

Two Apps for Putting Invasives and Natives on the Map

We all know that we are losing species and ecosystems around the globe at an alarming rate. And it can feel like there is very little we can each do to slow this destruction. But online databases, contributed to by armies of amateur naturalists, are making a massive difference to conservation efforts. With millions of users around the world documenting and uploading the plants they see, land stewards can map plant distributions and improve management plans, scientists can track the impacts of climate change on organisms and suggest mitigation plans, and community groups can target newly arrived invasives for removal. EDDMapS and iNaturalist apps are great for the individual user and they also are linked to many conservation and science projects. Here we take a look at how these two apps work to enhance our plant quests.

Play, Learn, and Contribute with iNaturalist

Sometimes the universe aligns and doing what we love coincides with doing important work. Using iNaturalist to learn about plants does just that. When you take a photo of a plant (or animal or fungi) in iNaturalist (aka iNat), the app quickly returns an automated identification based on visual characteristics. Snap. We plantaholics get our fix. But iNaturalist goes much further. So long as you don't turn off sharing, your observations will be posted and other users can agree or disagree with an identification or open a discussion about an observation. These universally available observations are how iNaturalist has become a substantial force for good works.

Global data for conservation. For land managers, scientists, and conservationists wanting to promote healthy ecosystems, knowledge of “what is out there” is priceless. More data help us to better understand critical ecosystem dynamics such as what corridors are essential for migration, the impact of roads, or where a disease may spread. Various research and conservation projects use iNaturalist data. For instance, iNat data has been used to map the spread of many invasive species such as sea figs in Uruguay, crayfish in Canada, and invasive beetles in Africa. iNaturalist observations are also used to

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explore climate change impacts, such as monitoring shifts in Monarch migrations, and the spread of seastar wasting disease on the Pacific Coast. New species have been identified, lost species rediscovered, and distribution maps of species improved with iNaturalist data. As of January 2022, over 2,000 research studies cited iNaturalist as a source of data.

Research grade observations. Some projects use iNaturalist “research grade” observations. These are observations whose identification has been agreed upon by at least two humans. Research grade observations are estimated to be 95% accurate. Thus far, the 7 million users of iNaturalist have provided over 117 million research grade observations. While this “two humans plus” vetting is considered good enough by many projects, others independently verify each piece of iNat data by consulting human experts before incorporating the observation into their database. For instance, the Maryland Biodiversity Project has two levels of human expert verification.

Ways to use iNaturalist. When we are out in the field, we'll most likely use the iNaturalist app on our phones. But we can also use iNaturalist by visiting the website, especially when we want to look at other folks' observations or do some kind of analysis. One way to analyze data is to group observations into an iNaturalist project, which can be done “one-by-one” or automatically based on some inclusion criteria. There are loads of iNaturalist projects to dig into, for instance, there are over 250 projects with the name “Maryland” in them. Other fun ways to use iNaturalist include playing with the “Explore” tab, or checking if the bluebells or lady slippers are blooming. Finally, iNaturalist is helpful to gardeners trying to decide if they want to remove or nurture an unknown plant. Note that for identifying and reporting invasive species, EDDMapS is more appropriate and useful.

Calling all citizen scientists. iNaturalist contributions to science, conservation, learning, and community building will only continue to grow. You can be part of all that, simply by using a free app to learn about plants, and, oh about animals and fungi too.

REFERENCES

iNaturalist FAQ page: help.inaturalist.org/en/support/solutions/151000067328