

GEOLOGICAL SURVEY OF IRELAND (GSI)

ANNUAL REPORT 2006 - APPENDICES

This information supplements that in the published GSI Annual Report for 2006, copies of which can be obtained from the GSI Customer Centre. Additional information on the work of GSI is available through “Geology Matters”, the regular GSI Newsletter, copies of which can be accessed through www.gsi.ie or by contacting the GSI Customer Centre, Geological Survey of Ireland, Beggars Bush, Haddington Road, Dublin 4. Phone (01) 6782000, Lo-call 1890 44 9900, Fax (01) 6681782, Email gsisales@gsi.ie.

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1. GSI COMMITTEES

GSI Consultative Committee consists of representatives of our customer and stakeholder groups, as well as experts in fields of GSI operations. During 2006 it considered recent work progress in GSI and business plans for 2007. Mr. Kevin Forde, Mr. Peter Lydon, Mr. Ciaran ÓhÓbáin and Mr. Pat Ryan joined the committee and Ms. Joan Brownlee, Mr. Michael Daly and Mr. Andrew Caldicott resigned during 2006. The membership, in addition to GSI staff, at the end of 2006 was as follows:

Mr. David Ball, Hydrogeologist
Mr. Brian Byrne, Arup and Partners
Mr. Viv Byrne, CSA Group Ltd
Ms. Petra Coffey, Wicklow
Dr. Catherine Coxon, Trinity College Dublin
Mr. Pat Duggan, Department of the Environment, Heritage and Local Government
Mr. Garth Earls, Geological Survey of Northern Ireland
Mr. Kevin Forde, Department of the Environment, Heritage and Local Government
Ms. Roisin Goodman, CSA Group Ltd
Mr. Eamonn Grennan, Sligo Institute of Technology
Dr. Bettie Higgs, NUI Cork
Ms. Margaret Keegan, Institute of Geologists of Ireland
Mr. Peter Lydon, Association of Geography Teachers in Ireland
Mr. Micheál MacCarthaigh, Environmental Protection Agency
Mr. Ciaran ÓhÓbáin, Department of Communications, Marine and Natural Resources
Prof. Peter Readman, Dublin Institute for Advanced Studies
Mr. Vincent Reynolds, Cavan Enterprise Board
Mr. Jim Ryan, Department of the Environment, Heritage and Local Government
Mr. Pat Ryan, Department of Communications, Marine and Natural Resources
Mr. Iain Williams, Readymix plc

The following GSI staff serve on the Committee:

Dr. Peadar McArdle Chairperson
Mr. Seamus Nevin Secretary
Dr. Pat O'Connor
Dr. Eibhlin Doyle
Dr. John Morris
Mr. Clive Murray
Mr. John O'Donoghue
Mr. Koen Verbruggen

The National Landslides Working Group was established in 2004 to collate information and examine the causes of landslides throughout the island of Ireland. The membership of this working group, which is multidisciplinary, is as follows:

Dr Eric Farrell – Department of Civil Engineering, Trinity College Dublin
Dr Mike Long – Department of Civil Engineering, University College Dublin
Dr Robbie Meehan – Consultant, Dublin
Ms Reamonn Fealy - Teasgasc, Kinsealy, County Dublin
Mr Tiernan Henry – Department of Earth and Ocean Sciences, NUI Galway
Ms Aileen Doyle – Planning Division, Department of the Environment, Heritage and Local Government
Mr Ken Gavin – Geotechnical Society of Ireland, Institute of Engineers of Ireland
Mr Terry Johnston – Geological Survey of Northern Ireland, Belfast

The following GSI staff serve on the Working Group:

Mr. Koen Verbruggen Chairperson
Dr. Ronnie Creighton Secretary
Ms. Charise McKeon
Mr. Xavier Pellicer

International Year of Planet Earth – Irish National Committee was established in 2006 to coordinate a programme of events to mark the International Year of Planet Earth 2008. Managed by GSI with the support of the Royal Irish Academy, this is an All-Island forum whose membership at the end of 2006 was:

Prof. Alan Jones, Dublin Institute for Advanced Studies
Prof Anne Buttimer, International Geographical Union, Royal Irish Academy (RIA), Senior Adviser
Dr. Aodhagán Ó'Rodaighe, National Committee for Climate Change
Dr. Bettie Higgs, Department of Geology, NUI Cork
Dr. Catherine Dalton, Irish Quaternary Association, National Committee for Geography
Mr. David Ball, International Association of Hydrogeologists (Irish Branch)
Dr. Deirdre Lewis, Institute of Geologists of Ireland, Geosciences Committee (RIA)
Dr. Tony Bazley, ES2K
Dr. Ian Sanders, Department of Geology, Trinity College Dublin
Mr. John Evans, Marine Institute
Mr. John O'Sullivan, Irish Offshore Operators Association, Geophysical Association of Ireland
Ms. Marie Cowan, ES2k, Geological Survey of Northern Ireland
Dr. Matthew Parkes, Institute of Geologists of Ireland, National Museum of Ireland, RIA
Mr. Garth Earls, Geological Survey of Northern Ireland
Ms. Sonja Masterson, RIA, International Association of Hydrogeologists (Irish Branch)
Ms. Susan Pyne, Irish Geological Association
Dr. Vincent Gallagher, Irish Association for Economic Geology
Ms. Willemien Phelan, Irish Meteorological Society, Met Eireann, RIA

The following GSI staff serve on the committee:

Dr. Peadar McArdle	Chairperson; Senior Adviser
Ms. Mary Carter	Secretary; International Union of Geological Sciences
Mr. Enda Gallagher	
Ms. Sophie Preteseille	RIA, Copper Coast Geopark

Irish National Committee for IUGS and IGCP is managed by GSI with the support of the Royal Irish Academy. Its members at the end of 2006 were:

Dr. Peadar McArdle	Chairperson
Ms. Mary Carter	Secretary
Dr. Julian Menuge	Geosciences Committee, Royal Irish Academy

INFOMAR Project Board is the supervisory board for the INFOMAR Project, jointly managed by GSI and the Marine Institute.

Its members at the end of 2006 were:

Mr. Martin Brennan	Chairperson, Department of Communications, Marine and Natural Resources (DCMNR)
Mr. Peter Croker	Petroleum Affairs Division, DCMNR
Mr. John Evans	The Marine Institute
Dr. Peter Heffernan	The Marine Institute
Dr. Peadar McArdle	Geological Survey of Ireland
Mr. Stephen O'Connor	DCMNR
Mr. Koen Verbruggen	Geological Survey of Ireland

2. NATIONAL AND INTERNATIONAL REPRESENTATION

Eurogeosurveys

- P. McArdle: Meeting of Directors: Romania – September.
P.O’Connor: Meeting of Contact Points: Brussels – March, Barcelona - June.
P. McArdle: Eurogeosurveys General Assembly: Brussels- February
P. O’Connor: Soil Protection Expert Group
G. Wright: Groundwater Topic Network Group
P. O’Connor: Natural Resources Expert Group
P. O’Connor: Geochemistry Expert Group: Brussels – September
M.J. Carter: e-content and FP7, Brussels, September

European Geoparks Network

J.H. Morris:

European Science Foundation, Life, Earth and Environmental Sciences Committee

P. McArdle: Irish Representative: Iceland – April

EU WFD Groundwater Working Group 2C

D. Daly: Member - Brussels

Geoscience Information Consortium

M.Carter: Warsaw, May.

GEO High Level Group

P. O’Connor: Brussels – June, Rome – March, Bonn – November.

Global Monitoring for Environment and Security (GMES)

P. O’Connor attended Advisory Council: Brussels - May
K. Verbruggen: National Contact Point, Terrafirma Project, Frascati.

International Hydrological Programme (Irish National Committee)

D. Daly: Member

International Year of Planet Earth

P. McArdle: Senior Adviser

Integrated Ocean Drilling Program – ECORD Council

K. Verbruggen and X. Monteys (Management)
B. McConnell and D. Hardy (Technical)

North East Atlantic and Mediterranean Tsunami Warning System (NEAMTWS) Coordination Group (UNESCO)

B. McConnell: Irish delegate, Nice, France.

ProGEO: The European Association for the Conservation of the Geological Heritage

J.H. Morris: Irish Representative.

Royal Irish Academy – National Committees:

P.McArdle: Geosciences.

W.P. Warren; Geography

P. McArdle: John Jackson Memorial Lecture Committee.

UK Groundwater Forum

D. Daly: Observer member.

UK-Ireland Groundwater WFD Task Team

D. Daly: Member: (Belfast, Birmingham)

3. PARTICIPATION IN WORKING GROUPS AND SOCIETIES

Applied Agricultural Meteorology Working Group (AGMET)

G.R. Wright: Member.

Bréifne Mountains Co. Ltd.

P. O'Connor: Director.

Coillte Advisory Panel, Woodland habitat on limestone pavement.

S. Gatley: Member.

Copper Coast European Geopark

J.H. Morris: Geological Representative to Co-ordination Committee.
France – March.

Department of Agriculture and Food - Technical Working Group on earth-lined slurry / effluent stores, out-wintering pads and constructed wetlands

D. Daly: Member.

Environmental Protection Agency

D. Daly and N. Hunter Williams: Members- Steering Committee on Groundwater Recharge and Vulnerability Project.

G.R. Wright: Member- Steering Committee for Project on Characterization of Unpolluted Groundwater.

D. Daly: Member- Steering Group for Project on Effects of Agricultural Practices on Nitrate Leaching.

Europamines - Project Development Meetings and Site Visits:

J.H. Morris:

European Federation of Geologists – Geological Heritage Working Group

J.H.Morris

EU Water Framework Directive (WFD)

Inter-Departmental Co-ordination Group

D. Daly (Convenor), G.R. Wright, C. Kelly, and N. Hunter-Williams.

Working Group on Groundwater (and sub-committees)

River Basin District Management Project Steering Group:

G.R. Wright, N. Hunter Williams: South-Eastern.

P. O'Connor, D. Daly: Shannon.

G.R. Wright: Eastern.

G.R. Wright, C. Kelly: South-Western.

D. Daly, C. Kelly: Western.

Working Group on Groundwater Protection Responses
D. Daly, G.R. Wright and C. Kelly: Members

Programme of Measures Working Group: D. Daly
Monitoring Working Group: D. Daly and N. Hunter Williams
Steering Group for SNIFFER Projects: D. Daly and N. Hunter Williams (Birmingham, Lancaster)

D. Daly: Member Technical Co-ordination Group
D. Daly: Member: Project Steering Groups. Brussels
D. Daly: Bridge Project, Madrid.

Exploration and Mining Division (EMD) – GSI Liaison Committee
P. McArdle, G. Stanley, G. Wright and N. Hunter Williams.

Fingal Heritage Forum
S. Gatley: Member

FUNMIG Project (Fundamental migration behaviour of radionuclides in the environment).
Associated Partner, P. O'Connor, Stockholm, November.

Geological Journal Editorial Board
B. McConnell: Member

Geotechnical Society of Ireland (Institute of Engineers of Ireland)
J.R. Creighton: Committee Member

Hydrogeology Journal
D. Daly: Associate Editor

Hydrographic Society – Irish Branch
S. Cullen: Chairperson

IGOS Geohazards Theme
K. Verbruggen: Member.

Institute of Geologists of Ireland
G.R. Wright: Board Member and Honorary Secretary
D. Daly, G.R. Wright, Working Group Members.
E. Doyle, GSI Liaison.
S. Gatley, Board Member.

International Association of Hydrogeologists – Irish Group
C. Kelly, T. Hunter-Williams and S. Masterson: Committee Members:

Irish Association for Economic Geology

K. Verbruggen: Past President

Irish Journal of Earth Sciences

J.H. Morris: Editorial Board Member.

Maritime Institute of Ireland

S. Cullen: Treasurer

Mining Heritage Trust of Ireland Ltd.

K. Verbruggen: Web-Manager.

J.H. Morris: Conservation and Inventory Co-coordinator

North Atlantic Minerals Symposium – Organising Committee

G. Stanley: Co-Chair

Society for Geology Applied to Mineral Deposits (SGA)

Local Organising Committee for SGA 2007 in Dublin: G. Stanley, Chairperson and E. Doyle, Treasurer.

Technical Advisory Group on Corrib Project (for the Minister for Communications, Marine and Natural Resources)

K. Verbruggen: Member

Silvermines Inter-Agency Advisory Committee

P. O'Connor: Member

Waterford City Council Natural Heritage Forum

S. Gatley: Member.

4. RESEARCH BASED ON GSI DATABASES

The following is a list of research topics based on GSI databases and the third level institutes where each was or is being undertaken. Some topics comprise more than one project.

Fracture systems and groundwater yields, post-Silurian (Trinity College Dublin)
Geophysical study of landslides, County Mayo (University of Leeds)
Lowland karst of Roscommon (Trinity College Dublin)
Highly and moderately permeable subsoils (Trinity College Dublin)
Geology and petroglyphs (University College Dublin)
Holocene sediment transport, southeast Ireland (University College Dublin)
Flood risk mapping, Dublin-Wicklow region (University of London)
Web-based geochemical and landslide data (NUI Galway)
Geohazards in Porcupine Seabight (NUI Galway)
River Shannon processes and geoarchaeology (NUI Galway)
Deep ocean habitat mapping with ROV (NUI Galway)
Grid-enabled data mining of INSS (NUI Galway)
Single beam acoustics in habitat mapping (NUI Galway)
Seabed substrate characterisation (NUI Galway)
Tenix waveform analysis (NUI Galway)
Neural networks and seabed backscatter (NUI Galway)
Northeast Atlantic marine system modelling (NUI Galway)
Slope processes in the Rockall Trough (University College Dublin)
Accuracy of tidal prediction (Dublin Institute of Technology)
Quaternary of Donegal Bay (Trinity College Dublin)
Gas hydrate systems, offshore Ireland (University College Dublin)
Cenozoic basin margins, Porcupine and Rockall (University College Dublin)
Quaternary of Clew Bay (Queen's University of Belfast)
Base metal geochemical soil levels, County Meath (Camborne School of Mines)
Use of digital laser scanning in Dublin Port area (Engineering – University College Dublin)
Site stability assessment using TerraFirma data (Engineering – University College Dublin)
Slope stability analysis, County Wicklow (Engineering – Trinity College Dublin)

5. GSI PUBLICATIONS

- Creighton, R. (Ed.) 2006 Landslides in Ireland: A report of the Irish Landslides Working Group. Geological Survey of Ireland. 109 pages.
- Feely, M., Leake, B.E., Baxter, S., Hunt, J. and Mohr, P. 2006.
A Geological Guide to the Granites of the Galway Batholith, Connemara, Western Ireland. Geological Survey of Ireland. 62 pages.
- Long, C.B., McConnell, B.J. and Philcox, M.E. 2006.
The Geology of South Mayo. A geological description to accompany Sheet 11 of the Bedrock Geology 1:100,000 scale map series. (Map published earlier). Geological Survey of Ireland. 164 pages.
- McConnell, B. and Gatley, S. 2006
Bedrock Geology of Ireland, 1:500,000 scale map.
Geological Survey of Ireland.
- Scanlon, R. and Sleeman, A.G. 2006
Sheet 77 Wexford. 1:50,000 scale GIS Bedrock Geology dataset and paper map, with accompanying report (pdf format) by A.G. Sleeman, 43pages.
- Stanley, G. (Ed.). 2006 Geology Matters. The GSI Newsletter. Issues Nos. 4 and 5. Include articles by GSI staff members.

6. SCIENTIFIC PUBLICATIONS

- DeVos, W. and Tarvainen, T. (Chief Editors) and others (including P.J. O'Connor). 2006. Geochemical Atlas of Europe. Part 2 – Interpretation of Geochemical Maps. Geological Survey of Finland. 692 pages.
- Gallagher, S.J., Mac Dermot, C.V., Somerville, I.D., Pracht, M. and Sleeman, A.G. 2006. Biostratigraphy, microfacies and depositional environments of Upper Viséan limestones from the Burren region, County. Clare, Ireland. Geological Journal 40, 61-91.

7. CONFERENCE PAPERS

- Cowman, D. and Morris J. 2006. The Copper Coast European Geopark, Ireland: A community based initiative (Abstract). In: Book of Abstracts, Geoparks 2006 Conference, Belfast, September, page 18
- Craig, M., Hunter Williams, N., Moe, H. 2006. Screening methodology for the WFD water quality monitoring network. In: It doesn't go away you know: sustainable urban drainage systems and groundwater monitoring. Proceedings of IAH (Irish Group) Annual Conference, Tullamore, April, pages 5.9-5.18.
- Daly, D., Craig, M., Hunter Williams, N. and Moe, H. 2006. Monitoring groundwater – a new beginning (Abstract). In: Ireland's Natural Resources 2006 – 2020: Developing our Assets. Institute of Geologists of Ireland, Dublin, November, pages 30-31.
- Daly, D., Craig, M., Kilroy, G. 2006. The draft EU Groundwater Directive on the protection of groundwater against pollution: a summary and an assessment of the likely implications. In: It doesn't go away you know : sustainable urban drainage systems and groundwater monitoring. Proceedings of IAH (Irish Group) Annual Conference, Tullamore, April, pages. 1.9-1.13
- Daly, D., Fletcher, S., Hunter Williams, N., Martin, G., Neale, S. 2006. Visualising Groundwater – a tool to aid implementation of the WFD. In: Proceedings of the European Groundwater Conference 2006, Vienna, June, pages 106-115.
- Daly, J.S., Flowerdew, M.J., McAteer, C.A., Whitehouse, M.J. and Scanlon, R. 2006. Crustal evolution of Iona and the Stanton Banks, Southwest Scotland. In: Programme Abstracts for Tectonic Studies Group, Transect through the Caledonides of North Mayo, Highlands Workshop, Achill Island, County Mayo. page 11.
- Doyle, E. 2006. Irish National Seabed Survey: Our offshore resources potential (Abstract). Geophysical Association of Ireland Conference Abstracts.
- Doyle, E. 2006. The need for up-to-date regional datasets (Abstract). In: Ireland's Natural Resources 2006 – 2020: Developing our Assets Institute of Geologists of Ireland, Dublin, November, pages 34-36.
- Garcia, X., Jones, A., Evans, R., Brown, C. and Monteys, X. 2006. Update on the development of a marine EM research group in Ireland (Poster Abstract). In: Programme and Abstracts, Irish Geological Research Meeting 2006, NUI Cork, February, page 25.

- McConnell, B. and Rigs, N. 2006. Detrital zircon provenance and Ordovician terrane amalgamation, western Ireland. Programme abstracts for Tectonic Studies Group, Transect through the Caledonides of North Mayo, Highlands Workshop, Achill Island, County Mayo.
- Meehan, R.T. and Fealy, R.F. 2006. The EPA Soil and Subsoil Mapping Project – final overview. In: A showcase of recent progress in soils research and identification of future requirements and challenges for the EPA Soils Research Strategy 2007 – 2013. EPA Soils Workshop 2006, May, pages 6-10.
- Monteys, X., Caloca, S., Praeg, D., Unnithan, V. 2006. Iceberg scour marks on the Irish Margin : a comprehensive database (Abstract). In: Programme and Abstracts, Irish Geological Research Meeting 2006, NUI Cork, February, page 50.
- O'Connor, P. and others 2006. The Breifne Project – a geotourism initiative embracing the Marble Arch European Geopark (Abstract). In: Book of Abstracts, Geoparks 2006 Conference, Belfast, September, page 74.
- Preteseille, S. 2006. Raising awareness of geology, the example of the Copper Coast European Geopark in Ireland (Abstract). In: Book of Abstracts, Geoparks 2006 Conference, Belfast, September, page 35.
- Scanlon, R. and Sleeman, A.G., 2006. Developing the new GSI 1:50,000 digital bedrock map series (Abstract). In: Programme and Abstracts, Irish Geological Research Meeting 2006, NUI Cork, February page 67.
- Scanlon, R., Menuge, J. and Kennedy, M.J., 2006. The Keem Conglomerate revisited. In: Programme Abstracts for Tectonic Studies Group, Transect through the Caledonides of North Mayo, Highlands Workshop, Achill Island, County Mayo, page. 21.
- Sutton, G. and Verbruggen, K. 2006. Ireland's offshore marine aggregate resources (Abstract). In: Ireland's Natural Resources 2006 – 2020: Developing our Assets. Institute of Geologists of Ireland, Dublin, November, pages 17-18.
- Wheeler, A.J. and others. 2006. IODP Expedition 307: analysis of a complete sequence through a cold-water coral carbonate mound (Abstract). In: Irish Geological Research Meeting, 2006, NUI Cork, February, page 77.

8. GENERAL ARTICLES

- Bolton, J. 2006. Conservation of Palisade Fencing. Ireland's Antiques and Period Properties, Vol 3, No. 2.
- Creighton, R. and Mozo, B. 2006. Tunnelling under Dublin. Science Spin Issue 17, August 2006
- Critchley, M. and Morris, J. 2005. Conservation works at Tankardstown Mine, Bunmahon, County Waterford. The Journal of the Mining Heritage Trust of Ireland, No. 5, December 2005, pages 75-79.
- Doyle, E. 2006. INFOMAR – Mapping Ireland's near shore. Inshore Ireland, February 2006, page 29.
- Doyle, E., Monteys, X. and Hardy, D. 2006. Unusual features on the Irish Seabed. Inshore Ireland, April 2006, page 29.
- Doyle, E., Monteys, X. and Hardy, D. 2006. A submarine slide in the Atlantic. Inshore Ireland, September 2006, page 32.
- Gatley, S. 2006. New temporary exposures initiative. ES2k Issue 12, Winter 2005-2006, page 27.
- Meehan, R. 2006. Slieve na Calliagh, County Meath. ES2k Issue 12, Winter 2005-2006, page 21.
- Monteys, X. 2006. Inshore mapping using laser technology. Inshore Ireland, February 2006, page 28.
- Morris J.H. 2005. The Knockmahon-Tankardstown Mineral Tramway, Bunmahon, County Waterford. The Journal of the Mining Heritage Trust of Ireland, No. 5, December 2005, pages 53-74.
- O'Connor, P. 2006. Medical Geology. ES2k Issue 12, Winter 2005 – 2006, page 22.
- Parkes, M. 2006. Geological heritage in the Emerald Isle. Earth Heritage, Issue 25, Winter 2005 – 2006, pages 20 – 22.
- Pellicer, X. 2006. Slipping and sliding in Breifne. Science Spin Issue 16, May 2006.
- Wright, G. 2006. Well Shaken. Science Spin, Issue 19, November 2006, page 11.

9. PRESENTATIONS

- Carter, M.J. Federated Metadata Portal. IAMG 06. International Association of Mathematical Geology, Liege, Belgium, September.
- Creighton, R. Ireland-a glaciated Landscape. Presentation at seminar, IEI Geotechnical Society.
- Creighton, R., Pellicer, X. and Mozo, B.
Quaternary geology and subsurface geology of Dublin. Presentation to visiting Swedish consultants, Dublin, September.
- Daly, D. Decision-making on location of on-site wastewater treatment systems. Difficult sites: difficult decisions. Presentation to Public Planning Seminar, Galway County Council, Galway.
- Donovan, A. Presentation on seabed databases. GIS inshore mapping forum (third meeting), Dublin, March.
- Donovan, A. Shipborne and LIDAR acquisition efforts by INFOMAR in 2006. GIS inshore mapping forum (fourth meeting), Dublin, September.
- Doyle, E. Irish National Seabed Survey. Presentation to the Cork Geological Association, Cork, April.
- Doyle, E. Acquisition of airborne geophysical data. Launch of airborne survey, Weston Airport, Dublin, June.
- Doyle, E. Presentation on Irish National Seabed Survey and INFOMAR. EMSAAG Conference.
- Doyle, E. Offshore Irish Seabed Survey. Seminar on Geophysical Exploration of Ireland's natural resources. Geophysical Association of Ireland, Dublin, May.
- Hardy, D. Presentation on current geological research being carried out at Trinity College Dublin. Irish Geological Research Meeting, Cork, February.
- Hardy, D., Monteys, X., and Doyle, E.
Presentation on Irish National Seabed Survey and INFOMAR (Poster). Oceanology International 06, London, March.
- McArdle, P. Closing remarks. Ireland's Natural Resources 2006-2020: Developing our Assets. Institute of Geologists of Ireland, Dublin, November.

- McConnell, B. Half-day course on geology for primary school teachers. Castlebar Education Centre, County Mayo, July.
- McConnell, B. The South Mayo/Mweelrea ignimbrites project (Poster). Volcanic and Magmatic Studies Group, Leeds, UK, January.
- McConnell, B. New found view from Newfoundland: Iapetean affinities. Presentation at “Where they stood we stand: new perspectives on Newfoundland”. Craig Dobbin Seminar Series, University College Dublin, March.
- McKeon, C. Presentation on geoscience databases to Landscape Archaeology students of NUI Galway, Dublin, January.
- McKeon, C. Presentation on geoscience databases to Tourism and Marketing students of Dublin Institute of Technology, Dublin, February.
- Monteys, X. Integration of IODP 307 and the Irish National Seabed Survey datasets. Presentation at Integrated Ocean Drilling Program Conference, Yokohama, Japan, August.
- Monteys, X. Iceberg scour marks on Irish Continental Margin. Irish Geological Research Meeting, Cork, February.
- Monteys, X. Malin Sea Geohazard project. Marine EM and Acoustic Workshop, Geological Survey of Ireland, Dublin, November.
- Morris, J. Cherishing Ireland’s mining heritage. Presentation to ES2k, September.
- O’Connor, P. Application of the Geochemical Atlas of Europe for health-related issues. Presentation at the launch of the Eurogeosurveys “Geochemical Atlas of Europe”, Brussels, September.
- O’Connor, P. The Breifne Project. Global Geoparks Conference, Belfast, September.
- Pellicer, X. Landslide susceptibility mapping. Fifth European Congress on Regional Geoscientific Cartography and Information Systems, Barcelona, Spain, June.
- Pellicer, X. Landslide susceptibility mapping (Poster). European Geophysical Union Conference, Vienna, Austria.
- Scanlon, R. The new Bedrock 1:50,000 scale map series. Irish Geological Research Meeting, Cork, February.
- Sleeman, A.G., McConnell, B.J. and Gatley, S.

In-service training course for geography teachers, Blackrock Education Centre, Dublin, and field trip to Killiney, April-May.

- Stanley, G. Sedimentary Basins and Mineral Deposits. Presentation to a workshop, Global Mineral Resources Assessment Project, Orleans, France, September.
- Stanley, G. Aggregates - Breaking it all down. Irish Geological Association, Dublin, April.
- Stanley, G. The need for aggregate potential mapping. The Need for Aggregates Seminar, Irish Concrete Federation, Kinnegad, October.
- Stanley, G. Presentation on Irelithos project. Office of Public Works, Dublin, November.
- Stanley, G. Pilot airborne surveys – methods and site selection. GSI Seminar, Dublin, December.
- Verbruggen, K. and Sheehy, M.
Appraisal of the Dublin Terrafirma data. Terrafirma Workshop, Frascati, Italy, March.
- Verbruggen, K.
Careers in Geoscience. NUI Galway Science and Careers Fair, Galway, March.
- Verbruggen, K. et al.
Landslides in Sligo. The Landslide Working Group and Recent Research. Sligo Field Club, April.
- Verbruggen, K. and Doyle, E.
Mapping the Shallows. Inshore work of the INSS & INFOMAR Plans. Building Coastal Knowledge and GI, Eco-Imagine Conference, UCC. June.
- Warren, W.P. The end of the Ice Age: catastrophic collapse or ordered retreat? – Killiney's story. Irish Geological Association.
- Warren, W.P. Serendipity in the serious pursuit of the trivial: the evolution of the concept of glaciation in Ireland. Lecture to students at St. Patrick's Training College, Drumcondra, Dublin.

10. FIELD TRIPS LED BY STAFF

- Bolton, J. The unique heritage of Dalkey Islands. National Heritage Week, August.
- Chew, D.M., Daly, J.S., Flowerdew, M.J. and Scanlon, R.
Transect through the Caledonides of North Mayo, Highlands Workshop,
Tectonic Studies Group, Mayo, May.
- Daly, D. Field Trip to Cadamstown, County Offaly, with the Stillorgan – Kilmacud
Historical Society, May.
- Leader, U. Water Heritage Day. National Heritage Week, September.
- Long, B. The Rosslare Complex, County Wexford. Irish Geological Association,
October.
- Lyle, P. and McConnell, B.
The Causeway Coast, County Antrim. Irish Geological Association, June.
- McArdle, P. Field visit to the Blackstairs, County Carlow. Irish Geology Week, April.
- McArdle, P. Some silent place – a walk in the Blackstairs. Irish Heritage Week,
September.
- McKeon, C. Field trip to Killiney Beach, County Dublin, for second level students of
Scoil Eoin, Ballybrack, June.
- Preteseille, S. The Copper Coast European Geopark, Summer walks during 2006. A
series of evening walks along coastal County Waterford during July and
August.
- Stanley, G. The Avoca Remediation Project. Presentation and field trip for candidate
consultants, November.
- Verbruggen, K.
A geological walk on Bray Head. National Heritage Week, September.
- Verbruggen, K.
A geological walk on Bray Head. Irish Geology Week, April.

11. EXHIBITIONS

Environment Ireland Conference, Dublin, September. Corporate stand on work of GSI.

Irish National Seabed Survey exhibition. Environmental Protection Agency, Wexford, June, and the ENFO Centre, Dublin, February.

NUI Galway Science and Careers Fair, Galway, March. Geoscience stand.

Prospectors and Developers Association of Canada Convention, Toronto, March. Joint stand with Exploration and Mining Division (D/CMNR) and the Geological Survey of Northern Ireland.

What on Earth? exhibition, Ashbourne Public Library, County Meath, April – May, and subsequently at Beggars Bush.

World Ocean Day, inaugural exhibition at the new premises of the Marine Institute, Galway, June.

12. OVERSEAS MEETINGS ATTENDED

Aquifer systems management. Conference organised by Bureau de Recherché Géologiques et Minières and the International Association of Hydrogeologists, Dijon, France, May-June, C. Kelly.

Carboniferous Conference: Platform to Basin (CCC-2006), Cologne University, Germany, September, A.G. Sleeman

Engineering for Tomorrow's Cities. International Association for Engineering Geology World Congress, Nottingham, September, R. Creighton.

European Geophysical Union Conference, Vienna, Austria, April, K. Verbruggen.

Fifth European Congress on Regional Geoscientific Cartography and Information Systems, Barcelona, Spain, June, P. O'Connor.

Gas Hydrates Conference, London, E. Doyle.

Hydro '06, Evolutions in Hydrography. The International Hydrographic Conference. Antwerpen, Belgium, November 2006. K. Verbruggen and S. Cullen.

Integrated Ocean Drilling Program Conference, Yokohama, Japan, August. X. Monteys.

Limestone Hydrogeology. International Association of Hydrogeologists and the Geological Society of London conference, Bristol, UK, September, Coran Kelly, Sonja Masterson, Monica Lee and Caoimhe Hickey.

Medical Geology Conference, Stockholm, Sweden, May, P. O'Connor.

UK – OUG, Birmingham, M. O'Dwyer, J. Trench.

13. STAFF CHANGES

The following staff joined or returned to GSI in 2006:

Derek Collins, Frank Fagan, Liam Fahy, Triona Giblin, Michael Kennedy, Sarah Lee, Seamus Nevin, Fionnuala Ní Mhairtín, Eamon O Loughlin, Michael O'Mahony, Edel O'Regan, Ronan O'Toole, Fiona Wolfe.

The following staff left the GSI in 2006:

Joe P Carey, Donal Daly, Philip Earley, Triona Giblin, Paula Gormley, Irene Hogan, Deepak Inamdar, Michael Kinsella, Chris Mc Williams, Bernie Mockler, Ann Monaghan, Dick O'Brien, Eamon O'Loughlin, Schalk Van Lill, Geoff Wright, Gerard Wright.

14. GSI ORGANISATION CHART

(the Geological Survey of Ireland (GSI) is a division of the Department of Communications, Marine and Natural Resources)

<i>Senior Management</i>		
Peadar McArdle	Director	
Pat O'Connor	Assistant Director, Finance, Support Services	
John O'Donoghue	Assistant Principal, Administrative Services	
John Morris	Principal Geologist	
Eibhlin Doyle	Principal Geologist	
Koen Verbruggen	Principal Geologist	
Clive Murray	Chief Technologist	
<i>Bedrock</i>	<i>Groundwater</i>	<i>Marine Geophysics</i>
Andy Sleeman	Donal Daly	Deepak Inamdar
Brian McConnell	Geoff Wright	Archie Donovan
<i>Sarah Gatley</i>	<i>Monica Lee</i>	Irene Hogan (part—time)
<i>Markus Pracht</i>	<i>Taly Hunter Williams</i>	<i>Seán Cullen</i>
<i>Ray Scanlon</i>	<i>Coran Kelly</i>	<i>Xavier Monteys</i>
	<i>Caoimhe Hickey</i>	<i>Enda Gallagher</i>
	<i>Sonja Masterson</i>	<i>David Hardy</i>
	<i>Eamonn O'Loughlin</i>	
<i>Cartography</i>	<i>Minerals</i>	<i>Information Management</i>
Padraig Connaughton	Gerry Stanley	Charise McKeon
John Dooley	Irene Hogan	<i>Silvia Caloca</i>
Marie Marini		
Raymond Weafer	<i>Information Technology</i>	<i>Quaternary & Geotechnical</i>
Eddie McMonagle	Mary Carter	Willie Warren
Eddie Hand	Joe Carey	Ronnie Creighton
Ann Scanlon	James Trench	John Butler
Gerry French	Mairéad O'Dwyer	<i>Xavier Pellicer</i>
Michael Kinsella		<i>Beatriz Mozo</i>
		<i>Michael Sheehy</i>
<i>Central Administration</i>	<i>Bréifne Project</i>	<i>Copper Coast Project</i>
Ann Monaghan	<i>Vincent Gallagher</i>	<i>Sophie Preteseille</i>
Philip Earley	<i>Gráinne O'Shea</i>	<i>Margaret Cosgrave</i>
Paula Gormley	<i>Schalk Van Lill</i>	
Margaret Nolan	<i>Chris McWilliams</i>	<i>Irish Geological Heritage/Archive</i>
Caroline O'Shea		Vacancy
Bernadette Mockler		
Gerry Wright	<i>Drilling Unit</i>	<i>Central Technical Services</i>
	Kevin Crilly	Tom McIntyre
<i>Services Officers</i>	Dick O'Brien	Chris McDonnell
Jimmy Kennedy		
Peter Eccles		Section Heads in bold .
Joseph Comerford		Contract Staff in <i>italics</i> .

15. SOME STATISTICS

(a) GSI Coverage in Print Media during 2006(Column-cm)

Theme	National	Regional	Trade	Total
Seabed	532	0	354	886
Hazards	923	0	78	1,001
Airborne Surveys	121	152	0	273
Heritage	97	0	216	313
Groundwater	0	0	0	0
General	156	0	123	279
Total	1,829	152	771	2,752

(b) GSI Website Activity: Visitor Numbers

	2006	2005	% Increase
Gsi.ie	401,159	225,004	78%
Web_Mapping	40,727	32,868	24%
Gsiseabed.ie	30,838	28,811	7%
Total	472,724	286,683	65%

(c) The distribution of queries from the public in 2005 and 2006

	2006	2005
Customer Centre	1,192	1,524
Groundwater	1,600	1,543
Minerals	120	158
Heritage	204	251
Seabed	165	253
Quaternary	134	175
Geotechnical	138	143
Information Management	98	122
Bedrock	125	53
Technical	18	0
Total	3,794	4,240