

Reproductive activity, microhabitat use, and calling sites of
Pristimantis bacchus (Anura: Craugastoridae)

Wilfredo Chinchilla-Lemus¹, Víctor Hugo Serrano-Cardozo², Martha Patricia Ramírez-
Pinilla^{3,*}

1 - Grupo de Estudios en Anfibios y Reptiles de Santander, Universidad Industrial de Santander, Bucaramanga, Colombia

2 - Laboratorio de Ecología, Grupo de Estudios en Biodiversidad, Escuela de Biología, Universidad Industrial de Santander, Bucaramanga, Colombia

3 - Colección Herpetológica y Laboratorio de Biología Reproductiva de Vertebrados, Grupo de Estudios en Biodiversidad, Escuela de Biología, Universidad Industrial de Santander, Bucaramanga, Colombia

*Corresponding author; e-mail: mpramir@uis.edu.co

Supplementary material

Table S1. Variation of body size between age categories and sexual dimorphism (boldface values) in *Pristimantis bacchus*, using SVL and body mass variables. Mann Withney *U* tests were used for comparison between sexes.

Variable		Minmax values (mean \pm SD), N	Statistical value	P
SVL (mm)	Undetermined juveniles	9.35–15 (17.18 \pm 1.34), 12		
	Juvenile females	20–28.7 (24.13 \pm 2.59), 49		
	Adult males	20–30.3 (26.05 \pm 1.88), 229		
	Adult females	29–41.5 (34.70 \pm 2.94), 66		
	Adult males vs adult females	(26.05 \pm 1.88, 30.20 \pm 5.94) 229, 115	$z = 4.47$	<0.05
Body mass (g)	Undetermined juveniles	0.2–0.6 (0.39 \pm 0.13), 12		
	Juvenile females	0.4–2.1 (1.11 \pm 0.39), 49		
	Adult males	0.4–2.2 (1.35 \pm 0.31), 229		
	Adult females	1.4–5.5 (3.57 \pm 0.94), 66		
	Adult male vs adult female	1.35 \pm 0.31, 2.52 \pm 1.43	$z = 4.93$	<0.05

Table S2. Variation in the microhabitat use (substrate and perch height) by age categories and reproductive condition in females through a Chi-square test (P values in boldface are significant).

	Substrate			Perch height		
	X^2	P	df	X^2	P	df
Adult male	241.06	<0.05	3	127.31	<0.05	4
Undetermined juvenile	14.66	0.002	3	31.33	<0.05	4
Juvenile female	42.51	<0.05	3	99.87	<0.05	4
Vitellogenic I female	6	0.111	3	10.66	0.03	4
Vitellogenic II female	14.4	0.002	3	32	<0.05	4
Non-reproductive adult female	29.4	<0.05	3	52	<0.05	4

Table S3. Pairwise comparisons by Analysis of Similarities test (ANOSIM), showing significant differences among sex, age category and reproductive condition in females, during the rainy season (values above the line) and dry season (values below the line) in the microhabitat use for *Pristimantis bacchus* individuals. Males (MA), juvenile (JU), vitellogenic females I (VFI), vitellogenic females II (VFII) and non-reproductive adult female (NRF). *P* values in boldface are significant.

Pairwise comparison					
	MA	JU	VFI	VFII	NRF
MA		0.663	<0.05	<0.05	0.154
JU	0.114		0.066	<0.05	0.112
VFI	0.472	0.410		0.431	0.095
VFII	0.322	1	0.218		0.061
NRF	0.060	0.651	<0.05	0.528	

Table S4. Results of Mann-Whitney *U* test for the structural and environmental variables of the perches where there were presence/absence of calling males, with mean \pm standard deviation value. *P* values in boldface are significant.

Variable	Presence (n = 51)	Absence (n = 51)	<i>U</i>	<i>P</i>
Leaf litter (g)	259.82 \pm 159.65	219.37 \pm 127.53	1095	0.168
Plant strata	2.60 \pm 2.18	2.45 \pm 2.16	1241	0.686
Number of trees	6.74 \pm 3.25	6.03 \pm 2.79	1159	0.340
Number of shrubs	29.52 \pm 11.88	25.66 \pm 10.31	1048.5	0.091
Canopy cover (%)	16.05 \pm 2.32	17.08 \pm 4.62	1143	0.291
Temperature (°c)	22.68 \pm 2.29	24 \pm 1.87	819	<0.05
Relative humidity (%)	89 \pm 9.71	79 \pm 9.99	612	<0.05
Wind speed (mph)	0.37 \pm 0.64	0.15 \pm 0.41	1105	0.064

Table S5. Results of logistic regression for the two models evaluated according to the Akaike’s Information Criterion corrected for small sample size (AICc). *k*: number of parameters in the model, $\Delta AICc$: differences between the AICc value of second model and the AICc value of the best model. *Wi*: Akaike’s weight of the models, and *cw*: cumulative weight. The model I present response variables: Leaf litter weight, canopy cover, temperature, and relative humidity.

<i>K</i>	Model	Variable	<i>AICc</i>	$\Delta AICc$	<i>wi</i>	<i>cw</i>
5	Model I	Leaf litter weight, canopy cover, temperature and relative humidity	110.64	0	1	1
5	Model II	Number of trees, number of shrubs, plant strata and wind speed	129.74	19.09	0	1