**Table SI-1:** Using data from WorldClim.org and GBIF, we compared the average climate of grid cells containing eBird observations to an equal number of randomly selected grid cells. The goal of this analysis was to determine whether the climate in which eBird observations are recorded form a representative sample of all of the climates that could potentially be observed. Analysis was limited to the continental United States in 2016, where 140,923 cells (approximately 28% of all available cells) contained an eBird observation. For each of the 19 WorldClim bioclimatic variables, we calculate “representative climates” by randomly sampling 140,923 cells and calculating the average value of that bioclimatic variable for that sample. This sampling process was repeated 200 times for each bioclimatic variable, giving an approximately normal distribution of representative climates for that variable. We then compared the actual average climate of the eBird cells to the mean and standard deviation of the distribution of representative climates. For each of the 19 bioclimatic variables, the table below reports the mean and standard deviation of the 200 randomly sampled representative climates, the actual average climate found in the eBird cells, and the number of standard deviations between the mean of the 200 representative climates and the eBird value. Overall, the climate represented by eBird cells is hotter, much wetter, and much less variable than the actual climate of the contiguous United States.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| WorldClim code | Bioclimatic variable | Randomly sampled mean | Standard deviation | Mean of eBird locations | # SD’s between randomly sampled mean and eBird mean |
| BIO1 | Annual Mean Temperature | 10.99103 | 0.01077193 | 11.45669 | 43.22913 |
| BIO2 | Mean Diurnal Range (Mean of monthly (max temp - min temp)) | 13.41329 | 0.00498805 | 12.72091 | -138.808 |
| BIO3 | Isothermality (BIO2/BIO7) (\* 100) | 36.17337 | 0.01483556 | 35.629 | -36.694 |
| BIO4 | Temperature Seasonality (standard deviation \*100) | 879.9577 | 0.44619473 | 860.4111 | -43.8073 |
| BIO5 | Max Temperature of Warmest Month | 29.07707 | 0.01010987 | 28.82037 | -25.3906 |
| BIO6 | Min Temperature of Coldest Month | -8.52774 | 0.0152894 | -7.56539 | 62.94214 |
| BIO7 | Temperature Annual Range (BIO5-BIO6) | 37.60772 | 0.01295867 | 36.38577 | -94.2962 |
| BIO8 | Mean Temperature of Wettest Quarter | 15.64255 | 0.01711775 | 16.0251 | 22.34758 |
| BIO9 | Mean Temperature of Driest Quarter | 6.122805 | 0.02630083 | 6.386641 | 10.03146 |
| BIO10 | Mean Temperature of Warmest Quarter | 21.70738 | 0.00956604 | 21.87304 | 17.31745 |
| BIO11 | Mean Temperature of Coldest Quarter | 0.046099 | 0.01441773 | 0.681112 | 44.04387 |
| BIO12 | Annual Precipitation | 751.9308 | 0.88711646 | 877.4389 | 141.4787 |
| BIO13 | Precipitation of Wettest Month | 99.10771 | 0.1104814 | 111.394 | 111.2069 |
| BIO14 | Precipitation of Driest Month | 32.44918 | 0.0623701 | 40.30299 | 125.9227 |
| BIO15 | Precipitation Seasonality (Coefficient of Variation) | 40.20618 | 0.04858289 | 36.77588 | -70.6073 |
| BIO16 | Precipitation of Wettest Quarter | 269.1402 | 0.33471523 | 305.2041 | 107.7449 |
| BIO17 | Precipitation of Driest Quarter | 113.4564 | 0.20852376 | 139.5287 | 125.0328 |
| BIO18 | Precipitation of Warmest Quarter | 209.686 | 0.26410444 | 238.2945 | 108.3228 |
| BIO19 | Precipitation of Coldest Quarter | 162.4308 | 0.35180029 | 197.1959 | 98.82043 |