

Short note

*Artificial Nesting of Common Goldeneye *Bucephala clangula* on the Park Lake in Puławy (Eastern Poland)*

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Abstract. The number of breeding pairs of Common Goldeneye in Lublin region was estimated to approx. 15. The survey in 2012 was conducted to estimate the breeding and the non-breeding population of the species on the Vistula oxbow in Czartoryskis Park in Puławy revealed one breeding pair and up to seven non-breeding. In March 2013 two nest boxes for Common Goldeneye were hung on trees in the middle and in the end of the oxbow. In 2014 the nest box in the middle of the oxbow was unoccupied and the one in the end of the reservoir was occupied by the pair of Common Goldeneye. We noted the successful breeding with six nestlings. Same time the second pair of the species successfully brood in the natural tree hollow. More than one breeding pair of the species on the same reservoir is unusual in this part of Poland.

Key words: Common Goldeneye, nest box, city park, park lake, Poland.

The area of the Common Goldeneye *Bucephala clangula* occurrence spreads into Asia, Europe and North America (BIRDLIFE INTERNATIONAL, 2014). In Poland the species is rarely nesting, while the limit of its nesting range lies in the northern part of the country. In the rest of the country, the species is extremely rarely nesting, found only on a few water reservoirs (TOMIAŁOJC & STAWARCZYK, 2003). In Lublin ornithological region only about 15 nesting pairs were noted, on sites in Vistula river valley and in Polesie region, where cases of using nest boxes were noted (CIOS, 2014, Lublin, pers. comm.). The species was firstly noted nesting near small ponds in parks in the second half of the 20th century (SIKORA *et al.*, 2007).

The Czartoryskis Park in Puławy is a historical complex, founded around the

Czartoryskis Palace. The important part of the park is the Vistula oxbow, turned into semi-natural reservoir, visited by tourists and local people, mostly in spring and summer. The occurrence of nesting Common Goldeneye makes this place highly important in the Lublin region and south-eastern part of Poland.

The aim of the study was to enlarge the nesting population of goldeneye on the park reservoir in Puławy, by providing safe nesting places in nest boxes.

The Vistula oxbow in Czartoryskis Park in Puławy is 1,2 km long. The width of the reservoir is about 50 meters, the depth is up to three meters. On the east side of the reservoir adjoins to the park and the urban area. The western side is adjacent to the field, in the first year of the survey, the field was covered with rape. Between the field

and the reservoir is the belt of willow thicket and some large poplars. The part of the park adjacent to the oxbow is covered with old stand, mostly consisting of oak, maple and chestnut trees. Some trees have large, natural holes. After modernization in early 90', there was no further action carried out in the place. The reservoir is semi-natural, with a stable population of crucian carp *Carassius* spp., perch *Perca fluviatilis* and other fish species. By the oxbow lake flows the clean water from the rain sewage treatment plant placed nearby. The most important threats to birds occurring on the reservoir are the presence of American mink *Neovison vison* and anglers.

Mounting nest boxes was preceded by the survey of Common Goldeneye and other waterfowl species on the reservoir. It lasted over a year and revealed one breeding pair and up to seven non-breeding pairs of the species, found on the park lake since late winter (after the ice melt) to the third decade of April (STASIAK & PIEKARSKA, 2013). It also provided data about the avifauna of the oxbow and the threats, which may impact on the birds' breeding success, e.g. interrupting birds by tourists and anglers. Two nest boxes for the Common Goldeneye were made of pine wood. The entrance hole had 10 cm in diameter. The bottom was 18x18 cm, with small holes drilled for drainage. The depth from the entrance to the bottom was 24 cm. Nest boxes were mounted on selected trees, according to the guide (DU FEU, 2005). Each of them was placed about 5 m over the ground, with the entrance hole facing the water. Boxes were hidden from passers, but were placed easily for birds to fly into. Box no. 1 was placed in the middle of the reservoir, box no. 2 near the estuary. In the first year (2013), none of the nest boxes were occupied by birds. In late autumn, the control of nest boxes' inside revealed that no. 1 was occupied by squirrel *Sciurus vulgaris*, while in no. 2 we found the dormouse *Muscardinus avellanarius*. In 2013 on the reservoir one breeding pair of Common Goldeneye was found, with 13 nestlings. Birds were nesting in the natural tree hole. In 2014 from March to April 5 pairs of the species were observed

on the oxbow. One of them was interested in nest box no. 1, but didn't start nesting. Nest box no. 2 was used by the other pair, especially by the female. During the control in early May 2014 we found the Common Goldeneye clutch of six eggs in the second nest box. Same time, the female and four nestlings were observed on the other part of the oxbow. Birds brood in the natural tree hole near the reservoir, about 8 meters above the ground. At the beginning of the 2015 breeding season, the nest box no. 2 was occupied by the pair of Common Goldeneyes, while the nest box no. 1 stayed unoccupied both in winter and spring.

The reservoir in Puławy is one of the breeding grounds of Common Goldeneye in Lublin region, but never more than one nesting pair was noted (SAFADER, 2009; personal observations). The number of breeding pairs of the species in southern part of Poland is many times lower, than in the north. As an example, in Augustowska forest, the species was present on every lake, nesting in natural tree holes, while in Lublin region, with many lakes, oxbows and rivers, only 15 breeding pairs were noted (BUCZEK, 2005; ZAWADZKA *et al.*, 2011). The fact of nesting of the Common Goldeneye in the city park is worth mentioning. The survey of cavity nesting species in parks of Poznań and Warsaw didn't reveal occurrence of this species, though those cities are settled far more in the north than Puławy (LUNIAK, 1992). The species nesting in city parks was noted by M. Stajszczyk only in the north part of Poland, in Łęczany, Olsztyn, Mrągowo, Szczecin and Milicz, which is very advantageous for waterfowl to breed (SIKORA *et al.*, 2007). In suitable habitat, the number of birds is increasing, e.g. on Milickie ponds, where Common Goldeneyes started to breed in 70s of 20th Century, and the population raised up to 20 breeding pairs (WITKOWSKI & ORŁOWSKI, 2012). It is mentioned, that the number of birds breeding on city ponds is increasing, but still the total number remains quite low (SIKORA *et al.*, 2007). The species willingly inhabits nest boxes (EADIE & GAUTHIER, 1985; ZICUS & HENNES, 1989; CORRIGAN *et al.*, 2011), but there's not much information about size of those.

We used the D-type boxes with circular entrance, same as in the other research of Common Goldeneye in Lublin region. The size is smaller than in other studies (CORRIGAN *et al.*, 2011), but this construction cannot be occupied by the Tawny Owl *Strix aluco*, which is breeding in the park (SAFADER, 2009; personal observations) and in the whole region (CIOS & GRZYWACZEWSKI, 2013). There was only one case of this owl unsuccessfully trying to inhabit this sort of nest box (CIOS, 2014, Lublin, pers. comm.), while authors noted numerous cases of the owl nesting in bigger nest boxes, even placed almost over the water.

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