

New records of the Vanzolini's Spiny-chest Frog, *Alsodes vanzolinii* (Donoso-Barros, 1974), from south-central Chile

Pedro P. Álvarez^{1,*}, Francisco Cifuentes², Álvaro García³, Sebastián Barra-Parra³, Óscar Hidalgo⁴,
and Fabián Campos-Cifuentes⁵

The genus *Alsodes* Bell, 1843 comprises 19 species of anurans distributed throughout central and southern Chile, and in a narrow strip along the eastern slopes of the Andes Mountains in southwestern Argentina (Formas and Brieva, 2004; Charrier et al., 2015). Of these, 18 are found in Chilean territory (13 of them endemic), making it the most diversified amphibian genus in the country (Frost, 2025). The geographic distribution, ecology, and natural history of most *Alsodes* species remain poorly known (Charrier et al., 2015).

One of these endemic Chilean amphibians, the Vanzolini's Spiny-chest Frog, *A. vanzolinii* (Donoso-Barros, 1974), primarily inhabits temperate forests of the Nahuelbuta Range, in remnant patches of *Nothofagus* spp. in the Biobío Region (Donoso-Barros, 1974; Rabanal and Núñez, 2008). It is also found in humid areas within *Aextoxicon punctatum* and *Persea lingue* forests, surrounded by *Pinus radiata* plantations, associated with clean and permanent streams that enable reproduction (Ortiz and Briones, 2022). Later records have also confirmed the direct presence of the species in mature and young pine plantations (Rabanal and Alarcón, 2010; Puente-Torres et al., 2017; Mella-Romero, 2018; Flores, 2018).

New records have allowed for an expansion of its known distribution, which for many years was restricted to its type locality in Ramadillas, Arauco Province, Biobío Region (Donoso-Barros, 1974;

Table 1). Its current distribution ranges from Tanumé, Cardenal Caro Province, O'Higgins Region (Cuevas, 2013) to Huillínco, Arauco Province, Biobío Region, at elevations between 25–700 m (Fig. 1; Flores, 2018; Charrier, 2019). This restricted distribution together with low population densities makes its detection difficult. It is considered one of the most threatened amphibian species in Chile, currently listed as Endangered-Rare (EN-R) both by the Reglamento de Clasificación de Especies (RCE) of the Chilean Ministerio del Medio Ambiente (MMA, 2025), and Endangered (EN) by the International Union for Conservation of Nature (IUCN SSC Amphibian Specialist Group, 2019).

On 21 July 2023, an adult individual of *A. vanzolinii* (Fig. 2A) was found on a forest plantation hillside during an active survey conducted as part of a wildlife environmental characterisation study near Constitución, Pangelillo sector, Talca Province, Maule Region (35.4989°S, 72.2947°W, elevation 463 m; Fig. 1). Vegetation at this locality comprised of wild growth of *P. radiata* (Fig. 2B), and is located approximately 75 m from the El Toro ravine. During a second survey conducted on 29 October 2023 near the same site (35.4991°S, 72.2946°W, elevation 462 m), a juvenile individual (Fig. 2C) was recorded 28 m from the location of the first individual, at a similar distance from the El Toro ravine. In a third survey on 29 November 2023, near Santa Olga sector (35.4548°S, 72.3033°W, elevation 452 m), an adult individual was recorded in a patch of native *N. glauca* surrounded by a *P. radiata* plantation (Fig. 2D), near a water stream and 5 km away from the previous findings (Fig. 1). All the individuals were found under stones.

The individuals were not handled but only photographed to allow accurate identification as *A. vanzolinii* based on distinctive morphological characteristics: a rounded snout, barred hind limbs, and the presence of a light yellow cranial triangle contrasting with the rest of the dark brown face, all traits that distinguish it from other *Alsodes* species (Donoso-Barros, 1974; Rabanal and

¹ Independent researcher, Concepción, Chile.

² Independent researcher, Padre Las Casas, Chile.

³ Independent researcher, Temuco, Chile.

⁴ Tebal, Estudios e Ingeniería Ambiental, Providencia 7510077, Chile.

⁵ Laboratorio de Ecología y Evolución, Facultad de Ciencias, Universidad del Bío-Bío, Andrés Bello 720, Chillán 3780000, Chile.

* Corresponding author: E-mail: ppalvarez89@gmail.com

Table 1. Known records of the Vanzolini’s spiny-chest frog *Alsodes vanzolinii*. Abbreviations: NP: National Park; NR: National Reserve.

No.	Locality	Geographic Coordinates	Reference
1	Ramadillas	37.2499°S, 73.2500°W	Donoso-Barros, 1974
2	Cabrería	Not registered	Veloso et al., 1981
3	Ramadillas	37.2499°S, 73.2500°W	Formas, 1995
4	Los Queules NR	35.9833°S, 72.6833°W	Cuevas and Cifuentes, 2009
5	Chauras de Laraquete	37.3333°S, 73.0833°W	Rabanal and Alarcón, 2010
6	Cuyinco Alto	37.6500°S, 73.3000°W	Rabanal and Alarcón, 2010
7	Molino del Sol	37.3166°S, 73.2000°W	Rabanal and Alarcón, 2010
8	Tregualemu	Not registered	Celis-Diez et al., 2011
9	Tanumé	34.2166°S, 71.9166°W	Cuevas, 2013
10	Tregualemu	35.9868°S, 72.7064°W	Puente-Torres et al., 2017
11	Tregualemu	35.9736°S, 72.7188°W	Puente-Torres et al., 2017
12	Tregualemu	35.9815°S, 72.7080°W	Puente-Torres et al., 2017
13	Tregualemu	35.9948°S, 72.6833°W	Puente-Torres et al., 2017
14	Tregualemu	35.9997°S, 72.6864°W	Puente-Torres et al., 2017
15	Huillinco	37.7333°S, 73.3666°W	Flores, 2018
16	Arauco	37.3000°S, 73.1333°W	See in Flores, 2018
17	Colegual	37.5333°S, 73.1333°W	See in Flores, 2018
18	Caramávida	37.6666°S, 73.2166°W	Flores, 2018
19	Epumallin	37.7166°S, 73.2500°W	Flores, 2018
20	Quebrada La Chupalla	37.7333°S, 73.3500°W	Flores, 2018
21	Trongol Bajo	37.5500°S, 73.3333°W	See in Flores, 2018
22	Nonguén NP	36.8667°S, 72.9833°W	Mella-Romero, 2018
23	El Fin	35.6303°S, 72.3518°W	Ortiz and Briones, 2022
24	Copiulemu	36.0009°S, 72.6722°W	Ortiz and Briones, 2022
25	Copiulemu	36.0010°S, 72.6737°W	Ortiz and Briones, 2022
26	Guañaquitos	36.0491°S, 72.6185°W	Ortiz and Briones, 2022
27	Ralbún	36.0620°S, 72.6257°W	Ortiz and Briones, 2022
28	Ralbún	36.0655°S, 72.6434°W	Ortiz and Briones, 2022
29	Ralbún	36.0667°S, 72.6435°W	Ortiz and Briones, 2022
30	Pangalillo	35.4989°S, 72.2947° W	This study
31	Pangalillo	35.4991°S, 72.2946°W	This study
32	Santa Olga	35.4548°S, 72.3033°W	This study

Núñez, 2008; Charrier, 2019). The records were later verified by experienced herpetologists (B. Bertin and F. Rabanal, pers. comm.).

This species has been primarily recorded in native forests of the Nahuelbuta Range (Fig. 1). However, more recent findings correspond to populations found within both mature and young pine plantations, including the records presented here. Despite anthropogenic destruction and fragmentation of native forest, along with its replacement by forest plantations, *A. vanzolinii* populations have managed to survive. This is likely because small watercourses still persist in these areas,

which the species uses during the reproductive period (Ortiz and Briones, 2022). Our records, therefore, confirm what other authors have noted (see Rabanal and Alarcón, 2010; Puente-Torres et al., 2017; Flores, 2018) regarding the use of pine plantations as a non-native habitat. However, it has not been determined whether the species uses these habitats for reproduction. Although *A. vanzolinii* is confirmed to use them for foraging, as shown by stomach content studies that reveal a diverse diet of invertebrates, including *Valdivium* spp., a beetle found in pine plantations (Mansilla, 2017; Puente-Torres et al., 2017).

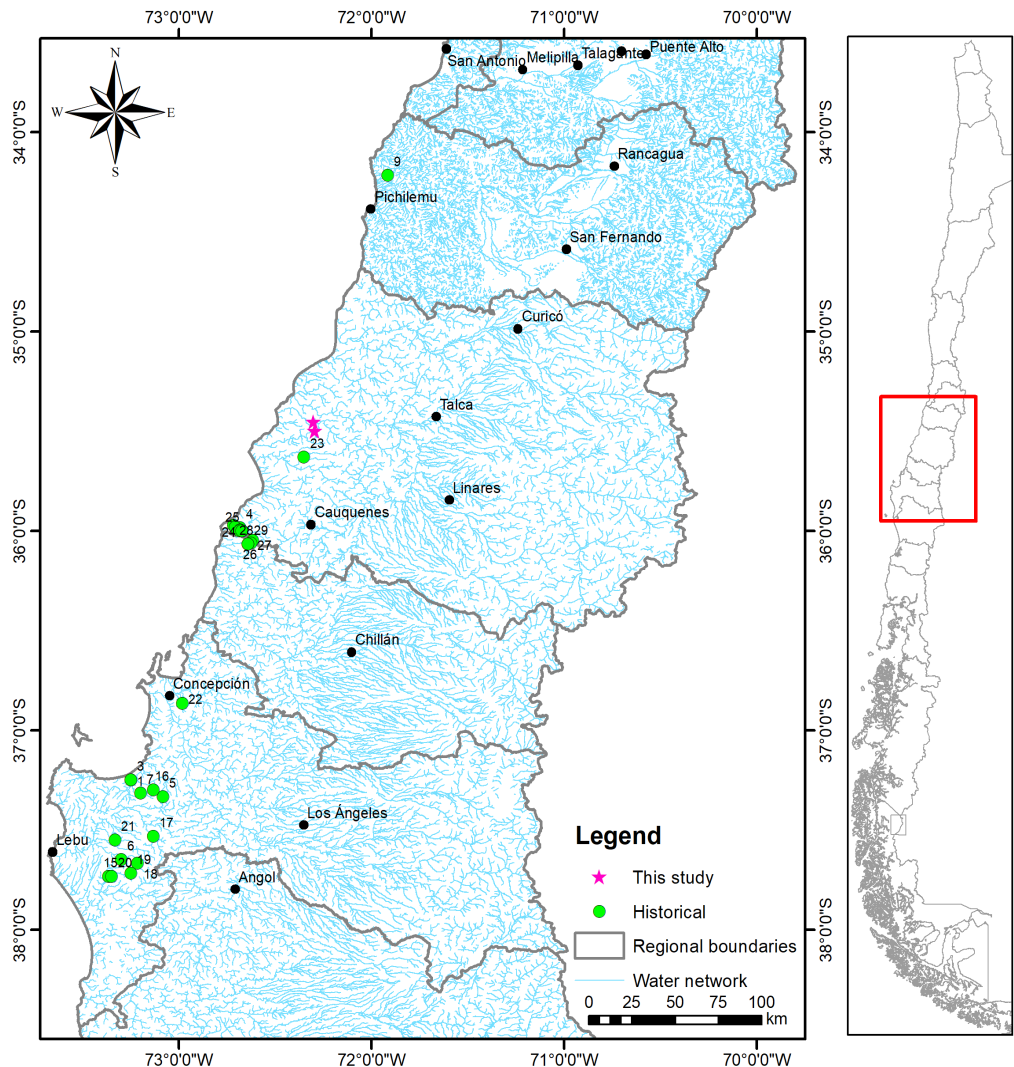


Figure 1. Current distribution map of *Alsodes vanzolinii* in central and south-central Chile.

The records reported on here enhance our understanding of the actual distribution range of *A. vanzolinii* (Fig. 1). Such information is highly relevant given that it is one of the most threatened anuran species in Chile, mainly due to its severely fragmented population and the decline of its habitat caused by extractive activities (pine plantations) and human-induced fires (Rabanal and Núñez, 2008; Lobos et al., 2013; IUCN SSC Amphibian Specialist Group, 2019). Most *A. vanzolinii* records are found outside of protected areas (either managed by the Corporación Nacional Forestal (CONAF) or by private entities belonging to forestry companies), so the formal protection of new sites should be a priority for its

conservation (IUCN SSC Amphibian Specialist Group, 2019). Furthermore, considering that *A. vanzolinii* has shown signs of adaptation to exotic tree plantations, it is necessary to implement measures within forested areas to prevent sedimentation and drying of watercourses, involving both specialists and forestry companies (Puentes-Torres et al., 2017; Flores, 2018; Charrier, 2019). Lastly, we call for additional fieldwork efforts to survey for *A. vanzolinii* at more localities to understand its true distribution.

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Figure 2. Individuals and environments recorded for *Alsodes vanzolinii* in this study. (A) Adult individual recorded in a forest plantation. (B) Feral forest plantation of *Pinus radiata*. (C) Juvenile individual recorded in a forest plantation. (D) Creek in a mixed forest of *Nothofagus glauca* with *P. radiata*. Photos by Pedro P. Álvarez (A, B), Francisco Cifuentes (C), and Álvaro García (D).

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