Invasive *Rosa rugosa* reduces the species richness of yellow dune vegetation and causes a shift in the species composition of grey dune vegetation

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Rosa rugosa Thunb.

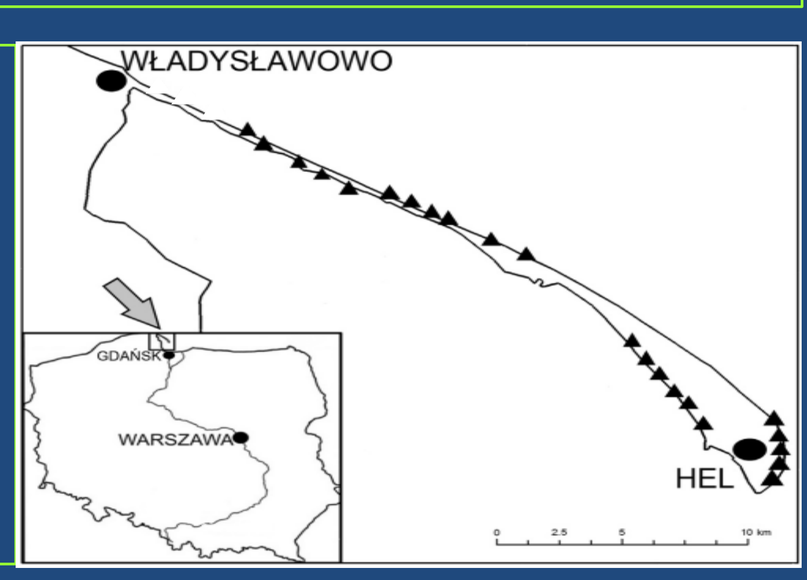
Introduced to Europe from East Asia in the 18th century
Enters the coastal ecosystems of Europe and North America
Displaces native plant species
The impact on native plant communities is poorly understood

Goal

To determine the impact on the plant communities of Baltic coastal dunes

Material and methods

- 22 pairs of plots scattered along the Hel Peninsula: a plot with the invader and an adjacent plot with resident vegetation (control plot)
- abundance of individual species, total species richness and richness of species belonging to different functional groups and basic soil parameters



Results

The study sites were divided into two groups with plant communities characteristic of:

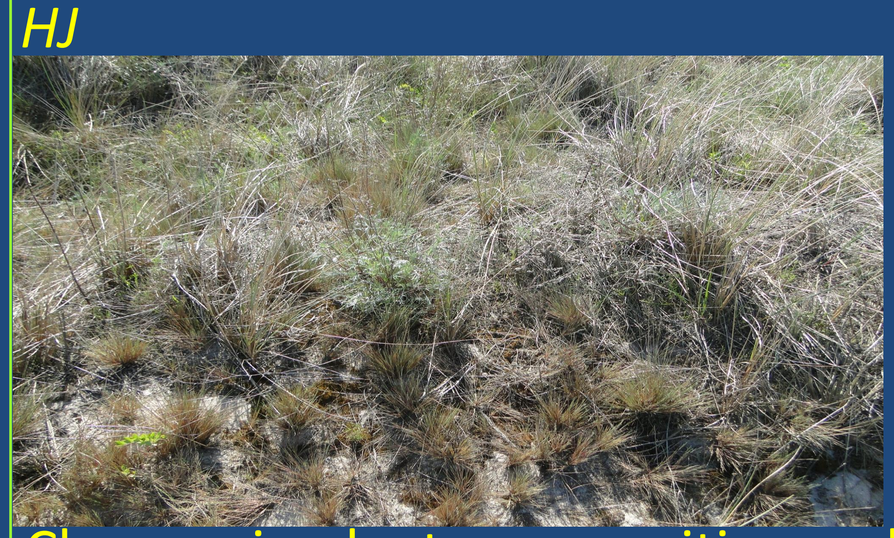
- yellow dunes (*Elymo-Ammophiletum arenariae* association, *EA*; N=11 sites)
- grey dunes (*Helichryso-Jasionetum litoralis* association, *HJ*; N=11 sites)

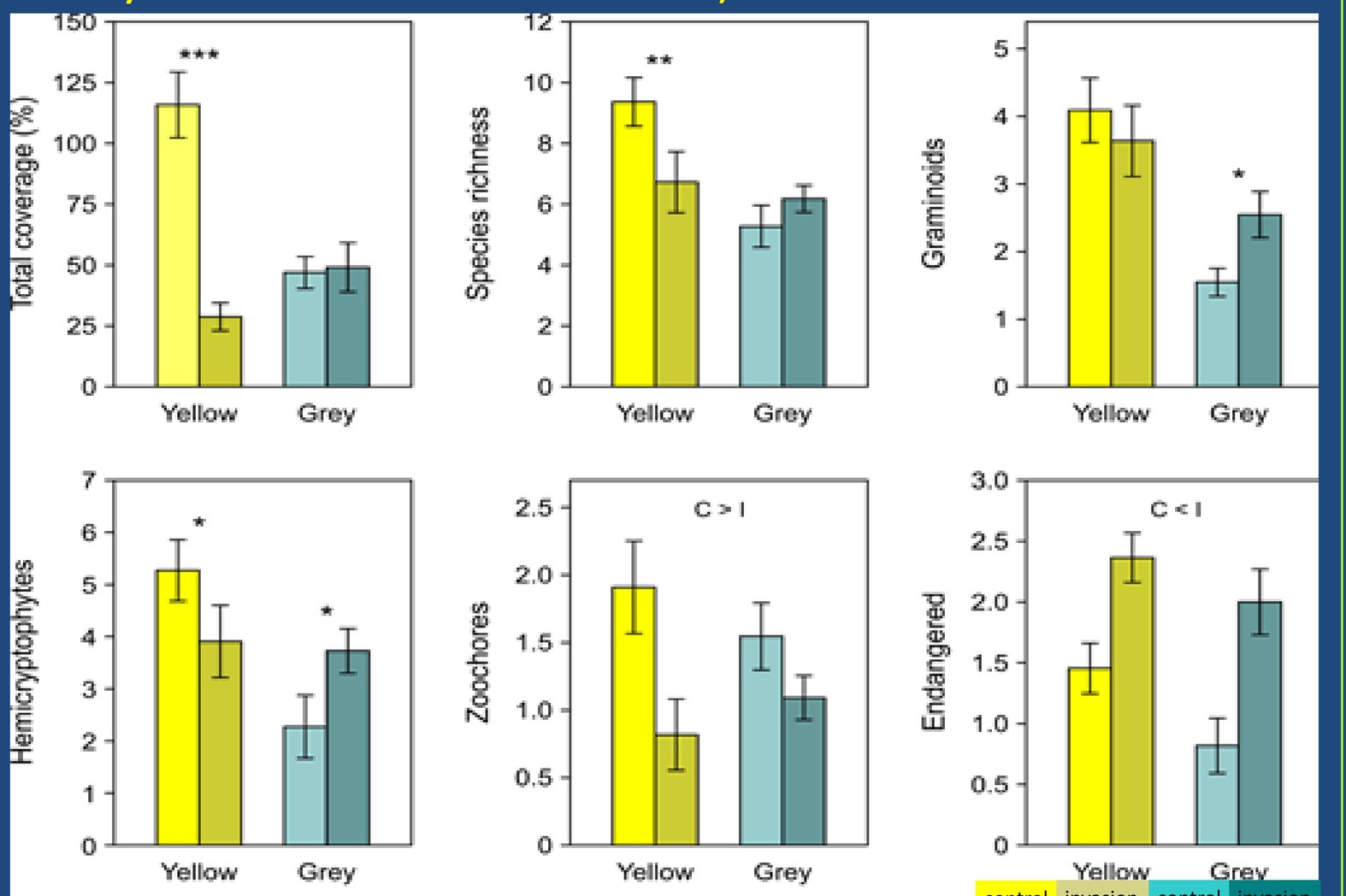
R. rugosa influenced these two communities differently:

- the *EA* sites – decreasing in species richness by displacing the open grassland species
- the *HJ* sites – shift in species composition by outcompeting some species (e.g., zoochores) and by creating conditions for the existence of others (e.g., graminoids; interestingly, this plant group was negatively affected by the invader in the EA sites)

EA

HJ





Changes in plant communities probably resulted not only from the direct impact of *R. rugosa* on plants but also from invader-induced soil alterations

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