Wild Tiger Health Centre Information Sheet

Disease threat: Mycobacterium tuberculosis complex

(M.tuberculosis, bovis, pinnipedii, microti, africanum, canetti, caprae) MTC.

Hazard description: MTC *Mycobacterium tuberculosis* complex covers several mycobacterial species which cause tuberculosis (TB), and are obligate pathogens.

Host species: Feline TB is predominantly caused by *M. bovis* and *M. microti*. *M. bovis* is a multi-host pathogen, with important implications of infection in domesticated livestock, predominantly cattle. *M. microti* is predominantly an infection of rodents. Both are zoonotic(Gunn-Moore 2014).

Pathogenesis: Disease in domestic cats may present as cutaneous granulomatous lesions, or with more systemic respiratory/gastro-intestinal signs (Gunn-Moore 2014). Routes of infection include bite wounds, ingestion and inhalation. Tuberculous disease (*M. bovis*) has been reported in wild free-ranging felids (Miller et al. 2012; Cleaveland et al. 2005; Pérez et al. 2001; Michel et al. 2006), with *M. bovis* representing a threat to Iberian lynx populations (Millán et al. 2009). Unusually, *M. caprae* has been reported as causing pulmonary disease in a captive tiger in Hungary (Lantos et al. 2003). With respect to co-infections, there seems to be no negative synergy between FIV infection and *M. bovis* infection in lions (in the Kruger National Park) in South Africa, (Maas et al. 2012), but it would be unwise to assume this to be the case in all wild felid species.

Diagnosis: Low sensitivity serological tests, culture, PCR.

Vaccination: Human-BCG vaccine – has been adapted for badgers. No other vaccines as yet.

Free-ranging tiger occurrence: No reports found. Rodent prey consumption (associated with *M. microti* risk) is more likely in the winter months when food may be in short supply.

Distribution: Global, but more prevalent in temperate climates, thus greater likelihood in range states RFE and China.

Assumptions: None.

Limitations: Low test sensitivity, serological tests not species validated. Uncertainty of prevalence data in tiger range states.