Title: Management of invasive plant species in the valley of the Ślepiotka river in Katowice : [poster]

Author: Małgorzata Frelich, Małgorzata Gancarek, Agata Lewandowska, Katarzyna Bzdęga, Barbara Tokarska-Guzik

Management of invasive plant species in the valley of the Ślepiotka river in Katowice

Małgorzata Frelich, Małgorzata Gancarek, Agata Lewandowska, Katarzyna Bzdęga & Barbara Tokarska-Guzik

Department of Plant Systematics, Faculty of Biology and Environmental Protection, University of Silesia, Jagiellońska 28, 40-032 Katowice, Poland, e-mail: malgosia88@poczta.fm, malgosia.sajan@gmail.com, pawliczek.agata@gmail.com, katarzyna.bzdega@us.edu.pl, barbara.tokarska-guzik@us.edu.pl

Invasive alien plants, besides river regulations, are one of the main reasons for transforming the riparian flora and vegetation. In many cases, the replacement of native species caused by alien plants may result not only in ecological losses but also economic ones. The group of invasive plants spreading along rivers in Poland include, among others: *Acer negundo* (Box-elder maple), *Echinocystis lobata* (Wild cucumber), two species from the genus *Impatiens*: *I. glandulifera* (Himalayan balsam) and *I. parviflora* (Small balsam), *Padus serotina* (Black cherry), *Reynoutria japonica* (Japanese knotweed) and *Solidago gigantea* (Giant goldenrod). Currently, in many countries, actions are undertaken which are dedicated to restoration of river valleys and halting the spread of invasive plant species. The project Revitalisation of Urban River Spaces (REURIS), implemented in 2009-2012 in the Ślepiotka river valley in Katowice, can be an example of such activity. Within the framework of the project, eradication of several alien plant species occurring in this area was conducted.

The main objectives of this study included: (*i*) assessment of the effects of invasive plant eradication within the REURIS project and assessment of the treatments continued by Katowice Urban Greenery and students of the Faculty of Biology and Environmental Protection of the University of Silesia, (*ii*) development of general guidelines for the control of invasive *Impatiens parviflora.*

The outcome of control methods used during the REURIS project was permanent reduction of the size of the populations of: *Impatiens glandulifera*, *I. parviflora*, *Padus serotina*, *Reynoutria japonica* and *Solidago canadensis*. Currently, upon completion of the REURIS project, elimination of the invasive plant species is continued and supervised by Katowice Urban Greenery, according to the guidelines drawn up as part of the project. Additionally, in these actions, staff and students from the Faculty of Biology and Environmental Protection of the University of Silesia take part, who participate in the manual elimination of two species: *Impatiens parviflora* and *Reynoutria japonica*.

The treatments applied during the project led, in the end, to the reduction in growth and vigour of *Reynoutria japonica* shoots and decline in the pool of *Impatiens parviflora* diasporas in the soil seed bank. On the other hand, majority of current attempts to control invasive species contributed exclusively to reducing the size of their populations. The choice of the appropriate method of elimination should be adapted to the biology and ecology of the species and the type of habitat. Therefore, it is recommended that treatments related to control of analysed species should be conducted systematically over several growing seasons until the complete elimination of *Impatiens parviflora* diasporas from the soil seed bank and rhizomes of *Reynoutria japonica*. The results made it possible to elaborate general guidelines for dealing with invasive plant species.