New App Streamlines Wetland Data

Ecobot, an offline IOS platform, aids wetland scientists in work

Ecobot, founded by Jeremy Schewe and Lee Lance, is a wetland delineation app that streamlines data input, provides data lookups and generates U.S. Army Corps of Engineers (USACE) wetland delineation reports.

The idea for Ecobot came to Schewe about eight years ago. He was doing delineation work for the U.S. Forest Service and was stuck in a national forest due to heavy rain. As he was walking, he slipped and fell, and the machete in his hand flew in the air and cut him across the forehead. Frustrated, he thought there had to be a simpler way to collect data than carrying tools and paperwork around.

The app is available for download from the Apple Store, and SWS Managing Editor Katie Johns asked Schewe to share details about how it works.

Katie Johns: Can you explain how the app works?

Jeremy Schewe: We are an IOS platform. The application works offline, so it gives scientists the ability to use it wherever they are and not have to worry about having some sort of data connection. We have tons of lookup tools, auto-calculations and supplemental information that is handy, so that scientists don't need to carry regulatory documents and other info out into the field with them, which can get pretty hefty and heavy. Essentially, what the app does is it replaces a 50-year old pen-and-paper process and enables scientists to collect the data digitally and then allows any sort of calculation to be auto-calculated. Also, it makes indicators of what the results may be but [it's] not taking the decision away from scientists.

Johns: Can you share examples of the data users would be recording in the app?

Schewe: With the wetland delineation, which of course is in respect to the Clean Water Act, basically a scientist has three criteria they are looking for. They are looking for hydrology that is indicative of wetlands, they are looking for vegetation [indicative] of wetlands and also for certain soil characteristics that would be indicative of wetlands or an anaerobic habitat in the soil.

So, to get into the specifics on hydrology, they are looking for specific geomorphology in the landscape or standing water or ground saturation or underground water that is moving very close to the surface. In vegetation, they are identifying all dominant, predominant or co-dominant species that are in the sample site or in a given area where they're doing their study, and each one of those species is going to have an indicator that was initially assigned by the Fish and Wildlife Service, but is now maintained by the USACE, that is called the Native Wetlands Plant List. On the soils, they are basically doing a probe down into the soil… to a certain depth, typically at least 24 inches and often up to 40 inches, and looking at the various layering in the soils and using a soil chart, as well as some other testing to determine whether a soil might be aerobic or anaerobic or would be an upland soil or a wetland soil.

Johns: How important is technology like this to the industry?

Schewe: It's crucial. One thing that I don't think we'll ever see change is the Clean Water Act, and the implementation of any changes in how it's being regulated are going to be based on the extent of what will be federally jurisdicted versus what will be jurisdicted by a state or local municipality.

There is also data being collected in the application itself. If there ever was a major change in what that looks like, then we'll adapt with it.
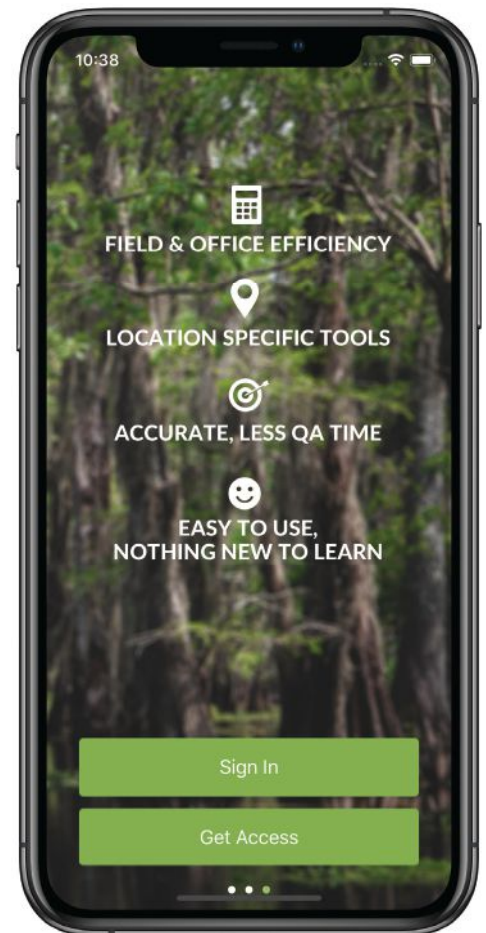
Johns: Will the app impact regulatory work?

Schewe: In the sense of helping a scientist to meet regulatory requirements, that's going to be the scientist's professional decision and then their communication with the regulatory agents. The app itself is basically just going to help the efficiency of how quickly the data can be gathered, processed and produced into a report that would then be part of the main communication tool with regulatory agencies.

Editor's note: Answers have been edited for clarity and length.

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