

Subarctic/ boreal broadleaf deciduous or mixed forest



ALASKA, USA

CREDIT: KRISTINA J. ANDERSON-TEIXEIRA

Vegetation

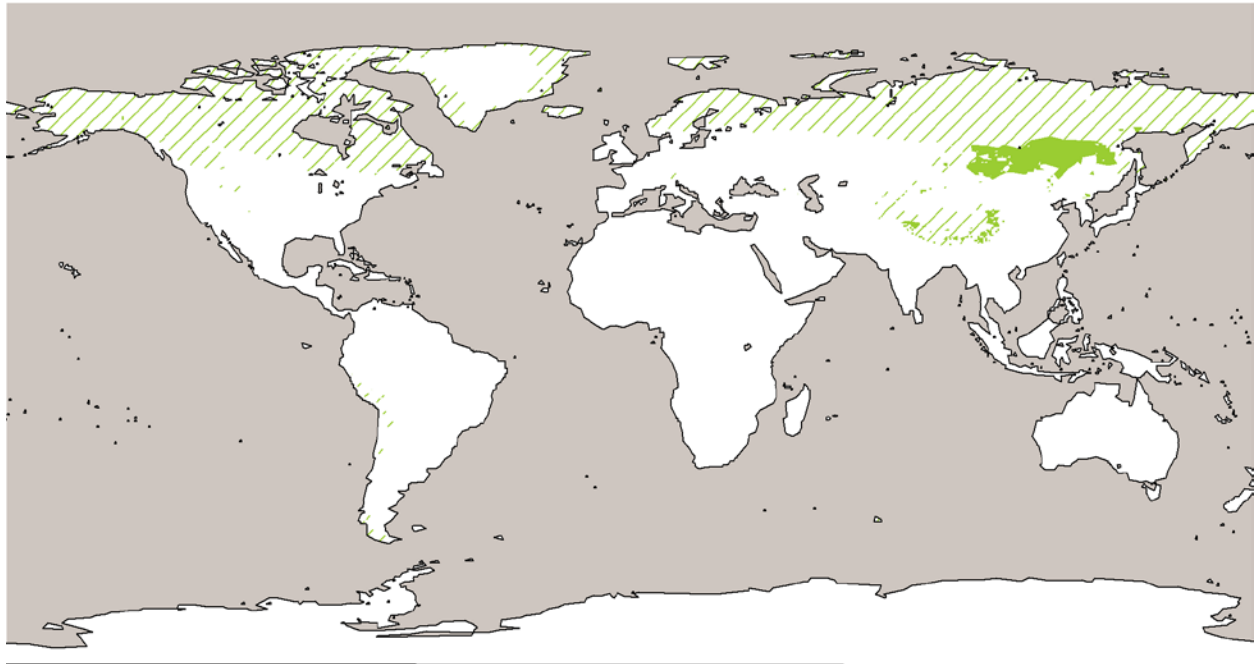
Subarctic/ boreal broadleaf deciduous or mixed forests are dominated by broadleaf trees or a mix of needleleaf and broadleaf trees. Broadleaf trees have flat leaves and produce seeds protected by fruits. Needleleaf trees (conifers)—a group that includes pine (*Pinus*), fir (*Abies*), spruce (*Picea*), larch (*Larix*), and others—have needle-shaped leaves and produce seeds in cones.

Climate

Subarctic/ boreal broadleaf deciduous or mixed forests are found in very cold climates, with temperatures of the warmest month averaging below 22°C (72°F) (Köppen-Geiger climate system zones Dfc, Dwc, Dsc, Dfd, Dwd, Dsd, ET).

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.



Examples

CTFS-ForestGEO Forest Monitoring Sites

The Center for Tropical Forest Science- Forest Global Earth Observatory (CTFS-ForestGEO) is a Smithsonian-led global forest monitoring network, including over 6 million trees and over 10,000 tree species in over 60 forested sites worldwide. Scientific research at these sites includes measurements that help to quantify the climate regulation services of these and similar sites. Examples of Subarctic/ boreal broadleaf deciduous or mixed forest in this network include the following site:

[SCOTTY CREEK, CANADA](#)

Climate regulation value

The average greenhouse gas value for ecosystems of this type is 744 metric tons CO₂-equivalents per hectare over a 50 year time frame (t CO₂-eq ha⁻¹ 50 yrs⁻¹). This includes 710 t CO₂-eq ha⁻¹ 50 yrs⁻¹ from storage of organic matter that would result in greenhouse gas release if cleared and 33 t CO₂-eq ha⁻¹ 50 yrs⁻¹ from ongoing greenhouse gas exchange between the ecosystem and the environment.

The calculator currently lacks appropriate data to calculate the biophysical effects of clearing this ecosystem type.

Considering an average car, emitting 1.1 lb CO₂ per mile driven, clearing 100 square feet (9.3 m²) of this ecosystem type would, on average, be equivalent to driving 1,383 miles/2,226 km (counting greenhouse gasses only).