“Invasive Alien Plants in a Changing World”

EWRS webinar Tuesday 24 February 14:00-15:30

Speakers: Ahmed Uludag, Heinz Müller-Schärer and Mostafa Oveisi
Organizer: Aleksandra Savic

Plant invasions are a major driver of biodiversity loss and ecosystem change worldwide, increasingly also becoming agricultural weeds in Europe. Climate change is reshaping temperature and precipitation regimes, and by this also altering the establishment, spread, and impacts of invasive plant species. In three short lectures, we will highlight a few aspects of invasive plants in a changing world.

Invasive alien plants (IAP) and weeds: concept and impacts
(Ahmet Uludag)

Understanding IAP and weed concepts: High occurrence of invasive alien species and their higher effect on biodiversity and ecosystem services are the result of global change during the last three-four decades. There are numerous ways of initial introductions, often deliberately introduced as ornamentals. Some IAP become weeds in managed and unmanaged areas. We can consider this as a broader body of work for weed scientists because of their effect on biodiversity, environment, forest, causing yield and quality loss of crops and affecting human health via allergies,

Invasive alien plants: why they become invasive and how to manage them
(Heinz Müller-Schärer)

Why plants are often rare at home but become invasive when introduced into new areas, although they are assumed not to be adapted there. I will present some theories and evidence for resolving the paradox of invasion. Why does climate change often favour non-native over native plants? Different strategies are needed to manage IAS in the various habitats as they can threaten grasslands, crops, but predominantly the biodiversity of non-agricultural areas, where chemical and mechanical control are often too expensive, not sustainable and ecologically problematic.

Spatial models to predict potential spread of IAP (Mostafa Oveisi)

What can be predicted, what types of data can be used and where they can be obtained? I will discuss which data are useful and which are not, which predictive variables are commonly used, where these variables can be found, how climate change scenarios can be incorporated and outcomes predicted, and criteria for selecting an appropriate modeling approach. Finally, a new innovative modeling framework will be presented that connects ecological impact severity with the spatial likelihood of establishment and spread under current and future climates, and applied to 20 invasive plants in Iran.