

To Save the Planet, Don't Plant Trees???

I personally believe that after reading the NYTimes Op-Ed and the blog that was our assignment to read that the tropical rain forests do cool the earth and that the Arctic forests have a net effect of warming the earth.

My husband and I are certified tree farmers with property of 40 acres in Rist Canyon. Our forest is in the “mid latitude” range which both articles discuss. Do the trees in our forest heat up the earth or cool it down? Let's go thru some of the points that were addressed in the articles.

#1 The amount of heat reflected from the surface of the earth. Of course the lighter the surface the more reflection of heat energy goes back into space (this is good). The darker the surface the more radiant energy from the sun is absorbed and the surface heats up. If our property was bare ground, it would be a light tan color reflecting a lot of the sun's energy. With grasses on the 40 acres, more energy would be absorbed and the surface would heat up more. With the trees (Ponderosa Pine and Douglas Fir) the surface of our tree farm is darker yet then if it were in just grasses. Considering this factor alone (albedo) it would be better that we have bare ground. In winters where our ground is snow-covered with no trees, reflection of the sun's energy back out into space would be very high.

#2 Water transpiration. I believe this has a small effect on our climate locally because our trees grow very, very slowly at this altitude and due to the poor soil that we have on the Front Range. Also the amount of VOCs emitted into the atmosphere is very low. Scientists are not convinced either way as to if the VOCs heat up or cool the earth.

#3 Trees and photosynthesis. When the trees are photosynthesizing they take CO₂ out of the air. When they are not doing this, they release pretty much exactly the same amount of CO₂ back into the air. That portion that is not released back into the air builds up in the trees as plant tissue and will be released back into the atmosphere when the plants die and decompose. It is a closed system. But this closed cycle extends over decades and decades of years. If we continuously plant more trees than what die the earth will cool. If more trees die and decompose than what are being planted then we are going to heat up the earth.

Let me tell you what happened the last 30 years we have had our tree farm. When we bought the property we had over half of the 40 acres supporting up to 550 trees per acre. This is well above the average number of trees our land supported before the pioneers came (160 trees per acre) The large number of trees is due mainly to the policy of suppressing forest fires. This made it ripe for huge infestation of destructive insects and severe fires. In 2008 we noticed a large number of our trees being infested with the Pine Bark Beetle. Pine beetle would attack the largest and the healthiest of our trees. It affected maybe 50% of our Ponderosas. “The Pine beetle affected about 33 million acres in Canada and 2,300 square miles of trees in Colorado thus releasing about 990 megatons of carbon dioxide into the atmosphere. This is approximately 5 years of all Canadian Transportation emissions.” This information was taken from an article by Catherine Tsai of Denver entitled “Pine Beetles Turn Forests From Carbon Sinks to Sources”.

Then on our property in 2012 the High Park fire came through twice. First time through it was a crown fire just staying in the

upper parts of the trees and the second time through it was a ground fire. Approximately 80% of our trees burnt. The High Park Fire burned about 136 square miles of forest. And since that particular fire there have been many more fires throughout Colorado. With the increase in ground fuel from the dead trees on our property we are now experiencing new beetles jumping from the dead wood to our remaining live Douglas Firs and killing them at a high rate.

Also, the wind has increased on our property and just after visiting a week ago we have noticed at least 50 trees blown down. Many of these trees were live trees that could have withstood the winds had other trees been standing to buffet the wind but now cannot survive.

The Forest Service has been very generous in money and technical support in helping us reforest our land. The main reason for this is to stop the erosion and to protect the Poudre water shed which our property is part of. We have and will plant trees for the rest of our lives (the next 10 to 20 years with grandchildren's help). That will definitely have a net effect of taking CO₂ out of the atmosphere. But, in 100 to 120 years from now, that CO₂ will go back into the atmosphere when decomposition becomes greater than growth.

We have goals on our tree farm besides that of cooling the earth—increasing the amount of wildlife, increasing the biodiversity (both plants and animals), and also have the property for recreational use which for us is frolicking in the trees. Last but not least, I don't want to see my neighbor's cabin from my cabin.

Definitely our tree farm in the last 20 years has been a carbon

source, as I would think most of the Colorado forests also have been a carbon source during this period.

So.....the questions should be: how much money should be allocated to forest restoration and how much of our resources should be allocated to the stopping of deforestation?? And where should these allocations go?? (What regions?) Should the money from the U.S. go into U.S. reforestation or be of better use going to the poor equatorial countries and the tropics??