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TAIGA BEAN GOOSE POPULATION STATUS REPORT 2015/16 AND 2016/17

Prepared by the AEWA European Goose Management Platform Data Centre

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Gitte Høj Jensen¹, Anthony D. Fox¹, Thomas Kjær Christensen¹, Preben Clausen¹, Kees Koffijberg², Niklas Liljebäck³, Jesper Madsen¹, Carl Mitchell⁴ & Leif Nilsson⁵

¹Aarhus University, Denmark

²Sovon Vogelonderzoek Nederland, The Netherlands

³Swedish Association for Hunting and Wildlife Management, Sweden

⁴Wildfowl & Wetlands Trust, UK

⁵University of Lund, Sweden

Aim

The aim of this report is to compile and review the available annual monitoring data to assess the population status of the Taiga Bean Goose *Anser fabalis fabalis* for the season 2015/16 and 2016/17. The data have been compiled to establish the population size and trend of each of the four Management Units (MU), i.e., Western, Central, Eastern1 and Eastern2, of the Taiga Bean Goose, as well as to provide specific data to input to the modelling and assessment of an optimal harvest strategy for the Central MU for the forthcoming hunting season (2017/18). This is part of an adaptive harvest management framework established to support the implementation of the AEWA International Single Species Action Plan for the subspecies (see Marjakangas et al. 2015). We thank the national goose monitoring networks who contributed to this report.

Population estimates

Western Management Unit

Population estimates for the Western MU of Taiga Bean Goose, consist of counts from north of Limfjorden in North Jutland in Denmark as well as from England and Scotland in the United Kingdom.

Taiga Bean Geese from the Western MU are protected from hunting.

Denmark

Goose monitoring in Denmark is coordinated as part of the national nature monitoring programme NOVANA (data being input online into www.fugledata.dk), supplemented with observations from BirdLife Denmark's citizen science portal www.DOFbasen.dk. The programme contributes to the mid-

winter international waterbird census (IWC) coordinated by Wetlands international. The population estimates based on these counts from January 2016 were 421 Taiga Bean Geese, 5 Tundra Bean Geese and 623 unidentified Bean Geese (Table 1). The counts from January 2017 gave an estimate of 226 Taiga Bean Geese, 43 Tundra Bean Geese and 529 unidentified Bean Geese (Table 2). Based on expert judgement, the 623 and 529 unidentified Bean Geese in 2016 and 2017 were most likely Taiga Bean Geese (by virtue of the fact they were counted at sites that traditionally normally only hold Taiga Bean Geese).

Estimates for Denmark are currently preliminary, as data made by aerial surveys, under the auspices of NOVANA, are not yet available. In addition, there might be observers who have not yet entered their registrations in DOFbasen. Additionally, Bean Geese in North Jutland are notoriously very difficult to locate, which may explain the low numbers in 2017.

United Kingdom

The Bean Goose counts in the United Kingdom also contribute to the international counts coordinated by Wetlands international. In Scotland and England the counts are carried out regularly through the winter months and, instead of relying on a January count, a maximum winter count (which can be any month, including the January count) is used as the final estimate. Counts are made in collaboration between the Wildfowl & Wetlands Trust (WWT), the Bean Goose Action Group, Scotland (BGAG) and the Royal Society for the Protection of Birds (RSPB). Results from ringing and re-sightings suggest very little (if any) within-winter movement of Taiga Bean Geese to/from continental Europe (Mitchell *et al.* 2016), which means that adopting this count approach poses little risk of double counting.

The population estimates for the United Kingdom was 285 individuals in 2016 (Table 1), and 239 individuals in 2017 (Table 2).

Conclusions for the Western Management Unit

Seven hundred and six individuals were counted in the Western MU in 2016 and 465 in 2017, both years excluding the unidentified Bean Geese. Assigning the unidentified individuals within Denmark to the Taiga race yields an estimated population size of 1329 for January 2016 and 994 for January 2017. These numbers suggest a decline in population size of the Western MU of Taiga Bean Goose. There might, however, be alternative explanations for the decrease in observed numbers:

- 1) As mentioned, estimates from Denmark are currently preliminary.
- 2) Bean Geese in North Jutland are very difficult to locate; hence some flocks might have been missed during the count in both years but especially in 2017.
- 3) In recent years, mid-winter counts are not in accordance with surveys at other times of the winter season hence both the spring and autumn counts of Taiga Bean Geese are recording (consistently) more geese (as well as following a pattern of a modest upward trend) which we fail to replicate in the mid-winter count.
- 4) It is also not beyond the bounds of possibility that increasing numbers of birds are wintering further up the flyway, for instance in Sweden or Norway, in areas yet to be recognised and counted, particularly in mild winters such as 2016/17.

Despite the potential gaps in survey coverage, the population level remains far below the short-term target (for the next 20 years) of 4,000 individuals, specified in the International Single Species Action Plan (Marjakangas *et al.* 2015).

Table 1. Results of international count of Bean Geese, the Western MU, winter of 2015/16. *Preliminary numbers, **Most likely Taiga Bean Geese.						
Country	Area	Period	Number of Bean Geese			Reported by
			Taiga	Tundra	Unidentified	
Denmark	NW Jutland	Jan 2016	421*	5*	623***	Preben Clausen/Tony Fox
UK	Slamannan, Scotland	Max. winter count	263	-	-	Carl Mitchell /BGAG/RSPB
	Norfolk, E England	Max. winter count	22	-	-	
TOTAL FOR WESTERN POPULATION 2016			706	5	623	

Table 2. Results of international count of Bean Geese, the Western MU, winter of 2016/17. *Preliminary numbers, **Most likely Taiga Bean Geese.						
Country	Area	Period	Number of Bean Geese			Reported by
			Taiga	Tundra	Unidentified	
Denmark	NW Jutland	Jan 2017	226*	43*	529***	Preben Clausen/Tony Fox
UK	Slamannan, Scotland	Max. winter count	216	-	-	Carl Mitchell /BGAG/RSPB
	Norfolk, E England	Max. winter count	23	-	-	
TOTAL FOR WESTERN POPULATION 2017			465	43	529	

Central Management Unit

Population estimates for the Central MU of Taiga Bean Goose consist of counts from Southern Sweden, the Netherlands and Denmark (i.e. excluding the area north of Limfjorden in North Jutland described above). Geese from the Central MU also winter in North-Central Germany depending on the severity of winter weather. It has however not been possible to obtain population estimates from Germany in 2016 and 2017.

Taiga Bean Geese from the Central MU are hunted in Russia, Sweden, Denmark and Germany; in Finland the species was formerly hunted but is currently protected.

Sweden

Population counts

The Bean Goose counts in Sweden are part of the contribution to international counts coordinated by Wetlands International which are performed throughout the winter, although only the January counts of Bean Geese are separated into Taiga and Tundra Bean Geese. In Sweden, the central counting areas are divided into Southwest Scania, Northeast Scania and North of Scania. In Southwest Scania, Bean Geese have always been separated into subspecies, whereas in Northeast Scania and North of Scania the observers have only recently (since 2014) been trained and asked to record numbers on the basis of this distinction. While most Bean Goose counts have been separated between the two subspecies, there are, however, still a number of geese unidentified to race (Tables 3 and 4). Based on expert judgement,

the numbers of unidentified Bean Geese in the North of Scania and Northeast Scania regions were assigned to either Tundra or Taiga Bean Geese based on the following assumptions:

- All the Bean Geese in North of Scania were considered to be Taiga Bean Geese. When checked, e.g. during a recent survey in October 2016 when most sites were visited (H. Persson unpubl. data), this region had very few Tundra Bean Geese. More generally, only single Tundra Bean Geese have been reported in some years from this part of Sweden.
- The ratio of observed Taiga Bean Geese to Tundra Bean Geese in Northeast of Scania was used to assign the unidentified Bean Geese for each year to subspecies for this particular region.

Based on these methods, the population estimates for Sweden in January 2016 were 37,750 Taiga Bean Geese (Table 3) and, 51,528 Taiga Bean Geese in 2017 (Table 4).

Harvest

The open season for Bean Geese in Sweden extends from October 1st until December 31th, but only in the counties of Skåne and Blekinge. In addition, under derogations ('skydds jakt') allowed under two different legal instruments and reporting systems (see Appendix 1), Bean Geese can be shot to prevent damage to crops outside the normal open season and permitted areas.

Bean Goose harvest is reported on a voluntary basis to the Swedish Association for Hunting and Wildlife Management. Such data originate from defined geographical areas and so are used to extrapolate the levels of reported harvest to unreported areas to generate estimates for entire counties and scaled up nationally. The numbers of Bean Geese shot under special licences issued by statutory authorities to reduce agricultural damage (potentially issued throughout Sweden, see Appendix 1) are not currently gathered and collated, but the numbers are considered to be small, compared to those shot under regular hunting. The harvest data on Bean Geese is not separated into the two subspecies.

During the 2014/2015 hunting season, the total hunting bag of Bean Geese was estimated at 1,675 birds and during the 2015/2016 hunting season 1,582 birds (Table 5). Harvest data for 2016/17 were not available at the time of writing this report. The number of Bean Geese shot under 'skyttsjakt' is unknown.

Denmark

Population counts

The January 2016 count in Denmark (excluding the region used by the Western MU) recorded 6,816 Taiga Bean Geese, 1,696 Tundra Bean Geese and 3,404 unidentified Bean Geese. In 2017 the corresponding numbers were 4,450 Taiga Bean Geese, 2,238 Tundra Bean Geese and 1,287 unidentified Bean Geese. In an attempt to assign the unidentified Bean Geese to subspecies, the following methods have been applied:

- The Bean Geese unidentified to subspecies have been assigned to Taiga Bean Geese or Tundra Bean Geese in south Zealand (former Storstrøms Amt) on the basis of the ratio amongst all the Bean Geese that have been identified to subspecies for each year within this particular region.
- The remainder of the unidentified Bean Geese in 2016 and 2017 elsewhere in Denmark were assigned to subspecies on the basis of the ratio of identified Taiga to Tundra Bean Geese in the total annual counts.

The totals for Denmark are thus 8,885 Taiga Bean Geese in January 2016 and 5,253 Taiga Bean Geese in January 2017 (Tables 3 and 4).

Hunting bag data

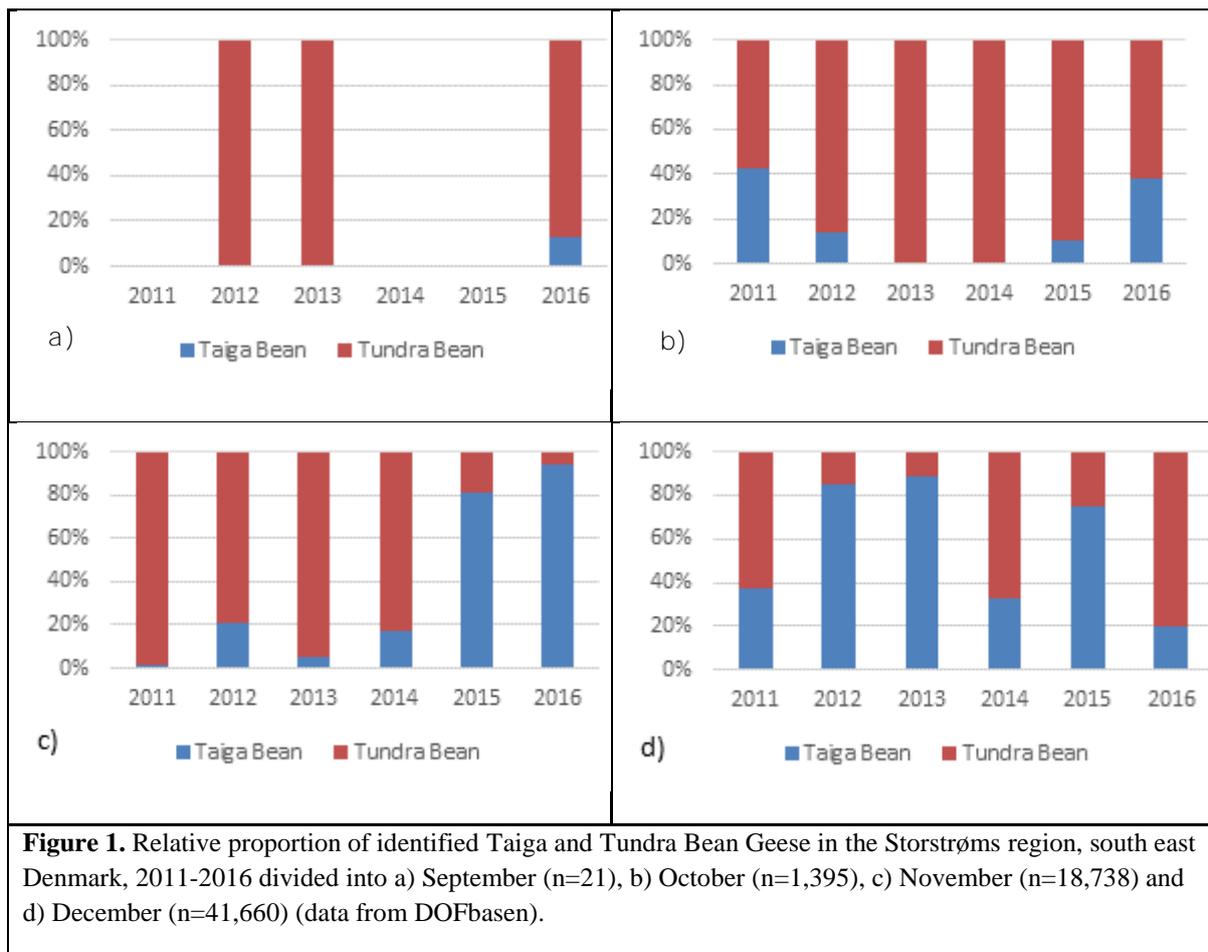
Bean Geese can be hunted in Denmark from September 1st until November 30th, but since 2014 hunting is only allowed in Southeast Denmark in the municipalities of Vordingborg, Guldborgsund and Lolland.

The spatial restrictions on hunting were initially established primarily to protect Taiga Bean Geese from the Western MU in North Jutland, but later expanded to most of the country to protect Taiga Bean Geese in general. Harvest of Bean Geese is reported by hunters through the mandatory Hunting Bag Statistics (administered by the National Environmental Agency).

In south east Denmark, previous analysis has suggested that during the early autumn, most Bean Geese are Tundra Bean Geese, but as the winter progresses, more Taiga Bean Geese arrive to winter, creating an increasing mix of both subspecies in the region. This was the rationale for restricting the hunt to the early part of the winter (i.e. September 1st until November 30th) in SE Denmark from 2014, and only in the three municipalities mentioned above. To establish whether this is indeed the case to validate the change in hunting legislation, an analysis of the seasonal phenology and relative abundance of the two subspecies in this part of Denmark was carried out. To achieve this, data on observations of Bean Geese assigned to subspecies were extracted from DOFbasen from September-December during 2011-2016, from the Storstrøms region (which consists of the five municipalities Næstved, Faxe, Vordingborg, Lolland and Guldborgsund).

During 2011-2016, birdwatchers have reported a grand total of 94,507 of Tundra, Taiga as well as unidentified Bean Geese in DOFbasen. Overflying geese were excluded from the analysis, as Bean Geese are very hard to separate into subspecies when in flight, potentially contributing to the relatively large overall proportion of unidentified Bean Geese (37%). The results show that relative to Tundra Bean Geese, Taiga Bean Geese in the Storstrøms region in Denmark are most abundant in December; however, increasing numbers are also reported in November (Figure 1). Thus, in November, the relative proportions of Taiga Bean Geese in relation to Tundra Bean Geese have increased in 2015 and 2016 compared to those in the four previous years. The implication from this is that there has been a shift in the phenology of arrival of the Taiga subspecies which brings an associated elevated risk of shooting Taiga Bean Geese within the present hunting season (which includes November) compared to earlier seasons.

In the 2014/2015 hunting season the total hunting bag of Bean Geese consisted of 1,296 birds and of 1,440 birds in 2015/16 (Table 5).



Netherlands

The national goose counts in the Netherlands, including those for Bean Geese contribute to the international counts coordinated by Wetlands international and are performed during monthly counts from September to May. Specifically for Taiga Bean Goose, also non-systematic observations from the portal www.waarneming.nl have been used. The January numbers from the Netherlands are preliminary figures, and with these reservations, the number of Taiga Bean Geese in the Netherlands was 0 in 2016 and 11 in 2017 (Tables 3 and 4). Recent results from telemetry and resightings of collared Taiga Bean Geese marked in northeastern Jutland, Denmark show that the remnant wintering Dutch birds currently at least partially belong to the Central MU (O. Therkildsen unpubl. data).

Bean Geese are protected in the Netherlands, but may be subject to scaring and shooting at local level, with permission from the local statutory authority. For the only area where Taiga Bean Geese occur, such licenses were not issued in the reporting period.

Conclusion for the Central Management Unit

Population counts

The counts from Denmark, Sweden as well as the Netherlands are summarised in Table 3 for 2016 and Table 4 for 2017. A total of 46,645 Taiga Bean Geese was counted in January 2016, compared to 56,792 Taiga Bean Geese in January 2017. These estimates do not include counts from Germany. Nevertheless, given the most recent population estimate of 56,792 Taiga Bean Geese, the Central MU appears to be recovering in recent years, approaching the target of 60,000 individuals for the short-term future,

specified in the International Single Species Action Plan. The suggested positive trend has also been observed in spring-staging areas in south-central Sweden 2007-2015 (Skyllberg 2015).

Table 3. Results of international counts of Bean Geese, the Central MU, January 2015/16. *Unidentified Bean Geese have been separated to subspecies, **Preliminary numbers.						
Country	Area	Period	Number of Bean Geese			Reported by
			Taiga	Tundra	Unidentified	
Sweden	S Sweden	Jan 2016	31,072	3,691	7,574	Leif Nilsson
			37,750*	4,587*		
Denmark	SE Denmark	Jan 2016	6,816	1,696	3,404	Preben Clausen/ Tony Fox
			8,131***	2,830***	955	
			8,895***	3,021***	0	
Germany	North-Central Germany	NA	NA	NA	NA	NA
The Netherlands	Noord-Brabant	Jan 2016	0**	-	-	Sovon Vogelonderzoek Nederland
TOTAL FOR CENTRAL POPULATION 2016			46,645	7,608	0	

Table 4. Results of international counts of Bean Geese, the Central MU, January 2016/17. *Unidentified Bean Geese have been separated to subspecies, **Preliminary numbers.						
Country	Area	Period	Number of Bean Geese			Reported by
			Taiga	Tundra	Unidentified	
Sweden	S Sweden	Jan 2017	41,737	3,128	10,569	Leif Nilsson
			51,528*	3,906*		
Denmark	SE Denmark	Jan 2017	4,450	2,238	1,287	Preben Clausen/Tony Fox
			4,866***	2,527***	582	
			5,253***	2,722***	0	
Germany	North-Central Germany	NA	NA	NA	NA	
The Netherlands	Noord-Brabant	Jan 2017	11**	-	-	Sovon Vogelonderzoek Nederland
TOTAL FOR CENTRAL POPULATION 2017			56,792	6,628	0	

Hunting bag data

The hunting bag data from Denmark and Sweden are summarised in Table 5. At least 2,971 Bean Geese were shot in 2014/15, compared to at least 3,022 in 2015/16. The application of the Adaptive Harvest Management programme for the Central MU of the Taiga Bean Goose requires the availability of robust estimates of population size in mid-winter and harvest bag data separated into the two subspecies (Taiga and Tundra Bean Geese). These two variables are the prerequisite for assessing the population response to management actions. In 2016 and 2017 it has been possible to obtain reasonable count data from Denmark, Sweden and the Netherlands, but unfortunately not from Germany. In addition, while it has been possible to obtain some harvest data from Denmark and Sweden, unfortunately the accuracy of these estimates remains open to question, and it has not been possible to separate the Bean Geese

represented in the hunting bag of each country into the two subspecies. Moreover, hunting data from other range states continues to be lacking (e.g. from Russia and Germany).

For these reasons, the successful implementation of an Adaptive Harvest Management framework for the Central Taiga Bean Goose MU cannot occur until the following data have been made available:

- 1) Mid-winter population estimates from Germany;
- 2) Species specific hunting bag data from all range states, but in particular Finland (if and when the current moratorium comes to an end), Sweden, Denmark, Germany as well as Russia.

The latter issue can potentially be resolved by hunter engagement, since submission of photographs of all shot Bean Geese to expert scrutiny would enable an assessment of the relative contributions of the two subspecies to the species harvest in all range states. Online app submission using mobile phones and the internet facilitates such online submission in real time.

Table 5. Hunting bags of Bean Geese in Denmark and Sweden, hunting season 2014/15 and 2015/16. Data from 2016/17 is not available yet.

Country	2014/15	2015/16	2016/17
Denmark	1,296	1,440	NA
Sweden	1,675	1,582	NA
TOTAL	>2,971	>3,022	NA

Eastern1 Management Unit

The Eastern1 MU Taiga Bean Geese winter in North-east Germany, North-west Poland, in lower numbers in Southern Sweden and only in small numbers in the Netherlands. In this report, all the birds in Sweden and the Netherlands were identified as Central MU birds in the absence of better information. Until better information is made available, we are forced to consider that this wintering element has contracted its wintering range eastwards into eastern Germany and Poland. However, as there have been no goose counts reported from Germany and Poland in January 2016 and 2017, it is not possible to estimate the population size for the Eastern1 MU.

Eastern2 Management Unit

The Eastern2 MU winters in South-east Kazakhstan, Eastern Kyrgyzstan and North-west China, it has however not been possible to get population estimates from these countries.

References

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Appendix 1

Swedish harvest data collection method

By Niklas Liljebäck, Swedish Association for Hunting and Wildlife Management

Harvest data in Sweden are reported on a voluntary basis except in the case of five species where returns are obligatory, namely moose, red deer and three spp. of large carnivores i.e. species with quotas/licenses. The Wildlife Management system in Sweden is geographically based, since almost all hunting is done in “hunting teams” or hunting clubs that hold the hunting rights on a specific piece of land for periods of long duration (often large areas and across many generations). This means that the smallest unit (geographically speaking) is relatively stable in terms of occupation. The system is focused on hunting of large mammals (moose, deer (three spp.), wild boar, etc.). All hunting teams nominate someone responsible for reporting harvest (mandatory for the five species above) and other data used in Swedish Game Management (moose survey, large carnivore observations etc.). These geographically stable units are then organized at a secondary level (‘jaktvårdsrets’) which include many hunting areas (about 300 such second-level units exist in Sweden) before data are collated at the County level and later used to generate national data.

The voluntary basis for reporting provides for high level of quality amongst the submitted data. Data from reporting hunting teams are used to calculate the number of individuals shot per 1000 hectares for each species. This value is used to extrapolate the harvest from areas with good data to those areas without reporting. The extrapolation requires local knowledge to generate a correction factor that is representative for the specific areas and species concerned.

Throughout this process the Swedish Association for Hunting and Wildlife Management (SAHWM) is responsible for the collection and quality control of the data. The organization’s network provides the opportunity for quality control down to the smallest area reporting unit. To ensure the delivery of the highest possible quality of data, it is necessary that those responsible for reporting feel comfortable to give data to the receiving body and to see that it is used in an appropriate fashion.

The Government of Sweden commissions SAHWM to produce national harvest data for all species that are permitted to be hunted during an open season (but see the next section for those species hunted under derogations/‘skydds jakt’).

Protective hunting, derogations (‘skydds jakt’)

There are two types of ‘skydds jakt’ possible in Sweden: one that can be undertaken without a license from the statutory authorities (type I) and another type that requires a license from those authorities (type II). Under type I, there is no explicit existing channel for reporting numbers shot, since this is not required under the hunting law and is not clearly stated in the commissioning contract to SAHWM. However, SAHWM has strong indications that most hunters report numbers of all species shot under Type I ‘skydds jakt’ as part of their normal hunting activity.

For type II hunting, the statutory authorities giving the permit/derogation are responsible for the collection of data, but to our knowledge there is no system for collating data at a national level.

Type I hunting for bean goose

Permitted 1th September- 31th October in the Counties of Östergötland and Örebro and some Municipalities in middle of Sweden. *To protect fields with unharvested crops.*

Permitted 1st January- 15th March in the Counties of Blekinge and Skåne. *To protect fields that has been sown with autumn cereals*

Type II hunting for bean goose

This can be permitted throughout the entire country at any time reflecting local needs.