

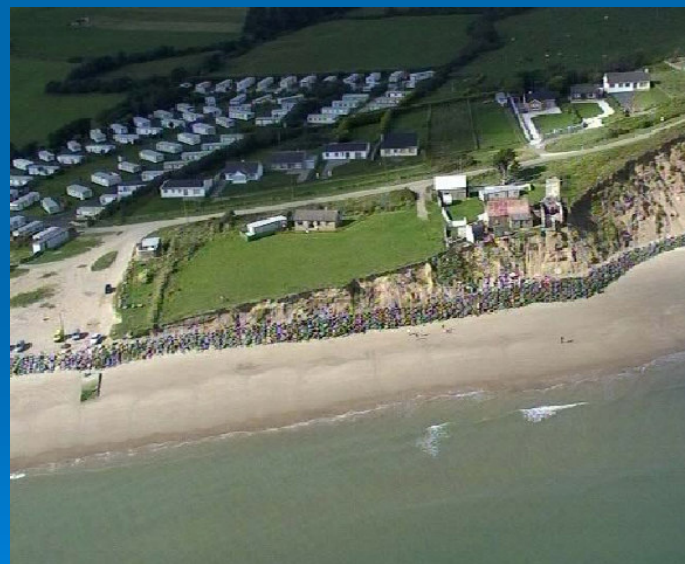


THE DEPARTMENT OF  
AGRICULTURE, FISHERIES & FOOD  
AN ROINN TALMHAÍOCHTA, IASCAIGH AGUS BIA

# Environmental Protection Agency Climate Change Research Adaption Workshop 17 June 2008

Update on Irish Coastal Protection Strategy Study (ICPSS)

How to best manage the risks associated with Coastal Flooding and Coastal Erosion ?



Presented by Jim Casey, Divisional Head of Coastal Protection, Engineering Division, DAFF

# Key Messages

- Project Background
- Project Scope & Status
- Project Future Direction
- Sample Project Outputs



# ICPSS Project Scope & Status

- Phase 1 Scope - Comprised Overview of Coastal Protection generally in Ireland and gave recommendations for further elements of the Study.
- Phase 1 Status – Commenced March 2003 and Final Report submitted October 2004
- Phase 2 Scope – Comprises a series of Work Packages being undertaken along a Pilot Coastline between Dalkey and Carnsore Point.
- Phase 2 Work Packages are as follows:
  - WP1: Development of GIS Coastal Database
  - WP2: Identification of Extreme Flood Outline ( 1000 year or 0.1% AEP )
  - WP3: Identification of Indicative Flood Plain ( 200 year or 0.5% AEP )
  - WP4a: Identification of Erosion Risk Outlines ( 2030 and 2050 year )
  - WP4b: Economics Assessment of Assets at Risk for Coastal Flooding and Erosion
  - WP5 : Development of a Storm Surge Prediction Model
  - WP6 : Development of Coastal Flood Warning System
  - WP7 : Coastal Survey Template
  - WP8 : Prioritising Coastal Protection Projects Decision Support Tool
  - WP9 : Integration of Climate Change Effect into NCPSS

# ICPSS Project Scope & Status ( Contd )

## ➤ Phase 2 Status as follows:

- WP1: Development of GIS Coastal Database - Started April 2004 now Substantially Complete
- WP2: Identification of Extreme Flood Outline - Started April 2004 now Substantially Complete
- WP3: Identification of Indicative Flood Plain - Started April 2004 now Substantially Complete
- WP4a: Identification of Erosion Risk Outlines - Started April 2004 now Substantially Complete
- WP4b: Economics Assessment of Assets at Risk - Started April 2004 now Substantially Complete
- WP5 : Development of a Storm Surge Model - Started April 2004 now Substantially Complete
- WP6 : Development of Coastal Flood Warning System - Outstanding
- WP7 : Coastal Survey Template - Outstanding
- WP8 : Prioritising Coastal Protection Projects Decision Support Tool - Outstanding
- WP9 : Integration of Climate Change Effect into NCPSS - Outstanding

# ICPSS Project Scope & Status ( Contd )

- Phase 3A Scope – Comprises same Work Packages to be undertaken along North East Coast from Dalkey to Carlingford Lough
- Phase 3A Status as follows:
  - WP1: Development of GIS Coastal Database - Started Jan 2007 now Substantially Complete
  - WP2: Identification of Extreme Flood Outline - Started Oct 2006 now Substantially Complete
  - WP3: Identification of Indicative Flood Plain - Started Oct 2006 now Substantially Complete
  - WP4a: Identification of Erosion Risk Outlines - Started Oct 2006 now Substantially Complete
  - WP4b: Economics Assessmt. of Assets at Risk - Started June 2007, Scheduled Finish Aug 2008
  - WP5 : Development of a Storm Surge Model - Started Oct 2006 now Substantially Complete
  - WP6 : Development of Coastal Flood Warning System - Outstanding
  - WP7 : Coastal Survey Template - Outstanding
  - WP8 : Prioritising Coastal Protection Projects Decision Support Tool - Outstanding
  - WP9 : Integration of Climate Change Effect into NCPSS - Outstanding

# ICPSS Project Scope & Status ( Contd )

- Phase 3B Scope – Comprises same Work Packages to be undertaken along South Coast from Carnsore Point to Bantry Bay
- Phase 3B Status as follows:
  - WP1: Development of GIS Coastal Database - Started Jan 2007, Scheduled Finish Aug 2008
  - WP2: Identification of Extreme Flood Outline - Started Oct 2006 , Scheduled Finish Aug 2008
  - WP3: Identification of Indicative Flood Plain - Started Oct 2006 , Scheduled Finish Aug 2008
  - WP4a: Identification of Erosion Risk Outlines - Started Oct 2006 , Scheduled Finish Aug 2008
  - WP4b: Economics Assessment of Assets at Risk - Outstanding
  - WP5 : Development of a Storm Surge Model - Started Oct 2006, Scheduled Finish Aug 2008
  - WP6 : Development of Coastal Flood Warning System - Outstanding
  - WP7 : Coastal Survey Template - Outstanding
  - WP8 : Prioritising Coastal Protection Projects Decision Support Tool - Outstanding
  - WP9 : Integration of Climate Change Effect into NCPSS - Outstanding



# ICPSS Project Future Direction

- Further Phases 4 and 5 at least with similar Work Packages will be required to extend the scope of the study to provide National coverage. Phase 4 covering South West Coast and Phase 5 covering West and North West Coast.
- Extensive new Airborne Lidar Survey acquisition will be necessary to facilitate these further phases.
- Flood and Erosion Risk Maps to be made available to Local Authorities to support the management of these risks.
- Flood and Erosion Risk Maps to be made available to Planners to inform future development decisions
- Climate change impacts to be integrated into Risk Maps
- Coastal Flood Warning Systems to be developed

# ICPSS Sample Project Outputs – WP1

- Coast of Ireland Oblique Aerial Imagery Survey – RSK Orbital 2003
- High Resolution Plan Aerial Photographic Surveys – Blom 2006
- Airborne Laser / Lidar Surveys – Blom 2006 / Infoterra 2001
- Web Spatial Data Viewer





# Coast of Ireland Oblique Aerial Imagery Survey, 2003 Web Version

web address : <http://gis3.dcmnronline.ie/imf5104/imf.jsp?site=Helicopter>

Friday June 13, 2008

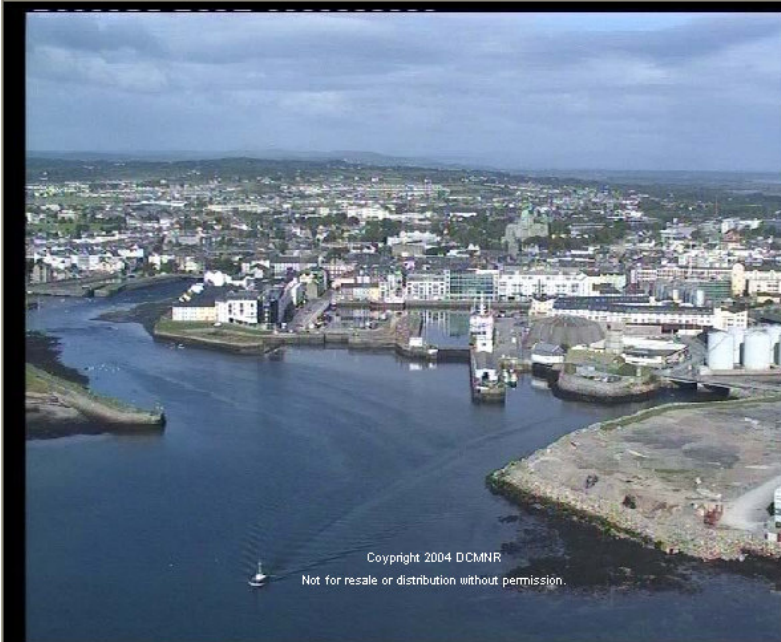
Department of Communications, Marine and Natural Resources  
Roinn Cumarsáide, Mara agus Ácmhainní Nádurtha

Engineering Helicopter Viewer

Find Location Refresh Map Help



Help Close



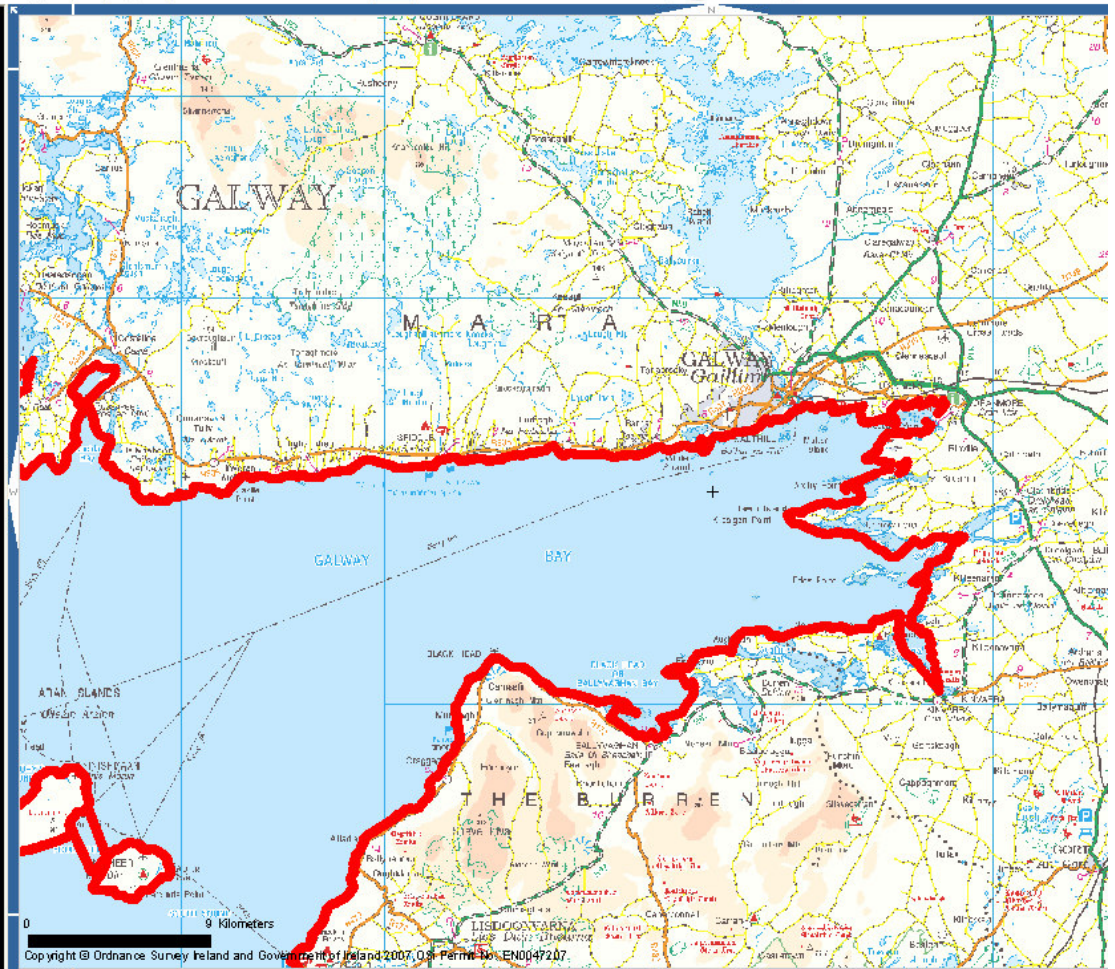
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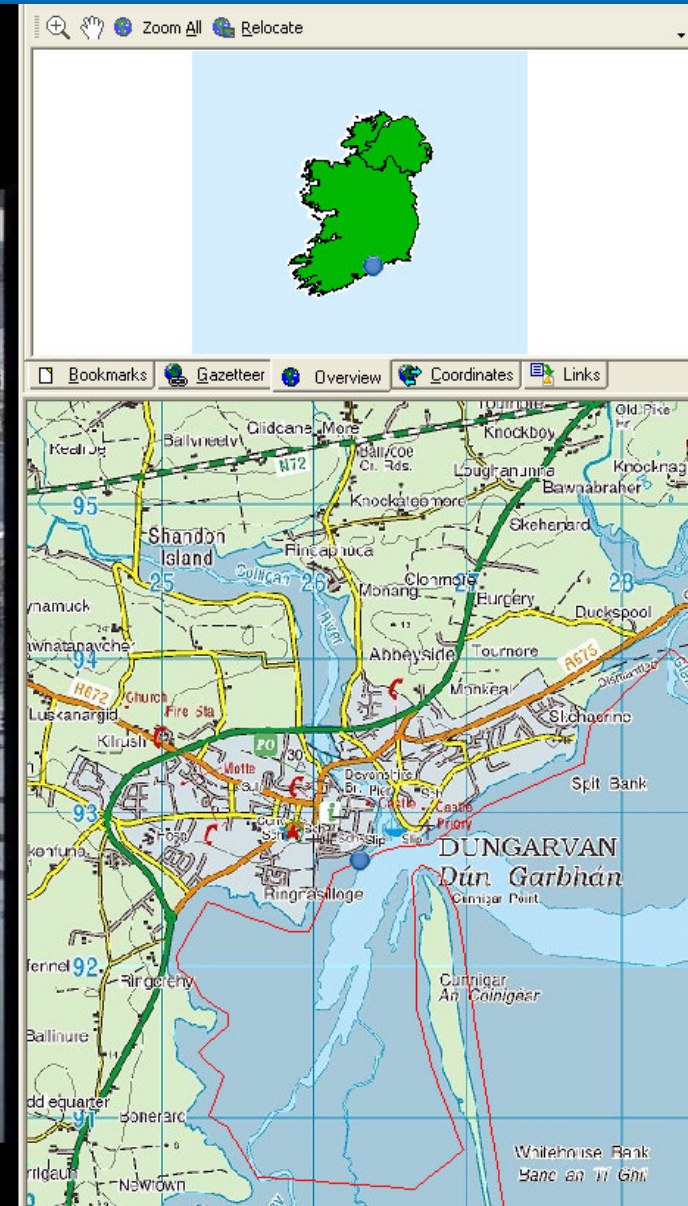
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# Coast of Ireland, Oblique Aerial Imagery Survey – Dungarvan Desktop Version





# High Resolution Plan Aerial Photographic Surveys

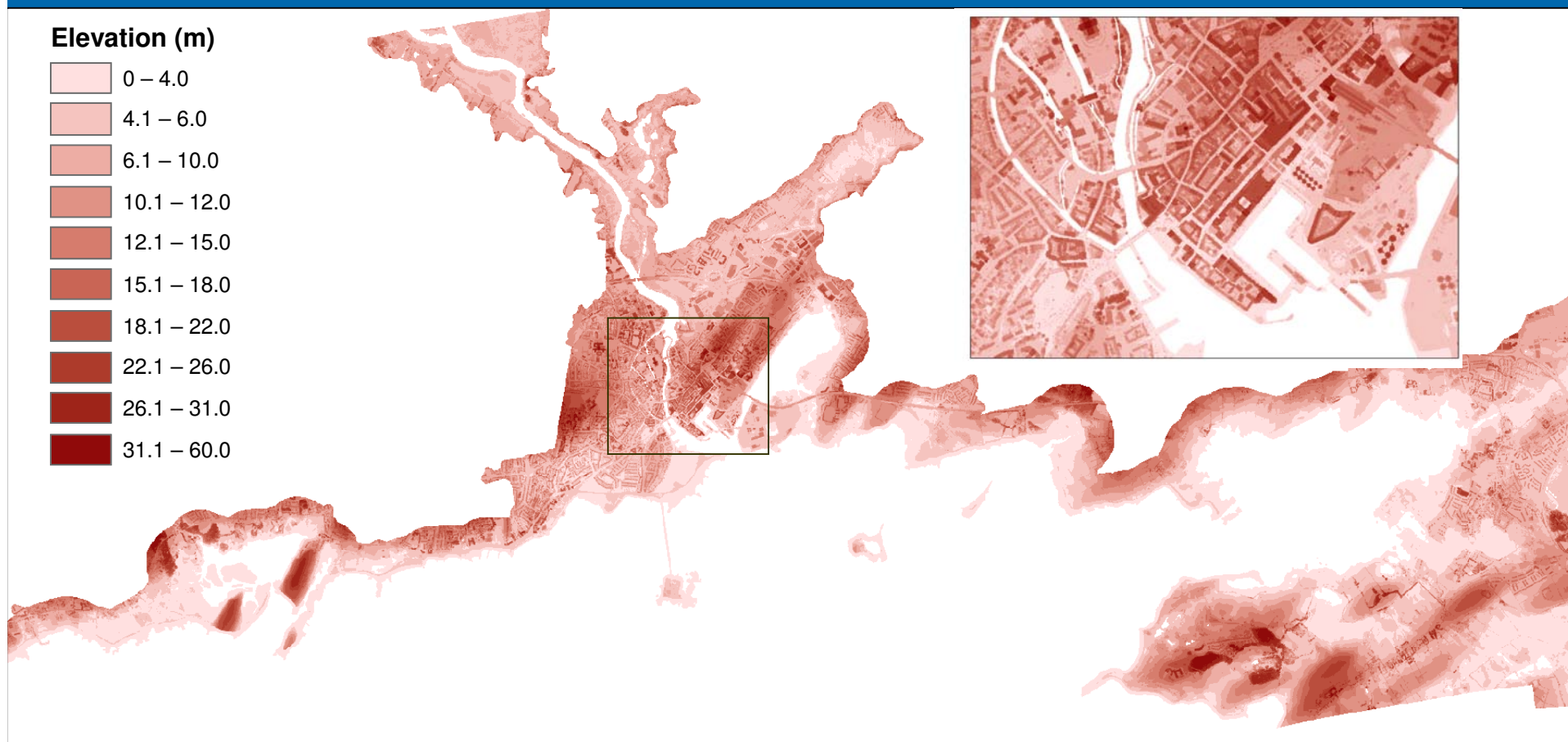
Blom 2006 - Galway Bay

(0.25m resolution)



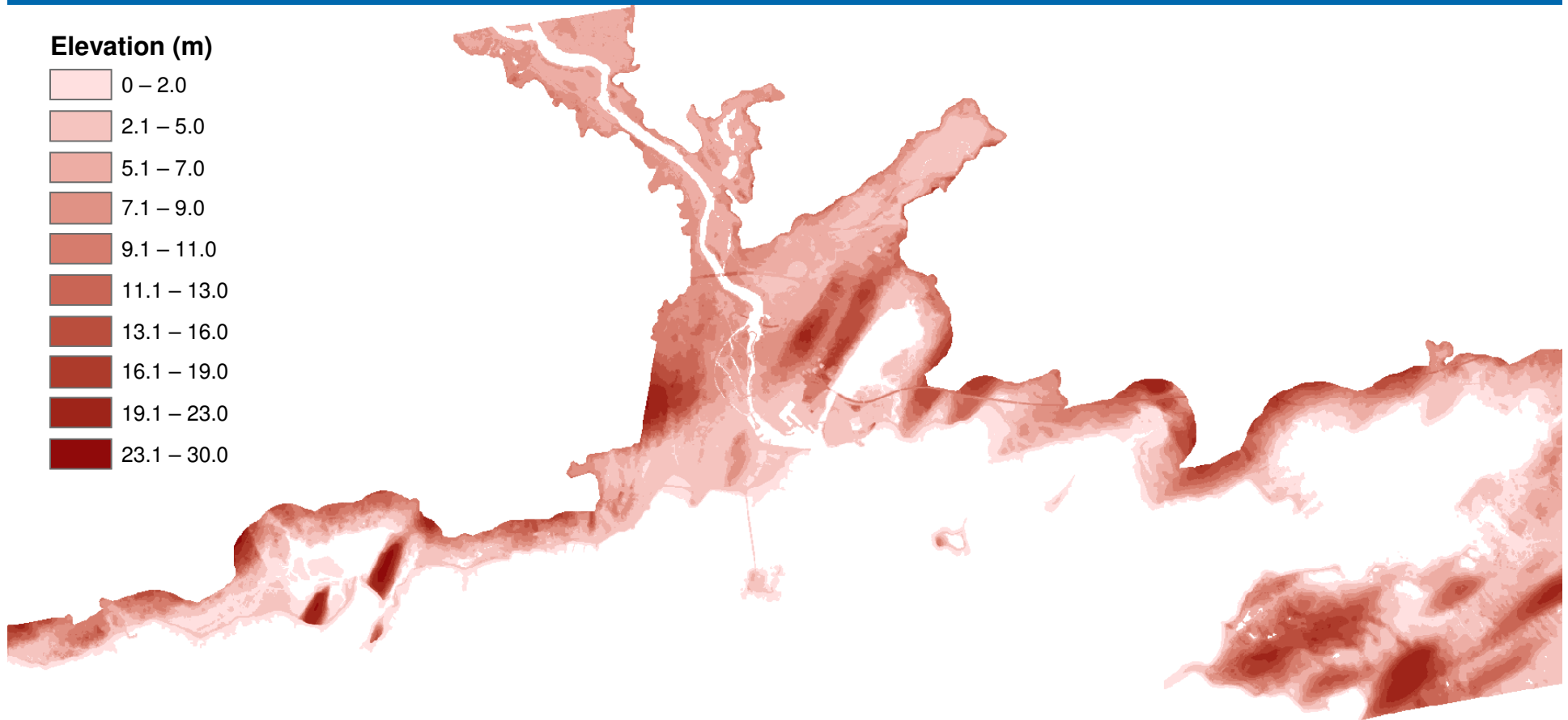
# Airborne Laser / Lidar Surveys – Blom 2006

## Galway Bay – DSM (2m resolution)



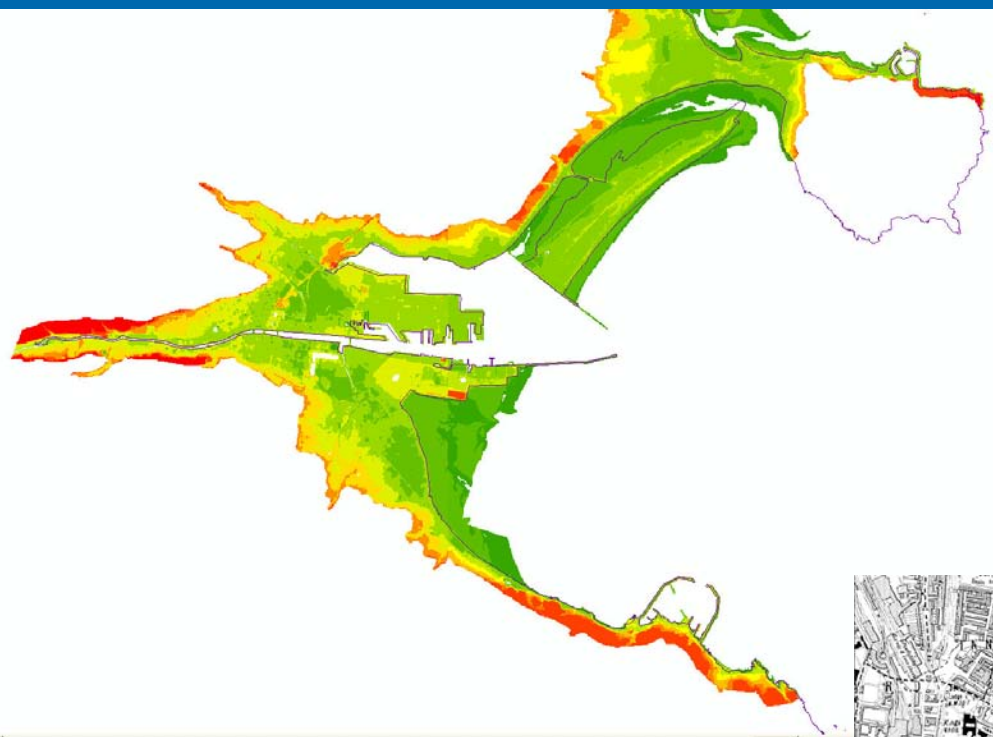
# Airborne Laser / Lidar Surveys – Blom 2006

## Galway Bay – DTM (2m resolution)

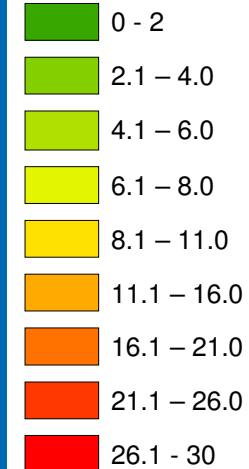




# Airborne Laser / Lidar Surveys – Blom 2006 – DTM Dublin



## Elevation (m)



# DCMNR Online Spatial Data Viewer

web address : <http://www.dcmnr.gov.ie/Spatial+Data/Engineering/>

E-Services | Home | Login | Contact | Request Braille | Site Map | Text only

Department of Communications, Energy and Natural Resources  
Roinn Cumarsáide, Fuinnimh agus Aerhannl Nádurtha

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**Welcome**

The Engineering Division (ED) of the Department of Communications, Marine and Natural Resources (DCMNR) is charged with supporting and managing the sustainable use and development of Ireland's marine territory. In striving to achieve this objective, ED continues to develop and enhance its expertise in the use of Geographic Information Systems (GIS) and in the acquisition of important spatial data including Coastal Aerial photography and Airborne LIDAR data. One of the projects initiated by ED in 2003, the Irish Coastal Protection Strategy Study (ICPSS) has generated many valuable data sets that are being made available on this website.

It is the intention that important spatial data from other ED projects will be similarly available in the near future.

**Map Viewer**

To view Engineering sample geospatial datasets please click the image below or here to open the [Public Data Viewer](#). Once connected to the viewer, click the Help button if you are unfamiliar with the functionality. Further Project specific viewers are available in the section below.

**Useful Engineering Links**

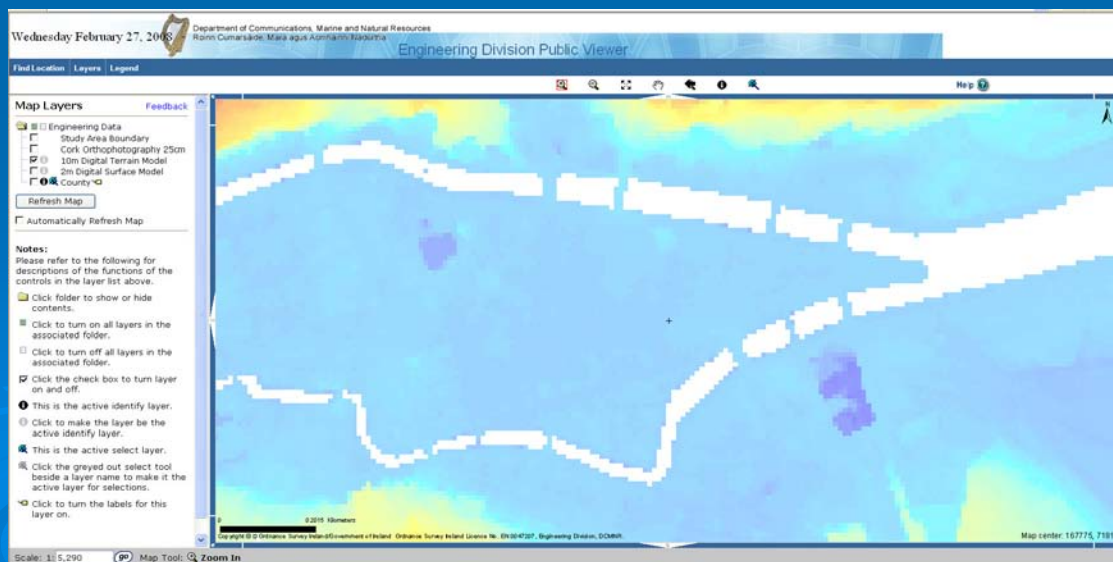
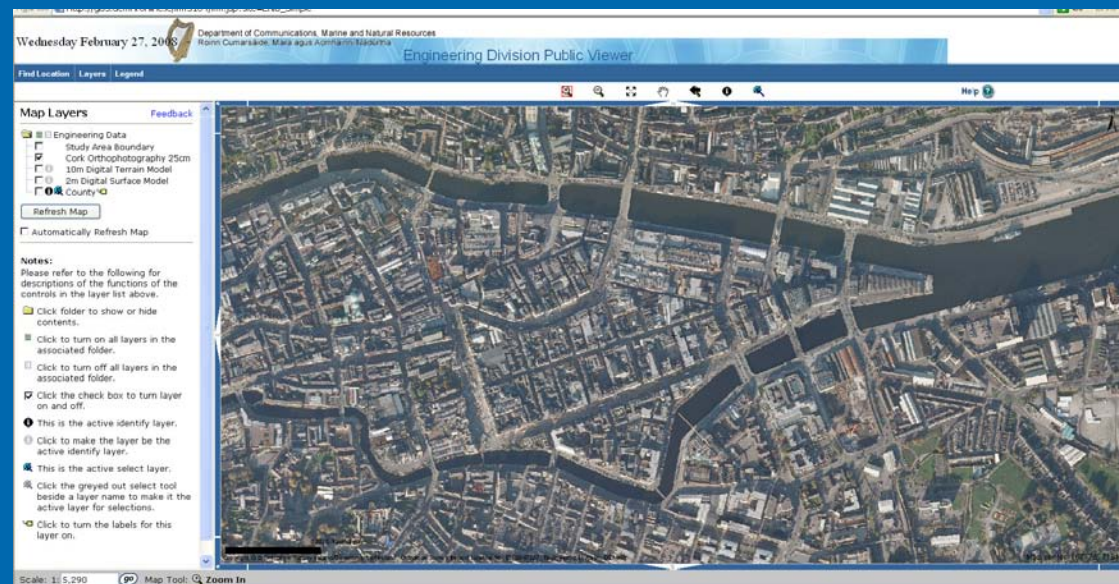
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**Data Download**

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- [Petroleum Affairs Division](#)
- [Exploration and Mining Division](#)
- [Summary Metadata](#)

**Divisional Spatial Links**

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## ICPSS Sample Project Outputs – WP2, 3 & 4a

- SE Coast Draft Indicative Flood Plain, 0.5 % AEP – Wexford
- SE Coast Draft Erosion Risk Lines, 2050 – Wexford



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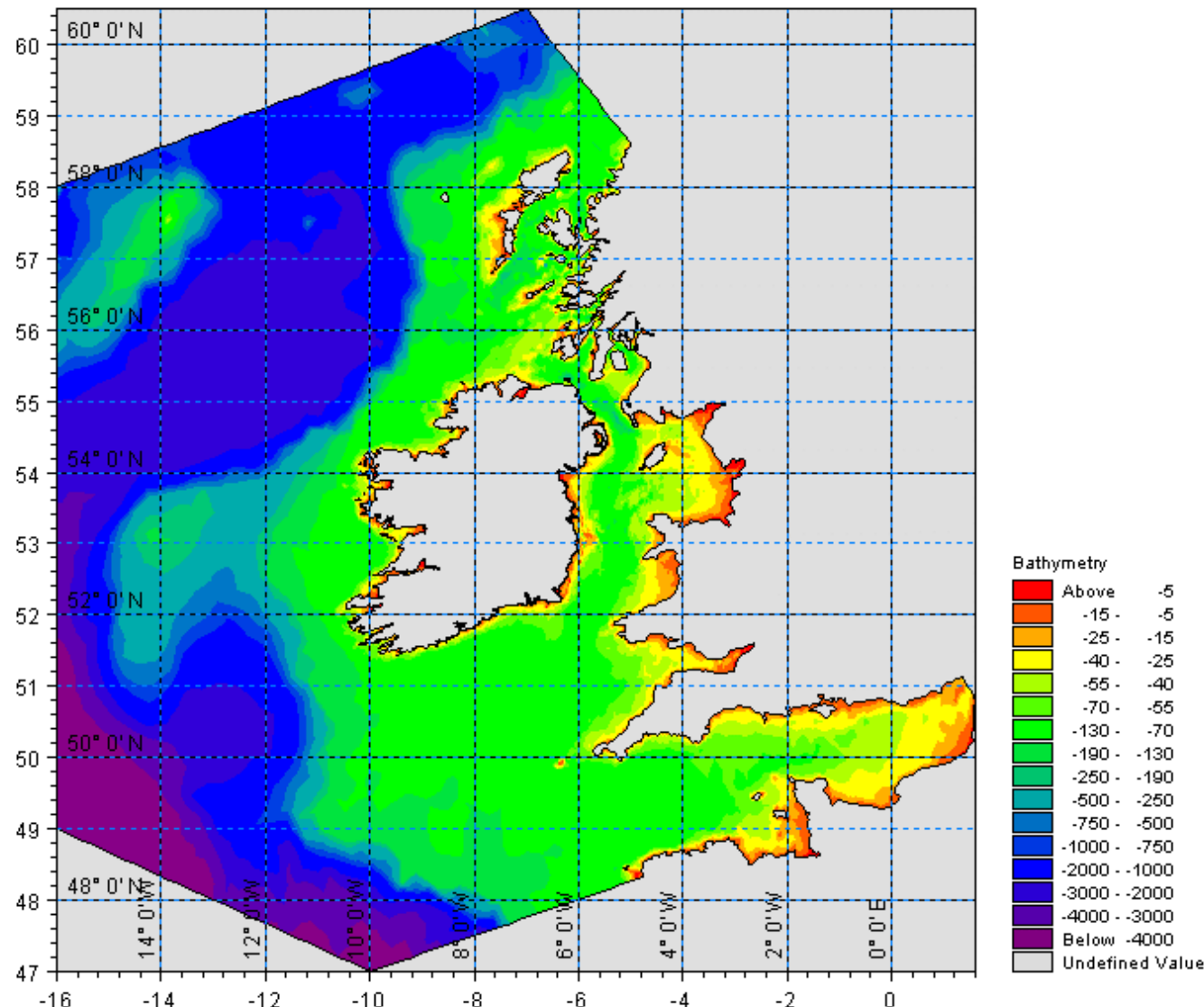


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# ICPSS Sample Project Outputs – WP5

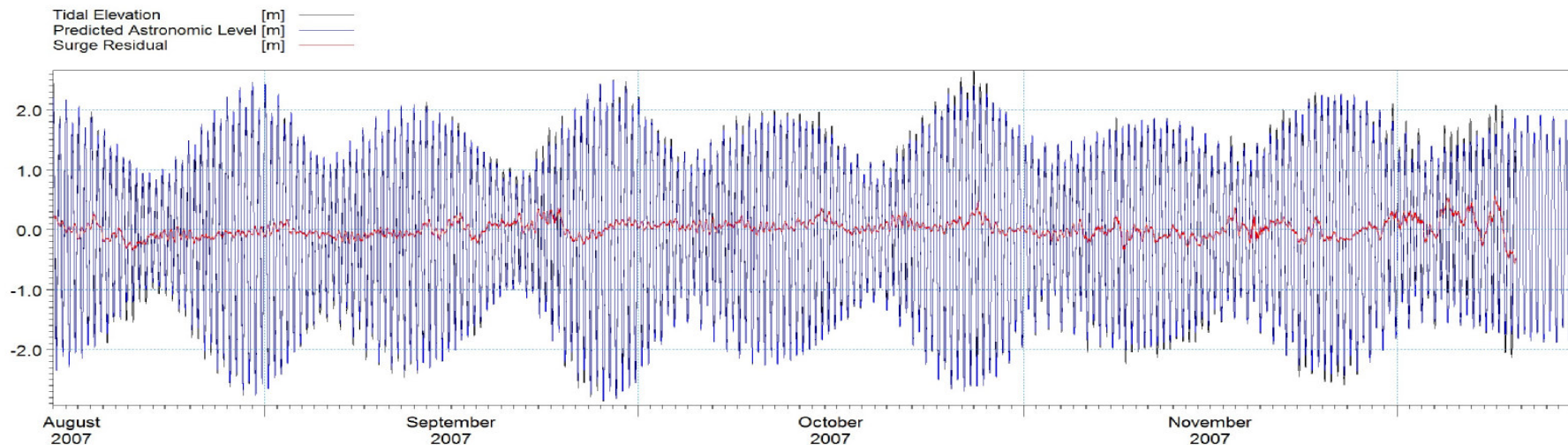
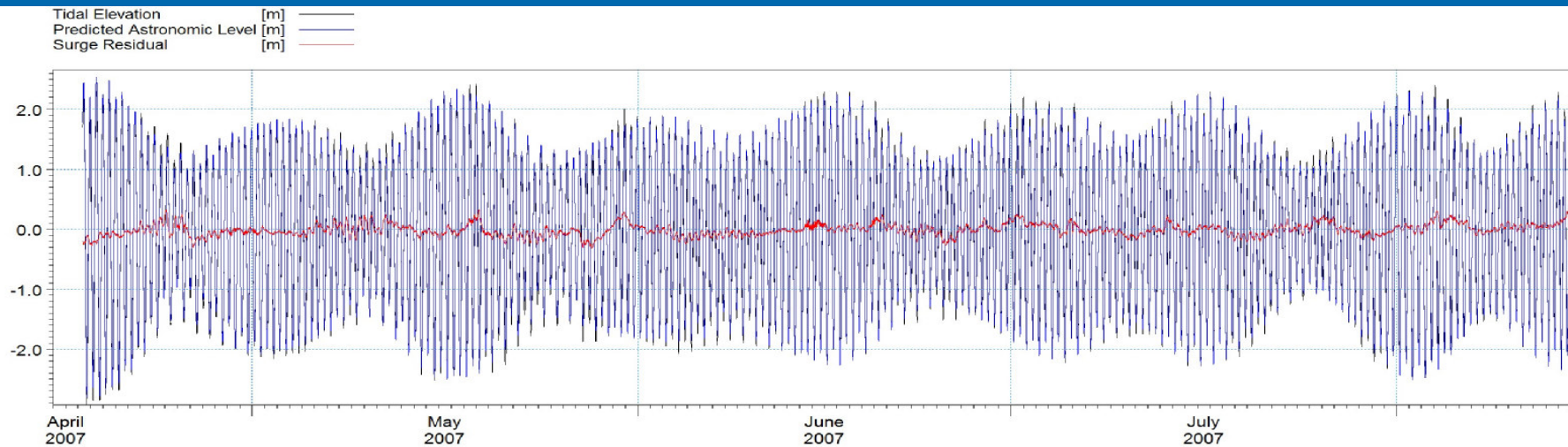
## ➤ Irish Sea Tidal Surge Model (ISTSM) Extent



- Flexible Mesh Model with cell resolution of between 200m and 3.5 km for Irish Sea Coast.
- The model is prepared for assimilation of ECMWF meteorological data for surge forecasting and simulation.
- Has incorporated GSi INSS data and Admiralty bathymetry
- Recorded tide gauge data used for model calibration and validation

# Irish Sea Tidal Surge Model – Calibration

## Sample DAFF Tide Gauge Data – Port Oriel, Co Louth





# Model Prediction Point locations for SE Coast

3 to 4km intervals typically



# Summary

- Background to ICPSS presented
- Project scope and status presented
- Future project direction discussed
- Sample project outputs presented

