

**THE PREVALENCE OF SINGING THRUSHES (*TURDUS  
PHILOMELOS BREHM, 1831*) IN STEPANAKERT  
AND NEARBY AREAS**

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**Abstract**

Singing thrushes have aesthetic significance and should be preserved. The prevalence of singing thrushes in Stepanakert and nearby areas is presented in our work. The existence of living conditions necessary for survival of this species in the new environment is clarified. Data collection and the study on the dynamics of amount of these birds, changes in habitat and chances to survive in new environment have been carried out in 2018-2020. The studies have shown that singing thrushes are ecologically agile and are able to revive their amount and to resist anthropogenic factors.

**Key words:** areal, singing thrush, ecological stress, breeding, urbanization, population.

**Introduction**

Studies of composition, rate of dynamics and ecological-ethological and biological features of fauna in urbanized areas is one of the prior issues of zoology. Unstable changes in habitats, in their turn, lead to changes in the habitats of animals living in certain areas, particularly birds, which affect the lifestyle of these species as an environmental stress resulting in some cases even fatal end.

Urbanized areas include complete complexes of diverse settlements [1]. Although the role of urbanization is negative for most birds living in natural habitats, some of them have not only been able to adapt and increase their amount, but have also been able to expand their areal.

In the new environment they are able to find food resources for themselves throughout the year, various favorable conditions for nesting as well as minimizing the pressure caused by predators. At present one-fifth of the world birdfauna is found in cities [2]. However, it must be assumed that this is due to the changing conditions of the urban environment. The structure of birds in urbanized areas can move to different directions which is mainly determined by two factors: the spatial structure of the city (diversity of habitats within its administrative boundaries) and the diversity of native fauna of landscapes surrounding the city [3].

True statements on ways of bird habitat formation are not still sufficient [4]. We have so far registered 132-135 species of migratory, sedentary or accidental non-native species belonging to different families in the urbanized ecosystems of Stepanakert. In contrast to the regional bird fauna, the species composition of birds remains richer in the area of the town. It should be assumed that many of the recorded species can be accidentally recorded once.

### Conflict setting

In the process of expanding the borders of Stepanakert, an increase in the diversity of birds is noticeable in the constantly changing habitats. The identification of the dynamics towards fauna and its determining factors in the current stage is important not only for the preservation of biodiversity and the development of management issues, but also for the discovery of the assessment of anthropogenic factors on the fauna.

We have set a task to study the prevalence, the dynamics of amount, changes in habitat and the possibilities of survival in a new environment of singing thrushes in 2018 - 2022.

### Research results

We carried out the studies in the parks and gardens of Stepanakert, in forest-covered and shrub-covered areas, in forests and in suburban forests. Route trips were made to clarify the distribution of singing thrushes and their amount. We made 159 trips with an average length of 8 km in 2018-2022. The total length of the route was 1272 km. Routes were selected in advance taking into account the terrain, relief and weather conditions.

The width of calculated routes did not exceed 40-45 km in each side. To find singing thrushes in open areas we used binoculars. The observations were made in different seasons of the year and in different hours of the day (Table 1). The speed of the walk in observed tour was 1-1,5km/h.

We determined the density of singing thrushes by the following formula:  $N=(n_1 \times 40 + n_2 \times 10 + n_3 \times 3 + n_4) / L$ , where  $n_1, \dots, n_4$  - are accordingly the number of species found on 0-25m (near), 25-100m (not far), 100-300m (far) and 300-1000m (very far) areas. 40, 10, and 3 are coefficients and L is the length of the calculated route in km.

**Table 1**

**Number of expeditions in various months and years**

	2018	2019	2020	2021	2022	Total
January	2	3	2	4	3	14
February	3	4	5	6	4	22
March	4	3	4	4	5	20
April	5	2	3	5	4	19
May	2	3	2	3	3	13
June	4	2	3	4	0	13
July	3	4	3	5	0	15
August	2	1	3	2	0	8
September	3	2	2	4	0	11
October	4	4	0	5	0	13
November	3	2	0	1	0	6
December	1	2	0	2	0	5
Total	36	32	27	45	19	159

Fauna has not been studied in Artsakh at all and there are no finalized data on the species composition, distribution and ecology of birds. The prevalence of singing thrushes and their ecology in Stepanakert and nearby areas is presented in our work for the first time.

Singing thrushes have been nesting in urbanized areas including Stepanakert since the beginning of the 20th century. These birds are considered sedentary in Artsakh Republic, and unlike the previous years, have become less common in the last 20-25 years [5].

Our observations showed that the singing thrushes prefer to live in the parks of Stepanakert, on the trees and the shrubs, in the gardens and in the suburban forests. However,

unlike other thrushes, this species mainly leads a hidden lifestyle, which in turn is a serious obstacle to full-fledged ecological research. The widespread sing of males contributes to the discovery of singing thrushes. Moreover, the more mature the singing thrush, the richer its amazing song is.

According to our observations, their amount mainly increases in late summer and early autumn which coincides with the end of population.

The data of singing thrushes found at various distances in Stepanakert and nearby areas are given in Table 2.

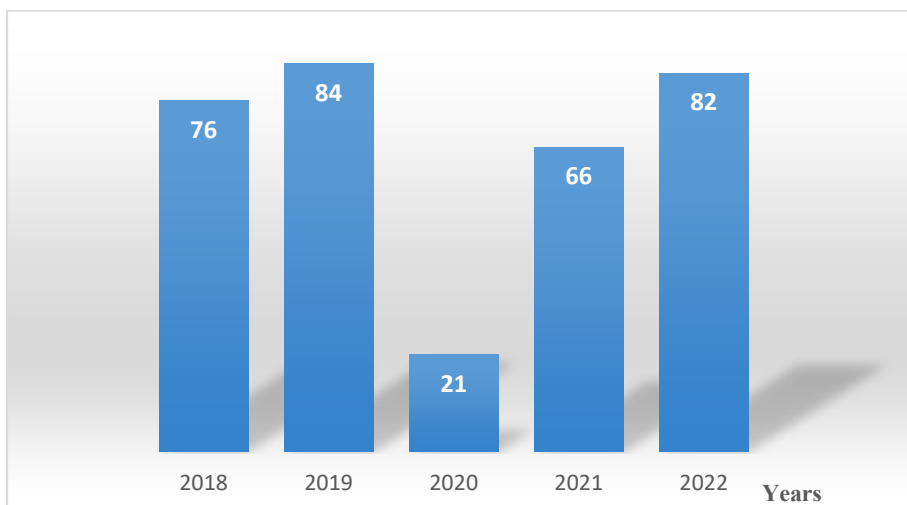
**Table 2**

**The amount of singing thrushes found at different distances**

	0-25	25-100	100-300	300-1000
2018	25	19	20	12
2019	22	28	16	18
2020	11	8	2	-
2021	17	15	21	13
2022	26	17	23	16
Total	101	87	82	59

The density of singing thrushes in studied areas was 4.1 in average. In our opinion, the low density in 2020-2021 is due to the hostilities unleashed by Azerbaijan as a result of which the habitats of birds were destroyed causing stress resulting the migration of singing thrushes.

We found that the amount of singing thrushes is negatively affected by deforestation, fires in shrubs and stray cats in the town and its suburbs. The changes in the amount are presented in Fig. 1.



**Fig. 1 Amount of singing thrushes in studied areas**

Singing thrushes can be found at altitudes from 600 m to 1100 m above sea level. According to our data, in the area called “Tamaren Dzor” they can be found on walnut, oak, hornbeam and sagebrush trees, and during flights in the shrubs of blackberries, hawthorn and thorns. In addition to the above, honeysuckle and juniper are added to the bushes in the area of Krkzhan and inside Stepanakert we find them on both coniferous and broad-leaved trees. In autumn, these birds are happy to appear in orchards. They are most often found in Nor Aresh district of Stepanakert in young orchards with fruit trees and sometimes on the roofs of summer houses.

We have recorded a fact in the territorial behavior of singing thrushes in our research that is not typical to thrushes, for example, in places where the anthropogenic factor is low,

they lead an open lifestyle: a mostly hidden lifestyle can be recorded in urban areas. These birds are quite active, they spend their lives on the ground and in the trees. They are active all day long, but the activity depends on both the climatic conditions and the seasons. The activity of females, like that of all other birds, is interrupted only during spawning.

### Conclusion

Studies have shown that the expansion of the borders of Stepanakert has a dual effect on the prevalence of singing thrushes, in one case contributing to the expansion of the range and in another-distorting.

Observations showed that the singing thrushes have a wide distribution area: trees with foliage are mostly preferred for nesting in towns and foliage and shrubs in the suburban area.

Singing thrushes are environmentally resilient and can recover in favorable conditions.

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### ԵՐԳՈՂ ԿԵՌՆԵԽՆԵՐԻ (*TURDUS PHILOMELOS BREHM, 1831*) ՏԱՐԱԾՎԱԾՈՒԹՅՈՒՆԸ ԱՏԵՓԱՆԱԿԵՐՏ ՔԱՂԱՔՈՒՄ ՈՒ ՆՐԱ ՄԵՐՁԱԿԱՅՔՈՒՄ

Այդինյան Լ.Գ.

*Շուշիի տեխնոլոգիական համալսարան*

Երգող կեռնեխներն ունեն գեղագիտական և էսթետիկական նշանակություն ու ենթակա են պահպանության: Ստեփանակերտ քաղաքի և դրա մերձակա տարածքի համար ներկայացվում է երգող կեռնեխների տարածվածությունը: Աշխատանքում պարզաբանվում է նոր միջավայրում երգող կեռնեխների գոյատևման համար անհրաժեշտ պայմանների առկայությունը: 2018-2022 թթ. իրականացվել է տվյալների հավաքագրում և ուսումնասիրվել է երգող կեռնեխների տարածվածությունը, թվաքանակի դինամիկան, բնակեցման փոփոխությունները, նոր միջավայրում գոյատևման հնարավորությունները: Հետազոտությունները ցույց են տվել, որ երգող կեռնեխները էկոլոգիապես ճկուն են և Ստեփանակերտ քաղաքի պայմաններում կարող են վերականգնել քանակն ու դիմակայել անթրոպոգեն ազդեցություններին:

**Բանալի բառեր.** արեալ, երգող կեռնեխ, էկոլոգիական սթրես, բազմացում, ուրբանիզացիա, բնադրում:

### РАСПРОСТРАНЕННОСТЬ ПЕВЧИХ ДРОЗДОВ (*TURDUS PHILOMELOS BREHM, 1831*) В ГОРОДЕ СТЕПАНАКЕРТЕ И ЕГО ОКРЕСТНОСТЯХ

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Певчие дрозды имеют эстетическое значение и подлежат охране. В статье представлена распространенность певчих дроздов для города Степанакерта и прилегающей к нему территории, а также уточняется наличие необходимых условий для выживания певчих дроздов в новой среде. В 2018-2022 гг. был проведен сбор данных и изучена распространенность певчих дроздов, динамика их численности, изменения среды их обитания, возможности выживания в новой среде. Исследования показали, что певчие дрозды обладают широкой экологической пластичностью и в условиях города Степанакерта могут восстанавливать свою численность и противостоять антропогенным воздействиям.

**Ключевые слова:** ареал, певчий дрозд, экологический стресс, размножение, урбанизация, гнездование.

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