



## **Where is the West Antarctic Rift System in the Amundsen Sea and Bellingshausen Sea sectors?**

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The West Antarctic Rift System (WARS) is one of the largest continental rifts globally, but its lateral extent, distribution of local rifts, timing of rifting phases, and mantle processes are still largely enigmatic. It has been presumed that the rift and its crustal extensional processes have widely controlled the history and development of West Antarctic glaciation with an ice sheet of which most is presently based at sub-marine level and which is, therefore, likely to be highly sensitive to ocean warming. While the western domain of the WARS in the Ross Sea has been studied in some detail, only recently have various geophysical and geochemical/thermochronological analyses revealed indications for its eastern extent in the Amundsen Sea and Bellingshausen Sea sectors of the South Pacific realm. The current model, based on these studies and additional data, suggests that the WARS activity included tectonic translateral, transtensional and extensional processes from the Amundsen Sea Embayment to the Bellingshausen Sea region of the southern Antarctic Peninsula. We present the range of existing hypotheses regarding the extent of the eastern WARS as well as published and yet unpublished data that support a conceptual WARS model for the eastern West Antarctica with implications for glacial onset and developments.