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Conceptual frameworks, geomorphic interpretation and storytelling: Tales from Lockyer Creek , Australia.

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Earth science knowledge and insight begins with case studies, and theories should be derived from and ultimately evaluated against empirical, case study evidence. However, isolated case studies not linked conceptually to other locations or embedded within a broader framework are often of limited use beyond the study site.
Geomorphic evidence and phenomena may be interpreted using a variety of conceptual frameworks (theories, models, laws, methodologies, etc.). The evidence may be, or at least appear to be, consistent with multiple frameworks, even when those constructs are derived from entirely different assumptions or frames of reference. Thus different interpretations and stories can be derived from the same evidence. Our purpose here is to illustrate this phenomenon via a case study from Lockyer Creek, southeast Queensland, Australia. Lockyer Creek is fast becoming one of Australia's most studied catchments with a wealth of data emerging following two extreme flood events in 2011 and 2013. Whilst the initial objective of the Big Flood project was to provide information on the frequency and magnitude of these extreme events, in essence the project revealed a rich 'story' of river evolution and adjustment which at first glance did not appear to 'fit' many established conceptual frameworks and theories. This presentation tells the tale of Lockyer Creek as it relates to selected key conceptual frameworks and importantly how this information can then be used for more effective catchment and flood management.