

NWFPs OF ANIMAL ORIGIN IN LITHUANIA: IDENTIFICATION AND ECOLOGY



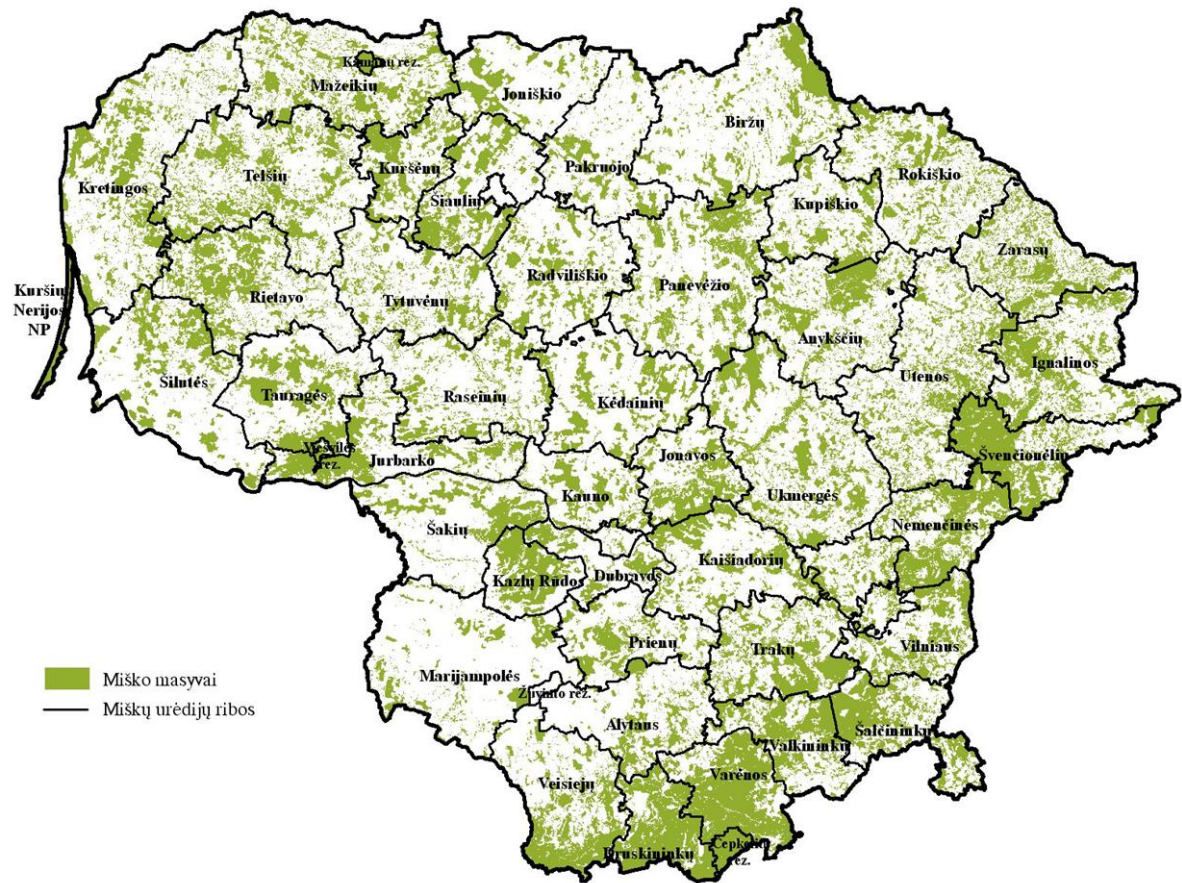
The total forest land area
= 2,177,000 ha,
covering **33.3%**
of the country's territory.

According to the
bio geographical delineation,
Lithuanian forests represent
the **transitional Boreal**
(South taiga)

= Nemoral zone

of mixed and coniferous and
broadleaved deciduous forests

with *Pinus sylvestris*, *Picea abies*,
Betula spp., *Populus tremula*,
Alnus spp., *Fraxinus excelsior*, *Quercus robur*,
Acer platanoides, *Ulmus* spp. etc.

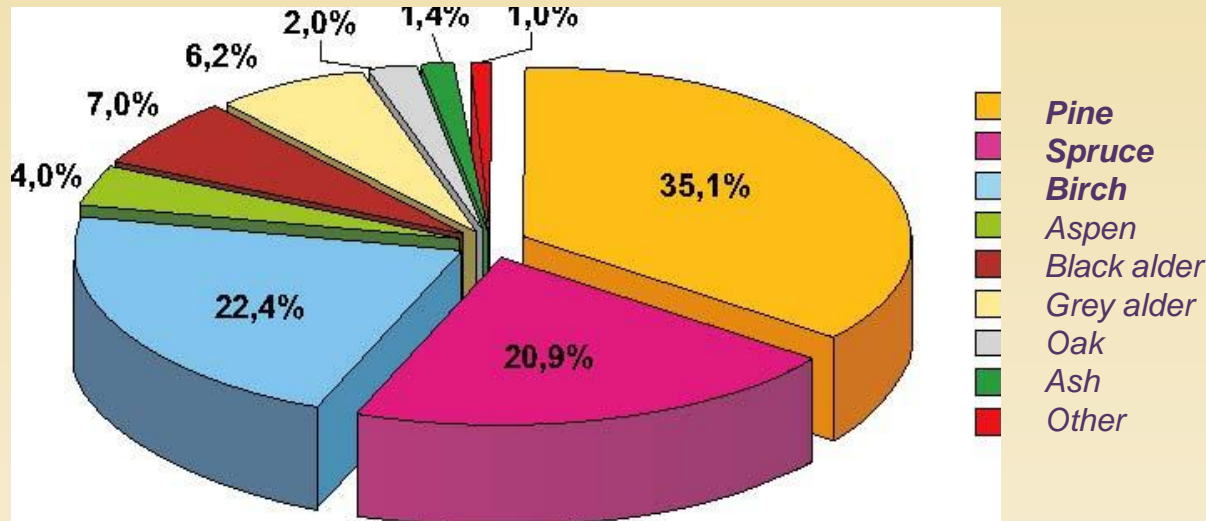


Lithuania: Forest Map

Coniferous stands prevail in Lithuania,
covering **56.1%** of the forest area.

Softwood deciduous forests = 40.3%

Hardwood deciduous forests = 3.7%



Forests by functional groups:

Strict nature reserves (group I) = 1.2%;

Ecosystem protection and recreational (group II)=12.2%;

Protective (group III) = 15.2%;

Commercial (group IV) = 71.3%.



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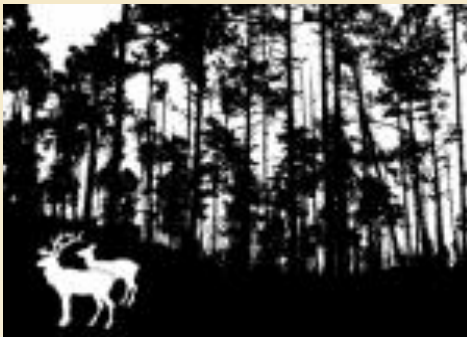
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FORESTS

are historically significant as **vital resources** of Lithuania's prosperity providing many **versatile and useful products**, as well as a **spiritual and welfare resource** for the indigenous people.

The initial notions of relation to forest formed mostly because of the influence of nature worship.

Through centuries, the ancient faith and awareness of the forest guard function had helped to protect forests.



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The considerable part of NWFPs are

game animals *ipso facto* attracting people.



A significant function emerges from NWFPs of animal origin is **recreational hunting** closely linked with recreation. Through centuries, **hunting** becomes a leisure more than a subsistence activity.



Value per hectare of marketed non-wood goods comprises **7.4 EUR/ha**

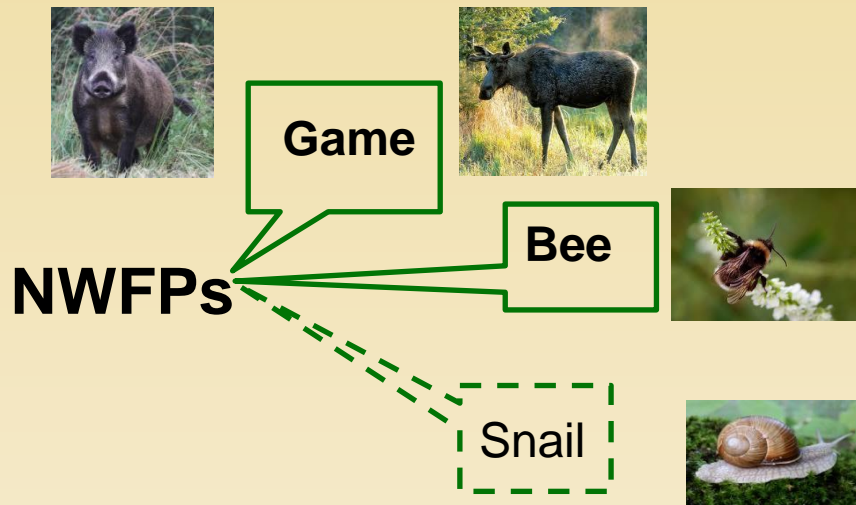


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CATEGORIES



Game = animals have been harvested previously

= are harvested recently = **34** species
(indicated in the Hunting Rules, 2000, 2011, 2014)

= will be harvested in future (*Hunting Law, 2002*)



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Tetrao urogalus L.



Tetrao tetrix L.



Bonasia bonasia L.

In Lithuania,

Game birds:

- a) grouse species (*capercaillie*, *black grouse*, *willow grouse*)
and most sandpipers are included into the **Red Data Book (RDB LT)** of Lithuania);
 - b) spring hunting is forbidden,
 - c) autumn hunting is less popular
- and
- = production is **homemade processed** (for personal use)
in rather low volume

Why? = as *the main game bird species migrate while small groups that stay for wintering are insufficient object of hunting*

An important reason of the less attention to this kind of game is that all previously available and popular spring hunting on waterfowl (mallard drake) and woodcock were forbidden according the valid legal acts (Bird Directive 79/409/EEC).

E.G.

Mallard: *widely distributed and most usual in Lithuania; partly synantropic as some part migrate while other is non-migrate and stay near cities permanently close to the ice-free waters;*



Mallard female



Mallard male

hunting season from 15th August to 15th December

IDENTIFICATION: Status = Collection method = Usage = Importance

For all game:

- = **valuable** by-products;
- = **recreational** & educational value;
- = **wildlife tourism**;
- = **taxidermy**;
- = predators' and hare fat, beaver castoreum in traditional & official **medicine, cosmetic industry**;
- = **necessity** of qualitative, quantitative and territorial regulation of populations ;

REASONS:

- = an **increase** in game populations/ overabundance /clumping distribution due to adaptation in anthropogenic landscape and environmental changes (e.g. climate change),
- = lack of natural predators;
- = overabundant or unregulated populations induce game-human conflicts, zoonotic diseases and is treated as natural disturbance



IDENTIFICATION: Status = Collection method = Usage = Importance

Species	Collection method	Product (use)	Notes
Moose	hunting allowed (licence)	antlers, venison, deerskin	
Red deer	hunting allowed (licence)	antlers, venison, deerskin	
Roe deer	hunting allowed (licence)	antlers, venison, deerskin	
Wild boar	hunting allowed*	tusks, skin, meat	*all year round due to ASF
Beaver	hunting allowed	fur, castoreum, meat	
Brown hare	hunting allowed (limited)	fur, meat, fat	
Fallow deer*	hunting allowed <i>introduced</i>	antlers, venison, breeding material	
Sika deer*	<i>raised in captivity; hunting limited (selective culling under licence) locally on the area of release from enclosures;</i>	antlers, venison, breeding material	
European Bison	<i>RDB LT 5(Rs) Category; hunting prohibition (except strongly limited selective hunting by game keepers, from 2015)</i>	breeding material; horns, meat, enclosures + free herd ~ 100 ind.	European bison has been recovered; the recent free herd increased up to 118 individuals; the risk of damage to landowners increases correspondingly; Decision-making authorities intend to solve this problem moving free groups in the different locations of national and regional parks
Mountain hare	<i>RDB LT, 3(R) Category</i>	is not used; protected	



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SYSTEM FROM WHICH RESOURCES ARE HARVESTED:

Moose (*Alces alces* L.) = mixed and coniferous forests, plantations with bogs;
seasonal migrations from summer to winter habitats
depending on food supply, 20-50 km;

Red deer (*Cervus elaphus* L.) = forests, forest plantations+ agroforestry, fenced
enclosures (captive breeding);

Roe deer (*Capreolus capreolus* L.) = forests, mixed forest edges; field (3
ecotypes depending on the forest cover);

Wild boar (*Sus scrofa* L.) = forests-agricultural lands (synanthropic, adaptable,
wide spatial distribution)

Eurasian Beaver (*Castor fiber* L.) = forests, agroforestry (water bodies)



Other species:

SYSTEM FROM WHICH RESOURCES ARE HARVESTED:

Fallow deer (*Cervus dama* L.) = introduced species; enclosures; deciduous and mixed forests with dense understory and a number of gaps; needs open lands;

Sika deer (*Cervus nipon* L.) = captive breeding; release is not allowed because it can threaten native species with local extinction due to inter-breeding and the production of hybrids

European bison (*Bison bonasus* L.) = Recovered (RDB, 5R); enclosures; scarce mixed forests with well-developed undergrowth; in the transformed landscape found easily available food (landowners' fields); prefer forest edges; points of supplementing feeding;

Brown hare (*Lepus europaeus* Pallas) = all forests, agroforestry three ecotypes depending on the forest cover of the certain territory; requirement for area mosaics;



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Other species:

SYSTEM FROM WHICH RESOURCES ARE HARVESTED:

Red fox (*Vulpes vulpes* L.) = natural habitat is dry, mixed landscape, with abundant "edge" of scrub and woodland; adaptable and opportunistic species; urban areas; appear to be closely associated with man, even thriving in intensive agricultural areas;

Eurasian badger (*Meles meles* L.) = deciduous woods with clearings, gaps; mixed and coniferous forests, scrub, suburban areas and urban parks

Raccoon dog (*Nyctereutes procyonoides* L. = alien species, natural intruder; deciduous & mixed forests (prefer young stands), forest edges, shores of water bodies covered by shrubs

Grey wolf (*Canis lupus* L.) = habitat generalist, most in forested & boggy habitats; habitat selection depends on the food supply & safety;



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USE CLASSIFICATION (by the hunting/wildlife legislation)

- All wildlife living in natural state are **public property**

a). Personal Collection and Use

= All harvested production is property of holders of the certain hunting ground unit

b) Small Scale Enterprises (if hunters apply for certain services)



USE OF GAME RESOURCES (2013/2014):

Name of annual output	Quantity
Moose	543
Red deer	2 467
Roe deer	16 763
Wild boar	50 172
Fallow deer	114
Beaver	21 749
Badger	8 150
Fox	10 084
Raccoon dog	4 828
Brown hare	3 859
American mink	281
Pine marten	1 130
Wolf	31
Muskrat	329
Mallard	12 725
Woodcock	787
Common pochard	102
Garganey	75
Bean goose	199

Government taxes for usage of game resources amounted to EUR 1.25 million in 2013.

Harvesting volume, %

Moose	4.98
Red deer	8.21
Roe deer	15.04
Wild boar	225*
Fallow deer	4.90
Beaver	48.97
Badger	3.79

* some *force majeure* situation:
by governmental orders, the hunting season was not closed due to the risk of **ASF**, and the hunting bag was increased almost 4 times, respectively

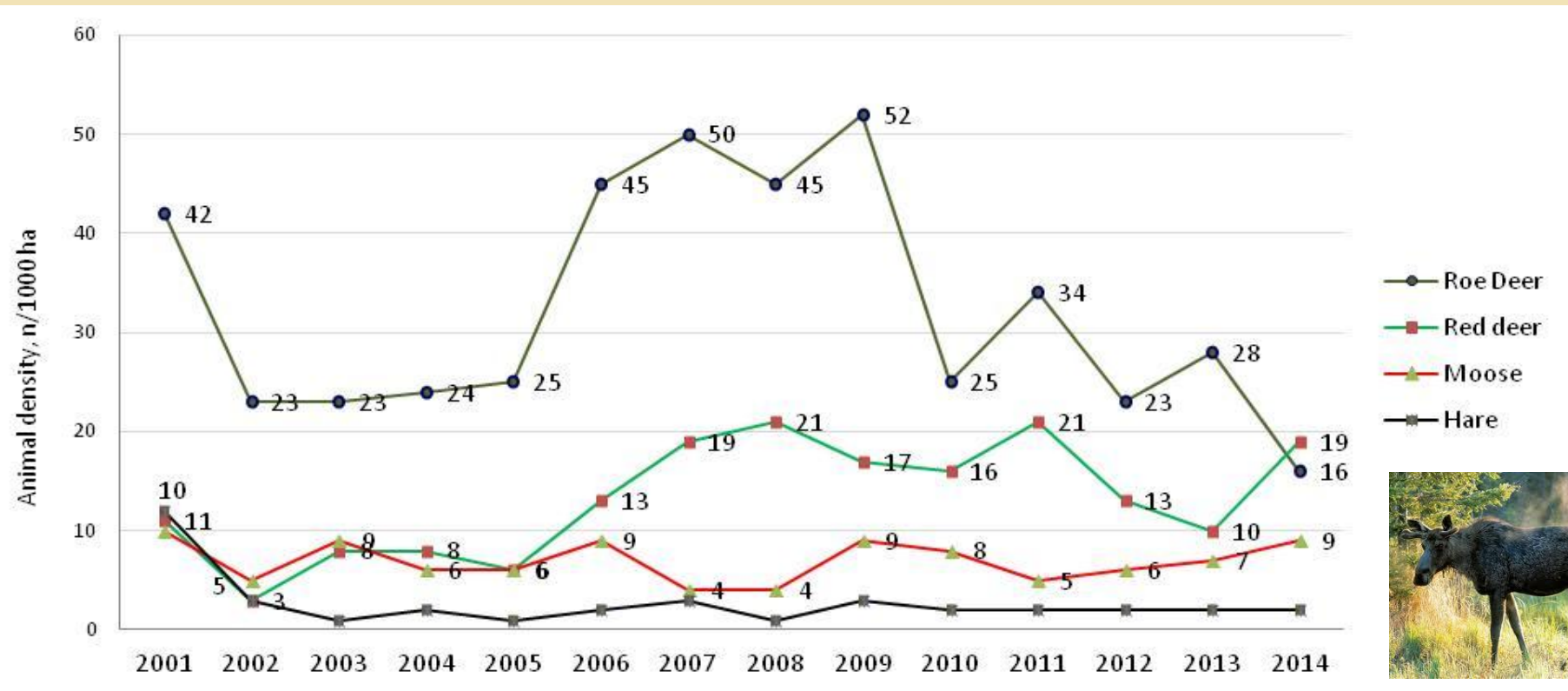


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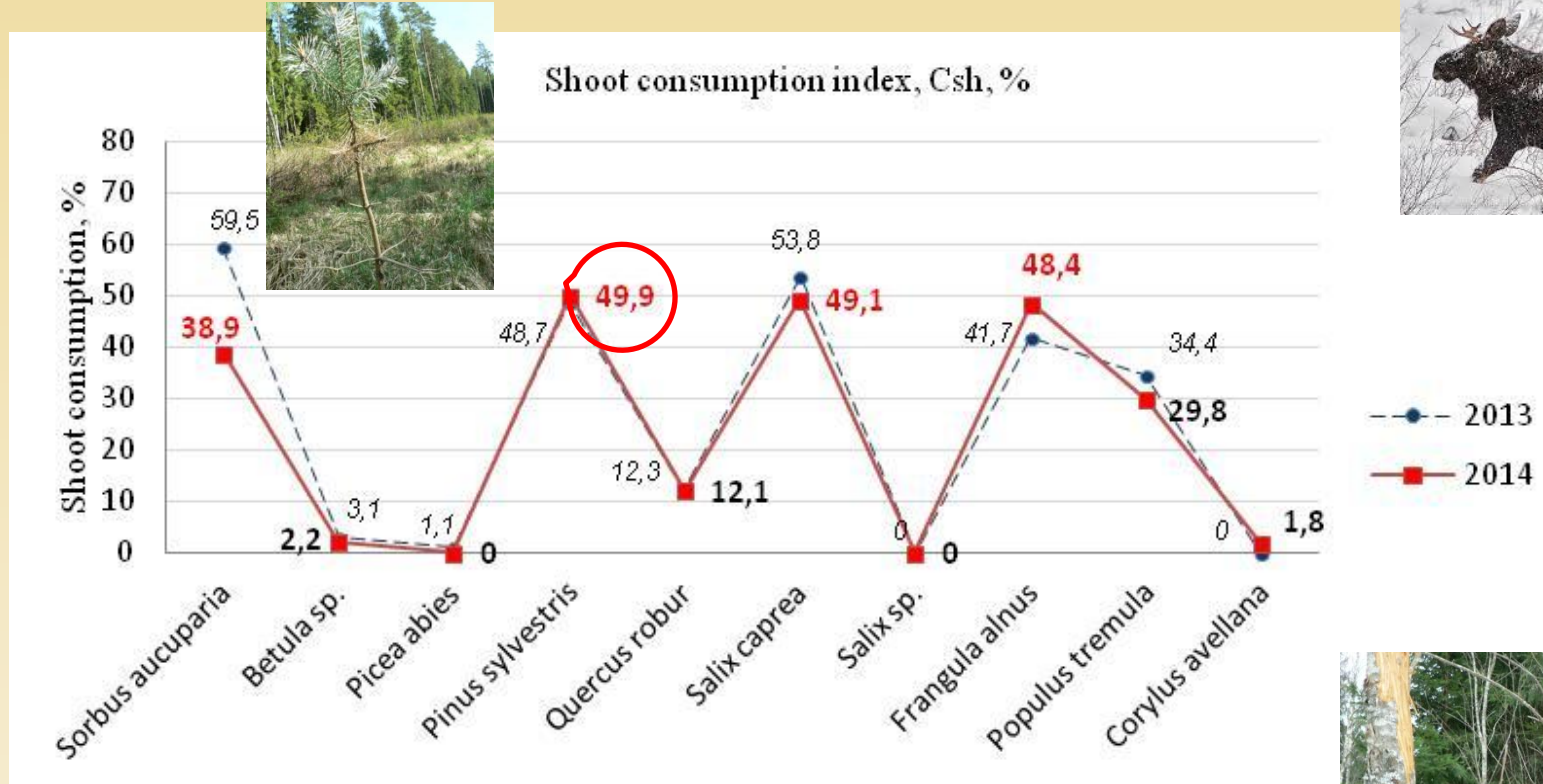
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Long-term changes in the main game density (n/1,000 ha) in the **model territory** for science and education of the Institute of Forestry LRCAF 56°3'15"N21°53'9"E



Outcomes of the overabundance of the main game species



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A photograph of a misty forest. In the foreground, there are several evergreen trees, including a prominent spruce on the left and a large, dense evergreen on the right. The ground is covered in grass and low-lying vegetation. In the background, a dense forest of tall evergreen trees is visible, shrouded in a thick mist or fog. The sky is a pale, hazy white. The overall atmosphere is serene and quiet.

Thank you so much for your attention

