C. Smith Open Forum BOS 4/7/15

GreenHouse Gas Emissions from Wildfires

R.W. Malmsheimer, J.L. Bowyer, J.S. Fried, E. Gee, R.L. Izlar, R.A. Miner, I.A. Munn, E. Oneil, W.C. Stewart 2011, Managing Forests because Carbon Matters: Integrating Energy, Products and Land Management Policy. *Journal of Forestry* 109(7S):S7-S50.

Last week I gave you a little bit of information about how much carbon has been put into the atmosphere because of wildfires over the past ten years. Today I want to tell you a little more about the role that forests and wildfires play in the control and creation of greenhouse gas emissions. The information is from a white paper written by some members of the Society of American Foresters. Many of the contributors are USFS employees.

So last week I said that

- wildfires emit carbon into the atmosphere during the fire
- if salvage logging is not done, carbon continues to be emitted for decades as the burned snags decay
- if reforestation is not done, new forests regenerate much slower, slowing down the sequestration of carbon from the atmosphere

Now adding to that

- high intensity stand replacing wildfire can damage soil to the extent that soil carbon stores are lost to carbon emissions
- the brush fields of the complex early seral forest that develops after a wildfire can negatively impact the environment
    - the higher transpiration rate of brush fields takes up more water, resulting in less water yield, a significant issue during times of drought
    - during drought conditions brush fields drop leaves, which decay on the ground, emitting more carbon into the atmosphere
- older forests sequester carbon at a slower rate than younger forests because the trees begin to decline after the first 100-150 years
- it takes time for regenerating forests to sequester carbon lost during a wildfire; the naturally regenerating forest from the Yellowstone Park fire of 1988 will take up to 230 years to recover the carbon that had been sequestered in the forest prior to the fire

But managing the forest, even after a wildfire, can improve carbon emission problems

- salvage logging provides an opportunity to convert some of the burned material into wood products that will continue to maintain stable carbon storage for many years, depending on what products are created
- It takes less energy to create building products from wood than from steel, aluminum, plastic, concrete. This substitution effect averages 2.1 tonnes of carbon removed from the atmosphere for every 1 tonne of wood used

- biomass from post-salvage logging or preventative fuel reduction activities can be converted into non-fossil fuel energy
- one-half to two-thirds of the energy used by the North American wood products industry is bioenergy, thereby reducing carbon emissions and reliance on fossil fuels

All this brings us to Carbon Accounting. Personally I think the idea of carbon credits to reduce greenhouse gases is a bad idea. It just says it's ok to pollute as long as you have the money to pay for it. But did you know that the USFS doesn't even participate in that program? I found that out at the last public comment meeting. I guess that someone, somewhere has decided that government carbon emissions are cleaner than corporate carbon emissions. Remember that the next time you are trying to decide which polluted air to breathe.