

Collection and Preparation of Soil Monoliths



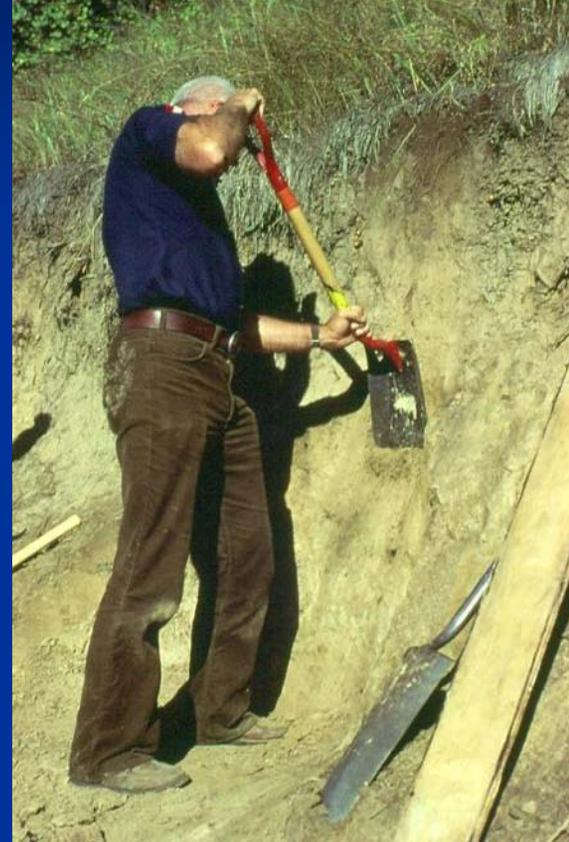
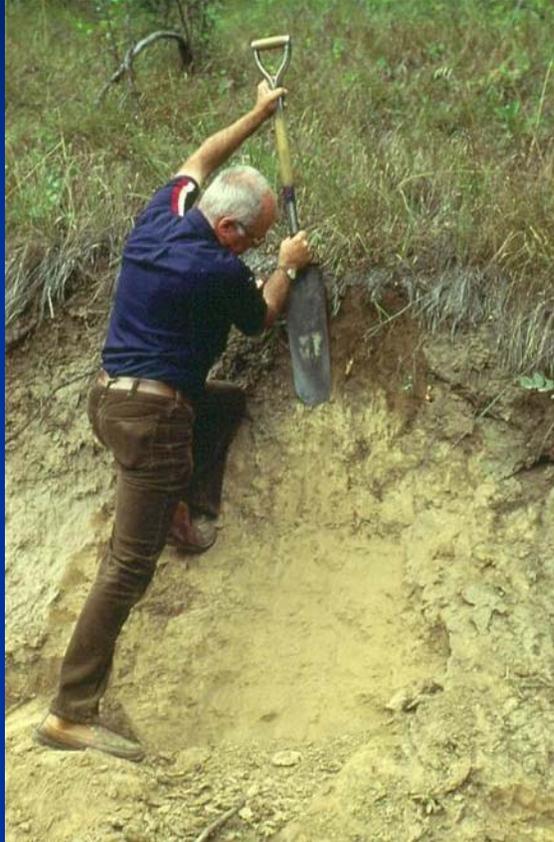
Maynard Fosberg
Professor Emeritus
University of Idaho



Site Selection

Road cut 6 miles east of Moscow
Taney Soil Series

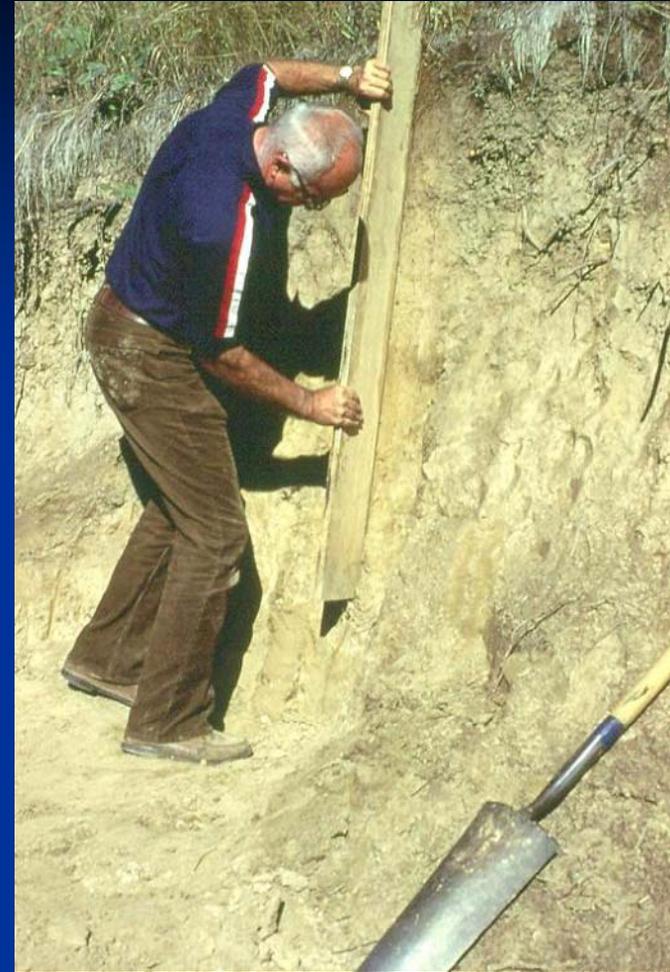
Soil Profile Excavation



Use shovels, picks, hand axes, etc.
With hardpans such as duripans and fragipans a power cutoff saw is vital.

Clipping Roots





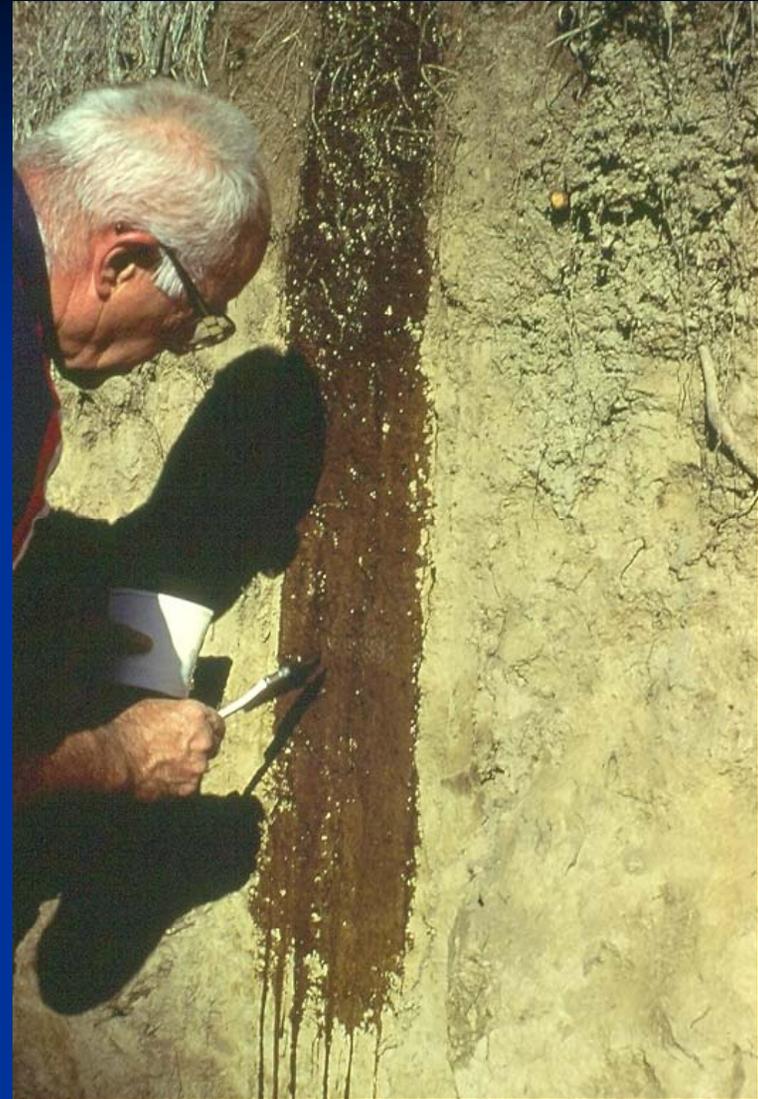
Board must be flush with soil surface
Use edge of board as a straight edge to detect high spots



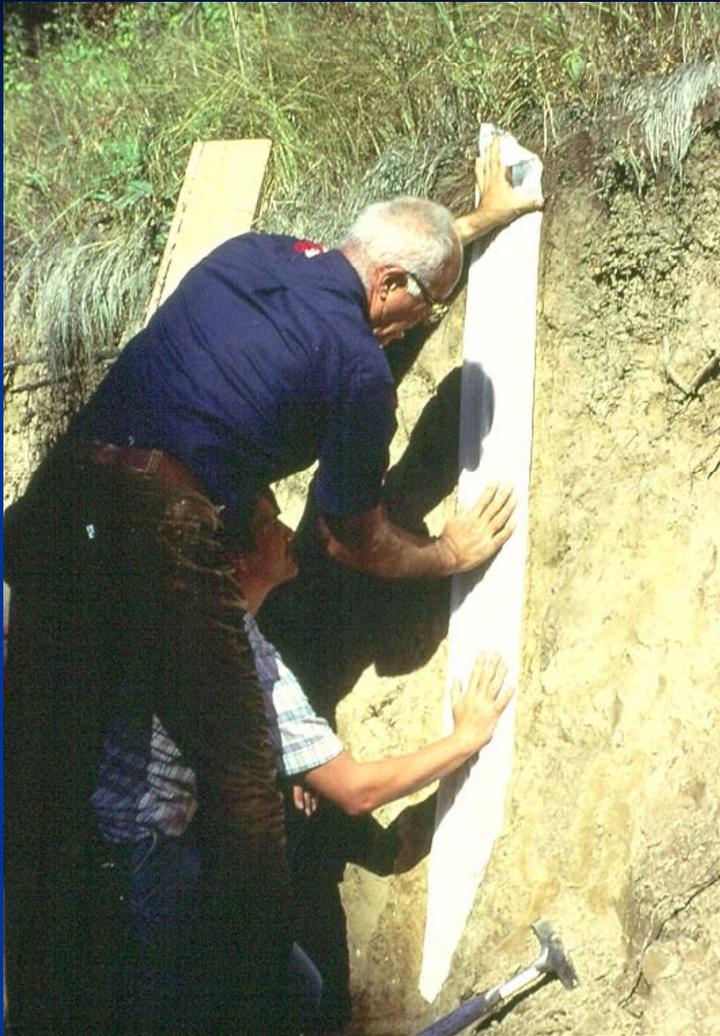
Use square shovel for finishing work.



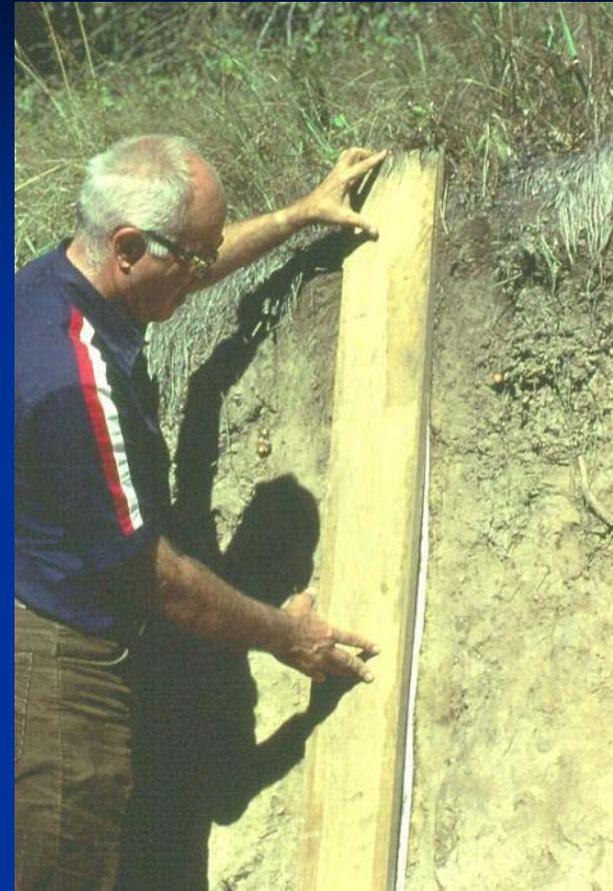
Place board against soil and scribe edges with knife.
Outlined soil column becomes profile to be excavated.



Coat outlined soil column with cellulose acetate.



Place strip of cheesecloth over coated profile before cellulose dries.
Then coat the cheesecloth surface with cellulose and let it dry.

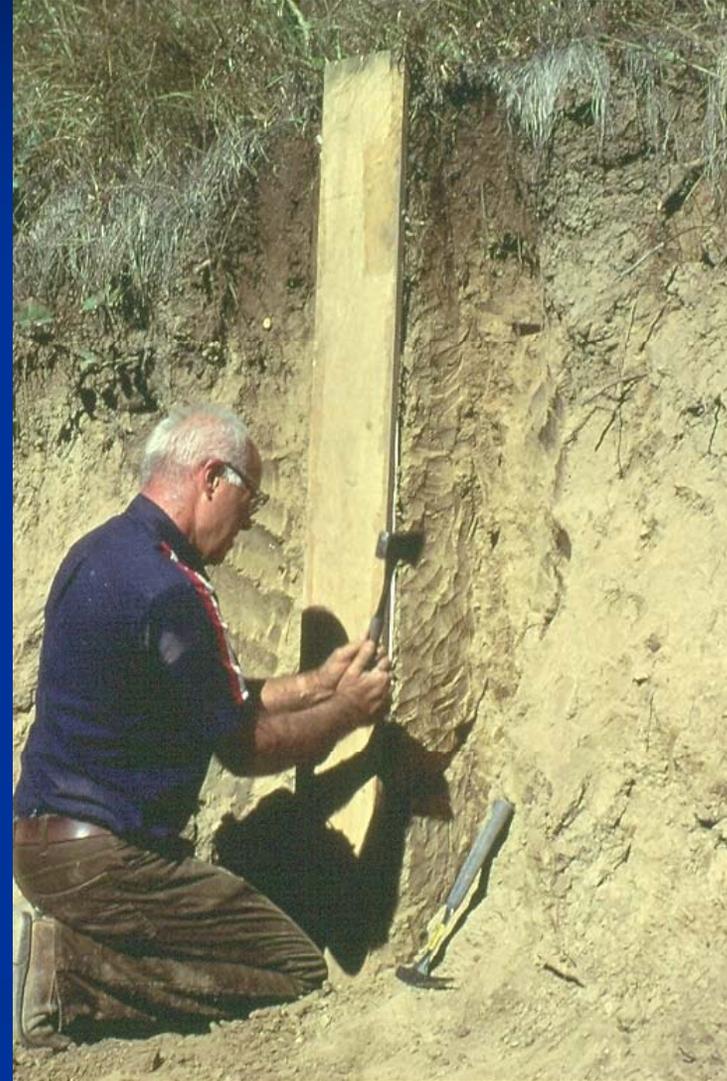
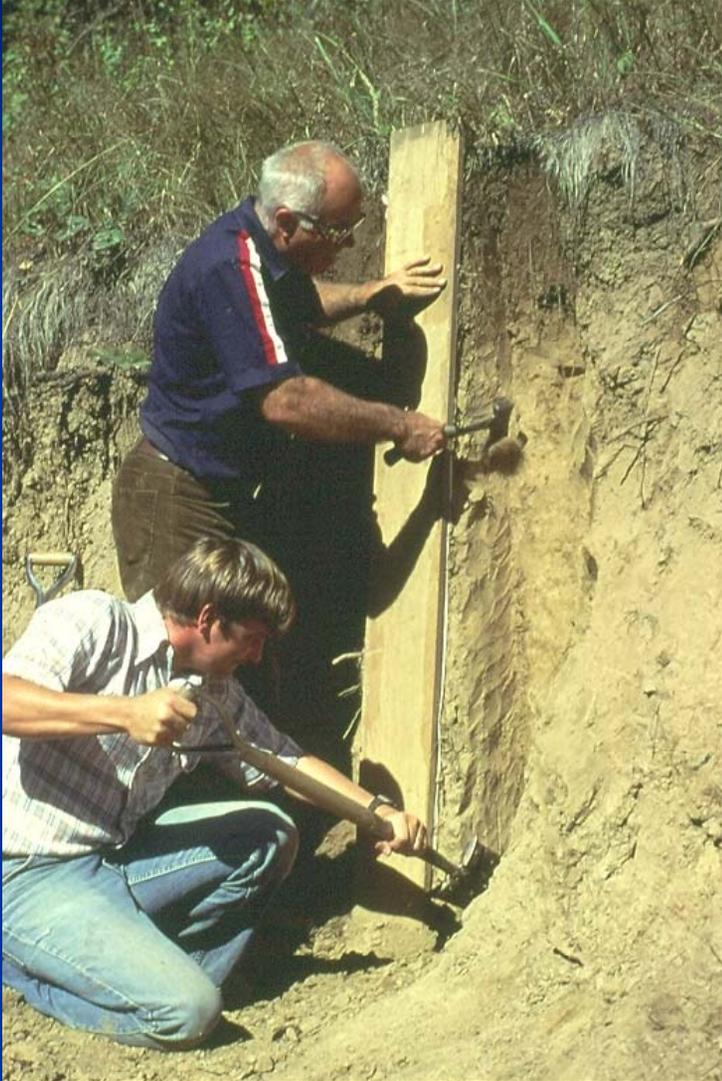


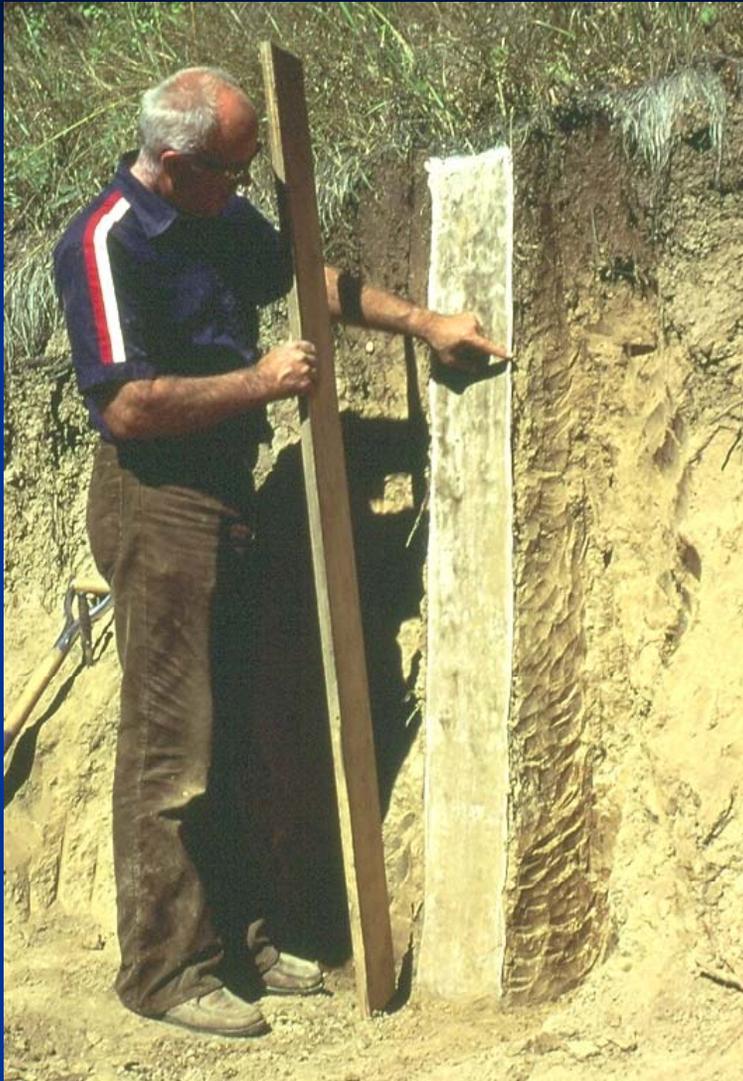
When the cheesecloth is dry to the touch,
place board over cheesecloth to start excavation.
Normally, use 2 boards because of the weight of the soil on the board.



Start excavation at the top of the board.

Excavation is done with knife, hand axe, shovel, chisel, etc.
Two people work together from both sides.





Note – Excavation is flush with the board and cheesecloth.

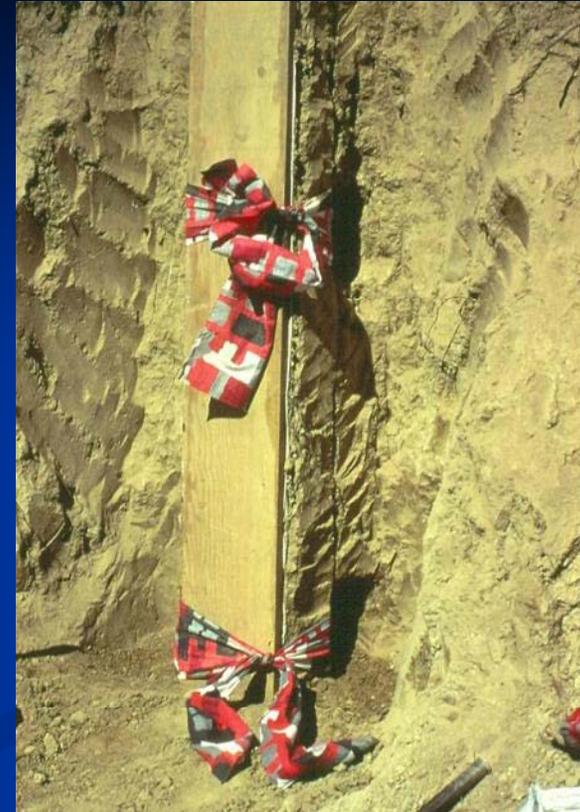
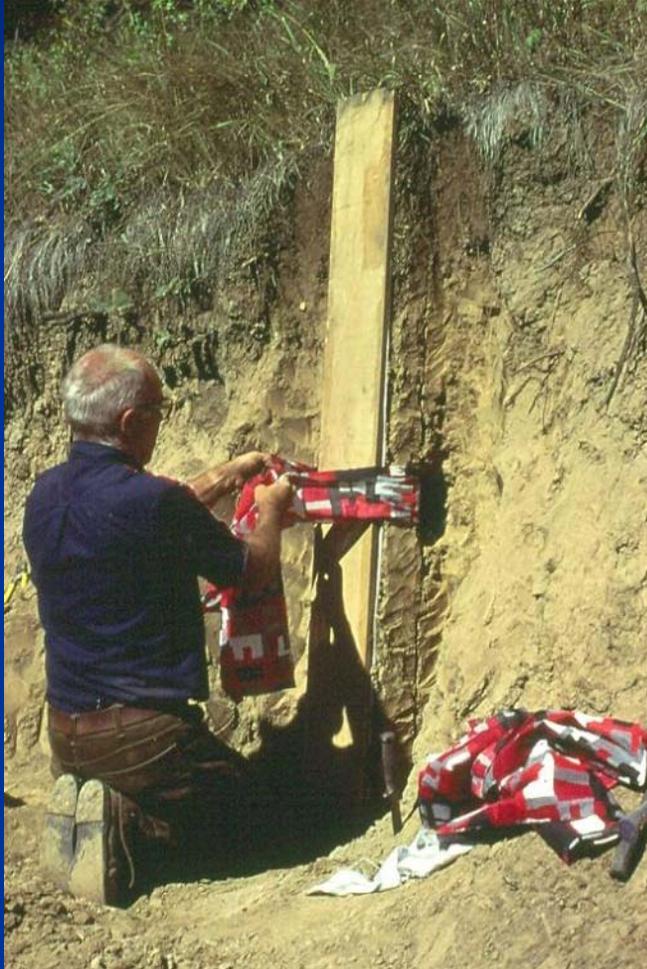
Also, note the board is **not** glued to the cheesecloth. This is very important for later transfer.



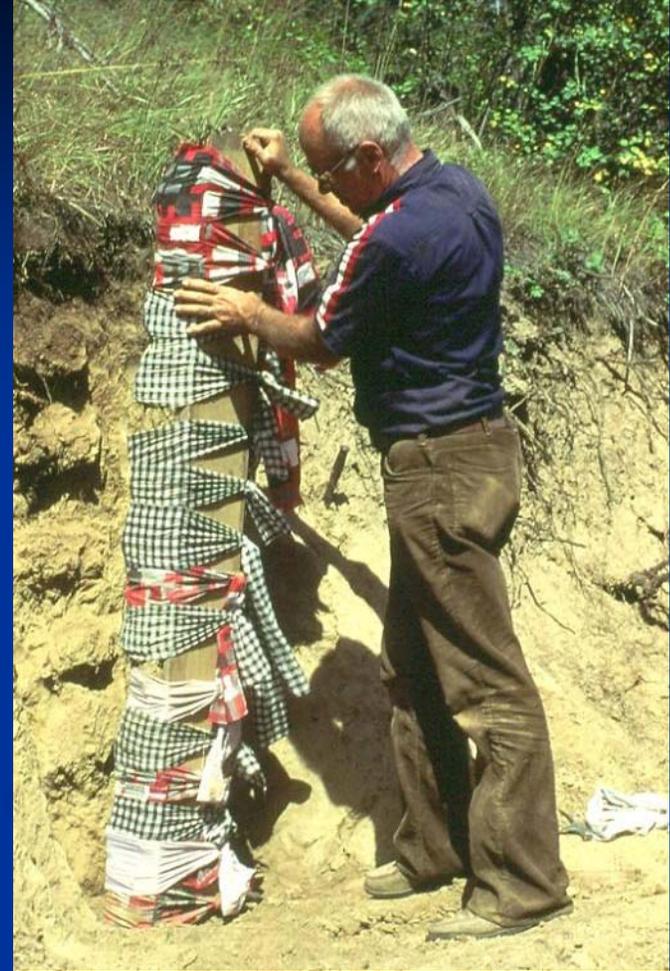
Start channeling in about center of profile.

Leave 3 to 4 inch thickness of soil, depending on the texture and structure.

Use cotton cloth, torn into 4-inch strips, placed around the soil and board and tied at the edge.



Tie the second strip at the bottom and work up.

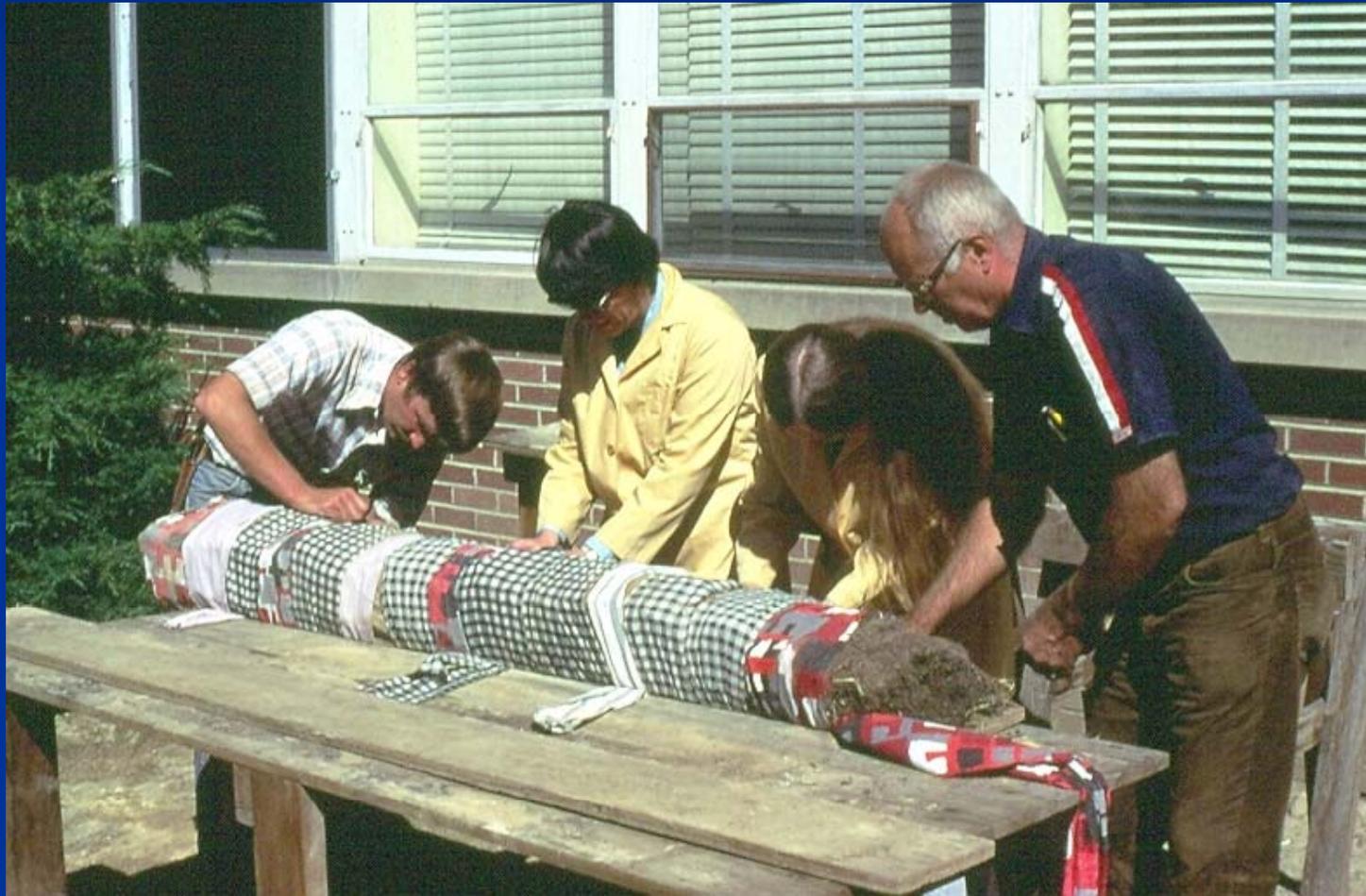


The last two ties are at the top

Remove the monolith and transport it back to the lab.



In the lab, place the monolith on the table next to the transfer board.





Coat the second board, to which the soil profile is to be transferred, with cellulose.

Leave space at the top of the board for tying,
and at the bottom for the label.





With many hands, pick up the board with the soil monolith,
place it at the far edge of the second board,
then slip out the first board as the soil is gently let down.



Push the soil into place on the board and close any cracks.



The soil is ready to be worked down with pocket knives and air pressure to expose the structure and achieve the proper thickness. The soil must be moist or this step cannot be accomplished.





Use air pressure to remove knife marks.



After the soil has dried, soak it with vinylite resin.
Apply vinylite until it stops soaking into the soil.
Do not let it puddle and dry on the surface.



Fill cracks and openings along edges with cellulose acetate.



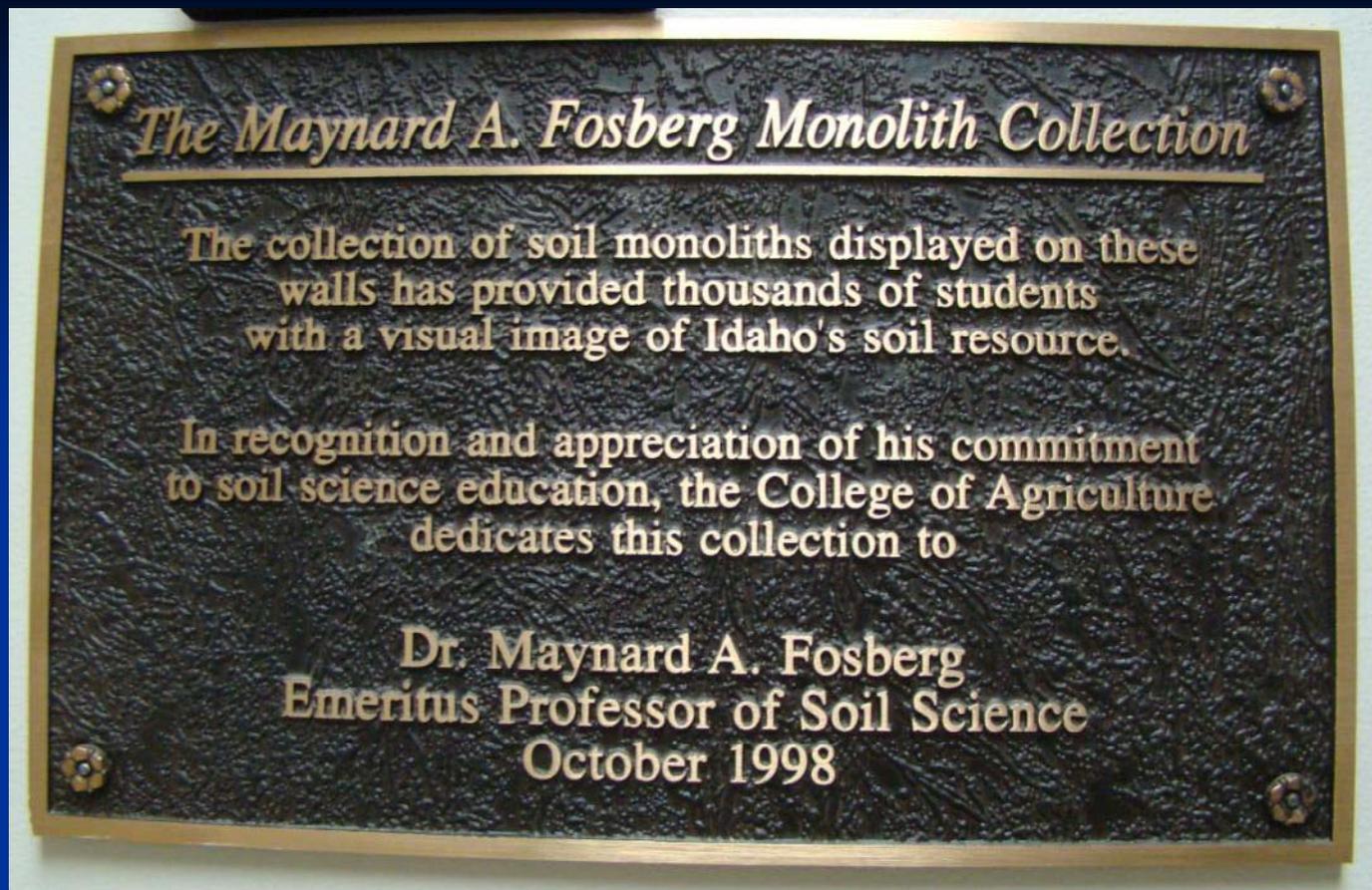
Use black soft iron wire to provide additional support for thick soils.



Wrap the wire around a screw and tighten it with a screwdriver.
Then paint the board black.



The finished Taney Monolith.



Following are a few photos of the monolith displays on the second floor of the University of Idaho's Agricultural Sciences building.



The 12 soil orders















I want to give credit and thanks to the following:

Dr. William Hall, Geology Professor Emeritus,
who took all the photos used
to show the collection and
preparation of monoliths

Anita Falen, Soil Pedology Research Associate,
who provided photos of the monolith displays

Dr. Paul McDaniel, Soil Science Professor of Pedology,
For providing support and maintenance of the monolith collection

Thank you for inviting me



Are there any questions?

Extra Slides Follow











































Any questions?