

NOTES ON GEOGRAPHIC DISTRIBUTION

Bivalvia, Mytilidae, *Limnoperna fortunei*: distribution extension

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The golden mussel (*Limnoperna fortunei*) is native from southern Asia and has become abundant elsewhere due to its rapid growth, early maturation, successful recruitment and paucity of natural predators. Its veliger larvae allows a quick dispersal through several mechanisms including water currents, animal and ship transport (ballast waters), and fishing activities (Morton 1977; Garcia and Protogino 2005). They had colonized a wide range of freshwater and estuarine environments. In urban areas, the golden mussel has a significant and noticeable impact on human activities by damaging dams and industries. The most significant problems are associated with pipe obstruction, reduction of pipe flow velocity because of turbulent flows, empty mollusc valve accumulation and waterway pollution from massive mortality, filter occlusion as well as increase in surface corrosion because of mussel infestation (Darrigran 2002).

The golden mussel was first introduced by ballast waters in South America in 1991 at La Plata River basin, Argentina (Pastorino et al. 1993; Darrigran and Pastorino 1995), and has since expanded its range to the Paraná, Paraguay, Pilcomayo, and Uruguay rivers in Argentina, Brazil, Paraguay and Uruguay (Boltovskoy and Cataldo 1999; Oliveira 2003; Brugnoli et al. 2005).

In 1998, the golden mussel was recorded at the northern reaches of the Patos Lagoon drainage basin (Mansur et al. 1999; 2003), and in the following years the species appeared in its southern portion (Mansur et al. 2003; Capítoli and Bemvenuti 2004). In 2005, *Limnoperna* was captured at São Gonçalo channel, which connects Patos and Mirim lagoons (Burns et al. in press). We report here the first occurrence of this species at Taim, a wetland ecological reserve located at southeastern portion of Mirim lagoon (Figure 1).

On 21st March 2006, eight individuals (ranging from 12 to 17 mm in total length) were collected by beach seine hauls at Nicola Lake, in the Taim Ecological Reserve. Comparing their size ranges with those reported on the literature (Magara et al. 2001), these individuals can be considered as adults. This species have not been found in previous beach seine sampling conducted monthly, since March 2004, at Nicola and others sites also in Taim reserve (e.g., Flores, Jacaré and Mangueira lakes) (Garcia et al. 2006). However, although they were not collected at the time, some individuals of golden mussel were observed by one of the authors (DMLMM) attached to emergent macrophytes during the summer of 2005.

Our current finding shows that the golden mussel seems to be spreading rapidly across Patos-Mirim Lagoon drainage basin (approx. 200,000 km²). After only eight years since its first record on its northern region (Mansur et al. 1999), it is now captured at its southeastern portion (Figure 1). In their review of the distribution of the golden mussel at the main hydrographical basins of Uruguay, Brugnoli et al. (2005) affirmed that the golden mussel did not occur at the Mirim Lagoon. However, recent records of the golden mussel at the São Gonçalo channel (Burns et al. in press) and Taim Reserve (present work), located in the northern and southeastern portions of the Mirim lagoon, respectively, suggested this species could also occur in this lagoon.

Occurrence of this exotic species at Taim brings concern because this area constitutes a crucial ecological reserve protecting unique subtropical wetland in southern Brazil and harbors an exceptional biological diversity (Motta Marques

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et al. 2002). Previous studies (Magara et al. 2001; Mansur et al. 2003) have reported deleterious effects of golden mussel in natural environment

and its native biota, such as destruction of habitats and impoverishment of epibenthic and infaunal native fauna.

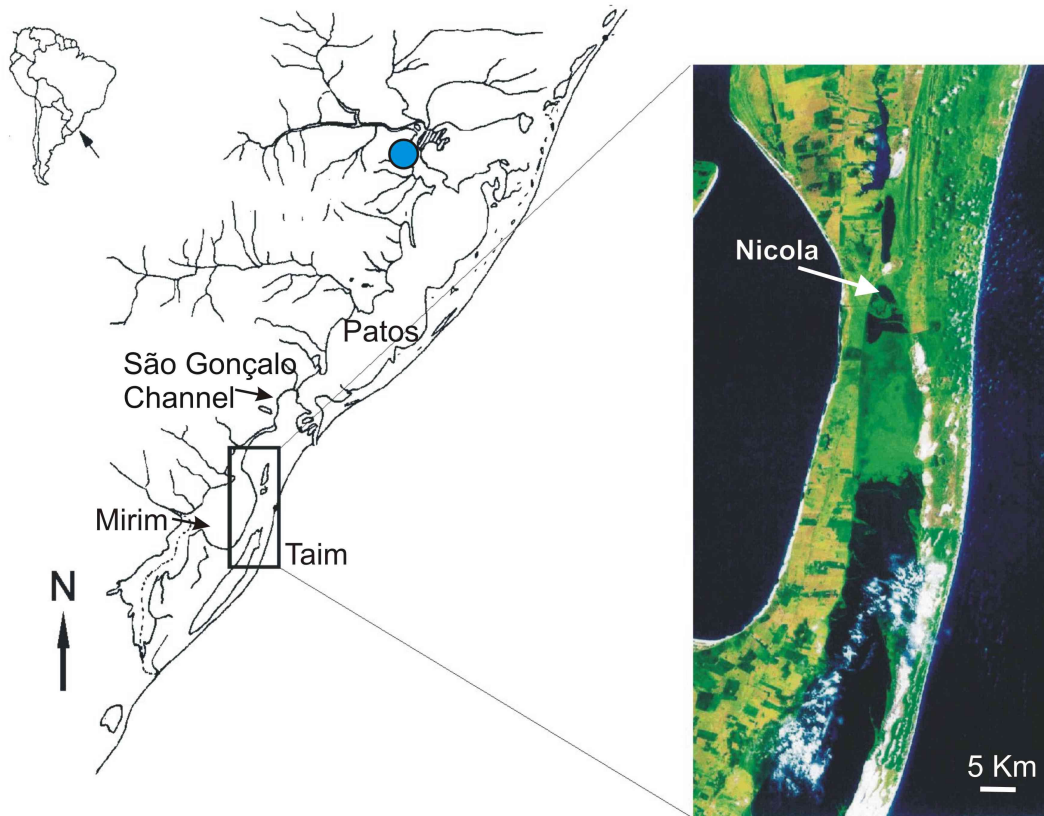


Figure 1. Patos-Mirim lagoon complex in southern Brazil and Taim Ecological Reserve (enlarged area) showing Nicola Lake, where individuals of the golden mussel *Limnoperma fortunei* were captured on March 2006. Blue dot denotes first record of this species in Patos Lagoon in 1998 according to Mansur et al. (1999).

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Received May 2006

Accepted July 2006

Published online July 2006