

## SUMMARY

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There are more and more highways and roads in the world. They mean an important intervention to the landscape and road surrounding ecosystems. Road environment is very specific, formed by different abiotic factors, high diaspores supply and by typical management (mowing, application of roadsalt, etc.). Natural species diversity is changed by massive use of winter de-icing agents along highways. The sensitive species are disappearing and salt tolerant species survive.

In Europe, the biggest attention is paid to the species *Puccinellia distans*, which spread during last few tens of years along highways in all Europe. On its example, I was looking in my diploma thesis for processes, that determine the presence of the species and the local species diversity. It could be the ecological conditions (salt and soil characteristics, light conditions, competition) or dispersal ability and population dynamics.

The individuals of the species *P. distans* were marked. By means of the size of its tussocks (calculated from photographs in ArcGis) the dynamics was observed in different conditions. Permanent plots with different management were also established and the individuals were observed in the same way. On a newly built highway segment the presence of the species was monitored: first, by repeated mapping, and second, by installing diaspore traps. From this data, the dispersal curves were calculated for individuals and diasporas, on the scale of hundreds of metres.

The success of the species *Puccinellia distans* along highways is caused by combination of multiple factors. They are: high dispersal ability along roads and highways, inclusive of long distances; high level of environment disturbance, and thus sufficient number of habitats, moreover with increased stress factors (for example salt concentration), causing decreased competition; stress toleration and high level of surviving, particularly in conditions of decreased competition.

**Key words:** *Puccinellia distans*, population biology, long distance dispersal, dispersal curve, highway and roadside vegetation, salination gradient, competition.