California Native Bee Society

Bee Photography and iNaturalist Tips

Safety

- Stay on the trail and watch where you step. There may be hazards such as rattlesnakes, stepping in scat, bumping into cactus or poison oak, etc.

Finding bees

- Check lots of flower types, even the tiny ones, even the “weeds”. Look for dark spots or different colors on the flowers.
- Look for movement. Sometimes it works to follow one moving insect around for a while to see where it lands.
- Native bees can also be found on the ground (females may have burrows and males may be resting). It’s a good photo opportunity as they’re stationary when they’re on the ground.

Some pollinators spook easily

- Start taking photos further away and move closer slowly (while still taking photos).
- Sometimes taking a step (and making noise) spooks the pollinator, so leaning forward or squatting without moving your feet can help.
- Sometimes your shadow over the insect can spook it, so watch your position.
- Sometimes the sound of the phone/camera taking the photo can spook it, consider turning the sound off.

What to photograph

- Features that can help with insect ID are the pattern on the abdomen, pattern of lines on wings, eye color, face size/shape/pattern, legs. Try to get different angles. Often the

insect will move around and you can keep watching and get different angles by staying where you are, but if the pollinator is not moving and not spooked, consider changing your position to get more angles. Sometimes photos in flight are helpful, as the wings can cover the abdomen, revealed in flight.

- Often researchers want to identify the plants that the pollinator is visiting, so getting at least one photo that shows more of the plant is helpful – zooming out can show more of the plant.

Photography tips

- Start with fully charged equipment (phone and/or camera).
- Take lots of photos. Take when they're still, flying, etc. You can edit/delete any not helpful later on. If the pollinator visits different plants, take photos on each of them.
- Kneeling or getting to the level of the flower/bug can improve photos.
- If you're using a cell phone, don't go past 2x zoom (on some models) or 5x zoom (on more recent models), as the resolution may suffer.
- With a camera, fast shutter speed can help for fast moving bees or windy conditions, and more depth of field can get a great image for non-moving pollinators.
- With a cell phone or some cameras with macro lenses, sometimes the pollinator is not shy and you can hold the flower steady with your fingers if it's windy. Other times it will spook and be gone.
- You could also take a video on a cell phone, then go back later and freeze frames to get images.
- Taking a photo of the ground or your foot can be handy. You could use it in between photos of 2 of the same insects on the same plants to tell yourself they're different. You could also take photos to remind you of location - at the start, end, middle of the trail or near identifying locations. If you are using GPS, that's great, but for manual location entry, having hints for start of trail, middle, end can be helpful.

Processing and selecting photos

- Crop so you can get details, but not so much it's totally blurry
- Put the bee in the center so the AI recognizes it (and can differentiate it if there are multiple bees in the same photo)
- Features that can help with ID are the pattern on the abdomen, pattern of lines on wings, eye color, face size/shape/pattern, legs. Look for those when selecting which photos to add to an observation. Sometimes it does make sense to include a blurry photo if a feature is shown that is not shown in other photos: for example, if you can tell from the blurry photo it has green eyes (and eye color is not apparent in other photos).

- If you are making multiple observations of the same type of bee, look for pollen to differentiate them. Maybe one has white pollen vs yellow, or not very much pollen vs huge amounts. Put different bees in different observations.

Posting photos to iNaturalist

- Using a computer (rather than phone app) to upload photos is more efficient/recommended.
- Drag the best photo in first, so it shows on the cover (the AI only uses the cover photo), then add more photos behind it. Maximum is 20 photos. Don't put in identical photos, but do put in several if you have different parts of the insect in focus (or blurry showing unique features), as that will help with identification. Remember to put in one showing the insect with some plant features, maybe more zoomed out (for plant ID).
- If you add multiple observations in the same window, that's called "bulk uploading" and you can apply projects/observation fields/locations at the same time. There's a "Select All" check box that allows you to add things to all, or select (mark the checkboxes for appropriate observations) observations - you can add location, projects, or observation fields to multiple things at once using this method.
- If your phone or camera is capturing GPS, it should automatically bring in the location data. If you're not, manually add location by selecting all and setting a starting location. Once you do this, you have a starting point from which you can edit the location for individual observations more easily. You can select a few that were further down the trail, update location, and repeat until you've approximated all the locations.
- Before you submit, it will prompt you to make an initial identification. Put your cursor in "species name" and it should give you a dropdown list of suggestions. Putting something as simple as "bee" or "insect" is also fine. Not all suggestions are accurate.
- After submitting, if your suggested ID doesn't match the identification others are making, and you are not an expert in that kind of animal, it's good practice to go in and "withdraw" the identification. If you think you are right, there is no need to "withdraw" your ID; it's just a good practice for those times when you are not sure.

Using Observation Fields and Projects in iNaturalist

As you are out observing, be sure to note some of these bees' fascinating behaviors and consider contributing to the following iNaturalist Projects:

- Sleepy bee slumber parties
- Nesting bees
- Ground-nesting bees
- Bees gathering nesting material
- Mating bees
- Bees concentrating nectar

We also suggest using relevant Observation Fields:

- Interaction-> visited flower of: add species of plant (you can enter either common name or genus and species. Entering just the genus is fine.)
- Robbing Nectar: select “Yes” for “Record as yes if insect is feeding from the corolla base from a hole cut into the floral tube.”

For each individual observation, you can assign Projects and Observation Fields. For projects, if you haven’t used it before, you may have to join the project. Select “Projects” from the “Community” drop down list on the top menu bar. Search for the project by name, then click “Join” on the top right. This page will tell you what qualifies for inclusion in the project, and you can view other observations that are part of the project.

To view and assign Projects and Observation Fields, go to the right edge of the browser window (you may have to scroll down). For Projects, go to the observation and find the “Add a Project” text box. Start typing the name of the project into the text box, and a pick list should appear. For “Observation Fields”, start typing the name of the field, and a pick list will appear below it and you can select the one you want. Other people can add your observations to projects, and some projects are built to automatically pull in observations (by location, type of organism, etc.).

If you are “bulk uploading” you can select all observations of bees on the same plant and assign the Observation Field for “Interaction-> visited flower of” to multiple bee observations at the same time. Do this before clicking the green button to submit the observations - it saves a lot of time!