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Earth Surface Dynamics Discussions

# *Interactive comment on* "Mātauranga Māori in geomorphology: existing frameworks, case studies and recommendations for Earth scientists" *by* Clare Wilkinson et al.

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General comments:

The paper presents a review of existing frameworks and models that have been used to incorporate Aotearoa Maori knowledge in New Zealand. It highlights case studies to exemplify how the frameworks work. It considers how the existing frameworks and studies apply to geomorphology and discuss the implications for studies outside of NZ. This is a high-quality review, it is well written and relevant. The frameworks presented should be a model for the US and the world where non-indigenous geoscientists wish to engage in research with indigenous peoples or their lands.



Specific comments I appreciate the words in the Maori language. But I found it taxing and distracting to go back and forth looking for the meaning. The authors should consider increasing the readability of the paper by including the English translation in parentheses, in some of the cases. Also, including a line or two justifying why using the words in Maori. I agree that they should be included, but the relevance of this choice may not be clear to everyone. Along with the terms, a phonetic guide would be useful.

A question I have is: What methods did the authors use for this paper? Did the authors conduct archival research? If so, please state it. On line 91, the authors mentioned permissions granted by the University to do the research. What did you have to ask permission for?

Technical corrections

Line 46, the authors talk about "a resurgence of sincere, respectful and reciprocal re-engagement between scientific and Indigenous communities". The word 'resurgence' implies that in the past, western and indigenous researchers collaborated in a respectful and reciprocal relationship. However, the history of colonialism shows that such a relationship has never existed. Instead, the western sciences have been extractive, non-reciprocal and disrespectful. The authors acknowledge this in lines 273-274. Thus, replace the words resurgence and re-engagement.

Line 57: Define "right of nature" to readers unfamiliar.

Move Table 1 so it appears after the first mention (it appears before so there's no context for it). Consider adding a guide for pronunciation (phonetic guide).

Line 176: What does it mean that: Whakapapa (...) fosters credibility by establishing connections between researchers and subjects?

Section 3.2. Consider making it shorter and clearly showing how this treaty connects to the frameworks.

Line 246: Just a comment, giving a river the legal personhood status is the way to go.

I celebrate; this!

Line 382-383: Could Fig. 3 be referenced there?

Line 386: What is Maori phenomena?

Line 426: How can conclusions be supported by both streams when one of the streams may lack the tools or paradigms of the other? What does it mean that both streams have to support findings? This is not clear to me.

Line 429: States that the method allows western science to stay true to the scientific method. Is this different from the other two? What do you mean when you say that there is no “hindrance” in using the scientific method for the other two?

Figure 4: This figure needs more explanation. For example, Whatwhat do the turquoise lines represent? Are we trying to connect the baskets? Do the arrows end in a particular place for a particular reason? And what do the horizontal double head arrows represent? And why using weaved baskets to represent both knowledges (i.e., western and Maori)

Paragraph starting in 549 states that non-Maori researchers could include Maori values. This raises questions for me. This could lead to cultural misrepresentation or cultural appropriation of knowledge. How are westerners going to interpret the Maori values when they are not part of that culture? I suggest revising this idea, and changing the wording to make it a REQUIREMENT of having a Maori researcher on the project, instead of a desirable situation.

615: Talks about “flexible” research methods. I’m concerned that this could translate as making science less rigorous or lowering its quality. I know that’s not what is meant. I’d suggest changing ‘flexible’ to inclusive, adaptive or culturally responsive research methods.

Line 658: Besides adapting, or extrapolating, the Maori models to other parts of the globe, this article shows how researchers and indigenous peoples can develop frame-



works and models particular for their culture. I would add that as a contribution.

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