**Supplementary Materials - The Use of Māori Words in National Science Challenge Online Discourse**

**Table S.1.** National Science Challenges and their funding rounds

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| --- | --- | --- | --- |
| **Challenge** | 1st Period to 30/6/2019  ($ million) | 2nd Period  1/7/2019 to 30/6/2024  ($ million) | Total  ($ million) |
| **A Better Start**  To improve the potential of young New Zealanders to have a healthy and successful life | 14.2 | 20.5 | 34.7 |
| **Ageing Well**  To harness science to sustain health and wellbeing into the later years of life | 14.6 | 20.3 | 34.9 |
| **Building Better Homes, Towns, and Cities**  To improve the quality and supply of housing and create smart and attractive urban environments | 23.6 | 24.3 | 47.9 |
| **Healthier Lives**  To reduce the burden of major New Zealand health problems | 13.7 | 17.6 | 31.3 |
| **High-Value Nutrition**  To develop high-value foods with validated health benefits to drive economic growth | 30.6 | 53.2 | 83.8 |
| **New Zealand’s Biological Heritage**  To protect and manage New Zealand’s biodiversity, improve our biosecurity and enhance our resilience to harmful organisms | 25.8 | 37.9 | 63.7 |
| **Our Land and Water**  To enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations | 27.6 | 69.3 | 96.9 |
| **Resilience to Nature’s Challenges**  To enhance New Zealand’s resilience to natural disasters | 19.6 | 39.8 | 59.4 |
| **Science for Technological Innovation**  To enhance the capacity of New Zealand to use physical and engineering sciences for economic growth | 33.3 | 72.7 | 106 |
| **Sustainable Seas**  To enhance utilisation of our marine resources within environmental and biological constraints | 31.3 | 39.8 | 71.1 |
| **The Deep South**  To understand the role of the Antarctic and the Southern Ocean in determining our climate and our future environment | 24.0 | 27.1 | 51.1 |

(source: <https://www.mbie.govt.nz/assets/e7c91ccacc/science-board-decisions-on-second-period-funding-2018.pdf>)

Table S2. Data analysed and included in the National Science Challenge Corpus

|  |  |  |
| --- | --- | --- |
| **Challenge** | **Websites – number of words** | **Twitter Feed – number of words** |
| *Aging Well* | 97,333 | 6,842 |
| *A Better Start* | 95,564 | 1,036 |
| *Building Better Homes, Towns and Cities* | 17,551 | (no Twitter feed) |
| *Healthier Lives* | 36,992 | 3,213 |
| *High-Value Nutrition* | 196,453 | 3,081 |
| *New Zealand’s Biological Heritage* | 139,707 | 12,035 |
| *Our Land and Water* | 171,182 | 1,145 |
| *Resilience to Nature’s Challenges* | 239,052 | 1,952 |
| *Science for Technological Innovation* | 31,154 | 2,342 |
| *Sustainable Seas* | 273,263 | 5,496 |
| *The Deep South* | 137,735 | 8,237 |
| TOTAL | 1,501,994 | 4,5379 | 1,547,373 |

Normalising the frequency of the top 20 loanwords in the NSC corpus over 10,000 words gives the following distribution, see Figure S1.

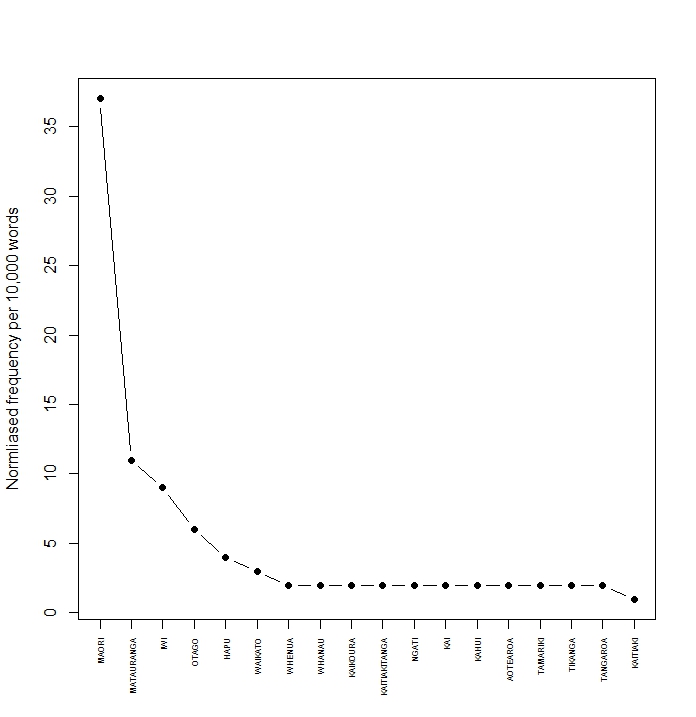


Figure S1. The 20 most frequent Māori loanwords in the entire NSC Corpus.

Table S3. Digital sources for the National Science Challenge Corpus

|  |  |  |
| --- | --- | --- |
| *Challenge* | *Twitter Handle* | *Website* |
| A Better Start | @abetterstartnz | https://www.abetterstart.nz/ |
| Ageing Well | @ageingwellnz | https://www.ageingwellchallenge.co.nz/ |
| Building Better Houses, Towns and Cities | none | http://www.buildingbetter.nz/ |
| Healthier Lives | @healthierNZ | https://healthierlives.co.nz/ |
| High-Value Nutrition | @HVNutrition\_NZ ‏ | https://www.highvaluenutrition.co.nz/ |
| New Zealand's Biological Heritage | @BioHeritage\_NZ | http://www.biologicalheritage.nz/ |
| Our Land and Water | @OurLandandWater | http://www.ourlandandwater.nz/ |
| Resilience to Nature's Challenges | @ResilienceNSC ‏ | https://resiliencechallenge.nz/ |
| Science for Technological Innovation | @sftichallenge ‏ | https://www.sftichallenge.govt.nz/ |
| Sustainable Seas | @Sust\_SeasNZ | https://sustainableseaschallenge.co.nz/ |
| The Deep South | @DeepSouth\_NZ | https://www.deepsouthchallenge.co.nz/ |

Table S4. List of loanwords which appear in the ten most frequent loans in each individual Challenge.

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| BETTER START | Frequency |
| MĀORI | 415 |
| TAMARIKI | 295 |
| REA | 201 |
| TIPU | 201 |
| WHĀNAU | 111 |
| MĀTAURANGA | 67 |
| TAMAITI | 66 |
| KĀHUI | 59 |
| OTAGO | 45 |
| IWI | 17 |

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| --- | --- |
| AGEING WELL | Frequency |
| MĀORI | 449 |
| OTAGO | 128 |
| MĀTAURANGA | 70 |
| KĀHUI | 61 |
| WHĀNAU | 49 |
| WAIKATO | 31 |
| KAUMĀTUA | 27 |
| HAUORA | 20 |
| AOTEAROA | 18 |
| HOKOWHITU | 17 |

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| --- | --- |
| BUILDING BETTER HOMES, TOWNS AND CITIES | Frequency |
| KĀINGA | 74 |
| MĀORI | 37 |
| RUA | 36 |
| TAHI | 30 |
| IWI | 22 |
| MAORI | 19 |
| KAINGA | 18 |
| TUATAHI | 16 |
| NGĀ | 12 |
| NGĀTI | 12 |

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| --- | --- |
| HEALTHIER LIVES | Frequency |
| MĀORI | 121 |
| WHĀNAU | 34 |
| TAHI | 25 |
| KŌRERO | 24 |
| HAUORA | 21 |
| MORENGA | 18 |
| ORANGA | 18 |
| MANA | 16 |
| PIKINGA | 16 |
| WAIKATO | 16 |

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| --- | --- |
| HIGH-VALUE NUTRITION | Frequency |
| KAI | 203 |
| WHAI | 203 |
| PAINGA | 201 |
| MĀORI | 186 |
| OTAGO | 122 |
| MĀTAURANGA | 71 |
| MAORI | 64 |
| KIWIFRUIT | 61 |
| MANUKA | 14 |
| KIWI | 13 |

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| --- | --- |
| NEW ZEALAND'S BIO HERITAGE | Frequency |
| MĀORI | 794 |
| MĀTAURANGA | 222 |
| KAURI | 173 |
| IWI | 152 |
| KĀHUI | 96 |
| TAONGA | 94 |
| HAPŪ | 55 |
| OTAGO | 47 |
| WHENUA | 45 |
| KAIHAUTŪ | 44 |

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| --- | --- |
| OUR LAND AND WATER | Frequency |
| MĀORI | 378 |
| WHENUA | 147 |
| MĀTAURANGA | 137 |
| IWI | 126 |
| MAURI | 106 |
| ORA | 105 |
| TAITOKERAU | 54 |
| KOROWAI | 34 |
| MAORI | 34 |
| WAIKATO | 33 |

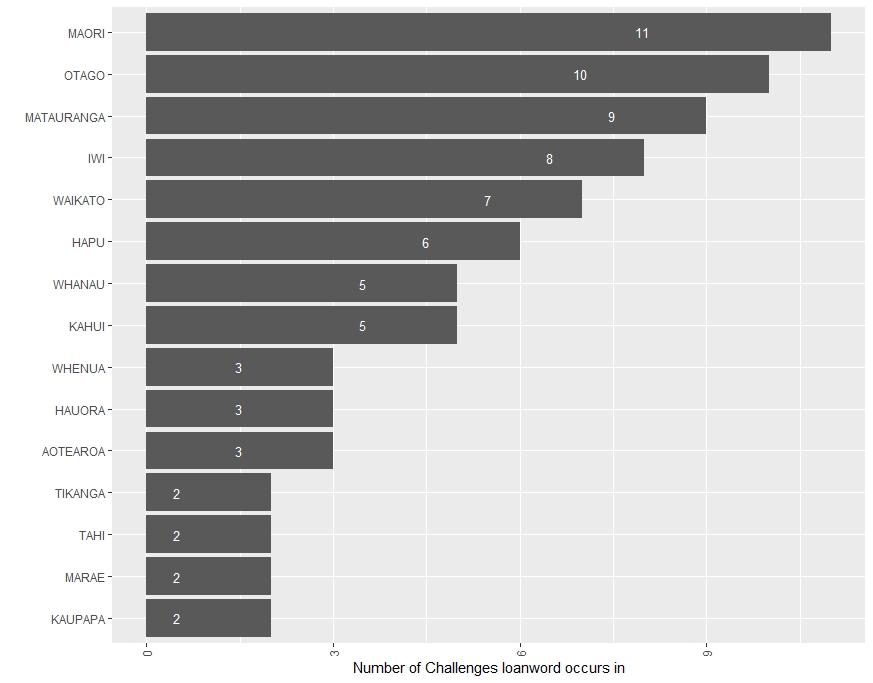
|  |  |
| --- | --- |
| RESILIENCE TO NATURE'S CHALLENGES | Frequency |
| MĀORI | 522 |
| IWI | 319 |
| KAIKŌURA | 271 |
| MĀTAURANGA | 191 |
| OTAGO | 74 |
| TAURANGA | 61 |
| WHENUA | 59 |
| HAPŪ | 58 |
| KIWIRAIL | 56 |
| TIKANGA | 49 |

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| --- | --- |
| SCIENCE FOR TECHNOLOGICAL INNOVATION | Frequency |
| MĀORI | 180 |
| MĀTAURANGA | 80 |
| WAIKATO | 21 |
| OTAGO | 19 |
| TAKA | 19 |
| KĀHUI | 18 |
| MAI | 18 |
| AO | 16 |
| NGĀTI | 14 |
| IWI | 12 |

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| --- | --- |
| SUSTAINABLE SEAS | Frequency |
| MĀORI | 1805 |
| MĀTAURANGA | 603 |
| IWI | 576 |
| HAPŪ | 325 |
| KAITIAKITANGA | 260 |
| TANGAROA | 232 |
| KAITIAKI | 184 |
| MOANA | 175 |
| NGĀTI | 173 |
| WAIKATO | 150 |

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| --- | --- |
| DEEP SEAS | Frequency |
| MĀORI | 338 |
| MĀTAURANGA | 155 |
| AOTEAROA | 140 |
| IWI | 81 |
| OTAGO | 61 |
| HAPŪ | 49 |
| NGĀTI | 41 |
| MARAE | 37 |
| WAIKATO | 30 |
| WHĀNAU | 29 |

Figure S2. The occurrence of the ten most frequent loanwords within each Challenge



Figures S3.A and S3.B how concordance plots obtained from AntConc provide a visual representation of the occurrence of *Mātauranga* and *Matauranga*, respectively, within the websites of each Challenge, and also the spread of its use within each website. The text included in the plots comprises the introductory summary and goal content for each site, the main content, and any supplementary content, if available (in that order). The plots indicate that, with few exceptions, the loanword is spread throughout the websites of each Challenge and unlike the funding application template generally asks for, its use is not confined to a particular section (or sub-section) of the overall document.

Note that the overall frequency counts are not directly comparable across Challenges because they are not normalized across the same number of total words used (for example, *Building Better Homes, Towns and Cities* has a website with the lowest frequency of the loanword *Mātauranga,* but alsothe smallest total number of words used overall).

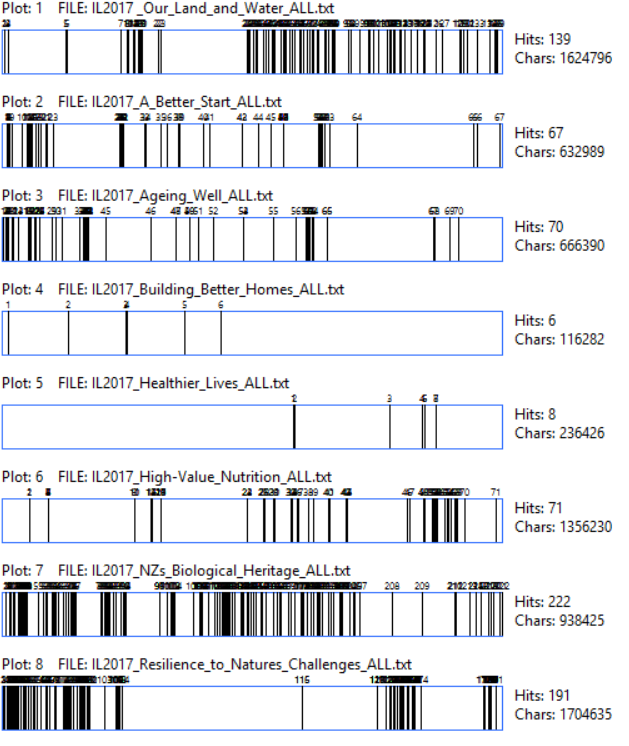
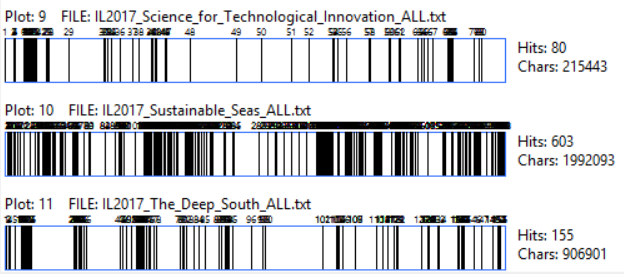


Figure S3.A The spread of *Mātauranga* within the text of each website of each Challenge

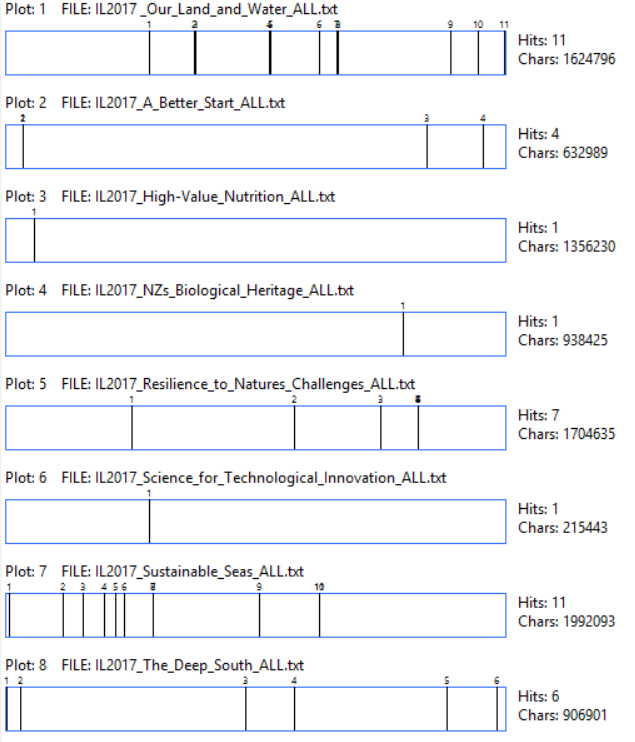


Figure S3.B The spread of *Matauranga* within the text of each website of each Challenge