

**Post-settlement demographics of reef building corals suggest prolonged recruitment
bottlenecks**

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Table S1: Abundance and survival of juveniles per taxon, in each time window.

Taxa	Initial abundance	Transition												Survival (%)
		1			2			3			4			
		Alive	Dead	Lost	Alive	Dead	Lost	Alive	Dead	Lost	Alive	Dead	Lost	
<i>Pocillopora</i>	165	101	49	15	70	67	28	57	79	29	44	89	32	27
<i>Stylophora</i>	121	88	12	21	66	24	31	55	35	31	53	37	31	44
<i>Pavona</i>	60	37	2	21	27	5	28	26	5	29	25	6	29	42
<i>Goniastrea</i>	48	35	5	8	30	8	10	30	8	10	27	10	10	56
<i>Hydnophora</i>	43	29	3	11	28	3	12	27	4	12	25	5	13	58
<i>Astrea</i>	43	37	0	6	35	2	6	30	5	8	28	7	8	65
<i>Porites</i>	19	7	1	11	2	2	15	2	2	15	2	2	15	11
<i>Acropora</i>	15	8	0	7	6	1	8	6	1	8	5	2	8	33
<i>Favites</i>	12	5	2	5	4	3	5	4	3	5	4	3	5	33
<i>Turbinaria</i>	5	4	0	1	3	1	1	3	1	1	3	1	1	60
<i>Platygyra</i>	3	3	0	0	3	0	0	3	0	0	3	0	0	100
<i>Leptastrea</i>	3	2	0	1	1	0	2	0	0	3	0	0	3	0
Total	537	356	74	107	275	116	146	243	143	151	219	163	155	41

Notes: Taxa are ordered by decreasing initial abundance.

Table S2: Abundance of juveniles per taxon separated by habitat types, in each time window.

Taxa	Habitat	Initial abundance	Transition											
			1			2			3			4		
			Alive	Dead	Lost	Alive	Dead	Lost	Alive	Dead	Lost	Alive	Dead	Lost
<i>Pocillopora</i>	Cons	128	77	39	12	54	53	21	45	62	21	34	71	23
	Uncons	37	24	10	3	16	14	7	12	17	8	10	18	9
<i>Stylophora</i>	Cons	92	67	11	14	50	19	23	41	28	23	39	30	23
	Uncons	29	21	1	7	16	5	8	14	7	8	14	7	8
<i>Pavona</i>	Cons	49	30	2	17	21	4	24	21	4	24	21	4	24
	Uncons	11	7	4	1	6	1	4	5	1	5	4	2	5
<i>Goniastrea</i>	Cons	34	25	3	6	21	5	8	21	5	8	19	7	8
	Uncons	14	10	2	2	9	3	2	9	3	2	8	4	2
<i>Hydnophora</i>	Cons	40	26	3	11	25	3	12	24	4	12	22	5	13
	Uncons	3	3	0	0	3	0	0	3	0	0	3	0	0
<i>Astrea</i>	Cons	34	28	0	6	27	1	6	24	2	8	23	3	8
	Uncons	9	9	0	0	8	1	0	6	3	0	5	4	0
<i>Porites</i>	Cons	14	3	1	10	1	2	11	1	2	11	1	2	11
	Uncons	5	4	0	1	1	0	4	1	0	4	1	0	4
<i>Acropora</i>	Cons	14	8	0	6	6	1	7	6	1	7	5	2	7
	Uncons	1	0	0	1	0	0	1	0	0	1	0	0	1
<i>Favites</i>	Cons	9	3	1	5	3	1	5	3	1	5	3	1	5
	Uncons	3	2	1	0	1	2	0	1	2	0	1	2	0
<i>Turbinaria</i>	Cons	4	3	0	1	2	1	1	2	1	1	2	1	1
	Uncons	1	1	0	0	1	0	0	1	0	0	1	0	0
<i>Platygyra</i>	Cons	1	1	0	0	1	0	0	1	0	0	1	0	0
	Uncons	2	2	0	0	2	0	0	2	0	0	2	0	0
<i>Leptastrea</i>	Cons	3	2	0	1	1	0	2	0	0	3	0	0	3
	Uncons	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	Cons	422	273	60	89	212	90	120	189	110	123	170	126	126
	Uncons	115	83	18	15	63	26	26	54	33	28	49	37	29

Notes: Taxa are ordered by decreasing initial abundance. Habitat types are described as ‘Cons’ for consolidated areas and ‘Uncons’ for unconsolidated areas.

Table S3: Likelihood ratio test results of the comparison of one-habitat constant (1) and logistic (2) model, for all taxa pooled together, and by taxon.

Group	χ^2 value		Best-fit model	Best-fit model parameters
All coral (Alive, Dead, Lost)	81.7	***	Logistic	s=0.94 b=0.82
All coral (Alive, Dead)	16.7	***	Logistic	s=0.90 b=2.06
<i>Pocillopora</i>	10.6	**	Logistic	s=0.80 b=1.09
<i>Stylophora</i>	15.8	***	Logistic	s=1.23 b=0.29
<i>Pavona</i>	19.2	***	Logistic	s=1.04 b=0.59
<i>Goniastrea</i>	9.5	**	Logistic	s=0.95 b=1.28
<i>Hydnophora</i>	13.6	***	Logistic	s=0.96 b=1.30
<i>Astrea</i>	0.7	NS	Constant	s _c =0.90
<i>Porites</i>	1.8	NS	Constant	s _c =0.43
<i>Acropora</i>	3.9	*	Logistic	s=0.92 b=0.78
<i>Favites</i>	5.5	*	Logistic	s=1.01 b=0.63

Notes: Results correspond to statistical summaries in table 1 and figure 3. Taxa are ordered by decreasing initial abundance. The number of degrees of freedom is one for all comparisons. Asterisks indicate significance: * p<0.05; ** p<0.01; *** p<0.001; NS denotes lack of significance.

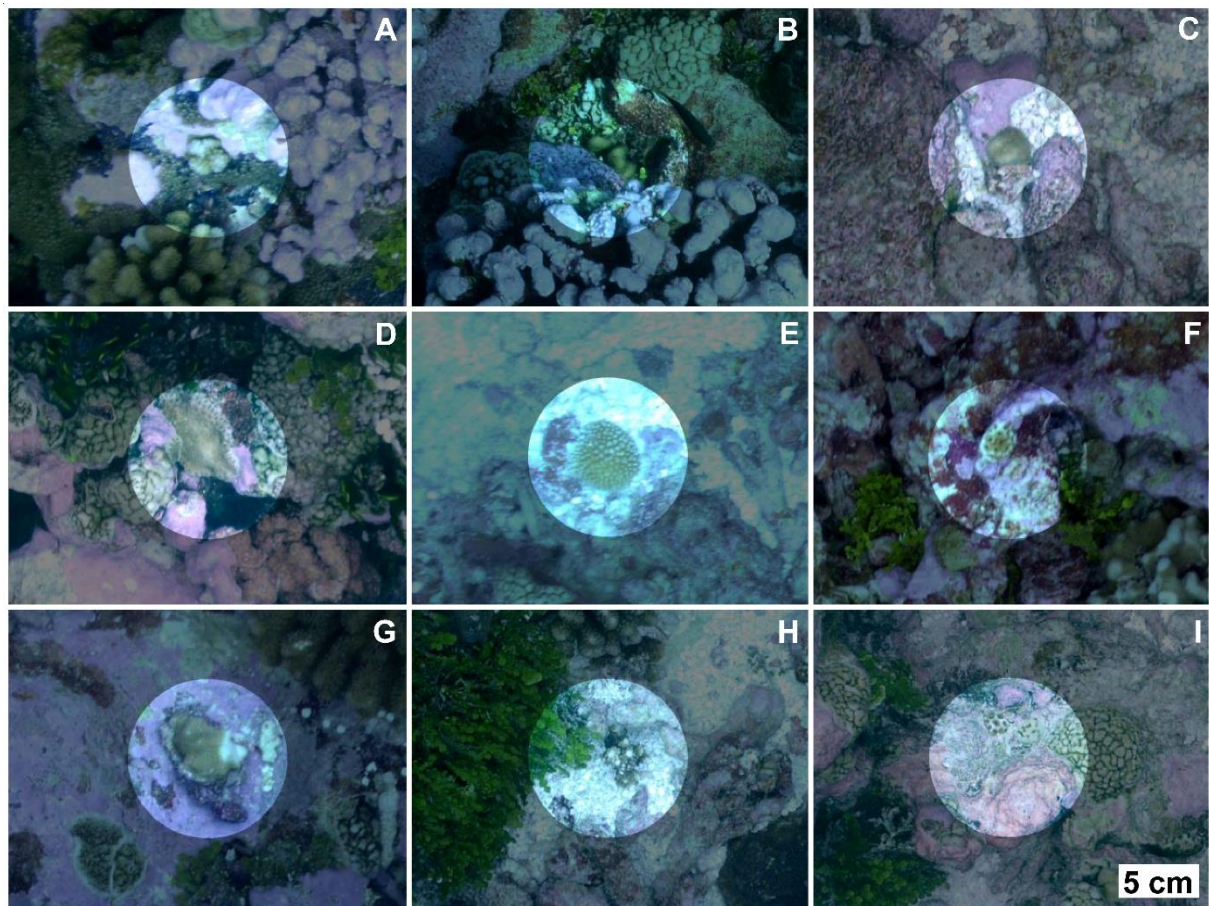


Figure S4: Photos of the nine taxa individually studied, taken on initial year (2013) and located at the center of each circle. Taxa are ordered by decreasing initial abundance, namely (A) *Pocillopora*, (B) *Stylophora*, (C) *Pavona*, (D) *Goniastrea*, (E) *Hydnothra*, (F) *Astrea*, (G) *Porites*, (H) *Acropora*, (I) *Favites*. The juvenile colonies' size range from 1-5cm.

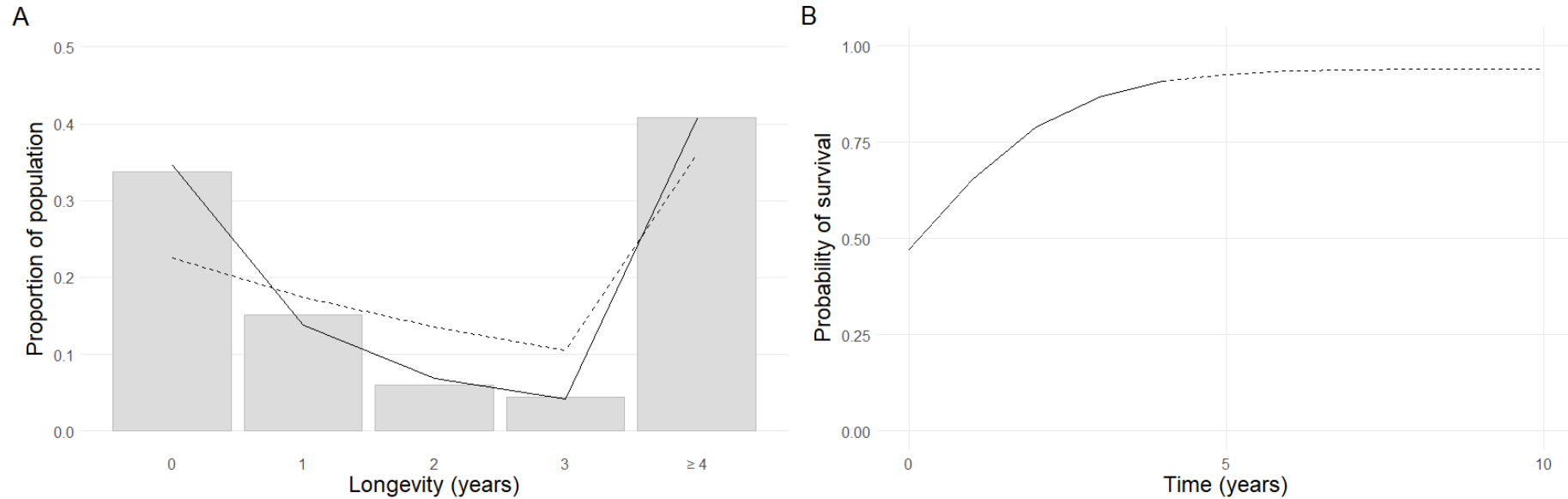


Figure S5: (a) Patterns of longevity for coral juveniles of all taxa over a 4-year sampling window (2013-2017). The distribution of realized longevity across the population is reported with bars, each representing the proportion of starting individuals (identified in 2013) that died or was lost within the time step window (*e.g.*, value in ‘0’ is the proportion of colonies that survived less than one year, value in ‘2’ is the proportion that survived at least 2 years and did not survive until year 3). All colonies that survived through the last sampling interval are binned in ‘ ≥ 4 ’, reflecting that these colonies had a longevity of 4 or more years. Idealized longevity ($\hat{L}_t$, defined in text) is the statistical expectation of the proportion of the starting population predicted to be removed from the surviving population between time t and $t+1$, and is estimated based upon best-fit parameters for models of constant annual survival (dashed lines) and logistic annual survival (solid lines). Models reported are for a single habitat type, and asterisks following the genus name indicate statistical support ($p < 0.05$) of the logistic model relative to the constant model using a Likelihood Ratio Test. (b) Estimated survival through time for colonies of all taxa pooled together. It was computed from statistical expectations based upon best-fit parameters (*i.e.*, $s = 0.94$ and $b = 0.82$) for a logistic model (2), assuming homogeneous survival patterns across habitats (‘one habitat’). Solid lines represent the signal fitting the data, dashed lines represent further extrapolations.

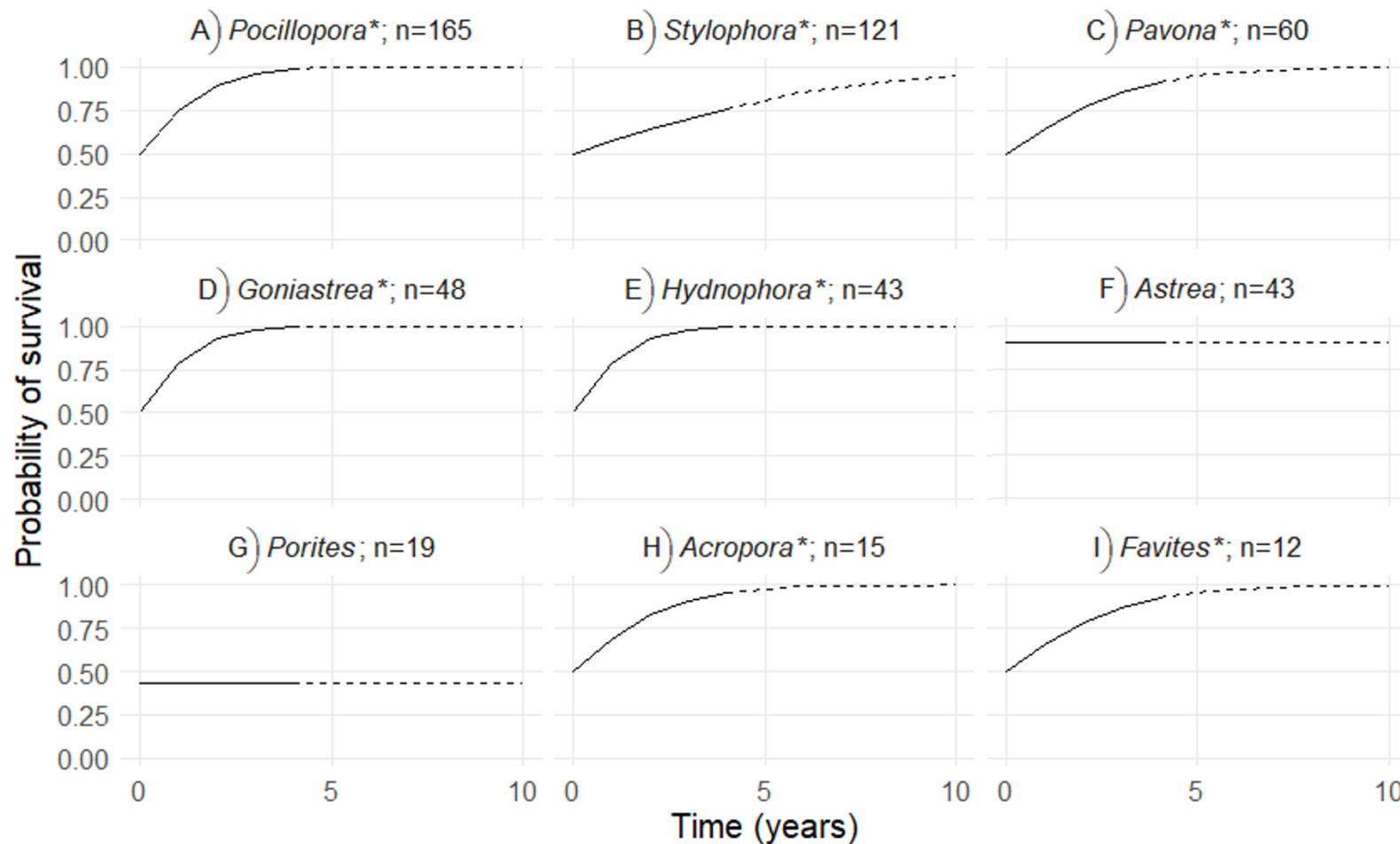


Figure S6: Estimated survival through time for coral juveniles of 9 taxa. It was computed from statistical expectations based upon best-fit parameters for models of either constant annual survival or logistic annual survival. Solid lines represent the signal fitting the data, dashed lines represent further extrapolations. Models reported are for a single habitat type, and asterisks indicate statistical support ($p < 0.05$) of the logistic model relative to the constant model using a Likelihood Ratio Test. Parameters' estimate values by taxon are *Pocillopora* ($s=0.80$; $b=1.09$), *Stylophora* ($s=1$; $b=0.29$), *Pavona* ($s=1$; $b=0.59$), *Goniastrea* ($s=0.95$, $b=1.28$), *Hydnohpora* ($s=0.96$, $b=1.30$), *Astrea* ($s_c=0.90$), *Porites* ($s_c=0.43$), *Acropora* ($s=92$, $b=0.78$) and *Favites* ($s=1$, $b=0.63$).