



Summer 2017

Volume 1, No. 1

Field Notes

Newsletter of Geological Survey Ireland

Contents

Geoheritage Programme.....	1
Geoscience Ireland.....	2
Groundwater.....	3
INFOMAR.....	4
Land Mapping.....	5
Minerals.....	6
Tellus.....	7
Research.....	8
Customer Centre.....	9



'St Finian's Sandstone,' by James Bannon, 3rd place winner in our 2016 Du Noyer photo contest. This year the expanded Visual Arts contest closes 22 September. More information available at gsi.ie

Visit our Customer Centre and Library:

Geological Survey Ireland
Beggars Bush, Haddington Road,
Dublin D04 K7X4
www.gsi.ie
(01) 6782896

Opening Hours:
Mon - Thurs: 9.30 – 12.45 and
14.00 - 16.00
Friday: As above but
closing at 15.30

 [@GeolSurvIE](https://twitter.com/GeolSurvIE)

 [/GeolSurvIE](https://www.facebook.com/GeolSurvIE)

 [geological-survey-ireland](https://www.linkedin.com/company/geological-survey-ireland)

 [geologicalsurveyireland](https://www.instagram.com/geologicalsurveyireland)

Welcome

Welcome to Issue No. 1 of Field Notes, the newsletter of Geological Survey Ireland.

Geological Survey Ireland provides accurate and up to date information about all aspects of geology in Ireland. We are continuously researching, unearthing and mapping new data and contributing to sustainable national development and environmental protection.

We hope you enjoy reading this edition of Field Notes and as always we welcome your comments and feedback (communications@gsi.ie). We would like to take this opportunity to remind you that you can stay up to date with all matters geological by accessing our website : gsi.ie

Geoheritage Programme

We continue to support Ireland's three UNESCO Global Geoparks (UGGs) and aspiring geoparks by providing technical advice and grant aid. The Copper Coast and Burren and Cliffs of Moher UGGs are coming to the end of the first year of our 2016-18 Grant Aid scheme that supports their geologists in carrying out Geopark educational and tourism activities. Joyce Country aspiring geopark has used the grant to develop a strategy for its future UNESCO Geopark application.

Burren and Cliffs of Moher Geopark hosted the 39th European Geoparks Network meeting in Ennistymon in March, with a record attendance of 130 representatives from 68 of the 69 European UNESCO Geoparks. An open day on Sustainable Tourism was also held.

The County Audits for Laois and Offaly were completed and the County Geological Site reports and GIS (33 in Laois; 28 in Offaly) are available on the Geoheritage web page and map viewer. Phase 1 of the Galway audit is now starting, concentrating on the Joyce Country aspiring geopark area, to help underpin any future UNESCO application.

National Heritage Week will take place from August 19th to 27th with the theme of "It's in Your Nature". We have an event on somewhere in the country every day of the week but more additions are welcome. Online registration is available until the start of Heritage Week: <http://www.heritageweek.ie/whats-on/submission-form>



68 European Geopark attendees at the 39th EGN Meeting in the Burren and Cliffs of Moher UNESCO Global Geopark.

Geoscience Ireland

The network of 33 companies delivering technical expertise to clients in over 50 countries.

Activities:

New Members

In Q2, Geoscience Ireland (GI) welcomed Lagan Asphalt, Arup (Ireland) and ERM as new members to the business cluster. Lagan Asphalt brings construction, manufacturing and civil engineering skills to the network having completed substantial projects in the UK, Eastern Europe and the Middle East. Arup's Irish operation comprises specialist skills in geotechnical engineering, engineering geology and hydrogeology, and actively targets projects in Scandinavia, India and North America. Mining projects operated by ERM from Ireland includes developments in Serbia, West Africa, Ethiopia and Scandinavia.

Events

The UK | Sean Finlay joined the Enterprise Ireland Pavilion at the 2017 National Infrastructure Forum in London which provided an overview of the UK's strategic infrastructure plans and investments for the coming year. Such projects offer a host of geo-scientific and engineering challenges for developers; GI Members: GDG, TOBIN, Lagan and Nicholas O'Dwyer also attended the conference.

Belgium | Andrew Gaynor and Stephen Walsh attended the EU Development Days conference in Brussels regarding programmes and funding instruments targeting global developing regions. In particular, Sub-Saharan Africa - a key market for GI Member Companies - was represented in terms of capacity building in mineral exploration and mine development, and renewable energies and related infrastructure.

France | The GI Team exhibited and met with French and Iranian companies at the annual geoscience conference hosted by Pole AVENIA - the French national geoscience cluster.

Canada | Sean Finlay represented GI on the Ireland Canada Trade Mission supported by Enterprise Ireland. GI Members have a strong interest in the Canadian mining market, and will be targeting effective access to the market through accessible public procurement on foot of the EU- Canada Trade Agreement.



Sean Finlay and Sean Canney TD on Irish Canada TM

Groundwater

The Groundwater Programme continues its work of assessing and characterising Ireland's groundwater resources, which supports our own work and that of other organisations with an interest in drinking water and environmental management.

In 2017, the GWflood team has expanded to five members from the three who started last October. This year, GWflood project has installed groundwater flood monitoring equipment at 50+ flood-prone sites throughout the country and had 15+ meetings with public interest groups, county councils and state bodies and at ministerial level. At present, the focus of the project is to manage and maintain the monitoring sites while also developing national groundwater flood maps as part of the second implementation cycle of the EU Floods Directive.

The Groundwater 3D project had a busy start to 2017. The nine-strong team is progressing mapping of sand and gravel aquifers in Galway, Dublin and Wicklow; the "Transition Zone" (broken, weathered bedrock) in Limerick, Wexford, Galway, Roscommon, and Clare; and several tracer tests in Mayo. The national chemistry database is near completion and will enable the preparation relevant and useful hydrochemical maps, e.g., water hardness and iron content/risk. LiDAR surveying is planned for Sligo, Leitrim and Mayo; this is weather dependent and it is hoped that these data will be acquired over the summer.

Our engagement with the Group Water Scheme sector continues, and we are now in the fifth year of the Group Water Scheme ZOC project — an ongoing collaboration with the National Federation of Group Water Schemes (NFGWS) and consultant hydrogeologists. Thirty-nine schemes are being assisted in establishing zones of contribution (ZOC) to their drinking water sources this year. The schemes are located across counties Clare, Galway, Tipperary, Limerick and Kilkenny. In 2017, ZOC report findings have been presented to members in 24 of the 28 schemes assisted last year, generating discussion and groundwater awareness amongst communities. This builds on the approximately 160 studies undertaken and reported on up to 2015.



Monitoring water levels and chemistry near a sinkhole in Co Galway as part of GWflood monitoring network

INFOMAR

Geological Survey Ireland's inshore vessels completed seabed mapping between Howth and Skerries, Co. Dublin earlier this summer and have now relocated further south along the coast to Arklow. Some of the data collected in the first survey leg will contribute to the CHERISH project (Climate, Heritage and Environments of Reefs, Islands and Headlands).

CHERISH is a 5 year project funded by the European Union's Ireland-Wales Programme. It will support data collection that will help analyse coastal and island archaeology and heritage sites that are particularly affected by climate change, coastal erosion, storminess and rising sea levels.

The next legs of the survey will focus on the waters off Cahore, Co. Wexford, before moving on to Rosslare, Carnsore Point and eventually Kilmore Quay and the Salties islands – some of these areas contain CHERISH sites as well.

The R.V. Keary, a 15m aluminium catamaran and the R.V. Geo, a 7.5m RIB (Rigid Inflatable Boat) have been busy collecting bathymetric (water depth) and shallow seismic data (acoustic profiles below the seafloor that show layers of sediment above bedrock), while two new vessels are being mobilised to join the fleet – the R.V. Mallet and the R.V. Lir.

The R.V. Mallet is an 18m catamaran and will greatly enhance INFOMAR's ability to gain survey coverage over larger areas, while also serving as a floating base of operations, processing centre and office. The R.V. Lir is going to specialise in shallow water surveying, much like the smaller R.V. Geo, but with its greater size and facilities it will be very versatile and capable of conducting longer-range missions without support.

The survey vessels will be open to the public at the Arklow RNLI Maritime Festival, which runs from the 29th to 31st July and again in Kilmore Quay during National Heritage Week, which runs from 19th to 27th August.



INFOMAR inshore fleet at Arklow: From Top to Bottom – R.V. Mallet, R.V. Keary, R.V. Lir and R.V. Geo



Land Mapping

The Land Mapping programme is currently active in the field, gathering new Quaternary and bedrock geology data. Our Quaternary team is gathering outcrop, borehole and shallow geophysical data in Roscommon and Longford to improve the National Quaternary map and thereby contribute to groundwater and resource studies. To date, sediment and morphology data have been digitally recorded from c. 850 point locations. In the same part of the country, borehole drilling of bedrock has retrieved over 1200m of core from 7 sites so far this year, to add to cores drilled in the same region last year, with the aim of establishing the stratigraphy of the poorly known and previously 'undifferentiated' Carboniferous limestone. This will allow refinement of our geological mapping, as part of the roll-out of our 1:50k bedrock map-based data compilations.

Meanwhile, back at base, look out for new printed maps from collaborations with our GSNi and BGS colleagues: a 1:1.25M scale bedrock geology map of the United Kingdom and Ireland; and a 1:500k scale Quaternary Geological map of Ireland.



The Land Mapping Unit's drilling programme working to reinterpret the bedrock geology of Ireland. A critical tool in order to say with confidence what rocks are present underneath our feet when they are under cover.

Minerals

Amongst other work, the Minerals Section is currently assisting in two projects financed by the European Union - Minerals Intelligence Capacity Analysis (MICA) and Prospecting the Urban Mine (ProSUM). MICA is creating a European Minerals Intelligence Platform which will host information on minerals data and where to get them, methods and tools commonly used in the raw materials sector, and legal aspects. Topics as diverse as mineral exploration, mining, minerals and the environment, recycling, life cycle analysis and spatial planning will be included with contributions from experts in each of these specialist areas. The Platform, in the form of a website, will use innovative means (Dynamic Decision Graph – DDG) to interrogate the system to provide answers to questions relating to the minerals sector.

The ProSUM project aims to deliver a centralised database of all available data and information on what are often referred to as secondary sources. The project deals with four waste streams: electrical and electronic equipment (WEEE); end-of-life vehicles (ELVs); batteries; and waste generated and stored at mines (mine waste).

Geological Survey Ireland's Minerals Section has contributed its dataset of mine waste to the project and has also been involved in creating new INSPIRE codelists†. In parallel with ProSUM, our 2015 short call research programme included a preliminary economic assessment of some mine waste in Ireland. The study was carried out by Aurum Exploration and identified higher than expected concentrations of gold and rare earth elements in the Avoca (Co. Wicklow) mine waste.

† INSPIRE (INfrastructure for SPatial INfoRmation in Europe) is a European Commission directive that aims to establish a pan European infrastructure of geographic data to support environmental policy. One of the tasks within the Directive is to produce common or standardised lists (codelists) to enable European Member States to share and understand each other's spatial information.



The Cronebane Pit in East Avoca, Co. Wicklow, looking southwest to the Mt. Platt mine waste pile.

Tellus

Airborne survey progress

Tellus surveying activities for 2017 consist of airborne surveys in Co Mayo and Co Donegal, and a geochemical survey in the central west of the Midlands of Ireland. Both surveys are currently underway and expect to finish in autumn 2017.

Tellus airborne survey of Mayo and Donegal is 80% complete; this breaks down to Donegal 100% complete and Mayo 67% complete!

Geochemical survey

The geochemical survey is currently active across Galway and the teams from OCAE Consultants Ltd will be moving their way eastwards into Roscommon and neighbouring parts of Offaly and Westmeath into the autumn months.

Heritage Week event, Sligo

As part of Geological Survey Ireland's Heritage Week activities, there will be a Tellus Family Open Day on 20th August, 10am - 4pm at Sligo Airport, Strandhill, Co. Sligo. The day at Sligo Airport will be entertaining and educational, bringing Irish geoscience to life and offering something for all ages, see the plane, meet the pilots, pan for gold and check out the data.



Research

Irish Research Council – Society and Policy Call, 4 projects (2 year each) started in Spring. Abstracts available here: <http://www.gsi.ie/Research/GSI+Funded+Projects/2016+IRC-GSI+Policy+and+Society.htm>

GSI Griffith Award (teaching buyout, 1 year) awarded to Dr Eugene Farrell in NUI, Galway <http://www.gsi.ie/Research/GSI+Funded+Projects/2016+Griffith+Award.htm>

GSI Postdoctoral Fellowships started on June 1st (MU, DIAS & 2 in UCD) <http://www.gsi.ie/Research/GSI+Funded+Projects/2016+GSI+Postdoc+Fellows.htm>

Dr Aggeliki Georgiopoulou (UCD) was awarded her Fulbright Scholarship at the formal event in Iveagh House on June 8th. She will be spending 5 months at USGS Wood Hole in 2018.

ERA Min 2 has closed with 5 applications with Irish partners, results of Stage 1 should be out in September. <http://www.gsi.ie/Research/Closed+Calls/ERA-MIN+2.htm>

GSI and GI presented a poster and full paper at the University Industry Innovation Network June 8th and 9th – the poster will be in the lobby/display area and the paper will be made available as GSI publication).

Irish Research Council Employment Based Programme (for MSc) has been reviewed and final check being carried out by IRC, results to be announced soon.

IRC Enterprise Partnership Scheme (for postdocs) closed in early June. Three applications were submitted with GSI as the Enterprise Partner: Groundwater (Caoimhe), Radon (Ray) and Landslides (Charise).

SFI Investigators Programme still in review (due Summer 2017)

Geothermica ERA NET Call closed July 10th <http://www.gsi.ie/Research/Open+Calls/GEOTHERMICA.htm>

GSI Short Call 2017 now open (closes Aug 4th), <http://www.gsi.ie/Research/Open+Calls/>



Dr Aggeliki Georgiopoulou, Fulbright Scholar, with Koen Verbruggen, Director, Geological Survey Ireland

Customer Centre

Maps and publications available now from our customer centre:

Please call [01 6782896](tel:016782896)

Bedrock Geology of the United Kingdom and Ireland Map 1:1,250,000 Scale

Price €6.00

ISBN 9780751837957

A new modern printed bedrock geology map produced in collaboration with the Earth Science Teachers' Association, Geographical Association, Geological Survey of Ireland and Geological Survey of Northern Ireland. Provides an overview of the geology of the UK and Ireland at a relatively coarse scale using current BGS and GSI data.

Scale: 1:1,250,000

Format: Flat and Folded

The Benbulbin Barytes Miners - The Forgotten Story

Price €12.00

ISBN 9781513615806

This book is a collection of stories of some of the men who worked in the Benbulbin mines from 1905 until all operations finally ceased in 1979. The stories were collected by the author, via audio recordings, podcasts, interviews, newspaper reports and personal documents belonging to some of the Barytes men. These stories are an important part of our heritage, in particular our industrial heritage and are worthy of recording for the education of future generations.

Author: Gerry Foley

Format: Paperback

Geology in History

Price €15.00

ISBN 9789082254754

In this book the European Geological Surveys are pleased to present some examples highlighting the links between History and Geology. Most of them are related to mineral resources which constitute the basement of the development of mankind. Nevertheless, other topics are addressed as problems of access to drinking water in Austria, or the 1755 Lisbon Earthquake. Indeed groundwater or geohazards constitute natural extensions of Geological Survey Ireland's traditional activities.

Format: Hardback



Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Irish Geoscience: What it's Worth to You
Dublin Castle, 7 November 2017
communications@gsi.ie

Save the Date: Geoscience 2017
Our annual conference is back again in Dublin Castle. This year we will focus on the economic value of Irish Geoscience.
Stay Tuned: More to come in September!