foraging habitat.

The pattern for a build up of numbers of Brent Geese in April, the pre-migration period, is interesting. Little has been published on the pre-migration period of the Brent Goose in Ireland due to the lack of count data from most sites beyond March when I-WeBS typically ends. Waterbird distributions in Ireland usually begin to change from around mid-February onwards (CROWE 2005), as birds leave Ireland for their breeding grounds (e.g. Sanderling *Calidris alba*), or move to aggregate at other, usually more northerly, sites (e.g. Black-tailed Godwit *Limosa limosa islandica*, Whooper Swan *Cygnus cygnus* and Brent Goose) (I-WeBS data, unpublished). The main increase in numbers at Sruwaddacon Bay occurs from early March, with further increases and higher numbers generally retained until mid April. This suggests that the geese could remain at this site for up to one month, although only limited evidence exists for a few ringed individuals that stayed for just over two weeks. However, if the turnover rate is high then actual numbers held by the site at this time could be much higher (i.e. the counts underestimate the actual number using the site). These data suggest that Sruwaddacon Bay may be an important stopping place prior to the birds migrating to their main staging grounds in Iceland. If this is the case, then whether we can classify Sruwaddacon Bay as a stopover site or a staging site is not immediately clear. Both terms are often used interchangeably for waterbirds (WARNOCK 2010) although there have been various attempts to distinguish between them (e.g. MA et al. 2013). Under the ‘hop’, ‘skip’ and ‘jump’ strategies categorised by PIERSMA (1987), hop and skip strategists make short to medium stops respectively between successive flights, acquiring small to medium amounts of extra fuel; while ‘jump’ migrants make long non-stop jumps, over thousands of kilometres, accumulating large stores of fuel before they do so. Under this model, WARNOCK (2010) suggests that stopover areas are used by hop and skip migrants with short length of stays (hours, days) and relatively short subsequent flights to the next stop; while staging sites are utilised for longer (weeks) by jump strategists that prepare for an energetic challenge such as a long flight over the ocean. If Sruwaddacon Bay is the last stop for some geese prior to their migration north to Iceland (approximately 1,400 km from Ireland), then based on the above model, this small site in northwest Ireland could be a staging ground for an unknown proportion of the wintering population of Brent Goose.

Decisions made during the non-breeding and pre-breeding seasons can have profound effects upon subsequent breeding performance (MADSEN 2001) with the quality of both wintering and staging grounds being important determinants of body condition and reproductive success (e.g. GUNNARSSON et al. 2005; INGER et al. 2008; HARRISON 2010). Why some Brent Geese may choose to stop at Sruwaddacon Bay is most likely related to their preferred food supplies. Here, the geese feed on green macroalgal beds that are still present into March and April, whereas at many wintering sites the marine food source of *Zostera* spp. and macroalgae have depleted and the birds rely on terrestrial grasslands for a large part of the winter. At Dublin Bay, for example, inland feeding sites are used during the day between November and March, although it has been noted that from March onwards the inland sites are confined to within 3 km of the main roost site on Bull Island, possibly to lessen the energy expenditure of longer commutes (BENSON 2009). Even in Iceland, Brent Geese utilise both marine and terrestrial habitats and the degree to which they do so has consequences for body mass and condition (INGER et al. 2008).

At Sruwaddacon Bay, the utilisation of a wholly marine food source in the pre-migration period at a remote site that is relatively undisturbed by humans and that has low predation levels (G. FENNESSY, pers. obs.) could be a highly advantageous pre-migration strategy for some geese.



Sruwaddacon Bay, view of Glengad taken from Dooncarton, Ireland (source Wikipedia).

Through the natural accretion of sand, the main feeding area of Glengad has become degraded in recent seasons and is reflected by the reduced numbers using the site during the latter years of the project. Only future monitoring will reveal the temporal extent of this habitat quality change. Similarly, only continued monitoring and survey/ringing efforts will be able to prove whether this site is a staging ground. The analysis of ring re-sighting records also revealed that Brent Geese can travel reasonably large distances between favoured sites during the non-breeding period. Some of these movements were unexpected and demonstrate the mobility of this species during winter and the pre-migration period. A lack of sightings for some ringed individuals before they were observed at Sruwaddacon Bay in the pre-migration period may also indicate that Brent Geese winter along parts of the non-estuarine coastline that are not regularly monitored. Clearly, for Sruwaddacon Bay and possibly for other west coast sites, there is still a lot of uncertainty as to the movements and final destinations of Brent Geese recorded using these sites in late spring.

Acknowledgements

BirdWatch Ireland was commissioned by Shell E & P Ireland Ltd (SEPIL) through their Project Ecologist (EACS - Ecological Advisory and Consultancy Services) to analyse the large body of accumulated data on waterbirds, leading to publication.

This is in line with the Corrib Development Biodiversity Action Plan (BAP) which, under Action 10†, commits SEPIL to setting up partnerships - including for the independent analysis of the Project's monitoring data.

The data were collected as part of an extensive ecological monitoring programme in connection with the Corrib Gas Development. BirdWatch Ireland acknowledge the assistance provided and comments received on earlier drafts by Project Ecologist Jenny Neff CEcol CEnv FCIEEM (EACS) and John Wilson (Environmental Consultant). Thanks are also due to Patrick Manley for his assistance in preparing the bird data for these analyses.

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Status and trends of wintering Bar-headed Geese *Anser indicus* in Myanmar

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Abstract

Bar-headed Geese winter in Myanmar at several sites. Most prominent are the river and floodplains of the Upper Ayeyarwaddy River in the Central drylands of the country as well as the Kaladan River in the northern Rakhine state. This charismatic goose species is intrinsically linked with these two rivers. Every winter, these geese migrate from the Himalayan Plateau, Northern China and Mongolia to Myanmar, where they roost predominantly on the river channel itself and feed in fields nearby. The number of geese along the Ayeyarwaddy River has steadily declined since 2001 and by 2018 they had almost disappeared entirely. Recent figures of the Kaladan population are not complete, but the data from selected sites reveal a similar yet less sharp decline of about two thirds. Reasons for the decline are discussed. The protection of selected river stretches as Ramsar sites or Biosphere Reserves is proposed.

Keywords: Bar-headed Goose, Myanmar, wintering habitat, population decline

Introduction

The Bar-headed Goose *Anser indicus* is the only goose breeding entirely outside the Arctic region. It is confined to breeding in the Himalayan Plateau and adjacent areas in the steppe region in Mongolia (BIRDLIFE INTERNATIONAL 2018). At present the population is estimated at 52,000-60,000 individuals (WETLANDS INTERNATIONAL 2018) and the majority winters in the Indian subcontinent (BIRDLIFE INTERNATIONAL 2018). VAN DER VEN et al. (2010) estimated the total population at about 75,000 birds. However, a more recent estimate places the global population at double the size at around 97-117,000 individuals (LIU et al 2017).

A small proportion of the wintering population has been regularly observed wintering in Myanmar. SMYTHIES (1953) mentioned the goose as 'typical' for the Ayeyarwady and Chindwin Rivers, but refers to numbers not higher than 6-20 birds, exceptionally 200 referring to BAILLIE's observation near Minya at the Chindwin



River. Larger numbers of over 1000 individuals were first noted in the Upper Ayeyarwady River near Myitkyina in 1999 and following years (VAN DER VEN 2000, 2001 and VAN DER VEN & THET 2008, VAN DER VEN et al. 2010), as well as in the northern Rakhine coastal areas (ZÖCKLER et al 2012). Recent surveys in both wetland areas revealed a strong decline in the wintering population. While the overall population does not appear to have declined, a shift to other areas is presumed and discussed.

Methods

Study area

There are two areas in Myanmar that host Bar-headed Geese. Fig. 1 shows both locations. The main study area in recent years has been the Upper Ayeyarwady River. Count data since 1999 are available for comparison. Nan Thar Island and the Kaladan and tributaries were only discovered as a major roosting site for Bar-headed Geese in 2008. Regular counts continued until 2012, but only were resumed in 2016 (REN NAUNG SOE pers. obs.)



Fig. 1: The two main wintering areas of Bar-headed Goose *Anser indicus* in Myanmar

Surveys

River-based bird surveys were conducted on 13 February 2016, 1-16 of February 2017 and 23 January-5 February 2018 along the Ayeyarwaddy River between Myitkyina and Bagan. For Bar-headed Geese only section I Myitkyina – Sinbo has been shown to be relevant for Bar-headed Geese recorded (See Fig. 2).

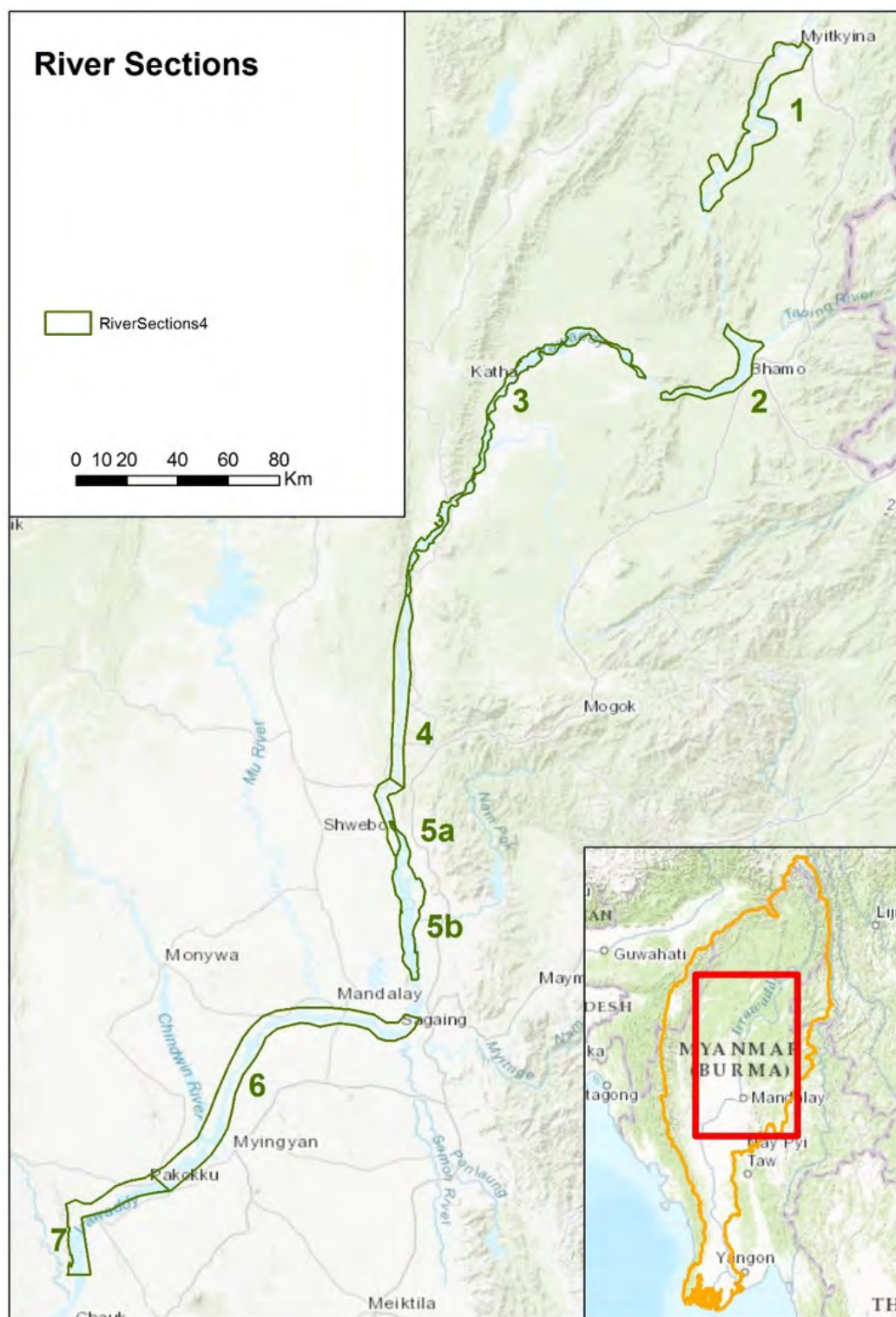


Figure 2: Ayeyarwady River sections slightly modified in accordance with DAVIS et al. (2004).

The surveys were conducted by boat and on foot at selected sites. Bird observations were conducted, using binoculars 10x40 and 8x32 respectively as well as zoom telescopes 25-60x85. Observations were made from the boat driving slowly, although boat vibrations hampered observations by telescope. The engine was stalled, when possible, to allow scanning of the river and listening for passing birds.

At several stops with potential high density of waterbirds several excursions on foot were undertaken to conduct water bird counts and establish a more comprehensive picture of the bird distribution along the river and floodplain. Due to insurgencies and uprising activities, permission was not granted to survey the river stretch completely in 2018 and we were not surveying further south than about half way.

All birds were registered, all waterbirds and characteristic birds of the floodplain forests and globally threatened species counted and observations georeferenced using a KOBO smart phone app and using QGIS entered in a pre-prepared map.



River survey boat with camp site on sand bank near Talawgyi

© C. Zöckler

Counts in Rakhine State near Nan Thar Island were not possible due to current limited access to the region. However, recent counts provided by REN NAUNG SOE during Spoon-billed Sandpiper *Calidris pygmaea* surveys were taken into account for the analysis.

Results

There are two main wintering sites known for Bar-headed Geese in Myanmar. The main site has been the Upper Ayeyarwady River south of Myitkyina and the other site is on Nan Thar Island and adjacent fields on the nearby Rakhine coast (see Fig. 1). In this paper mainly survey results from the Ayeyarwady River are reported and put in perspective with counts in previous years and also recent counts at Nan Thar Island (Rakhine).

Large flocks of up to 670 birds were observed on 13 February 2016 on the Ayeyarwady River near Myitkyina at 25.352 N and 97.308 E. These were roosting on the sandbank after feeding in nearby crops. In 2017 and 2018, no such flocks were observed again in the area, but smaller flocks of 103 in 2017 and up to 42 in 2018 (KYAW SAW MOE in litt.) individuals respectively were spotted along the river.



Bar-headed Geese at pebble-rich river sandbank. Myitkyina February 2016. © C. Zöckler

Compared with the early 2000s the numbers have drastically declined. Fig. 3 depicts the trend at the Upper Ayeyarwady River from 2000 to 2018.

The coastal site Nan Thar in Rakhine State (see Fig.1) shows a similar trend (Fig. 4). However, it appears the decline is not as steep as observed at the Ayeyarwady River. The 2018 numbers also appear higher, but this might be a reflection of special focus on this species in 2018.

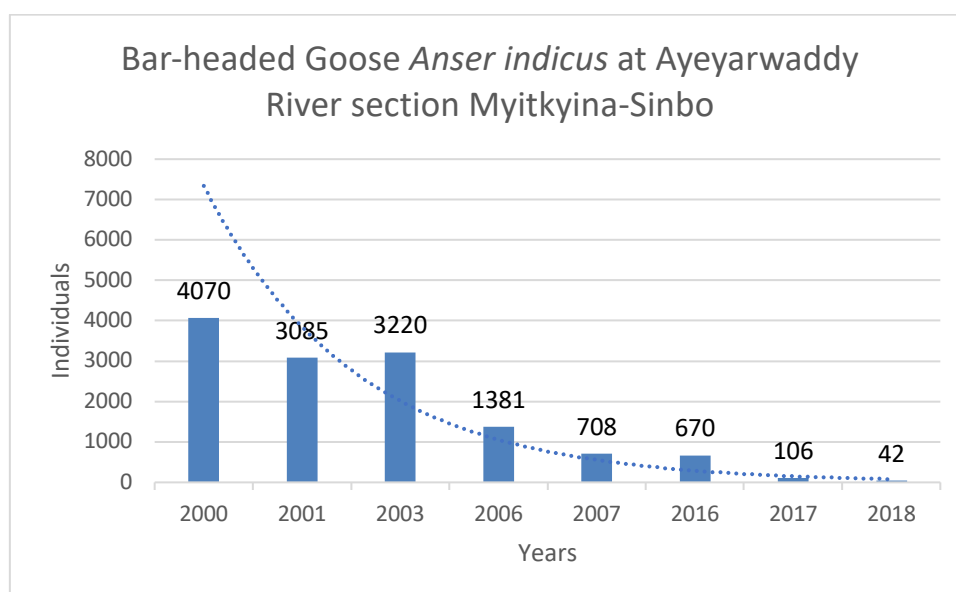


Fig. 3: Trends in Bar-headed Geese *Anser indicus* at the Upper Ayeyarwaddy River (based on count data from VAN DER VEN 2000, 2001, DAVIES et al. 2004, AWC in WETLANDS INTERNATIONAL 2018, THET & NGWE LWIN 2006, THET 2007 and own observations)

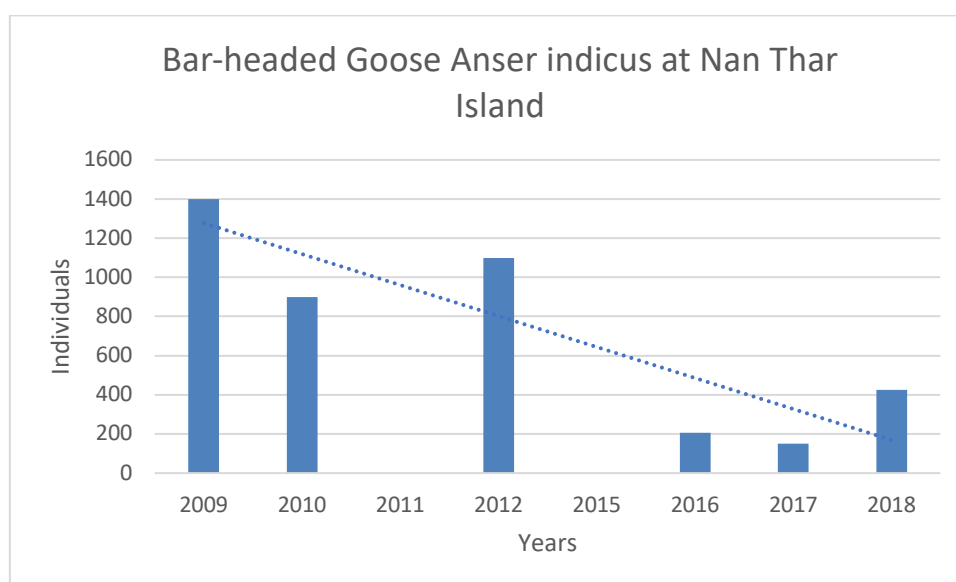


Fig. 4: Trends in Bar-headed Geese *Anser indicus* at Nan Thar Island (based on own observations and reports from REN NAUNG SOE for 2016-2018)

Threats to geese and other waterbirds

The Upper Ayeyarwaddy River is close to the capital city of Kachin State Myitkyina and as a consequence, lies close to several development projects that require increasing dredging and panning for sand and pebbles as well as panning for gold. The increasing human population is also demanding more and more agricultural areas. In addition to these processes, there is an increase in general boat and lorry traffic, all of which leads to major background disturbance, which has led to major declines in almost all water bird populations (ZÖCKLER 2017). Furthermore, hunting and trapping as well as bait poisoning has been observed, which will have an impact on many waterbirds including Bar-headed Geese (see Fig. 6).



Fig. 5: Pebble mining on the Upper Ayeyarwady River bank, Feb 2018.



Fig. 6: Birdnet for trapping large waterfowl in the Upper Ayeyarwady River, Feb 2018.

Discussion

The severe decline and almost complete disappearance of the Bar-headed Goose from over 4000 individuals in 2000 (VAN DER VEN et al. 2010) to fewer than 100 birds in 2018 along the Upper Ayeyarwady River is striking and requires some explanation. Even if the numbers at Nan Thar Island do not seem to have declined so sharply, only 20-30% of the previous counted maximum in 2009 (ZÖCKLER et al. 2012) was found nine years later in 2018.

It is not quite clear why these numbers are declining and why there has been such steep decline in numbers along the Upper Ayeyarwady River. There are potentially several reasons of explanations. Increasing human impact and pressure observed along the river could have disturbed the roosting habitats. In particular the ever present and prevailing hunting pressure observed along all river sites and also at Nan Thar Island could have impacted the roosting numbers, but also increasing disturbance by motorboat traffic as well as that associated with increased sand and pebble extraction (ZÖCKLER 2017). However these factors may not fully explaining the sudden and sharp decline and would show a more gradual or precipitous decline.

Another possibility is that an overall decline has occurred in the global population, as suggested by BIRDLIFE INTERNATIONAL (2018). This is however less likely the case as indicated by data from China (LIU et al. 2017) and India (A. RAHMANI in LIU et al. 2017). The two main wintering areas show in fact rather a strong increase and doubling of the population over the past two decades. The south-central Tibetan population almost quadrupled since 1993 to 67,000 birds in 2014 (LIU et al. 2017) and is still increasing as recent counts in Jan 2018 confirm (D. LIU in litt.). LIU et al. (2014) mentioned a similar increase in the wintering Bar-headed Goose population in the Yan-Gui Plateau, Yunnan and Guizhou Province in southern China. Although the data derive from a period from 2002-2004 the trend is similar, adding to the notion of a northward shift in wintering birds away from Myanmar to southern China.

LIU et al. (2017) list the improvements of wintering habitats for the geese in South-central Tibet as the main reason for the increase in goose population. The area of cropland has increased and also the quality of agricultural land. Today, winter wheat is the dominant crop in the region. This has also been shown to be the favourite food of the geese (LIU et al. 2017). These favourable winter conditions in south-central Tibet may have triggered a general growth in the population as well as a northward shift from populations previously wintering in Myanmar to cut short their migration route, reducing the energetic costs that are associated with a longer migration route.

It is not clear if this likely scenario for the Ayeyarwady population also applies for the Nan Thar population. The weaker decline and the proximity to India might imply a different shift or even a decline considering major development schemes on the Kaladan River and continuous hunting of the geese occurs in almost any place. However, it was not possible to verify these speculations through more recent surveys on the Kaladan River and its tributaries.

Both areas, the Upper Ayeyarwady River as well as Nan Thar Island, qualify as Ramsar sites based on several criteria. Even though the Bar-headed Goose no longer contributes to fulfilling these criteria, many other waterbirds, including Ruddy Shelduck *Tadorna ferruginea* and others still occur. Their combined continued presence indicate the high conservation values of both wetland sites (ZÖCKLER 2018), which have been proposed as Ramsar sites, but which are awaiting governmental approval for designation.

The Ayeyarwady River in its Upper reaches, as well as further south, still provide habitats, which support many waterbirds and river dolphins *Platanista gangetica* and would serve ideally as a Biosphere reserve with core areas for nature conservation and buffer and development zones along the fertile shores.

Acknowledgements

These surveys have been conducted on behalf of FFI Myanmar, the Manfred-Hermsen Foundation for the Ayeyarwady River and for ArcCona and BANCA on Nan Thar Island. I would like to thank the Forest Department and Department of Fisheries of the government of Myanmar for granting permissions. Thanks to Frank Momberg, Ngwe Lwin and Zau Lunn of FFI for consistent support and encouragement throughout the survey period, Lay Win, Thant Zin Tun and Htoo Naing for accompanying me on the river surveys and providing crucial logistic support and last but not least Ren Naung Soe for conducting additional counts and providing his observations.

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The establishment of an European Goose Management Platform under AEWA

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The African-Eurasian Migratory Waterbird Agreement (AEWA) offers an international platform for the conservation and the sustainable use of migratory waterbird populations, covered by the agreement.

Since the middle of the 20th century in Northern America and Europe the numbers of most goose populations have shown considerable increases. But one man's joy is another man's sorrow. Most nature conservationists enjoy the increasing abundance of the geese, but these high goose numbers regionally can cause increasing conflicts with agricultural, economic, health and safety interests. At some sites also ecosystem impacts have been reported.

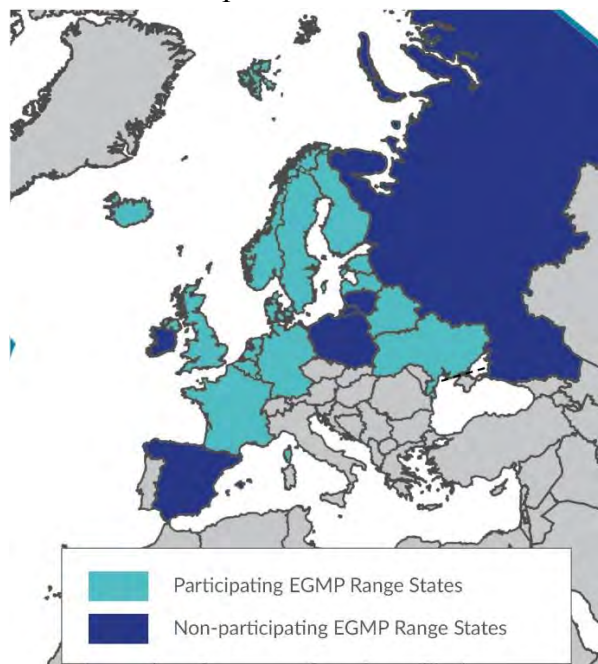
To find solutions for these problems in Europe, it was decided to establish a international goose management platform (EuroGMP) under the auspices of AEWA.



Because goose species show great differences in ecology, behaviour, population development as well as socio-economic and political acceptance of geese and goose problems, it is not possible to arrange one solution for all species.

To develop specific solutions for specific goose problems valid for specific regions, it is necessary to collect monitoring data on distribution, abundance, reproduction, mortality, hunting bags, dimension of ecosystem and agricultural damage at the flyway level.

Based on an analysis of these data it should be possible to evolve tailor-made solutions for each species population and each site, in which the management options can vary between high standard protection and conservation measures at one extreme and measures to a sustainable reduction of the population at the other end.



To consolidate and analyze the population and harvest data provided by the AEWA range states it was decided to install an International Data Centre Aarhus University in Denmark.

In a first phase the EurGMP will focus on four goose species: Pink-footed Goose, Taiga Bean Goose (for which AEWA Species Management Plans exist), Barnacle Goose and Greylag Goose (for which AEWA Species Management Plans are yet to be developed).

So far so good.



Whereas some stakeholders appreciate the idea of an international management of goose populations, there is a considerable group of scientists, politicians, conservationist and volunteer counters, who disagree with a goose management platform. They argue that geese are a natural phenomenon and should be tolerated, even when their populations increase. In their opinion goose damage should be financially compensated and the chasing of geese only should be allowed in rare cases and only with non-lethal methods. A number of goose count volunteers threatened not to deliver any goose data anymore, when these will flow into the goose management platform. Besides, a number of range states, participating in the EurGMP, do not have reliable goose numbers or goose bag statistics and the data about annual reproduction and mortality for most species are fragmentary.

So, there is still a lot to do before the EurGMP can function. The main challenge will be to gain the confidence of the stakeholders that mistrust the EurGMP and to help all participating countries to build a functioning monitoring system to collect all necessary data.

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Outstanding Ornithologist of the past: Johann Friedrich Naumann (1780 – 1857)

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Johann Friedrich Naumann (born 14 February 1780 and died 15 August 1857 in Ziebigk (today Prosigk in Saxony-Anhalt, Germany) was a German scientist, ornithologist, taxidermist, engraver and editor. He is one of the founders of the "Deutsche Ornithologen-Gesellschaft (DO-G) (German Ornithologists' Society, one of the world's oldest existing scientific societies) in 1850 and is regarded as the founder of scientific ornithology in Europe.

Johann Friedrich Naumann was born as the first of three sons of the estate owner and farmer Johann Andreas Naumann (1744-1826), who was an ardent hunter and amateur naturalist. The Naumann family owned, for a number of generations, the Ziebigk estate near the town of Köthen in the former Duchy of Anhalt-Cöthen. Because parts of the estate were situated in the floodplains of the Elbe river, where the regular floodings supported thousands of waterbirds, most Naumann men were hunters and had a strong relationship with nature, especially with birds. As a nine year old boy the little Johann Friedrich accompanied his father on hunting tours and drew excellent pictures of birds. Together with his father and his brother Carl Andreas, he collected birds and stuffed them. Because he wanted his drawn and stuffed birds to look as lively as possible, he started to observe birds intensively and collect information about them. As a result in 1815 he produced his first book "Taxidermie oder die Lehre, Thiere aller Klassen am einfachsten und zweckmäßigsten für Kabinette auszustopfen und aufzubewahren." (an educational book about taxidermy) when he was 35 years old, he followed this, in 1818, with an illustrated guide to identifying bird eggs to species, called "Die Eier der Vögel Deutschlands und der benachbarten Länder in naturgetreuen Abbildungen und Beschreibungen."



Johann Friedrich Naumann
1780-1857 (source Wikipedia)

In the years 1820-1844, Naumann published together with his father, a twelve volume encyclopedia about the birds of Germany, called „Naturgeschichte der Vögel Deutschlands“ ("A Natural History of German Birds") with for each species, a picture, information about appearance, behaviour, annual life cycle, distribution, phenology, ecology, food, breeding, song and calls. Although the encyclopedia was published under the name of his father and his name appeared as co-author, Johan Friedrich Naumann wrote most of the text himself and put his fathers name on the cover to honour and thank him. Also most of the copperplate engravings in the books he published he made by himself.

A number of years later he produced another epoch-making twelve volume encyclopedia “Die Vögel Mitteleuropas” (The Birds of Middle Europe”). For this handbook he again not only wrote the text but also produced the coloured illustrations of the species described.

However, Naumann was not only interested in birds. He also collected butterflies as well as plants and build up a considerable herbarium. In 1821 he sold his collection of stuffed birds to Duke Ferdinand of Anhalt-Köthen, who built a new wing at his palace in Köthen for the collection and made Johann Friedrich Naumann its first curator. The Naumann-collection has been open to the public since 1835.

Birds like the Lesser Kestrel (*Falco naumanni*) and Naumann’s Thrush (*Turdus naumanni*) were named after the Naumann family.



Picture of the Lesser White-fronted Goose by J.F. Naumann from the „Naturgeschichte der Vögel Deutschlands“.

In addition to his scientific work Naumann managed the family estate. When he was 14 years old, he had to leave school to help his father managing the estate and after the death of his father, at the age of 46, he took over the management of the estate completely. Besides overseeing and directing the agricultural production of the estate, he also had a great interest in grafting fruit trees.

Although he never studied biology and made his living as a farmer he was very well aware of the fact that intensive farming could endanger nature and during the 1840s he warned that a further promotion and intensification of agriculture easily could become a threat for birds.

During his last years this workaholic lost more and more strength, had increasing problems with his health, gradually lost his eyesight and died in his sleep at the age of 77.



Obituary: William Joseph Lambart Sladen (1920 – 2017)

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William (Bill) Joseph Lambart Sladen (29 December 1920 – 20 May 2017) was born in Newport, Wales (U.K.). Although he already had a strong interest in nature, he studied medicine in London. In 1946, he became a bachelor of medicine and a bachelor of science from London University. However, it did not take long for his original passion to win over and he left his medical career to become a zoologist.

He first went to Antarctica in 1948 as medical officer and biologist with a small team of researchers and returned there many times for his zoological research. Bill Sladen undertook research on Antarctic penguins, banded Antarctic sea birds and studied the population dynamics, diseases, and behaviour of the Antarctic fur seal. Once, after a fire destroyed his base hut and killed his fellow travelers, he survived 17 days alone with no shelter but a tent, eating penguins and cormorants.



William (Bill) Sladen
1920-2017 (source Wikipedia)



In the early 1950s, he successfully submitted the results of his penguin research at Oxford University to get a doctorate in biology (Sladen 1954. Biology of the Pygoscelid Penguins. D.Phil Thesis, University of Oxford) and subsequently joined Peter Scott in the summer of 1953 on an expedition to central Iceland to catch and ring Pink-footed Geese *Anser brachyrhynchus*. This expedition founded his lifelong enthusiasm for geese and swans.

In 1956, Bill Sladen received a post-doctoral fellowship and moved over to Baltimore, Maryland (USA) where he taught comparative behaviour and ecology to graduate students and continued ecological field studies, which included studies on waterbirds in Chesapeake Bay, where with funding from the National Geographic Society he established Chesapeake Bay Center for Field Biology in the mid-1960s.

In 1961 he began a long-term banding of Adélie Penguins *Pygoscelis adeliae* and albatrosses at Cape Crozier, Ross Island. He was a pioneer in using banding, neck collars and radiotelemetry techniques for bird studies. His first demographic study of Adélie Penguins is continued until today.

His discovery from 1964 that DDT residues could be found in antarctic penguins contributed to the banning of DDT in the U.S in 1972.

During the 1970s he studied Snow Geese *Anser caerulescens*, being the first researcher from the western countries to visit their breeding area on Wrangel Island (Russia), and Tundra Swan *Cygnus columbianus*, whose migration routes he delineated using individual markers for identification.



Bill Sladen realised that science has to be communicated to the public. He produced a film about his penguin research, called “Penguin City” (1971), about the natural history of Adélie Penguins at Cape Crozier. As an engaged nature conservationist and waterbird manager he opposed the release of captive bred mallards for hunting. He founded the Waterfowl Trust of North America and tried to establish a replica of the Wildfowl & Wetlands Trust waterbird sanctuary at Slimbridge in Maryland (USA), from which he engaged himself in research and conservation activities associated with many waterbird sites.

In the late 1980s, he collaborated with the Canadian sculptor and amateur-ornithologist Bill Lishman to develop a method to train Canada Geese *Branta canadensis* to fly behind an ultralight aircraft. Dr. Sladen considered this technique as a potential tool for teaching endangered waterbird species, like the Trumpeter Swan *Cygnus buccinator* to fly along safer migration routes. After Bill Lishman’s first successful migration of 18 young Canada Geese, imprinted on two ultralights in 1993, the ultralight-technique was successfully applied until 2016 to the reintroduction of endangered Whooping Crane *Grus americana* under Operation Migration (www.operationmigration.org).



Bill Sladen and Bill Lishman, after arrival of the ultralight guided migration of 18 Canada Geese from Toronto, Ontario (Canada) to Arlie, Virginia (USA) in 1993 (Photo Joe Duff; copy from William Lishmann – Father Goose)

After his retirement as a university teacher in 1990 Bill Sladen remained active in the field of waterbird research and conservation. He founded the Airlie Research Station at his retirement home in Airlie, Virginia, where he subsequently became its director and focused on Swan research.

Dr William Sladen was a renowned expert and researcher of polar birds (especially penguins, swans, and geese), an engaging nature conservationist, a gifted communicator of science, as well as an enthusiastic amateur botanist, photographer and filmmaker.



Obituary: William (Bill) Lishman (1939 – 2017)

Johan H. Mooij

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William Lishman (12 February 1939 – 30 December 2017), well-known as Bill Lishman, was a Canadian multi award-winning sculptor, filmmaker, inventor, aviation pioneer and naturalist. He developed an ultralight aircraft, which he - as the first human being - used to lead birds in the air on their first migration.

Bill Lishman was born in Toronto, Ontario (Canada) and grew up in Pickering, Ontario (Canada). His father was a dairy farmer and his mother a biologist. As a child he did not like school. He used to say that he learned more at the farm of his father and from his mother than he ever could learn in school. At the farm's pond young Bill observed the visiting wild waterbirds and the farm's domestic geese and learned a lot about their behaviour. For him, one of the most intriguing things about birds was their ability to fly, to get airborne and to be free up in the air. At migration time he wondered where the migrating birds came from, where they were heading to and how they know when and where to fly. Based on his observations and the questions that arose from them, he developed the strong wish to become a pilot and fly with the birds.

On leaving highschool he tried to train as a civil pilot, but his potential career was blocked by a minor medical detail: he was partially colour-blind. His second attempt to become a pilot, this time as a military pilot with the Royal Canadian Air Force, was blocked at an early stage, when it became evident that Bill Lishman and RCAF were somewhat incompatible.

After a number of small jobs and a trip through England, where he learned the handcraft of traditional British wood carving, he started to study art at the Ontario College of Art. Unfortunately, his father was not prepared to pay for an art education and forced Bill to do something "more practical". So he worked sometime on his father's farm as well as in a series of small jobs until he got the opportunity to use an old blacksmith's shop as a studio. There, together with a colleague, he started to produce wood carvings and metal sculptures out of scrap. Well-known sculptures from these early years as a sculptor were his life-size horses and his copy of the lunar lander.

After becoming established as a sculptor, Bill Lishman revived his old passion for flying in the early 1970s and made his first flights in a hang-glider. In the mid-1970s, together with a friend, he added an engine to a hang-glider and made a first flight with this aircraft. To fly this motorised hang-glider could be rather tricky, especially during take off and landing, when the pilot had to run on foot at speeds up to 30 km/h! To make flying less risky he reconstructed the whole "aircraft" and in the end he had created a small, ultralight aircraft with a tricycled frame, a seat for the pilot, and an electric starter for the engine.

During one of his flights accidentally he got into a huge flock of ducks. The ducks did not look disturbed by this "big bird" and Bill felt himself as a natural part of the flock. This experience revived his wish to fly with birds.

In the mid 1980s Bill Lishman met Bill Carrick (a member of the Trumpeter Swan Society), who had trained a flock of Canada Geese to fly behind his motor boat for film work. From him as well as from the publications of Konrad Lorenz, Bill Lishman learned all about "imprinting". With this new knowledge he tried to train young Canada Geese to follow his ultralight. After a number of failed trials and a crash with his aircraft, Bill reconstructed his ultralight completely and tried again in 1988. This time he succeeded; the geese followed him in the air and back to the ground again.



William (Bill) Lishman
1939-2017 (source
Wikipedia)

In 1989 Bill Carrick and Bill Lishman flew to the biannual convention of the Trumpeter Swan Society and showed a film presentation about Bill Lishman's ultralight flight with the Canada Geese and Bill Carrick proposed the ultralight technique as a potential tool to re-establish endangered Trumpeter Swans in former parts of their traditional range. The reactions of the scientific auditorium varied from enthusiasm to laughter. However, one person was electrified by the idea: Dr. Bill Sladen, who invited the other two Bills to fly a flock of swans from Ontario to Virginia. After several failed attempts to imprint the swans on an ultralight as well as some legal problems about the keeping and working with the birds, the plan to fly with swans was abandoned. After a meeting in Airlie, Virginia, where Bill Lishman, George Archibald of the International Crane Foundation and Bill Sladen of the Airlie Research Center discussed using an ultralight to migrate with Whooper Cranes or Trumpeter Swans, Bill Lishman suggested making an ultralight test migration with Canada Geese from Ontario to Virginia in autumn, to see if the geese can find their way back in spring on their own. Bill Sladen agreed and together with friends Bill Lishman founded the "Operation Migration" (www.operationmigration.org) to find funding for this experimental flight. Dr. Bill Sladen wrote a scientific proposal to conduct a migratory bird experiment, which Bill Lishman used to get the required permissions. In October 1993, Bill Lishman and his friend Joe Duff took off in two ultralights of Lishman's design and construction followed by 18 Canada Geese from Bill's farm near Toronto (Canada) to the Airlie Research Center in Virginia (USA), where they arrived in early December. In the following April the marked birds returned to the Lishman farm on their own. With the results of this experiment Bill Lishman showed that geese learn their migratory route from their parents and that goslings can be guided to new wintering sites along new migration routes.



Bill Lishman, on the ultralight guided migration of 18 Canada Geese from Toronto, Ontario (Canada) to Airlie, Virginia (USA) in 1993
(Photo Joe Duff; copy taken from William Lishmann – Father Goose)

The story of this first ultralight goose migration provided the basis for the Hollywood film "Fly away home" in 1994. The ultralight method became an approved method to found new migration routes for endangered bird species in Northern America, Europe and Asia, e.g. Whooping Crane *Grus americana*, Bald Ibis *Geronticus eremita* and Siberian Crane *Grus leucogeranus*.

Bill Lishman was an award-winning artist, inventor, naturalist, designer, filmmaker, writer, environmental activist and manager. He was an always curious and lovely guy, always ready to help. It was a privilege to have known him.



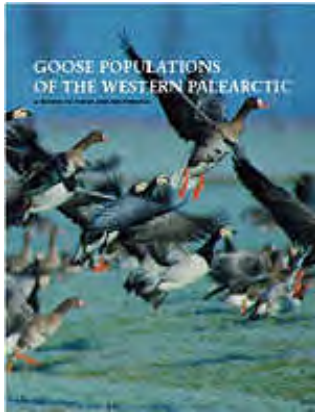
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Literature



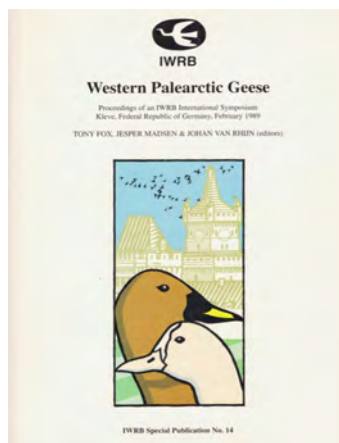
The Goose Specialist Group made an impressive compilation (edited by Jesper Madsen, Tony Fox & Gill Cracknell) of our knowledge on the status and distribution of the goose populations of the western palearctic. This book is not for sale anymore, but a digital copy can be downloaded for free from:

http://issuu.com/jesper_madsen/docs/goosepopulationswestpaleartic

or from

<http://bios.au.dk/en/knowledge-exchange/about-our-research-topics/animals-and-plants/mammals-and-birds/goose-populations-of-the-western-paleartic/>

Furthermore it is still possible to receive a printed copy of the official proceedings of earlier meetings of the Goose Specialist group, as there are:



Proceedings Goose Meeting 1989
(Kleve, Germany)

Interested? Please contact:
johan.mooij@bskw.de



Proceedings Goose 2007
(Xanten, Germany)

Interested? Please contact:
johan.mooij@bskw.de



Proceedings Goose 2009
(Höllviken, Sweden)

Interested? Please contact:
leif.nilsson@zooekol.lu.se

Proceedings of the 14th meeting of the Goose Specialist Group

The proceedings of the 14th meeting of the Goose Specialist Group held in Steinkjer, Norway in April 2012 have been published in the online journal *Ornis Norvegica*, which is the scientific journal of the Norwegian Ornithological Society (Norsk Ornitologisk Forening – NOF). You can find articles from the 2012 meeting, as well as a number of other ornithological papers which are surely of interest on the journal website:

<https://boap.uib.no/index.php/ornis/issue/view/62>

Proceedings of the 15th meeting of the Goose Specialist Group



The proceedings of the 15th meeting of the Goose Specialist Group held in Arcachon, France in January 2013 have appeared as a special edition of the journal **Wildfowl**.

By sending an email to wildfowl@wwt.org.uk a printed copy of this Special Issue (nr.3) can be ordered at the cost of £17 plus an additional £3.50 for credit card transactions.

It also can be downloaded for free at:

<http://wildfowl.wwt.org.uk/index.php/wildfowl/issue/view/285>



Wildfowl is an international scientific journal, published annually by the Wildfowl & Wetlands Trust (WWT).

The journal appeared originally as the Annual Report of The Severn Wildfowl Trust at the end of the Trust's first working year in 1947. From the outset it presented the results of scientific research in order to improve knowledge and understanding of wildfowl populations. It now disseminates original material on the ecology, biology and conservation of wildfowl (Anseriformes) and ecologically-associated birds (such as waders, rails and flamingos), and on their wetland habitats. The complete back catalogue of Wildfowl is available via the Open Journal System at <http://wildfowl.wwt.org.uk>



Call for help:

As discussed during the Höllviken meeting we invite all goose researchers to send their publications or goose publications they know of to our data bank of goose literature. Not only international but also local publications (including those in languages other than English) are most welcome. Please send your publications, preferably as a pdf file, to Johan Mooij - johan.mooij@t-online.de.



Instructions to authors

The Goose Bulletin accepts all manuscripts dealing with goose ecology, goose research and goose protection in the broadest sense as well as Goose Specialist Group items.

All manuscripts should be submitted in English language and in electronic form. Text files should be submitted in “.doc”-format, Font “Times New Roman 12 point”, tables and graphs in “.xls”-format and pictures in good quality and “.jpg”-format.

Species names should be written with capitals as follows: Greylag Goose, Greenland White-fronted Goose etc. Follow an appropriate authority for common names (e.g. Checklist of Birds of the Western Palearctic). Give the (scientific) Latin name in full, in *italics*, at first mention in the main text, not separated by brackets.

Numbers - less than ten use words e.g. (one, two three etc) greater than 10, use numbers with blank for numbers over 1 000.

In case of doubt please look at the last issue of the Goose Bulletin.

