The Greater Sudbury region in Northern Ontario is known as one of Canada's most ecologically disturbed regions because of the effects of heavy metal pollution. The main objectives of the present study were to assess the effects of soil liming of sites contaminated with metals on species richness and abundance, forest health in general, and to determine the level of genetic variability in white birch populations from Northern Ontario. Shannon-Wiener diversity index and tree species richness values were higher in populations from limed and control sites compared to the unlimed areas.