



## Nereididae (Annelida: Phyllodocida) of Lizard Island, Great Barrier Reef, Australia

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### Abstract

Nereididae is one of the most ubiquitous of polychaete families, yet knowledge of their diversity in the northern Great Barrier Reef is poor; few species have been previously reported from any of the atolls or islands including Lizard Island. In this study, the diversity of the family from Lizard Island and surrounding reefs is documented based on museum collections derived from surveys conducted mostly over the last seven years. The Lizard Island nereidid fauna was found to be represented by 14 genera and 38 species/species groups, including 11 putative new species. Twelve species are newly reported from Lizard Island; four of these are also first records for Australia. For each genus and species, diagnoses and/or taxonomic remarks are provided in addition to notes on their habitat on Lizard Island, and general distribution; the existence of tissue samples tied to vouchered museum specimens is indicated. Fluorescence photography is used to help distinguish closely similar species of *Nereis* and *Platynereis*. A key is provided to facilitate identification and encourage further taxonomic, molecular and ecological studies on the group.

**Key words:** Polychaeta, polychaete, ragworm, paddleworm, taxonomy, biodiversity, key

### Introduction

Nereididae (Annelida: Phyllodocida) of Lizard Island has, by and large, not been documented previously. The only previous taxonomic studies dealing with the family at Lizard Island are those of Ben-Eliahu *et al.* (1984) who described one new species, *Ceratonereis lizardensis* (now *Simplisetia*), and Glasby *et al.* (2013) who described three new species, *Nereis lizardensis* and *Perinereis pictilis*, *Pseudonereis anomalopsis*. The numerous ecological studies involving polychaetes on Lizard Island have mostly dealt with groups that bore into coral (bioeroders) (e.g., Hutchings *et al.* 1992) and therefore have largely excluded the family, which are not an important component of this fauna. More generally, faunistic studies of Nereididae from the Great Barrier Reef are equally scarce, with the only significant taxonomic accounts being Augener (1922) who described four species from Cape York including a new species, *Nereis (Perinereis) yorkensis* Augener, 1922 (now *Perinereis nigropunctata*), and Monro (1931) who described eight species from the Low Isles, northern Great Barrier Reef. Hutchings & Howitt (1988) reported 16 unidentified, reproductively mature, species of Nereididae from Lizard Island, which represented the largest component of the swarming polychaete fauna. The subfamily and generic-level reviews of Glasby (1999), Hutchings & Reid (1991), Hutchings, Reid & Wilson (1991) and Paxton (1983) have also included specimens from Lizard Island.

The aim of this paper is to document the diversity of Nereididae of Lizard Island and surrounding reefs based on recent museum collections. The museum collections studied have been derived mainly from four surveys over the last seven years: CREefs surveys of 2008 (April), 2009 (February) and 2010 (August–September) (<http://www.aims.gov.au/creefs/field-program.html>), and the Lizard Island Polychaete Workshop (August 2013). In all cases the family was targeted specifically. Considering the range of annual and monthly sampling events, the targeted collecting effort and the range of habitats sampled, the list of species presented in this study probably represents a reasonable approximation of the total Nereididae diversity of the island. As such, a key is also presented to facilitate identification of the Lizard Island nereidid fauna and therefore facilitate future systematic and ecological studies of the group.