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AGREEMENT ON THE CONSERVATION OF
AFRICAN-EURASIAN MIGRATORY WATERBIRDS

WORKSHOP FOR THE REVISION OF THE INTERNATIONAL SINGLE SPECIES ACTION PLAN FOR THE TAIGA BEAN GOOSE

1-3 April 2025, Bonn, Germany and Online

DRAFT BIOLOGICAL ASSESSMENT AND PROBLEM ANALYSIS OF THE WEST SIBERIA/POLAND AND GERMANY POPULATION OF TAIGA BEAN GOOSE – "EASTERN 1 POPULATION"[1], FORMER EASTERN 1 MANAGEMENT UNIT [2]

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In terms of the Revised Format and Guidelines for AEWA International Single and Multi-species Action Plans (Doc. AEWA/TBG/ISSAP/Inf.1.3), the annexes of each International Single Species Action Plan (ISSAP) must include both a biological assessment and a problem analysis.

For the purposes of the Taiga Bean Goose ISSAP Revision Workshop, a preliminary biological assessment and preliminary problem analysis has been prepared for each of the four populations of Taiga Bean Goose. These meeting documents have been divided by population to enable each Range State to more easily focus on those populations that occur in their countries. During the workshop, participants' input will be sought on both how best to present these assessments and analyses in the revised ISSAP (i.e., whether/how they should be merged) and how their content can be further refined and strengthened.

This document includes the preliminary biological assessment and a table with the preliminary assessment of threats to facilitate a discussion of the problem analysis during the revision workshop. The full problem analysis will be produced by the compilation team after the workshop.

[1] Given stakeholders' familiarity with referring to the 'Eastern 1 MU', the term 'Eastern 1population' will be used for the purposes of the Taiga Bean Goose ISSAP Revision Workshop. At present, Table 1 of AEWA's Annex 3 lists this population as the 'West Siberia/Poland and Germany' population of *Anser fabalis fabalis*. However, a proposal will be made to AEWA MOP9 to simplify these population names to the following: 'Germany and Poland (nbr)' population of *Anser fabalis fabalis*. Assuming that the MOP adopts these amendments, the new population names will ultimately be reflected in the revised Taiga Bean Goose ISSAP.

[2] Funding for the action-planning process was provided by the Danish Agency for Green Transition and Aquatic Environment under the Ministry of Green Transition and the Finnish Wildlife Agency.

1. DRAFT BIOLOGICAL ASSESSMENT

1.1 Distribution throughout the annual cycle

Overview

Eastern 1 population nests in the forest zone of Western Siberia (50% east of the Lower Ob, eastwards as far as 75° 20' E) and in small numbers in the upper Pechora region and the Ussa river basin west of the Ural Mountains. Non-breeders and failed breeders mostly migrate to the western part of Taimyr Peninsula for wing moult (with single birds also moulting in the Tazovsky Peninsula and in the south of Yamal peninsula), while successful breeders moult at their breeding sites. There are important spring and autumn staging areas along the Western Siberian river basins (mainly along the Lower Ob) and key stopover areas during migration in the Baltic Region (coastal areas in Poland, Lithuania and Latvia), Central Black Earth Region in southern European Russia and Sviyaga-Vyatka interfluve in the Kazan region/Russia. The population winters in Northeastern Germany and Poland. *(Heinicke et al. 2019, Heinicke et al. in prep.)*

The spring migration from wintering sites can start as early as in January (late December), while most birds depart during February. Birds arrive in the breeding areas from mid-April onwards (on average 1 May ± 9 days).
More than half of all key stopover sites are located in Russia. The autumn migration starts from late September onwards, while most birds don't start migration from Western Siberia before mid-October. First birds arrive wintering areas from mid-October onwards, while substantial numbers occur at wintering sites not before early to mid-November. Maximum numbers at wintering grounds (Mecklenburg-Vorpommern, Northeast Brandenburg, northern Poland) can be found in December and January, with single birds or small numbers can be found in Lithuania and Latvia at the time as well (Heinicke et al. in prep.).

Spring migration

On average, spring migration lasts at least two months. The start of migration from wintering grounds occurs from second half of January and February, but for some individuals it can be delayed until the end of March (particularly in cold winters). Arrival at nesting sites occurs from mid-April to mid-May, on average at the end of the first five days of May. For the period 2019-2024, a trend towards an earlier start from wintering grounds and an earlier arrival at nesting areas is observed. No differences were found in the dates of the beginning and end of migration, or the duration of flights and stops in males and females. The length of the migration route for different individuals varied from 3.3 to 6.3 thousand km, on average 4.6 ± 0.7 thousand km. More than 50% of the spring stopovers are located in Russia. Other important spring stopovers are located in Lithuania, Latvia, Belarus and eastern Poland.

Moult migration

Adult birds with broods moult directly in the nesting areas. If the clutch or brood is lost, the pair soon leaves the nesting sites, moving mostly to moult in the tundra areas of the western part of Taimyr Peninsula at a distance of 1,050 to 1,750 km from the breeding sites. In rare cases, birds moult in the south of the Yamal Peninsula and in Tazovsky Peninsula. The onset of moult migration depends on the time of nest or brood loss and vary between late May and early July (main departure around 20th of May). Birds arrive at the moulting sites mostly in the last days of June or first days of July, where they stay for about 52 days. After moulting is complete, the birds leave moulting sites during second half of August. Most birds return to staging sites close to their nesting areas, where they join birds with broods at these pre-migration sites. Here they spend up to 2 months. The average duration of stay at the pre-migration site is 58.5 ± 9.7

days (n = 35). A smaller proportion of moulters start autumn migration directly from post-moulting staging areas at Tazovsky Peninsula (Heinicke et al in prep.).

Autumn migration

Autumn migration is shorter than spring migration in time and route. Departure from pre-migration stops in most cases occurs between late September and late October, on average 18th of October. Arrival at wintering grounds occurs between mid-October and mid-December, on average 8th of November. Departing from pre-migration stops, birds reach wintering grounds in about 3 weeks. During autumn migration, the number of migration stops is reduced, and the route itself is mostly more direct than in spring (Heinicke et al in prep.).

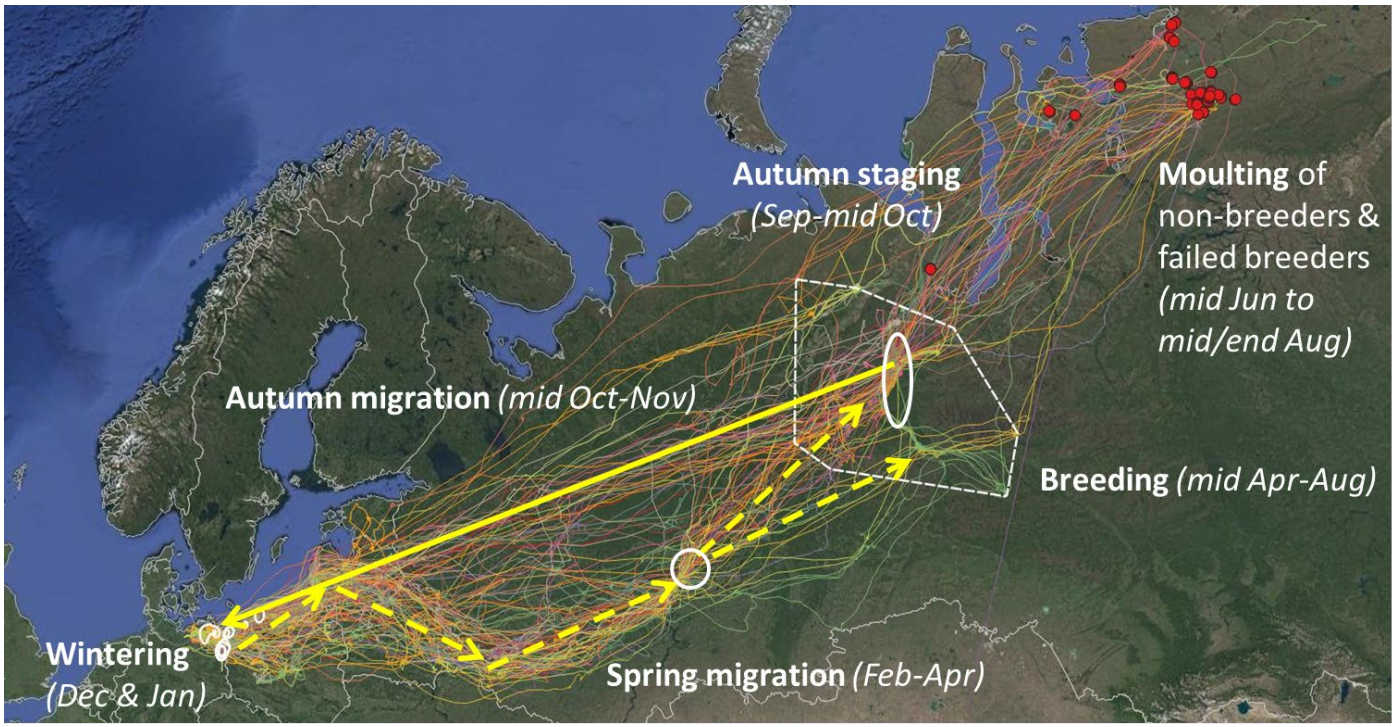

Figure 1. Annual cycle of taiga bean geese from population E1 according to tracking data from 2019-2024 (Heinicke et al. in prep.)

1.2 Habitat requirements

The main breeding habitats in Yamalo-Nenets and Khanty-Mansi include raised bogs, woodlands, taiga lakes and open habitats bordering small rivers (Râbicev 2001). Taiga bean geese tend to nest in upstream areas of tributaries inaccessible by motorboats even during spring flood and hence in areas mostly undisturbed by humans (Golovatin & Pashalnyj 2004). Nests are found in open and sometimes in wooded habitat, and as in Finland, some nests are located far away from the nearest water body.

In Germany and Poland, stubble fields with waste grain and especially maize are the most important feeding habitats during autumn. In winter and early spring, taiga bean geese feed predominantly on winter cereals and rape. In areas with remaining large (wet) grassland areas, taiga bean geese also use partly these more natural habitats. In opposite to Sweden, sugar beet and potato spill are of less importance (Heinicke 2004, Heinicke et al. 2019, Heinicke 2020). A recent study on the habitat preferences of Anser geese in Poland showed that Bean Geese selected maize stubbles and tended to avoid winter cereals and pastures in autumn (Rosin et al. 2012).

In Western Siberia, the extensive natural wetlands of Dvuobje in the Lower Ob River valley (e.g. Sirin 2012) constitute their most important spring staging area (Lebedeva 1979). Dvuobje includes a network of tributaries, marshes, meadows, lakes, wooded islands and permanent and seasonal water bodies called "sors" (Rozenfeld & Strelnikov 2011, Sirin 2012). Bean Geese prefer to feed in highly productive graminoid vegetation in "sors", swamps and flood-plain lakes. In such habitats *Agrostis stolonifera* and *Ranunculus reptans* dominate in the low-lying, often fully flooded parts. Along the shores, *Agrostis straminea*, *Beckmannia syzigachne*, *Arctophila fulva* and *Senecio congestus* are plentiful and also grazed by Bean Geese. Sometimes geese graze on flooded plains which provide extensive flat areas with *Arctophila fulva* and *Agrostis spp*., and at the outlets of channels where "sor" wetlands occur, comprising abundant *Agrostis stolonifera* and *Puccinellia spp*. complex, *Rumex spp.* and underwater vegetation (Rozenfeld & Strelnikov 2011).

1.3 Survival and productivity

There is little information about annual survival rates of taiga bean geese from Eastern 1 population. Birds banded in North-east Germany in October 2007 had a survival rate of 0.36–0.58 (Heinicke et al. 2019, T. Heinicke unpubl.). The relative contribution of natural and hunting mortality to overall Taiga Bean Goose mortality is not known. The annual natural mortality rate in adult geese is low, generally c. 0.05-0.10 (Larsson et al. 1988, Ebbinge 1991, Francis et al. 1992a, Èktova, S.N., & Zamâtin, D.O. (Eds.). (2010). *Red Data Book of the Yamalo-Nenets Autonomous Okrug: Animals, Plants, Fungi*. Yekaterinburg: Basko. et al. 2001, Frederiksen et al. 2004) but hunting mortality can make a substantial difference to survival if such mortality is additive. The high prevalence of embedded shot pellets (Jönsson et al. 1985, Kenntner et al. 2009) suggests that the hunting pressure on Taiga Bean Goose is relatively high and therefore hunting is probably an important cause of mortality. A repeated study of embedded shot pellets in autumn 2021 in the Lower Odra National Park, in Germany, showed a similar high prevalence (54.2 % in 2021, n =24) of shot pellets in adult taiga bean geese as a previous study from 2007 (45.8% in 2007, n=24) (T. Heinicke unpubl.).

Data on the breeding performance of the Taiga Bean Goose, including breeding propensity (i.e. the proportion of pairs actually attempting breeding), clutch size, egg survival, and hatching and fledging success, as well as the key factors affecting them are scarce or lacking. The only data on the proportion of adults breeding is that of Golovatin (2010), which estimated that c. 40% of taiga bean geese present in the Yamalo-Nenets region attempted to breed.

Golovatin (2010) reported that 60% of hatched Taiga Bean Goose goslings in the Yamalo-Nenets region survived to fledge. However, despite all of these observations, it is not possible to estimate the overall rates of predation on eggs or goslings, the relative significance of the various predators involved and their impact on the dynamics of the population.

1.4 Population size and trend

The numbers of taiga bean geese breeding in Western Siberia have decreased, probably since the 1990s (Golovatin 2005). However, estimates for the population size are contradictory, and it is not possible to differentiate the numbers of taiga bean geese between the Eastern 1 and 2 populations from the breeding area data. Estimates from 1997 suggested that thousands of pairs of taiga bean geese breed in the northern taiga between the Nadym and Taz Rivers in the Yamalo-Nenets region (Kupriânov & Kupriânova 1997).

In Khanty-Mansi, the total number of taiga bean geese, including non-breeding birds, was estimated at 7,000 individuals (Red Data Book of KHMAO-Yugra 2003). On the other hand, there are recent estimates that suggest the

total Western Siberian stock numbers only 800-3,000 individuals, including non-breeders (Èktova & Zamâtin 2010). During the autumn counts throughout Western Siberia in 2014, the total number of taiga bean geese migrating over the area was estimated at 2,060 birds (S. Rozenfeld unpubl.). Historical data suggest that the number of taiga bean geese wintering in Central Asia have substantially decreased, but it is unclear whether this decline has been caused by a decline in the overall sub-population size or a major shift in wintering areas (Heinicke 2008, 2009).

The size of the E1 population can only be estimated by counts in the wintering areas. Latest counts from northeast Germany in January 2020 and 2021 (Heinicke et al, manuscript) revealed a population size of 10-15,000 birds wintering in Germany, that belong to population E1. According to new tracking and ringing data, a smaller part of the wintering numbers in Germany, especially at coastal areas in Mecklenburg-Vorpommern (mainly island Rügen and areas further west) belong to the central population. This wintering group was estimated at 2-3,000 birds during the counts in 2020 and 2021.
The current wintering population in northern Poland is unknown, but a population size of about 5,000 birds seems to be realistic. Therefore, the total population size of E1 can be estimated at 15-20,000 birds at the moment.

Table 2. Population size and trend by country

Country	**Breeding numbers**	**Quality of data**	**Year(s) of the estimate**	**Breeding population trend in the last 10 years (or 3 generations)**	**Quality of data**	**Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)**	**Quality of data**	**Year(s) of the estimate**
Germany	N/A					10-15,000	counts	2020/21
Poland	N/A					5,000	estimate	2020/21
Lithuania	N/A					>5,000	estimate	2020/21
Latvia	N/A					>5,000	estimate	2020/21
Estonia	N/A					Hundreds	estimate	2020/21
Belarus	N/A					>5,000	estimate	2020/21
Russia	?			?		15-20,000	estimate	2020/21
Overall								

Annex 2: PROBLEM ANALYSIS

[A table with the preliminary assessment of threats is included below to facilitate a discussion of the main threats to the Eastern 1 population during the revision workshop. The problem analysis will be produced by the compilation team after the discussions during the workshop.]

Table 2. The threat assessment of West Siberia/Poland and Germany "Eastern 1" population following the IUCN Threats Classification Scheme (IUCN, 2020)*

Population: West Siberia/Poland and Germany Population of Taiga Bean Goose – Eastern 1 population				
Threat	**Scope** (i.e., the proportion of the total population affected)	**Severity** (i.e., the overall declines caused by the threat)	**Timing** (i.e., past, ongoing or future)	**Overall Threat Impact Score**
2. Agriculture & aquaculture Seizure of grassland and farmland management (land abandonment) (IUCN threat category 2.1.1 Shifting agriculture). *Staging areas*	*Affects the minority of the population (<50%)*	*Causing or likely to cause relatively slow but significant declines (<20% over 10 years or three generations; whichever is the longer)*	*Ongoing*	
3. Energy production & mining Oil and gas production (IUCN threat category 3.1 Oil & gas drilling) *Breeding* Windpower, solar fields and related powerlines (IUCN threat category 3.3 Renewable energy) *Staging, Wintering*	*Affects the majority of the population (50–90%)* *Affects the whole population (>90%)*	*Causing or likely to cause relatively slow but significant declines (<20% over 10 years or three generations; whichever is the longer)* *Causing or likely to cause relatively slow but significant declines (<20% over 10 years or three generations; whichever is the longer)*	*Ongoing*	
5.1 Hunting & collecting terrestrial animals Legal hunting at unsustainable levels. Spring hunting, lack of protected staging areas. (IUCN threat category 5.1.1 Intentional use) *Breeding, Staging, Wintering*	*Affects the whole population (>90%)*	*Causing or likely to cause very rapid declines (>30% over 10 years or three generations; whichever is the longer)*	*Ongoing*	

Illegal harvest, poaching (IUCN threat category 5.1.2 Unintentional effects) Breeding, Staging, Wintering	*Affects the whole population (>90%)*	*Causing or likely to cause very rapid declines (>30% over 10 years or three generations; whichever is the longer)*		
6.Human intrusions & disturbance			*Ongoing*	
Increased access to breeding and spring staging areas (motorboats) (IUCN threat category 6.1 Recreational activities)	*Affects the majority of the population (50–90%)*	*Causing or likely to cause relatively slow but significant declines (<20% over 10 years or three generations; whichever is the longer)*		
(IUCN threat category 6.2 War, civil unrest & military exercises) *Staging,*	*Affects the majority of the population (50–90%)*	*Causing or likely to cause fluctuations*		
Oil and gas developments, forestry (IUCN threat category 6.3 Work & other activities) *Breeding,*	*Affects the whole population (>90%)*	*Causing or likely to cause relatively slow but significant declines (<20% over 10 years or three generations; whichever is the longer)*		

*To be completed during the workshop following participants' inputs on scope, severity and time columns.

REFERENCES

Ebbinge, B.S. (1991). The impact of hunting on mortality rates and spatial distribution of wintering geese in the western Palearctic. *Ardea*, 79(2), 197–209.

Èktova, S.N., & Zamyatin, D.O. (Eds.). (2010). *Red Data Book of the Yamalo-Nenets Autonomous Okrug: Animals, Plants, Fungi*. Yekaterinburg: Basko. 308 pp.

Francis, C.M., Richards, M.H., Cooke, F. & Rockwell, R.F. 1992a. Changes in survival rates of Lesser Snow Geese with age and breeding status. Auk 109: 731–747.

Frederiksen, M., Hearn, R.D., Mitchell, C., Sigfússon, A., Swann, R.L. & Fox, A.D. 2004. The dynamics of hunted Icelandic goose populations: a reassessment of the evidence. Journal of Applied Ecology 41: 315–334.

Gauthier, G., Pradel, R., & Menu, S. (2001). Seasonal survival of Greater Snow Geese and effect of hunting under dependence in sighting probabilities. *Ecology*, 82(11), 3105–3119.

Golovatin, M.G. 2005. Guseobraznye severa Zapadnoj Sibiri: sovremennoe sostoânie. In: Guseobraznye pticy severnoj Evrazii / Tezisy dokladov Tret'ego meždunarodnogo simpoziuma, pp. 221–223. Kart fabrika VSEGEI, Sankt-Peterburg, Rossiâ (in Russian).

Golovatin, M.G. 2010.Taežnyj gumennik *Anser fabalis fabalis* (Latham 1787). In: Èktova, S.N. & Zamâtin, D.O. (eds.), Krasnaâ kniga Âmalo-Neneckogo avtonomnogo okruga: životnye, rasteniâ, griby, p. 212. Ekaterienburg: Izdatel'stvo "Basko".

Golovatin, M.G. & Pashalnyj, S.P. 2004. The Bean Goose in Nizhnee Priobye and the Jamal Peninsula. Casarca 10: 168–180 (in Russian with English summary).

Heinicke, T. (2004). Neue Erkenntnisse zum Auftreten der Waldsaatgans Anser fabalis fabalis in Mecklenburg-Vorpommern. Orn. Rundbrief Meckl.-Vorp. 45: 3-18.

Heinicke, T. (2008). Wintering Bean Geese *Anser fabalis* in Kyrgyzstan with annotations on the situation in other Central Asian countries. Casarca **11 (2)**: 53-75.

Heinicke, T. (2009). Status of the Bean Goose Anser fabalis wintering incentral Asia. Wildfowl, 59, 77–99.

Heinicke T., Müller S., Müller R., Polderdijk K. & H.-J. Haferland (2019). Das Untere Odertal als Hotspot für Waldsaatgänse und der Waldsaatgans-Forschung in Deutschland. Nationalpark-Jahrbuch Unteres Odertal 2019: 120-132.

Heinicke, T. (2020). Beringung und Besenderung von Waldsaatgänsen Anser fabalis fabalis im Nationalpark Unteres Odertal zur Erforschung des Jahreslebensraumes von in Westsibirien brütenden Vögeln. Projektbericht, 46 S.

Heinicke, T., Müller, S. & R. Müller (submitted). Verbreitung, Bestandssituation und -entwicklung sowie künftiges Monitoring der Waldsaatgans Anser fabalis in Deutschland. Vogelwelt

Jönsson, B., Karlsson, J. & Svensson, S. 1985. Incidence of lead shot in tissues of the Bean Goose (*Anser fabalis*) in South Sweden. Swedish Wildlife Research (Viltrevy) 13: 259–271.

Kenntner, N., Heinicke, T., Polderdikj, K. & Krone, O. 2009. Prevalence of embedded shot pellets in geese in Germany. Goose Specialist Group, 12th Meeting, Höllviken, Sweden 9–13 Oct. 2009. Program, Abstracts & Participants, pp. 26–27.

Kupriânov, A.G. & Kupriânova, I.F. 1997. Observations on the spring migration and nesting of geese and swans in the northern taiga of Western Siberia. Casarca 3: 369–372 (in Russian with English summary).

Larsson, K., Forslund, P., Gustafsson, L. & Ebbinge, B.S. 1988. From the high Arctic to the Baltic: the successful establishment of a Barnacle Goose *Branta leucopsis* population on Gotland, Sweden. Ornis Scandinavica 19: 182–189.

Lebedeva, M.I. 1979. Migracii gumennikov po dannym kol'cevaniâ, polučennym v SSSR (Migrations of Bean Geese according to banding results obtained in the USSR). In: Il'ičev, V.D. & Kiŝinskij, A.A. (ed.), Migracii ptic vostočnoj Evropy i severnoj Azii. Aictoobraznye – plastinčatoklûvye, pp. 150–160. Izdatel'ctvo "Nauka", Moskva (in Russian).

Râbicev, V.K 2001. Pticy Urala, Priural'â i Zapadnoj Sibiri. Spravočnik-opredelitel'. Izd-vo Ural, uh-ta, Ekaterinburg. 608 pp. (in Russian).

Red Data Book of KHMAO-Yugra 2003. Krasnaâ kniga Hanty-Mansijskoij Avtonomnyj Okrug (in Russian).

Rosin, Z.M., Skórka, P., Wylegała, P., Krąkowski, B., Tobolka, M., Myczko, Ł., Sparks, T.H. & Tryjanowski, P. 2012. Landscape structure, human disturbance and crop management affect foraging ground selection by migrating geese. Journal of Ornithology 153: 747–759.

Rozenfeld, S. & Strelnikov, E. 2011. Survey of Lesser White-fronted Goose *Anser erythropus* in lower Ob River, Russia in autumn 2010. NOF-report 2011-3. 25 pp. Ruokonen, M. & Aarvak, T. 2011. Typology revisited: historical taxa of the bean goose – pink-footed goose complex. Ardea 99: 103–112.

Sirin, A.A. (ed.) 2012. Wetlands of International Importance in Russia. Wetlands International Russia Programme Publication, Moscow. 48 pp.