

S1 Nematomorph collection sites

Location	Latitude	Longitude	Elevation (m)	Type
Remarkables	-45.056996	168.816187	1656	cushionfield
Crown Range	-44.979982	168.943269	935	tussock
Rock & Pillar Range				
1st Stream	-45.444428	170.106226	508	tussock
2nd Stream	-45.441464	170.084285	1085	tussock
Big Hut	-45.433755	170.076145	1319	cushionfield
Old Man Range				
Stream A	-45.344442	169.199392	1588	cushionfield
Stream B	-45.351334	169.204526	1521	cushionfield
Ida Range	-44.925604	170.263658	1148	tussock

S2 PCR thermal cycling profiles

Primer Set	Step #	Temp. (°C)	Time (sec)	Primer Set	Step #	Temp. (°C)	Time (sec)
LCO1498/	1	94	240	NZHW_CO1_F/R	1	94	240
HCO2198 AND	2	94	30		2	94	30
HHW-cox1-	3	48	30		3	60	30
F2/R2	4	72	60		4	72	60
	5	Repeat 2-4	40x		5	Repeat 2-4	40x
	6	72	300		6	72	300
HHW-ITS-F2/R2	1	94	240	HW_Grp5_ITS_F/R	1	94	240
	2	94	30		2	94	30
	3	60	30		3	53	30
	4	72	90		4	72	90
	5	Repeat 2-4	40x		5	Repeat 2-4	40x
	6	72	300		6	72	300

S3 List of sequences obtained from GenBank for phylogenetic analyses. DS = direct submission

Species	18S	COI	Reference
<i>Chordodes morgani</i>	AF036639	KU721072	(Blaxter et al., 1998); (Harkins et al., 2016)
<i>Chordodes sp. BH-2013</i>		KF381359	(Bolek et al., 2013)
<i>Chordodes sp. BSG-2002</i>	AF421763		(Bleidorn et al., 2002)
<i>Chordodes fukuui</i>		AB647244	(Sato et al., 2012)
<i>Gordionus chinensis</i>		AB741906	(Sato et al., 2014)

<i>Gordionus kii</i>		AB647252	(Sato et al., 2012)
<i>Euchordodes nigromaculatus</i>	AF421764		(Bleidorn et al., 2002)
<i>Gordius aquaticus</i>	X80233		(Winnepenninckx et al., 1995)
<i>Gordius attoni</i>		KM382318	(Hanelt et al., 2015)
<i>Gordius albopunctatus</i>	U88337		(Aleshin et al., 1998)
<i>Gordius balticus</i>		KM382320	(Hanelt et al., 2015)
<i>Gordius cf. robustus N132B</i> (Clade 7)		KM382310	(Hanelt et al., 2015)
<i>Gordius cf. robustus N131</i> (Clade 1)		KM382279	(Hanelt et al., 2015)
<i>Gordius cf. robustus N148A</i> (Clade 3)		KM382284	(Hanelt et al., 2015)
<i>Gordius cf. robustus N161A</i> (Clade 6)		KM382301	(Hanelt et al., 2015)
<i>Gordius cf. robustus N223A</i> (Clade 8)		KM382311	(Hanelt et al., 2015)
<i>Gordius cf. robustus N257</i> (Clade 5)		KM382296	(Hanelt et al., 2015)
<i>Gordius cf. robustus N272</i> (Clade 4)		KM382290	(Hanelt et al., 2015)
<i>Gordius cf. robustus N395</i> (Clade 2)		KM382283	(Hanelt et al., 2015)
<i>Gordius sp. KW-2011-A</i>		AB647235	(Sato et al., 2012)
<i>Gordius sp. KW-2011-B</i>		AB647237	(Sato et al., 2012)
<i>Gordius sp. KW-2011-D</i>		AB647241	(Sato et al., 2012)
<i>Gordius sp. N178</i>		KM382321	(Hanelt et al., 2015)
<i>Gordius sp. N183</i>		KM382322	(Hanelt et al., 2015)
<i>Gordius sp. N297B</i>		KM382323	(Hanelt et al., 2015)
<i>Gordius sp. N357</i>		KM382324	(Hanelt et al., 2015)
<i>Gordius paranensis</i>	AF421766		(Bleidorn et al., 2002)
<i>Gordius sp.</i>	U51005		(Aguinaldo et al., 1997)
<i>Gordius sp. AN154</i>	KT202296		(Efeykin et al., 2016)

<i>Gordius sp. BDE3</i>	KT202295		(Efeykin et al., 2016)
<i>Gordionus alpestris</i>	KT202292		(Efeykin et al., 2016)
<i>Gordionus sp. BD15</i>	KT202294		(Efeykin et al., 2016)
<i>Gordionus wolterstorffi</i>	AF421765		(Bleidorn et al., 2002)
<i>Nectonema agile</i>	AF421767		(Bleidorn et al., 2002)
<i>Neochordodes occidentalis</i>	AF421768	JN881995	(Bleidorn et al., 2002); (Looney et al., 2012)
<i>Paragordionus dispar</i>	AF421769		(Bleidorn et al., 2002)
<i>Paragordionus rautheri</i>	AF421770		(Bleidorn et al., 2002)
<i>Paragordius sp. GG-2004</i>	AY428819	AY428843	(Giribet et al., 2004)
<i>Paragordius tricuspidatus</i>	AF421771		(Bleidorn et al., 2002)
<i>Paragordius varius</i>	AF421772	KU721073	(Bleidorn et al., 2002); (Harkins et al., 2016)
<i>Trichinella spiralis</i>	AY497012	AF293969	DS; (Lavrov and Brown, 2001)
<i>Spiniochordodes tellini</i>	AF421773		(Bleidorn et al., 2002)
<i>Xiphinema americanum</i>	AY283170	AY382608	(Neilson et al., 2004); (He et al., 2005)

S4 GenBank accession numbers of ribosomal and *COI* sequences from this study.SP = specimen, SL = sub-location.

SP	SL	<u>Accession Number</u>		SP	SL	<u>Accession Number</u>	
		Ribosomal	<i>COI</i>			Ribosomal	<i>COI</i>
RK1		KY172663	KY172745	RP32	Big Hut	KY172704	KY172777
CR1		KY172664	-	RP33	Big Hut	KY172705	KY172778
CR2		KY172665	-	RP34	Big Hut	-	KY172779
CR3		KY172666	KY172746	RP35	Big Hut	KY172706	KY172780
CR4		-	-	RP36	Big Hut	KY172707	KY172781
CR5		KY172667	-	RP37	Big Hut	KY172708	KY172782
CR6		KY172668	KY172747	RP38	Big Hut	KY172709	KY172783

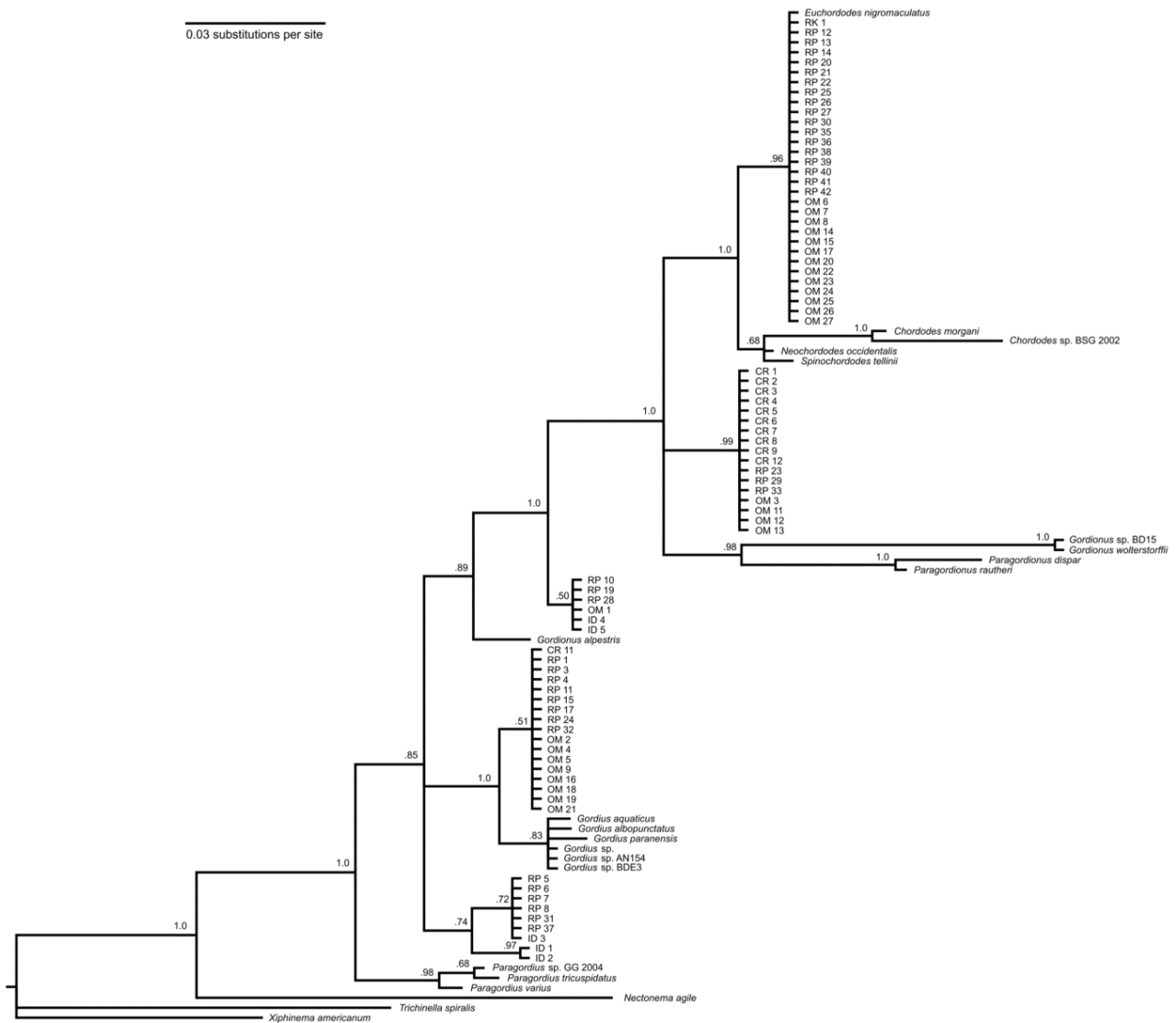
SP	SL	<u>Accession Number</u>		SP	SL	<u>Accession Number</u>	
		Ribosomal	COI			Ribosomal	COI
CR7		KY172669	KY172748	RP39	Big Hut	KY172710	KY172784
CR8		KY172670	-	RP40	Big Hut	KY172711	KY172785
CR9		KY172671	-	RP41	Big Hut	KY172712	KY172786
CR10		-	-	RP42	Big Hut	KY172713	KY172787
CR11		KY172672	KY172749	OM1	Stream A	KY172714	KY172788
CR12		KY172673	-	OM2	Stream A	KY172715	KY172789
RP1	1 st Stream	KY172674	KY172750	OM3	Stream A	KY172716	KY172790
RP2	1 st Stream	-	-	OM4	Stream A	KY172717	KY172791
RP3	1 st Stream	KY172675	KY172751	OM5	Stream A	KY172718	KY172792
RP4	1 st Stream	KY172676	KY172752	OM6	Stream A	KY172719	KY172793
RP5	2 nd Stream	KY172677	KY172753	OM7	Stream A	KY172720	KY172794
RP6	2 nd Stream	KY172678	KY172754	OM8	Stream A	KY172721	KY172795
RP7	2 nd Stream	KY172679	KY172755	OM9	Stream A	KY172722	-
RP8	2 nd Stream	KY172680	KY172756	OM10	Stream A	-	-
RP9	Big Hut	KY172681	KY172757	OM11	Stream B	KY172723	-
RP10	Big Hut	KY172682	KY172758	OM12	Stream B	KY172724	KY172796
RP11	Big Hut	KY172683	KY172759	OM13	Stream B	KY172725	-
RP12	Big Hut	KY172684	KY172760	OM14	Stream B	KY172726	KY172797
RP13	Big Hut	KY172685	KY172761	OM15	Stream B	KY172727	KY172798
RP14	Big Hut	KY172686	KY172762	OM16	Stream B	KY172728	KY172799
RP15	Big Hut	KY172687	KY172763	OM17	Stream B	KY172729	KY172800

SP	SL	<u>Accession Number</u>		SP	SL	<u>Accession Number</u>	
		Ribosomal	COI			Ribosomal	COI
RP16	Big Hut	KY172688	KY172764	OM18	Stream B	KY172730	KY172801
RP17	Big Hut	KY172689	KY172765	OM19	Stream B	KY172731	KY172802
RP18	Big Hut	KY172690	KY172766	OM20	Stream B	KY172732	KY172803
RP19	Big Hut	KY172691	-	OM21	Stream B	KY172733	KY172804
RP20	Big Hut	KY172692	KY172767	OM22	Stream B	KY172734	KY172805
RP21	Big Hut	KY172693	KY172768	OM23	Stream B	KY172735	KY172806
RP22	Big Hut	KY172694	KY172769	OM24	Stream B	KY172736	KY172807
RP23	Big Hut	KY172695	-	OM25	Stream B	KY172737	KY172808
RP24	Big Hut	KY172696	KY172770	OM26	Stream B	KY172738	KY172809
RP25	Big Hut	KY172697	KY172771	OM27	Stream B	KY172739	KY172810
RP26	Big Hut	KY172698	KY172772	ID1		KY172740	KY172811
RP27	Big Hut	KY172699	KY172773	ID2		KY172741	KY172812
RP28	Big Hut	KY172700	KY172774	ID3		KY172742	KY172813
RP29	Big Hut	KY172701	-	ID4		KY172743	KY172814
RP30	Big Hut	KY172702	KY172775	ID5		KY172744	KY172815
RP31	Big Hut	KY172703	KY172776				

S5 Mean length and standard deviation of the five hairworm species by sex. Includes only fully intact hairworms of determined sex.

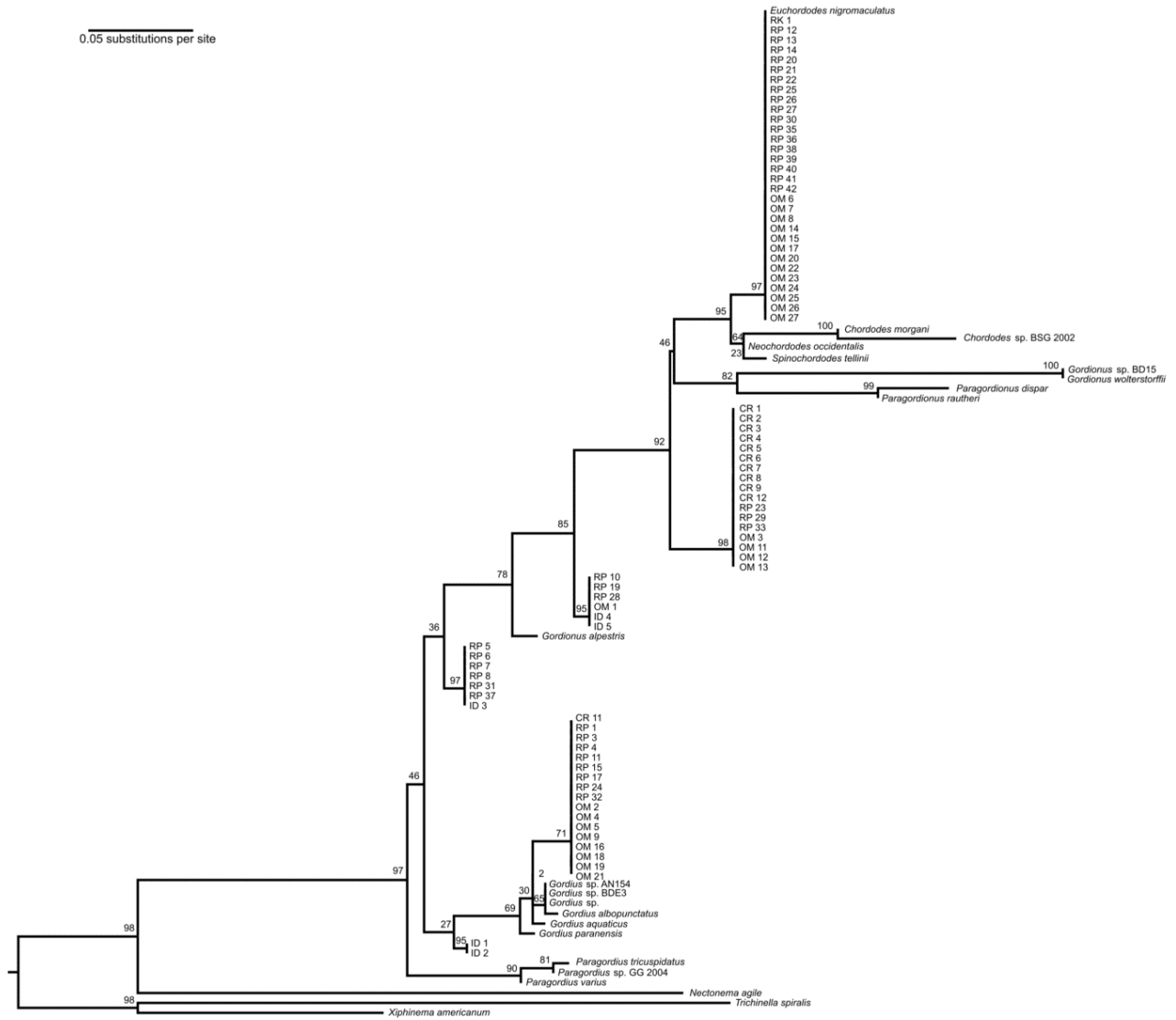
<u>Species</u>	<u>Sex</u>	<u>Mean Length \pm SD</u>
<i>Euchordodes nigromaculatus</i>	M	106.6 \pm 19.7
<i>Parachordodes diblastus</i>	M	251.6 \pm 44.3
<i>Gordius paranensis</i>	M	136.0 \pm 64.6
<i>Gordius</i> sp.	M	205.9 \pm 66.5
	F	478.0 \pm 123.0
<i>Gordionus</i> n. sp.	M	95.8 \pm 36.5
	F	149

S6 Bayesian phylogenetic tree of nematomorph 18S rRNA gene.

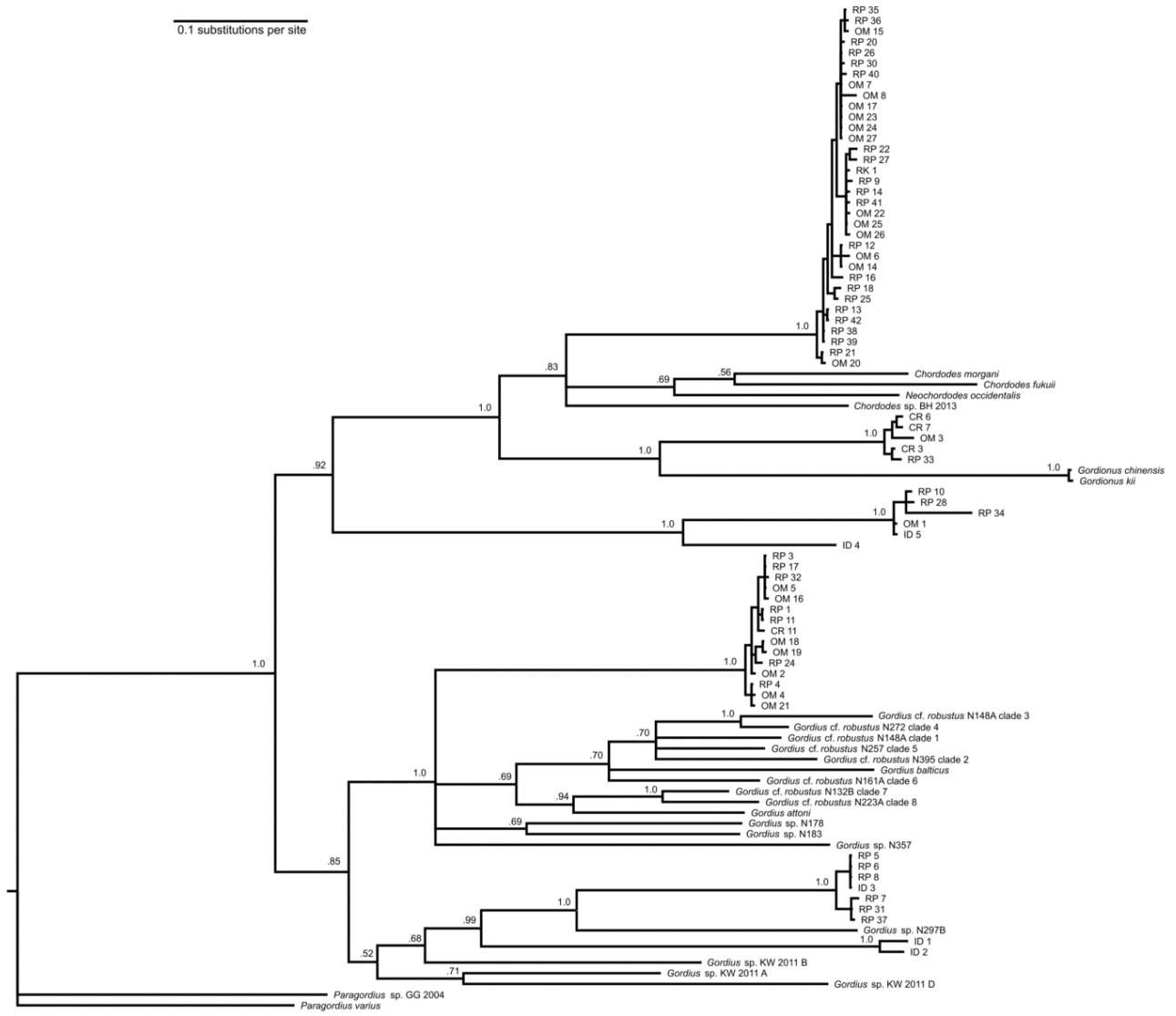


S7 Maximum likelihood phylogenetic tree of nematomorph 18S rRNA gene.

0.05 substitutions per site



S8 Bayesian phylogenetic tree of nematomorph CO1 gene.



S9 Maximum likelihood phylogenetic tree of nematomorph CO1 gene.

0.2 substitutions per site

