# Wildlife Health in a Shrinking World:
## ECOLOGY, MANAGEMENT AND CONSERVATION


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## 47) CRYPTOCOCCAL INFECTIONS IN CAPTIVE GILBERT'S (*POTOROUS GILBERTII*) & LONG NOSED (*POTOROUS TRIDACTYLUS*) POTOROOS

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Mortalities associated with cryptococcocosis have been recorded in both the critically endangered Gilbert's Potoroo and in the analogue species, the Long-nosed Potoroo. In mammals, inhalation of *Cryptococcus* from the environment usually results in subclinical disease that is rapidly resolved in the healthy animal. However, clinical disease may be seen in the immunologically compromised animal (*C.neoformans*), or when the dose or pathogenicity of the organism is overwhelming (*C.gattii*). Common presentations of the disease in mammals include nasal disease, pneumonia, and disseminated disease including meningitis.

A post mortem diagnosis of cryptococcal meningoencephalitis was made in a captive born male Gilbert's potoroo housed at the CALM Two People's Bay Nature Reserve near Albany, Western Australia. This potoroo was euthanased due to progressive illness that was non-responsive to treatment. The causative agent was found to be *Cryptococcus neoformans* var. *grubii,* which was presumed to have been spread via faecal contamination from Bronzewing pigeons.

A female Long-nosed potoroo, resident of the Perth Zoo colony, initially presented with non-specific signs of hind limb weakness, muscle atrophy, weight loss, and inappetence. CBC and serum biochemistry were inconclusive, and Toxoplasma serology was negative. There was little response to antibiotic therapy. In the ensuing weeks, this animal developed a progressive head tilt, circling, recumbency and visual deficits. Blood taken for LCAT analysis showed serological evidence of cryptococcosis. An aggressive systemic oral antifungal therapy regime was subsequently commenced using fluconazole and amphotericin B.

Although there was an initial improvement in neurological signs and appetite, the animal did not continue to recover, and was eventually euthanased. Post mortem evidence of cryptococcal meningoencephalitis and optic neuritis was found, and *Cryptococcus gattii* was cultured from cerebral tissue. This species can be associated with certain *Eucalyptus* spp. trees, which are offered to the potoroos as browse.

Cryptococcosis represents a potential threat to the survival of the critically endangered Gilberts potoroo. There are reports of outbreaks of cryptococcosis in other captive species, caused by provision of contaminated substrate; therefore, avenues for transmission such as the provision of heavily contaminated eucalypt browse and access to bird droppings may need to be considered in captive management protocols. Early diagnosis and treatment of disease may lead to improved survival rates.