

Living in your landscape

Learning from the past to prepare for the future



Living in your landscape

Objectives

- Understanding the concept of geohazards and resilience
- Identifying the different possible geohazards in your landscape
- Learn about the geological features that may contribute to geohazards in your area
- Examine flood risks and management strategies in your area
- Using historic and present day maps analyse any future risks
- Learn about community preparedness and response strategies for geohazards
- Work together to develop a warning system for your community
- Explore how climate change might affect future geohazards.

Living in your landscape

Aims for students

- Explain the concept of geohazards
- Describe the rock types in their region and how they may have an impact in their area
- Describe past and possible future flooding in the area
- Provide a community warning system and action plan
- Understand how climate change may impact their local area

Example of Assessment

Can be altered to suit different groups

Percentage	Descriptor	Criteria achieved based on group work and presentation of findings
90-100	Distinction	Excellent group work, work load shared appropriately, evidence of further research, all points covered, findings identified and excellent presentation of findings
75-90	Higher Merit	Very good group work, workload shared, some further research evident, most points covered, findings identified and very good presentation of findings
55-75	Merit	Good group work, medium sharing of workload, little further research evident, points covered in small detail, basic findings identified,
40-55	Achieved	Disjointed group work, poor sharing of workload, no further research evident, points not adequately addressed in a basic way, no findings identified, poor presentation of findings in general
20-40	Partially achieved	Little to no group work, Group not collaborating in a basic manner, 1 or 2 students in group attempted work, very poor findings evident, very poor presentation of findings
0-20	Not Graded	No group work, no roles/work shared, very little progress made, incomplete/no presentation of findings

Lesson One to Four

- Objectives

- Research relevant keywords and record
- Research and record rock types in area
- Research and record
 - water resources (rivers, lakes and aquifers) and navigation,
 - soil and drainage (farm land quality),
 - other natural resources (mining, fishing, etc...),
 - woodland,
 - energy potential (wind, solar, geothermal or even peatland)
- Analyse why the town was built on that site

Keywords

- Define the following keywords

Resilience:

Geohazards:

Groundwater flooding:

Community risk:

Landscape:

Natural resources:

Weather warning:

Synoptic maps:

Lesson One to Four

Flood Maps

HOMEABOUT▼PUBLICATIONSRESOURCES▼REPORT PAST FLOODFEEDBACKHELP▼DISCLAIMER

Active Layers

+ Add Layer

Single Flood Event

Recurring Flood Event

Layer Queryable: Yes

On Past Flood Event Photos

Legend:

On Past Flood Event Extents

Legend:

Layer Queryable: Yes

On Geological Survey Ireland (GSI) Winter 2015/2016 Surface Water Flooding

Winter 2015/2016 Surface Water Flooding

On Geological Survey Ireland (GSI) Maximum Historic Groundwater Flooding

Maximum Historic: Flood Type

Groundwater

Layers

Tools

Search

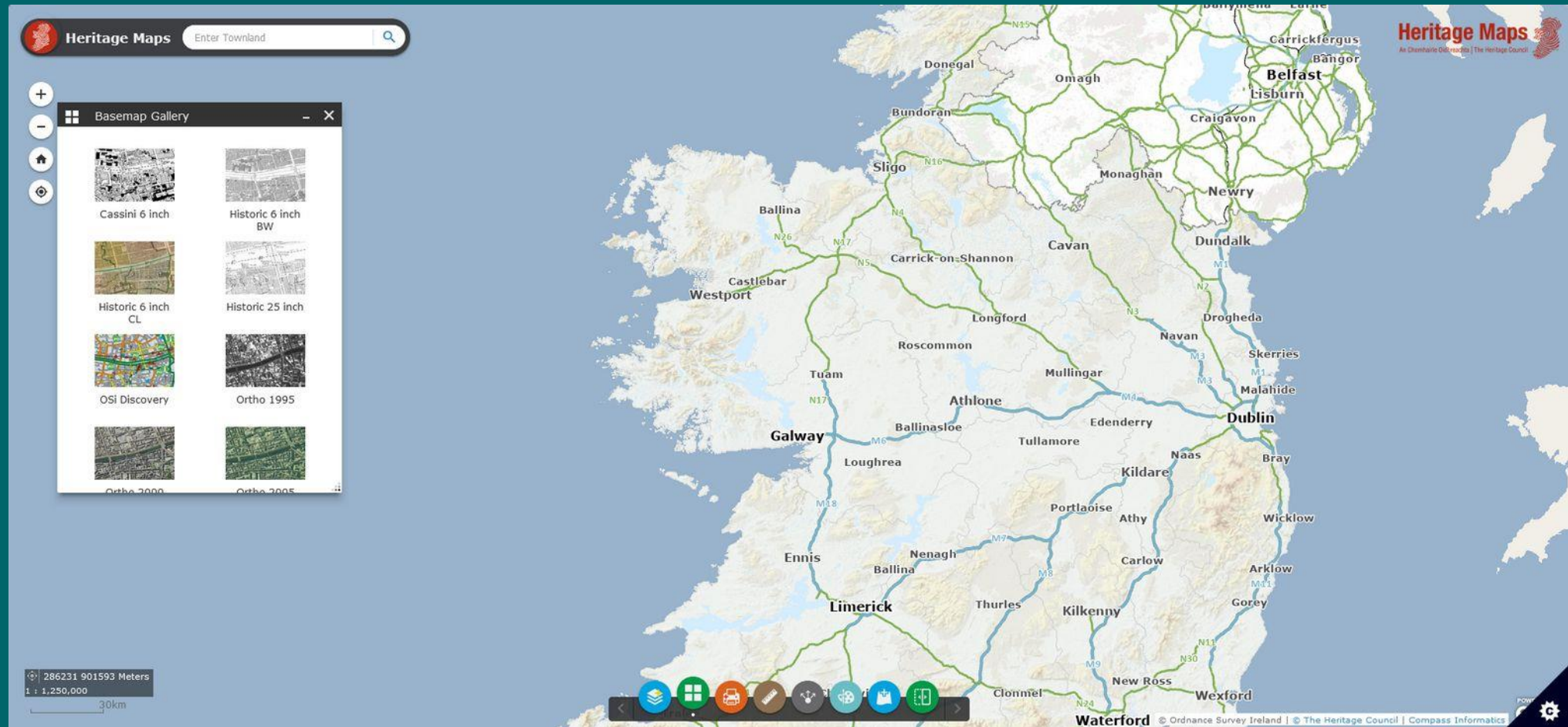
Close

We use cookies on this site to enhance your experience. By browsing this website, you agree to our use of cookies. [More info](#)

Marine and Coastal

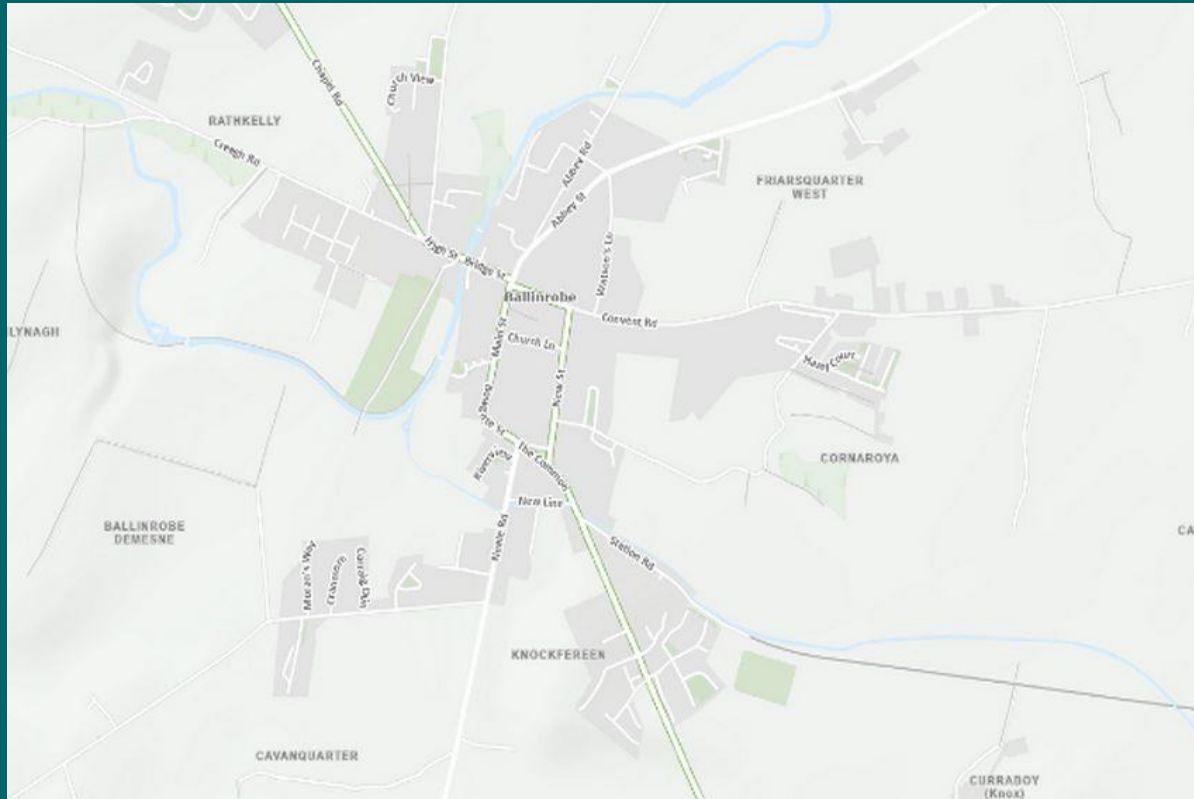
Heritage Maps

- www.heritagemaps.ie (press X when asked about arcGIS account, select basemap gallery, then select the historic maps...)



Comparison maps Historic V Present day

Example for Ballinrobe, co. Mayo



Geological Survey Ireland viewer

- [Www.gsi.ie](http://www.gsi.ie) (select data and maps then “click here for access to maps”)
- Select the relevant tab at the top of the maps, zoom in or search for your area, tick on the relevant layer of information on the right, click on the map for more information

The screenshot displays the 'Geological Survey Ireland Spatial Resources' web application. The interface includes a top navigation bar with tabs for various data categories: All Data, Geology, Geotechnical, Geological Heritage, Groundwater, Tellus, Geothermal, Landslides, Aggregate Potential, INFOMAR, Physiographic Units, GeoUrban, JIBS, Breifne, GOLDMINE, and Du Noyer Photos. The 'All Data' tab is currently selected.

On the left side, there is a sidebar with the following content:

- All Data** (with a link to 'View in full screen')
- A message: 'If content doesn't display, please [clear your cache](#).'
- Information about the Geological Survey Ireland as a division of the Department of the Environment, Climate and Communications.
- A description of the Public Data Viewer Series, stating it contains a comprehensive but not exhaustive list of spatial layers for use by stakeholders from industry, academia, and the public.
- Contact information: 'View more information on the Geological Survey data, please visit our [website](#) (Data & Maps section). Should you have any query, please contact us at support@geodata.gov.ie'.
- The Geological Survey Ireland logo and name in both English and Irish: 'Geological Survey / Suirbhéireacht Gheolaíochta Ireland | Éireann'.
- A small text at the bottom: 'An Boice Comhachail, Aeráide agus Cumarsíod / Department of the Environment, Climate and Communications'.

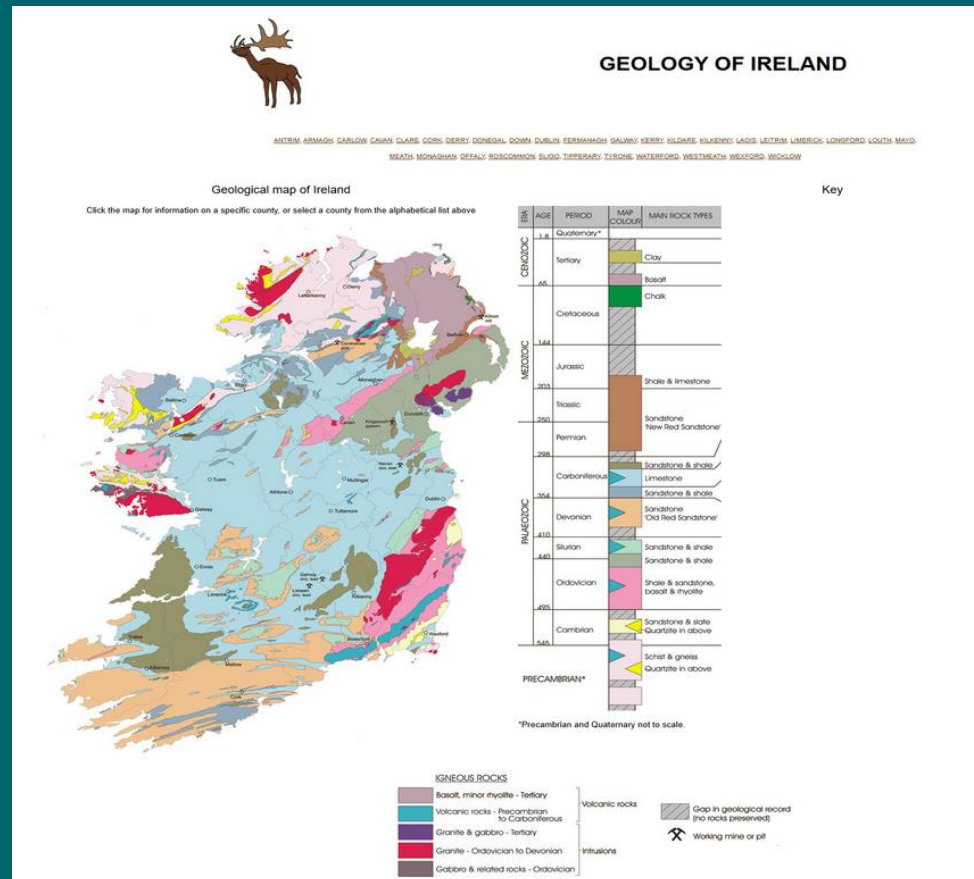
The main area of the interface is the 'Public Data Viewer Series', which features a map of Ireland. Above the map is a search bar labeled 'Find Eircode, address or place'. To the left of the map are navigation controls (zoom in, zoom out, home, and a legend icon). To the right of the map is a 'Layer List' panel with a search icon and a list of layers, each with a checkbox and a three-dot menu icon:

- ☐ Geological Heritage Audited Sites
- ☐ Geological Heritage Unaudited Sites
- ☐ Mineral Exploration Boreholes
- ☐ Verified Boreholes Logs
- ☐ Borehole Locations (Unverified)
- ☐ Mineral Localities
- ☐ Active Quarries
- ☐ Groundwater Karst Data
- ☐ Groundwater Wells and Springs
- ☐ Landslide Events
- ☐ EXT GSI Geotechnical Boreholes
- ☐ EXT GSI Geotechnical Sites
- ☐ Quaternary Sediments
- ☐ Bedrock Geology 1 Million
- ☐ Bedrock Geology 500k
- ☐ Bedrock 100k Sections

At the bottom of the map, there is a scale bar showing 500m and a coordinate display: '368991 967993 Meters'. The footer of the page includes the copyright notice '© Taite Éireann | Geological Survey Ireland' and a small logo for 'Bedrock Geology 100k'.

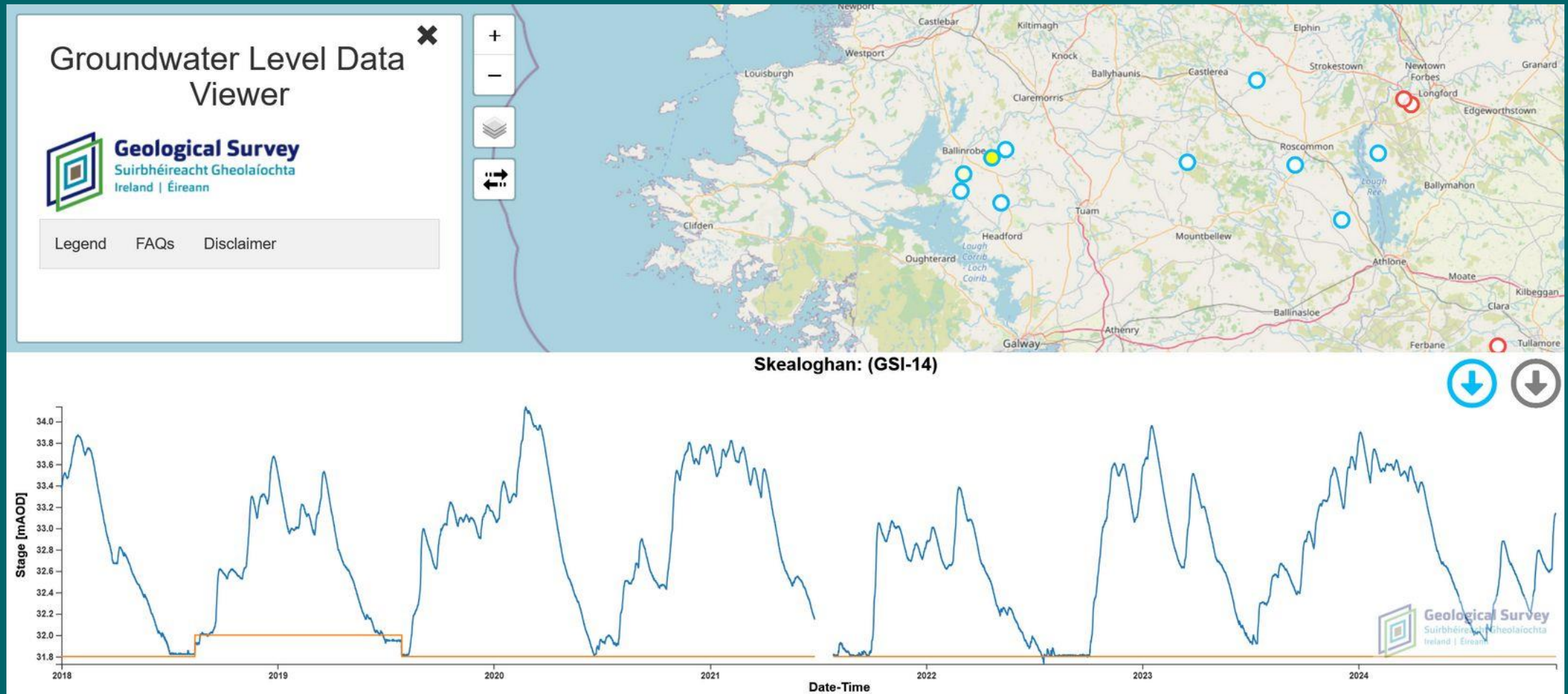
Geoschol

- [Www.geoschol.com](http://www.geoschol.com) (select ireland to go to the map of the country)
- Click on your county to get the relevant geological story pdf



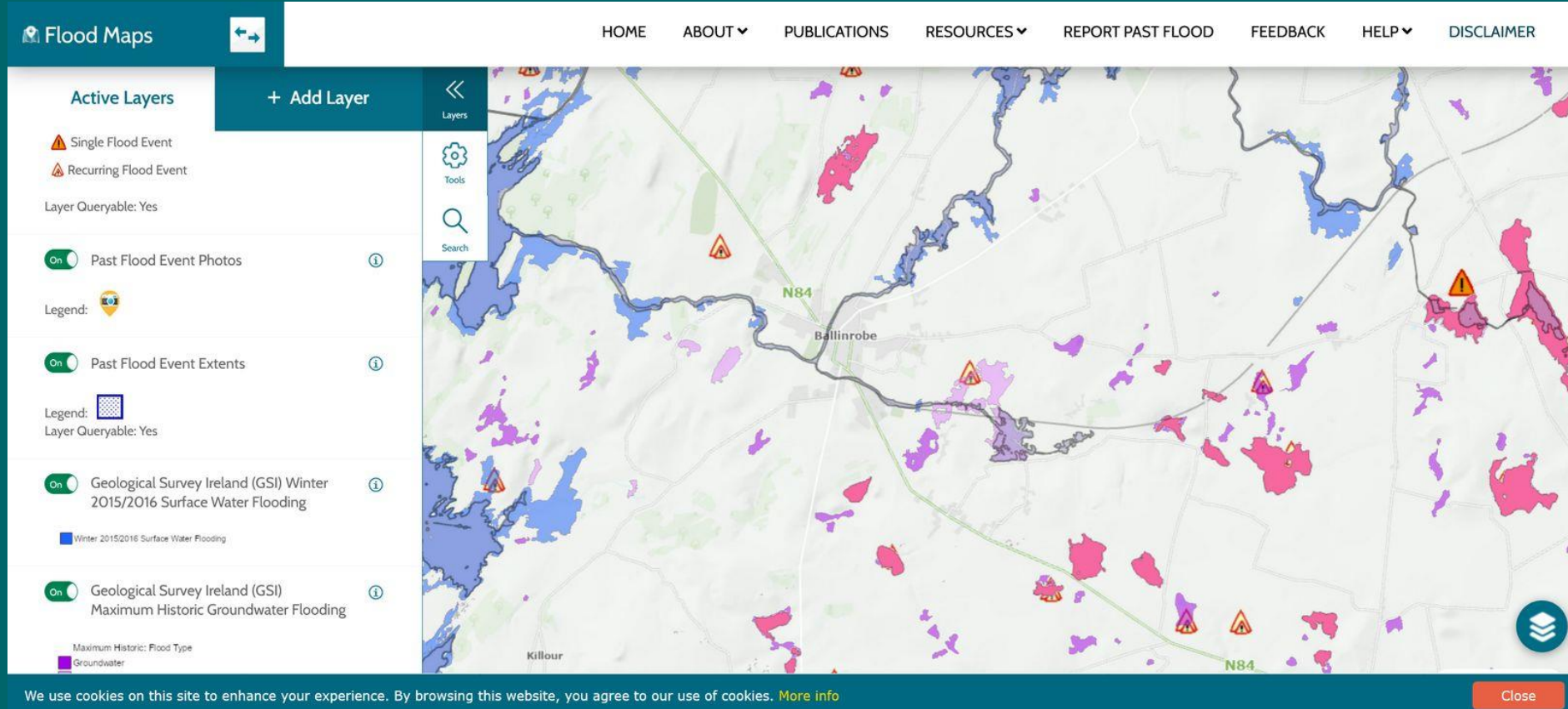
Groundwater level

- www.gwlevel.ie: click on local data points for groundwater level record



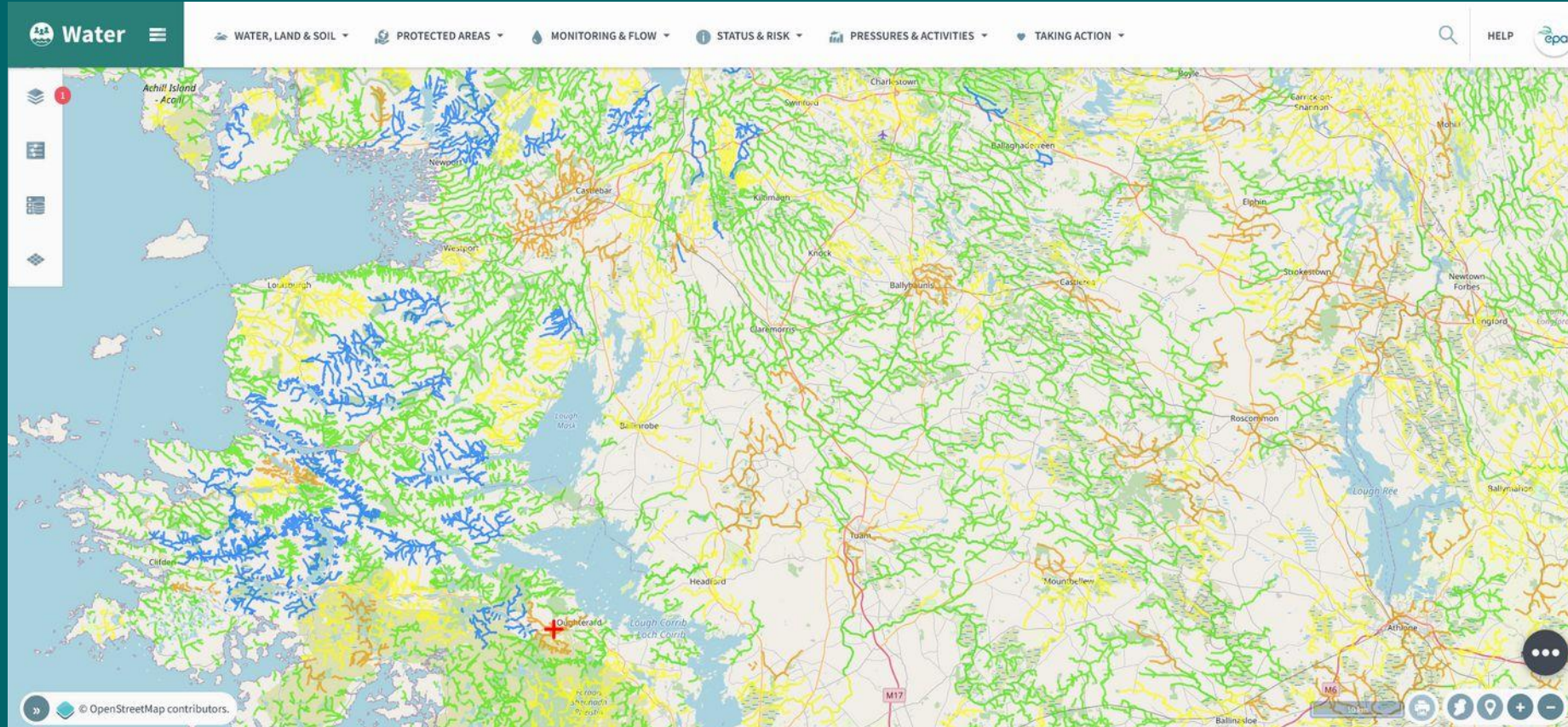
Flood maps

- www.floodinfo.ie/map/floodmaps/: zoom in to your area and select the relevant layer for Past flood events, GSI groundwater flooding probability maps or National indicative fluvial mapping



Water quality (EPA maps)

- <https://gis.epa.ie/EPAMaps/Water> : zoom in to your area, check the status of local water bodies by hovering on “Status & Risk” at the top and switching on the relevant layer of information. You can click on the map for more information



Lessons Five to Eight

Objectives

- Analyse and record geohazard risks to area
- Survey and record findings of local business – experiences of past events
- Map areas vulnerable to hazards
- Impact that climate change might have on future geohazards and on vulnerable areas

Lessons Five to Eight



Geohazards in my area

Survey of local businesses on past events and impacts

Hi, Anne. When you submit this form, the owner will see your name and email address.

1. Name Of Business

Enter your answer

2. Has this Business been impacted by flooding/ landslide or other

☐ Yes

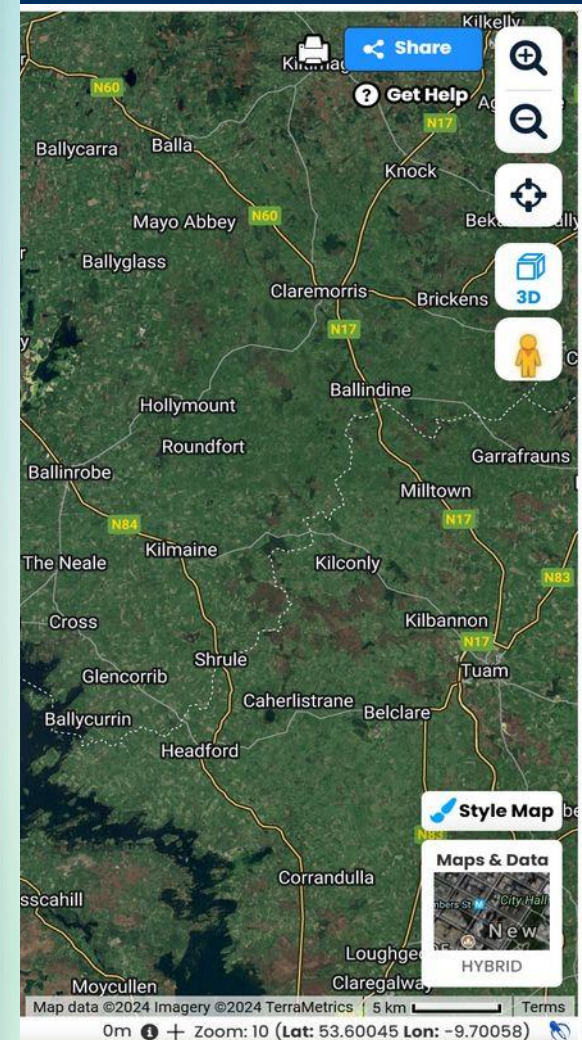
☐ No

3. Date of event

Please input date (M/d/yyyy)

4. Details of the event

Enter your answer



Historical rainfall data

- <https://www.met.ie/climate/available-data/historical-data> : zoom in to your area, click on the weather station closest to your area. Look at the open-year date as you might want to select a station further away but with a longer data set. Select the type of data you need (hourly, daily or monthly)

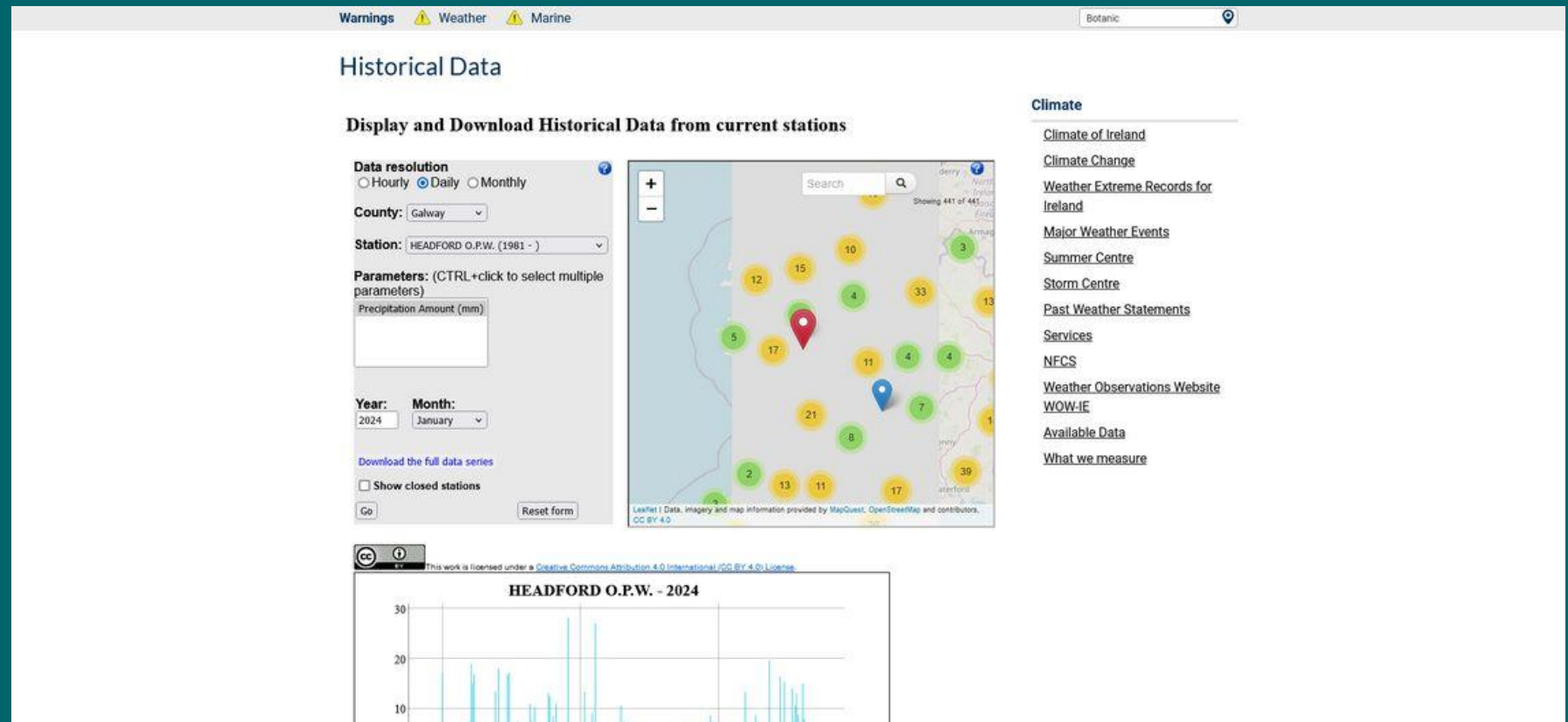
The screenshot shows the MET Éireann website's 'Historical Data' section. The page has a dark blue header with the MET Éireann logo and navigation links: Forecasts, Latest Reports, Climate, Education, Science, Podcasts, and About. Below the header is a light grey bar with 'Warnings', 'Weather', and 'Marine' tabs, and a search bar containing 'Westport'. The main content area is white and titled 'Historical Data'. Under the heading 'Display and Download Historical Data from current stations', there are radio buttons for 'Data resolution' (Hourly, Daily, Monthly) and a 'Show closed stations' checkbox. A map of Ireland is displayed with a pop-up window for station details. The pop-up window shows the following information:

stno	4527
Name	HEADFORD O.P.W.
county	Galway
open_year	1981
data_types	Daily Monthly
get_data	☐ Daily ☐ Monthly
daily_parameters	Daily: Rainfall
monthly_parameters	Monthly: Rainfall - (Amount /

At the bottom of the pop-up window, there is a 'Go' button and a link to 'Click here to download Station Details'. On the right side of the page, there is a 'Climate' section with links to 'Climate of Ireland', 'Climate Change', 'Weather Extreme Records for Ireland', 'Major Weather Events', 'Summer Centre', 'Storm Centre', 'Past Weather Statements', 'Services', 'NFCS', 'Weather Observations Website', 'WOW-IE', 'Available Data', and 'What we measure'.

Historical rainfall data (cont.)

- For daily data, type in the year and select the month then press go. The data will then appear in a graph below that can be saved. You can also select “download the full data series” to download a zipped .csv file of all the precipitation data recorded at the station to open in excel...



Make your survey

See Appendix 2 in lesson plan

...

Geohazards in my area

Survey of local businesses on past events and impacts

Hi, Anne. When you submit this form, the owner will see your name and email address.

1. Name Of Business 

Enter your answer

2. Has this Business been impacted by flooding/ landslide or other 

☐ Yes

☐ No

3. Date of event 

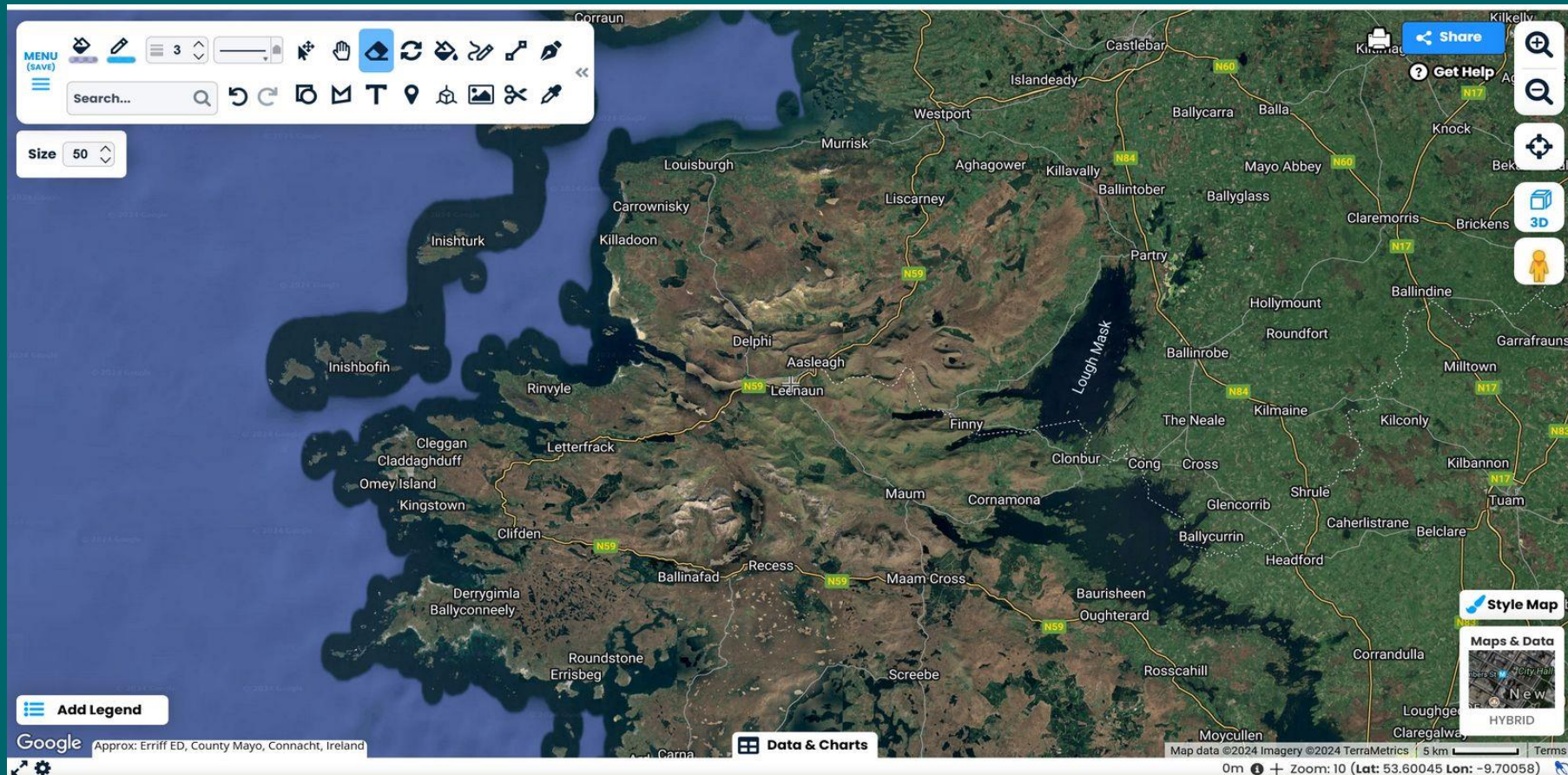
Please input date (M/d/yyyy) 

4. Details of the event 

Enter your answer

Make your own map

- See Appendix 1 in lesson plan



Lesson Nine to Twelve

Objectives

- Research and record weather warning systems and emergency responses to geohazards
- Prepare questionnaire for guest speaker of Community response team
- Produce a community warning system
- One student from each group present their PowerPoint Presentation

**RISK
LEVEL**

CAP-COMPLIANT HYDRO-MET EARLY WARNING SYSTEM



What We Mean

What You Should Do

**GREEN
LEVEL**

LOW RISK

Low Risk to public safety, livelihoods and property.
Risk posed has dropped to a safe level.
Only used for cancellations.

REMAIN VIGILANT

Be aware of your surroundings.
Pay attention to other warnings that may still be in effect.
Consider restocking emergency supplies.

**YELLOW
LEVEL**

MODERATE RISK

Moderate Risk to public safety, livelihoods and property. Conditions may cause some disruptions in a few places.
There is some potential for minor injuries.
Most people will be able to go about their normal activities, but some will be directly impacted.

INCREASE MONITORING

Increase Monitoring of your environment, and stay tuned to official updates from the Trinidad and Tobago Meteorological Service, Office of Disaster Preparedness and Management, Regional Corporations, and the media.

**ORANGE
LEVEL**

HIGH RISK

High Risk to public safety, livelihoods and property. Hazardous conditions may threaten lives, livelihoods and property. Serious injuries or casualties are possible if you do not prepare.

MAKE PREPARATIONS

Make Preparations to protect yourself, your family, your livelihood and your property.

**RED
LEVEL**

VERY HIGH or EXTREME RISK

Very High or Extreme Risk to public safety, livelihoods and property.
Dangerous conditions are imminent or already occurring.
There is a very high potential for multiple lives to be lost and major damage to property and infrastructure.

FIND SAFE SHELTER

Final preparations should be rushed to completion.
Remain indoors or evacuate to a safe location if where you are is unsafe or if instructed to do so by government officials.

Community resilience plan

- <https://www.gov.uk/government/publications/community-resilience-resources-and-tools>
(for the UK but has good guidelines on what the plan would look like)
- <https://www.gov.ie/en/publication/30ce3-emergency-management/>
- (see in particular page 29 of the Framework for major emergency management on community resilience)