Searching for graves and objects buried in peat or concealed in freshwater associated with crime

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Peat is an organic-rich soil that can comprise over 90% organic matter when dry and over 80% water when wet. Peat commonly occurs on either upland moorland as blanket bog or in lowland areas as raised bog, both in temperate, wet climates. Exceptions do occur. Freshwater bodies such as ponds, small lakes, slow-flowing streams and ditches make up over 20% of the Earth’s freshwater resource. Such small inland water bodies can contain up to 40% organic matter, sometimes more. Therefore from a hydrogeological perspective the difference between peat bogs and organic-rich freshwater bodies is minimal. Peat is diggable with ease and is often located in relatively remote locations. This makes peat ideal for burials associated with criminal activities, such as shallow, unmarked murder victim’s graves and associated objects. In this presentation, we review the methods available for the searching of peat environments, including strategies developed to overcome the problems as outlined above. The search of inland water bodies such as lakes, ponds, ditches and rivers/canals requires as full as desk study, and a Conceptual Geological and Hydrogeological Model (e.g. of body decomposition plume movement). However, the featureless surface of water produces fewer variations than on land, such that although intelligence may lead investigators to certain general areas of say a pond, ultimately, the whole area is likely to be surveyed by gridded geophysical transects. A case study example of the problematic search for a drowned suicide victim is given. In this, cadaver dog reactions (deployed from a boat) were incorrectly located, due to bottom currents displacing the scent from the body.

In conclusion, it may seem that peat-filled bogs and inland water bodies are logistically different environments to search for burials. However, their compositions maybe similar, with organic matter-filled water merging into water-saturated peat. This makes the geophysical response of such environments comparable. Both environments require a detailed desk study, a thorough review of any police intelligence and site reconnaissance visits before appropriate geophysical instruments can be deployed. Since both open peat moorland and open water bodies are exceptionally challenging environments to search, developing a strategy is critically important to focus and begin the search before the search team personnel and geophysical instruments are used.

References
