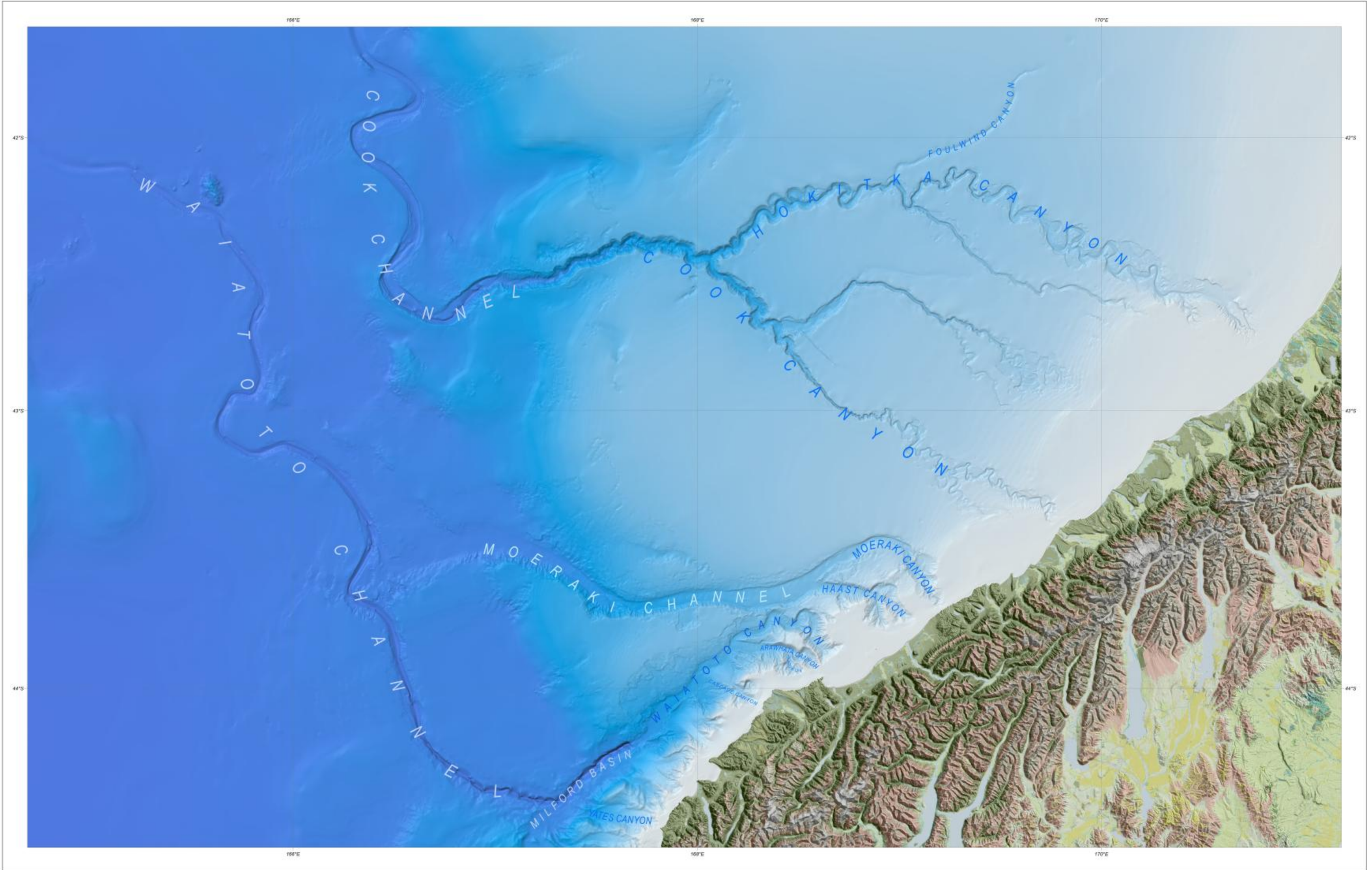


# WEST COAST CANYONS



New Zealand's coastline is a focal point for international researchers examining the transfer of large quantities of terrestrial material from the high ranges to the deep sea basins. On the South Island West Coast, sediment supply to rivers is driven by rapid tectonic uplift of the Southern Alps and a vigorous wet climate.

Here we have mapped the canyon and channel complexes off the west coast of the South Island. This has revealed that three broad, large scale channel features that wander across

the continental shelf and slope as a sinuous oxbow meandering thalweg evolving to deeply incised channels offshore.

Despite New Zealand's small aerial landmass (0.18% of world's land area) erosion of New Zealand contributes almost 1% of the total riverine sediment loading to the oceans per year. The west coast system is supplied by 3 of the 5 largest rivers in New Zealand with respect to sediment load producing 29% of New Zealand's riverine contribution. This

west coast system is only beaten by the sediment load entering New Zealand's marine realm from the Waipooa sedimentary system on East Coast North Island (33%).

Analogies can be drawn between meandering rivers and sinuous leveed submarine channels, there are however significant differences in both channel morphology and fluid-flow processes.

**Bibliographic Reference**  
Mackay, K.A., Mitchell, J.S., Neil, H.L., and Mackay, E. 2009. West Coast Canyons. NIWA Miscellaneous Chart Series 93.

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