Wild Tiger Health Centre Information Sheet

Disease threat: Leptospira spp.

Hazard description: Gram-negative bacteria, with complex epidemiology and ecology of 17 species (Birtles 2012b). Currently classification is complicated with serological categorisation into serogroups, and serovars within serogroups, still being widely used – there are up to 300 recognised serovars (Birtles 2012b).

Host species: Wide mammalian host range. Rodent species appear to be the predominant reservoir hosts, with lagomorphs also implicated. Humans and canids appear to be most susceptible to disease, with lower susceptibility in felids (Birtles 2012b). In domestic cats, several serovars within the serogroups *L. interrogans* and *L. kirschneri* appear to be the most common infections (Hartmann *et al.* 2013). Infection has been recorded in Eurasian lynx (Birtles 2012b), free-ranging Iberian lynx (Millán *et al.* 2009), and captive wild felids in South America (Guerra Neto *et al.* 2004) and India (Vijayarani *et al.* 2009; Subramanian *et al.* 2012).

Pathogenesis: Reservoir hosts may suffer chronic renal disease, but acute disease in non-reservoirs is more likely. Disease, although not commonly reported in domestic cats, is most likely renal related (Hartmann *et al.* 2013). Immunocompetence and serovar are both likely to be of importance in disease susceptibility. Likely sources of infection include urine-contaminated water/prey species (Birtles 2012b).

Diagnosis: Serology most common. Detection of leptospires in urine.

Vaccination: Inactivated vaccines available for domestic dogs – need to be serovar specific.

Free-ranging tiger occurrence: No reports of clinical leptospirosis were found. However, 6/11 Bengal tigers were serologically positive in a survey of tigers in Chitwan National Park, Nepal between 2011-2016 (McCauley *et al.* 2018) indicating exposure at least. Rodent/lagomorph prey consumption is more likely in the winter months in the Russian Far East and North-eastern China when other food may be in short supply.

Distribution: Global distribution.

Assumptions: Wild felids are relatively resistant

Limitations: None.