

Herbivory is one of the most important relations between plants and animals. The herbivores affect plant populations not only by grazing, but also by trampling and disturbing the vegetation. Herbivores have also great potential to affect the population dynamics of particular plant species. The aim of this thesis is to evaluate the effect of herbivores on plant population dynamics and to interpret it in relation to biological control of invasive plants.

When evaluating the effect of herbivores, it is necessary to keep in mind the fact that herbivores don't affect only plants but also each other through direct as well as indirect competition. The use of different herbivore species to suppress the invasive plants may not necessarily be effective. The range of the effect of herbivores on plant population dynamics depends also on the environmental conditions. Habitats with infrequent disturbances and high competition levels among plants increase the effect of biological control, because high competition facilitates competitive exclusion of the target plant species.

Different life-histories of plants play are also important in terms of biological control mainly the life-span and the endurance of the seed bank affect the results. Monocarpic species with short-lived seed bank can be relatively easily reduced by consumption of seeds or florets. On the other hand, perennial polycarpic species need to be reduced by affecting the established individuals. In such plant species, the biological control by below-ground herbivores seems to be relatively more effective. Possible explanations of the success of this herbivore functional group are the long-term activity of belowground insect larvae and the increased vulnerability of plants to pathogens because of damaged root epidermis.