

## OUTBREAK OF CANINE DISTEMPER IN RACCOONS (*PROCYON LOTOR*) IN GERMANY

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In Germany two major racoon (*Procyon lotor*) population exist, one is located in the centre of the federal republic, the other in Northeastern Germany within the federal state of Mecklenburg-Pomerania. During a long term study of the Mecklenburg' raccoon population concerning ecology, distribution and social behaviour of this species, a total of 65 individual animals were tracked by radio collar so far. During a time period from May 2007 until May 2008 14 of these animals died, but due to close monitoring almost all were recovered soon after death and were submitted for necropsy to the Leibniz Institute for Zoo and Wildlife Research. The first seven animals died during May until August 2007. Clinically, five of these animals revealed abnormal behaviour patterns associated with neurological symptoms. At the time of death, these animals were solely found hidden in impassable moor or swamp areas. Microscopic investigations gave evidence of pathological lesions within lung and/or brain tissue were found consistent with canine distemper. One adult male had also hyperkeratosis of the paw pads (hard pad disease). Analysis of matched tissue samples by PCR revealed infection with canine distemper virus (CDV) of these five individuals, while the other two animals were negative for CDV infection. Subsequent sequencing comprised up to 98.4% similarity with canine distemper virus compared with virus strains from domestic dogs published in Genbank. From August to October 2007 five animals were live captured for blood sampling of which three animals had high antibody titres against canine distemper virus, one animal had a moderate titre, while one animal's serum sample was negative. Of the remaining seven animals which were investigated from October 2007 until May 2008 neither histological nor molecular evidence of CDV was found. Three raccoons were killed or succumbed severe injuries. Two individuals had severe eosinophilic infiltrations in multiple organs suggestive of systemic parasitic infection, while the cause of two further animals could not clearly be determined.

This is the first report of an outbreak of CDV in a free-ranging population of raccoons in Europe. As this species effortlessly enters urban habitats, raccoons – moving between human communities and nature reserves – could play an important role as a reservoir host and even more as a transmission vector for CDV infection between domestic animals and endangered wildlife species.