

## PLANT-SOIL FEEDBACK AS MECHANISM OF INVASION OF *CARPOBROTUS EDULIS* IN COASTAL DUNES

de la Peña Eduardo<sup>1</sup>, Dries Bonte<sup>1</sup>, Sergio Roiloa<sup>2</sup>, Susana Rodríguez-Echeverría<sup>2</sup> and Helena Freitas<sup>2</sup>

<sup>1</sup> Terrestrial Ecology Group, Department of Biology, Ghent University, K.L. Ledeganckstraat 35, 9000 Gent, Belgium  
E-mail: [eduardo.delapena@ugent.be](mailto:eduardo.delapena@ugent.be)

<sup>2</sup> Centre for Functional Ecology, Coimbra University, 3000 Coimbra, Portugal

The interaction between plant and soil is not unidirectional and depends to a great extent on feedback mechanisms between plants and their associated soil biota. Plant-soil feedbacks explain the success of certain exotic species in the introduced areas. *Carpobrotus edulis* is one of the most devastating species in Mediterranean and Atlantic coastal dunes in southern Europe. Although several aspects of its biology have been studied in relation to invasion, the occurrence of plant-soil feedbacks has been scarcely addressed. We tackled this key question and we studied the effect of plant-soil feedbacks on (i) the growth of *C. edulis* at different stages of the invasion and (ii) the growth and germination capacity of different species of the native community in Mediterranean coastal dunes.

The results obtained illustrate the importance of the plant-soil feedbacks to understand *C. edulis* invasion. The modification of the soil biota after invasion benefits not only *C. edulis*' subsequent growth but also it is detrimental for the growth of the native plant community.