SNOWBAL

Restoration, maintenance of diverse forest edges

Before restoration: identify important elements of the forest edge and unwanted trees and shrubs.

In all pictures especially valuable elements of the forest edge are marked green.
Unwanted trees and shrubs, that endanger important elements of the forest edge, are marked red.

1 Unwanted trees and shrubs that are not taller than those you want to protect.

These trees and shrubs can be divided into two subgroups. The First subgroup would include buckthorns, rowan trees etc, that do not spread significantly. These trees and shrubs shadow the trunks of old trees and the ground around it, thus worsen living conditions of species that require light. The second subgroup would consist of spruce trees, birch trees, aspen trees, rarely pine trees that have potential to grow taller and taller and overgrow the old trees of the forest edge. These trees shadow the trunks of old trees and endanger their vitality as they grow into their crowns, shading their lateral branches and sometimes even the tops of trees. Considering that one would need to clear these unwanted trees and shrubs around the old trees within the radius of tree crown of 5 m.

2 Unwanted trees and shrubs that are at the same height or taller than those you want to protect.

These trees overshadow the trunks of old trees and the ground around them, in contrast to the trees described in the 1st column, these threaten the vitality of old trees already now, since they shadow their crown already. Therefore you would need to cut these threes down within the radius of 5 m around the crown projection. If in the following years the lateral branches do not grow denser foliage than before, you need to cut a wider zone. While cutting please make sure you cut obviously younger trees. Old trees can be distinguished from new ones by rougher branching and a rounded top of the tree.

Pine tree
Spacious crown and long, thick branches indicate that the tree used to grow in a more open space then it is now.

Spruce tree
Branches are wide and almost reach the ground, the lower branches are partly withered due to lack of light. It indicates that living conditions used to be different – more open and lighter conditions.

Cluster of hazel trees
Many trunks in a large cluster, some of the trunks are thicker than an arm of a human being. It indicates that this tree used to grow next to a spruce, pine or oak tree without being damaged. Hazels are low thus they don't grow in crowns of other trees, and clusters of hazels will create relatively less shadow than many, scattered growing shrubs all together.

Old oak tree (also linden tree, elm, maple, ash tree etc)
If the crown is much wider than crowns of other forest trees it indicates that a particular tree used to grow in a more open space than now. Often only the upper part of the crown will be green; the lateral branches are dry and overgrown with younger trees. The old tree sometimes is even shorter than those surrounding it.

Hawthorn (rowan tree, buckthorn, viburnum, juniper)
A tree or shrub with dense foliage, sometimes with many trunks. Usually it has grown in an open space. The same species grow also in the forest as underwood, then they have very thin foliage and branching, there are many of them but all of them wither.

Old birch tree
The birch trees that used to grow on the field edges have coarser, often curved trunks, larger branches and all in all they have more foliage, their branches pointing toward open space.

Stone pile
Stone piles usually indicates the former edges of the fields. Nowadays edges of the fields are straightened and stone piles are covered by the forest.

Apple tree (also rowan tree, buckthorn, pear tree, goat willow, bird cherry)
In the wilderness you can come across apple trees mostly in forest edges. Also the other trees mentioned above are witnesses of former, sunny forest edges. You can tell that by looking at their crowns – nowadays overgrown by other trees only the upper part of the crowns is green.

Wild roses
It is hard to notice them since plants are oppressed by trees.

Young oak with dense foliage (also linden tree, elm, maple, ash tree etc)
The first part of their lives these trees have spent in the forest edge before it overgrew with bushes. If they are provided with better living conditions they will assure the succession of the old trees.

This publication, which is produced within the framework of the EU project Snowbal (Saving the Sea from Nutrient Overload by managing Wetlands/grasslands BaLtically), refects the author´s views. The Managing Authority can not be held liable for the information published.

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After restoration: forest edge and its role in nature diversity

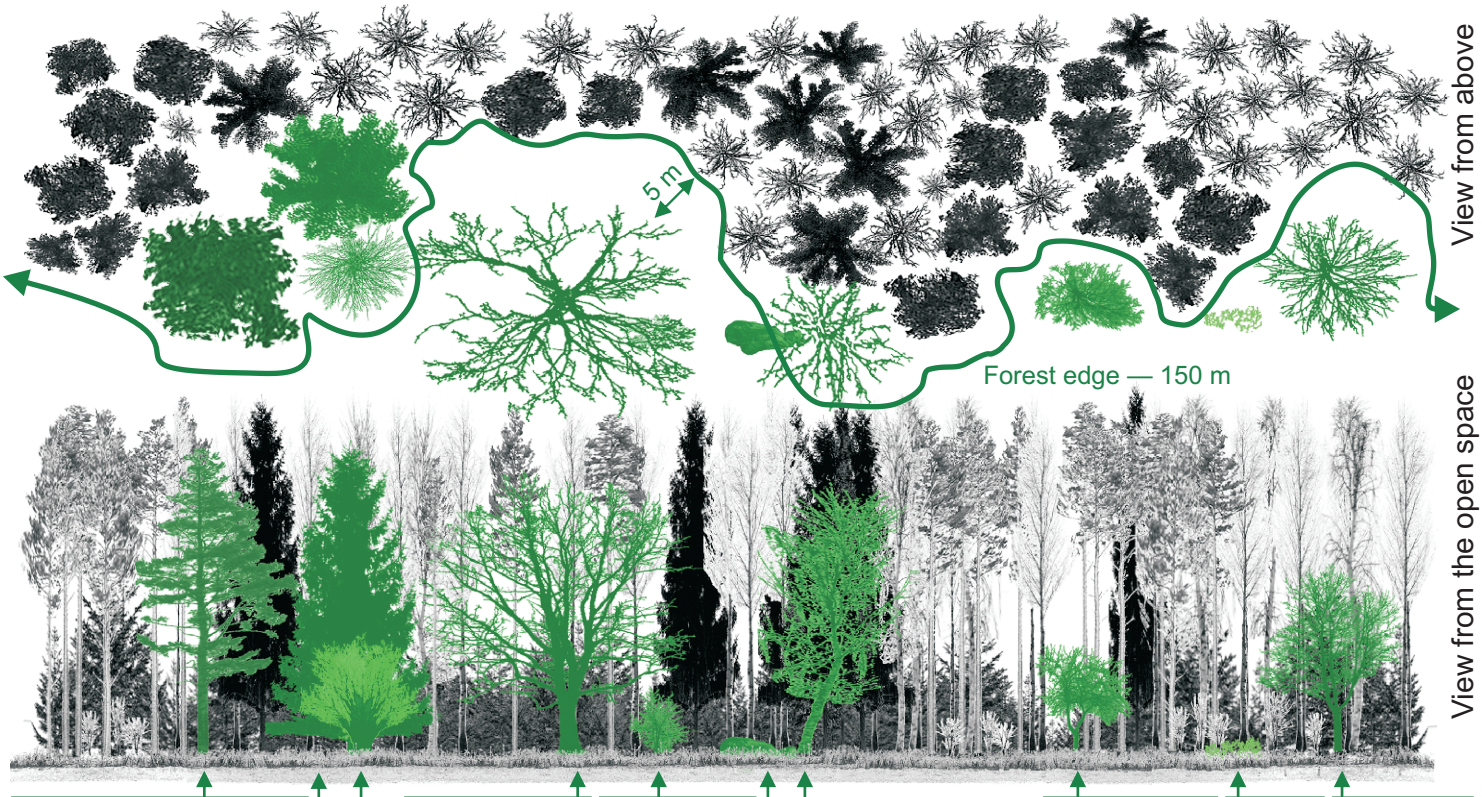
In all pictures especially valuable elements of the forest edge are marked green.
Unwanted trees and shrubs, that endanger important elements of the forest edge, are marked red.

!!! The role of the forest edge in maintaining biodiversity.

The forest edge is a transition zone between forest and open area. In this habitat you can find species typical for forest, open areas and also species that can be found only in forest edges. Therefore it is a habitat with a greater number of species. This is true only if the belt of forest edge is wide enough and tall forest trees gradually are taken away, leave shorter, more spread out ones with denser foliage. This belt is meandering, sometimes forest enters the fields and vice versa, the line of the forest edge is curved and long. In the provided sketch we can see, that the length of the overgrown forest edge is around 100m, after restoration the length would increase by 1/3 and reach 150 m.

? What to do if you don't have elements of old forest edges present?

In such a case you can choose trees and shrubs in the forest edge that would eventually become important elements of the forest edge. While managing the existing edge you will provide these trees with more favourable conditions that would foster their growth. Further you can find a short description of some of the trees' species – what conditions are necessary in order to be an important element. You can also graze the forest edge; it will also give an input in restoring/creating a valuable forest edge yet it will take longer since animals can't handle larger trees and shrubs. Cutting down these trees would accelerate this process.



Pine tree
Trunks exposed to the sunlight inhabit beetles that depend on light and warmth. Birds of prey will use the long branches stretching over the fields as an observation platform.

Spruce tree
Dense foliage all over the tree is appreciated by birds, who build there nests.

Cluster of hazel trees
The denser the foliage the more nuts it can produce, and more animals can be provided with forage. The trunks of old hazel trees are also habitats for wood fungus which grow only in hazels.

Old oak tree (also linden tree, elm, maple, ash tree etc)
The old broad-leaved trees can contain large amounts of species – on one trunk you can find more than ten lichen species, branches are homes for more than one hundred species of beetles. The oak tree provided with excellent growing conditions can produce more than 200 kg of acorns annually and therefore provide livestock and wild animals with forage.

Hawthorn (rowan tree, buckthorn, viburnum, juniper)
Branchy shrubs with dense foliage are great places for birds to build nests. When shrubs are blossoming they attract insects, provide nectar, in the autumn they are a feeding place for all kinds of animals.

Old birch tree
Sloping trunks are a habitat for several moss species. Birds of prey will use the long branches stretching over the fields as an observation platform.

Stone pile
Sunny stone piles are important habitats for lizards, which are cold-blooded animals and need a place to get warm. The pile will be a great place for small mammals and bumble bees to build a nest. The stones will be a great habitat also for different lichen species.

Apple tree (also rowan tree, buckthorn, pear tree, goat willow, bird cherry)
While blossoming these trees increase resources of nectar, and therefore increases the diversity of insects. At the end of the summer, early autumn, the fruits of these trees will attract different birds and also mammals.

Wild roses
The blossoms of the roses promote a diversity of insects; the fruits are an important feeding source for birds and small animals.

Young oak with dense foliage (also linden tree, elm, maple, ash tree etc)
These young trees will assure the succession to all benefits, one can get from old trees representing the same species.

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