



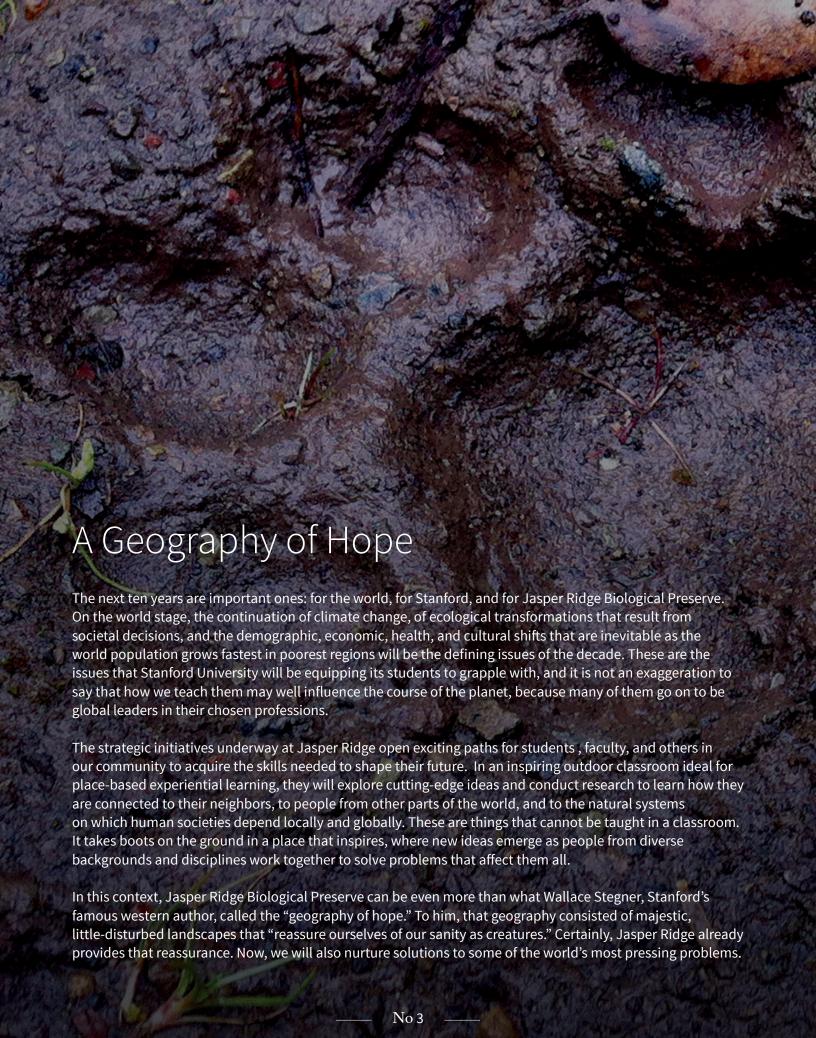
To contribute to the understanding of the Earth's natural systems through research, education, and protection of the preserve's resources.

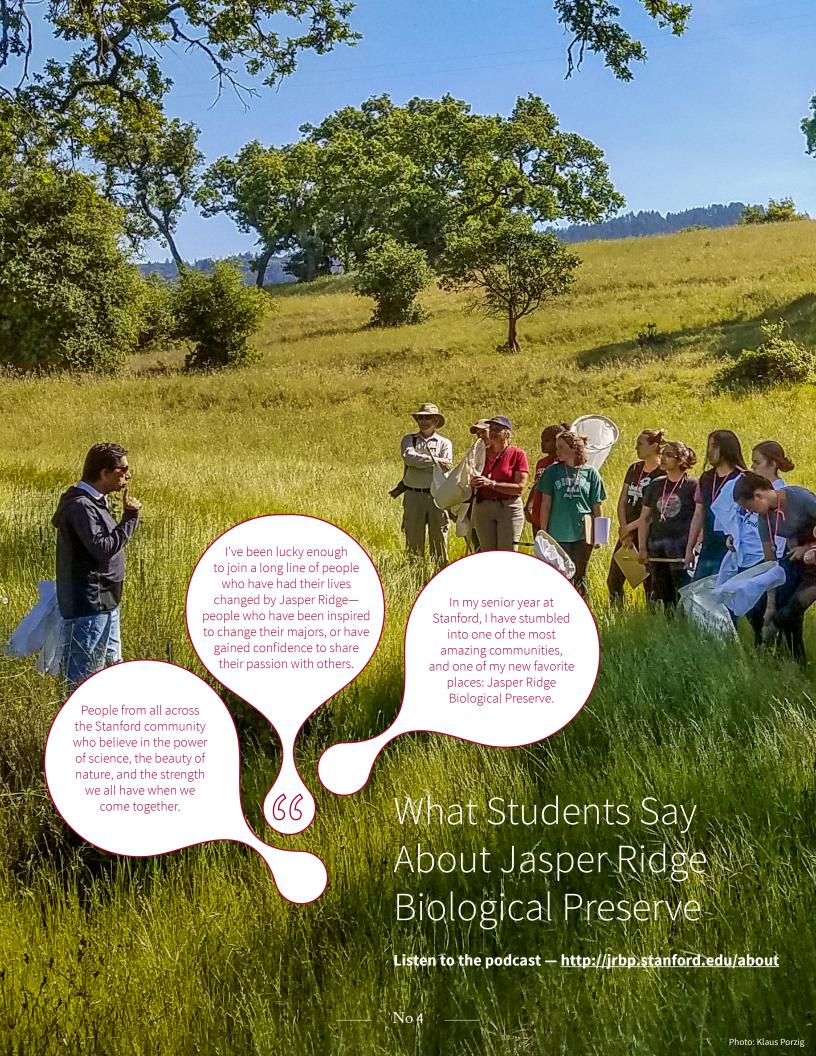
## Our Vision

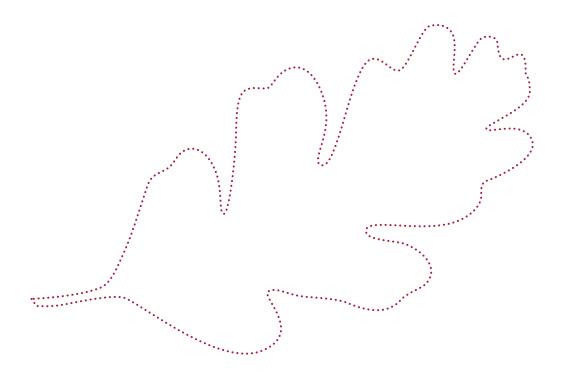
To be a leader for innovation in research, education, and communication on natural systems, through providing an interdisciplinary, cross-cultural, and place-based training ground for effective Earth stewardship by our community and the next generations of global leaders.

## Our Pledge

To be a safe and welcoming place for discovery, discussion, and community for people of all cultures and identities.







### The Next Ten Years

Today, the rolling hills, grasslands, woodlands, and wetlands of Jasper Ridge Biological Preserve are filled with wildlife and offer solace in the midst of a bustling Silicon Valley, as well as a uniquely important research and training ground. But Jasper Ridge also offers an unparalleled, irreplaceable portal into the future, where students, faculty, and partners from diverse disciplines will problem-solve in ways that scale local discoveries to regional and global relevance. At its heart, the plan is designed to provide springboards for interaction between natural and social scientists, engineers, humanists, and artists from the Stanford campus and beyond.

The Jasper Ridge strategic plan aligns well with Stanford's overarching mission to achieve the purposeful university, embracing a complex, interdependent world. Given its unique setting, exceptional expertise, and involved university and outside communities, the preserve has become the perfect place to incubate critical contributions that will extend the frontiers of knowledge, foster engaged world citizens, and help guide the future of our planet during this time of unusually rapid and intense global change.

While we implement new initiatives, work with new campus and outside partners, and improve infrastructure, we will of course continue the amazing work that already goes on at Jasper Ridge—world-class research, teaching of thousands of students each year both from Stanford and elsewhere, and a vibrant outreach program that transfers knowledge generated at Jasper Ridge to learners of all ages and backgrounds. We invite you to join us on our exciting journey into the future!



# Helping to Solve Global Problems Through Local Work at Jasper Ridge



The Anthropocene is a new epoch in our planet's history characterized by people actively reshaping all of Earth's systems at lightning speed. How nature is transforming under these unusual conditions has emerged as the issue of our time. Related questions permeate scientific studies and societal decisions in ways that range from dealing with climate change to alleviating poverty and providing such basics to life as breathable air and drinkable water. Nature's transformation is taking place before our eyes because people—themselves a component of biodiversity—are nowadays actively (though often inadvertently) shaping the future of all other organisms on the planet. Jasper Ridge Biological Preserve is the perfect natural laboratory in which to provide hands-on field experiences for students and researchers aimed at revealing not only the processes that underpin this transformation of life on Earth, but also how best to maintain the biodiversity processes and societal actions that will maximize environmental health and human well-being as we head into an uncertain future.



Given its long history of collaboration with other Stanford conservation programs, with local, state, and federal agencies, and as an integral part of UNESCO's Golden Gate Biosphere and the Santa Cruz Mountains Stewardship Network, Jasper Ridge is well positioned to become an incubator of discovery and knowledge transfer that will benefit ecological stewardship of Stanford and the entire Bay area community. At the same time this initiative will connect students with practitioners to increase impact and to facilitate career opportunities. In effect, Jasper Ridge will function as a central brain trust contributing primary science to stewardship groups on campus and throughout our region.



Many of the research and educational challenges that field stations face, such as climate change, invasive species, and diminishing appreciation for nature, require collaborations that extend far beyond individual field station boundaries. Jasper Ridge Biological Preserve, already a leader in field-research technology, is uniquely positioned to foster these collaborations given its position in Stanford's campus and within Silicon Valley. This initiative will facilitate field-based exchanges of Stanford students with counterparts living and working in the developing world, necessary to promote the cross-cultural communication that is essential for solving global and local problems. Participants from both developed and developing countries will learn from each other—both scientifically and culturally—in immersive field-related settings, recognized to be one of the most effective and influential learning environments.

## The Path to Success

The Jasper Ridge strategic plan dovetails with key aspects of Stanford's Long-Range Planning Process and embraces the university's founding goals: "promoting the public welfare by exercising an influence in behalf of humanity and civilization" and "qualifying students for personal success, and direct usefulness in life." The plan is ambitious but feasible, with some benchmarks already achieved and others underway.

LEGEND:

- ALREADY IN PLACE
- UNDERWAY
- ANTICIPATED
- O Renovating infrastructure
- Increasing funding

- Closer partnering with other Stanford field and stewardship programs
- Ensuring adequate staffing

Collaborating

with Hopkins Marine Station

Integrating Searsville Dam and

Reservoir modifications with research

and education programs

Long-term land-use planning that identifies Jasper Ridge as Stanford's

premier ecological preserve that can be maintained only with

adequate buffer zones

- Re-apportioning existing resources to jump start strategic development
- Enhancing communication with our stakeholders and externally
- Q Collaborations with other Stanford programs and beyond
- O Commitments and baseline funding by Stanford University and the outside community
- Talented and enthusiastic faculty, staff, students, and community

### Our Destination

We're striving to provide more opportunities for students, faculty, and our community through productive programs and collaborations and updating aging infrastructure.

#### **Programs**

Continue the highly successful research, teaching and outreach already underway

Increase opportunities for research and education by implementing three new initiatives (Anthropocene Biodiversity, Science for Land Stewardship, and Out of the Box and Into the Cloud).

Develop collaborations with Hopkins Marine Station

Work with other Stanford land-stewardship programs to maintain Jasper Ridge as the university's premier naturally-operating terrestrial ecosystem

Enhance communication with all stakeholders

#### **People**

Involve postdoctoral scholars to conduct research on preserve issues relevant to effective stewardship and to help mentor graduate students and undergraduates

Attract visiting scholars—the best and brightest researchers, writers, and artists—to increase the breadth of expertise and ideas relevant to engagement with our students, faculty and community

Ensure staffing sufficient for ongoing and new programs

#### Infrastructure

Renovate the maintenance yard ("corp yard"), update Leslie Shao-ming Sun Field Station, and replace aging vehicles and other equipment needed to support present preserve activities and new programs

More fully integrate campus services into preserve maintenance

Improve data storage and accessibility for research, teaching, and communication

Accommodate the Searsville Dam and Reservoir modification project and integrate it with scholarly activity

## More Information

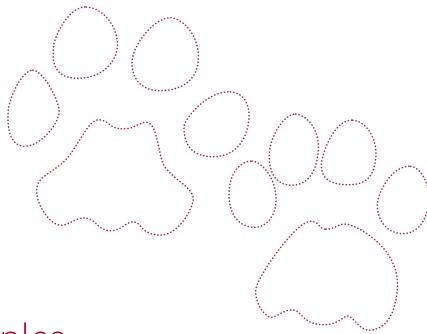
The Jasper Ridge Strategic Plan arose through more than a year of meetings with hundreds of stakeholders—students, faculty, staff, thought leaders in the communities that surround the preserve, alumni, docents, national and international field-station researchers and educators, and Stanford upper administrators. This process affirmed the preserve's long-standing mission, crystallized a vision for the future, defined appropriate initiatives, and highlighted issues that need to be addressed over the next ten years. The following pages provide information for those who want to learn more about the plan's underpinning.

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Also special is the rich cultural heritage in which Jasper Ridge is embedded, both past and present. Its archaeological legacy tells stories of the Muwekma Ohlone, whose living descendants continue their relationship with Jasper Ridge, and of the European settlers who subsequently influenced the landscape. Today, the communities around the preserve, Stanford, and in the San Francisco Bay area writ large include people from throughout the world, whose diverse perspectives are a vital ingredient to incubating globally relevant knowledge in this extraordinary place that is Jasper Ridge.



## Guiding Principles

Formulation of the strategic plan was guided by the following important considerations that were identified by the planning groups.

Enhancing Stanford University through improvements in key areas highlighted in the university's Long-Range Planning Process.

Building on Jasper Ridge Biological Preserve's widely acknowledged legacy and remarkable strengths.

- World-class research that has changed the ways biologists think
- Award-winning courses
- Leslie Shao-ming Sun Field Station
- Leading-edge field-station technology
- Diverse ecological and cultural setting
- Proximity to central campus and Silicon Valley
- Stanford's core terrestrial nature preserve surrounded by buffer lands
- Talented and dedicated staff
- Strong outreach program
- Committed volunteers
- Supportive surrounding communities
- Collaborations with a multitude of programs both within and outside Stanford
- Dedicated endowments and university support that make existing programs possible

Recognizing that unusually rapid global change is transforming all of the world's ecosystems, with increasing threats to the preserve from external influences acting globally as well as right outside its boundaries: these include climate change, wildfire, invasive species, extinctions, pollution, and intensified urbanization.

Anticipating that major changes to Searsville Dam and Reservoir are inevitably on the horizon in accordance with stakeholder recommendations.

Acknowledging that the infrastructure for maintaining the preserve is in critical need of renovation, and the necessity of adequate staffing for programs.

Appreciating the tradeoffs between increasing human footfalls and preserving the sensitive ecosystems harbored in the preserve.

## About the Initiatives

#### Why These Initiatives?

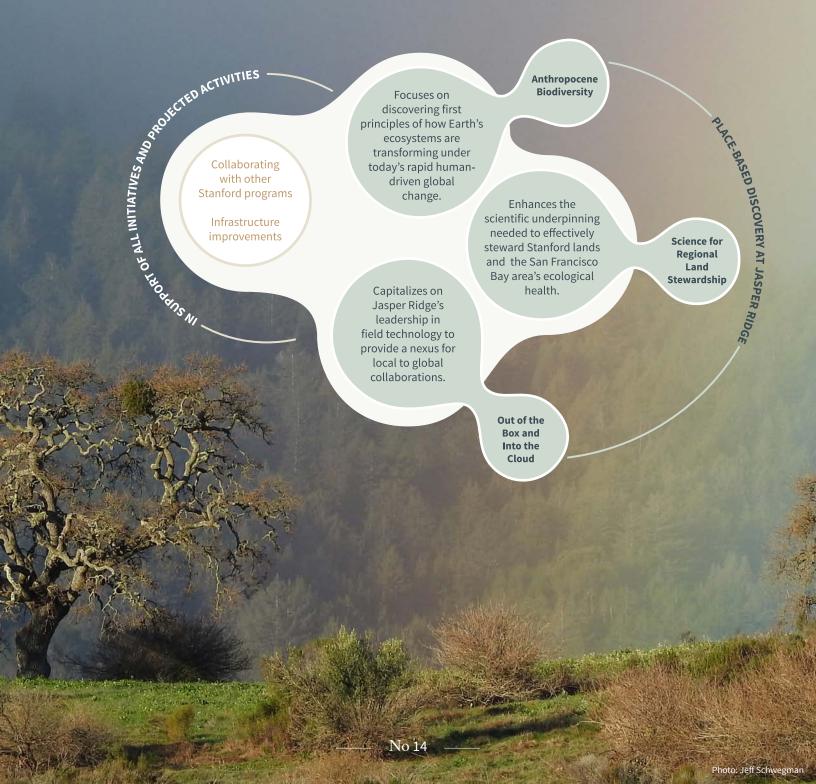
- Build on existing strengths
- Inclusive and interdisciplinary
- Scholarly and practical benefits

#### Why Here?

- Ideal setting and history
- Expertise
- Need for information

#### Why Now?

- Critical juncture in history
- Need answers to steward ecosystems locally, regionally, and globally





biodiversity. Measures of success will involve tracking scholarly advances, the efficacy of collaborations with other groups doing related work at Stanford, and the success of students who participate in the initiative over the next decade.





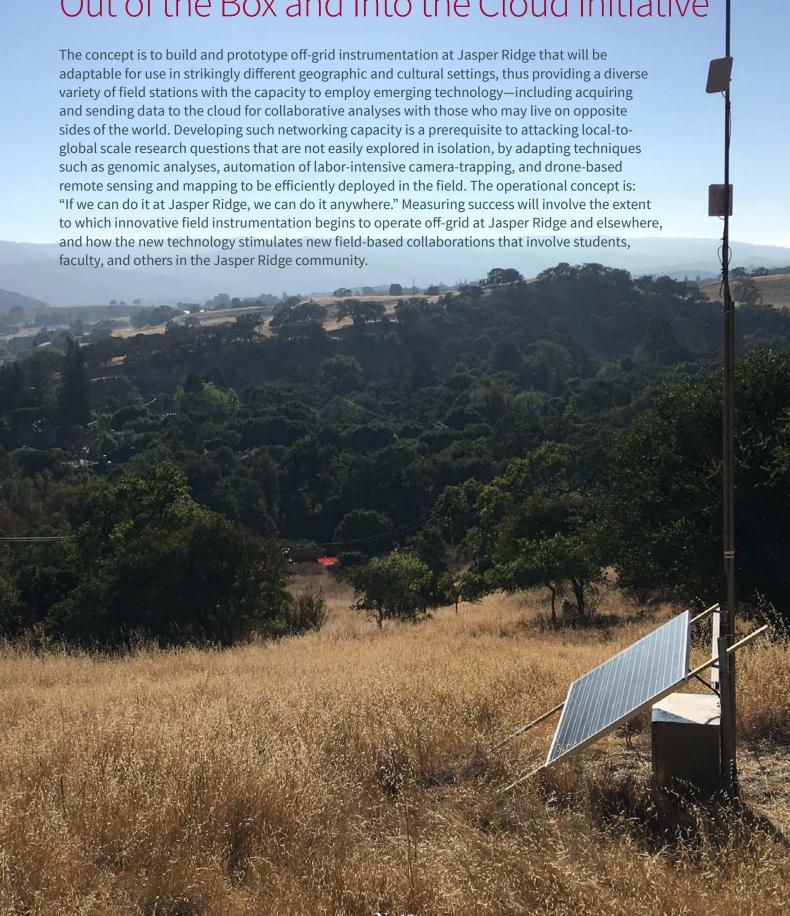


Photo: Trevor Hébert



# Improving Data Management Over the past decades Jasper Ridge Biological Preserve has accumulated an immense amount of important scientific data, ranging from historic photographs, to time-series of climate information, to decades of bird, ant, and other wildlife surveys, to the primary data arising from investigator-driven research projects. Outside and internal reviewers of the preserve highlighted that these data need to be organized so that they can be easily retrieved and available to the research community and for preserve management. Easy access to historic and current data will be especially important in ¥ understanding the environmental changes that will result from the Searsville Dam project. Moreover, archiving and making available such data is now a normal requirement of most federal and state grants. Developing the system and staffing that will enable data-storage and retrieval that is transparent and easily accessible by preserve personnel and as appropriate by the academic ¥ and management community is therefore a high priority. X X ¥ ¥ X ¥ X O Ō

# Strengthening Connections with Hopkins Marine Station

Jasper Ridge Biological Preserve is one of two world-class field stations operated by Stanford University—the other is Hopkins Marine Station in Pacific Grove. With Jasper Ridge and Hopkins, students and faculty have access to exceptional field facilities both on land and at sea—a rare combination for most universities. Historically the two field stations have operated essentially independently, with students and faculty interested in terrestrial ecology focusing their work at Jasper Ridge, and those with marine interests working at Hopkins. While this specialization has served users well in the past, even more opportunities can open up through collaborative programs designed to highlight the biological and societal processes, problems, feedbacks, and solutions that inextricably connect the marine and terrestrial realms. Examples of how this might be accomplished include collaborative classes and research on land-sea connections that utilize both field stations, and portfolios of field opportunities presented to students and faculty under the auspices of the Stanford Field Stations.

# Integrating Jasper Ridge into Stanford Land Management

The 1193 acres of Jasper Ridge Biological Preserve contain the most pristine ecosystems that Stanford University oversees within its extensive land-management portfolio, which totals about 8180 acres. In recognition of this, the management philosophy at Jasper Ridge has emphasized preserving natural ecological processes. Other Stanford lands that surround Jasper Ridge, while also managed to maintain environmental health, prioritize different management philosophies depending on their mandates. These lands include SLAC (which comprises abundant open space as well as the linear accelerator); equestrian and ranch lands (Webb Ranch, Woodside Horse Park, grazing areas); protected watersheds (Los Trancos and San Francisquito Creeks and Felt Lake); and lands included in Stanford's Habitat Conservation Plan—recreational hiking areas (the Dish); the main campus with its classrooms, laboratories, and residences, office parks, and the Stanford Shopping Center.

This matrix of multiple-use Stanford lands opens two exceptional opportunities. The first is to understand how ecological processes vary across a gradient that spans a core nature preserve (Jasper Ridge) that is surrounded by a buffer of working lands including some agricultural and some not, which in turn grade into more urbanized residential and office areas. The second is to recognize the feedbacks between land-use in the buffer zones and the core natural area, and formulate overall management plans accordingly. The need to develop such integrated land-management plans is a problem now faced by every nature preserve in the world. Thus, using the Stanford lands to both develop effective methods of collaboration between land managers that have different mandates, and to more fully understand the ecological feedbacks between what takes place in core nature areas and their surrounding buffers, can fill an essential niche in the scholarship of environmental stewardship. The groundwork for this has already been laid with effective collaborations between Jasper Ridge, SLAC, and LBRE, but ensuring the ecological integrity of Jasper Ridge over the coming decades requires a more coordinated process.

Measures of success would include such accomplishments as workshops that bring together different players in Stanford land management focused on understanding each other's mandates; development of an integrated Stanford land-management plan that takes into account how activities on buffer lands impact the core nature preserve that is Jasper Ridge; and research and teaching activities that examine the socieoecological gradients that transect Stanford lands.

## Searsville Dam and Reservoir

The Searsville Alternatives Study lays out eight options for a major construction project that will severely impact Jasper Ridge. Although neither the exact scope of the project nor the timing are clear yet, strategic planning at Jasper Ridge needs to recognize the probability that work will begin within 10 years. From an infrastructure point of view, that means identifying critical staging sites and the potential footprints of the construction project so that future preserve activities can be planned accordingly. From a programmatic viewpoint, the ongoing process and eventual dam project provide an exceptional "natural experiment" with which to understand the diverse socioecological issues that must be balanced in order to effectively steward nature in today's world. All groups participating in the planning process emphasized that this is an opportunity not to be missed. The long-term nature of the Searsville Dam project lends itself to a programmatic approach that should involve faculty and students in the processes of developing bestpractices to balance needs of multiple stakeholders, and in generating new scientific knowledge that can result from focused study of the ecological transition that will occur. Rather than simply being a "teachable moment," the Searsville process represents a "teachable decade."

One productive approach would involve engaging faculty and students in determining the existing socioecological baseline of the Searsville watershed and tracking its transformation through coming decades, with the goal of generating new knowledge about social and ecosystem processes and environmental stewardship. In effect this would form a case study to inform the world about best practices for solving the complicated problems that every nature preserve now faces.

# Corp Yard Renovation A pressing problem is the "corp yard," the acre of land where maintenance equipment and facilities are located, which needs total renovation. The storage and garage structures there are dilapidated and have exceeded their useful life, the heavy equipment necessary for road and trail maintenance is decades old and needs replacing, and much of the area floods during heavy rainstorms. In 2017 the National Science Foundation provided a facility planning grant to define needs in the context of a long-term space and usage strategy for Jasper Ridge, which identified base-level requirements for the renovation. Next steps include developing detailed designs, cost estimates, and funding strategies in conjunction with relevant university units. In keeping with overall Stanford objectives and long-standing practice at Jasper Ridge, the renovation needs to be accomplished with minimal environmental impact. Facilities Maintenance Past maintenance of Jasper Ridge facilities has not called on Campus Zone Management to the extent that would be appropriate. Going forward, the goal is to identify the aspects of maintenance that can be integrated into Campus Zone Management as a way to augment ongoing maintenance activities in a cost-effective way. Photo: Anthony Barnosky

## Leslie Shao-ming Sun Field Station

Although Sun Field Station was state of the art when it opened in 2002, its systems are showing their age—for example, the boiler frequently breaks down, the fire sprinklers were found to be faulty, the electrical system is underpowered, and the electronics controllers that support the building's systems are scattered in various places through the building rather than in a climate-controlled electronics closet. Climate control is also a problem: while the building is designed to take advantage of passive heating and cooling, particularly the cooling aspects are falling short especially given the increasing number of hot days in our summers. Offices typically are well above 80°F through much of the summer and cold in winter, and ideally should see installation of energy-efficient climate-control systems that conceivably can be powered by solar panels. The strategic planning groups also highlighted that the entryway to Sun Field Station is confusing and in need of remodeling, and that the lab space can be improved to make it even more useful, especially in view of the plans for increased activity. All of these issues need to be addressed over the coming decade, keeping in mind the overall philosophy at Jasper Ridge of minimizing environmental footprints by repurposing materials and using renewable energy.



The strategic planning groups identified the lack of on-site housing for visiting researchers as a weakness of Jasper Ridge. Adequate researcher housing is doubly important in our area, because the cost of hotels and other housing options off-site are prohibitively expensive for most users of the preserve, especially for collaborators from the developing world. A chief candidate for providing researcher housing, the caretaker house now situated in the corp yard, has fallen into such disrepair that it cannot be used and its present location is in a flood zone. To complicate matters, the house is a historic structure so it cannot be simply demolished. The options are to move it to a more suitable location and renovate it there or to dismantle it and reconstruct a replica at a better location incorporating the historically significant pieces that can be salvaged. Next steps include developing detailed cost-estimates for each option.

# Staffing

The dedication, talents, and institutional knowledge of the staff are a widely recognized major asset. At present the permanent staff consists of six full-time employees (Executive Director, Staff Scientist, Education Coordinator, Academic Technology Specialist, Operations Manager, Administrative Progam Manager), one three-quarters-time resident Ranger, a half-time Special Projects technician, and a half-time Operations Assistant (vacant in 2017-18), plus the Faculty Director who also has considerable academic and administrative duties elsewhere on campus.

Participants in the strategic planning effort unanimously expressed concern that the preserve is under- staffed and that demands on staff time are extraordinarily heavy. To support key initiatives in the immediate future, the strategic plan calls for adding requisite staff in the form of term positions supported from external grants and as appropriate by restricted funds already in hand, in the form of postdoctoral scholars and other appropriate temporary staff.

Sustaining term-positions in the long run can be accomplished by instituting Distinguished Visiting Scholar and Postdoctoral Scholar programs, which is a cost-effective way to staff new initiatives while at the same time serving a broader spectrum of students and increasing interdisciplinary and interinstitutional collaborations. The Visiting Scholar program would bring in distinguished visiting faculty whose specialties would vary from year to year, ranging from scientists to humanists and artists. The Postdoctoral Scholar program would attract the best recent PhD graduates to conduct and oversee targeted projects beneficial to the preserve and to mentor graduate and undergraduate students.



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