

Supplementary Table S1. List of sponge species found inside and outside the caves and tunnel studied in Fernando de Noronha, with species authorities and Aphia IDs from WoRMS.

Species	Aphia ID (urn:lsid:marinespecies.org:taxname:)
CLASS DEMOSPONGIAE	
<i>Agelas clathrodes</i> (Schmidt, 1870) [47]	164823
<i>Agelas dispar</i> Duchassaing & Michelotti, 1864 [48]	164827
<i>Agelas</i> sp. 1	
<i>Agelas</i> sp. 2	
<i>Aiolochoiria crassa</i> (Hyatt, 1875) [49]	169632
<i>Amphimedon compressa</i> Duchassaing & Michelotti, 1864 [48]	166666
<i>Aplysina fulva</i> (Pallas, 1766) [50]	169649
<i>Batzella</i> sp. 1	
<i>Batzella</i> sp. 2	
<i>Chondrilla caribensis</i> Rützler, Duran & Piantoni, 2007 [51]	248192
<i>Chondrosia collectrix</i> (Schmidt, 1870) [47]	170373
<i>Chondrosia</i> sp.	
<i>Clathria</i> (<i>Thalysias</i>) <i>minuta</i> (van Soest, 1984) [52]	167759
<i>Dercitus</i> (<i>Halinastra</i>) <i>luteus</i> (Pulitzer-Finali, 1986) [53]	555685
<i>Dercitus</i> (<i>Stoebea</i>) <i>latex</i> (Moraes & Muricy, 2007) [36]	555785
<i>Dictyonella</i> sp.	
<i>Diplastrella megastellata</i> Hechtel, 1965 [54]	170700
<i>Dragmacidon reticulatum</i> (Ridley & Dendy, 1886) [55]	165558
<i>Dysidea</i> sp.	
<i>Ectyoplasia ferox</i> (Duchassaing & Michelotti, 1864) [48]	168021
<i>Erylus formosus</i> Sollas, 1886 [56]	170070
<i>Gastrophanella cavernicola</i> Muricy & Minervino, 2000 [34]	171201
<i>Haliclona</i> sp.	
<i>Halisarca caerulea</i> Vacelet & Donadey, 1987 [57]	166037
<i>Hyrtios proteus</i> Duchassaing & Michelotti, 1864 [48]	165352
<i>Ircinia felix</i> (Duchassaing & Michelotti, 1864) [48]	165020
<i>Ircinia strobilina</i> (Lamarck, 1816) [58]	165051
<i>Ircinia</i> sp. 1	
<i>Ircinia</i> sp. 2	
<i>Jaspis</i> sp.	
<i>Monanchora arbuscula</i> (Duchassaing & Michelotti, 1864) [48]	169016
<i>Neopetrosia</i> sp.	
<i>Niphates amorpha</i> van Soest, 1980 [59]	166772
<i>Oceanapia</i> sp.	
<i>Petrosia</i> sp.	
<i>Scopalina ruetzleri</i> (Wiedenmayer, 1977) [60]	165702
<i>Spirastrella hartmani</i> Boury-Esnault, Klautau, Bézac, Wulff & Solé-Cava, 1999 [61]	170709
<i>Suberites</i> sp.	
<i>Thorecta</i> sp.	
<i>Topsentia ophiraphidites</i> (de Laubenfels, 1934) [62]	165956
<i>Verongida</i> unidentified	
<i>Xestospongia muta</i> (Schmidt, 1870) [47]	166894
<i>Xestospongia</i> sp.	
CLASS CALCAREA	
<i>Arturia</i> cf. <i>alcatrazensis</i> (Lanna, Rossi, Cavalcanti, Hajdu & Klautau, 2007) [63]	1030553
<i>Ascandra</i> cf. <i>atlantica</i> (Thacker, 1908) [64]	732710
<i>Ascandra</i> sp.	
<i>Calcarea</i> unidentified	
<i>Clathrina aurea</i> Solé-Cava, Klautau, Boury-Esnault, Borojevic & Thorpe, 1991 [65]	164649

<i>Clathrina</i> aff. <i>luteoculcitella</i> Wörheide & Hooper, 1999 [66]	164672
<i>Clathrina delicata</i> Fontana, Cóndor-Luján, Azevedo, Perez & Klautau, 2018 [67]	1248507
<i>Clathrina insularis</i> Azevedo, Pádua, Moraes, Rossi, Muricy & Klautau, 2017 [39]	1030541
<i>Clathrina</i> sp. 1	
<i>Clathrina</i> sp. 2	
<i>Clathrina</i> sp. 3	
<i>Clathrina</i> sp. 4	
<i>Clathrina</i> sp. 5	
<i>Clathrina</i> sp. 6	
<i>Janusya</i> sp.	
<i>Neoernsta</i> sp. 1	
<i>Neoernsta</i> sp. 2	
<i>Neoernsta</i> sp. 3	
CLASS HOMOSCLEROMORPHA	
cf. <i>Aspiculortis</i> sp.	
<i>Oscarella</i> cf. <i>zoranja</i> Pérez & Ruiz, 2018 [68]	1054040
<i>Oscarella</i> sp. 1	
<i>Oscarella</i> sp. 2	
<i>Oscarella</i> sp. 3	
cf. <i>Oscarella</i> sp.	
<i>Plakina coerulea</i> Cedro, Hajdu & Correa, 2013 [69]	736977
<i>Plakina</i> sp. 1	
<i>Plakina</i> sp. 2	
<i>Plakinastrella microspiculifera</i> Moraes & Muricy, 2003 [35]	169755
<i>Plakinastrella</i> sp. 1	
<i>Plakinastrella</i> sp. 2	
<i>Plakortis angulospiculatus</i> (Carter, 1879) [70]	169759
<i>Plakortis insularis</i> Moraes & Muricy, 2003 [35]	169764
<i>Plakortis microrhabdifera</i> Moraes & Muricy, 2003 [35]	169768
<i>Plakortis spinalis</i> Domingos, Moraes & Muricy, 2013 [38]	742475
<i>Plakortis</i> sp.	
