

# Proposed guidelines on forest genetic conservation for integration in forest management plans in Slovenia

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## INTRODUCTION

In terms of forest management planning, Slovenia is divided to 14 regional units, 69 local units and further to several forest districts. The main tool for forest management are forest management plans prepared by Slovenia Forest Service. They are elaborated for a period of ten years and include;

- regional forest management plans,
- plans of forest management units,
- silvicultural plans and
- regional hunting management plans.

They describe the state of forests and their development trends and set the goals of management in the future, together with guidelines and measures for the rational implementation of these goals. In the past, the principal objective of forest management was timber production. Nowadays this objective is still significant, but new ones are steadily but surely assuming importance. They are related to important forest functions such as; biotopic, protective, recreational, water protection, etc. Conservation of forest and biodiversity conservation function (biotic and genetic) are particularly important today in times of climate change.

In order to transfer the Lifegenmon project results into practice, two proposed guidelines were prepared: Guidelines for providing forest reproductive material and Guidelines for monitoring and conservation of genetic diversity. Their purpose is the implementation of their content into forest management plans in Slovenia, since the conservation of forest genetic monitoring is of great importance for future forests.

## GUIDELINES FOR MONITORING AND CONSERVATION OF GENETIC DIVERSITY

Forest genetic diversity helps to maintain the adaptive potential of forests to future environmental conditions. Therefore, measures for forest genetic conservation are all aimed at preserving and increasing the genetic diversity of the future forest. In the Guidelines for monitoring and conservation of genetic diversity measures, that help protect genetic diversity, are described.

Some of the measures that contribute to the conservation of genetic diversity:

- In forest management, each measure is considered in terms of how it will affect the genetic diversity of the stand or population, species or group of species targeted for conservation.
- Retention of a sufficiently large number of reproductive populations (with a healthy reproductive part of the canopy).
- Maintenance of corridors between forest stands that allow gene migration (pollen and seeds).
- Adaptive forest management.
- Natural regeneration is a priority. When planting it is necessary to use seeds and seedlings of appropriate provenance, which can increase the genetic diversity of forest tree populations.
- Establishment of seed orchards to increase the genetic diversity of some minority tree species.
- Regular monitoring of genetic diversity (in accordance with the Lifegenmon Forest Genetic Monitoring Manual).

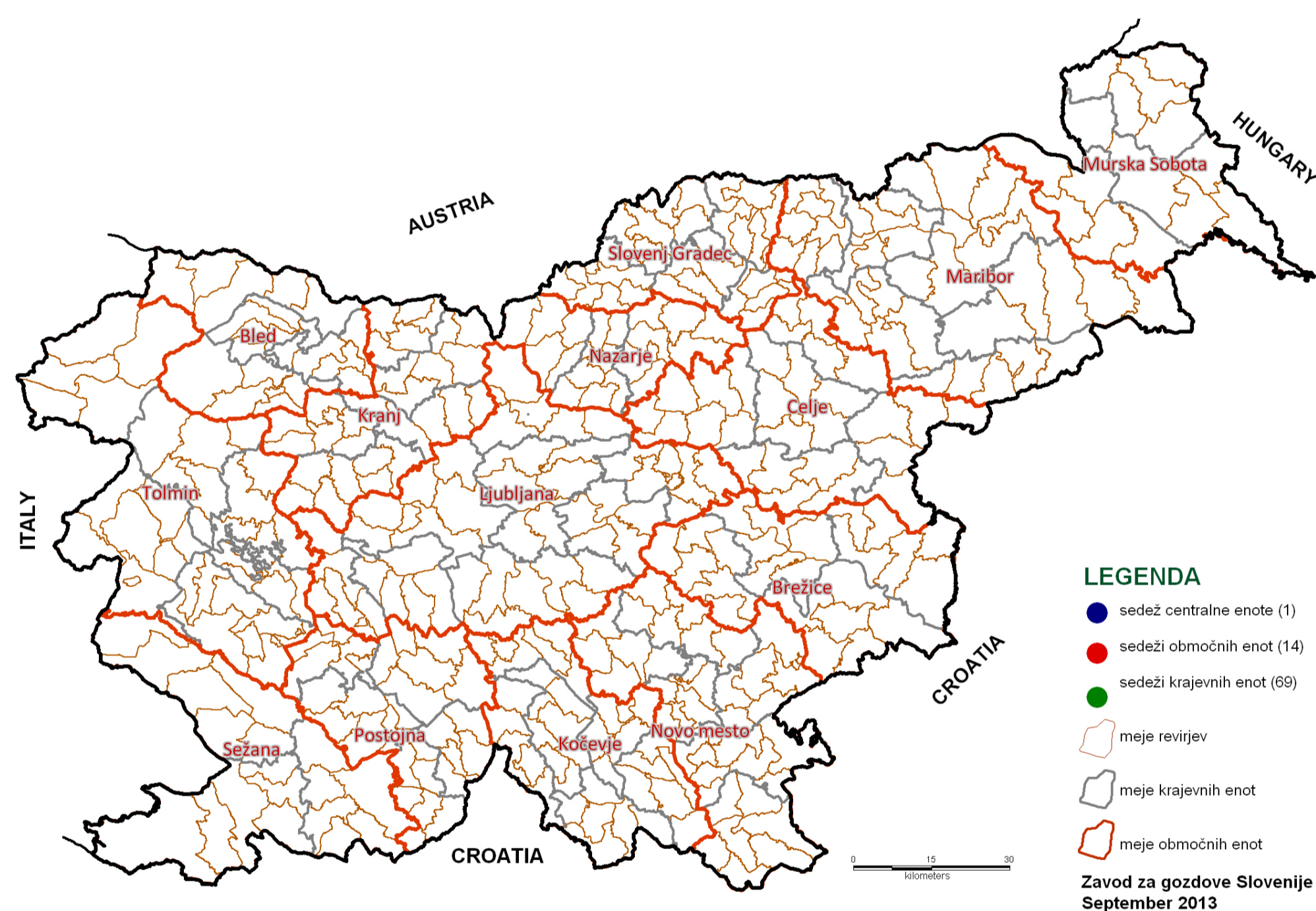


FIGURE 1: The map of Slovenia Forest Service organisation - forest management regional units, local units and forest districts.



FIGURE 2: Collecting data on the state and development of forests for Forest management plans.

## GUIDELINES FOR PROVIDING FOREST REPRODUCTIVE MATERIAL

The guidelines give some general information on forest reproductive material and further describe guidelines for forest tending and maintenance of seed stands, production and use of forest reproductive material, tending of forest genetic reserves and give guidelines for main tree species (*Fagus sylvatica*, *Abies alba*, *Picea abies*, *Quercus* sp., *Prunus avium*, *Fraxinus* sp., *Acer* sp. and *Larix decidua*) and tree species that are potentially suitable to grow in our environment (*Pseudotsuga menziesii*, *Juglans nigra* and *Robinia pseudoacacia*).

### *Fraxinus excelsior*- Common ash Guidelines:

- Retention and promotion of trees showing signs of resistance to the fungus *Hymenoscyphus fraxineus*.
- Creating a register of resistant trees.
- Establishment of a clonal plantation of trees showing signs of resistance to the *Hymenoscyphus fraxineus*.
- The use of seed from stands where *F. excelsior* and *F. angustifolia* grow together be only local due to hybridization between species.



## CONCLUSIONS

Forest management plans in Slovenia are elaborated for a period of ten years. The past ten-year period (2011-2020) is just coming to an end. The phase of proposals and adoption of new plans for the period 2021-2030 follows. The content of both proposed guidelines, presented in this poster will be included in the guidelines for the preparation of new forest management plans (2021 – 2030). The new plans will include detailed content and recommendations on monitoring and conservation of genetic diversity and on the provision of forest reproductive material. This will also emphasize and highlight the importance of genetic diversity for forests in the forestry profession.

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## Acknowledgments

The work was carried out within the LIFEGENMON project.