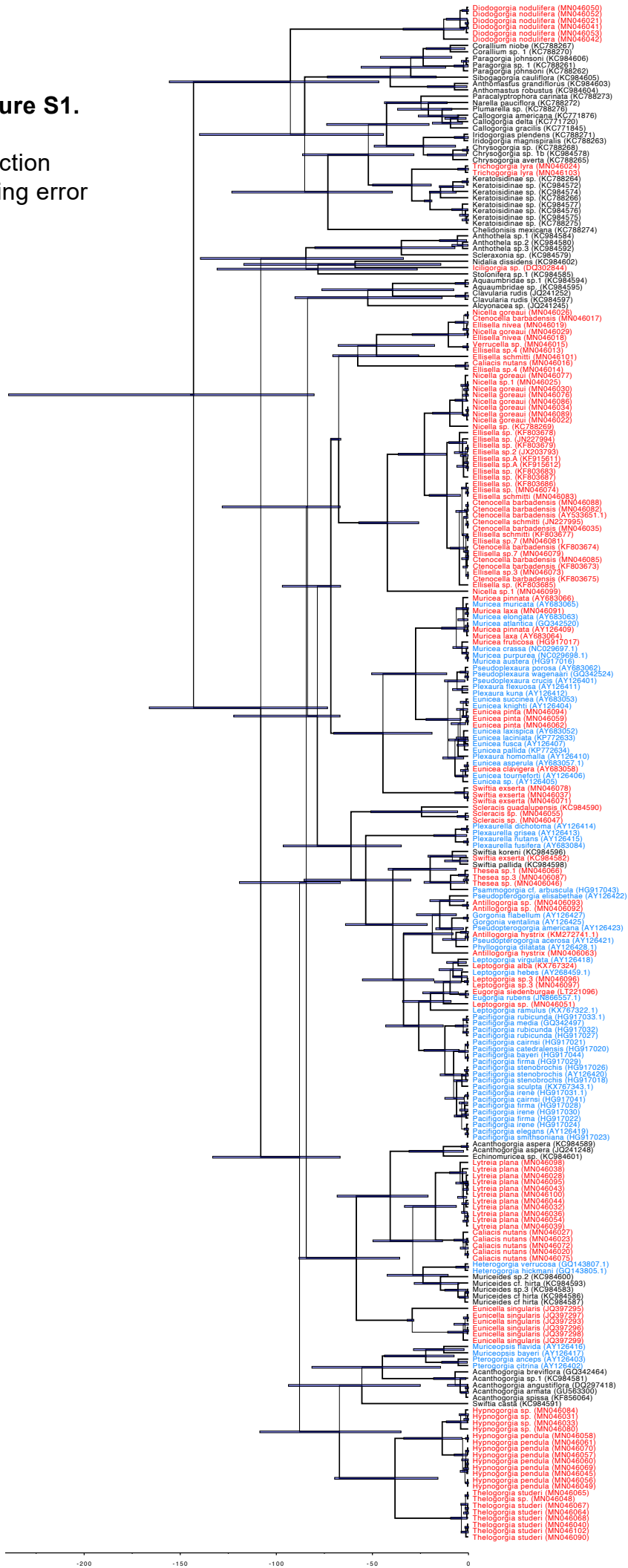


Supplementary Figure S1.
Time-calibrated
phylogeny reconstruction
(chronogram) including error
bars.



Supplementary Table S1. Metadata from sequences used in the study.

GenBank ACC No.	Type	Depth	Species	Specimen_voucher	Country
<i>New sequences generated for this study (D=deep-water; M=mesophotic; S=shallow-water)</i>					
MN046063	M	60m	<i>Antillogorgia hystrix</i>	ANDES-IM 4262	Colombia
MN046092	M	45m	<i>Antillogorgia</i> sp.	ANDES-IM 4459	Colombia
MN046093	M	45m	<i>Antillogorgia</i> sp.	ANDES-IM 4461	Colombia
MN046016	M	37m	<i>Caliacis nutans</i>	ANDES-IM 4661	Colombia
MN046020	M	35m	<i>Caliacis nutans</i>	ANDES-IM 4658	Colombia
MN046023	M	80m	<i>Caliacis nutans</i>	ANDES-IM 4347	Colombia
MN046027	M	80m	<i>Caliacis nutans</i>	ANDES-IM 4348	Colombia
MN046072	M	95m	<i>Caliacis nutans</i>	ANDES-IM 4801	Colombia
MN046075	M	95m	<i>Caliacis nutans</i>	ANDES-IM 4645	Colombia
MN046017	M	37m	<i>Ctenocella barbadensis</i>	ANDES-IM 4146	Colombia
MN046035	M	80m	<i>Ctenocella barbadensis</i>	ANDES-IM 4132	Colombia
MN046082	M	90m	<i>Ctenocella barbadensis</i>	ANDES-IM 4139	Colombia
MN046085	M	85m	<i>Ctenocella barbadensis</i>	ANDES-IM 4500	Colombia
MN046088	M	85m	<i>Ctenocella barbadensis</i>	ANDES-IM 4143	Colombia
MN046021	M	45m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4368	Colombia
MN046041	M	72m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4795	Colombia
MN046042	M	72m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4796	Colombia
MN046050	M	72m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4366	Colombia
MN046052	M	72m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4367	Colombia
MN046053	M	72m	<i>Diodogorgia nodulifera</i>	ANDES-IM 4797	Colombia
MN046018	M	37m	<i>Ellisella nivea</i>	ANDES-IM 4363	Colombia
MN046019	M	37m	<i>Ellisella nivea</i>	ANDES-IM 4365	Colombia
MN046083	M	90m	<i>Ellisella schmitti</i>	ANDES-IM 4440	Colombia
MN046101	M	50m	<i>Ellisella schmitti</i>	ANDES-IM 4439	Colombia
MN046074	M	95m	<i>Ellisella</i> sp.	ANDES-IM 4497	Colombia
MN046073	M	95m	<i>Ellisella</i> sp3	ANDES-IM 4800	Colombia
MN046013	M	60m	<i>Ellisella</i> sp4	ANDES-IM 4494	Colombia
MN046014	M	60m	<i>Ellisella</i> sp4	ANDES-IM 4495	Colombia
MN046079	M	115m	<i>Ellisella</i> sp7	ANDES-IM 4498	Colombia
MN046081	M	115m	<i>Ellisella</i> sp7	ANDES-IM 4499	Colombia
MN046059	M	80m	<i>Eunicea pinta</i>	ANDES-IM 4409	Colombia
MN046062	M	60m	<i>Eunicea pinta</i>	ANDES-IM 4410	Colombia
MN046094	M	45m	<i>Eunicea pinta</i>	ANDES-IM 4406	Colombia
MN046045	M	72m	<i>Hypnogorgia pendula</i>	ANDES-IM 4620	Colombia
MN046049	M	72m	<i>Hypnogorgia pendula</i>	ANDES-IM 4624	Colombia
MN046056	M	80m	<i>Hypnogorgia pendula</i>	ANDES-IM 4369	Colombia
MN046057	M	80m	<i>Hypnogorgia pendula</i>	ANDES-IM 4639	Colombia
MN046058	M	80m	<i>Hypnogorgia pendula</i>	ANDES-IM 4640	Colombia
MN046060	M	80m	<i>Hypnogorgia pendula</i>	ANDES-IM 4641	Colombia
MN046061	M	80m	<i>Hypnogorgia pendula</i>	ANDES-IM 4370	Colombia
MN046069	M	95m	<i>Hypnogorgia pendula</i>	ANDES-IM 4371	Colombia

MN046070	M	95m	<i>Hypnogorgia pendula</i>	ANDES-IM 4644	Colombia
MN046031	M	80m	<i>Hypnogorgia</i> sp.	ANDES-IM 4633	Colombia
MN046033	M	80m	<i>Hypnogorgia</i> sp.	ANDES-IM 4634	Colombia
MN046080	M	115m	<i>Hypnogorgia</i> sp.	ANDES-IM 4372	Colombia
MN046084	M	85m	<i>Hypnogorgia</i> sp.	ANDES-IM 4646	Colombia
MN046051	M	72m	<i>Leptogorgia</i> sp.	ANDES-IM 4504	Colombia
MN046096	M	50m	<i>Leptogorgia</i> sp3	ANDES-IM 4505	Colombia
MN046097	M	50m	<i>Leptogorgia</i> sp3	ANDES-IM 4506	Colombia
MN046028	M	80m	<i>Lytrea plana</i>	ANDES-IM 4421	Colombia
MN046032	M	80m	<i>Lytrea plana</i>	ANDES-IM 4422	Colombia
MN046036	M	77m	<i>Lytrea plana</i>	ANDES-IM 4629	Colombia
MN046038	M	77m	<i>Lytrea plana</i>	ANDES-IM 4418	Colombia
MN046039	M	77m	<i>Lytrea plana</i>	ANDES-IM 4476	Colombia
MN046043	M	72m	<i>Lytrea plana</i>	ANDES-IM 4605	Colombia
MN046044	M	66m	<i>Lytrea plana</i>	ANDES-IM 4513	Colombia
MN046054	M	72m	<i>Lytrea plana</i>	ANDES-IM 4475	Colombia
MN046095	M	85m	<i>Lytrea plana</i>	ANDES-IM 4802	Colombia
MN046098	M	50m	<i>Lytrea plana</i>	ANDES-IM 4511	Colombia
MN046100	M	50m	<i>Lytrea plana</i>	ANDES-IM 4512	Colombia
MN046091	M	45m	<i>Muricea laxa</i>	ANDES-IM 4794	Colombia
MN046022	M	80m	<i>Nicella goreau</i>	ANDES-IM 4212	Colombia
MN046026	M	80m	<i>Nicella goreau</i>	ANDES-IM 4213	Colombia
MN046029	M	80m	<i>Nicella goreau</i>	ANDES-IM 4522	Colombia
MN046030	M	80m	<i>Nicella goreau</i>	ANDES-IM 4214	Colombia
MN046034	M	80m	<i>Nicella goreau</i>	ANDES-IM 4215	Colombia
MN046076	M	115m	<i>Nicella goreau</i>	ANDES-IM 4655	Colombia
MN046077	M	115m	<i>Nicella goreau</i>	ANDES-IM 4219	Colombia
MN046086	M	85m	<i>Nicella goreau</i>	ANDES-IM 4220	Colombia
MN046089	M	85m	<i>Nicella goreau</i>	ANDES-IM 4221	Colombia
MN046025	M	80m	<i>Nicella</i> sp1	ANDES-IM 4521	Colombia
MN046099	M	50m	<i>Nicella</i> sp1	ANDES-IM 4519	Colombia
MN046055	M	87m	<i>Scleraxis</i> sp.	ANDES-IM 4626	Colombia
MN046047	M	72m	<i>Scleraxis</i> sp.	ANDES-IM 4622	Colombia
MN046037	M	77m	<i>Swiftia exserta</i>	ANDES-IM 4609	Colombia
MN046071	M	95m	<i>Swiftia exserta</i>	ANDES-IM 4193	Colombia
MN046078	M	115m	<i>Swiftia exserta</i>	ANDES-IM 4194	Colombia
MN046040	M	72m	<i>Thelogorgia studeri</i>	ANDES-IM 4615	Colombia
MN046064	M	67m	<i>Thelogorgia studeri</i>	ANDES-IM 4665	Colombia
MN046065	M	95m	<i>Thelogorgia studeri</i>	ANDES-IM 4666	Colombia
MN046067	M	95m	<i>Thelogorgia studeri</i>	ANDES-IM 4667	Colombia
MN046068	M	95m	<i>Thelogorgia studeri</i>	ANDES-IM 4668	Colombia
MN046090	M	85m	<i>Thelogorgia studeri</i>	ANDES-IM 4670	Colombia
MN046102	M	50m	<i>Thelogorgia studeri</i>	ANDES-IM 4664	Colombia
MN046046	M	72m	<i>Thesea</i> sp.	ANDES-IM 4621	Colombia
MN046066	M	95m	<i>Thesea</i> sp1	ANDES-IM 4643	Colombia

MN046087	M	85m	<i>Thesea</i> sp3	ANDES-IM 4647	Colombia
MN046024	M	80m	<i>Trichogorgia lyra</i>	ANDES-IM 4342	Colombia
MN046103	M	50m	<i>Trichogorgia lyra</i>	ANDES-IM 4653	Colombia
MN046048	M	72m	Unknown octocoral	ANDES-IM 4617	Colombia
MN046015	M	60m	<i>Verrucella</i> sp.	ANDES-IM 4654	Colombia

Sequences obtained from GenBank

DQ297418	D	<i>Acanthogorgia angustiflora</i>
GU563300	D	<i>Acanthogorgia armata</i>
JQ241248	D	<i>Acanthogorgia aspera</i>
KC984589	D	<i>Acanthogorgia aspera</i>
GQ342464	D	<i>Acanthogorgia breviflora</i>
KC984581	D	<i>Acanthogorgia</i> sp1
KF856064	D	<i>Acanthogorgia spissa</i>
JQ241245	D	<i>Alcyonacea</i> sp.
KC984603	D	<i>Anthomastus grandiflorus</i>
KC984604	D	<i>Anthomastus robustus</i>
KC984584	D	<i>Anthothela</i> sp1
KC984580	D	<i>Anthothela</i> sp2
KC984592	D	<i>Anthothela</i> sp3
KM272741.1	S	<i>Antillogorgia hystrix</i>
KC984595	D	<i>Aquaumbridae</i> sp.
KC984594	D	<i>Aquaumbridae</i> sp1
KC771876	D	<i>Callogorgia americana</i>
KC771720	D	<i>Callogorgia delta</i>
KC771845	D	<i>Callogorgia gracilis</i>
KC788274	D	<i>Chelidonisis mexicana</i>
KC788265	D	<i>Chrysogorgia averta</i>
KC788268	D	<i>Chrysogorgia</i> sp.
KC984578	D	<i>Chrysogorgia</i> sp1b
JQ241252	D	<i>Clavularia rudis</i>
KC984597	D	<i>Clavularia rudis</i>
KC788267	D	<i>Corallium niobe</i>
KC788270	D	<i>Corallium</i> sp1
AY533651.1	M	<i>Ctenocella barbadensis</i>
KF803673	M	<i>Ctenocella barbadensis</i>
KF803674	M	<i>Ctenocella barbadensis</i>
KF803675	M	<i>Ctenocella barbadensis</i>
JN227995	M	<i>Ctenocella schmitti</i>
KC984601	D	<i>Echinomuricea</i> sp.
KF803677	M	<i>Ellisella schmitti</i>
JN227994	M	<i>Ellisella</i> sp.
KF803678	M	<i>Ellisella</i> sp.
KF803679	M	<i>Ellisella</i> sp.
KF803683	M	<i>Ellisella</i> sp.
KF803685	M	<i>Ellisella</i> sp.

KF803686	M	<i>Ellisella</i> sp.
KF803687	M	<i>Ellisella</i> sp.
JX203793	M	<i>Ellisella</i> sp2
KF915611	M	<i>Ellisella</i> spA
KF915612	M	<i>Ellisella</i> spA
JN866557.1	M	<i>Eugorgia rubens</i>
LT221096	M	<i>Eugorgia siedenburgae</i>
AY683057.1	S	<i>Eunicea asperula</i>
AY683058	S	<i>Eunicea clavigera</i>
AY126407	S	<i>Eunicea fusca</i>
AY126404	S	<i>Eunicea knighti</i>
KP772633	S	<i>Eunicea laciniata</i>
AY683052	S	<i>Eunicea laxispica</i>
KP772634	S	<i>Eunicea pallida</i>
AY126405	S	<i>Eunicea</i> sp.
AY683053	S	<i>Eunicea succinea</i>
AY126406	S	<i>Eunicea tourneforti</i>
JQ397293	M	<i>Eunicella singularis</i>
JQ397295	M	<i>Eunicella singularis</i>
JQ397296	M	<i>Eunicella singularis</i>
JQ397297	M	<i>Eunicella singularis</i>
JQ397298	M	<i>Eunicella singularis</i>
JQ397299	M	<i>Eunicella singularis</i>
AY126427	S	<i>Gorgonia flabellum</i>
AY126425	S	<i>Gorgonia ventalina</i>
GQ143805.1	S	<i>Heterogorgia hickmani</i>
GQ143807.1	S	<i>Heterogorgia verrucosa</i>
DQ302844	S	<i>Iciligorgia</i> sp.
KC788263	D	<i>Iridogorgia magnispiralis</i>
KC788271	D	<i>Iridogorgia splendens</i>
KC788264	D	<i>Keratoisidinae</i> sp.
KC788266	D	<i>Keratoisidinae</i> sp.
KC788275	D	<i>Keratoisidinae</i> sp.
KC984572	D	<i>Keratoisidinae</i> sp.
KC984574	D	<i>Keratoisidinae</i> sp.
KC984575	D	<i>Keratoisidinae</i> sp.
KC984576	D	<i>Keratoisidinae</i> sp.
KC984577	D	<i>Keratoisidinae</i> sp.
KX767324	M	<i>Leptogorgia alba</i>
AY268459.1	S	<i>Leptogorgia hebes</i>
KX767322.1	S	<i>Leptogorgia ramulus</i>
AY126418	S	<i>Leptogorgia virgulata</i>
GQ342520	S	<i>Muricea atlantica</i>
HG917016	S	<i>Muricea</i> cf. <i>austera</i>
NC029697.1	S	<i>Muricea crassa</i>

AY683063	S	<i>Muricea elongata</i>
HG917017.1	S	<i>Muricea fruticosa</i>
AY683064	S	<i>Muricea laxa</i>
AY683065	S	<i>Muricea muricata</i>
AY126409	S	<i>Muricea pinnata</i>
AY683066	M	<i>Muricea pinnata</i>
NC029698.1	S	<i>Muricea purpurea</i>
KC984586	D	<i>Muriceides</i> cf. <i>hirta</i>
KC984587	D	<i>Muriceides</i> cf. <i>hirta</i>
KC984593	D	<i>Muriceides</i> cf. <i>hirta</i>
KC984600	D	<i>Muriceides</i> sp2
KC984583	D	<i>Muriceides</i> sp3
AY126417	S	<i>Muriceopsis bayeri</i>
AY126416	S	<i>Muriceopsis flavida</i>
KC788272	D	<i>Narella pauciflora</i>
KC788269	M	<i>Nicella</i> sp.
KC984602	D	<i>Nidalia dissidens</i>
HG917044	S	<i>Pacifigorgia bayeri</i>
HG917021	S	<i>Pacifigorgia cairnsi</i>
HG917041	S	<i>Pacifigorgia cairnsi</i>
HG917020	S	<i>Pacifigorgia catedralensis</i>
AY126419	S	<i>Pacifigorgia elegans</i>
HG917022	S	<i>Pacifigorgia firma</i>
HG917028	S	<i>Pacifigorgia firma</i>
HG917029	S	<i>Pacifigorgia firma</i>
HG917024	S	<i>Pacifigorgia irene</i>
HG917030	S	<i>Pacifigorgia irene</i>
HG917031.1	S	<i>Pacifigorgia irene</i>
GQ342497	S	<i>Pacifigorgia media</i>
HG917027	S	<i>Pacifigorgia rubicunda</i>
HG917032	S	<i>Pacifigorgia rubicunda</i>
HG917033.1	S	<i>Pacifigorgia rubicunda</i>
KX767343.1	S	<i>Pacifigorgia sculpta</i>
HG917023	S	<i>Pacifigorgia smithsoniana</i>
AY126420	S	<i>Pacifigorgia stenobrochis</i>
HG917018	S	<i>Pacifigorgia stenobrochis</i>
HG917026	S	<i>Pacifigorgia stenobrochis</i>
KC788273	D	<i>Paracalyptrophora carinata</i>
KC788262	D	<i>Paragorgia johnsoni</i>
KC984606	D	<i>Paragorgia johnsoni</i>
KC788261	D	<i>Paragorgia</i> sp1
AY126428.1	S	<i>Phyllogorgia dilatata</i>
AY126411	S	<i>Plexaura flexuosa</i>
AY126410	S	<i>Plexaura homomalla</i>
AY126412	S	<i>Plexaura kuna</i>

AY126414	S	<i>Plexaurella dichotoma</i>
AY683084	S	<i>Plexaurella fusifera</i>
AY126413	S	<i>Plexaurella grisea</i>
AY126415	S	<i>Plexaurella nutans</i>
KC788276	D	<i>Plumarella</i> sp.
HG917043	S	<i>Psammogorgia</i> cf. <i>arbuscula</i>
AY126401	S	<i>Pseudoplexaura crucis</i>
AY683062	S	<i>Pseudoplexaura porosa</i>
GQ342524	S	<i>Pseudoplexaura wagnaari</i>
AY126421	S	<i>Pseudopterogorgia acerosa</i>
AY126423	S	<i>Pseudopterogorgia americana</i>
AY126422	S	<i>Pseudopterogorgia elisabethae</i>
AY126403	S	<i>Pterogorgia anceps</i>
AY126402	S	<i>Pterogorgia citrina</i>
KC984590	M	<i>Scleraxis guadalupensis</i>
KC984579	D	<i>Scleraxonia</i> sp.
KC984605	D	<i>Sibogagorgia cauliflora</i>
KC984585	D	<i>Stolonifera</i> sp1
KC984591	D	<i>Swiftia casta</i>
KC984582	M	<i>Swiftia exserta</i>
KC984596	P	<i>Swiftia koreni</i>
KC984598	D	<i>Swiftia pallida</i>