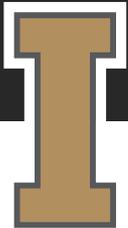


Adapting To Climate Change: Comparing Forestry & Agriculture

Chris Schnepf, Area Extension Educator - Forestry



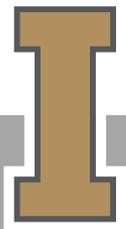
Private Forests

Many westerners presume any forest they drive by is managed by the U.S. Forest Service

- Nationally, the largest portion of forests are privately owned

Even in the west, key regions have a very high percentage of private forests

- Example: >1/2 of Idaho panhandle forests are private



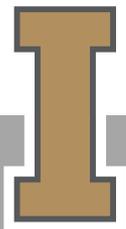
Is Forestry Part of Agriculture?

Yes and No . . .

Both are discerning how to adapt their management practices to changing climate, but;

Forestry starts from a different point than most agricultural practices;

- In North America, we manage native species and ecosystems in ways that mimic natural patterns of forest growth and development for a site



Long Time Frames

Cereal producers can usually switch to a new variety next year if necessary

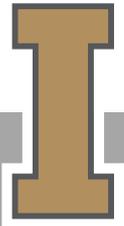
- Foresters sometimes envy this flexibility
- Planting a tree is a longer-term decision

Forest regeneration cycles:

- 40 years on the most productive PNW sites
- Much longer on drier sites or where forests are managed primarily for other reasons



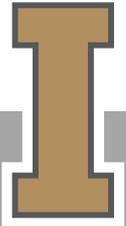
Image: Idaho Forest Products Commission



Lack of extra water

Some agricultural producers can supplement water for crops through irrigation

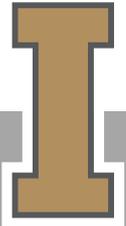
- Irrigation is almost never an option in native forests
- We manage forests to be resilient in the face of likely drought years:
 - Tree species adapted to historic drought extremes for a given site
 - Thinning to reduce the number of trees competing for limited moisture



Native Seed Sources

Foresters have focused primarily on getting regeneration from seed sources as close to the site as possible

- Local seed source genetics have been selected by the historic range of environmental conditions a site experienced

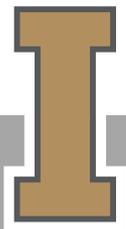


Native Seed Sources

Foresters often rely on natural regeneration from trees on-site

For tree planting:

- Tree seed must be from an adapted latitude and elevation
- Seed source adaptability varies greatly by species

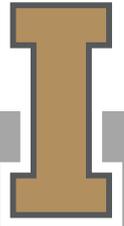


Native Seed Sources

Traditional strategy weakens if the future doesn't look like the past

On some sites, the best seed source may be from a location where their past looks more like our future

- e.g., seed from a site where the growing season starts sooner

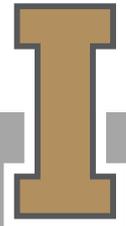
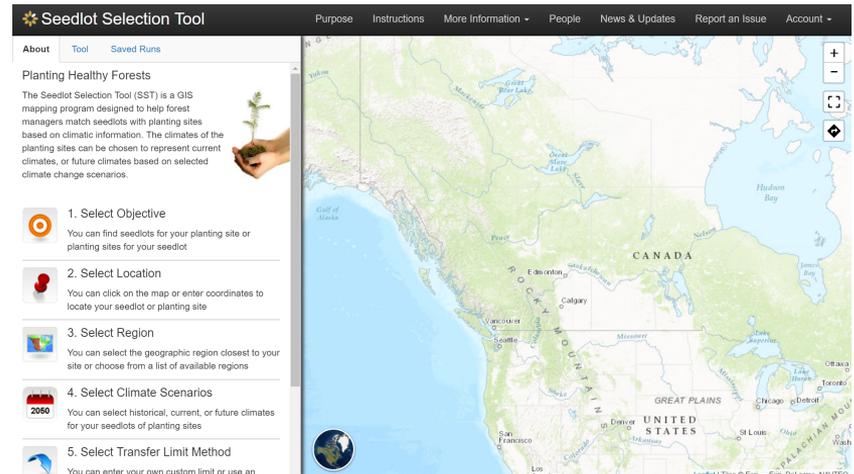


Native Seed Sources

Assisted migration can be problematic.

- A seed source that looks to be better adapted to 40 years from now may not be able to handle environmental extremes on a site for the next 10 years (e.g. frost).

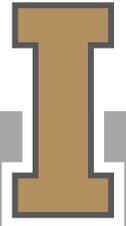
www.seedlotselectiontool.org: useful online GIS tool to help foresters think about matching seed sources to future climate scenarios



Insects and disease

The primary focus of strategies to manage forest insects and diseases is favoring tree species and spacing that is most resilient in the face of native insects and diseases

- Forestry also places more emphasis on cultural practices, native biological controls of problem insects and diseases
- How will climate change affect these natural biological controls and their hosts?

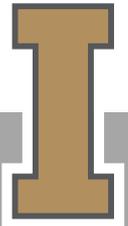


Fire

Natural disasters affect both forestry and agricultural lands

Fire is a unique issue in forestry:

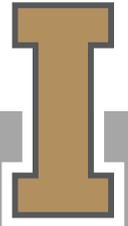
- Since 1910 we have tried to extinguish nearly all forest fires immediately
- But fires have been a key element in PNW forest ecology – nearly everything is adapted to fire in some way



Fire

Extinguishing fires is becoming more difficult:

- Unnaturally heavy fuel accumulations
- Fire seasons are projected to become longer and more intense, as a result of climate change

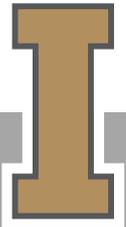


Fire

Currently more discussion of ways to allow managed fire back into these forests

Forestry faces one public concern the same as agricultural burning – smoke

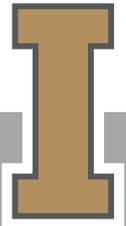
- If managed fires produce limited smoke and reduce likelihood of wildfires filling valleys with thick smoke for a month at a time, the public may be more accepting smoke from prescribed forest burning?



It's not just about the trees

Even where some timber is harvested, some forests' primary value may be for:

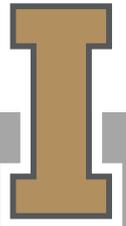
- watersheds, fisheries, recreation, wildlife, or other values . . .
- forest management must often consider those benefits as much, and in some cases, more, than harvested commodities



Conclusion

Like agriculture, a variety of groups are discussing and researching ways to adapt forests to changing climate. To learn more, see:

- Climate Forests and Woodlands community of Practice at www.Extension.org
- U.S. Forest Service Climate Change Resource Center (<https://www.fs.usda.gov/ccrc/>)



Adapting To Climate Change: Comparing Forestry & Agriculture

Chris Schnepf, Area Extension Educator - Forestry

