

Population status of Pigeons and Doves in the Eastern Baltic Region

Svazas, Saulius
Institute of Ecology
Akademijos, 2
LT-2600 Vilnius
E-mail: svazas@eko.lt

BIBLID [1137-8603 (2001), 16; 71-81]

Lan honetan Ekialdeko Baltikoko eskualdeko usakume eta usoei buruzko ikuspegi orokorra ematen dugu, hainbat alderdiri erreparatu: kopuruak, banaketa eta habitata populatzeko eta erabiltzeko joerak. Kopuruei dagokienez, 500.000 bikote ingurukoa da eskualde horretako pagausoan populazio osoa –usapalak 100.000 bikote, usapal turkiarrak 60.000 bikote eta txolomak 20.000 bikote inguru direlarik. Hazteko txolomen kopurua apaltzen ari da Ekialdeko Baltikoko eskualdean, baina pagauso, usapal eta usapal arrunten kopurua gorantz doa edo egonkorturik mantentzen da. Ekialdeko Baltikoko eskualdeari dagokionez, oraindik ez ditugu datu aski zehatzak usakume eta usopak haztearen inguruko migrazio eta ekologia ereduaz.

Giltz-Hitzak: Pagauso. Usapalak. Populazioa. Banaketa. Habitata. Baltikoaren ekialdeko eskualdea.

Se aporta una visión general de las cifras, distribución, tendencias de población y uso de hábitat de las tórtolas y palomas en la región del Báltico Oriental. Se calcula que la población total de palomas torcaces en dicha región es de alrededor de 500.000 parejas, –junto con más de 100.000 parejas de tórtolas, hasta 60.000 parejas de tórtola turca y cerca de 20.000 parejas de Paloma Zurita. La población de cría de la Paloma Zurita está disminuyendo en la región Báltica Oriental, mientras que las poblaciones de palomas torcaces, tórtolas turcas y tórtolas comunes están aumentando o permanecen estables. Aún no se dispone de suficientes datos detallados sobre el modelo de migración y ecología de cría para tórtolas y palomas en la región báltica oriental.

Palabras Clave: Paloma Torcaz. Tórtolas. Población. Distribución. Hábitat. Región Este del Báltico.

On apporte une vision générale des chiffres, de la distribution, des tendances de population et de l'usage d'habitat des pigeons et des colombes dans la région de la Baltique Orientale. On estime la population totale de pigeons ramiers dans cette région à environ 500.000 couples, –avec plus de 100.000 couples de tourterelles, jusqu'à 60.000 couples de tourterelles turques et près de 20.000 couples de bisets. La population des petits de bisets diminue dans la région de la Baltique Orientale, cependant que les populations de pigeons ramiers, tourterelles turques et tourterelles communes augmentent ou restent stables. On ne dispose pas encore de données détaillées suffisantes sur le modèle de migration et d'écologie des petits pour les pigeons et les colombes dans la région de la Baltique Orientale.

Mots Clés: Pigeon Ramier. Tourterelles. Population. Distribution. Habitat. Région est Baltique.

1. INTRODUCTION

This paper provides an overview of the breeding and migratory populations of Wood Pigeon *Columba palumbus*, Stock Dove *C. oenas*, Collared Dove *Streptopelia decaocto* and Turtle Dove *S. turtur* in the Eastern Baltic region. The Eastern Baltic region supports a substantial part of the total biogeographical population of these species. There is still a lack of the detailed data on the breeding ecology and migration pattern of Wood Pigeon and doves in the Eastern Baltic region. It is expected that a successful realization of the planned regional program on the breeding and migratory populations of Wood Pigeon and Turtle Dove will enable to fill the gap in our knowledge concerning these species.

2. STUDY AREAS AND METHODS

The Eastern Baltic region stretches along the eastern coast of the Baltic Sea between 54°00'N and 60°00'N in the territories of Lithuania, Latvia, Estonia and in the Kaliningrad and St. Petersburg districts of Russia. Belarus traditionally is also included into the bio-geographical Eastern Baltic region as its major part is located within the drainage area of the Baltic Sea. The total area of the whole region –about 484.000 km². The temperate maritime climatic zones are characteristic of the southern part of the region, while boreal continental climatic zones dominate in its northern and eastern parts. Coniferous forests (the southern part of the boreal taiga zone) dominate in the St. Petersburg district of Russia, in Estonia and in eastern parts of Belarus, Latvia and Lithuania. Mixed or deciduous woodlands are characteristic of western Belarus, Latvia, Lithuania and of the Kaliningrad district of Russia.

Four species of wild pigeons and doves (Wood Pigeon, Stock Dove, Collared Dove and Turtle Dove) breed in the Eastern Baltic region. All available data on the status, abundance, distribution, habitat use and population trends of wild pigeons and doves present in the region were compiled and analyzed in this overview. Data on the breeding populations of pigeons and doves were earlier compiled in the breeding bird atlases of Latvia and Estonia (Viksnē, 1989; Renno, 1993) and in several overviews concerning birds of Lithuania, Belarus and of the Kaliningrad and St. Petersburg districts of Russia (Logminas, 1990; Zalakevicius *et al.*, 1995; Kurlavicius & Raudonikis, 1999; Nikiforov *et al.*, 1997; Grishanov *et al.*, 1998; Malchevsky & Pukinsky, 1993; etc). Long-term surveys of migratory populations of pigeons and doves were performed in the coastal region of Lithuania (Petraitis & Grazulevicius, 1992; Zalakevicius & Petraitis, 1993; Zalakevicius *et al.*, 1995). The migratory population of Wood Pigeon was a subject of long-term investigations performed by means of various methods (including visual diurnal surveys of low-flying birds in the permanent observation points, diurnal surveys of the high-altitude migration with a vertical-directed telescope, visual nocturnal surveys of low-flying birds in the illuminated areas, the radar surveillance of passing birds, evaluation of weather factors affecting the migration intensity and analysis of ringing recoveries). All available data were analyzed in order to evaluate recent population trends and changes in the habitat use of populations of pigeons and doves in the region concerned.

3. RESULTS

3.1. Wood Pigeon (*Columba palumbus*)

Numbers and distribution

It is widespread and abundant species in the region, with the total estimated population of about 500.000 pairs (table 1). In recent years about 150.000 breeding pairs of Wood Pige-

ons were recorded in Belarus (Nikiforov *et al.*, 1997), about 50.000 pairs – in the Kaliningrad and St.Petersburg regions of Russia (Grishanov *et al.*, 1998, Malchevsky & Pukinsky, 1993) and some 300.000 pairs in the Baltic States (Viksne, 1989; Renno, 1993; Kurlavicius & Raudonikis, 1999). The breeding population of Wood Pigeon is increasing in the whole Eastern Baltic region. The successful utilization of new urban habitats in the 1970s-1980s has contributed to the rapid spread of this species (Tomialojc, 1976). For example, in towns of NW Poland the breeding population of Wood Pigeon in the 1990s was 26 times greater than in the 1970s, while in the sub-urban areas the breeding populations remained stable (Gorski *et al.*, 1998). Wood Pigeon breeds solitary or semi-colonially, at densities of up to 20 pairs/100 hectares estimated in the optimum habitats of the Eastern Baltic region (table 2) and with the average breeding densities of about 2-3 pairs/100 ha estimated in Lithuania and in Latvia (Zalakevicius *et al.*, 1995; Viksne, 1989). The largest breeding densities were recorded in old city parks and in mixed forests with spruce *Picea abea* and oak *Quercus* spp. groves. Very advantageous conditions of breeding in city parks are caused by lower predation risk and by additional food resources available in urban habitats (Gorski *et al.*, 1998). The breeding densities of Wood Pigeon in the Eastern Baltic region are low in comparison with the maximum breeding densities (up to 220 pairs/10 ha) recorded in city parks of Western Poland and with the average breeding densities in Poland estimated at 10-100 pairs/km² (Tomialojc, 1990).

Table 1. The population size (in pairs) of Wood Pigeon and doves in the Eastern Baltic region and Belarus.

Country/ region	<i>Columba palumbus</i>	<i>Columba oenas</i>	<i>Streptopelia turtur</i>	<i>Streptopelia decaocto</i>
Belarus ¹	140.000-160.000 (I)	14.000-25.000 (D)	40.000-60.000 (S)	4.500-7.000 (I)
The Baltic States (Lithuania, Latvia, Estonia) ²	270.000-320.000 (I)	1.700-2.200 (D)	25.000-35.000 (S)	40.000-50.000 (I)
Kaliningrad and St. Petersburg districts of Russia ³	40.000-60.000 (I)	1000-2000 (D)	15.000-25.000 (S)	3.000-4.000 (I)
TOTAL	450.000-550.000 (I)	15.000-30.000 (D)	80.000-120.000 (S)	45.000-65.000 (I)

Estimated population trends are: I, increasing population; D, decreasing population; S, stable population. Sources of information are: 1, Nikiforov *et al.*, 1997; 2, Kurlavicius & Raudonikis, 1999; Viksne, 1989; Renno, 1993; 3, Grishanov *et al.*, 1998; Malchevsky & Pukinsky, 1983.

Table 2. The maximum estimated densities of breeding Wood Pigeons and doves in the Eastern Baltic region.

Country/ region	<i>Columba palumbus</i>	<i>Streptopelia turtur</i>	<i>Streptopelia decaocto</i>
Lithuania ¹	12-20 pairs/ 100 ha (old parks with oak and spruce groves)	1,1 pairs/ 100 ha (at edges of forests with spruce)	4-6 pairs/ 100 ha (parks of small towns, settlements)
Latvia ²	3,6-3,8 pairs/ km ² (mixed forests with spruce)	0,4-0,5 pairs/ km ² (at edges of forests with spruce)	3-5 pairs/ km ² (parks, green areas of towns, settlements)
Kaliningrad district of Russia ³	10-12 pairs/ km ² (mixed forests with oak-groves, parks)	2 pairs/km ² (at edges of mixed forests)	8-12 pairs/ km ² (parks of small towns)

Sources of information are: 1, present publication; Logminas, 1990; Zalakevicius *et al.*, 1995; 2, Viksne, 1989; 3, Grishanov *et al.*, 1998.

Breeding biology

The earliest nest with eggs of Wood Pigeon in Lithuania was recorded on 19 April and the latest one on 20 July (Logminas, 1990). In Lithuanian urban parks the breeding season of this species is generally longer than in the natural breeding habitats. The species usually lays two clutches each year in the Kaliningrad district of Russia, Lithuania and Latvia, but mostly only one in the St. Petersburg district of Russia and in eastern Belarus. Several breeding attempts were observed in Lithuania after the loss of first clutches. Incubation by both members of the pair lasts between 15-17 days. Incubation starts just after the first egg laying. In Lithuania the chicks spend in the nest 23-28 days (Logminas, 1990). The data on the breeding success of Wood Pigeon in the region are very limited. The loss of up to 65% of all monitored clutches was recorded in certain woodlands of Lithuania with high numbers of predators, while successful rearing of up to 80% of all registered clutches was noted in certain urban parks. One of the most important causes of breeding failure of Wood Pigeon in the Eastern Baltic region seems to be predation on eggs and juveniles by Carrion Crows *Corvus corone corone*, Ravens *Corvus corax*, Magpies *Pica pica* and other *Corvidae* species specializing on Wood Pigeon broods. Predators of both young and adult birds can be Goshawks *Accipiter gentilis*. Some impacts were also caused by mammals like Martens *Martes martes*, Stoats *Mustela erminea*, Squirrels *Sciurus vulgaris* and by domestic cats.

Diet

Seeds of wild plants and berries constitute the basis of the spring diet of Wood Pigeon in the Eastern Baltic region, while in late summer-autumn (at the time of the harvest) the species generally feeds on cereals. Numerous flocks of feeding Wood Pigeons were recorded on the arable lands of the region in August–September.

Migration

Wood Pigeon is one of the most abundant migrants in Lithuania. The average arrival date of Wood Pigeon to Lithuania in spring is March 23. The earliest recorded arrival date is March 10 and the latest April 2 (Logminas (ed.), 1990). The peak of the spring migration in Lithuania at the coast of the Baltic Sea was recorded in late April (Petraitis & Grazulevicius, 1992). More than 60% of all passing woodpigeons were counted during the 2nd and the 3rd 10-day periods of April in several Lithuanian coastal observation points during the long-term visual observations performed in 1974-1991 (fig. 1). The spring migration of Wood Pigeon at the Lithuanian Baltic coast was not intensive, with up to 7.000 passing birds recorded in various observation points. This species was numerous during the autumnal passage with up to 90.000 pigeons counted per season in certain points. The peak of the autumnal migration was recorded in late September-early October, with about 80% of all passing pigeons counted in 1973-1990 (fig. 2). In spring and in autumn the maximum intensity of Wood Pigeon migration was recorded during the first 4 hours after the sunrise. More than 90 % of all passing birds were observed in the altitudes up to 300 m and only separate flocks – in the altitudes over 1.000 m. Wood Pigeon is almost an exclusively diurnal migrant, though separate flocks of passing birds were recorded at night (Svazas, 1995). A significant correlation between the weather factors and the intensity of Wood Pigeon migration was established. The initiation of the intensive migration in the Eastern Baltic region in autumn was recorded with the following most important meteorological conditions: the falling air temperature, the rising barometric pressure, the declining quantity of precipitation, good visibility and weak following or side-following winds (Zalakevicius, 1993). The linear step-wise multiple regression models were evaluated for the short-term forecasting of Wood Pigeon migration intensity in autumn (Zalakevicius *et al.*, 1995). The authorities of the airports of the region can apply these models in order to reduce the possible damage of collisions of pigeons with aircrafts. Several collisions of pigeons with aircrafts were recorded in Lithuania in the 1960s-1980s (Zalakevicius, 1994).

Fig. 1. Seasonal dynamics of Wood Pigeon spring migration (% of all observed birds/per 10-day periods) along the Lithuanian Baltic coast in 1974-1991.

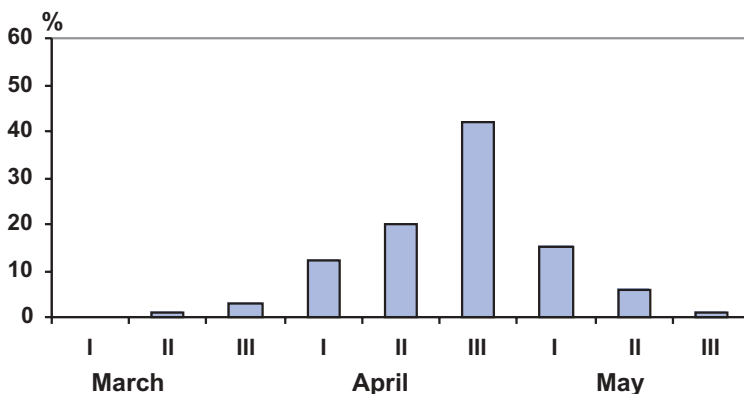
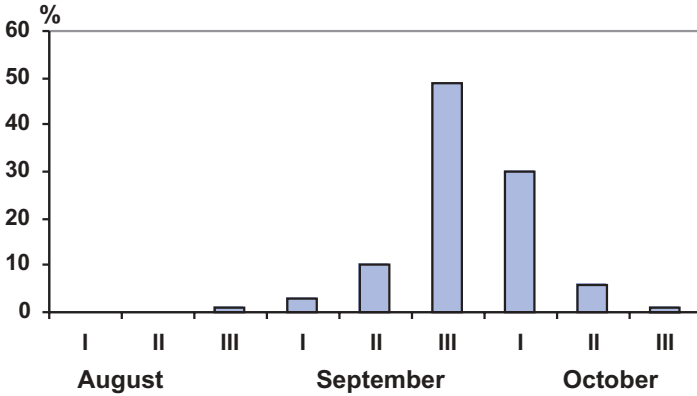


Fig. 2. Seasonal dynamics of Wood Pigeon autumn migration (% of all observed birds/per 10-day periods) along the Lithuanian Baltic coast in 1973-1990.



Most woodpigeons breeding in the Eastern Baltic region are migratory. Only about 400 woodpigeons were ringed in Lithuania in 1929-1999. Most recoveries were received from the wintering grounds located in southeastern France. However, in recent years there has been an increasing tendency for birds in Poland (Gorski *et al.*, 1998) and in coastal region of Lithuania to remain throughout the year in their breeding areas (particularly in city parks). Up to now mainly sedentary or partially migratory populations of Wood Pigeon were located only in Western Europe west of the 0°C January isotherm. However, under the present conditions of the climate amelioration the unique climatic phenomenon, - the period of 6 exceptionally mild winters with the average January air temperature above 0°C, was recorded also in the Baltic region in 1988-1993 (Bukantis, 1998). Therefore it is likely that a new partially migratory population of Wood Pigeon can be formed in the Eastern Baltic region in near future.

3.2. Stock Dove (*Columba oenas*)

Numbers and distribution

Stock Dove is a rare breeder in the Eastern Baltic region, with 14.000-25.000 pairs estimated in Belarus (Nikiforov *et al.*, 1997), 1.500-2.000 pairs in the Baltic States (Kurlavicius & Raudonikis, 1999; Viksne, 1989; Renno, 1993) and 1.000-2.000 pairs in the St. Petersburg and Kaliningrad districts of Russia (Grishanov *et al.*, 1998, Malchevsky & Pukinsky, 1983). The total estimated breeding population of Stock Dove in the region is 15.000-30.000 pairs (table 1). A marked decrease of the breeding population was recorded in the whole Eastern Baltic region since the 1970s. It was mainly caused by the habitat loss. Stock Dove is a characteristic species of old forests with abundant hollows and the intensification of forestry activities has negatively impacted the breeding population of the region. In certain forests of the former Eastern Prussia in late 19th – early 20th centuries Stock Dove was more numerous than Wood Pigeon, while at present it is a very rare species in the whole territory of the Kaliningrad district (Grishanov *et al.*, 1998). A very marked decline of this species was recorded in Lithuania and Latvia since the 1970s (Logminas, 1990, Viksne, 1989). During the last decades Stock Dove was not recorded in numerous formerly known breeding sites. The species is included into the Red Data Book of Lithuania. A marked increase in numbers of breeding Stock Doves

occurred in the St. Petersburg district of Russia in the 1920s-1960s, but a decline was recorded since the 1970s and at present it is not numerous breeding bird in the district (Malchevsky & Pukinsky, 1983). A gradual decline in numbers of the breeding population was recently recorded in Belarus (Nikiforov *et al.*, 1997). The largest densities of Stock Dove in the Eastern Baltic region occur in large old forests (particularly in the old oak groves in southern Belarus). In Lithuania most breeding birds were recorded in old mixed forests with pine, spruce and birch.

Breeding ecology

The earliest nests with eggs of Stock Dove in Lithuania were recorded in late April, while the latest in late July (Logminas, 1990). In the Baltic States Stock Doves frequently occupy the hollows made by Black Woodpecker *Dryocopus martius*. The species usually lays two clutches each year. Incubation by both members of the pair lasts 16 - 18 days. In Lithuania the chicks spend in the nest 26-28 days (Logminas, 1990). The data on the breeding success of Stock Dove in the region are very limited. One of the most important causes of breeding failure of Stock Dove in the Eastern Baltic region seems to be predation on eggs and juveniles by Martens.

Diet

Seeds, leaves, fruits of wild plants and berries constitute the basis of the diet of Stock Dove in the Eastern Baltic region. Up to now there were no detailed investigations of the diet of this species in the region.

Migration

The migratory passage of Stock Dove in the Eastern Baltic region is not intensive, with only small flocks observed along the Lithuanian coast of the Baltic Sea during the long-term surveys performed in 1973-1991 (Petraitis & Grazulevicius, 1992). The earliest recorded arrival date of Stock Dove in Lithuania was recorded at March 9 and the latest April 18 (Logminas, 1990). The average arrival date of Stock Dove in spring is March 25. Stock Doves frequently formed mixed flocks with Wood Pigeons. One Stock Dove was observed in a flock of Lapwings *Vanellus vanellus*.

3.3. Turtle Dove (*Streptopelia turtur*)

Numbers and distribution

Turtle Dove is common and a rather abundant breeder in all countries of the Eastern Baltic region, with the estimated population of more than 100.000 pairs (table 1). About 40.000-60.000 pairs breed in Belarus (Nikiforov *et al.*, 1997), 25.000-35.000 pairs in the Baltic States (Kurlavicius & Raudonikis, 1999; Viksne, 1989; Renno, 1993) and some 15.000-25.000 pairs in the St. Petersburg and Kaliningrad districts of Russia (Grishanov *et al.*, 1998, Malchevsky & Pukinsky, 1983). The breeding population is stable in all countries of the region. Turtle Doves inhabit various types of habitats including large and small forests, agricultural and urban areas. The average estimated density of breeding birds in the Baltic States is 0.5-0.7 pairs/1 km² (Zalakevicius *et al.*, 1995; Viksne, 1989). The maximum densities of Turtle Dove were recorded in mixed forests with spruce at the edges of forests. In the Kaliningrad district of Russia the species that was earlier rare at present is a common breeder with the recorded densities of up to 2 pairs/km² in the optimum habitats (in deciduous forests with oak groves and in mixed stands with spruce), (Grishanov *et al.*, 1998). In the St. Petersburg district of Russia the

species has established as breeding bird in the 1950s and at present is a common breeder in the whole territory of the district (Malchevsky & Pukinsky, 1983). In Belarus Turtle Dove prefers habitats in small deciduous or mixed forests, particularly at the edges of forests, at clear cuttings and in other open areas (Nikiforov *et al.*, 1997).

Breeding biology

In the Southern part of Belarus and in the Kaliningrad district of Russia, Turtle Dove generally prefer to nest on oaks and on spruce (Nikiforov *et al.*, 1991; Grishanov *et al.*, 1998). In Lithuania the great majority of nests (79% of all recorded nests) were found on spruce trees, at the altitude of 2-6 m (Logminas, 1990), while in the northern part of the Eastern Baltic region numerous nests were found also on pines (Malchevsky & Pukinsky, 1983). The earliest nests with eggs of Turtle Dove in Lithuania were recorded on May 16, while the latest on July 28 (Logminas, 1990). The species usually lays two clutches each year. Incubation by both members of the pair lasts 13 - 15 days. In Lithuania the chicks spend in the nest 16-20 days (Logminas, 1990). The data on the breeding success of Turtle Dove in the region are very limited. One of the most important causes of breeding failure of Turtle Dove in the Eastern Baltic region seems to be predation on eggs and juveniles by Carrion Crows, Ravens, Magpies and other *Corvidae* species. Predators of both young and adult birds are Goshawks. Mammals like Martens, Stoats and Squirrels also caused some impacts.

Diet

In spring Turtle Dove prefers seeds of many wild plants, berries and occasionally insects (Logminas, 1990). Like Wood Pigeons, in late summer – early autumn Turtle Doves feed mostly on cereals. A similar feeding pattern is characteristic of this species also in other countries of Europe (Murton *et al.*, 1964). Since late August small flocks of feeding Turtle Doves were frequently recorded on the arable fields of the Baltic States.

Migration

The migratory passage of Turtle Dove in the Eastern Baltic region is not intensive, with only small groups or pairs of doves observed along the Lithuanian coast of the Baltic Sea during the long-term surveys performed in 1973-1991 (Petraitis & Grazulevicius, 1992). Turtle Dove arrives to Lithuania later than Wood Pigeon and Stock Dove, with first individuals appearing in late April – early May (Logminas, 1990). The earliest recorded arrival date is 17 April. Most passing birds in spring were recorded in early May, while the main passage in autumn occurred in October. Separate passing birds were recorded also in mid-November.

3.4. Collared Dove (*Streptopelia decaocto*)

Numbers and distribution

Collared Dove is a new breeding species in the Eastern Baltic region. A recent marked increase of Collared Dove population in the eastern Baltic region reflects the continuing northward range expansion of this species. It was firstly recorded in Lithuania in 1954 and in St. Petersburg region in 1975. It is likely that the northward range expansion of Collared Dove in the Eastern Baltic region occurred from Poland along the coastline of the Baltic Sea and from Ukraine in the eastern part of the region. In Ukraine Collared Dove was firstly recorded in 1949 and in Poland in 1950 (Cramp, 1985). In recent years this species has established in many towns and settlements of the Eastern Baltic region. The total estimated population size in the region is about 50.000 pairs (table 1). In recent years 4.500-7.000 breeding pairs were estima-

ted in Belarus (Nikiforov *et al.*, 1997), about 40.000-50.000 pairs in the Baltic States (Kurlavicius & Raudonikis, 1999; Viksne, 1989; Renno, 1993) and 3.000-4.000 pairs in the St. Petersburg and Kaliningrad districts of Russia (Grishanov *et al.*, 1998, Malchevsky & Pukinsky, 1983). The population is increasing in all countries of the region, though large fluctuations in numbers were recorded in its northern part. Marked declines in numbers of the breeding population were recorded in the St. Petersburg district of Russia after cold winters (Malchevsky & Pukinsky, 1983). In the optimum habitats of the region the breeding densities of Turtle Dove can reach up to 12 pairs/km² (table 2). The largest densities were recorded in the parks of Kaliningrad town and in numerous small settlements of the Baltic States.

Breeding biology

In Lithuania most nests of Collared Dove were recorded on deciduous trees, at the altitude of 3-5 m (Logminas (ed.), 1990). The earliest nests with eggs of Collared Dove in Lithuania were recorded on April 4, while the latest clutch with young on September 28 (Logminas, 1990). The species usually lays 2-3 clutches each year. Incubation by both members of the pair lasts 14-16 days. In Lithuania the chicks spend in the nest 17-20 days (Logminas, 1990). The data on the breeding success of Collared Dove in the region are very limited. It is evident that the climatic conditions of winter and spring largely affect the reproduction success of this species, particularly in the northernmost breeding grounds. One of the most important causes of breeding failure of Collared Dove in the Eastern Baltic region seems to be predation on eggs and juveniles by Carrion Crows and Magpies. In certain monitored sites Collared Doves were forced to leave their nesting sites due to increased human disturbance.

Diet

In the Eastern Baltic region Collared Doves are largely omnivorous. They were recorded feeding on cereals in the agricultural habitats, on seeds of numerous plant species, on insects, etc. It is likely that a large part of their diet is formed by man-made food. Collared Doves were frequently observed feeding in city dumps, at the stores of grains and in other urban habitats.

3.5. Hunting aspects and harvest of wild pigeons and doves in the Eastern Baltic region

All 4 breeding species of wild pigeons and doves are included into the list of game birds of Russia and Belarus, while in Lithuania Stock Dove is included into the Red Data Book. The hunting season in Russia and in the Baltic States is open since September, while in Belarus pigeons and doves can be hunted in summer-autumn. However, in the whole Eastern Baltic region the hunting on pigeons is not popular. Only several hundreds of birds (mostly Wood Pigeons) were annually harvested in the St. Petersburg district of Russia and in Belarus in recent years (Nikiforov *et al.*, 1991). Only few birds were harvested in the Kaliningrad district of Russia and in the Baltic States during the last decade (Grishanov *et al.*, 1998; Svazas & Zalakevicius, 1997). Therefore it is likely that the total annual bag of pigeons and doves in the Eastern Baltic region hardly exceeds some 1,000-3,000 birds and the impacts of hunting are very small.

4. CONCLUSIONS

The Eastern Baltic region supports a substantial part of the total biogeographical population of Wood Pigeon, Stock Dove, Turtle Dove and Collared Dove. At present only the breeding population of Stock Dove is decreasing in the Eastern Baltic region, while the regional

populations of Wood Pigeon, Collared Dove and Turtle Dove are increasing or stable. However, there is still lack of a detailed data on the breeding ecology, the reproduction success, mortality (particularly in winter period) and on the migration pattern of Wood Pigeon and doves populations in the Eastern Baltic region.

Therefore a special OMPO (“Migratory Birds of Western Palearctic”) program on Wood Pigeon and Turtle Dove is planned in 2001-2005. Surveys of the breeding and migratory populations of these species were initiated in Northwest Poland in 2001 and it is planned to further extend them in the Baltic States and in Belarus in 2003-2005. The main goals of the regional OMPO program on Wood Pigeon and Turtle Dove are the following:

- to identify habitats, especially important for breeding populations of these species in NW Poland and in the Eastern Baltic region
- to estimate the numbers, distribution and the breeding density of these species in NW Poland and in the Eastern Baltic region
- to evaluate the breeding success and productivity of the breeding populations of Wood Pigeon and Turtle Dove in the region concerned
- to evaluate post-breeding numbers and the migration pattern (in the coastal regions) of these species in NW Poland and in the Eastern Baltic region

It is expected that the successful realization of this regional OMPO program in Poland and in the Eastern Baltic region will enable to fill the gap in our knowledge concerning the regional populations of Wood Pigeon and Turtle Dove.

REFERENCES

- BUKANTIS, A. (ed.). 1998. *The Changes of Climatic Factors in Lithuania*. Institute of Geography Press. Vilnius (In Lithuanian).
- CRAMP S. (ed.). 1985. *The Birds of the Western Palearctic. Vol. 4*. Oxford University Press. Oxford.
- GORSKI W., ANTCZAK J. & HETMANSKI T. 1998. Survey and monitoring of breeding habitats: the breeding ecology of Wood Pigeon in urban areas of NW Poland. Proceedings of the OMPO International Meeting “Reproduction and important habitats of migratory birds of the Western Palearctic. *Acta Zool. Lituonica*, 8 (spec. issue):137-144.
- GRISHANOV G. 1994. Breeding birds of Kaliningrad Region: territorial distribution and dynamics of number in the 19th-20th centuries. I. Non-Passeriformes. *Russ. J. Ornithol.*, 3: 83-116. (In Russian).
- GRISHANOV G., ROMANOV J., KOZLOVSKI E. & BELIAKOV V. 1998. Game fauna and hunting in the Kaliningrad district of Russia. Kaliningrad Publishing House. Kaliningrad. (In Russian).
- KURLAVICIUS P. & RAUDONIKIS L. 1999. Population estimate of Lithuanian breeding birds. *Ciconia*, 7: 52-57.
- LOGMINAS V. (ed.). 1990. *Lithuanian fauna. Birds*. Vol. 1. Mokslas Press. Vilnius (In Lithuanian).
- MALCHEVSKI A. & PUKINSKI, Y. 1983. *The Birds of Leningrad Region and adjacent territories: history, biology and conservation. Vol. 2*. Leningrad University Press. Leningrad. (In Russian).
- MURTON R. K., WESTWOOD N. & ISAACSON, A. 1964. The feeding habitats of Wood Pigeon *Columba palumbus*, Stock Dove *C. oenas* and Turtle Dove *Streptopelia turtur*. *Ibis*, 106: 174-188.
- NIKIFOROV M., KOZULIN A. & SIDOROVICH V. 1991. *Huntable mammals and birds of Belarus*. Minsk. (In Russian).

- NIKIFOROV M., KOZULIN A., GRICHIK V. & TISHECHKIN A. 1997. *Birds of Belarus on the edge of the XXI Century. Status, number, distribution*. N. A. Korolev Publ., Minsk. (In Russian).
- RENNO O. (compiler). 1993. *The Atlas of Breeding Birds of Estonia*. Valgus Press. Tallinn. (In Estonian).
- PETRAITIS A. & GRAZULEVICIUS G. 1992. Seasonal migration of pigeons *Columbidae* on the Lithuanian coast of the Baltic Sea. *Acta Ornith. Lituonica*. Vol. 5-6: 11-35.
- SVAZAS S. 1995. The pattern of diurnal-nocturnal migratory activity of birds. In: Zalakevicius (ed.). *Bird Migration and Wintering in Lithuania. Acta Zool. Lituonica (monograph)*, 2: 41-52.
- SVAZAS S. & ZALAKEVICIUS M. 1997. *Lithuanian game birds*. Vilnius. (In Lithuanian).
- SVAZAS S., DROBELIS E., BALCIAUSKAS L. & RAUDONIKIS L. 1999. *Important Wetlands in Lithuania*. OMPO Vilnius Press. Vilnius.
- TOMIALOJC L. 1976. The urban population of Wood Pigeon in Europe: its origin, increase and distribution. *Acta Zool. Cracov.*, 21: 585-631.
- TOMIALOJC L. 1990. *The birds of Poland. Their distribution and abundance*. Warsaw. (In Polish).
- VIKSNE J. (ed.). *Latvian Breeding Bird Atlas 1980-1984*. Riga Zinatne Press. Riga.
- ZALAKEVICIUS M. 1993. A study of factors controlling migratory take-off of geese, thrushes and Wood Pigeon in spring and autumn: a radar study. *Acta Ornith. Lituonica*, 7-8: 16-27.
- ZALAKEVICIUS M. 1994. Bird strike analysis in Lithuania. *Acta Ornith. Lituonica*, 9: 87-91.
- ZALAKEVICIUS M. (comp.). 1995. *Birds of Lithuania. Acta Ornith. Lituonica*, 11: 56-57.