

Emergency Management Capacity Building: New Zealand Experience

Raj Prasanna
Joint Centre for Disaster Research
Massey University, NZ



Joint Centre for Disaster Research (JCDR)

- The Centre is a joint venture between Massey University and GNS Science, is located within the School of Psychology and is based at the Wellington Campus of Massey University.
- The centre undertakes multi-disciplinary research and teaching aimed at:
 - Gaining a better understanding of the impacts of natural, man-made, and environmental disasters on communities



New Zealand (*Aotearoa*)

- Located in the Southwestern Pacific Ocean
- Situated some 1,500 kilometres east of Australia across the Tasman Sea and roughly 1,000 kilometres south of the Pacific Islands
- Comprises two main islands (North & South)
- Population 4.5M
- Nearly one third of its population is in and around Auckland Region



Hazards and Risks

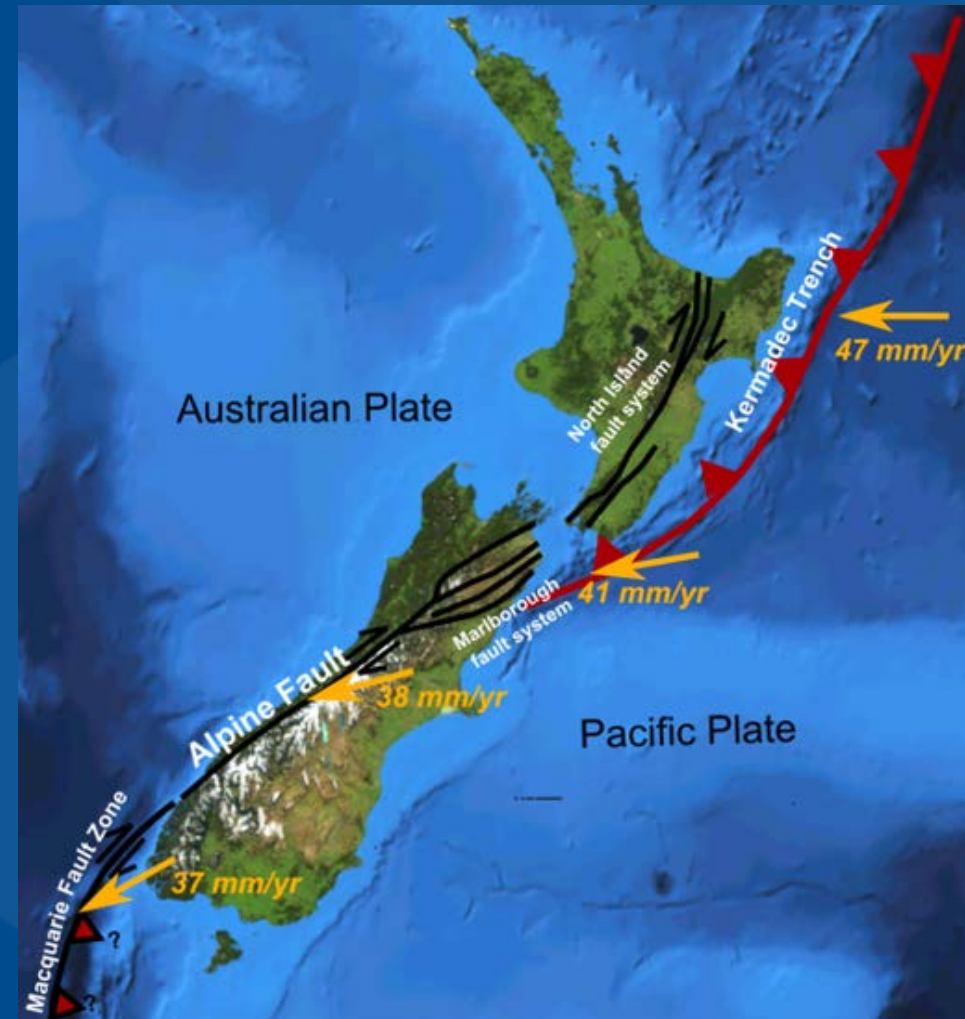


NATIONAL Hazardscape REPORT



Hazards and Risks

- New Zealand lies across the boundary of the **Australian and Pacific tectonic plates**
- To the east of the North Island, the Pacific Plate is being subducted under (pushed under) the Australian Plate
- To the southwest of the South Island the opposite is happening — the Australian Plate is being subducted under the Pacific Plate
- These two subduction zones are connected by the Alpine Fault and several smaller faults that run through the South Island.





- Volcanoes, fed by melting of the subducted Pacific Plate, rise in the centre, north, and west of the North Island
- New Zealand's active volcanoes include the Auckland Volcanic Field, the caldera volcanoes of Taupo and Okataina, and the active cones of Taranaki, Ruapehu, Tongariro, Ngauruhoe
- Particular attention is paid to the frequently active volcanoes (Ruapehu, Tongariro-Ngauruhoe and White Island)

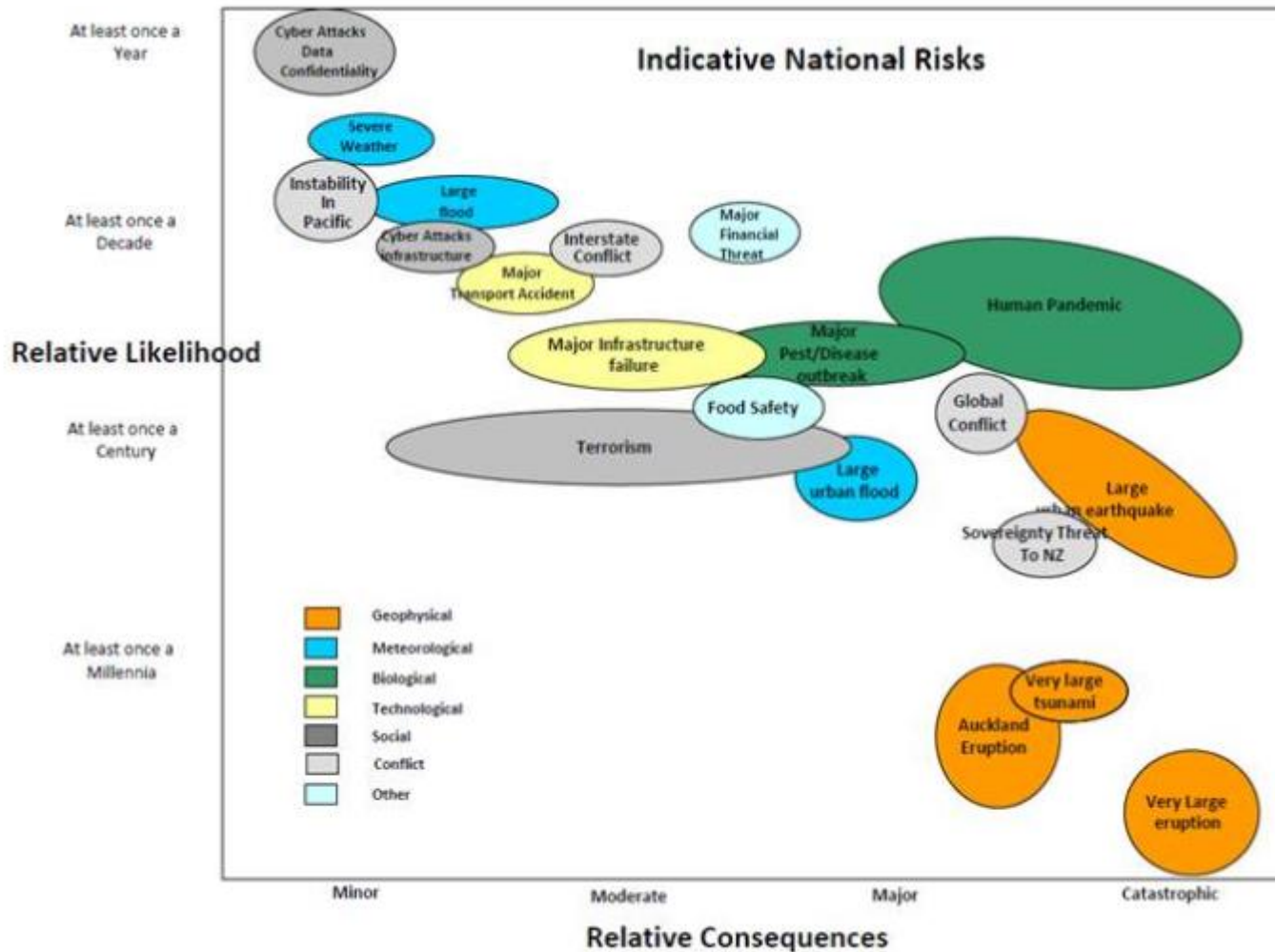


Hazard Profile of NZ

- Earthquakes
- Volcanoes
- Landslides
- Tsunamis
- Coastal hazards
- Floods
- Severe wind
- Snow
- Droughts
- Wildfires
- Animal + plant diseases
- Human disease pandemics
- Infrastructure failures
- Major transport accidents
- Terrorism
- Food safety



New Zealand's National Security Risks



Emergency Management in NZ

- Formal emergency management in New Zealand has been in development since at least the response to the Napier earthquake in 1931.
- The term "Civil Defence" came into common usage in the 1950s, as nations across the globe, including New Zealand, prepared for potential responses to the fear of nuclear war.



Emergency Management in NZ

From: Generic, natural, all-hazards

To: Hazards and risk-based

From: Response focus

To: Comprehensive risk management

Continuity of operations and resilience

From: Top-down, command and control response

To: Community empowerment and coordination



Emergency Management in NZ

- 2002 Civil Defence and Emergency Management (CDEM) Act replaced previous Civil Defence Act 1983 which is response driven and based on natural hazards



CDEM Act 2002

- The New Zealand integrated approach to CDEM can be described by the four areas of activity, known as the 4Rs

The 4Rs – New Zealand’s integrated approach to CDEM

Reduction

Identifying and analysing long-term risks to human life and property from hazards; taking steps to eliminate these risks if practicable, and, if not, reducing the magnitude of their impact and the likelihood of their occurring.

Readiness

Developing operational systems and capabilities before a civil defence emergency happens; including self-help and response programmes for the general public, and specific programmes for emergency services, lifeline utilities and other agencies.

Response

Actions taken immediately before, during or directly after a civil defence emergency to save lives and protect property, and to help communities recover.

Recovery

The coordinated efforts and processes to bring about the immediate, medium-term and long-term holistic regeneration of a community following a civil defence emergency.

The National Civil Defence Emergency Management Strategy



The National Civil Defence Emergency Management Strategy

- The Strategy sits within the wider emergency management framework
- It has a vision: ***Resilient New Zealand: communities understanding and managing their hazards.***
- It also sets out principles and national level goals and objectives.
- Collectively, these define what New Zealanders want to achieve through CDEM arrangements.



Strategic Principles

- The Strategy confirms five principles :
 - Individual and community responsibility and self - reliance
 - A transparent and systematic approach to managing the risks from hazards
 - Comprehensive and integrated hazard risk management
 - Addressing the consequences of hazards
 - Making the best use of information, expertise and structures.



Strategic Goals

- The Strategy's vision is based on four goals reflecting the 4Rs and the provisions of the Act
 1. Increasing community awareness, understanding, preparedness and participation
 2. Reducing the risks from hazards
 3. Enhancing capability to manage emergencies
 4. Enhancing capability to recover



Emergency Management Tertiary Education in NZ

AUT



THE UNIVERSITY OF
AUCKLAND
NEW ZEALAND

UC 
UNIVERSITY OF
CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND



MASSEY
UNIVERSITY



JCDR Contribution towards Education



Emergency Management Education Programme

- Professional Development
- Introductory + Undergraduate
- Graduate Certificate
- Graduate Diploma
- Postgraduate Diploma
- Masters
- PhD



Key Internal Links

- GNS Science – JCDR Partner
- Social Sciences
- Resource and Environmental Studies
- Development Studies
- Centre for Defence + Security Studies
- Communications – Public Relations
- Public Policy
- Professional + Continuing Education
- School of Design
- ...



Key External Links



- Ministry of CDEM - DPMC
- Wellington Regional Emergency Management Office (WREMO)
 - International Centre of Excellence – Community Resilience
- Ministry of Health, Ministry of Foreign Affairs + Trade (MFA/T)
- Ministry of Building Innovation and Employment (MBIE)
- EQC
- Red Cross NZ
- “NZ Natural Hazards Inc”
- University of Canterbury
- Auckland University of Technology (AUT)
- USC Long Beach, California
- Asia Disaster Preparedness Centre ...



Professional Development



- Open2Study
 - Free on-line “MOOC”
 - On Comprehensive Emergency Management
 - Attracted nearly 23,000 students since 2014
 - 20% completion rate

Open & Free Learning Emergency Management MOOC

OPEN 2 STUDY

What are you curious about?

Don't have an account? [Register now](#) [Sign In](#)

HOME FREE COURSES ACCREDITED COURSES EDUCATORS HOW IT WORKS FORUM MY STUDY CENTRE

Emergency Management (EMG)

by *Jon Mitchell*

[Like](#) [Share](#) [in Share](#) [Tweet](#)

★★★★★ (1547 student reviews)

Learn the concepts, principles and practice of Emergency Management through real-world case studies

Course started on: 17/10/2016
Course ends on: 15/11/2016

22,381 students have taken this course
77,073 videos have been watched
8,102 classroom posts

[Enrol & Start now](#) ...It's free!

RISKS

Risk Understanding
Risk Reduction
Readiness
Response
Recovery

0:44 / 2:05



CDEM Controller Development Programme

- The CDEM Controllers' Development Programme was created in 2014 to meet capability development needs of controllers
- Pre-Course Development Phase 1
 - 3-4 hours per week online learning over 6 weeks.
- Residential Phase 2
 - 5-days x 8 hours minimum.
- Ongoing Development Phase 3
 - 12 – 18 months (5 hours per month) mentor and peer supported cohort development phase.

CDEM CONTROLLERS' DEVELOPMENT PROGRAMME MINISTRY OF CIVIL DEFENCE & EMERGENCY MANAGEMENT

LEADERSHIP IN COMPREHENSIVE EMERGENCY MANAGEMENT FOR
CURRENT AND POTENTIAL CONTROLLERS

The Controllers' Development Programme is the only programme sanctioned by the MCDEM and upon completion you will be recognised as fully trained and experienced for the role of Controller.



RISK ASSESSMENT HANDBOOK



Train the Trainer

- Risk Assessment Train the Trainer Program in Myanmar and Laos
- Risk Assessment Handbook



EMERGENCY MANAGEMENT Summer Institute

Massey University Campus,
Wellington, New Zealand
13 - 17 March, 2017



Rockfalls near Redcliffs School, Christchurch, initiated by the 22 February 2011 earthquake and subsequent aftershocks.
Photo: GNS Science



Emergency Management Summer Institute

JOINT CENTRE FOR DISASTER RESEARCH

The Joint Centre for Disaster Research opened in December 2006 and is a joint venture between GNS Science and Massey University, based within the School of Psychology. In 2016 NIWA became a collaborating partner. It is located at the Massey University campus in Wellington.

The centre undertakes multi-disciplinary applied teaching and research aimed at:

- gaining a better understanding of the impacts of natural, man-made, and environmental disasters on communities;
- improving the way society manages risk;
- enhancing community preparedness, response and recovery from the consequences of natural, man-made and environmental hazard events.



Riccarton Road, Christchurch, after 4 September 2010 earthquake.
Photo: GNS Science

Who should attend ?

This course will help you better understand how your organisation can prepare for, respond to, and recover from a disaster.

Emergency managers and social and physical scientists form part of the multi-disciplinary team that explores relationships between the physical and social aspects of natural hazards and their management.

This course is designed for those involved in all aspects of emergency management: planners, educators, engineers, local and central government policy makers, insurance managers, researchers, emergency managers and utility and property owners.



Undergraduate and Graduate Programs

- Grad Cert
 - Entry
 - Level 7 NZQA
 - 60 credits
- Grad Diploma
 - Flagship program
 - Intermediate
 - Level 7 NZQA
 - 120 credits
- Proposed BA Minor in Emergency Management (2017)





Undergraduate and Graduate Programmes

- Intro to Emergency Management
- Incident Command Systems
- National Expedition in Emergency Management
- International Internship
- Disaster Risk Management



Postgraduate Diploma

- Post-Grad Diploma
 - Course work-based
 - Level 8 NZQA
 - 120 credits
 - 60 credits compulsory



Masters

- Masters in Emergency Management
 - Course work or research focused
 - Level 9 NZQA
 - 180 credit, 1.5 year



PhD

Doctor of Philosophy (Emergency Management)

- Hosted within Joint Centre for Disaster Research
- Broad range of topics available
- Supervised research
- Linked to key stakeholders
- Level 10 NZQA
- 480 credits



Research and Practice Led Education



CRISIS Lab

- **CR**isis **I**ntegrated **S**imulation **S**cience **L**aboratory
- Collaborative research platform consisting of core research partners supported by and supportive of academic, practitioner, policy, governance, community and private sector collaborators.
- Creates the opportunity for the creation of simulated disaster test bed environment in a laboratory setting
- Facilitates collaborating parties to share their existing knowledge and build capacity to create new knowledge for Disaster Management



CDDRL

- Co-Design Disaster Resilience Laboratory (CDDRL)
- University level initiative
- Combine socio technical research conducted by **JCDR** and **Institute of Design** for Industry and Environment to promote various innovative product designs to support disasters and emergencies



CDDRL



Co-Design Disaster Resilience Laboratory

Collaborative Product and Service Solutions
Developing Resilient Communities

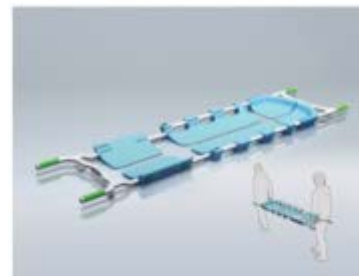
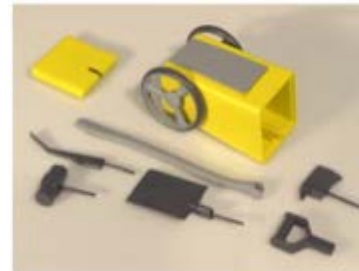
- Networked international communities of collaboration
- Co-Design; across disciplines and stakeholder groups
- Innovation and enterprise
- Delivering benefits to communities and developing resilience

Pre-disaster, Disaster Response, Post Disaster

General enquiries: jcdr.enquiry@massey.ac.nz

Telephone: +64 4 801-5799, ext 62169

Facsimile: +64 4 570-4600



Citizen Science Activities



East Coast Lab



East Coast LAB (Life at the Boundary) is a multi-agency project that brings together scientists, emergency managers, experts and stakeholders across the East Coast to make it easy and exciting to learn more about the natural hazards that can affect us.



East Coast Lab



- What do we want to learn?
 - Living so close to this boundary means that we could be affected by a number of natural hazards like earthquakes, tsunami, coastal erosion and even volcanoes, so we want to learn as much as we can about it. The more we understand about what causes these natural hazards to happen, the better we can be prepared.
- How can you help?
 - We'll make it easy and exciting to learn about natural hazard science here at East Coast LAB. You can jump right in and take part in natural hazard citizen science and help us with our research, discover what we've already uncovered and explore our science - science that is happening right now.



Community-driven emergency management volunteers in Wellington



Community-driven emergency management volunteers in Wellington

- A Community-driven Emergency Management Volunteer is someone who works with their community to educate people on emergency preparedness and to increase the resilience of the Wellington region.
- Volunteers participate in exercises and events throughout the year to maintain their skills and their relationships with each other and civil defence staff.
- WREMO offers free training for volunteers which is funded by Wellington City Council



ICoE in Community Resilience

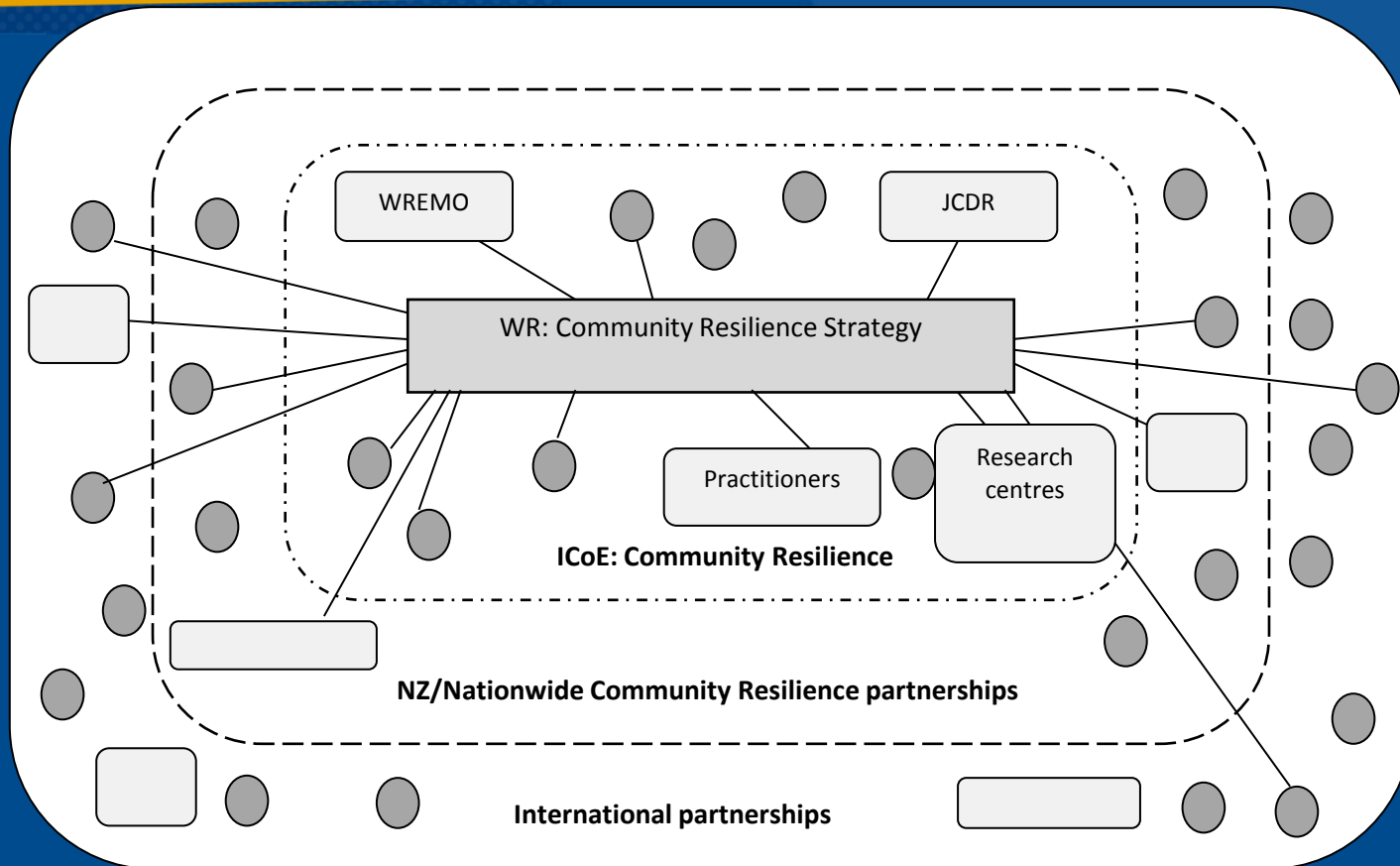
“An internationally recognised centre of excellence, to research and enable community resilience to disasters; actively collaborating with individuals, organisations, and communities in the Wellington Region”



ICoE in Community Resilience



ICoE Membership



Readiness and Lifelong Learning



- Exercise Tangaroa
 - Testing New Zealand's arrangements for preparing for, responding to, and recovering from a national tsunami impact.



Readiness and Lifelong Learning



What is it?

An earthquake preparedness campaign



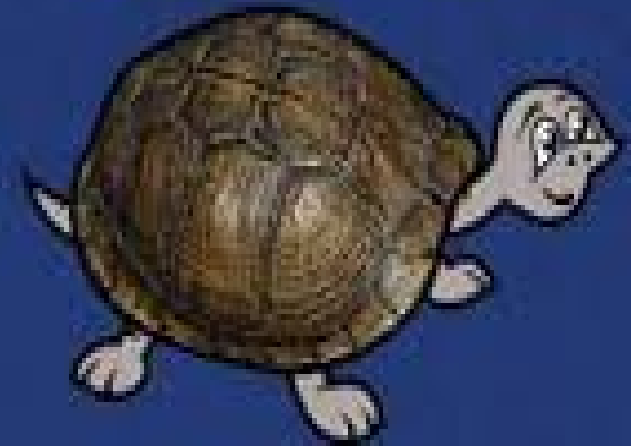
09:15am, 15 October 2015



Readiness and Lifelong Learning



Turtle Safe



Earthquake safety
resource for
pre-school children



www.getthegood.co.nz

Reflect on Lifelong Learning

- The European Commission (2001: 9) found that lifelong learning has four broad and mutually supporting objectives:
 - personal fulfilment,
 - active citizenship,
 - social inclusion
 - employability/adaptability



Thank You !!!!

Search: “JCDR Massey”

