



THE SCHOOL OF PHYSICAL EDUCATION, SPORT AND EXERCISE SCIENCES
TE KURA PARA-WHAKAWAI



Water Safety in New Zealand and Australia, Symposium

University of Otago, Wednesday 18 February 2015, Programme





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- 8.30-8.40 **Welcome** Hauiti Hakopa (University of Otago)
- 8.40-9.20 Cory Sweeney (Water Safety New Zealand), The Water Safety Plan and its Challenges
- 9.20-10.00 Chris Button (University of Otago), Moving Competently in Water: What Really is Fundamental?
- 10.00-10.40 Renee Wikaire (University of Otago), Ngati Porou Surf Life Saving Incorporated: Māori, Empowerment, Water Safety, and Surf Lifesaving
- 10.40-11.00 **Morning Tea**
- 11.00-11.40 Nick Mulcahy (Coastal Research Ltd, and Surf Life Saving New Zealand), Aquatic Risk Management and Evidence-based Decision Making: Hunua Falls, Auckland Region
- 11.40-12.20 Anne-Marie Jackson (University of Otago), Hauiti Hakopa (University of Otago) and Hauteruruku (Hinerangi Ferrall-Heath, Brendan Flack, Suzi Flack, Waiariki Parata-Taiapa, Samantha Jackson, Ron McLachlan, Hoturoa Kerr), One Day a Waka for Every Marae: A Southern Approach to Māori Water Safety
- 12.20-1.10 Mike Boyes (University of Otago), River Crossing Revisited: Bushcraft Instructors' Beliefs and Values
- 1.10-2.30 **Lunch**
- 2.30-3.10 Douglas Booth (University of Otago), Bondi's Black Sunday: The Clubbie as Hazard
- 3.10-3.50 Jim Cotter (University of Otago), Chris Button (University of Otago), Carl Bradford (Sports Institute of Singapore), David Gerrard (University of Otago), Sam Lucas (University of Birmingham), Do We Have a Sufficient Feel for Cold Water Immersion?
- 3.50-4.00 **Afternoon Tea**
- 4.00-4.40 Rob Brander (University of New South Wales), The Rip Current Hazard: Recent Lessons from Australia
- 4.40-5.10 Richard Pringle (University of Auckland), A Concluding Dip: Methods, Assumptions and Theories in Water Safety Research



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Water Safety in New Zealand and Australia, Symposium

Abstracts and Biographies (Alphabetical order by surname)

Douglas Booth (University of Otago)

Presentation: Bondi's Black Sunday: The Clubbie as Hazard, 2.30-3.10

Abstract: On Sunday 6 February 1934 five bathers drowned and some 200 were returned to shore in a mass rescue at Bondi, Australia's iconic beach, while swimming between the flags. Notwithstanding the deaths, local surf lifesavers were widely lauded for their calm, military efficiency, and heroics. In this historical analysis I offer an alternative interpretation of Black Sunday and suggest that the event could have been avoided. I also contextualise Black Sunday within a broader history of the Australian surf lifesaving movement that propagates the idea of conquering the sea.

Biography: Douglas Booth is Professor of Sport Studies and Dean of the School of Physical Education, Sport and Exercise Sciences at the University of Otago. He is the author of *The Race Game* (1998), *Australian Beach Cultures* (2001) and *The Field* (2005). Douglas serves on the editorial boards of *Rethinking History* and the *Journal of Sport History* and is an executive member of the Australian Society for Sport History. doug.booth@otago.ac.nz

Mike Boyes (University of Otago)

Presentation: River Crossing Revisited: Bushcraft Instructors' Beliefs and Values, 12.20-1.10

Abstract: A plethora of rivers and streams flow from New Zealand's mountains and high country to the sea. From the time of early settlement by Maori and Europeans, rivers have presented a hazard to life with over 1,000 river crossing fatalities recorded by 1870. In present times there are about three river-crossing deaths a year in outdoor recreational activities; 80% of these are in fast flowing, flooded rivers or side streams. The deaths of tourists are particularly newsworthy. In this presentation I discuss research involving 220 Mountain Safety Council bushcraft instructors who outline their beliefs and values regarding river crossing. In particular, I analyse their perspectives on education, decision-making, river-crossing techniques, recovery methods, resources and professional development. I outline survey questions through 15 statements with seven point Likert scales and present additional qualitative information regarding the education of tourists, the ideal content of a river safety course, desirable resources, and professional development needs. I present my research outcomes in three categories: (1) document custom and practice; (2) support

planning of future courses for the public; and (3) enabling professional development of the instructor pool.

Biography: Mike Boyes is an Associate Professor in outdoor education at the School of Physical Education, Sport and Exercise Sciences at the University of Otago. His research primarily focuses on outdoor recreation and outdoor education. He is particularly interested in outdoor leadership, teaching and learning in the outdoors, and adventure engagement by older people. Mike has held a number of outdoor instructor awards, serves on the executive of Education Outdoors NZ and is chairperson of the NZ Mountain Safety Council's research committee. He was awarded the NZ Order of Merit for his services to outdoor recreation and mountain safety. mike.boyes@otago.ac.nz

Rob Brander (University of New South Wales)

Presentation: The Rip Current Hazard: Recent Lessons from Australia, 4.00-4.40

Abstract: Rip currents are the main cause of rescue and drowning on surf beaches, including those in New Zealand. Many of these incidents are potentially avoidable and are intrinsically linked to the limited sharing of information between rip current scientists, beach safety practitioners and the general public. However, largely driven by advances in field observation techniques, there has been a rapid improvement in our physical understanding of these strong, concentrated offshore flows of water. A new emphasis on social science based research has also begun to focus on beachgoers understanding, identifying, and responding appropriately in, rip currents. This paper presents findings from recent studies in Australia that have physically tested the efficacy of traditional rip current escape strategies for bathers caught in rips and used survey questionnaires and interviews to document the experiences of people who have actually been caught in rips. At the same time, attempts have been made to examine new approaches to best communicate a basic understanding and awareness of the rip current hazard to the beachgoing public. These findings and approaches have the potential to be applied in the New Zealand context with significant implications for the future development and improvement of public rip current education interventions.

Biography: Rob Brander is a coastal geomorphologist and Associate Professor in the School of Biological, Earth and Environmental Sciences at UNSW, Sydney, Australia. He has published over 30 scientific journal articles and book chapters related to rip currents, and he is the author of the book *Dr Rip's Essential Beach Guide*. Rob's 'Science of the Surf' surf safety community education program has been presented to over 40,000 adults and school children in Australia and his YouTube rip current video has had over 1.3 million views. In 2012, he received an Australian Eureka Science Prize for promoting understanding of scientific research. rbrander@unsw.edu.au

Chris Button (University of Otago)

Presentation: Moving Competently in Water: What Really is Fundamental? 9.20-10.00

Abstract: Physical literacy is a multifaceted conceptualisation of the skills required for humans to fully realise their potential through embodied experience. The movement component of physical literacy is composed of a group of so-called 'fundamental movement skills' (FMS) which are presumed to be the building blocks for more sophisticated motor skills. While much attention has been directed at FMS on land, much less is known about what movements may be fundamental to aquatic environments. For example, a candidate FMS for aquatics may be to sweep/skull the hands or feet in an appropriate pattern to generate buoyancy and therefore remain afloat whilst treading water. Substantial financial investments in FMS education by governments are underpinned by a wide range of anticipated benefits including improved physical and psychological well-being of the population, improved safety, expectations of significant future savings to health care and raised levels of expertise in sport and exercise participation. However, gauging the relative success of such investment depends upon robust and reliable ways of monitoring FMS which is problematic in the absence of appropriate movement assessment tools. This presentation provides direction in terms of the likely fundamentals of aquatic movement behaviour and how they could be measured.

Biography: Associate Professor Chris Button is a motor learning researcher at the School of Physical Education, Sport and Exercise Sciences, University of Otago. His PhD was undertaken at Manchester Metropolitan University and he worked at Edinburgh University before coming to Otago in 2003. Chris has developed an interest in water safety research over the last five years and has managed various research projects on topics such as cold water immersion, distance estimation in open water, and the factors influencing male drowning in New Zealand. chris.button@otago.ac.nz

Jim Cotter (University of Otago), Chris Button (University of Otago), Carl Bradford (Singapore Sports Institute), David Gerrard (University of Otago), Sam Lucas (University of Birmingham)

Presentation: Do We Have a Sufficient Feel for Cold Water Immersion? 3.10-3.50

Abstract: Cold water surrounds us in Aotearoa New Zealand; we enter it purposely or accidentally, in fun or fear. Cold water is a major mediator of mortality; immersion initially drives a powerful 'cold shock response', which gives way to problems of the limbs cooling rapidly, and eventually to the body core tissues cooling (hypothermia). Knowledge of such effects is important but far from complete, especially in regard to methodology (e.g., gaining insightful measures and in valid settings), personal factors (e.g., swimming proficiency, anthropometry or habituation), and the utility of such exposures (e.g., as a means to impose stress for research or personal purposes). Many seemingly simple questions of practical importance are inherently extremely difficult to provide answers to. For example, how warm is too warm, and how cool is too cool for open-water swimmers? Can humans adapt to thermally-stressful water, and if so, how? In this presentation we summarise the current state of

knowledge—including some obvious limitations—in regard to humans' physiological and behavioural responses to immersion in thermally-stressful water. In doing so, we will make clearer the difficulties of answering key practical questions involving water safety.

Biography: Associate Professor Jim Cotter is a thermal physiologist by training; starting on the cold side with a master's thesis on the physiology and epidemiology of immersion hypothermia, at the University of Otago, before switching to heat, for doctoral research into the roles of skin in physiological and behavioural thermoregulation, at the University of Wollongong. During the past few years he has collaborated in the WSNZ-sponsored work led by Chris Button on acute and adaptive effects of the cold shock response, and has subsequently co-led research into determining water temperature limits for open-water swimming. This research has been sponsored by the International Triathlon Union, the International Olympic Committee, and the International Swimming Federation. jim.cotter@otago.ac.nz

Anne-Marie Jackson (University of Otago), Hauiti Hakopa (University of Otago) and Hauteruruku (Hinerangi Ferrall-Heath, Brendan Flack, Suzi Flack, Waiariki Parata-Taiapa, Samantha Jackson, Ron McLachlan, Hoturoa Kerr)

Presentation: One Day a Waka for Every Marae: * A Southern Approach to Māori Water Safety, 11.40-12.20

Abstract: Māori are waka people. For our whānau (family), being involved in waka has firmly centred us within our cultural traditions. In our fast paced lives, many of us have become disconnected from both our ocean traditions and our whānau. As Māori we have high rates of drowning and also our kaimoana (seafood) supplies are becoming depleted. We know some of this occurs because of a lack of connection to Tangaroa (Māori deity of the ocean). Within all of us is a connection to Tangaroa. We are all descended from seafarers. Part of our role as kaitiaki (guardians) is to re-awaken that connection. Thus our approach to Māori water safety is 'one day a waka for every marae'. Through our shared passion for waka, we have been providing one-off waka and water safety experiences for other whānau over the past 3 years. The water safety programmes have included building waka, paddling waka ama (outrigger canoes) and waka unua (double hulled canoes), kids holiday programmes, navigation wānanga (both traditional and modern learning events) and traditional knowledge wānanga. Māori water safety is much more than preventing drowning; it is about re-awakening the connection to our ancestors within the realms of our deities.

Biography: Dr Anne-Marie Jackson and Dr Hauiti Hakopa (Māori researchers at the University of Otago, School of Physical Education, Sport and Exercise Sciences) are joined by whānau from Hauteruruku, which is an incorporated society based at Puketeraki, 45kms North of Dunedin. Building upon positive relationships, the group has created a Southern approach to Māori water safety that is based around waka and Māori cultural traditions that firmly reconnect Māori to the water. anne-marie.jackson@otago.ac.nz

*Ancestral meeting house

Nick Mulcahy (Coastal Research Ltd, and Surf Life Saving New Zealand)

Presentation: Aquatic Risk Management and Evidence-based Decision Making: Hunua Falls, Auckland Region, 11.00-11.40

Abstract: A conceptual Drowning and Injury Prevention strategy has been developed to guide evidence-based aquatic risk management decision making across New Zealand's water safety sector. The strategy is aligned to best practice risk management principles, and it identifies six causal factors that can lead to drowning and injury, with six corresponding risk management strategies. Application of the strategy ensures that all elements of risk in the aquatic landscape are duly considered and addressed in the risk assessment reporting and implementation process. The Drowning and Injury Prevention strategy was recently applied to a risk assessment at Hunua Falls, Auckland Region, where there have been seven drowning fatalities since 1987. The risk assessment utilised a wide range of quantitative and qualitative data sources, including site visitation data, visitor surveys, past incident data and an assessment of site morphology and physical hazards. The assessment found the risk of drowning and injury at Hunua Falls to be very high, and as such recommended a wide range of safety interventions to reduce this risk. The project is currently in the final stage of consultation, with the aim of incorporating the recommendations in the long-term (10 year) plans of relevant stakeholders, and implementing all interventions progressively within this timeframe. This case study demonstrates the effectiveness of the evidence-based approach to aquatic safety decision making. This methodology is currently being applied to other high risk aquatic locations throughout New Zealand.

Biography: Nick Mulcahy is the Director of Coastal Research Ltd, and the Aquatic Risk Manager at Surf Life Saving New Zealand. He has a background in quantitative and qualitative research, having completed studies at Victoria University of Wellington with First Class Honours in his Master of Science degree in Physical Geography (Coastal Geomorphology). Nick has a longstanding passion for aquatic environments, in particular the ocean, and has been a volunteer and/or professional lifeguard on New Zealand and Australia beaches for over 15 years. Over the past five years he has developed, implemented and evaluated risk management projects in aquatic environments throughout New Zealand. This evidence-based approach to water safety aims to maximise the use of finite resources. nick.mulcahy@coastalresearch.org.nz

Richard Pringle (University of Auckland)

Presentation: A Concluding Dip: Methods, Assumptions and Theories in Water Safety, 4.40-5.10

Abstract: In my presentation I will offer an overview of the various interdisciplinary papers presented to this symposium. As per my brief, I will pay particular attention to the underpinning methods, assumptions and theories evident in each presentation. I will also focus on how the research findings and approaches overlap, compliment or rub-up against each other, and I will suggest possibilities for interdisciplinary research to enhance water safety.

Biography: Richard Pringle is Associate Professor of socio-cultural studies of sport and physical education at the University of Auckland. He is the co-author (with Pirkko Markula) of *Foucault, Sport and Exercise: Power, Knowledge and Transforming the Self*, and (with Bob Rinehart and Jayne Caudwell) of *Sport and the Social Significance of Pleasure* (forthcoming). He is the co-editor (with Murray Phillips) of *Examining Sport Histories: Power, Paradigms and Reflexivity*. Richard serves on the editorial boards of *International Review for the Sociology of Sport*, *Asia-Pacific Journal of Health, Sport and Physical Education* and *Annals of Leisure Research*. r.pringle@auckland.ac.nz

Cory Sweeney (Water Safety New Zealand)

Presentation: The Water Safety Plan and its Challenges, 8.40-9.20

Abstract: Over 100 New Zealanders drown every year, another 200 are injured as a result of a submersion incident, and a further 10,000 plus, injured in some way, shape or form due to an incident around water. Water Safety New Zealand (WSNZ) has recently been repositioning itself as a leadership body for the sector. No longer a delivery agent, WSNZ is responsible for leading the sector through evidence, policy and partnerships. In this presentation I will outline the process being followed for the New Zealand Water Safety Plan, focussing on a collective impact model. This non-traditional style of planning can be fragile and messy. To date, the sector has agreed upon an aspirational goal—*No One Drowns*—and upon its mission—to *develop a culture of safe enjoyment around water*. Sector consultation emphasised a significant weighting on the use of evidence to inform decision making. So, what is evidence? How can evidence support the reduction of drowning and injury in New Zealand? As a sector, we must sharpen our focus and be more targeted with our interventions. This could require traditional isolated delivery models to be refined into a more complete and aligned practice. First of all it needs a change to focus on the community and the problem. Herein lies the challenge, the use of evidence to inform decision making and change to occur within a high trust environment.

Biography: Cory is currently the Partnership and Sector Development Manager at Water Safety New Zealand with the emphasis placed on building partner relationships and to strengthen partner and sector capacity. Previous to that he was the North Island Area Manager for WSNZ providing project management, direction and support across the region and New Zealand for water safety initiatives.

Renee Wikaire (University of Otago)

Presentation: Ngati Porou Surf Life Saving Incorporated: Māori, Empowerment, Water Safety, and Surf Lifesaving, 10.00-10.40

Abstract: Most people consider water safety education as an apolitical, positive and socially integrative practice that can both reduce drowning and contribute to the social, economic, political and cultural development of communities. But when applied to Māori communities, such water safety education programmes, which lie within the realm of functionalist thinking, tend to advocate solutions to 'fix' the problem of drowning among Māori while disregarding the broader socio-

historical, cultural and political roles of education. In this presentation I adopt a critical perspective that acknowledges the worldviews of indigenous communities and incorporates them into the planning and implementation of policies and programmes. Against this background, I will discuss work currently being conducted with Ngati Porou Surf Life Saving Incorporated throughout Tairāwhiti. In particular I will highlight the key strategies and techniques used by Ngati Porou Surf Life Saving to empower themselves and their communities through surf lifesaving.

Biography: Renee Wikaire is currently enrolled in a PhD at the University of Otago. She is also working as the Surf Life Saving New Zealand Club Support Manager in Tairāwhiti, developing Māori focused water safety programmes and strategies. As an Honours student at Otago she completed research with Dr Joshua Newman and Matahi Whakataka-Brightwell on the philosophical underpinnings of waka ama. Renee then took up a Fulbright scholarship at Florida State University to complete her master's in sport management. During her master's Renee conducted research with Dr Newman and the Suquamish peoples on the concept of sport for development in indigenous communities. Her long term research goals are to develop strategies for the implementation of community-driven water safety programmes in Māori communities.
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