

Екологія	Беркут	15	Вип. 1-2	2006	120 - 124
----------	--------	----	----------	------	-----------

SPARROWHAWK – A NEW BREEDING SPECIES IN THE POLISH TOWNS?

Waldemar Biaduń

Abstract. Research on synurbic breeding population of the Sparrowhawk was conducted in the urban zone of Lublin (SE Poland). It was part of a wide-scale study of the avifauna of the city that has been conducted for nearly 30 years now. The first four cases of breeding in the downtown area were noted in 2002. In 2005 and 2006 – six everyone. 9 breeding sites were localized altogether (Fig.). Five territories were found in parks, two – in cemeteries, and once per a little timbered area along a congested artery road, and a row of trees growing between two streets. All nests were situated in the vicinity of streets and/or lanes or near park or cemetery paths. Out of the 21 nests, 14 were located on coniferous trees (6 on larches, 5 on spruces, 3 on a pine). The nest height ranged from 8 to 25 m (14,5 m on average). In 2002 and 2004, pairs brought up only 1–4 fledglings (2,3/successful pair), later (2005–2006) number of fledglings increased to 2–6 (4,2/successful pair). It seems that the Sparrowhawk population in Lublin is an expansive one and that the number of breeding pairs will be growing in the future.

Key words: Lublin, Sparrowhawk, *Accipiter nisus*, distribution, synurbization.

Address: Department of Biology and Genetics, Medical University, Staszica St. 4, 20-081 Lublin, Poland; e-mail: wbiadun@op.pl.

Перепелятник – новый гнездящийся вид в польских городах? - В. Бядунь. - Беркут. 15 (1-2). 2006. - Исследования проводились в Люблине на юго-востоке Польши. Первые 4 случая гнездования отмечены в 2002 г. В 2005 и 2006 г. гнездились уже по 6 пар. Всего выявлено 9 мест гнездования: 5 – в парках, 2 – на кладбищах, по 1 – на деревьях вдоль улиц и дорог. Из 21 гнезда 14 были расположены на хвойных деревьях. Высота размещения гнезд 8–25 м (в среднем 14,5). В 2002 и 2004 гг. успешная пара вырастила от 1 до 4 птенцов, в среднем 2,3, в 2005–2006 гг. – от 2 до 6 (4,2). Численность перепелятника в Люблине имеет тенденцию к росту.

Until the 1950s, in Europe there had been observed an extensive decrease of the breeding population of the Sparrowhawk (*Accipiter nisus*) (Newton 1973). A similar tendency was also noted a little later in Poland. Then, the population of the species clearly increased (Chmielewski et al., 1996; Pugaciewicz, 1997; Dombrowski et al., 2000; Tomiałojć, Stawarczyk, 2003).

In the breeding season, the Sparrowhawk avoids housing estates. Yet it has been observed breeding in administrative areas of many European cities (Bokotey, 1998; Luniak et al., 2001; Mitschke, Baumung, 2001; Matusiak et al., 2002; Otto, Witt, 2002; Stój, Dyczkowski, 2002). In all those cases, the broods were found solely on the outskirts and only exceptionally were they spotted within downtown areas in the breeding season (e.g., Mizera et al., 1998; Ptaszyk, 2003). Until recently, a similar situation had been observed in Lublin, where individual pairs were nesting in suburban forest complexes.

Study area and methods

Research on synurbic breeding population of the Sparrowhawk was conducted in the urban zone of Lublin (SE Poland, 147.55 km²) inhabited by ca. 400,000 people. It was part of a wide-scale study of the breeding avifauna of the city that has been conducted for nearly 30 years now.

The first cases of breeding of the Sparrowhawk in the downtown area were noted in 2002 in several census plots which for many years had been subject to quantitative studies. In the breeding seasons 2004–2006, all the timbered areas of the urban zone were scrutinized for the presence of nests and breeding territories of the species. The nests which had been discovered were controlled visually a several times during breeding season. The frequently vocalizing and unskittish birds were found without much difficulty during the first visits to the area. Species tree, height and nest location were described.



Results and discussion

Size and distribution of the population

In the study period 21 breeding territories were found altogether. In 2002 four nests were found, two years later – five, whereas in 2005 and 2006 – six everyone. 9 breeding sites were localized altogether. Three of them were occupied until 2002. According to Newton et al. (1977), the species shows attachment to territory, and the old nests are usually concentrated within a 100 m radius. 6 breeding sites were found in inner city, 3 – in district part of inner (Fig.).

Habitat

Two territories were found in cemeteries, five – in parks, and once per a little timbered area along a congested artery road, and a row of trees growing between two streets. Only in 3 cases, the size of the timbered area exceeded 10 ha (30.2, 18.4 ha and 18 ha); in the remaining cases, it was smaller than 6 ha. The tendency to occupy small patches of timbered areas has also recently been reported for the birds' natural environment (Pugacewicz, 1996, 1997; Dombrowski et al., 2000).

All the nests were situated in the vicinity of streets and/or lanes or near park or cemetery paths. Two cases deserve particular attention. During the whole breeding season, a bonfire was regularly made directly under one nest and a second nest was located above a park bench "night club". In both nests, breeding was successful. Also in the remaining cases, the nests were surrounded by constant traffic. Meanwhile, low breeding success in natural complexes had been blamed on forestry works (Matusiak et al., 2002).

Tree species, nest location and nest height

Out of the 21 nests, 14 were located on coniferous trees (6 on larches, 5 on spruces, 3 on a pine). The rest were built on an ash (3), maple, oak, lime and an acacia. 18 nests were built near the tree trunk, and only three (on the

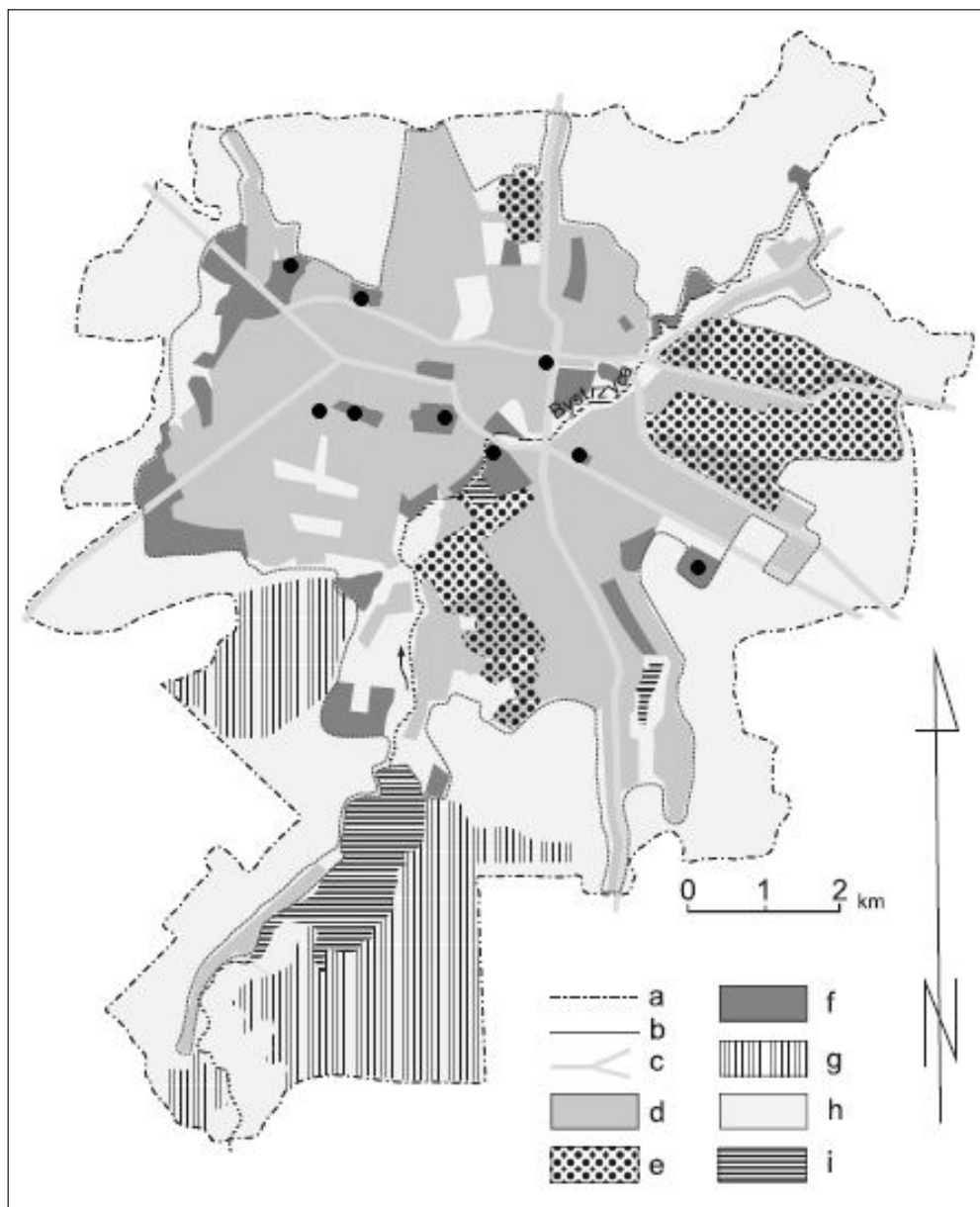
maple, oak and ash) in the tree-top. Similar preferences had been observed in the natural environment (Newton et al., 1979; Pugacewicz, 1996; Dombrowski et al., 2002). The nest height ranged from 8 to 25 m (14,5 m on average) and was significantly higher – especially in 2006 (16,8 m) than in natural habitats (Hald-Mortensen, 1974; Pugacewicz, 1996).

Brood phenology

The birds started building their nests at the beginning of the second decade of April and continued until the end of the month. Females were spotted in the nests as early as the 19 and 21 of April. The earliest nestlings were seen in the nests from the ground on the 26 of May, the latest on the 6 of July. In one case, the young were observed around the nest as early as the 4 of June, and fledglings on the 13 of June. Usually, however, young birds left their nests between June and July, that is, significantly earlier than in their natural environments in Poland (Pugacewicz, 1996) and Europe (Perrins, Geer, 1981).

Breeding success

The history of 21 nests was studied thoroughly. One of the nests was abandoned during the building, and another one during the incubation. Both events occurred in the downtown area in 2002. In the three cases breeding success was not established. In the remaining cases, breeding was successful. The estimated breeding effectiveness (76.2 %) was significantly higher than in the Białowieska Primeval Forest (NE Poland) (Pugacewicz, 1996) and Strzeleckie Forests in the Lublin region (Matusiak et al., 2002). Interestingly enough, in the latter case, anthropopressure was regarded as the cause of the low success (35.7 %). However, in 2002 and 2004, pairs brought up only 1–4 fledglings (2.3/successful pair and 1.8/breeding pair), and these values were significantly lower than in natural conditions (Newton et al., 1979; Pugacewicz, 1997; Matusiak et al., 2002). Later (2005–2006) number of fledglings increased to 2–6 (4,2/successful pair).



Breeding territories of the Sparrowhawk in Lublin.

Explanations: a – municipal boundaries, b – boundaries of the urban zone, c – main streets, d – built-up areas, e – industrial built-up areas, f – urban green areas (parks, cemeteries and allotment gardens), g – woods and forest parks of outskirts, h – agricultural and open areas and wasteland, i – water bodies.

Гнездовые территории перепелятника в Люблине.

Behaviour

The birds were perceptibly difficult to

frighten. With some individuals, the run-away distance was as short as ten meters. The fe-



males building their nests allowed observation from a very short distance without interrupting their work. During incubation, when scared away from their nests (by the researcher's hitting the tree trunk), they only rarely stood up or occasionally made a noise and flew 20 to 50 meters away. There was one case of a bird attacking the observer from the air in the vicinity of the nest. In the breeding season, especially at the outset, the males were active and often vocalized calling to the females. Equally energetic were the fledglings, which, for a certain period of time, stay constantly within several dozen meters of the nest and often vocalize, especially in the presence of parents bringing prey.

It seems that the Sparrowhawk population in Lublin is an expansive one and that the number of breeding pairs will be growing in the future. Even before now (Opdam, 1978), the species' adaptation to the cultural landscape was pointed out, which is demonstrated by the birds' change of diet to feeding on mass species, mainly the House Sparrow (*Passer domesticus*). It has also been shown (Egglar, 1981) that the Sparrowhawk can feed on carrion, which is important in the face of growing mortality among city birds caused by traffic. According to Newton et al. (1977, 1983), a significant part of the breeding population consists of birds hatched in the same place, and the birds are attached to their territories. The evaluation of the influence of this new, untypical element of urban avifauna on the numbers of other species may, therefore, be interesting. The influence of birds of prey on the populations of other species in natural environments has received various evaluations (Newton, 1973; Wyrwoll, 1977; Geer, 1978; Perrins, Geer, 1981).

REFERENCES

- Bednorz J., Kupczyk M., Kuźniak S., Winiecki A. (2000): [Birds of Wielkopolska]. Poznań: Bogucki Wydawnictwo Naukowe. (in Polish).
- Biaduń W. (2004): [The birds of Lublin]. AM Lublin, 1-199. (in Polish).
- Bokotey A. A. (1998): [Avifauna of Lvov – composition, distribution, changes]. Ph. D. Thesis. Warsaw: Museum & Institute of Zoology. (in Russian).
- Chmielewski S., Dombrowski A., Kot H., Rzepała M. (1996): [Numbers of birds of prey in the agricultural landscape of the regions of Mazowsze and southern Podlasie]. - Not. Ornitol. 37: 39-53. (in Polish).
- Dombrowski A., Goławski A., Szymkiewicz M. (2000): [Breeding birds of prey *Falconiformes* and the Raven *Corvus corax* in the agricultural landscape near Siedlce in 1978 and 1999]. - Not. Ornitol. 41: 201-212. (in Polish).
- Egglar R. (1981): L'Autour charognard: une experience peu banale. - Nos Oiseaux. 36: 113-120.
- Friemann H. (1967): Beitrag zur Winternahrung des Sperrers *Accipiter nisus*. - Emberiza. 1: 126-138.
- Geer T.A. (1978): Effects of nesting Sparrowhawks on nesting tits. - Condor. 80: 419-422.
- Hald-Mortensen P. (1974). [Nests and breeding biology of Sparrowhawk *Accipiter nisus* and some comparisons with Goshawk *Accipiter gentilis*]. - Dan. Ornithol. Foren. Tidsskr. 68: 91-115. (in Danish).
- Luniak M., Kozłowski P., Nowicki W., Plit J. (2001): [Birds of Warsaw 1962–2000]. Warszawa: PAN, IGiPZ. 1-179. (in Polish).
- Matusiak J., Wójciak J., Keler M. (2002): [Distribution, abundance and breeding success of raptors *Falconiformes* in the Lasy Strzeleckie forests]. - Not. Ornitol. 43: 145-161. (in Polish).
- Mitschke A., Baumung S. (2001): Brutvogel-Atlas Hamburg. Hamburger Avifaun. Beiträge. 31: 344 pp.
- Mizera T., Maciorowski G., Śliwa P. (1998): [Breeding birds of prey in Poznań during the years 1992-1997, preliminary report]. - Fauna miast – Urban fauna. Bydgoszcz: Wyd. ATR. 141-145. (in Polish).
- Newton I. (1973): Studies of Sparrowhawks. - Brit. Birds, 66: 271-278.
- Newton I. (1976): Breeding of Sparrowhawks (*Accipiter nisus*) in different environments. - J. Anim. Ecol. 45: 831-849.
- Newton I., Manguiss M., Moss D. (1979): Habitat, female age, organochlorine compounds and breeding of european Sparrowhawks. - J. Appl. Ecol. 16: 777-793.
- Newton I., Manguiss M., Rothery P. (1983): Age structure and survival in a Sparrowhawk population. - J. Anim. Ecol. 52: 591-602.
- Newton I., Manguiss M., Weir D., N., Moss D. (1977): Spacing of Sparrowhawk nesting territories. - J. Anim. Ecol. 46: 425-441.
- Opdam P. (1978): Feeding ecology of a Sparrowhawk population (*Accipiter nisus*). - Ardea. 66: 137-155.
- Otto W., Witt K. (2002): Verbreitung und Bestand Berliner Brutvögel. - Berliner Ornithol. Bericht. 12: 1-256.
- Perrins C.M., Geer T.A. (1981): The effect of Sparrowhawks on Tit populations. - Integrated Study Bird Populations. Amsterdam. 133-142.
- Ptaszyk J. (2003): [The birds of Poznań – qualitative and quantitative condition and its changes in the period 1850–2000]. Adam Mickiewicz University Press. Seria Zool. 26: 1-506. (in Polish).
- Pugaczewicz E. (1996): [Birds of prey breeding in the



- Polish part of the Białowieża Primeval Forest]. - Not. Ornitol. 37: 173-224. (in Polish).
- Pugacewicz E., (1997): [Changes in the numbers of birds of prey in the agricultural landscape of the Równina Bielska plain (eastern Poland) in 1983–1996]. - Not. Ornitol. 38: 183-195.
- Stój M., Dyczkowski J. (2002): [The birds of Jasło – num-

- bers, distribution and protection]. Poznań: Bogucki Wydawnictwo Naukowe. 1-188. (in Polish).
- Tomiałojć L., Stawarczyk T. (2003): [The avifauna of Poland. Distribution, numbers and trends]. Wrocław: PTPP "pro Natura". (in Polish).
- Wyrwoll T. (1977): Die Jagdbereitschaft des Habichts (*Accipiter gentilis*) in Beziehung zum Horstort. - J. Ornithol. 118: 21-34.

Замітки	Беркут	15	Вип. 1-2	2006	124
---------	--------	----	----------	------	-----

ІНВАЗІЯ ЯЛИНОВОГО ШИШКАРЯ В СТЕПОВЕ ПРИДНІПРОВ'Я У 2004 / 2005 рр.

Invasion of Red Crossbill in the steppe part of the Dnieper area in 2004/2005. - V.V. Syzhko. - **Беркут. 15 (1-2). 2006.** - During the period of investigation (1991–2006) the only but considerable invasion were observed. The first birds have appeared already in early June. From 18.10.2004 to 7.01.2005 the numbers of the species remained at a high level, flocks contained up to 20 birds. The last birds were seen on 15.03.2005. [Ukrainian].

В Україні ялиновий шишкар (*Loxia curvirostra*) є нечисленним гніздовим птахом Карпат та Гірського Криму (Гаврись, 2003). Відомі випадки гніздування і в рівнинній частині України під час сильних інвазій (Белик, 1998; Новак, 1998). На території нинішньої Дніпропетровської обл. шишкарі в незначній кількості спостерігалися в кінці XIX ст. (Вальх, 1911). У XX ст. до кінця 80-х років, коли птахів виявили в соснових лісах Дніпровсько-Орільського заповідника, зустрічі взагалі не були відомі (Булахов, Губкин, 1996).

У період наших досліджень (1991–2006 рр.) зафіксована єдина, але досить потужна інвазія ялинового шишकारя в Степове Придніпров'я. Перші поодинокі птахи з'явилися в м. Верхньодніпровськ вже на початку червня. В наступні 4 місяці відмічались по одному разу щомісяця. Починаючи з 18.10.2004 р. кількість птахів різко зросла, вони стали траплятися майже щодня, а в зграях налічувалося до 20 ос. Спо-

стереження велися переважно в північній частині області, але і в м. Дніпропетровськ шишкарі відмічались неодноразово. Невелика зграя цих птахів зустрінута також під час короткочасного перебування і в м. Світловодськ Кіровоградської обл. 12.07.2004 р.

У всіх випадках птахи годувалися насінням ялини, урожай якої того року був досить значним. На високому рівні чисельність шишकारя трималася до 7.01.2005 р. Після цієї дати зустрічі зареєстровані 22.02 (11 ос.), 4.03 (4 ос.) та 15.03 (1 ос.).

ЛІТЕРАТУРА

- Белик В.П. (1998): О гнездовании клеста-словика в Сумском Полесье. - Мат-ли 3 конфер. молодых орнитологов Украины. Чернівці. 16-17.
- Булахов В.Л., Губкин А.А. (1996): Современное состояние орнитофауны Днепропетровщины. - Праці Укр. орнитол. т-ва. Київ. 1: 3-18.
- Вальх Б.С. (1911): Материалы по орнитологии Екатеринославской губернии. Перечень птиц, найденных в губернии с 1892 по 1910 гг. - Орнитол. вестн. 3/4: 242-271.
- Гаврись Г.Г. (2003): Шишкар ялиновий. - Птахи України під охороною Бернської конвенції. Київ. 367-368.
- Новак В.О. (1998): Нові дані по орнитофауні Хмельницької області. - Мат-ли 3 конфер. молодых орнитологов Украины. Чернівці. 111-112.



В.В. Сижко

пр. Леніна, 27, кв. 33,
м. Верхньодніпровськ,
Дніпропетровська обл.,
51600, Україна (Ukraine).