

The following supplement accompanies the article

Habitat alteration and community-level effects of an invasive ecosystem engineer: a case study along the coast of NSW, Australia

Fabiane Gallucci^{1,2,*}, Pat Hutchings², Paul Gribben³, Gustavo Fonseca^{1,2}

¹Centro de Biologia Marinha da Universidade de São Paulo, Rodovia Manoel Hypólito do Rego, km 131.5, São Sebastião 11600-000, Brazil

²Australian Museum, 6 College Street, Sydney, New South Wales 2010, Australia

³Plant Functional Biology and Climate Change Cluster, School of the Environment, University of Technology, Sydney, New South Wales 2007, Australia

*Email: fabiane.gallucci@usp.com.br

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Supplement. Abundances of meiofaunal higher taxa and nematode morphospecies at each habitat within each site and results from permutational analysis of multivariate dispersion for meiofauna and nematode assemblages.

Table S1. Mean abundances of meiofaunal taxa (ind. 10 cm⁻²) at each habitat (unvegetated sediments and sediments underneath *Caulerpa taxifolia* or *Zostera capricorni*) within each site.

	Lake Conjola			Pittwater			Port Hacking		
	<i>C. taxifolia</i>	Unvegetated	<i>Z. capri-corni</i>	<i>C. taxifolia</i>	Unvegetated	<i>Z. capri-corni</i>	<i>C. taxifolia</i>	Unvegetated	<i>Z. capri-corni</i>
Nematodes	1760	2537	1031	6802	3097	5825	1970	4676	5688
Copepods	372	331	239	497	789	519	872	528	633
Nauplii	73	239	185	357	493	442	277	452	541
Polychaetes	3	76	201	150	124	124	13	124	54
Kinorhyncha	0	3	357	13	10	6	3	0	16
Ostracoda	3	10	6	6	3	13	32	38	16
Amphipods	13	54	0	0	3	0	6	22	0
Oligochaetes	3	10	0	6	0	19	13	13	22
Tardigrades	0	54	6	3	3	3	0	0	0
Turbellaria	0	3	3	3	0	10	3	6	35
Tanaids	0	0	0	32	0	0	6	0	0
Insects	32	0	6	0	0	0	0	0	0
Halocarida	0	0	10	3	10	3	0	0	0
Gastrotrichia	0	0	3	6	3	3	0	3	6
Bivalves	3	0	6	3	0	0	0	0	0
Hydrozoa	0	0	0	3	0	0	0	3	3
Gastropoda	3	0	0	0	0	3	0	0	0
Isopoda	0	0	0	0	3	0	3	0	0
Sipuncula	0	0	3	0	0	0	0	0	0

Table S2. Results from permutational analysis of multivariate dispersion (PERMDISP) analysis for multivariate structure of meiofauna and nematode assemblages. LC: Lake Conjola; PW: Pittwater; PH: Port Hacking. Significant values in **bold**

Meiofauna							
		Pseudo- <i>F</i>	p				
	Site	25.17	0.001				
	Habitat	2.21	0.185				
	Site \diamond Habitat	2.24	0.284				
		<i>t</i>	p				
Pair-wise (Site)	LC \diamond PW	6.17	0.001				
	LC \diamond PH	5.65	0.001				
	PW \diamond PH	0.87	0.435				
Nematodes							
		Pseudo- <i>F</i>	p				
	Site	17.42	0.001				
	Habitat	5.93	0.014				
	Site \diamond Habitat	6.60	0.002				
Pair-wise (Site \diamond Habitat)		<i>C. taxifolia</i>		<i>Z. capricorni</i>		Unvegetated	
		<i>t</i>	p	<i>t</i>	p	<i>t</i>	p
	LC \diamond PW	2.12	0.131	4.49	0.002	3.72	<0.001
	LC \diamond PH	1.44	0.230	7.47	0.003	9.92	0.003
	PW \diamond PH	0.95	0.973	0.62	0.547	0.23	0.892
		Lake Conjola		Port Hacking		Pittwater	
		<i>t</i>	p	<i>t</i>	p	<i>t</i>	p
	<i>C. taxifolia</i> \diamond Unvegetated	1.59	0.301	0.45	0.732	0.14	0.918
	<i>C. taxifolia</i> \diamond <i>Z. capricorni</i>	4.29	0.002	0.51	0.786	0.60	0.415
	Unvegetated \diamond <i>Z. capricorni</i>	17.23	0.003	2.36	0.002	0.44	0.796

Table S3. Relative abundances (average of 4 replicates) of nematode morphospecies at each habitat (unvegetated sediments and sediments underneath *Caulerpa taxifolia* or *Zostera capricorni*) within each site.

	Lake Conjola			Port Hacking			Pittwater		
	<i>C. taxifolia</i>	Unvegetated	<i>Z. Capri-corni</i>	<i>C. taxifolia</i>	Unvegetated	<i>Z. Capri-corni</i>	<i>C. taxifolia</i>	Unvegetated	<i>Z. capri-corni</i>
<i>Viscosia</i> sp.1	11.2	7.9	2.9	0.6	2.4	3.8	3.2	4.4	4.0
<i>Metoncholaimus</i> sp.1	22.9	0.0	0.0	5.7	0.0	4.4	0.0	0.0	0.0
<i>Metachromadora</i> sp.1	0.0	6.1	0.6	4.6	6.5	4.0	2.8	3.8	3.9
<i>Spirinia</i> sp.1	16.6	0.0	7.8	0.5	0.0	3.4	0.7	0.0	0.8
<i>Neochromadora</i> sp.1	7.5	1.5	6.5	1.4	0.5	1.6	1.8	0.5	0.5
<i>Microlaimus</i> sp.2	1.4	2.9	0.7	0.5	1.8	2.8	3.6	2.8	4.3
<i>Desmodora</i> sp.2	0.0	0.0	0.0	3.7	4.6	1.6	3.6	2.5	4.3
<i>Sabatieria</i> sp.1	0.0	3.7	5.9	0.6	3.2	1.0	1.3	1.8	2.6
<i>Prochromadorella</i> sp.1	4.7	1.0	2.9	1.7	0.0	0.5	2.1	4.3	2.0
<i>Comesoma</i> sp.1	1.8	2.0	6.5	1.9	4.9	0.0	1.4	0.5	0.0

<i>Viscosia</i> sp.2	0.0	5.3	0.0	0.0	4.6	4.0	1.7	1.9	1.4
<i>Chromaspirina</i> sp.1	1.6	7.3	1.1	1.3	1.0	2.8	0.7	0.0	1.7
<i>Bathylaimus</i> sp.1	0.0	4.7	0.0	0.0	4.7	0.0	1.8	2.9	3.3
<i>Anticoma</i> sp.2	0.0	0.0	0.0	5.4	4.4	2.3	2.4	1.4	1.3
<i>Rhabdocoma</i> sp.1	0.0	0.0	4.8	0.5	1.2	0.7	1.7	4.6	3.2
<i>Paracomesoma</i> sp.1	0.0	0.0	2.2	5.1	0.0	3.2	2.8	0.0	3.0
<i>Daptonema</i> sp.3	0.0	0.0	0.0	6.4	2.9	2.0	1.0	2.5	0.7
<i>Comesa</i> sp.1	8.2	0.0	0.0	4.0	0.0	1.1	0.4	0.5	1.0
<i>Chromadorita</i> sp.1	0.0	2.3	1.2	2.9	2.9	0.8	1.5	3.1	0.4
<i>Theristus</i> sp.2	0.0	3.8	0.7	2.6	3.7	1.6	0.4	1.4	0.5
<i>Chromadorella</i> sp.2	0.0	0.0	0.6	4.5	2.8	3.4	0.9	1.3	0.5
<i>Chromadorella</i> sp.4	0.0	0.0	0.0	0.0	0.9	4.0	3.5	0.3	4.8
<i>Ptycholaimellus</i> sp.1	0.0	0.0	0.0	3.9	1.5	2.6	0.6	2.3	2.4
<i>Chromadorina</i> sp.1	7.7	0.0	0.9	0.9	0.7	0.0	1.2	0.0	1.5
<i>Nannolaimoides</i> sp.1	8.8	0.0	3.3	0.0	0.7	0.0	0.0	0.0	0.0
<i>Onyx</i> sp.1	0.0	3.5	0.0	0.0	0.5	0.5	2.2	2.0	3.7
<i>Chromadorella</i> sp.1	1.4	0.0	2.7	0.8	0.5	2.3	0.9	1.7	1.4
<i>Daptonema</i> sp.1	0.0	0.7	4.7	0.0	0.0	0.0	1.9	1.5	2.4
<i>Microlaimus</i> sp.1	0.0	2.1	1.9	0.0	0.0	0.6	1.7	1.1	3.5
<i>Dichromadora</i> sp.2	0.0	0.0	0.0	0.7	3.1	1.6	2.4	0.0	2.9
<i>Sabatieria</i> sp.2	0.0	0.0	0.0	4.2	0.0	1.8	1.8	0.0	2.1
<i>Theristus</i> sp.1	0.0	7.7	0.5	0.0	0.9	0.0	0.0	0.0	0.0
<i>Dichromadora</i> sp.1	0.0	5.1	2.0	0.5	0.8	0.5	0.0	0.0	0.0
<i>Chromadorita</i> sp.2	0.0	0.0	0.0	0.5	2.4	0.5	0.0	4.9	0.6
<i>Odontophora</i> sp.1	0.0	0.0	0.5	0.6	0.5	4.2	2.5	0.0	0.6
<i>Rhyps</i> sp.1	0.0	3.9	0.0	0.0	0.0	0.0	0.0	4.3	0.5
<i>Siphonolaimus</i> sp.1	1.4	0.0	0.9	0.0	0.0	1.9	3.0	0.0	1.3
<i>Monoposthia</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.4	3.6
<i>Cobbia</i> sp.1	0.0	0.0	0.0	4.2	0.0	2.4	1.3	0.0	0.4
<i>Cobbia</i> sp.2	0.0	0.0	0.0	3.8	0.0	0.7	2.8	0.0	0.8
<i>Marylynnia</i> sp.1	0.0	0.0	0.0	1.3	0.5	3.7	1.7	0.8	0.0
<i>Paralinhomoeus</i> sp.1	1.4	0.0	2.2	0.7	0.0	0.0	1.1	0.0	2.2
<i>Xenolaimus</i> sp.1	0.0	3.2	0.0	0.0	0.5	0.0	0.0	3.9	0.0
<i>Metalinhomoeus</i> sp.1	0.0	0.0	2.6	0.5	0.0	1.2	2.9	0.0	0.5
<i>Paralongicyatholaimus</i> sp.1	0.0	0.0	0.0	0.0	0.0	4.5	0.4	0.0	2.5
<i>Paracanthochus</i> sp.2	0.0	0.0	0.0	1.4	3.1	1.1	0.0	0.0	1.8
<i>Polysigma</i> sp.1	0.0	0.0	0.0	0.0	1.0	5.4	0.5	0.0	0.0

<i>Metachromadora</i> sp.3	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.1	2.1
<i>Leptolaimus</i> sp.1	0.0	0.6	5.7	0.0	0.0	0.0	0.0	0.0	0.0
<i>Tripyloides</i> sp.1	0.0	0.0	0.0	1.1	4.5	0.6	0.0	0.0	0.0
<i>Steineria</i> sp.1	0.0	0.0	0.0	0.5	0.7	1.1	1.4	0.0	1.9
<i>Thalassomonhystera</i> sp.1	0.0	0.0	0.0	1.6	3.9	0.0	0.0	0.0	0.0
<i>Pselionema</i> sp.1	0.0	3.1	0.0	0.0	0.0	0.0	0.4	2.0	0.0
<i>Paramonhystera</i> sp.1	0.0	0.0	0.0	2.2	1.2	0.0	0.6	1.5	0.0
<i>Parodontophora</i> sp.1	0.0	0.0	1.8	3.5	0.0	0.0	0.0	0.0	0.0
<i>Oncholaimus</i> sp.1	0.0	0.0	0.0	0.0	1.0	0.0	1.5	2.0	0.8
<i>Gonionchus</i> sp.1	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pomponema</i> sp.1	3.4	0.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0
<i>Bathyeurystomina</i> sp.1	0.0	0.0	0.0	1.9	0.0	2.1	0.9	0.0	0.0
<i>Terschellingia</i> sp.1	0.0	0.0	4.2	0.0	0.0	0.0	0.4	0.0	0.0
<i>Camacolaimus</i> sp.1	0.0	1.5	0.7	0.0	1.8	0.5	0.0	0.0	0.0
<i>Halalaimus</i> sp.1	0.0	3.2	0.7	0.0	0.0	0.0	0.0	0.5	0.0
<i>Scaptrella</i> sp.1	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rhynchonema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0
<i>Syringolaimus</i> sp.1	0.0	0.0	0.9	0.0	0.0	0.0	2.4	0.0	0.4
<i>Bolbolaimus</i> sp.1	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
<i>Tricoma</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.7	1.8
<i>Viscosia</i> sp.3	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.7	0.0
<i>Camacolaimus</i> sp.2	0.0	0.0	0.7	0.0	0.5	1.0	0.0	0.3	1.0
<i>Daptonema</i> sp.4	0.0	0.0	0.0	1.6	0.0	1.4	0.0	0.0	0.4
<i>Terschellingia longicaudata</i>	0.0	0.0	0.0	2.7	0.0	0.0	0.6	0.0	0.0
<i>Axonolaimus</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.5	0.5
<i>Dichromadora</i> sp.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.2	0.4
<i>Halalaimus</i> sp.2	0.0	0.7	0.0	0.0	0.0	0.0	0.9	0.7	0.9
<i>Laimella</i> sp.1	0.0	0.0	0.0	0.8	0.0	0.0	0.8	0.0	1.3
<i>Gomphonema</i> sp.1	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.9
<i>Eleutherolaimus</i> sp.1	0.0	0.0	0.0	0.0	0.0	1.2	0.5	0.0	1.1
<i>Stephanolaimus</i> sp.1	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Spilophorella</i> sp.1	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.9	0.0
<i>Daptonema</i> sp.2	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.3	0.0
<i>Axonolaimus</i> sp.1	0.0	0.0	0.0	0.0	0.5	0.0	0.9	1.0	0.0
<i>Neochromadora</i> sp.2	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.5	0.8
<i>Chromaspirina</i> sp.2	0.0	0.0	1.8	0.0	0.5	0.0	0.0	0.0	0.0
<i>Cyarttonema</i> sp.1	0.0	0.0	1.4	0.0	0.0	0.5	0.4	0.0	0.0

<i>Daptonema</i> sp.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.2
<i>Enoploides</i> sp.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.6	0.0
<i>Thalassoalaimus</i> sp.1	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
<i>Paralinhomoeus</i> sp.2	0.0	0.0	0.0	1.5	0.0	0.0	0.4	0.0	0.0
<i>Daptonema</i> spp	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.6
<i>Eurystomina</i> sp.1	0.0	0.7	0.0	0.0	1.0	0.0	0.0	0.0	0.0
<i>Sphaerolaimus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.1
<i>Setosabatieria</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0
<i>Desmoscolex</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0
<i>Stephanolaimus</i> sp.2	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
<i>Paracanthonchus</i> sp.1	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.4
<i>Atrochromadora</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
<i>Epsilonema</i> sp.1	0.0	0.0	0.0	0.6	0.5	0.0	0.0	0.5	0.0
<i>Dolicholaimus</i> sp.1	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
<i>Oxyonchus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
<i>Metachromadora</i> sp.2	0.0	0.0	0.0	0.0	1.0	0.0	0.4	0.0	0.0
<i>Halichoanalaimus</i> sp.1	0.0	0.0	0.6	0.0	0.0	0.0	0.4	0.3	0.0
<i>Anticoma</i> sp.1	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0
<i>Diplolaimella</i> sp.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.6
<i>Ascolaimus</i> sp.1	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.3	0.0
<i>Desmodora</i> sp.1	0.0	0.0	0.7	0.0	0.0	0.5	0.0	0.0	0.0
<i>Gammanema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0
<i>Halalaimus</i> sp.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0
<i>Wieseria</i> sp.1	0.0	0.6	0.0	0.0	0.0	0.5	0.0	0.0	0.0
<i>Sabatieria</i> sp.3	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.6
<i>Actinonema</i> sp.1	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
<i>Innocuonema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0
<i>Tricoma</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
<i>Chromadorina</i> sp.2	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0
<i>Calyptronema</i> sp.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
<i>Trissonchulus</i> sp.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
<i>Southernia</i> sp.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catanema</i> sp.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pseudonchus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0
<i>Chromadorella</i> sp.3	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
<i>Paracanthonchus</i> sp.3	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
<i>Acantholaimus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
<i>Ammotheristus</i> sp.1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0

<i>Paramonhystera</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
Fam.A, Gen.A sp.1	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
<i>Parapinanema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
<i>Chromadoridae</i> A sp.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phanodermopsis</i> sp.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
<i>Chromadorella</i> sp.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
<i>Oxystomina</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
<i>Calomicrolaimus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
<i>Tarvaia</i> sp.1	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Metepsilonema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
<i>Prochromadorella</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
<i>Metachromadora</i> sp.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
<i>Longicyatholaimus</i> sp.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
<i>Halichoanalaimus</i> sp.2	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
<i>Anoplostoma</i> sp.1	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
<i>Stylotheristus</i> sp.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
<i>Stygodesmodora</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Fam.Bastianidae, G en.A sp.1	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
<i>Metachromadora</i> sp.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
<i>Chromadorita</i> sp.3	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
<i>Monhystrella</i> sp.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
<i>Linhomoeus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Eubostrichus</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Fam. Linhomoidae, Gen.A sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Siphonolaimus</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Alaimella</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Daptonema</i> sp.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Daptonema</i> sp.7	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Desmodorinae</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Draconema</i> sp.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Microlaimus</i> sp.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
<i>Odontophora</i> sp.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0