European approach to plant conservation in Siberia (IPA system of Kemerovo region)

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The European Important Plant Areas (IPA) approach was implemented for the first time in Russia in the Kemerovo region (South-West Siberia). This region is one of the world-important centers of biodiversity (according to the World Wildlife Fund, WWF) and at the same time is the most industrial region in Siberia with some serious ecological problems. It is critically important to conserve the unique regional natural ecosystems and to maintain a suitable environment for human beings.

This project was initiated by the IUCN (International Union for the Conservation of Nature) and was implemented through the alliance of two botanical gardens (Novosibirsk and Kemerovo) together with a few ecological NGOs. Financially the project was supported by the IUCN, the Russian Foundation for Basic Research and by local resources.

Firstly, we modified slightly the European IPA criteria according to the Russian natural and political conditions. For example we checked carefully species lists of Bern Convention Appendix I and EU Habitat Directive Annexes IIb and IVb to exclude plant species which are quite common in West Siberia (such as *Moehringia lateriflora* (L.) Fenzl, *Pulsatilla patens* (L.) Mill., *Saxifraga hirculis* L. etc.). Also we extended the European habitat classification to include new Siberian habitats (mountain larch forests and other).

Secondly, based on the modified criteria we determined 21 IPAs in such a way as to create a representative network for all regional botanical districts plus few unique botanical entities. Resulting system of IPAs covered all mountain belts from forest-steppe up to alpine vegetation and all biomes on plains from open steppe to dense coniferous forest.

Thirdly, a critical review of the regional Red Data list was made in order to identify endangered species which should be additionally conserved *ex situ* in botanical gardens. These species usually have natural habitats which are too small or are under extraordinary anthropogenic pressure to be well-conserved in the wild.

Finally we created a regional strategy for plant conservation which was validated by the local government [1].

To date we cultivate successfully a few regional endemics in the collections of the Central Siberian Botanical Garden (Novosibirsk) and in the Kusbass Botanical Garden (Kemerovo). Among them there are strict endemics like *Dracocephalum krylovii*

Lipsky and *Tilia sibirica* Fisch. ex Bayer but also more widespread species like *Erythronium sibiricum* (Fisch. & C. A. Mey.) Kryl. and *Fornicium carthamoides* (Willd.) R. Kam. Some of them (especially ephemeroids) could be recommended as ornamental plants suitable for city parks and gardens. In addition to conservation purposes, the usage of ephemeroids allows to create flower carpets in big cities during early spring just after snow melting – the most critical time for the other groups of ornamental plants in Siberia. Methods and new criteria have been published in a special monograph [2] and we have printed a brochure with an illustrative description of all the regional IPA's [3]. In addition, a large protected area was officially created based on the results of this project in order to protect a single mountain ridge with a high diversity of plant species and plant communities.
To summarize our experience, we conclude that IPA approach in Siberian conditions is a new quite effective way of plant species protection *in situ* as well as *ex situ*.

References

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