

## Observational Metrics

### Aggregate Stability

<b>Ecological Process:</b>	Community Dynamics
<b>Why Monitor This Metric?</b>	Aggregate stability is a measure of how well a soil aggregate maintains its structural integrity when submerged in water. This measurement demonstrates how soil microorganisms and plants interact in the rhizosphere and how their interactions build soil structure. Poorly aggregated soil will have a tendency to literally fall apart under heavy precipitation leading to both poor infiltration and unwanted runoff. Good aggregate stability creates space for water infiltration, root growth and a thriving community of microorganisms in the soil.
<b>Tools Needed:</b>	Pen/Pencil, Phone, Data Sheet/Paper, Camera, Shovel, Mason Jar, Water, Wire Mesh, Stop Watch

#### The Process:

1. Using a shovel, dig up a clod of soil and select an aggregate that is approximately the size of a golf ball.
2. Make sure to identify the GPS location where you obtained the soil clod with your phone to refer back to. The aggregate should not be overly moist before starting the next step. It can be "air dried" overnight if needed.
3. Place the aggregate on a piece of wire mesh that easily fits into the mouth of a mason jar.
4. Slowly lower the wire "basket" containing the aggregate into the prefilled mason jar and fully submerge the aggregate.
5. Set the timer for five minutes.
6. Make observations and take note of what happens during and after the five minutes.
  - a. Did the water turn cloudy?
  - b. How much of the aggregate has disappeared?

#### Use Your Observations to Rate Aggregate Stability (adapted from ROC)

- Poor: water turns cloudy quickly. Aggregate mostly disintegrates within five minutes.
- Fair: water turns somewhat cloudy. About 50% of aggregate remains.
- Good: water is clear. About 80% of aggregate or more remains.