



Below are answers to questions asked at 2024 California Bumble Bee Atlas training workshops.

Question	Answer
<p>So the big bumblebees I'm seeing out right now (March) are probably still queens...the little ones that come out a bit later are the daughter?</p>	<p>Yes, in spring, the large bumble bees you'll see are likely queens, while smaller females are normally workers. That said, there is a lot of size variation in bumble bees, and some workers are as big as queens.</p>
<p>If bumble bees hibernate throughout the winter, why was I observing yellow-faced bumble bees foraging on manzanita flowers in December 2023 and January of this year in Monterey County, CA?</p>	<p>Most bumble bees have a period of diapause or hibernation during the colder months. In coastal California and a few other warmer places, we see queen bumble bees occasionally through the winter months. We think these bees may be coming out of hibernation to forage on available flowers, and going back to it during times of cold weather--however, this is not well understood and we really don't know what they're doing. Second, on the coast we have some species whose queens emerge in December-January from hibernation, and found colonies in these months. A great place to watch these queens forage is on manzanita, which can bloom in December.</p>
<p>Do you have a project that we can specify on iNaturalist? I report there.</p>	<p>We do not use iNaturalist for data gathered in the California Bumble Bee Atlas. We are big fans of the site, but instead, we use Bumble Bee Watch (<a href="https://www.bumblebeewatch.org/">https://www.bumblebeewatch.org/</a>) for upload, visualization, and management of our bumble bee records. We don't cross-post to iNaturalist or other sites, but when these data are used for research or conservation purposes, we combine a variety of datasets, including iNaturalist and Bumble Bee Watch.</p>
<p>why are you focusing surveys on BLM land in 2024?</p>	<p>In 2024, our project is supported by significant grant funding from the Bureau of Land Management, and one of the things we need to do in exchange is to conduct surveys on BLM lands. This is not a requirement, but we hope you will consider visiting one of these places. A great way to explore BLM lands is to use the maps and other tools on this page: <a href="https://www.blm.gov/maps/frequently-requested/california">https://www.blm.gov/maps/frequently-requested/california</a>. Once you have identified parcels you wish to do surveys at, please email Leif Richardson (<a href="mailto:caBumbleBeeAtlas@xerces.org">caBumbleBeeAtlas@xerces.org</a>), and he will connect you with local field staff, who can advise you of road closures, sensitive areas to avoid, and site conditions.</p>

<p>Have the NPS and State Park permits been renewed for 2024? I also see the SCP provided last year expires on July 28, 2024. Will there be a new SCP issued beyond that date?</p>	<p>We are working on permits for these public lands, and expect to have them in hand shortly. Yes, the SCP does expire in July, 2024. We have applied for an extension through the calendar year, and expect to be granted this well in advance of that date. You don't have to worry about this, but we may ask you to print a new copy of the documents for carrying in the field. Stay tuned for more on this.</p>
<p>What are your thoughts on using a catch-and-release bug vacuum (like the kind made for kids) to catch bees?</p>	<p>We are not opposed to the use of these devices. However, when conducting surveys for the Bumble Bee Atlas, we ask that you use a net rather than other methods for catching the bees. This is because the method of collection can affect your ability to catch the bees, which can skew the outcomes of your survey work. For consistency, we'd like everyone to use the same methods in their surveys.</p>
<p>I have found when flowers are added to the vial, bees are frequently observed to be wet when removed from the cooler. Presumably from condensation from the flower. Anyway to prevent this?</p>	<p>We find that adding a flower to the vial usually benefits the bee—they may feed on it, or just find some cover beneath it. Both flowers and bees can produce moisture in the vials. Some people will include a piece of paper towel in the vial to soak this up. Or, you can make holes in the vial lid, allowing some air flow. Whether using vials with holes or not, make sure to keep the top of the vial exposed above the ice, so that melting water does not get inside the vial.</p>
<p>Should surveys be avoided following rain showers?</p>	<p>No! While it's true that bumble bees will stop foraging during rainstorms, they usually come back to the flowers quickly when the sun comes out. In fact, some bumble bees may keep foraging during rain storms!</p>
<p>How much ice do we put in the cooler?</p>	<p>Just enough! I like to fill the bottom of the cooler with about 3-5" of crushed ice, but more is fine also. If you have a small cooler and survey a site with lots of bees, you may find that you have to get rid of some ice to accommodate the vials!</p>
<p>would the mojave desert be considered a useful place to perform a survey?</p>	<p>As a very general rule, I have noticed that in sites that receive less than 10" of rain annually, we usually do not find bumble bees. California's deserts meet this definition. That said, there are in fact a number of historic records of bumble bees collected in the Mojave, especially in the higher elevations. And, in our Atlas we have observed a few bumble bees in the western Mojave near the mountain ranges. We are interested in finding out both where bees occur and where they don't, so yes, we'd like to see surveys in the deserts!</p>

<p>What do we do if we believe we have captured <i>Bombus crotchii</i> or another candidate for listing under the California Endangered Species Act?</p>	<p>We hope you do find these uncommon and rare species! Our permits from California Department of Fish and Wildlife allow us to handle these bees, so long as we report their occurrence to CDFW. You do not have to do this reporting yourself--instead, project staff will send our data to CDFW annually, and this counts as the notification required.</p>
<p>Is there another place to upload all the data from the data forms? When uploading the information onto bumblewatch in prior years, it didn't have spaces for all the information on the forms.</p>	<p>No, there is no other place to upload data from the data sheets. We are aware that a few of the items on the field data sheets do not appear on Bumble Bee Watch (e.g., the names of the surveyors). In the future, we'll make sure these two feature all of the same data questions, but for now, you don't need to worry about this.</p>
<p>In General, how far will bees travel from their nest sites to forage?</p>	<p>Bumble bees have been documented to fly more than 10km to return to their nests when experimentally displaced. Other studies have found that the foraging range varies by species: some travel an average of just a few hundred meters in search of food, while others may average a kilometer or more. Gynes (new queens) and males probably disperse away from their natal nests, but we do not know how far. There is much that we don't know about this topic!</p>
<p>Is the 15 min effort for roadside surveys per site or for the entire survey? I think it said there were 5 stops along a ten mile stretch. Please review. Thanks.</p>	<p>A roadside survey should consist of 5 stops spaced <math>\geq 1/2</math> mile apart along a ~10 mile stretch. At each of these 5 stops, you'll do a 15-minute survey.</p>
<p>For incidental observations I've had good success taking a video of the bumble bee and then scrolling through it later, frame by frame. You can screenshot your best frames.</p>	<p>This is a nice tip, thank you! Keep in mind that video frames will often be shot at lower resolution than still images, but this is probably something you can adjust on your device if necessary.</p>
<p>Do we need to warm the bees before releasing? How do we do that?</p>	<p>No--in fact, we do not want you to do this, as warming up too quickly may harm them. After you have finished photographing the bee, just let it sit and warm up on its own. Keep it out of direct sunlight, but otherwise there's nothing special you need to do.</p>
<p>If you notice that the location is a bit off on the atlas, is there any way to edit it and move the pin on the map to the correct location?</p>	<p>You cannot currently edit the location of one of your locations in Bumble Bee Watch. But, you can assign a new location to your checklist. To do this, navigate to the checklist in question, or one of the bees caught within it. Click "Edit checklist", then choose "Add a new location." Give the location a new name and use the map tools to find the correct coordinates.</p>
<p>Do you have recommendations for vials to use for these surveys?</p>	<p>Vials are widely available, and we have recommendations on the website: <a href="https://www.cabumblebeeatlas.org/project-resources.html">https://www.cabumblebeeatlas.org/project-resources.html</a>.</p>

<p>For the survey start and end time, does that include the time for photography? Or just net/vialing and searching time?</p>	<p>No, it includes only the time you were actively looking for and catching bees.</p>
<p>Would a survey be a volunteer effort on the Bumble Bee Watch form if you are a federal employee surveying on the clock?</p>	<p>No, if you are conducting surveys while on the job for your federal employer or another employer, you should not answer that you are a volunteer.</p>
<p>are you really looking at every bee photo?</p>	<p>Yes! In the fall, project staff will look at every bee observation submitted and verify its identity.</p>
<p>When editing the checklist, in the count window, if we had &gt; one bee of a species x sex x host plant combination, can we put that count there?</p>	<p>The data sheet asks whether you are catching all bees you see, or just representatives of each species you find in the site. On the page for uploading photos, we allow you to tell us if the submitted bee represents just itself (1) or multiple others (2+) of the same species that you saw but did not collect. We ask that unless you are very good at bumble bee identificatin, you please catch every bee you see, recording "1" in that field. Experts who use the other method may submit one set of photos representing multiple individual bee x bee sex x floral host observations; in this case, you'd enter your count as some number greater than 1.</p>
<p>On the page where it asked for the list of plants, it indicated it should be plants that were NOT hosts of bees recorded in survey, but then when you were mentioning identifying the plant when recording the bee, you said it should be on the plant list. Which is correct?</p>	<p>We're sorry for this confusion! Where we ask about plant species in bloom on the datasheet and on Bumble Bee Watch, we want you to record plants that are in flower, <i>but that you did not see bumble bees visiting</i>. You'll record all of the plants visited by bumble bees when you record your bees, so there's no need to include them here also.</p>
<p>How important is time of day?</p>	<p>Time of day matters. Flowers are often freshly opened in the morning, and nectar often refills overnight, making morning a good time to forage. Bumble bees typically forage all day when conditions permit, however, they will sometimes stop during the hottest parts of the day--often 12pm-4pm on hot California days. Beyond this, we have noticed that some species are most often caught in the morning, while others are more often observed in the afternoon. This probably reflects individual ecological variation, but we don't really know. We think you should survey at any time of the day, but do keep in mind that very hot conditions will tend to reduce the abundance of bees that you see.</p>

<p>Is it better to return to my past locations from 2022 and 2023 or go to new locations?</p>	<p>Either way is beneficial to the project. When you resurvey sites from previous years, you give us a great opportunity to look at change over time within a given site. On the other hand, we are actively trying to conduct surveys throughout the state, and we encourage folks to get away from population centers to survey new locations. The bottom line is that we want you to be happy and successful in your efforts, and we leave this decision to you.</p>
<p>If visiting a more remote area only once, do you recommend doing a roadside survey, since you cannot do a second survey after 3 weeks?</p>	<p>No, in this case we would still recommend a point survey if that is feasible. While it's true that we ask you to survey twice in each grid cell you adopt, a single survey is still very useful data.</p>
<p>Do you place the vials directly on top of the ice?</p>	<p>As long as the ice is not too cold, as described, you can sink the vials right into the ice. You don't need to include anything in the cooler to separate the vials from the ice. Just make sure that the lid is above the ice so that water doesn't enter the vial.</p>
<p>Regarding question on % of survey area having "flowering resources available" --- does that mean... currently flowering? % of all vegetation? % of land surface? Also in submitting plant data: # flower plants in area... currently flowering, or at all stages of flowering?</p>	<p>Here we are asking for the percent cover of plants in flower in your plot. We only want you to count plants that are currently in flower--not those already in fruit or that will bloom later. Our motivation is to understand what the floral resources look like to a bee--just how densely packed are flowers in this plot? This is an estimate you'll give us, but it really matters: in the first two years of the study, we found that bumble bee abundance is positively correlated with percent cover of flowering plants!</p>
<p>Is this workshop being recorded?</p>	<p>Yes. We record on workshop each year and post the file to the Xerces Society YouTube Channel (<a href="https://www.youtube.com/channel/UCAiPLPJuySOgn6CbjkOxqLQ">https://www.youtube.com/channel/UCAiPLPJuySOgn6CbjkOxqLQ</a>). You can find a link to this file on our website (<a href="https://www.cabumblebeeatlas.org/training-videos.html">https://www.cabumblebeeatlas.org/training-videos.html</a>), and you are always welcome to watch this recording as your training instead of coming to a live, remote session.</p>
<p>Do older bumblebees lose facial hair making it hard to identify?</p>	<p>Yes they do. As bumble bees age, they may lose hair on the head, thorax, or abdomen, and this can complicate ID. If you see bare integument without any hair covering it, this is usually a place where the hairs have fallen off. When identifying the bee, don't make the mistake of assuming this part of the bee is black in color--instead, consider that the hair could have been any of the usual bumble bee colors. This can make ID difficult, so try to look at the other characters we teach as useful in ID, such as cheek length.</p>
<p>Should we collect all bees? Or just bumble bees?</p>	<p>We only want you to collect bumble bees. It's fine if you make a mistake. In this case, when we ID the bees submitted to BBW, we'll mark these as "Unknown/not a bumble bee."</p>

So I've attended the training.  
What's the next step?

The next step is to take a short quiz:  
<https://tinyurl.com/cabumblebees> . When you pass this quiz,  
you'll receive an email with the permits as attachments, and you  
are ready to start surveying! If you don't pass, you can take the  
quiz as many times as you'd like.