

ZooKeys 489: 133–144 (2015)
doi: 10.3897/zookeys.489.7311
<http://zookeys.pensoft.net>

DATA PAPER

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Free-living marine nematodes from San Julián Bay (Santa Cruz, Argentina)

Catalina Pastor de Ward¹, Virginia Lo Russo¹, Gabriela Villares¹,
Viviana Milano², Lidia Miyashiro³, Renato Mazzanti³

1 *Laboratorio de Meiobentos CENPAT-CONICET, Boulevard Brown 2915, U9120ACF, Puerto Madryn, Argentina* **2** *Universidad Nacional de la Patagonia San Juan Bosco, sede Puerto Madryn. Boulevard Brown 3051, U9120ACF, Puerto Madryn, Argentina* **3** *Centro de Cómputos CENPAT-CONICET, Boulevard Brown 2915, U9120ACF, Puerto Madryn, Argentina*

Corresponding author: *Catalina Pastor de Ward* (pastor@cenpat-conicet.gob.ar)

Academic editor: *P. Stoev* | Received 19 February 2014 | Accepted 10 March 2015 | Published 24 March 2015

<http://zoobank.org/C0480572-4990-46A1-B652-3BB35D4A6715>

Citation: Pastor de Ward C, Lo Russo V, Villares G, Milano V, Miyashiro L, Mazzanti R (2015) Free-living marine nematodes from San Julián Bay (Santa Cruz, Argentina). ZooKeys 489: 133–144. doi: 10.3897/zookeys.489.7311

Abstract

The free-living marine nematodes of San Julián Bay dataset is based on sediment samples collected in January 2009 during the project PICT AGENCIA-FONCYT 2/33345-2005. A total of 36 samples have been taken at three locations in the San Julián Bay, Santa Cruz Province, Argentina on the coastal littoral at three tidal levels. This presents a unique and important collection for the nematode benthic biodiversity assessment as this area remains one of the least known regions in Patagonia. In total 10,030 specimens of free-living marine nematodes belonging to 2 classes, 9 orders, 35 families, 78 genera and 125 species were collected. The San Julián city site presented a very high species richness.

Keywords

Nematoda, Enoplea, Chromadorea, South Atlantic

Data published through

GBIF: <http://www.gbif.org/dataset/06df03fc-8973-490c-af74-089fffae9e24>

Taxonomic coverage description

This is the first study on nematodes performed on a sub-Antarctic salt marsh along the coast of Santa Cruz Province, Argentina with a growing human impact (oil ventures, mining, aquaculture and tourism). The objectives of the study were to collect, identify and discover the structure and diversity of nematode community of San Julián Bay. The coverage (Figure 1) of this dataset includes two classes: Chromadorea (82%) and Enoplea (18%); nine orders: with Monhysterida (36%), followed by Enoplida (15%) and Chromadorida (13%) as those of main occurrences and thirty-five families (see Figure 1).

Taxonomic ranks

Kingdom: Animalia

Phylum: Nematoda

Class: Chromadorea, Enoplea

Order: Monhysterida, Enoplida, Chromadorida, Desmodorida, Araeolaimida, Plectida, Rhabditida, Dorylaimida, Triplonchida

Family: Xyalidae, Linhomoeidae, Monhysteridae, Microlaimidae, Chromadoridae, Comesomatidae, Leptolaimidae, Oncholaimidae, Oxystominidae, Cyatholaimidae, Desmodoridae, Sphaerolaimidae, Diplopeltidae, Dorylaimidae, Ironidae, Neotonchidae, Thoracostomopsidae, Tripyloidae, Tylenchidae, Aegialoalaimidae, Anoplostomatidae, Aphelenchoididae, Axonolaimidae, Enchelidiidae, Ethmolaimidae.

Genera: *Odontophora*, *Hopperia*, *Laimella*, *Sabatieria*, *Campylaimus*, *Chromadora*, *Chromadorella*, *Prochromadora*, *Dichromadora*, *Neochromadora*, *Spilophorella*, *Marylynnia*, *Paracanthonchus*, *Paracyatholaimus*, *Pomponema*, *Paraethmolaimus*, *Gomphonema*, *Neotonchus*, *Halichoanolaimus*, *Molgolaimus*, *Polysigma*, *Spirinia*, *Bolbolaimus*, *Microlaimus*, *Desmolaimus*, *Metalinhomoeus*, *Terschellingia*, *Paralinhomoeus*, *Siphonolaimus*, *Diplolaimella*, *Diplolaimelloides*, *Halomonhystera*, *Monhystera*, *Sphaerolaimus*, *Subsphaerolaimus*, *Amphimonhystera*, *Daptonema*, *Linhystera*, *Metadesmolaimus*, *Paramonohystera*, *Pseudosteineria*, *Steineria*, *Theristus*, *Haliplectus*, *Cyartonema*, *Camacolaimus*, *Deontolaimus*, *Antomicron*, *Leptolaimoides*, *Leptolaimus*, *Paramicrolaimus*, *Mesorhabditis*, *Aphelenchoides*, *Panagrolaimus*, *Boleodorus*, *Tylenchorhynchus*, *Tylenchus*, *Dorylaimus*, *Eudorylaimus*, *Chaetonema*, *Thoracostomopsis*, *Dolicholaimus*, *Syringolaimus*, *Halalaimus*, *Thalassoalaimus*, *Wieseria*, *Calyptronema*, *Adoncholaimus*, *Oncholaimellus*, *Viscosia*, *Oncholaimus*, *Rhabdocoma*, *Bathylaimus*, *Tripyloides*, *Trichodorus*, *Pandolaimus*.

Species with higher occurrences: *Paraethmolaimus dahli*, *Sabatieria mortenseni*, *Daptonema rectangulatum*, *Metalinhomoeus parafiliformis*, *Leptolaimus puccinelliae*, *Diplolaimelloides oschei*, *Leptolaimus sebastiani*, *Metalinhomoeus gloriae*, *Thalassomonhystera parva*, *Metalinhomoeus typicus*, *Haliplectus salicornius*.

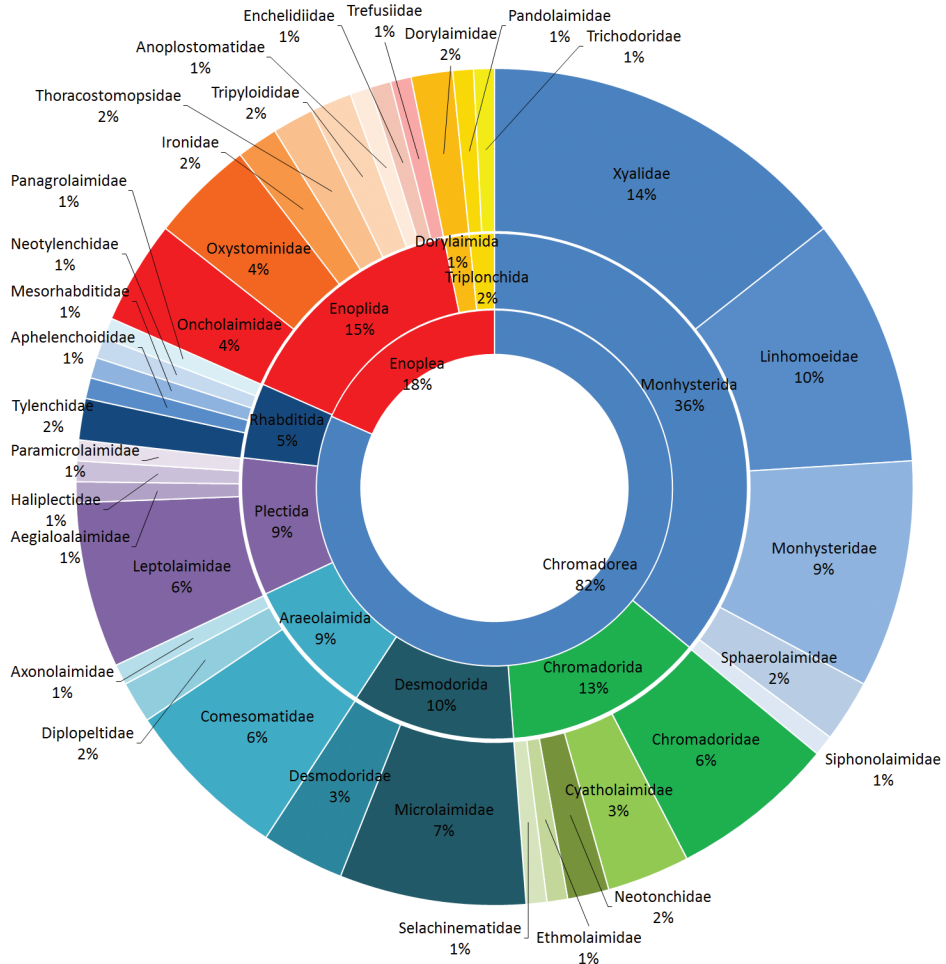


Figure 1. Taxonomic coverage by class, order and family.

Spatial coverage

General spatial coverage: San Julián Bay, Santa Cruz Province, Argentina (Figure 2). For this study three sites were selected: “La pingüinera” (M), at the bay entrance, “La Rural” (C) in front of San Julián city and “El Rincón” (E) at the end of the bay. At each sampling site, three tidal levels were chosen: upper-littoral, high tide, salt-marsh habitat (u); middle littoral, mean tide, un-vegetated habitat (m) and low littoral, low tide, un-vegetated habitat (l) (Figure 3).

Coordinates: La pingüinera: Mu = 49°16'15.24"S; 67°42'40.68"W; Mm = 49°16'12"S; 67°42'43.92"W; Ml = 49°16'11.28"S; 67°42'39.6"W. La Rural: Cu = 49°18'37.44"S; 67°42'55.8"W; Cm = 49°18'34.92"S; 67°42'55.8"W; Cl = 49°18'35.28"S; 67°42'52.56"W. El Rincón: Eu = 49°21'18.72"S; 67°41'26.88"W; Em = 49°21'14.4"S; 67°41'42.36"W; El = 49°21'18"S; 67°41'51"W.

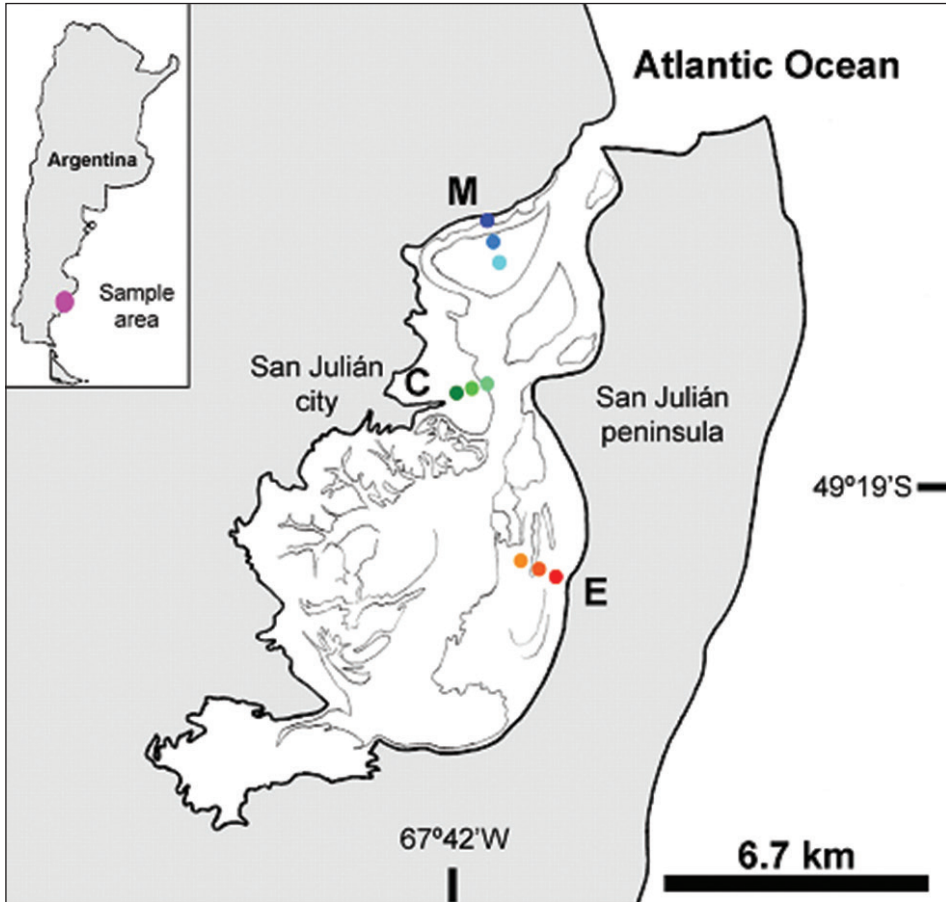


Figure 2. Spatial coverage. San Julián Bay, Argentina. Sites: M = “La pingüinera”, C = “La Rural”, E = “El Rincón”. Levels = u, m, i.

Temporal coverage

11–13 January 2009.

Methods

Sampling description: At each site and level location, four replicates (20 ml) were sampled with a PVC syringe (60 ml, inner diameter 2.9 cm) and separated by a distance of 5–10 m each: four for marine nematodes counts, two for organic matter and two for sediment analyses. Each sample was fixed *in situ*, with a solution of 5% formaldehyde in filtered sea water with the addition of Rose Bengal tint.

Marine nematodes were extracted from samples using the elutriation/decantation LUDOX™ (colloidal silica polymer) method at a specific gravity of 1.15, quan-

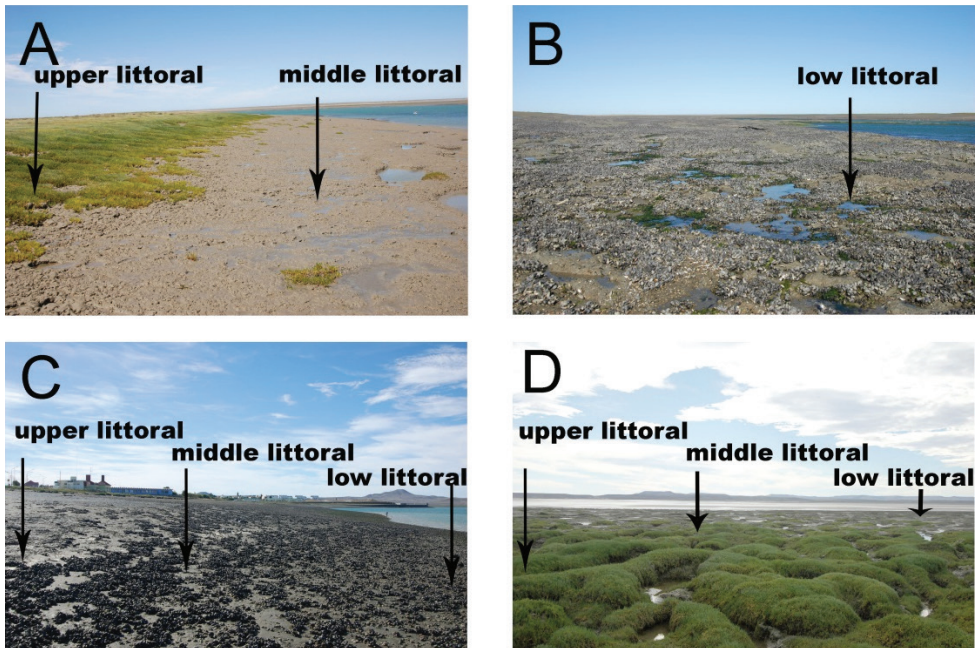


Figure 3. San Julián Bay, Argentina. Views from the sampling sites. **A, B** “La pingüinera” (M) **C** “La Rural” (C) **D** “El Rincón” (D).

tifying only organisms passing through a 500 μm mesh and then retained by a 63 μm mesh. Samples were evaporated to anhydrous glycerol and permanent slides made (Sommerfeld and Warwick 1996).

The taxonomic classification followed proposed by De Ley and Blaxter (2004). For the identification of species international keys (Platt and Warwick 1983, Platt and Warwick 1988, Warwick et al. 1998, Lorenzen 1994, Abebe et al. 2006) and previous taxonomical papers for Santa Cruz nematodes (Pastor de Ward 1978, 1980, 1984a, b, c, d, e, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1995a, b, 1996, 1998a, b, c, 1999, Pastor de Ward and Lo Russo 2009, Villares and Pastor de Ward 2012, Villares et al. 2013, Pastor de Ward et al. 2013) were used.

Project details

Project title: “Evaluación del impacto urbano en costas arena-limosas de la provincia de Santa Cruz, usando métodos rápidos de análisis de cambios en estructura comunitaria del bentos.” [Impact assessment in urban sand-clay coastal areas of Santa Cruz Province, using methods of rapid assessment in changes of nematodes community structure].

Personnel: Catalina Pastor de Ward (Project Director, meio-benthos specialist); Héctor Zaixso (Project Co-director, macro-benthos specialist), Virginia Lo Russo (Field work, nematodes identification, data collection and analysis), Gabriela Villares (Data

collection and analysis), Viviana Milano (Grant student, data input), Lidia Miyashiro (Darwin core data input), Renato Mazzanti (Software engineer, data base manager).

Funding: PICT AGENCIA-FONCYT 2/33345-2005

Study extent description: The San Julián Bay marine nematodes is a dataset that gives new insights on the taxonomic and geographic distribution of south Atlantic marine nematodes, covering an under-explored region of the southern Atlantic coasts. This is the first study on marine nematodes in this locality. This dataset presents species occurrences and species richness of the individual free-living marine nematodes present at three coastal areas (La pingüinera; La Rural; El Rincón) of the San Julián Bay at three different tidal levels (upper, middle and low-littoral).

In total 10,030 specimens of free-living marine nematodes belonging to 2 classes, 9 orders, 35 families, 78 genera and 125 species were collected.

Genera and species	Family	Order	Class
<i>Odontophora peritricha</i> Wieser, 1956	Axonolaimidae	Araeolaimida	Chromadorea
<i>Hopperia americana</i> Pastor de Ward, 1984	Comesomatidae	Araeolaimida	Chromadorea
<i>Hopperia arntzi</i> Chen & Vincx, 1998	Comesomatidae	Araeolaimida	Chromadorea
<i>Laimella</i> sp. 1	Comesomatidae	Araeolaimida	Chromadorea
<i>Laimella</i> sp. 2	Comesomatidae	Araeolaimida	Chromadorea
<i>Sabatieria</i> sp. 1	Comesomatidae	Araeolaimida	Chromadorea
<i>Sabatieria</i> sp. 2	Comesomatidae	Araeolaimida	Chromadorea
<i>Sabatieria mortenseni</i> (Ditlevsen, 1921)	Comesomatidae	Araeolaimida	Chromadorea
<i>Sabatieria wieseri</i> Platt, 1985	Comesomatidae	Araeolaimida	Chromadorea
<i>Campylaimus gerlachi</i> Timm, 1961	Diplopeltidae	Araeolaimida	Chromadorea
<i>Campylaimus</i> sp. 1	Diplopeltidae	Araeolaimida	Chromadorea
<i>Chromadora nudicapitata</i> Bastian, 1865	Chromadoridae	Chromadorida	Chromadorea
<i>Chromadorella circumflexa</i> Wieser, 1954	Chromadoridae	Chromadorida	Chromadorea
<i>Prochromadora argentinensis</i> Pastor de Ward, 1984	Chromadoridae	Chromadorida	Chromadorea
<i>Dichromadora</i> sp. 1	Chromadoridae	Chromadorida	Chromadorea
<i>Neochromadora lineata</i> Pastor de Ward, 1985	Chromadoridae	Chromadorida	Chromadorea
<i>Neochromadora papillosa</i> Pastor de Ward, 1985	Chromadoridae	Chromadorida	Chromadorea
<i>Neochromadora</i> sp. 1	Chromadoridae	Chromadorida	Chromadorea
<i>Spilophorella paradoxa</i> (De Man, 1888)	Chromadoridae	Chromadorida	Chromadorea
<i>Marylynnia quadriseta</i> (Wieser, 1954)	Cyatholaimidae	Chromadorida	Chromadorea
<i>Paracanthonchus longispiculum</i> Pastor de Ward, 1985	Cyatholaimidae	Chromadorida	Chromadorea
<i>Paracyatholaimus chilensis</i> Gerlach, 1953	Cyatholaimidae	Chromadorida	Chromadorea
<i>Pomponema tautraense</i> (Allgén, 1933)	Cyatholaimidae	Chromadorida	Chromadorea
<i>Paraethmolaimus dahl</i> (Gerlach, 1953)	Ethmolaimidae	Chromadorida	Chromadorea
<i>Gomphonema</i> sp. 1	Neotonchidae	Chromadorida	Chromadorea
<i>Neotonchus</i> sp. 1	Neotonchidae	Chromadorida	Chromadorea
<i>Halichoanolaimus ovalis</i> Ditlevsen, 1921	Selachinematidae	Chromadorida	Chromadorea
<i>Molgolaimus minutus</i> Jensen, 1978	Desmodoridae	Desmodorida	Chromadorea
<i>Molgolaimus</i> sp. 1	Desmodoridae	Desmodorida	Chromadorea
<i>Polysigma</i> sp. 1	Desmodoridae	Desmodorida	Chromadorea
<i>Spirinia septentrionalis</i> (Cobb, 1914)	Desmodoridae	Desmodorida	Chromadorea
<i>Bolbolaimus</i> sp. 1	Microlaimidae	Desmodorida	Chromadorea
<i>Bolbolaimus</i> sp. 3	Microlaimidae	Desmodorida	Chromadorea

Genera and species	Family	Order	Class
<i>Microloaimus capillaris</i> Gerlach, 1957	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus conothelis</i> (Lorenzen, 1973)	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus cyatholaimoides</i> Gerlach, 1957	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus decoratus</i> Pastor de Ward, 1991	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus gerlachi</i> Wieser, 1954	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus globiceps</i> De Man, 1880	Microloaimidae	Desmodorida	Chromadorea
<i>Microloaimus</i> sp. 1	Microloaimidae	Desmodorida	Chromadorea
<i>Desmolaimus</i> sp. 1	Linhomocidae	Monhysterida	Chromadorea
<i>Desmolaimus</i> sp. 2	Linhomocidae	Monhysterida	Chromadorea
<i>Metalinhomoeus gloriae</i> Pastor de Ward, 1989	Linhomocidae	Monhysterida	Chromadorea
<i>Metalinhomoeus parafiliformis</i> Pastor de Ward, 1989	Linhomocidae	Monhysterida	Chromadorea
<i>Metalinhomoeus typicus</i> De Man, 1907	Linhomocidae	Monhysterida	Chromadorea
<i>Terschellingia distalampyda</i> Juario, 1974	Linhomocidae	Monhysterida	Chromadorea
<i>Terschellingia longicaudata</i> De Man, 1907	Linhomocidae	Monhysterida	Chromadorea
<i>Terschellingia</i> sp. 1	Linhomocidae	Monhysterida	Chromadorea
<i>Terschellingia sulfidrica</i> Pastor de Ward, 1989	Linhomocidae	Monhysterida	Chromadorea
<i>Paralinhomoeus aridus</i> Pastor de Ward, 1989	Linhomocidae	Monhysterida	Chromadorea
<i>Paralinhomoeus pachyamphis</i> Wieser, 1956	Linhomocidae	Monhysterida	Chromadorea
<i>Paralinhomoeus visitus</i> Pastor de Ward, 1989	Linhomocidae	Monhysterida	Chromadorea
<i>Siphonolaimus auratus</i> Wieser, 1956	Siphonolaimidae	Monhysterida	Chromadorea
<i>Diplolaimella gerlachi</i> Pastor de Ward, 1984	Monhysteridae	Monhysterida	Chromadorea
<i>Diplolaimelloides oschei</i> Meyl, 1954	Monhysteridae	Monhysterida	Chromadorea
<i>Diplolaimelloides tehuclhus</i> Pastor de Ward & Lo Russo, 2009	Monhysteridae	Monhysterida	Chromadorea
<i>Diplolaimelloides warwicki</i> Pastor de Ward & Lo Russo, 2009	Monhysteridae	Monhysterida	Chromadorea
<i>Halomonhystera disjuncta</i> (Bastian, 1865)	Monhysteridae	Monhysterida	Chromadorea
<i>Halomonhystera</i> sp. 1	Monhysteridae	Monhysterida	Chromadorea
<i>Halomonhystera</i> sp. 2	Monhysteridae	Monhysterida	Chromadorea
<i>Halomonhystera</i> sp. 3	Monhysteridae	Monhysterida	Chromadorea
<i>Thalassomonhystera parva</i> (Bastian, 1865)	Monhysteridae	Monhysterida	Chromadorea
<i>Thalassomonhystera refringens</i> (Bresslau & Stekhoven, 1935)	Monhysteridae	Monhysterida	Chromadorea
<i>Sphaerolaimus pacificus</i> Allgen 1947	Sphaerolaimidae	Monhysterida	Chromadorea
<i>Sphaerolaimus pentasetus</i> Pastor de Ward, 1984	Sphaerolaimidae	Monhysterida	Chromadorea
<i>Subsphaerolaimus</i> sp. 1	Sphaerolaimidae	Monhysterida	Chromadorea
<i>Amphimonhystera</i> sp. 1	Xyalidae	Monhysterida	Chromadorea
<i>Daptonema concordense</i> Pastor de Ward, 1985	Xyalidae	Monhysterida	Chromadorea
<i>Daptonema laxus</i> Wieser, 1956	Xyalidae	Monhysterida	Chromadorea
<i>Daptonema lopezi</i> Pastor de Ward, 1985	Xyalidae	Monhysterida	Chromadorea
<i>Daptonema rectangulatum</i> Pastor de Ward, 1985	Xyalidae	Monhysterida	Chromadorea
<i>Daptonema</i> sp. 1	Xyalidae	Monhysterida	Chromadorea
<i>Linhystera longa</i> Pastor de Ward, 1985	Xyalidae	Monhysterida	Chromadorea
<i>Metadesmolaimus</i> sp. 1	Xyalidae	Monhysterida	Chromadorea
<i>Metadesmolaimus</i> sp. 2	Xyalidae	Monhysterida	Chromadorea
<i>Paramonhystera megacephala</i> (Steiner, 1916)	Xyalidae	Monhysterida	Chromadorea
<i>Paramonhystera parabutschlii</i> Timm, 1961	Xyalidae	Monhysterida	Chromadorea
<i>Paramonhystera</i> sp. 1	Xyalidae	Monhysterida	Chromadorea
<i>Paramonhystera</i> sp. 2	Xyalidae	Monhysterida	Chromadorea
<i>Paramonhystera</i> sp. 3	Xyalidae	Monhysterida	Chromadorea
<i>Pseudosteimeria antcipans</i> Wieser, 1956	Xyalidae	Monhysterida	Chromadorea

Genera and species	Family	Order	Class
<i>Steineria pilosa</i> Cobb, 1914	Xyalidae	Monhysterida	Chromadorea
<i>Theristus modicus</i> Wieser, 1956	Xyalidae	Monhysterida	Chromadorea
<i>Theristus</i> sp. 1	Xyalidae	Monhysterida	Chromadorea
<i>Haliplectus salicornius</i> Pastor de Ward, 1984	Haliplectidae	Plectida	Chromadorea
<i>Cyartonema flexile</i> Cobb, 1920	Aegialoalaimidae	Plectida	Chromadorea
<i>Camacolaimus barbatus</i> Warwick, 1970	Leptolaimidae	Plectida	Chromadorea
<i>Deontolaimus papillatus</i> De Man, 1880	Leptolaimidae	Plectida	Chromadorea
<i>Antomicron alveolatum</i> Villares & Pastor de Ward, 2012	Leptolaimidae	Plectida	Chromadorea
<i>Leptolaimoides</i> sp. 1	Leptolaimidae	Plectida	Chromadorea
<i>Leptolaimoides</i> sp. 2	Leptolaimidae	Plectida	Chromadorea
<i>Leptolaimus gabinoi</i> Villares & Pastor de Ward, 2012	Leptolaimidae	Plectida	Chromadorea
<i>Leptolaimus puccinelliae</i> Gerlach, 1959	Leptolaimidae	Plectida	Chromadorea
<i>Leptolaimus sebastiani</i> Vitiello, 1974	Leptolaimidae	Plectida	Chromadorea
<i>Paramicroalaimus spirulifer</i> Wieser, 1959	Paramicroalaimidae	Plectida	Chromadorea
<i>Mesorhabditis</i> sp. 1	Mesorhabditidae	Rhabditida	Chromadorea
<i>Aphelenchoides</i> sp. 1	Aphelenchoididae	Rhabditida	Chromadorea
<i>Panagrolaimus</i> sp. 1	Panagrolaimidae	Rhabditida	Chromadorea
<i>Boleodorus</i> sp. 1	Neotylenchidae	Rhabditida	Chromadorea
<i>Tylenchorhynchus</i> sp. 1	Tylenchidae	Rhabditida	Chromadorea
<i>Tylenchus</i> sp. 1	Tylenchidae	Rhabditida	Chromadorea
<i>Dorylaimus</i> sp. 1	Dorylaimidae	Dorylaimida	Enoplea
<i>Eudorylaimus</i> sp. 1	Dorylaimidae	Dorylaimida	Enoplea
<i>Chaetonema</i> sp. 1	Anoplostomatidae	Enoplida	Enoplea
<i>Thoracostomopsis</i> sp. 1	Thoracostomopsidae	Enoplida	Enoplea
<i>Dolicholaimus marioni</i> De Man, 1888	Ironidae	Enoplida	Enoplea
<i>Syringolaimus smarigodus</i> Cobb, 1928	Ironidae	Enoplida	Enoplea
<i>Halalaimus (Halalaimus) setosus</i> Timm, 1961	Oxystominidae	Enoplida	Enoplea
<i>Halalaimus (Nuada) diacros</i> Mawson, 1958	Oxystominidae	Enoplida	Enoplea
<i>Halalaimus</i> sp. 3	Oxystominidae	Enoplida	Enoplea
<i>Halalaimus floridanus</i> Keppner, 1992	Oxystominidae	Enoplida	Enoplea
<i>Thalassoalaimus</i> sp. 1	Oxystominidae	Enoplida	Enoplea
<i>Wieseria</i> sp. 1	Oxystominidae	Enoplida	Enoplea
<i>Cabyptronema maxweberi</i> (De Man, 1922)	Enchelidiidae	Enoplida	Enoplea
<i>Eurystomina</i> sp. 1	Enchelidiidae	Enoplida	Enoplea
<i>Adoncholaimus</i> sp. 1	Enchelidiidae	Enoplida	Enoplea
<i>Oncholaimellus paracarlbergi</i> Pastor de Ward, 1993	Oncholaimidae	Enoplida	Enoplea
<i>Viscosia macramphida</i> Chitwood, 1951	Oncholaimidae	Enoplida	Enoplea
<i>Viscosia separabilis</i> (Wieser, 1953)	Oncholaimidae	Enoplida	Enoplea
<i>Oncholaimus salobrus</i> Pastor de Ward, 1993	Oncholaimidae	Enoplida	Enoplea
<i>Rhabdocoma</i> sp. 1	Trefusiidae	Enoplida	Enoplea
<i>Bathylaimus australis</i> Cobb, 1894	Tripyloididae	Enoplida	Enoplea
<i>Tripyloides amazonicus</i> (Gerlach, 1957)	Tripyloididae	Enoplida	Enoplea
<i>Trichodoris</i> sp. 1	Trichodoridae	Triplonchida	Enoplea
<i>Pandolaimus</i> sp. 1	Pandolaimidae	Triplonchida	Enoplea

Quality control description: The geo-referencing of all specimens were recorded using a Garmin eTrex Legend GPS (WGS84 Datum) with an accuracy of less than 10 m and with at least 5 satellites.

The taxonomic identification of specimens, scientific names, and their current accurate spelling were verified by C. Pastor de Ward, a free-living marine nematode specialist. Other post-validation procedures (including geographic coordinate format, congruence between collection and identification dates, absence of ASCII anomalous characters) were checked using the Darwin Test software (http://www.gbif.es/darwin_test/Darwin_Test_in.php).

Dataset description

Object name: Darwin Core Archive free-living marine Nematodes from San Julián Bay (Santa Cruz, Argentina)

Character encoding: UTF-8

Format name: Darwin Core Archive format

Format version: 1.0

Distribution: <http://www.cenpat-conicet.gov.ar:8080/ipt-2.0.3/resource.do?r=sjnem>

Publication date of data: 2013-10-17

Language: English

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External datasets

Object name: Centro Nacional Patagónico (CENPAT-CONICET)

Distribution: <http://www.cenpat-conicet.gov.ar:8080/ipt-2.0.3/resource.do?r=sjnem>

Object name: Ministerio de Ciencia y Tecnología de Argentina (Sistema Nacional de Datos Biológicos - SNDB)

Distribution: GBIF: <http://www.gbif.org/dataset/06df03fc-8973-490c-af74-089ff-fae9e24>

Formatted: English (U.K.)

Field Code Changed

Metadata language: English

Date of metadata creation: 2013-10-17

Hierarchy level: Dataset

Acknowledgements

We are thankful to the Agencia de Investigaciones Científicas (MINCyT), to Sistema Nacional de Datos Biológicos (SNDB) and Consejo Nacional de Investigaciones Científicas y Técnicas (CENPAT-CONICET) for their financial support.

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