

DORMICE – THEIR PRESENT STATUS IN LATVIA

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ABSTRACT – The distribution and habitats of four Dormouse species (*Muscardinus avellanarius*, *Eliomys quercinus*, *Dryomys nitedula* and *Myoxus glis*) found in Latvia are described. This study was carried out as part of a Latvian and European mammal atlas project, starting in 1991. Questionnaires were the main source of information regarding the period since 1970. In Latvia dormice are rare animals and have small populations in separated localities. Here *D. nitedula* and *M. glis* are at their most northern edge of distributional range. Reduction of the known localities for *M. glis* and *E. quercinus* is described. *M. avellanarius*, often found in bird nest boxes, is the most common Dormouse in western Latvia. Legal and practical aspects of dormice conservation, and the protection of habitats are discussed.

Key words: Myoxidae, Distribution, Population Status, Habitats, Conservation, Latvia.

RIASSUNTO – *Mioxidi in Lettonia: lo stato attuale* – Vengono descritti distribuzione e habitat di quattro specie di Mioxidi (*Muscardinus avellanarius*, *Eliomys quercinus*, *Dryomys nitedula* e *Myoxus glis*) presenti in Lettonia. Questa ricerca è stata condotta come parte del progetto per un atlante dei mammiferi lettoni ed europei avviato nel 1991.

La maggior parte delle informazioni riguardanti il periodo successivo al 1970 deriva da questionari. In Lettonia i Mioxidi sono animali rari con piccole popolazioni in località distinte. La Lettonia rappresenta il margine settentrionale di distribuzione di *D. nitedula* e di *M. glis*. Viene descritta la riduzione di località note per *M. glis* e *E. quercinus*. *M. avellanarius*, spesso trovato in cassette nido per uccelli, è il Mioxide più comune nella Lettonia occidentale. Vengono discussi aspetti pratici e legali riguardanti la conservazione e la protezione degli habitat dei Mioxidi.

Parole chiave: Myoxidae, Distribuzione, Status delle popolazioni, Habitat, Conservazione, Lettonia.

INTRODUCTION

The first records of Dormice (Rodentia, Myoxidae) in Latvia date back to the 18th and early 19th centuries (Hupel, 1777; Fischer, 1791; Petri, 1809; Baumann, 1817; Kawall, 1847). Nevertheless they are one of the less studied groups of mammals in Latvia. The published data are scarce and fragmentary. The available data include observations on the feeding habits of Hazel Dormouse (Luksevics, 1981) and Fat Dormouse (Eglitis, Kaktina, unpubl. data) in captivity, and the diurnal and seasonal activity of Fat Dormouse (Eglitis, Kaktina, unpubl. data). One study was conducted on the incidence of Hazel Dormouse in bird nest boxes (Strauss, 1959).

Historically, three periods of study of Dormouse distribution have occurred. At the beginning of the 20th century, Karl Greve (1909) summarized knowledge on

mammals, including Dormice, found in most of Latvia. During the late 1970s data were collected for a monograph on Latvian mammals (Taurins, 1982) and the "Red Data Book of Latvian SSR" (Latvijas PSR Zinatnu Akademija Biolonijas instituts, 1985). In 1991, the "Atlas of Latvian Mammals" project began, the results of which also pertain to Dormice. The present paper gives an overview of work on dormice, including a short review of preferred habitats as well as the protection and future perspectives of Dormice as rare animals in Latvia.

A comparison with the status of Dormice in neighbouring countries is also made.

METHODS

Collection of data for the Atlas was carried out in two main directions: (1) summary of all published and unpublished materials and (2) distribution of questionnaires, sent out since 1991. Mostly volunteers who have already contributed to several ornithological studies were involved. Checks of some localities reported to be inhabited by dormice were also made.

The records for the presence of a species in a site were mapped using the standard European UTM-grid system. Altogether Latvia is divided into 739 squares of 10x10 km. The most attention was paid to the period after 1970 for the European Mammal Atlas (Museum National D'Histoire Naturelle, 1992).

RESULTS AND DISCUSSION

DISTRIBUTION, RELATIVE ABUNDANCE AND HABITATS

Four Dormouse species are found in Latvia: the Hazel Dormouse (*Muscardinus avellanarius*), Garden Dormouse (*Eliomys quercinus*), Forest Dormouse (*Dryomys nitedula*) and Fat Dormouse (*Myoxus glis*). It is known that the Dormice in the East Baltic are at the northern limit of their distributional range (Ognev, 1947; Storch, 1978; Ajrapetjants, 1983). This factor significantly influences their distribution in Latvia. A mosaic pattern of distribution is typical. In general dormice are considered to be rare animals in Latvia, as well as in the whole East Baltic region. Not only are few localities known, but the populations are also small.

MYOXUS GLIS

At the beginning of this century 10 localities for Fat Dormouse were known (Greve, 1909; Fig. 1). Greve points out that one of these localities is the most northern occurrence for the species. Most of the Fat Dormouse records in Latvia after 1970 are from two areas: the Gauja Valley (around Sigulda in the Gauja National Park) and the Daugava Valley near Skriveri (Fig. 1). In the Gauja Valley this species is known from the 1930s. During the last 20 years it was found around the Gauja more often but only sporadically and as single individuals (J. Brikmanis, pers. comm.). This area could be the present most northern location for the Fat Dormouse.

The first records in the Daugava Valley are from the early 19th century (Baumann, 1817). Some specimens were also found here at the beginning of the 20th century

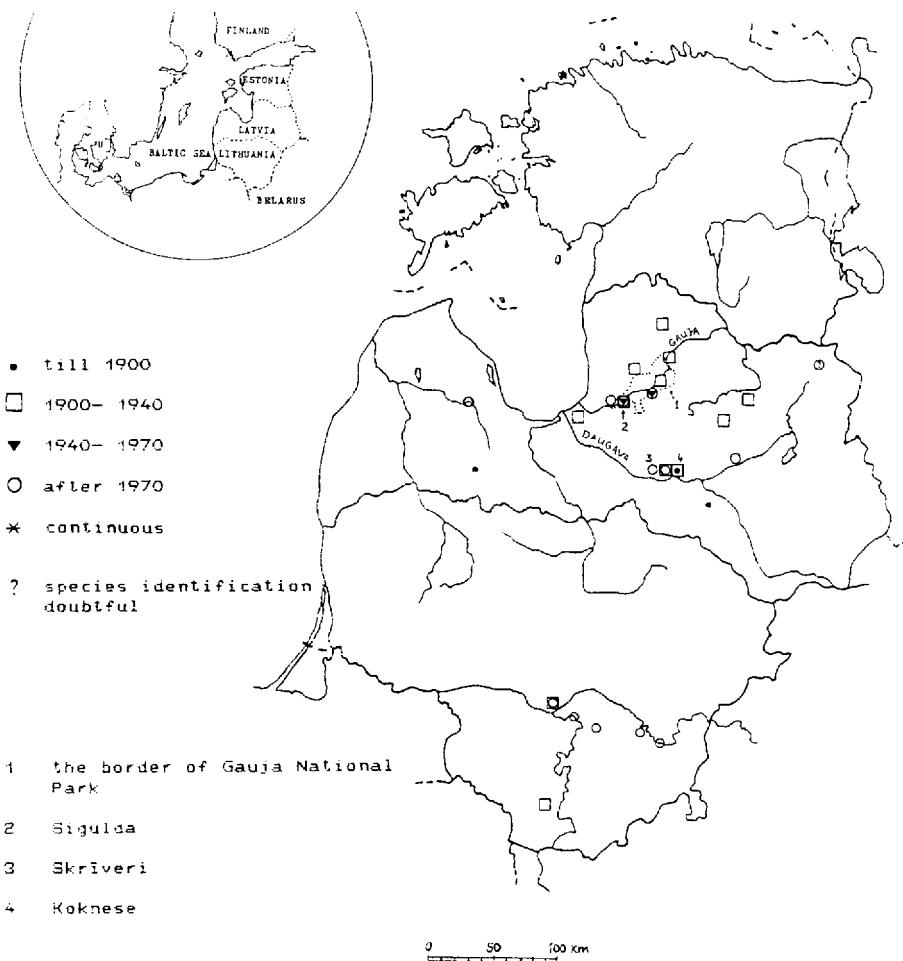


Fig. 1 – Localities of *Myoxus* in the East Baltic.

(Greve, 1909) and in the 1930s (Taurins, 1982). During the years 1977-1980 fat dormice have been found (5-13 specimens each year) in a small glen (Askeres grava) in the Daugava Valley near Skriveri (Taurins, 1982). In the 1990s, 3 animals were found in another small glen some 7 km away from this site. Although it is possible that the whole slope of the Daugava Valley between these localities is inhabited by fat dormice, it seems that both the Daugava and Gauja Valleys are inhabited by scarce and isolated micropopulations. Similarly, in Lithuania this species is found only in a few localities (Juškaitis, 1995; Fig. 1). In Eastern Europe including Latvia, the Fat Dormouse inhabits mostly broad-leaved and mixed forests (Ognev, 1947). The small Askeres grava glen mentioned above is

overgrown by a middle age forest (almost without old trees) with mixed elm, white alder and hazel. The glen is bounded by a fruit orchard on one side and meadows on the other. It is underlain by dolomite and evidently holes in the slopes are used as a shelters. In other areas some specimens were also found near human settlements, e.g., in empty bee hives and in wood piles. Many of the animal's locations in the Gauja NP area were associated with human buildings during the winter period (J. Brikmanis, pers. comm.).

MUSCARDINUS AVELLANARIUS

The Hazel Dormouse was already described as part of the Latvian and Estonian fauna in the 18th and 19th centuries (Hupel, 1777; Fischer, 1791; Petri, 1809; Fig. 2). Since 1970 this species has been found in fairly numerous localities in Latvia, but only in the west. In Lithuania this species is common and widespread up to the border with Latvia (Juškaitis, 1993; Fig. 2). The Hazel Dormouse is also found in Estonia (Timm, 1992: Fig. 2). It is unclear if the gap in eastern Latvia is real or simply due to insufficient investigation.

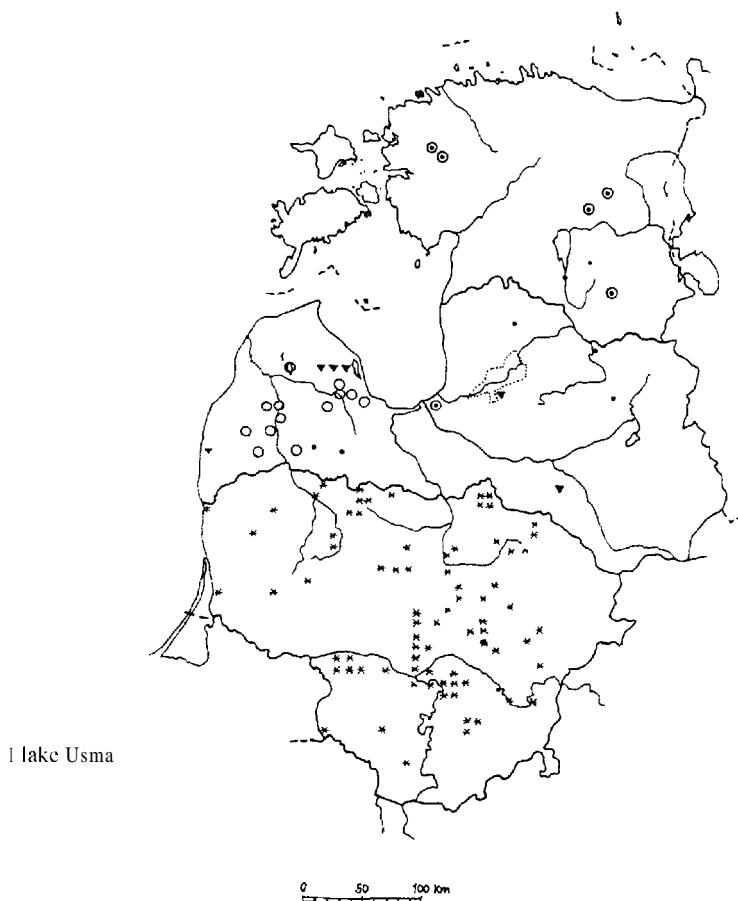


Fig. 2 – Localities of *Muscardinus avellanarius* in the East Baltic.

In older publications the Hazel Dormouse was generally regarded as quite rare (Greve, 1909; Grosse & Transehe, 1929). Nevertheless the large scale use of bird nesting boxes in Latvian forests, initiated in the 1950s, showed that the Hazel Dormouse is common at least in the west, where 18 to 60 % of the boxes were used by these animals (i.e. specimens or nests found; Strauss, 1959). Unfortunately the boxes were set up mostly in young or middle aged pine forests not suitable for Hazel Dormouse.

In 1992 to study bird nesting success, six study plots, each with 100 nest boxes, were set up with a distance of a few kilometers from each other. These boxes were for flycatcher-size birds and were located mainly along forest edges. Mixed pine forests with rich undergrowth and a ground cover of *Hylocomium* were chosen. In the first summer dormice were found in 3 plots where 4-6% of the boxes were occupied (animals, nests and/or droppings found). In the following summer dormouse occurrence in 3 plots remained at the same level but increased up to 26% in one of the plots. In 5 boxes single specimens were found, but in 3 boxes family groups had settled. More of the boxes (ca 30%) were used by *Apodemus tlvicollis*. In some boxes signs (mostly droppings) left by both species were found (V. Liepa; V. Pilāts, unpubl. data). Similar observations were also made in Lithuania (Ezerskas, 1961). Great care must be taken not to misidentify the user of the boxes.

It is thought that the Hazel Dormouse requires not only a deciduous or mixed forest, but also a rich tall shrub/small tree layer, especially of hazel (Ognev, 1949; Taurīns, 1982) and spruce (Juškaitis, 1990). This view is confirmed by our observations. Stands of aspen and pine, as well as mixed stands of birch, aspen and pine with hazel and young spruce in the understorey prevail in the study plot where 26 bird nest boxes were used by Hazel Dormice. In this area occasional oak, lime, white alder and spruce trees were also present.

EIJOMYS QUERCINUS

In the 19th century the Garden Dormouse was common throughout Latvia (Kawall, 1847; Greve, 1909; Fig. 3). At the beginning of this century during a 2 year period 23 specimens were caught in a wine cellar (Greve, 1909). Some authors indicate that this species was still frequent in the Cesis district (possibly in part of the present Gauja National Park) as late as the 1950s (Spuris et al., 1974). Since this time the species seems to have practically disappeared. New localities in all parts of Latvia were found during the Atlas Project, but have not yet been verified.

In Estonia it was also previously quite common, but now few localities are known. The only viable population of the Garden Dormouse is situated near the northern coast of Estonia on Suur-Tutarsaar Island (Russia) in the Gulf of Finland (Timm, 1992; Fig. 3). The most northerly sites for the Garden Dormouse are in Southern Finland (Kaikusalo, 1993) and the St. Petersburg area (Ajrapetjants, 1983). Only one locality is known in Lithuania (Juškaitis, 1995; Fig. 3). It is considered that the population of the Garden Dormouse has much decreased both in Latvia (Taurīns, 1982) and Estonia (Timm, 1992), as well as in other countries, e.g. in the Czech Republic (Anděra, 1993) and Slovakia (Dudich, 1993).

Unfortunately, there is not much information on the habitats of the Garden Dormouse in Latvia. This species is regarded as an inhabitant of different wood stands (Taurins, 1982; Ajrapetjants, 1983), and even large tracts of forest (Ognev, 1949). In Latvia it is found in pine forests as well as in orchards.

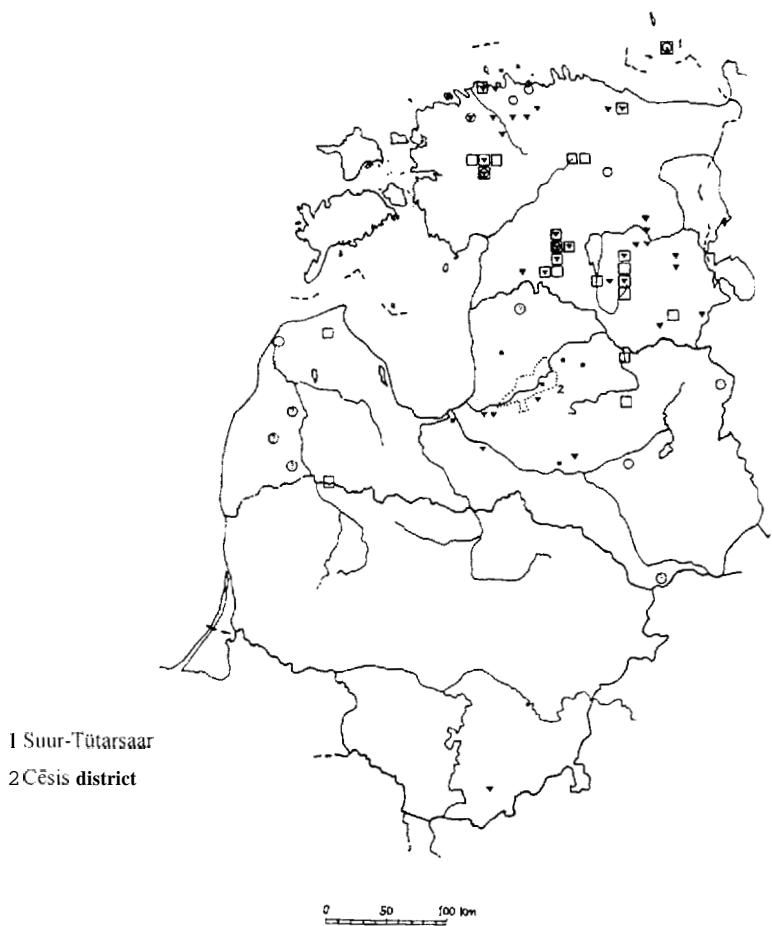


Fig. 3 – Localities of *Eliomys quercinus* in the East Baltic

DRYOMYS VIIEDULA

The first reference (however doubtful) to the Forest Dormouse in Latvia is from the 19th century (Greve, 1909). Later it was found in the central part of Latvia (Taurins, 1982), but now only one locality is known where this species is found regularly, in the extreme South-East of Latvia (Fig. 4). About 8-17 specimens have been found annually during the last several years (Pupins & Skute, 1992). Twenty one nest boxes were also checked in the same locality (area ca 5 ha) in May, 1993. Three boxes were occupied by single specimens, but in another 6 boxes nests and/or droppings were found (V. Pilāts, unpubl. data). This all indicates that the

locality is inhabited by a viable population of the Forest Dormouse. Obviously the area occupied by this population is larger than known presently.

In Lithuania two localities are known (Juškaitis, 1995; Fig. 4), but in Belarus it is a widely distributed species (Serzanin, 1961).

In Latvia the Forest Dormouse has been found in mixed stands consisting of spruce, birch, aspen, lime and pine, as well as some oak and maple, with a rich understorey of hazel, rowan and young spruce. In its distributional range the Forest Dormouse is associated mainly with broad-leaved and mixed forests (Ognev, 1949; Ajrapetjants, 1983).

CONSERVATION

Dormice were first protected in Latvia in 1957, when it was ruled that all vertebrates except pest animals are protected. Later, in 1968, the Act on Nature Conservation in Latvian SSR came into force. In 1977 this Act was supplemented by lists of protected plant and animal species. All dormouse species except for the Forest Dormouse were included in the list of protected animals. In 1987 these lists were revised (Environmental Protection Committee of Latvia, 1991). Since regaining independence in 1991, much legislative reform has occurred in Latvia and is ongoing. The Supreme Council has passed the general Law on Environmental Protection and the Law on Specially Protected Nature Areas in Latvia. A proposal for new law on the protection of species and habitats is being prepared for the new Saeima parliament. The lists of specially protected plant and animal species are also being revised. A proposal to include all four dormouse species found in Latvia in these lists has been submitted.

Besides the legal protection of dormice, protection of habitats occupied by these mammals is also very important. In some cases protected nature areas include localities where dormice have been found. For example, the Hazel Dormouse inhabits the oldest nature reserve in Latvia, Moricsala, Island in Lake Usma. The Gauja National Park includes one of the two most important areas inhabited by the Fat Dormouse. A so called "mini sanctuary" was established in 1979 near Skriveni (the Askerves grava glen) to protect another important site for this species. The size of this sanctuary is about 4,5 ha and includes the whole area of the important small glen inhabited by the Fat Dormouse. Unfortunately due to reorganization of the network of protected nature areas the future status of this particular sanctuary is now unclear. The only known locality of the Forest Dormouse is situated in one of the large wildlife sanctuaries in south-eastern Latvia. Although large scale forest clearance is not allowed in this area, this may not be enough to protect the habitats of this dormouse species. Strict regulation regarding forest management is needed. For some time dormice have been included in threatened and rare species lists (Spuris et al., 1974; Latvijas PSR Zinatnu Akademija Biologijas institūts, 1985). In 1992 the lists were revised (Tab. I) and included in the Red Data Book of the Baltic Region (Swedish Threatened Species Unit, 1993).

Although reduction of the number of known localities for Dormouse populations is very obvious, especially for Fat Dormouse and the Garden Dormouse, the causes are unclear. In Latvia dormice are rare animals and have

never attracted much attention from people and therefore have not been directly threatened by hunting etc. Indirectly, dormice could be influenced both favorably and adversely by different activities, especially forest management. The removal of old hollow trees and/or understorey shrubs will reduce suitable habitats for dormice. At the same time, intensive forest harvest has not taken place in Latvia during the last 50 years. The total area of forests has actually increased from 24,9% of Latvia's territory in 1935 to 41,4% in 1991 due to the socialistic land use system. Nevertheless, the use of bird nest boxes in dormouse habitats would have a beneficial effect on the conservation of these rodents. The disappearance of the Fat Dormouse localities around Koknese coincides with the construction of a hydro-electric dam. A large part of the Daugava Valley slopes which were inhabited by the Fat Dormouse were flooded.

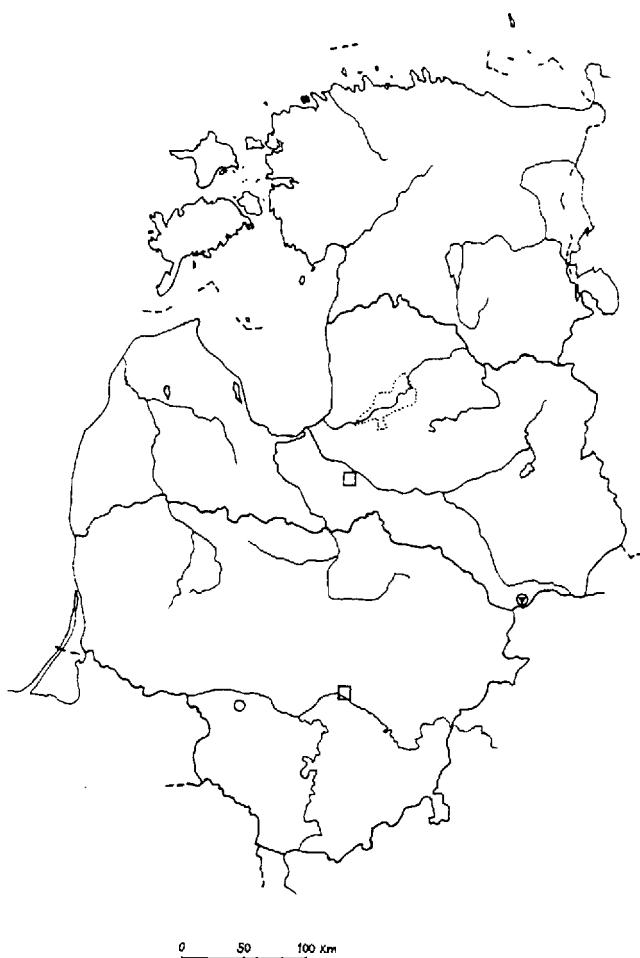


Fig. 4 – Localities of *Dryomys nitedula* in the East Baltic.

Tab. I – Dormice in the Red lists of Latvia

SPECIES	STATUS IN:	1980	1992
<i>Myoxus glis</i>		1	1
<i>Muscardinus avellanarius</i>		4	4
<i>Eliomys quercinus</i>		3	3
<i>Dryomys nitedula</i>			3

1 endangered; 2 vulnerable; 3 rare; 4 status unclear

The typical mosaic distribution of dormice in Latvia, with separated micropopulations, has an additional risk factor. If the animals in a certain locality become extirpated, the loss is irreversible until reintroduction, even if the locality is suitable for dormice. This type of risk can increase due to current reprivatization of land in the transition period to a market economy. Already many small forest stands have been transformed into arable land, and tree harvest has increased. Until now the distribution of dormice in Latvia was obviously regulated by natural processes. The intensification of agriculture and forestry taking place in Latvia is expected to decrease the amount of suitable natural and seminatural areas. Both habitats and species may be threatened in the coming years.

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