

## **Mosaic cycles of ecosystems and population strategies of terrestrial orchids**

**Ekaterina ZHELEZNAIA**

Peoples' Friendship University, State Biological Museum, Russia  
**zheleznaya@yandex.ru**

Sustainable biodiversity may be achieved only by permanent natural disturbances in an ecosystem. Many species of orchids are among protected plants and need constant protection from serious human impact on natural processes. However having a stress-tolerant and ruderal population strategy, orchids are dependent on biogenic and anthropogenic factors that violate dense tree and shrub canopy as well as closed ground vegetation. Manifesting a stress-tolerant strategy, they inhabit swamps, fens and floodplains, avoiding the competition with other herbs. They are renewed by seeds on disturbed by wild boar diggings, windthrow gaps, and scree. Showing features of ruderal strategy, orchid populations expand and increase in density following surface fires. Orchids are pioneering species of abandoned quarries, dried reclamation canals, clearings, roadsides, and talus. Higher population density numbers are found in the early stages of succession. Orchids may exist for a long periods of time in low numbers, in low level of vitality and even move into a state of secondary dormancy under unfavorable conditions during the next stages of succession. The species having narrow ecological tolerance ranges may disappear during the overgrowing of meadows in the absence of grazing ungulates and haymaking. Special management practices are required in nature reserves by imitating natural processes to establish the forest and meadow mosaic patterns.