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Orientation: Ocean Observation and Global Change

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PhD project: **Invasive ecology of *Corbicula fluminea* (Müller, 1774)**

Supervisors: Dr. Isabel Pardo Gamundi (University of Vigo)

Summary: The Asian plum *Corbicula fluminea* (Müller, 1774) began its world colonization associated with human movements. In the mid-nineteenth century a series of historical events in China (Wars of the Opium between China and the British Crown, Rebellion of the Boxers, fall of the Manchú Dynasty) and on the west coast of the United States (discovery of gold in the Californian rivers, construction of the transcontinental railroad, abolition of slavery) motivated that more than 100,000 people had crossed the Pacific from China to the American continent leading the Asian plum into a process of world colonization that places it in the peninsular rivers in the early 1980s.

This thesis aims to identify the routes of entry and dispersion of *C. fluminea* (and other invasive freshwater species) as a strategy to prevent new introductions. Also, a multidisciplinary approach (field work, experimental laboratory approach, molecular biology techniques) is carried out to the environmental factors related to the establishment and dispersion of the species with the aim of identifying those more vulnerable areas for the establishment of new populations of *C. fluminea*. Interaction with native species (potential competitors and predators) centered the third block of this thesis. In this way, taking into account the global warming models, the effect on native freshwater mussels is evaluated, one of the most threatened animal groups worldwide. Finally, the interaction with native predators has been evaluated as a biological control strategy. The evaluation of the potential of the plans for the reintroduction of the Atlantic sturgeon *Acipenser sturio* into European basins such as biological control of exotic bivalves (ie Asian clam and zebra mussel *Dreissena polymorpha*), facilitation for the establishment of resident populations of migratory waterbirds (ie *haematopus ostralegus* gulls) or its potential as a food finite for threatened species such as the European *Sapoconcho* (*Emys orbicularis*). All the works have been developed with the collaboration of local conservation organizations (ANABAM) and national (Spanish Association of Herpetology), researchers from the University of Vigo, University of Minho, Alto Douro University and After the Mountains, CCMAR, University of the Algarve, IGB Leibniz and Universidad de la República de Uruguay.

