

1 **Supplemental Material**

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3 Decadal-scale changes in abundances of non-scleractinian invertebrates on a Caribbean coral
4 reef

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7 Table S1. Summary of taxa scored in the photoquadrats from 1992 to 2007. Bold font indicates
8 taxa that were abundant, and therefore used to support the separate class- and species-level
9 analyses; the class-level analysis was completed with the pooled taxa for that class.

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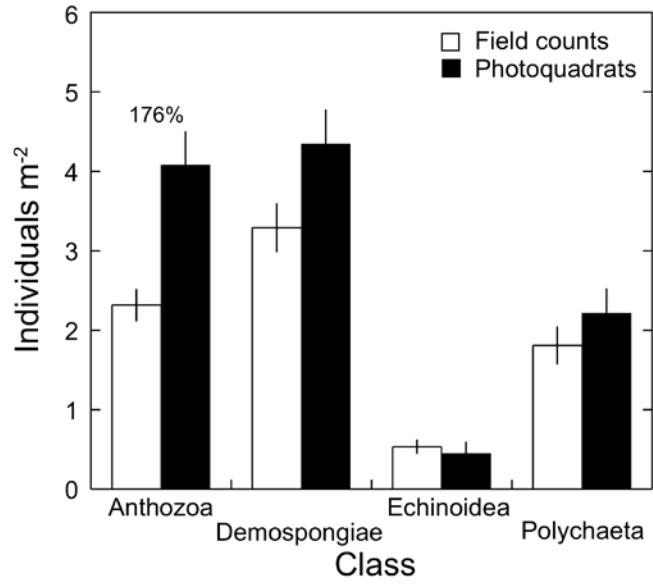
Class	Genus	Species
Anthozoa	<i>Gorgonia</i>	<i>Gorgonia</i> spp. (mostly <i>G. ventalina</i>)
	<i>Palythoa</i>	<i>P. caribaeorum</i>
	<i>Pseudopterogorgia</i>	<i>P. bipinnata</i>
	<i>Eunicea</i>	<i>E. mammosa</i>
	<i>Bartholomea</i>	<i>B. annulata</i>
	<i>Condylactis</i>	<i>C. gigantean</i>
	<i>Eythropodium</i>	<i>E. caribaeorum</i>
Ascidiacea	<i>Ascidia</i>	<i>A. nigra</i>
	<i>Clavelina</i>	<i>Clavelina</i> spp.
	<i>Eudistoma</i>	<i>Eudistoma</i> spp.
Bivalvia	<i>Lima</i>	<i>L. scabra</i>
Crinoidea	<i>Davidaster</i>	<i>D. rubiginosa</i>
Demospongiae	<i>Amphimedon</i>	<i>A. compressa</i>
	<i>Aplysina</i>	<i>A. cauliformis</i>
	<i>Callyspongia</i>	<i>C. vaginalis</i>
	<i>Spiraastrella</i>	<i>S. coccinea</i>
	<i>Ectyoplasia</i>	<i>E. ferox</i>
	<i>Sphaciospongia</i>	<i>S. vesparium</i>
Echinoidea	<i>Diadema</i>	<i>D. antillarum</i>
	<i>Echinometra</i>	<i>Echinometra</i> spp.
	<i>Eucidaris</i>	<i>E. tribuloides</i>
Gastropoda	<i>Cyphoma</i>	<i>C. gibbosum</i>
Hydrozoa	<i>Millepora</i>	<i>Millepora</i> spp. (mostly <i>M. alcicornis</i>)
Malacostraca	<i>Periclimenes</i>	<i>P. pedersoni</i>
	<i>Stenorhynchus</i>	<i>S. seticornis</i>
Ophiuroidea	<i>Ophiothrix</i>	<i>Ophiothrix</i> spp. (mostly <i>O. suensonii</i>)
Polychaeta	<i>Pomastegus</i>	<i>P. stellatus</i>
	<i>Sabellastarte</i>	<i>S. magnifica</i>
	<i>Spirobranchus</i>	<i>S. giganteus</i>
	<i>Eupolymnia</i>	<i>E. crassicornis</i>

12 Table S2. Statistical test of association between mean invertebrate abundance and mean
 13 macroalgal cover. Results are shown for the four most numerous classes, and the 12-14 most
 14 numerous species; Pearson correlations (r) and their significance (P) displayed. Associations
 15 between invertebrates and coral cover are not shown as coral cover did not vary over time in this
 16 habitat. All significant interactions are in bold.
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	Test of association
Class	
Anthozoa	r = -0.089, df = 7, P > 0.05
Demospongiae	r = 0.170, df = 7, P > 0.05
Echinoidea	r = 0.363, df = 7, P > 0.05
Polychaeta	r = 0.407, df = 7, P > 0.05
Species	
<i>Gorgonia ventalina</i>	r = 0.702, df = 7, P < 0.05
<i>Palythoa caribaeorum</i>	r = -0.457, df = 7, P > 0.05
<i>Pseudopterogorgia bipinnata</i>	r = -0.203, df = 7, P > 0.05
<i>Eunicea mammosa</i>	r = 0.357, df = 7, P > 0.05
<i>Amphimedon compressa</i>	r = 0.698, df = 7, P < 0.05
<i>Aplysina cauliformis</i>	r = 0.558, df = 7, P > 0.05
<i>Callyspongia vaginalis</i>	r = 0.347, df = 7, P > 0.05
<i>Spirastrella coccinea</i>	r = -0.419, df = 7, P > 0.05
<i>Diadema antillarum</i>	r = -0.344, df = 7, P > 0.05
<i>Echinometra spp.</i>	r = 0.535, df = 7, P > 0.05
<i>Eucidaris tribuloides</i>	r = 0.115, df = 7, P > 0.05
<i>Pomatostegus stellatus</i>	r = 0.732, df = 7, P < 0.05
<i>Sabellastarte magnifica</i>	r = 0.529, df = 7, P > 0.05
<i>Spirobranchus giganteus</i>	r = -0.308, df = 7, P > 0.05

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19 Fig. S1. Contrast of invertebrate abundances determined *in situ* (Field counts) and with the
20 photographic technique (Photoquadrats). Mean \pm SE shown with n = 240. Percentage indicates
21 the discrepancy between photographic and field techniques where these are significant.
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24 Fig. S2. Species-level analysis for the four invertebrate classes [(A) Anthozoa, (B)
 25 Demospongiae, (C) Echinoidea, and (D) Polychaeta) that were censused biennially between
 26 1992 and 2007. Two of the classes were represented by four species, and two by three species
 27 (Table S1); taxa were selected for analysis based on their suitability for enumeration in planar
 28 images. Mean \pm SE shown with $n = 100-248 \text{ y}^{-1}$. For statistical analyses of these data refer to
 29 Table 2.
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