

## Distribution and biometry of native and alien crayfish in Trentino (Italian Alps)

Sonia Endrizzi, Bruno Maiolini, Maria Cristina Bruno

Fondazione Edmund Mach – Research and Innovation Center, Italy; sonia.endrizzi@fmach.it

The distribution of native and alien crayfish populations in Trentino (Italian Alps) is poorly known and for this reason a first survey was carried out in 2010-2011. Based on historical information and recent grey literature, 46 freshwater sites were selected and surveyed. For each surveyed site and sampling date we recorded environmental parameters such as presence of refugia, type and extension of riparian vegetation, aquatic vegetation, substrate composition, and water physico-chemical parameters. Crayfish were collected with different methods according to the habitat (lakes, streams) and all individuals were measured, sexed and weighted. Variation of density and structure of crayfish populations were recorded in spring, summer and early autumn, to assess the distribution, density and seasonal dynamics of the two species. Sixteen of the investigated sites hosted crayfish populations, 12 with *Austropotamobius italicus* and 4 with *Orconectes limosus*. *A. italicus* was found in small, isolated streams and in one small isolated pond. *O. limosus* was found only in four lakes, one of which invaded only in 2011, where it replaced a previously existing population of *A. italicus*. Infestation by the parasite *Thelobania* was registered in some populations of *A. italicus*. The extinction of eleven native populations of *A. italicus* was attributed to the spread of the alien species and to the related transmission of their specific parasite *Aphanomyces astaci*, and to habitat modifications. The environmental survey allowed identifying potential refuge sites for the conservation of the native species, and the most likely future diffusion pathways of the alien species.

Keywords: *Austropotamobius italicus*, *Orconectes limosus*, crayfish distribution, invasive pathways, biometry