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Characterising transition towards more ephemeral streams in Australian catchments

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Many streams experienced a prominent increase in proportion of cease to flow conditions during and after the multiyear drought in Australia (Millennium drought, circa 1997 – 2009). Change in zero flow occurrence frequency reflects the general transition of stream reaches from gaining to losing conditions, from losing to losing more, and ultimately to the disconnected state. We track and characterise these changes in groundwater-surface water connection using zero flow conditions as a proxy and explore the spatial and temporal patterns in flow regime transformation. The implications for upstream / downstream water availability and management of environmental flows and ecosystems are discussed in view of projected drier future climate.