H40 A Case Study of Glacial Taphonomy

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After attending this presentation, attendees will understand the unique taphonomic signature that can present on human remains recovered from a glacial environment.

This presentation will impact the forensic science community by defining taphonomic processes that are encountered in a glacial setting.

In 2012 and 2013, the Joint Prisoners of War, Missing in Action Accounting Command Central Identification Laboratory (JPAC-CIL) lead recovery efforts of a 1952 aircraft crash of a C-124 carrying 52 individuals on Colony Glacier in Matanuska-Susitna Borough, Alaska. The initial crash site was recorded approximately 18km east of where the JPAC-CIL recovered the majority of human remains, aircraft wreckage, and other associated artifacts. This case presents a unique opportunity to investigate the taphonomic effects related to the deposition and subsequent movement within and across the ice of human remains that have been subject to glacial processes for a known period of time. The taphonomic processes affecting the remains can be summarized as follows: the initial aircraft crash; subsequent snow burial of wreckage and remains; movement of remains and other associated artifacts through and/or on the ice; melting of the ice and snow leading to the exposure of the remains and artifacts; and the recovery of these items by the JPAC-CIL. Each of these events contributes to the unique taphonomic pattern apparent on these remains. The primary taphonomic features described on human remains recovered from this incident are associated with the movement within and across the ice and include abrasion, shearing, fraying, and splitting. These unique taphonomic characteristics are unlike other taphonomic effects that can result from similar environments (such as cold climates).

Global climate change forecasts indicate glaciers will continue to recede in the coming decades. It is likely that more human remains cases may be exposed from previously inaccessible areas as ice and snow cover disappear. The unique taphonomy related to glacial deposition and movement may aid investigators in recognizing the contextual history of human remains recovered in these types of environments.

Taphonomy, Glacier, Aircraft Crash Recovery

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