

Title: Imported bushmeat –species identification using DNA profiling.

Defra project: CR0345

Stakeholders: Defra, FSA, HMRC, IFAW

Contractor: Wildlife DNA Services Ltd.

In order to assess possible infringements of the Convention on the International Trade in Endangered Species of flora and fauna (CITES) through the illegal importation of meat into the UK, a pilot study was undertaken to identify the species composition of meat seized entering the UK at Heathrow airport. The project required a broad interdepartmental approach involving teams from HMRC, DEFRA Global Wildlife, DEFRA International Animal Health and the Food Standards Agency, in addition to backing from the International Fund for Animal Welfare (IFAW) and technical expertise from Wildlife DNA Services (WDNAS).

Samples were obtained through seizures of illegal imports of meat coordinated by HMRC CITES and Products of Animal Origin (POAO) teams operating on five separate occasions during late 2005 and early 2006. In compliance with licensing regulations, DNA was extracted from samples at point of seizure by WDNAS in a converted customs interview room, prior to genetic identification at the WDNAS laboratories. Species identification of each DNA sample was achieved by amplifying a fragment of the mitochondrial (mtDNA) cytochrome b gene using universal primers. The DNA sequence for the fragment was then compared to an international database of animal DNA and the species determined where possible based on the percentage match to a reference animal DNA sequence.

A total of 230 meat samples were made available for DNA testing. Sixty-two meat samples were chosen as possible wild meat of which seven (four pangolins, one marsh buck, one cane rat and a wild pig species) were identified as wild meat, with the remainder originating from agricultural animals. Of the wild meat samples, five (pangolins and marsh buck) were identified as belonging to CITES regulated species. The majority of the imported meat was likely for personal use. Some of the wild meat samples

entering the UK from Africa did so from European transit flights. In addition to sampling at Heathrow, a further three samples were collected by local authority inspectors in London on behalf of the Food Standards Agency. The three samples all originated from an African native cane rat, a non-CITES listed species.

Figure1. Temporary laboratory at Heathrow airport and an example of the bushmeat sampled.

