E105   The Search and Recovery of 43 Victims From the Oso Mudslide in Washington State

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The goal of this presentation is to educate attendees regarding the devastating landslide that took the lives of 43 people and how recovery efforts were conducted.

This presentation will impact the forensic science community by teaching attendees about: (1) the challenges presented in the recovery of human remains from a natural disaster in mud and water; (2) the use of multiple resource types; and, (3) the requisite support and time needed to recover remains buried under deep, saturated mud.

A small community was devastated without warning in Snohomish County, north of Seattle, WA. On the morning of March 22, 2014, a massive landslide occurred that took the lives of 43 people, destroyed sections of State Highway 530 and a rural neighborhood in a matter of seconds. This was the deadliest mudslide in United States history. The search area was a massive $3.24km^2$ (800 acres) with debris estimated to be 7.6 million cubic meters (~270 million cubic feet). Confounding the search and recovery efforts was the fact that the slide crossed and dammed the Stillaguamish River, making it an area of mud estimated to be up to 12m (40 feet) at the time of the emergency response. The last body was reported located exactly four months after the slide occurred. The Snohomish County Medical Examiner's Office reported cause of death for all victims as multiple blunt force injuries and manner of death as Accident.

At the time, the Snohomish County Emergency Management office had ten people on staff, who were suddenly in the position of coordinating and overseeing what became a response that included 240 agencies. The Emergency Operations Center (EOC) was activated for 40 days. The enormity of the devastation quickly overwhelmed local and in-state agencies. On April 3, 2014, President Obama declared the mudslide a major disaster. More than 600 personnel, including more than 160 volunteers, 77 of which were canine handlers, worked on the recovery operations.

A first-hand account of the search and recovery efforts will be presented. It was the use of K9s working alongside heavy equipment that enabled every individual to be located and recovered, even when buried under mud and submerged under water. Volunteer search, rescue, and recovery canine teams located most of the victims in the first 11 days. The challenges of working an area of that size, with resources coming from across the United States, working in cold, wet, and dangerous conditions, without power and limited communication access will be discussed. Physical hazards, such as debris, presented one set of challenges, while chemical and biological hazards presented other challenges. Transportation within the search area required specialized equipment. Coordination between agencies was conducted using a joint command under the Incident Command System (ICS). Not all canine teams were effective, but those with the proper training for the deployment and handlers prepared for such conditions were able to complete search assignments safely and effectively. An on-scene veterinary station was established at the IC as well as the forward base of operations. The United States Army National Guard established an efficient decontamination station including hot and cold running water for canines. A separate decontamination station was established for humans. Lessons learn from this catastrophic natural disaster have and will continue to inform those involved in recovering human remains from mudslides.

Recovery, Cadaver K9, Natural Disaster

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