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Devaluation of Rhinoceros Horn through Nuclear Techniques

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Abstract. South Africa is home to 83% of Africa's rhinoceroses and 73% of all wild rhinoceroses worldwide and an important country for rhinoceros conservation. However, the poaching of rhinoceroses has reached a crisis point, and if the killing continues at this rate, population decline could be expected in 2016-2018, meaning rhinoceroses could go extinct in the very near future. The total number of rhinoceroses poached in South Africa during 2014 increased to 1215 as the number of people arrested for rhinoceroses poaching-related offences climbed to 34. Several attempts have been made to stem poaching, ranging from implants of electronic signal devices to possible colouring impregnation or even poisoning of horns. A research project is currently being undertaken at Necsa to investigate the use of in situ labelling of rhinoceros horn through neutron activation. The primary purpose of radioactive labelling techniques is to enable the detection of poached rhinoceros horn at border control points through radiation monitoring. This paper will discuss the options considered and presents results of the investigation to date.