

Sierra Streams Institute: A Strategic Planning Update

December 2017

The mission of Sierra Streams Institute is “to link water, science and people for the benefit of human and environmental health.” Water is essential to all life on Earth, and the need for watershed protection is limitless. Problems faced in downstream waterways and oceans are inextricably linked to the condition in the upstream watersheds. In the Sierra Nevada water quality improvements in rural headwater communities have the potential to benefit the health of the California’s entire connected water system. The human and financial resources needed to make these improvements are often limited and come from both public and nonprofit organizations working in collaboration. Since its early days as Friends of Deer Creek, Sierra Streams Institute (SSI) has played a significant role in the understanding and development of watershed science using the Deer Creek watershed as a laboratory. We work with local, state, and federal agencies as well as universities, tribes, and community groups to find solutions to the problems that afflict Deer Creek, the Bear River and other watersheds throughout the region. These environmental challenges result from a century and a half of gold mining, development, and agriculture. SSI’s emphasis on rigorous science and consistent data collection provides the basis for land and water management and watershed restoration decisions, making us an especially valuable partner of local and state government agencies, who lack the funding and capacity to gather their own data.

Most crucial to our success during the past twenty years, is the involvement of the community in our work. When Friends of Deer Creek organized in 1996, “citizen science” was a new term in the vocabulary of scientific research. Yet the contributions of citizens to science already had a long history in the world of scientific research. In addition to the valuable labor of volunteers, citizen science engagement increases awareness of the scientific process and furthers understanding of the work we do, as well as providing data leading to valuable new insights.

We have learned that for our research and restoration efforts to be most effective it is imperative that we engage the public through the efforts of volunteers, educational programs, citizen science projects, and partnerships with local governments. Sharing knowledge allows us to educate each other and work closely with local government to solve local problems. This approach encourages a better-informed public to contribute an educated voice to the governing process. We have increased our focus on the connection between environmental and human health, a critical field of inquiry in our mine-scarred landscape. Climate change and the need to consider ground water issues in restoration projects have also emerged as pressing concerns

In 2010, as Friends of Deer Creek began its metamorphosis into Sierra Streams Institute, we created an initial strategic plan for the organization and launched our current programs: Education, Restoration, Research and Laboratory Services. The purpose of this strategic plan update is to address the challenges and opportunities facing our organization. Today as SSI continues to identify and solve environmental problems, we have a new and very exciting opportunity as an organization. After seven years in our current offices, we will be moving to a new facility in the spring of 2018. Our new home will more than double our office, lab and classroom space. In addition, the facility is located on a 236-acre campus that includes meadows, forests, a pond, stream, and trails. The new facility offers new opportunities for restoration, education, research and citizen science projects on-site, as well as allowing us to expand and improve our current laboratories. Now we are looking forward to building capacity for the future, focusing on five critical areas:

- **Enhancing the sustainability and reach of our core programs: Restoration, Research and Education**
- **Expanding the position of Sierra Streams Institute as a regional leader for citizen science**
- **Strengthening our organizational structure to support our goals and objectives**
- **Creating a Center for Environmental and Citizen Science**
- **Developing our research initiative on the intersection of human and environmental health in rural communities**

While we focus on strengthening existing programs, our new home will also enable us to increase the level of community participation. We will have a physical gathering place for community involvement, the new Center for Environmental and Citizen Science, where citizen scientists, students, educators and community members can gather to share ideas and scientific data.

We have not changed our fundamental Mission, Organizational Goals and Values.

Our Mission

To link water, science and people for the benefit of human and environmental health.

Organizational Goals

1. Monitor, protect and improve watershed health in a changing climate.
2. Advance scientific knowledge through research and citizen science.
3. Expand scientific knowledge through education.
4. Promote watershed stewardship.
5. Work with native groups to integrate science and traditional ecological knowledge.
6. Assess and remediate environmental impacts on human health.
7. Develop and implement administrative, outreach and communications strategies.

Our Values

Collaboration: Working collectively to accomplish more than is possible alone.

Ownership: Individual and group responsibility for results, actions and decisions.

Quality: Commitment to excellence and the discipline to continually improve.

Purposefulness: Deliberate action, focused on the organization's goals and priorities.

Scientific and technical rigor: Commitment to rigorous scientific method and inquiry.

Strategic Goals

This strategic plan update includes strategies and action items that will help us manage our growth and organizational infrastructure as we strive to fulfill our mission in the coming years. We have identified five strategic goals to guide our work.

Strategic Goal # 1

Enhancing the Sustainability and Reach of Our Core Programs: Restoration, Research, Education

Sierra Streams Institute will work to enhance the sustainability and reach of our core programs to address the environmental challenges resulting from a century and a half of gold mining, development, agriculture and the impacts of climate change.

The Restoration, Research and Education Programs at SSI are interdependent, sharing staff and organizational resources. A collective emphasis on rigorous science and consistent data collection provides the basis for watershed restoration decisions. Priorities differ by program while sharing common strategies for identifying, planning, and developing sustainable projects. Efforts will concentrate on strategically selected projects, working to achieve measurable restoration, research, and education goals to ensure the protection of habitat, connectivity, and water quality, necessary to healthy, climate-change resilient environments for people and nature. Our work will be informed by traditional ecological knowledge. We will maximize our effectiveness by partnering with other organizations, agencies, and individuals.

Objectives, Benchmarks, Timeline

OBJECTIVE	BENCHMARKS	2018	2019	2020	2021	2022
1. Identify priority projects.	List all potential projects and sort by geographical area.	X				
	Review and determine how they fit our mission.	X	X			
	Assess funding opportunities to apply to at least two new funding sources each year.	X	X	X	X	X
	Prioritize projects according to need, practicality and funding opportunities.	X	X	X	X	X
2. Develop and strengthen partnerships and collaborative opportunities.	Develop a template for different types of collaboration.	X				
	Evaluate current and identify at least one new partnership opportunity every year.		X	X	X	X
	Develop and implement strategies for creating stronger relationships.		X	X	X	X
3. Leverage our new home at the Woolman campus.	Take advantage of teaching opportunities through the Woolman Outdoor School collaboration to support SSI's education program beginning in 2019, with an annual increase of 5% a year.		X	X	X	X
	Apply for funding to study and enhance the Woolman property through application for at least one restoration grant per year.		X	X	X	X

4. Raise visibility of SSI in the scientific community.	Pursue opportunities for publishing research findings, with the goal of one publication per year.			X	X	X
	Increase conference attendance and paper presentations to five conferences annually including presentation of three papers or posters.			X	X	X
	Pursue funding opportunities to support these activities.			X	X	X
	Create a dynamic and interactive digital platform to showcase SSI's work.				X	X
5. Identify and implement holistic best practices.	Prioritize scientific rigor through implementation of program evaluations.		X	X	X	X
	Consider TEK and indigenous participation in project development.	X	X	X	X	X

Strategic Goal # 2

Expand the role of Sierra Streams Institute as a regional leader for Citizen Science
Sierra Streams Institute is a regional leader for Citizen Science enabling our volunteers to actively contribute to scientific inquiry with wide regional impact. Sierra Streams will expand opportunities for volunteers to acquire new skills, and deeper understanding of the scientific method while raising new questions and providing valuable data for analysis at the state and national as well as regional levels.

The recognition and inclusion of citizen scientists has played an integral part in the development of Sierra Streams Institute. Hundreds of volunteers and interns have contributed thousands of hours to restoration, research, education and laboratory activities alongside the Sierra Streams staff. Today the involvement of citizen scientists is allowing scientists to accomplish tasks that would be too expensive or time-consuming for them to accomplish on their own. This community participatory research leads to more democratic research and evidence-based decision-making and fosters environmental stewardship throughout the community.

Objectives, Benchmarks, Timeline

OBJECTIVE	BENCHMARKS	2018	2019	2020	2021	2022
6. Contribute data to a wider variety of state and national projects.	Research national database project data sharing opportunities.		X			
	Prioritize data sharing opportunities and match with current projects.			X		
	Add at least one data sharing partnerships.			X		
	Communicate to broader public our data sharing and its impact for science through at least two new channels annually.				X	X
7. Strengthen our Citizen Science volunteer program.	Set up internal systems for tracking and communicating with volunteers.	X				
	Identify and cultivate volunteers for a citizen science leadership council.			X		
	Create a Citizen Science leadership council			X		

	beginning with six members.					
	Create training program for Citizen Science.			X		
	Strengthen link between California Naturalist and the Citizen Science volunteer program.		X			
	Utilize existing relationships with schools to recruit at least two new student volunteers for Citizen Science.	X	X	X	X	X
8. Educate community about the value of citizen science, locally and globally.	Develop a communication plan in stages including: <ul style="list-style-type: none"> • Speaker series • Traditional media coverage • Video • Social media • YouTube Channel • Website 		X	X	X	X
	Plan at least one Citizen Science community event annually.			X	X	X
	Present at least one Citizen Science projects to the community.		X	X	X	X
	Train Citizen Science volunteers to do outreach to the community through a minimum of two speaker opportunities annually.				X	X

Strategic Goal # 3

Strengthen Our Organizational Structure to Support Our Goals

Sierra Streams Institute will strengthen our organizational structure to support our goals and objectives, creating a financially sound and sustainable organization. Management and personnel planning, a growing base of unrestricted financial support, as well as dedicated support for priority programs will provide a solid foundation for achieving our goals.

Flexible funding enables financial stability. We will strive to attract a greater diversity of funding sources including an increased individual donor base and corporate giving. This will require recruiting volunteer leadership and additional staff with expertise in fundraising, as well as increasing capacity in development and communications.

Objectives, Benchmarks, Timeline

OBJECTIVE	BENCHMARKS	2018	2019	2020	2021	2022
9. Implement updated strategic plan.	Review benchmarks and timelines semi annually with management team and BOD.	X	X	X	X	X
	Review annually with staff.	X	X	X	X	X
10. Refine organizational structure and priorities.	Develop more effective internal communication channels.	X				
	Define the role of the management team.	X				
	Create a management team of four members.	X				

	Define the role of the Center for Environmental and Citizen Science within the structure of SSI for the staff, collaborators and the public	X				
	Determine how to integrate the Center for Environmental and Citizen Science into the overall goals of the organization	X				
11. Develop and implement a strategic personnel plan.	Identify staffing needs to match annual planning goals.	X	X	X	X	X
	Determine optimal board size and desired areas of expertise needed.	X				
	Define the role of, and create a Science Advisory Board of a minimum of ten members.			X		
12. Increase capacity for scientific analysis.	Add two new software programs.		X			
	Adjust staffing as needed.		X			
	Increase funding for data analysis and publications by 10%.		X	X	X	X
13. Define our relationship to advocacy.	Establish policy defining how the organization relates to advocacy through board and staff conversations.	X				
14. Enhance communications and outreach.	Develop and implement a multi-outlet communication plan in stages including: Newsletter and e-blasts; Speaker series; Traditional media coverage; Video; Social media; YouTube Channel; Website	X	X	X	X	X
	Develop and implement an annual outreach calendar.	X	X	X	X	X
	Strategize relationship between general communications and fundraising/development.	X	X	X	X	X
	Consider Citizen Science App development.				X	
15. Raise more money.	Develop fundraising case statement.	X				
	Create development calendar and set fundraising goal.	X	X	X	X	X
	Transfer Giftworks to Cloud and develop protocols for integrated tracking of constituents.	X				
	Expand funding sources, including: ○ Program grants – 10% ○ Unrestricted donor sources 10% ○ Monthly giving 50% ○ Corporate outreach/local businesses 50% ○ Fee for service – 25%	X	X	X	X	X
16. Match budgeting, financial oversight to program needs.	Focus funding efforts on priority targets, identify two new targets annually.	X	X	X	X	X

Strategic Goal # 4

Create a Center for Environmental and Citizen Science

Sierra Streams Institute will move to the Woolman Campus in Spring 2018. The new facility includes space that will be dedicated to an on-site Center for Environmental and Citizen Science as a portal for public engagement with our programs.

The new facility will offer new opportunities for expanding program offerings at Sierra Streams. Careful planning will allow us to strategically develop and implement program while increasing opportunities for collaboration and community outreach. In the new facility, it will be easier to engage the public in education, citizen science projects, and partner collaborations, expanding our connections to the community.

Objectives, Benchmarks, Timeline

OBJECTIVE	BENCHMARKS	2018	2019	2020	2021	2022
17. Develop and implement plans for the Center for Environmental and Citizen Science as a portal for public engagement with our programs.	Plan details of the physical space and equipment needs of center including: <ul style="list-style-type: none"> • Vibrant calendar of public activities • Visitor center signage and brochures • Guided trail with citizen science opportunities • Collaborative outreach with Nisenan • Dynamic website integration • Volunteer opportunities visible and easy to engage with 	X	X			
	Implement the plan in stages as funding is available.		X	X		
	Open the Center for Environmental and Citizen Science to the public.			X		
18. Engage partners to make the CS Center more effective.	Create a C. S. Environmental Center stakeholders think tank to provide input and guidance for center development and operations. <ul style="list-style-type: none"> • Identify and recruit 5 diverse (strategic) representatives of the community • Recruit a board member to lead citizen science think tank • Hold quarterly meetings of the stakeholders think tank 		X	X		

Strategic Goal # 5

Develop a Research Initiative on the Intersection of Human and Environmental Health in Rural Communities

This initiative will be the formalized project emerging from several years of working with the community to collect environmental monitoring data. We are now connecting the dots between the health of the local environment and of the humans who live here.

After 5 years of working on the CHIME research projects, SSI has plans to expand our investigation into other parts of the Gold Country. In addition to geographic expansion of our project, this research will broaden the study of health outcomes related to mining contamination, and expand environmental sampling to better identify routes of exposure. These efforts will provide information to inform cleanup and remediation to improve the health of the community.

Objectives, Benchmarks, Timeline

OBJECTIVE	BENCHMARKS	2018	2019	2020	2021	2022
19. Define the scope and components of the Research Initiative on the Intersection of Human and Environmental Health in Rural Communities.	Create program and policy goals.			X		
	Identify community health issues and affected populations for participatory research.	X	X	X	X	X
	Prioritize projects and launch Initiative.				X	X
	Develop one to two new and strengthen existing partnerships for this initiative.			X	X	X
	Identify and pursue one to two funding sources specific to the Initiative.			X		

About Sierra Streams Institute

Sierra Streams Institute is a regional watershed science organization based in Nevada City, California, dedicated to increasing watershed stewardship capacity throughout the Sierra Nevada region and beyond. Much of our work takes place in the watershed of Deer Creek—a major tributary of the Yuba River, which drains to the Feather River, the Sacramento River, and ultimately the San Francisco Bay—Sierra Streams Institute is a vitally important voice in the regional scientific community. We work with local, state, and federal agencies as well as universities and community groups to find solutions to the problems that afflict other watersheds throughout the region that share the challenges resulting from a century and a half of gold mining, development, and agriculture. Sierra Streams Institute's emphasis on rigorous science and consistent data collection provides the basis for restoration decisions and makes us an especially valuable partner of local and state government agencies who lack the funding and capacity to gather their own data.

From experience, we have learned that in addition to conducting research, it is imperative to impart an understanding of the issues we are studying to the public and to work closely with local government entities to solve local problems. This approach enables the public to contribute an educated guiding voice to the governing process. As an organization, we have chosen to accomplish this task through education and involvement rather than political means