13TH

INTERNATIONAL CONFERENCE ON BIOLOGICAL INVASIONS

3RD-6TH SEPTEMBER 2024
LISBON
PORTUGAL

NEOBIOTA

MARE

FC Ciências ULisboa

UNIVERSIDADE DE ÉVORA

Session 1 – Risk assessment and management of invasive species

THE EFSA METHODOLOGY FOR ENVIRONMENTAL RISK ASSESSMENT FOR INVASIVE PLANT PESTS

Gianni Gilioli[1], Andrea De Francesco[1], Katharina Dehnen-Schmutz[2], Pablo González-Moreno[3], Maria Luisa Paracchini[4], Alessandro Portaluri[5], Bethan V. Purse[6], Sara Tramontini[7]

1- Agrofood Research Hub, Department of Civil, Environmental, Architectural Engineering and Mathematics (DICATAM), University of Brescia, Via Branze 43, 25123 Brescia, Italy; 2- Centre for Agroecology, Water and Resilience, Coventry University, Ryton Gardens, Wolston Lane, COVENTRY, CV8 3LG; 3- Depto. Ingeniería Forestal, Grupo ERSAF, Universidad de Córdoba, Campus de Rabanales, Crta. IV, km. 396, 14071 Córdoba, Spain; 4- European Commission, Joint Research Centre (JRC), Ispra, Italy; 5- University of Turin, Largo Paolo Braccini, 2, 10095 Grugliasco (TO), Italy; 6- UK Centre for Ecology and Hydrology, Wallingford, Oxfordshire, UK, OX100SR; 7- European Food Safety Authority (EFSA), Via Carlo Magno, 1A, 43126 Parma (PR), Italy

The European Food Safety Authority (EFSA) proposed the first Environmental Risk Assessment (ERA) methodology in 2011, emphasizing the importance of considering the consequences caused by invasive pests on both the structural (biodiversity) and the functional (ecosystem services) aspects. Recently (2018) the whole pest risk assessment approach was revised by EFSA to ensure quantitative, transparent, comparable, and fit-for-purpose results. This requires a revision of the ERA methodology where the ecological mechanisms involved in the impact on biodiversity and ecosystem services are captured and integrated in the quantitative assessment.

The EFSA-ERA methodology is based on the following steps: i) definition of the spatial and temporal scales of the assessment; ii) identification of ecosystem types potentially impacted by the presence of an invasive pest; iii) characterization of the factors driving the impacts, such as pest population pressure and relative importance of host plants; iv) identification of the link between the impact on the host plants, ecosystem traits and services that are affected; v) calculation of the change in selected ecosystem services flow; vi) calculation of the impact on biodiversity at the community level, and on protected species and areas (e.g.: Natura2000 sites), vii) integration of the impacts on the assessed ecosystem services and biodiversity elements in composite indexes, viii) development of new probability models and statistics risk assessment indicators.

Here, we present the new framework that has been tested on more than 20 pest species and validated with the support of an international group of experts. Although originally targeted to plant pests, we suggest that the approach could also be tested for other invasive alien species.