Supplementary Information

A meta-analysis to assess long-term spatiotemporal changes of benthic coral and macroalgae cover in the Mexican Caribbean

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**Supplementary Table S1.** Estimates resulting from the hard-coral meta-analyses divided by periods of time, general result and by sub-regions. ES denotes the mean effect size (ARC), n denotes the sample size, SE denotes standard error and p the significance of the statistical analysis.

|        | 1978-2016 |          |          | 1978-2004 |          |          | 2005-2016 |          |          |
|--------|-----------|----------|----------|-----------|----------|----------|-----------|----------|----------|
|        | ES        | SE       | n        | p         | ES       | SE       | n        | p         | ES       | SE       | n        | p         |
| Overall MC | 1.18     | 2.64     | 125      | 0.656     | -12.16   | 4.68     | 35       | 0.0094    | 5.19     | 1.36     | 92       | 0.0001    |
| North  | 6.47      | 4.12     | 50       | 0.1161    | -2.40    | 4.51     | 16       | 0.5952    | 3.78     | 2.31     | 32       | 0.1022    |
| Cozumel| 4.05      | 4.55     | 41       | 0.3736    | -1.67    | 5.45     | 11       | 0.76      | 8.75     | 2.18     | 35       | <0.0001   |
| Center | -14.15    | 7.06     | 17       | 0.0451    | -68.55   | 9.04     | 4        | <0.0001   | 2.59     | 3.56     | 13       | 0.4681    |
| South  | -5.58     | 6.86     | 18       | 0.4159    | -23.82   | 9.01     | 4        | 0.0082    | 1.30     | 3.71     | 12       | 0.7272    |
Supplementary Table S2. Estimates resulting from the macroalgae meta-analyses divided by periods of time, general result and by sub-regions. ES denotes the mean effect size (ARC), n denotes the sample size, SE denotes standard error and p the significance of the statistical analysis.

|         | 1989-2016 | 1989-2004 | 2005-2016 |
|---------|-----------|-----------|-----------|
|         | ES  | SE  | n   | p     | ES  | SE  | n   | p     | ES  | SE  | n  | p     |
| Overall | 10.87| 1.77 | 94  | <0.0001 | 8.77| 4.35 | 15  | 0.0437 | 12.06| 1.84 | 85  | <0.0001 |
| North   | 6.28 | 3.19 | 29  | 0.0489  | 0   | 12.31| 2   | 1     | 6.60 | 3.16 | 28  | 0.0365 |
| Cozumel | 12.05| 2.72 | 40  | <0.0001 | 2.87| 3.73 | 11  | 0.44  | 16.55| 2.87 | 34  | <0.0001 |
| Center  | 15.20| 4.76 | 13  | 0.0014  | 28.51| 12.44| 2   | 0.02  | 14.10| 4.82 | 12  | 0.0034  |
| South   | 13.36| 4.96 | 12  | 0.007   | 35.60| 8.69 | 2   | <0.0001 | 9.85 | 5.04 | 11  | 0.0506  |
**Supplementary Table S3.** Reef sites used for hard coral cover analyses. MPA (Marine Protected Area), Pub (origin of the information, 0 = monitoring or grey literature data; 1 = published data). NA = not available.

| Num | Site code           | Latitude  | Longitude  | Region   | Municipality       | Depth | MPA | Pub |
|-----|---------------------|-----------|------------|----------|--------------------|-------|-----|-----|
| 1   | Akumal Garcia       | 20.398    | -87.3052   | Northern | Tulum              | 10    | 0   | 0   |
| 2   | Akumal Garza        | 20.406    | -87.30056  | Northern | Tulum              | 10    | 0   | 0   |
| 3   | Akumal Harvell      | 20.398    | -87.3061   | Northern | Tulum              | NA    | 0   | 0   |
| 4   | Akumal Rodriguez    | 20.383    | -87.3151   | Northern | Tulum              | 7     | 0   | 1   |
| 5   | Boca Paila Garza    | 19.975    | -87.4284   | Center   | F.Carrillo.Puerto  | 10    | 1   | 0   |
| 6   | Bonanza Garza       | 20.965    | -86.81408  | Northern | Puerto.Morelos     | 2     | 1   | 0   |
| 7   | Cancun Barranco     | 21.181    | -86.75833  | Northern | Isla.Mujeres       | NA    | 1   | 1   |
| 8   | Cardona Mera Somero | 20.408    | -87.01955  | Cozumel  | Cozumel            | 5     | 1   | 0   |
| 9   | Cardona ReefKeeper  | 20.414    | -87.02031  | Cozumel  | Cozumel            | NA    | 1   | 0   |
| 10  | Chankanaab          | 20.44     | -87.00295  | Cozumel  | Cozumel            | 12    | 1   | 0   |
| 11  | Chankanaab Bolones  | 20.44     | -87.00295  | Cozumel  | Cozumel            | NA    | 1   | 0   |
| 12  | Chankanaab Bolones Mera Profundo | 20.44 | -87.00512  | Cozumel  | Cozumel            | 18    | 1   | 0   |
| 13  | Chankanaab Mera Somero | 20.439 | -86.99961  | Cozumel  | Cozumel            | 12    | 1   | 0   |
| 14  | Chitales Jordan     | 21.141    | -86.7437   | Northern | Cancun             | NA    | 1   | 1   |
| 15  | Colombia             | 20.324    | -87.02719  | Cozumel  | Cozumel            | 12    | 1   | 0   |
| 16  | Colombia Mera Profundo | 20.31  | -87.02565  | Cozumel  | Cozumel            | 18.5  | 1   | 0   |
| 17  | Colombia Mera Somero | 20.32    | -87.02437  | Cozumel  | Cozumel            | 6.5   | 1   | 0   |
| 18  | Colombia ReefKeeper  | 20.326    | -87.01681  | Cozumel  | Cozumel            | NA    | 1   | 0   |
| 19  | Cozumel Barranco    | 20.426    | -87.0159   | Cozumel  | Cozumel            | NA    | 1   | 1   |
| 20  | Cozumel Garcia      | 20.329    | -87.0269   | Cozumel  | Cozumel            | 10    | 1   | 0   |
| 21  | Cuevones            | 21.162    | -86.74199  | Northern | Isla.Mujeres       | 7     | 1   | 0   |
| 22  | Dalila               | 20.349    | -87.02906  | Cozumel  | Cozumel            | 12    | 1   | 0   |
| 23  | DzulHa Mera Somero  | 20.459    | -86.98709  | Cozumel  | Cozumel            | 3     | 1   | 0   |
| 24  | Hanan                | 20.505    | -86.757    | Cozumel  | Cozumel            | 5     | 1   | 0   |
|   | Name             | Latitude  | Longitude | Location          | Code | Zone | Region |
|---|------------------|-----------|-----------|-------------------|------|------|--------|
| 25 | Hanan II         | 20.499    | -86.761   | Cozumel           | 8    | 1    | 0      |
| 26 | Islote           | 20.441    | -87.00233 | Cozumel           | 15   | 1    | 0      |
| 27 | Ixlache          | 21.435    | -86.78    | Northern          | 2    | 1    | 0      |
| 28 | Jardines         | 20.833    | -86.87844 | Northern Puerto.M | 2    | 1    | 0      |
| 29 | La Bocana        | 20.875    | -86.85172 | Northern Puerto.M | 4    | 1    | 0      |
| 30 | La Pared         | 20.824    | -86.87753 | Northern Puerto.M | 4    | 1    | 0      |
| 31 | Las Redes_13     | 20.389    | -87.31028 | Northern Tulum    | 13   | 0    | 1      |
| 32 | Limones          | 20.988    | -86.79719 | Northern Puerto.M | 3    | 1    | 0      |
| 33 | Mah01            | 18.663    | -87.71636 | Southern Othon.P.B | 11   | 0    | 0      |
| 34 | Mahahual Arias   | 18.712    | -87.70329 | Southern Othon.P.B | 15   | 0    | 1      |
| 35 | Mahahual Garza   | 18.712    | -87.70333 | Southern Othon.P.B | 10   | 0    | 0      |
| 36 | Mahahual Harvell | 18.723    | -87.6971  | Southern Othon.P.B | NA   | 0    | 0      |
| 37 | Mahahual Rodríguez| 18.805   | -87.6583  | Southern Othon.P.B | 10   | 0    | 1      |
| 38 | Media Luna_13    | 20.402    | -87.30272 | Northern Tulum    | 13   | 0    | 1      |
| 39 | MX1005           | 19.75     | -87.40317 | Center            | 17   | 1    | 0      |
| 40 | MX1006           | 19.829    | -87.4399  | Center            | 18   | 1    | 0      |
| 41 | MX1008           | 20.057    | -87.46059 | Center            | 17   | 1    | 0      |
| 42 | MX1010           | 20.348    | -87.33246 | Northern Tulum    | 16   | 0    | 0      |
| 43 | MX1017           | 21.171    | -86.72976 | Northern Isla.M   | 6    | 1    | 0      |
| 44 | MX1020           | 18.65     | -87.71769 | Southern Othon.P.B | 11   | 0    | 0      |
| 45 | MX1026           | 19.13     | -87.53735 | Center            | 8    | 1    | 0      |
| 46 | MX1028           | 19.239    | -87.49639 | Center            | 14   | 1    | 0      |
| 47 | MX1034           | 19.591    | -87.39506 | Center            | 10   | 1    | 0      |
| 48 | MX1035           | 19.74     | -87.4135  | Center            | 6    | 1    | 0      |
| 49 | MX1037           | 19.869    | -87.4194  | Center            | 12   | 1    | 0      |
| 50 | MX1042           | 20.115    | -87.45794 | Center            | 9    | 1    | 0      |
| 51 | MX1043           | 20.259    | -87.38535 | Northern Tulum    | 8    | 0    | 0      |
| 52 | MX1047           | 20.39     | -87.31046 | Northern Tulum    | 10   | 0    | 0      |
|   | Code    | Lat.    | Long.    | Region       | City         | District | Provincia | Zipcode |
|---|---------|---------|----------|--------------|--------------|----------|-----------|---------|
| 53| MX1048  | 20.358  | -87.02822| Cozumel      | Cozumel      | 12       | 1         | 0       |
| 54| MX1050  | 20.536  | -87.16451| Northern Solidaridad | 11 | 0 | 0 |
| 55| MX1053  | 20.486  | -86.97072| Cozumel      | Cozumel      | 5        | 1         | 0       |
| 56| MX1055  | 20.584  | -87.10606| Northern Solidaridad | 7 | 0 | 0 |
| 57| MX1057  | 20.641  | -87.05353| Northern Solidaridad | 2 | 0 | 0 |
| 58| MX1059  | 18.209  | -87.82293| Southern Othon.P.Blanco | 7 | 1 | 0 |
| 59| MX1062  | 21.01   | -87.77834| Northern Isla.Mujeres | 12 | 1 | 0 |
| 60| MX1065  | 18.353  | -87.7907 | Southern Othon.P.Blanco | 12 | 1 | 0 |
| 61| MX1066  | 21.46   | -86.78122| Northern Isla.Mujeres | 7 | 1 | 0 |
| 62| MX1109  | 19.647  | -87.41732| Center F.Carrillo.Puerto | 2 | 1 | 0 |
| 63| MX1116  | 20.551  | -87.14924| Northern Solidaridad | 2 | 0 | 0 |
| 64| MX1117  | 20.218  | -87.41906| Northern Tulum | 3 | 0 | 0 |
| 65| MX1131  | 20.916  | -86.8288 | Northern Puerto.Morelos | 4 | 1 | 0 |
| 66| MX1132a | 20.987  | -86.79642| Northern Puerto.Morelos | 2 | 1 | 0 |
| 67| MX1132b | 20.987  | -86.79642| Northern Puerto.Morelos | 2 | 1 | 0 |
| 68| MX1133  | 21.133  | -86.74054| Northern Isla.Mujeres | 4 | 1 | 0 |
| 69| MX1134  | 21.199  | -86.72548| Northern Isla.Mujeres | 6 | 1 | 0 |
| 70| MX1136  | 18.35   | -87.79838| Southern Othon.P.Blanco | 1 | 1 | 0 |
| 71| MX2007  | 19.835  | -87.44176| Center F.Carrillo.Puerto | 13 | 1 | 0 |
| 72| MX2033  | 19.45   | -87.43655| Center F.Carrillo.Puerto | 11 | 1 | 0 |
| 73| MX2067  | 18.4    | -87.6702 | Southern Othon.P.Blanco | 10 | 1 | 0 |
| 74| MX3009  | 20.272  | -86.99994| Cozumel      | Cozumel      | 7        | 1         | 0       |
| 75| MX3021  | 18.783  | -87.65809| Southern Othon.P.Blanco | 12 | 0 | 0 |
| 76| MX3054  | 20.511  | -86.7524 | Cozumel      | Cozumel      | 12       | 1         | 0       |
| 77| MXXCK01 | 18.214  | -87.82744| Southern Othon.P.Blanco | 9 | 1 | 0 |
| 78| MXXCK02 | 18.24   | -87.82623| Southern Othon.P.Blanco | 7 | 1 | 0 |
| 79| Palancar Herradura | 20.331 | -87.02742 | Northern Cozumel | NA | 1 | 0 |
| 80| Palancar Jardines Mera Profundo | 20.334 | -87.02722 | Cozumel | Cozumel | 22 | 1 | 0 |
| Number | Location | Latitude | Longitude | Towns | Coordinates | Details |
|--------|----------|----------|-----------|-------|-------------|---------|
| 81     | Palancar Jardines Mera Somero | 20.332 | -87.0262 | Cozumel Cozumel | 6 1 0 |
| 82     | Palmas Mera Profundo | 20.455 | -86.99373 | Cozumel Cozumel | 25 1 0 |
| 83     | Paraiso | 20.469 | -86.98303 | Cozumel Cozumel | 10 1 0 |
| 84     | Paraiso Mera Somero | 20.469 | -86.98147 | Cozumel Cozumel | 4 1 0 |
| 85     | Paraiso Norte ReefKeeper | 20.475 | -86.97957 | Cozumel Cozumel | NA 1 0 |
| 86     | Paraiso Sur ReefKeeper | 20.472 | -86.98232 | Cozumel Cozumel | NA 1 0 |
| 87     | Paso del Cedral | 20.374 | -87.02894 | Cozumel Cozumel | 13 1 0 |
| 88     | Puerto Morelos | 20.862 | -86.8559 | Northern Puerto.Morelos | 2 1 0 |
| 89     | Puerto Morelos Harvell | 20.847 | -86.867 | Northern Puerto.Morelos | NA 1 0 |
| 90     | Puerto Morelos Posterior Jordan | NA | NA | Northern Puerto.Morelos | NA 1 0 |
| 95     | Puerto Morelos Rodriguez | 20.989 | -86.7941 | Northern Puerto.Morelos | 5 1 1 |
| 96     | Punta Allen Rodriguez | 19.784 | 87.4338 | Center Tulum | 10 1 1 |
| 97     | Punta Francesa Mera Profundo | 20.357 | -87.02963 | Cozumel Cozumel | 17 1 0 |
| 98     | Punta Francesa Mera Somero | 20.362 | -87.0272 | Cozumel Cozumel | 7 1 0 |
| 99     | Punta Maroma_10 Jordan | NA | NA | Northern Solidaridad | 10 0 0 |
| 101    | Punta Maroma Posterior Jordan | NA | NA | Northern Solidaridad | 5 0 0 |
| 104    | Punta Nizuc Posterior Jordan | NA | NA | Northern Benito.Juarez | 5 1 0 |
| 105    | Punta Sur Mera Profundo | 20.301 | -87.02476 | Cozumel Cozumel | 20 1 0 |
| 106    | Punta Sur Mera Somero | 20.298 | -87.0194 | Cozumel Cozumel | 4 1 0 |
| 107    | Radio Pirata | 20.854 | -86.86501 | Northern Puerto.Morelos | 1 1 0 |
| 108    | San Clemente | 20.408 | -87.02197 | Cozumel Cozumel | 8 1 0 |
| 109    | San Francisco Mera Intermedio | 20.397 | -87.02603 | Cozumel Cozumel | 12 1 0 |
| 110    | Santa Rosa Bolones | 20.377 | -87.02933 | Cozumel Cozumel | 17 1 0 |
| 111    | Santa Rosa Mera Intermedio | 20.378 | -87.02849 | Cozumel Cozumel | 11 1 0 |
| 112    | Sta Rosa bajo | 20.376 | -87.02953 | Cozumel Cozumel | 12 1 0 |
| 113    | Tampalam Centro | 19.146 | -87.53611 | Center F.Carrillo.Puerto | 20 1 0 |
| 114    | Tampalam Norte | 19.154 | -87.53333 | Center F.Carrillo.Puerto | 20 1 0 |
| 115    | Tanchacte Norte | 20.912 | -86.83608 | Northern Puerto.Morelos | 20 1 0 |
|   | Location                  | Latitude  | Longitude | Region       | Municipality | Code | Num | Status |
|---|---------------------------|-----------|-----------|--------------|--------------|------|-----|--------|
| 116| Tanchacte Sur             | 20.902    | -86.84227 | Northern     | Puerto.Morelos | 20   | 1   | 0      |
| 117| Tormentos                 | 20.432    | -87.01257 | Cozumel      | Cozumel      | 8    | 1   | 0      |
| 118| Tunch Mera Profundo       | 20.415    | -87.0205  | Cozumel      | Cozumel      | 24   | 1   | 0      |
| 119| Uvero Harvell             | 18.952    | -87.61    | Southern     | Othon.P.Blanco| NA   | 1   | 0      |
| 120| Xcalak Harvell            | 18.26     | -87.8237  | Southern     | Othon.P.Blanco| NA   | 1   | 0      |
| 121| Xcalak Fore Steneck       | 18.32     | -87.813   | Southern     | Othon.P.Blanco| 13   | 1   | 1      |
| 122| Xcalak Garcia             | 18.264    | -87.8233  | Southern     | Othon.P.Blanco| 10   | 1   | 0      |
| 123| Xcalak Patch Steneck      | 18.265    | -87.828   | Southern     | Othon.P.Blanco| 2    | 1   | 1      |
| 124| Yalku Rodríguez           | 20.406    | -87.2998  | Northern     | Tulum        | 10   | 0   | 1      |
| 125| Yucab                     | 20.421    | -87.01747 | Cozumel      | Cozumel      | 13   | 1   | 0      |
**Supplementary Table S4.** Reef sites used for macroalgae (calcareous and fleshy) analyses. MPA (Marine Protected Area), Pub (origin of the information, 0 = monitoring or grey literature data, 1 = published data). NA = not available.

| Num | Site_code         | Latitude | Longitude | Region       | Municipality          | Depth | MPA | Pub |
|-----|-------------------|----------|-----------|--------------|-----------------------|-------|-----|-----|
| 1   | Akumal Garcia     | 20.4     | -87       | Northern     | Tulum                 | 10    | 0   | 0   |
| 2   | Akumal Garza      | 20.4     | -87       | Northern     | Tulum                 | 10    | 0   | 0   |
| 3   | Boca Paila Garza  | 20       | -87       | Center       | F.Carrillo.Puerto     | 10    | 1   | 0   |
| 4   | Bonanza           | 21       | -87       | Northern     | Puerto.Morelos        | 2     | 1   | 0   |
| 5   | Cardona Mera Somero | 20.4  | -87       | Cozumel      | Cozumel               | NA    | 1   | 0   |
| 6   | Cardona ReefKeeper | 20.4  | -87       | Cozumel      | Cozumel               | NA    | 1   | 0   |
| 7   | Chankanaab        | 20.4     | -87       | Cozumel      | Cozumel               | 12    | 1   | 0   |
| 8   | Chankanaab bolones | 20.4  | -87       | Cozumel      | Cozumel               | NA    | 1   | 0   |
| 9   | Chankanaab Bolones Mera Profundo | 20.4  | -87       | Cozumel      | Cozumel               | 18    | 1   | 0   |
| 10  | Chankanaab Mera Somero | 20.4  | -87       | Cozumel      | Cozumel               | 12    | 1   | 0   |
| 11  | Colombia          | 20.3     | -87       | Cozumel      | Cozumel               | 12    | 1   | 0   |
| 12  | Colombia Mera Profundo | 20.3  | -87       | Cozumel      | Cozumel               | 19    | 1   | 0   |
| 13  | Colombia Mera Somero | 20.3  | -87       | Cozumel      | Cozumel               | 6.5   | 1   | 0   |
| 14  | Colombia ReefKeeper | 20.3  | -87       | Cozumel      | Cozumel               | NA    | 1   | 0   |
| 15  | Cozumel Garcia    | 20.3     | -87       | Cozumel      | Cozumel               | 10    | 1   | 0   |
| 16  | Cuevones          | 21.2     | -87       | Northern     | Isla.Mujeres          | 7     | 1   | 0   |
| 17  | Dalila            | 20.3     | -87       | Cozumel      | Cozumel               | 12    | 1   | 0   |
| 18  | DzulHa Mera Somero | 20.5  | -87       | Cozumel      | Cozumel               | 3     | 1   | 0   |
| 19  | Hanan             | 20.5     | -87       | Cozumel      | Cozumel               | 5     | 1   | 0   |
| 20  | Hanan II          | 20.5     | -87       | Cozumel      | Cozumel               | 8     | 1   | 0   |
| 21  | Islote            | 20.4     | -87       | Cozumel      | Cozumel               | 15    | 1   | 0   |
| 22  | Ixlache           | 21.4     | -87       | Northern     | Isla.Mujeres          | 2     | 1   | 0   |
| 23  | Jardines          | 20.8     | -87       | Northern     | Puerto.Morelos        | 2     | 1   | 0   |
| 24  | La Bocana         | 20.9     | -87       | Northern     | Puerto.Morelos        | 4     | 1   | 0   |
|   | Location          | Latitude | Longitude | Region             | City               | Code | Nearest City      | Distance (km) | Population |
|---|-------------------|----------|-----------|--------------------|--------------------|------|-------------------|---------------|------------|
| 25| La Pared          | 20.8     | -87       | Northern           | Puerto.Morelos     | 4    | 1                 | 0             |            |
| 26| Limones           | 21       | -87       | Northern           | Puerto.Morelos     | 3    | 1                 | 0             |            |
| 27| Mah01             | 18.7     | -88       | Southern           | Othon.P.Blanco     | 11   | 0                 | 0             |            |
| 28| Mahahual Arias    | 18.7     | -88       | Southern           | Othon.P.Blanco     | 15   | 0                 | 1             |            |
| 29| Mahahual Garza    | 18.7     | -88       | Southern           | Othon.P.Blanco     | 10   | 0                 | 0             |            |
| 30| MX1005            | 19.8     | -87       | Center             | F.Carrillo.Puerto  | 17   | 1                 | 0             |            |
| 31| MX1006            | 19.8     | -87       | Center             | F.Carrillo.Puerto  | 18   | 1                 | 0             |            |
| 32| MX1008            | 20.1     | -87       | Center             | F.Carrillo.Puerto  | 17   | 1                 | 0             |            |
| 33| MX1010            | 20.3     | -87       | Northern           | Tulum              | 16   | 0                 | 0             |            |
| 34| MX1017            | 21.2     | -87       | Northern           | Isla.Mujeres       | 6    | 1                 | 0             |            |
| 35| MX1020            | 18.6     | -88       | Southern           | Othon.P.Blanco     | 11   | 0                 | 0             |            |
| 36| MX1026            | 19.1     | -88       | Center             | F.Carrillo.Puerto  | 8    | 1                 | 0             |            |
| 37| MX1028            | 19.2     | -87       | Center             | F.Carrillo.Puerto  | 14   | 1                 | 0             |            |
| 38| MX1034            | 19.6     | -87       | Center             | F.Carrillo.Puerto  | 10   | 1                 | 0             |            |
| 39| MX1035            | 19.7     | -87       | Center             | F.Carrillo.Puerto  | 6    | 1                 | 0             |            |
| 40| MX1037            | 19.9     | -87       | Center             | F.Carrillo.Puerto  | 12   | 1                 | 0             |            |
| 41| MX1042            | 20.1     | -87       | Center             | Tulum              | 9    | 1                 | 0             |            |
| 42| MX1043            | 20.3     | -87       | Northern           | Tulum              | 8    | 0                 | 0             |            |
| 43| MX1047            | 20.4     | -87       | Northern           | Tulum              | 10   | 0                 | 0             |            |
| 44| MX1048            | 20.4     | -87       | Cozumel            | Cozumel            | 12   | 1                 | 0             |            |
| 45| MX1050            | 20.5     | -87       | Northern           | Solidaridad        | 11   | 0                 | 0             |            |
| 46| MX1053            | 20.5     | -87       | Cozumel            | Cozumel            | 5    | 1                 | 0             |            |
| 47| MX1055            | 20.6     | -87       | Northern           | Solidaridad        | 7    | 0                 | 0             |            |
| 48| MX1057            | 20.6     | -87       | Northern           | Solidaridad        | 2    | 0                 | 0             |            |
| 49| MX1059            | 18.2     | -88       | Southern           | Othon.P.Blanco     | 7    | 1                 | 0             |            |
| 50| MX1062            | 21       | -87       | Northern           | Isla.Mujeres       | 12   | 1                 | 0             |            |
| 51| MX1065            | 18.4     | -88       | Southern           | Othon.P.Blanco     | 12   | 1                 | 0             |            |
| 52| MX1066            | 21.5     | -87       | Northern           | Isla.Mujeres       | 7    | 1                 | 0             |            |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
|53| MX1109 | 19.6 | -87 | Center | F.Carrillo.Puerto | 2 | 1 | 0 |
|54| MX1116 | 20.6 | -87 | Northern | Solidaridad | 2 | 0 | 0 |
|55| MX1117 | 20.2 | -87 | Northern | Tulum | 3 | 0 | 0 |
|56| MX1131 | 20.9 | -87 | Northern | Puerto.Morelos | 4 | 1 | 0 |
|57| MX1132a | 21 | -87 | Northern | Puerto.Morelos | 2 | 1 | 0 |
|58| MX1132b | 21 | -87 | Northern | Puerto.Morelos | 2 | 1 | 0 |
|59| MX1133 | 21.1 | -87 | Northern | Isla.Mujeres | 4 | 1 | 0 |
|60| MX1134 | 21.2 | -87 | Northern | Isla.Mujeres | 6 | 1 | 0 |
|61| MX1136 | 18.3 | -88 | Southern | Othon.P.Blanco | 1 | 1 | 0 |
|62| MX2007 | 19.8 | -87 | Center | F.Carrillo.Puerto | 13 | 1 | 0 |
|63| MX2033 | 19.5 | -87 | Center | F.Carrillo.Puerto | 11 | 1 | 0 |
|64| MX2067 | 18.4 | -88 | Southern | Othon.P.Blanco | 10 | 1 | 0 |
|65| MX3009 | 20.3 | -87 | Cozumel | Cozumel | 7 | 1 | 0 |
|66| MX3021 | 18.8 | -88 | Southern | Othon.P.Blanco | 12 | 0 | 0 |
|67| MX3054 | 20.5 | -87 | Cozumel | Cozumel | 12 | 1 | 0 |
|68| MXXCK01 | 18.2 | -88 | Southern | Othon.P.Blanco | 9 | 1 | 0 |
|69| MXXCK02 | 18.2 | -88 | Southern | Othon.P.Blanco | 7 | 1 | 0 |
|70| Palancar Jardines Mera Profundo | 20.3 | -87 | Cozumel | Cozumel | 22 | 1 | 0 |
|71| Palancar Jardines Mera Somero | 20.3 | -87 | Cozumel | Cozumel | 25 | 1 | 0 |
|72| Palmas Mera Profundo | 20.5 | -87 | Cozumel | Cozumel | 6 | 1 | 0 |
|73| Paraiso | 20.5 | -87 | Cozumel | Cozumel | 10 | 1 | 0 |
|74| Paraiso Mera Somero | 20.5 | -87 | Cozumel | Cozumel | 4 | 1 | 0 |
|75| Paraiso Norte ReefKeeper | 20.5 | -87 | Cozumel | Cozumel | NA | 1 | 0 |
|76| Paraiso Sur ReefKeeper | 20.5 | -87 | Cozumel | Cozumel | NA | 1 | 0 |
|77| Paso del Cedral | 20.4 | -87 | Cozumel | Cozumel | 13 | 1 | 0 |
|78| Puerto Morelos | 20.9 | -87 | Northern | Puerto.Morelos | 2 | 1 | 0 |
|79| Punta Francesa Mera Profundo | 20.4 | -87 | Cozumel | Cozumel | 17 | 1 | 0 |
|80| Punta Francesa Mera Somero | 20.4 | -87 | Cozumel | Cozumel | 7 | 1 | 0 |
| No. | Location                      | Latitude | Longitude | Town       | Town       | Meters | Meters | Meters |
|-----|-------------------------------|----------|-----------|------------|------------|--------|--------|--------|
| 81  | Punta Sur Mera Profundo       | 20.3     | -87       | Cozumel    | Cozumel    | 20     | 1      | 0      |
| 82  | Punta Sur Mera Somero         | 20.3     | -87       | Cozumel    | Cozumel    | 4      | 1      | 0      |
| 83  | Radio Pirata                  | 20.9     | -87       | Northern   | Puerto.Mor. | 1      | 1      | 0      |
| 84  | San Clemente                  | 20.4     | -87       | Cozumel    | Cozumel    | 8      | 1      | 0      |
| 85  | San Francisco Mera Intermedio | 20.4     | -87       | Cozumel    | Cozumel    | 12     | 1      | 0      |
| 86  | Santa Rosa Bolones            | 20.4     | -87       | Cozumel    | Cozumel    | 17     | 1      | 0      |
| 87  | Santa Rosa Mera Intermedio    | 20.4     | -87       | Cozumel    | Cozumel    | 11     | 1      | 0      |
| 88  | Sta Rosa bajo                 | 20.4     | -87       | Cozumel    | Cozumel    | 12     | 1      | 0      |
| 89  | Tanchacte Norte               | 20.9     | -87       | Northern   | Puerto.Mor. | 20     | 1      | 0      |
| 90  | Tanchacte Sur                 | 20.9     | -87       | Northern   | Puerto.Mor. | 20     | 1      | 0      |
| 91  | Tormentos                     | 20.4     | -87       | Cozumel    | Cozumel    | 8      | 1      | 0      |
| 92  | Tunich Mera Profundo          | 20.4     | -87       | Cozumel    | Cozumel    | 24     | 1      | 0      |
| 93  | Xcalak Garcia                 | 18.3     | -88       | Southern   | Othon.P.Bl. | 10     | 1      | 0      |
| 94  | Yucab                         | 20.4     | -87       | Cozumel    | Cozumel    | 13     | 1      | 0      |
| Section/topic | # | Checklist item                                                                                                                                                                                                 | Reported on page # |
|---------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| **TITLE**     |   |                                                                                                                                                                                                             |                   |
| Title         | 1 | Identify the report as a systematic review, meta-analysis, or both.                                                                                                                                            | 1                 |
| **ABSTRACT**  |   |                                                                                                                                                                                                             |                   |
| Structured summary | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number. | 1                 |
| **INTRODUCTION** | |                                                                                                                                                                                                             |                   |
| Rationale     | 3 | Describe the rationale for the review in the context of what is already known.                                                                                                                               | 2                 |
| Objectives    | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).                                                      | 2                 |
| **METHODS**   |   |                                                                                                                                                                                                             |                   |
| Protocol and registration | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.                                        | -                 |
| Eligibility criteria | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.                                  | 7                 |
| Information sources | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.                                      | 8                 |
| Search        | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.                                                                               | 7                 |
| Study selection | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).                                                       | 7                 |
| Data collection process | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.                                    | -                 |
| Data items    | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.                                                                             | 7                 |
| Section                                      | Method                                                                 | Page References |
|----------------------------------------------|------------------------------------------------------------------------|----------------|
| **Risk of bias in individual studies**       | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis. | -              |
| **Summary measures**                         | State the principal summary measures (e.g., risk ratio, difference in means). | 7              |
| **Synthesis of results**                     | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I²) for each meta-analysis. | 8              |
| **Risk of bias across studies**              | Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). | 9              |
| **Additional analyses**                      | Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified. | 9              |
| **RESULTS**                                  |                                                                                                                     |                |
| **Study selection**                          | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. | 3              |
| **Study characteristics**                    | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | -              |
| **Risk of bias within studies**              | Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). | -              |
| **Results of individual studies**            | For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. | -              |
| **Synthesis of results**                     | Present results of each meta-analysis done, including confidence intervals and measures of consistency. | 3              |
| **Risk of bias across studies**              | Present results of any assessment of risk of bias across studies (see Item 15). | -              |
| **Additional analysis**                      | Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). | -              |
| **DISCUSSION**                               |                                                                                                                     |                |
| **Summary of evidence**                      | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). | 4-7            |
| **Limitations**                              | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). | 6-7            |
| **Conclusions**                              | Provide a general interpretation of the results in the context of other evidence, and implications for future research. | 6-7            |
| **FUNDING**                                  |                                                                                                                     |                |
| Funding |
|---------|
| Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review. |

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