



Operational Wave and Water Level model Impact Case Study #3

**Jon Griffiths (Coastal Advisor)
and Dave Picksley (Senior Coastal Advisor),
Environment Agency, Dorset**

We have been using the OWWL forecast since its inception in 2018. Whilst not part of recognised Environment Agency procedures that directly trigger flood warnings or associated actions, it is a very useful piece of additional evidence. It is used alongside various other third party datasets/websites to provide additional assurance to forecasts particularly in the build up to a storm. In this way, it is a valuable part of our decision-making process.

What threat did Storm Eunice pose to you, and your area of the coast?

Storm Eunice caused flooding of roads and parks in various locations across Dorset including Christchurch Harbour and Poole. Five Flood Alerts and six Flood Warnings were issued along the Dorset Coast during Storm Eunice.

The potential for wave overtopping at West Beach, West Bay triggered the deployment of temporary sea defences by Dorset Council on the 18th February 2022. At East beach, West Bay, the Environment Agency organised flood reconnaissance to assess the morning tide and temporary defences were on standby to be deployed at short notice if on site observation noted wave overtopping.

At Chiswell, the forecast for a flood warning and potential for significant spray/shingle overtopping of the beach crest triggered a multi-agency response from the Local Resilience Forum (LRF) with various organisations on site throughout the day and into the evening on the 18th February. A consideration of road closures at the Portland causeway road remained under constant review and could not be accurately forecast as unnecessary until late into the evening.

How and why did you use the OWWL forecasts before, and during, Storm Eunice?

We used OWWL forecasts daily in the build up to the storm and more often during the incident.

The wave and model animations, and buoy predictions, add an initial layer of evidence and confidence in the forecast predictions we use, as well as early warnings for long swell waves from sites further west, for example Porthleven.

What are the main benefits of the OWWL forecast to you?

The OWWL model provides us with accurate and timely data that increases our confidence so we're more able to make accurate decisions about predicting and managing coastal overtopping, disruption and damage at our sites. This offers us various benefits:

- ✓ It gives us further information to target resources efficiently (for example where to deploy operational field teams) to reduce coastal flooding and improve resilience.
- ✓ The early warning OWWL emails flagging overtopping at multiple sites up to 3 days in advance is advantageous for strategic and tactical planning across multiple agencies such as ourselves and other members of the Local Resilience Forum for example, police, local council etc. This enables a more co-ordinated, early and targeted response to the threats of coastal flooding, that ultimately will result in better allocation of resources and less disruption and safety risks to local businesses and residents.
- ✓ The value is such that we would like to see the OWWL model being further developed for example to include additional profile lines for example, East of Portland.