'Camp Fire' Cremains Recovery 2019

Background

The **Camp Fire** started on November 8, 2018, in Butte County, in Northern California. It is the deadliest fire and most destructive wildfire in California history. After exhibiting extreme fire behavior through the community of Concow an urban firestorm formed in the densely populated foothill town of Paradise. The fire was so extreme due to high winds that it was burning one acre per minute. The Paradise Camp Fire is Catastrophic

The **Camp Fire** burnt 153,336 acres and destroyed 18,804 structures, with most of the damage occurring within the first four hours. Total damage was $16.5 billion. The fire reached 100% containment after 17 days on November 25, 2018. What's Next After The Camp Fire Destroyed Paradise and Paradise Lost: Inside California's Camp Fire

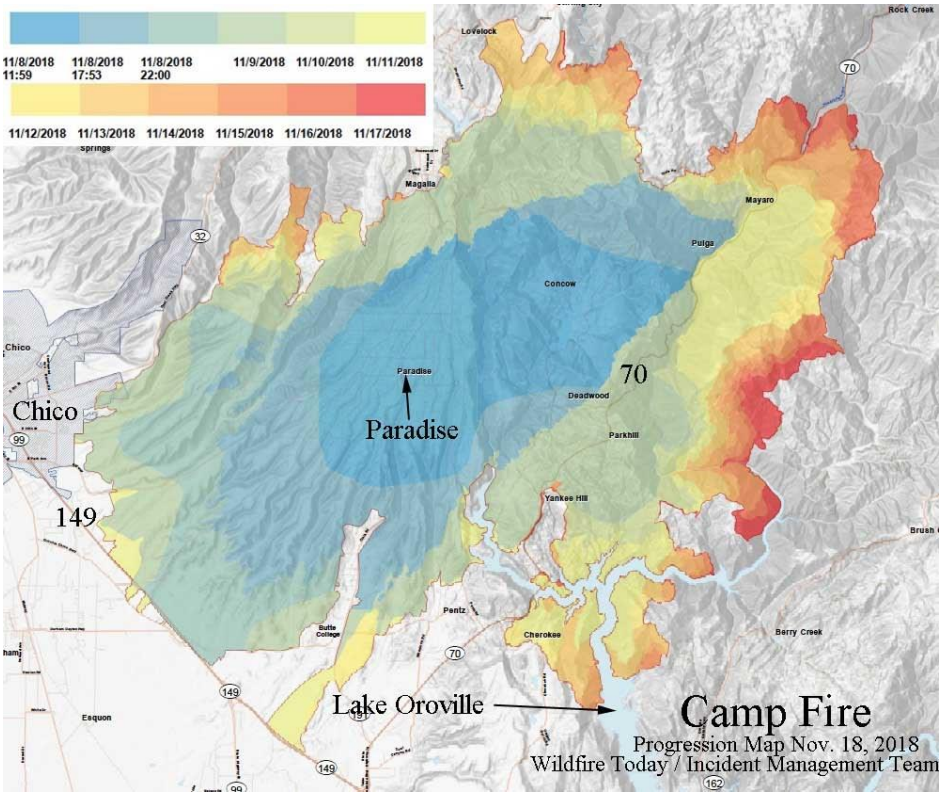
Because it started near Camp Creek Road, it was called "The Camp Fire." The cause is still under investigation. But within a couple of hours it devoured the town of Paradise - population 27,000. About 95 percent of Paradise was lost; its smaller neighbors, Concow and Magalia, were all but destroyed.

The **Camp Fire** killed 86 people and there are still people missing. The coroner, forensic anthropologists, and search dogs went from house to house looking for burned remains. To help identify who the victims were, a rapid DNA procedure was offered to the community. A DNA profile could be generated in just two hours. The system uses DNA from bone fragments or other remains, then matches it to genetic material, such as a cheek swab, provided by relatives of the missing. Rapid DNA Analysis Used to Help ID Camp Fire Victims

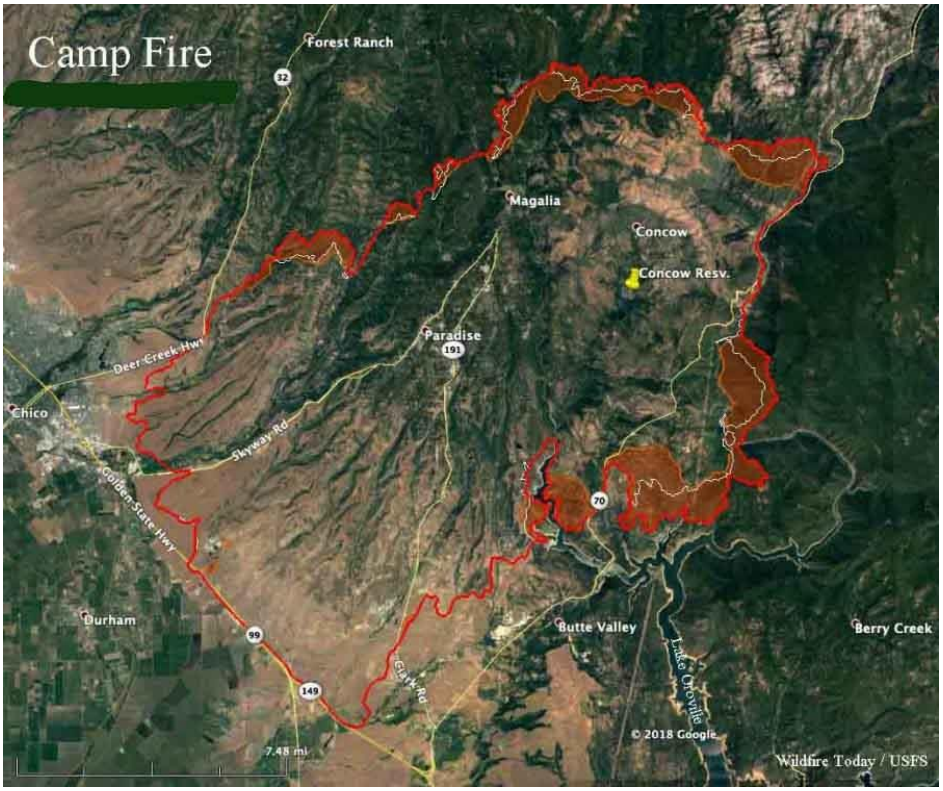
1 - Searching for Human Remains

2 - Searching for Human Remains

3 - S&R Dog Searching for Human Remains


11/8/2018 11:59
11/8/2018 17:53
11/8/2018 22:00
11/9/2018
11/10/2018
11/11/2018
11/12/2018
11/13/2018
11/14/2018
11/15/2018
11/16/2018
11/17/2018
Chico
Paradise
70
149
Lake Oroville
Camp Fire
Progression Map Nov. 18, 2018
Wildfire Today / Incident Management Team

4 - Fire Range


Camp Fire
Forest Ranch
Magalia
Concow
Concow Resv.
Paradise
Deer Creek Hwy
Chico
Skyway Rd
Durham
Butte Valley
Berry Creek
Lake Oroville
© 2018 Google
Wildfire Today / USFS

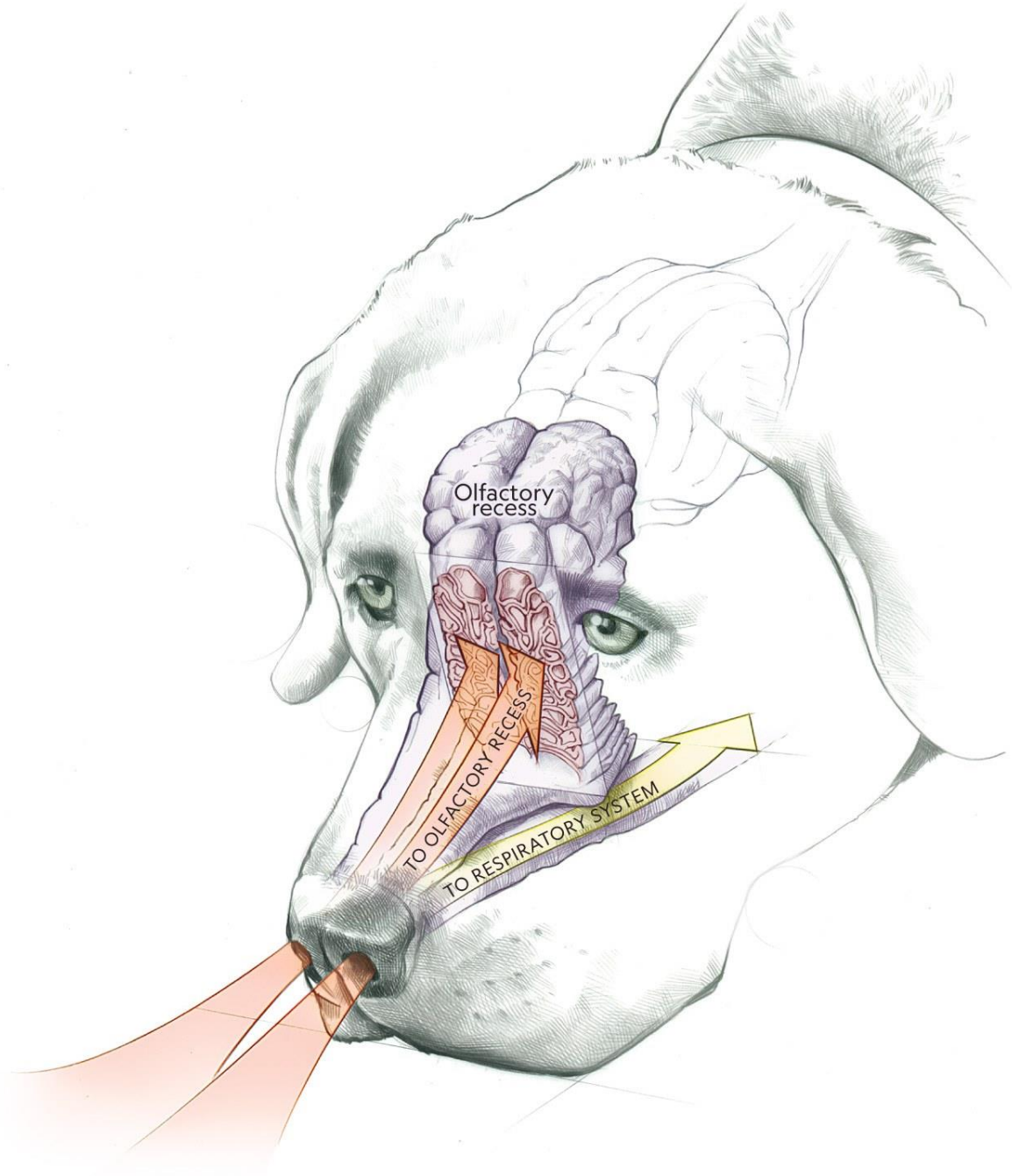
Dogs - A Non-Invasive Search Tool to Locate Human Remains

The **Institute for Canine Forensics** (ICF) is a non-profit organization located in the Bay Area, established through Search and Research (SAR). SAR dogs are trained to find both live and recently deceased people. Handlers and their dogs are trained together with other teams on a regular basis. The Institute for Canine Forensics

The **Institute for Canine Forensics** recognized the need for dogs to sniff out the remains of prehistoric and historic burials. Typically, search and rescue dogs find the strong scent of recently dead people. ICF modified their search protocols and focused training only on locating a very weak scent.

Over the years, ICF has worked with Native American tribes, forensic anthropologists, archaeologists and other scientific disciplines to design and refine their non-invasive approach for locating historic and prehistoric human remains.

How the Nose Knows



A dog's extraordinary sense of smell—up to 100,000 times more acute than a human's—relies in part on a structure called the olfactory recess. This labyrinth of paper-thin bones is lined with millions of scent receptors attached by neurons to the brain, where the scents are analyzed. Sniffing up to five times a second, a dog constantly surveys its surroundings and even knows through which nostril it detects a scent.

The ability to sniff out such subtle odors is possible because of dogs' remarkable noses. The animals can smell at least one part per trillion, which is at least three times more sensitive than the most sensitive mechanical sniffers. And compared to human schnozes, dogs' smelling abilities are up to 100,000 times better, by some measures.

According to a 2016 study in Frontiers in Veterinary Science, canines can detect the equivalent of "one drop of a liquid in 20 Olympic-size swimming pools."

Dogs have hundreds of millions of olfactory receptors—compared to just a few million in humans—and their nostrils register scents independently from each other, giving them the ability to smell in stereo. Their super-smelling abilities allow them to identify bombs, drugs, missing people, and to detect medical conditions like cancer.

When humans reward dogs for smelling specific scents, the animals learn to hone in on those odors, and ignore all others. That's how detection dogs are trained.

Cremated Remains (Cremains)

After a loved one is cremated, many families keep the **cremated remains** (cremains) in their home. Cremains are often stored in a plastic container, box, urn, etc. Many families keep the cremains of their loved ones in their home. It might be temporary, until they go to a final resting place. Or it might be more permanent, as some people find comfort in having them nearby. As the victims of the fires ran for their lives, many did not have time to take their loved one's cremains.

There is a high success rate in using Historic Human Remains Detection dogs to locate cremains. Humans cremains have a distinct odor that trained dogs can easily identify, even in a house that has been totally destroyed by a wildfire that may have reached 1,500 degrees Fahrenheit.

5 - Adela Morris and Jasper

Camp Fire Cremains Recovery

On January 11 - 13, 2019, the third rotation of cremains recovery was organized by the Institute for Canine Forensics and **ALTA Archaeological Consulting.** ICF had seven dogs/handlers who worked with 3-4 volunteer archaeologists per team. Each team was assigned 3-4 houses per day in Paradise, Magalia, and Concow to locate and recover the cremains of these loved ones.

"Our ICF volunteer group of seven canine teams supported by a group of archaeologist professionals and students recovered 53 sets of cremains from the ruins of 49 homes this weekend in Paradise, our third three-day trip to help those in need. We've now helped 117 families recover the lost cremains of their loved ones, and have over 40 more requests outstanding."

To offer free services to the fire survivors, **ICF** placed flyers at evacuation centers and word spread on social media. Families contacted ICF for help in locating their loved one's cremains. Coordinator and dog handler, Lynne Engelbert talked to families over the phone and set up a schedule for the site visits. The teams were very organized and on schedule to meet a family at each house.

ALTA Archaeological Consulting put a call out for archaeologists, and they also have a form to fill out on their website.

Volunteers met at Home Depot in Chico each morning at 8:00 a.m. to go through procedures, be assigned to teams, and pick up supplies.

6 - Organizing supplies, such as rubber gloves, Ziploc bags, etc.

7 - Barbara with her two dogs.

Once at the site of a burned home, the owners showed the team where the cremains were kept in the house, such as a closet, mantle, bookshelf or in a safe. The houses were destroyed, but metal was still present to piece together a room or location.

Sacramento Bee: January 17, 2019: Even the ashes of late loved ones were lost in Paradise. Enter archaeologists and canines.

8 - Burnt house

9 - Working with owner to determine layout of house and where the cremains were kept.

MARCELLA

On **Friday, January 11, 2019**, our team met Marcella and her husband at their destroyed house to locate the cremains of her father. The first step in the process is for the dog handler (Lynne) and our archaeology lead (Joanne) to discuss with Marcella the location in the house where the cremains were kept, the kind of container used to store the cremains, and how much of the cremains was present. Often times, a family may split up the cremains so only 50% may be present.

The next step is for the dog handler (Lynne) and her dog (Piper) to search. In this particular house, it only took Piper about 2 minutes to locate the cremains. Piper alerted by sitting on or near the human cremains

10 - Lynne and Piper working to find the cremains.

Next, the archaeologists start clearing an area, isolating around where the dog alerted.

11 - Cremains visible on the surface (tan color).

12 - Isolating the cremains.

13 - Pedestaling the cremains.

If the cremains are on the surface, the process goes quickly. If the cremains are buried underneath debris and not visible on the surface, then a 3-4 ft. radius is left around the area the dog identified. The archaeologists work from the outside in - towards the identified area. Debris is collected using a trowel and dust pan, then thrown into a refuse pile away from the site. The debris is removed until the bottom of the house is reached, typically red clay soil in this location.

After the area is dug with a trowel and cremains are observed, archaeologists brush off layers of ash until the cremains emerge.

14 - Using brushes to remove ash and debris.

Cremains are unmistakable, grainy in texture, sometimes with small chunks of bone in them. Colors vary and include tan, pink, grey, and brown. Working slowly through the burnt debris is important because wet drywall and insulation may be mistaken for cremains.

The cremains are carefully collected in a dust pan and placed into a plastic bag.

15 - Collecting Cremains using a brush and dustpan.

16 - Cremains are placed in Ziploc bags.

The Ziploc bags with cremains are given to the loved ones with instructions on how to dry them. Families are very thankful to have their loved ones returned to them. If the teams did not volunteer this service of recovery, human cremains would be deposited in a hazardous material landfill with the house debris. We certainly do not want that!

17 - Marcella receiving her father's cremains from Joanne.

18 - Group shot with Marcella and her husband. (Lynne and Piper, Joanne, Adam, Kia, and Karen)

CYNTHIA

Cynthia lived in a double-wide mobile home and lost her husband's cremains, dog, and gold wedding band in the fire. Cynthia lived with her husband's ashes next to her bed. She took a pro-active approach to make sure the cremains were protected by covering the area (her burnt bed) with a blue tarp. She also placed a sign "Human Cremains" and caution tape to protect the area from the Hazardous Material and Forensics teams.

After pulling back the tarp and removing the metal bed frame, Lynne sent Piper into the debris to find the cremains.

19 - Piper Locating Cremains

Piper layed down on top of the cremains under a metal beam. Lynne did a visual surface survey and located the cremains on the surface.

20 - Cremains on the surface

21 - Cremains pedestalled

22 - Removing cremains

23 - ID tag recovered: Numbers are for the Crematorium and then Body #

24 - Cynthia receiving her husband's cremains. She was very emotional and sat in her car and cried as we drove away to the next house.

CHRISTINE

On Saturday, January 12, 2019, our team (Lynne, Piper, Joanne, and Karen) arrived at Christine's house by 10am. She had not yet seen the remains of her house after the Camp Fire. She stated that she did not want to collect anything, that she's ready to move on. However, there was one thing she did want, her father's cremains.

Christine and Joanne consulted on the layout of the house, describing where her bedroom was located in the debris. She said her father's ashes were stored in her closet. We located the metal closet shelf and had a general sense of the closet layout.

25 - Joanne interviewing Christine

After the interview, it was time for Lynne to work with Piper to locate the cremains.

26 - Piper searching for Christine's father. Twice she sat on the spot where we found the cremains.

Piper alerted to a spot in the closet. The cremains were visible on the surface, a tan color.

27 - A small, metal box tag was present on top of the cremains.

28 - Moving cremains into a dust pan.

29 - Cremains.

30 - Cremains.

31 - Alex, from ALTA Archaeological Consulting clearing off debris around the cremains.

The cremains were bagged in a Ziploc, and the box tag and Crematorium tag were given to Christine.

32 - Giving Cremains to Christine

33 - Cleaning off tags.

LIZ

34 - Burnt House

35 - Front Entrance

Liz was a client we worked with over the phone as she was not able to visit the site. She described that her husband's ashes were kept in a safe. When she had returned to her burnt house, she said the safe was missing possibly due to looting.

Within a few minutes, Joanne located the safe. All the metal was burned, and it looked like a styrofoam container.

36 - Burnt Safe

Lynne sent Piper into the house to search for the cremains, and she put her nose into the safe.

37 - Piper up close and safe behind her.

38 - Piper with nose inside safe.

39 - Piper confirming cremains inside safe.

Liz's husbands cremains were visible inside the safe. We carefully used a trowel to move the cremains inside a plastic bag and searched underneath the safe as well.

40 - Removing Cremains

41 - Using a trowel and Ziploc Bag

42 - Burned Safe and Papers Inside

43 - Cremains Visible in Safe

44 - Looking Underneath Safe

After we recovered the cremains, we called Liz and told her that her husband's remains were mixed with paper. She thought it best that his cremains be scattered in the backyard where he loved to garden.

45 - Backyard

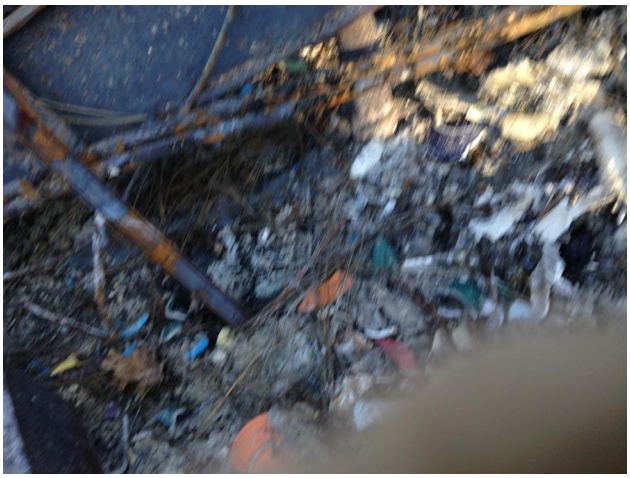
Because the area and debris will be dug down 4 ft. and moved to a hazardous waste landfill, we opted to place his cremains in a more peaceful location.

TERRY

Terry lost her son's cremains in the fire. This was a more difficult site because she was not exactly sure where his ashes were kept. She thought they were on a shelf in an attached room on her mobile home.

46 - Side of trailer where extra room was added on.

In this situation, Piper did not pick up a scent, so we used Terry's description of the room as our starting point. The area was covered with metal and broken ceramics because the kitchen cupboards fell through the wall in the fire.



47 - Pile of debris to be excavated.

Joanne and I started by removing metal and large chunks of debris. We then started back about 4 feet from the trailer, scrapping burnt wood, drywall and insulation into a dustpan. We worked our way to the metal beam of the trailer and then moved over, foot by foot. We were very worried we would not find the cremains, so we called for backup from another team. They provided the man power to move an air conditioning unit and to excavate another area.

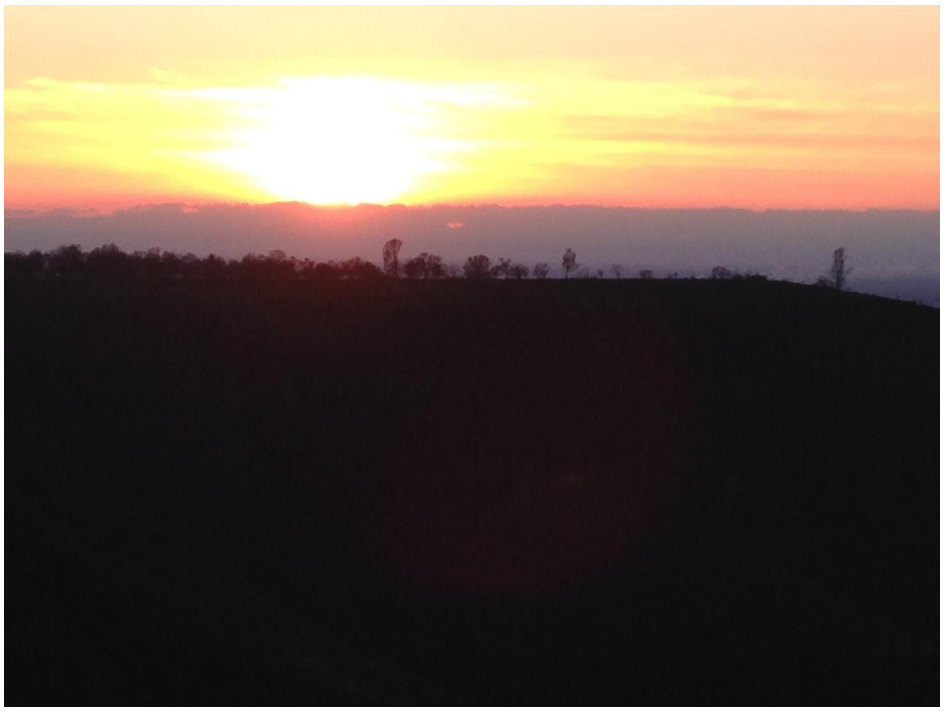
Eventually, Joanne found the remains. They were grey in color!

48 - Cremains grey in color!

49 - Karen and Joanne brushing cremains into a dust pan.

50 - Terry with her son's cremains.

51 - Terry receiving an urn, donated by students in the ceramic program at Sacramento State University.



52 - Sunset in Paradise

Overall, the experience was very rewarding. It was incredible to watch Piper track human cremains and how well Lynne guides and trains her dog. The survivors of the Camp Fire are resilient and strong to overcome a catastrophic disaster. One day their town and homes will be rebuilt. For now, the families have comfort in the return of their loved ones after the fire.

A goal for the Institute for Canine Forensics and ALTA Archaeological Consulting is to highlight the importance of raising awareness and getting the official blessing of FEMA or CalOES, as they estimate a paid non-volunteer campaign of this magnitude would be a $500,000 job. It's important that FEMA make this service of cremains recovery a part of their official protocol.

53 - You are in Our Hearts! #ParadiseStrong