Coastal Temperate Rainforests of the World

What is a Coastal Temperate Rainforest?
Coastal temperate rainforests (CTRFs) are characterized by cool summers, mild winters, and abundant precipitation distributed throughout the year.¹

A CTRF has the following characteristics:²
- Location within 93 miles of the coast
- High annual precipitation (33-105 inches)
- Over 100 days of precipitation seasonally, with 10% during the summer months
- Dominance by numerous coniferous species
- Some of the greatest biomass accumulation and highest productivity levels of any rainforest in the world—temperate, tropical, or boreal

Difference between Temperate and Tropical Rainforests³

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Tropical</th>
<th>Temperate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Coverage</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>Temperature (°F)</td>
<td>73°-81°</td>
<td>39°-54°</td>
</tr>
<tr>
<td>Rainfall (inches/yr)</td>
<td>&gt; 67</td>
<td>33-105</td>
</tr>
<tr>
<td># of Tree Species</td>
<td>100(s)</td>
<td>10-20</td>
</tr>
<tr>
<td>Dominant Leaf Type</td>
<td>Broadleaf</td>
<td>Needles</td>
</tr>
<tr>
<td>Age of Trees (yrs)</td>
<td>50-100</td>
<td>500-1000</td>
</tr>
<tr>
<td>Decomposition Rate</td>
<td>Rapid</td>
<td>Slow</td>
</tr>
</tbody>
</table>

Biodiversity
CTRFs represent only 2% of the world’s forests, but provide critical habitat for many unique species. In the four largest CTRFs, there are approximately⁴:
- 12,800 plant species
- 985 bird species
- 305 freshwater fish species
- 215 mammal species
- 145 reptile species
- 100 amphibian species

Forests of the Northern Hemisphere are comprised of tree species closely related to the pine family, (e.g. hemlock, Douglas fir, spruce, cedar, and pine), and the understory contains a variety of bryophytes and deciduous woody shrubs. Pine, spruce, and fir species are absent from CTRFs of the Southern Hemisphere, that are dominated by broad-leaved evergreen, and the understory is comprised of evergreen and deciduous trees and shrubs.⁵
“Biodiversity is the greatest treasure we have... Its diminishment is to be prevented at all cost.”
-Thomas Eisner

Protected Areas
In recent years, policies within many CTRFs has increased the area of land protected. New Zealand, Tasmania, and Alaska have the highest proportion of protected areas with 28%, 32%, and 36% protected, respectively. Globally, CTRFs originally covered approximately 75-100 million acres and currently cover approximately 43 million acres.

Ecosystem Services
CTRFs provide communities with a wide range of benefits including food, fiber, and timber to fulfill immediate social and economic needs. Additional ecosystem services include nutrient cycling, carbon sequestration, recreation, and spiritual enlightenment.

Figure 2: Historic, current, and protected global distribution of coastal temperate rainforests in millions of acres

Figure 3: Global carbon dioxide equivalent emissions versus rainforest carbon storage in gigatons

(cont’d)