

California All Taxa Biodiversity Inventory Sampling Protocol: Soil

The following instructions are for soil sampling. Do not collect soil samples on or near archeological sites. Archeological sites include areas where artifacts or cultural material are located as well as in or around historical structures. If you do encounter an archeological site while sampling, do not move or remove archeological material, stop sampling, and move locations.

If you are collecting soil samples, you do not need to collect environmental DNA (eDNA) samples. During processing, micro invertebrates will be extracted from the soil samples. The samples will also be used for other analyses including eDNA, chemical, and bacterial.

Precautions and Guidance on Sampling:

- **Use caution to prevent contaminating your sample with DNA that is not from the site.**
- Be sure to clean the spade prior to sampling with a bleach wipe or 10% bleach solution. Allow the bleach to evaporate off the spade face prior to sampling (~30 seconds).
- Try not to touch the soil sample if possible. Use a stick or rock from the site instead of your finger to pack soil down.
- If you do have to touch the sample, make sure you are wearing clean gloves that have not been used to touch your backpack, face, clothing etc.
- If you do touch or contaminate the sample, then discard and start over.
- Avoid rocks, sticks, mushrooms, leaves or other large debris or organic material.
- Collect samples in natural areas that are not impacted by anthropogenic disturbances. If possible, sample away from roads, trails, etc.
- **DO NOT sample in agriculture/ agricultural fields.**
- Collect samples across the site that reflect the site's biodiversity (e.g., sample under a variety of plant types or soil types present at the site).

Equipment:

- Gloves
- Barcode sticker labels or pre-labeled Ziplock bag (1 per site)
- 1-quart Ziplock bag (1 per site)
- Spade
- 15-cm ruler (optional)
- Bleach wipes or 10% bleach solution for sterilization

Steps:

1. Put on gloves.
2. Wipe spade with a bleach wipe and let dry (30 seconds).
3. Using the spade or natural material (rock or stick) found at the site, scrape away debris and litter from the collection area.
4. Use the spade to create an approximately 15 cm deep hole from the topsoil.
5. Collect approximately 100 ml of soil from the hole and place the soil in the Ziplock bag. Make sure you are collecting from the entire depth of the hole (from the topsoil to 15 cm deep).
6. Fill in the hole and return the area to an undisturbed state.
7. Repeat steps 3. through 6. Collect samples from 10 locations within your site. Combine all samples together in a single Ziplock bag. The total volume collect per site should be 1 liter.
8. Seal the Ziplock bag.
9. Scan the barcode label.
10. Store the Ziplock bag in a cool, dark, and dry location (e.g. in a cooler with leakproof ice packs or in a fridge). Ideally, soil samples should be refrigerated (e.g. in a cooler with ice packs) from the time they are sampled until delivered to the laboratory.
- 11. Ship or drop off samples within 48 hours or as soon as possible.**