

## DESCRIPTION FOR THE GENERAL PUBLIC

Black poplar (*Populus nigra* L.) is a characteristic and very important species for river valley ecosystems, which in past was widely distributed in Europe. Currently, as a result of many ages of human disturbance along lowland river valleys, it is rare and threatened in Europe, and declining in Poland. There are two major causes of the continuous decrease in population size of this species. The first cause is linked with the regulation of river beds and restriction of the flood plains, and thus the partial destruction of the sites for natural regeneration and spread of this species or their use for farming or forest management. The second cause results from the establishment of plantations of poplar hybrids in river valleys in the 1950s to 1970s. The introduced hybrids may cross with native black poplar trees. Thus it is highly probable that some of the young individuals are spontaneous hybrids, very difficult to distinguish on the basis of phenotypic traits from the genetically pure individuals of black poplar. Hence it is necessary to assess the existent genetic resources of this threatened species to develop effective conservation and restitution programmes.

So far no information has been available on the level of genetic variability of black poplar in Poland, including the frequency of pure black poplar and its hybrids. The project is primarily aimed to analyse the genetic variation of many black poplar populations along the Oder valley with the use of DNA markers. The applied DNA markers will allow us to characterize the gene pool of this species, both within and between populations, to visualize gene flow, and to assess the intensity of hybridization, which negatively affects the conservation of genetic resources of black poplar. The project also involves attempts to propagate vegetatively the most valuable individuals and to add them to the existent clone archive of this species in the Kórnik Arboretum. The material from the clone archive will be accessible to other research centres interested in recovery of this species and renaturalization of rivers and their valleys in Poland. The material can be also extremely valuable because of the continued breeding and selection of black poplar in worldwide.