

Abundance and distribution of *Pontodrilus litoralis* in the shores of the Cabo Rojo Lighthouse, Puerto Rico

(Oligochaeta)

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Abstract. The structure and dynamics of the populations of the oligochaete *Pontodrilus litoralis* on the coasts near the Cabo Rojo Lighthouse in Puerto Rico were studied. Sampling was made at low tide on the sandy littoral shores of two beaches (protected and exposed) on each side of the lighthouse. Environmental factors such as substrate temperature, pH, soil moisture and organic matter content, and anoxic sand and surface accumulation of plant debris were registered. Spatial distribution of *P. litoralis* was determined to be aggregate in clusters which were predominant right at the high tide marking where sand was always humid but never completely submerged under seawater. Organic matter and temperature were the primary factors in the distribution of the oligochaete. Sites with the lowest temperatures recorded seemed to have the most number of individuals. Those with the most accumulation of surface plant debris recorded the lowest temperatures as well as the highest organic matter contents. There were no significant differences in earthworm density between beaches or collection time. New collection sites for the species in Puerto Rico are also included.

Key words. Neotropical, Caribbean, Annelida, Megascolecidae, Acanthodrilidae.

Introduction

Twenty nine terrestrial oligochaete species have been reported from Puerto Rico, 62 % are native while 38% are exotic (BORGES 2004). Among the exotic species is the megascolecid *Pontodrilus litoralis* (Grube, 1855). The first mention of *P. litoralis* in Puerto Rico was made by BORGES & MORENO (1994). To this day, this species has only been reported from the southwest region of Puerto Rico, in the Cabo Rojo Lighthouse zone and from the south coasts of Vieques (BORGES et al. 2005) an island of the Puerto Rican archipelago. On both sites it has been found to inhabit underneath decomposing marine grass (*Thalassia* sp.) that accumulates on the littoral zone by action of currents and tides.

In ecological terms, Puerto Rico has been research ground for terrestrial oligochaete investigations in diverse ecosystems, for example, in a palm forest (BORGES & ALFARO 1997), a wetland (ALFARO & BORGES 1996), disturbed forest (BORGES et al. 2006), plantations (GONZÁLEZ et al. 1996; RAMOS et al. 2010) and in abandoned croplands (ZOU & GONZÁLEZ 1997), to mention a few. This investigation is the first ecological study on a littoral zone, specifically with *P. litoralis*, the only terrestrial oligochaete that inhabits this area in Puerto Rico. It analyzes density, distribution patterns, and some of the physicochemical properties that could influence the presence of this species on the beaches of two separate, nearby coasts, on the southwest part of the island.