



A37 Wildfire Search, Recovery, and Identification of Victims: Post-Recovery Anthropological Analysis and Identification

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Learning Overview: After attending this presentation, attendees will better understand the analytical and logistical challenges faced by anthropologists in the post-recovery analysis and identification of victims of a mass casualty wildfire. The primary goals of this presentation are to define the role of anthropology in this context and to present strategies for case documentation and maximizing evidence recovery.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by bringing attention to the planning required for mass casualties from wildfire, which must include post-recovery analysis. Prior to any disaster, understanding the role anthropologists play in this context, how they integrate with the other team members, how to stage anthropological analysis within the identification process, and how and when to use anthropological services needs to be clarified and planned for.

The California wildfires tested the ability of agencies to plan and execute a systematic search, recovery, analysis, and identification of fire victims. As we plan for future fires, ensuring that there are personnel to cover the post-recovery operations is essential. Primary efforts are on positive identification of fire victims so that remains may be returned to grieving families as expeditiously as possible. The analytical and logistical challenges involved in post-recovery analysis and identification need to be addressed in order to smoothly integrate anthropology into morgue operations involving wildfire victims. This presentation offers procedures and strategies for the documentation and analysis of wildfire victims in the morgue setting.

Anthropologists are critical in the morgue analysis of wildfire victims, complementing the work of pathologists, odontologists, DNA analysts, and morgue staff. Anthropology's contributions include: (1) removal of non-osseous material from human remains, (2) separation of human and non-human material, (3) identification of incomplete recoveries, (4) identification of split recovery of remains, (5) identification of commingled remains, and (6) identification of elements useful for positive identification, such as appropriate DNA samples. Using examples from the Camp Fire, handled through the Sacramento County Coroner's Office, basic issues include the range of thermal damage to remains, the extent of commingling (human and non-human), and the difficulty of isolating material useful for identification.

In the Camp Fire analysis, anthropologists examined 69 of the 86 "cases" recovered. While some remains were partially burned, retaining significant soft tissue, most cases were severely impacted by the fire. Sorting calcined material became extremely important and resulted in fluctuating body counts as body segments were reunited or commingled remains identified.

Anthropologists began work in the morgue approximately nine (9) days after the outbreak of the fire. Often their analyses followed examination by the pathologists and odontologists. This sequence was problematic as anthropologists focused not only on the numbered remains, but also on the elements represented by addresses and the localities of where remains were recovered. Often commingled remains recovered from the same address were bagged "separately" but each container collected from the field represented a full intermingling of bodies from a specific locale.

In order to work efficiently, a systematic approach was developed. Bone fragments were separated by body segment, examined to ensure that full body recovery was present, and elements separated that may be useful for positive identification. Additionally, all remains found at a single address were analyzed simultaneously to address comingling issues. Peer review was accommodated by separate examination by one anthropologist, then cross-checking the work of the other. Potential disagreements or clarifications were discussed prior to sign-off. Case records were memorialized using extensive photo documentation and standard recording forms.

Given that major contributions of anthropology include identifying teeth, comingling, and appropriate samples for DNA, the integration of anthropology at the beginning of the analytical process is recommended. With these fragile remains, anthropologists should work prior to other disciplines (pathology, odontology, and DNA) to minimize damage and to maximize appropriate specimens for other experts. Another important lesson learned is the importance of small bones, such as carpals and tarsals, and bone fragments to identify comingling. Lastly, to prepare anthropologists for the complexity of burned bone analysis on a large scale, training opportunities are recommended to address these issues as a specialty area.

It is recommended that planning for future such disasters account for early anthropological analysis in the post-recovery efforts. Anthropologists should work on fully burned remains prior to the work of the pathologists and odontologists. Normal analysis is limited by the condition of remains and pace of identification, but valuable contributions are still possible. Training specific to burned bone analysis is recommended for anthropologists planning on contributing to wildfire mass disasters.

Forensic Anthropology, Burned Bone, Identification