ADVENTURE SCIENTISTS

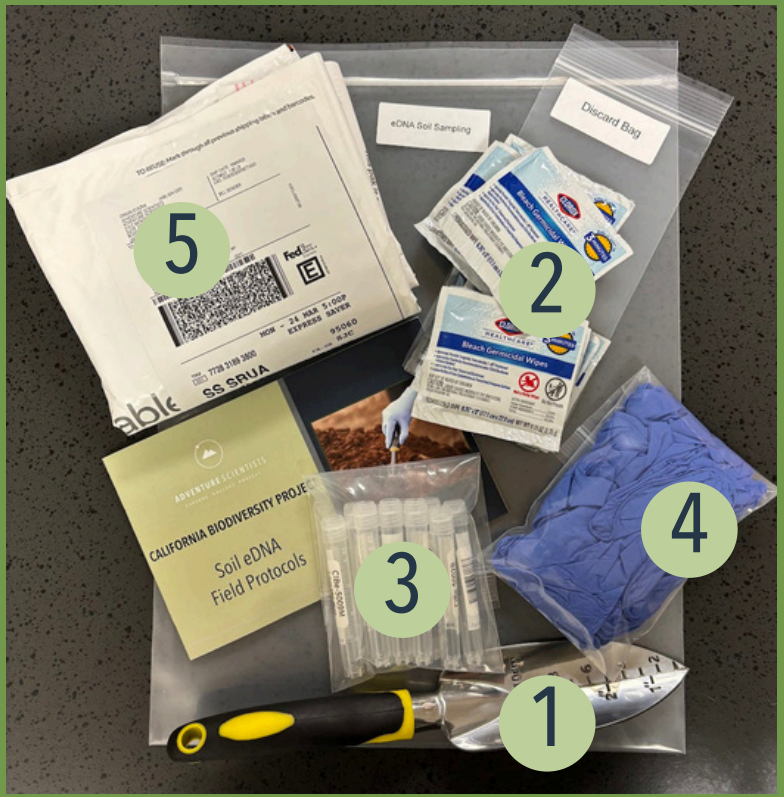
EXPLORE. COLLECT. PROTECT.

CALIFORNIA BIODIVERSITY PROJECT

Soil eDNA Field Protocols

updated May 2025

REQUIRED GEAR LIST



WE PROVIDE:

1. Trowel
2. Bleach wipes
3. Vials for samples
4. Gloves
5. Return envelope for samples
6. Location based permit

YOU PROVIDE:

- Smartphone with Survey 123 app and California Biodiversity project loaded

DATA COLLECTION

PREPARE GEAR

Step 1:

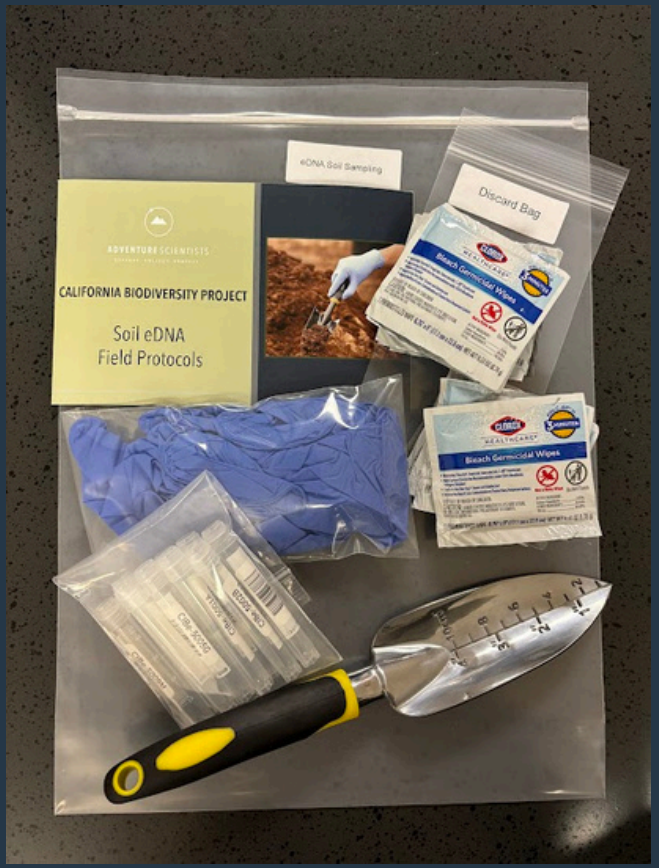
Unpack and organize supplies for ease of use.

Ensure each member of your trained volunteer team knows their roles and responsibilities.

Pro Tip:

Team Roles

Have one team member in charge of entering data on the phone and another for sample collection.



DATA COLLECTION

PREPARING FOR TOPSOIL SAMPLE COLLECTION

Step 2:

Put on gloves and wipe gloves and trowel with a bleach wipe. Place used wipe in discard bag.

Step 3:

In your sample area, imagine a 1 foot triangle. Use the trowel to clear bulky organic materials (leaf litter, debris, etc.) from the ground's surface as well as the top 1cm of soil from the triangle area.

Note: We do not want to collect grass, sod, leaves, sticks, etc.

Step 4:

Prepare the plastic vial by carefully unscrewing the top and setting it to the side.

REMINDER

Minimize open vial exposure.

Microbes are everywhere! Don't leave the cap off for too long. Be efficient while filling your vial with soil and put the cap back on.

DATA COLLECTION

COLLECTING TOPSOIL SAMPLE

Step 5:

Use the trowel to dig soil from each of the three points of the triangle area.

Step 6:

Use the vial itself to scrape soil from the trowel up to the marked 4.5mL line.

- do not use your hands to collect or touch the soil in any way
- do not collect soil that is directly touching the trowel
- you can use a stick or organic material nearby to help collect soil into the vial if necessary

Step 7:

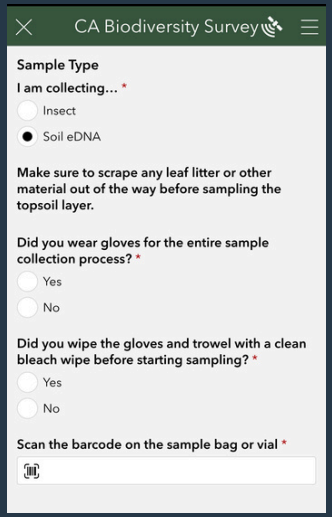
Once filled to the 4.5mL line, seal the lid on the sample vial completely.

DATA COLLECTION
ENTERING DATA

Step 8:
Use your phone to open the Survey 123 app and scan the barcode on the vial.

Step 9:
Place the vial in the ziplock bag. Be sure the lid of the vial is closed tightly.

Step 10:
Finish entering data into the Survey 123 application.



Pro Tip:

Assign Team Roles

While one person is entering data on the phone, another can complete site cleanup. Alternatively, by removing one glove, you can complete this task, but will need to use one hand with your phone, and the other (still gloved) to handle the sample.

DATA COLLECTION

PREPARING TO LEAVE THE COLLECTION SITE

Step 11:

Return the sample site to its previous natural state. Leave No Trace ©

Step 12:

Knock excess soil off of trowel. Use a bleach wipe to sanitize the trowel, take extra care to get inside the engraved numbers. This will minimize cross-contamination.

Step 13:

Remove your gloves and place them in the discard bag.

Step 14:

Repack your gear kit, leaving no trash behind. All gear, bags, vials, gloves, etc. should be placed back into your gear bag.

SUBMITTING SAMPLES

Store your samples in a cool, dark place or refrigerate while waiting to ship. You must send your samples within 2 weeks of collection.

Ship bagged samples using the provided shipping label to:

Rachel Meyer / Cal eDNA
130 McAllister Way, CBB Room 242
Santa Cruz, CA 95060

Finished collecting? Check the Volunteer Homepage for next steps!

IN CASE OF EMERGENCY

FIRST, CALL 911

Once you are in a safe situation, after the emergency, alert Adventure Scientists staff about the incident by contacting: (406) 579-9702.

ONLY contact this number if you are reporting an incident.

Have project-related questions?

Email: biodiversity@adventurescientists.org