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ECOBOT FOCUS ON NATURAL RESOURCES SPEEDS DEPLOYMENT OF DATA MANAGEMENT APPLICATIONS; ACQUISITIONS AND VENTURE INVESTMENT HELPS

Ecobot *empowers the AEC and environmental consulting industry to better serve their clients by reducing the time and expenses required to complete environmental regulatory reporting. The field scientists in these industries make critical decisions that inform land use and Ecobot's wetland management platform provides accuracy and efficiency for thousands of wetland delineation reports submitted to the US Army Corps of Engineers (USACE) each month. Ecobot has raised over $1 million in venture funding to bring its software to market. Over the past two years, Ecobot has grown to a team of 10; in August of 2020 the acquisition of WetForm solidified Ecobot as the preeminent software provider in the space.*

Ecobot was cofounded by Jeremy Schewe, PWS and Lee Lance in 2018. Lee Lance is CEO and a communications and operations professional with 20 years of experience driving technology development and strategy, serving regional, national and international clients. Career wetland scientist Jeremy Schewe is Chief Scientific Officer and an ecologist, botanist, and environmental consultant with 15 years management experience in the Americas, South Pacific, Middle East, and Europe.

EBJ: Can you provide some company background? When was Ecobot founded and why? Which problems were you trying to solve for your customers, and where did you see opportunity? How has the company evolved throughout this time, and what have been your major milestones?

Ecobot: The need for a better way to do natural resources consulting was born out of the personal experience of cofounder and wetland scientist Jeremy Schewe. Regulatory-related natural resources consulting processes have been largely unchanged since the origins of the Clean Water Act (CWA) in the 1970s, even though the multi-trillion dollar architecture, engineering and construction (AEC) industry spends billions annually on environmental regulatory reporting. Manual, paper, QA-QC-intensive processes plague field scientists and project managers with busywork.

Ecobot, founded in 2018, built a mobile and cloud platform that eliminates unnecessary complexity in the traditional workflow of Waters of the United States (WOTUS) regulatory reporting while enabling greater scientific accuracy, ultimately speeding regulatory approval and reducing costs. In 2020, Ecobot has partnered with **Esri** to include ArcGIS mapping capabilities into the app, and Ecobot has partnered with **Trimble**, deeply integrating with their R-series Global Navigation Satellite System (GNSS) devices. Looking ahead to 2021, Ecobot is continuing to enhance its integration with other companies that serve natural resources consultants.

EBJ: There are many Environmental Data Management applications used in the environmental industry. How is yours unique, and why have you decided to focus on wetlands and natural resources?

Ecobot: Ecobot is unique compared to other environmental data management applications in that it has been built entirely from within the industry, by a natural resources consultant with two decades of wetland science experience, coupled with a product development process that deeply engages customers in the evolution of the platform.

Jeremy Schewe, PWS partnered with Lee Lance to cofound Ecobot, and together they bring deep industry knowledge plus best practices of building usable, enterprise-ready applications to this market. The Ecobot platform initially focused on wetland delineation reporting for the USACE and is expanding to address the entire workflow of natural resources consultants. The complexities of calculations and regionally specific knowledge related to the regulatory reporting of wetlands provided the greatest opportunity to make the biggest impact in the shortest period of time.

EBJ: Can you describe your products and how they work?

Ecobot: Environmental consultants use Ecobot in the field – regardless of whether they have internet connectivity – to collect wetland delineation field data according to the specifications of the USACE. Ecobot provides regionally specific lookup tools and automatically performs required calculations which allows field scientists to build knowledge in real-time rather than having to wait until they return to the office and, after an arduous QAQC process, produce the required USACE reports. Scientists that use Ecobot spend more time in the field as scientists, and less time in the office manually filling out reports and provide better quality deliverables to their clients in a more efficient manner.

EBJ: Ecobot recently acquired WetForm. Can you provide some background on the transaction?

Ecobot: The acquisition of **WetForm** solidified Ecobot as the preeminent software provider in the space. Ecobot's market share and usage have been surging since the company's founding in 2018. WetForm, created in 1997, was the first software platform of its kind and enhances Ecobot's domain expertise. Through the acquisition of WetForm, WetForm customers have a path to migrate to the Ecobot platform, adding submeter-accurate location awareness, enhanced Esri ArcGIS

mapping technology, and a cloud-based project management and delivery dashboard.

Patrick Murphy, WetForm's founder, joined the Ecobot team as senior wetland scientist. Pat Murphy collaborated with the U.S. Army Corps of Engineers to develop the initial wetland delineation workflow and was one of the first scientists to perform a wetland delineation. His remarkable vision and his workflow-centric approach to building WetForm catapulted the industry forward and Ecobot is excited to collaborate with him to better serve our customers.

EBJ: What trends have you noticed in the environmental instrumentation market, in particular those used for wetlands or natural resources projects?

Ecobot: In the past few years there has been a parabolic explosion of technologies that impact the way we live and work. Natural resources consulting is no exception. From field applications to tiny handheld GPS receivers, to new software to augment the prediction and field-mapping of wetlands, to mapping and monitoring wetlands with drones, there's no shortage of new opportunities to improve workflows in the environmental industry. Any one of these advances alone is helpful on its own. But when two or more of these technologies can be combined to provide the support across the entire spectrum of planning, reporting, permitting and execution, that's when the industry experiences a profound transformation. Increasing connectedness between emerging technology solutions in the decades to come will continue to better equip environmental scientists with the best possible tools and technology to augment their workflows.

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EBJ: Can you describe in which ways you are using the cloud?

Ecobot is built on both the iOS platform and the Amazon AWS cloud, leveraging the power of cloud computing to instantly process and generate required reports, project data spreadsheets and Esri ArcGIS-ready shapefiles for wetland delineation sample points and wetland polygons. For example, the power of the cloud allows Ecobot to process all related project files for a 200 sampling point project in less than 30 seconds. Furthermore, the cloud ensures data security, stability and availability in ways previously unattainable.

EBJ: What drivers are having a big effect on the environmental information systems market?

Ecobot: Both the pandemic and the previous administration's NEPA rollbacks have created a situation where the need to digitize workflows across the board is, if anything, more urgent than companies had planned. Natural resources consulting is no exception; there has been a surge in demand for Ecobot as companies look for turnkey solutions to streamline and digitize their operations. A rapidly changing landscape demands that providers of environmental information systems adopt a continuous release model for development and deployment to ensure long-term relevance for their customers.

EBJ: How are regulatory trends or public agency requirements impacting your company and how you adapt your products?

Ecobot: We continuously monitor various regulatory agencies and their policies to ensure that the platform is always up to date. For example, when the latest National Wetlands Plant List (NWPL) was released earlier this year, Ecobot had the updated list in front of customers within a few days. Technology that is up to date with the latest regulatory trends and requirements ensures that field teams can swiftly re-delineate or adjust reports as-needed without missing deadlines or delaying construction projects.

EBJ: Ecobot is used by various types of professionals and entities. Comment on the needs that each client category has and how they differ.

Ecobot: Our platform is for natural resources scientists at AEC (architectural, engineering construction) and natural resources consulting firms, counties, state and federal DOT, the mitigation banking industry, and utility and oil and gas companies. The field scientists that we support across the various types of companies or agencies they work for have more in common than not: their needs and workflows are similar, and the benefits that

Ecobot provides both to the individual field scientist and the companies they work for are similar. Ecobot is a worklow-first platform, rather than an off-the-shelf solution. The platform is grounded in and built around this shared, structured workflow found across the entire industry. Because of this focus, Ecobot is the only natural resources consulting platform that provides meaningful efficiency and accuracy in this space. ¤

Ecobot Completes Two Rounds of Financing

In late 2018, Ecobot (Asheville, N.C.), a developer of environmental data reporting software, reported landing a $450,000 seed investment round led by Cofounders Capital, with entrepreneur and angel investor Michael Shore participating. Shore previously led a solar company to $100 million in revenue and a ranking of 46th on the Inc 500 list. In December 2019, Ecobot reported it had raised over $1 million in venture funding with Cofounders part a second tranche. The Ecobot wetland delineation app offers efficiency and accuracy to wetland scientists at environmental ,AEC companies and natural resource consulting firms. Other target customers are DOT agencies, the mitigation banking industry, and utility and oil & gas companies. In 2020 Ecobot acquired the wetland delineation software platform WetForm, solidifying Ecobot as "the preeminent software provider in the space."

NAVIGATING THE CHANGING TIDES OF WETLAND REGULATIONS WITH TECHNOLOGY

By Jeremy Schewe, PWS Cofounder and Chief Scientific Officer of Ecobot

In the year 2020 the environmental services industry saw several changes to regulations that have protected our nation's wetlands for decades. These include:

- the definition and jurisdiction of the "waters of the United States" (WOTUS) under the Clean Water Act, which was repealed and replaced with the implementation of the Navigable Waters Protection Rule (NWP Rule);
- the EPA's temporary* policy waiving enforcement of many of its health and environmental protections, citing the coronavirus pandemic. (*Note: This policy was lifted on August 31, 2020); and
- an Executive Order suspending the National Environmental Protection Act (NEPA) in an effort to "cut red tape" and spur development, which allowed certain infrastructure projects to proceed without federal environmental review.

That these changes leave wetlands vulnerable is only a small part of the issue (albeit an important part). On the business side, these regulatory changes require alteration of project plans and disrupt construction and permitting schedules, requiring re-delineation in many cases.

Further complicating the picture is the fact that wetlands assessment work has traditionally been done manually and can be painstakingly tedious. In the past, scientists have had few new technologies at their disposal, and thus work was typically completed using low-tech methods (think clipboards and pens). This led to obvious challenges; work was error-prone, despite heavy QA/QC efforts, and adjusting for new regulations made their time-consuming work all the more arduous.

CHANGES ON THE HORIZON

The coming year may bring additional policy changes. The Biden Administration is expected to restore many environmental policies that Trump abolished; therefore, the industry will likely see a reversal of both the NEPA Implementing Regulations and the NWP Rule. The U.S. Congress has long been in talks about the need to repair the country's aging infrastructure. With interest rates at an all-time low and the need for jobs at an all-time high, talks on Capitol Hill indicate that infrastructure might be addressed in the next coronavirus stimulus package and/or under Biden's infrastructure plan.

A sudden boom in construction would require careful planning to ensure the continued preservation of our nation's wetlands and protect urban growth and development against the effects of extreme weather events. Wetlands absorb the impacts of climate change and extreme weather, protecting cities from floods, storm surge, and erosion. If degraded, the surrounding cities will become more vulnerable to these events, which could pose a threat to new construction projects and cities as a whole. Access to timely information is needed to leave wetlands intact, and ensure cities' resilience against the onslaught of extreme weather events and climate change.

A recent move by the **Federal Emergency Management Agency** (FEMA) adds a glimmer of hope for the future of wetlands and may be an indication that policy is headed in a new direction. In October, FEMA released a new flood policy that will promote wetland mitigation projects for flood protection in place of sea walls. The move is intended to encourage nature-based solutions to risk-based mitigation projects and could boost the restoration or expansion of wetlands, reefs, mangroves, and floodplains.

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ADVANCES AND SOLUTIONS IN THE INDUSTRY

Over the years, more tools and resources have emerged to help environmental scientists, engineers, and other environmental professionals streamline processes and navigate ongoing regulatory changes. These tools both ease the regulatory burden and ensure the preservation of these valued, but often overlooked, ecosystems.

The **US Army Corps of Engineers** (USACE) maintains a guide to assist with wetlands identification; the 1987 Wetlands Delineation Manual is the federal guide used to identify and delineate wetlands. More recently, the USACE's Hydrologic Engineering Center (CEIWR-HEC) has developed various software platforms including the Corps Water Management System (CWMS), a real-time forecasting and decision-support system.

Since 1969, Esri's applied computer mapping and spatial analysis products have helped land-use planners and land resource managers make informed decisions. Esri is responsible for the development of many of the GIS mapping and spatial analysis methods that are currently used around the world.

Today, GIS is giving scientists the ability to map digital layers to help solve a wide variety of problems, such as real-time mapping associated with the Coronavirus pandemic. In the future GIS technology

integrated into the "Internet of Things," technologies will help scientists further understand and address problems using the language of mapping.

TECHNOLOGY AT OUR FINGERTIPS

While these resources can help engineers and wetland scientists to navigate a changing regulatory landscape, digital solutions that provide up-to-date, dependable and accurate information in the field and at their fingertips is key.

The Ecobot platform, for example, provides access to a vast library of reference materials and auto-calculates required data used to determine if a parcel of land contains wetlands. Ecobot, an Esri Startup Partner, provides on-demand access to a vast library of reference materials and auto-calculates required worksheets used to determine if a parcel of land contains wetlands. The technology anticipates frictions that occur in the field and provides solutions, from addressing lack of internet connectivity (everything that must be done in the field can be done without a data connection) to simplified navigation for users with muddy hands. Ecobot continuously monitors changing industry regulations and updates its applications, forms, reference data and calculations, to easily, electronically generate the necessary, regionally-specific USACE reports.

Built in collaboration with customers to thoroughly optimize the entire workflow, Ecobot customers consistently report significantly reducing the time it takes for wetland delineations, while improving accuracy. The cloud app, built on Amazon AWS, instantly generates regulatory agency-ready project files and facilitates easier project management. In the face of an ever-changing regulatory landscape, the need to equip scientists with tools to improve efficiency and enable real-time decision-making is greater than ever. The net result of technology in wetlands delineation work can be significant; saving time and money, producing more accurate, error-free results, negating the need for site revisits, giving scientists a competitive edge, ensuring proper maintenance and protection of wetlands, and enabling responsible economic progress. ¤

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