

1 **Supporting material for: Diel vertical migration and seamount stepping stones promote**
2 **species connectivity from coastal to offshore insular systems in the Tropical Southwestern**
3 **Atlantic**

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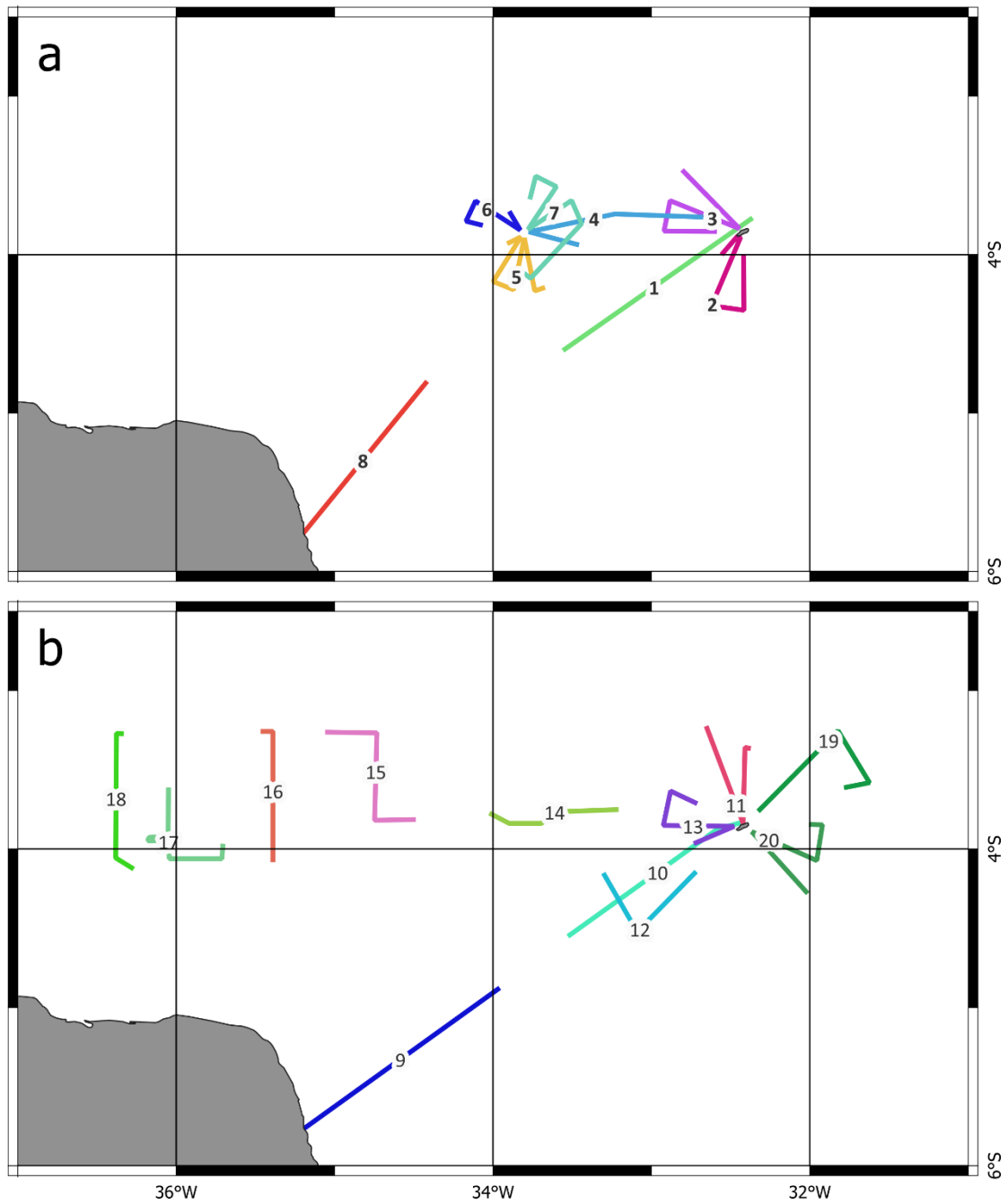
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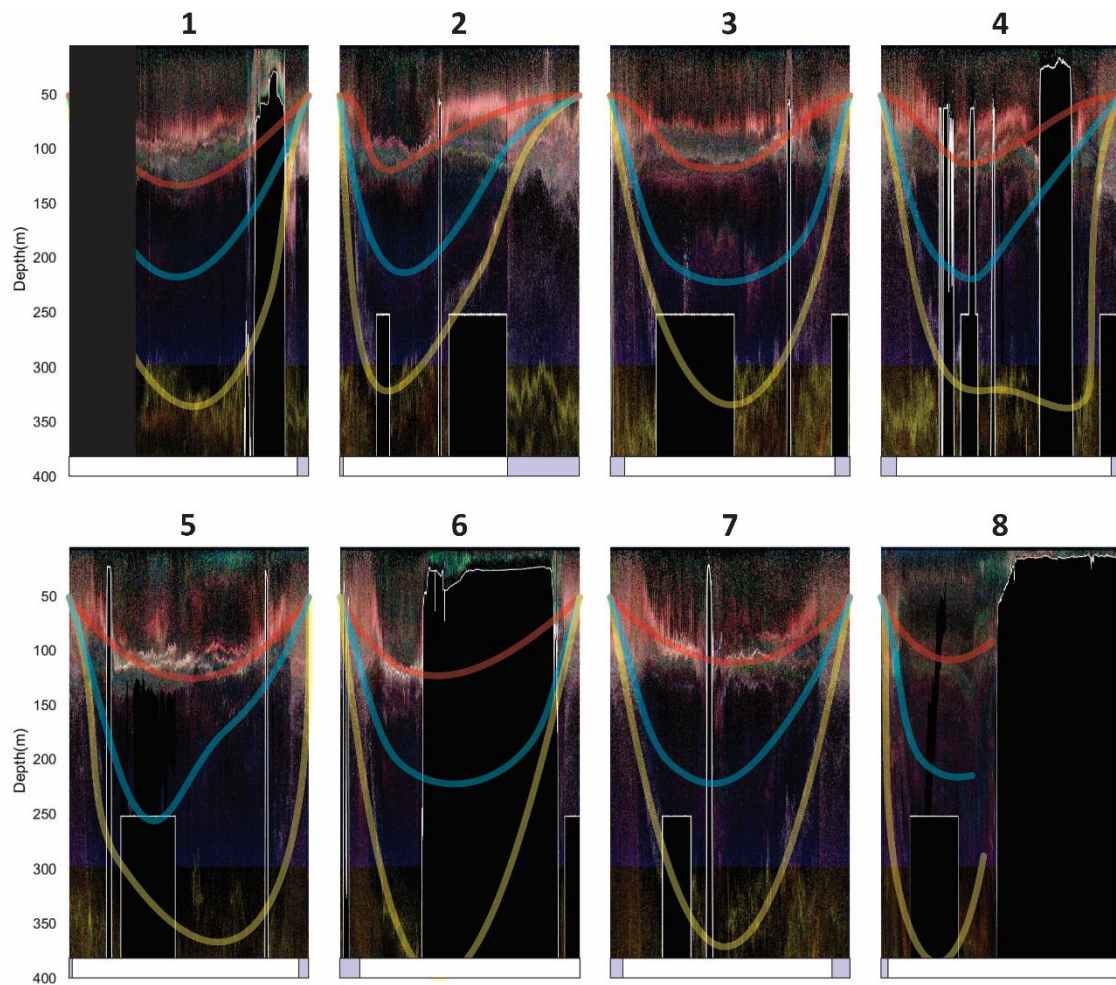
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19 **Supplementary figure S1.** Multi-frequency echo sounder data collected during the ABRACOS
 20 surveys in austral spring 2015 (a) and autumn 2017 (b) off Northeast Brazil (Bertrand 2015,
 21 2017) and selected to study the diel vertical migration of pelagic organisms. Numbers indicate
 22 echogram numbers in Fig S2 (a) and S3 (b).



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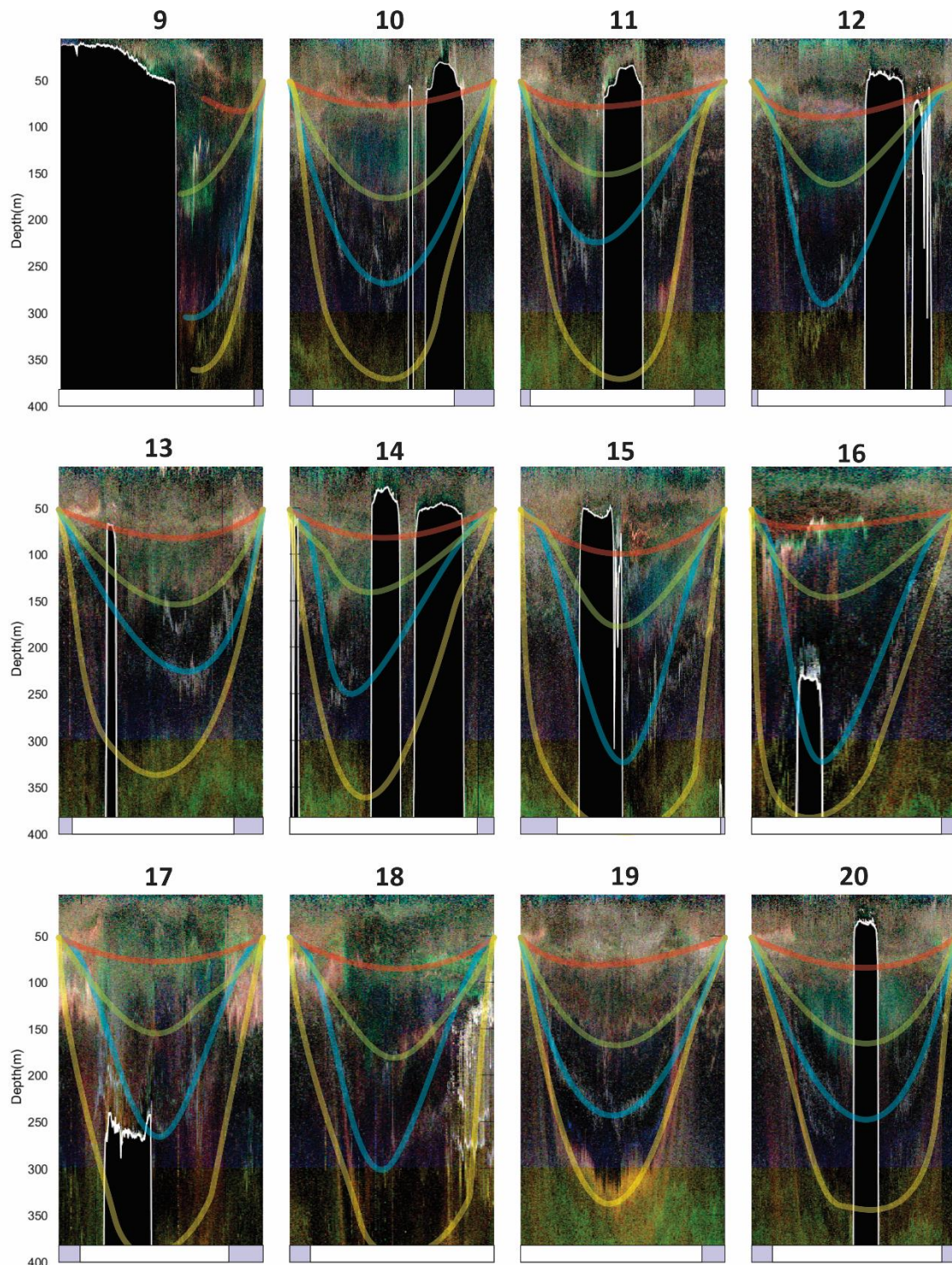
24 **Supplementary figure S2.** Multifrequency RGB echograms from austral spring 2015 data.

25 Numbers represent the transects indicated in Fig S1a. Solid lines colored lines represent the

26 three mains vertical migration patterns observed. White and grey bars in the bottom of

27 echograms indicate daytime and nighttime, respectively. Beyond diel vertical patterns, physical

28 structure of the seascape may also affect the vertical distribution of scattering layers.



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30 **Supplementary figure S3.** Multifrequency RGB echograms from austral autumn 2017 data.

31 Numbers represent the transects indicated in Fig S1b. Solid colored lines represent the four

32 main vertical migration patterns observed. White and grey bars in the bottom of echograms

33 indicate daytime and nighttime, respectively. Beyond diel vertical patterns, physical structure

34 of the seascape may also affect the vertical distribution of scattering layers.

36 **Supplementary Table S1.** Number of particles that recruited in each recruitment zone (particles.month⁻¹) classified according to their planktonic larval
 37 duration (PLD), release habitat and diel vertical migration (DVM) depth (m).

PLD	Release habitat	DVM	Recruitment zone					
			Western seamounts		Rocas Atoll and eastern seamounts		Fernando de Noronha	
			Mean	SD	Mean	SD	Mean	SD
Medium	Coast	No DVM	10.5	37.3	0	0	0	0
		120	3.7	16.5	0	0	0	0
		220	4.8	16	0	0	0	0
		320	3.6	17.7	0	0	0	0
	Outer shelf	No DVM	97.8	211.4	0	0	0	0
		120	31.1	112	0	0	0	0
		220	45.2	172.8	0	0	0	0
		320	42.1	205.1	0	0	0	0
	Western seamounts	No DVM	13.1	55	1.8	18.9	0	0
		120	10.1	105.1	0.6	6	0	0
		220	21.7	123.2	2.4	18.6	0	0
		320	61.4	206.6	2.1	18.7	0.3	3.4
	Rocas Atoll and eastern seamounts	No DVM	288.6	511.6	40.2	154.8	0	0
		120	353.6	488.7	80.2	217.1	3	21.7
		220	386.9	432.5	99.5	232.3	2.5	17.3
		320	458.9	491.3	87.4	212	0.3	2.3
	Fernando de Noronha	No DVM	105.5	203.1	79.5	176.3	23.7	69.3
		120	134.3	253.1	162.8	225.8	28.5	79
		220	111.3	249	123.7	183.9	38.7	103
		320	100.8	245.8	166.4	235.6	38.5	96.8
Long	Coast	No DVM	29.9	81.8	0.3	3.5	0	0
		120	11	54.4	0.2	2	0	0

		220	8.7	45.2	0.4	3.6	0	0
		320	10.4	51.1	0.1	1.3	0	0
	Outer shelf	No DVM	98.6	257	1	9.9	0	0
		120	24.7	121.7	0.5	4.7	0	0
		220	13.8	68.1	0.7	7.5	0	0
		320	17.6	74.3	0.9	9	0	0
	Western seamounts	No DVM	1.2	8.8	0.2	2.1	0	0
		120	0.5	5.7	0	0	0	0
		220	6.5	39.6	3.9	31.8	0	0
		320	14.4	64	2.9	21.4	0	0
	Rocas Atoll and eastern seamounts	No DVM	54.3	164	21.4	153.4	0	0
		120	47.7	178.2	28.3	136.4	0	0
		220	142.9	288.4	66.6	191.8	10.8	65.6
		320	138.5	262.9	31.3	111.5	1.4	9.9
	Fernando de Noronha	No DVM	61.4	163.9	9.4	30.8	3.3	13.4
		120	49.6	112.5	50.7	131.4	3.3	18.7
		220	44.9	119.2	46.1	122.1	19.9	79.3
		320	56.8	157.1	51.7	133.9	10.7	35.5

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	6	No DVM	28.6	125.5	0.7	2.7	0.4	2.1
		120	121	256.9	17.4	62.4	0.2	1.3
		220	139.8	283.2	23.5	76.7	0.5	2.8
		320	164.9	348.4	31.9	106.5	1.2	6.7
	7	No DVM	78.5	180.1	13.9	71	3	14.6
		120	120.5	283.9	51.3	175.2	13.8	77.9
		220	165.6	380.8	25.1	104.5	12.3	67.4
		320	183.8	412.2	55.7	184.5	5.9	30.8
	8	No DVM	160.9	421	53.6	206.6	0.4	2.1
		120	144	281.7	69.6	192	0.4	2.1
		220	79.2	213.3	30.6	98	0.7	2.8
		320	101.9	271.8	50.6	142.6	0.6	2.9
	9	No DVM	203.9	427.2	32.8	93.5	11.6	49.3
		120	100.9	276.2	91.6	221.3	7	22.6
		220	99.7	248.9	49	133.9	13.2	61.5
		320	141.2	297.8	68.3	168.3	7.9	27.6
	10	No DVM	146.2	337.9	24.3	85.5	4.1	20.2
		120	39.3	106.2	42.5	153.8	11.9	34.2
		220	106.4	290.9	25.6	89.1	9.7	27.9
		320	114.5	325.6	47.1	139.8	26.2	113
	11	No DVM	201.3	472	50.6	161.6	16.2	84.5
		120	206.4	514.6	98.4	219.4	23	75.6
		220	51.8	137.1	37.8	131	27.3	83.5
		320	86.3	223.8	44.8	125.5	15.9	58
	12	No DVM	146.5	256.3	42.2	150.1	4.6	12.8
		120	136.1	369.6	58.1	175.6	11.3	59.1
		220	86.9	265	49	146.6	18.8	100
		320	77.6	235.4	50.7	188.7	13.7	51.6

Long	1	No DVM	54.5	173.2	2.3	11.2	2	10.7
		120	10.2	35.1	14.1	66.6	0	0.2
		220	60.4	239.8	14.2	62.9	7.6	39.2
		320	32.3	131.6	34.9	131.4	1.5	7
	2	No DVM	12.7	45	6.5	38.8	0	0.3
		120	7.3	28.8	4.9	28.3	0	0
		220	66	187.5	22.4	103.1	3.9	18.4
		320	77.4	205.7	23.1	113.4	0	0
	3	No DVM	7.1	36.9	11.2	60.5	0.2	1.3
		120	2.6	10.3	0	0.2	0	0
		220	23.4	107.1	23.3	91.7	1.7	9.6
		320	37.4	125.8	5	29	3.9	24.3
	4	No DVM	7.7	34.7	0	0	0	0
		120	4.3	20.9	0.1	0.8	0	0
		220	67.3	217.7	27.3	103.5	0	0
		320	57	185.3	8.7	41.1	0	0
	5	No DVM	19.6	72	0.1	0.3	0.1	0.7
		120	8	27.5	32.3	164.6	0	0
		220	9.3	28.5	19.1	113.2	13.6	91.6
		320	31.2	97.9	8.8	58.7	0	0
	6	No DVM	6.2	27.9	0	0	0	0
		120	9.3	27.2	1.7	11.1	0	0
		220	18.2	44.9	2.4	15.6	0	0
		320	24.2	64.3	2.7	18.1	0	0
	7	No DVM	81.8	223.3	5	19.1	0.3	1.9
		120	68.3	195.8	12.4	70.2	0	0
		220	90.6	244.3	10.7	50	14.9	89.7
		320	99.1	252	9.5	36.7	2	13.2

8	No DVM	76.2	212.7	5.3	35.4	0	0.3	
	120	34.2	96	2.6	16.9	0.3	2.2	
	220	68.8	193.7	4.1	21.8	9.1	61.2	
	320	66.8	205	7.4	26	0.4	2.7	
9	No DVM	85	159.8	8.5	27.8	0	0.3	
	120	41.7	113.4	51.2	155.3	5.7	27.6	
	220	35.9	108.9	34.5	98.4	10.1	53.2	
	320	29.1	136.1	27.9	93.8	6.4	33	
10	No DVM	73.5	262.1	1.5	6.8	2.7	15.1	
	120	50.9	207.7	15.5	46.3	1.9	8.7	
	220	44	108.9	6.7	23.5	2.8	9.6	
	320	69.6	151.4	14.3	51.9	7.2	32.7	
11	No DVM	78.1	186.7	36.2	227.5	1.2	8.1	
	120	58.2	163.9	42.8	148.3	0	0.3	
	220	16.4	56.7	48.5	128.8	4.5	24.4	
	320	27.5	79.5	35.5	122.9	4.1	15.4	
12	No DVM	86.5	205.9	1	5.3	1.2	5.9	
	120	25.5	124	13.4	56.8	0	0	
	220	20.3	56	69.2	238.2	5.1	24.8	
	320	19	49.2	30.7	117.1	3.7	14.7	

