

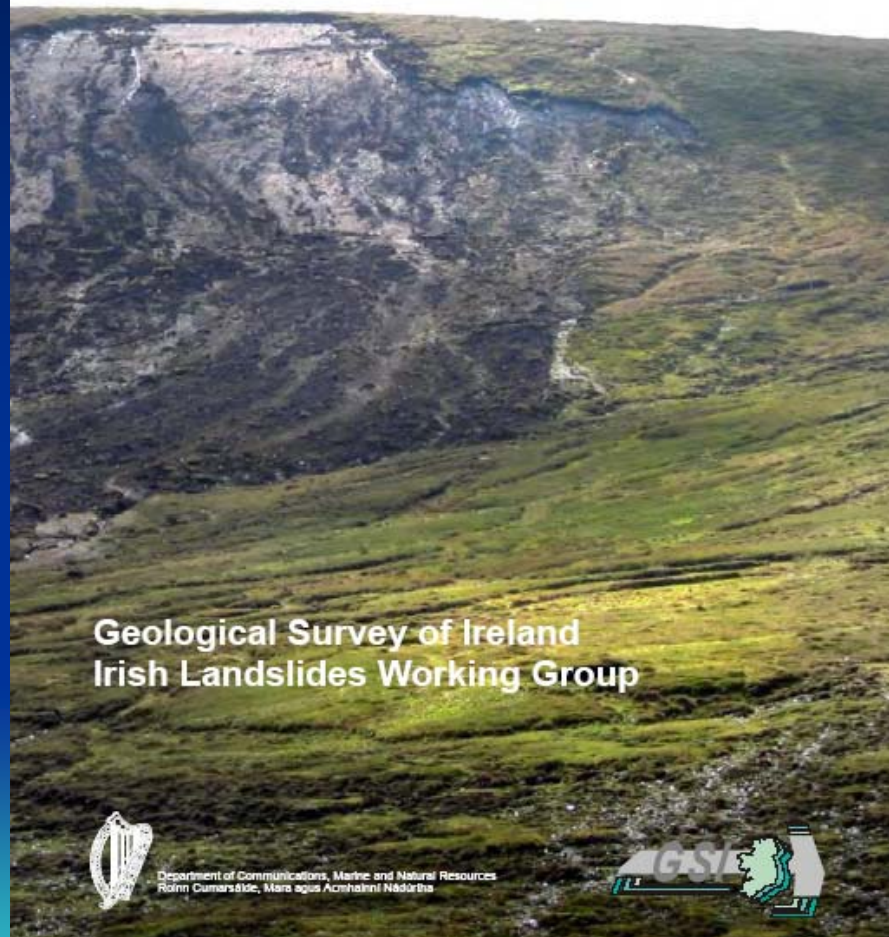
# Geological Survey of Ireland

## Landslides Workshop

21 April 2009



# Landslides in Ireland



Geological Survey of Ireland  
Irish Landslides Working Group



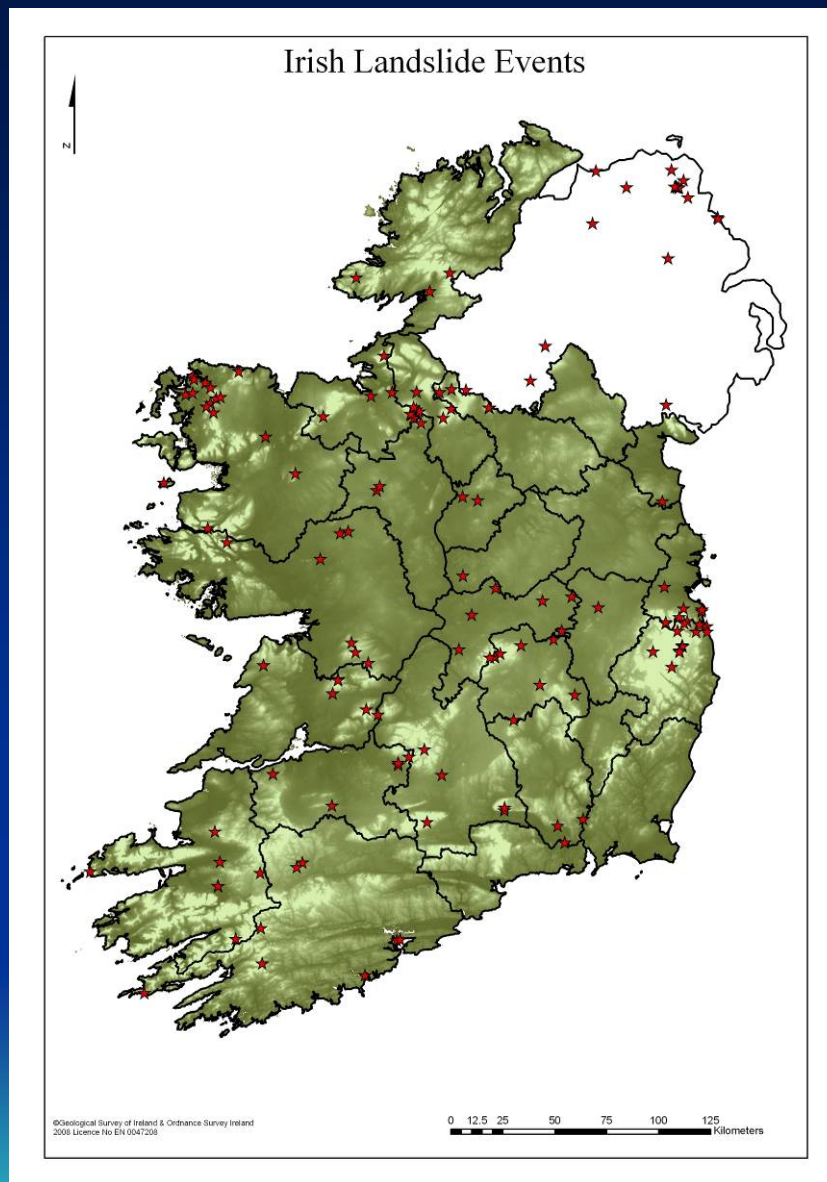
Department of Communications, Marine and Natural Resources  
Roinn Cumarsáide, Mara agus Acmhainní Nádartha



# Recommendations

1. National Database of Landslide Events
2. Research on geotechnical properties
3. Landslide susceptibility mapping
4. Landslide hazard issues and planning
5. Public awareness of landslide hazard

The Irish Landslide Database currently holds 148 events. A further 264 events have also been documented from the Breifne Study Area.



# Findings

- **Landslide Types**

- Peat slides and flows in blanket and raised bogs
- Debris slides and flows
- Rockfalls

- **Impacts**

- Historic peat failures - loss of life  
eg. Castlegarde, Co. Limerick 1708 - 21 dead
- Infrastructure - Roads / Rail / Settlement  
Pollatomish - Derrybrien - Ballincollig - Dunquin  
Bray Head

# Geohazards

- Landslides
- Karst Terrains - cavitation - rockhead profile
- Subsidence - Soft soils
- Subsidence - Weak rock - mining
- Flooding
- Coastal Erosion

# The Future

- **Impacts of Climate Change**
  - Higher temperatures
  - Higher winter rainfall with more frequency of extreme events / drier summers
  - Sea level rise - coastal erosion
- **Impacts of development expansion**
  - building on unsuitable soils and rocks
  - undercutting of slopes
  - building on floodplains

# A Multi-disciplinary Approach

- Geologists
- Geomorphologists
- Geotechnical Engineers
- Planners
- GIS Specialists
- Hydrologists/ Hydrogeologists
- Environmental Scientists

# Definitions

- **Landslide Inventory** -  
Listing of past landslides in an area
- **Susceptibility Mapping** -  
Identification and rating of landscape units as to their potential to experience landslides in the future
- **Hazard Mapping** -  
Identification and rating of landscape units as to the estimated frequency of potential landslides which will cause damage
- **Vulnerability** -  
The degree of potential losses in an area affected by landslides
- **Risk Mapping** -  
Identification and rating of landscape units as to the probability and severity of damage from potential landslides

# Landslides Susceptibility Mapping

- Project commenced in June 2008
- Consultants – Mouchel Ireland Ltd
- Multi – annual project
- 2 project areas – East Leinster / Greater Cork City – key development zones
- Project to include the coastal zone
- Landslide Susceptibility Maps
- Methodologies applicable across Ireland

## Workshop Programme

- 10.00** Opening Remarks – Dr. Peadar McArdle, Director, GSI  
Introduction - Ronnie Creighton, GSI Landslides Project Manager
- 10.20** The GSI Landslide Susceptibility Mapping Project – Robert Bone & Stefan Morrocco, Mouchel Ireland
- 11.00** *Tea & Coffee*
- 11.20** Some recent developments in geotechnologies for landslide mapping and monitoring. – Tim McCarthy, National Centre for Geocomputation, NUIM
- 11.45** Models and Methods for Landslides Susceptibility Mapping: Revisiting the Breifne Area – Alexei Pozdnoukhov, National Centre for Geocomputation, NUIM and Xavier Pellicer, Geological Survey of Ireland
- 12.10** The Impacts from Development and the Assessment of peat Instability - David Fleming, RPS Group
- 12.35** Recent developments in understanding the shear strength of peat with reference to peat bog slides. – Noel Boylan and Mike Long, UCD
- 1.00** *Lunch*
- 2.00** The effect of rainfall on the stability of glacial till slopes – Ken Gavin, UCD
- 2.25** Development of Ireland's Coastal Protection Strategy – Jim Casey, OPW
- 2.50** Landslide Experiences in Northern Ireland - Terry Johnston, GSNI
- 3.15** Investigation and repair of a small landslide on the Torr Head Coast Road in North Antrim – Mark Cassidy, Byrne Looby Partners
- 3.40** *Tea & Coffee*
- 4.00** Landslides and the Planning Process – An Overview - Aileen Doyle, DEHLG
- 4.25** Planning for a disappearing Wexford - Eamonn Hore, Wexford County Council
- 4.50** Landslides: Implications for the planning process - Iain Douglas, Mayo County Council
- 5.15** Discussion & Concluding Remarks
- 5.30** *Close*