

On the Biology of the Lesser Spotted Eagle *Aquila pomarina* in Lithuania

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Investigations into the biology of the Lesser Spotted Eagle were carried out in 1978-91. Its abundance and dynamics were studied in three study areas about 120 km² each in South and East Lithuania. Fragmentary observations were made all over the republic. Factors conditioning nest site preference were defined on the basis of the description of 80 nest sites. Breeding phenology and reproduction were evaluated according to the study of 58 clutches and broods.

The numbers of Lesser Spotted Eagle in separate areas varied markedly and depended on many factors: feeding and breeding conditions, number of suitable nest sites, abundance of prey, intensity of exploitation of the territory, disturbance factors, etc. In woods with poor food supply the density of eagles in separate years made 3.5 pairs per 100 km² of the total study area, or 7.4 pairs per 100 km² of forest, i.e. 1.6 ± 1.0 (3.4 ± 1.5) pairs as an average. In more productive forests the density reached 28.6 pairs per 100 km² of the total area, or 29.6 pairs per 100 km² of forest. If we consider the average long-term density of all three study areas, it is 2.2 ± 0.9 pairs per 100 km² of the total area, or 3.6 ± 1.7 pairs per 100 km² of forest. In separate forest areas the abundance of the Lesser Spotted Eagle may be considerably greater and reach $52.1 \pm 3.4/71.7 \pm 3.9$ pairs. In South Lithuania in a forest area of about 200 ha we detected even four breeding pairs. The present population of this species in Lithuania is 400-500 pairs.

In spring Lesser Spotted Eagles usually arrive at the beginning of April; 95% of clutches were laid from April 21st to May 15th; 95% of juveniles left the nest from July 30th to August 18th. Clutch size varied from 1-3 (1.8 ± 0.3) eggs ($n = 37$); 21.6% of all nests had 1 egg, 75.7% - 2 eggs and 2.7% - 3 eggs. In 35 successful broods one juvenile per nest was reared, and in one successful brood two were reared. Of all eggs laid, 48.8% hatched and 34.9% were successfully reared. Juveniles were successfully reared in 60% of all nests. Of all egg losses, 16.8% were infertile, 75.0% were destroyed by human activities, and the loss of 8.2% is unknown. The main reason for the death of juveniles (88.9%) was cannibalism.

Nest site preference in the Lesser Spotted Eagle is conditioned by the type of forest, food supply and individual features of bird behaviour. Nests were detected in

stands of spruce (40.0%), oak (26.3%), black alder (23.8%), birch (5.0%) aspen (3.7%), and lime (1.2%). Lesser Spotted Eagles showed a preference for mixed forests: only 8.7% of all nests were built in forests with one single tree species. Nests were constructed in forests 50-180 years old (94.4 ± 2.3). More productive forests with higher fertility were preferred: 58.7% nests were found in forests of Grade I, 26.3% - Grade II, 12.5% - Grade III, 2.5% - Grade IV. As concerns tree species, oaks were chosen for nest building in 43.8% cases in preference to other species: fir-trees - 28.8%, black alder - 13.7%, aspen - 5.0%, birch - 5.0%, pines - 2.5%, ash - 1.2%. The age of trees was 50-180 (101.1 ± 2.6) years. The majority of nests were constructed on side branches near the trunk (40.0%), or against it (41.3%). Nests of this species are large constructions 60-126 (88.5 ± 2.4) cm wide and 15-120 (60.4 ± 1.9) cm deep, usually built at a height of 8-22 (15.0 ± 0.8)m. Most often Lesser Spotted Eagles built their nests themselves (90.0%), sometimes occupied the nests of other birds of prey (2.5%) or adopted artificial nests (7.5%). Most nest sites were no more than half a kilometre from clearings, glades, water bodies or the forest edge.

Though rather cautious, secretive and sensitive to various disturbances, the Lesser Spotted Eagle is often found breeding in the neighbourhood of farmsteads or small villages. A stable and rather abundant population of this species in Lithuania is most presumably subject to its flexibility in selecting nest sites and to a wide feeding spectrum.

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