Table S1: Indicator species analysis of bird mist-netting (MN), bird point count (PC) community and bat community data across the three timeframes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Data** | **Group** | **Species** | **Stat** | **p.value** | **Feeding guild** | **Stratification** |
| Understory birds | pre-logged | *C.tyrannina* | 0.581 | 0.023 | insectivore | understory |
|  |  |  |  |  |  |  |
|  | 1 year post-logged | *T.caesius* | 0.684 | 0.005 | insectivore | understory |
|  |  | *M.barbatus* | 0.526 | 0.033 | insectivore | understory |
|  |  |  |  |  |  |  |
|  | 10 years post-logged | *S.olivacea* | 0.886 | 0.001 | omnivore | understory |
|  |  | *T.murinus* | 0.704 | 0.006 | insectivore | all |
|  |  | *X.guttatus* | 0.675 | 0.018 | insectivore | understory |
|  |  | *S.mexicanus* | 0.655 | 0.003 | insectivore | understory |
|  |  | *M.villosus* | 0.535 | 0.022 | insectivore | understory |
|  |  |  |  |  |  |  |
| Mid-upper-level birds) | pre-logged | *H.sticturus* | 0.886 | 0.001 | insectivore | canopy |
|  |  | *T.assimilis* | 0.845 | 0.001 | insectivore | understory |
|  |  | *C.spiza* | 0.764 | 0.001 | omnivore | canopy |
|  |  | *X.pardalotus* | 0.745 | 0.001 | insectivore | understory |
|  |  | *M.guttata* | 0.74 | 0.001 | insectivore | understory |
|  |  | *H.stictocephalus* | 0.735 | 0.005 | insectivore | canopy |
|  |  | *R.vitellinus* | 0.73 | 0.005 | frugivore | canopy |
|  |  | *L.vociferans* | 0.713 | 0.017 | frugivore | canopy |
|  |  | *D.pipra* | 0.699 | 0.01 | frugivore/insectivore | understory |
|  |  | *P.albifrons* | 0.682 | 0.011 | insectivore | understory |
|  |  | *T.chionurus* | 0.658 | 0.014 | omnivore | canopy |
|  |  | *Ph.melanocephalus* | 0.657 | 0.047 | granivore | canopy |
|  |  | *M.longipennis* | 0.655 | 0.013 | insectivore | understory |
|  |  | *T.erythrurus* | 0.655 | 0.002 | insectivore | understory |
|  |  | *W.poecilonota* | 0.654 | 0.009 | insectivore | understory |
|  |  | *P.caica* | 0.646 | 0.044 | frugivore | canopy |
|  |  | *C.alector* | 0.646 | 0.015 | frugivore | understory |
|  |  | *C.rubricollis* | 0.644 | 0.004 | insectivore | canopy |
|  |  | *M.axillaris* | 0.626 | 0.028 | insectivore | understory |
|  |  | *M.surinamensis* | 0.598 | 0.003 | insectivore | understory |
|  |  | *V.leucotis* | 0.598 | 0.009 | insectivore | canopy |
|  |  | *S.turdina* | 0.571 | 0.041 | insectivore | understory |
|  |  |  |  |  |  |  |
|  | 1-year post logged | *P.fuscus* | 0.647 | 0.047 | frugivore | canopy |
|  |  | *R.simplex* | 0.627 | 0.044 | insectivore | midstory |
|  |  | *H.perrotii* | 0.566 | 0.045 | insectivore | all |
|  |  | *P.albus* | 0.515 | 0.039 | frugivore | canopy |
|  |  |  |  |  |  |  |
|  | 10-years post logged | *C.variegatus* | 0.782 | 0.001 | insectivore | understory |
|  |  | T.virdis | 0.756 | 0.001 | frugivore | canopy |
|  |  | *T.ardesiacus* | 0.71 | 0.006 | insectivore | understory |
|  |  | *M.gilvicollis* | 0.675 | 0.002 | carnivore | understory |
|  |  | *A.chloropterus* | 0.674 | 0.03 | frugivore | canopy |
|  |  | *F.analis* | 0.653 | 0.047 | insectivore | understory |
|  |  | *M.brachyura* | 0.588 | 0.021 | insectivore | understory |
|  |  | *S.olivacea* | 0.535 | 0.03 | omnivore | understory |
|  |  |  |  |  |  |  |
| Bats | pre-logged | *A. planirostris* | 0.675 | 0.046 | frugivore | - |
|  |  | *C.auritus* | 0.672 | 0.003 | carnivore | - |
|  |  |  |  |  |  |  |
|  | 10-years post logged | *G.soricina* | 0.645 | 0.008 | nectarivore | - |

Table S2: Model output for richness response to timeframe only in understory and mid-upper-level bird community and bat community. Non-overlapping credibility intervals (CrI) indicate certain effect.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Data** | **Parameter** | **Estimate** | **SE** | **Lower CrI** | **Upper CrI** | **Rhat** |
| **Understory birds** | Intercept | 3.19 | 0.06 | 3.06 | 3.31 | 1.00 |
|  | timeframepost1 | -0.03 | 0.09 | -0.20 | 0.14 | 1.00 |
|  | timeframepost10 | 0.00 | 0.09 | -0.16 | 0.18 | 1.00 |
| **Mid-upper-level birds** | Intercept | 3.97 | 0.05 | 3.88 | 4.06 | 1.00 |
|  | **timeframepost1** | **-0.21** | **0.07** | **-0.34** | **-0.07** | 1.00 |
|  | **timeframepost10** | **-0.21** | **0.07** | **-0.34** | **-0.08** | 1.00 |
| **bats** | Intercept | 2.45 | 0.09 | 2.28 | 2.63 | 1.00 |
|  | timeframepost1 | -0.17 | 0.14 | -0.43 | 0.10 | 1.00 |
|  | timeframepost10 | -0.23 | 0.14 | -0.50 | 0.04 | 1.00 |
|  |  |  |  |  |  |  |

Table S3: Model output for richness response to timeframe + harvest buffers in understory and mid-upper-level bird community and bat community. Non-overlapping credibility intervals (CrI) indicate certain effect.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Data** | **Parameter** | **Estimate** | **SE** | **Lower CrI** | **Upper CrI** | **Rhat** |
| Understory birds | intercept | 3.21 | 0.25 | 2.74 | 3.61 | 1.00 |
|  | timeframepost1 | 0.07 | 0.24 | -0.40 | 0.52 | 1.00 |
|  | timeframepost10 | 0.10 | 0.24 | -0.37 | 0.56 | 1.00 |
|  | buffer100m | 0.01 | 0.02 | -0.04 | 0.05 | 1.00 |
|  | buffer200m | 0.00 | 0.01 | -0.02 | 0.01 | 1.00 |
|  | buffer500m | 0.00 | 0.00 | 0.00 | 0.01 | 1.00 |
|  | buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| Mid-upper-level birds | intercept | 3.97 | 0.07 | 3.83 | 4.11 | 1.00 |
|  | timeframepost1 | -0.14 | 0.16 | -0.46 | 0.18 | 1.00 |
|  | timeframepost10 | -0.14 | 0.16 | -0.46 | 0.18 | 1.00 |
|  | buffer100m | 0.00 | 0.01 | -0.03 | 0.02 | 1.00 |
|  | buffer200m | 0.00 | 0.01 | -0.01 | 0.01 | 1.00 |
|  | buffer500m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  | buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| Bats | Intercept | 2.49 | 0.26 | 1.95 | 2.98 | 1.00 |
|  | timeframepost1 | -0.39 | 0.34 | -1.06 | 0.26 | 1.00 |
|  | timeframepost10 | -0.44 | 0.34 | -1.10 | 0.22 | 1.00 |
|  | buffer100m | -0.01 | 0.03 | -0.07 | 0.05 | 1.00 |
|  | buffer200m | -0.01 | 0.01 | -0.04 | 0.02 | 1.00 |
|  | buffer500m | 0.00 | 0.00 | -0.01 | 0.00 | 1.00 |
|  | buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |

Table S4: Model output for feeding guild + Stratification response to timeframe in understory, mid-upper-level bird community and bat community. Non-overlapping credibility intervals (CrI) indicate certain effect.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Data** | **Category** | **Parameter** | **Estimate** | **SE** | **Lower CrI** | **Upper CrI** | **Rhat** |
| Understory birds | feeding guild | insectivore\_intercept | 2.89 | 0.07 | 2.75 | 3.03 | 1.00 |
|  |  | granivore\_intercept | -2.20 | 0.83 | -4.02 | -0.79 | 1.00 |
|  |  | frugivore\_intercept | -0.94 | 0.45 | -1.92 | -0.11 | 1.00 |
|  |  | carnivore\_intercept | -0.63 | 0.38 | -1.44 | 0.07 | 1.00 |
|  |  | omnivore\_intercept | 0.34 | 0.24 | -0.14 | 0.77 | 1.00 |
|  |  | frugivoreinsectivore\_intercept | 0.56 | 0.21 | 0.14 | 0.95 | 1.00 |
|  |  | nectarivore\_intercept | 0.60 | 0.23 | 0.12 | 1.04 | 1.00 |
|  |  | insectivore\_timeframepost1 | -0.07 | 0.10 | -0.27 | 0.12 | 1.00 |
|  |  | insectivore\_timeframepost10 | 0.06 | 0.10 | -0.13 | 0.26 | 1.00 |
|  |  | granivore\_timeframepost1 | 0.50 | 1.08 | -1.53 | 2.70 | 1.00 |
|  |  | granivore\_timeframepost10 | 0.00 | 1.20 | -2.41 | 2.39 | 1.00 |
|  |  | frugivore\_timeframepost1 | 0.17 | 0.62 | -1.02 | 1.42 | 1.00 |
|  |  | frugivore\_timeframepost10 | -0.46 | 0.72 | -1.93 | 0.93 | 1.00 |
|  |  | carnivore\_timeframepost1 | -0.32 | 0.59 | -1.48 | 0.83 | 1.00 |
|  |  | carnivore\_timeframepost10 | -0.52 | 0.62 | -1.81 | 0.67 | 1.00 |
|  |  | omnivore\_timeframepost1 | 0.00 | 0.33 | -0.65 | 0.65 | 1.00 |
|  |  | omnivore\_timeframepost10 | 0.14 | 0.32 | -0.50 | 0.78 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost1 | 0.15 | 0.28 | -0.41 | 0.71 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost10 | 0.08 | 0.29 | -0.49 | 0.65 | 1.00 |
|  |  | nectarivore\_timeframepost1 | 0.12 | 0.32 | -0.51 | 0.74 | 1.00 |
|  |  | **nectarivore\_timeframepost10** | **-0.88** | **0.40** | **-1.68** | **-0.12** | **1.00** |
| Understory birds | stratification | canopy\_intercept | 0.60 | 0.21 | 0.17 | 1.00 | 1.00 |
|  |  | midstory\_intercept | -0.92 | 0.43 | -1.86 | -0.16 | 1.00 |
|  |  | all\_intercept | -0.11 | 0.29 | -0.72 | 0.44 | 1.00 |
|  |  | understory\_intercept | 3.05 | 0.07 | 2.92 | 3.18 | 1.00 |
|  |  | canopy\_timeframepost1 | -0.44 | 0.34 | -1.11 | 0.20 | 1.00 |
|  |  | **canopy\_timeframepost10** | **-0.64** | **0.36** | **-1.38** | **-0.06** | **1.00** |
|  |  | midstory\_timeframepost1 | 0.44 | 0.55 | -0.63 | 1.52 | 1.00 |
|  |  | midstory\_timeframepost10 | 0.73 | 0.53 | -0.28 | 1.81 | 1.00 |
|  |  | all\_timeframepost1 | 0.07 | 0.41 | -0.73 | 0.89 | 1.00 |
|  |  | all\_timeframepost10 | 0.21 | 0.39 | -0.55 | 0.99 | 1.00 |
|  |  | understory\_timeframepost1 | -0.02 | 0.09 | -0.20 | 0.16 | 1.00 |
|  |  | understory\_timeframepost10 | 0.01 | 0.09 | -0.17 | 0.19 | 1.00 |
| Mid-upper-level birds | feeding guild | insectivores\_Intercept | 3.39 | 0.06 | 3.27 | 3.50 | 1.00 |
|  |  | granivores\_Intercept | 0.38 | 0.23 | -0.10 | 0.82 | 1.00 |
|  |  | frugivores\_Intercept | 2.68 | 0.07 | 2.53 | 2.82 | 1.00 |
|  |  | carnivores\_Intercept | -1.41 | 0.56 | -2.64 | -0.44 | 1.00 |
|  |  | omnivores\_Intercept | 1.60 | 0.13 | 1.34 | 1.86 | 1.00 |
|  |  | frugivore.insectivore\_Intercept | -0.11 | 0.28 | -0.70 | 0.42 | 1.00 |
|  |  | nectarivore\_Intercept | 0.11 | 0.27 | -0.45 | 0.62 | 1.00 |
|  |  | insectivores\_timeframepost1 | -0.22 | 0.09 | -0.39 | -0.04 | 1.00 |
|  |  | **insectivores\_timeframepost10** | **-0.25** | **0.09** | **-0.42** | **-0.08** | **1.00** |
|  |  | granivores\_timeframepost1 | 0.00 | 0.33 | -0.64 | 0.64 | 1.00 |
|  |  | granivores\_timeframepost10 | -0.50 | 0.37 | -1.23 | 0.20 | 1.00 |
|  |  | frugivores\_timeframepost1 | -0.18 | 0.11 | -0.39 | 0.04 | 1.00 |
|  |  | frugivores\_timeframepost10 | -0.18 | 0.11 | -0.39 | 0.04 | 1.00 |
|  |  | carnivores\_timeframepost1 | 0.64 | 0.69 | -0.68 | 2.06 | 1.00 |
|  |  | carnivores\_timeframepost10 | 1.30 | 0.64 | 0.15 | 2.64 | 1.00 |
|  |  | omnivores\_timeframepost1 | -0.36 | 0.20 | -0.76 | 0.03 | 1.00 |
|  |  | omnivores\_timeframepost10 | -0.19 | 0.20 | -0.57 | 0.20 | 1.00 |
|  |  | frugivore.insectivore\_timeframepost1 | 0.00 | 0.41 | -0.80 | 0.80 | 1.00 |
|  |  | frugivore.insectivore\_timeframepost10 | 0.34 | 0.37 | -0.39 | 1.09 | 1.00 |
|  |  | nectarivore\_timeframepost1 | -0.59 | 0.46 | -1.53 | 0.29 | 1.00 |
|  |  | **nectarivore\_timeframepost10** | **-1.23** | **0.55** | **-2.38** | **-0.21** | **1.00** |
| Mid-upper-level birds | stratification | canopy\_Intercept | 3.24 | 0.06 | 3.12 | 3.36 | 1.00 |
|  |  | midstory\_Intercept | -0.19 | 0.30 | -0.83 | 0.36 | 1.00 |
|  |  | understory\_Intercept | 3.16 | 0.06 | 3.04 | 3.28 | 1.00 |
|  |  | all\_Intercept | 1.09 | 0.16 | 0.76 | 1.40 | 1.00 |
|  |  | canopy\_timeframepost1 | -0.27 | 0.09 | -0.44 | -0.09 | 1.00 |
|  |  | **canopy\_timeframepost10** | **-0.26** | **0.09** | **-0.43** | **-0.08** | **1.00** |
|  |  | midstory\_timeframepost1 | 0.48 | 0.39 | -0.27 | 1.25 | 1.00 |
|  |  | midstory\_timeframepost10 | 0.30 | 0.40 | -0.46 | 1.09 | 1.00 |
|  |  | understory\_timeframepost1 | -0.19 | 0.09 | -0.37 | 0.00 | 1.00 |
|  |  | **understory\_timeframepost10** | **-0.20** | **0.09** | **-0.38** | **-0.02** | **1.00** |
|  |  | all\_timeframepost1 | -0.10 | 0.24 | -0.58 | 0.36 | 1.00 |
|  |  | all\_timeframepost10 | -0.07 | 0.23 | -0.52 | 0.38 | 1.00 |
| Bats | feeding guild | insectivores\_Intercept | 0.93 | 0.18 | 0.57 | 1.27 | 1.00 |
|  |  | frugivores\_Intercept | 1.84 | 0.12 | 1.61 | 2.06 | 1.00 |
|  |  | carnivores\_Intercept | 0.03 | 0.28 | -0.55 | 0.54 | 1.00 |
|  |  | omnivores\_intercept | -0.29 | 0.32 | -0.96 | 0.30 | 1.00 |
|  |  | nectarivore\_Intercept | -0.49 | 0.34 | -1.21 | 0.13 | 1.00 |
|  |  | sanguinivore\_Intercept | -1.47 | 1.58 | -3.15 | 0.36 | 1.00 |
|  |  | insectivores\_timeframepost1 | 0.21 | 0.24 | -0.26 | 0.68 | 1.00 |
|  |  | insectivores\_timeframepost10 | -0.25 | 0.27 | -0.79 | 0.27 | 1.00 |
|  |  | frugivores\_timeframepost1 | -0.18 | 0.17 | -0.52 | 0.16 | 1.00 |
|  |  | frugivores\_timeframepost10 | -0.09 | 0.17 | -0.41 | 0.23 | 1.00 |
|  |  | carnivores\_timeframepost1 | -0.98 | 0.52 | -2.07 | -0.01 | 1.00 |
|  |  | **carnivores\_timeframepost10** | **-1.77** | **0.69** | **-3.28** | **-0.55** | **1.00** |
|  |  | omnivores\_timeframepost1 | -0.66 | 0.54 | -1.78 | 0.37 | 1.00 |
|  |  | omnivores\_timeframepost10 | -0.65 | 0.54 | -1.73 | 0.41 | 1.00 |
|  |  | nectarivore\_timeframepost1 | -0.12 | 0.51 | -1.14 | 0.87 | 1.00 |
|  |  | nectarivore\_timeframepost10 | 0.30 | 0.46 | -0.61 | 1.22 | 1.00 |
|  |  | sanguinivore\_timeframepost1 | -10.95 | 13.52 | -44.15 | -0.39 | 1.00 |
|  |  | sanguinivore\_timeframepost10 | -11.29 | 13.99 | -47.61 | -0.42 | 1.00 |

Table S5: Model output for feeding guild response to timeframe + harvest buffers in understory and mid-upper-level bird community and bat community. Non-overlapping credibility intervals (CrI) indicate certain effect.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Method** | **Parameter** | **Estimate** | **SE** | **Lower CrI** | **Upper CrI** | **Rhat** |
| **HARVEST** | **Understory birds** | insectivore\_intercept | 2.89 | 0.07 | 2.75 | 3.03 | 1.00 |
|  |  | granivore\_intercept | -1.05 | 4.90 | -4.04 | 8.87 | 1.00 |
|  |  | frugivore\_intercept | -0.93 | 0.46 | -1.91 | -0.11 | 1.00 |
|  |  | carnivore\_intercept | -0.63 | 0.39 | -1.44 | 0.08 | 1.00 |
|  |  | omnivore\_intercept | 0.33 | 0.24 | -0.15 | 0.78 | 1.00 |
|  |  | frugivoreinsectivore\_intercept | 0.56 | 0.21 | 0.14 | 0.95 | 1.00 |
|  |  | nectarivore\_intercept | 0.61 | 0.24 | 0.12 | 1.07 | 1.00 |
|  |  | insectivore\_timeframepost1 | 0.03 | 0.19 | -0.35 | 0.41 | 1.00 |
|  |  | insectivore\_timeframepost10 | 0.17 | 0.19 | -0.21 | 0.54 | 1.00 |
|  |  | insectivore\_buffer100m | 0.00 | 0.02 | -0.03 | 0.03 | 1.00 |
|  |  | insectivore\_buffer200m | 0.01 | 0.01 | -0.01 | 0.02 | 1.00 |
|  |  | insectivore\_buffer500m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | insectivore\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | granivore\_timeframepost1 | 3.14 | 18.92 | -17.46 | 37.74 | 1.01 |
|  |  | granivore\_timeframepost10 | -1.10 | 20.08 | -38.00 | 27.57 | 1.01 |
|  |  | **granivore\_buffer100m** | **-1.73** | **3.62** | **-9.30** | **-0.06** | **1.01** |
|  |  | granivore\_buffer200m | 0.71 | 1.52 | -0.05 | 4.09 | 1.01 |
|  |  | **granivore\_buffer500m** | **-0.19** | **0.34** | **-1.17** | **-0.01** | **1.01** |
|  |  | granivore\_buffer1000m | 0.04 | 0.10 | -0.02 | 0.27 | 1.01 |
|  |  | frugivore\_timeframepost1 | -1.09 | 1.48 | -4.18 | 1.65 | 1.00 |
|  |  | frugivore\_timeframepost10 | -1.75 | 1.56 | -5.03 | 1.13 | 1.00 |
|  |  | frugivore\_buffer100m | 0.00 | 0.13 | -0.25 | 0.25 | 1.00 |
|  |  | frugivore\_buffer200m | 0.05 | 0.06 | -0.06 | 0.17 | 1.00 |
|  |  | frugivore\_buffer500m | -0.01 | 0.01 | -0.03 | 0.01 | 1.00 |
|  |  | frugivore\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.01 | 1.00 |
|  |  | carnivore\_timeframepost1 | -0.58 | 1.28 | -3.23 | 1.84 | 1.00 |
|  |  | carnivore\_timeframepost10 | -0.81 | 1.26 | -3.47 | 1.53 | 1.00 |
|  |  | carnivore\_buffer100m | -0.15 | 0.13 | -0.43 | 0.10 | 1.00 |
|  |  | carnivore\_buffer200m | -0.01 | 0.04 | -0.10 | 0.08 | 1.00 |
|  |  | carnivore\_buffer500m | -0.01 | 0.01 | -0.03 | 0.02 | 1.00 |
|  |  | carnivore\_buffer1000m | 0.00 | 0.00 | -0.01 | 0.01 | 1.00 |
|  |  | omnivore\_timeframepost1 | -0.73 | 0.68 | -2.10 | 0.57 | 1.00 |
|  |  | omnivore\_timeframepost10 | -0.58 | 0.68 | -1.94 | 0.71 | 1.00 |
|  |  | **omnivore\_buffer100m** | **0.11** | **0.05** | **0.01** | **0.21** | 1.00 |
|  |  | omnivore\_buffer200m | -0.03 | 0.02 | -0.07 | 0.01 | 1.00 |
|  |  | omnivore\_buffer500m | 0.00 | 0.00 | -0.01 | 0.01 | 1.00 |
|  |  | omnivore\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost1 | 0.67 | 0.53 | -0.37 | 1.69 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost10 | 0.60 | 0.53 | -0.46 | 1.62 | 1.00 |
|  |  | frugivoreinsectivore\_buffer100m | -0.01 | 0.04 | -0.09 | 0.08 | 1.00 |
|  |  | frugivoreinsectivore\_buffer200m | 0.00 | 0.02 | -0.04 | 0.04 | 1.00 |
|  |  | frugivoreinsectivore\_buffer500m | 0.00 | 0.00 | -0.01 | 0.01 | 1.00 |
|  |  | frugivoreinsectivore\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | nectarivore\_timeframepost1 | 0.03 | 0.71 | 1.36 | 1.47 | 1.00 |
|  |  | nectarivore\_timeframepost10 | -0.99 | 0.73 | -2.45 | 0.44 | 1.00 |
|  |  | nectarivore\_buffer100m | -0.04 | 0.06 | -0.16 | 0.08 | 1.00 |
|  |  | nectarivore\_buffer200m | 0.00 | 0.03 | -0.05 | 0.05 | 1.00 |
|  |  | nectarivore\_buffer500m | 0.00 | 0.01 | -0.01 | 0.01 | 1.00 |
|  |  | nectarivore\_1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  | **Mid-upper-level birds** | insectivores\_Intercept | 3.39 | 0.06 | 3.26 | 3.51 | 1.00 |
|  |  | granivores\_Intercept | 0.39 | 0.23 | -0.08 | 0.82 | 1.00 |
|  |  | frugivores\_Intercept | 2.68 | 0.07 | 2.53 | 2.83 | 1.00 |
|  |  | carnivores\_Intercept | -1.40 | 0.54 | -2.59 | -0.47 | 1.00 |
|  |  | omnivores\_Intercept | 1.60 | 0.13 | 1.35 | 1.84 | 1.00 |
|  |  | frugivore.insectivore\_Intercept | -0.11 | 0.29 | -0.71 | 0.42 | 1.00 |
|  |  | nectarivore\_Intercept | 0.11 | 0.28 | -0.45 | 0.62 | 1.00 |
|  |  | insectivores\_timeframepost1 | -0.14 | 0.18 | -0.50 | 0.21 | 1.00 |
|  |  | insectivores\_timeframepost10 | -0.17 | 0.18 | -0.53 | 0.18 | 1.00 |
|  |  | insectivores\_buffer100m | 0.00 | 0.01 | -0.03 | 0.03 | 1.00 |
|  |  | insectivores\_buffer200m | 0.00 | 0.01 | -0.01 | 0.01 | 1.00 |
|  |  | insectivores\_buffer500m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | insectivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | granivores\_timeframepost1 | 0.21 | 0.70 | -1.16 | 1.56 | 1.00 |
|  |  | granivores\_timeframepost10 | -0.29 | 0.72 | -1.73 | 1.09 | 1.00 |
|  |  | granivores\_buffer100m | -0.04 | 0.06 | -0.16 | 0.08 | 1.00 |
|  |  | granivores\_buffer200m | 0.04 | 0.03 | -0.02 | 0.10 | 1.00 |
|  |  | granivores\_buffer500m | 0.00 | 0.01 | -0.01 | 0.01 | 1.00 |
|  |  | granivores\_buffer1000m | 0.00 | 0.00 | -0.01 | 0.00 | 1.00 |
|  |  | frugivores\_timeframepost1 | -0.12 | 0.21 | -0.54 | 0.30 | 1.00 |
|  |  | frugivores\_timeframepost10 | -0.12 | 0.21 | -0.54 | 0.31 | 1.00 |
|  |  | frugivores\_buffer100m | -0.01 | 0.02 | -0.05 | 0.02 | 1.00 |
|  |  | frugivores\_buffer200m | 0.00 | 0.01 | -0.01 | 0.02 | 1.00 |
|  |  | frugivores\_buffer500m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | frugivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | carnivores\_timeframepost1 | 0.90 | 1.07 | -1.21 | 3.02 | 1.00 |
|  |  | carnivores\_timeframepost10 | 1.57 | 1.02 | -0.42 | 3.57 | 1.00 |
|  |  | carnivores\_buffer100m | 0.03 | 0.08 | -0.13 | 0.19 | 1.00 |
|  |  | carnivores\_buffer200m | -0.03 | 0.04 | -0.10 | 0.04 | 1.00 |
|  |  | carnivores\_buffer500m | -0.01 | 0.01 | -0.03 | 0.01 | 1.00 |
|  |  | carnivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.01 | 1.00 |
|  |  | omnivores\_timeframepost1 | -0.52 | 0.40 | -1.34 | 0.26 | 1.00 |
|  |  | omnivores\_timeframepost10 | -0.34 | 0.40 | -1.13 | 0.43 | 1.00 |
|  |  | omnivores\_buffer100m | -0.01 | 0.03 | -0.08 | 0.05 | 1.00 |
|  |  | omnivores\_buffer200m | 0.02 | 0.02 | 0.00 | 0.06 | 1.00 |
|  |  | omnivores\_buffer500m | 0.00 | 0.00 | -0.01 | 0.00 | 1.00 |
|  |  | omnivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost1 | 0.75 | 0.72 | -0.68 | 2.15 | 1.00 |
|  |  | frugivoreinsectivore\_timeframepost10 | 1.06 | 0.71 | -0.34 | 2.45 | 1.00 |
|  |  | frugivoreinsectivore\_buffer100m | -0.10 | 0.06 | -0.22 | 0.02 | 1.00 |
|  |  | frugivoreinsectivore\_buffer200m | 0.03 | 0.03 | -0.03 | 0.09 | 1.00 |
|  |  | frugivoreinsectivore\_buffer500m | 0.00 | 0.01 | -0.01 | 0.01 | 1.00 |
|  |  | frugivoreinsectivore\_buffer1000m | 0.00 | 0.00 | -0.01 | 0.00 | 1.00 |
|  |  | nectarivore\_timeframepost1 | -1.23 | 1.16 | -3.64 | 0.88 | 1.00 |
|  |  | nectarivore\_timeframepost10 | -1.88 | 1.22 | -4.47 | 0.36 | 1.00 |
|  |  | nectarivore\_buffer100m | -0.15 | 0.10 | -0.34 | 0.03 | 1.00 |
|  |  | nectarivore\_buffer200m | 0.05 | 0.04 | -0.02 | 0.14 | 1.00 |
|  |  | nectarivore\_buffer500m | 0.01 | 0.01 | 0.00 | 0.03 | 1.00 |
|  |  | nectarivore\_buffer1000m | 0.00 | 0.00 | -0.01 | 0.00 | 1.00 |
|  | **Bats** | insectivores\_Intercept | 0.93 | 0.18 | 0.57 | 1.28 | 1.00 |
|  |  | frugivores\_Intercept | 1.85 | 0.12 | 1.62 | 2.08 | 1.01 |
|  |  | carnivores\_Intercept | 0.05 | 0.27 | -0.52 | 0.55 | 1.00 |
|  |  | omnivores\_Intercept | -0.31 | 0.33 | -0.98 | 0.29 | 1.01 |
|  |  | nectarivore\_Intercept | -0.48 | 0.34 | -1.19 | 0.14 | 1.01 |
|  |  | sanguinivore\_Intercept | 272.34 | 211.69 | 1.67 | 685.44 | 1.04 |
|  |  | insectivores\_timeframepost1 | 0.12 | 0.48 | -0.85 | 1.05 | 1.02 |
|  |  | insectivores\_timeframepost10 | -0.35 | 0.49 | -1.33 | 0.60 | 1.02 |
|  |  | insectivores\_buffer100m | -0.03 | 0.04 | -0.11 | 0.05 | 1.04 |
|  |  | insectivores\_buffer200m | 0.01 | 0.02 | -0.03 | 0.04 | 1.07 |
|  |  | insectivores\_buffer500m | 0.00 | 0.00 | -0.01 | 0.00 | 1.03 |
|  |  | insectivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.02 |
|  |  | frugivores\_timeframepost1 | -0.16 | 0.31 | -0.73 | 0.46 | 1.02 |
|  |  | frugivores\_timeframepost10 | -0.07 | 0.30 | -0.62 | 0.52 | 1.02 |
|  |  | frugivores\_buffer100m | 0.00 | 0.03 | -0.05 | 0.05 | 1.03 |
|  |  | frugivores\_buffer200m | -0.01 | 0.01 | -0.03 | 0.01 | 1.02 |
|  |  | frugivores\_buffer500m | 0.00 | 0.00 | -0.01 | 0.00 | 1.02 |
|  |  | frugivores\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.00 | 1.02 |
|  |  | carnivores\_timeframepost1 | -3.84 | 1.70 | -7.65 | -0.90 | 1.02 |
|  |  | carnivores\_timeframepost10 | -4.65 | 1.74 | -8.50 | -1.57 | 1.02 |
|  |  | carnivores\_buffer100m | -0.27 | 0.20 | -0.71 | 0.06 | 1.01 |
|  |  | carnivores\_buffer200m | -0.01 | 0.05 | -0.10 | 0.08 | 1.02 |
|  |  | carnivores\_buffer500m | -0.02 | 0.01 | -0.04 | 0.01 | 1.02 |
|  |  | **carnivores\_buffer1000m** | **0.01** | **0.01** | **0.00** | **0.02** | **1.02** |
|  |  | omnivores\_timeframepost1 | 0.16 | 1.11 | -2.32 | 2.15 | 1.02 |
|  |  | omnivores\_timeframepost10 | 0.12 | 1.09 | -2.15 | 2.08 | 1.02 |
|  |  | omnivores\_buffer100m | -0.05 | 0.11 | -0.29 | 0.15 | 1.04 |
|  |  | omnivores\_buffer200m | 0.02 | 0.05 | -0.07 | 0.13 | 1.04 |
|  |  | omnivores\_buffer500m | 0.00 | 0.01 | -0.02 | 0.02 | 1.04 |
|  |  | omnivores\_buffer1000m | 0.00 | 0.00 | -0.01 | 0.00 | 1.04 |
|  |  | nectarivore\_timeframepost1 | -0.76 | 0.87 | -2.64 | 0.92 | 1.01 |
|  |  | nectarivore\_timeframepost10 | -0.35 | 0.87 | -2.11 | 1.35 | 1.01 |
|  |  | nectarivore\_buffer100m | 0.00 | 0.08 | -0.16 | 0.15 | 1.06 |
|  |  | nectarivore\_buffer200m | -0.01 | 0.03 | -0.08 | 0.05 | 1.05 |
|  |  | nectarivore\_buffer500m | -0.01 | 0.01 | -0.03 | 0.00 | 1.02 |
|  |  | nectarivore\_buffer1000m | 0.00 | 0.00 | 0.00 | 0.01 | 1.03 |
|  |  | sanguinivore\_timeframepost1 | -258.01 | 718.13 | 1960.45 | 943.81 | 1.10 |
|  |  | sanguinivore\_timeframepost10 | -253.78 | 719.42 | 1921.27 | 929.02 | 1.09 |
|  |  | sanguinivore\_buffer100m | -15.84 | 53.51 | -119.10 | 86.54 | 1.03 |
|  |  | sanguinivore\_buffer200m | 5.18 | 22.36 | -36.59 | 52.07 | 1.03 |
|  |  | sanguinivore\_buffer500m | -0.98 | 5.12 | -11.33 | 8.63 | 1.06 |
|  |  | sanguinivore\_buffer1000m | -0.05 | 1.70 | -3.44 | 3.08 | 1.06 |

Table S6: Leave-One-Out Cross Validation (LOOCV) test on bird (MN & PC) and bat community response models.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Method** | **Model** | **LOOIC** | **SE** | **∆LOOIC** | **∆SE** | **formula** |
| **Understory birds** | m0.bird1 | 254.8 | 5.5 | 0.0 | 0.0 | diversity~timeframe |
|  | m0.bird2 | 257.5 | 5.0 | -1.4 | 1.4 | diversity~timeframe + buffer100m + buffer200m + buffer500m + buffer1000m |
|  | m1.bird | 269.8 | 5.9 | -7.5 | 2.5 | diversity~timeframe + buffer100m + buffer200m + buffer500m + buffer1000m + (UID + management\_unit) |
|  | m0.bird4 | 563.5 | 15.0 | -154.4 | 6.7 | canopy+understory+midstory+all ~timeframe |
|  | m0.bird6 | 580.6 | 14.0 | -162.9 | 6.3 | canopy+understory+midstory+all ~timeframe+ buffer100m + buffer200m + buffer500m + buffer1000m |
|  | m3.bird | 612.2 | 16.4 | -178.7 | 7.8 | canopy+understory+midstory+all ~timeframe+ buffer100m + buffer200m + buffer500m + buffer1000m + (UID|management\_unit) |
|  | m0.bird3 | 835.0 | 25.5 | -290.1 | 12.2 | insectivore + frugivore + carnivore + omnivore + granivore + nectarivore ~ timeframe |
|  | m2.bird | 849.5 | 25.1 | -297.4 | 12.1 | insectivore + frugivore + carnivore + omnivore + granivore + nectarivore ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m + (UID|management\_unit) |
|  | m0.bird5 | 881.2 | 33.3 | -313.2 | 16.3 | insectivore + frugivore + carnivore + omnivore + granivore + nectarivore ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m |
|  |  |  |  |  |  |  |
| **Mid-upper-level birds** | m0.bird1 | 298.0 | 7.2 | 0.0 | 0.0 | diversity~timeframe |
|  | m1.bird | 303.7 | 6.5 | -2.9 | 2.3 | diversity~timeframe + buffer100m + buffer200m + buffer500m + buffer1000m + (UID + management\_unit) |
|  | m0.bird2 | 306.7 | 7.8 | -4.4 | 2.0 | diversity ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m |
|  | m0.bird5 | 754.4 | 11.2 | -227.7 | 3.8 | canopy + understory + mid.story + all ~ timeframe |
|  | m0.bird6 | 779.3 | 12.9 | -240.7 | 5.0 | canopy+understory+midstory+all ~timeframe+ buffer100m + buffer200m + buffer500m + buffer1000m |
|  | m3.bird | 788.4 | 12.5 | -245.2 | 5.2 | canopy+understory+midstory+all ~timeframe+ buffer100m + buffer200m + buffer500m + buffer1000m + (UID|management\_unit) |
|  | m0.bird3 | 1050.0 | 16.9 | -376.0 | 7.6 | insectivores + granivores + frugivores + carnivores + omnivores + frugivore.insectivore + nectarivore ~ timeframe |
|  | m0.bird4 | 1085.5 | 22.4 | -393.8 | 10.7 | insectivores + granivores + frugivores + carnivores + omnivores + frugivore.insectivore + nectarivore ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m |
|  | m2.bird | 1115.6 | 22.6 | -408.8 | 11.1 | insectivores + granivores + frugivores + carnivores + omnivores + frugivore.insectivore + nectarivore ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m + (UID|management\_unit) |
|  |  |  |  |  |  |  |
| **Bats** | m0.bat | 233.4 | 11.5 | 0.0 | 0.0 | diversity~ timeframe |
|  | m0.bat2 | 233.7 | 11.3 | -0.1 | 1.7 | diversity~ timeframe + harvest buffers |
|  | m1.bat | 240.1 | 6.7 | -3.3 | 4.1 | diversity ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m + (UID|management\_unit) |
|  | m0.bat3 | 623.8 | 18.3 | -195.2 | 8.4 | insectivores + frugivores + carnivores + omnivores + nectarivore sanguinovore ~ timeframe |
|  | m2.bat | 662.8 | 20.5 | -214.7 | 12.1 | insectivores + frugivores + carnivores + omnivores + nectarivore ~ timeframe + buffer100m + buffer200m + buffer50mm + buffer100m + (UID+ mangement\_unit) |
|  | m0.bat4 | 681.5 | 31.2 | -224.0 | 15.8 | insectivores + frugivores + carnivores + omnivores + nectarivore sanguinovore ~ timeframe + buffer100m + buffer200m + buffer500m + buffer1000m |

Figure S1: Box plots of species diversity (H’) of birds (A & B) and bat (C) communities across timeframes

