Recreation Aotearoa
Te Whai Oranga

AI and recreation

Artificial Intelligence is embedded in our personal and professional lives. It has value as a source of information, safety and insights.

But, it is also an omnipresent observer that can reinforce cultural stereotypes, and generate inappropriate information.

Why AI

AI are rational systems that assess situations, consider available actions, and select the best options for achieving objectives. They use a combination of techniques including pattern recognition, planning, optimisation, game theory, and other algorithms.

We are all using AI tools in our daily lives.

- **Personal tech –** Alexa, cameras, watches, photo modification, google maps, social media feeds.
- **Crowd sourcing** used on aggregator sites with reviews and recommendations.
- **Social media** – information sharing, networking.

Benefits vs risks

There are identified risks with AI, which include confirmation bias within algorithms and the accuracy and traceability of sources. As well, there is the potential to dilute original creative sources, and impact on creative authenticity.

How can AI help?

AI is a **rich data source**, providing biofeedback, health/ill-health detection, improved comprehension and assisting with forecasting, understanding, translation, simplification, precis. It has also increased our access to knowledge, places and transport.

Personally we may use AI for such things as managing breaks, tracking our health data, exercise, and time management. We can also use it for information management and stay up to date with professional reading via its ability to summarise.

AI is also a great source for **generating** ideas, starting points, content, images using tools such as ChatGPT, Claude, Bard, DeepAI. These produce information, structure documents, generate creative ideas, and write code in response to questions and tasks.

Figure 1 Remote sensing scientist Ben Jolly sets up a RPAS 'drone' for a remote-sensing operation in Palmerston North. Source: Landcare research

AI offers our **teams** communication tools, provides copy for social media posts, can identify market segments, and can generate tailored comms (personalisation). **Chatbots** answer our FAQs and customer questions – although not without some issues, where an organisation was found liable for a chatbot's bad advice.

As **planners and providers** AI can track usage and users, helping with market analysis, and targeted communication. It can source preliminary information and reduce administration.

Needs analysis tools are available. Statistics New Zealand's tool Aria helps managing concepts, classifications, concordances, and related information – and makes their data and website more accessible! ActiveXchange's platform – Sportseye combines demographics and participation data to forecast demand.

Tools for Mapping include monitoring utilisation and occupancy of open space and facilities. Bellwether counts people and movement patterns.

Asset management tools assist with grounds management enhancing biodiversity and optimisation of use. Sygenta includes tools which help with biodiversity mapping in environmental assessments.

We use AI to enhance **safety**[1] by anticipating danger and/or providing alerts.

- Smart watches for epilepsy, falls, heart rate etc.
- Detection systems for broken glass (see Case Study).
- Camera tracking for drowning prevention.
- Virtual reality for creating real-life scenarios in **training.**
- Help with search and rescue (eg satellite links & tracking, planning).
- Analysis of real-time data like weather conditions, providing accurate, up-to-date information.

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Case Study 1: Drowning prevention

American Red Cross uses the Lifeguard VR virtual scanning Simulator which enables trainers to offer real-life scenarios set in a realistic pool environment for lifeguards to analyse.

Some Australian aquatics centres are using a pool analytics detection software (Lynxsite) or an intelligent detection system (Swimeye). Bluefit National operations manager commented "It doesn't remove the risk and does come with limitations; however, it's allowed us to consider different lifeguard levels and vary site supervision plans". [He] noted that lifeguards were younger and more fatigued and this summer had seen a high level of 'near misses and rescues' which the technology would help to alleviate. The current costs are high but will reduce as these technologies become more mainstream.

Aquatics have used AI for some time in the maintenance area for auto dose analysing and water testing, freeing up lifeguard time for other duties.

Figure 2 VR lifeguard training, McQuarie university

Case Study 2: WCC Mapping

Strategic planning manager at Wellington City Council Sean Audain discovered a concept called a "digital twin" - a virtual replica of a city that mirrors the physical reality. It's a bit like being in a 3D videogame that's being fed with real-time information.

In Wellington's Cuba Street Audain's team installed a microphone near the playground which is connected to a computer. Trained it to identify the sound of breaking glass, it automatically triggers a message to Council's contact centre for someone to sweep it up the broken glass.

Another layer of visual data represents where the disabled community has reported poor accessibility.

Listening systems at Zealandia help with bird counts: "The software learned the sound of [the birds'] voices, and began to listen for those calls in the bush. It classified the sounds into seven different species, Audain said.

For more information read Mirror city: All the ways our city is listening.

Case Study 3: Remote sensing & GIS - monitoring change

The main objective of remote sensing is to map and monitor the earth's resources. Compared with traditional survey techniques, satellite remote sensing is accurate, fast and cost-effective.

Landcare Research/Manaaki Whenua used new remote-sensing methods in 2023 to update mapping of nine regions for the Land Use Map of New Zealand. This critical information for the Ministry for the Environment can accurately identify land- use changes over time for greenhouse gas reporting, to model the impacts of changing land use on water quality, and to inform land and water policy development.

Data collected via remote sensing[2,3] can include information on indigenous forest classes for biodiversity and pest control research; shrubland classes for use in weed control and to help with mapping mānuka and kānuka areas for the honey industry; indigenous grasses for biodiversity management; woody vegetation for pest control and soil conservation; pasture productivity for agricultural management; bare ground for soil erosion monitoring; and wetlands for biodiversity management.

Insights into Action

Principle	Action
Embrace the possibilities	Use AI to simplify tasks through aggregation, analysis, pattern recognition. Better questions, instructions and parameters drive out better responses. Use AI for personal, professional and community benefit
Imagine the future	Use AI to collect, analyse and extrapolate data to generate scenarios and inform planning.
Beware the pitfalls	Check sources for their trustworthiness and authenticity. Honour data ownership – data is taonga. Take care when using data about people – staff, customers, the community – and use with discretion.
Think critically	Bring intelligence and critical thinking to both content generation and review. Engage your heart and your mind.

References

1 Examining the feasibility and utility of big data and Artificial Intelligence (AI) for drowning risk reduction/drowning risk forecasting in Aotearoa, New Zealand [conference abstract #282]
2 Remote Sensing and GIS Applications in Sustainability. 10.1002/9781119434016.ch28.
3 Information about Remote sensing and satellite technology for environmental monitoring.