

# An Open Data Network supporting Marine Planning, Science, and Policy

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## Introduction

Marine Scotland, as part of the Scottish Government, is the marine management organisation for Scotland with the purpose of managing Scotland's seas for prosperity and environmental sustainability. This specifically means the responsibility for integrated management of Scotland's Seas, which require clear and transparent policy development and planning that are underpinned by sound evidence. Marine Scotland also conduct scientific monitoring and research to develop parts of the evidence base.

With the development in national and international data sharing, technology, and government strategies to increase transparency, Marine Scotland has developed capabilities to share evidence, and information relevant for policy and planning, not only internally, but with the public as well. Through the development of an Open Data Network of applications, Marine Scotland now provides geospatial services, contextual information, and direct access to reports and open data.

## MARINE SCOTLAND OPEN DATA NETWORK

[www.gov.scot/Topics/marine/science/data](http://www.gov.scot/Topics/marine/science/data)

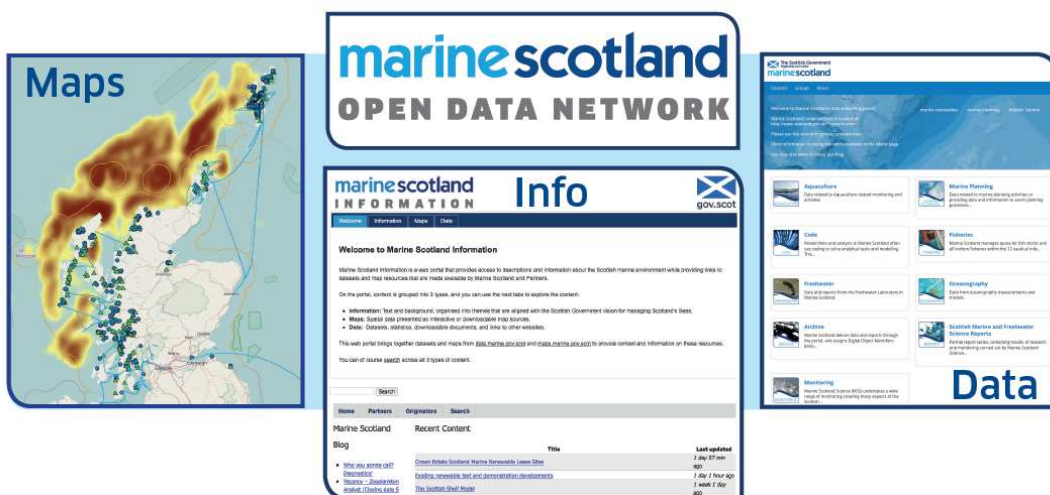


Figure 1: The components of the Marine Scotland Open Data Network : Maps, Information, and Data portals

The Open Data network comprises 3 applications that work together with integrated service exchanges of data :

- Marine Scotland Information: A search engine friendly portal, that provides contextual information, lay summaries, and linkages to the Map and Data portals.
- Marine Scotland Maps : Provides a web based GIS interface for accessing more than 900 spatial data layers relevant for marine spatial planning on national and regional scales.
- Marine Scotland Data : Provides access to open datasets and reports, minted with persistent identifiers (DOI), and API services for data extraction and exploration.

## Open source applications working together

Each of Marine Scotland's Open Data Network components are developed on the basis of open source software. Marine Scotland Maps is an open-source stack using PostGIS, GeoServer and a customised OpenLayers interface, allowing the ingestion and provision of web map services and download services. Marine Scotland Information is built in Drupal, utilising ingestion of service feeds from the Map and Data portals to improve linkage between contextual information and real resources. In addition, all content is accessible through machine readable services. The Marine Data portal is also built in Drupal, using a DKAN distribution to standardise metadata reporting to the DCAT standard, while providing data download, exploration and API access to more than 500 resources in over 180 datasets.

The real strength in the open data network is realised through exchange of data using services, allowing the information portal to provide information pages directly accessed from the geospatial Maps portal, while also listing published open data sets that are relevant evidence to the topic, for e.g. time series.

The Open Data Network has been increasing considerably in popularity, basically trebling traffic to the portals, since all 3 applications started to work together in 2016.

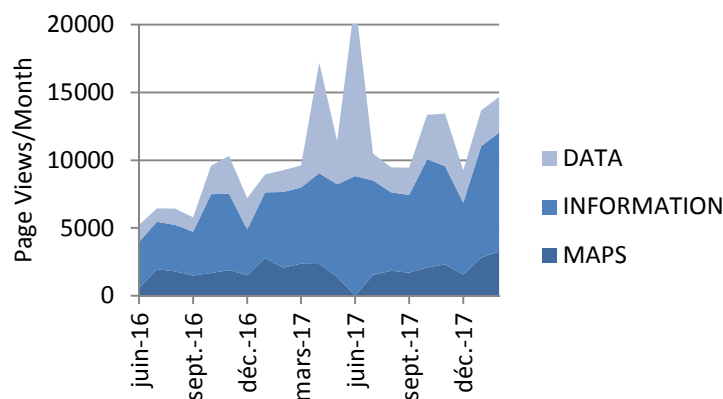


Figure 2. Web-traffic growth of the Marine Scotland Open Data Network

## One Network – Multiple Services

Apart from the discrete delivery roles, and the overall provision of data and information about the management of Scotland's Seas, the Open Data Network also fulfills other Marine Scotland obligations. The Data portal further acts as a landing point for Marine Scotland's role as a fisheries data archive centre in UK's Marine Environmental Data and Information Network (MEDIN), and the Maps portal links up to the Scottish public sector Spatial Data Infrastructure (SSDI) to meet INSPIRE obligations.

In this talk, we demonstrate the capabilities of each component as well as discuss the collaborative work across organisational boundaries that has resulted in a better overall product for all parts of the organisation. We also discuss the design considerations of tackling current challenges while considering future demands and requirements for technical developments in marine information and data management.