Alien impact 2. Patterns of impact of highly invasive plant species (HIPS) on native vegetation in Belgium

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It is often suggested that diverse communities are less likely to be invaded, but both negative and positive relationships, between native flora richness and invasion, have been reported. Invaders may induce differential impacts on various native species, resulting in fundamental changes in community structure. Within the framework of the ALIEN IMPACT project we investigated the patterns of impact of seven highly invasive species (four terrestrial and three aquatic species) on native plant species richness, structure and composition in Belgium, with a particular focus on sites of high biological value. Our results showed similar patterns of impact following invasion, both for terrestrial and aquatic communities. The four terrestrial target species tended to invade diverse habitats or vegetation communities. Disturbances appeared to be the main cause of invaders establishment. The reduction in native plant richness/diversity was a common pattern to invasion. However, the magnitude of impacts were species specific. No endangered species or species of concern was found to be directly impacted by invasion. The three aquatic target species could invade ponds with a broad range of nutrient levels. Invaded ponds, regardless of the alien species, supported a lower native plant richness/diversity compared to adjacent non-invaded ponds. Submerged vegetation is the most threatened by the invasion because alien species tend to occupy a large amount of space. Indirect consequences on whole communities should be further studied and taken into account in order to produce an integrated ranking of HIPS impacts.