

Summary

Wetland plants share several common characters, such as clonality, wind pollination and self-compatibility that facilitate hybridization, especially in complexes of closely related taxa. In this thesis, a *Sparganium erectum* complex of four subspecies and 14 species of the genus *Bolboschoenus* were investigated to detect hybridization and verify the origins of putative hybrids.

The first part of the thesis is dedicated to an introduction to hybridization, a process of great evolutionary impact, and its several general consequences, which are broadly discussed with numerous examples. In addition, an introduction to the studied taxa is provided as well as the main results of three papers that are presented and discussed herein.

The second part of the thesis consists of three papers on hybridization within the *Sparganium erectum* aggregate (Paper I) and in the genus *Bolboschoenus* (Paper II, central European species; Paper III all 14 species worldwide). AFLP molecular marker analysis, sequencing of nuclear and chloroplast DNA, and genome size and morphometric analyses were applied to elucidate the genetic relationships among taxa and to confirm the suitability of morphometric characters for taxa and hybrid delimitation.

The results clearly present the differentiation of individual taxa and their stable hybrids with intermediate morphology and intermediate genetic information. These hybrids were proven to inhabit divergent and/or disturbed habitats, unlike their parents. Moreover, several recent hybrids were detected; this finding indicates ongoing introgression, which might be adaptive in at least one recent hybrid.

In addition, the convergent morphology of *Bolboschoenus* species among continents appears to be the result of the migration or long-distance dispersal of already-differentiated morphotypes to North America and Australia. True convergence may only be observed in the independent hybrid origin of *B. novae-angliae* from North America, whereas Asian and Australian hybrids might have polytopic origins.

To conclude, in this thesis, the hybrid origins of several putative homoploid hybrid taxa with intermediate characters were confirmed, and younger hybrids indicating recent hybridization were detected.