

Final Evaluation Report

Your Details	
Full Name	Mireile Reis dos Santos
Project Title	Ecology and distribution of the Morro do Ferro anuran fauna (Poços de Caldas Plateau) with focus for Pithecopus ayeaye (ANURA, HYLIDAE)
Application ID	27976-1
Grant Amount	£4833 or USD5859.53
Email Address	mireile.santos@ifsuldeminas.edu.br
Date of this Report	Jun 24 th

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Morro do Ferro anurofauna record				Due to atypical and high level of rains that occurred in February 2020 and also the COVID-19 pandemic (as from March 2020 in Brazil), it was not possible to maintain the same fieldwork frequencies as sequential months. However, it was possible to sample a high number of species over the months and days in the field (September 2019 to March 2020). Although the project originally has proposed sampling over 12 months, we opted to focus efforts on the breeding season (September 2019 to March 2020) and fulfilled all the planned field campaigns.
Registration of the target specie (Pithecopus ayeaye)				This aim was completely achieved, as we found the species and georeferenced its reproductive site.
Production of scientific dissemination material (environmental education)				<p>We have already created a website to publicise the project and the results obtained at www.labdiversidade.bio.br (https://www.labdiversidade.bio.br/profissional/mireille-r-s).</p> <p>We have also created the datasheets and bookmarks about animals so that we can paste them in primary schools (supplementary materials).</p> <p>We are already developing a three-dimensional model (mockup on a 3D printer) of the species <i>Pithecopus ayeaye</i> to present in schools during the lectures to be given.</p> <p>We are preparing an online teaching material to offer to local schools, such as an environmental education course using the frogs of Morro do Ferro as generating themes, in case we are unable to go face-to-face due to the COVID pandemic19.</p> <p>We are analysing the data and building</p>

			<p>the scientific paper for publication in a high impact journal. We have already publicised in other social media the resulted of the research (supplementary materials).</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

We had difficulties in carrying out the fieldwork, specifically during February 2020, in which the rainfall index was raised, and it was not possible to remain in the field during intense rains.

The other situation was the lockdown in Brazil, on March 17th 2020 due to COVID-19.

Our health ministry imposed in law the stoppage of activities of research and education, which hindered our group work in Morro do Ferro. Thus, our choice was to carry out the prospecting of potential areas for the occurrence of *Pithecopus ayeaye*. In this way, in pairs, we travel closer areas with aspects similar to those registered in the reproductive site of the species. The objective with this was to identify and geo-manage these areas for sampling in the 2020-2021 campaigns.

3. Briefly describe the three most important outcomes of your project.

Our work made a very important contribution to the region because we carried out a complete mapping of the anurofauna present in Morro do Ferro, which had never been done. We found a total of 30 species distributed in seven families.

In addition, we found the target species (*Pithecopus ayeaye*) and mapped its reproductive sites. Unfortunately, the areas are under intense threat from cattle and eucalyptus crops.





Although not the focus of this study, we also registered the endemic species of the Poços de Caldas Plateau, *Bokermannohyla vulcaniae*, considered by the list of endangered species in Brazil as critically endangered and by IUCN as vulnerable.

Also, we recorded the species *Scinax caldarum*, which although it is considered less worrying by the IUCN, it is considered by the Brazilian biodiversity lists as "insufficient data".

<https://ala-bie.sibbr.gov.br/ala-bie/species/249494>

<https://proceedings.science/cbh/papers/ampliacao-de-distribuicao-da-pouco-conhecida-e-ameacada--bokermannohyla-vulcaniae---anura--hylidae->

<https://www.iucnredlist.org/search?query=Bokermannohyla%20vulcaniae&searchType=species>



Bokermannohyla vulcaniae



Scinax caldarum



<https://www.icmbio.gov.br/portal/faunabrasileira/estado-de-conservacao/7747-anfibios-scinax-caldarum>

<https://www.iucnredlist.org/search?query=Bokermannohyla%20vulcaniae&searchType=species>

4. Briefly describe the involvement of local communities and how they have benefitted from the project.

The people of local community will be served through regional schools. Our aim is to offer an environmental education course for both students and teachers in these schools, demonstrating the importance of conserving the biodiversity of local frogs.

The course should have started in May 2020. Undergraduate students in the Biological Sciences degree course, besides the members of this project, would give workshops and training. However, due to the pandemic, the start of activities will be in October 2020 and we are building and adapting digital material for its offer, in case it cannot be offered face to face.

5. Are there any plans to continue this work?

Our planning for the second step of this project (2020 - 2021) is to focus on the reproductive localities of the species *Pithecopus ayeaye* for the realisation of ecological studies about their populations (population size, sex ratio, ecological demands, etc.). We will submit a new detailed proposal.

6. How do you plan to share the results of your work with others?

With the scientific community, we intend to publish a paper for divulgation scientific. At this moment, we submitted a technical note to a national magazine, telling about the record of the species. We are also building a scientific article with data from the entire survey of the anuran fauna of Morro do Ferro.

To popularise the subject, we are elaborating on other specific materials to people of the community.

7. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

The part of the grant destined for the purchase of materials and equipment was used at the beginning of the project, except for the herpetological hook, that was missing in the marketplace. So we use a borrowed one and we bought ours later. The camping resources were spent as the time fieldwork campaigns occurred. As the field campaigns had a changed schedule (and also due to COVID-19), we have a remaining resource that we intend to use in the next step of the project.

8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Vehicle rental	857	602	-255	We transfer 286.75 to lodging and food how authorized by Rufford
Lodging and food to fieldwork	3429	3289	-140	Due to pandemic COVID19 we didn't do all the work field in this step
Water proof megaphone	99	32	-67	With the difference we bought a backpack and digital pachymeter
Water proof backpack	36	79	+43	We offset for the difference in the cost of the lanterns
Zoom H1_ digital recorder	95	130	+35	
Head lamp	159	59	-100	
Protective glove	23	16	-7	We offset the differences among these items
Herpetological hook	135	100	-35	
waterproof boot		42	+42	
Pachymeter		11	+11	we offset the difference in the cost of the megaphone
Bank rate		239	+239	Fees for banking transactions throughout the year
Total	4833	4599	-234	we intend to spend the positive balance in the next stage of the project (2020 - 2021)

Following the link of the Fund's management foundation with the accountability http://fadema.org.br/?page_id=394

9. Looking ahead, what do you feel are the important next steps?

For the future, we believe that the most important thing will be to generate data about the population of the *Pythecopus ayeaye* species. Knowing the size of its population, understanding its ecological demands, and looking for ways to guarantee its reproductive sites (habitats) intact to the survival of the species in nature.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

In all graphical materials produced (printed and digital) we have inserted The Rufford Foundation logo, or we do direct citation of Rufford Foundation. We sent a semi-annual report to Rufford and photos of the species when it was found in the wild.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Bárbara Marcondes, Daniel Silveiras, José Eduardo Coutinho – were essential for fieldwork and taxonomic identification of species.

Ederson Godoy – fieldwork and official photographer of the team and species.

Roosevelt Heldt Junior – fieldwork, georeferencing and making maps, construction of the frogs' models (mockup - being built in 3D printer)

Iberê Farina Machado – taxonomic identification of species

Paulo Augusto Zaitune Pamplim – equipment borrowing to measure water quality

I would like to thank and point out that the volunteer professional **Elidio Monteiro Junior** was very important to make all the graphic art and educational materials for the project.

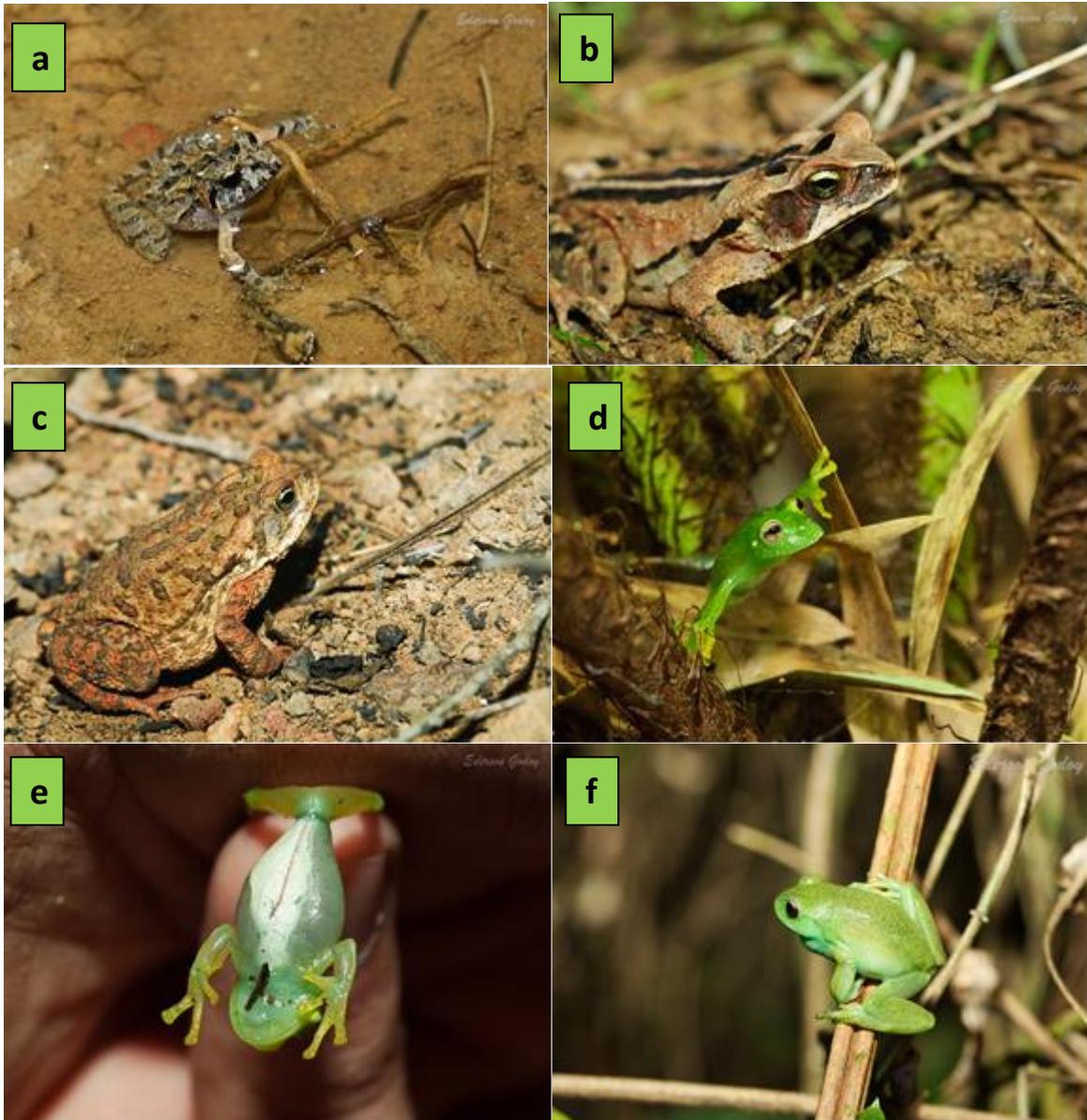
12. Any other comments?

We are very happy with the results obtained, as we were to generate a taxonomic listing of the species anuran occurring in Morro do Ferro and still find the target specie of the study. We are very grateful for the aid of The Rufford Foundation because otherwise, we would not have been able to realize the research with the breadth that we did.

SUPPLEMENTARY MATERIALS

1 - List of species found (Family and species)

Brachycephalidae (a=*Ischnocnema juipoca*); **Bufo**nidae (b=*Rhinella ornata*, c=*Rhinella rubescens*); **Centrolenidae** (d, e = *Vitreorana uranoscopa*); **Hylidae** (f = *Aplastodiscus perviridis*, g = *Boana albopunctata*, h = *Boana beckeri*, i = *Boana faber*, j= *Boana prasina*, k= *Bokermannohyla vulcaniae*, l = *Dendropsophus minutus*, m= *Oloolygon longilinea*, n = *Oloolygon ranki*, o= *Scinax caldarum* p = *Scinax fuscovarius*); **Leptodactylidae** (q = *Adenomera thomei*, r = *Leptodactylus fuscus*, s= *Leptodactylus latrans*, t = *Leptodactylus mystacinus*, u= *Physalaemus cuvieri*, w= *Physalaemus jordanensis*); **Odontophrynidae** (v = *Odontophrynus americanus*, Proceratophrys boiei - **we can't photograph); **Phyllomedusidae** (x = *Pithecopus ayeaye*, z = *Phasmahyla cochranae*)









2 - Datasheets and bookmarks about animals

frente	verso	frente	verso	frente	verso
	<p>LABORATÓRIO DE BIO DIVERSIDADE</p> <p>FICHA TÉCNICA</p> <p>Nome popular Perereca do Vulcão</p> <p>Nome científico <i>Bokermannohyla vulcaniae</i></p> <p>Filo Chordata</p> <p>Classe Amphibia</p> <p>Ordem Anura</p> <p>Família Hylidae</p> <p>Gênero Bokermannohyla</p> <p>Acesse o QR Code abaixo para mais informações.</p>  <p>Design by Elidio Monteiro Junior</p>		<p>LABORATÓRIO DE BIO DIVERSIDADE</p> <p>FICHA TÉCNICA</p> <p>Nome popular Perereca da folhagem</p> <p>Nome científico <i>Pithecopus ayeaye</i></p> <p>Filo Chordata</p> <p>Classe Amphibia</p> <p>Ordem Anura</p> <p>Família Phyllomedusidae</p> <p>Gênero Pithecopus</p> <p>Acesse o QR Code abaixo para mais informações.</p>  <p>Design by Elidio Monteiro Junior</p>		<p>LABORATÓRIO DE BIO DIVERSIDADE</p> <p>FICHA TÉCNICA</p> <p>Nome popular Scinax caldarum</p> <p>Nome científico <i>Scinax caldarum</i></p> <p>Filo Chordata</p> <p>Classe Amphibia</p> <p>Ordem Anura</p> <p>Família Hylidae</p> <p>Gênero Scinax</p> <p>Acesse o QR Code abaixo para mais informações.</p>  <p>Design by Elidio Monteiro Junior</p>



LABORATÓRIO DE **BIO** DIVERSIDADE

LABORATÓRIO DE BIODIVERSIDADE
Preservação Científica e Proteção de Espécies

PERERECA DO VULCÃO
Bokermannohyla vulcaniae

Foto: Ederson Godoy - Texto organização: Coutinho, J.E; Marcondes, B. C.; Santos, M.R.; Matos, D.S. - Criação e Design by Elidio Monteiro Junior



FICHA TÉCNICA

Nome popular	Perereca do vulcão
Nome científico	<i>Bokermannohyla vulcaniae</i>
Filo	Chordata
Classe	Amphibia
Ordem	Anura
Família	Hylidae
Gênero	Bokermannohyla

Habitat

É encontrada no bioma da Mata Atlântica, em floresta de galeria ocupando arbustos, arbustos perto de córregos com correnteza leve.

Reprodução

Embora sua vocalização já tenha sido registrada, pouco se sabe sobre a reprodução da espécie, sendo preciso mais estudos sobre os mecanismos comportamentais reprodutivos da espécie.

Ocorrência e Distribuição geográfica
É nativa da América do Sul e vive em regiões montanhosas da Mata Atlântica, no planalto de Poços de Caldas/MG, na região conhecida como Morro do Ferro.

Particularidades

É uma espécie arbórea de tamanho médio, com cerca de 40 a 53 mm. Possui dorso marrom, ficando mais claro ventralmente e possui faixas irregulares nas coxas com formato de X e/ou Y invertido. Os machos vocalizam por volta de uma hora da manhã. Os girinos são encontrados durante o período de chuvas e apresentam características morfológicas distintas das outras espécies do gênero

Bokermannohyla. A espécie foi coletada em 1965, mas foi descrita somente em 2003.

Ocorrência e Distribuição geográfica

É endêmica do Brasil, da cidade de Poços de Caldas, região sudeste de Minas Gerais. Sua localidade tipo é a região montanhosa do Morro do Ferro e sua extensão geográfica é 4 km².

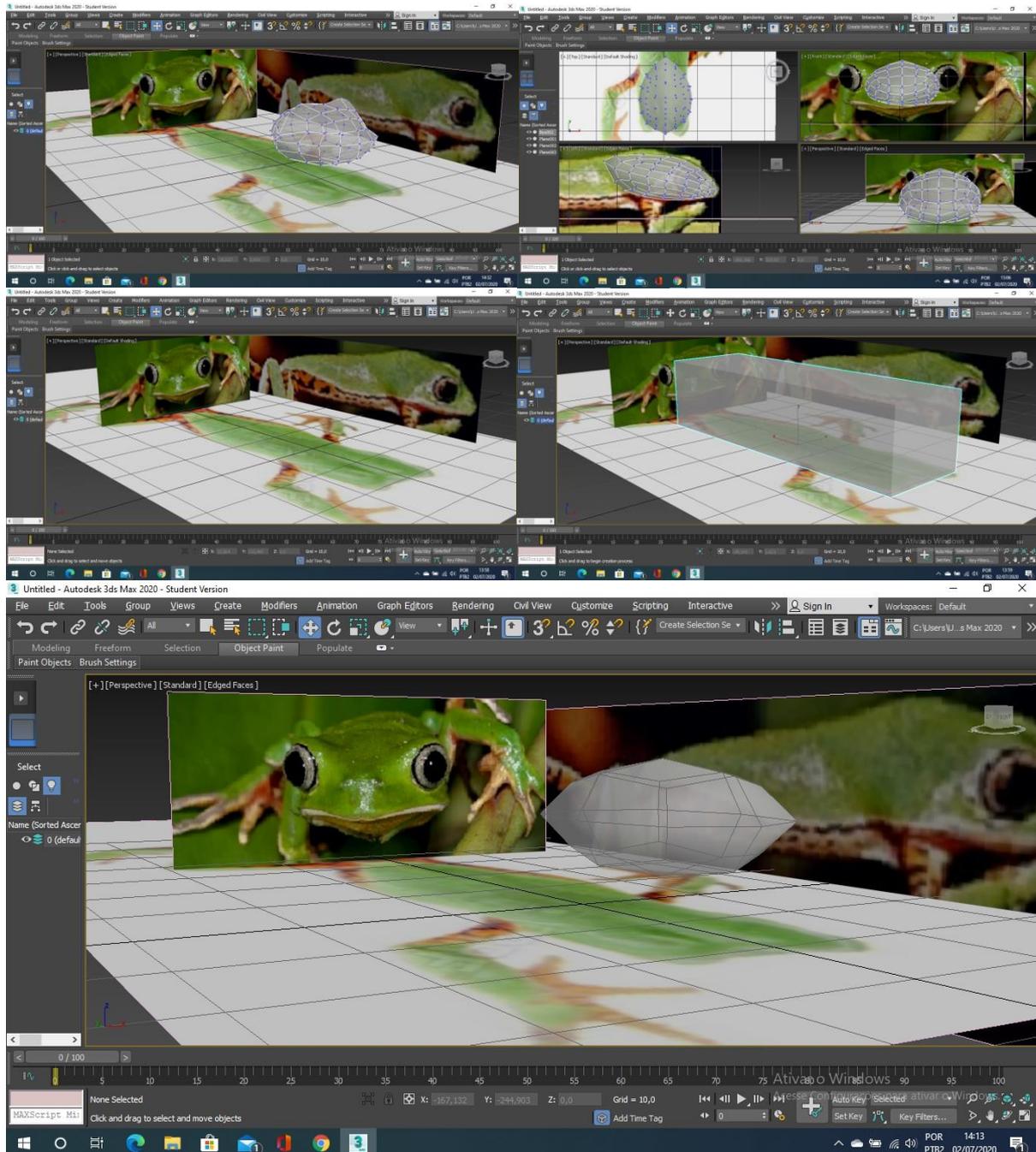
Principais ameaças

A espécie é considerada vulnerável (VU) pela IUCN, pois sua área de distribuição conhecida é restrita e devido à perda de habitat relacionada às atividades agrícolas, pastagem para bovinos e mineração. Na Lista Brasileira de espécies ameaçadas é considerada Criticamente em Perigo (CR).

Referências

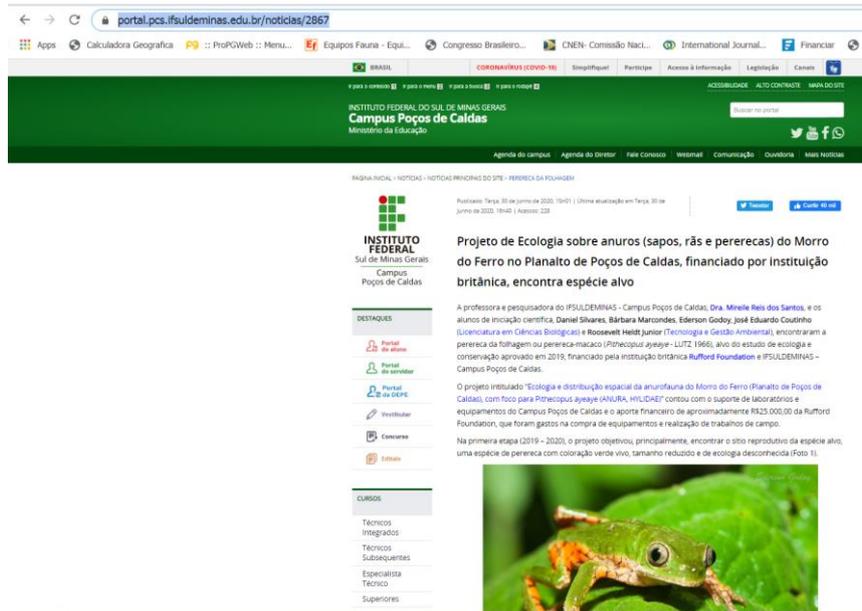
- Galla, B. et al. Advertisement Call and Tadpoles of *Bokermannohyla vulcaniae* (Anurocnoceros and Giaretta, 2003) (Amphibia: Anura: Hylidae). *South American Journal of Herpetology* 8(2): 127-131, 2013. Disponível em: <https://doi.org/10.2994/SAJH-D-12-00023.3>. Acesso em 02 mai 2020.
- Giaretta, A. A. *Bokermannohyla vulcaniae*. The IUCN Red List of Threatened Species 2008. Disponível em: <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T135966A1219087.e0>. Acesso em 02 mai 2020.
- Haddad, C. F. B. et al. Avaliação do Risco de Extinção de *Bokermannohyla vulcaniae* (Anurocnoceros & Giaretta, 2004 "2003"). *Processo de avaliação do risco de extinção da fauna brasileira*. ICMBio, 2016. Disponível em: <http://www.icmbio.gov.br/portal/biodiversidade/fauna-brasiliana/estado-de-conservacao/7499-arfbios-bokermannohyla-vulcaniae.html>. Acesso em 02 mai 2020.
- Anurocnoceros, E. G. & Giaretta, A. A. A new species of Hyla (Anura: Hylidae) from southeastern Brazil. *Rev. Esp. Herp.*, 17: 21-27, 2003.

3 - We are building the three-dimensional file for printing on the 3D printer. We intend to use the model of *Pithecopus ayeaye* in Environmental Education programs in schools and the community



4 – Social media for project dissemination and related news

<https://portal.pcs.ifsuldeminas.edu.br/noticias/2867>



portal.pcs.ifsuldeminas.edu.br/noticias/2867

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Ministério da Educação

Página inicial - NOTÍCIAS - NOTÍCIAS PRIVADAS DO SITE - PERERACA DA FLORESTA

Publicado: Terça, 30 de junho de 2020, 19:41 | Última atualização em Terça, 30 de junho de 2020, 19:41 | Acesso: 128

Projeto de Ecologia sobre anuros (sapos, rãs e pererecas) do Morro do Ferro no Planalto de Poços de Caldas, financiado por instituição britânica, encontra espécie alvo

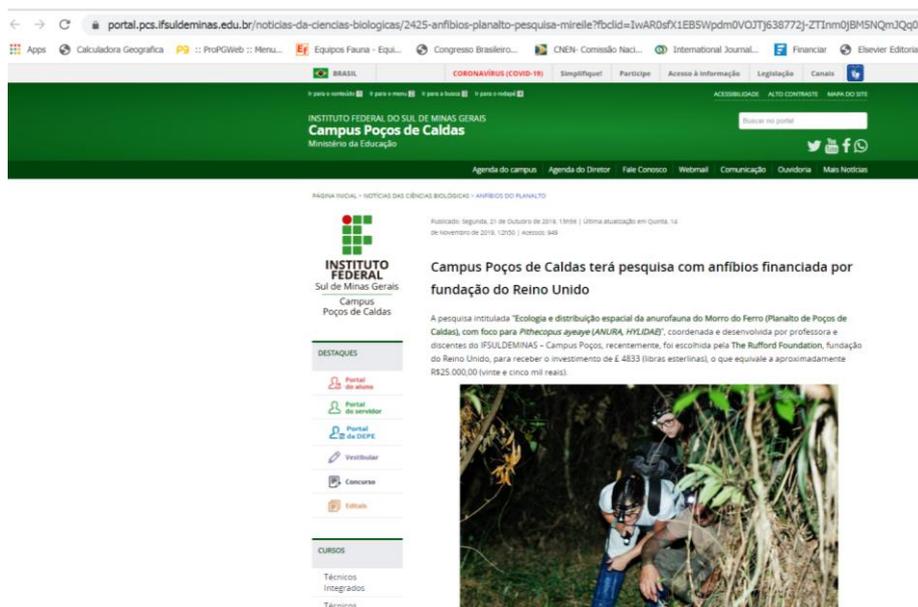
A professora e pesquisadora do IFSULDEMINAS - Campus Poços de Caldas, Dra. Mirelle Reis dos Santos, e os alunos de iniciação científica, Daniel Silveira, Bárbara Marcondes, Ederson Godoy, José Eduardo Coutinho e licenciatura em Ciências Biológicas e Bioprocessos, Rosaneide Heloísa Junior (Tecnologia e Gestão Ambiental), encontram a perereca da folhagem ou perereca-macaco (*Pithecopus ayeaye* - LUTZ, 1966), alvo do estudo de ecologia e conservação aprovado em 2019, financiado pela instituição britânica Rufford Foundation e IFSULDEMINAS - Campus Poços de Caldas.

O projeto intitulado "Ecologia e distribuição espacial da anurofauna do Morro do Ferro (Planalto de Poços de Caldas), com foco para *Pithecopus ayeaye* (ANURA, PHYLONIAE)" contou com o suporte de laboratório e equipamentos do Campus Poços de Caldas e o aporte financeiro de aproximadamente R\$23.000,00 da Rufford Foundation, que foram gastos na compra de equipamentos e realização de trabalhos de campo.

Na primeira etapa (2019 - 2020), o projeto objetivou, principalmente, encontrar o sítio reprodutivo da espécie alvo, uma espécie de perereca com coloração verde vivo, tamanho reduzido e de ecologia desconhecida (Foto 1).



<https://portal.pcs.ifsuldeminas.edu.br/noticias-da-ciencias-biologicas/2425-anfibios-planalto-pesquisa-mireille?fbclid=IwAR0sfX1EB5Wpdm0VOJTj638772j-ZTInm0jBM5NQmJQq0-xjApZNpnfkXmM>



portal.pcs.ifsuldeminas.edu.br/noticias-da-ciencias-biologicas/2425-anfibios-planalto-pesquisa-mireille?fbclid=IwAR0sfX1EB5Wpdm0VOJTj638772j-ZTInm0jBM5NQmJQq0-xjApZNpnfkXmM

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Página inicial - NOTÍCIAS DAS CIÊNCIAS BIOLÓGICAS - ANFÍBIOS DO PLANALTO

Publicado: Segunda, 21 de Outubro de 2019, 19:08 | Última atualização em Quinta, 14 de Novembro de 2019, 12:20 | Acesso: 340

Campus Poços de Caldas terá pesquisa com anfíbios financiada por fundação do Reino Unido

A pesquisa intitulada "Ecologia e distribuição espacial da anurofauna do Morro do Ferro (Planalto de Poços de Caldas), com foco para *Pithecopus ayeaye* (ANURA, PHYLONIAE)" coordenada e desenvolvida por professora e discentes do IFSULDEMINAS - Campus Poços, recentemente, foi escolhida pela The Rufford Foundation, fundação do Reino Unido, para receber o investimento de £ 4833 (libras esterlinas), o que equivale a aproximadamente R\$25.000,00 (vinte e cinco mil reais).



<https://www.labdiversidade.bio.br/>

