## Abstract

Extraction of mineral resources causes landscape degradation and the aim of reclamation efforts is to restore ecosystems. Our research was carried out on spoil heaps after brown coal mining near Sokolov (Czech Republic). We compared twenty years old spontaneously developed sites and reclaimed sites afforested by alders *Alnus glutinosa* and *A. incana*. Biomass and nutrient budget were evaluated for herbs and woody plants, separately for species *Salix caprea*, *Populus tremula* and *Alnus glutionosa*. Alder showed significantly higher concentrations of nitrogen and carbon compared to other tree species. The total amount of biomass, carbon and nitrogen was higher on reclaimed sites whereas phosphorus was more represented on spontaneously developed sites. Most of nitrogen was accumulated in the below-ground tree biomass and the largest amount of phosphorus was in the above-ground tree biomass. Woody plants of non-reclaimed sites produced more litter whilst litter of alder stands showed a higher concentration of nitrogen. Higher values of biomass, carbon and nitrogen of reclaimed sites were probably achieved through alder ability to fix atmospheric nitrogen.