



Institute for Canine Forensics

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Non-invasive Remote Sensing of Human Remains
Specializing in Historic and Pre-contact Burials



Off Road Training

ICF set up a 4-wheel (and all-wheel) driving class for our handlers. We engaged [The Driving Company](#) to teach their 2-Day Off Road EVOC course. The class was both really fun and educational! The first day was 4WD / AWD / IWD theory and driving. We learned techniques for difficult terrain, including ascending / descending steep inclines, dealing with various obstacles, learning to spot and direct another vehicle, and how to use the off road features in your vehicle. We practiced everything what we'd learned on the obstacle course. (The picture above is Kris driving a difficult steep rutted decent followed by a large water / mud crossing. Aurora is Kris's spotter to help guide her down the best path. [Instructor Scot Smithee](#) is making sure everyone is safe.) We finished off the day with a trail ride.

The second day was recovery. We learned about how to select and use various types recovery gear and how to calculate the anchoring / pulling force required by vehicles in different situations. Our "final exam" included setting up a winch, several straps, pulleys, shackles, wood 4x4's, and 2 vehicles to recover a 3rd heavier vehicle uphill over rocks. (In the middle of this, 2 off-road tow trucks pulled up to help. We told them we didn't need it.) We pulled the "disabled" truck up over the rocks and passed the test!



Aurora rigging our "final" exam." (The vehicle to be recovered is down hill. There is an imaginary cliff just behind the camera, so the recovering vehicles had to be at angles. The truck near the camera is acting as an anchor and change of direction point. We were required to use the smaller winch on a 3rd lighter vehicle off camera to the right.)

Getting to many of our projects requires high-clearance vehicles and some need 4WD. This class helped our dog handlers learn what their vehicle is capable of, how to help spot other vehicles to keep them safe and from getting stuck, as well as what to do to help get a vehicle out of a problem. (Many of us came away with a shopping list of equipment we want to add to our vehicles.)

We had a great time in our two-day class getting hot and dirty, practicing known skills, and learning new ones!

~Adela~

THIS AIN'T LASSIE: CANINE FORENSICS & CHINESE GRAVE SEARCH IN UTAH

Christopher W. Merritt, Ph.D., Utah State Historic Preservation Officer and Michael Sheehan, Ph.D., Archaeologist, Salt Lake Field Office, Bureau of Land Management

For most of the last eight years, the Bureau of Land Management (BLM) and the Utah State Historic Preservation Office (UT-SHPO) have been working with Chinese and Chinese American organizations to investigate the heritage of the Chinese workers who built and maintained the nation's first Transcontinental Railroad. Meeting at Promontory Summit on May 10, 1869, the Central Pacific and Union Pacific Railroads connected the United States from east to west, while also spurring the migration of thousands of Chinese immigrants. While the Central Pacific Railroad employed over 13,000 Chinese workers during construction, both railroads and their successors in Utah (the Southern Pacific) continued to employ Chinese workers on section crews and other railroad-related jobs until the early 20th century when the long-term negative effects of the Chinese Exclusion Act, passed in 1882, radically altered the ethnic demographics of the available labor pool.

In 2018, the BLM and UT-SHPO initiated an ongoing collaborative project with the Chinese Railroad Workers Descendants Association (CRWDA) based in Utah. The core of the collaboration was to deepen our understanding of the historical role and lives of Chinese workers along 87 miles of the original transcontinental railroad that is now managed by the BLM as a Backcountry Byway. In 2020 and 2021, volunteers and staff from both the federal and state governments conducted excavations at the abandoned railroad town of Terrace, in Box Elder County, Utah. While an overview of that excavation will appear in a future *AACC Newsletter*, here we focus on one piece of the larger project, identifying the location of historic Chinese graves in Terrace and beyond. Key issues we identified related to this undertaking were a) where are the graves of Chinese workers who died during the railroad construction period? and b) where are the graves of Chinese workers who died in the Terrace townsite over the next 30 years?

It is impossible to underestimate the role serendipity has played in these

investigations. Initially it arrived in the form of an email in 2020. A member of the public sent Merritt a newspaper clipping from Elko, Nevada, describing the death and burial of a European-American man along a specific part of the grade. BLM and UT-SHPO crews surveyed the suspected area and found a pile of rocks in the general shape and orientation of a grave. Surprisingly, however, only about five meters away was another depression with displaced rocks and a Double Happiness pattern bowl nearby. It appeared that the burial was co-located with at least one more grave which may have been that of a disinterred Chinese worker.

Fast-forward to 2021, when news of our excavations at Terrace's Chinatown hit the local and regional press. Once again serendipity stepped in to open a window on the past when another member of the public contacted Merritt, noting that his great-grandfather started the meat market in Terrace, and that his grandfather was born there sometime before 1900. He offered his family history, and one piece in particular was striking. In Terrace there is a formal cemetery but no indication of a Chinese section nearby. But his grandfather's oral history mentioned that he joined a procession to bury a Chinese man. In this oral history it indicated a general location for the burial on the opposite side of town from the European-American cemetery. A subsequent field survey found two concentrations of Chinese material culture in this location that were associated with a series of enigmatic surface features.



Institute for Canine Forensics team conducting a survey on BLM lands in Box Elder County, Utah, 2022.

Thus, with two serendipitous moments, we were more encouraged to locate burial grounds and areas for the Chinese worker community. Using a generous donation from Price Realty, we were able to acquire the services of the Institute of Canine Forensics based out of the Bay Area in California. Under the direction of Dr. John Grebenkemper, four handlers and their canines completed a forensics survey in several locations at Terrace and the other location where the disinterred burial was identified (Figure 1). The CRWDA accompanied the

canine crew during a portion of the project, highlighting the fundamentally collaborative approach we have been able to accomplish.

For obvious reasons we are not releasing specific location information on the canine search but suffice it to say that the canine crews identified potential human remains in four locations, including two that were highly suspected. Many of these locations actually had four independent canine alerts, providing more confidence in the results (Figure 2). There were even several locations where the canines alerted to clear piles of soil and rock or, in some cases, significant divots in the soil suggestive of disinterment.

Future work being conducted by Mike Polk, of Aspen Ridge Consultants, and the BLM and UT-SHPO is focused on creating a model for understanding where construction-period burial grounds might be concentrated. The supposition thus far is that Chinese workers consolidated their burials in one location for ease of collection of those remains in the future. Thus, if construction was paced and controlled, there might be a discernible pattern to identifying these locations that will aid in additional surveys.

There is no current plan to ground truth the present findings out of respect for the descendant community and the remains themselves. In 2023, we plan to revisit these locations with the Chinese community and conduct “honoring the ancestor ceremonies” in a way that will not arouse too much public attention. Anyone interested in learning more about this ongoing research is welcome to contact the lead author at cmerritt@utah.gov.



Example of resulting map; each color triangle is a separate and independent canine alert. Note at least two distinct clusters with a couple of outliers. Image courtesy of John Grebenkemper, 2022.

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John Grebenkemper with Kayle and Dana Timbrook search the desert for lost Chinese graves.

Ground Temperature

Don't forget when you are out walking your dog that the ground temperature is likely much hotter than the air temp. In the picture below, the air temperature was reasonable 87°F, but the ground was a scorching 140.5°F! Ground plays a big role in ground temp; for example dark asphalt is almost always hotter than dirt, with green grass being the coolest.

Some people with dogs are aware of the ground temperature, as it can easily burn a dog's paw pads. We track ground temperature, along with other key weather factors, as they play an important part of how available the scent is to the dogs, and so impact the dogs' probability of detection (PoD). The higher the ground temperature is, the less the scent is available, the lower the PoD.



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We are happy to talk with you about your project and how our dogs might help locate human remains or burials. Call, email, or check us out on facebook or our website. (You can find past newsletters there, too.)

Please feel free to pass this newsletter along to anyone who might be interested.

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