## Coupe 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 | 0.64098 | 0.32761 | 0.95435 | 0.15365 | 4.17170 | 0.00023 | 0.64098 | 0.11939 | 5.36873 | 0.00000 | 0.63389 | 0.13117 | 4.83269 | 0.00000 |

## Coupe 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 | 0.71822 | 0.33961 | 1.09682 | 0.18512 | 3.87982 | 0.00055 | 0.71822 | 0.18090 | 3.97029 | 0.00028 | 0.62466 | 0.15928 | 3.92173 | 0.00009 |
| Year | 0.00471 | -0.01357 | 0.02299 | 0.00906 | 0.51993 | 0.60584 | 0.00471 | 0.00634 | 0.74277 | 0.46176 | 0.00920 | 0.00819 | 1.12424 | 0.26115 |
| root\_inv\_ESS | -0.13978 | -0.62110 | 0.34154 | 0.24532 | -0.56979 | 0.56893 | -0.13978 | 0.22085 | -0.63292 | 0.53022 | 0.23586 | 0.24429 | 0.96550 | 0.33464 |

## Coupe 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 | 0.59514 | 0.20204 | 0.98825 | 0.20009 | 2.97437 | 0.00308 | 0.59514 | 0.18544 | 3.20937 | 0.00275 | 0.60201 | 0.17161 | 3.50796 | 0.00046 |
| MethodNatural debris | 1.20491 | 0.35846 | 2.05136 | 0.43084 | 2.79666 | 0.00536 | 1.20491 | 0.49548 | 2.43183 | 0.01998 | 0.78483 | 0.31746 | 2.47219 | 0.01360 |
| MethodNeighbour effects | -0.23324 | -1.00230 | 0.53582 | 0.39145 | -0.59584 | 0.55155 | -0.23324 | 0.16973 | -1.37418 | 0.17765 | -0.29653 | 0.38197 | -0.77632 | 0.43767 |
| MethodOther fencing | 0.72799 | -0.11561 | 1.57159 | 0.42939 | 1.69542 | 0.09061 | 0.72799 | 0.24541 | 2.96638 | 0.00525 | 0.61780 | 0.38310 | 1.61267 | 0.10700 |
| MethodRepellents | 0.56294 | 0.14204 | 0.98385 | 0.21424 | 2.62767 | 0.00886 | 0.56294 | 0.26291 | 2.14121 | 0.03891 | 0.51736 | 0.16532 | 3.12950 | 0.00179 |
| MethodStock manipulation | 0.22735 | -0.40559 | 0.86029 | 0.32216 | 0.70569 | 0.48070 | 0.22735 | 0.21139 | 1.07552 | 0.28911 | 0.34340 | 0.27052 | 1.26943 | 0.20456 |
| MethodTree guards | 1.20081 | 0.76946 | 1.63217 | 0.21956 | 5.46924 | 0.00000 | 1.20081 | 0.23280 | 5.15814 | 0.00001 | 1.22203 | 0.17663 | 6.91849 | 0.00000 |
| Plot\_size | -0.00001 | -0.00005 | 0.00004 | 0.00002 | -0.27580 | 0.78281 | -0.00001 | 0.00001 | -0.89290 | 0.37768 | -0.00001 | 0.00002 | -0.26824 | 0.78858 |

## Coupe 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 | 0.67090 | 0.23709 | 1.10471 | 0.22081 | 3.03842 | 0.00250 | 0.67090 | 0.22991 | 2.91816 | 0.00612 | 0.56317 | 0.18979 | 2.96728 | 0.00305 |
| MethodNatural debris | 1.35364 | 0.42965 | 2.27763 | 0.47030 | 2.87823 | 0.00417 | 1.35364 | 0.36720 | 3.68634 | 0.00077 | 0.79363 | 0.33507 | 2.36853 | 0.01805 |
| MethodNeighbour effects | -0.15439 | -0.94914 | 0.64036 | 0.40452 | -0.38167 | 0.70286 | -0.15439 | 0.21564 | -0.71597 | 0.47876 | -0.33126 | 0.39066 | -0.84796 | 0.39658 |
| MethodOther fencing | 0.82895 | -0.05168 | 1.70959 | 0.44824 | 1.84937 | 0.06499 | 0.82895 | 0.33200 | 2.49685 | 0.01739 | 0.58923 | 0.39437 | 1.49413 | 0.13532 |
| MethodRepellents | 0.67087 | 0.18015 | 1.16159 | 0.24977 | 2.68593 | 0.00747 | 0.67087 | 0.34907 | 1.92186 | 0.06280 | 0.50478 | 0.19591 | 2.57654 | 0.01009 |
| MethodStock manipulation | 0.30097 | -0.35414 | 0.95608 | 0.33344 | 0.90261 | 0.36717 | 0.30097 | 0.24378 | 1.23458 | 0.22521 | 0.31808 | 0.28233 | 1.12666 | 0.26013 |
| MethodTree guards | 1.30138 | 0.81225 | 1.79051 | 0.24896 | 5.22719 | 0.00000 | 1.30138 | 0.30451 | 4.27375 | 0.00014 | 1.20446 | 0.20013 | 6.01849 | 0.00000 |
| Plot\_size | -0.00001 | -0.00005 | 0.00004 | 0.00002 | -0.22253 | 0.82399 | -0.00001 | 0.00001 | -0.69889 | 0.48924 | -0.00000 | 0.00002 | -0.18881 | 0.85028 |
| Year | 0.00666 | -0.01469 | 0.02802 | 0.01052 | 0.63354 | 0.53050 | 0.00666 | 0.01046 | 0.63695 | 0.52830 | 0.00734 | 0.00851 | 0.86275 | 0.38847 |
| root\_inv\_ESS | -0.13396 | -0.59389 | 0.32597 | 0.23442 | -0.57147 | 0.56780 | -0.13396 | 0.25318 | -0.52912 | 0.60006 | 0.24644 | 0.23584 | 1.04493 | 0.29643 |

## Coupe 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 | 0.63223 | 0.20353 | 1.06092 | 0.21850 | 2.89352 | 0.00388 | 0.63223 | 0.17451 | 3.62284 | 0.00083 | 0.69763 | 0.17882 | 3.90137 | 0.00010 |
| AnimalMixed | 0.63087 | -0.25267 | 1.51440 | 0.45032 | 1.40093 | 0.16150 | 0.63087 | 0.26680 | 2.36454 | 0.02313 | 0.49044 | 0.45154 | 1.08615 | 0.27756 |
| AnimalNot specified | 0.61615 | -0.05552 | 1.28783 | 0.33207 | 1.85550 | 0.07109 | 0.61615 | 0.26668 | 2.31043 | 0.02624 | 0.70463 | 0.35344 | 1.99365 | 0.04634 |
| AnimalOther | 0.87929 | 0.10470 | 1.65388 | 0.38295 | 2.29609 | 0.02713 | 0.87929 | 0.32902 | 2.67246 | 0.01093 | 0.73532 | 0.34842 | 2.11043 | 0.03496 |
| AnimalOther ungulates | 0.61298 | 0.03253 | 1.19344 | 0.28697 | 2.13605 | 0.03901 | 0.61298 | 0.38111 | 1.60844 | 0.11581 | 0.49882 | 0.24092 | 2.07049 | 0.03856 |
| Plot\_size | -0.00001 | -0.00006 | 0.00003 | 0.00002 | -0.61338 | 0.53990 | -0.00001 | 0.00001 | -1.23282 | 0.22502 | -0.00001 | 0.00002 | -0.52917 | 0.59682 |

## Coupe 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 | 0.73907 | 0.24091 | 1.23723 | 0.25390 | 2.91082 | 0.00367 | 0.73907 | 0.20292 | 3.64219 | 0.00082 | 0.70875 | 0.20634 | 3.43491 | 0.00061 |
| AnimalMixed | 0.73295 | -0.19372 | 1.65963 | 0.47231 | 1.55186 | 0.12097 | 0.73295 | 0.32206 | 2.27585 | 0.02874 | 0.37940 | 0.47173 | 0.80427 | 0.42136 |
| AnimalNot specified | 0.66816 | -0.02511 | 1.36143 | 0.34215 | 1.95280 | 0.05844 | 0.66816 | 0.28225 | 2.36725 | 0.02326 | 0.59226 | 0.36406 | 1.62682 | 0.10395 |
| AnimalOther | 1.01254 | 0.15829 | 1.86680 | 0.42161 | 2.40163 | 0.02146 | 1.01254 | 0.40658 | 2.49037 | 0.01738 | 0.75492 | 0.36333 | 2.07776 | 0.03788 |
| AnimalOther ungulates | 0.67061 | 0.06283 | 1.27839 | 0.29996 | 2.23567 | 0.03149 | 0.67061 | 0.41997 | 1.59681 | 0.11881 | 0.50217 | 0.25916 | 1.93767 | 0.05283 |
| Plot\_size | -0.00001 | -0.00006 | 0.00003 | 0.00002 | -0.55554 | 0.57877 | -0.00001 | 0.00001 | -1.05434 | 0.29856 | -0.00001 | 0.00002 | -0.43374 | 0.66457 |
| Year | 0.00623 | -0.01426 | 0.02672 | 0.01011 | 0.61582 | 0.54179 | 0.00623 | 0.00665 | 0.93691 | 0.35488 | 0.01010 | 0.00878 | 1.14948 | 0.25059 |
| root\_inv\_ESS | -0.14472 | -0.63171 | 0.34228 | 0.24821 | -0.58304 | 0.55998 | -0.14472 | 0.23336 | -0.62016 | 0.53896 | 0.25371 | 0.24700 | 1.02716 | 0.30473 |

## Coupe 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 | 0.42731 | -0.14156 | 0.99617 | 0.26963 | 1.58479 | 0.13144 | 0.42731 | 0.33346 | 1.28142 | 0.21056 | 0.55044 | 0.22957 | 2.39770 | 0.01663 |
| MethodNatural debris | 0.94532 | -0.13305 | 2.02369 | 0.54882 | 1.72245 | 0.08563 | 0.94532 | 0.67348 | 1.40363 | 0.17142 | 0.23776 | 0.37886 | 0.62757 | 0.53044 |
| MethodNeighbour effects | -1.02417 | -1.94727 | -0.10107 | 0.46980 | -2.18003 | 0.02974 | -1.02417 | 0.08930 | -11.46935 | 0.00000 | -1.10177 | 0.49869 | -2.20932 | 0.02728 |
| MethodOther fencing | 1.04874 | -0.51037 | 2.60785 | 0.79349 | 1.32169 | 0.18690 | 1.04874 | 0.60417 | 1.73584 | 0.09359 | 0.75937 | 0.78601 | 0.96612 | 0.33412 |
| MethodRepellents | 0.24365 | -0.31891 | 0.80622 | 0.28631 | 0.85100 | 0.39519 | 0.24365 | 0.54018 | 0.45105 | 0.65542 | 0.05294 | 0.25211 | 0.20998 | 0.83371 |
| MethodStock manipulation | -0.34685 | -1.10360 | 0.40991 | 0.38514 | -0.90057 | 0.36826 | -0.34685 | 0.41787 | -0.83003 | 0.41354 | -0.51221 | 0.34221 | -1.49678 | 0.13494 |
| MethodTree guards | 0.38513 | -0.18157 | 0.95183 | 0.28841 | 1.33535 | 0.18239 | 0.38513 | 0.48809 | 0.78907 | 0.43670 | 0.39472 | 0.25927 | 1.52247 | 0.12813 |
| Months | 0.00252 | -0.00326 | 0.00831 | 0.00295 | 0.85688 | 0.39169 | 0.00252 | 0.00326 | 0.77500 | 0.44484 | 0.00122 | 0.00309 | 0.39339 | 0.69411 |
| Plot\_size | -0.00001 | -0.00005 | 0.00004 | 0.00002 | -0.24984 | 0.80282 | -0.00001 | 0.00001 | -0.88140 | 0.38560 | -0.00001 | 0.00002 | -0.28853 | 0.77300 |
| MethodNatural debris:Months | -0.01056 | -0.03275 | 0.01162 | 0.01131 | -0.93426 | 0.35037 | -0.01056 | 0.00383 | -2.75812 | 0.01012 | -0.00218 | 0.01044 | -0.20840 | 0.83504 |
| MethodNeighbour effects:Months | -0.00277 | -0.02793 | 0.02240 | 0.01283 | -0.21562 | 0.82933 | -0.00277 | 0.00205 | -1.34862 | 0.18827 | -0.00228 | 0.01640 | -0.13934 | 0.88920 |
| MethodOther fencing:Months | -0.08379 | -0.19966 | 0.03208 | 0.05906 | -1.41882 | 0.15623 | -0.08379 | 0.05027 | -1.66684 | 0.10670 | -0.05397 | 0.04690 | -1.15083 | 0.24996 |
| MethodRepellents:Months | -0.00658 | -0.01311 | -0.00005 | 0.00333 | -1.97819 | 0.04815 | -0.00658 | 0.00348 | -1.89375 | 0.06863 | -0.00409 | 0.00359 | -1.13955 | 0.25472 |
| MethodStock manipulation:Months | -0.00229 | -0.01412 | 0.00954 | 0.00603 | -0.37911 | 0.70467 | -0.00229 | 0.00514 | -0.44450 | 0.66010 | 0.01287 | 0.00678 | 1.90016 | 0.06003 |
| MethodTree guards:Months | 0.00471 | -0.00185 | 0.01127 | 0.00334 | 1.40977 | 0.15888 | 0.00471 | 0.00333 | 1.41557 | 0.16793 | 0.00649 | 0.00362 | 1.79088 | 0.07360 |

## Coupe 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 | 0.50039 | -0.12089 | 1.12167 | 0.29148 | 1.71670 | 0.10661 | 0.50039 | 0.36331 | 1.37732 | 0.18016 | 0.49925 | 0.24629 | 2.02708 | 0.04283 |
| MethodNatural debris | 1.03778 | -0.07249 | 2.14805 | 0.56505 | 1.83663 | 0.06688 | 1.03778 | 0.53043 | 1.95651 | 0.06123 | 0.28807 | 0.38201 | 0.75409 | 0.45098 |
| MethodNeighbour effects | -1.02391 | -1.94965 | -0.09817 | 0.47114 | -2.17327 | 0.03025 | -1.02391 | 0.09765 | -10.48593 | 0.00000 | -1.10046 | 0.49903 | -2.20520 | 0.02757 |
| MethodOther fencing | 1.06482 | -0.49935 | 2.62898 | 0.79605 | 1.33762 | 0.18165 | 1.06482 | 0.67289 | 1.58244 | 0.12564 | 0.79565 | 0.79008 | 1.00704 | 0.31405 |
| MethodRepellents | 0.26593 | -0.30130 | 0.83317 | 0.28868 | 0.92120 | 0.35741 | 0.26593 | 0.56697 | 0.46904 | 0.64295 | 0.06548 | 0.25418 | 0.25760 | 0.79675 |
| MethodStock manipulation | -0.35735 | -1.11647 | 0.40176 | 0.38634 | -0.92498 | 0.35544 | -0.35735 | 0.43398 | -0.82344 | 0.41775 | -0.50554 | 0.34192 | -1.47855 | 0.13974 |
| MethodTree guards | 0.39931 | -0.16981 | 0.96843 | 0.28964 | 1.37864 | 0.16865 | 0.39931 | 0.50966 | 0.78348 | 0.44042 | 0.39760 | 0.26068 | 1.52525 | 0.12743 |
| Months | 0.00232 | -0.00350 | 0.00815 | 0.00297 | 0.78236 | 0.43417 | 0.00232 | 0.00332 | 0.69948 | 0.49047 | 0.00096 | 0.00313 | 0.30697 | 0.75893 |
| Plot\_size | -0.00000 | -0.00005 | 0.00004 | 0.00002 | -0.18341 | 0.85455 | -0.00000 | 0.00001 | -0.65202 | 0.52011 | -0.00000 | 0.00002 | -0.20394 | 0.83844 |
| Year | 0.00760 | -0.01491 | 0.03011 | 0.01095 | 0.69374 | 0.49399 | 0.00760 | 0.01187 | 0.63999 | 0.52778 | 0.00794 | 0.00888 | 0.89450 | 0.37127 |
| root\_inv\_ESS | -0.04787 | -0.52737 | 0.43162 | 0.24438 | -0.19590 | 0.84473 | -0.04787 | 0.28137 | -0.17015 | 0.86621 | 0.35358 | 0.24191 | 1.46159 | 0.14427 |
| MethodNatural debris:Months | -0.01086 | -0.03306 | 0.01134 | 0.01132 | -0.95976 | 0.33738 | -0.01086 | 0.00351 | -3.09112 | 0.00471 | -0.00216 | 0.01046 | -0.20636 | 0.83663 |
| MethodNeighbour effects:Months | -0.00263 | -0.02779 | 0.02253 | 0.01282 | -0.20535 | 0.83733 | -0.00263 | 0.00209 | -1.26064 | 0.21863 | -0.00210 | 0.01644 | -0.12776 | 0.89835 |
| MethodOther fencing:Months | -0.08354 | -0.19961 | 0.03253 | 0.05916 | -1.41216 | 0.15818 | -0.08354 | 0.05608 | -1.48963 | 0.14835 | -0.05641 | 0.04708 | -1.19826 | 0.23098 |
| MethodRepellents:Months | -0.00643 | -0.01299 | 0.00012 | 0.00334 | -1.92492 | 0.05449 | -0.00643 | 0.00356 | -1.80675 | 0.08239 | -0.00374 | 0.00362 | -1.03449 | 0.30113 |
| MethodStock manipulation:Months | -0.00213 | -0.01397 | 0.00972 | 0.00604 | -0.35224 | 0.72472 | -0.00213 | 0.00526 | -0.40450 | 0.68915 | 0.01294 | 0.00679 | 1.90447 | 0.05944 |
| MethodTree guards:Months | 0.00488 | -0.00172 | 0.01148 | 0.00336 | 1.45125 | 0.14699 | 0.00488 | 0.00343 | 1.42399 | 0.16634 | 0.00698 | 0.00366 | 1.90669 | 0.05684 |