



A Strategic Planning Update

August 2022

Introduction

Since its early days, Friends of Deer Creek—and subsequently Sierra Streams Institute (SSI)—has played a significant role in community understanding and stewardship of watershed health in the Northern Sierra Nevada mountains. We have historically worked 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. Our emphasis on rigorous science, consistent data collection, and community education contributes to an informed public and data-driven understanding of watershed health, making us an especially valuable partner of local and state government agencies, who often lack the funding and capacity to gather longitudinal data to guide decision making, or the flexibility to employ novel educational approaches to engage the public.

Most crucial to our success during the past twenty-five years has been 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. Since then, community and citizen science has grown into a robust field of study and acts as a fundamental tool in large-scale data collection and community education. In addition to the valuable time and effort of volunteers, community and citizen science 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, community and citizen science projects, and partnerships with local governments. This approach encourages a better-informed public to contribute an educated voice to the governing process.

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. Since then, SSI has: generated educational materials and programs that have grown to reach more than 300 students per year ranging from third grade through adulthood; restored or completed restoration planning on more than 1,200 acres of riparian, floodplain, and forest land; conducted both peer-reviewed and community-supported research on new methods for mine waste remediation, water quality and biological integrity over time and in response to changing climate, drivers of fire severity, and human health impacts from mining exposure; and analyzed more than 4,000 water quality samples and 540 biological samples for the community and partners across the region. We have also used all of this data and prior success to assess what changes we can make, what our role is in the community, and how we can continue to provide scientific support to our community, including partner organizations. To that end, 2022 marks a new strategic plan revision for SSI.

Today, as Sierra Streams Institute continues to identify and solve environmental problems, we have a new and very exciting opportunity as an organization. After losing our office in the Jones Fire in August 2020, we went through a significant transition, including new leadership, new staff, and an entirely new office and laboratory. This rebuild allowed us to focus on who we are in the community, and what we identify as our core programs and offerings. The underlying goal in the new plan is to re-establish our focus on data-driven support for our community in all aspects of environmental health. Through this transition, we have focused on five critical areas:

Collaboration: with so many environmental non-profits in our region, we can all improve our ability to leverage each other’s capacity and expertise to reduce competition for limited funds while improving environmental, scientific, and community outcomes for all.

Scientific rigor: good decisions on environmental quality and management come from good data. While we have previously played a role as a scientific advisor and support system for the community, we are focused on increasing scientific rigor in everything from revised protocols and instrumentation to peer review and data dissemination.

Communication and data dissemination: the key to community science is in community engagement with results. We have a long history conducting research in the community, but are focused on improving access to all of our research, both previous and current or planned, as well as to general scientific resources that help serve an informed community.

Building lasting educational models: our educational programs have been identified by community partners and agencies as highly influential, successful, and worthy of modeling or expanding moving forward. Our next 5 years are focused on expanding current approaches and frameworks, as opposed to generating entirely new approaches.

Embracing staff well-being and community engagement: a community organization is only as healthy and engaged as its staff and board. We are focused on increasing staff work-life balance, interaction among all staff and board, and educating ourselves about how to better engage with underrepresented groups in our region through a thoughtful, guided process.

In alignment with these critical areas, we have updated our fundamental Vision, Mission, Values, and Organizational Goals:

Vision

We envision a future in which people are empowered through scientific knowledge for the benefit of community and watershed health.

Mission

We promote scientific knowledge and stewardship of Sierra Nevada watersheds through research, restoration, education, and community science.

Our Values

Community

We engage with the community to build agency around environmental issues. We make science accessible and collaboration meaningful through a curiosity driven, educational approach.

Integrity

We strive for integrity in our work by engendering respect, honesty, and transparency and holding ourselves accountable.

Humility

We believe addressing complex environmental issues can only be achieved through acknowledging the uncertainties in the science we conduct.

Scientific Excellence

We approach environmental and community science adhering to high scientific standards and critical review.

Compassion

We strive to promote the health and well-being of our staff, board, volunteers and interns. We engage with one another and our community from a place of compassion.

Equity, Diversity, and Inclusion

We acknowledge that inequity is pervasive in our community. Through partnerships, education, and action, we seek to raise awareness and create positive change in our organization and community.

Goal # 1: Advance scientific knowledge of Sierra Nevada watershed health through a legacy of basic and applied research.

Ecological monitoring is fundamental to assessing changes in environmental health either over time or in direct response to a particular impact such as drought, fire, or climate change in general. Only through “baseline monitoring” can we truly ask whether a particular disturbance caused impacts to environmental conditions; monitoring conditions before and after impacts provides us with a reference point to compare the disturbance to, which then allows us to make inferences about the severity of the impact. Further, baseline monitoring allows research in both the “basic” and “applied” realms. By analyzing conditions as they are, or assessing response to a disturbance, we can learn not only about broad environmental impacts from stress, but also about mechanism; how do the systems we study respond to change? Are those responses consistent with expectations? Why or why not? Asking these questions allows us to gain new insights into not just *what* changes, but *how* it changes. These insights can then be leveraged in the “applied science” world, by asking “how can what we learned from this disturbance be used to increase resilience to future iterations of this same or increased stress”?

Thus, the primary drive of our first organizational goal for the next 5 years is increased and continued baseline monitoring, but with an eye toward thoughtful monitoring site placement and protocol design to be able to detect changes due to restoration, disturbance, or climate change. Further, we intend to continue to identify new, interesting, and relevant scientific questions and methods that we can provide capacity in asking and answering for the community. Our goal is to be a community resource that can be leveraged to extend the scientific scope of community questions, concerns, solutions, and management, by leveraging the following strategies:

Strategy #1: Monitor and evaluate indicators of watershed health and changes in ambient conditions over time.

Strategy #2: Evaluate climate change impacts on watershed health, utilizing existing long-term, new or on-going datasets.

Strategy #3: Identify new questions, methods, technologies, and geographical areas for watershed assessment that align with organizational objectives.

Goal # 2: Identify and assess environmental impacts to guide the process of restoring ecological integrity, including those that may affect human health.

Ecological Restoration is a dynamic field, and restoration as a whole continues to evolve as our understanding of how systems change on their own or in response to stressors continues to grow. Historically, restoration projects often focused on targeted landscape issues or modifications, such as the removal of invasive species or the removal of targeted disturbances. However, as the field has grown, knowledge of how whole *systems* respond to stress and restoration has allowed the adoption of “Process-based restoration”. Process-based restoration is based on the principle that if we provide the conditions necessary for a system to flourish as opposed to forcing it into a single desired state, it will restore its own function in a way that it can under current conditions.

Sierra Streams Institute has often been restricted to fairly discrete, “one-and-done” restoration projects due to the non-profit funding model. These projects may result in immediate restoration success, but require either landowner or additional partner adaptive management and maintenance. As we enter a new strategic plan period, we are focusing almost entirely on defining and standardizing a process-based approach that leverages our expertise in ecological monitoring to define system-wide conditions that we can nudge a site towards, as opposed to specific targets such as acreage treated or number of trees planted. Further, our approach to restoration is transitioning toward a greater focus on the impacts of restoration itself on ecological integrity; what worked and what didn’t in a restoration project in terms of quantifiable ecological health, and how can this information be leveraged for future project success and shared with partners? To that end, our restoration goal focuses on three main areas, including standardization of the process-based approach in our region, learning more about what works and doesn’t work in mine waste remediation projects, and using research on recent fires to improve outcomes of forest management projects, in the following goals:

Strategy #1: Define our approach to restoration work for project identification, monitoring, and determining success.

Strategy #2: Identify and monitor mine waste impacts and remediation project success.

Strategy #3: Identify and monitor degraded forest areas and forest health treatment success and fire impacts.

Goal #3: Promote watershed stewardship through community science and place-based education.

Community Science is a model for scientific inquiry in which community members are directly engaged in the scientific process from start to finish. This can include everything from question development and experimental design, to sample gathering, through final results interpretation and dissemination. A successful community science program should include formal, structured educational opportunities and programs as well as stakeholder meetings and volunteer opportunities. Further, it should leverage current SSI and partner projects, as well as meet the actual educational and scientific needs of the community.

Our community science and place-based education goal focuses on building on our recent educational successes in our region, including the highly influential NSF Our Forests program. It also focuses on geographic expansion to meet the needs of those beyond our immediate community and current projects, easing the stakeholder engagement process with us and our science, and standardizing volunteer opportunities moving forward.

Strategy #1: Continue to build and maintain comprehensive place-based science education programming for Nevada County.

Strategy #2: Explore opportunities to increase the geographic scope of the education program.

Strategy #3: Establish opportunities for two-way communication about regional natural sciences.

Strategy #4: Develop a structured, formalized, volunteer program.

Goal # 4: Build and strengthen partnerships to address shared watershed challenges.

Collaboration is paramount to success in the world of environmental education, research, and management. The problems facing water quality, forest health, youth engagement in natural sciences are larger than any one organization can address. The scope and scale of research questions in this era of big data and climate change impacts require partnering with researchers and institutions that have the capacity to conduct the kinds of studies needed. Funding in the non-profit sector is often competitive, with projects with broader reach and multiple partners being more successful in both securing funding and maintaining project outcomes. Finally, partnering with communities in the Sierra Nevada includes direct investment in underrepresented groups, including thoughtful collaboration with tribal groups that uplifts them, their cause, and their way of life.

Our goal for building and strengthening partnerships to address shared watershed challenges focuses on leveraging what our partners already know (including everything from previously identified challenges to their own data and project impacts), clearly defining roles consistent with the strengths of each partner, and moving forward with a thoughtful, self-educating approach toward working with tribal groups.

Strategy #1: Identify and prioritize shared watershed challenges

Strategy #2: Establish a process for collaboration

Strategy #3: Evaluate responsibilities and roles in current partnerships and Identify new partnership opportunities

Strategy 4: Invest in the growth and ongoing health of a collaborative, supportive, and decolonized relationship with the Indigenous people on whose lands we work.

Goal #5: Ensure the short and long term financial sustainability of the organization

Sustainability depends on both achieving current objectives and putting structures and support in place to maintain stability. We view our core programs (research and dissemination, monitoring, education, restoration planning) as integral to our community, and thus building a sustainable financial model is paramount. Sierra Streams Institute has been quite successful at acquiring and maintaining grant funding and outside support for project work, but has a continuing need for core operating support.

This goal focuses on increasing income from non-grant sources, shoring up internal financial practices to remove excess costs, and establishing a re-invigorated relationship with our community that demonstrates our value to our stakeholders.

Strategy #1 : Diversify Revenue

Strategy #2: Best practices, stability, Due Diligence

Strategy #3: Establish robust marketing and outreach plan

Goal #6: Continue to build a healthy work culture that aligns with our organizational values

Culture is a term often used in business settings but rarely invested in. At SSI, we envision a work environment and an engagement with our community that places work-life balance, mental health, support systems, and general well-being at the forefront. We do this by acknowledging we are not where we want to be, but can invest in tangible steps toward improved work culture that aligns with our values. Further, we acknowledge that work culture is more than simply how staff interact with each other, but also includes how we view ourselves and our role in our community.

This goal focuses on: increasing transparency across all administrative levels of SSI; increasing staff buy-in and personal engagement with the review and professional development process; increasing a sense of collaboration and teamwork among staff, board, and the community while maintaining our individual voices; and taking a thoughtful, reflective approach toward SSI language surrounding community, tribal partnerships, diversity, and our role.

Strategy 1: Standardize personnel review and professional development plan

Strategy 2: Support a healthy work culture

Strategy 3: Assess and reorient SSI Equity, Diversity and Inclusion practices