

# Environmental Health Disaster Management

**25-30 August 2013**

Venue: Rydges Southbank

Townsville, Queensland

Delivered and facilitated by



**International Federation of Environmental Health**  
Asia-Pacific Regional Group



In partnership with the Centers for Disease Control and Prevention (CDC), USA

# Environmental Health Disaster Management

## Course developed by:



**Ben Ryan** MPH, MEHA, MIFEH  
Director  
Disaster Training  
Asia-Pacific Regional Group  
International Federation of Environmental Health



**Dr Peter Davey** PhD, FAIEH, MIFEH  
President  
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**Martin A. Kalis** MA  
Public Health Advisor  
Environmental Health Services Branch  
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United States of America



**Mark D. Miller** RS, MPH  
Captain, U.S. Public Health Service  
Senior Environmental Health Officer  
Environmental Health Services Branch  
National Center for Environmental Health  
Center for Disease Control and Prevention  
United States of America



**Nelson Fabian** MS  
Executive Director and CEO  
National Environmental Health Association  
United States of America

**Tim Hatch** MPA, REHS  
Planning and Logistics Director  
Center for Emergency Preparedness  
Alabama Department of Public Health  
United States of America

**Melissa McKeown**  
Manager Environmental Health & Short Term Welfare  
Coordinator  
Townsville City Council

Director  
Environmental Health Australia - Queensland

## Presenters:

### **Tim Hatch, MPA, REHS**

Planning and Logistics Director  
Alabama Department of Public Health  
Center for Emergency Preparedness

Tim is highly qualified and experienced professional in Environmental Health and Disaster Management in America. Tim is the subject matter expert for their Environmental Health Training for Emergency Response course and the Healthcare Leadership course. Tim's disaster responses include: Hurricane Ivan (2004), Hurricane Katrina (2005), Kentucky Ice Storm (2009), widespread water outage in rural Alabama (2009), Gulf Oil Spill (2010), and Alabama Tornadoes (2011). Tim has made it his personal goal to learn all that he can about the environmental impacts on human health. Tim has spent the last few years responding to disasters across the south of America and he has learnt a lot about how environmental health fits into disaster preparedness and response.



### **Ben Ryan**

Director, Disaster Training  
Asia-Pacific Regional Group  
International Federation of Environmental Health

Ben is Director of Disaster Risk Reduction for the International Federation of Environmental Health (Asia-Pacific) and a PhD candidate at James Cook University, Australia. Ben's research is focused on the impact of disasters on public health. He has worked as an Environmental Health Officer during responses to natural disasters and disease outbreaks, facilitated delivery of health services to asylum seekers and worked in environmental health at all levels of government in Australia and internationally. Ben is a state government Environmental Health Officer with Queensland Health and sessional Lecturer at Griffith University. He is passionate about the role environmental health professionals should have in the response to disasters and hopes to share his experiences, insights and research with other professionals in Australia and across the world.



### **Bob Handby**

Bob Handby recently retired from the position as manager of Water & Sanitation for International Emergencies with the Australian Red Cross. Prior to this he had a 27 year career in local government as an Environmental Health Officer. Since 1984 Bob has undertaken numerous missions with the Red Cross to some of the world's greatest disasters, including conflict zones in Uganda, Iraq, Rwanda, Kosovo and Sri Lanka. Bob has worked extensively throughout Asia and the Pacific in natural disasters, including the Boxing Day Tsunami in Banda Aceh, Cyclone Nargis in Myanmar and floods in Pakistan. Although retired, Bob maintains an active role with the Institute in Emergency Management and has worked in disasters in Australia, including floods, bushfires and cyclones. Bob is a Life Fellow of Environmental Health Australia.

### **Alexandra Marsh**

Old Operations Coordinator  
Australian Red Cross

### **Gavin Hammond**

Executive Manager Environmental Health  
Deputy Townsville Local Disaster Management Group Coordinator

Gavin is the Executive Director of environmental health with the Townsville City Council. His role overseeing all environmental health issues in the competence of "boards of the city of Townsville. He has worked in all aspects of the "environmental health" since graduating from the Queensland Institute of technology "in 1983. Most of these have been implemented in North Queensland. He praised his qualifications for environmental health graduate diploma and master's degree in management. Since 2009 Gavin has taken on the additional role of Deputy Coordinator of local disasters with local disaster management group working in the area of Townsville and helped in every event since then.

### **Ian Kuhl**

Waste Advisor  
Kuhl-Meadows

Ian retired as Manager of Waste Operations with Townsville City Council in 2011 three days before Cyclone Yasi. Four days after Yasi Ian commenced consulting on environmental health, waste management and public health to the Cassowary Coast Regional Council to assist in the recovery from Cyclone Yasi. This has involved the construction of two landfill cells to replace air space used for cyclone waste, managing the 100,000 cubic metres of temporarily stored waste awaiting the completion of the landfill cells, the review of the CCRC Waste Management Strategy and the preparation of the waste contracts. Ian has previously been involved in disaster management (including Cyclone Althea 1971) during his 20 year military career and when at Townsville City Council (Townsville floods and minor cyclones also assisting Johnstone Shire Council for Cyclone Larry 2007). Ian has been involved in CCRC addressing the need for the community to be resilient in the cyclone recovery and the management of asbestos containing material after a cyclone.





### Why you should attend:

EHA, IFEH, CDC US and TCC are extending an invitation to all Environmental Health and Disaster Management professionals to attend our Environmental Health in Disaster Management Course. This course is based on the Centers for Disease Control and Prevention's (CDC) successful Environmental Health Training in Emergency Response (EHTER) Awareness Level course run throughout America. This course is seen as international best practice for environmental health in disaster management. If you want your employees to be capable and competent in a disaster situation than this is the only course they need to be attending.

Attendance at this course will provide:

- Pathways to develop relationships and networks with members from IFEH, EHA, CDC US, Local & State Governments and International professionals;
- Increase the knowledge and skills in disaster management;
- Further development of your Environmental Health Plan for disaster situations;
- To learn practical solutions to address a number of environmental health issues that occurs in a disaster; and
- Access to emerging thinking and hands on applications in all manners of environmental health tasks.

### Introduction

During the last quarter century, more than 3.4 million lives have been lost due to disasters, with billions more affected, and tens of billions of dollars spent on repairing damage and reconstructing lives<sup>i</sup>. Between 1980 and 2005, 90 per cent of the natural disasters, 72.5 per cent of casualties and 75 per cent of economic losses were caused by weather, climate and water related hazards such as droughts, floods, windstorms, tropical cyclones, storm surges, extreme temperatures, landslides and wild fires, or by health epidemics and insect infestations<sup>ii</sup>.

Environmental health disaster management has a significant role in addressing the impact of disasters on environmental health infrastructure and consequently the public. This includes protecting and mitigating risks to systems required for general health and wellbeing, such

as water supply, food safety, sewerage, waste management and stormwater<sup>iii</sup>.

The preparedness and response actions to the environmental health aspects of disasters are vital in influencing the amount of human suffering, loss of life and ill-health. For example, over two years after the 2004 Indian Ocean tsunami caused massive devastation, people were living in temporary shelters and reconstruction projects were struggling to ensure that new housing had clean water supplies and good sanitation. At this time, diarrhoea was prevalent and there were a large number of vector-borne disease cases (dengue and malaria) in Indonesia's capital Aceh.<sup>iv</sup>

As the world's population and density continues to increase, the risk disasters pose to environmental infrastructure and conditions will continue to rise. Furthermore, increased urbanisation and industrialisation place a greater proportion of the world community at risk with the majority of the population migrating to urban, disaster-prone areas that are often without an adequate level of environmental health protective infrastructure<sup>v</sup>.

### About the Course

Environmental health and disaster management professionals from across the world have a critical function in mitigating public health risks during a response to a disaster. To ensure environmental health and disaster management professionals are adequately equipped to prepare for, respond to, recover from, and mitigate the adverse impacts of disasters, the International Federation of Environmental Health (IFEH), Environmental Health Australia (Qld) Inc., the USA Centers for Disease Control and Prevention (CDC) and the National Environmental Health Association (USA) have worked together to develop this Australian course.

This course will identify the critical role you, as an environmental health professional may have in mitigating environmental health risks from a disaster. This includes the need to conduct assessments to identify and address key risks such as those relating to drinking water, shelters, communicable diseases, food safety, wastewater, disease-causing vectors, solid waste and hazardous materials. Many of these risks are within the existing roles of environmental health professionals, however, a

disaster response has unique challenges and a specific skill set is required from a range of professions and all levels of government.

The course recognises that environmental health professionals are in the best position to assess and address the impact of disasters due to their skill set and population-based focus. The content is guided by the successful Environmental Health Training in Emergency Response (EHTER) course run by CDC. It will provide training on how to apply environmental health skills and information in a disaster setting.

- i. Hogan D, Burstein J (2007). Basic Perspectives on Disaster. Lippincott Williams and Wilkins, Philadelphia.
- ii. World Meteorological Organization. WMO Disaster Risk Reduction Programme. Accessed 23 February 2012; Available from: <http://www.wmo.int/pages/prog/drr/>
- iii. Commonwealth of Australia (2008). Report of the 6th National Conference - Sustaining Environmental Health in Indigenous Communities.
- iv. Chang, M. (2007). Health and housing after the Indian Ocean tsunami. *Lancet*, 369(9579):2066–2068.
- v. World Health Organization. Statistical Information System Page. Accessed 30 May 2011. Available at <http://www.who.int/whosis>

### Learning Objectives

- Demonstrate how environmental health infrastructure and practices are central to disaster management activities
- Provide an overview of key environmental health infrastructure and how this can be affected by natural disasters
- Understand what should be considered to mitigate the environmental health risks
- Provide guidance on planning, assessing, addressing and responding to environmental health impacts of a disaster using a population focus

### Course Structure

The course addresses the need for environmental health and other professionals to increase their education and training in disaster management. This course covers twelve core topics (see course content) and includes an exercise to demonstrate the relevance of these topics in the disaster setting. A provisional program is at [Attachment A](#).

### Course Content

The course core topics are outlined:

1. Disaster Management
  - Discuss plans, systems, guidelines and programs that guide the role of environmental health during the disaster management cycle
  - Identify and discuss disaster preparedness, response, recovery, and mitigation resources for environmental health
  - Outline the structures and parameters in which environmental health may function during a disaster
  - Discuss environmental health disaster preparedness and response systems
2. Drinking Water
  - Water issues faced in disasters
  - The role of environmental health practitioners in addressing water issues
  - Identification of key response partners
  - Increase understanding of the basic components of drinking water systems
  - Practice and demonstrate basic skills related to water issues
  - Common tests, sampling, treatment and assessment
  - Identify key messages for the public and response partners
3. Food Safety
  - Discuss food safety preparedness and response considerations
  - Operational considerations for mass feeding
  - Methods that may be used for assessing and mitigating food safety risks
  - Considerations for reopening food establishments
  - Actions that environmental health professionals can take to promote food protection
4. Wastewater
  - Environmental health role in wastewater issues
  - Describe onsite (septic) and public sewer wastewater systems
  - Discuss system vulnerabilities, failures and recovery considerations
  - Identify alternative means of treating wastewater
  - Assessment and response to wastewater spills

- Identify areas to improve wastewater preparedness
- 5. Solid Waste and Hazardous Materials
  - Discuss solid and hazardous waste issues
  - Identify key response partners
  - Increase understanding of solid and hazardous waste planning, collection and disposal
- 6. Vector Control
  - The impact of vectors disaster events
  - Control measures needed in disaster events
  - The role of environmental health in addressing vector control issues
  - Identification of key response partners
- 7. Shelters (including Red Cross involvement)
  - Shelter types and their operations
  - The role of environmental health within shelters
  - Planning and operational considerations for shelters
  - Considerations and processes for conducting an environmental health shelter assessment
  - Identify key environmental health preparedness, response and recovery actions for shelters and interim housing
- 8. Building Health Assessments
  - Discuss how disasters can impact buildings
  - Identify exterior and interior building components
  - Explain assessment preparation and process for buildings
  - Identify building-related health hazards
  - Exercise recovery and re-occupancy evaluations
  - Identify preventative actions to improve building resiliency
- 9. Responder Safety
  - Identify common hazards that may be encountered during a response
  - How disaster related hazards can affect your health
  - Health and safety precautions that should be taken during a response

- 10. Animals in Disasters
  - Discuss animals in shelters and evacuation centres
  - Discuss the benefits of animals in disaster recovery
  - Discuss the stressors on people where animals are concerned
- 11. Media Management
  - Identify the types of communication tools
  - Discuss the advantages and disadvantages of social media
  - How media can work and go terribly wrong
- 12. Communicable Diseases in Disasters
  - Identify diseases that can occur in disaster situations
  - Look at practical ways to prevent the spread of diseases

### Target Audience

Environmental health specialists, professionals and students who plan to broaden their understanding of the role environmental health has during the preparedness and response phases of disaster management. Participants can be from the local, provisional, state, federal, international and private sectors.

The course is also relevant for other health and disaster professionals who require further knowledge of the role environmental health has in disaster preparedness and response.

### Course Cost

EHA & IFEH members \$1500 (+ GST) Non members: \$1800 (+GST)

### Accommodation Options:

Rydges Southbank Townsville Hotel:

<http://www.rydges.com/accommodation/townsville-qld/townsville/welcome/>

### Registration Information

Please visit [www.ifeh.org](http://www.ifeh.org) or [www.eh.org.au](http://www.eh.org.au)

*EHA Members—CPD Points Allocation -5 per day*

**Fax Completed forms to: 07 3252 9084**

**Register early to avoid disappointment as maximum numbers apply**

Cancellations/substitutions accepted up to 14 days prior, unfortunately no refunds for cancellations within 14 days of Course.

Further information at [www.eh.org.au](http://www.eh.org.au) or contact the Executive Officer on  
07 3000 2299 or [gld@eh.org.au](mailto:gld@eh.org.au)

Payment by credit card, cheque to EHA (QLD) INC, or EFT: BSB 633-000 Account 139683106

NAME: \_\_\_\_\_

ORGANISATION:

ADDRESS:

PHONE: \_\_\_\_\_ EMAIL: \_\_\_\_\_

**Registration** includes breakfasts, morning/afternoon teas, lunches, dinners, Attendance Certificate and Course Notes.

Special dietary requirements .....

**EHA Member    \$1500 + GST    =    \$1650.00**

**Non-Member \$1800 + GST = \$1980.00**

**PLEASE DEBIT MY:**

MASTERCARD

VISA

[illegible]

CARDHOLDER'S NAME: \_\_\_\_\_

EXPIRY DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

CARDHOLDER'S SIGNATURE :

AMOUNT

## For Further Course Information

**Melissa McKeown**  
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Townsville City Council  
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## Day 1 – Sunday 25 August – Portside Room

*(walk out the front doors of Rydges facing the road and it's on your right hand side)*

4:00pm Welcoming participants on arrival

4.30pm Introduction & Overview – Melissa McKeown

- Safety
- Program – how it will work (plan update, presentations, room set up, meals, why days are so long)

5.00pm IFEH, CDC USA and EHA forming partnerships – Ben Ryan

5.15pm Introduction to disasters – Bob Handby and Tim Hatch

6.15pm Pre course knowledge test – Ben Ryan

7:00pm Dinner – BBQ & Beverages – Portside Room

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## **Day 2 – Monday 26 August – Portside Room**

- 6.30am            Optional Strand Walk – EHO from Townsville City Council
- 6.30–8.30am Breakfast in the Southbank Grill Restaurant
- 8.40am            Start
- 8.45am            Official Welcome – Mayor of Townsville
- 9.00am            Queensland Disaster Management Arrangements – Gavin Hammond
- 10.30am           Morning Tea
- 10.45am           Responder Safety – Ben Ryan
- 12.00pm           Lunch
- 1.00pm            Solid Waste and Hazardous Materials – Ian Kuhl
- 3.00pm            Afternoon Tea
- 3:30pm            Solid Waste and Hazardous Materials Exercise – Ian Kuhl
- 5.30pm            Review of Day – Tim Hatch
- 6.00pm            Free Time
- 6.30pm            Dinner – 2 Course Set Menu in the Savoy Room, Southbank Convention Centre (next door to Rydges, upstairs). There will be a cash bar.
- 7.30-8.30pm      Disaster Footage & Discussion (Red Cross Interview with 60 Minutes) – Bob Handby

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### **Day 3 – Tuesday 27 August – Portside Room**

- 6.30am            Optional - City Walk – EH Staff
- 6.30–8.45am    Breakfast in the Southbank Grill Restaurant
- 9.00am            Drinking Water – Bob Handby
- 10.30am          Morning Tea
- 10.45am          Drinking Water (cont) – Bob Handby
- 12.30pm          Lunch
- 1.30pm            Wastewater – Tim Hatch
- 3.00pm            Afternoon Tea
- 3.30pm            Food Safety – Tim Hatch
- 5.00pm            Recent Disaster Example – Bob Handby
- 5.30pm            Review of Day – Tim Hatch
- 6.00pm            Free Time
- 6.30pm            Course Dinner at Michels Restaurant Palmer Street

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## Day 4 – Wednesday 28 August – Portside Room

6.30–8.45am Breakfast in the Southbank Grill Restaurant

9.00am Shelters – Melissa McKeown

10.30am Morning Tea

10.45am Shelters continued – Alexandra Marsh

12.30pm Lunch

1.30pm Animals in Disasters – A Townsville City Council Plan – Mykel Smith

2.00pm Environmental Protection – Peter Davey

3.00pm Afternoon Tea

3.30pm Communicable Diseases – Peter Davey

4.30pm CDC USA Disaster Exercise – Tim Hatch & Peter Davey

6.30pm Dinner – 2 Course Set Menu in Southbank Grill Restaurant. There will be a cash bar.

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## Day 5 – Thursday 29 August – Portside Room

- 6.30am            Optional – Strand Walk – EH Staff
- 6.30–8.45am    Breakfast in the Southbank Grill Restaurant
- 9.00am           Vector & Pest Control – Tim Hatch & Scott Dundson
- 10.30am          Morning Tea
- 10.45am          Recent Disasters Example – Tim Hatch (Haiti)
- 12.30pm          Lunch
- 1:30pm           Media Management – Kiah Granata & Chelsea McLennan
- 3.00pm           Afternoon Tea
- 3.30pm           Building Health Assessments – Tim Hatch
- 5.00pm           EHA Disaster Exercise – Angela Lawson
- 6.00pm           Optional - Cactus Jacks Palmer Street for drinks (next door to Rydges)
- 7.00pm           Dinner – Carvery Buffet in the Savoy Room, Southbank Convention Centre  
(next door to Rydges, upstairs). There will be a cash bar.



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## Day 6 – Friday 30 August – Portside Room

6.30–8.45am Breakfast in the Southbank Grill Restaurant

9.00am EHA Disaster Exercise Continued - Angela Lawson, Melissa McKeown, Ben Ryan & Tim Hatch

10.30am Morning Tea

10.45am EHA Disaster Exercise Summary

11.45pm Post Course Knowledge Test  
Week in Review – Tim Hatch & Melissa McKeown

12.15pm Presentations & Close of Course – Peter Davey

13.00pm Lunch

The Committee reserves the right to make any necessary changes to the Program