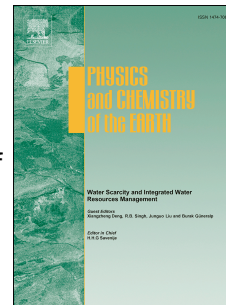


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A geomorphological characterisation of river systems in South Africa: A case study of the Sabie River

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1 **A geomorphological characterisation of river systems in South Africa: a case study of**
2 **the Sabie River**

3

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10

11 **Abstract**

12 Fluvial geomorphology affects river character, behaviour, evolution, trajectory of change and
13 recovery potential, and as such affects biophysical interactions within a catchment. Water
14 bodies in South Africa, in common with many other water-stressed parts of the world, are
15 generally under threat due to increasing natural and anthropogenic influences including
16 aridity, siltation and pollution, as well as climate and environmental change. This study
17 reports on a case study to characterise the geomorphology of different river systems in South
18 Africa, with the aim of better understanding their properties, controls, and implications for
19 biophysical interactions including water quality, biodiversity (aquatic and riparian), and
20 human activity within the catchment. The approach adopted is based on the River Styles[®]
21 framework (RSF), a geomorphology-based approach developed for rivers in New Zealand
22 and Australia, but applied here for the first time to South Africa. Based on analysis of remote
23 sensing imagery, SRTM-2 digital topographic data and field observations on sites through the
24 entire river system, six geomorphic elements were identified along the Sabie River, northeast
25 South Africa (gorge, bedrock-forced meander, low-moderate sinuosity planform controlled

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