FRUITBATS OF MONTSERRAT:
SUB-LETHAL PATHOLOGY ASSOCIATED
WITH THE INGESTION OF VOLCANIC ASH

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ABSTRACT

Since 1995, we have observed a dramatic increase in sub-lethal pathologies among fruitbat populations on the small Caribbean island of Montserrat coincident with renewed pyroclastic activity from the Soufriere Hills volcano. Indeed, apart from the minor inconvenience of being incinerated by the occasional pyroclastic flow (500 C), the fruitbats of Montserrat have contended with acid rain, the deposition of volcanic ash on fruits/flowers (and its subsequent ingestion), and the accumulation of ash on the animals pelage whilst foraging. Life in this world dusted by volcanic ash has had serious consequences for the health of Montserrats’ fruitbat populations. We observed, in all species of fruitbat on the island, that the occlusal surfaces of the teeth exhibit abnormal wear, advanced dramatically by the incidental ingestion of volcanic ash while feeding and grooming. Before 1995, idiopathic hair-loss (alopecia) had been observed only once in 638 captures, whereas alopecia has been recorded frequently (30-60%) for Brachyphylla, Artibeus, and Ardops in each of our last three surveys (’97, ’98, ‘00). The incidence of alopecia is more difficult to pin-down, however, it is most likely due to mineral deficiencies associated with the ingestion of ash, and to abnormal amounts of roost-parasitism. The adjacent island of Antigua has served as an excellent biological control for the natural history of Montserrat’s fruitbats; these islands share similar habitats and faunal diversity. However, without the threat of living beneath a volcano, Antiguan bats have not been affected by the volcanic ash, exhibiting neither abnormal tooth-wear, nor alopecia.