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Investigating the potential of Earth Observation data for Conservation Management

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Data-driven management of endangered species is important for making informed conservation policy decisions. However, collecting reliable (non-invasive) data on such populations can be difficult for many reasons due to, for example, finite resources (i.e. time and money), geographical scales involved and animal behaviour. The current primary data collection tools for these elephants uses aerial surveys to obtain estimated population counts and GPS collaring of individual animals recording their locations over time. This project will focus on investigating the potential for using earth observation data for identifying elephants within southern Africa using modern machine learning techniques, and some associated estimate of the error rate. The successful candidate will train the machine learning techniques using satellite data, making use of available GPS data, before testing the algorithm for its performance. Thus, a strong computational background and/or experience of applied machine learning algorithms is desirable. Time and data permitting, the project will also investigate the potential for distinguishing between alive from dead elephants in such data, which is useful for conservation purposes in terms of population trends.