

Weed Science and Weed Identification: Phone Applications Available to the Public

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Why is weed identification important? Simply stated, because not all weed management strategies are equally effective against all weed species. The weed communities present in a system may be comprised of species that are naturally sensitive to different herbicides, herbicide modes of action, or physical control practices. To develop an effective control program, managers must be aware of the diversity of species infesting rangeland areas.

There are numerous weed identification tools available for weed ID (including your local UC Farm Advisor). Recommended printed guides for identifying weed species in the Western US include:

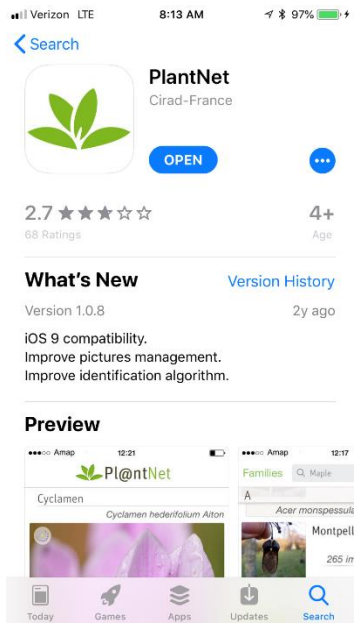
- Weeds of the West, 5th Edition (Burrill et al.) ISBN-10: 0941570134 (No longer actively in print);
- Weeds of California and Other Western States (2-Volume Set) (DiTomaso) ISBN-10: 1879906694.

There are also Smartphone apps available to use, including Pl@ntNet and iNaturalist.

The Pl@ntNet app, which is the result of a collaboration among several French institutions, allows you to upload one or more pictures of leaves, flowers, fruits, or bark and then compares your photos to a database of images using visual recognition software. The app then provides the user with a link to a given species' Wikipedia entry in case more information is desired. With respect to image databases, multiple projects are available for users to select from, depending on location and need, including: Plants of the United States, Plants of Canada, Plants of North Africa, Plants of Western Europe, Trees of South Africa, Useful Plants of Asia, etc...

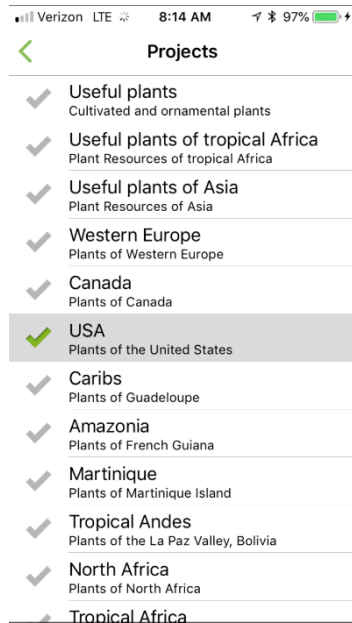
iNaturalist.org began as the Master's final project of Nate Agrin, Jessica Kline, and Ken-ichi Ueda at UC Berkeley's School of Information in 2008. In 2014, iNaturalist became an initiative of the California Academy of Sciences and a joint initiative with National Geographic Society in 2017. Like Pl@ntNet, the iNaturalist app allows you to screen images against a database using visual recognition software. Added images help to build and refine the database.

Note: Some apps may not be available for all operating systems. It is always good practice to doublecheck if you are not certain about an identification. The Calflora website (<http://www.calflora.org/about-cf.html>) is very useful for this process. Calflora is a website you can use to learn about plants (both native and weedy) that grow throughout California. A name search (common or scientific) will return a list of species. By 'clicking' on a specimen, you will be taken to a page providing details about the selected plant, including a map of where it has been observed in the state.



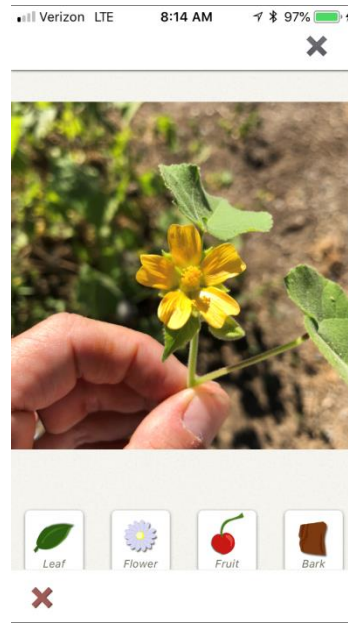
Step 1.

Search for the PlantNet application in your phone's app store. Download and install the app.



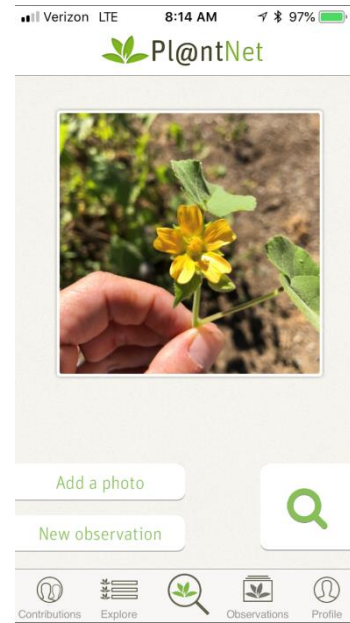
Step 2.

Select the project (i.e. database) that best describes your plant interest and current location (i.e. for the United States, select 'Plants of the United States').



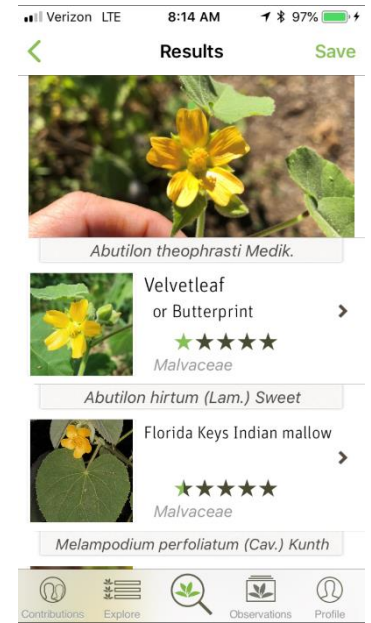
Step 3.

Allow the PlantNet app to have access to your phone camera and photo library. Take or upload a picture and select what plant part you are observing (i.e. leaf, flower, fruit, bark).



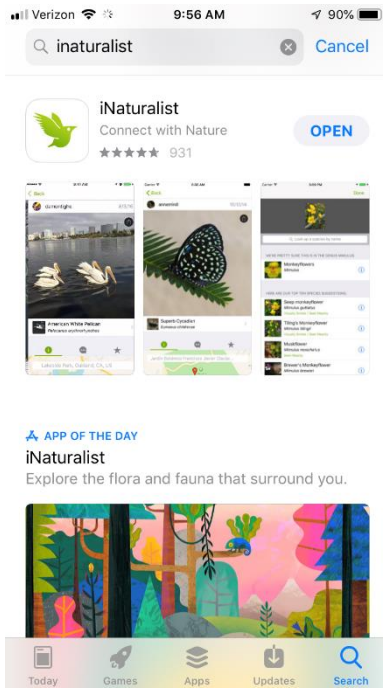
Step 4.

You can add as many photos as you want to a single query (i.e. batch submit), just click on the button that says 'add photo'. Once your photos are loaded, submit the analysis request by hitting the magnifying glass icon.



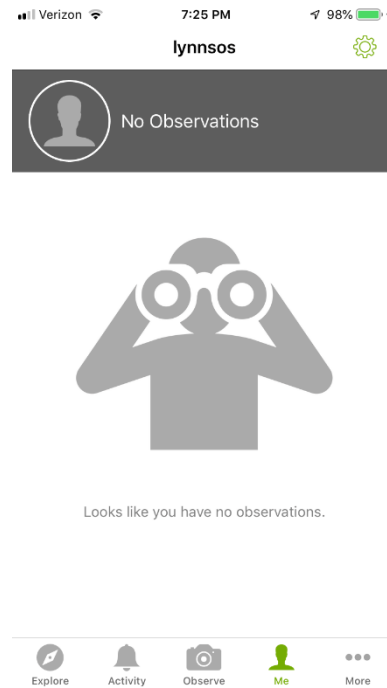
Step 5.

Review results. Links will take you to the Wikipedia page for each individual species. PlantNet will almost always return a result. THAT DOES NOT MEAN THAT IT WILL BE THE CORRECT RESULT. Always doublecheck species IDs.



Step 1.

Search for the iNaturalist application in your phone's app store. Download and install the app.



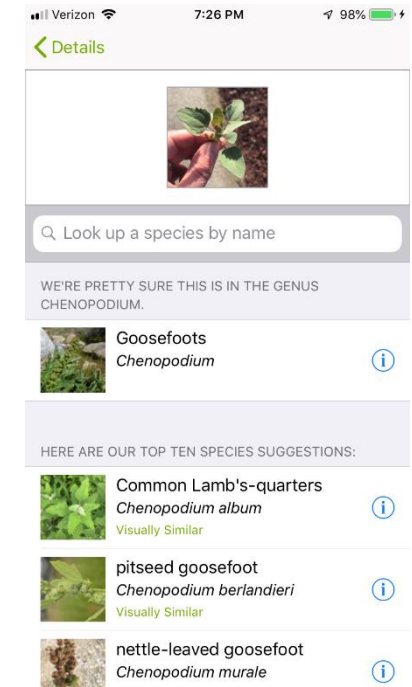
Step 2.

Allow the iNaturalist app to have access to your phone camera and photo library. Take or upload a picture using the camera icon.



Step 3.

Click on the button that says 'next' to submit your photo for analysis.



Step 4.

Review results. iNaturalist will almost always return a result. **THAT DOES NOT MEAN THAT IT WILL BE THE CORRECT RESULT.** Always doublecheck species IDs.

For more Agronomy and Weed Science information: Website: <http://ucanr.edu/sites/AgronomyWeedScience/>

Blog: <https://ucanr.edu/blogs/SJVAgronomyWeedScienceBlog/index.cfm>