

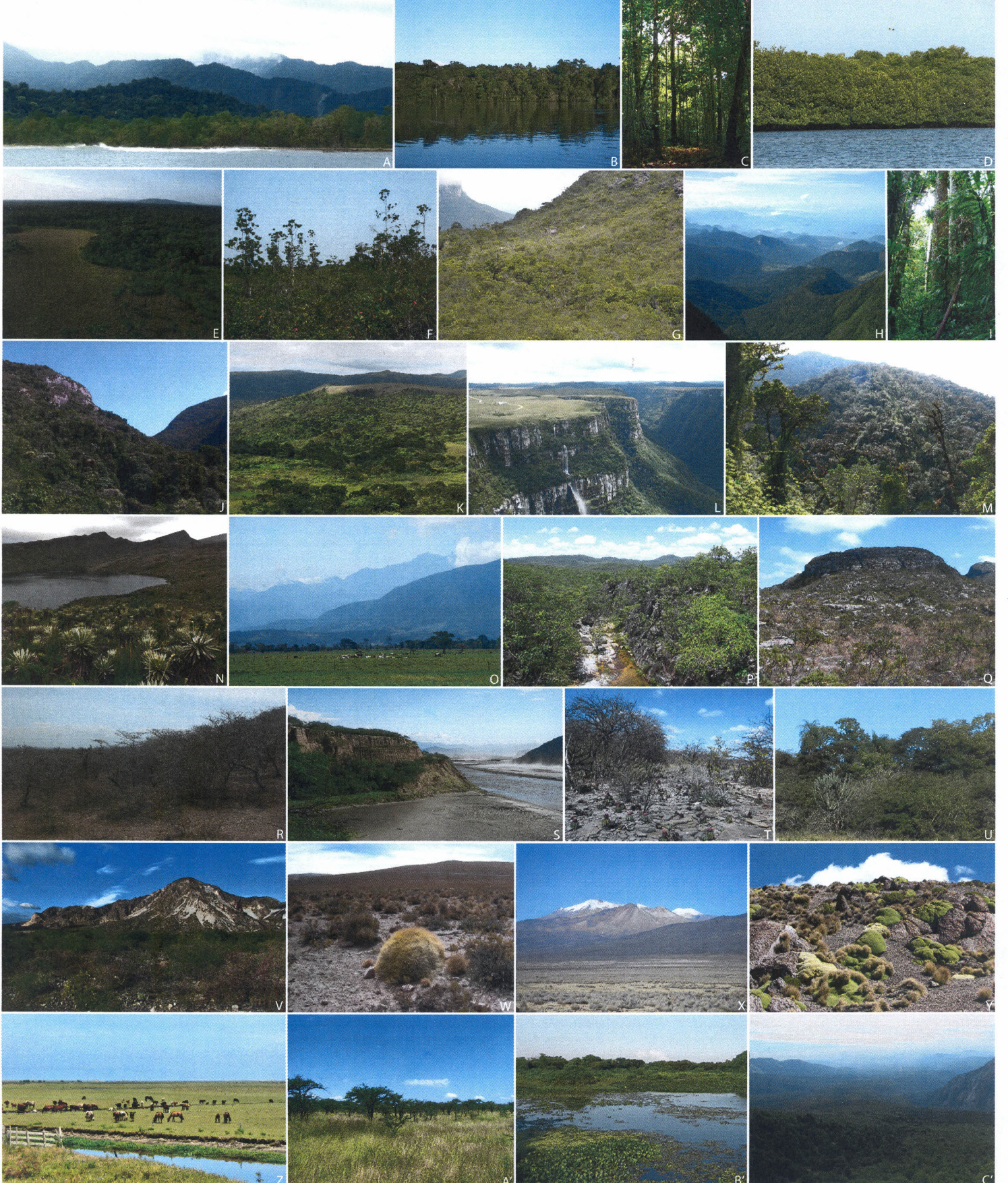
Pedro Fiaschi¹, Gustavo Heiden², Alexandre Antonelli³ & José R. Pirani⁴

Even though smaller than other continents, with c. 18 million km², South America is home to about one third of all plant species. This floristic diversity is mirrored by a complex mosaic of vegetation types. Temperate areas on the southern end of the continent are mostly covered by Patagonian tundra and grasslands, which are heavily influenced by seasonal climatic patterns. The subtropical Chilean coastal forests (C), with iconic southern hemisphere elements, are exceptionally humid throughout the year. Subtropical montane tropical forests along the southern Brazilian coast (K,L) show floristic links with Chilean rainforests, but also with nearby lowland tropical areas. Tropical South American main vegetation types include rainforests, savannas, seasonally dry forests and shrublands, and open montane vegetation. There are three main disjunct blocks of rainforests in South America: the highly fragmented Brazilian Atlantic Forest (H,I), interspersed with inland seasonally dry forests; the Amazonian Forest (B,C), covering most of the Amazonas Drainage Basin,

intermingled with low-stature white-sand vegetation (F), and the hyper-humid Chocoran Forest (A), along the Colombian/northern Ecuadorian coast. Between the Atlantic and Amazonian forests lies a diagonal belt of vegetation types under a more seasonal climate, including the semi-arid northeastern Brazilian Caatinga (T), the Cerrado (Q), and the Chaco, which is a winter deciduous subtropical vegetation occasionally subjected to frost (U). Additionally to these main vegetation types, it is important to acknowledge there is a great vegetational heterogeneity at smaller spatial scales. Other savannic-like areas from South America, such as the Venezuelan-Colombian Llanos (O), are found along the Orinoco and its tributary plains. Small patches of tropical dry forest vegetation occur along the coastal Caribbean forest, the Andean piedmont, and the inter-Andean valleys (R,S), especially from Ecuador to Bolivia.

Transition from lowland rainforest to montane vegetation is gradual, forming montane cloud forests (M) and open phylogenomes, such as the páramos (N), in Venezuela, Colombia, and Ecuador. In the Guayana Shield, the endemic Tepui vegetation (G) replaces Amazonian and Guianan forests (E) in an abrupt fashion. Along the Atlantic coast, rainforests are replaced by open grasslands on elevations above 1500-2000 m (K,L). South of the Tropic of Capricorn, westwardly from the Pampas grasslands (Z), there is a high vegetation complexity between latitudes 25° and 35°S, including lowland subtropical dry vegetation (U,A), humid Yungas Forest along Andean eastern slopes, the Bolivian/Argentinian Altiplano, with Monte semi-desert scrub (V), dry Puna (X), high Andean dry vegetation (Y), and the hyper-arid Atacama Desert scrub (W), along the Chilean-Peruvian coast. Mangrove forests (D) are found mostly along tropical Atlantic coastal estuaries, and freshwater wetlands form the Pantanal (B') along the northern Paraguay River system.

¹ Departamento de Botânica, Universidade Federal de Santa Catarina, Campus Universitário, Florianópolis, SC 88040-970, Brazil, pedrofiaschi@gmail.com; ² Embrapa Clima Temperado, Rodovia BR 392, s/n 78, Caixa Postal 403, Palotas, RS 96110-971, Brazil, gustavo.heiden@embrapa.br; ³ Department of Biological and Environmental Sciences, University of Gothenburg, Box 461, 405 30, and Gothenburg Botanical Garden, Göteborg, Sweden, alexandre.antonelli@biomem.gu.se; ⁴ Departamento de Botânica, Instituto de Biociências, Universidade de São Paulo, Rua do Matão 277, São Paulo, SP 05508-900, Brazil, pirani@usp.br



Figures: A-C. **Tropical rainforest;** A. Chocó, Colombia; B. Amazon, Rio Negro, Brazil; C. Rainforest interior, Amazonas, Brazil; D. **Mangrove,** Guayas, Ecuador; E. **Rainforest-Savanna** mosaic, Cayenne, French Guiana; F. **Amazonian white-sand campina,** Acre, Brazil; G. **Montane shrubland with gallery forest** on Tepui slopes, Amazonas, Brazil; H. **Atlantic tropical rainforest,** Rio de Janeiro, Brazil; I. Rainforest interior, Bahia, Brazil; J. **Montane cloud forest,** Rio de Janeiro, Brazil; K. **Subtropical rainforest-Montane grassland** mosaic, Santa Catarina, Brazil; L. Canyon with **grassland** (plateau) and **rainforest** (slope), Rio Grande do Sul, Brazil; M. **Montane cloud forest,** Mérida, Venezuela; N. **Páramo** vegetation, Cundinamarca, Colombia; O. **Llanos grasslands,** Meta, Colombia; P. **Cerrado,** Goiás, Brazil; Q. **Campos rupestres,** Minas Gerais, Brazil; R-T. **Seasonally dry tropical forest;** R. Guayaquil, Ecuador; S. Rio Marañón valley, Amazonas, Peru; T. Caatinga, Bahia, Brazil; U. **Seasonally dry subtropical forest** (Chaco), Mato Grosso do Sul, Brazil; V. **Monte semi-desert scrub,** Mendoza, Argentina; W. **Desert scrub,** San Pedro de Atacama, Chile; X. **Andean Altiplano** vegetation: **Dry puna,** Potosí, Bolivia; Y. **High-Andean dry vegetation,** Potosí, Bolivia; Z. **Pampas temperate grasslands,** Rio Grande do Sul, Brazil; A'. **Seasonally dry temperate thorny scrub** (Españal), Rio Grande do Sul, Brazil; B'. **Pantanal wetland,** Mato Grosso do Sul, Brazil; C'. **Temperate rainforest** with *Nothofagus*, Maule, Chile. Photos: A. Antonelli (A, D, E, O, R, S); P. Fiaschi (B, F, H, L, M, P, Q, X, Y); G. Heiden (C, K, N, V, Z, A'); Paulo Labiak (G); André M. Amorim (I); Maria Ana Farinaccio (U, B'); Domingos Cardoso (T); Stig-Arne Gullbrantz (W); Benoit Loeuille (C'). Funding: CNPq, European Research Council, Swedish Research Council.