



ADVENTURE SCIENTISTS

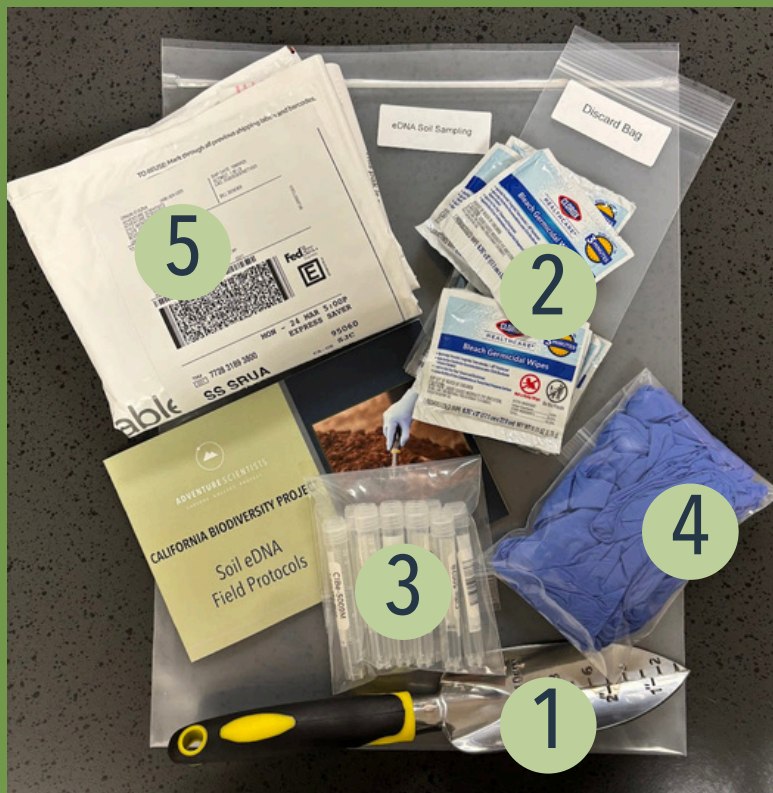
EXPLORE. COLLECT. PROTECT.

## 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:

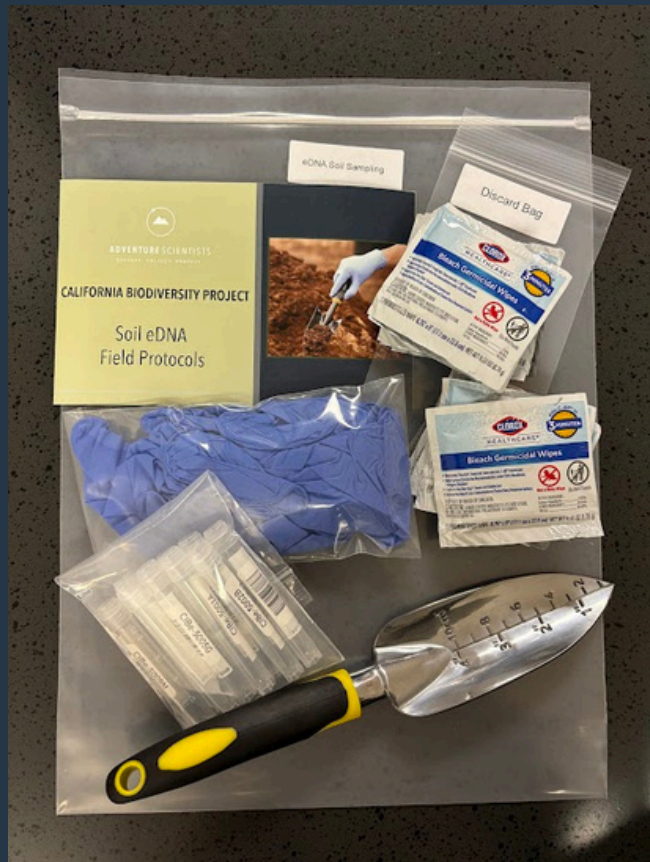
Unpack and organize supplies for ease of use.

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.

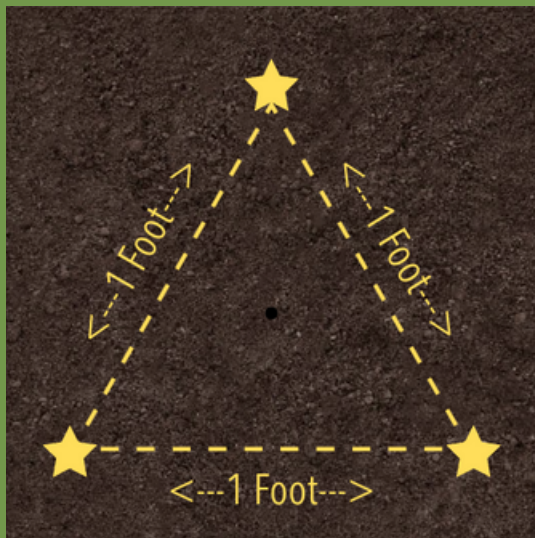
### Step 3:

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.

The screenshot shows the 'CA Biodiversity Survey' app interface. At the top, there is a green header bar with a close button (X), the title 'CA Biodiversity Survey', and a menu icon (three horizontal lines). Below the header, the form is titled 'Sample Type'. It contains a section 'I am collecting...' with two radio button options: 'Insect' (unselected) and 'Soil eDNA' (selected). Below this, there is a text instruction: 'Make sure to scrape any leaf litter or other material out of the way before sampling the topsoil layer.' This is followed by another question: 'Did you wear gloves for the entire sample collection process?' with 'Yes' (unselected) and 'No' (unselected) radio button options. The next question is 'Did you wipe the gloves and trowel with a clean bleach wipe before starting sampling?' with 'Yes' (unselected) and 'No' (unselected) radio button options. At the bottom, there is a question 'Scan the barcode on the sample bag or vial' followed by a barcode scanner icon and a text input field.

### 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](mailto:biodiversity@adventurescientists.org)