



Sisyrinchium bellum
Blue-eyed grass



Papilio polyxenes
Swallowtail caterpillar



Eremophila alpestris
Horned lark



Thermopsis californica
False lupine

Photos: Paige Green, Denise Rocco-Zilber, Dr. Michael Whitt, Michelle Cooper.

Citizen Science

A quick photo with your phone could turn up a new plant species. It's the latest incarnation of citizen science—and it's having an impact in Marin and around the world.

Scientists knew there were 900 plant species in the Mt. Tam watershed when they started a project in 2012 to document samples of every species on the 18,000 acres managed by the Marin Municipal Water District. Now, thanks to the keen observations of citizen scientists, that number is up to 930.

Such diversity isn't surprising in Marin County, where 20 percent of California's plant species can be found. What might surprise is the fact that these observers aren't necessarily botanists. They're volunteers armed with smartphones working with the water district and the California Academy of Sciences to protect biodiversity and water quality.

Crowdsourcing Science

Before it was a profession, science was for amateurs.

Observations of natural phenomena fueled questions, which in turn fueled inquiry—and discovery.

"Citizen science is eyes on the ground," says Michelle Cooper, MALT's land stewardship manager.

Today's movement, born in the last 10 years, is heavily influenced by technology. "People now have supercomputers in their pockets," says Rebecca Johnson, citizen science research coordinator for the California Academy of Sciences. "Today scientists can ask questions and citizen science can mobilize a million people to answer those questions—things you wouldn't have even thought to ask 10 years ago."

The Academy's citizen science engagement coordinator, Alison Young, points to Galaxy Zoo, an early tech-enabled project that enlisted 150,000 people to classify galaxies from telescope photos. Work that could have taken scientists years was instead crowdsourced by people on home

Message from the Executive Director



Paolo Vescia

In California an estimated 70 percent of our most rare and endangered plants and animals can only be found on private land. And because most of the state's privately owned land is considered working land, whether

for farming, ranching, or timber production, conservation of these lands is critical to protecting biodiversity.

That's part of why this month's bioblitz on Millerton Creek Ranch is so important. As the first bioblitz the California Academy of Sciences has held on private, working land, it will give scientists rare insight into the diversity of life on this ranch. On the ground, the plant and animal observations that participants record will also help MALT better steward the land and protect its natural diversity.

Land stewardship is the present and future of MALT. We've protected nearly half of the private farmland in Marin, committing MALT to partner with our landowners to care for it in perpetuity. With each new farm or ranch we protect, our role in conserving our county's natural and agricultural resources grows.

A MALT easement doesn't just stop development. It also protects sensitive species and their habitats, water quality, and the ability of the land to grow food. Our easements limit grazing around creeks, allowing plants to flourish, limiting erosion, reducing bacteria counts in water, and cooling stream temperatures so fish and other species can thrive. We help landowners manage weeds to prevent valuable pastureland from being overcome with thistles and other invasive plants that livestock won't eat and native grasses can't compete against.

Good management of farms and ranches has far-reaching benefits. Local food and a beautiful landscape are obvious. But look closer and you'll find diverse plant and animal species, restored habitat for fish and wildlife, better water quality, a healthy watershed, and development-free corridors that allow wildlife to move through and thrive.

I hope you'll join MALT in exploring—and stewarding—our county's rich biodiversity.

A handwritten signature in black ink, appearing to read "Jamison Watts".

Jamison Watts

Citizen Science ...continued from page 1

computers—yielding 50 million classifications in the first year alone.

Hobbyists and enthusiasts of all stripes can get involved in citizen science, from birders to space-watchers, and from neighbors checking the water quality in local creeks to people worldwide mapping changes in plant life cycles under the force of climate change.

“In order to get a picture of biodiversity—what's where, when—you need people,” says Rebecca.

Bioblitz on Working Land

MALT is partnering with the California Academy of Sciences on June 27 for a one-day bioblitz on Millerton Creek Ranch, which MALT bought from a developer late last year, to take a literal snapshot of the species of plants and animals on this working, private ranch.

The bioblitz is free and open to the public—no botany literacy required. Participants will take photos of flowers, grasses, insects, birds and other species they see using a free app called iNaturalist. Once uploaded to this social network-style platform, other users review the photos and identify each species. Duplicate identifications confirm accuracy and GPS-derived geotagging shows precisely where the species was found.

The results will influence long-term management of the ranch's natural resources and habitat—both the good (MALT staff have spotted burrowing owls on the property) and the bad (we've documented invasive woolly daisy thistle here).

It will be the first bioblitz the Academy has hosted on privately owned land. “We know a lot about public land, but we don't know a lot about private land,” explains Rebecca. “Private lands have important natural values, including providing wildlife corridors. We can also focus on a specific question, like how daisy is distributed.”

“We've also never done an event on working land,” adds Alison, distinguishing working farms and ranches from public open spaces like parks. “This bioblitz will give people a chance to see that there's a lot of biodiversity in places like this.”

From Data to Conservation

The immediate impact is to help MALT and the ranchers who are leasing Millerton Creek Ranch better steward the land. But that's only the beginning: The data gathered by citizen scientists through iNaturalist, once species are identified and confirmed by other users, is sent to biodiversity databases around the world.



California poppies (*Eschscholzia californica*) thrive on West Marin farms and ranches. Photo: Denise Rocco-Zilber.

“It’s useful for weed management because it ties into the Cal-Flora database,” says Michelle. This statewide database maps observations of all types of plants and helps land managers identify and control weeds before they get out of hand. The data gathered in the Mt. Tam watershed has allowed Marin Municipal Water District to get a jump on weeds before they spread. Weeds are a constant threat to ranches because they crowd out the pasture grasses grazing livestock prefer, and they reduce biodiversity.

On the Scientific Record

“More long-term, it’s building a scientific baseline, in California and globally as well, so we can use it to compare to historical collections,” explains Alison. A finding of a lupine on a rocky outcropping along Tomales Bay could be used tomorrow or years from now.

Once people get engaged with citizen science and iNaturalist, they can continue to use the tools in everyday life. An intriguing flower spotted on a hike or an unusual spider in a garden shed will be identified by the iNaturalist community, satisfying curiosity, inviting more exploration and ultimately adding to the picture of biodiversity in communities near and far.

“The Academy’s goal is to document biodiversity everywhere,” says Rebecca. “Our parallel goal is to connect people with nature and build naturalists—that’s the only way we can get a picture of global biodiversity.”

Join us: Register for MALT’s June 27 Bioblitz on Working Lands. Details on page 5.

Explore Citizen Science

www.calacademy.org/citizen-science

Explore California Academy of Sciences’ citizen science projects in the Bay Area and beyond.

www.inaturalist.org

Search observations from other users, check out the global map of observations, and download the free app.

www.zooniverse.org

A collection of global citizen science projects that you can participate in from home, including its original project, Galaxy Zoo.

www.scistarter.com

A searchable database of citizen science projects from organizations around the world.

www.calflora.org

A database of plants found in California.



Donor Profile **Ann and Paul Brenner**

“Milking cows and training oxen were my favorite things,” explains MALT volunteer and donor Ann Brenner, speaking of summers spent at farm camp

when she was a girl. Her early love for farms and the outdoors was nurtured by her family.

“I come from a long line of lovers of the land and land preservation,” says the Santa Barbara County native. She grew up camping in the Sierras and living as a “faculty brat” on the campus of nature-centric Midland School, where her father taught. In later years her mother was deeply involved in saving the famed Wilcox Property in Santa Barbara.

When Ann and her husband, Paul Brenner, moved to Marin in 1986, she brought her passion for the land with her. Then, when their sons were born, she passed it along to them. Older son Tristan has put his experiences at farm camp and Midland School to good use: He is now the herd manager at MALT-protected Toluma Farms in Tomales.

“‘Little House in the Big Woods’ and ‘Farmer Boy’ were my two favorite books when I was 9. I loved the idea of living off the land. So now every Tuesday I go out and help my son at

Toluma, milking goats, mucking out stalls and herding animals,” says Ann.

Ann and Paul have been MALT members since 2000, and Ann has been a volunteer since 2004. Last year they decided to include MALT in their estate plans and joined our Legacy Giving Circle, which, fittingly, supports the ongoing stewardship of all the farms and ranches MALT protects.

“I grew up in a family that believed that if you’re able to give back, you do.”

“It’s so important to support the preservation of land for agriculture, for the sake of both maintaining the number of properties in agriculture and protecting the land from development,” says Paul, a banker who once worked with dairies in Chino, Calif.

While Ann gets her hands dirty on the farm, Paul experiences West Marin from his motorcycle, riding from southern Marin out to the Nicasio Reservoir and on to Point Reyes Station when he has the chance. “When you’re in a car you drive through the countryside,” he says. “When you’re on a motorcycle, you’re in the countryside—you smell every smell and feel every change in temperature.”

However they experience Marin farmland, Ann and Paul have committed to protecting it—forever. “I grew up in a family that believed that if you’re able to give back, you do,” says Ann. “That’s the kind of legacy we want to leave.”



Ride in MALT Style

Our 2015 jersey is hand-crafted in California by Voler, featuring a sleek new design and true-to-size fit for both men and women. Preorder now and wear for Tour de MALT July 11!

www.malt.org/tourdemalt

DOES YOUR COMPANY CARE ABOUT FARMLAND?

Join MALT’s Corporate Circle to show your support for protecting Marin’s:

- Local food sources • Natural resources
- Farming heritage
- Thriving agricultural economy

All levels of support come with a range of great benefits and exposure:

www.malt.org/corporatecircle.





Measure A Thank-You Hike *Saturday, June 20*

Thacher Ranch was the first ranch preserved with funds from Measure A, a sales tax approved by Marin voters in 2012. We can't think of a better way to thank you for supporting Measure A than to invite you to hike the beautiful working lands you helped protect.

Time: 10 a.m.

Place: Thornton and Thacher ranches, Tomales

Cost: Free

What to Bring: Lunch, water, hiking shoes, hat, sunscreen

Hike Distance: Challenging 7-mile hike over hilly, uneven terrain

Age Appropriate: 12 years and up



Bioblitz on Working Lands with California Academy of Sciences *Saturday, June 27*

Spend a day as a citizen scientist, collecting plant and wildlife data that will help MALT conserve resource-rich Millerton Creek Ranch. Experts from the California Academy of Sciences and the iNaturalist smartphone app will make it easy and fun—no experience required. After our fieldwork, we'll gather nearby to share findings.

Time: 9 a.m.–2 p.m.

Place: Millerton Creek Ranch, Point Reyes Station

Cost: Free

What to Bring: Lunch, water, hiking shoes, hat, sunscreen, smartphone preloaded with iNaturalist (not required)

Hike Distance: Various routes to choose from. Steep climbs on uneven trails in some areas.

Age Appropriate: 8 years and up



Tour de MALT *Saturday, July 11*

A barn-to-barn cycling event through the stunning landscape of West Marin, much of it protected as farmland forever by MALT. Finish to a farm-to-table lunch. New for 2015: Go the extra mile to save this rural landscape by signing up for our optional rider fundraiser—you could win a bike from Marin Bikes! Scholarships for young riders are also available.

Time: 8 a.m.–3 p.m.

Place: Nicasio Valley Farms

Cost: \$85 MALT members/
\$125 nonmembers

What to Bring: Bike, helmet (required), water

Ride Distance: 40-mile and 60-mile options

Age Appropriate: 15 years and up



Rangeland Paddle Tour *Sunday, July 26*

MALT teams up with Blue Waters Kayaking for a morning paddle on Tomales Bay, which offers a completely different perspective on the many MALT-protected ranches that flank it. This gentle naturalist-led guided tour is appropriate for first-timers as well as experienced paddlers. Lunch and cheese-tasting on the beach included.

Time: 9 a.m.–12:30 p.m.

Place: Blue Waters Kayaking Inverness beach launch

Cost: \$95 MALT members/
\$135 nonmembers

What to Bring: Water to carry on kayak, sunhat, sunscreen. All equipment is included along with wetsuit and dry bag for snacks and cameras.

Age Appropriate: 15 years and up



Preregistration is required; exceptions noted. Register online at www.malt.org/events or call (415) 663-1158.



MALT Day at the Pumpkin Patch *Sunday, October 18*

Bring the kids and pick an organic pumpkin at picturesque Nicasio Valley Farms, protected by MALT since 1986. A portion of proceeds from the day's pumpkin sales goes to MALT, helping us save more Marin farms.

Time: 10 a.m.–4 p.m.

Place: Nicasio Valley Farms
Pumpkin Patch

Cost: Free; preregistration
not required

Age Appropriate: All ages



In the Community

Visit the MALT booth at upcoming fairs, markets and festivals.



San Rafael Sunday Farmers Market

June 14, July 26, August 23

Place: Marin Civic Center, San Rafael

While you're shopping for local vegetables, meat, eggs and cheese (including food produced on MALT-protected land), stop by our booth to learn what's new with MALT. Guess how many eggs we have in the jar for a chance to win a MALT T-shirt.

Marin County Fair

July 1–5

Place: Marin Civic Center, San Rafael

Funnel cakes, pig races...and farmland! Find MALT in the main exhibitor area, where we'll have prizes for kids and adults and lots of info about our county's farmland.

Tomales Founders Day

Sunday, September 6

Place: Downtown Tomales

More than a fifth of the acres MALT protects circle the tiny town of Tomales, so we're proud to help celebrate its annual Founders Day. Check out the parade then stop by the MALT booth to learn about Tomales-grown foods.

More fall events to be announced, including a ranch run and a cheese event! Make sure you're on our email list to get the details early: www.malt.org/enews.

Explore West Marin Flower-Hunting This Season

Come visit West Marin now and you can expect to see a few interesting species blooming on our working and wild lands. Because of the drought, plants here are blooming one to two months earlier than usual, so some of the species you normally see in June may have already come and gone.

LOOK FOR



Soap plant (*Chlorogalum pomeridianum*)

Typically blooms May to August. Look for blooming flowers at dusk in grasslands and open woodlands, particularly in areas where deer and livestock can't eat them. The white, 6-petaled, star-shaped flowers look like they are floating.



Farewell-to-spring (*Clarkia amoena*)

Blooms June to August. Very common in grasslands, the flowers show off their bright pink color when everything else is brown.



Wild buckwheat (*Eriogonum latifolium*)

Blooms July to September. Commonly found growing on rocky outcrops or roadside cuts. This long-lived perennial has pale pink pompom-like flowers and fuzzy, round, silvery leaves that help the plant conserve water.

Photos: Ken-ichi Ueda, Michael Wolf, Daniel L. Nickrent.



Michael Woolsey

New MALT Board Member John Taylor

Local dairyman and engineer John Taylor was elected to MALT's Board of Directors in 2014. John and his wife, Karen, own Bivalve Dairy just north of Point

Reyes Station, supplying milk to Clover Organic as well as Cowgirl Creamery, which turns Bivalve's organic milk into coveted Red Hawk cheese. John and Karen also host field trips offering children an opportunity to learn about sustainable farming and where milk comes from. An engineer by trade with a degree from Cal Poly San Luis Obispo, John worked in the semiconductor industry before turning his energy to farming.

"I'm proud to welcome John to MALT's board," said Executive Director Jamison Watts. "He brings to the organization deep experience in business development, land management and what it takes to succeed as a farmer in West Marin."

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Co-Founded by Phyllis Faber and Ellen Straus

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Register now at www.malt.org/tourdemalt.

Marin Agricultural Land Trust is a member-supported, nonprofit organization created in 1980 to protect Marin County farmland. Some of the Bay Area's most highly acclaimed meats, dairy products and organic crops are produced on farmland protected by MALT totaling more than 47,000 acres on 75 family farms and ranches.

To learn about Marin's working farms and ranches and the food they produce, visit:
www.malt.org