

## Te Tiriti-guided national DNA reference library wānanga series

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### Wānanga 1: End-use cases of reference databases

The following questions were submitted during our wānanga but due to time restrictions were only addressed in the chat. Some answers have been modified in the interest of clarity.

**To Dr Shaun Wilkinson: I assume you primarily use 16s and 18s amplicons, or do you want WGS databases?**

We generally run lots of different assays on each sample, including COI, CytB, 12S, 16S, 18S, trnL, rbcL, ITS2, etc, to pick up as many species as possible. We don't necessarily need WGS, but certainly those key mitochondrial/plastid and rRNA barcodes are very important. From my perspective, ideally we would progress from just doing one or two barcodes (e.g. COI) to longer barcodes that include multiple genetic markers (e.g. COI, CytB, 12S, 16S and D-loop as one 'megabarcode'). This would be really useful for eDNA, as well as other projects such as phylogenetics, species descriptions, etc.

**I'm representing the Moths and Butterflies of NZ Trust and we are trying to raise funds to research the DNA of our copper butterfly species. We are about to run a Givealittle page on Monday, 'Save our Butterflies', but is there any other funding we could apply for to cover the costs of a PhD student and the costs for the research required such as DNA testing, morphology, etc? It seems very difficult to find any funding to set projects up like this!**

It can be so hard to find funding for these projects since barcoding projects don't tend to end up in Nature or Science journals. There are no funding sources that immediately spring to mind, but hopefully some of the other participants can provide you with some leads. To all participants, please get in touch with the Moths and Butterflies of NZ Trust directly if you have an interest in this.

**Dr Julia Allwood mentioned that museum collections are important players in this work as museums hold well curated reference database material with reliable metadata. What support will be given to NZ museums to help build these reference databases? And how do you see them fitting into this work?**

Current reference barcoding projects tend to be small, limited to specific taxon groups, and not terribly well-funded, so most include little or no support for museum staff. A national reference library barcoding effort would certainly need to include meaningful support for museum collaborators.

**To Dr Anastasija Zaiko: In your description of sequences on Pest Alert you mentioned 'trustworthiness' of sequences. What are the metrics or requirements for a sequence to be considered trustworthy?**

Some of the criteria include whether the sequence is accompanied by comprehensive metadata information, whether information on the voucher specimen is available, and whether the reference was generated by a well-established laboratory/research team.

**To Dr Shane Sturrock: Curious to hear that we have over 500 species in Aotearoa that are CITES listed. Are any of these reported as trafficked around the world?**

A lot aren't specifically New Zealand but are present here, so trafficking is still controlled. Also, there are a lot of marine mammals included in that (not only/exclusively NZ located). Here's the cite with the list of CITES species. If you filter to appendix I, you'll see tuatara, various birds etc.  
[https://checklist.cites.org/#/en/search/country\\_ids%5B%5D=179&output\\_layout=alphabetical&level\\_of\\_listing=0&show\\_synonyms=1&show\\_author=1&show\\_english=1&show\\_spanish=1&show\\_french=1&scientific\\_name=&page=1&per\\_page=20](https://checklist.cites.org/#/en/search/country_ids%5B%5D=179&output_layout=alphabetical&level_of_listing=0&show_synonyms=1&show_author=1&show_english=1&show_spanish=1&show_french=1&scientific_name=&page=1&per_page=20)

**Is there any reading you would recommend ahead of next month's wānanga on 'Māori perspectives on the uses of DNA data'?**

Thanks to Holden Hohaia, Associate Professor Phil Wilcox, and Dr Alana Alexander for the following suggestions:

- [Te Tiriti of Waitangi, particularly Article 2](#): this booklet from Network Waitangi covers many commonly asked questions, including the key differences between the Māori and English versions of Te Tiriti of Waitangi and the implications of this.
- [A values-based process for cross-cultural dialogue between scientists and Māori](#)
- [Te Mata Ira: Guidelines for Genomic Research with Māori](#)
- [Ngā Tikanga Paihere: a framework guiding ethical and culturally appropriate data use](#)
- [Te Nohonga Kaitiaki: Guidelines for Genomic Research on Taonga Species](#)