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

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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
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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, Ironiidae, Neotonchidae, Thoracostomopsidae, Tripyloididae, Tylenchidae, Aegialoalaimidae, Anoplostomatidae, Aphelenchoидidae, Axonolaimidae, Ethmolaimidae.
Genera: Odontophora, Hopperia, Laimella, Sabatieria, Campylaimus, Chromadora, Chromadorella, Prochromadora, Dichromadora, Neochromadora, Spilophorella, Marylynnia, Paracanthonchus, Paracyatholaimus, Pomponema, Paraethmolaimus, Gomphionema, Neotonchus, Halichoanolaimus, Molgolaimus, Polysigma, Spirinia, Bolbolaimus, Microlaimus, Desmolaimus, Metalinhomoeus, Terschellingia, Paralinhomoeus, Siphonolaimus, Diplolaimella, Diplolaimelloides, Halomonhystera, Monhystera, Sphaerolaimus, Subsphaerolaimus, Amphiomonhystera, 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, Thalasso-monhystera parva, Metalinhomoeus typicus, Haliplectus salicornius.
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.
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 TM (colloidal silica polymer) method at a specific gravity of 1.15, quan-
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Identifying 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 (Somerfield 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 areno-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).
collection and analysis), Viviana Milano (Grant student, data input), Lidia Miyashiro (Darwin core data input), Renato Mazzanti (Software engineer, data base manager).

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**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 pingüínera; 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      |
|-------------------------------------|-----------------|-------------|------------|
| Odontophora peritricha Wieser, 1956| Axonolaimidae   | Araeolaimida| Chromadorea|
| Hopperia americana Pastor de Ward, 1984| Comesomatidae | Araeolaimida| Chromadorea|
| Hopperia arntzi Chen & Vinçx, 1998| Comesomatidae   | Araeolaimida| Chromadorea|
| Laimella sp. 1                      | Comesomatidae   | Araeolaimida| Chromadorea|
| Laimella sp. 2                      | Comesomatidae   | Araeolaimida| Chromadorea|
| Sabatieria sp. 1                    | Comesomatidae   | Araeolaimida| Chromadorea|
| Sabatieria sp. 2                    | Comesomatidae   | Araeolaimida| Chromadorea|
| Sabatieria mortenseni (Ditlevsen, 1921)| Comesomatidae | Araeolaimida| Chromadorea|
| Sabatieria wieseri Platt, 1985      | Comesomatidae   | Araeolaimida| Chromadorea|
| Campylaimus gerlachi Timm, 1961     | Diplopeltidae   | Araeolaimida| Chromadorea|
| Campylaimus sp. 1                   | Diplopeltidae   | Araeolaimida| Chromadorea|
| Chromadora nudicapitata Bastian, 1865| Chromadoridae  | Chromadorida| Chromadorea|
| Chromadorella circumflexa Wieser, 1954| Chromadoridae  | Chromadorida| Chromadorea|
| Prochromadora argentensis Pastor de Ward, 1984| Chromadoridae | Chromadorida| Chromadorea|
| Dichromadora sp. 1                  | Chromadoridae   | Chromadorida| Chromadorea|
| Neochromadora lineata Pastor de Ward, 1985| Chromadoridae  | Chromadorida| Chromadorea|
| Neochromadora papillosa Pastor de Ward, 1985| Chromadoridae  | Chromadorida| Chromadorea|
| Neochromadora sp. 1                 | Chromadoridae   | Chromadorida| Chromadorea|
| Spilophorella paraoida (De Man, 1888)| Chromadoridae  | Chromadorida| Chromadorea|
| Marylynna quadriseta (Wieser, 1954) | Cyatholaimidae  | Chromadorida| Chromadorea|
| Paracanthonchus longispiculum Pastor de Ward, 1985| Cyatholaimidae | Chromadorida| Chromadorea|
| Paracynthia larvata Tournier, 1921   | Cyatholaimidae  | Chromadorida| Chromadorea|
| Pomponema tatraeae (Allégén, 1933)  | Cyatholaimidae  | Chromadorida| Chromadorea|
| Parastephanolaimus dahli (Gerlach, 1953)| Ethmolaimidae | Chromadorida| Chromadorea|
| Gomphionema sp. 1                   | Neotonaclidae   | Chromadorida| Chromadorea|
| Neotonia sp. 1                      | Neotonaclidae   | Chromadorida| Chromadorea|
| Halich工orolaimus ovalis Ditlevsen, 1921| Selachinematidae| Chromadorida| Chromadorea|
| Molgolaimus minutus Jensen, 1978    | Desmodoridae    | Desmodorida| Chromadorea|
| Molgolaimus sp. 1                   | Desmodoridae    | Desmodorida| Chromadorea|
| Polysigma sp. 1                     | Desmodoridae    | Desmodorida| Chromadorea|
| Spirinia septentrionalis (Cobb, 1914)| Desmodoridae    | Desmodorida| Chromadorea|
| Bolbolaimus sp. 1                   | Microlaimidae   | Desmodorida| Chromadorea|
| Bolbolaimus sp. 3                   | Microlaimidae   | Desmodorida| Chromadorea|
### Genera and species

| Genera and species                                                        | Family           | Order    | Class    |
|--------------------------------------------------------------------------|------------------|----------|----------|
| *Microlaimus capillaris* Gerlach, 1957                                  | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus conothelis* (Lorenzen, 1973)                               | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus cyatholaimoides* Gerlach, 1957                             | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus decoratus* Pastor de Ward, 1991                            | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus gerlachi* Wieser, 1954                                     | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus globiceps* De Man, 1880                                    | Microlaimidae    | Desmodorida | Chromadorea |
| *Microlaimus sp. 1*                                                     | Microlaimidae    | Desmodorida | Chromadorea |
| *Desmolaimus sp. 1*                                                     | Linhomoecida     | Monhysterida | Chromadorea |
| *Desmolaimus sp. 2*                                                     | Linhomoecida     | Monhysterida | Chromadorea |
| *Metalinhomoeus gloriae* Pastor de Ward, 1989                           | Linhomoecida     | Monhysterida | Chromadorea |
| *Metalinhomoeus parafiliformis* Pastor de Ward, 1989                    | Linhomoecida     | Monhysterida | Chromadorea |
| *Metalinhomoeus typicus* De Man, 1907                                    | Linhomoecida     | Monhysterida | Chromadorea |
| *Terschellingia distalamphida* Juanio, 1974                             | Linhomoecida     | Monhysterida | Chromadorea |
| *Terschellingia longicaudata* De Man, 1907                               | Linhomoecida     | Monhysterida | Chromadorea |
| *Terschellingia sp. 1*                                                  | Linhomoecida     | Monhysterida | Chromadorea |
| *Paralinhomoeus aridus* Pastor de Ward, 1984                            | Linhomoecida     | Monhysterida | Chromadorea |
| *Paralinhomoeus pachyamphis* Wieser, 1956                               | Linhomoecida     | Monhysterida | Chromadorea |
| *Paralinhomoeus visitus* Pastor de Ward, 1989                           | Linhomoecida     | Monhysterida | Chromadorea |
| *Siphonolaimus auratus* Wieser, 1956                                    | Siphonolaimidae  | Monhysterida | Chromadorea |
| *Diplolaimella gerlachi* Pastor de Ward, 1984                           | Monhysterida     | Monhysterida | Chromadorea |
| *Diplolaimellloides ocheri* Meyl, 1954                                  | Monhysterida     | Monhysterida | Chromadorea |
| *Diplolaimellloides tehuelchus* Pastor de Ward & Lo Russo, 2009          | Monhysterida     | Monhysterida | Chromadorea |
| *Diplolaimellloides warwickii* Pastor de Ward & Lo Russo, 2009           | Monhysterida     | Monhysterida | Chromadorea |
| *Halomonhystera disjuncta* (Bastian, 1865)                              | Monhysterida     | Monhysterida | Chromadorea |
| *Halomonhystera sp. 1*                                                  | Monhysterida     | Monhysterida | Chromadorea |
| *Halomonhystera sp. 2*                                                  | Monhysterida     | Monhysterida | Chromadorea |
| *Halomonhystera sp. 3*                                                  | Monhysterida     | Monhysterida | Chromadorea |
| *Thalasomonhystera parva* (Bastian, 1865)                               | Monhysterida     | Monhysterida | Chromadorea |
| *Thalasomonhystera refringens* (Bresslau & Stekhoven, 1935)             | Monhysterida     | Monhysterida | Chromadorea |
| *Sphaerolaimus pacificus* Allgen 1947                                   | Sphaerolaimidae  | Monhysterida | Chromadorea |
| *Sphaerolaimus pentasetus* Pastor de Ward, 1984                         | Sphaerolaimidae  | Monhysterida | Chromadorea |
| *Subsphaerolaimus sp. 1*                                                | Sphaerolaimidae  | Monhysterida | Chromadorea |
| *Amphimonhystera sp. 1*                                                 | Xyalidae         | Monhysterida | Chromadorea |
| *Daptonema concordiense* Pastor de Ward, 1985                           | Xyalidae         | Monhysterida | Chromadorea |
| *Daptonema laxus* Wieser, 1956                                           | Xyalidae         | Monhysterida | Chromadorea |
| *Daptonema Lopezi* Pastor de Ward, 1985                                 | Xyalidae         | Monhysterida | Chromadorea |
| *Daptonema rectangulatum* Pastor de Ward, 1985                          | Xyalidae         | Monhysterida | Chromadorea |
| *Daptonema sp. 1*                                                       | Xyalidae         | Monhysterida | Chromadorea |
| *Linhystrona longa* Pastor de Ward, 1985                                | Xyalidae         | Monhysterida | Chromadorea |
| *Metadesmolaimus sp. 1*                                                 | Xyalidae         | Monhysterida | Chromadorea |
| *Metadesmolaimus sp. 2*                                                 | Xyalidae         | Monhysterida | Chromadorea |
| *Paramonhystera megacephala* (Steiner, 1916)                            | Xyalidae         | Monhysterida | Chromadorea |
| *Paramonhystera parabutschlii* Timm, 1961                               | Xyalidae         | Monhysterida | Chromadorea |
| *Paramonhystera sp. 1*                                                  | Xyalidae         | Monhysterida | Chromadorea |
| *Paramonhystera sp. 2*                                                  | Xyalidae         | Monhysterida | Chromadorea |
| *Paramonhystera sp. 3*                                                  | Xyalidae         | Monhysterida | Chromadorea |
| *Pseudosteineria anticipans* Wieser, 1956                               | Xyalidae         | Monhysterida | Chromadorea |
| Genera and species                        | Family                  | Order       | Class     |
|------------------------------------------|-------------------------|-------------|-----------|
| Steineria pilosa Cobb, 1914              | Xyalidae                | Monhysterida| Chromadorea|
| Theristanus modicus Wieser , 1956        | Xyalidae                | Monhysterida| Chromadorea|
| Theristanus sp. 1                        | Xyalidae                | Monhysterida| Chromadorea|
| Haliplectus salicornius Pastor de Ward, 1984 | Haliplectida           | Plectida    | Chromadorea|
| Cyartonema flexile Cobb, 1920            | Aegialoalaimidae        | Plectida    | Chromadorea|
| Camacolaimus barbatus Warwick, 1970      | Leptolaimidae           | Plectida    | Chromadorea|
| Deontolaimus papillatus De Man, 1880     | Leptolaimidae           | Plectida    | Chromadorea|
| Anomicron alveolatum Villares & Pastor de Ward, 2012 | Leptolaimidae           | Plectida    | Chromadorea|
| Leptolaimoides sp. 1                     | Leptolaimidae           | Plectida    | Chromadorea|
| Leptolaimoides sp. 2                     | Leptolaimidae           | Plectida    | Chromadorea|
| Leptolaimus gabini Villares & Pastor de Ward, 2012 | Leptolaimidae           | Plectida    | Chromadorea|
| Leptolaimus pucinelliae Gerlach, 1959    | Leptolaimidae           | Plectida    | Chromadorea|
| Leptolaimus sebastiani Vitiello, 1974    | Leptolaimidae           | Plectida    | Chromadorea|
| Panamicrolaimus spirulifer Wieser, 1959  | Paramicrolaimidae       | Plectida    | Chromadorea|
| Mesorhabditis sp. 1                      | Mesorhabditida          | Rhabditida  | Chromadorea|
| Aphelenchoides sp. 1                     | Aphelenchoidida         | Rhabditida  | Chromadorea|
| Panagrolaimus sp. 1                      | Panagrolaimida          | Rhabditida  | Chromadorea|
| Boleodorus sp. 1                         | Neotylenchida           | Rhabditida  | Chromadorea|
| Tylechorylchnus sp. 1                    | Tylechida               | Rhabditida  | Chromadorea|
| Tylechus sp. 1                           | Tylechida               | Rhabditida  | Chromadorea|
| Dorylaimus sp. 1                         | Dorylaimida             | Enoplea     | Enoplea    |
| Eudorylaimus sp. 1                       | Dorylaimida             | Enoplea     | Enoplea    |
| Chaetonema sp. 1                         | Anoplostomatida         | Enoplea     | Enoplea    |
| Thoracostomopsis sp. 1                   | Thoracostomopsida       | Enoplea     | Enoplea    |
| Dolicholaimus marioni De Man, 1888       | Ironida                 | Enoplea     | Enoplea    |
| Syringolaimus smarigus Cobb, 1928        | Ironida                 | Enoplea     | Enoplea    |
| Halalaimus (Halalaimus) setosus Timm, 1961 | Oxystominida           | Enoplea     | Enoplea    |
| Halalaimus (Nuada) diacros Mawson, 1958  | Oxystominida            | Enoplea     | Enoplea    |
| Halalaimus sp. 3                         | Oxystominida            | Enoplea     | Enoplea    |
| Halalaimus floridanus Keppner, 1992      | Oxystominida            | Enoplea     | Enoplea    |
| Thalassotaimus sp. 1                     | Oxystominida            | Enoplea     | Enoplea    |
| Wieseria sp. 1                           | Oxystominida            | Enoplea     | Enoplea    |
| Calyptronema maxweberi (De Man, 1922)    | Enchelidiida            | Enoplea     | Enoplea    |
| Eurystonema sp. 1                        | Enchelidiida            | Enoplea     | Enoplea    |
| Adoncholaimus sp. 1                      | Enchelidiida            | Enoplea     | Enoplea    |
| Oncholaimellus pancarlsbergi Pastor de Ward, 1993 | Oncholaimida           | Enoplea     | Enoplea    |
| Viscosia macroptha Chitwood, 1951        | Oncholaimida            | Enoplea     | Enoplea    |
| Viscosia separabilis (Wieser, 1953)       | Oncholaimida            | Enoplea     | Enoplea    |
| Oncholaimus salobrus Pastor de Ward, 1993 | Oncholaimida            | Enoplea     | Enoplea    |
| Rhabdocoma sp. 1                         | Trefusiida              | Enoplea     | Enoplea    |
| Bathylaimus australis Cobb, 1894         | Tripyloidida            | Enoplea     | Enoplea    |
| Tripyloides amazonicus (Gerlach, 1957)    | Tripyloidida            | Enoplea     | Enoplea    |
| Trichodorus sp. 1                        | Trichodorida            | Triplonchida| Enoplea    |
| Pandolaimus sp. 1                        | Pandolaimida            | 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.)

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**Metadata language:** English

**Date of metadata creation:** 2013-10-17

**Hierarchy level:** Dataset
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