flow

manatiaki kōawa
rivers
GROUP

A joint technical interest group of Engineering New Zealand & Water NZ

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NEWSLETTER

Issue 30 | September 2020

FROM THE CHAIR

Heide Friedrich

A lot of talk at the moment is how we are going to work with the government-funded shovel ready projects. There is a $3 billion fund for infrastructure projects set aside in the 2020 Budget, of this $210 million is for shovel-ready climate resilience and flood protection projects. A few announcements of how the funding will be used have already been made, Environment Canterbury got $15.5 million for flood protection measures, the Bay of Plenty Regional Council will receive up to $23 million for flood protection infrastructure projects. Regions hard hit with flooding in 2020, such as Northland, Southland and Otago will receive $12.5 million, $25 million and $5 million, respectively, to help combat future flooding events. With the borders mostly closed, both universities and industry likely will struggle to train-up and recruit the needed numbers of people to help with those investments. The Rivers Group would like to help, and connect universities and industry better. We can help with advertising for positions or opportunities for student work over summer, and share the information through our membership. Please also share with us aspects you identify that will impact our people who working on those urgently needed flood protection projects, or impact on the resourcing to deliver projects.

I want to use the opportunity to congratulate our 2020 student research grant winners Danielle Cairns, Niraj Bal Tamang and Dipendra Magaju, who all do exciting academic research that is introduced in more detail in this issue and in future. I also want to thank Jo Hoyle for her long service to the Rivers Group management committee. Jo is looking after a lot of projects as the manager of NIWAs Sediment Processes Group, and decided to step aside from the management committee this year.

There is still a lot of uncertainty on how we can deliver face-to-face events at present. We are excited to see the uptake by the community on our 2020 joint New Zealand Hydrological Society (NZHS), New Zealand Freshwater Sciences Society (NZFSS), and Rivers Group New Zealand (NZRG) conference, which will be held in Invercargill from 1-4 December 2020. We have received over 270 abstracts, and offer in-person and virtual registrations. Please keep checking updates on the website nzhsrivers2020.co.nz/ regularly.

Don't forget to submit nominations for the Arch Campbell Award. Nominations must be received by Friday 18 September 2020. If you have any contributions or articles you want to share, please email nzriversgroup@gmail.com to submit your FLOW articles or any news, and keep checking for updates and connect with us through our Website, Facebook, Twitter and LinkedIn.

Heide Friedrich

Chair

INTRODUCING OUR 2020 COMMITTEE IN DETAIL

You can learn more about the whole committee at riversgroup.org.nz/committee

Hamish Smith, Tonkin + Taylor Ltd

Hamish is Water Resources Engineer at Tonkin + Taylor based in Wellington, and is the Rivers Group Committees Events Coordinator. Hamish has over 10 years' experience in a wide range of river management, stormwater, and flood risk projects, and more recently web development. His current passions include incorporating web technologies into his projects, flood response and forecasting. His favourite projects include bringing together a range of skills and knowledge across disciplines, including software development, fluvial geomorphology, hydrology, engineering, ecology and landscape design.

Jacqui McCord, Morphum Environmental

Jacqui is a geomorphologist working for Morphum Environmental in Auckland. She previously worked for 10 years in the engineering geology field before finding her passion for rivers. Jacqui specialises in geomorphic river assessment and river restoration, in combination with her geological background in soil and rock assessment, and slope stability analysis. Jacqui is currently studying towards a BSc (Hons) in Earth Science, focussing on geomorphology and earth processes. When not working or studying, Jacqui loves to go and explore the countries rivers, especially with a camera in hand.

Richard Measures, NIWA

Richard is an engineer/scientist in the Sediment Processes group at NIWA Christchurch. Richard enjoys trying to understand river behaviour and is easily distracted by the many interesting challenges affecting NZ rivers. His research and consultancy experience includes morphodynamic modelling of rivers, flood mapping and forecasting, river/coast interaction, artificial flushing flows and the impacts of flow regime change. Richard joined the Rivers Group committee in 2020.

STUDENT RESEARCH GRANT AWARD WINNERS

This year the Rivers Group is supporting three student research projects with grants of $1000 each:

- Dipendra Magaju (Auckland University) is in the second year of his PhD research into the fish swimming behaviour of whitebait in complex flow fields, helping to inform the design of fish passage structures appropriate for whitebait. The grant will be used to purchase laboratory equipment to facilitate his experiments.
- Niraj Bal Tamang (Auckland University) is undertaking PhD research into morphodynamic modelling of landslide responses in braided and steepland rivers, focussing on rivers affected by the Kaikoura earthquake. He plans to use the grant to fund travel expenses associated with an extended visit to Christchurch to collaborate with NIWA researchers and receive training from them on morphodynamic modelling.
- Danielle Cairns (Auckland University) is undertaking master's research into the perceptions of residents and river users regarding river restoration in the Waimatā River (Gisbourne). Danielle will use the grant to cover travel expenses associated with conducting questionnaire surveys and interviews.

Expect to hear more from these students in future editions of FLOW. If you or someone you know is considering student research relating to river management in New Zealand then look out for next year's Rivers Group student grants.

Danielle Cairns

My name is Danielle Cairns and I am currently completing my Master's of Science in Environmental Science at the University of Auckland. I am interested in all things outdoors and freshwater, something I owe to growing up in the Bay of Plenty. Studying geomorphology and water quality at University sparked my interest in river systems and I've been lucky enough to work in this field during my summers for Auckland Council and Bay of Plenty Regional Council.

My current research for my MSc (Environmental Science) is looking at local values and relations to the Waimatā River in Gisborne and how these shape perceptions of restoration work currently being undertaken in the catchment. The Waimatā River, a river of historical significance, is experiencing high rates of erosion, high nutrient concentrations and poor water quality with forestry and agriculture ongoing in the catchment. My research aims to investigate potential differences in perspective across the catchment, aspirations for the future Waimatā and the relationship between river health and public wellbeing.

I am keen to continue in this space going forwards and would love to be working in freshwater research and management after my studies. I am very grateful to the NZ Rivers Group for supporting my research.

Dipendra Magaju

My name is Dipendra Magaju. I am a PhD student at the University of Auckland. I did my Civil Engineering from Nepal followed by a Masters in Hydraulic Engineering and River Basin Development from IHE-Delft Institute for Water Education, Netherlands. My PhD research entitled “influence of roughness in fish passage hydraulics” is related with the fish passage solutions in small scale instream structure such as culverts. One of the key objectives is to find the behavioral information of the native fish species of New Zealand while travelling upstream through the fish passage solution. This includes finding the effect of turbulence and determining the hydraulic characteristic of their pathway and resting areas.

The overall methodology consists of a two step process. First, we will create a turbulent flow in the laboratory flume using the spoiler baffles of different size and arrangement. Mean velocity and turbulence parameters around these baffles will be measured using the acoustic Doppler velocimeter. In the second step fish will be kept inside the flume and their three-dimensional movement will be recorded. For our research three different species of fish; inanga, common bully and banded kokopu will be used. These fish will be collected from rivers either at Auckland or Hamilton. All the tests will be done at Water Engineering Laboratory at the Newmarket Campus. At the end we will match fish behavior with the observed hydrodynamic characteristics, ultimately synthesized into a fish passage solution framework* that takes behavioral information into account.

*see Magaju, D., Montgomery, J., Franklin, P., Baker, C., & Friedrich, H. (2020). A new framework for assessing roughness elements in promoting fish passage at low-head instream structures. Journal of Ecohydraulics, https://doi.org/10.1080/24705357.2020.1738967

Niraj Bal Tamang

My name is Niraj Bal Tamang , and I was born in Nepal, a country rich in water resources, I have always been fascinated by the beauty as well the processes occurring in the rivers. Rivers play a major role not only in the natural aspect but also in the daily life activities of Nepalese people. I began to understand the scientific aspect of the rivers after I started my undergraduate with Earth Science as one of the Majors. My interest for the fluvial processes never stopped growing as I travelled different parts of Nepal during fieldtrips.

Nepal is diverse in fluvial conditions as one can find spring-originated streams along with snow-fed perennial rivers coming from the Himalayas as well as rain-dependent ephemeral streams especially in the Sub-Himalayan region. Straight, braided and meandering river systems can be found in the northern parts, including high snowy mountains of the Himalayas to hilly region, and gradually flat plains in the southern parts, respectively. The fluvial processes occurring in those systems are different and their interactions with other physical and biological components of the environment also alter accordingly. Such river diversity created a lot of curiosities within me and encouraged me to learn more in this field.

There are many aspects in fluvial study which can be explored including origin, types, processes, relationship with other aspects. My interest in the earthquake-landslides-river interactions got boosted by the Gorkha Earthquake, 2015 in Nepal. My work experiences as well as my interest is inclined towards exploring the combined interactions of above mentioned processes. And I feel really lucky that my PhD topic is strongly related to my interest. Currently, I am working on the Hapuku River, Kaikoura Region, New Zealand, under Dr. Jon Tunnicliffe, University of Auckland, to model the river response to landslide sedimentation in braided and steepland rivers.

My PhD research includes both numerical modelling and fieldwork to study the rivers reaction after the 2016 Kaikoura Earthquake. The rivers in the Kaikoura region were overloaded with sediments coming from a large number of landslides generated after the Kaikoura Earthquake. My study will be focused on the network-based sediment transfer potential along with the reach scale flood risk evaluation due to change in the sediment delivery conditions. The sediment loading behavior in the headwaters of the Hapuku River is also a topic of interest in my work. I will be working on the rapid assessment for the sediment evacuation and identify the important parameters, limitations and scope for improvement in such study. I believe this work will act as a good reference for similar events in future. I am also planning to continue working on this sector to explore more as a river scientist.

ROIMATA FOOD COMMONS

On the banks of the Ōpāwaho (Heathcote River)

Michael Reynolds – Roimata Food Commons, Christchurch

Roimata Food Commons (roimatafoodcommons.org), located in Radley Park, is a project that was first set up in 2017 with the planting of 34 fruit trees. The project has evolved quite markedly in the almost 3 years since that first planting. There are now over 100 fruit trees, many other edible plants, as well as over 1000 native plants that have been added along the banks of the Ōpāwaho (Heathcote River).

The project is administered by the Roimata Commons Trust - a charitable trust consisting of people from across Ōtautahi (Christchurch) that are devoted to the exploration of creating a localised food system that is ecologically regenerative for the community.

Ecology is an interesting term to use in this context - as it speaks to relationships and interaction between the various parts of the ecosystem, both anthropogenic and non. Strengthening and healing this relationship is the aim of the Roimata Commons Trust with this project, and the re-establishing of native plants along the riverbank is a really big part of this healing process.

The area is quite significant in the history of Ōtautahi - from the site being used for Mahinga Kai practices prior to Anglo-European settlement in the 1840's right through the industrialisation of the area that still exists in some form today. The relationship that people have held with this area has had deep ecological impacts for both the park's physical landscape and the way in which the community interact with it.

The land was purchased in the late 1840's by Edward Kent and Isaac Luck as Rural Section 64, a parcel of 130 acres of land. This was promptly turned into farmland, through a process of draining the wetlands, and subsequently naming the area Isis Farm. This name was taken from the River Isis that flows through Oxford University, which Kent and Luck attended together.

It appears that on the far banks of the Ōpāwaho something quite different was happening at this time. This is where the industrial neighbourhood of Woolston was born. Woolston, named in reference to the significant number of wool scouring and tanning activities taking place along the river, was the first concentration of industrial activity in Aotearoa (New Zealand). Even the historical housing that still stands today is a reminder of this time, with many workers' cottages having been built in the area. There were also 3 wharves on the banks of the river within the bounds of Radley Park. Union Wharf, one of the busiest points of goods flowing to and from Lyttelton, and 2 private wharves were central to the development of the early stage of Ōtautahi. Yet, these wharves also seemed to change the relationship with the river – guiding relationships more towards an economic/exploitative view of the river.

The activities that took place in and around the river changed over the decades, with scarce information about what actually took place. As technology and demands change, one can assume that these activities changed with them.

The next significant event was in the late 1950's. The landowners at the time, Alfred and Hannah Gates, passed away within a few years of each other, however they did bequeath the land to the Christchurch City Council. This did come with one condition - that a portion of the land be kept as a space that enhanced the wellbeing of the children of the community. Thus, Radley Park was born.

Not long after this, in the late 1980's, the Christchurch City Council decided to stop a regular dredging program, and install the Woolston Cut. A man-made section of river to act as a more direct hydraulic relief for when flood levels rose and threatened the local built infrastructure. The original project had no floodgates, and because of its proximity to a coastal estuary, it allowed more saline water to move up the river. This changed the ecosystem significantly. Saltwater crabs moved up the river and started burrowing into the banks, which caused instability issues with the overburden vegetation. Floodgates were then installed to limit the movement of heavily saline water migrating to this part of the river.

There are many challenges that still exist today in regard to relationships with the river. Roimata Food Commons has taken the vital first step in working to change this situation by acknowledging that there needs to be a fundamental change in relationship with whenau and awa in order for there to be a change in the physical ecosystem.

Through modelling deep respect and adopting a practice of stewardship, the Roimata Food Commons invite this to become a commonly held values structure across the community. The project can, and has, inspire/inspired locals to get involved through tree plantings and environmental stewardship events, and hopefully, the project can continue to inspire local government to take the right steps to be a proactive partner in connecting and living with this special environment.

The New Zealand Rivers Group – Manatiaki koawa has provided a monetary donation to assist the Roimata Commons Trust with placement of signage in the park to highlight the work being done.

WATER REGULATION BRINGS CHALLENGES & OPPORTUNITIES

By Engineering New Zealand 29 Jul 2020

Rivers group management committee members Hamish Smith and Heide Friedrich talked in July to Engineering New Zealand (ENZ) to provide the group's input into their Water Regulation Brings Challenges & Opportunities opinion piece. We advocate for the need to work closely with iwi, for infrastructure to be resilient in the face of changing climate and for the requirement to consider the needs of our regions. Any water harvesting from rivers that contributes to water supply, as well stormwater going back into our natural waterways needs to be properly monitored and managed. There will also be a lot of demand on educating the skillsets needed, which will require coordination with education providers. You can read a re-print of the ENZ article engineeringnz.org/news-insights/government-investment-safe-drinking-water/ below.

With funding announced and the Taumata Arowai – Water Services Regulator Act now passed, changes to the management of our drinking water, wastewater and stormwater are on the way. What are the opportunities for engineers and how can they contribute to the development of a better system that is healthier for us and our environment?

Earlier this month the Government announced $761 million of funding to help local government maintain and upgrade their three waters infrastructure.

To receive the money, councils will need to opt-in to the government's Three Waters Reform Programme. Under the reform, councils will come together to form public multi-regional water entities, taking into consideration, catchments and communities of interest. The programme's details are yet to be finalised and will be developed with input from the local government sector.

The process will be overseen by the Three Waters Steering Committee, formed to provide guidance and to assist with stakeholder engagement.

Read more about the three waters reform.

The funding is a welcome boost for councils who are struggling with a legacy of underinvestment in water infrastructure. To receive their share of the funds, councils need to sign an MoU where they agree to work together to support the objectives of the reform programme and make steps towards forming multi-regional service delivery models. The funding is also intended as a Covid-19 recovery stimulus package so Councils will only have until 30 June 2021 to spend the money. This may prove a challenge for many councils but could also provide a useful sense of urgency that will see upgrade work quickly underway.

The MoU represents stage 1 of the reform programme. Councils who sign will still be able to choose whether they continue to stage 2, which will see the formation of aggregate water entities. The government has indicated further funding will be available at stage 2. Councils who don't opt in at stage 1 will still have the opportunity to do so later.

Aggregating Water Suppliers will Bring Benefits

Although some councils may be reluctant to opt-in, there are several advantages of a multi-regional model.

There are currently 67 public water suppliers. Many of the smaller suppliers have struggled to fund maintenance of their infrastructure and to meet water quality standards. Larger multi-regional entities will have more funding options available to them, and with a uniform approach across a large area, standards will be easier to apply and monitor. Decisions about the treatment of water and safety standards will be the domain of experts and removed from local politics.

The model preferred by the Government is collective council ownership and will include mechanisms to protect against future privatisation. This is important and should give councils some reassurance of continued control of assets that are vital to the health of their communities.

Taumata Arowai will Enforce Higher Standards for Drinking Water

The Three Waters Reform is part of a wider programme of water reform that central and local government have been considering over the past three years. Taumata Arowai—the Water Services Regulator Bill was introduced to parliament in December last year and was passed into law this July.

The bill establishes Taumata Arowai as a regulator with responsibility to oversee and enforce a new drinking water regulatory framework. It will also have an oversight role for wastewater and stormwater networks.

A separate Bill, the Water Services Bill, will detail the functions and powers of Taumata Arowai. Once this bill is enacted, probably towards the middle of 2021, Taumata Arowai will then be a fully operational entity.

The Three Waters Reform and the allocation of funding will help councils prepare so they are able to meet the new standards when they come into force.

Billion-Dollar Upgrades Needed

Drinking water is the first area to receive attention and clearer regulation, but higher standards for wastewater and stormwater are also on the way.

It is estimated that nationally, the capital costs of upgrading drinking water treatment plants to meet health standards is between $309 and $574 million. The cost of upgrading wastewater and stormwater systems will be far greater. Minister Mahuta has stated that the cost to upgrade wastewater treatment plants could be between $3-$5 billion.

Underinvestment in Water Infrastructure

The Government has acknowledged that much of New Zealand's public water infrastructure is in urgent need of upgrading, and that local government often doesn't have the resources to fix it.

The full extent and the urgency of the situation was thrown into sharp relief in 2016. 5,500 people in Havelock North became ill and four died after campylobacter bacteria contaminated the town's water supply. The resulting inquiry found that the incident was far from unique and that issues with drinking water are widespread and often undetected. 100,000 people, the Inquiry stated, become sick every year because of their drinking water. In 2018 the Ministry of Health released its own report confirming that nearly 20 percent of New Zealanders were receiving reticulated water that failed to meet drinking water standards. The dire situation highlighted by these reports prompted the Three Waters Review.

How did things get so bad?

Water is such an important asset but has been a severely underfunded one. The Office of the Auditor General found local authorities often don't have reliable information about their stormwater, water supply and wastewater assets, and that they were more likely to reinvest in their roading assets than their water assets.

This is partly due to a perception of risk. We have been complacent and have taken clean drinking water for granted. Without ratepayers pushing for investment in water infrastructure, it has been too easy for many councils to neglect this area. Unlike roads and buildings, water infrastructure is out of public sight. And unlike roads, water infrastructure often has a long replacement cycle. Parts of the wastewater network in some regions are over 100 years old.

An Opportunity to Do Things Differently

The Three Waters Review and the establishment of Taumata Arowai is an opportunity to reconsider how we plan and invest in our water assets. The path we take should be collaborative, multi-disciplinary and support a whole of ecosystem approach.

It is heartening that the Government has signalled up front that neighbouring catchment areas and communities of interest be considered in the formation of multi-regional entities. Cities are high consumers of water, while the catchment areas that supply their demand are often in the regions.

The model developed must work for the regions as well as the cities. For smaller councils, loss of autonomy is a very real concern. They do not want their needs subsumed by the demands of larger parties. A whole-of-ecosystem approach will balance the demands of all parties rather than solving a problem in one place to the detriment of another or to the detriment of the ecosystem itself.

The approach must also be multi-disciplinary and take a long-term view. It is no longer enough for an engineer to solve the problem immediately in front of them without looking wider to colleagues in other disciplines and at other agencies - planners, ecologists, social scientists, and without question, iwi. Working more closely with iwi is essential and will hopefully result in systems that prioritise the health of waterbodies and environmental protection. A healthy environment is the foundation of healthy communities and should be of absolute priority.

Instead of designing a piece of infrastructure that has the capacity to solve a particular problem for a set number of years, we must work with nature to design systems that are robust and resilient in the face of our changing climate.

Investing in Local Skills & Education

To look after our natural environment, we also need to nurture and grow our local specialist skillsets. Investing in local skills and training will put us in a stronger position to meet the challenges ahead. New Zealand does not have enough specialists in the water space, and this is felt most acutely in the regions.

We also need to begin conversations that advance community understanding of water management. Where communities feel connected to their natural environment they will push for its care, insisting on water sensitive urban design and green infrastructure options. But first they need to know these options exist.

Engineers are often not natural publicists, but the expertise and experience they can bring to the conversation is vital. Engineers can help inform communities about the value of water, the risks we face, and options to deal with the growing challenges.

POLICY UPDATES

Released recently by the Ministry for the Environment

Action for Healthy Waterways

- In late May 2020, the Government announced the Action for healthy waterways package aimed at cleaning up New Zealand's rivers, lakes, streams and wetlands. It has committed more than $700 million to help farmers, iwi/Māori, local government and communities implement the reform measures.
- The regulatory reform package delivers on the Government's commitment to stop further degradation, make immediate improvements and restore waterways within a generation.
- We are preparing guidance to help local government, other stakeholders and Treaty partners implement the Action for healthy waterways package. This will be made available as new rules and regulations come into force.

Budget 2020

- 1.1 billion will be invested to create 11,000 environment jobs in our regions. This includes:
  - More jobs in the regions
  - Pest Eradication and Management
  - Jobs for Nature Fund
  - New jobs enhancing biodiversity on public and private land
- More details can be found in this Ministerial media release
- Investment of $11.4 million to grow the agritech sector and improve environmental outcomes while boosting productivity in the primary sector. More details in this media release.
- MfE is developing an action plan to determine what initiatives we invest in and where. We will provide updates on our website once the plan is approved.

Resource Management Amendment Bill

- The Resource Management Amendment Bill has been through its third and final reading in Parliament.
- The Bill aims to reduce complexity and improve environmental outcomes for freshwater and climate change, before more comprehensive changes to the resource management system are considered following the Resource Management Review Panel's recommendations.

Stage 2 RMA Reform

- The comprehensive review of the resource management system is the most significant, broad ranging and inclusive review of the system since the Resource Management Act 1991 (RMA) was enacted. The review is primarily focussed on the RMA, the interface of the RMA with specific legislation, and a new role for spatial planning.
- The independent Resource Management Review panel has undertaken a thorough process and its report reflects this.
- The Panel have come up with a large number of significant recommendations that means a plan is required for reform of the resource management system
- These proposals for reform have been informed by extensive consultation with stakeholders and iwi/Maori over the last year. The Panel released an Issues and Options paper in November 2019 with the written and verbal feedback received helping inform the review. A series of regional hui in February 2020 also provided valuable input helping shape the panel's thinking. Advisory groups also helped to inform the panel's report.
- MfE officials are continuing to support the Panel as it develops its final report for Minister Parker. The delivery of the final report has been slightly delayed due to the COVID-19 disruption. We now expect the Minister to receive it by 30 June.
- The report and summary documents will be available on mfe.govt.nz once it is publicly released.
- Decisions will be made about how to take forward the report and its findings.

COVID-19 RMA (fast track consenting) Bill

- A new law change will give the Government temporary powers to fast track the consenting process for eligible development and infrastructure projects to assist economic recovery after the COVID-19 pandemic.
- The Bill was introduced to Parliament on 15 June and is now in the select committee process.
- The Bill is expected to be enacted in early July. The Application process to enter the fast-track consenting process will be available on the MfE website after that date.
- More information:
- Minister's media release of 15 June 2020: Streamlined consents to boost jobs and economic recovery [Beehive website].

EVENTS

Future Events

Continuing on from the success of the webinars held in May and June, the Rivers Group intends to hold further webinars, and to integrate these with locally held regional events where local organisers can assist.

The Committee is looking for members to support in event organisation and contribute ideas for future webinars. Please get in touch with the committee via our website, or email hsmith@tonkintaylor.co.nz if you can help or have ideas.

Look out for updates in your email inbox and on social media and on the Rivers Group website for the upcoming events.

Watch the Webinars Online

Past webinars can be found hosted online by Engineering New Zealand. Links will be posted on our website and social media.

July Webinars:

Beyond the Stopbanks - Graeme Campbell – Convenor of the NZ River Managers Special Interest Group

In our July webinar, Graeme Campbell – Convenor of the NZ River Managers Special Interest Group / Manager – Flood Protection Greater Wellington Regional Council brought his insights into his work with senior river managers around the country, and in the Wellington Region with his webinar 'Beyond the stopbanks: investment needs in flood risk management'.

The NZ River Managers are advocating for long term commitment and plan to helping regional councils raise the level of performance across range of fronts from investment in skills and training, to improved science and asset management practices.

This presentation will provide insights on recent announcements as well as discussion on what the River Managers Groups long term goals are.

August Webinar:

Building successful partnerships with academia – Dr Heide Friedrich & Diego Ravazzolo – University of Auckland

To meet the challenges of hydrological alterations induced by climate change, capitalise on our improved understanding of ecosystem connectivity and manage our increasing population densification in flood-prone areas a multidisciplinary and collaborative research approach is needed to ensure healthy water environments and resilient water systems.

In our August webinar, our chair Heide Friedrich showed our members how those in industry and the public sector can partner with academia and can jointly access funding channels through collaboration, and allow the knowledge generated by research to flow back into the industry and policy. Heide outlined the opportunities there are of working with Academia in the river space, and share her experiences on how academic education and industry requirements can be combined.

In the second half of the webinar, Diego Ravazzolo talked about his academic research on instream wood transport dynamics in gravel-bed rivers. He presented how laboratory experiments and field surveys help to model risks associated with hazards, such as encountered during the recruitment and transport of instream wood. Diego's work will be of interested to all those involved in river management and bridge design.

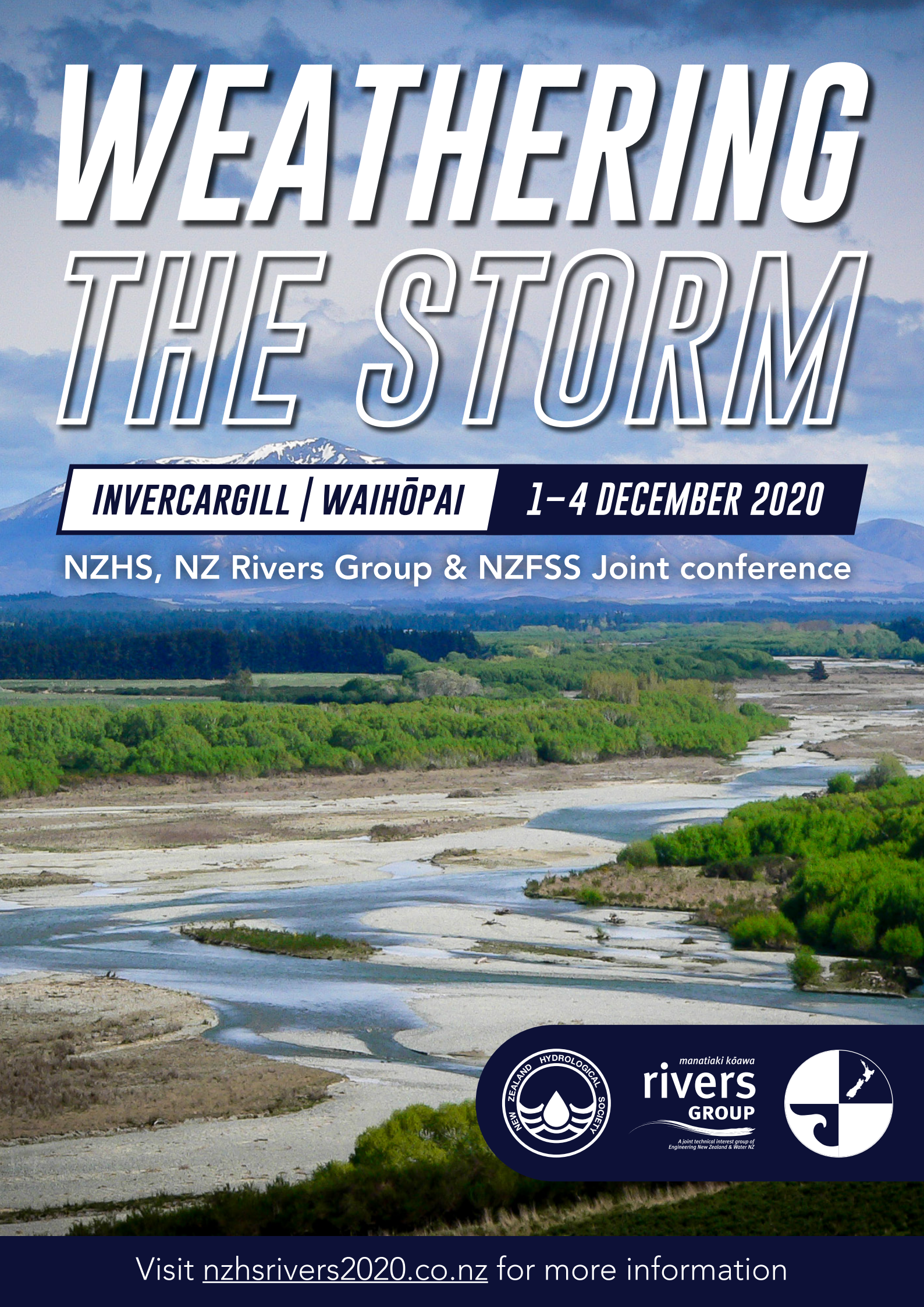
NOMINATIONS FOR THE ARCH CAMPBELL AWARD 2020

Each year at the NZ Rivers Group conference dinner, the Rivers Group recognises an outstanding individual with the Arch Campbell Award. This Award was established in memory of Arch Campbell to recognise his very significant contribution to soil conservation and river control and management in New Zealand. It has a distinguished history and was entrusted to the Rivers Group in 2010. It recognises a member for either:

- A notable published paper, presentation or written report pertaining to catchment hydrology, river and stream hydraulics, sediment transport, or catchment/river management; or
- A notable contribution over a number of years to the advancement of knowledge or practice in the fields of catchment hydrology, catchment management or river engineering.

We rely on suitable nominations from our membership, so please have a think about who might be deserving of such recognition.

Please go to our website to find out more about the award, past award recipients and how to make a nomination. Nominations must be received by Friday 18 September 2020.


WEATHERING
THE STORM
INVERCARGILL | WAIHŌPAI
1–4 DECEMBER 2020
NZHS, NZ Rivers Group & NZFSS Joint conference
NEW ZEALAND HYDROLOGICAL SOCIETY
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GROUP
A joint technical interest group of Engineering New Zealand & Water NZ
Visit nzhsrivers2020.co.nz for more information

CALL FOR CONTRIBUTIONS

For our newsletter FLOW we are always looking for articles from our membership. Please consider submitting an article, case study, update or notice for the next issue of FLOW.

Deadline for article submission is **30th August 2020**, and please format your contribution as follows:

- Length of 500 – 1500 words, in Microsoft word format (Articles should include name of the author(s), affiliation, titles and section headings and illustrations are strongly encouraged)
- Attach images in jpg (file size 300KB-1MB) and at high-resolution separately
- Provide credits and captions for your images

If you have articles which are longer, please email us.

For our 'Fortnightly Reads' email, you can email us News items, announcements, event details, recognitions, guidelines news – anything of interest for our community.

Please email nzriversgroup@gmail.com to submit your FLOW contributions or any news you want to share through our 'Fortnightly Reads' email. We look forward to receiving your contribution.

RIVERS GROUP MANATIAKI KŌAWA MISSION STATEMENT

The New Zealand Rivers Group Manatiaki Kōawa was formed in 2009 to provide a forum for 'Working together to promote good river management'. It is a place for people with an interest in rivers, flood risk management and the operational and environmental issues of catchments and river systems to come together.

We currently have over 250 members, and promote a multi-disciplinary approach to river management, reflecting cultural and societal diversity in an integrated and holistic manner. Our membership reflects this, with our members coming from a wide range of river management, science and engineering, and planning backgrounds - working as consultants, or in local, regional and central government, research institutes and universities.

New members can sign up here riversgroup.org.nz/joining-the-rivers-group/.

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