

### **IAH (Irish Group) 2021 Annual Report**

- (1) Secretary's Report
- (2) Education and Publicity Secretary's Report
- (3) Fieldtrip Secretary's Report
- (4) Conference's Secretary's Report
- (5) TDM Report

## IAH (Irish Group) – Annual Secretary's Report 2021

	Irish National Chapter www.iah-ireland.org
<b>Names of 2021 office holders</b> (Date in brackets is when term of office expires)	President Donal Daly (2021) Secretary Niamh Rogan (2022) Treasurer Janka Nitsche (2022) Conference Secretary Philip Maher (2021) Fieldtrip Secretary Robbie Meehan (2022) Education & Publicity Secretary Damien Doherty (2023) Burdon Secretary Morgan Burke Northern Ireland Region Secretary Paul Wilson <i>Conference sub-committee</i> Eleanor Burke, Janka Nitsche, Alasdair Pilmer, Eoin McAleer, Lindsay Connolly, Laura McGrath, Kevin Murphy <i>Education and Publicity Sub-Committee</i> Rashaqat Ali Siddiqui
<b>Changes to office holders</b>	<b>President</b> Donal Daly has completed his term and will be stepping down <b>Conference Secretary</b> Philip Maher has completed his term and will be stepping down. He will stay on the conference sub-committee <b>Subcommittee positions:</b> Alison Orr, Eleanor Burke and Kevin Murphy have completed their terms and will be stepping down. <b>Burdon Secretary:</b> Morgan Burke has agreed to continue <b>Northern Region Secretary</b> Paul Wilson has agreed to continue
<b>Membership information (as of October 2021)</b>	Total IAH (Irish Group) Members: 139 (134 members last year).
<b>Activities during the year</b>  <b>Technical Discussion Meetings (TDMs)</b> are organised by Taly Hunter-Williams (GSI) and Alasdair Pilmer (Gavin & Doherty Geosolutions).	<b>2<sup>nd</sup> February 2021</b> <b>Annual David Burdon Memorial Lecture</b> <i>Sustaining water services in refugee camps in Jordan</i> Fiona Ward, WASH Specialist with UNICEF  <b>2<sup>nd</sup> March 2021</b> <b>IAH TDM</b> Three talks from Early Careers Hydrogeologists, with a common theme of karst <i>The impact of human wastewater effluent contaminants on karst groundwater quality</i> Luka Vucinic (iCrag/TCD)  <i>E. coli and P. aeruginosa occurrence in private groundwater wells in the Republic of Ireland, with an emphasis on karst</i> Luisa Andrade (iCrag/UCC)  <i>Locating flowing conduits in Karst using seismic ground vibrations</i> Haleh Karbala Ali (iCrag/DIAS)

	<p><b>26<sup>th</sup> and 27<sup>th</sup> April 2021</b>  <b>Annual Conference</b>  <i>Catchment Science and Management - The Role of Geoscience and Groundwater</i></p> <p><b>1<sup>st</sup> and 2<sup>nd</sup> June 2021</b>  <b>Training Course - online</b>  <i>Hydrology for Hydrogeologists</i></p> <p><b>5<sup>th</sup> October 2021</b>  <b>IAH TDM</b>  <i>Assessing Climate Change Impacts to Groundwater: The GSI GWClimate Project</i>  Ted McCormack and Joan Campanya (GSI/ITCarlow)</p> <p><i>Historical droughts in Ireland: Perspectives from the past to inform the future</i>  Prof. Conor Murphy (ICARUS/NUIM)</p> <p><b>16<sup>th</sup> and 17<sup>th</sup> October 2021</b>  <b>Annual IAH (Irish Group) Fieldtrip</b>  <i>Aspects of the Hydrogeology of Northern Ireland.</i></p>
<b>Burdon Update</b>	No update.
<b>Other initiatives and achievements during the year</b>	Following the 2020 AGM, the IAH (Irish Group) contacted IAH International to sponsor IAH membership for people in low income countries. IAH (Irish Group) arranged to sponsor 12 members on a yearly basis for five years.

Niamh Rogan  
Secretary IAH (Irish Group)  
27<sup>th</sup> October 2021



# IAH (Irish Group) Annual General Meeting

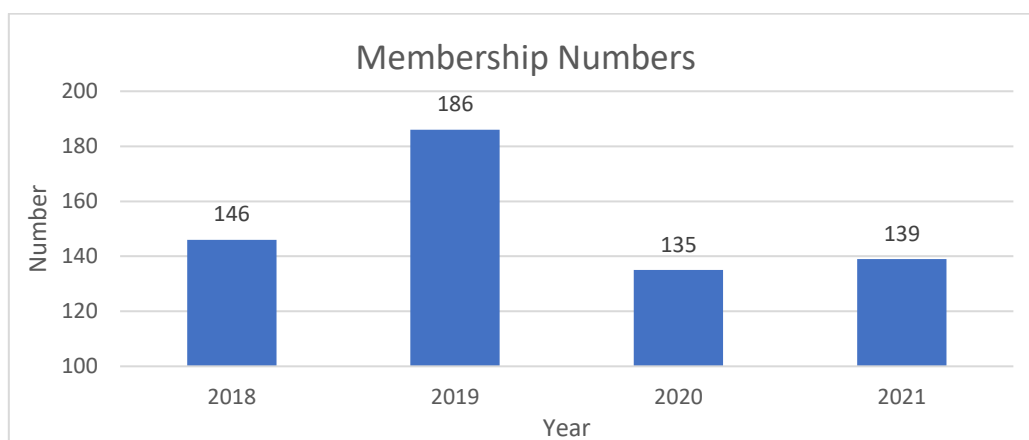
Tuesday 2<sup>nd</sup> November 2021

## Education & Publicity Secretary Report

### Membership

As of the 6<sup>th</sup> of October 2021, we had 139 members in the IAH (Irish Group) which is an increase from 135 in 2020. This is less than 2019 where when we had 186 members, I expect this is reflective of the annual conference being online and free this year, whereas in other years, casual members would rejoin before registering for the conference.

Membership details are sent from IAH head office monthly and new or repaid members are updated on our 'Members' mailing list accordingly.



### Student Bursaries

The email for the 2021 bursary scheme applications went out again in February of this year. We had four applicants, three of whom were deemed suitable for the bursary:

- Christopher Ahern (MSc UCC) – Support to undertake an independent research project.
- Luisa Andrade (PhD UCC/iCRAG) – Support to purchase consumables and equipment to complete field activities.
- Ellen Mullarkey (MSc Birmingham) – Support tuition fees and cost associated with research project.

I'd like to thank the 2021 Student Bursary sponsors:

- [O'Callaghan Moran & Associates](#)
- [CDM Smith](#)
- [Parkmore Environmental Services](#)
- [Talamh Ireland](#)
- David Ball
- Shane Regan

### Email Circulars

IAH events, general notices, job adverts and other relevant seminars or events are circulated to members (membership email list) and other interested parties who have subscribed (TDM's email list). These emails are generally sent to members on a fortnightly basis.



If you have any notices which you think is of benefit to the IAH membership, please email [educationandpublicity@iah-ireland.org](mailto:educationandpublicity@iah-ireland.org).

If you'd like to be added to the TDM mailing list, please email [publicity@iah-ireland.org](mailto:publicity@iah-ireland.org).

### IAH Website & Twitter

The IAH (Irish Group) website ([www.iah-ireland.org](http://www.iah-ireland.org)) and Twitter account ([twitter.com/IAH\\_Ireland](https://twitter.com/IAH_Ireland)) are managed by Rashaqat Ali Siddiqui. Both platforms are updated, such that the latest conference proceedings, fieldtrip guides and TDM's are all available online.

### YouTube

The IAH (Irish Group) YouTube account ([IAH Ireland](https://www.youtube.com/IAH_Ireland)) currently contains videos of our most recent online events. 12 videos from the 2021 Conference (Catchment Science and Management – The Role of Geoscience and Groundwater) and 8 videos from the 2021 Training course (Hydrology for Hydrogeologists) are available to view online. Please have a look through the videos if you are interested.

### Outreach

There has been no schools related outreach completed in the past year.

### Training Course

The training course 'Hydrology for Hydrogeologists' was organised in June 2021. The course topic and delivery platform were chosen based on membership responses to the survey sent out in January 2021.

The course focused on the principles underlying observational measurements in hydrology, recent developments in the way these measurements are made and the nature of the hydrological conceptual models that demand such data.

We had 10 different presenters over the two half days. The course was well attended with 62 logging in on day 1 and 51 logging in on day 2.

We would like to thank the course speakers and all the attendees who joined over the two days.

--

Damien Doherty  
Education and Publicity Secretary IAH (Irish Group)

Email	<a href="mailto:educationandpublicity@iah-ireland.org">educationandpublicity@iah-ireland.org</a>
Website	<a href="http://www.iah-ireland.org">www.iah-ireland.org</a>
Twitter	<a href="https://twitter.com/IAH_Ireland">twitter.com/IAH_Ireland</a>
YouTube	<a href="https://www.youtube.com/IAH_Ireland">IAH Ireland</a>
Membership	<a href="#">Become an IAH member</a>

## **The 2021 Annual Fieldtrip of the International Association of Hydrogeologists (Irish Group) to Northern Ireland**

### **‘Aspects of the Hydrogeology of Northern Ireland’**

This year the Irish Group of the International Association of Hydrogeologists (IAH) held their fieldtrip on the weekend of 16<sup>th</sup> and 17<sup>th</sup> October, when fifteen intrepid hydrogeologists headed north from Dublin to meet researchers working in Counties Armagh, Antrim, Derry and Tyrone. The hydrogeology of the region has been long-studied, but the trip focussed on recent and novel work in the region, and several new approaches to examining issues regarding water supply, blanket bog hydrogeology, novel and unusual karst, and various facets of coastal hydrogeology. The idea of the field trip was to examine this rich library of new work, by visiting a wide variety of sites with very different hydrogeological influences.

Different to last year, there were no Government restrictions on outdoor gathering, though face masks were worn on the bus and social distancing was maintained at all sites as much as possible. For the first time for IAH (Irish Group), detailed Risk Assessments were required, in light of the fact that we were visiting a number of Northern Irish Water sites, and all participants were required to wear steel toe-cap boots at these sites. This in no way detracted from the enjoyment of the sites however, as the menu was rich.

On the outward journey from Dublin, the weather was relatively clement, which was different to many trips of the recent past. When the bus reached Lisburn, Mark Cooper and Paul Wilson of the Geological Survey of Northern Ireland gave an overview of the geology and hydrogeology of Northern Ireland itself, and Conor Lydon of Tetra Tech took participants on a walk down to the Barbour Well, an old borehole drilled in the 1930s and recently rejuvenated as a water supply source. John Walsh and John Paul Moore had deep insights into the fault and fracture network across all of Ireland, and how the Lisburn locality fit into that scheme. Both aspects led to brief but focussed discussion, before the group were led as smaller groups into the well house itself, to investigate the borehole setting. By this time all were well ready for the lunch that followed.

After lunch at Applegreen M2 Newtownabbey, the bus climbed the Antrim Plateau to meet Ray Flynn of Queen’s University Belfast, who led the group across potentially the best and most intact blanket bog site on the island of Ireland. The hydrogeological processes involved in blanket bog formation, and the maintenance of same, were outlined, before a number of short stops to examine various aspect of Ray’s peatland research. From here, the bus traversed the Glens of Antrim, and Mark Cooper and Paul Wilson led the group down to Loughareema, the vanishing lake on the chalk of north Antrim, with an interesting and unique karst history. By this time rain had set in, and the group were ready for warmth and succour, so they embarked on the journey to their overnight pit stop, at the Portrush Atlantic Hotel. Here, the colloquial dinner was attended by all of the participants.

On the Sunday, the weather initially murky, but segued into dry and bright phases as the morning progressed. The Sunday morning studies began early, with a talk just after breakfast and just outside the hotel by Mark Cooper on the geology of the Portrush locality. A stop at the Gortmore Viewpoint, overlooking Lough Foyle, allowed Mark Cooper, Paul Wilson, Andy Croy of Ulster Wildlife and Kyle Hunter of the Northern Ireland Environment Agency to outline the geology, hydrogeology and ecology of Magilligan Point and its related backshore area, as well as the background to the Umbra Nature Reserve contained thereon. The group then went down in to the Umbra Reserve, where Andy and Kyle outlined the processes of buckthorn removal and restoration

of the dune and slack geomorphology, hydrogeology and ecology. This led to vigorous discussion, and following this Ray Flynn and Tom Rowan led the trip participants a few hundred metres down the beach, where they have installed boreholes into the beach sands at the edge of the dunes. Aspects of saltwater intrusion were outlined, and following this all were well ready for a lunch stop with tremendous food and service, at Silky's Bistro in Dungiven, by the time discussion finished up.

Following lunch and on the return journey to Dublin, a visit was made to Anney's Well near Lough Fea, both of which supply water to the Cookstown area. Conor Lydon took all around the site and discussed the unusual hydrogeology of the locality. At this stage, the bus began the journey back to truck the Dublin contingent headed home.

The IAH would like to thank all the contributors to this year's field trip. Thanks also to Northern Irish Water and the landowners at Loughareema and around Anney's Well for giving us permission to visit their sites, and thanks also to McCaffrey coaches, and the bus driver Noel, for getting us there, around and back safely. Noel has now been on more IAH (Irish Group) field trips in the last few years than a number of active IAH (Irish Group) members !

The outlay on the trip was more expensive than standard, as there were much less than less than half the usual number of participants. This may be a hangover from covid, but we would be hoping that attendance spikes again in 2022. As we could not do a 'looped' route on the trip, this may have restricted people coming for portions of the trip and heading off if they have other commitments, as is the usual case when 'looped' routes are followed. As an aside, we are always usually down the money for the bus each year, owing to the fact that we pay hotel, dinner and lunches for the contributors, the bus driver and the field trip secretary.

The move to online booking and payment of the trip worked very well, and is something that we will continue. Cash is no longer king, another change which has been fully copper-fastened by covid 19.

**Dr. Robbie Meehan, IAH Fieldtrip Secretary**



**Mark Cooper, Paul Wilson and Conor Lydon discuss the geology of Northern Ireland, and the Lisburn locality, at the first stop on Saturday morning.**



**Paul Wilson gets nervous before his input into the Antrim plateau bog sites.**



**Hi- ho, hi-ho ... it's off to work we go ...**



**Ray Flynn discussing blanket peat and discharge.**



**Paul and Mark and the group inside a lake.**



**The majesty of Magilligan.**



**Ray and Tom outlining the boreholes and their design ... the borehole had been excavated specifically for the trip, as they underlie shifting sands.**

## IAH (Irish Group) 2021 AGM - Conference Secretary's Report

### 41st Annual IAH Conference: "Catchment Science and Management – The Role of Geoscience and Groundwater"

The 2021 IAH (Irish Group) Conference was once again held online in 2021, due to the pandemic restrictions. We welcomed 14 speakers over two half-days from academia, industry and state bodies, as well as a session of short presentations by early career hydrogeologists. Overall, the conference was very well attended - there were 335 unique attendees over the two days, with 275 unique viewers on Monday and 250 unique viewers on Tuesday. There was lively online discussion after each session, with attendees submitting questions via Zoom.

The talks are available to view online on the IAH Irish Group's YouTube channel at the following [link](#).

Over 90% of respondents to the post-conference survey rated the event as 'Excellent' or 'Very Good'. The survey feedback from attendees can be viewed at the following [link](#). Note that we received 44 responses to the survey, unfortunately only the first 40 responses are accessible to IAH as we do not have the paid subscription that is required to view responses over 40 surveys on Survey Monkey. Thanks to all those that replied to the survey.

The following is a description of the talks. Session one, *Catchments and the Environment*, introduced a broader perspective and included talks on the Framework for Integrated Land and Landscape Management developed by An Fóram Uisce (Gretta McCarron, An Fóram Uisce), Nature-based Catchment Management (Patrick Morrissey, EPA) and a karstic lake habitat (Cilian Roden, Consultant). Session two, *Investigating and Assessing Catchment Water Quality*, consisted of presentations on the 3<sup>rd</sup> WFD Cycle River Basin Management Plan (Marie Archbold, EPA), the Agricultural Catchments Programme (Per-Erik Mellander, Teagasc), local catchment assessment (Eoin McAleer, LAWPRO), and the CatchmentCARE Project (Caoimhe Hickey, GSI).

The second day started with a session on *Insights on Water Flow in Catchments*, with talks on the role of groundwater in catchment functioning (Alan McDonald, BGS), blanket bogs and streamflow (Ray Flynn, QUB), and characterising flows in a western karst terrain (Suzanne Tynan, Consultant). The final session was *Managing Drinking Water with a Catchment Based Approach*, and the speakers presented on the recast Drinking Water Directive (Lorraine Gaston, Irish Water), mitigation actions using the pollutant transfer continuum (Patrick McCabe, NFGWS), catchment modelling of orthophosphate leakage from water mains (Gerry Baker, Arup) and catchment management in a karst environment (Coran Kelly, Tobin). The opening address was given by the IAH Conference Secretary (Philip Maher, EPA), and the closing address by the IAH Secretary (Niamh Rogan, EPA).

The organising committee wishes to express their gratitude to all of those who attended this year's and previous year's conferences, particularly the speakers. We hope you found the 2021 conference interesting, educational and thought provoking, and we look forward to hopefully hosting an 'in-person' event 2022.

Philip Maher (EPA)  
IAH (Irish Group) Conference Secretary, 2020-2021

## **Technical Discussion Meetings (TDMs) Report**

Due to the ongoing Covid-19 pandemic and restrictions on public gatherings, the IAH (Irish Group) TDM organisers decided to host all TDMs for 2021 online, via Zoom.

In total we have held three TDMs so far this year, with a further two scheduled for November and December. The slight reduction in number of TDMs was due to there being no joint-TDMs with the Geotechnical Society of Ireland and the Geothermal Association of Ireland. These will resume in 2022.

Topics for TDMs have included our Early Careers Hydrogeologists' talks, Climate and Groundwater & a great talk from Fiona Ward of UNICEF for our annual David Burdon memorial lecture. In total, over 150 people attended TDMs this year. We are also delighted to have welcomed Dr John Weatherill, UCC, to our TDM organising group.

We would like to acknowledge the great feedback received for our online sessions, particularly from those located outside of Dublin who have previously been unable to attend in-person TDMs. Our aim is to provide a mixture of online and in-person TDMs going forward so that we may continue to engage with the hydrogeological cohort throughout Ireland.