Temperate steppe/ open shrubland

CALIFORNIA, USA
CREDIT: KRISTINA J. ANDERSON-TEIXEIRA

Vegetation

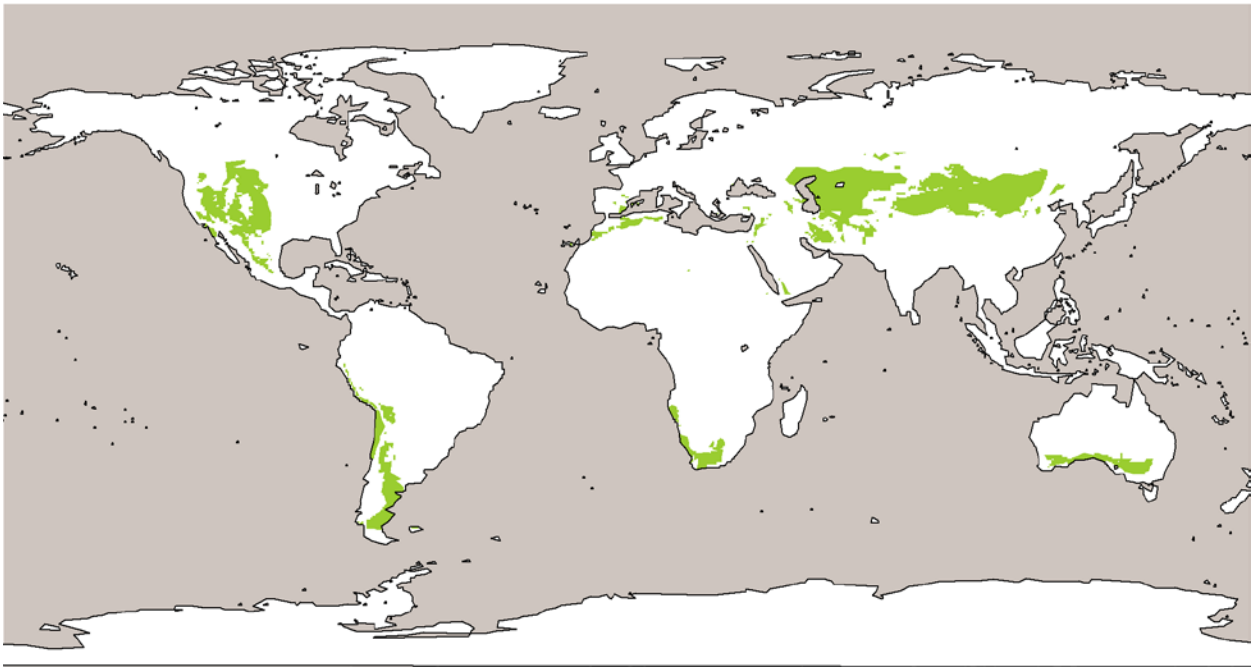
Temperate steppe/ open shrubland is dominated by shrubs, and are often partially barren.

Climate

Temperate steppe/ open shrubland are found in Köppen-Geiger climate zones Cold Arid Steppe (BSk), where annual precipitation ranges from 50 to 100% of the potential evapotranspiration and there is at least one month whose average temperature is below freezing, and Cold Arid Desert climate (BWk), where annual precipitation is 50% of the potential evapotranspiration and there is at least one month whose average temperature is less than 0 °C.

Potential Distribution

This distribution map illustrates the climate zones in which this ecosystem type occurs, with stippled areas indicating climate zones where it is rare. It is not present in all parts of its climatic range.



Climate regulation value

The average greenhouse gas value for ecosystems of this type is 95 metric tons CO_2-equivalents per hectare over a 50 year time frame (t CO_2-eq ha^{-1} 50 yrs^{-1}). This includes 84 t CO_2-eq ha^{-1} 50 yrs^{-1} from storage of organic matter that would result in greenhouse gas release if cleared and 11 t CO_2-eq ha^{-1} 50 yrs^{-1} from ongoing greenhouse gas exchange between the ecosystem and the environment.

When biophysical effects are taken into account, the average climate regulation value for ecosystems of this type is -37 metric tons CO_2-equivalents per hectare (t CO_2-eq ha^{-1} 50 yrs^{-1}). This is a decrease relative to the value based on greenhouse gas regulation alone.

Considering an average car, emitting 1.1 lb CO_2 per mile driven, clearing 100 square feet (9.3 m^2) of this ecosystem type would, on average, be equivalent to driving 177 miles/ 286km (counting greenhouse gasses only). Counting biophysical effects, maintaining the vegetation would be equivalent to driving 69 miles/110 km.