

**TABLE S4** | Analysis of molecular variance for eighth distinct scenarios of population structure of *Rhinoptera bonasus*. Collection areas: Santa Catarina (SC), São Paulo (SP), Rio de Janeiro (RJ), Pernambuco (PE) and Pará (PA). \* $\phi_{ST}$  values are significant at  $p < 0.05$ .

		Source of variation	Sum of squares	Variance component	% of variation	Fixation index	p value
	All sampling areas*	Among groups	17.511	0.15334	12.58	$\phi_{ST} = 0.12589$	0.0000±0.0000
		Within groups	134.15	1.06476	87.41		
1	(SC + SP + RJ + PE) vs. (PA)*	Among groups	2.408	0.06558	9.64	$\phi_{CT} = 0.09636$	0.1915±0.0147
		Among populations within groups	3.762	0.02533	3.72	$\phi_{SC} = 0.04119$	0.0430±0.0059
		Within population	78.417	0.58960	86.64	$\phi_{ST} = 0.13359$	0.0019±0.0013
2	(SC + SP + RJ) vs. (PE + PA)*	Among groups	2.699	0.03561	5.49	$\phi_{CT} = 0.0914$	0.0948±0.0088
		Among populations within groups	3.471	0.02370	3.65	$\phi_{SC} = 0.0386$	0.0430±0.0060
		Within population	78.417	0.58960	90.86	$\phi_{ST} = 0.0914$	0.0019±0.0013
3	(SC + SP + RJ) vs. PE vs. PA	Among groups	3.342	0.0242	3.78	$\phi_{CT} = 0.0377$	0.3128±0.01212
		Among populations within groups	2.828	0.0283	4.42	$\phi_{SC} = 0.0459$	0.03911±0.0073
		Within population	78.417	0.5896	91.80	$\phi_{ST} = 0.0819$	0.0019±0.0013
4	(SC + SP) vs. RJ vs. (PE + PA)*	Among groups	4.831	0.0509	7.90	$\phi_{CT} = 0.0790$	0.07527±0.0084
		Among populations within groups	1.339	0.0039	0.53	$\phi_{SC} = 0.0057$	0.3509±0.0154
		Within population	78.417	0.58960	91.57	$\phi_{ST} = 0.08432$	0.0009±0.0009
5	(SC + SP) vs. RJ vs. PE vs. PA*	Among groups	5.473	0.04918	7.66	$\phi_{CT} = 0.0766$	0.1896±0.0118
		Among populations within groups	0.696	0.0031	0.50	$\phi_{SC} = 0.0053$	0.3450±0.0138
		Within population	78.417	0.5896	91.84	$\phi_{ST} = 0.0815$	0.0029±0.0016
6	SC vs. (SP + RJ) vs. (PE + PA)*	Among groups	3.603	0.0101	1.61	$\phi_{CT} = 0.01590$	0.3431±0.0164
		Among populations within groups	2.567	0.0327	5.18	$\phi_{SC} = 0.05038$	0.0263±0.0041
		Within population	78.417	0.5896	93.21	$\phi_{ST} = 0.0679$	0.0048±0.0020
7	SC vs. SP vs. RJ vs. (PE + PA)*	Among groups	5.527	0.0379	6.40	$\phi_{CT} = 0.0600$	0.28641±0.0177
		Among populations within groups	0.643	0.0038	0.62	$\phi_{SC} = 0.0065$	0.3255±0.0133
		Within population	78.417	0.5896	93.38	$\phi_{ST} = 0.0661$	0.00391±0.0023
8	SC vs. (SP + RJ) vs. PE vs. PA	Among groups	4.246	-0.0073	-1.17	$\phi_{CT} = -0.0117$	0.0058±0.0026
		Among populations within groups	1.924	0.0465	7.41	$\phi_{SC} = 0.0732$	0.0136±0.0030
		Within population	78.417	0.5896	93.76	$\phi_{ST} = 0.0623$	0.6041±0.0133



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Official Journal of the Sociedade Brasileira de Ictiologia

#### HOW TO CITE THIS ARTICLE

- Souza BC, Cruz VP, Almeida TRA, Sales JBL, Rodrigues-Filho LFS, Vianna M, Rotundo MM, Oliveira C, Foresti F. Genetic diversity assessment for the vulnerable migratory cownose ray *Rhinoptera bonasus* (Myliobatiformes: Rhinopteridae) from the southwestern Atlantic Ocean. Neotrop Ichthyol. 2021; 19(4):e210077. <https://doi.org/10.1590/1982-0224-2021-0077>



Official Journal of the Sociedade Brasileira de Ictiologia