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Sommario/riassunto	Lithium-cesium-tantalum (LCT) pegmatites are important resources for rare metals. For Cs, only the LCT pegmatites with the zeolite group mineral pollucite at Bikita (Zimbabwe Craton) and Tanco (Superior Province Craton) are of commercial importance. Common characteristics of world-class LCT pegmatite deposits include their Meso- to Neoarchean age and geological setting within greenstone belt lithologies on Archean Cratons. This study presents the first coherent and comparative scientific investigation of five major LCT pegmatite systems from the Yilgarn, Pilbara and Zimbabwe Craton. For the evaluation of their Cs potential and of the genetic concepts of pollucite formation, the pegmatites from Wodgina, Londonderry, Mount Deans and Cattlin Creek were compared to the Bikita pollucite mineralization. The integration of the new data (e.g., geochronological and radiogenic

isotope data) into the complex geological framework: 1) enhances our knowledge of the formation of LCT pegmatite systems, and 2) will contribute to the further exploration of additional world-class LCT pegmatite deposits, which 3) may host massive pollucite mineralisations. .