**SUPPORTING INFORMATION**

**A waterfowl seed-dispersal network from the Neotropical region is nested and modular**

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**Figure S1.** Rarefaction curves with percentage of plant richness detected in faeces as a product of the observed richness divided by the richness estimated via Chao 2 non-parametric estimator. Curves were computed for all samples (Total) and for bird species (BT, Brazilian teal; CS, coscoroba swan; RT, ringed teal; WF, white-faced whistling-duck; YT, yellow-billed teal).

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**Table S1** Diaspores dispersed by five waterfowl species via endozoochory in southern Brazil in cold and warm periods. Numbers between parentheses represent number of samples with at least one diaspore / total samples. Seeds = total number of intact diaspores recorded. Sws = Number of samples where the respective diaspore was found. In fruits/types: Na = Not applicable.

|  |  |  |  |  | Brazilian teal | | Coscoroba swan | | Ringed teal | | White-faced whistling duck | | Yellow-billed teal | | Total |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | (n = 20/40) | | (n = 15/22) | | (n = 14/31) | | (n = 28/40) | | (n = 24/32) | |  |  |
| Family | Taxa | Abbrev. | Fruit | Type | seed | sws | seed | sws | seed | sws | seed | sws | seed | sws | seed | sws |
| Acanthaceae | *Hygrophila* sp. | Hyg\_sp | Capsule | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Alismataceae | *Hydrocleys nymphoides* | Hyd\_nym | Follicle | Dry | 3 | 1 | 34 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 38 | 8 |
| Amaranthaceae | *Salicornia fruticosa* | Sal\_fru | Utricle | Dry | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| Apocynaceae | Apocynaceaespp. | Apo\_spp | Na | Na | 5 | 2 | 0 | 0 | 0 | 0 | 39 | 6 | 3 | 2 | 47 | 10 |
| Charophyceae | Charophyceaespp. | Cha\_spp | Oogonia | Na | 3 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 185 | 4 | 189 | 7 |
| Cyperaceae | *Androtrichum trigynum* | And\_tri | Achene | Dry | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 |
| Cyperaceae | *Cyperus diformiss* | Cyp\_dif | Achene | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cyperaceae | *Eleocharis radicans* | Ele\_rad | Achene | Dry | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Cyperaceae | *Eleocharis maculosa* | Ele\_mac | Achene | Dry | 0 | 0 | 0 | 0 | 5 | 2 | 10 | 2 | 0 | 0 | 15 | 4 |
| Cyperaceae | *Eleocharis bonariensis* | Ele\_bon | Achene | Dry | 2 | 2 | 1 | 1 | 19 | 6 | 3 | 2 | 1 | 1 | 26 | 12 |
| Cyperaceae | *Eleocharis flavescens* | Ele\_fla | Achene | Dry | 38 | 5 | 0 | 0 | 0 | 0 | 6 | 3 | 1 | 1 | 45 | 9 |
| Cyperaceae | *Eleocharis rabenii* | Ele\_rab | Achene | Dry | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 7 | 4 |
| Cyperaceae | *Eleocharis minima* | Ele\_min | Achene | Dry | 2 | 1 | 3 | 3 | 165 | 10 | 8 | 4 | 7 | 2 | 185 | 20 |
| Cyperaceae | *Fuirena incompleta* | Fui\_inc | Achene | Dry | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Cyperaceae | *Kyllinga odorata* | Kyl\_odo | Achene | Dry | 0 | 0 | 0 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 18 | 4 |
| Cyperaceae | *Rynchospora* sp. | Ryn\_sp | Achene | Dry | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 492 | 2 | 493 | 3 |
| Cyperaceae | *Scirpus* sp*.* | Sci\_sp | Achene | Dry | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 1 | 5 | 4 |
| Hydrocharitaceae | *Najas guadalupensis* | Naj\_gua | Achene | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Isoetaceae | *Isoetes cf. maxima* | Isso\_max | Megaspore | Na | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 |
| Juncaceae | *Juncus cf. bufonius* | Jun\_buf | Capule | Dry | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Juncaceae | *Juncus* sp. | Jun\_sp | Capule | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 |
| Menyanthaceae | *Nymphoides indica* | Nym\_ind | Capsule | Dry | 1 | 1 | 24 | 5 | 6 | 4 | 35 | 5 | 33 | 5 | 99 | 20 |
| Onagraceae | *Ludwigia erecta* | Lud\_ere | Capsule | Dry | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 3 | 3 |
| Poaceae | *Axonopus purpusii* | Axo\_pur | Capsule | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 |
| Poaceae | *Echinochloa cruss-galli* | Echi\_cru | Capsule | Dry | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 |
| Poaceae | *Poaceae* spp. | Poa\_spp | Na | Na | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Poaceae | *Panicum dichotomiflorum* | Pan\_dic | Capsule | Dry | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 |
| Poaceae | *Panicum germinatum* | Pan\_ger | Capsule | Dry | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 |
| Poaceae | *Paspalum repens* | Pas\_rep | Capsule | Dry | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 |
| Poaceae | *Paspalum* sp. | Pas\_sp | Capsule | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 |
| Poaceae | *Zizaniopsis cf. bonariensis* | Ziz\_bon | Capsule | Dry | 11 | 5 | 24 | 9 | 480 | 10 | 24 | 4 | 7 | 5 | 546 | 33 |
| Polygonaceae | *Polygonum punctatum* | Poly\_pun | Achene | Dry | 0 | 0 | 4 | 3 | 5 | 2 | 1 | 1 | 1 | 1 | 11 | 7 |
| Pontederacae | *Heteranther areniformis* | Het\_ren | Capsule | Dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Potamogetonaceae | *Potamogeton pusillus* | Pot\_pus | Achene | Dry | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 46 | 6 | 48 | 8 |
| Ranunculaceae | *Ranunculus flagelliformis* | Ran\_fla | Achene | Dry | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Rubiaceae | Rubiaceaespp. | Rub\_spp | Na | Na | 0 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 4 |
| Rubiaceae | *Oldenlandia salzmannii* | Old\_sal | Capsule | Dry | 5 | 5 | 1 | 1 | 160 | 12 | 23 | 5 | 17 | 6 | 206 | 29 |
| Ruppiaceae | *Ruppia maritima* | Rup\_mar | Drupe | Fleshy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 5 | 1 |
| Salviniaceae | *Azolla filiculoides* | Azo\_fil | Sporocarp | Na | 0 | 0 | 0 | 0 | 15 | 2 | 1 | 1 | 0 | 0 | 16 | 3 |
| Solanaceae | *Solanum americanum* | Sol\_ame | Berry | Fleshy | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 2 | 0 | 0 | 23 | 2 |
| Total |  |  |  |  | 95 | 40 | 98 | 35 | 881 | 60 | 180 | 42 | 812 | 46 | 2066 | 223 |

**Table S2.** Species contributions to network nestedness, considering waterfowl and plants in a Neotropical wetland network.

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| **Waterfowl** | **Z-scores** |
| Yellow-billed teal | 2.319 |
| Brazilian teal | 1.789 |
| White-faced whistling-duck | 0.945 |
| Ringed teal | 0.687 |
| Coscoroba swan | 0.367 |
| **Plant taxa** | **Z-scores** |
| *Oldenlandia salzmannii* | 1.175 |
| *Eleocharis bonariensis* | 1.159 |
| *Eleocharis minima* | 1.135 |
| *Nymphoides indica* | 1.131 |
| *Zizaniopsis bonariensis* | 1.103 |
| *Rynchospora* sp. | 1.006 |
| *Polygonum punctatum* | 0.868 |
| Apocynaceae spp. | 0.662 |
| *Eleocharis flavescens* | 0.636 |
| *Potamogeton pusillus* | 0.534 |
| *Charophyceae* spp | 0.509 |
| *Eleocharis rabenii* | 0.500 |
| *Isoetes maxima* | 0.330 |
| *Hydrocleys nymphoides* | 0.326 |
| *Scirpus* sp. | 0.129 |
| *Cyperus diformiss* | 0.100 |
| *Paspalum* sp. | 0.095 |
| *Ruppia maritima* | 0.088 |
| *Juncus* sp. | 0.073 |
| *Axonopus purpusii* | 0.070 |
| *Najas guadalupensis* | 0.062 |
| *Solanum americanum* | 0.061 |
| *Hygrophila* sp. | 0.059 |
| *Heteranthera reniformis* | 0.053 |
| *Salicornia fruticosa* | -0.108 |
| *Kyllinga odorata* | -0.116 |
| *Ranunculus flagelliformis* | -0.253 |
| *Panicum dichotomiflorum* | -0.271 |
| *Panicum germinatum* | -0.276 |
| Poaceae spp. | -0.277 |
| *Echinochloa crussgalli* | -0.282 |
| *Fuirena incompleta* | -0.316 |
| *Eleocharis radicans* | -0.544 |
| *Juncus bufonius* | -0.578 |
| *Androtrichum trigynum* | -0.598 |
| *Ludwigia erecta* | -0.621 |
| *Eleocharis maculosa* | -0.645 |
| *Azolla filiculoides* | -0.646 |
| *Paspalum repens* | -0.652 |
| Rubiaceae spp. | -0.710 |

**Table S3.** Species contributions to network weighted nestedness, considering waterfowl and plants in a Neotropical wetland network.

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| **Waterfowl** | **Z-scores** |
| Yellow-billed teal | 2.320 |
| Brazilian teal | 1.952 |
| White-faced whistling-duck | 0.830 |
| Ringed teal | 0.674 |
| Coscoroba swan | 0.345 |
| **Plant taxa** | **Z-scores** |
| *Oldenlandia salzmannii* | 1.184 |
| *Eleocharis minima* | 1.181 |
| *Eleocharis bonariensis* | 1.181 |
| *Zizaniopsis bonariensis* | 1.157 |
| *Nymphoides indica* | 1.144 |
| *Rynchospora* sp. | 0.998 |
| *Polygonum punctatum* | 0.902 |
| Apocynaceae spp | 0.675 |
| *Eleocharis flavescens* | 0.629 |
| *Charophyceae* spp | 0.558 |
| *Potamogeton pusillus* | 0.534 |
| *Eleocharis rabenii* | 0.498 |
| *Hydrocleys nymphoides* | 0.390 |
| *Isoetes maxima* | 0.306 |
| *Scirpus* sp. | 0.173 |
| *Juncus* sp. | 0.139 |
| *Ruppia maritima* | 0.127 |
| *Cyperus diformiss* | 0.113 |
| *Axonopus purpusii* | 0.090 |
| *Hygrophila* sp. | 0.089 |
| *Najas guadalupensis* | 0.080 |
| *Paspalum* sp. | 0.075 |
| *Heteranthera reniformis* | 0.074 |
| *Solanum americanum* | 0.034 |
| *Kyllinga odorata* | -0.104 |
| *Salicornia fruticosa* | -0.128 |
| *Echinochloa crussgalli* | -0.213 |
| *Panicum germinatum* | -0.263 |
| Poaceae spp. | -0.264 |
| *Fuirena incompleta* | -0.286 |
| *Panicum dichotomiflorum* | -0.287 |
| *Ranunculus flagelliformis* | -0.318 |
| *Ludwigia erecta* | -0.579 |
| *Juncus bufonius* | -0.605 |
| *Azolla filiculoides* | -0.614 |
| *Androtrichum trigynum* | -0.629 |
| *Eleocharis maculosa* | -0.629 |
| *Eleocharis radicans* | -0.644 |
| *Paspalum repens* | -0.697 |
| Rubiaceae spp. | -0.742 |

**Table S4.** Species contributions to weighted modularity, considering waterfowl and plants in a Neotropical wetland network. Z represents the connection within-modules and C the among-module connectivity. NA values for Z are shown when the species is fully connected within the module, indicating a very large within-module connectivity.

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| **Waterfowl** | **Z** | **C** | |
| White-faced whistling-duck | 0.707 | 0.220 |
| Yellow-billed teal | NA | 0.291 |
| Brazilian teal | NA | 0.132 |
| Ringed teal | NA | 0.355 |
| Coscoroba swan | -0.707 | 0.039 |
| **Plants** |  |  |
| *Rynchospora* sp. | 2.651 | 0.031 |
| *Nymphoides indica* | 2.566 | 0.215 |
| *Eleocharis flavescens* | 2.441 | 0.152 |
| *Zizaniopsis bonariensis* | 2.251 | 0.581 |
| *Hydrocleys nymphoides* | 1.739 | 0.155 |
| Apocynaceae spp. | 1.013 | 0.325 |
| Charophyceaespp. | 0.705 | 0.210 |
| *Eleocharis minima* | 0.347 | 0.508 |
| *Oldenlandia salzmannii* | 0.317 | 0.638 |
| *Solanum americanum* | 0.305 | 0.000 |
| *Panicum dichotomiflorum* | -0.131 | 0.000 |
| *Potamogeton pusillus* | -0.176 | 0.277 |
| *Echinochloa crussgalli* | -0.211 | 0.000 |
| *Eleocharis rabenii* | -0.211 | 0.089 |
| *Eleocharis maculosa* | -0.269 | 0.172 |
| *Panicum germinatum* | -0.291 | 0.000 |
| *Polygonum punctatum* | -0.379 | 0.237 |
| *Ruppia maritima* | -0.435 | 0.000 |
| *Axonopus purpusii* | -0.454 | 0.000 |
| *Juncus* sp. | -0.454 | 0.000 |
| *Paspalum* sp. | -0.454 | 0.000 |
| *Heteranthera reniformis* | -0.461 | 0.000 |
| *Hygrophila* sp. | -0.461 | 0.000 |
| *Najas guadalupensis* | -0.461 | 0.000 |
| Rubiaceae spp. | -0.495 | 0.072 |
| *Fuirena incompleta* | -0.532 | 0.000 |
| Poaceae spp. | -0.532 | 0.000 |
| *Ranunculus flagelliformis* | -0.532 | 0.000 |
| *Eleocharis bonariensis* | -0.535 | 0.674 |
| *Kyllinga odorata* | -0.541 | 0.000 |
| *Scirpus* sp. | -0.551 | 0.190 |
| *Azolla filiculoides* | -0.559 | 0.366 |
| *Paspalum repens* | -0.595 | 0.000 |
| *Ludwigia erecta* | -0.638 | 0.416 |
| *Eleocharis radicans* | -0.639 | 0.000 |
| *Juncus bufonius* | -0.639 | 0.000 |
| *Salicornia fruticosa* | -0.644 | 0.000 |
| *Androtrichum trigynum* | -0.667 | 0.287 |
| *Cyperus diformiss* | -0.667 | 0.000 |
| *Isoetes maxima* | -0.667 | 0.301 | | |