Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Helpful resources: [FVS Guides](https://www.fs.usda.gov/fvs/documents/guides.shtml)

1. Navigate to [FVS-Online](https://charcoal2.cnre.vt.edu/FVSOnline/)
2. Enter a project title and your email address and select, “Use production version”
3. Check email and click link.
4. Lets make a run to see baseline conditions and what the stand will look like in 50 years with No Management Action.
5. We can build our model from “Stands” or from “Plots within Stands. Name this run, Baseline. Lets use inventory tables from Stands and select the Central Rockies Variants.
6. Now we need to select a Forest Type – see [Essential FVS](https://www.fs.usda.gov/fmsc/ftp/fvs/docs/gtr/EssentialFVS.pdf) appendix B for information on coding. Lets select 221 – Ponderosa Pine
7. Select the top stand “03010020030018” and click add selected stand.
8. Switch to the Time tab. Lets change the ending year to 2074, so 50 years of growth.
9. Next lets go to Outputs
10. Check Stand Visualization, tree lists, stand structure, Inventory statistics and Regeneration’
11. Go to Run, type ‘None’ in MgmtID and hit Save and Run
12. A graph should appear that shows an increasing trend in BA over time and then decreasing BA.
13. Click View Visualize
14. Select the appropriate Run and for Image select beginning of cycle. Notice the stand was inventoried in 2017. For the second image select end of projection.
15. Notice that there are many more dead trees at the end of the run.
16. Next click on View Outputs, select the Baseline Run
17. Click on the FVS\_DM\_Stnd\_Sum table (HINT: the describe tables will tell you what each table contains.
18. Click on explore. Look at the tables and play around with making some graphs
19. Go back to Load
20. Click on the StdStk table; click Explore. Select the year 2024, select all of the diameter classes (not ALL)
	1. Make a graph that shows live TPA by DBHClass. Note the densities. Lets try to make this more like a Reverse J.
		1. Lets thin Dclass 10-16 to 50% of their current densities and thin D-Class 2-10 to a TPA of 10.
21. Note that regeneration tables were not made… this is because no regeneration events occurred.
22. Now lets make a new run with thinning.
23. Go back to Simulate
24. Type Thinning in the for the Run.
25. Now go to components and select thinning in the components and select thin throughout a diameter range.
26. In the component title type “ThinDclass 12-16 to 50%”.
27. In schedule by year type 2024
28. Select density in terms of Tree per acre and type 0.5 in proportion of tree to cut.
29. In smallest DBH type 10 and largest type 16
30. Click save in run.
31. Now lets do the thinning of smaller trees
32. Repeat the steps above but this time specific a residual density of 10 and specific the size range of 2-10
33. Go to Run and type Thin
34. Now the graph that appears shows the thinning treatment and the growth that follows
35. Go to visualize and select run thinning
	1. Visualize before and after thinning and deselect down trees to make it easier to see the effects of thinning.
36. Lets do a new run and schedule an un-even age regeneration cut after our thinning.
37. Go back to simulate and components, select Regeneration Methods: Un-even aged
38. You can choose a Q-factor. The Q-factor is the diminutionon quotient.
	1. Ex: If 12 trees in D-class one, 9 trees in D-class 2 then 12/9=1.3. Determines decrease from one class to the next
39. You can also do group selection and determine group sizes. Lets try a Q-factor of 1.4
	1. Important: What is the largest tree that should be removed? What was the largest tree in our stand?
40. Click save in run and Run the model. Explore the data

This is just an introduction to FVS.. you can see how you can select and implement a variety of tools.

Homework: Using the information in the guides and table descriptions, pick a new Forest type (in a new region or not) and pick a stand to “ play around with”. If you are interested in fire, consider looking at fire severity outputs. For your stand, make a graph that shows Trees per acre in 2024 (present) and 2074 (future) and bring your graph to class with this worksheet on Monday. For right now DO NOT run any treatments.

HINT: Pick a forest type you want to learn more about!!