

LATVIAN STATE INSTITUTE OF AGRARIAN ECONOMICS



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EUROPEAN AGRICULTURAL FUND FOR RURAL DEVELOPMENT:
EUROPE INVESTS IN RURAL AREAS

Rural Development Programme 2007-2013

**Impact of the Measures on Feeding Biotopes of Lesser
Spotted Eagle *Aquila Pomarina* in Monitored Sample Plots**

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Summary

Lesser spotted eagle as a species of the birds of prey and therefore as the final link of the food chain, accumulating in itself many chemical elements ingested with food, corresponds with classic criteria of indicator species. Size and stability of the population of the lesser spotted eagle is determined also by a line of other factors – various influences at the migration and winter shelter locations (lesser spotted eagle belongs to migrating species), as well as the quality of nesting and feeding biotopes. Taking into consideration the impact of complex factors on the population of the lesser spotted eagle at its nesting, migration and winter shelter locations, it is one of the most endangered species of the birds of prey in Europe, the studying and protection where of is given increased attention. The information currently obtained as the result of research shows that approximately 20% of the World population (3600 couples) is nesting in Latvia.

Especially important results have been obtained by the research of recent years regarding the food ingested by the lesser spotted eagle, as the result whereof it was established that the most important food items – rodents, flogs and moles reside mainly in open biotopes – utilised agricultural areas. It is therefore possible that the population of the lesser spotted eagle depends on the quality of agricultural land, and evaluation of this land is a significant stage in studying development of the species population. The Common Agricultural Policy (CAP) and the Rural Development Programme (RDP) 2007-2013 in the framework thereof on the other hand is a significant administrative tool for the management of utilised agricultural areas. A study was therefore performed by an expert Ugis Bergmanis in cooperation with Peteris Lakovskis, an expert of Rural Development Evaluation Department of the Latvian State Institute of Agrarian Economics, in order to establish the changes in feeding biotopes of the lesser spotted eagle in Latvia in last five years and the potential impact of these changes on the population of lesser spotted eagles, as well their relation to the impact of the Rural Development Programme 2007-2013 measures.

The following methods and data were used for reaching these objectives:

1. Analysis of feeding biotopes, hunting strategy and landscape elements used during hunting by the lesser spotted eagle (analysis of the information for the period of 1995-1997 obtained in Latvia by using telemetric method).
2. Analysis of nesting density and success of the lesser spotted eagle (analysis of the information obtained during the period of 2007-2011, using sample plot method in five monitored sample spots in Latvia – „Murmastiene”, „Žūkļis”, „Pāle”, „Bukaiši” and „Mazgramzda”).
3. Characterization of types of the land use and vegetation in the sample plots (Information of the Rural Development Service on the types of utilised agricultural areas and their dynamics in the sample plots – „Murmastiene”, „Žūkļis”, „Pāle”, „Bukaiši” and „Mazgramzda” during the period of 2007-2011, as well as Corine Land Cover data of the European Environment Agency (EEA) for 2006), and comparison of information with the parameters characterizing the lesser spotted eagle population.

4. Impact evaluation of economic factors on the population of lesser spotted eagle (analysis of economic size of the agricultural holdings – SO groups and specialization indicators, using calculations made by LSIAC FADN (*Farm Accountancy Data Network*) for summarizing the results of agricultural census of 2010.

The main conclusions drawn as the result of the data analysis are as follows:

1. The most important feeding biotope of the lesser spotted eagle is the land extensively used for agricultural purposes – meadows, grassland and fallow land.
2. A significant role in successful finding of food is played by mowed down meadows and trashed areas of crop, which is explained with better availability of small animals used for feeding.
3. Significant feeding biotopes, especially in the direct vicinity of nests, are overflowing shallow gullies in the meadows and fallow land with characteristic high concentration of frogs, which is important food of the lesser spotted eagle.
4. In respect of the utilised agricultural areas, the lesser spotted eagles prefer to hunt in crop, corn, rapeseed and goat's rue fields at least. Lesser spotted eagles start hunting in corn, rapeseed and goat's rue fields only after their threshing, because the height of vegetation and density of the crop is not suitable for finding food.
5. Especially important structural elements of the landscape for successful finding of food are various vertical landscape elements, such as separately growing trees and their groups, rows of trees, and wooden electricity/transmission poles.
6. Higher nesting density of the lesser spotted eagle can be observed in the territories with larger proportion of the areas extensively used for agricultural purposes - meadows, grassland and fallow land.
7. Regions with high nesting density produce larger quantity of new birds, but higher density is facilitated by a more significant proportion of the land extensively used in agriculture in the area.
8. Increase of the areas of organic farming in sample plots „Žūkliš”, „Mazgramzda” „Bukaiši” and „Pāle”, as well as increase of unploughed crop fields (fallows) in „Pāle” must be rated as the positive factors facilitating nesting of the lesser spotted eagle, because these factors improve the quality of feeding biotopes of the lesser spotted eagle.
9. Increase of arable land and especially rapeseed fields in the sample plots „Murmastiene”, „Mazgramzda” and „Bukaiši” must be rated as negative factors for the nesting of the lesser spotted eagle.
10. Based on economic indicators of the agricultural holdings, the regions with a higher proportion of large agricultural holdings and specialization in arable farming are less favourable for nesting of lesser spotted eagle.

Recommendations for supplementation of Rural Development Programme:

Implementation of axis 2 measures must be continued and financial support for axis 2 measures and maintaining the permanent meadows/pastures must be balanced out, by financially encouraging competitiveness of these measures with other RDP measures:

Less Favoured Areas (LFA) payment must be increased for maintaining *permanent meadows (710) perennial grasses sown into the arable land (720), fallows (610)*, and Agri-environment measures- *Natura 2000 payments and payments related to implementation of Water Framework Directive, Development of organic farming, (PMP, nectar plants), Maintaining biodiversity in grasslands, Establishment of buffer strips (field, gully and water bodies), Stubble field in winter period, Natura2000 payments and Forest environment payments*;

Amount of the payment should be increased for the following Agri-environmental measures: *Natura 2000 payments and payments related to implementation of Water Framework Directive, Development of organic farming, (PMP, nectar plants), Maintaining biodiversity in grasslands, Establishment of buffer strips (field, gully and water bodies), Stubble field in winter period, Natura2000 payments, Forest- environment payments*;

A time restriction for mowing biologically valuable grasslands must be cancelled, while setting criteria for single mowing, thereby facilitating preservation of such areas and their use in dairy farming and breeding of grazing livestock.

Support system must be developed and implemented for preservation of important structural elements of landscape - wet lowlands, separately growing trees and tree groups, stimulating preservation and finding efficiency of the feeding elements for the lesser spotted eagle (unploughed protective zone must be created around the tree in the size of projective cover of its crown in event of separately growing trees);

In order to reduce the fragmentation of large-sized flat crop fields and to stimulate availability of food for the lesser spotted eagle, approximately 5 m wide unploughed zone must be left near the edge of the forest, roads and ditches (near the areas with trees used by lesser spotted eagles to look for their feeding objects).

Afforestation of the areas with less than 40% proportion of utilised agricultural areas is not advised/not supported.

Conclusions

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12. Territories with larger proportion of areas extensively used for agricultural purposes - meadows, grassland and fallow land has higher nesting density of the lesser spotted eagle/number of nesting couples, but further more extensive research is necessary for testing this coherence.