

Techniques of collecting genetic material

We collect seeds from the best Polish trees with the use of a technique of standing trees collection.

In order to maintain the continuity of collection of the most valuable forest resources, pickers climb standing trees up to the crown and collect cones, fruits or scions, without affecting the crown.



Who can be a picker?

Each man of at least 18 who:

- has been examined by a doctor and allowed to work at heights,
- is fit enough,
- has completed an appropriate course and passed the final exam.

To work as a picker, one needs to be fit and able to climb, but also to have basic knowledge of forest seed production. It is not enough to climb up to the tree top, as one also needs to know which individual of which part of the crown to pick.

Such knowledge and skills can be acquired during training courses organized by the Forest Gene Bank in Kostrzyca.

In order to collect and store seed material from all over Poland, the Forest Gene Bank in Kostrzyca cooperates with well-trained people who are reliable and conscientious.

All our actions are aimed at our common treasure, that is the
Polish Forests



Forest Gene Bank Kostrzyca



Protection and Storage of Forest Gene Reserves

FOREST GENE BANK IN KOSTRZYCA

The purpose of the Forest Gene Bank

The environmental disaster which had such a huge impact on the forests of the Karkonosze Mountains, Izerskie Mountains and eastern Sudeten Mountains in the 1980s, sparked off an idea to create an institution which would mainly deal with protection of endangered ecosystems in Poland. In 1992 the General Board of the State Forests in cooperation with the Dendrology Institute of the Polish Science Academy in Kórnik set forth the guidelines.

A group of experts and a World Bank representative accepted the technical assumptions. The Forest Gene Bank was opened on 13 December 1995.



The groundbreaking plaque which was built in by General Director of the State Forests at that time, Janusz Dawidziuk, reads:

'(...) in order to save the Polish endangered ecosystems for the future generations, Polish foresters have decided to build the Forest Gene Bank which would provide technical conditions for active protection of biodiversity. That would include long-term storage of genes of the most valuable trees, shrubs and plants of the forest bed. The genes will be returned to their natural habitat when negative external conditions recede and the endangered species can grow naturally, both entire populations and individuals, the most precious representatives of the Polish forests.'

The Forest Gene Bank in Kostrzyca is therefore material evidence of *The Biodiversity Convention* issued by the Polish Parliament.

The significance of biodiversity:

- it is the basis for adaptation processes and for increasing chances of survival,
- it decides about continuity of economically indispensable features,
- it is the basis for selection aimed at improving chosen features.

Methods of protecting gene reserves

Active forms of protection of gene reserves can be divided into two groups:

1. *in situ*
 - selection of excluded seed forest stands,
 - initiation of natural forest renewal,
 - establishment of derivative cultivations,
 - selection of crop trees,
2. *ex situ*
 - establishment of derivative cultivations,
 - establishment of seed plantations,
 - establishment of a clone collection,
 - proliferation,
 - **long-term storage of seeds, plant fragments and pollen in a gene bank.**

The objective of the *in situ* protection, i.e. in the natural or original place, is maintaining the entire genetic diversity of local and indigenous populations with respect to their high level of adaptation to the local environment.

The *ex situ* protection, i.e. outside the natural or original place, includes populations and ecotypes which due to various factors (mainly due to industrial immissions) need relocation outside their natural habitat.

Objectives of the Forest Gene Bank:

- **to store, as long as it is advisable, representative samples of valuable excluded seed forest stands and crop trees found in Poland,**
- **to catalogue forest ecosystems and plant stands in the Sudeten Mountains,**
- **to promote environment protection and education,**
- **to preserve and reconstitute endangered populations, especially those from the western Sudeten Mountains.**

Protected objects

Protection encompasses the most valuable resources of our forests, both individual plants and entire populations. In case of individual plants, we collect genetic material from crop trees, monumental trees and others which have specific and unique individual features.

Population protection covers excluded seed forest stands, forest stands within the 'Sudeten Gene Bank,' farm seed forest stands, precious forest stands within national parks and reserves.