Analysis of past distribution patterns of inland water fish in southern Spain

Menor A, Álvarez-Robles JA y Prenda J.

Biolología de las Aguas Epicontinentales, Dpto. Biología Ambiental y S.P., Universidad de Huelva, España
E-MAIL: jprenda@uhu.es

INTRODUCTION

Patterns of abundance and distribution of the Iberian fishes have suffered important changes in the last years. These changes may be a consequence of the dramatic transformation of streams and rivers.

In this work, we reconstructed the distribution of the native fish species in a pristine context in order to quantify the magnitude of the contemporary changes in their distribution range. For this purpose we compiled data about the distribution of fishes from historical records and compared them with current distributions. Here we present examples from eel (Anguilla anguilla), barbel (Barbus scateri, B. microcephalus and B. comiza) and trout (Salmo trutta).

METHODOLOGY

We compiled the historical records from the “Diccionario Geográfico-Estadístico-Histórico de España” by Pascual Madoz (1845-1850) belonging to Castilla-La Mancha and Andalucia regions (South of Spain). We created a data base assigning each fish record to the current municipalities. This information was mapped in 10x10 UTM squares using ArcView program. Then, we compared these results with the current distribution reported by Atlas y Libro Rojo de los Peces Continentales de España (Doadrio, 2001), to assess changes in the distribution of the target species.

RESULTS AND DISCUSSION

The most important changes in the distribution range affect to migratory species, as can be observed in the case of eel. On the other hand, sedentary species (trout and barbel) maintain, practically, the same distribution as in the XIX century. However, this is an artifact in the case of trout, because a large proportion of the sites inhabited nowadays by this species is made of by restockings of different strains from northern Europe and authocnous populations have gone definitely extinct.

These results show different patterns of distribution range evolution, from migratory species almost extinct (due to impoundment of rivers), to non-commercial cyprinids or trout, whose range remains almost the same (only apparently for salmonids).