

## New records of the azure gallinule *Porphyrio flavirostris* (Gmelin, 1789) (Gruiformes: Rallidae) for the state of Paraná

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### Abstract

Although it has a wide distribution in the country, the Azure Gallinule (*Porphyrio flavirostris*) has become rare in the southern region, due to the drainage of wetlands, implementation of hydroelectric reservoirs and the reduction of surrounding forests. Through the inventory carried out in the municipality of Capanema, field trips in Francisco Alves and Foz do Iguaçu in humid areas with a predominance of seasonal semideciduous forest, individuals of *P. flavirostris* were registered in October 2019, December 2020 and January 2021 on the floating vegetation. This work communicates new records of the species in the state of Paraná and makes a brief contribution about its conservation status.

**Keywords:** geographical distribution, *Porphyrio flavirostris*, wetland, Atlantic Forest, south of Brazil.

## Novos registros do frango-d'água-pequeno *Porphyrio flavirostris* (Gmelin, 1789) (Gruiformes: Rallidae) para o estado do Paraná

### Resumo

Embora tenha ampla distribuição no país, o Frango-d'água-pequeno (*Porphyrio flavirostris*) tornou-se raro na região sul, devido à drenagem de áreas úmidas, implantação de reservatórios hidrelétricos e redução das florestas circundantes. Através do inventário realizado no município de Capanema, saídas de campo em Francisco Alves e Foz do Iguaçu em áreas úmidas com predominância de floresta estacional semidecídua, foram registrados indivíduos de *P. flavirostris* em outubro de 2019, dezembro de 2020 e janeiro de 2021 na flutuação vegetação. Este trabalho comunica novos registros da espécie no estado do Paraná e faz uma breve contribuição sobre seu estado de conservação.

**Palavras-chave:** distribuição geográfica, *Porphyrio flavirostris*, área úmida, Mata Atlântica, sul do Brasil.

### 1. Introduction

Azure Gallinule *Porphyrio flavirostris* (Gmelin, 1789) is one of the three species of the genus *Porphyrio* that occur in Brazil. With daytime habits, this species inhabits humid areas, such as wetlands, marshes, buriçais, edges and interiors of rice fields, with the presence of tall thick vegetation and/or undergrowth, in addition to places with floating plant species (Haverschmidt, 1968; Parker, 1982; Sick, 1997; Meyer, 2015) avoiding dry areas (Remsen; Parker 1990). This species prefers areas with vegetation up to one meter high, in which it can hide. However, when there is a high rise in the water level, *P. flavirostris* prefers to roost on top of grass tufts, with greater preference for surrounding wetland forests than open wetlands (Remsen; Parker 1990).

The species has an occurrence from the Guianas to Argentina. In Brazil, it is found in almost all states, with more evidence in the Planalto Central region (Sick, 1997; Freitas et al. 2006; Lorenzón et al. 2012; WikiAves, 2021) and seasonally (Remsen; Parker 1990).

In the southern region of the country, there are few reports of its distribution, except records made in a rice field (26°45'23"S, 49°27'57"W) in the municipality of Doutor Pedrinho in Santa Catarina (Meyer, 2015), in a flooded

area (32° 30'S, 52°35'W) near the Taim Ecological Station (Remsen; Parker 1990) and in a wetland 72 km (30°0'11.95"S, 56°28'7.78"W) of the city's urban perimeter of the municipality of Uruguaiana (Oliveira, 2015) both in Rio Grande do Sul. In Paraná, its only record was made in 1997 in the municipality of Pontal do Paraná (Bornschein; Reinert 1997). Due to the scarce records of the species in the south and its rarity, this work aims to document the current appearances of *P. flavirostris* in the state of Paraná.

## 2. Records and characterization of areas

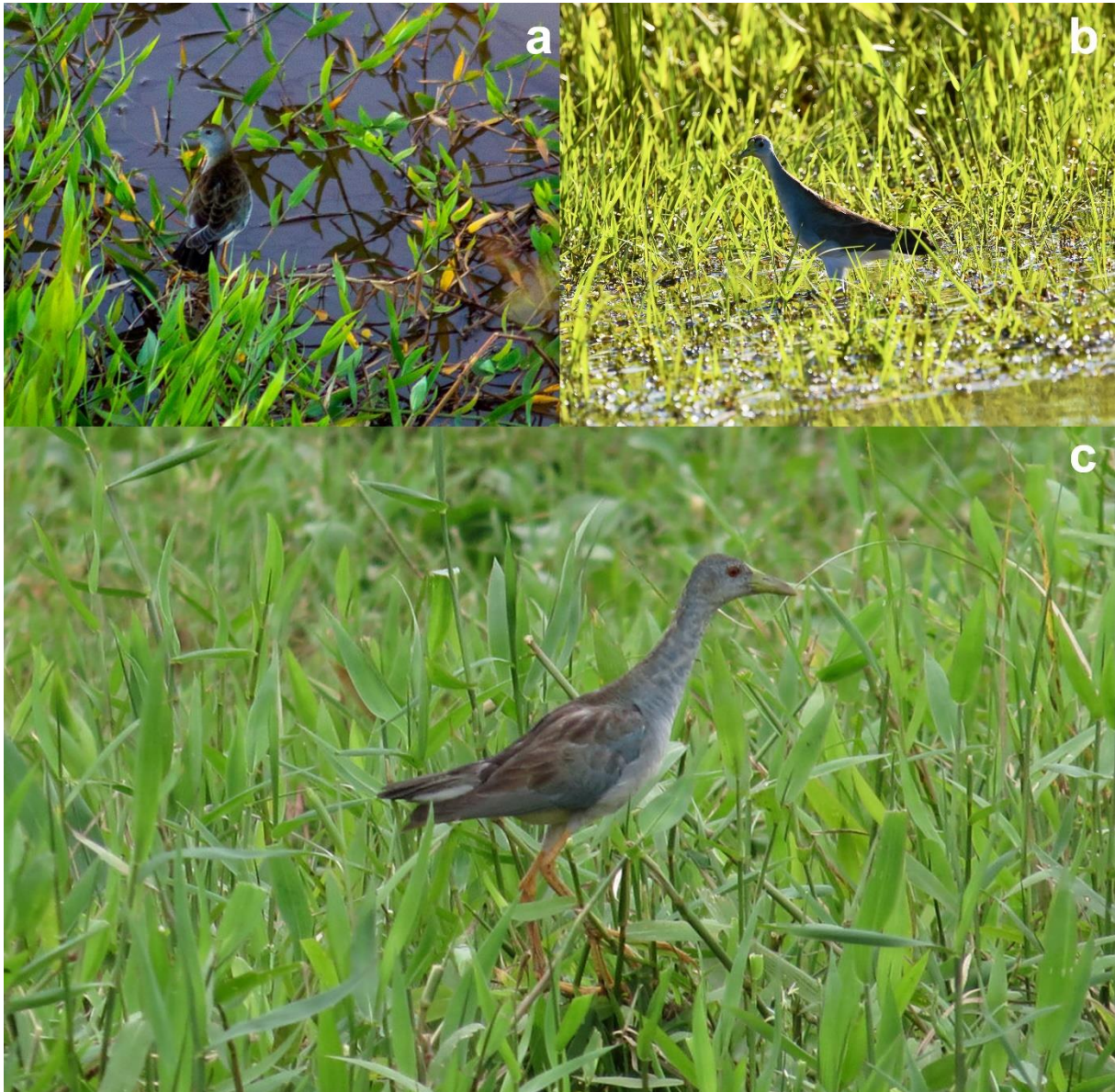
The oldest record of the species was an adult individual, on October 9, 2019 (Figure 1) (Hang, 2019), in a wetland in the municipality of Francisco Alves, (24°1'30.92"S; 53°52'52.46"O). The registry area has a large, flooded portion with low vegetation of approximately 53.86 hectares, on the banks of the Xambrê River, a tributary of the Piquiri River. A fish farm is located on the site, on the property's boundaries (Figure 2a).

Another record took place in an environment with an association of wetlands and forests, called Lagoa do Remanso Grande, (25°36'40.20"S; 54°31'21.90"W) in the municipality of Foz do Iguaçu-PR (Figure 2). On December 13, 2020 a specimen of the species (Figure 1) was recorded by an observer on aquatic vegetation (Farias 2020), as well as the previous one, close to the Iguacu National Park.

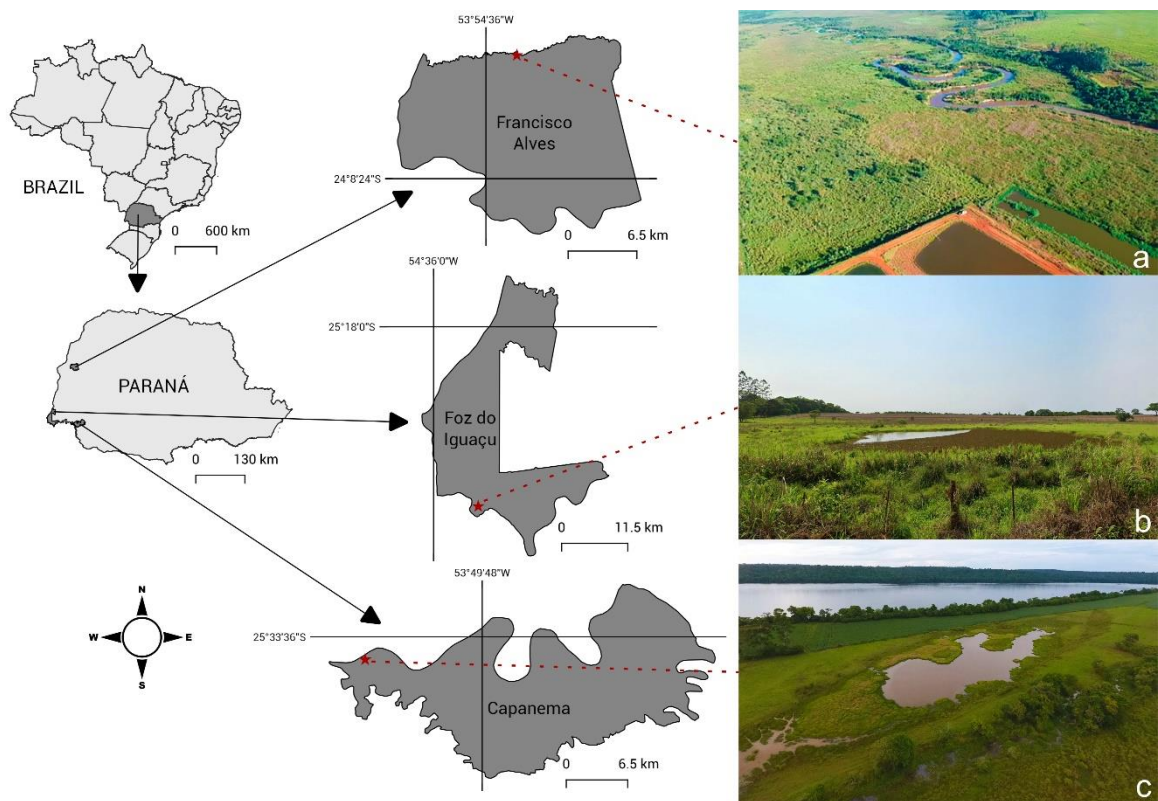
This area has great relevance, as it is located close to two areas known to have a high richness of migratory and threatened species (Cemave, 2019). With approximately 24 hectares, this site has several natural lakes, in addition to an extensive marshy area with about 11 occupied hectares, in association with 6.40 hectares of forests.

The most recent record occurred in the municipality of Capanema, an area considered to have a high richness of migratory bird species (Cemave, 2019). Sampling began in June 2020, with the aim of inventorying the avifauna of a wetland considered as a hotspot for bird biodiversity (Gonsales et al 2021a). This area is located in the community of Santa Clara, close to the Iguacu National Park (25°35'3.37"S; 53°57'13.00"W) (Figure 2), an important forest remnant, refuge for numerous species of mammals and rare and endangered birds (D'Oliveira et al 2002).

The record of *P. flavirostris* in Capanema took place on January 7, 2021 (Gonsales, 2021b), where an adult individual was sighted foraging on the aquatic vegetation in the inventoried area (Figure 1). With about 60594 hectares, this site is an important habitat for the species, since of this total, 10,481 hectares are composed of forests and 10,722 hectares of wetlands (Gonsales et al 2021a), which for the species as well as for many others, mainly waders, is very important as they are ecologically dependent, or semi-dependent on these areas (Ramsar, 1994). This is because the physical structure of these environments influences the availability of resources (Wetlands, 2001), favors reproduction and facilitates migratory displacement (López-Lanús; Blanco, 2005; Cemave, 2012).



**Figure 1.** Azure Gallinule (*Porphyrio flavirostris*) found in (a) Francisco Alves - Bruno Czerechowicz Hang; (b) Foz do Iguaçu – Chris Farias and (c) Capanema – Patrick Luiz Bola Gonsales, in the state of Paraná, southern Brazil.



**Figure 2.** Areas where individuals of *Porphyrio flavirostris* were registered. (a) Francisco Alves, (b) Bairro Remanso, Foz do Iguaçu and (c) Community of Santa Clara, Capanema, in the state of Paraná, southern Brazil. Caption: red star corresponds to the registration location in the perimeter of the municipalities.

### 3. Conclusions

With the low number of previous records in southern Brazil, there is an indication that the species is rare in this region, however, since aquatic and/or semi-aquatic species are indicators of preserved environments, it cannot be ruled out that its rarity may have increased due to the history of habitat destruction (drainage of wetlands and implementation of hydroelectric reservoirs).

Thus, the preservation of wetlands and the forests that protect them are likely to be important factors for the maintenance and establishment of future populations of this and other wading bird species. With these new records for Paraná, we highlight the importance of these monitoring studies focused on wet natural areas for better understanding of the avifauna, as well as for the indication of management and conservation actions.

### 4. Acknowledgments

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### 5. Authors' Contributions

*Bruno Czerechowicz Hang*: Views and photographs of the species.

### 6. Conflicts of Interest

No conflicts of interest.

### 7. Ethics Approval

Not applicable.

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