**Supplementary Information for:**

**Model-based Impact Analysis of Climate Change and Land-use**

**Intensification on Trophic Networks**

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# Supplementary Note 1: Climate data

## Preprocessing of the climate data

'MadingleyR' requires gridded spatial data with a resolution of 0.5 degrees. The default climate input data includes gridded data for available water capacity in mm, terrestrial net primary productivity in gC/m-2/d-1, surface temperature in °C, precipitation in mm/month, ground frost frequency in days/month and diurnal temperature range in °C. Available water capacity and ground frost frequency have not been replaced. To replace the default spatial input provided by 'MadingleyR', historical and future climate data were obtained from the World Climate Research Programme (WCRP) CMIP6 climate data store, hosted by the Earth System Grid Federation (ESGF). The variables npp (net primary production on land as carbon mass flux), tas (near-surface air temperature), tasmax (maximum near-surface air temperature), tasmin (minimum near-surface air temperature) and pr (precipitation) were obtained at a monthly resolution, with a spatial resolution of 0.5 degrees. Each variable was obtained for the historical (Voldoire 2019a), the SSP1-2.6 (Voldoire 2019b) and the SSP5-8.5 (Voldoire 2019c) scenarios. A brief description of each dataset can be found in Table 1 (Supplementary Note 1.2).

The climate data were preprocessed using Climate Data Operators (CDO), version 2.0.0, from the Max Planck Institute of Meteorology (Schulzweida 2022). The 359 Gaussian grid (360 x 720 latitude/longitude) of the netCDF files was remapped to a regular longitude/latitude grid (720 x 360) using bilinear interpolation. Each variable was converted into 'MadingleyR' compatible units. Npp was converted from kgC/m-2/s-1 to gC/m-2/d-1, pr was converted from kg/m-2/s-1 to mm/month and the temperature variables were converted from K to C°. As we only used the terrestrial realm of 'Madingley', a topographical grid was created, to mask all oceanic areas of the climate data. To calculate the diurnal temperature range, tasmin was subtracted from tasmax.

The resulting netCDF files for npp, pr, tas and diurnal temperature range were further processed using RStudio version 4.1.2 (R Core Team 2023). MadingleyR requires 12 monthly raster files for each climate variable, thus the monthly bands of the netCDF raster files were extracted and converted to the TIFF file format. For each climate scenario, 30-year averages were calculated, i.e., 1984-2014 for the historical climate and 2070-2100 for the two future climate scenarios. This accounts for climate variability and averages single extreme events. The resulting TIFF files were used to replace the data in MadingleyR with the monthly bands of the years 2014 (historical dataset) and 2100 (SSP1-2.6, SSP5-8.5) for the different simulation scenarios.

## Description of the climate data

**Table 1:** Description of the climate data sets (Historical, SSP1-2.6, SSP5-8.5) (Voldoire 2019a, b, c). The variable abbreviation pr stands for precipitation, npp for net primary production as carbon mass flux, tasmax for maximum near-surface air temperature, tasmin for minimum near-surface air temperature and tas for near-surface air temperature.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Institute** | **Variable** | **Exp. ID** | **Grid label** | **Unit** | **Doi** | **Licence** |
| CNRM-CM6-1-HR | CNRM-CERFACS | pr | historical | gr | kg m-2 s-1 | <https://doi.org/10.22033/ESGF/CMIP6.4067> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | npp | historical | gr | kg m-2 s-1 | <https://doi.org/10.22033/ESGF/CMIP6.4067> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmax | historical | gr | K | <https://doi.org/10.22033/ESGF/CMIP6.4067> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmin | historical | gr | K | <https://doi.org/10.22033/ESGF/CMIP6.4067> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tas | historical | gr | K | <https://doi.org/10.22033/ESGF/CMIP6.4067> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | pr | ssp126 | gr | kg m-2 s-1 | <http://doi.org/10.22033/ESGF/CMIP6.4185> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | npp | ssp126 | gr | kg m-2 s-1 | <http://doi.org/10.22033/ESGF/CMIP6.4185> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmax | ssp126 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4185> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmin | ssp126 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4185> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tas | ssp126 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4185> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | pr | ssp585 | gr | kg m-2 s-1 | <http://doi.org/10.22033/ESGF/CMIP6.4225> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | npp | ssp585 | gr | kg m-2 s-1 | <http://doi.org/10.22033/ESGF/CMIP6.4225> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmax | ssp585 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4225> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tasmin | ssp585 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4225> | CC BY-NC-SA 4.0 |
| CNRM-CM6-1-HR | CNRM-CERFACS | tas | ssp585 | gr | K | <http://doi.org/10.22033/ESGF/CMIP6.4225> | CC BY-NC-SA 4.0 |

# Supplementary Note 2: Impacts on the biomass by functional group

## 2.1 Climate change

**Table 2:** Percentage change in biomass and bootstrapped 95 % confidence intervals for each functional group and region for the climate scenarios SSP1-2.6, and SS5-8.5, using historical climate as a control. End. denotes endotherm and ect. denotes ectotherm functional groups. Lower and upper CI show the lower and upper confidence interval.

| **Region** | **Climate** | **Functional Group** | **Percentage Change** | **Lower CI** | **Upper CI** |
| --- | --- | --- | --- | --- | --- |
| Brazil | SSP1-2.6 | End. Herbivores | 0.14 | 0.12 | 0.17 |
| Brazil | SSP1-2.6 | End. Carnivores | 0.01 | -0.02 | 0.04 |
| Brazil | SSP1-2.6 | End. Omnivores | 0.12 | 0.05 | 0.18 |
| Brazil | SSP1-2.6 | Ect. Herbivores | -0.74 | -0.84 | -0.63 |
| Brazil | SSP1-2.6 | Ect. Carnivores | -1.12 | -1.16 | -1.07 |
| Brazil | SSP1-2.6 | Ect. Omnivores | -0.51 | -0.56 | -0.45 |
| Brazil | SSP1-2.6 | Overall Biomass | -0.26 | -0.29 | -0.24 |
| Brazil | SSP5-8.5 | End. Herbivores | 0.02 | 0 | 0.05 |
| Brazil | SSP5-8.5 | End. Carnivores | -0.34 | -0.37 | -0.31 |
| Brazil | SSP5-8.5 | End. Omnivores | -0.19 | -0.25 | -0.13 |
| Brazil | SSP5-8.5 | Ect. Herbivores | -2.89 | -3 | -2.78 |
| Brazil | SSP5-8.5 | Ect. Carnivores | -3.33 | -3.37 | -3.29 |
| Brazil | SSP5-8.5 | Ect. Omnivores | -2.07 | -2.14 | -2 |
| Brazil | SSP5-8.5 | Overall Biomass | -1.15 | -1.18 | -1.12 |
| Namibia | SSP1-2.6 | End. Herbivores | -0.11 | -0.15 | -0.07 |
| Namibia | SSP1-2.6 | End. Carnivores | -0.86 | -1.05 | -0.68 |
| Namibia | SSP1-2.6 | End. Omnivores | 0.04 | -0.01 | 0.09 |
| Namibia | SSP1-2.6 | Ect. Herbivores | -3.75 | -3.91 | -3.59 |
| Namibia | SSP1-2.6 | Ect. Carnivores | -1.07 | -1.22 | -0.91 |
| Namibia | SSP1-2.6 | Ect. Omnivores | -0.45 | -0.61 | -0.29 |
| Namibia | SSP1-2.6 | Overall Biomass | -0.87 | -0.94 | -0.79 |
| Namibia | SSP5-8.5 | End. Herbivores | -0.49 | -0.55 | -0.44 |
| Namibia | SSP5-8.5 | End. Carnivores | -2.14 | -2.32 | -1.96 |
| Namibia | SSP5-8.5 | End. Omnivores | -0.16 | -0.21 | -0.11 |
| Namibia | SSP5-8.5 | Ect. Herbivores | -5.56 | -5.81 | -5.31 |
| Namibia | SSP5-8.5 | Ect. Carnivores | -3.12 | -3.27 | -2.97 |
| Namibia | SSP5-8.5 | Ect. Omnivores | -7.16 | -7.37 | -6.95 |
| Namibia | SSP5-8.5 | Overall Biomass | -2.13 | -2.22 | -2.05 |
| France | SSP1-2.6 | End. Herbivores | -0.3 | -0.39 | -0.22 |
| France | SSP1-2.6 | End. Carnivores | -0.89 | -1.12 | -0.65 |
| France | SSP1-2.6 | End. Omnivores | -0.17 | -0.31 | -0.03 |
| France | SSP1-2.6 | Ect. Herbivores | -0.98 | -1.73 | -0.25 |
| France | SSP1-2.6 | Ect. Carnivores | -0.33 | -0.87 | 0.2 |
| France | SSP1-2.6 | Ect. Omnivores | -3.59 | -4.24 | -2.95 |
| France | SSP1-2.6 | Overall Biomass | -0.47 | -0.54 | -0.4 |
| France | SSP5-8.5 | End. Herbivores | -0.27 | -0.34 | -0.19 |
| France | SSP5-8.5 | End. Carnivores | -0.65 | -0.87 | -0.43 |
| France | SSP5-8.5 | End. Omnivores | 0.24 | 0.1 | 0.37 |
| France | SSP5-8.5 | Ect. Herbivores | -7.42 | -8.16 | -6.67 |
| France | SSP5-8.5 | Ect. Carnivores | -2.56 | -3.07 | -2.05 |
| France | SSP5-8.5 | Ect. Omnivores | -6.76 | -7.35 | -6.19 |
| France | SSP5-8.5 | Overall Biomass | -0.65 | -0.72 | -0.58 |
| Finland | SSP1-2.6 | End. Herbivores | 0.12 | -0.15 | 0.4 |
| Finland | SSP1-2.6 | End. Carnivores | 0.25 | -0.17 | 0.69 |
| Finland | SSP1-2.6 | End. Omnivores | -0.04 | -0.28 | 0.2 |
| Finland | SSP1-2.6 | Ect. Herbivores | -1.1 | -1.68 | -0.52 |
| Finland | SSP1-2.6 | Ect. Carnivores | -0.68 | -1.37 | 0.02 |
| Finland | SSP1-2.6 | Ect. Omnivores | -0.53 | -1.1 | 0.05 |
| Finland | SSP1-2.6 | Overall Biomass | 0.03 | -0.14 | 0.2 |
| Finland | SSP5-8.5 | End. Herbivores | -0.65 | -0.92 | -0.37 |
| Finland | SSP5-8.5 | End. Carnivores | -0.41 | -0.84 | 0.01 |
| Finland | SSP5-8.5 | End. Omnivores | -1.29 | -1.53 | -1.06 |
| Finland | SSP5-8.5 | Ect. Herbivores | 1.75 | 1.16 | 2.33 |
| Finland | SSP5-8.5 | Ect. Carnivores | -0.94 | -1.6 | -0.25 |
| Finland | SSP5-8.5 | Ect. Omnivores | 0.03 | -0.54 | 0.61 |
| Finland | SSP5-8.5 | Overall Biomass | -0.61 | -0.78 | -0.44 |

## 2.2 Current land use

**Table 3:** Percentage change in biomass and bootstrapped 95 % confidence intervals for each functional group and region for the climate scenarios SSP1-2.6, and SS5-8.5, using the no land use climate scenarios as a control. End. denotes endotherm and ect. denotes ectotherm functional groups. Lower and upper CI show the lower and upper confidence interval.

| **Region** | **Climate** | **Functional Group** | **Percentage Change** | **Lower CI** | **Upper CI** |
| --- | --- | --- | --- | --- | --- |
| Brazil | Historical | End. Herbivores | 0.22 | 0.2 | 0.25 |
| Brazil | Historical | End. Carnivores | 0.09 | 0.05 | 0.12 |
| Brazil | Historical | End. Omnivores | -0.69 | -0.77 | -0.62 |
| Brazil | Historical | Ect. Herbivores | -1.7 | -1.84 | -1.57 |
| Brazil | Historical | Ect. Carnivores | -0.58 | -0.63 | -0.53 |
| Brazil | Historical | Ect. Omnivores | -1.21 | -1.26 | -1.15 |
| Brazil | Historical | Overall Biomass | -0.58 | -0.62 | -0.55 |
| Brazil | SSP1-2.6 | End. Herbivores | 0.33 | 0.31 | 0.36 |
| Brazil | SSP1-2.6 | End. Carnivores | 0.26 | 0.23 | 0.29 |
| Brazil | SSP1-2.6 | End. Omnivores | -0.7 | -0.77 | -0.64 |
| Brazil | SSP1-2.6 | Ect. Herbivores | -0.77 | -0.87 | -0.66 |
| Brazil | SSP1-2.6 | Ect. Carnivores | -0.46 | -0.5 | -0.42 |
| Brazil | SSP1-2.6 | Ect. Omnivores | -2.27 | -2.34 | -2.2 |
| Brazil | SSP1-2.6 | Overall Biomass | -0.53 | -0.56 | -0.51 |
| Brazil | SSP5-8.5 | End. Herbivores | 0.6 | 0.58 | 0.62 |
| Brazil | SSP5-8.5 | End. Carnivores | 0.32 | 0.3 | 0.35 |
| Brazil | SSP5-8.5 | End. Omnivores | -0.5 | -0.55 | -0.45 |
| Brazil | SSP5-8.5 | Ect. Herbivores | -0.16 | -0.26 | -0.06 |
| Brazil | SSP5-8.5 | Ect. Carnivores | -0.23 | -0.27 | -0.2 |
| Brazil | SSP5-8.5 | Ect. Omnivores | -2.19 | -2.26 | -2.12 |
| Brazil | SSP5-8.5 | Overall Biomass | -0.17 | -0.2 | -0.15 |
| Namibia | Historical | End. Herbivores | 0.26 | 0.22 | 0.29 |
| Namibia | Historical | End. Carnivores | 0.89 | 0.69 | 1.09 |
| Namibia | Historical | End. Omnivores | 0.49 | 0.43 | 0.54 |
| Namibia | Historical | Ect. Herbivores | -1.51 | -1.64 | -1.37 |
| Namibia | Historical | Ect. Carnivores | -0.91 | -1.09 | -0.74 |
| Namibia | Historical | Ect. Omnivores | -0.49 | -0.63 | -0.35 |
| Namibia | Historical | Overall Biomass | -0.12 | -0.19 | -0.05 |
| Namibia | SSP1-2.6 | End. Herbivores | -0.05 | -0.09 | -0.01 |
| Namibia | SSP1-2.6 | End. Carnivores | 0.75 | 0.58 | 0.92 |
| Namibia | SSP1-2.6 | End. Omnivores | 0.48 | 0.43 | 0.52 |
| Namibia | SSP1-2.6 | Ect. Herbivores | -0.52 | -0.69 | -0.35 |
| Namibia | SSP1-2.6 | Ect. Carnivores | -0.8 | -0.93 | -0.67 |
| Namibia | SSP1-2.6 | Ect. Omnivores | 0.17 | -0.01 | 0.34 |
| Namibia | SSP1-2.6 | Overall Biomass | 0.06 | -0.02 | 0.13 |
| Namibia | SSP5-8.5 | End. Herbivores | -0.17 | -0.25 | -0.1 |
| Namibia | SSP5-8.5 | End. Carnivores | 0.41 | 0.24 | 0.57 |
| Namibia | SSP5-8.5 | End. Omnivores | 0.32 | 0.26 | 0.38 |
| Namibia | SSP5-8.5 | Ect. Herbivores | -0.33 | -0.65 | -0.01 |
| Namibia | SSP5-8.5 | Ect. Carnivores | -0.57 | -0.7 | -0.45 |
| Namibia | SSP5-8.5 | Ect. Omnivores | 0.72 | 0.46 | 0.99 |
| Namibia | SSP5-8.5 | Overall Biomass | -0.02 | -0.13 | 0.09 |
| France | Historical | End. Herbivores | -1.05 | -1.11 | -0.99 |
| France | Historical | End. Carnivores | -1.65 | -1.83 | -1.46 |
| France | Historical | End. Omnivores | -1.92 | -2.02 | -1.81 |
| France | Historical | Ect. Herbivores | -7.99 | -8.58 | -7.39 |
| France | Historical | Ect. Carnivores | -1.69 | -2.21 | -1.16 |
| France | Historical | Ect. Omnivores | -5.17 | -5.76 | -4.58 |
| France | Historical | Overall Biomass | -1.58 | -1.65 | -1.51 |
| France | SSP1-2.6 | End. Herbivores | -0.54 | -0.62 | -0.46 |
| France | SSP1-2.6 | End. Carnivores | -1.56 | -1.79 | -1.34 |
| France | SSP1-2.6 | End. Omnivores | -1.41 | -1.55 | -1.27 |
| France | SSP1-2.6 | Ect. Herbivores | -7.54 | -8.13 | -6.94 |
| France | SSP1-2.6 | Ect. Carnivores | -1.19 | -1.68 | -0.7 |
| France | SSP1-2.6 | Ect. Omnivores | -2.57 | -3.09 | -2.03 |
| France | SSP1-2.6 | Overall Biomass | -1.12 | -1.17 | -1.06 |
| France | SSP5-8.5 | End. Herbivores | -0.63 | -0.7 | -0.56 |
| France | SSP5-8.5 | End. Carnivores | -1.47 | -1.67 | -1.26 |
| France | SSP5-8.5 | End. Omnivores | -1.51 | -1.64 | -1.39 |
| France | SSP5-8.5 | Ect. Herbivores | -3.15 | -3.83 | -2.48 |
| France | SSP5-8.5 | Ect. Carnivores | -1.18 | -1.65 | -0.71 |
| France | SSP5-8.5 | Ect. Omnivores | -1.4 | -1.9 | -0.9 |
| France | SSP5-8.5 | Overall Biomass | -0.96 | -1.01 | -0.91 |
| Finland | Historical | End. Herbivores | -0.05 | -0.32 | 0.22 |
| Finland | Historical | End. Carnivores | -0.12 | -0.53 | 0.31 |
| Finland | Historical | End. Omnivores | -0.26 | -0.48 | -0.04 |
| Finland | Historical | Ect. Herbivores | -1.59 | -2.15 | -1.03 |
| Finland | Historical | Ect. Carnivores | -0.74 | -1.42 | -0.06 |
| Finland | Historical | Ect. Omnivores | -1.05 | -1.62 | -0.49 |
| Finland | Historical | Overall Biomass | -0.19 | -0.35 | -0.03 |
| Finland | SSP1-2.6 | End. Herbivores | 0.09 | -0.15 | 0.33 |
| Finland | SSP1-2.6 | End. Carnivores | 0.26 | -0.14 | 0.65 |
| Finland | SSP1-2.6 | End. Omnivores | -0.07 | -0.29 | 0.15 |
| Finland | SSP1-2.6 | Ect. Herbivores | -0.89 | -1.49 | -0.31 |
| Finland | SSP1-2.6 | Ect. Carnivores | -0.64 | -1.29 | 0.04 |
| Finland | SSP1-2.6 | Ect. Omnivores | -0.87 | -1.44 | -0.28 |
| Finland | SSP1-2.6 | Overall Biomass | 0.01 | -0.13 | 0.16 |
| Finland | SSP5-8.5 | End. Herbivores | 0.58 | 0.34 | 0.81 |
| Finland | SSP5-8.5 | End. Carnivores | 0.59 | 0.2 | 0.97 |
| Finland | SSP5-8.5 | End. Omnivores | 0.31 | 0.07 | 0.55 |
| Finland | SSP5-8.5 | Ect. Herbivores | -2.44 | -3 | -1.86 |
| Finland | SSP5-8.5 | Ect. Carnivores | -0.4 | -1.03 | 0.25 |
| Finland | SSP5-8.5 | Ect. Omnivores | -1.62 | -2.19 | -1.05 |
| Finland | SSP5-8.5 | Overall Biomass | 0.34 | 0.19 | 0.5 |

## 2.3 Maximum land use

**Table 4:** Percentage change in biomass and bootstrapped 95% confidence intervals for each functional group and region for the historical, SSP1-2.6 and SS5-8.5 climate scenarios under maximum land use, using the current land use climate scenarios as a control. End. denotes endotherm and ect. denotes ectotherm functional groups. The lower and upper CI shows the lower and upper confidence interval.

| **Region** | **Climate** | **Functional Group** | **Percentage Change** | **Lower CI** | **Upper CI** |
| --- | --- | --- | --- | --- | --- |
| Brazil | Historical | End. Herbivores | -2.36 | -2.38 | -2.34 |
| Brazil | Historical | End. Carnivores | -6.85 | -6.88 | -6.83 |
| Brazil | Historical | End. Omnivores | -3.32 | -3.37 | -3.26 |
| Brazil | Historical | Ect. Herbivores | -7.17 | -7.28 | -7.06 |
| Brazil | Historical | Ect. Carnivores | -4.97 | -5 | -4.93 |
| Brazil | Historical | Ect. Omnivores | -10.75 | -10.79 | -10.71 |
| Brazil | Historical | Overall Biomass | -4.71 | -4.73 | -4.69 |
| Brazil | SSP1-2.6 | End. Herbivores | -2.52 | -2.54 | -2.5 |
| Brazil | SSP1-2.6 | End. Carnivores | -7.3 | -7.33 | -7.28 |
| Brazil | SSP1-2.6 | End. Omnivores | -3.39 | -3.43 | -3.35 |
| Brazil | SSP1-2.6 | Ect. Herbivores | -9.36 | -9.42 | -9.3 |
| Brazil | SSP1-2.6 | Ect. Carnivores | -5.23 | -5.26 | -5.21 |
| Brazil | SSP1-2.6 | Ect. Omnivores | -9.03 | -9.08 | -8.98 |
| Brazil | SSP1-2.6 | Overall Biomass | -4.67 | -4.69 | -4.65 |
| Brazil | SSP5-8.5 | End. Herbivores | -2.72 | -2.73 | -2.71 |
| Brazil | SSP5-8.5 | End. Carnivores | -7.61 | -7.63 | -7.59 |
| Brazil | SSP5-8.5 | End. Omnivores | -3.67 | -3.71 | -3.64 |
| Brazil | SSP5-8.5 | Ect. Herbivores | -2.3 | -2.37 | -2.23 |
| Brazil | SSP5-8.5 | Ect. Carnivores | -5.56 | -5.59 | -5.53 |
| Brazil | SSP5-8.5 | Ect. Omnivores | -5.14 | -5.18 | -5.1 |
| Brazil | SSP5-8.5 | Overall Biomass | -3.44 | -3.45 | -3.42 |
| Namibia | Historical | End. Herbivores | -3.44 | -3.5 | -3.38 |
| Namibia | Historical | End. Carnivores | -14.45 | -14.57 | -14.32 |
| Namibia | Historical | End. Omnivores | -20.47 | -20.53 | -20.41 |
| Namibia | Historical | Ect. Herbivores | -3.11 | -3.21 | -3.01 |
| Namibia | Historical | Ect. Carnivores | -4.34 | -4.47 | -4.21 |
| Namibia | Historical | Ect. Omnivores | -4.86 | -4.96 | -4.76 |
| Namibia | Historical | Overall Biomass | -4.7 | -4.76 | -4.64 |
| Namibia | SSP1-2.6 | End. Herbivores | -5.72 | -5.78 | -5.65 |
| Namibia | SSP1-2.6 | End. Carnivores |  |  |  |
| Namibia | SSP1-2.6 | End. Omnivores |  |  |  |
| Namibia | SSP1-2.6 | Ect. Herbivores | 0.38 | -3.21 | -3.01 |
| Namibia | SSP1-2.6 | Ect. Carnivores | -5.48 | -4.47 | -4.21 |
| Namibia | SSP1-2.6 | Ect. Omnivores | -4.45 | -4.58 | -4.33 |
| Namibia | SSP1-2.6 | Overall Biomass | -5.16 | -5.23 | -5.1 |
| Namibia | SSP5-8.5 | End. Herbivores | -20.47 | -20.54 | -20.4 |
| Namibia | SSP5-8.5 | End. Carnivores |  |  |  |
| Namibia | SSP5-8.5 | End. Omnivores |  |  |  |
| Namibia | SSP5-8.5 | Ect. Herbivores | -0.79 | -1.01 | -0.58 |
| Namibia | SSP5-8.5 | Ect. Carnivores | -18.03 | -18.11 | -17.94 |
| Namibia | SSP5-8.5 | Ect. Omnivores | -2.06 | -2.24 | -1.88 |
| Namibia | SSP5-8.5 | Overall Biomass | -9.04 | -9.12 | -8.95 |
| France | Historical | End. Herbivores | -3.46 | -3.51 | -3.41 |
| France | Historical | End. Carnivores | -8.45 | -8.57 | -8.32 |
| France | Historical | End. Omnivores | -5.32 | -5.41 | -5.24 |
| France | Historical | Ect. Herbivores | -0.89 | -1.35 | -0.43 |
| France | Historical | Ect. Carnivores | -5.9 | -6.3 | -5.5 |
| France | Historical | Ect. Omnivores | -0.89 | -1.33 | -0.44 |
| France | Historical | Overall Biomass | -4.17 | -4.24 | -4.1 |
| France | SSP1-2.6 | End. Herbivores | -2.49 | -2.55 | -2.43 |
| France | SSP1-2.6 | End. Carnivores | -10.51 | -10.65 | -10.37 |
| France | SSP1-2.6 | End. Omnivores | -5.89 | -6 | -5.79 |
| France | SSP1-2.6 | Ect. Herbivores | -0.03 | -0.47 | 0.41 |
| France | SSP1-2.6 | Ect. Carnivores | -9.24 | -9.58 | -8.89 |
| France | SSP1-2.6 | Ect. Omnivores | 0.03 | -0.36 | 0.44 |
| France | SSP1-2.6 | Overall Biomass | -3.53 | -3.6 | -3.47 |
| France | SSP5-8.5 | End. Herbivores | -3 | -3.06 | -2.94 |
| France | SSP5-8.5 | End. Carnivores | -9.34 | -9.47 | -9.2 |
| France | SSP5-8.5 | End. Omnivores | -6.36 | -6.45 | -6.26 |
| France | SSP5-8.5 | Ect. Herbivores | 0.16 | -0.28 | 0.59 |
| France | SSP5-8.5 | Ect. Carnivores | -17.49 | -17.82 | -17.16 |
| France | SSP5-8.5 | Ect. Omnivores | -0.71 | -1.11 | -0.3 |
| France | SSP5-8.5 | Overall Biomass | -4.02 | -4.09 | -3.96 |
| Finland | Historical | End. Herbivores | -2.57 | -2.76 | -2.39 |
| Finland | Historical | End. Carnivores |  |  |  |
| Finland | Historical | End. Omnivores | -12.37 | -6.45 | -6.26 |
| Finland | Historical | Ect. Herbivores | 2.24 | -0.28 | 0.59 |
| Finland | Historical | Ect. Carnivores | -7.28 | -7.73 | -6.82 |
| Finland | Historical | Ect. Omnivores | 0.84 | 0.39 | 1.29 |
| Finland | Historical | Overall Biomass | -4.04 | -4.18 | -3.91 |
| Finland | SSP1-2.6 | End. Herbivores | -2.15 | -2.33 | -1.97 |
| Finland | SSP1-2.6 | End. Carnivores |  |  |  |
| Finland | SSP1-2.6 | End. Omnivores | -12.9 | -13.06 | -12.74 |
| Finland | SSP1-2.6 | Ect. Herbivores | 2.3 | 1.81 | 2.77 |
| Finland | SSP1-2.6 | Ect. Carnivores | -7.5 | -7.96 | -7.04 |
| Finland | SSP1-2.6 | Ect. Omnivores | 0.76 | 0.29 | 1.23 |
| Finland | SSP1-2.6 | Overall Biomass | -3.78 | -3.91 | -3.64 |
| Finland | SSP5-8.5 | End. Herbivores | -1.39 | -1.58 | -1.21 |
| Finland | SSP5-8.5 | End. Carnivores |  |  |  |
| Finland | SSP5-8.5 | End. Omnivores | -10.69 | -13.06 | -12.74 |
| Finland | SSP5-8.5 | Ect. Herbivores | 0.67 | 0.24 | 1.12 |
| Finland | SSP5-8.5 | Ect. Carnivores | -8.3 | -8.72 | -7.88 |
| Finland | SSP5-8.5 | Ect. Omnivores | 0.46 | 0.01 | 0.9 |
| Finland | SSP5-8.5 | Overall Biomass | -3.08 | -3.22 | -2.94 |

# Supplementary Note 3: Impact on the abundance-body mass relationship for non-aggregated functional groups

## 3.1 Slope heatmap for non-aggregated functional groups

Figure 1 shows the slopes of the linear regression models in a heatmap plot for each region, climate scenario and simulation experiment. The functional groups are not aggregated, separating ectotherm functional groups further by their reproduction type into semelparous (s.), and iteroparous (it.) species. The slope values range from a strongly negative relationship (-5.93) for endotherm carnivores in a SSP5-8.5 climate to a positive relationship (+1.21) for ectotherm iteroparous herbivores in SSP5-8.5, both in Namibia, in the climate simulation experiment.

In general, the slopes across all functional groups are more negative in Namibia and France compared to the other regions, especially in the historical climate and current land use simulation experiments. Apart from that, in Brazil and Finland, the maximum land use simulation experiment leads to an increasing steepness of the slope (decreasing slope values). This implies a shift towards smaller organisms in almost all functional groups and climate scenarios compared to the other two simulation experiments ((1) climate and (2) current land use). While this may not be true for Namibia, the same pattern can also be observed in France for iteroparous ectotherm carnivores and all endotherm functional groups. In Namibia in the SSP5-8.5 climate, maximizing land use leads to a change in sign from negative to positive, indicating a shift towards larger body sizes for ectotherm carnivores (it.), ectotherm herbivores (it.), ectotherm omnivores (it.) and endotherm herbivores, while ectotherm carnivores (s.), endotherm carnivores and omnivores become extinct.



**Figure 1:** Heatmap of the slopes of the linear regression models for each region, functional group, climate scenario and simulation experiment. The nine functional groups of the model are divided into endotherm and ectotherm, while the ectotherm functional groups are further divided into iteroparous (it.) and semelparous (s.) reproductive types. A negative slope indicates decreasing body mass with increasing abundance, and a positive slope indicates increasing body mass with decreasing abundance.

## 3.2 Regression results for climate simulation

**Table 5:** Results of the linear regression for each region, climate, and functional group for the climate simulation experiment for all functional groups. Ectotherm functional groups are further separated by reproduction type in iteroparous (i.), and semelparous (s.) functional groups.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores (i.) | 6.72 | -1.03 | 0.75 | -1.38 | 0.45 | -2.51 | 0.17008 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.56 | 0.43 | 0.69 | 0.63 | 1.8 | -0.94 | 0.53295 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (i.) | 5.35 | 0.54 | 0.44 | 1.23 | 1.41 | -0.33 | 0.22280 |
| Brazil | Historical | Ectotherm Carnivores (s.) | 6.32 | -0.5 | 0.19 | -2.58 | -0.12 | -0.88 | 0.01138 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (s.) | 6.33 | -0.47 | 0.19 | -2.43 | -0.09 | -0.85 | 0.01707 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.93 | -0.53 | 0.18 | -2.86 | -0.16 | -0.89 | 0.00527 |
| Brazil | Historical | Ectotherm Herbivores (i.) | 5.79 | 0.9 | 0.45 | 1.99 | 1.8 | 0 | 0.04951 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (i.) | 6.1 | -0.04 | 0.33 | -0.11 | 0.62 | -0.69 | 0.91149 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.85 | 0.6 | 0.35 | 1.71 | 1.29 | -0.1 | 0.09111 |
| Brazil | Historical | Ectotherm Herbivores (s.) | 9.22 | -0.18 | 0.48 | -0.37 | 0.77 | -1.12 | 0.71362 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (s.) | 8.65 | -0.34 | 0.46 | -0.74 | 0.57 | -1.26 | 0.45884 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (s.) | 8.59 | -0.29 | 0.6 | -0.47 | 0.91 | -1.48 | 0.63635 |
| Brazil | Historical | Ectotherm Omnivores (i.) | 5.92 | 0.82 | 0.64 | 1.29 | 2.1 | -0.45 | 0.20188 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (i.) | 5.98 | -0.03 | 0.57 | -0.06 | 1.1 | -1.17 | 0.95145 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (i.) | 5.82 | 0 | 0.49 | 0 | 0.98 | -0.98 | 0.99652 |
| Brazil | Historical | Ectotherm Omnivores (s.) | 9.89 | 0.1 | 0.41 | 0.23 | 0.92 | -0.73 | 0.81778 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (s.) | 9.72 | -0.08 | 0.45 | -0.18 | 0.81 | -0.96 | 0.86124 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (s.) | 10.3 | 0.45 | 0.53 | 0.85 | 1.5 | -0.6 | 0.39861 |
| Brazil | Historical | Endotherm Carnivores (i.) | 6.09 | -0.28 | 0.41 | -0.68 | 0.53 | -1.08 | 0.49687 |
| Brazil | SSP1-2.6 | Endotherm Carnivores (i.) | 7.53 | -1.35 | 0.36 | -3.76 | -0.64 | -2.06 | 0.00030 |
| Brazil | SSP5-8.5 | Endotherm Carnivores (i.) | 6.26 | -0.51 | 0.32 | -1.58 | 0.13 | -1.16 | 0.11639 |
| Brazil | Historical | Endotherm Herbivores (i.) | 6.55 | 0.2 | 0.22 | 0.89 | 0.64 | -0.25 | 0.37699 |
| Brazil | SSP1-2.6 | Endotherm Herbivores (i.) | 6.52 | 0.27 | 0.23 | 1.17 | 0.72 | -0.19 | 0.24297 |
| Brazil | SSP5-8.5 | Endotherm Herbivores (i.) | 6.55 | 0.16 | 0.23 | 0.69 | 0.62 | -0.3 | 0.49018 |
| Brazil | Historical | Endotherm Omnivores (i.) | 5.55 | 0.81 | 0.64 | 1.26 | 2.07 | -0.46 | 0.20919 |
| Brazil | SSP1-2.6 | Endotherm Omnivores (i.) | 5.83 | 0.34 | 0.66 | 0.52 | 1.65 | -0.97 | 0.60397 |
| Brazil | SSP5-8.5 | Endotherm Omnivores (i.) | 5.63 | 0.63 | 0.6 | 1.04 | 1.82 | -0.57 | 0.30073 |
| Finland | Historical | Ectotherm Carnivores (i.) | 5.79 | -0.59 | 0.13 | -4.59 | -0.33 | -0.84 | 1.4e-05 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.53 | -0.06 | 0.12 | -0.52 | 0.18 | -0.31 | 0.60467 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (i.) | 5.11 | 0.83 | 0.17 | 4.8 | 1.17 | 0.48 | 5.9e-06 |
| Finland | Historical | Ectotherm Carnivores (s.) | 6.13 | -0.24 | 0.17 | -1.37 | 0.11 | -0.59 | 0.17430 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (s.) | 6.2 | -0.14 | 0.13 | -1.09 | 0.12 | -0.41 | 0.28006 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.81 | -0.43 | 0.26 | -1.67 | 0.08 | -0.94 | 0.09741 |
| Finland | Historical | Ectotherm Herbivores (i.) | 5.64 | -0.74 | 0.19 | -3.88 | -0.36 | -1.12 | 0.00019 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (i.) | 5.68 | -0.5 | 0.13 | -3.96 | -0.25 | -0.75 | 0.00015 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (i.) | 6.08 | 1.21 | 0.42 | 2.91 | 2.04 | 0.38 | 0.00452 |
| Finland | Historical | Ectotherm Herbivores (s.) | 7.38 | -0.08 | 0.25 | -0.33 | 0.42 | -0.58 | 0.74402 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (s.) | 6.41 | -0.6 | 0.18 | -3.31 | -0.24 | -0.96 | 0.00131 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (s.) | 7.01 | -0.22 | 0.62 | -0.35 | 1.02 | -1.46 | 0.72343 |
| Finland | Historical | Ectotherm Omnivores (i.) | 5.39 | -0.76 | 0.11 | -6.78 | -0.54 | -0.98 | 1.1e-09 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (i.) | 5.57 | -0.18 | 0.08 | -2.26 | -0.02 | -0.34 | 0.02638 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (i.) | 6.17 | 1.18 | 0.23 | 5.17 | 1.63 | 0.72 | 1.4e-06 |
| Finland | Historical | Ectotherm Omnivores (s.) | 6.91 | -0.19 | 0.14 | -1.3 | 0.1 | -0.47 | 0.19559 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (s.) | 7.33 | 0.06 | 0.16 | 0.41 | 0.38 | -0.25 | 0.68622 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (s.) | 7.42 | 0.2 | 0.25 | 0.82 | 0.69 | -0.29 | 0.41151 |
| Finland | Historical | Endotherm Carnivores (i.) | 4.51 | -0.15 | 0.05 | -3.06 | -0.05 | -0.25 | 0.00289 |
| Finland | SSP1-2.6 | Endotherm Carnivores (i.) | 4.45 | -0.09 | 0.08 | -1.08 | 0.08 | -0.26 | 0.28175 |
| Finland | SSP5-8.5 | Endotherm Carnivores (i.) | 4.75 | -0.45 | 0.09 | -5.08 | -0.27 | -0.62 | 2.0e-06 |
| Finland | Historical | Endotherm Herbivores (i.) | 5.18 | 0.46 | 0.16 | 2.9 | 0.78 | 0.15 | 0.00470 |
| Finland | SSP1-2.6 | Endotherm Herbivores (i.) | 5.07 | 0.51 | 0.15 | 3.36 | 0.8 | 0.21 | 0.00114 |
| Finland | SSP5-8.5 | Endotherm Herbivores (i.) | 4.53 | 0.69 | 0.18 | 3.76 | 1.06 | 0.33 | 0.00030 |
| Finland | Historical | Endotherm Omnivores (i.) | 5.12 | -0.09 | 0.15 | -0.6 | 0.21 | -0.39 | 0.54819 |
| Finland | SSP1-2.6 | Endotherm Omnivores (i.) | 4.83 | 0.28 | 0.19 | 1.49 | 0.66 | -0.1 | 0.14090 |
| Finland | SSP5-8.5 | Endotherm Omnivores (i.) | 4.91 | 0.07 | 0.18 | 0.4 | 0.42 | -0.28 | 0.69207 |
| Namibia | Historical | Ectotherm Carnivores (i.) | 8.58 | -3.41 | 0.49 | -6.99 | -2.44 | -4.38 | 3.4e-10 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.74 | -1.34 | 0.15 | -9.2 | -1.05 | -1.63 | 6.8e-15 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores (i.) | 6.4 | -1.59 | 0.49 | -3.26 | -0.62 | -2.57 | 0.00154 |
| Namibia | Historical | Ectotherm Carnivores (s.) | 4.39 | -1.63 | 0.12 | -13.76 | -1.39 | -1.86 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (s.) | 4.33 | -1.62 | 0.14 | -11.85 | -1.35 | -1.89 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.04 | -0.91 | 0.13 | -6.73 | -0.64 | -1.17 | 1.2e-09 |
| Namibia | Historical | Ectotherm Herbivores (i.) | 6.05 | -0.44 | 0.66 | -0.67 | 0.86 | -1.74 | 0.50611 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (i.) | 4.48 | 0.54 | 0.15 | 3.67 | 0.84 | 0.25 | 0.00040 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.68 | 0 | 0.6 | 0.01 | 1.19 | -1.18 | 0.99463 |
| Namibia | Historical | Ectotherm Herbivores (s.) | 4.44 | -2.02 | 0.24 | -8.25 | -1.53 | -2.5 | 7.3e-13 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (s.) | 3.22 | -2.78 | 0.63 | -4.41 | -1.53 | -4.04 | 2.7e-05 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (s.) | 5.08 | -1.71 | 0.24 | -7.15 | -1.23 | -2.18 | 1.6e-10 |
| Namibia | Historical | Ectotherm Omnivores (i.) | 5.7 | -0.24 | 0.56 | -0.43 | 0.86 | -1.35 | 0.66495 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.68 | 0.37 | 0.14 | 2.58 | 0.65 | 0.08 | 0.01134 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (i.) | 5.49 | -0.15 | 0.53 | -0.28 | 0.9 | -1.2 | 0.77779 |
| Namibia | Historical | Ectotherm Omnivores (s.) | 5.48 | -2.69 | 0.52 | -5.18 | -1.66 | -3.72 | 1.2e-06 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (s.) | 3.31 | -5.88 | 1.22 | -4.81 | -3.45 | -8.31 | 5.6e-06 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (s.) | 4.3 | -3.4 | 0.43 | -7.99 | -2.56 | -4.25 | 2.7e-12 |
| Namibia | Historical | Endotherm Carnivores (i.) | 13.17 | -5.16 | 0.66 | -7.86 | -3.86 | -6.46 | 4.9e-12 |
| Namibia | SSP1-2.6 | Endotherm Carnivores (i.) | 4.79 | -0.6 | 0.17 | -3.59 | -0.27 | -0.93 | 0.00052 |
| Namibia | SSP5-8.5 | Endotherm Carnivores (i.) | 14.02 | -5.93 | 0.71 | -8.35 | -4.52 | -7.34 | 4.6e-13 |
| Namibia | Historical | Endotherm Herbivores (i.) | 7.39 | -1.09 | 0.7 | -1.56 | 0.3 | -2.47 | 0.12249 |
| Namibia | SSP1-2.6 | Endotherm Herbivores (i.) | 3.98 | 0.41 | 0.18 | 2.32 | 0.76 | 0.06 | 0.02232 |
| Namibia | SSP5-8.5 | Endotherm Herbivores (i.) | 4.65 | 0.97 | 0.69 | 1.41 | 2.33 | -0.4 | 0.16283 |
| Namibia | Historical | Endotherm Omnivores (i.) | 8.82 | -3.39 | 0.59 | -5.72 | -2.21 | -4.57 | 1.2e-07 |
| Namibia | SSP1-2.6 | Endotherm Omnivores (i.) | 4 | 0.64 | 0.22 | 2.9 | 1.09 | 0.2 | 0.00462 |
| Namibia | SSP5-8.5 | Endotherm Omnivores (i.) | 7.68 | -2.36 | 0.64 | -3.71 | -1.1 | -3.62 | 0.00034 |
| France | Historical | Ectotherm Carnivores (i.) | 6.33 | -1.81 | 0.33 | -5.48 | -1.15 | -2.46 | 4.5e-07 |
| France | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.68 | -1.21 | 0.26 | -4.58 | -0.68 | -1.73 | 1.7e-05 |
| France | SSP5-8.5 | Ectotherm Carnivores (i.) | 4.96 | -0.24 | 0.24 | -0.98 | 0.24 | -0.72 | 0.32766 |
| France | Historical | Ectotherm Carnivores (s.) | 4.69 | -1.95 | 0.24 | -8.28 | -1.48 | -2.41 | 1.9e-12 |
| France | SSP1-2.6 | Ectotherm Carnivores (s.) | 5.22 | -0.95 | 0.24 | -3.88 | -0.46 | -1.44 | 0.00021 |
| France | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.22 | -0.74 | 0.24 | -3.07 | -0.26 | -1.22 | 0.00290 |
| France | Historical | Ectotherm Herbivores (i.) | 5.1 | -3.22 | 0.41 | -7.93 | -2.41 | -4.03 | 9.7e-12 |
| France | SSP1-2.6 | Ectotherm Herbivores (i.) | 4.84 | -1.8 | 0.38 | -4.72 | -1.04 | -2.56 | 9.4e-06 |
| France | SSP5-8.5 | Ectotherm Herbivores (i.) | 4.71 | -1.41 | 0.39 | -3.57 | -0.62 | -2.19 | 0.00060 |
| France | Historical | Ectotherm Herbivores (s.) | 3.47 | -2.55 | 0.56 | -4.56 | -1.44 | -3.66 | 1.8e-05 |
| France | SSP1-2.6 | Ectotherm Herbivores (s.) | 2.77 | -2.85 | 1.05 | -2.73 | -0.77 | -4.93 | 0.00780 |
| France | SSP5-8.5 | Ectotherm Herbivores (s.) | 2.14 | -3.35 | 0.82 | -4.1 | -1.73 | -4.98 | 9.6e-05 |
| France | Historical | Ectotherm Omnivores (i.) | 4.36 | -3.31 | 0.67 | -4.94 | -1.98 | -4.65 | 4.0e-06 |
| France | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.56 | -1.49 | 0.42 | -3.52 | -0.65 | -2.33 | 0.00071 |
| France | SSP5-8.5 | Ectotherm Omnivores (i.) | 4.72 | -0.65 | 0.56 | -1.16 | 0.47 | -1.78 | 0.24994 |
| France | Historical | Ectotherm Omnivores (s.) | 2.82 | -3.23 | 0.52 | -6.23 | -2.2 | -4.26 | 1.9e-08 |
| France | SSP1-2.6 | Ectotherm Omnivores (s.) | 5.73 | -0.58 | 0.48 | -1.23 | 0.36 | -1.53 | 0.22404 |
| France | SSP5-8.5 | Ectotherm Omnivores (s.) | 5.65 | -0.65 | 0.37 | -1.78 | 0.08 | -1.38 | 0.07833 |
| France | Historical | Endotherm Carnivores (i.) | 5.52 | -0.85 | 0.2 | -4.29 | -0.46 | -1.25 | 4.8e-05 |
| France | SSP1-2.6 | Endotherm Carnivores (i.) | 5.57 | -0.92 | 0.15 | -6.05 | -0.61 | -1.22 | 4.2e-08 |
| France | SSP5-8.5 | Endotherm Carnivores (i.) | 5.01 | -0.53 | 0.17 | -3.17 | -0.2 | -0.87 | 0.00215 |
| France | Historical | Endotherm Herbivores (i.) | 6.57 | -0.55 | 0.21 | -2.64 | -0.14 | -0.96 | 0.00992 |
| France | SSP1-2.6 | Endotherm Herbivores (i.) | 5.9 | -0.26 | 0.21 | -1.22 | 0.16 | -0.68 | 0.22503 |
| France | SSP5-8.5 | Endotherm Herbivores (i.) | 5.83 | -0.19 | 0.19 | -0.98 | 0.19 | -0.57 | 0.32881 |
| France | Historical | Endotherm Omnivores (i.) | 5.17 | 0.23 | 0.42 | 0.56 | 1.07 | -0.6 | 0.57864 |
| France | SSP1-2.6 | Endotherm Omnivores (i.) | 4.73 | 0.52 | 0.4 | 1.32 | 1.31 | -0.27 | 0.19152 |
| France | SSP5-8.5 | Endotherm Omnivores (i.) | 4.87 | 0.42 | 0.41 | 1.02 | 1.24 | -0.4 | 0.30908 |

## 3.3 Regression results for current land use simulation

**Table 6:** Results of the linear regression for each region, climate, and functional group for the current land use simulation experiment for all functional groups. Ectotherm functional groups are further separated by reproduction type in iteroparous (i.), and semelparous (s.) functional groups.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores (i.) | 5.99 | -0.11 | 0.74 | -0.14 | 1.36 | -1.57 | 0.88641 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (i.) | 6.66 | -1.32 | 0.53 | -2.48 | -0.26 | -2.38 | 0.01491 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (i.) | 5.46 | 0.05 | 0.44 | 0.12 | 0.92 | -0.81 | 0.90598 |
| Brazil | Historical | Ectotherm Carnivores (s.) | 6.01 | -0.7 | 0.15 | -4.62 | -0.4 | -1.01 | 1.2e-05 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (s.) | 6.05 | -0.53 | 0.15 | -3.6 | -0.24 | -0.82 | 0.00053 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.85 | -0.32 | 0.13 | -2.43 | -0.06 | -0.58 | 0.01743 |
| Brazil | Historical | Ectotherm Herbivores (i.) | 6.32 | -0.27 | 0.61 | -0.44 | 0.94 | -1.49 | 0.65868 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (i.) | 6.05 | 0.3 | 0.44 | 0.68 | 1.18 | -0.58 | 0.50103 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.89 | 0.44 | 0.33 | 1.33 | 1.09 | -0.22 | 0.18728 |
| Brazil | Historical | Ectotherm Herbivores (s.) | 8.7 | -0.25 | 0.29 | -0.88 | 0.32 | -0.83 | 0.38331 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (s.) | 7.45 | -0.84 | 0.3 | -2.82 | -0.25 | -1.43 | 0.00593 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (s.) | 7.95 | -0.47 | 0.48 | -1 | 0.47 | -1.42 | 0.32206 |
| Brazil | Historical | Ectotherm Omnivores (i.) | 5.89 | 0.69 | 0.54 | 1.27 | 1.76 | -0.39 | 0.20667 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (i.) | 6.02 | 0.07 | 0.75 | 0.09 | 1.56 | -1.42 | 0.92468 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (i.) | 5.85 | 0.47 | 0.57 | 0.83 | 1.6 | -0.66 | 0.40955 |
| Brazil | Historical | Ectotherm Omnivores (s.) | 9.95 | 0.15 | 0.37 | 0.4 | 0.89 | -0.59 | 0.69041 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (s.) | 9.47 | 0.1 | 0.41 | 0.25 | 0.92 | -0.72 | 0.80631 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (s.) | 8.44 | -0.94 | 0.33 | -2.82 | -0.28 | -1.61 | 0.00589 |
| Brazil | Historical | Endotherm Carnivores (i.) | 6.07 | -0.31 | 0.26 | -1.2 | 0.2 | -0.82 | 0.23216 |
| Brazil | SSP1-2.6 | Endotherm Carnivores (i.) | 6.01 | -0.3 | 0.21 | -1.4 | 0.12 | -0.72 | 0.16363 |
| Brazil | SSP5-8.5 | Endotherm Carnivores (i.) | 6.29 | -0.49 | 0.19 | -2.57 | -0.11 | -0.88 | 0.01176 |
| Brazil | Historical | Endotherm Herbivores (i.) | 6.58 | 0.17 | 0.22 | 0.77 | 0.6 | -0.27 | 0.44360 |
| Brazil | SSP1-2.6 | Endotherm Herbivores (i.) | 6.87 | -0.04 | 0.22 | -0.19 | 0.4 | -0.49 | 0.85184 |
| Brazil | SSP5-8.5 | Endotherm Herbivores (i.) | 6.3 | 0.36 | 0.16 | 2.23 | 0.68 | 0.04 | 0.02837 |
| Brazil | Historical | Endotherm Omnivores (i.) | 5.64 | 0.53 | 0.57 | 0.93 | 1.67 | -0.6 | 0.35430 |
| Brazil | SSP1-2.6 | Endotherm Omnivores (i.) | 5.91 | 0.25 | 0.53 | 0.48 | 1.3 | -0.79 | 0.63242 |
| Brazil | SSP5-8.5 | Endotherm Omnivores (i.) | 5.5 | 0.7 | 0.5 | 1.4 | 1.7 | -0.29 | 0.16516 |
| Finland | Historical | Ectotherm Carnivores (i.) | 5.74 | -0.58 | 0.1 | -5.94 | -0.38 | -0.77 | 5.0e-08 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.54 | -0.19 | 0.08 | -2.25 | -0.02 | -0.36 | 0.02656 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (i.) | 4.95 | 1 | 0.14 | 7.09 | 1.28 | 0.72 | 2.6e-10 |
| Finland | Historical | Ectotherm Carnivores (s.) | 6.13 | -0.21 | 0.13 | -1.69 | 0.04 | -0.46 | 0.09342 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (s.) | 6.27 | -0.05 | 0.12 | -0.43 | 0.19 | -0.29 | 0.66951 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.55 | -0.68 | 0.18 | -3.85 | -0.33 | -1.03 | 0.00022 |
| Finland | Historical | Ectotherm Herbivores (i.) | 5.6 | -0.66 | 0.15 | -4.36 | -0.36 | -0.96 | 3.3e-05 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (i.) | 5.62 | -0.46 | 0.09 | -5.38 | -0.29 | -0.64 | 5.5e-07 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.93 | 1.16 | 0.41 | 2.85 | 1.96 | 0.35 | 0.00536 |
| Finland | Historical | Ectotherm Herbivores (s.) | 6.31 | -0.58 | 0.17 | -3.44 | -0.25 | -0.92 | 0.00089 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (s.) | 6.92 | -0.28 | 0.13 | -2.05 | -0.01 | -0.54 | 0.04304 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (s.) | 4.25 | -1.51 | 0.35 | -4.34 | -0.82 | -2.2 | 3.7e-05 |
| Finland | Historical | Ectotherm Omnivores (i.) | 5.39 | -0.65 | 0.1 | -6.75 | -0.46 | -0.85 | 1.2e-09 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (i.) | 5.42 | -0.41 | 0.06 | -6.31 | -0.28 | -0.54 | 9.3e-09 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (i.) | 6.03 | 1.15 | 0.22 | 5.34 | 1.58 | 0.72 | 6.6e-07 |
| Finland | Historical | Ectotherm Omnivores (s.) | 6.86 | -0.17 | 0.11 | -1.58 | 0.04 | -0.39 | 0.11743 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (s.) | 7.14 | -0.01 | 0.13 | -0.09 | 0.24 | -0.26 | 0.92737 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (s.) | 6.08 | -0.53 | 0.17 | -3.1 | -0.19 | -0.87 | 0.00253 |
| Finland | Historical | Endotherm Carnivores (i.) | 4.45 | -0.1 | 0.06 | -1.61 | 0.02 | -0.22 | 0.11135 |
| Finland | SSP1-2.6 | Endotherm Carnivores (i.) | 4.24 | 0.09 | 0.06 | 1.44 | 0.21 | -0.03 | 0.15217 |
| Finland | SSP5-8.5 | Endotherm Carnivores (i.) | 4.54 | -0.26 | 0.1 | -2.66 | -0.07 | -0.45 | 0.00919 |
| Finland | Historical | Endotherm Herbivores (i.) | 5.68 | -0.01 | 0.14 | -0.09 | 0.26 | -0.29 | 0.93053 |
| Finland | SSP1-2.6 | Endotherm Herbivores (i.) | 5.25 | 0.27 | 0.14 | 1.94 | 0.55 | -0.01 | 0.05572 |
| Finland | SSP5-8.5 | Endotherm Herbivores (i.) | 4.64 | 0.58 | 0.16 | 3.53 | 0.9 | 0.25 | 0.00066 |
| Finland | Historical | Endotherm Omnivores (i.) | 5.01 | 0.02 | 0.17 | 0.09 | 0.35 | -0.32 | 0.92829 |
| Finland | SSP1-2.6 | Endotherm Omnivores (i.) | 5.19 | -0.15 | 0.22 | -0.66 | 0.29 | -0.59 | 0.51059 |
| Finland | SSP5-8.5 | Endotherm Omnivores (i.) | 4.93 | 0 | 0.16 | -0.03 | 0.32 | -0.33 | 0.97595 |
| Namibia | Historical | Ectotherm Carnivores (i.) | 9.02 | -3.74 | 0.54 | -6.91 | -2.67 | -4.82 | 4.9e-10 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (i.) | 6.29 | -1.81 | 0.14 | -12.58 | -1.53 | -2.1 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores (i.) | 6.28 | -1.36 | 0.54 | -2.51 | -0.29 | -2.44 | 0.01363 |
| Namibia | Historical | Ectotherm Carnivores (s.) | 4.32 | -1.29 | 0.16 | -8.13 | -0.98 | -1.61 | 1.3e-12 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (s.) | 4.45 | -0.91 | 0.21 | -4.41 | -0.5 | -1.32 | 3.0e-05 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores (s.) | 4.56 | -1.19 | 0.17 | -6.86 | -0.84 | -1.54 | 5.5e-09 |
| Namibia | Historical | Ectotherm Herbivores (i.) | 5.85 | -0.13 | 0.65 | -0.2 | 1.16 | -1.41 | 0.84359 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (i.) | 4.59 | 0.36 | 0.19 | 1.89 | 0.73 | -0.02 | 0.06196 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.55 | 0.17 | 0.67 | 0.26 | 1.51 | -1.16 | 0.79670 |
| Namibia | Historical | Ectotherm Herbivores (s.) | 4.46 | -1.67 | 0.21 | -7.91 | -1.25 | -2.08 | 3.9e-12 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (s.) | 5.28 | -0.84 | 0.55 | -1.52 | 0.25 | -1.94 | 0.13057 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (s.) | 5.93 | -1.23 | 0.24 | -5.12 | -0.75 | -1.7 | 1.5e-06 |
| Namibia | Historical | Ectotherm Omnivores (i.) | 5.78 | -0.4 | 0.58 | -0.7 | 0.74 | -1.55 | 0.48570 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.7 | 0.25 | 0.2 | 1.27 | 0.64 | -0.14 | 0.20796 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (i.) | 5.54 | -0.38 | 0.58 | -0.65 | 0.77 | -1.52 | 0.51633 |
| Namibia | Historical | Ectotherm Omnivores (s.) | 6.18 | -1.74 | 0.45 | -3.85 | -0.84 | -2.64 | 0.00021 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (s.) | 4.64 | -3.78 | 0.87 | -4.32 | -2.04 | -5.51 | 3.7e-05 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (s.) | 6.23 | -1.52 | 0.41 | -3.69 | -0.7 | -2.34 | 0.00036 |
| Namibia | Historical | Endotherm Carnivores (i.) | 12.66 | -4.36 | 0.62 | -7.08 | -3.14 | -5.59 | 2.2e-10 |
| Namibia | SSP1-2.6 | Endotherm Carnivores (i.) | 4.89 | -0.64 | 0.15 | -4.18 | -0.34 | -0.94 | 6.3e-05 |
| Namibia | SSP5-8.5 | Endotherm Carnivores (i.) | 12.22 | -4.06 | 0.74 | -5.48 | -2.59 | -5.54 | 3.3e-07 |
| Namibia | Historical | Endotherm Herbivores (i.) | 7.05 | -0.68 | 0.56 | -1.2 | 0.44 | -1.8 | 0.23248 |
| Namibia | SSP1-2.6 | Endotherm Herbivores (i.) | 4.7 | -0.01 | 0.16 | -0.04 | 0.31 | -0.32 | 0.96610 |
| Namibia | SSP5-8.5 | Endotherm Herbivores (i.) | 4.35 | 1.13 | 0.59 | 1.91 | 2.31 | -0.04 | 0.05910 |
| Namibia | Historical | Endotherm Omnivores (i.) | 9.34 | -3.42 | 0.52 | -6.61 | -2.39 | -4.45 | 2.0e-09 |
| Namibia | SSP1-2.6 | Endotherm Omnivores (i.) | 4.55 | 0.15 | 0.25 | 0.62 | 0.64 | -0.34 | 0.53811 |
| Namibia | SSP5-8.5 | Endotherm Omnivores (i.) | 8.81 | -3.12 | 0.67 | -4.67 | -1.8 | -4.45 | 9.4e-06 |
| France | Historical | Ectotherm Carnivores (i.) | 6.06 | -1.75 | 0.32 | -5.51 | -1.12 | -2.38 | 4.1e-07 |
| France | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.6 | -1.21 | 0.27 | -4.45 | -0.67 | -1.75 | 2.7e-05 |
| France | SSP5-8.5 | Ectotherm Carnivores (i.) | 5.12 | -0.68 | 0.28 | -2.42 | -0.12 | -1.23 | 0.01782 |
| France | Historical | Ectotherm Carnivores (s.) | 4.73 | -1.44 | 0.19 | -7.67 | -1.07 | -1.81 | 3.1e-11 |
| France | SSP1-2.6 | Ectotherm Carnivores (s.) | 5.26 | -0.71 | 0.16 | -4.35 | -0.38 | -1.03 | 3.9e-05 |
| France | SSP5-8.5 | Ectotherm Carnivores (s.) | 5.3 | -0.6 | 0.14 | -4.11 | -0.31 | -0.88 | 9.3e-05 |
| France | Historical | Ectotherm Herbivores (i.) | 5.12 | -3 | 0.28 | -10.59 | -2.44 | -3.56 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Herbivores (i.) | 4.95 | -2.42 | 0.32 | -7.59 | -1.79 | -3.05 | 4.5e-11 |
| France | SSP5-8.5 | Ectotherm Herbivores (i.) | 4.82 | -1.3 | 0.33 | -3.93 | -0.64 | -1.96 | 0.00018 |
| France | Historical | Ectotherm Herbivores (s.) | 1.33 | -3.09 | 0.26 | -12.06 | -2.58 | -3.6 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Herbivores (s.) | 1.32 | -3.12 | 0.34 | -9.24 | -2.45 | -3.79 | 2.4e-14 |
| France | SSP5-8.5 | Ectotherm Herbivores (s.) | 4.89 | -0.88 | 0.32 | -2.76 | -0.24 | -1.51 | 0.00722 |
| France | Historical | Ectotherm Omnivores (i.) | 4.49 | -2.92 | 0.4 | -7.32 | -2.13 | -3.71 | 1.5e-10 |
| France | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.46 | -2.23 | 0.35 | -6.39 | -1.53 | -2.92 | 9.3e-09 |
| France | SSP5-8.5 | Ectotherm Omnivores (i.) | 4.69 | -0.72 | 0.37 | -1.93 | 0.02 | -1.46 | 0.05684 |
| France | Historical | Ectotherm Omnivores (s.) | 2.66 | -2.57 | 0.33 | -7.82 | -1.91 | -3.22 | 1.6e-11 |
| France | SSP1-2.6 | Ectotherm Omnivores (s.) | 4.39 | -1.28 | 0.3 | -4.3 | -0.69 | -1.87 | 4.6e-05 |
| France | SSP5-8.5 | Ectotherm Omnivores (s.) | 6.15 | -0.11 | 0.17 | -0.63 | 0.23 | -0.45 | 0.52884 |
| France | Historical | Endotherm Carnivores (i.) | 5.75 | -0.95 | 0.12 | -8.11 | -0.72 | -1.18 | 4.3e-12 |
| France | SSP1-2.6 | Endotherm Carnivores (i.) | 5.17 | -0.63 | 0.12 | -5.09 | -0.39 | -0.88 | 2.3e-06 |
| France | SSP5-8.5 | Endotherm Carnivores (i.) | 4.83 | -0.43 | 0.13 | -3.29 | -0.17 | -0.7 | 0.00150 |
| France | Historical | Endotherm Herbivores (i.) | 6.7 | -0.97 | 0.19 | -5.13 | -0.59 | -1.35 | 1.9e-06 |
| France | SSP1-2.6 | Endotherm Herbivores (i.) | 6.48 | -0.91 | 0.15 | -6 | -0.61 | -1.21 | 5.1e-08 |
| France | SSP5-8.5 | Endotherm Herbivores (i.) | 6.51 | -0.9 | 0.15 | -6.03 | -0.6 | -1.2 | 4.6e-08 |
| France | Historical | Endotherm Omnivores (i.) | 6.08 | -0.88 | 0.39 | -2.26 | -0.1 | -1.66 | 0.02666 |
| France | SSP1-2.6 | Endotherm Omnivores (i.) | 6.18 | -1.02 | 0.47 | -2.19 | -0.09 | -1.95 | 0.03130 |
| France | SSP5-8.5 | Endotherm Omnivores (i.) | 5.34 | -0.24 | 0.47 | -0.52 | 0.69 | -1.18 | 0.60333 |

## 3.4 Regression results for maximum land use simulation

**Table 7:** Results of the linear regression for each region, climate, and functional group for the maximum land use simulation experiment for all functional groups. Ectotherm functional groups are further separated by reproduction type in iteroparous (i.), and semelparous (s.) functional groups.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores (i.) | 5.19 | -0.75 | 0.18 | -4.28 | -0.4 | -1.1 | 4.4e-05 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.39 | -1.18 | 0.2 | -5.93 | -0.79 | -1.58 | 5.1e-08 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (i.) | 5.36 | -1.59 | 0.19 | -8.47 | -1.22 | -1.96 | 3.2e-13 |
| Brazil | Historical | Ectotherm Carnivores (s.) | 4.97 | -0.69 | 0.07 | -9.63 | -0.55 | -0.83 | 1.2e-13 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores (s.) | 5.11 | -0.22 | 0.07 | -2.96 | -0.07 | -0.37 | 0.00479 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores (s.) | 4.02 | 0.48 | 0.26 | 1.87 | 1.06 | -0.09 | 0.09116 |
| Brazil | Historical | Ectotherm Herbivores (i.) | 5.89 | -0.96 | 0.17 | -5.58 | -0.62 | -1.3 | 2.3e-07 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (i.) | 5.77 | -0.82 | 0.15 | -5.48 | -0.52 | -1.12 | 3.6e-07 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (i.) | 5.59 | -0.97 | 0.15 | -6.51 | -0.67 | -1.26 | 3.6e-09 |
| Brazil | Historical | Ectotherm Herbivores (s.) | 7.05 | -0.25 | 0.09 | -2.72 | -0.07 | -0.43 | 0.00777 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores (s.) | 6.2 | -0.56 | 0.09 | -6.19 | -0.38 | -0.75 | 1.6e-08 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores (s.) | 6.44 | -0.14 | 0.04 | -3.16 | -0.05 | -0.22 | 0.00220 |
| Brazil | Historical | Ectotherm Omnivores (i.) | 5.71 | -1.52 | 0.15 | -9.94 | -1.22 | -1.82 | 2.5e-16 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (i.) | 5.67 | -1.79 | 0.15 | -12.13 | -1.5 | -2.08 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (i.) | 5.27 | -0.75 | 0.12 | -6.02 | -0.5 | -1 | 3.3e-08 |
| Brazil | Historical | Ectotherm Omnivores (s.) | 6.65 | -0.28 | 0.1 | -2.84 | -0.09 | -0.48 | 0.00551 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores (s.) | 6.31 | -0.32 | 0.08 | -4.01 | -0.16 | -0.48 | 0.00012 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores (s.) | 6.06 | -0.15 | 0.04 | -3.57 | -0.07 | -0.24 | 0.00058 |
| Brazil | Historical | Endotherm Carnivores (i.) | 5.42 | -0.8 | 0.12 | -6.43 | -0.55 | -1.04 | 5.2e-09 |
| Brazil | SSP1-2.6 | Endotherm Carnivores (i.) | 5.19 | -0.72 | 0.14 | -5.25 | -0.44 | -0.99 | 9.4e-07 |
| Brazil | SSP5-8.5 | Endotherm Carnivores (i.) | 5.8 | -1.07 | 0.14 | -7.73 | -0.8 | -1.35 | 1.2e-11 |
| Brazil | Historical | Endotherm Herbivores (i.) | 5.39 | -0.41 | 0.05 | -7.83 | -0.31 | -0.51 | 7.1e-12 |
| Brazil | SSP1-2.6 | Endotherm Herbivores (i.) | 5.38 | -0.43 | 0.05 | -7.85 | -0.32 | -0.54 | 6.5e-12 |
| Brazil | SSP5-8.5 | Endotherm Herbivores (i.) | 5.49 | -0.57 | 0.07 | -8.69 | -0.44 | -0.7 | 1.1e-13 |
| Brazil | Historical | Endotherm Omnivores (i.) | 5.13 | -0.7 | 0.12 | -5.81 | -0.46 | -0.94 | 8.7e-08 |
| Brazil | SSP1-2.6 | Endotherm Omnivores (i.) | 5.87 | -1.42 | 0.11 | -12.4 | -1.19 | -1.65 | < 2e-16 |
| Brazil | SSP5-8.5 | Endotherm Omnivores (i.) | 5.64 | -1.3 | 0.12 | -11.02 | -1.07 | -1.54 | < 2e-16 |
| Finland | Historical | Ectotherm Carnivores (i.) | 4.53 | -0.17 | 0.3 | -0.58 | 0.41 | -0.76 | 0.56072 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (i.) | 4.65 | -1.11 | 0.15 | -7.36 | -0.81 | -1.41 | 7.1e-11 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (i.) | 4.61 | -1.41 | 0.24 | -5.9 | -0.93 | -1.88 | 5.9e-08 |
| Finland | Historical | Ectotherm Carnivores (s.) | 5.09 | -0.47 | 0.2 | -2.4 | -0.08 | -0.87 | 0.01832 |
| Finland | SSP1-2.6 | Ectotherm Carnivores (s.) | 4.93 | -0.45 | 0.12 | -3.8 | -0.21 | -0.68 | 0.00026 |
| Finland | SSP5-8.5 | Ectotherm Carnivores (s.) | 5 | -0.32 | 0.11 | -2.93 | -0.1 | -0.53 | 0.00428 |
| Finland | Historical | Ectotherm Herbivores (i.) | 5.1 | -1.12 | 0.13 | -8.56 | -0.86 | -1.38 | 2.2e-13 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (i.) | 5.06 | -0.85 | 0.1 | -8.11 | -0.64 | -1.06 | 2.0e-12 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (i.) | 4.95 | -0.8 | 0.17 | -4.66 | -0.46 | -1.14 | 1.1e-05 |
| Finland | Historical | Ectotherm Herbivores (s.) | 5.08 | -0.83 | 0.12 | -6.93 | -0.59 | -1.06 | 5.4e-10 |
| Finland | SSP1-2.6 | Ectotherm Herbivores (s.) | 5.54 | -0.63 | 0.11 | -5.88 | -0.42 | -0.84 | 6.4e-08 |
| Finland | SSP5-8.5 | Ectotherm Herbivores (s.) | 5.39 | -0.67 | 0.25 | -2.75 | -0.19 | -1.16 | 0.00725 |
| Finland | Historical | Ectotherm Omnivores (i.) | 4.81 | -1.06 | 0.25 | -4.27 | -0.57 | -1.55 | 4.7e-05 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.7 | -1.19 | 0.16 | -7.41 | -0.87 | -1.51 | 5.6e-11 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (i.) | 4.55 | -1.29 | 0.1 | -12.83 | -1.09 | -1.49 | < 2e-16 |
| Finland | Historical | Ectotherm Omnivores (s.) | 6.34 | -0.26 | 0.08 | -3.14 | -0.1 | -0.43 | 0.00228 |
| Finland | SSP1-2.6 | Ectotherm Omnivores (s.) | 6.24 | -0.33 | 0.11 | -2.95 | -0.11 | -0.55 | 0.00400 |
| Finland | SSP5-8.5 | Ectotherm Omnivores (s.) | 6.47 | -0.15 | 0.1 | -1.53 | 0.04 | -0.35 | 0.12869 |
| Finland | Historical | Endotherm Herbivores (i.) | 5.48 | -0.52 | 0.04 | -13.08 | -0.44 | -0.6 | < 2e-16 |
| Finland | SSP1-2.6 | Endotherm Herbivores (i.) | 5.37 | -0.45 | 0.03 | -13.14 | -0.39 | -0.52 | < 2e-16 |
| Finland | SSP5-8.5 | Endotherm Herbivores (i.) | 5.45 | -0.51 | 0.04 | -14.24 | -0.44 | -0.58 | < 2e-16 |
| Finland | Historical | Endotherm Omnivores (i.) | 9.27 | -3.77 | 0.38 | -9.94 | -3.02 | -4.53 | 2.8e-16 |
| Finland | SSP1-2.6 | Endotherm Omnivores (i.) | 7.76 | -2.73 | 0.33 | -8.2 | -2.07 | -3.39 | 1.3e-12 |
| Finland | SSP5-8.5 | Endotherm Omnivores (i.) | 8.55 | -3.3 | 0.33 | -10.11 | -2.65 | -3.94 | < 2e-16 |
| Namibia | Historical | Ectotherm Carnivores (i.) | 5.29 | -0.98 | 0.24 | -3.99 | -0.49 | -1.46 | 0.00013 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (i.) | 4.73 | -0.82 | 0.12 | -6.78 | -0.58 | -1.05 | 9.2e-10 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores (i.) | 2.83 | 0.06 | 0.26 | 0.25 | 0.58 | -0.45 | 0.80436 |
| Namibia | Historical | Ectotherm Carnivores (s.) | 4.47 | -0.57 | 0.16 | -3.6 | -0.26 | -0.89 | 0.00059 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores (s.) | 3.88 | -0.42 | 0.38 | -1.11 | 0.34 | -1.17 | 0.27478 |
| Namibia | Historical | Ectotherm Herbivores (i.) | 5.68 | -0.97 | 0.31 | -3.1 | -0.35 | -1.58 | 0.00250 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (i.) | 5.07 | -0.65 | 0.07 | -9.01 | -0.51 | -0.79 | 1.7e-14 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (i.) | 3.96 | 1.13 | 0.17 | 6.78 | 1.46 | 0.8 | 9.3e-10 |
| Namibia | Historical | Ectotherm Herbivores (s.) | 5.5 | -0.86 | 0.11 | -7.92 | -0.64 | -1.07 | 3.8e-12 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores (s.) | 5.62 | -0.51 | 0.16 | -3.26 | -0.2 | -0.81 | 0.00151 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores (s.) | 4.69 | -0.81 | 0.23 | -3.51 | -0.35 | -1.28 | 0.00069 |
| Namibia | Historical | Ectotherm Omnivores (i.) | 5.68 | -1.46 | 0.27 | -5.43 | -0.93 | -2 | 4.1e-07 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.95 | -0.73 | 0.08 | -8.7 | -0.56 | -0.9 | 8.0e-14 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (i.) | 4.06 | 0.33 | 0.28 | 1.19 | 0.88 | -0.22 | 0.23560 |
| Namibia | Historical | Ectotherm Omnivores (s.) | 5.9 | -0.6 | 0.13 | -4.62 | -0.35 | -0.86 | 1.2e-05 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores (s.) | 5.42 | -0.64 | 0.11 | -5.71 | -0.42 | -0.87 | 1.2e-07 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores (s.) | 4.8 | -0.34 | 0.22 | -1.5 | 0.11 | -0.78 | 0.13649 |
| Namibia | Historical | Endotherm Carnivores (i.) | 5.2 | -0.94 | 0.19 | -4.88 | -0.56 | -1.32 | 4.2e-06 |
| Namibia | Historical | Endotherm Herbivores (i.) | 5.21 | -0.54 | 0.06 | -8.83 | -0.42 | -0.66 | 4.2e-14 |
| Namibia | SSP1-2.6 | Endotherm Herbivores (i.) | 5.02 | -0.6 | 0.06 | -10.36 | -0.49 | -0.72 | < 2e-16 |
| Namibia | SSP5-8.5 | Endotherm Herbivores (i.) | 0.59 | 0.67 | 0.29 | 2.32 | 1.25 | 0.09 | 0.02427 |
| Namibia | Historical | Endotherm Omnivores (i.) | 7.25 | -2.78 | 0.3 | -9.23 | -2.18 | -3.38 | 5.7e-15 |
| France | Historical | Ectotherm Carnivores (i.) | 5.64 | -2.57 | 0.22 | -11.65 | -2.13 | -3.01 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Carnivores (i.) | 5.48 | -2.32 | 0.2 | -11.42 | -1.91 | -2.72 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Carnivores (i.) | 4.25 | -2.27 | 0.29 | -7.86 | -1.7 | -2.85 | 1.3e-11 |
| France | Historical | Ectotherm Carnivores (s.) | 4.76 | -0.36 | 0.16 | -2.25 | -0.04 | -0.69 | 0.02756 |
| France | SSP1-2.6 | Ectotherm Carnivores (s.) | 3.79 | -0.54 | 0.24 | -2.22 | -0.05 | -1.03 | 0.03051 |
| France | SSP5-8.5 | Ectotherm Carnivores (s.) | 2.39 | -1.15 | 1.62 | -0.71 | 19.39 | -21.69 | 0.60621 |
| France | Historical | Ectotherm Herbivores (i.) | 4.87 | -1.18 | 0.33 | -3.54 | -0.52 | -1.84 | 0.00067 |
| France | SSP1-2.6 | Ectotherm Herbivores (i.) | 4.75 | -1.17 | 0.27 | -4.28 | -0.63 | -1.71 | 5.1e-05 |
| France | SSP5-8.5 | Ectotherm Herbivores (i.) | 4.54 | -1.26 | 0.27 | -4.75 | -0.73 | -1.79 | 8.4e-06 |
| France | Historical | Ectotherm Herbivores (s.) | 4.41 | -1.09 | 0.15 | -7.06 | -0.78 | -1.39 | 4.9e-10 |
| France | SSP1-2.6 | Ectotherm Herbivores (s.) | 4.9 | -0.88 | 0.16 | -5.46 | -0.56 | -1.21 | 5.1e-07 |
| France | SSP5-8.5 | Ectotherm Herbivores (s.) | 6.75 | 0.11 | 0.34 | 0.34 | 0.79 | -0.56 | 0.73735 |
| France | Historical | Ectotherm Omnivores (i.) | 4.59 | -1.62 | 0.35 | -4.68 | -0.93 | -2.31 | 1.1e-05 |
| France | SSP1-2.6 | Ectotherm Omnivores (i.) | 4.47 | -1.68 | 0.31 | -5.45 | -1.06 | -2.29 | 5.2e-07 |
| France | SSP5-8.5 | Ectotherm Omnivores (i.) | 4.22 | -1.15 | 0.28 | -4.16 | -0.6 | -1.71 | 7.9e-05 |
| France | Historical | Ectotherm Omnivores (s.) | 5.81 | -0.51 | 0.14 | -3.73 | -0.24 | -0.79 | 0.00035 |
| France | SSP1-2.6 | Ectotherm Omnivores (s.) | 5.28 | -0.76 | 0.2 | -3.85 | -0.37 | -1.15 | 0.00023 |
| France | SSP5-8.5 | Ectotherm Omnivores (s.) | 5.86 | -0.22 | 0.23 | -0.95 | 0.24 | -0.68 | 0.34722 |
| France | Historical | Endotherm Carnivores (i.) | 6.93 | -1.59 | 0.23 | -6.76 | -1.12 | -2.05 | 1.9e-09 |
| France | SSP1-2.6 | Endotherm Carnivores (i.) | 8.07 | -2.17 | 0.34 | -6.36 | -1.49 | -2.85 | 1.1e-08 |
| France | SSP5-8.5 | Endotherm Carnivores (i.) | 6.26 | -1.33 | 0.19 | -7.1 | -0.96 | -1.7 | 4.2e-10 |
| France | Historical | Endotherm Herbivores (i.) | 5.54 | -0.71 | 0.09 | -8.07 | -0.54 | -0.89 | 5.1e-12 |
| France | SSP1-2.6 | Endotherm Herbivores (i.) | 5.32 | -0.57 | 0.07 | -7.89 | -0.43 | -0.71 | 1.2e-11 |
| France | SSP5-8.5 | Endotherm Herbivores (i.) | 5.25 | -0.62 | 0.09 | -7.07 | -0.45 | -0.8 | 4.6e-10 |
| France | Historical | Endotherm Omnivores (i.) | 6.49 | -1.89 | 0.13 | -14.43 | -1.63 | -2.15 | < 2e-16 |
| France | SSP1-2.6 | Endotherm Omnivores (i.) | 6.94 | -2.18 | 0.18 | -12 | -1.82 | -2.54 | < 2e-16 |
| France | SSP5-8.5 | Endotherm Omnivores (i.) | 6.05 | -1.71 | 0.16 | -10.97 | -1.4 | -2.02 | < 2e-16 |

# Supplementary Note 4: Impact on the abundance-body mass relationship for aggregated functional groups

## 4.1 Regression results for climate simulation

**Table 8:** Results of the linear regression for each region, climate, and functional group for the climate simulation experiment for aggregated functional groups. Ectotherm functional groups are aggregated by their feeding guild.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores | 6.34 | -0.48 | 0.04 | -12.5 | -0.41 | -0.56 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores | 6.25 | -0.57 | 0.04 | -12.85 | -0.49 | -0.66 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores | 5.96 | -0.48 | 0.04 | -11.26 | -0.39 | -0.56 | < 2e-16 |
| Brazil | Historical | Ectotherm Herbivores | 6.88 | -1.56 | 0.06 | -25.17 | -1.44 | -1.68 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores | 6.7 | -1.54 | 0.07 | -22.88 | -1.41 | -1.68 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores | 6.42 | -1.74 | 0.08 | -20.85 | -1.58 | -1.9 | < 2e-16 |
| Brazil | Historical | Ectotherm Omnivores | 6.62 | -2.35 | 0.09 | -25.45 | -2.17 | -2.53 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores | 6.37 | -2.63 | 0.11 | -24.98 | -2.42 | -2.84 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores | 5.69 | -3.29 | 0.15 | -22.49 | -3 | -3.58 | < 2e-16 |
| Brazil | Historical | Endotherm Carnivores | 6.09 | -0.28 | 0.41 | -0.68 | 0.53 | -1.08 | 0.4969 |
| Brazil | SSP1-2.6 | Endotherm Carnivores | 7.53 | -1.35 | 0.36 | -3.76 | -0.64 | -2.06 | 0.0003 |
| Brazil | SSP5-8.5 | Endotherm Carnivores | 6.26 | -0.51 | 0.32 | -1.58 | 0.13 | -1.16 | 0.1164 |
| Brazil | Historical | Endotherm Herbivores | 6.55 | 0.2 | 0.22 | 0.89 | 0.64 | -0.25 | 0.3770 |
| Brazil | SSP1-2.6 | Endotherm Herbivores | 6.52 | 0.27 | 0.23 | 1.17 | 0.72 | -0.19 | 0.2430 |
| Brazil | SSP5-8.5 | Endotherm Herbivores | 6.55 | 0.16 | 0.23 | 0.69 | 0.62 | -0.3 | 0.4902 |
| Brazil | Historical | Endotherm Omnivores | 5.55 | 0.81 | 0.64 | 1.26 | 2.07 | -0.46 | 0.2092 |
| Brazil | SSP1-2.6 | Endotherm Omnivores | 5.83 | 0.34 | 0.66 | 0.52 | 1.65 | -0.97 | 0.6040 |
| Brazil | SSP5-8.5 | Endotherm Omnivores | 5.63 | 0.63 | 0.6 | 1.04 | 1.82 | -0.57 | 0.3007 |
| Finland | Historical | Ectotherm Carnivores | 5.8 | -0.62 | 0.01 | -52.57 | -0.59 | -0.64 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Carnivores | 5.75 | -0.62 | 0.01 | -48.19 | -0.59 | -0.64 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Carnivores | 5.62 | -0.62 | 0.02 | -34.65 | -0.59 | -0.66 | < 2e-16 |
| Finland | Historical | Ectotherm Herbivores | 5.58 | -1.07 | 0.02 | -68.43 | -1.04 | -1.1 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Herbivores | 5.53 | -1.06 | 0.01 | -73.31 | -1.03 | -1.08 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Herbivores | 5.34 | -1.08 | 0.04 | -29.83 | -1.01 | -1.15 | < 2e-16 |
| Finland | Historical | Ectotherm Omnivores | 5.25 | -1.23 | 0.02 | -79.8 | -1.2 | -1.26 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Omnivores | 5.16 | -1.27 | 0.02 | -54.3 | -1.22 | -1.32 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Omnivores | 4.85 | -1.42 | 0.04 | -39.38 | -1.35 | -1.49 | < 2e-16 |
| Finland | Historical | Endotherm Carnivores | 4.51 | -0.15 | 0.05 | -3.06 | -0.05 | -0.25 | 0.00289 |
| Finland | SSP1-2.6 | Endotherm Carnivores | 4.45 | -0.09 | 0.08 | -1.08 | 0.08 | -0.26 | 0.28175 |
| Finland | SSP5-8.5 | Endotherm Carnivores | 4.75 | -0.45 | 0.09 | -5.08 | -0.27 | -0.62 | 2.0e-06 |
| Finland | Historical | Endotherm Herbivores | 5.18 | 0.46 | 0.16 | 2.9 | 0.78 | 0.15 | 0.00470 |
| Finland | SSP1-2.6 | Endotherm Herbivores | 5.07 | 0.51 | 0.15 | 3.36 | 0.8 | 0.21 | 0.00114 |
| Finland | SSP5-8.5 | Endotherm Herbivores | 4.53 | 0.69 | 0.18 | 3.76 | 1.06 | 0.33 | 0.00030 |
| Finland | Historical | Endotherm Omnivores | 5.12 | -0.09 | 0.15 | -0.6 | 0.21 | -0.39 | 0.54819 |
| Finland | SSP1-2.6 | Endotherm Omnivores | 4.83 | 0.28 | 0.19 | 1.49 | 0.66 | -0.1 | 0.14090 |
| Finland | SSP5-8.5 | Endotherm Omnivores | 4.91 | 0.07 | 0.18 | 0.4 | 0.42 | -0.28 | 0.69207 |
| Namibia | Historical | Ectotherm Carnivores | 5.46 | -0.51 | 0.06 | -9.14 | -0.4 | -0.63 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores | 4.76 | -0.49 | 0.04 | -13.22 | -0.41 | -0.56 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores | 5.37 | -0.52 | 0.05 | -9.7 | -0.41 | -0.62 | < 2e-16 |
| Namibia | Historical | Ectotherm Herbivores | 6.3 | -1.05 | 0.07 | -14.52 | -0.91 | -1.19 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores | 5.46 | -0.92 | 0.08 | -11.76 | -0.77 | -1.08 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores | 6.15 | -1.13 | 0.06 | -17.81 | -1.01 | -1.26 | < 2e-16 |
| Namibia | Historical | Ectotherm Omnivores | 6.34 | -1.79 | 0.13 | -14.13 | -1.54 | -2.03 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores | 5.86 | -2.27 | 0.17 | -13.37 | -1.94 | -2.61 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores | 5.82 | -1.89 | 0.1 | -19.06 | -1.69 | -2.08 | < 2e-16 |
| Namibia | Historical | Endotherm Carnivores | 13.17 | -5.16 | 0.66 | -7.86 | -3.86 | -6.46 | 4.9e-12 |
| Namibia | SSP1-2.6 | Endotherm Carnivores | 4.79 | -0.6 | 0.17 | -3.59 | -0.27 | -0.93 | 0.00052 |
| Namibia | SSP5-8.5 | Endotherm Carnivores | 14.02 | -5.93 | 0.71 | -8.35 | -4.52 | -7.34 | 4.6e-13 |
| Namibia | Historical | Endotherm Herbivores | 7.39 | -1.09 | 0.7 | -1.56 | 0.3 | -2.47 | 0.12249 |
| Namibia | SSP1-2.6 | Endotherm Herbivores | 3.98 | 0.41 | 0.18 | 2.32 | 0.76 | 0.06 | 0.02232 |
| Namibia | SSP5-8.5 | Endotherm Herbivores | 4.65 | 0.97 | 0.69 | 1.41 | 2.33 | -0.4 | 0.16283 |
| Namibia | Historical | Endotherm Omnivores | 8.82 | -3.39 | 0.59 | -5.72 | -2.21 | -4.57 | 1.2e-07 |
| Namibia | SSP1-2.6 | Endotherm Omnivores | 4 | 0.64 | 0.22 | 2.9 | 1.09 | 0.2 | 0.00462 |
| Namibia | SSP5-8.5 | Endotherm Omnivores | 7.68 | -2.36 | 0.64 | -3.71 | -1.1 | -3.62 | 0.00034 |
| France | Historical | Ectotherm Carnivores | 5.54 | -0.67 | 0.04 | -18.93 | -0.6 | -0.74 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Carnivores | 5.35 | -0.69 | 0.02 | -27.69 | -0.64 | -0.73 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Carnivores | 5.22 | -0.73 | 0.03 | -25.34 | -0.68 | -0.79 | < 2e-16 |
| France | Historical | Ectotherm Herbivores | 5.21 | -1.46 | 0.08 | -17.83 | -1.3 | -1.62 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Herbivores | 4.91 | -1.36 | 0.1 | -13.88 | -1.16 | -1.55 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Herbivores | 4.6 | -1.66 | 0.1 | -17.31 | -1.47 | -1.85 | < 2e-16 |
| France | Historical | Ectotherm Omnivores | 4.76 | -1.74 | 0.08 | -20.45 | -1.57 | -1.91 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Omnivores | 4.55 | -1.55 | 0.06 | -24.89 | -1.43 | -1.68 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Omnivores | 4.1 | -1.95 | 0.08 | -25.2 | -1.8 | -2.1 | < 2e-16 |
| France | Historical | Endotherm Carnivores | 5.52 | -0.85 | 0.2 | -4.29 | -0.46 | -1.25 | 4.8e-05 |
| France | SSP1-2.6 | Endotherm Carnivores | 5.57 | -0.92 | 0.15 | -6.05 | -0.61 | -1.22 | 4.2e-08 |
| France | SSP5-8.5 | Endotherm Carnivores | 5.01 | -0.53 | 0.17 | -3.17 | -0.2 | -0.87 | 0.0021 |
| France | Historical | Endotherm Herbivores | 6.57 | -0.55 | 0.21 | -2.64 | -0.14 | -0.96 | 0.0099 |
| France | SSP1-2.6 | Endotherm Herbivores | 5.9 | -0.26 | 0.21 | -1.22 | 0.16 | -0.68 | 0.2250 |
| France | SSP5-8.5 | Endotherm Herbivores | 5.83 | -0.19 | 0.19 | -0.98 | 0.19 | -0.57 | 0.3288 |
| France | Historical | Endotherm Omnivores | 5.17 | 0.23 | 0.42 | 0.56 | 1.07 | -0.6 | 0.5786 |
| France | SSP1-2.6 | Endotherm Omnivores | 4.73 | 0.52 | 0.4 | 1.32 | 1.31 | -0.27 | 0.1915 |
| France | SSP5-8.5 | Endotherm Omnivores | 4.87 | 0.42 | 0.41 | 1.02 | 1.24 | -0.4 | 0.3091 |

## 4.2 Regression results for current land use simulation

**Table 9:** Results of the linear regression for each region, climate, and functional group for the current land use simulation experiment for aggregated functional groups. Ectotherm functional groups are aggregated by their feeding guild.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores | 6.22 | -0.46 | 0.04 | -11.02 | -0.38 | -0.54 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores | 6.07 | -0.5 | 0.04 | -12.36 | -0.42 | -0.58 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores | 5.78 | -0.42 | 0.04 | -10.14 | -0.34 | -0.5 | < 2e-16 |
| Brazil | Historical | Ectotherm Herbivores | 6.88 | -1.24 | 0.06 | -21.53 | -1.12 | -1.35 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores | 6.75 | -1.22 | 0.07 | -17.01 | -1.08 | -1.36 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores | 6.5 | -1.43 | 0.11 | -13.22 | -1.21 | -1.64 | < 2e-16 |
| Brazil | Historical | Ectotherm Omnivores | 6.71 | -2.12 | 0.1 | -21.96 | -1.93 | -2.31 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores | 6.6 | -1.97 | 0.14 | -14.42 | -1.7 | -2.24 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores | 6.1 | -2.59 | 0.15 | -16.83 | -2.29 | -2.89 | < 2e-16 |
| Brazil | Historical | Endotherm Carnivores | 6.07 | -0.31 | 0.26 | -1.2 | 0.2 | -0.82 | 0.2322 |
| Brazil | SSP1-2.6 | Endotherm Carnivores | 6.01 | -0.3 | 0.21 | -1.4 | 0.12 | -0.72 | 0.1636 |
| Brazil | SSP5-8.5 | Endotherm Carnivores | 6.29 | -0.49 | 0.19 | -2.57 | -0.11 | -0.88 | 0.0118 |
| Brazil | Historical | Endotherm Herbivores | 6.58 | 0.17 | 0.22 | 0.77 | 0.6 | -0.27 | 0.4436 |
| Brazil | SSP1-2.6 | Endotherm Herbivores | 6.87 | -0.04 | 0.22 | -0.19 | 0.4 | -0.49 | 0.8518 |
| Brazil | SSP5-8.5 | Endotherm Herbivores | 6.3 | 0.36 | 0.16 | 2.23 | 0.68 | 0.04 | 0.0284 |
| Brazil | Historical | Endotherm Omnivores | 5.64 | 0.53 | 0.57 | 0.93 | 1.67 | -0.6 | 0.3543 |
| Brazil | SSP1-2.6 | Endotherm Omnivores | 5.91 | 0.25 | 0.53 | 0.48 | 1.3 | -0.79 | 0.6324 |
| Brazil | SSP5-8.5 | Endotherm Omnivores | 5.5 | 0.7 | 0.5 | 1.4 | 1.7 | -0.29 | 0.1652 |
| Finland | Historical | Ectotherm Carnivores | 5.76 | -0.61 | 0.01 | -74.26 | -0.59 | -0.62 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Carnivores | 5.72 | -0.59 | 0.01 | -61.29 | -0.57 | -0.61 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Carnivores | 5.63 | -0.59 | 0.01 | -43 | -0.57 | -0.62 | < 2e-16 |
| Finland | Historical | Ectotherm Herbivores | 5.56 | -0.98 | 0.01 | -105.27 | -0.96 | -1 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Herbivores | 5.52 | -0.96 | 0.01 | -75.09 | -0.94 | -0.99 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Herbivores | 5.4 | -0.94 | 0.02 | -42.26 | -0.89 | -0.98 | < 2e-16 |
| Finland | Historical | Ectotherm Omnivores | 5.29 | -1.08 | 0.01 | -98.08 | -1.06 | -1.1 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Omnivores | 5.2 | -1.12 | 0.01 | -79.89 | -1.09 | -1.14 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Omnivores | 5.01 | -1.15 | 0.02 | -53.48 | -1.11 | -1.19 | < 2e-16 |
| Finland | Historical | Endotherm Carnivores | 4.45 | -0.1 | 0.06 | -1.61 | 0.02 | -0.22 | 0.11135 |
| Finland | SSP1-2.6 | Endotherm Carnivores | 4.24 | 0.09 | 0.06 | 1.44 | 0.21 | -0.03 | 0.15217 |
| Finland | SSP5-8.5 | Endotherm Carnivores | 4.54 | -0.26 | 0.1 | -2.66 | -0.07 | -0.45 | 0.00919 |
| Finland | Historical | Endotherm Herbivores | 5.68 | -0.01 | 0.14 | -0.09 | 0.26 | -0.29 | 0.93053 |
| Finland | SSP1-2.6 | Endotherm Herbivores | 5.25 | 0.27 | 0.14 | 1.94 | 0.55 | -0.01 | 0.05572 |
| Finland | SSP5-8.5 | Endotherm Herbivores | 4.64 | 0.58 | 0.16 | 3.53 | 0.9 | 0.25 | 0.00066 |
| Finland | Historical | Endotherm Omnivores | 5.01 | 0.02 | 0.17 | 0.09 | 0.35 | -0.32 | 0.92829 |
| Finland | SSP1-2.6 | Endotherm Omnivores | 5.19 | -0.15 | 0.22 | -0.66 | 0.29 | -0.59 | 0.51059 |
| Finland | SSP5-8.5 | Endotherm Omnivores | 4.93 | 0 | 0.16 | -0.03 | 0.32 | -0.33 | 0.97595 |
| Namibia | Historical | Ectotherm Carnivores | 5.27 | -0.35 | 0.06 | -6.07 | -0.24 | -0.46 | 6.5e-09 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores | 4.67 | -0.4 | 0.04 | -9.11 | -0.31 | -0.48 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores | 5.29 | -0.41 | 0.06 | -6.7 | -0.29 | -0.54 | 3.5e-10 |
| Namibia | Historical | Ectotherm Herbivores | 6.21 | -0.82 | 0.06 | -12.79 | -0.69 | -0.94 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores | 5.43 | -0.73 | 0.07 | -10.26 | -0.59 | -0.87 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores | 6.24 | -1.06 | 0.06 | -16.35 | -0.93 | -1.19 | < 2e-16 |
| Namibia | Historical | Ectotherm Omnivores | 6.38 | -1.54 | 0.13 | -12.3 | -1.29 | -1.79 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores | 5.94 | -2.03 | 0.16 | -13.07 | -1.73 | -2.34 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores | 6.04 | -1.69 | 0.1 | -17.68 | -1.5 | -1.88 | < 2e-16 |
| Namibia | Historical | Endotherm Carnivores | 12.66 | -4.36 | 0.62 | -7.08 | -3.14 | -5.59 | 2.2e-10 |
| Namibia | SSP1-2.6 | Endotherm Carnivores | 4.89 | -0.64 | 0.15 | -4.18 | -0.34 | -0.94 | 6.3e-05 |
| Namibia | SSP5-8.5 | Endotherm Carnivores | 12.22 | -4.06 | 0.74 | -5.48 | -2.59 | -5.54 | 3.3e-07 |
| Namibia | Historical | Endotherm Herbivores | 7.05 | -0.68 | 0.56 | -1.2 | 0.44 | -1.8 | 0.23248 |
| Namibia | SSP1-2.6 | Endotherm Herbivores | 4.7 | -0.01 | 0.16 | -0.04 | 0.31 | -0.32 | 0.96610 |
| Namibia | SSP5-8.5 | Endotherm Herbivores | 4.35 | 1.13 | 0.59 | 1.91 | 2.31 | -0.04 | 0.05910 |
| Namibia | Historical | Endotherm Omnivores | 9.34 | -3.42 | 0.52 | -6.61 | -2.39 | -4.45 | 2.0e-09 |
| Namibia | SSP1-2.6 | Endotherm Omnivores | 4.55 | 0.15 | 0.25 | 0.62 | 0.64 | -0.34 | 0.53811 |
| Namibia | SSP5-8.5 | Endotherm Omnivores | 8.81 | -3.12 | 0.67 | -4.67 | -1.8 | -4.45 | 9.4e-06 |
| France | Historical | Ectotherm Carnivores | 5.37 | -0.64 | 0.02 | -28.15 | -0.6 | -0.69 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Carnivores | 5.29 | -0.67 | 0.02 | -36.55 | -0.64 | -0.71 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Carnivores | 5.17 | -0.77 | 0.02 | -36.99 | -0.73 | -0.81 | < 2e-16 |
| France | Historical | Ectotherm Herbivores | 5.1 | -0.87 | 0.04 | -22.93 | -0.8 | -0.95 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Herbivores | 5.03 | -0.76 | 0.03 | -27.61 | -0.7 | -0.81 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Herbivores | 4.9 | -0.87 | 0.02 | -36.34 | -0.82 | -0.92 | < 2e-16 |
| France | Historical | Ectotherm Omnivores | 4.82 | -1.13 | 0.04 | -25.62 | -1.05 | -1.22 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Omnivores | 4.76 | -1.01 | 0.03 | -32.9 | -0.95 | -1.07 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Omnivores | 4.51 | -1.26 | 0.03 | -38.84 | -1.2 | -1.32 | < 2e-16 |
| France | Historical | Endotherm Carnivores | 5.75 | -0.95 | 0.12 | -8.11 | -0.72 | -1.18 | 4.3e-12 |
| France | SSP1-2.6 | Endotherm Carnivores | 5.17 | -0.63 | 0.12 | -5.09 | -0.39 | -0.88 | 2.3e-06 |
| France | SSP5-8.5 | Endotherm Carnivores | 4.83 | -0.43 | 0.13 | -3.29 | -0.17 | -0.7 | 0.0015 |
| France | Historical | Endotherm Herbivores | 6.7 | -0.97 | 0.19 | -5.13 | -0.59 | -1.35 | 1.9e-06 |
| France | SSP1-2.6 | Endotherm Herbivores | 6.48 | -0.91 | 0.15 | -6 | -0.61 | -1.21 | 5.1e-08 |
| France | SSP5-8.5 | Endotherm Herbivores | 6.51 | -0.9 | 0.15 | -6.03 | -0.6 | -1.2 | 4.6e-08 |
| France | Historical | Endotherm Omnivores | 6.08 | -0.88 | 0.39 | -2.26 | -0.1 | -1.66 | 0.0267 |
| France | SSP1-2.6 | Endotherm Omnivores | 6.18 | -1.02 | 0.47 | -2.19 | -0.09 | -1.95 | 0.0313 |
| France | SSP5-8.5 | Endotherm Omnivores | 5.34 | -0.24 | 0.47 | -0.52 | 0.69 | -1.18 | 0.6033 |

## 4.3 Regression results for maximum land use simulation

**Table 10:** Results of the linear regression for each region, climate, and functional group for the maximum land use simulation experiment for aggregated functional groups. Ectotherm functional groups are aggregated by their feeding guild.

| **Region** | **Climate** | **Functional Group** | **Intercept** | **Slope** | **Std. Error** | **F Statistic** | **Upper CI** | **Lower CI** | **P Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Brazil | Historical | Ectotherm Carnivores | 5.05 | -0.59 | 0.02 | -25.52 | -0.54 | -0.63 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Carnivores | 4.93 | -0.43 | 0.04 | -10.99 | -0.35 | -0.51 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Carnivores | 4.1 | 0.43 | 0.09 | 4.92 | 0.61 | 0.26 | 3.2e-06 |
| Brazil | Historical | Ectotherm Herbivores | 5.97 | -0.9 | 0.03 | -27.68 | -0.83 | -0.96 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Herbivores | 5.82 | -0.8 | 0.03 | -25.08 | -0.74 | -0.87 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Herbivores | 5.84 | -0.41 | 0.04 | -9.54 | -0.33 | -0.5 | < 2e-16 |
| Brazil | Historical | Ectotherm Omnivores | 5.7 | -1.07 | 0.04 | -25.51 | -0.98 | -1.15 | < 2e-16 |
| Brazil | SSP1-2.6 | Ectotherm Omnivores | 5.65 | -0.9 | 0.05 | -20.03 | -0.81 | -0.99 | < 2e-16 |
| Brazil | SSP5-8.5 | Ectotherm Omnivores | 5.61 | -0.35 | 0.05 | -7.21 | -0.25 | -0.44 | 1.4e-11 |
| Brazil | Historical | Endotherm Carnivores | 5.42 | -0.8 | 0.12 | -6.43 | -0.55 | -1.04 | 5.2e-09 |
| Brazil | SSP1-2.6 | Endotherm Carnivores | 5.19 | -0.72 | 0.14 | -5.25 | -0.44 | -0.99 | 9.4e-07 |
| Brazil | SSP5-8.5 | Endotherm Carnivores | 5.8 | -1.07 | 0.14 | -7.73 | -0.8 | -1.35 | 1.2e-11 |
| Brazil | Historical | Endotherm Herbivores | 5.39 | -0.41 | 0.05 | -7.83 | -0.31 | -0.51 | 7.1e-12 |
| Brazil | SSP1-2.6 | Endotherm Herbivores | 5.38 | -0.43 | 0.05 | -7.85 | -0.32 | -0.54 | 6.5e-12 |
| Brazil | SSP5-8.5 | Endotherm Herbivores | 5.49 | -0.57 | 0.07 | -8.69 | -0.44 | -0.7 | 1.1e-13 |
| Brazil | Historical | Endotherm Omnivores | 5.13 | -0.7 | 0.12 | -5.81 | -0.46 | -0.94 | 8.7e-08 |
| Brazil | SSP1-2.6 | Endotherm Omnivores | 5.87 | -1.42 | 0.11 | -12.4 | -1.19 | -1.65 | < 2e-16 |
| Brazil | SSP5-8.5 | Endotherm Omnivores | 5.64 | -1.3 | 0.12 | -11.02 | -1.07 | -1.54 | < 2e-16 |
| Finland | Historical | Ectotherm Carnivores | 4.72 | -0.89 | 0.03 | -25.54 | -0.82 | -0.95 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Carnivores | 4.6 | -0.82 | 0.03 | -30.65 | -0.77 | -0.87 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Carnivores | 4.52 | -0.89 | 0.03 | -29.52 | -0.83 | -0.95 | < 2e-16 |
| Finland | Historical | Ectotherm Herbivores | 5.12 | -0.81 | 0.01 | -84.13 | -0.79 | -0.83 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Herbivores | 5.06 | -0.85 | 0.01 | -68.18 | -0.83 | -0.88 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Herbivores | 4.94 | -0.88 | 0.02 | -37.8 | -0.84 | -0.93 | < 2e-16 |
| Finland | Historical | Ectotherm Omnivores | 4.84 | -1.09 | 0.02 | -52.71 | -1.05 | -1.13 | < 2e-16 |
| Finland | SSP1-2.6 | Ectotherm Omnivores | 4.72 | -1.21 | 0.02 | -55.16 | -1.17 | -1.26 | < 2e-16 |
| Finland | SSP5-8.5 | Ectotherm Omnivores | 4.59 | -1.28 | 0.03 | -49.52 | -1.23 | -1.33 | < 2e-16 |
| Finland | Historical | Endotherm Herbivores | 5.48 | -0.52 | 0.04 | -13.08 | -0.44 | -0.6 | < 2e-16 |
| Finland | SSP1-2.6 | Endotherm Herbivores | 5.37 | -0.45 | 0.03 | -13.14 | -0.39 | -0.52 | < 2e-16 |
| Finland | SSP5-8.5 | Endotherm Herbivores | 5.45 | -0.51 | 0.04 | -14.24 | -0.44 | -0.58 | < 2e-16 |
| Finland | Historical | Endotherm Omnivores | 9.27 | -3.77 | 0.38 | -9.94 | -3.02 | -4.53 | 2.8e-16 |
| Finland | SSP1-2.6 | Endotherm Omnivores | 7.76 | -2.73 | 0.33 | -8.2 | -2.07 | -3.39 | 1.3e-12 |
| Finland | SSP5-8.5 | Endotherm Omnivores | 8.55 | -3.3 | 0.33 | -10.11 | -2.65 | -3.94 | < 2e-16 |
| Namibia | Historical | Ectotherm Carnivores | 4.63 | -0.33 | 0.04 | -8.89 | -0.26 | -0.41 | 8.5e-16 |
| Namibia | SSP1-2.6 | Ectotherm Carnivores | 4.01 | -0.12 | 0.07 | -1.63 | 0.02 | -0.26 | 0.10586 |
| Namibia | SSP5-8.5 | Ectotherm Carnivores | 2.83 | 0.06 | 0.26 | 0.25 | 0.58 | -0.45 | 0.80436 |
| Namibia | Historical | Ectotherm Herbivores | 5.56 | -0.82 | 0.03 | -31.63 | -0.77 | -0.87 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Herbivores | 5.24 | -0.83 | 0.01 | -57.33 | -0.8 | -0.86 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Herbivores | 4.93 | -0.58 | 0.06 | -10.15 | -0.47 | -0.69 | < 2e-16 |
| Namibia | Historical | Ectotherm Omnivores | 5.48 | -1.07 | 0.03 | -31.64 | -1.01 | -1.14 | < 2e-16 |
| Namibia | SSP1-2.6 | Ectotherm Omnivores | 5.17 | -1.03 | 0.02 | -56.78 | -0.99 | -1.07 | < 2e-16 |
| Namibia | SSP5-8.5 | Ectotherm Omnivores | 4.52 | -0.63 | 0.09 | -6.87 | -0.45 | -0.82 | 9.0e-11 |
| Namibia | Historical | Endotherm Carnivores | 5.2 | -0.94 | 0.19 | -4.88 | -0.56 | -1.32 | 4.2e-06 |
| Namibia | Historical | Endotherm Herbivores | 5.21 | -0.54 | 0.06 | -8.83 | -0.42 | -0.66 | 4.2e-14 |
| Namibia | SSP1-2.6 | Endotherm Herbivores | 5.02 | -0.6 | 0.06 | -10.36 | -0.49 | -0.72 | < 2e-16 |
| Namibia | SSP5-8.5 | Endotherm Herbivores | 0.59 | 0.67 | 0.29 | 2.32 | 1.25 | 0.09 | 0.02427 |
| Namibia | Historical | Endotherm Omnivores | 7.25 | -2.78 | 0.3 | -9.23 | -2.18 | -3.38 | 5.7e-15 |
| France | Historical | Ectotherm Carnivores | 4.67 | -0.47 | 0.05 | -10.26 | -0.38 | -0.56 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Carnivores | 4.25 | -0.12 | 0.07 | -1.83 | 0.01 | -0.26 | 0.0691 |
| France | SSP5-8.5 | Ectotherm Carnivores | 3.81 | -0.54 | 0.18 | -2.97 | -0.18 | -0.9 | 0.0039 |
| France | Historical | Ectotherm Herbivores | 4.85 | -0.87 | 0.02 | -46.53 | -0.83 | -0.91 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Herbivores | 4.75 | -0.96 | 0.02 | -47.25 | -0.92 | -1 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Herbivores | 4.62 | -1.14 | 0.06 | -18.1 | -1.01 | -1.26 | < 2e-16 |
| France | Historical | Ectotherm Omnivores | 4.66 | -1.2 | 0.03 | -37.97 | -1.14 | -1.26 | < 2e-16 |
| France | SSP1-2.6 | Ectotherm Omnivores | 4.55 | -1.24 | 0.04 | -28.86 | -1.16 | -1.33 | < 2e-16 |
| France | SSP5-8.5 | Ectotherm Omnivores | 4.27 | -1.31 | 0.08 | -17.34 | -1.16 | -1.45 | < 2e-16 |
| France | Historical | Endotherm Carnivores | 6.93 | -1.59 | 0.23 | -6.76 | -1.12 | -2.05 | 1.9e-09 |
| France | SSP1-2.6 | Endotherm Carnivores | 8.07 | -2.17 | 0.34 | -6.36 | -1.49 | -2.85 | 1.1e-08 |
| France | SSP5-8.5 | Endotherm Carnivores | 6.26 | -1.33 | 0.19 | -7.1 | -0.96 | -1.7 | 4.2e-10 |
| France | Historical | Endotherm Herbivores | 5.54 | -0.71 | 0.09 | -8.07 | -0.54 | -0.89 | 5.1e-12 |
| France | SSP1-2.6 | Endotherm Herbivores | 5.32 | -0.57 | 0.07 | -7.89 | -0.43 | -0.71 | 1.2e-11 |
| France | SSP5-8.5 | Endotherm Herbivores | 5.25 | -0.62 | 0.09 | -7.07 | -0.45 | -0.8 | 4.6e-10 |
| France | Historical | Endotherm Omnivores | 6.49 | -1.89 | 0.13 | -14.43 | -1.63 | -2.15 | < 2e-16 |
| France | SSP1-2.6 | Endotherm Omnivores | 6.94 | -2.18 | 0.18 | -12 | -1.82 | -2.54 | < 2e-16 |
| France | SSP5-8.5 | Endotherm Omnivores | 6.05 | -1.71 | 0.16 | -10.97 | -1.4 | -2.02 | < 2e-16 |

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