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The app:
Swiss Army Knife

Price: Free (Android)

The user: Dwight Wolfe

Owner

Weed Man

Albany, Ore.

The Swiss Army Knife app Dwight Wolfe puts to use on his Android smartphone is much like its pocketknife predecessor—it's quite the multi-tool.

Within the app you'll find a flashlight, unit converter, timer, calculator, compass, bubble level, magnifying glass, ruler and more. Wolfe has been a fan of using this app for his lawn care operation for about three years. In fact, it was one of the first he downloaded upon upgrading to a smartphone. He estimates he uses it a few times a week.



"SOMETIMES YOU NEED A MAGNIFYING GLASS."

—DWIGHT WOLFE

The app's flashlight has come in handy for Wolfe when working on equipment and even for off-hand "customer service" needs, like the time he pulled up to treat a homeowner's lawn and ended up helping her locate information she couldn't find on her car battery.

The unit converter tool and timer both come in handy when he mixes chemicals.

"Sometimes the chemicals are in liters rather than gallons, so I can convert metric to standard," he says. "And when you calibrate spray equipment, you always need to measure out a minute."

One of Wolfe's favorite features is the

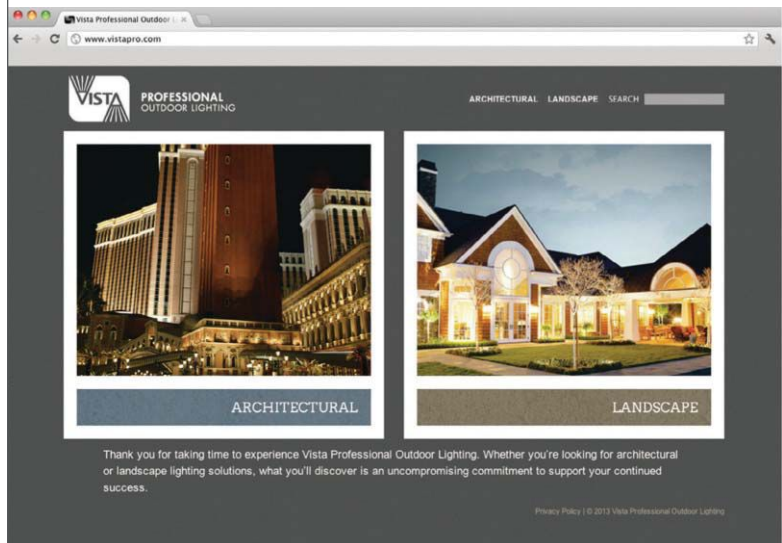


magnifying glass tool. He uses it to identify insects and other pests, such as *poa annua*, which is invasive in lawns in his region.

"You can identify it by its boat-shaped tip," he says.

"Sometimes you need a magnifying glass to see that." —MP LMI

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5 WE THOUGHT YOU MIGHT LIKE



Bubble Level

This app allows users to hold any of the phone's four sides against an object to test it for level or plumb or lay it down on a flat surface for a 360-degree level.

iOS, Android // Free



Leafsnap

Leafsnap is the first in a series of electronic field guides being developed by researchers from Columbia University, the University of Maryland and the Smithsonian Institution. It uses visual-recognition software to help identify tree species from photographs of their leaves.

iOS, to-be-released for Android // Free



Safety Meeting App

Manage your workplace safety more effectively with regularly scheduled safety meetings that allow you to address important safety hazards, including updates on recent incidents.

iOS, Android // 30-day free trial and options from \$9.95 per month



SprinklerTimes

Developed by a landscape contractor, this app uses regionally-based, historical climate information and combines that with plant type, sprinkler type, soil type and sun exposure to generate a customized monthly schedule to determine the best possible watering settings for clients' irrigation systems.

iOS, Android // \$5.99



Turfpath

Developed by turfgrass professionals, Turfpath is a mobile resource to assist in the visual identification of turfgrass pests worldwide.

iOS, Android // Free

11 FROM INDUSTRY SUPPLIERS



Belgard Hardscapes

The Belgard Hardscapes app allows users to browse the company's catalog, color swatches and project photo collections. It also features an authorized contractor and design center locator.

iOS, Android // Free



Dow T&O

Need to quickly identify a weed or check a product label? Dow AgroSciences Turf & Ornamental's app gives access to product information, labels and a weed guide. After downloading, users must enter their email addresses and the password "Dowagro" to get started.

iOS, Android // Free



Ewing Irrigation

Ewing's app allows contractors to locate the nearest Ewing branch, access landscape and irrigation calculators and conversion formulas and stay informed with Ewing news via Twitter and Facebook.

iOS, Android // Free



ExakTime Mobile/PocketClock

This time-tracking app allows workers to clock in and enter job locations, cost codes and materials from their smartphones. It also offers GPS crew tracking and a field notes feature.

iOS, Android // Free for current users



Irritrol

The Irritrol app allows users to view and download brochures and photos, access the company's YouTube channel for how-to videos and view promotions and specials.

iOS, Android // Free

apps to try

DON'T MISS [SIX MORE APP RECOMMENDATIONS](#) FROM LM STAFF MEMBERS ON PAGE 4.



Labor Sync

An alternative to time sheets, this GPS-enabled app allows users to track employees' time and locations with their mobile devices.

iOS, Android // Free to download; \$10 per month per employee



My Harrell's Mobile

This app offers a searchable product listing, MSDS and label downloads, sales representative contact information, calculators and a glossary of fertilizer terms. Additional features for the distributor's customers include viewing open orders and billing information.

iOS, Android // Free



PRO Landscape Companion

This free app for PRO Landscape design software users allows users to create and edit designs, assemble proposals and deliver client presentations.

iOS, Android (tablets only) // Free for current users



Rain Bird

This app is a catalog that provides irrigation information and tools, including system layouts, product details and specifications of Rain Bird landscape irrigation products.

iOS, Android // Free



TimeScope Live

The mobile component of Modeco Systems' TimeScope Live time and material-tracking system allows a live feedback option to the office and the ability to see the GPS location of crews.

iOS, Android // Free for current users



WeatherTRAK Mobile

HydroPoint Data Systems' app turns mobile devices into remote controls for WeatherTRAK Central controllers. Features include real-time alerts, one-click customer support and on-site troubleshooting and diagnostics.

iOS, Android // Free with WeatherTRAK.net login information

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Plateau *pains*



Good businesses grow naturally, until they don't.

Many landscape company owners find their initial success stalls, leaving them struggling to break through a plateau and reach the next level.

Bill Silverman, owner of Springboard Business Coaching, offered executives "The Keys to Breaking Through to the Next Level While Working Less" during his presentation at the Professional Land-care Network's Green Industry Conference in Louisville, Ky., in October.

Some business owners blame the economy for their lack of growth, but that simply allows them to "take the responsibility off their shoulders," says Silverman. He offers tips for leaders to take matters into their own hands.

Business growth happens in spurts, he says. Companies grow quickly and then that growth levels off for a period of time. Using broad strokes, Silverman divides a business's growth into three categories:

Phase 1: Up to \$250,000—where the owner does as much as he or she can to get the business to grow. The plateau usually comes between \$150,000 and \$250,000. An owner's next goal is usually \$500,000.

Phase 2: Between \$250,000 and \$1 million—the goals are expanding the business and becoming a well-oiled machine. The plateau usually comes north of the \$500,000 level.

Phase 3: More than \$1 million. The goal for these business owners often is "to be a market leader," Silverman says.

Periods of stagnation are common in business. Here's how to reach the next level. **BY DAN JACOBS**

The plateau typically comes between \$1 million and \$2 million.

The first step in breaking through the plateaus is to know why the plateaus happen, Silverman says. One of the most basic reasons for an inability to move to the next level is owners don't set a good foundation on which to build to the next level.

Think of it like a student's progression through math, he suggests. First you learn to add and subtract and then multiply and divide. You don't start off with algebra and calculus. Business is no different. An owner needs to build on fundamental skills—marketing, sales, team management, financial management, service delivery, etc.

"What you do on one level leads to the next," Silverman says. "At each level the same challenges happen," but different skills are needed to be successful, just like there are different skills needed to complete high school and college. "Different level; different devil," he says.

Phase 1 business owners tend to be the "be all and end all" for their businesses, he says. They handle crew management, finances, marketing, spend time in the field and the list goes on. To move to

Phase 2, the owner has to transition from a doer to a manager. At some point some of those responsibilities must be handed over to others. The owner needs to focus on selling and marketing the business.

"If you don't switch your role, you will learn there is too much work," Silverman says.

By the time a business owner reaches Phase 3, he or she shouldn't be working anymore, Silverman says. "Work must be done by other people."

When most business owners hit a plateau, they "hunker down" and start working harder. They come in earlier and stay later. But at some point, it's like pouring water into a full glass, he says.

Silverman offers the following techniques to break through a plateau:

› **Triage:** Like in a war movie in which the most seriously wounded soldiers are treated first, business owners should start by addressing their most critical problems. Look at the foundation and assess which areas are the weakest.

› **The post-up:** Bring your team into a meeting room and let them help you find your broken areas. "They see



things you don't," Silverman says. Give everyone in the room a stack of Post-it notes. Have them write one broken process down on each note and let them write until they're done. Put the notes on the wall by category—marketing, selling, schedule prep, etc.

This way you start to recognize where the biggest problems are. A good question to ask at this point is, "How much money are we leaving on the table with all these broken issues?"

► **Systemize:** Start developing solutions, begin testing them and turn successful solutions into procedures you document. Eventually you will have a procedure manual to run your business.

Are you the bottleneck?

To move to the next level, a business owner also must build a self-sufficient team.

"If you can't do that, it's game over," Silverman says.

Many business owners fall into what he calls the "growth trap." The owner begins the day with a list of high-level growth issues, but after getting the crews out in the morning, one crew calls and needs something left behind. The owner drops it off and decides to check on the other crews while he's out. He makes a couple of calls between stops. At the end of the day, he realizes he hasn't completed half the items on the list.

"You end up being the bottleneck," Silverman says. You're not able to grow

your business because of that. That's why you need self-sufficient crews."

The first step to create self-sufficient crews is to create job descriptions. Showing employees what their roles are helps them do their jobs better. It also helps when it's time to evaluate employees, give feedback and coach them.

Once the processes are in place, a business owner doesn't need to manage every aspect of the business.

"The process of growing your business, is a process of letting go," Silverman says. **LM**

Jacobs is a Cleveland-based freelance writer.

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LAWN/TREE CARE

Bee-friendly lawn care

How turf managers can help protect pollinators while using insecticides.

By JONATHAN LARSON AND DANIEL POTTER, PH.D.

Populations of cultivated honeybees, native bumblebees and other pollinators have declined alarmingly in recent years. Scientists are scrutinizing the possible causes of bee die-offs and what to do about them. Much of the debate centers on whether or not exposure to insecticides, especially neonicotinoids, contributes to the problem. Because lawn care providers use these insecticides to control grubs and other turfgrass pests, they should understand the issue and be able to reassure customers their services don't contribute to the problem.

WHY POLLINATING INSECTS ARE IMPORTANT

Many orchard and garden crops, including apples, cantaloupes, almonds, cherries, soybeans, blueberries and a host of others, will not produce fruits without first being pollinated by bees. European honeybees get much of the credit, but in the U.S. alone some 4,000 species of native bees, including bumblebees, orchard mason bees, squash bees and leafcutter bees, also provide important pollination services.

According to a 2012 scientific study published in the journal *Public Library of Science One (PLOS One)*, crops pollinated by bees and other insects contributed \$29 billion to U.S. farm income in 2010. If bees continue to die off, those pollination needs may not be met, resulting in shortages of fruits, vegetables and seeds. These shortages lead to higher costs to consumers. Insect pollination also is essential to the preservation of wild plants, most of which would not otherwise produce fruits and seeds.



University of Kentucky researchers studied how to reduce insecticide hazards to bees. Above: A bee hive at a safe foraging site. Right: A hive in a treatment tent.



PG 27

LAWN/TREE CARE How turf managers can protect bees

PG 30

MAINTENANCE One company saves with box trucks

PG 32

IRRIGATION Successfully selling efficient irrigation systems

PG 34

DESIGN/BUILD Pros debate hourly vs. flat-rate design fees

Bees in suburban areas commonly forage on flowering lawn weeds. Indeed, we've surveyed and collected dozens of species of native bees visiting dandelions and white clover in central Kentucky lawns. Many of the species we caught are also pollinators of garden crops, fruits and berries, and of ornamentals such as flowering crabapples and hollies. Bumblebees, for example, are especially good pollinators of tomatoes, eggplant and peppers in home gardens.

WHY ARE BEE NUMBERS DECLINING?

Experts agree there's no single reason why bee numbers are declining. Rather, bee populations face a number of stresses that include parasitic mites, disease-causing pathogens, land development, habitat fragmentation, changes in beekeeping practices and, in some cases, exposure to pesticides.

Parasites, diseases and changes in beekeeping practices. Honeybees are parasitized by varroa mites that suck their blood and by tracheal mites that clog the breathing ducts of adult bees. They are susceptible to diseases caused by bacteria and fungi as well and to a virus that targets their immune systems. Shipping bee colonies around the country for commercial pollination can weaken them, increasing vulnerability to these agents. Plus, they may bring diseases with them that will infect local bee populations. Beekeepers provide colonies with supplemental food—often sugar or corn syrup—to compensate for the lack of wild forage in agricultural monocultures and as a substitute for “raiding” the bees’ stores of honey, which is harvested for sale. Artificial bee foods, however, lack some of the nutrients in real honey that bees need to develop a strong immune system.

Loss and fragmentation of natural habitat. Replacement of natural habitat by agricultural or urban expansion results in shortages of plants that bees depend on for food. Monocultures of crops like corn and wheat offer relatively little in the way of pollen and nectar that bees need to survive. In addition, native wild bees typically have specific nesting requirements; bumble bees, for example, often construct their underground nest in abandoned rodent burrows. Because of habitat loss, nesting sites are limited and worker bees must forage greater distances to bring food back to the nest.

Insecticides. Bees may encounter insecticide residues on the crops they pollinate or on wildflowers or flowering weeds that are inadvertently sprayed. Many chemical insecticides used to control insect pests of lawns, landscapes and gardens are acutely toxic to bees, which is why they have label precautions not to apply them to plants that are in bloom when bees may be present. This potential hazard was punctuated by an incident in Oregon this past June that led to the deaths of some 50,000



An inside look at a bumblebee hive tested by UK researchers.

bumblebees when linden trees in bloom were sprayed with an insecticide, a violation of the pesticide label.

Because neonicotinoids are systemic, there also is potential for translocation of their residues into pollen and nectar. Even low-level exposures can adversely affect bees. For example, research has shown worker bees that ingest sublethal amounts of imidacloprid become intoxicated and neglect their duties in the hive. Such bees are less likely to learn essential tasks like locating patches of food plants, which can lead to food shortages and decreased colony success. Additionally, sublethal exposure to insecticides can weaken bees’ immune systems, making them more vulnerable to infection by parasites and pathogens.

A perfect storm of stresses. Most likely, bee declines are due to a combination of the aforementioned menaces acting together. In the case of honeybees, a one-two punch of varroa mites and viruses has been implicated in collapsing colonies, although lack of food and pesticide exposures can weaken colonies and make it easier for the mites and pathogens to finish them off. In the case of bumblebees, stresses from habitat loss and disease could be compounded by

pesticide exposures. Ongoing research does not point to a single causal agent for global bee declines; rather, the causes are multiple and complex.

LAWN INSECTICIDES AND BEES

We conducted a study to determine how turf care providers can reduce insecticide hazards to bees when treating lawns for grub control. The research, published last spring in *PLOS One*, showed when turf intermixed with flowering white clover is sprayed with a neonicotinoid insecticide, bumblebee workers foraging on the contaminated flowers were intoxicated or killed, reducing colony growth. Only the largest, most vigorous bumblebee colonies will produce queens by late summer, and those failing to do so are doomed because only the new queens survive the winter to start the next generation. We found even when they were moved to a “safe site” with no pesticide exposure, colonies that had foraged on treated flowers for just six days failed to produce new queens.

Notably, though, once the clover flowers present at the time of treatment were removed by mowing and new flowers grew to replace them, bees subsequently foraging on the site were not harmed. Indeed, residues in the nectar dropped from toxic to essentially nontoxic levels

» WEB EXTRA

Read Larson’s, Potter’s and Carl Redmond’s complete study, “Assessing Insecticide Hazard to Bumble Bees Foraging on Flowering Weeds in Treated Lawns,” at bit.ly/15S6oja.

once the turf was mowed. Thus, while the research validates EPA label precautionary statements not to apply neonicotinoids to blooming nectar-producing plants if bees may visit the treatment area, it also indicates that such applications don't pose a prolonged systemic hazard to bees. Another key finding was chlorantraniliprole (Acelepryn), representing a relatively new class of insecticides called anthranilic diamides, did not adversely affect bee colonies even when the workers foraged on flowering clover that had been directly sprayed.

UK research shows LCOs taking precautions can use neonicotinoids on turf without harming bees.

FIRST DO NO HARM

What can lawn care providers do to avoid harming resident bees? Clearly, direct contamination of flowers by neonicotinoids is a bee hazard, so applicators should follow label directions to not spray those products on turf when blooming weeds are present. But with a few sensible precautions—e.g., controlling flowering weeds with herbicides before application, delaying grub treatments until after peak bloom of spring-flowering weeds, using granular formulations, and/or notifying homeowners to mow off any flower heads before or soon after liquid applications have been watered-in—it should be possible to use neonicotinoid insecticides for grub and billbug control



without harming bees. Chlorantraniliprole, a relatively new chemistry, appears non-hazardous to bees.

Larson is a doctoral candidate in the Turfgrass Entomology Lab in the Department of Entomology at the University of Kentucky, where Potter is a professor of entomology. Reach them at jonathan.larson@uky.edu or dapotter@uky.edu.

PHOTO: DANIEL POTTER, PH.D.



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MAINTENANCE

Fuel savings inside the box (truck)

John Shorb Landscaping backs its sustainable mission with diesel-electric hybrid vehicles. *By JONATHAN KATZ*



Some of the latest blog entries on John Shorb Landscaping’s website focus on sustainable landscaping practices, such as beneficial insects, rooftop gardens, conservation and stormwater management. The company, based in Kensington, Md., also promotes its sustainability message on its Facebook page.

The efforts all are part of an overall commitment to resource conservation. John Shorb Landscaping has built a sizable portfolio of services that appeal to eco-conscious customers. To build on its sustainability message, the company ordered two diesel-electric hybrid box trucks in 2012 and began driving them in the spring of 2013.

“We thought this played into our image of trying to do the right thing environmentally,” says John Shorb, president of the company.

In addition to the environmental benefits, Shorb expects the trucks to provide fuel savings. As of September, the company was still evaluating how much it has cut fuel use.

“We are noticing fuel savings,” Shorb says. “We don’t have empirical data proving it. It’s mainly based on the fact that we’re not fueling up as often.”

John Shorb Landscaping added two diesel-electric hybrid box trucks during the 2013 season.

WHY HYBRIDS?

The trucks Shorb purchased were 2014 Hino 195h diesel-electric hybrid box trucks. The company drove Isuzu box vans for several years until Isuzu stopped making the model the company preferred. Shorb purchased two Hino vans and liked them enough to purchase two more. Upon visiting the Hino website to view his options, he noticed the company, a Toyota Motor Group company, offered hybrid vehicles. One of Shorb’s managers drove a Toyota Prius and spoke highly of its performance, further convincing Shorb to make the purchase.

“Hino is Toyota’s truck version (of the Prius), so we knew the brand and liked it,” Shorb recalls. “Also, we knew fuel prices weren’t going down, so we thought it would be worth a try.”

Shorb says his company plans to continue replacing its fleet with more hybrid box trucks as long as the cost remains competitive. The hybrid trucks cost about \$11,000 more than a traditional diesel box truck, says Ed Ervin, a commercial fleet sales manager at K. Neal International Trucks in Hyattsville, Md.



In addition to improving fuel efficiency, John Shorb Landscaping hopes to better maintenance crew productivity with the addition of bathrooms and laptop computers to its box trucks.

PHOTOS: JOHN SHORB LANDSCAPING