

## A new record of Asian clam *Corbicula fluminea* (Müller, 1774) in Galicia (Iberian Peninsula) - Ribeiras do Louro e Gandaras de Budiño wetland

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### Abstract

This paper presents the first record of *Corbicula fluminea* (Müller, 1774) in the Centeans Ponds, Ribeiras do Louro e Gandaras de Budiño wetland (northwestern Iberian Peninsula). This exotic invasive bivalve has been found in January 2008 in the Centeans ponds. The way and date of introduction it is still unknown.

*Key words:* *Corbicula fluminea*, invasive species, Galicia, Iberian Peninsula

Asian clam *Corbicula fluminea* (Müller, 1774) was first reported in Iberian waters in 1980 in the Tajo River estuary (Mouthon 1981). One decade later, the species was found from the Duero River, in Portugal (Nagel 1989), and also in the Miño and Duero rivers, in Spain (Araujo et al. 1991, 1993). Further, *C. fluminea* was detected in Delta del Ebro Natural Park (Lopez and Altaba 1997), there was an old report about Asian clam in the Guadiana River Basin (Perez Quintero 1990). There are new works about the distribution of this invasive species in the Iberian Peninsula, extending distribution in the northern border between Spain and Portugal, Asian clam distribution and density in the lower part of the Miño River Basin it is well studied, and also in the Lima River estuary (Sousa et al 2005, 2006, 2007a, 2007b, 2008a, 2008b), and with more data for the Guadiana River Basin (Perez-Bote and Fernandez 2008; Perez-Quintero 2008).

This species is considered as one of the most invasive species, due to early sexual maturity, high reproductive potential and a high adaptability to colonize new environments (Darrigan 1997). Asian clam are considered between the best freshwater invaders worldwide with populations in America, Japan and Europe (Darrigan 2002; Perez-Quintero 2008).

First observation of *C. fluminea* individuals was made in January 2008 during herpetological



**Figure 1.** Individuals of *Corbicula fluminea* captured in Centeans Ponds (Photo by C. Ayres)

monitoring of Centeans ponds (Galicia region, Spain: Centeans 42°07'N, 8°37'W), that are included in Gandaras de Budiño and Ribeiras do Louro protected wetland. These ponds are old clay pits, some of the still in use, surrounded by gallery forest and a small stream, Rego da Ceboleira, tributary of river Louro, which flows out in the lower part of the Miño river that is highly invaded by *C. fluminea*.

To assess the presence and density of *C. fluminea* in these ponds an additional survey

was performed in October 2008, sampling a 0.5 m<sup>2</sup> of bottom area in shallow water. Twelve individuals were captured by hand in the mud, most of them adults, and a couple of smaller ones (see Figure 1).

The spreads rate of the Asian clam depends mainly on human activities, especially related to fishing (McMahon 2000). Fishing activities could be the pathway for the dispersal of Asian clam in this area. But in these ponds fishing activities have been forbidden in the last three years to protect endangered species. Centeans ponds are not directly connected with the Rego da Ceboleira stream. Further, the Rego da Ceboleira is an ephemeral course that often dries out during the summer, so it seems that this is not a suitable connection route with Miño River, where *C. fluminea* is present. So, it remains unclear which could be the way to disperse used by *C. fluminea* in this area. Further monitoring will be necessary to assess the real area invaded by this alien species and the effects on aquatic endangered species presented in this protected wetland.

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## Annex 1

Records of *Corbicula fluminea* in the Miño River Basin

Location	Record coordinates		Date of record	Reference
	Latitude, °N	Longitude, °W		
Miño	41°57'	8°44'	1989	Araujo et al. 1993
Miño	41°58'	8°42'	1991	Antunes and Weber 1996
Miño	42°01'	8°38'	2004	Sousa et al. 2007
Centeans ponds	42°07'	8°37'	2008	Present study