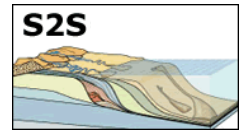


# The demise of a submarine canyon? Evidence for highstand infilling on the Waipaoa River continental margin, New Zealand



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Submarine canyons are major geomorphologic features on the Earth's surface. Their formation has received considerable debate, but their demise has received less attention. Research of modern canyons with cores and moorings has documented active sediment transport and deposition, but extrapolation of these local observations over larger areas is precluded by complex canyon geomorphology. High-resolution multibeam and chirp data collected as part of the MARGINS Source-to-Sink Initiative provide convincing evidence of an infilling canyon head on the Waipaoa River margin of New Zealand. Tens of meters of Holocene sediment have accumulated on the outer shelf and in Lachlan canyon as a result of off-shelf sediment transport. Regardless of the ultimate fate of this system over geological time scales, the research demonstrates highstand sedimentation as a possible mechanism for canyon burial and cause of canyon demise, which has important implications for the evolution of canyons globally.

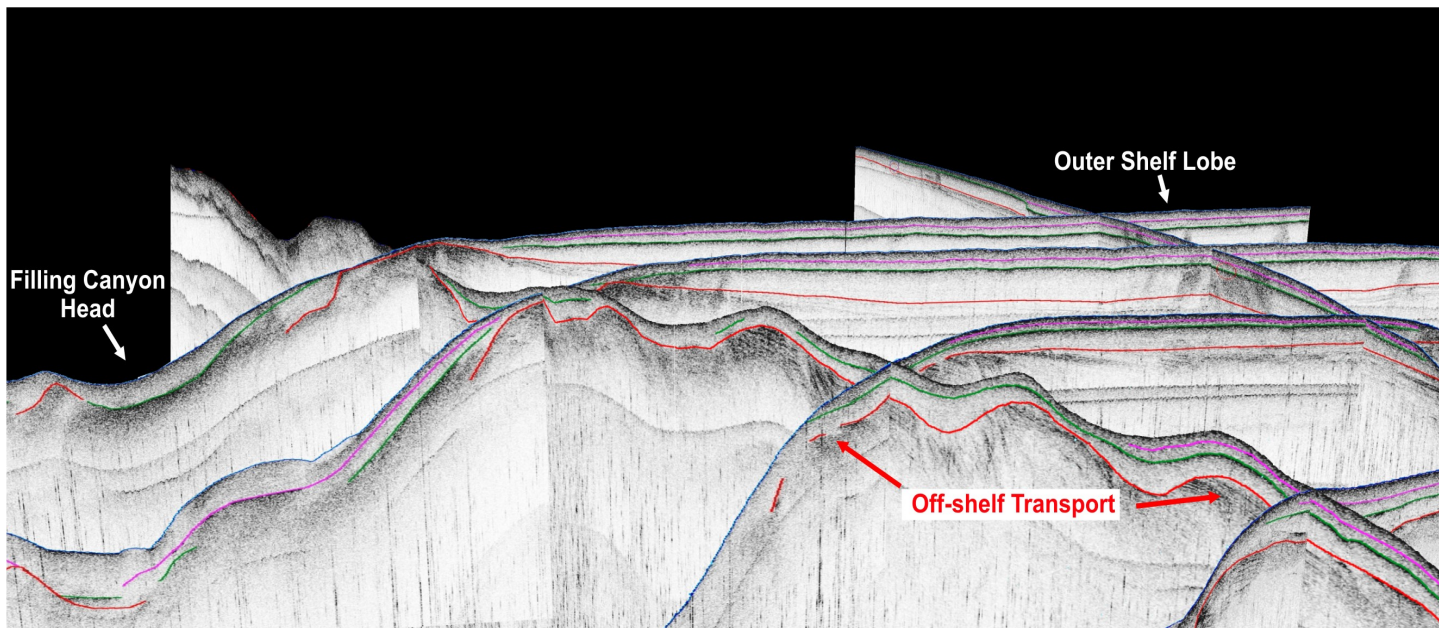


Figure: A fence diagram of chirp seismic lines across the Lachlan canyon and the adjacent shelf of the Waipaoa River margin. Divergent reflectors on the shelf edge and strata within the canyon indicate appreciable Holocene sediment accumulation within and around the canyon. Cores in the vicinity corroborate recent, rapid sedimentation.