

He Karapitipitinga Mariko Tourism between worlds



Immersive Regenerative Tourism Experiences in Aotearoa

Tourism Policy School, University of Otago, Queenstown 27/03/26

James Higham

Griffith Institute for Tourism, Griffith University
University of Otago



He Karapitipitinga Mariko

- ▶ MBIE Endeavour Programme (2024-2028)
- ▶ Tourism between worlds:
 - Tourism between the physical and virtual worlds
- ▶ Explores opportunities to apply extended reality technologies to immersive visitor experiences in Aotearoa
 - ▶ Experiences that are aligned with regenerative ambitions and outcomes that are defined by local tourism and community stakeholders

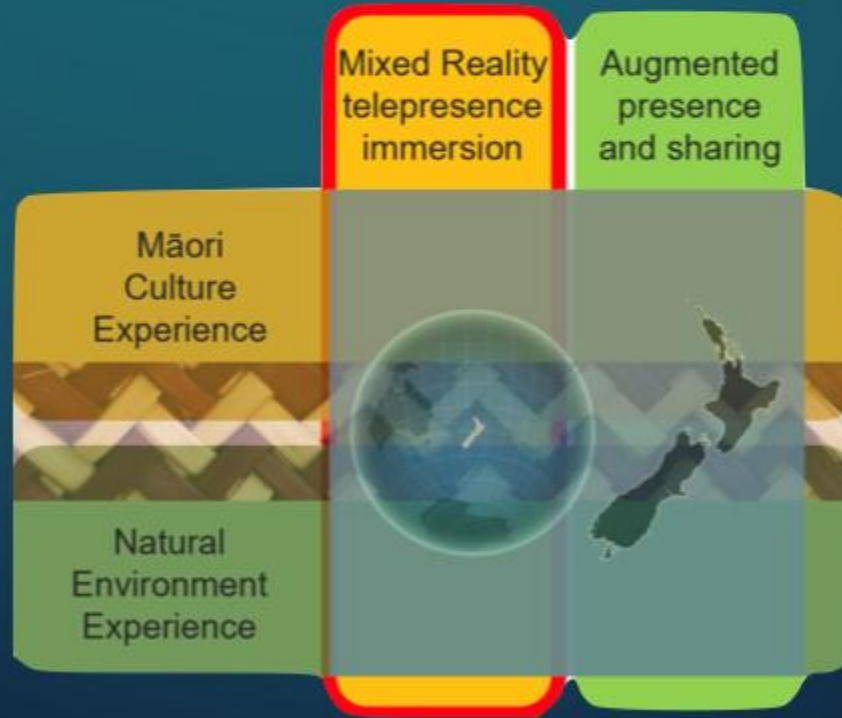
He Karapitipitinga Mariko research overview

Theme 3:
Telepresence Experience
Holger Regenbrecht

Theme 4:
On-site Experience
Stephan Lukosch

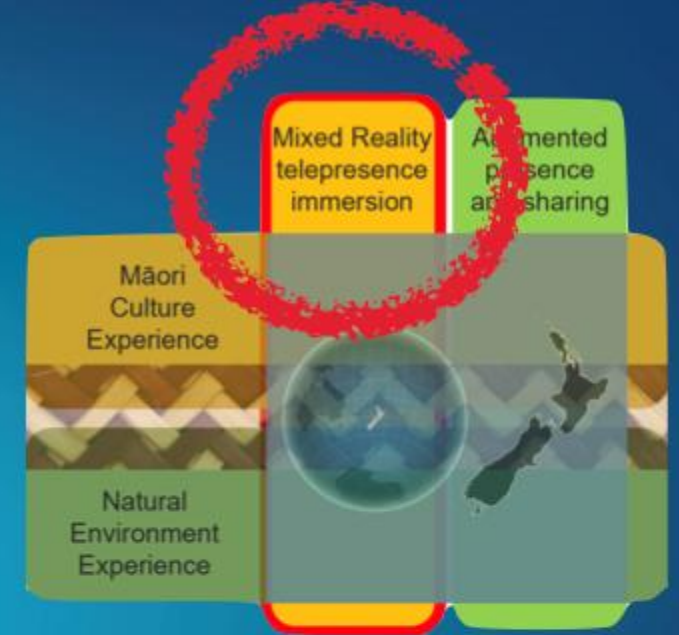
Theme 2: Māori Experience
Hēmi Whaanga

Theme 1: Tourism Experience
James Higham



Theme 3

- ▶ Focus is on Tele-Co-Presence
- ▶ i.e. delivering a meaningful “being there” tourism experience without physical travel



Theme 3: State of Progress

▶ Technology Demonstrators (Probes)





Virtual Birder Tourism

Immersive 360 video and audio experience of nature scene for shared bird watching



Watching and identifying birds is a pastime experience for many. Birders often go to remote places and do so together. We are exploring the possibility to allow birders to do this virtually, i.e. to stay at home (for whatever reason) and to meet with other people in a remote natural environment—pre-recorded or live.

Our current prototypical system uses 360 video recordings and ambisonic (spatial) sound recordings and delivers a shared birder experience with head-mounted displays worn by the users. Each user is represented in the virtual environment in an abstract way, users experience the environment together, can talk to each other and are able to gesture and point.

Which elements form a sense of social and co-presence amongst users? Is this a meaningful scenario for a future form of tourism? Which 3D interaction experiences are appropriate?

This prototypical demonstration system is continuously researched and developed as part of the He Karapitipitinga Mariko project to explore immersive regenerative tourism experiences in Aotearoa New Zealand.

For more information visit: <https://karapitipitinga.org/>

Contacts and Feedback:

Principal Researchers: Claudia Ott <claudia.ott@otago.ac.nz>

Kerian Varaine <kerian.varaine@otago.ac.nz>

Programme Manager: Jackie Rees <jackie.rees@otago.ac.nz>

Principal Investigator: Prof Holger Regenbrecht <holger.Regenbrecht@otago.ac.nz>



Funded by:

University of Otago Research Grants
Pūtea Rangahau mā Ōtākou Whakaitiū
Waka



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI



Funded by:

University of Otago Research Grants
Pūtea Rangahau mā Ōtākou Whakaitiū
Waka



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI



Live 360° Video Streaming

Enabling immersive experiences in real time

Video streaming platforms are increasingly popular with millions of viewers logging in daily to watch live events, music broadcasts, and travel vlogs.

The increasing portability and popularity of 360° cameras means that these experiences could be delivered more immersively, allowing viewers to look or even walk around the streamed environment.

How could real-time immersive experiences be designed to support tourists and tourism providers?



This experience demonstrates how immersive 360° video could be livestreamed from anywhere using portable, lightweight, and cost-effective equipment.

The video you see is being streamed from a small camera nearby – all that is needed is a 360° camera, a pocket-sized computer, and a portable power bank. This portability, combined with mobile or satellite networks, means these streams could originate from anywhere.

What new types of experiences are made possible with real-time immersive video streaming?



This prototypical demonstration system is continuously researched and developed as part of the He Karapitipitinga Mariko project to explore immersive regenerative tourism experiences in Aotearoa New Zealand.

For more information visit: <https://karapitipitinga.org/>

Contacts and Feedback:

Principal Researcher: Jacob Young <jacob.young@otago.ac.nz>

Programme Manager: Jackie Rees <jackie.rees@otago.ac.nz>

Principal Investigator: Prof Holger Regenbrecht

<holger.Regenbrecht@otago.ac.nz>

<holger.Regenbrecht@otago.ac.nz>

Principal Investigator: Prof Holger Regenbrecht

Programme Manager: Jackie Rees <jackie.rees@otago.ac.nz>

Principal Researcher: Jacob Young <jacob.young@otago.ac.nz>

Contacts and Feedback:



The Virtual Wharerau

Immersive virtual reality experience of the 3D reconstruction of the whareniui at Te Rau Aroha, Motupōhue



Te Rau Aroha is one of the most beautiful marae in te motu. It was designed by Cliff Whiting together with the local community. As part of the past Ātea Presence project we built an immersive virtual experience of this place to allow people not physically present in Bluff / Motupōhue to experience this amazing building. From thousands of photographs taken on site we three-dimensionally reconstructed the whare and brought this reconstruction in a 1:1 scale to a head-mounted display. We now use this as a technology probe to initiate dialogue.

What visual, acoustic, or other elements contribute to a sense of virtually being there? What elements lead to cultural presence? Can such an experience be used for authentic and meaningful forms of tourism. How are we normally welcomed to or greeted by a place of such significance? What tikanga should be followed? What tikanga needs to be developed?



This prototypical demonstration system was developed as part of the NSC SftI Ātea Presence project and is continuously researched and developed as part of the He Karapitipitinga Mariko project to explore immersive regenerative tourism experiences in Aotearoa New Zealand.

For more information visit: <https://karapitipitinga.org/>

Contacts and Feedback:

Programme Manager: Jackie Rees <jackie.rees@otago.ac.nz>

Principal Investigator: Prof Holger Regenbrecht

<holger.Regenbrecht@otago.ac.nz>

<holger.Regenbrecht@otago.ac.nz>

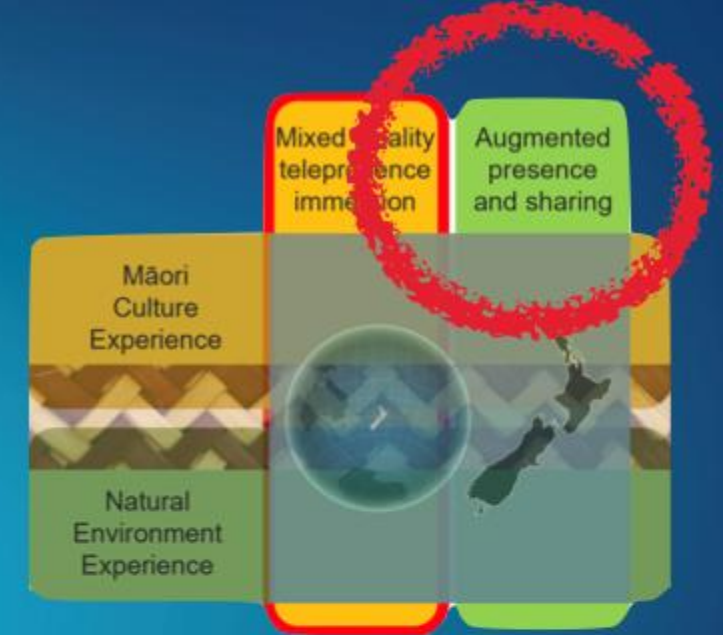
Principal Investigator: Prof Holger Regenbrecht

Programme Manager: Jackie Rees <jackie.rees@otago.ac.nz>

Contacts and Feedback:

Theme 4

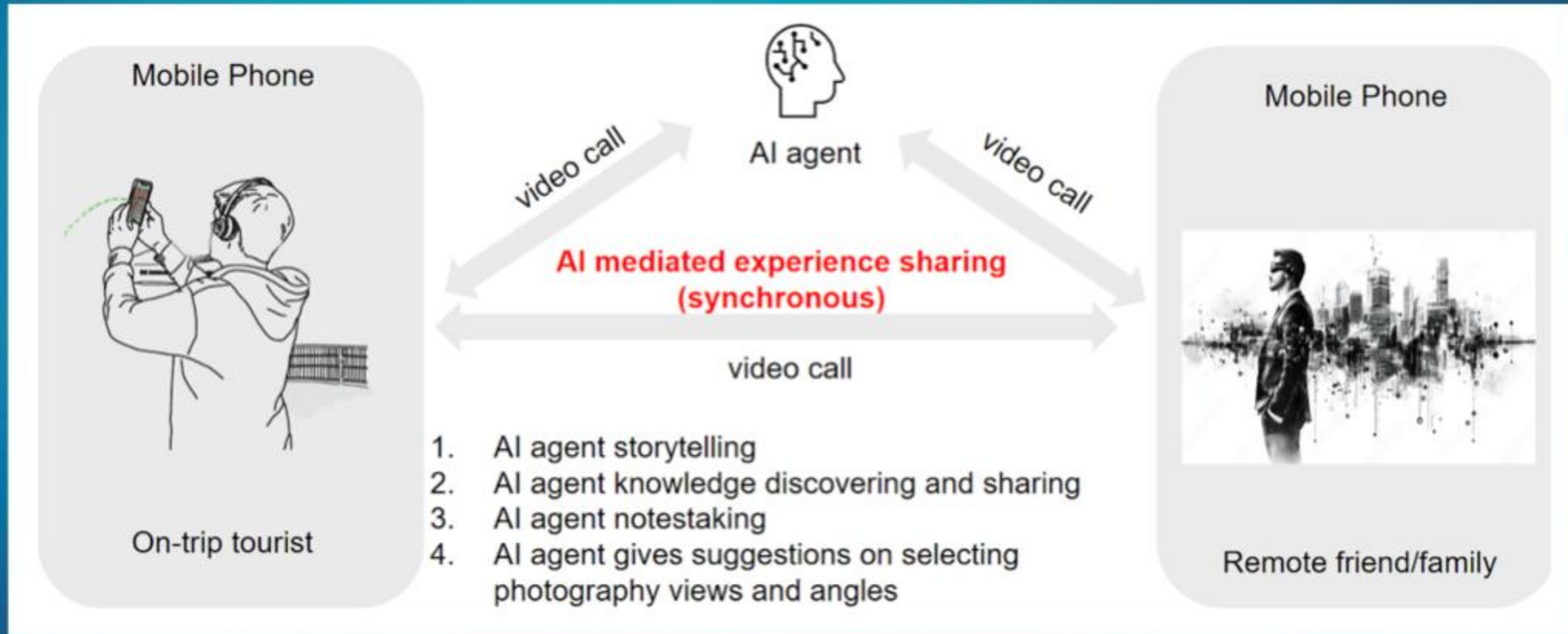
- ▶ Focus is on augmenting the on-site tourism experience
- ▶ i.e. delivering authentic augmented reality, shareable experiences for visitors



Theme 4: Current Work



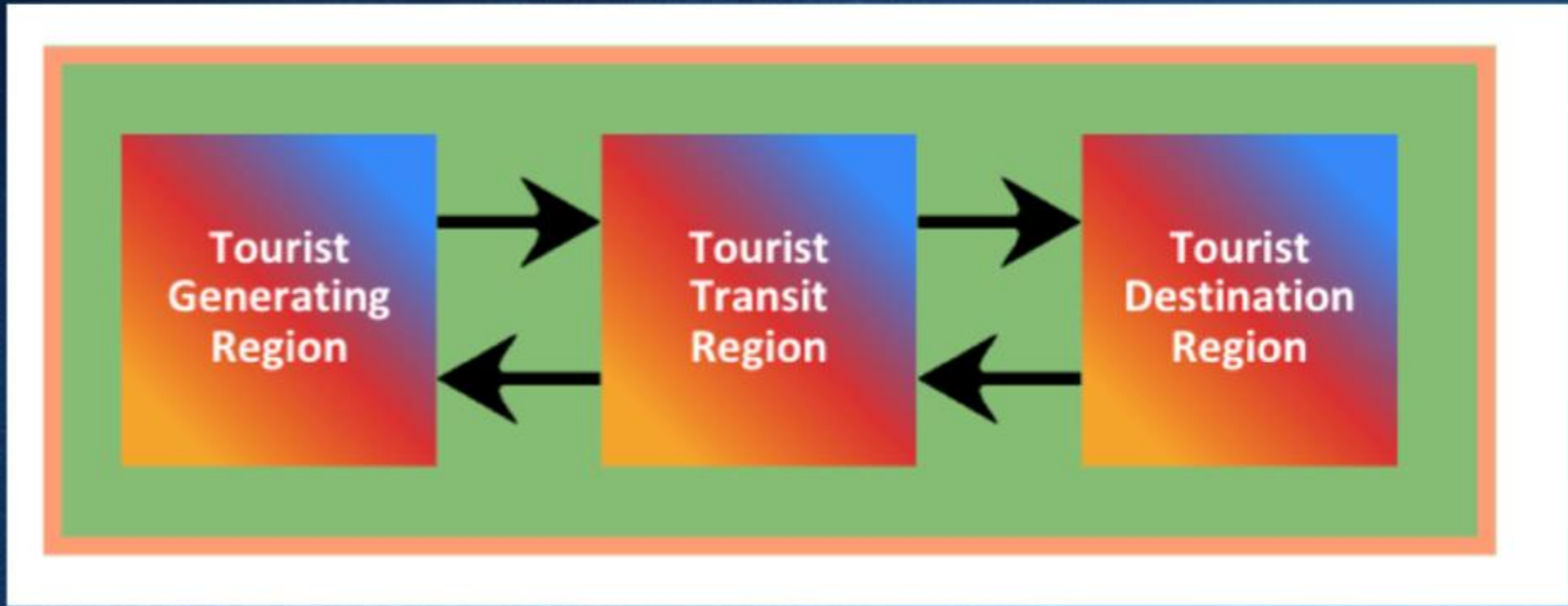
Theme 4: Current Work



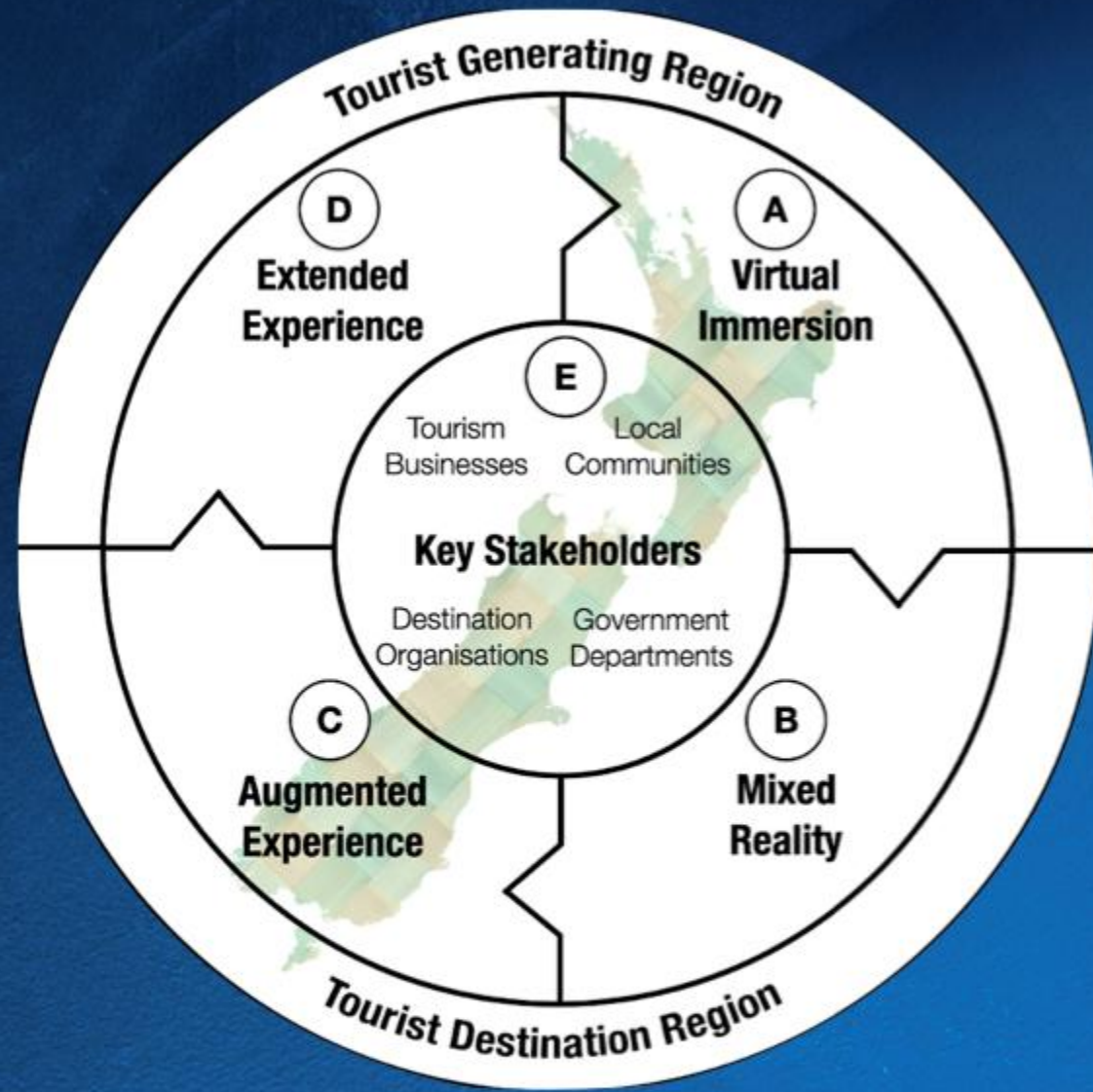
On-trip tourist

4. AI agent gives suggestions on selecting photography views and angles
3. AI agent notetaking

Remote friend/family



The global tourism system (Leiper, 1990)



He Karapitipitinga Mariko: Tourism between worlds



Actual tourists

Physically present (pre-travel to destination)

- Insights into environment, society
- Engagement with local culture/tikanga

Latent tourists

Not physically present (ex-situ); intend to visit later

- Pre-travel (shared) virtual visits
- Insights into environment, society
- Engagement with local culture/tikanga

Virtual tourists

Not physically present (ex-situ); no future intentions

- Shared/guided virtual immersion experiences
- Low carbon experiences (e.g., flight shame)
- Accessible experiences (e.g., elderly)

He Karapitipitinga Mariko: Tourism between worlds



Actual tourists

Physically present (in-situ)

- In-situ at time of experience production
- Enhanced mixed reality experiences
- Virtual access to sacred places under closure
- Virtual experiences of inaccessible locations

Latent tourists

-Shared experiences with remote family or friends

Virtual tourists

-Shared experiences with in-situ family or friends

He Karapitipitinga Mariko: Tourism between worlds

- Actual tourists**
 - AR experiences of changing environments over time
 - AR experiences of historical periods/events
- Latent tourists**
 - Shared AR experiences via mobile technologies
- Virtual tourists**
 - Temporal extension of visitor experiences to provide insights into environmental change over time



He Karapitipitinga Mariko: Tourism between worlds

- Actual tourists**
 - Relive in person experiences
 - Continued engagement with cultural or natural environments
 - Continued engagement with restoration programmes
 - Share extended experiences online via social media
- Latent tourists**
 - Continued engagement following subsequent visit
- Virtual tourists**
 - Continued engagement despite never physically visiting



He Karapitipitinga Mariko: Tourism between worlds

Systemic issues – 20th century tourism

- ▶ Vulnerable to exogenous threats (e.g., COVID-19)
- ▶ Workforce issues (low skill, seasonal, vulnerable, loss of workforce)
- ▶ Low value tourism (declining length of stay)
- ▶ High carbon emissions; vulnerable to flight shame
- ▶ Chronic congestion at popular destinations; crowding at iconic sites
- ▶ Spatial and temporal concentration (lack of regional/seasonal dispersal)
- ▶ Loss of social license
- ▶ High environmental impacts (e.g., Kauri dieback)
- ▶ Accelerating environmental change (e.g., Glacier retreat)
- ▶ Limited scope for meaningful environmental and cultural engagement
- ▶ Ability to exercise kaitiakitanga and manaakitanga
- ▶ Changing visitor demands and expectations - search for deeper engagement


New Zealand has no shortage of knowledge

- ▶ The real problem: evidence without action



If the evidence already **exists** ...

Minister shuts down Tourism Taskforce after releasing 'bold' draft report



A hastily written tourism report proposes bold new regulation of the sector but has been cut short from achieving its goals by the Tourism Minister.

Government's Marsden Fund cuts: All humanities, social sciences research funding slashed

9:08 pm on 4 December 2024

Protests erupted, announced @protests.greens@nz.co.nz
Mary Argen, NZ Green @maryargen@nz.co.nz

NZ's plan to 'welcome anyone, from anywhere, anytime' is not a sustainable tourism policy



Underpinning tourism growth into another post-pandemic period will be the need to attract more visitors. Photo: Peter Hunt / iStock

Government makes another investment into tourism marketing

NZ Herald
9 Jul 2023 11:30 PM



NZ Herald Live: Christopher Luxon and Louise Upston make tourism announcement

The Government is pumping another \$13.5 million into international tourism marketing, with the expectation it brings an extra 72,000 visitors to New Zealand.

Prime Minister Christopher Luxon and Tourism Minister Louise Upston are expected to talk to media about the announcement at a 3.30pm press conference at Auckland International...

Department of Conservation proposes 130 job cuts


14:44 pm on 10 April 2024

Department of Conservation set to lose scientific expertise in job cuts

10:02 pm on 11 April 2024

Kate Green, NZ Green @kategreen@nz.co.nz

... why are policy recommendations **ignored**, advisory groups **dissolved**, strategy documents **discarded**, social science funding **cut**, IVL funding **diverted**?



CHECKING IN – MY REGULAR PODCAST

jameshigham.com



PODCAST EPISODE

A NATIONAL TOURISM DEVELOPMENT AGENCY

BY JAMES HIGHAM · 22 JULY 2025

REGENERATIVE TOURISM

—
SYSTEMS.
TECHNOLOGY.
EXPERIENCES.

—
INSIGHTS FROM
AOTEAROA NEW ZEALAND

—
JAMES HIGHAM & YI BIAN
GRIFFITH UNIVERSITY, BRISBANE, AUSTRALIA

MARCH 2026



THANK YOU AND QUESTIONS

PROFESSOR JAMES HIGHAM
j.higham@griffith.edu.au

YI BIAN
yi.bian@griffithuni.edu.au

DOWNLOAD YOUR
COPY NOW



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI



Immersive Regenerative
Tourism Experiences
in Aotearoa



Queensland, Australia



University
of Otago
ŌTĀKOU WHAKAIHU WAKA