



Photo Credit: Hannah Dunn

GEI Consultants Environmental Insights

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Practice and People Updates

GEI's Growing Environmental Practice Group



Carol Maxwell is the latest edition to GEI's Ecological Restoration Team. She is a restoration ecologist and landscape designer with over 10 years of experience enhancing ecological resources while incorporating the diverse needs of stakeholders to strengthen project outcomes. Her diverse project portfolio includes visual impact assessments for offshore wind projects, large-scale ecological restoration projects, and park designs that include everything from large sculpture gardens to off-highway vehicle trails and camping areas. She received her graduate training at Temple University, focused on the convergence of ecological restoration and landscape architecture. Carol also served on the Board of Directors of the Society for Ecological Restoration International from 2013 to 2020, elected three times and promoted to the executive committee for her final 2 years. There she refined her leadership skills in the non-profit sector while expanding her knowledge of restoration techniques and politics on a global scale.



Lasthenia Lee joined the GEI Environmental Practice Team as an on-call Senior Botanist and Wildlife Biologist, and will be leading and conducting special-status plants surveys, vegetation monitoring, vegetation mapping, and impact assessments. However, her skill set also consists of a balanced mix of field work and technical writing, including plant and wildlife reconnaissance-level and focused surveys, vegetation monitoring and mapping, wetland delineations and agency permitting, construction monitoring, technical report writing, biological resource assessments, and landscape maintenance contractor oversight. Lasthenia has an M.S. in Wildland Resource Science, as well as an A.S. as a Landscape Design and Construction Specialist.



Sophie Siegel is a wildlife biologist who has logged over 1,500 hours of construction monitoring and hundreds of hours surveying for special-status species, including California tiger salamander and Alameda Whipsnake. She graduated with a B.S. in Biology from Humboldt State University and is passionate about ecology with an emphasis in reptiles, amphibians, and invertebrates. Sophie joined our team as an on-call biologist, and will be working on a variety of construction compliance projects this year, contributing her expertise in conducting surveys and biological monitoring for special-status wildlife.



Maggie Woodworth has experience assisting with a wide variety of field work, including nesting bird surveys and monitoring, hydrological research on experimental wetlands, stormwater permit compliance, and microchemical analysis on freshwater fish. With her extensive field experience and a B.S. in Evolution and Ecology and Minor in Professional Writing, Maggie has a diverse skill set to assist with many of our Team's project needs. She joined our team as an on-call biologist, and is conducting construction compliance monitoring for a number of projects.



Miles Jenks Miles is an archaeologist who regularly works on projects in California. Miles is currently assisting with our busy field season in California and is helping out on a number of projects. Miles has an M.A. in Museums, Heritage, and Public History, a B.A. in Anthropology (archaeology), and is finishing her M.S. in Geographic Information Systems at Northwest Missouri State University.

Practice and People Updates (continued)

Staff Certifications

GEI biologist **Hannah Dunn** was recently certified as a Yolo HCP/NCCP qualified biologist with the Yolo Habitat Conservancy. With this certification, Hannah is approved to do biological surveys and monitoring for a select number of special-status species, including valley elderberry longhorn beetle, western pond turtle, giant garter snake, Swainson's hawk, white-tailed kite, and burrowing owl, as well as assist with planning-level habitat assessments for projects associated with the Yolo HCP/NCCP. She joins about 100 other biologists on this approved list in California and looks forward to being able to assist both the Yolo Habitat Conservancy and GEI with future projects together!

In February, GEI archaeologist **Amy Wolpert** was certified in Wilderness and Remote Location First Aid through the Red Cross. The Wilderness and Remote Location First Aid Certification is designed for people who spend time outside or in remote locations. As an archaeologist and wilderness/bushcraft skills instructor-in-training, Amy spends a great deal of time in outdoor environments. In an instance where a first aid situation arises, or an emergency where medical services may not be accessible or immediately available, Amy is prepared and able to care for those in need.

Volunteering in the Community



Salmonid Habitat Restoration Project in the American River Parkway

In January, GEI restoration ecologists **Vance Howard** and **Carol Maxwell** lent a hand and some technical expertise to the Water Forum and U.S. Bureau of Reclamation during a volunteer planting day at a recently constructed salmonid spawning and rearing habitat restoration project on the American River at Ancil Hoffman Park. Vance and Carol provided a brief training on how to properly install live willow cuttings and helped volunteers install more than 700 cuttings that had been harvested a few days earlier. The willows will jump-start the revegetation process and provide cover and food web inputs for juvenile salmonids as they emerge from the nearby spawning redds. The event was a great success, and the Water Forum is planning additional volunteer planting days for future projects.

Student Mentor through the Center for Land-based Learning

The Student and Landowner Education and Watershed Stewardship Program (SLEWS), selected as the recipient of GEI's Charitable Contribution for 2021, has been in full effect this spring. For two decades, the SLEWS program has worked to engage high school students in habitat restoration through a series of hands-on field days at real projects that develop science skills and environmental stewardship in youth.

This year, GEI's restoration ecologist **Carol Maxwell** volunteered as a student mentor, helping Woodland High School students plant hedgerows and a pollinator species at the La Tourangelle's Edible Learning Garden. Most of the students were part of the Future Farmers of America program and were familiar with traditional agriculture techniques and weeds within the farm field. This two-day field session was an incredible opportunity to expand their knowledge of native plants and pollinators, an essential support system to agricultural production. In addition to installing over 200 plants, participants engaged in plant identification and journaling workshops and team-building exercises. The activities provided many learning opportunities and laughter for both students and mentors.



Practice and People Updates (continued)

Volunteering in the Community (continued)

GEI Staff Present during Engineers and Scientists in the Classrooms Week

Kelly Holland, Melinda Mohamed, and Denise Jurich volunteered for the Engineers and Scientists in the Schools Week, held March 21 to 25, 2022. The Tuolumne County Superintendent of Schools Office collaborated with the San Francisco Public Utilities Commission to bring experts from different professional fields to students. Our staff gave online presentations to five different classes in three different schools in Tuolumne County. Students were instructed on biology, archaeology, and engineering. After the presentations, students participated in an activity related to Science, Technology, Engineering, and Math (STEM). GEI was proud to support the Tuolumne County Schools in helping students see the impact of STEM in their everyday lives.



GEI Sponsors Creek Week Cleanup Event

GEI staff and their guests took part in a Creek Week cleanup event in April. The event took place at River Bend Park in Rancho Cordova, CA. River Bend Park is one of Sacramento County's oldest parks and is part of the American River Parkway. Co-organizer **Devin Barry** chose this location because the park experiences heavy recreational use by the local community and commercial rafting companies, and it is near GEI's Rancho Cordova branch office. Volunteers spent two hours collecting trash along the river and the park's extensive trail system, and collected 120 gallons of trash!

"Creek Week cleanup is a long-standing tradition in Sacramento County," says co-organizer **Denise Jurich**. "It was fantastic that GEI staff and their guests ventured out on a rainy morning to participate in our Earth Day event. It felt great to help keep our rivers and streams free of debris, support wildlife, and make the park more enjoyable for the community."

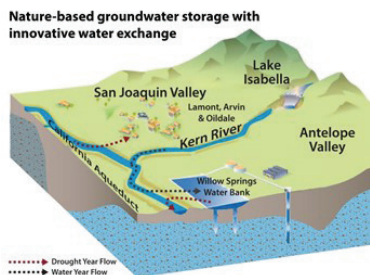


Photo Credit: Valerie Febre Yap

Project Updates

GEI Helps Secure FEMA Grant Funding to Support Building Resilient Infrastructure in Communities

GEI staff prepared 30% design documents and conducted a detailed benefit cost analysis in support of a FEMA Building Resilient Infrastructure and Communities grant application for approximately \$40 Million in federal grant funds. This grant application is a critical first step to expanding water storage capabilities for drought-impacted disadvantaged communities in the Central Valley of California. The funding would support additional infrastructure at Willow Springs Water Bank and a conjunctive use-based water repositioning from Lake Isabella Reservoir to the water bank, freeing up additional storage in the reservoir and providing safe, long term water storage in a natural aquifer. Grant application tasks also included extensive consultation with the California Office of Emergency Services and support of project- related negotiations with stakeholders.



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GEI Awarded Michigan Governor's Historic Preservation Award

GEI is a co-recipient of the Michigan Governor's Historic Preservation Award for its work on the Orchard Beach State Park Shelter Building Relocation Project, in Manistee County, Michigan. GEI was contracted by the Michigan Department of Technology, Management, and Budget to design and engineer the relocation of a historic shelter that is part of a district listed on the National Register of Historic Places. GEI's cultural resources staff conducted a cultural resources study to identify and assess cultural resources that may be affected by the Orchard Beach State Park Shelter Building Relocation Project and completed the Section 106 documentation for the project.



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Industry Updates

How Understanding Weather Whiplash Can Help Build Climate Resilience

GEI's Senior Climate Adaptation Scientist **Rebecca Verity** says, "the concept of knowing one's enemy is critical to climate resilience." While simple solutions can be appealing, these can have unintended consequences. For example, a landowner who clear cuts a hillside to reduce wildfire risk may hasten a landslide. In a recent blog post, Rebecca presents two concepts to help avoid these unintended consequences. First, when the enemy is weather whiplash, it is critical to illuminate the connection between two or more seemingly opposite catastrophes. Second, by following five discrete, practical steps for resilience planning, we can avoid pitfalls and respond, rather than react, when emergencies occur. Read more at: https://www.geiconsultants.com/thought_leadership/how-understanding-weather-whiplash-can-help-build-climate-resilience/. Now that our climate regularly encompasses extremes, our ideas, partnerships, plans and designs must expand as well.



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Visualizing our Restored Future

GEI is expanding its visual communication tools by incorporating Autodesk InRoads into restoration projects. This software, traditionally used for highway infrastructure projects, is a 3D modeling software that renders proposed projects within the context of real-world imagery. The 3D model software can incorporate data from other software programs such as ArcGIS, Civil 3D, and Revit to change the topography, add wetland areas and add vegetation to a project site. The proposed site is seen within the context of current surrounding aerial imagery, terrain elevations, roads, buildings, and vegetation cover. Visuals can be generated from any perspective, ground or aerial. It can even create movies that orbit around the project. Stay tuned for specific project examples!



Photo credit: Devin Barry



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GEI Presents at Infrastructure Improvements and the Historic Preservation Act Conference

On March 8, 2022, GEI Senior Archaeologist **Denise Jurich** presented at the Infrastructure Improvements and the Historic Preservation Act Online Conference. Her presentation included an overview of two federal laws, the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA), and focused on the application processes involved at the intersection of these two laws. These laws require federal agencies to "stop, look, and listen" before making decisions that impact historic properties and the human environment. Denise explained the benefits of integrating the independent processes and statutory obligations of NHPA and NEPA in the early stages of planning infrastructure projects.



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