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Exploring the climatic and land use factors behind the 1999 Vancouver Island outbreak of *Cryptococcus gattii*

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Why do infectious diseases emerge where they do? Climatic and land use changes are considered the two major factors, with increasing debate around which factor is more important. In Canada, a fungus called *Cryptococcus gattii* emerged on Vancouver Island in 1999 for unknown reasons, capable of causing a potentially fatal respiratory and neurological disease upon inhalation of its spores. The research project proposed here aims to investigate the environmental factors behind the emergence of *C. gattii* on Vancouver Island using geographic information systems and remote sensing. Environmental data (e.g. seasonal temperature, precipitation, etc.) at 30-m resolution for Vancouver Island were collected from the ClimateBC program for 1984-2012. Annual land cover and forest harvest data, as well as elevation, were also used. Georeferenced *C. gattii* occurrence records provided by the British Columbia Centre for Disease Control were used to determine the corresponding environmental data at their time of collection and in the years prior to isolation. This oral presentation will show the results of these analyses, focusing on common environmental traits of areas where *C. gattii* was isolated from the environment. How did these areas (i.e. grid cells) change in the 10-15 years prior to *C. gattii*'s isolation in that area?