

SUPPLEMENTARY MATERIAL

# Cacti diversity in the xerophilous scrublands of the Valley of Mexico

## Diversidad de cactáceas en los matorrales xerófilos del Valle de México

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**Table S1.** Number of genera and species for sites with xerophilous scrubland on igneous substrate in the Valley of Mexico.

| Site                                        | Abbreviation | Source (year)                                              | Genera | Species |
|---------------------------------------------|--------------|------------------------------------------------------------|--------|---------|
| Reserva Ecológica del Pedregal de San Ángel | Repsa        | Valiente-Banuet y de Luna 1990, Cano-Santana et al. (2008) | 3      | 6       |
| Cerro Metecatí                              | Met          | Hernández-Cruz et al. (2016)                               | 2      | 3       |
| Cerro Tetzcotzingo                          | Tet          | Pulido and Koch (1988)                                     | 2      | 3       |
| Parque Estatal Atizapan-Valle Escondido     | Ati          | Medina y Tejero (2006)                                     | 3      | 6       |
| Sierra de Guadalupe                         | Gua          | Boop (1965)                                                | 6      | 10      |
| Cerro Tecamac                               | TecT         | MEXU                                                       | 3      | 4       |
| Cerro de La Cumbre                          | Cum          | MEXU                                                       | 4      | 5       |
| Cerro San Lucas                             | Luc          | MEXU                                                       | 3      | 3       |
| Cerro Gordo (Otumba)                        | GorO         | Castilla y Tejero (1983)                                   | 4      | 6       |
| Cerro Santo Domingo                         | Dom          | MEXU                                                       | 3      | 3       |
| Cerro San Ignacio                           | Ign          | Castilla y Tejero (1983)                                   | 4      | 5       |
| Cerro de la Ahumada                         | Ahu          | This study, MEXU                                           | 6      | 12      |
| Cerro Caja del Agua                         | Agu          | MEXU                                                       | 2      | 2       |
| Cerro Tecajete                              | TecZ         | MEXU                                                       | 4      | 4       |
| Cerro Alto                                  | Alt          | MEXU                                                       | 3      | 3       |
| El Chilelete                                | Chi          | This study                                                 | 2      | 3       |
| Cerro El Zopilote                           | Zop          | MEXU                                                       | 3      | 5       |
| Cerro Santa Isabel                          | Isa          | Barrios-Rodríguez (1998), MEXU                             | 5      | 9       |
| Cerro Gordo (Pachuca)                       | GorP         | Barrios-Rodríguez (1998), MEXU                             | 5      | 9       |



Table S2. Beta diversity of cactus species across 19 sites of xerophilous scrubland in the Valley of Mexico.

|       | Agu  | Ahu  | Alt  | Ati  | Chi  | Cum  | Dom  | GorO | GorP | Gua  | Ign  | Isa  | Luc  | Met  | Repsa | TecT | TecZ | Tet  | Zop |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|-----|
| Agu   | -    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Ahu   | 0.17 | -    |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Alt   | 0    | 0.07 | -    |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Ati   | 0.14 | 0.50 | 0    | -    |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Chi   | 0    | 0    | 0    | 0    | -    |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Cum   | 0.17 | 0.21 | 0    | 0.10 | 0    | -    |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Dom   | 0.25 | 0.25 | 0.20 | 0.29 | 0    | 0.14 | -    |      |      |      |      |      |      |      |       |      |      |      |     |
| GorO  | 0.33 | 0.50 | 0    | 0.50 | 0    | 0.22 | 0.29 | -    |      |      |      |      |      |      |       |      |      |      |     |
| GorP  | 0.10 | 0.17 | 0    | 0.07 | 0.20 | 0.08 | 0    | 0.15 | -    |      |      |      |      |      |       |      |      |      |     |
| Gua   | 0.09 | 0.57 | 0.08 | 0.45 | 0.18 | 0.07 | 0.30 | 0.33 | 0.27 | -    |      |      |      |      |       |      |      |      |     |
| Ign   | 0    | 0.13 | 0.14 | 0    | 0.14 | 0.11 | 0.14 | 0.10 | 0.27 | 0.25 | -    |      |      |      |       |      |      |      |     |
| Isa   | 0    | 0.11 | 0    | 0.07 | 0.20 | 0    | 0    | 0.07 | 0.38 | 0.19 | 0.27 | -    |      |      |       |      |      |      |     |
| Luc   | 0.25 | 0.25 | 0    | 0.50 | 0    | 0.14 | 0.50 | 0.29 | 0.09 | 0.30 | 0    | 0.09 | -    |      |       |      |      |      |     |
| Met   | 0    | 0.25 | 0    | 0.50 | 0    | 0.14 | 0.20 | 0.29 | 0.09 | 0.18 | 0    | 0.09 | 0.50 | -    |       |      |      |      |     |
| Repsa | 0.14 | 0.29 | 0    | 0.20 | 0.13 | 0.10 | 0    | 0.20 | 0.15 | 0.33 | 0    | 0    | 0    | 0    | -     |      |      |      |     |
| TecT  | 0    | 0.23 | 0    | 0.25 | 0    | 0.29 | 0    | 0.11 | 0.08 | 0.08 | 0.13 | 0.08 | 0.17 | 0.40 | 0     | -    |      |      |     |
| TecZ  | 0.20 | 0.14 | 0    | 0.25 | 0.17 | 0    | 0.17 | 0.25 | 0.08 | 0.17 | 0.13 | 0.18 | 0.17 | 0    | 0.11  | 0    | -    |      |     |
| Tet   | 0    | 0.15 | 0    | 0.29 | 0.20 | 0.14 | 0.20 | 0.13 | 0.20 | 0.30 | 0    | 0.09 | 0.50 | 0.50 | 0.13  | 0.17 | 0    | -    |     |
| Zop   | 0.17 | 0.13 | 0    | 0.22 | 0    | 0.11 | 0.33 | 0.22 | 0.17 | 0.15 | 0.11 | 0.27 | 0.33 | 0.14 | 0     | 0    | 0.29 | 0.14 | -   |

Table S3. Beta diversity of cactus genera across 19 sites of xerophilous scrubland in the Valley of Mexico.

|       | Agu  | Ahu  | Alt  | Ati  | Chi  | Cum  | Dom  | GorO | GorP | Gua  | Ign  | Isa  | Luc  | Met  | Repsa | TecT | TecZ | Tet  | Zop |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|-----|
| Agu   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Ahu   | 0.33 |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Alt   | 0.25 | 0.50 |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Ati   | 0.67 | 0.50 | 0.50 |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Chi   | 0.33 | 0.14 | 0    | 0.25 |      |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Cum   | 0.20 | 0.67 | 0.17 | 0.40 | 0.20 |      |      |      |      |      |      |      |      |      |       |      |      |      |     |
| Dom   | 0.25 | 0.50 | 1.00 | 0.50 | 0    | 0.17 |      |      |      |      |      |      |      |      |       |      |      |      |     |
| GorO  | 0.50 | 0.67 | 0.40 | 0.75 | 0.20 | 0.60 | 0.40 |      |      |      |      |      |      |      |       |      |      |      |     |
| GorP  | 0.17 | 0.38 | 0    | 0.14 | 0.40 | 0.50 | 0    | 0.29 |      |      |      |      |      |      |       |      |      |      |     |
| Gua   | 0.33 | 0.71 | 0.50 | 0.50 | 0.33 | 0.43 | 0.50 | 0.67 | 0.38 |      |      |      |      |      |       |      |      |      |     |
| Ign   | 0    | 0.43 | 0.17 | 0    | 0.20 | 0.33 | 0.17 | 0.14 | 0.50 | 0.43 |      |      |      |      |       |      |      |      |     |
| Isa   | 0.40 | 0.57 | 0.14 | 0.33 | 0.40 | 0.50 | 0.14 | 0.50 | 0.67 | 0.57 | 0.50 |      |      |      |       |      |      |      |     |
| Luc   | 0.67 | 0.50 | 0.50 | 1.00 | 0.25 | 0.40 | 0.50 | 0.75 | 0.14 | 0.50 | 0    | 0.33 |      |      |       |      |      |      |     |
| Met   | 0.33 | 0.33 | 0.25 | 0.67 | 0.33 | 0.50 | 0.25 | 0.50 | 0.17 | 0.33 | 0    | 0.17 | 0.67 |      |       |      |      |      |     |
| Repsa | 0.25 | 0.50 | 0.20 | 0.50 | 0.25 | 0.75 | 0.20 | 0.75 | 0.33 | 0.50 | 0.17 | 0.33 | 0.50 | 0.67 |       |      |      |      |     |
| TecT  | 0.25 | 0.50 | 0    | 0.20 | 0.25 | 0.75 | 0    | 0.40 | 0.60 | 0.29 | 0.40 | 0.60 | 0.20 | 0.25 | 0.50  |      |      |      |     |
| TecZ  | 0.50 | 0.67 | 0.40 | 0.75 | 0.20 | 0.60 | 0.40 | 0.60 | 0.29 | 0.43 | 0.14 | 0.50 | 0.75 | 0.50 | 0.40  | 0.40 |      |      |     |
| Tet   | 0.33 | 0.33 | 0.25 | 0.67 | 0.33 | 0.50 | 0.25 | 0.50 | 0.17 | 0.33 | 0    | 0.17 | 0.67 | 1.00 | 0.67  | 0.25 | 0.50 |      |     |
| Zop   | 0.25 | 0.50 | 0.50 | 0.50 | 0    | 0.40 | 0.50 | 0.40 | 0.14 | 0.29 | 0.17 | 0.33 | 0.50 | 0.25 | 0.20  | 0.20 | 0.75 | 0.25 |     |

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