**Efecto del manejo sobre la diversidad de árboles en vegetación secundaria en la Reserva de la Biosfera de Calakmul, Campeche, México**

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Anexo 1

Listado de especies con sus usos y números de individuos en los sitios de estudio. Uso: A = apícola , F = forestal maderable y no maderable\*.

Appendix 1

List of species with their uses and number of individuals in the study sites. Use: B = beekeeping, F = forest timber and non-timber \*.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Familia | Nombre científico | Uso | VSMA | VSMF | VS | BTS |
| Anacardiaceae  | *Metopium brownei* | A,F | x | x |  x | x |
| Annonaceae | *Annona reticulata* |  | - | x | - | - |
| *Mosannona depressa* | F | x | x | x | x |
| Apocynaceae | *Plumeria obtusa* | F | - | x | - | x |
| *Cascabela gaumeri* | A,F | x | x | x | x |
| Bignoniaceae  | *Handroanthus chrysantha* | A,F | - | - | - | x |
| Boraginaceae | *Bourreria pulchra* | A,F | x | x | x | x |
| *Bourreria sp.* |  - | - | x | - | - |
| *Cordia alliodora* | A,F | x | x | - | x |
| *Cordia dodecandra* | A,F | x | - | - | - |
| *Ehretia tinifolia* | A,F | x | - | - | - |
| Burseraceae | *Bursera simaruba* | A,F | x | x | x | x |
| *Protium copal* | A,F | x | x | x | - |
| Canellaceae  | *Canella winterana* | -  | x | x | - | x |
| Cannabaceae | *Celtis trinervia* | A | - | x | - | - |
| Capparaceae  | *Capparis indica* |  -  | - | - | x | x |
| Celastraceae | *Semialarium mexicanum* | - | - | x | - | x |
| *Maytenus schippii* |  -  | - | - | x | x |
| *Rhacoma gaumeri* | F\* | - | - | x | - |
| Ebenaceae  | *Diospyros bumelioides* | A, F\* | - | - | - | x |
| *Diospyros salicifolia* | A,F | x | x | x | x |
| Erythroxylaceae  | *Erythroxylum rotundifolium* | F | x | x | - | x |
| Euphorbiaceae  | *Bernardia mexicana* | -  | -  | -  | -  | x |
| *Cnidoscolus aconitifolius* | A, F\* | - | x | x | - |
| *Croton arboreus* |  - | x | x | x | x |
| *Croton icche* | A | x | x | x | x |
| *Croton lucidus* |  - | - | - | x | x |
| *Croton oerstedianus* | A | - | x | x | x |
| *Jatropha gaumeri* | F\* | x | x | x | x |
| Fabaceae | *Acacia centralis* | A,F | x | x | x | x |
| *Acacia cornigera* | A,F | - | x | x | - |
| *Acacia dolichostachya* | A, F | - | x | - | - |
| *Acacia gaumeri* | A,F | x | x | x | x |
| *Acacia sp.* |  - | - | - | - | x |
| *Bauhinia divaricata* | A,F | - | - | x | x |
| *Caesalpinia gaumeri* | A,F | - | - | x | x |
| *Caesalpinia mollis* | F | x | x | x | x |
| *Caesalpinia vesicaria* | F | - | - | - | x |
| *Chloroleucon mangense*  | F | - | x | x | x |
| *Diphysa carthagenensis*  | A,F | x | x | x | - |
| *Haematoxylum campechianum* | A,F | x | x | x | - |
| *Lonchocarpus castilloi* | A,F | - | - | x | - |
| *Lonchocarpus guatemalensis* | A,F | x | x | x | x |
| *Lonchocarpus rugosus* | A,F | x | - | - | - |
| *Lonchocarpus yucatanensis* | A,F | x | x | x | x |
| *Lysiloma latisiliquum* | A,F | - | x | - | - |
| *Mimosa bahamensis*  | A,F | x | x | - | x |
| *Piscidia piscipula*  | A,F | x | x | x | - |
| *Platymiscium yucatanum* | A,F | x | x | x | x |
| Lamiaceae  | *Vitex gaumeri* | A,F | x | x | x | x |
| Lauraceae  | *Licaria coriacea* | -  | x | - | - | - |
| *Nectandra salicifolia* | A,F | x | - | x | x |
| Malpighiaceae | *Byrsonima bucidifolia* | A,F\* | - | - | - | x |
| *Malpighia glabra* | A,F\* | x | x | x | x |
| Malvaceae  | *Hampea trilobata* | A,F | x | x | x | x |
| Meliaceae  | *Cedrela odorata* | A,F | - | x | - | - |
| *Trichilia pallida*  |  - | x | x | - | x |
| Menispermaceae | *Hyperbaena winzerlingii* | F\* | - | - | - | x |
| Moraceae | *Brosimum alicastrum*  | A,F | x | x | x | x |
| *Ficus obtusifolia* | F\* | - | - | - | x |
| *Trophis racemosa* | A,F | - | - | x | - |
| Myrtaceae | *Eugenia capuli* | A | - | x | - | - |
| *Eugenia ibarrae* |  - | x | x | x | x |
| *Eugenia winzerlingii* | A,F | - | x | x | x |
| *Myrciaria floribunda*  |  -  | x | - | x | x |
| Nyctaginaceae  | *Neea choriophylla*  | F\* | x | x | x | x |
| Opiliaceae  | *Agonandra ovatifolia*  | - | x | x | x | x |
| Phyllanthaceae  | *Astrocasia tremula*  | A | - | - | - | x |
| Picramniaceae  | *Alvaradoa amorphoides* | A,F | - | x | - | - |
| Polygonaceae | *Coccoloba acapulcensis* | A,F | x | x | x | x |
| *Coccoloba cozumelensis* | A,F | - | - | x | x |
| *Coccoloba reflexiflora*  | A | x | - | x | x |
| *Gymnopodium floribundum*  | A,F | x | x | x | x |
| *Neomillspaughia emarginata* | A,F | x | x | x | x |
| Primulaceae | *Bonellia flammea* | - | - | - | - | x |
| *Bonellia macrocarpa*  | - | - | x | x | - |
| *Parathesis cubana* | F | - | - | - | x |
| Putranjivaceae  | *Drypetes lateriflora*  | F | x | x | x | x |
| Rhamnaceae  | *Rhamnus humboldtiana* | F\* | x | - | - | x |
| *Krugiodendron ferreum* | A,F | x | x | x | x |
| Rubiaceae | *Exostema caribaeum* | A,F | - | - | - | x |
| *Guettarda gaumeri* | -  | x | - | x | - |
| *Machaonia lindeniana* | A,F | x | x | - | x |
| *Randia aculeata*  | A,F | x | x | x | x |
| *Randia longiloba*  | F\* | x | x | x | x |
| *Simira salvadorensis* | F | - | - | x | - |
| Rutaceae | *Amyris elemifera* | A,F | - | x | x | x |
| *Casimiroa tetrameria* | A,F\* | - | - | x | - |
| *Esenbeckia berlandieri*  | A,F | x | x | x | x |
| *Pilocarpus racemosus*  | F\* | x | x | x | x |
| Salicaceae | *Casearia emarginata*  | A | x | x | x | x |
| *Laetia thamnia*  | A,F | x | - | x | x |
| *Samyda yucatanensis* | A, F\* | - | x | - | - |
| *Xylosma flexuosa*  | A | x | x | - | x |
| Sapindaceae | *Exothea diphylla* | A,F | x | - | x | x |
| *Melicoccus oliviformis* | A,F | - | - | x | x |
| *Thouinia paucidentata*  | A,F | x | x | x | x |
| Sapotaceae | *Manilkara zapota*  | A,F | - | x | x | x |
| *Pouteria amygdalina*  | F | - | x | - | - |
| *Sideroxylon obtusifolium* | -  | - | - | - | x |
| *Sideroxylon salicifolium* | A | x | x | - | - |

Fuentes= Souza-Novelo, Suárez-Molina & Barrera-Vasquez, 1981; Escalante-Rebolledo, 2000; Arellano-Rodríguez et al., 2003; Porter-Bolland, 2003; Vester & Navarro-Martínez, 2007; Zamora-Crescencio, Flores-Guido & Ruenes-Morales, 2009.

Anexo 2. Especies con mayor valor de importancia relativo (VIR) en las cuatro condiciones de muestreo (VSMA, VSMF, VS y BTS).\* 10 especies con mayor VIR/de total de todas las especies por cada condición (VSMA, VSMF, VS y BTS).

Appendix 2. Species with greater relative importance value (VIR) in the four sampling conditions (VSMA, VSMF, VS and BTS). \* 10 species most VIR/total of all species for each condition (VSMA, VSMF, VS and BTS).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| VSMA \*(10/56) | Sps | Área basal relativa | Frecuencia relativa | Abundancia relativa | VIR |
|  | *Lonchocarpus guatemalensis*  | 41.48 | 3.88 | 43.83 | 89.19 |
|  | *Bursera simaruba* | 15.27 | 3.88 | 7.39 | 26.53 |
|  | *Nectandra salicifolia* | 6.3 | 3.1 | 10.96 | 20.36 |
|  | *Esenbeckia berlandieri*  | 5.74 | 3.88 | 6.9 | 16.51 |
|  | *Croton arboreus*  | 4.29 | 3.88 | 5.19 | 13.36 |
|  | *Lonchocarpus yucatanensis*  | 2.66 | 3.88 | 3 | 9.54 |
|  | *Gymnopodium floribundum*  | 1.78 | 3.88 | 1.95 | 7.6 |
|  | *Thouinia paucidentata*  | 1.91 | 3.88 | 1.22 | 7 |
|  | *Croton icche* | 1.73 | 3.1 | 1.46 | 6.29 |
|  | *Cascabela gaumeri*  | 1.76 | 3.1 | 0.65 | 5.51 |
| VSMF \*(10/65) | *Bursera simaruba* | 17.39 | 3.82 | 8.22 | 29.43 |
|  | *Lonchocarpus yucatanensis*  | 9.67 | 3.82 | 13.7 | 27.18 |
|  | *Lonchocarpus guatemalensis*  | 7.8 | 3.05 | 12.33 | 23.19 |
|  | *Esenbeckia berlandieri*  | 6.89 | 3.05 | 7.22 | 17.17 |
|  | *Neomillspaughia emarginata*  | 3.8 | 3.05 | 9.96 | 16.81 |
|  | *Thouinia paucidentata*  | 5.89 | 3.82 | 5.48 | 15.19 |
|  | *Lysiloma latisiliquum*  | 11.66 | 0.76 | 1.37 | 13.79 |
|  | *Piscidia piscipula*  | 6.1 | 2.29 | 2.37 | 10.75 |
| *Diospyros salicifolia*  | 3.03 | 3.82 | 3.86 | 10.7 |
|  | *Cascabela gaumeri*  | 4.15 | 3.05 | 2.12 | 9.32 |
| VS \*(10/63) | *Lonchocarpus yucatanensis*  | 14.47 | 3.73 | 15.11 | 33.31 |
|  | *Lonchocarpus guatemalensis*  | 8.92 | 3.73 | 13.43 | 26.08 |
|  | *Bursera simaruba* | 11.74 | 3.73 | 4.11 | 19.58 |
|  | *Hampea trilobata*  | 7.13 | 2.99 | 7.14 | 17.25 |
|  | *Esenbeckia berlandieri*  | 4.58 | 2.99 | 9.15 | 16.72 |
|  | *Gymnopodium floribundum*  | 6.65 | 2.99 | 3.53 | 13.17 |
|  | *Thouinia paucidentata*  | 5.24 | 3.73 | 2.94 | 11.91 |
|  | *Drypetes lateriflora*  | 3.23 | 1.49 | 6.88 | 11.61 |
|  | *Neomillspaughia emarginata*  | 2.17 | 2.99 | 5.63 | 10.78 |
|  | *Manilkara zapota*  | 6.61 | 2.24 | 1.51 | 10.36 |
| BTS \*(10/73) | *Lonchocarpus yucatanensis*  | 16.98 | 2.81 | 14.4 | 34.19 |
|  | *Pilocarpus racemosus*  | 4.4 | 1.69 | 15.66 | 21.75 |
|  | *Esenbeckia berlandieri*  | 10.84 | 2.81 | 7.04 | 20.69 |
|  | *Manilkara zapota*  | 11.15 | 2.25 | 3.48 | 16.87 |
|  | *Thouinia paucidentata*  | 6.98 | 2.81 | 5.78 | 15.57 |
|  | *Drypetes lateriflora*  | 2.62 | 2.81 | 7.99 | 13.42 |
|  | *Krugiodendron ferreum* | 3.72 | 2.81 | 4.03 | 10.56 |
|  | *Bursera simaruba* | 5.93 | 2.81 | 1.66 | 10.41 |
|  | *Amyris elemifera*  | 3.15 | 2.25 | 3.56 | 8.96 |
|  | *Gymnopodium floribundum*  | 3.51 | 2.25 | 2.45 | 8.21 |