

ELEPHANT Ivory

Investigating global trafficking



Trafficking of illegal goods remains a global security problem, and investigators may turn to forensic science to prosecute poachers and dealers. Following a 1989 international ban on ivory trade, an ivory dealer in the West African country of Togo was charged with violating Togolese environmental and forestry laws, including an ivory ban. The defendant claimed that the ivory stockpile was older than the trade ban.

Prosecutors in the 2013 case enlisted Livermore scientists for forensic analysis of more than 1,500 pounds of elephant tusks confiscated from the defendant's property. Through radioisotope analysis, CAMS staff determined that the samples included ivory from elephants killed after 1990—after the trade ban—and perhaps as recently as 2010, which contradicted the defense's claims.

All organic material contains carbon. Radiocarbon dating measures the ratio of

carbon-14 to other carbon isotopes in a sample material. Comparing the ratio against carbon's half-life (5,730 years), scientists can determine a material's age. Radiocarbon technology has assisted in many trafficking investigations around the world, providing insight into trade patterns and networks. Convictions reliant on radioisotope testing can send a deterrent message to poachers and traffickers.

