(a) Species-level ecological characteristics **Life-history: Resource use: Specialisation: Habitat affinity:** geographical range size diel activity (nocturnal/non-nocturnal) lifespan body mass litter/clutch size diet/primary diet use of artificial habitats diet breadth habitat breadth (b) Land use and land-use intensity responses (c) Climate-change sensitivity Amphibians (980 sites) Birds (3,755 sites) Species i - implementation of CENFA Distribution Global covariance matrix from six climatic variables Mammals (2,047 sites) Reptiles (907 sites) Sensitivity for species i **Across vertebrates** Density of species Class Land use: Land-use intensity: Primary vegetation (reference) **Minimal** Secondary vegetation Light Plantation forest Intense Agriculture (pasture & cropland) Urban Climate change sensitivity (log10) n=307 (amphibians); n=2,963 (birds) n=532 (mammals); n=305 (reptiles) Pred/cts n=4,537 (amphibians) Class-specific models (PGLS): Class-specific mixed-effects models (lme4): n=10,198 (birds) sensitivity ecological \log_{10} Poccurrence ~ land use + land-use intensity + n=4,712 (mammals) characteristics phylogenetic ecological characteristics + interactions + random n=7,330 (reptiles) random effects effects

Amphibians

Mammals

Reptiles

Birds