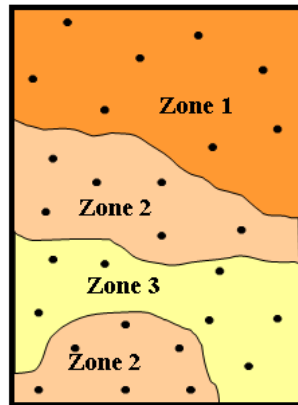


1. Pick your points carefully!

- Randomly select the sample sites
- Sample from the entire area you're trying to measure soil carbon (i.e. pasture, entire ranch, or area you applied a practice)
- Grouping soils (i.e., Stratification) can help if your ranch has steep slopes
- Steer clear of manure & other spots that could skew your sample
- Mark your points for future resampling

• **Helpful Resources**

- Earth Engine Stratifi app



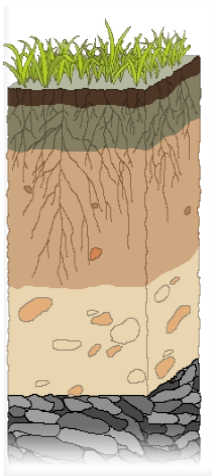
2. Take enough samples for your goals

- Too few samples = unreliable estimates!
- Take some preliminary 'practice' samples if possible
- OR find landscape variability information from other resources (i.e. nearby studies)
- How much do you expect soil C to change?
- Calculate the exact number of samples needed with a power analysis

• **Helpful Resources**

- Power analysis: scf.berkeley.edu/shiny/bosf/soil-carbon-statistics
- Range-C Monitoring Handbook of Field Methods from Point Blue Conservation Science website

3. Think about depth



- Find out how deep your soils might be (USDA SSURGO)
- Consider your goals: are you interested in soil health or climate change mitigation?
- Think about how your management may influence deep soils
- Sampling down to 30 cm is commonly recommended, but dig deeper if you can!

• **Helpful Resources**

- Check out a map of your soil horizons at <https://casoilresource.lawr.ucdavis.edu/gmap/>

4. Be consistent and precise

- Your soil C data will only be as good as your samples!
- Follow the protocol as carefully as possible
- Make sure you do things consistently (e.g., maintain a consistent depth, reject points using standard rules, etc)
- Don't be afraid to ask for help!

• **Helpful Resources**

- Range-C Monitoring Handbook of Field Methods from Point Blue Conservation Science
- Contact your local Resource Conservation District, NRCS, Cooperative Extension Agent, or other trusted technical service provider

5. Choose what you are measuring wisely

- You have options to measure soil carbon in the lab, but some are more reliable than others:
 - Loss-on-ignition is widely used to estimate soil C: it's inexpensive, but can be imprecise
 - Elemental analysis by dry combustion improves precision and is the "gold standard". Be sure to request inorganic carbon removal if you have carbonates in your soil (or pH over 7.5)

• **Helpful Resources**

- See what soil testing services are offered at UC Davis: <https://anlab.ucdavis.edu/>