## Landscape Scale Multilevel Meta-analytic model (MMA)

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| intrcpt | 0.50833 | 0.35361 | 0.66305 | 0.07629 | 6.66328 | 0.00000 | 0.50833 | 0.07616 | 6.67439 | 0.00000 | 0.57460 | 0.08562 | 6.71099 | 0.00000 |

## Landscape Scale MMA publication bias

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| intrcpt | 0.35098 | 0.11254 | 0.58942 | 0.11733 | 2.99145 | 0.00514 | 0.35098 | 0.11585 | 3.02950 | 0.00375 | 0.58836 | 0.13109 | 4.48831 | 0.00001 |
| Year | -0.00112 | -0.01696 | 0.01473 | 0.00791 | -0.14113 | 0.88829 | -0.00112 | 0.00806 | -0.13850 | 0.89036 | -0.00906 | 0.00650 | -1.39309 | 0.16439 |
| root\_inv\_ESS | 0.55462 | -0.03728 | 1.14651 | 0.30138 | 1.84024 | 0.06623 | 0.55462 | 0.37033 | 1.49764 | 0.14005 | -0.11155 | 0.30847 | -0.36162 | 0.71784 |

## Landscape Scale Meta-regression (MR) - suppressed intercept, control method

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| MethodExclusion fence | 0.50148 | 0.28596 | 0.71700 | 0.10963 | 4.57428 | 0.00001 | 0.50148 | 0.11793 | 4.25219 | 0.00009 | 0.55712 | 0.10946 | 5.08971 | 0.00000 |
| MethodNatural debris | 0.30638 | -0.68746 | 1.30022 | 0.50555 | 0.60604 | 0.54483 | 0.30638 | 0.22150 | 1.38320 | 0.17287 | 0.32180 | 0.44092 | 0.72983 | 0.46580 |
| MethodNeighbour effects | 0.54075 | -0.31558 | 1.39709 | 0.43560 | 1.24139 | 0.21518 | 0.54075 | 0.14738 | 3.66914 | 0.00060 | 0.86899 | 0.36679 | 2.36913 | 0.01818 |
| MethodOther fencing | 0.57752 | -0.28836 | 1.44341 | 0.44046 | 1.31119 | 0.19054 | 0.57752 | 0.07080 | 8.15698 | 0.00000 | 0.54963 | 0.43073 | 1.27605 | 0.20268 |
| MethodRepellents | 0.53586 | 0.04464 | 1.02708 | 0.24988 | 2.14450 | 0.03259 | 0.53586 | 0.26831 | 1.99715 | 0.05138 | 0.67668 | 0.22046 | 3.06947 | 0.00232 |
| MethodStock manipulation | -1.58859 | -2.39038 | -0.78680 | 0.40786 | -3.89497 | 0.00011 | -1.58859 | 0.71094 | -2.23448 | 0.03004 | -0.87832 | 0.42228 | -2.07993 | 0.03785 |
| MethodTree guards | 0.76480 | 0.29318 | 1.23641 | 0.23990 | 3.18794 | 0.00154 | 0.76480 | 0.24003 | 3.18619 | 0.00251 | 0.75548 | 0.20825 | 3.62769 | 0.00032 |
| Plot\_size | 0.00011 | -0.00046 | 0.00068 | 0.00029 | 0.38589 | 0.69978 | 0.00011 | 0.00026 | 0.43397 | 0.66621 | -0.00001 | 0.00005 | -0.12336 | 0.90205 |

## Landscape Scale MR - suppressed intercept, control method publication bias

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| MethodExclusion fence | 0.32053 | 0.02533 | 0.61572 | 0.15016 | 2.13461 | 0.03340 | 0.32053 | 0.12892 | 2.48632 | 0.01652 | 0.60052 | 0.15371 | 3.90679 | 0.00011 |
| MethodNatural debris | 0.21508 | -0.81454 | 1.24471 | 0.52374 | 0.41067 | 0.68154 | 0.21508 | 0.23268 | 0.92439 | 0.36000 | 0.35630 | 0.45050 | 0.79090 | 0.42937 |
| MethodNeighbour effects | 0.34480 | -0.54493 | 1.23453 | 0.45258 | 0.76186 | 0.44659 | 0.34480 | 0.20267 | 1.70133 | 0.09549 | 0.91789 | 0.37971 | 2.41738 | 0.01601 |
| MethodOther fencing | 0.38903 | -0.52275 | 1.30082 | 0.46380 | 0.83879 | 0.40208 | 0.38903 | 0.15371 | 2.53090 | 0.01478 | 0.53766 | 0.44062 | 1.22024 | 0.22312 |
| MethodRepellents | 0.47362 | -0.06502 | 1.01226 | 0.27399 | 1.72858 | 0.08465 | 0.47362 | 0.29562 | 1.60213 | 0.11583 | 0.63355 | 0.23867 | 2.65456 | 0.00829 |
| MethodStock manipulation | -1.78099 | -2.60702 | -0.95495 | 0.42018 | -4.23862 | 0.00003 | -1.78099 | 0.80164 | -2.22168 | 0.03116 | -0.85527 | 0.42953 | -1.99119 | 0.04682 |
| MethodTree guards | 0.67852 | 0.17101 | 1.18604 | 0.25816 | 2.62831 | 0.00891 | 0.67852 | 0.24243 | 2.79879 | 0.00742 | 0.74468 | 0.22286 | 3.34153 | 0.00090 |
| Plot\_size | 0.00006 | -0.00053 | 0.00064 | 0.00030 | 0.18476 | 0.85351 | 0.00006 | 0.00027 | 0.20637 | 0.83739 | -0.00000 | 0.00005 | -0.06690 | 0.94677 |
| Year | 0.00536 | -0.01359 | 0.02430 | 0.00942 | 0.56874 | 0.57224 | 0.00536 | 0.00966 | 0.55443 | 0.58192 | -0.00854 | 0.00686 | -1.24403 | 0.21411 |
| root\_inv\_ESS | 0.60211 | -0.01585 | 1.22007 | 0.31465 | 1.91361 | 0.05615 | 0.60211 | 0.38999 | 1.54391 | 0.12932 | -0.14640 | 0.31933 | -0.45846 | 0.64688 |

## Landscape Scale MR - suppressed intercept, browsing taxa

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| AnimalDeer | 0.60731 | 0.33688 | 0.87773 | 0.13470 | 4.50858 | 0.00004 | 0.60731 | 0.14538 | 4.17726 | 0.00012 | 0.72430 | 0.14770 | 4.90377 | 0.00000 |
| AnimalMixed | 0.27920 | -0.10519 | 0.66359 | 0.19554 | 1.42788 | 0.15410 | 0.27920 | 0.08204 | 3.40306 | 0.00130 | 0.38613 | 0.22978 | 1.68040 | 0.09383 |
| AnimalNot specified | 0.78870 | 0.35964 | 1.21776 | 0.21372 | 3.69031 | 0.00055 | 0.78870 | 0.37638 | 2.09548 | 0.04111 | 0.81821 | 0.22956 | 3.56422 | 0.00039 |
| AnimalOther | 0.20067 | -0.37787 | 0.77920 | 0.28817 | 0.69634 | 0.48938 | 0.20067 | 0.27645 | 0.72586 | 0.47124 | 0.43705 | 0.28183 | 1.55078 | 0.12149 |
| AnimalOther ungulates | 0.31847 | 0.07141 | 0.56553 | 0.12568 | 2.53404 | 0.01165 | 0.31847 | 0.07675 | 4.14972 | 0.00013 | 0.42035 | 0.12981 | 3.23809 | 0.00125 |
| Plot\_size | 0.00023 | -0.00028 | 0.00074 | 0.00026 | 0.89967 | 0.36883 | 0.00023 | 0.00023 | 1.01625 | 0.31431 | -0.00001 | 0.00005 | -0.23108 | 0.81773 |

## Landscape Scale MR - suppresed intercept, browsing taxa publication bias

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| AnimalDeer | 0.45918 | 0.14149 | 0.77687 | 0.15809 | 2.90460 | 0.00550 | 0.45918 | 0.16872 | 2.72150 | 0.00897 | 0.70058 | 0.17728 | 3.95188 | 0.00011 |
| AnimalMixed | 0.09473 | -0.33502 | 0.52449 | 0.21861 | 0.43336 | 0.66499 | 0.09473 | 0.13648 | 0.69411 | 0.49089 | 0.39292 | 0.24773 | 1.58606 | 0.11380 |
| AnimalNot specified | 0.63814 | 0.15778 | 1.11851 | 0.23904 | 2.66963 | 0.01027 | 0.63814 | 0.39220 | 1.62710 | 0.11013 | 0.84405 | 0.24308 | 3.47233 | 0.00055 |
| AnimalOther | -0.05224 | -0.69371 | 0.58924 | 0.31921 | -0.16364 | 0.87069 | -0.05224 | 0.36174 | -0.14440 | 0.88578 | 0.45443 | 0.30097 | 1.50990 | 0.13167 |
| AnimalOther ungulates | 0.12068 | -0.19647 | 0.43784 | 0.16133 | 0.74805 | 0.45487 | 0.12068 | 0.11896 | 1.01451 | 0.31532 | 0.44123 | 0.16250 | 2.71519 | 0.00680 |
| Plot\_size | 0.00021 | -0.00031 | 0.00073 | 0.00027 | 0.78268 | 0.43427 | 0.00021 | 0.00024 | 0.88634 | 0.37976 | -0.00001 | 0.00005 | -0.18288 | 0.85522 |
| Year | 0.00119 | -0.01442 | 0.01680 | 0.00777 | 0.15313 | 0.87893 | 0.00119 | 0.00855 | 0.13912 | 0.88993 | -0.00798 | 0.00656 | -1.21585 | 0.22466 |
| root\_inv\_ESS | 0.65997 | 0.06287 | 1.25707 | 0.30403 | 2.17075 | 0.03034 | 0.65997 | 0.37964 | 1.73841 | 0.08842 | -0.07344 | 0.31328 | -0.23441 | 0.81479 |

## Landscape Scale MR - control method efficacy through time

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| intrcpt | 0.39210 | 0.12970 | 0.65450 | 0.12653 | 3.09899 | 0.00524 | 0.39210 | 0.13367 | 2.93330 | 0.00553 | 0.50277 | 0.13975 | 3.59753 | 0.00035 |
| MethodNatural debris | 0.02910 | -0.79398 | 0.85217 | 0.41855 | 0.06952 | 0.94462 | 0.02910 | 0.17978 | 0.16184 | 0.87224 | -0.10656 | 0.50147 | -0.21250 | 0.83197 |
| MethodNeighbour effects |  |  |  |  |  |  |  |  |  |  | 0.45151 | 0.43359 | 1.04134 | 0.29858 |
| MethodRepellents | 0.18391 | -0.37197 | 0.73979 | 0.28268 | 0.65060 | 0.51571 | 0.18391 | 0.30469 | 0.60360 | 0.54952 | 0.18928 | 0.28260 | 0.66978 | 0.50342 |
| MethodTree guards | 0.27351 | -0.22539 | 0.77240 | 0.25370 | 1.07808 | 0.28171 | 0.27351 | 0.27171 | 1.00662 | 0.32017 | 0.16833 | 0.28106 | 0.59890 | 0.54967 |
| Months | 0.00239 | 0.00064 | 0.00414 | 0.00089 | 2.68567 | 0.00746 | 0.00239 | 0.00068 | 3.50104 | 0.00115 | 0.00095 | 0.00115 | 0.82293 | 0.41091 |
| Plot\_size | -0.00000 | -0.00055 | 0.00054 | 0.00028 | -0.01301 | 0.98963 | -0.00000 | 0.00033 | -0.01094 | 0.99133 | -0.00001 | 0.00006 | -0.12985 | 0.89704 |
| MethodNatural debris:Months | -0.06276 | -0.09626 | -0.02927 | 0.01705 | -3.68081 | 0.00026 | -0.06276 | 0.00146 | -42.88846 | 0.00000 | -0.02016 | 0.06578 | -0.30651 | 0.76228 |
| MethodNeighbour effects:Months |  |  |  |  |  |  |  |  |  |  | -0.01321 | 0.02544 | -0.51919 | 0.60529 |
| MethodRepellents:Months | -0.00534 | -0.02522 | 0.01454 | 0.01012 | -0.52769 | 0.59793 | -0.00534 | 0.00515 | -1.03791 | 0.30555 | -0.00401 | 0.01630 | -0.24612 | 0.80567 |
| MethodTree guards:Months | 0.00040 | -0.00636 | 0.00717 | 0.00344 | 0.11668 | 0.90716 | 0.00040 | 0.00408 | 0.09856 | 0.92198 | 0.00232 | 0.00361 | 0.64197 | 0.52112 |

## Landscape Scale MR - control method efficacy through time publication bias

|  | Complete case | | | | | | Robust | | | | Imputed case | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| term | est | ci.lb | ci.ub | se | stat | p.val | rob\_est | rob\_se | rob\_stat | rob\_p.val | imp\_est | imp\_se | imp\_stat | imp\_p.val |
| intrcpt | 0.35342 | 0.04907 | 0.65777 | 0.14591 | 2.42226 | 0.02505 | 0.35342 | 0.16292 | 2.16923 | 0.03639 | 0.59045 | 0.17024 | 3.46844 | 0.00058 |
| MethodNatural debris | 0.04137 | -0.79072 | 0.87346 | 0.42312 | 0.09777 | 0.92217 | 0.04137 | 0.17090 | 0.24208 | 0.81002 | -0.12736 | 0.50423 | -0.25258 | 0.80091 |
| MethodNeighbour effects |  |  |  |  |  |  |  |  |  |  | 0.44394 | 0.43616 | 1.01784 | 0.30965 |
| MethodRepellents | 0.17726 | -0.41032 | 0.76485 | 0.29879 | 0.59327 | 0.55337 | 0.17726 | 0.29907 | 0.59272 | 0.55688 | 0.10067 | 0.28872 | 0.34868 | 0.72750 |
| MethodTree guards | 0.27459 | -0.24255 | 0.79173 | 0.26297 | 1.04418 | 0.29710 | 0.27459 | 0.26798 | 1.02468 | 0.31199 | 0.10301 | 0.28810 | 0.35756 | 0.72094 |
| Months | 0.00227 | 0.00048 | 0.00407 | 0.00092 | 2.48427 | 0.01328 | 0.00227 | 0.00083 | 2.74666 | 0.00915 | 0.00114 | 0.00117 | 0.98083 | 0.32709 |
| Plot\_size | -0.00002 | -0.00056 | 0.00053 | 0.00028 | -0.05551 | 0.95576 | -0.00002 | 0.00033 | -0.04734 | 0.96249 | -0.00000 | 0.00006 | -0.00636 | 0.99494 |
| Year | -0.00245 | -0.02226 | 0.01736 | 0.00979 | -0.25042 | 0.80361 | -0.00245 | 0.00972 | -0.25201 | 0.80239 | -0.00821 | 0.00764 | -1.07398 | 0.28329 |
| root\_inv\_ESS | 0.15363 | -0.35725 | 0.66451 | 0.26008 | 0.59071 | 0.55496 | 0.15363 | 0.31903 | 0.48156 | 0.63288 | -0.32422 | 0.30465 | -1.06423 | 0.28781 |
| MethodNatural debris:Months | -0.06293 | -0.09642 | -0.02944 | 0.01705 | -3.69094 | 0.00025 | -0.06293 | 0.00156 | -40.43701 | 0.00000 | -0.01994 | 0.06589 | -0.30270 | 0.76514 |
| MethodNeighbour effects:Months |  |  |  |  |  |  |  |  |  |  | -0.01315 | 0.02546 | -0.51631 | 0.60729 |
| MethodRepellents:Months | -0.00516 | -0.02519 | 0.01487 | 0.01020 | -0.50589 | 0.61314 | -0.00516 | 0.00502 | -1.02681 | 0.31100 | -0.00366 | 0.01631 | -0.22465 | 0.82232 |
| MethodTree guards:Months | 0.00031 | -0.00646 | 0.00709 | 0.00345 | 0.09125 | 0.92733 | 0.00031 | 0.00410 | 0.07677 | 0.93921 | 0.00235 | 0.00361 | 0.65067 | 0.51548 |