Growing tightly packed together and collectively weaving a dense canopy of branches, a stand of red alder trees can totally dominate a site to the exclusion of almost everything else.

Certain species such as salmonberry and sword ferns have adapted to the limited sunlight dappling through the canopy, but few evergreen trees will survive there; still fewer can compete with the early prodigious growth of alders.

A Douglas fir tree reaches its maximum rate of growth ten years later than an alder, and if the two of them begin life at the same time, the alder quickly outgrows and dominates the Douglas fir.

After an alder canopy has closed, the Douglas fir suffers a marked decrease in growth, often dying within seven years.

Even more shade-tolerant species of trees such as hemlock may remain badly suppressed beneath aggressive young alders.

Companies engaged in intensive timber cropping naturally take a dim view of alders suppressing more valuable evergreen trees.

But times are changing; a new generation of foresters seems better prepared to include in their management plans consideration of the vital ecological role alders, play.

Among the alder's valuable ecological contributions is its capacity to fix nitrogen in nitrogen-deficient soils.

Alder roots contain clusters of nitrogen-fixing nodules like those found on legumes such as beans.

in addition, newly developing soils exposed by recent glacier retreat and planted with alders show that these trees are applying the equivalent of ten bags of high-nitrogen fertilizer to each hectare per year.

Other chemical changes to soil in which they are growing include a lowering of the base content and rise in soil acidity, as well as a substantial addition of carbon and calcium to the soil.

Another important role many alders play in the wild, particularly in mountainous areas, is to check the rush of water during spring melt.

In Japan and elsewhere, the trees are planted to stabilize soil on steep mountain slopes.

Similarly, alders have been planted to stabilize and rehabilitate waste material left over from old mines, flood deposits, and landslide areas in both Europe and Asia.