Last updated 28 July 2019

All plenary and keynote session will be held in the Main Presentation Room – NZ1&2

AGENDA WITH ABSTRACTS JULY 26

	Monday, 12 August 2019
9:30 -12:00	**Pre-Conference Workshops and Special Interest Groups**
12:00 – 12:45	**Lunch**
1:00 – 1:10	**Conference Opening & Welcome**
1:10-2:30	**NZ Esri User Conference Plenary**
2:30-3:00	**Afternoon tea, PROMENADE area**
3:00-4:30	**NZ Esri User Conference Plenary**
4:30-6:00	**Welcome Function – EXPO Opening**

	Tuesday, 13 August 2019				
7:15-8:30	**Women in Spatial Breakfast | Room NZ4**				
8:40-8:50	**Tuesday Morning Welcome and Plenary | Facilitator: Scott Campbell, Eagle Technology**				
8:50-9:20	**Herman Coomans, Senior Manager Solutions Architecture | Amazon Web Services**				
9:20-9:50	**Jim Higgins, Director | Esri**				
9:50-10:10	**Samuel Leske, Director Intelligence, Planning and Coordination Services | Ministry for Primary Industries**				
10:10-10:30	**Brett Dixon, General Manager Asia Pacific | Esri**				
10:30-11:00	**Morning tea, EXPO area**				
11:00-12:30	Concurrent sessions				
S1	**Esri Technology** Facilitator: Claire Thurlow Room: NZ 1&2	**Agriculture** Facilitator: Jamie Till Room: NZ 3&4	**Utilities** Facilitator: Dan Clark Room: Marlborough 1&2	**Collaboration & Engagement** Facilitator: Anya Duxfield Room: Epsom 1&2	**Analytics** Facilitator: Subodh Dhakal Room: Epsom 3
11.00-11:25	**What's New in ArcGIS Online (Part I)** Julian Pilois, Eagle Technology & Kelly Gerrow, Esri ArcGIS Online is Esri's cloud-based mapping and analysis solution. As a pure SaaS offering, it receives multiple releases each year including lots of exciting new functionality. This session will cover what's new in the ArcGIS Online June update as well as other recent releases. We will cover improvements in Mapping and Visualisation, Web Applications, 3D, Data Management and Administration as well as highlighting tips and tricks (Part 1 of 2).	**Using Esri to combat the Great Fruit Fly Response** Quenten Higgan, AsureQuality The February 2019 Fruit Fly response occurred on multiple fronts simultaneously with multiple trap captures at multiple locations over a short space of time. The previous large-scale deployment for Fruit Fly was in 2015 when it took some 9 months to finalize the operation. Now in 2019 we have used Esri as the centre of operations which has led to significant cost savings and huge improvements in the deployment process and utilization of resources. Workstream field staff use Collector for ArcGIS in the field to record inspections, samples and any treatments applied. Staff wellbeing is considered as all staff have access to all known hazards and locations of dogs to help eliminate the risk of field staff becoming injured while working on private property. Operations Dashboard for ArcGIS has been configured for each Workstream Manager to assist with managing and reporting all activities required.	**Building a Geometric Network** Ronel van Rooyen, Watercare Services The GIS team at Watercare have been working on building a water and wastewater geometric network for more than a year. Unfortunately, BAU and resource constraints were holding us back and we simply could not get the project over the line. In 2017 Watercare embarked on a Strategic Transformation Program (STP) which is about replacing and upgrading technology, but it is also a strategic approach to transform our processes and create a better customer experience. After proving the value of a geometric network to the business it was agreed upon that a team of contractors could be set up to continue the progress that the GIS team have started.	**Open Data - The Waikato Data Portal** Chris Mardon, Hamilton City Council In 2018, Hamilton City Council (HCC) moved its GIS platform to a new Azure subscription provisioned by Eagle Technology under a new Infrastructure Managed Service Agreement. Our councils GIS infrastructure was tied into a large IaaS agreement encompassing much of the organisations infrastructure and application management, and as a result, the cost management and issue resolution for GIS had become more complex than it needed to be. HCC decided to separate GIS out of the main agreement to achieve better care and visibility and selected an Eagle MSA as it was a competitive and mature cloud offering managed by people that understood our specific needs for GIS. One year in our decision to move has been validated and we have achieved full transparency of costs and a high level of responsiveness and care from the team at Eagle.	**Fuzzy logic mapping of high and low producing grassland** Deborah Burgess, Ministry for the Environment & Andrew Manderson, Manaaki Whenua - Landcare Research The LUCAS land use map tracks New Zealand's land use through time for international greenhouse gas reporting. Historically the mapping of high and low-producing grassland, and particularly changes between these two classes, has received little attention, partly because the class distinction is hard to make from satellite imagery alone. The time series of maps since 1990 therefore showed little of the transformation from low to high-producing grassland which has been widely reported in a range of publications including the Ministry for the Environment's environmental reporting products. The maps therefore needed to be corrected. Fuzzy logic data fusion techniques developed as part of the Manaaki Whenua Innovative Data Analysis Programme were used to combine a wide range of environmental, land use and land management data sets to obtain a proxy-probability layer of high-producing grassland which was used to update the mapping of high and low-producing grassland at 3 mapping dates
Room Change					
11:30-11:55	**Esri Technology** Facilitator: Claire Thurlow Room: NZ 1&2	**Agriculture** Facilitator: Jamie Till Room: NZ 3&4	**Utilities** Facilitator: Dan Clark Room: Marlborough 1&2	**Collaboration & Engagement** Facilitator: Anya Duxfield Room: Epsom 1&2	**Analytics** Facilitator: Subodh Dhakal Room: Epsom 3
	What's New in ArcGIS Online (Part II) Julian Pilois, Eagle Technology & Kelly Gerrow, Esri ArcGIS Online is Esri's cloud-based mapping and analysis solution. As a pure SaaS offering, it receives multiple releases each year including lots of exciting new functionality. This session will cover what's new in the ArcGIS Online June update as well as other recent releases. We will cover improvements in Mapping and Visualisation, Web Applications, 3D, Data Management and Administration as well as highlighting tips and tricks (Part 2 of 2).	**Use of GIS and drones in Farm Environment Plan delivery** Debbie Care, AgVice Farm Environment Plans (FEP's) are becoming a key component of how Regional Councils are getting land owners to identify the risk areas on their land and how they will manage or mitigate the impacts of these risk areas. There had been various iterations of environment plans nationally. Sustainable Milk Plans (SMP's) were done on a voluntary basis in the Upper Waikato. This was a 28-page hard copy spreadsheet. Land Environment Plans (LEP's) from Beef and Lamb were the basis for FEP's in the Waipa in a recent project. At the same time Waikato Regional Council were developing their FEP as part of Plan Change 1 implementation. None of these were spatial, and data collection was in hard copy. The concurrency of this work gave an opportunity to develop and compare FEP's in different formats. Alongside the plans developed for the dry stock	**Integrating Operational data into Esri** Paul Garnham, OSIsoft In conjunction with our partner Dimension Software OSIsoft has provided solutions to Transpower and Energy Queensland that combines data from the PI system and ESRI to support their operational environment. Transpower uses the integration of PI and ESRI data to quickly identify the location of faults and the cause. This enables them to either re-close a breaker and immediately return power to the circuit or to advise crews the location of the fault for them to remedy the problem more quickly than has been possible in the past. Energy Queensland also combines PI data and ESRI data to provide the safe rating of conductors in real-time to enable them to push the maximum amount of power through the lines. This enables them to safely	**A regenerating river: digital tools for innovative public engagement** James Sturman, Aurecon This paper presents innovative community engagement and storytelling experiences built by Aurecon and used to support dynamic community engagement initiatives. The development of online StoryMap applications, and interactive Augmented Reality and Virtual Reality installations allowed stakeholders to interact with concepts in innovative ways. Aurecon's creative use of emerging visualisation technology has helped to bring regenerating riverine areas to life and has contributed towards successful public exhibitions. These community engagement tools provide the public with a much more 'real' way of envisaging and imagining exciting new spaces that connect people to the environment as well as	**Esri and Machine Learning** Phil Woods, Lynker Analytics Data science and machine learning are powerful tools that can be used to solve a variety of geospatial problems. From inferring missing values in our data to capturing data from aerial imagery or finding the perfect place to put a new shop, machine learning's capacity to detect patterns within large unstructured data sets is helping us more and more, to gain useful insights and solve difficult problems. Lynker Analytics specialise in machine learning solutions and have been exploring the new tools available within Esri's toolset, to see how they perform and stack-up against more traditional alternatives, both within the geospatial and data science domains.

		farmers was a spatial version of the FEP.	operate at higher loads in times of constraint and saves large capital expenditure.	people to people for a stronger community.	
Room Change					
12:00-12:30	**Esri Technology** Facilitator: Claire Thurlow Room: NZ 1&2	**Agriculture** Facilitator: Jamie Till Room: NZ 3&4	**Utilities** Facilitator: Dan Clark Room: Marlborough 1&2	**Collaboration & Engagement** Facilitator: Anya Duxfield Room: Epsom 1&2	**Analytics** Facilitator: Subodh Dhakal Room: Epsom 3
	3D GIS Workflows & BIM Sam Williamson & Zorko Sostaric, Eagle Technology & Gert van Maren, Esri LiDAR Point Clouds, Elevation Models, 3D Objects, 3D CAD and BIM (Building Information Models)... 3D data is fast being made available from a wide variety of different sources. Come along to this technical session to learn how to manage it all and create your own 3D Scenes with ArcGIS Online. We'll also demonstrate ways which you can bring together location information stored in GIS with detailed design and construction information stored in CAD or BIM systems - an increasingly important integration for large construction projects.	**Asset Mangement (Natural & Built) in a Rural Landscape** Bronwyn Rodgers, Pāmu Farms of New Zealand The Esri suite (ArcMap, ArcGIS Pro, Survey123, ArcGIS Online) has contributed to a proposed new operating model for part of the business; facilitated design of a physical landscape to suit the new requirements (taking account of environmental constraints), and enabled communication of the modifications to stakeholders. It has also enabled us to refine our corporate knowledge of where our built assets are and of their overall condition and safety fitness; and subsequently improved our cognisance of maintenance or replacement requirements. The presentation will discuss the tools and processes used, show examples of data collection/manipulation methods, and outputs with commentary on how they have supported decision-making for the projects.	**Automating beforeUdig requests using ArcGIS Pro, Python, and FME** Rory McPherson, Stantec Wellington Water is responsible for completing beforeUdig enquires to protect bulk water supply mains on behalf of Greater Wellington Regional Council. The beforeUdig service allows anyone to obtain information on the location of underground utilities assets in and around a proposed dig site. Responding to beforeUdig enquires involves monitoring incoming email notifications, assessing the proposed dig site location for bulk water supply mains, producing maps, locating as build drawings, and emailing a response to the customer. In the past this task was completed manually and could take up to 15 minutes per notification. Using ArcGIS Pro, Python and FME this task has now been largely automated. Notifications can now be completed in less than a minute, saving Wellington Water hours of time and costs.	**ArcGIS Online as a Cross Organisational GIS Solution** Robyn Crisford, Department of Conservation The NEXT Foundation has been working in partnership with the Department of Conservation on two key projects: Taranaki Mounga and Project Janszoon, with the aim to restore biodiversity and ensure future protection. Working across organisations has proven to be complex, requiring a new way of thinking. GIS is being used to analyse results, for reporting purposes, and as a measurement of progress; ultimately facilitating better decision making and cost efficiency. ArcGIS Online is being utilised as an effective GIS solution for cross organisational projects. Web maps, web apps, dashboards, StoryMaps, and mobile apps are all being used to provide a new way for project staff to collaborate, view, collect and interact with spatial data. RSS feeds, links to Google DOCs, FME and WMS are enabling live data streams and are reducing time and resources needed for data sharing across organisations. Dashboards are providing real-time reporting	**The Spatial Nature of Sound: Mapping what you cannot see** Rachel Summers, Bruce Rapley & Huub Bakker, Massey University The human soundscape changed with the industrial revolution that began in the 18th century. 'Noisy' machines became commonplace, replacing manual labour and changing the working environment. The mixing of industrial and residential areas, saw the encroachment of noise that affected health and well-being only grew. Sound is one of the most difficult physical variables to quantify, and map. With the advent of GIS, a range of new computer tools became available that merged computing, databases and human environments. Our challenge is to find meaningful ways to represent soundscapes using yet-to-be-developed GIS strategies. This paper discusses some of the present methodologies, their shortcomings and suggests future directions for GIS. These must be based on a human-centric approach rather than the current narrow focus on audible perception and hearing loss, and be able to deal with a greater number of variables for measuring health impacts.
12:30-2:00	**Lunch, EXPO area**				
1:35-1:55	**DEMO THEATRE** Facilitator: Ryan Cooper Room: EXPO				
Room Change					
2:00-3:30	Concurrent Sessions				
S2	**Community Meeting** Facilitator: Kate Waterhouse Room: NZ 3 & 4		**Demo Theatre** Facilitator: Ryan Cooper Room: EXPO		
2:00-2:25	**Esri User Group AGM**				
2:30-2:55					
Room Change					
S3	**Esri Technology** Facilitator: Beth-Anne Lee Room: NZ 1&2	**Field Mobility** Facilitator: Dan Clark Room: NZ 3&4	**National Mapping & Statistics** Facilitator: Halyley Hume-Merry Room: Marlborough 1&2	**Data Management & Workflow** Facilitator: Hellen Munro Room: Epsom 1&2	**Design & Planning** Facilitator: Nick Duke Room: Epsom 3
3:00-3:30	**What's New in ArcGIS Enterprise** Sam Williamson & Boudewijn Boogaard, Eagle Technology ArcGIS Enterprise is the complete system that started it all—allowing on-premise and private cloud deployment of WebGIS. ArcGIS Enterprise is always evolving and advancing: join us at this technical session for details on ArcGIS Enterprise 10.7 including performance enhancements and administration, mapping and analysis, data management and more. We'll also be demonstrating new tools included with ArcGIS Image Server, and ArcGIS Notebook Server.	**Integrating Field Apps, Operations Dashboards and Webhooks into Organisational Workflows** David Herries, Interpine Innovation The Esri field apps are deployed to our field staff. The Explorer app is used to take maps offline into remote environments via mobile map packages created in ArcGIS Pro using vector basemaps and locators, so that field crews can search for locations. From the Explorer App, links are then used to launch Survey123. Surveys are pre-populated with information from the Explorer map, to avoid data entry error and save time. As data is submitted from Survey123, it is combined with webmaps and Operations Dashboards to provide insights and reporting. Microsoft Flow webhooks are triggered when a	**An update from the Topography Group from LINZ** Andrew Ferrel, Bjorn Borns & Charlotte Dawson, Land Information NZ The Topography group at Land Information New Zealand (LINZ) has been working hard to deliver and coordinate several valuable datasets. This presentation will cover some of our most recent successes, including: Building Outlines - Several enhancements have been incorporated into three new layers to take building outlines beyond a pilot. LINZ will continue to improve this dataset and keep it up to date with available imagery. Elevation - The LINZ national elevation programme is	**Diverse Spatial Solutions** Ashleigh Ross & Liam Koedyk, Wellington City Council Councils use a range of spatial tools and applications to manage asset data. To support our business, we require the ability to report and analyse up to date asset information. We implemented an effective and streamlined workflow to capture and maintain asset data in the field and office environment. Integrating data from our asset database into multiple GIS applications including Dashboards, Storymaps, AGOL, Collector, Survey 123 and ArcGIS Pro, we assign adequate resources to sites and capture asset data quickly and accurately in the field and process data efficiently in the office.	**Supporting and Managing Housing Development Growth with GIS** Shaun Rothery, HLC HLC manages the development of integrated urban communities. The company was established to develop the former Hobsonville Air Force base into a new township. It is a wholly-owned subsidiary of Housing New Zealand Corporation. In 2016 HLC was tasked with helping Housing New Zealand provide more homes more quickly to growth areas, by managing housing development projects on under-utilised Government-owned land. HLC partners with many companies including architectural, engineering infrastructure design, and construction companies, to delivery of their development projects.

		Survey123 survey is submitted. The webhook inserts the survey data into a SQL database which is the data source for more detailed Power BI dashboards.	delivering precise airborne LiDAR based elevation measurements to build a game changing national dataset. Historic Imagery - With about 50,000 photos scanned the historic aerial photo scanning project is coming to an end.	Benefits of this streamlined workflow include, improved data quality and reduced field and data processing time. This workflow allows us to effectively plan and visualise the whole data management process. We continue to test and refine our method in order to better meet our work flow needs. Incorporating an adaptable workflow is important in the dynamic work setting.	These companies use GIS and CAD tools to create datasets and products that often have value to HLC that extend beyond a specific project or activity, to uses that they weren't originally created for. Some companies are not GIS users at all. To properly curate and leverage this spatial information, HLC looked to Eagle Technology and Geographic Business Solutions for tools and guidance to use them.
3:30-4:00	**Afternoon tea, EXPO area**				
S4	**Esri Technology** Facilitator: Richard Redman Room: NZ 3&4	**Data Management & Workflow** Facilitator: Grant Carroll Room: Marlborough 3	**Design & Planning** Facilitator: Nathan Heazlewood Room: Marlborough 1&2	**Field Mobility** Facilitator: Jithen Singh Room: Epsom 1&2	**National Mapping & Statistics** Facilitator: Rachel Summers Room: Epsom 3
4:00-4:25	**What's New in ArcGIS Apps (Part I)** Ed Cook & Beth-Anne Lee, Eagle Technology A rapid-fire session covering what's new with the ArcGIS Field Apps including QuickCapture, Survey123 & Collector. These apps continue to grow in both in popularity and functionality.	**Python Tips and Tricks** Kim Ollivier, Ollivier & Company Ltd Python scripting tips and tricks in ArcGIS and ArcGIS Pro for Python 2/3. Upward compatibility is easy to arrange for you existing scripting library. Performance can be dramatically faster if you use some simple techniques. Partitioning is now built in to some tools and you can use the same technique. There are many additional tools only available via Python through the third-party packages now included in the standard install by default. Models built using the desktop can be deployed on ArcGIS Server which opens up a wider audience to using complex workflows more easily. Full code of worked examples will be provided.	**Subdivision Susceptibility: Modelling Change in the Rural-Urban Interface** Logan Ashmore, Vision Consulting and Engineers This project demonstrates a novel application of Land Change Modelling using machine learning to assess the drivers of sub-division in the rural-urban interface. While land change modelling is normally applied to changes in physical attributes (land cover or use), this project has applied it to changes in legally defined parcel size. The presentation will cover how the model evaluates the relationship of drivers to change, establish areas of susceptibility, and project potential future areas of subdivision." This presentation includes a review of the four modelling steps: 1. Data preparation, 2. Measuring historic land change (subdivision), 3. Modelling the drivers and subdivision susceptibility, and 4. Predicting areas of future subdivision. This concludes with a discussion of the results and how the findings can be used better manage growth in the area. The land change model is produced by Clark Labs, and available through an updated plug-in for ArcMap 10.2 and higher	**Helicopter Boarding Pass – Survey123 for safety in the field** Katie Milne, Department of Conservation Helicopters have been identified as one of DOC's highest risk activities, a fact tragically brought home by the fatal Wanaka crash last October. A review of incidents and near misses showed a consistent problem - in order to slow staff down and encourage safety awareness, DOC's Director of Health and Safety requested the urgent development of a pre-flight safety checklist – dubbed the 'Helicopter Boarding Pass'. Survey123 was chosen for deploying the checklist for several reasons. Perhaps the most significant in this case was the ease of creating and amending the checklist which allowed us to quickly deploy and respond to changing requirements. The capture of basic metadata – location, user, and date – was also important for auditing the use of the checklist. The Helicopter Boarding Pass project has significantly increased DOC's use of the ArcGIS Online platform and opened opportunities for other uses of ArcGIS Online and Survey123.	**Automating cadastre updates using Python and the LINZ Data Service** Tim White, Queenstown Lakes District Council Land and Property information are among the core datasets of Local Government Authorities. A GIS is the perfect platform for being able to present this complex information to the public in an easily consumable way. The QLDC GIS utilises web services provided by LINZ to update the cadastre and property information, such as parcel, address, and owner details. This process has replaced an outdated, laborious, flat-file based update system that occurred once a month. The new process uses Python and the Data Interoperability Workbench in ArcGIS Pro that allows QLDC to perform weekly updates of land and property information. The time and efficiency improvements achieved by this new process have highlighted the potential of using Python and ArcGIS Pro Workbench for various other outdated council processes.
	Room Change				
4:30-5:00	**Esri Technology** Facilitator: Richard Redman Room: NZ 3&4	**Data Management & Workflow** Facilitator: Grant Carroll Room: Marlborough 3	**Design & Planning** Facilitator: Nathan Heazlewood Room: Marlborough 1&2	**Field Mobility** Facilitator: Jithen Singh Room: Epsom 1&2	**National Mapping & Statistics** Facilitator: Rachel Summers Room: Epsom 3
	What's New in ArcGIS Apps (Part II) Ed Cook & Beth-Anne Lee, Eagle Technology Continuing the discussion of what's new with the ArcGIS Field Apps including how to have these apps interact with one another to create more sophisticated and flexible workflows.	**How good is your z-component... Really?** Bruce Robinson, Global Survey If 3D is an important component of your spatial analysis or your data sets then it is critical to understand how vertical datums are determined, and understand their relationship to a sea-level that changes over time. This presentation is geared towards anybody who works across spatially diverse areas and wants to improve the quality of the z-value component of their dataset. An overview of the historic height datums in NZ and the problems associated with them will be discussed, as well as the best available to solution to improve 3D surface data in the tectonically challenging, sea level changing, country we live in.	**Planning to impress: Using Web GIS in a Planning Context** Hayley Hume-MerryB, offa Miskell Web GIS tools such as ArcGIS Online, StoryMaps and Operations Dashboards have embedded themselves in much of the spatial community, as an instrument for storytelling and displaying real-time data. Yet these applications can have huge impacts outside of our own industry, particularly in a traditionally report-based industry such as planning. Not only can we use these tools to empower decision-makers, but also to create efficiencies during the data collection and community consultation stages. Reflecting on recent planning review case studies, this presentation suggests new ways	**Implementing Workforce for ArcGIS at Spark New Zealand** Stephen Usmar, Firstname Spark have deployed Workforce for ArcGIS to manage over 50 field staff tasked who carry out in-home setups of digital devices. This session covers the journey of developing the processes and Esri applications to support these teams. Having deployed Workforce for ArcGIS in ways that even Esri didn't anticipate, you will get a good practical understanding of the application's capabilities and how it can be modified for your organisation. This will be of interest for both business owners, along with those tasked with the technical implementation & integration to other systems.	**Spatially disaggregating statistical data** Karl Majorhazi, Statistics NZ Are you looking for ways to get more impact and usability from Stats NZ data? Here are three techniques that may help improve your calculations, link to other data sources and customise your geographies: dasymetric filtering, areal interpolation and pycnophylactic reallocation. All these methods can be used with publicly available, confidentialised data. Dasymetric filtering removes unpopulated land from statistical areas such as mountains, lakes and forests. Areal interpolation assigns aggregated data to individual geographic features that can be re-aggregated to different geographies. Pycnophylactic reallocation breaks down statistical areas into a regular grid and smooths the boundaries between statistical areas. A feature of

			to approach a technical review, exploring data capture (Collector for ArcGIS and Google Street View), analysis and primarily, the communication of results. Which areas of a technical review can benefit from a geospatial approach? And, how can our collaboration with aligned industries be mutually beneficial?	If you are interested in the capabilities of Workforce for ArcGIS and considering implementing it, this session could save you time, effort and cost by taking advantage of some of the lessons we have learnt along the way	this method is the total values of all cells matches the total values in the original dataset - which makes this technique useful for re-zoning and user-defined geographies.
6:15-12:00	**Conference Dinner**– "Summer of '69" - SkyCity Convention Centre				

	Wednesday, 14 August 2019				
8:50-9:00	**Wednesday Morning Welcome** Facilitator: Graeme Henderson				
9:00-10:00	**Lightning Talks** Facilitator: Doug Stark *Free Energy. Who wants some?* - Marc Galle | Porirua City Council *King Kong your Storymaps Kung Fu* – Duane Wilkins | Land Information New Zealand *Dashboards: Visualizing DOC's trapping data* – Cleo Schurink | Department of Conservation *Introduction to GALoP-X* – James Wright | Eagle Technology *The Data City as a public experiment?* – Tiwene Roberts | Palmerston North City Council *GALoP-X: Highlights and Challenges* – Megan Cheong | Eagle Technology				
10:00-10:30	Morning tea, EXPO area				
10:30-12:00	Concurrent sessions				
S5	**Esri Technology** Facilitator: Shoaib Ahmed Room: NZ 1&2	**Drones & Imagery** Facilitator: Chad Benham Room: NZ 3&4	**Public Safety** Facilitator: Kenna Kelly Room: Marlborough 1&2	**Youth & Communities** Facilitator: Claire Thurlow Room: Epsom 1&2	**Oceans** Facilitator: Harvey Wong Room: Epsom 3
10:30-10:55	**What's New in ArcGIS Pro (Part I)** Sam Williamson & Boudewijn Boogaard, Eagle Technology ArcGIS Pro is Esri's powerful, desktop GIS application supporting data visualisation, advanced analysis and authoritative data maintenance in both 2D and 3D. ArcGIS Pro is tightly coupled with the ArcGIS platform supporting data sharing across ArcGIS Online and ArcGIS Enterprise through Web GIS. In this, the first of two back-to-back technical sessions, the Eagle team will cover everything you need to know about ArcGIS Pro, quickly getting into the new features introduced in the recent releases of ArcGIS Pro including new GeoAnalytics tools, Imagery Analysis tools & Data Management tools. Stick around during after break for part two...	**The power of imagery & drones on a sub-Antarctic island** Ann De Schutter, Department of Conservation Auckland Island is New Zealand's last sub-Antarctic island with pests. Eradicating pigs, cats and mice will be ambitious. This could be a 10 year-long project that will need infrastructure to support the operation. GIS was critical in identifying potential infrastructure sites on this 46,000 ha island, 465 km South of New Zealand. Satellite imagery and elevation data was used to identify potential infrastructure sites. These sites were visited, and additional data was collected using a drone. The imagery was post-processed and uploaded onto ArcGIS Online for the team to use as a planning resource in refining the infrastructure sites. The planning team now has all this information at their fingertips and can refine the effort required in this ambitious project. Lessons learnt from this project will contribute to the success of eradication projects and Predator Free New Zealand.	**NZGIS4EM: Making GIS and its practitioners integral to emergency management** Derek Phyn, Waikato Regional Council & Kate Waterhouse, Bay of Plenty Regional Council Geographic Information Systems (GIS) have often been poorly considered, planned and implemented across New Zealand's emergency management sector. GIS practitioners involved in emergency management events often suffer the consequences. Recent significant events have reinforced both the need for a nation-wide coordinated, planned and pro-active approach to implementing GIS for emergency management, and the advantages that GIS can offer to the emergency management sector if implemented properly. This paper offers insights into the "grass roots" foundation of a community called New Zealand GIS for Emergency Management (NZGIS4EM) to help address these issues. Several other subject targeted projects are also underway or planned relating to data, standards, symbology, common operating picture and key datasets	**Remuera: From maps into Story Maps, an online community resource** Tony Batistich, Remuera Heritage Society When the Remuera Heritage Society asked to map the changes in the Remuera shopping centre it seemed a simple GIS project; find some old aerials, georeference them, digitise some outlines of buildings over time and produce a few maps. But the romance of archived old maps and records, early aerials, heritage photos, newspapers past became engrossing and called for something innovative for the wider community. Without GIS this project might have been just another book on a library shelf. Finding ways to present this new digital history through GIS, ArcGIS Online, ArcGIS Pro, web apps and Story Maps meant new skills and frustrations to be overcome. There's so much more to be done for other villages and towns. Finding the team, the support and the way is the final problem to be solved….. And maybe that's where you come in.	**Using the ESRI Bathymetry Information System in Seabed 2030** Evgenia Bazhenova, Kevin Mackay, & Tilmann Steinmetz, NIWA Seabed 2030 is an ambitious project of Nippon Foundation and GEBCO which tries to compile a dataset with global coverage for all of Earth's seafloor by the year 2030. NIWA host the South and West Pacific Regional Data Centre which will be used to gather, analyse and store existing as well as new datasets to contribute to the Global Data Centre. NIWA have chosen to use The Esri Bathymetry Information System Extension for ArcMap (part of the Mapping and Charting Solutions for Desktop) for the maintenance of a local database with all required Metadata. This allows for convenient search and web publication facilities
10:30-10:55	**DEMO THEATRE** Facilitator: Ryan Cooper Room: EXPO				
Room Change					
11:00-11:25	**Esri Technology** Facilitator: Shoaib Ahmed Room: NZ 1&2	**Drones & Imagery** Facilitator: Chad Benham Room: NZ 3&4	**Public Safety** Facilitator: Kenna Kelly Room: Marlborough 1&2	**Youth & Communities** Facilitator: Claire Thurlow Room: Epsom 1&2	**Oceans** Facilitator: Harvey Wong Room: Epsom 3
	What's New in ArcGIS Pro (Part II) Sam Williamson & Boudewijn Boogaard, Eagle Technology We'll be continuing our back-to-back technical sessions of ArcGIS Pro with more demonstrations of new features introduced in recent releases of ArcGIS Pro. We'll be showing more Mapping and Analytics tools, as well as best practices for	**Dogs, Drones and the Art of Online Inception** Scott Sambell, Ethos Environmental New Zealand is unique in the world in that almost all of our ecological problems come down to one common factor: Invasive species. To save our precious and unique native ecosystems requires removing these invaders. It's a simple problem	**Burning the Tree at Both Ends - Pigeon Valley Fire** Kilmeny Stephens, Nelson City Council The Pigeon Valley Fire started in the Tasman District on 5th February, resulting in a state of emergency being declared. Many GIS personnel (amongst others) offered to assist and worked at the Nelson Tasman CDEM	**Are women better placed?** Elaine McAlister, GeoEd Ltd Both the NZ and Australian spatial industry has recognized the need for diversity and inclusion. Find out how Australia has devised an action plan for boosting innovation and collaboration in the spatial sector through diversity and inclusion. The current state of diversity has	**Using ArcGIS Online to visualise results of sea floor mapping** Evgenia Bazhenova, NIWA This presentation focuses on the GIS solutions developed by the GEBCO-Nippon Foundation Alumni Team for the Round 2 Grand Prize field tests of the Shell Ocean Discovery XPRIZE competition, which took place in the southern Ionian Sea off the coast of Greece in November 2018. XPRIZE

	sharing the information products you create with ArcGIS Pro to your audience.	with no simple solution. But with emerging spatial technology we may finally have a way to get on top of these threats as we develop the tools to first locate them, and then define the most effective tools for each unique situation. Scott Sambell takes us through the use of drones, detector dogs, inter-agency collaboration, analysis, response and monitoring for both mammalian predators and invasive weed species in the most remote locations in New Zealand. It is literally a battle of life and death in the forest, all represented majestically on a web browser for all to see. Fortunately, the good guys have a few new tricks up their sleeves.	Emergency Operations Centre throughout the event, which transitioned to recovery on 27 February. GIS personnel responded to more than 350 requests for maps, webmaps and spatial analysis from 15 different agencies and EOC staff. We will talk about the fire situation, show some statistics, discuss the agencies involved and the operation of the Emergency Operation Centre. We'll also cover where the GIS people came from, what we actually did and how, then discuss what went well, challenges encountered and our goals for next time.	shown that while women make up around 50 percent of Australia's workforce across all industries, only one quarter of the spatial workforce is women. This talk will give an oversight of the Australian action plan while concentrating on the results of the recent NZ focused Women in Spatial (WIS) survey. It will provide a view into the female spatial community in NZ, including how the barriers to diversity and inclusion compare to our West Island neighbours. It will also answer other pressing questions such as "does it pay to do a postgraduate in GIS?" and "what do women need to progress in the spatial industry?"	competition (2017-2019) aimed to advance deep-sea technologies for autonomous, fast and high-resolution ocean mapping. The Round 2 requirements were to demonstrate a system that can produce a bathymetric map at 5 metre horizontal resolution of at least 250 km2 area of the ocean floor within 24 hours. Operations had to be remotely coordinated from a land-based operation centre. During the Round 2 preparation and field test phases, the Team made extensive use of the ArcGIS Online web maps and web applications for the purposes of survey planning, as well as for visualization of final products, including multibeam bathymetric data and high-resolution side-scan imagery.
11:00-11:25	**DEMO THEATRE** Facilitator: Ryan Cooper Room: EXPO				
Room Change					
11:30-12:00	**Esri Technology** Facilitator: Shoaib Ahmed Room: NZ 1&2	**Drones & Imagery** Facilitator: Chad Benham Room: NZ 3&4	**Public Safety** Facilitator: Kenna Kelly Room: Marlborough 1&2	**Youth & Communities** Facilitator: Claire Thurlow Room: Epsom 1&2	**Oceans** Facilitator: Harvey Wong Room: Epsom 3
	IoT, RAMM & Reporting: What's New in LocalMaps Grant Carroll & Julian Pilois, Eagle Technology This session will be a chance to look at some of new capabilities in the latest version of Eagle's popular LocalMaps solution. A solution which complements your existing ArcGIS Online or ArcGIS Enterprise by creating an elegant set of applications and galleries to find the content you are looking for and much more. This session will give a quick overview of the solution before covering the latest advances including Reporting, live IoT feeds and RAMM integration.	**Gaining Insights from Historic Imagery** Lidia van Kruiningen, Environment Canterbury Historic imagery holds a lot of valuable information: it can help by supporting better decision making, identifying hazardous activities and contaminated land sites, monitoring growth and recession of coastlines, changes in areas of significant vegetation and river pathways and much more! Over 500,000 images have been made available through the Crown archive, so find out how 'Canterbury Maps' turns these historic images into a usable product. Learn about the process we use to create a mosaicked dataset from historic images across Canterbury and how we use this product in our business and externally. Maybe you too could create something like this in your region.	**Experiences as a FENZ GIS-Analyst at the Pigeon Valley Fire** Patrick De Jong, Interpine Innovation On 6th February 2019 Fire and Emergency New Zealand deployed a National Incident Management Team to respond to the Pigeon Valley Fire which had burnt approximately 1,500 ha on the previous day. The fire would go on to burn 2,343 ha, making it New Zealand's largest ever wildfire. As the GIS analyst in this management team my role was to collate various sources of spatial data and present them in a useful way for the operations managers, create tactical and navigational maps for the fire fighters on the fire ground and assist with the Public Information Map in collaboration with Civil Defence GIS staff and NZGIS4EM. Types of geospatial analysis included processing satellite imagery, creating and editing feature layers, creating webmaps and paper maps, converting data to various file formats and sharing data with other GIS staff. All analyses were performed using ArcGIS Pro	**Source to Sea: Bringing a WebGIS to rural NZ schools** Aubrey Miller, University of Otago The Source to Sea project works with students from semi-rural/rural schools in the greater Dunedin region to develop knowledge about their local waterways through cultural, historical and ecological lenses. Students were led on physical and virtual field trips to understand the concept of a catchment and see how the catchments have changed through time. A tool was needed that was intuitive, provided a simple interface, but offered GIS functionality, that could be run from students' Chromebooks. A WebGIS was built so students could delve deeper with spatial data at their fingertips. Students used the WebGIS to: (1) define their catchments crisply with a DEM, make calculations such as stream sinuosity, and compare the DEM-derived streams with their personal knowledge; and (2) use imagery and maps to quantify land-use change through time. After two sessions, students were experts at using spatial data to draw inferences about the health of their catchments.	**Mega Maps for safer journeys** Dale Harris & Steven Ford, Abley The Safer Journeys Risk Assessment Tool ("Mega Maps") is a web application that supports speed management decisions. The Tool supports the roll-out of the New Zealand Speed Management Framework – a framework for calculating safe and appropriate speeds and identifying where speed limit reviews are required. Infrastructure Risk Rating (IRR) is one of three inputs to the Framework. IRR was calculated for the New Zealand road network using geospatial analysis techniques, enabling the nationwide mapping of safe and appropriate speeds. The outputs are displayed in the Tool and shared with every Road Controlling Authority in New Zealand (over 370 users). The Tool was built with Web AppBuilder for ArcGIS 2.9 developer edition and includes multiple custom widgets, including a widget that enables users to generate template .docx letters for speed limit reviews. The Tool is hosted on an external server, with authentication enabled through NZ Transport Agency's Maphub OKTA authentication
12:00-1:30	Lunch, EXPO area				
12:30-1:00	**DEMO THEATRE** Facilitator: Ryan Cooper Room: EXPO				
1:30-2:00	Concurrent sessions				
S6	**Esri Technology** Facilitator: Harvey Wong Room: NZ 1&2	**Drones & Imagery** Facilitator: Rachel Summers Room: NZ 3&4	**Public Safety** Facilitator: Greg Price Room: Marlborough 1&2	**Youth & Communities** Facilitator: Doug Cockroft Room: Epsom 1&2	**Organisational GIS** Facilitator: Doug Stark Room: Epsom 3
1:30-1:55	**Getting Started with ArcGIS Hub** Julian Pilois, Eagle Technology & Kelly Gerrow, Esri ArcGIS Hub is an easy-to-configure community engagement platform that organizes people, data, and tools through information-driven initiatives. Organisations of any type and any size, including government agencies, non-profit groups, and academia, can maximize	**Drone acquired imagery for a GIS supporting ecological restoration** Dr Glenn Aguilar, Unitec Institute of Technology Drone acquired imagery was used as the basis for a geographic information system (GIS) of ecological restoration projects in Northland including Waipoua Forest and Whirinaki areas in Northland. Advantages included convenience in	**Northland Civil Defence Operational Overview** Rebecca Norman, Northland Regional Council Northland Civil Defence Emergency Management (CDEM) has launched the Northland Civil Defence Operational Overview which leverages the Esri ArcGIS Suite – from WebApp Builder to Operations Dashboards and	**YSAR – Early adopters of innovative technology in SAR/EM** Steve Campbell, Youth Search and Rescue Tauranga Trust YSAR (Youth Search and Rescue) NZ is an associate member of LandSAR NZ. The organisation is a magnet for some of NZ's brightest young minds, many of whom are outstanding secondary	**Engagements of a different kind - Geospatial RoadMap & Maturity** Andrew Hansford, Ministry for Primary Industries Ministry for Primary Industries (MPI) undertook a business wide Geospatial RoadMap. Some of the key learning's from the Roadmap that was identified are several dozen initiatives that are considered foundational, continuous improvement and business driven to

	engagement, communication, collaboration, and data sharing using the ArcGIS Hub initiative-based approach. This session will cover the ArcGIS Hub Basic version (which includes Open Data) as well as the Premium version which allows Initiatives and Community logins for true two-way engagement with external stakeholders.	the conduct of surveys, ease of use in flight planning, very high-resolution imagery, lower costs compared to satellite or plane surveys and the ability to conduct repeat flights readily. Limits include battery endurance, weather conditions, terrain, access to survey sites and the processing required. Results included orthomapped products, digital surface models, classification of the ground and story maps. Outputs also include 3D models that allow different viewpoints of the landscape and provide much needed information on areas that are not readily accessible and where satellite images are not updated regularly nor are of sufficiently high resolution.	StoryMaps - to gather real time information for situation reports and action planning. This approach has been designed with one purpose in mind – to provide help when help is needed. Utilizing this ArcGIS Suite should deliver vast amounts of information through an Emergency Operations Centre (EoC) at a rapid pace, which assists in all six functions of a Civil Defence Emergency Management (CDEM) response – Intelligence, Planning, Operations, Welfare, Public Information and Logistics.	school students in science, technology, engineering and mathematics. At ages spanning between 14 to 18, all are Generation Z, a generation also known as 'digital natives. This YSAR 'Gen Z' cohort provides a hotbed of research opportunity for LandSAR and SAR technology companies. As examples, since 2015, YSAR has been at the forefront of testing, RPAS/UAV thermal and Hi Res imagery, command and control development in the field using Eagle Technology's Field Force Intelligence. YSAR have also been an early adopters of StoryMaps as SAR Preplans by Esri for the improvement of situational awareness of a search area before and during a Search and Rescue Operation to assist access and field deployments of assets.	enhance the overall maturity of Geospatial. We also reviewed Roles and Responsibilities in MPI we use a federated model of skills and experiences across the organisation. The goal is to raise MPI's overall maturity of Geospatial business wide
Room Change					
2:00-3:00	**The Closing Plenary – The ArcGIS Road Ahead** Join the Eagle and Esri teams for a tour of the future of ArcGIS including what's coming in **ArcGIS Online**, **Apps**, **ArcGIS Enterprise** and **ArcGIS Pro**. Alongside these key components we'll be taking a sneak peek at the future capabilities of the wider platform including the exciting new **ArcGIS Indoors**; **Experience Builder** (the next generation of Web App Builder); the new cloud-hosted **ArcGIS Analytics for IoT** product ; and what's coming next for **ArcGIS Developer**s. Don't be tempted to leave early – this is worth staying for! **Host: Scott Campbell** **Room:** NZ1&2				
3:00-4:30	Farewell Function, Marlborough Rooms and Foyer				