**List of collated questions from CoP Remote Sensing Event**

**Participant Numbers attending: 94 online**

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| MentiMeter Comments on collective process   * Collaborative * who will lead |
| Mentimeter comment on issues to explore   * modelling of flood inundation extent under different flow scenarios * surface water groundwater connectivity * The storage and movement of water through the landscape is always hard to gauge and represent in hydrologic models. RS insight into the interaction of surface water and shallow groundwater systems is valuable when estimating model parameters. * Modellers need to stop just assuming the monitoring sites will continue to exist for them to obtain calibration and validation data from. Become active supporters of monitoring, send us back your products and publish your findings. * 1. River connectivity to the aquifer or river bed hydraulic conductivity * 2. Water movement into the aquifer from soil profile * 3. Land use coverage and identification of GDE * where has it been done well and what has made it successful. * stormwater modelling and climate change * climate change |
| Mentimeter comments on technology and sharing :   * Co-analysis of proximal and remote sensing technologies * As remotely sensed products are now available with a much higher temporal and spatial resolution, data storage, access, and processing capacity are key issues, particularly for regional locations. Also regular sharing of info about new products * Access to remote sensing data and validation techniques. * A brief summary of the RS products available and which is most appropriate for different purposes. * How other water modelling teams are using remote sensing data, particularly those with experience in using these datasets. Shared learnings will be valuable. * Provide information from/to other states/ national organisations . Eg Water Research Australia are currently seeking support for state of knowledge and remote sensing for water applications review - https://www.waterra.com.au/research/   Question from: |
| Question for: Anyone  Question from: Menti Meter  identifying riparian vegetation species type and condition (including extent of viney weeds) across SEQLD waterways has previously not been possible, has there been any advancement in this area? |
| Question for: Tim  Question from: Ian Gordon (DNRME)  We have a growing catalogue of "remote sensing" data collected through drones, fixed cameras etc - will most of the same principles apply? Anyone working on how to blend more static and/or infrequent collection of lidar/camera imagery through drones (often event-based collection) with more frequent, lower-resolution data-sets from satellites. Another line of evidence to add to direct measurement (sensors)? |
| Question for: Tim  Question from: Thong Nguyen - CACS, USQ  If we want to extract time series data for a location, were Landsat or Sentinel scenes co-registered well enough for each pixel? Do we need to re-registered each image together? |
| Comment from: Luigi Renzullo - ANU Institute Water Futures  Thanks Tim. What I liked about the presentation is that is spanned the whole information value chain from ‘raw’ observations right through to value-added end-use information for decision support. This is why forums such as QWMN workshops is so important: so that those researchers working on deriving satellite products can be informed/guided by the end user needs. Very cool!. |
| Question for: Andy Clark  Question from: Brian McIntosh    What would need to happen for us to get to land use mapping being updated and released on a monthly basis in arrears or even instantly 'on demand'? And would this be a valuable thing to do?  Response from Andy:  The ultimate goal is to move to near real-time land use monitoring but that might be a few years away. It will also be at a lower resolution than I demonstrated as high resolution imagery (<1m) is usually not satellite based  Question for: Andy Clark  Question from: Brian McIntosh  Are there any significant computational or sensor problems to overcome before that can happen?  Response from Andy: We have the computing capability just lack of resources to accelerate the research |
| Question for: Andy Clark  Question from: Thong Nguyen - CACS, USQ  Were crop boundaries detected automatically, Andy?  Response from Andy - Yes crop boundaries were automatically detected |
| Question for: Andy Clark  Question from: Luigi Renzullo - ANU Inst Water Futures  Can you comment on multi-sensor approaches to LULC mapping? |
| Question for: Jo Owens  Question from: Brian McIntosh  Wonder if that indicates an area for RS-modelling-decision making collaboration? Making effective business cases for the required resourcing. Being able to compellingly show that x$ can be saved in planning or disaster response and recovery by using models that run on more up to date / live LULC RS data sets? |
| Question for: Jo Owens  Comment from: Ian Gordon  A few groups looking into lower cost "weather sensors", which could include evaporation - not clear where pan evaporation sites are being used as part of any calibration/validation. Might be insignificant compared to evapotranspiration |
| Question For: Andy Clarke  Question From: Rasitha Perera (Senior Water Resources Engineer, MPN Consulting)  Hi Andy. Anyone looking into adapting deep learning to allotment-scale land-cover mapping using high resolution imagery, preferably in Queensland? flood modelers such as myself need this data desperately.  Response from Andy - Yes I am :-) |
| Question For: ???  Question From: Daniele De Rosa (Research Associate, QUT)  Can RS be used to improve the digital soil mapping process? |
| Question for Jo and Andy  Questions from Beata Sochacka (PhD Student - AWMC, UQ/CRCWSC)  Thank you for great presentations. I have a question to both Andy and Jo: What are the challenges/options for land use and land cover mapping in urban areas using RS. Could Fractional Vegetation Cover be used for mapping greenspace/tree cover in urban areas (especially alive versus dead vegetation during drought)?  Response from Andy - HI Beata, yes, I have looked at some urban tree cover and the results are promising. |