

**Table S1.** Summarized environmental variables of the study sites in the MCMA, Mexico.

| Study site                                                              | Size<br>(ha) | Perimeter<br>(m) | Vegetation<br>cover (%) | Built<br>cover (%) | Built cover in<br>the<br>surroundings<br>(%) | Distance<br>to the<br>closest<br>natural<br>vegetation<br>patch<br>(Km) | Distance<br>to nearest<br>greenspace<br>(Km) |
|-------------------------------------------------------------------------|--------------|------------------|-------------------------|--------------------|----------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------|
| Guadalupe Lake                                                          | 297.6        | 8923.6           | 232.1                   | 65.4               | 261.8                                        | 6.4                                                                     | 4.1                                          |
| Sierra Hermosa<br>Ecological, Tourist<br>and Recreational<br>State Park | 572.6        | 18309            | 547.6                   | 17.13              | 595                                          | 12.9                                                                    | 14.3                                         |
| Zumpango Lagoon                                                         | 1860         | 18818.4          | 43.8                    | 26.2               | 1618.2                                       | 11.6                                                                    | 5.4                                          |
| Nabor Carrillo<br>Lake                                                  | 1474         | 15790            | 160.8                   | 82                 | 1917                                         | 17.8                                                                    | 5.12                                         |
| Cerro de Paula and<br>surrounding areas                                 | 1162         | 13656            | 557.3                   | 104.7              | 744.2                                        | 9.97                                                                    | 7.27                                         |

**Table S2.** Model selection that supported the interaction of bird diversity with season and environmental variables of study sites.

|                                                 | AICc        | AICc_wt    | dAICc      |
|-------------------------------------------------|-------------|------------|------------|
| Overall species richness~Season*Dgs+(1 Site)    | 1149.391903 | 0.99451831 | 0          |
| Overall species richness~Season*Vcov+(1 Site)   | 1160.991607 | 0.0030114  | 11.5997039 |
| Overall species richness~Season*PAR+(1 Site)    | 1164.850478 | 0.00043735 | 15.4585754 |
| Overall species richness~Season+(1 Site)        | 1164.888545 | 0.0004291  | 15.4966418 |
| Overall species richness~Season+Buicov+(1 Site) | 1166.210534 | 0.00022156 | 16.8186308 |
| Overall species richness~Season+PAR+(1 Site)    | 1166.24772  | 0.00021748 | 16.8558172 |
| Overall species richness~Season*Dgs+(1 Site)    | 1166.263361 | 0.00021579 | 16.8714579 |
| Overall species richness~Season+Dnpa+(1 Site)   | 1166.766798 | 0.00016777 | 17.3748955 |
| Overall species richness~Season*Size+(1 Site)   | 1166.839234 | 0.0001618  | 17.4473306 |
| Overall species richness~Season+Surcov+(1 Site) | 1166.930752 | 0.00015456 | 17.5388488 |
| Overall species richness~Season+Vcov+(1 Site)   | 1167.02802  | 0.00014722 | 17.6361167 |
| Overall species richness~Season+Size+(1 Site)   | 1167.065577 | 0.00014449 | 17.6736739 |
| Overall species richness~Season*Surcov+(1 Site) | 1168.418644 | 7.35E-05   | 19.0267412 |
| Overall species richness~Season*Buicov+(1 Site) | 1168.841717 | 5.94E-05   | 19.4498136 |
| Overall species richness~Season*Dnpa+(1 Site)   | 1169.620359 | 4.03E-05   | 20.2284556 |
| Overall species richness~1+(1 Site)             | 1206.067103 | 4.91E-13   | 56.6752001 |

|                                                  | AICc       | AICc_wt    | dAICc      |
|--------------------------------------------------|------------|------------|------------|
| Resident species richness~Season*Dgs+(1 Site)    | 1069.64974 | 0.99985944 | 0          |
| Resident species richness~Season*PAR+(1 Site)    | 1090.68709 | 2.70E-05   | 21.0373468 |
| Resident species richness~Season*Buicov+(1 Site) | 1091.08349 | 2.22E-05   | 21.4337528 |
| Resident species richness ~PAR+(1 Site)          | 1091.33796 | 1.95E-05   | 21.6882196 |
| Resident species richness~Dgs+(1 Site)           | 1091.53883 | 1.77E-05   | 21.8890832 |
| Resident species richness ~1+(1 Site)            | 1092.58554 | 1.05E-05   | 22.9357936 |
| Resident species richness ~Season*Vcov+(1 Site)  | 1092.92191 | 8.84E-06   | 23.2721652 |
| Resident species richness~Vcov+(1 Site)          | 1093.16011 | 7.85E-06   | 23.5103705 |
| Resident species richness~Season+(1 Site)        | 1093.92509 | 5.35E-06   | 24.275349  |
| Resident species richness~Size+(1 Site)          | 1094.00374 | 5.15E-06   | 24.3539997 |
| Resident species richness~Season+Surcov+(1 Site) | 1094.3245  | 4.38E-06   | 24.6747583 |
| Resident species richness~Buicov+(1 Site)        | 1094.37106 | 4.28E-06   | 24.721316  |
| Resident species richness~Dnpa+(1 Site)          | 1094.69904 | 3.64E-06   | 25.0492949 |

|                                                  |            |          |            |
|--------------------------------------------------|------------|----------|------------|
| Resident species richness~Season*Dnpa+(1 Site)   | 1094.80043 | 3.46E-06 | 25.1506849 |
| Resident species richness~Season*Size+(1 Site)   | 1098.45668 | 5.55E-07 | 28.8069334 |
| Resident species richness~Season*Surcov+(1 Site) | 1100.06678 | 2.48E-07 | 30.4170374 |

|                                                 | AICc       | AICc_wt    | dAICc      |
|-------------------------------------------------|------------|------------|------------|
| Migrant species richness~Season*Surcov+(1 Site) | 1036.30335 | 0.19913626 | 0          |
| Migrant species richness~Season+Surcov+(1 Site) | 1036.97591 | 0.14226728 | 0.67256354 |
| Migrant species richness~Season+(1 Site)        | 1037.23658 | 0.12488226 | 0.93323586 |
| Migrant species richness~Season*Dnpa+(1 Site)   | 1038.14843 | 0.07915813 | 1.84508355 |
| Migrant species richness~Season+Vcov+(1 Site)   | 1038.31279 | 0.07291313 | 2.00944116 |
| Migrant species richness~Season+Buicov+(1 Site) | 1038.32535 | 0.0724564  | 2.02200866 |
| Migrant species richness~Season+Size+(1 Site)   | 1038.4329  | 0.06866295 | 2.12955917 |
| Migrant species richness~Season*Vcov+(1 Site)   | 1038.97343 | 0.05240207 | 2.67008663 |
| Migrant species richness~Season*Size+(1 Site)   | 1039.28317 | 0.04488386 | 2.97982221 |
| Migrant species richness~Season+PAR+(1 Site)    | 1039.36473 | 0.04309023 | 3.06138615 |
| Migrant species richness~Season+Dgs+(1 Site)    | 1039.37539 | 0.04286124 | 3.07204304 |
| Migrant species richness~Season*Buicov+(1 Site) | 1040.35494 | 0.02626377 | 4.05159777 |
| Migrant species richness~Season*Dnpa+(1 Site)   | 1041.11316 | 0.01797682 | 4.80981203 |
| Migrant species richness~Season*PAR+(1 Site)    | 1043.0334  | 0.00688236 | 6.73005459 |
| Migrant species richness~Season*Dgs+(1 Site)    | 1043.25412 | 0.00616323 | 6.95077595 |
| Migrant species richness~1+(1 Site)             | 1141.64278 | 2.66E-24   | 105.339433 |

|                                       | AICc       | AICc_wt    | dAICc      |
|---------------------------------------|------------|------------|------------|
| log(Abundance)~Surcov+(1 Site)        | 2704.06078 | 0.25872829 | 0          |
| log(Abundance)~Vcov+(1 Site)          | 2705.29403 | 0.13965248 | 1.23324283 |
| log(Abundance)~1+(1 Site)             | 2705.38586 | 0.13338506 | 1.3250767  |
| log(Abundance)~Size+(1 Site)          | 2706.04935 | 0.09572656 | 1.98856531 |
| log(Abundance)~Dnpa+(1 Site)          | 2706.32482 | 0.08340936 | 2.26403582 |
| log(Abundance)~(1 Site)               | 2706.75333 | 0.0673233  | 2.69254421 |
| log(Abundance)~Dgs+(1 Site)           | 2706.89789 | 0.06262883 | 2.83710548 |
| log(Abundance)~Buicov+(1 Site)        | 2706.95283 | 0.06093187 | 2.89204405 |
| log(Abundance)~PAR+(1 Site)           | 2707.17579 | 0.05450399 | 3.11500895 |
| log(Abundance)~Season*Surcov+(1 Site) | 2709.74863 | 0.01505719 | 5.6878455  |
| log(Abundance)~Season*Vcov+(1 Site)   | 2710.98367 | 0.00812004 | 6.92288559 |
| log(Abundance)~Season*Size+(1 Site)   | 2711.77267 | 0.00547305 | 7.7118856  |
| log(Abundance)~Season*Dnpa+(1 Site)   | 2712.05486 | 0.00475282 | 7.9940811  |
| log(Abundance)~Season*PAR+(1 Site)    | 2712.64848 | 0.00353223 | 8.58769832 |

|                                       |            |            |            |
|---------------------------------------|------------|------------|------------|
| log(Abundance)~Season*Dgs+(1 Site)    | 2712.68    | 0.00347699 | 8.61922048 |
| log(Abundance)~Season*Buicov+(1 Site) | 2712.78575 | 0.00329792 | 8.72497017 |

|                                          | AICc       | AICc_wt    | dAICc      |
|------------------------------------------|------------|------------|------------|
| Shannon diversity~Season+(1 Site)        | 99.5916939 | 0.20412909 | 0          |
| Shannon diversity~Season+Buicov+(1 Site) | 100.221329 | 0.14899832 | 0.62963513 |
| Shannon diversity~Season*Dgs+(1 Site)    | 100.399682 | 0.13628641 | 0.80798788 |
| Shannon diversity~Season+PAR+(1 Site)    | 101.274733 | 0.08799087 | 1.68303903 |
| Shannon diversity~Season+Vcov+(1 Site)   | 101.724284 | 0.07027792 | 2.13258967 |
| Shannon diversity~Season+Size+(1 Site)   | 101.727339 | 0.07017064 | 2.13564513 |
| Shannon diversity~Season+Surcov+(1 Site) | 101.749407 | 0.06940064 | 2.15771293 |
| Shannon diversity~Season+Dnpa+(1 Site)   | 101.751053 | 0.06934356 | 2.15935871 |
| Shannon diversity~Season*Dgs+(1 Site)    | 101.768159 | 0.06875299 | 2.17646464 |
| Shannon diversity~Season*Buicov+(1 Site) | 103.806366 | 0.02481422 | 4.21467168 |
| Shannon diversity~Season*PAR+(1 Site)    | 105.06029  | 0.01325606 | 5.46859597 |
| Shannon diversity~Season*Vcov+(1 Site)   | 105.247125 | 0.01207379 | 5.65543146 |
| Shannon diversity~Season*Surcov+(1 Site) | 105.935095 | 0.00855959 | 6.34340088 |
| Shannon diversity~Season*Size+(1 Site)   | 106.003451 | 0.00827198 | 6.41175663 |
| Shannon diversity~Season*Dnpa+(1 Site)   | 106.153659 | 0.00767348 | 6.56196546 |
| Shannon diversity~1+(1 Site)             | 125.607785 | 4.58E-07   | 26.0160915 |

|                                 | AICc       | AICc_wt    | dAICc      |
|---------------------------------|------------|------------|------------|
| Evenness~Season+(1 Site)        | -349.08856 | 0.28590332 | 0          |
| Evenness~1+(1 Site)             | -347.26297 | 0.1147618  | 1.82559011 |
| Evenness~Dgs+(1 Site)           | -346.84453 | 0.09309674 | 2.24402896 |
| Evenness~Surcov+(1 Site)        | -346.80979 | 0.09149349 | 2.27877176 |
| Evenness~Vcov+(1 Site)          | -346.35303 | 0.07281232 | 2.73553713 |
| Evenness~Season*Dgs+(1 Site)    | -345.71912 | 0.05303393 | 3.36944344 |
| Evenness~Dnpa+(1 Site)          | -345.65844 | 0.05144907 | 3.43012254 |
| Evenness~Size+(1 Site)          | -345.4505  | 0.04636861 | 3.63806192 |
| Evenness~PAR+(1 Site)           | -345.20653 | 0.04104372 | 3.88203156 |
| Evenness~Buicov+(1 Site)        | -345.16916 | 0.04028398 | 3.91939965 |
| Evenness~Season*Vcov+(1 Site)   | -344.19792 | 0.02478733 | 4.89064176 |
| Evenness~Season*Surcov+(1 Site) | -344.16919 | 0.02443384 | 4.91936964 |
| Evenness~Season*Buicov+(1 Site) | -343.24786 | 0.01541442 | 5.84070065 |
| Evenness~Season*PAR+(1 Site)    | -343.22424 | 0.01523343 | 5.86432326 |
| Evenness~Season*Dnpa+(1 Site)   | -343.18943 | 0.01497056 | 5.89913623 |
| Evenness~Season*Size+(1 Site)   | -343.18178 | 0.01491344 | 5.90678154 |