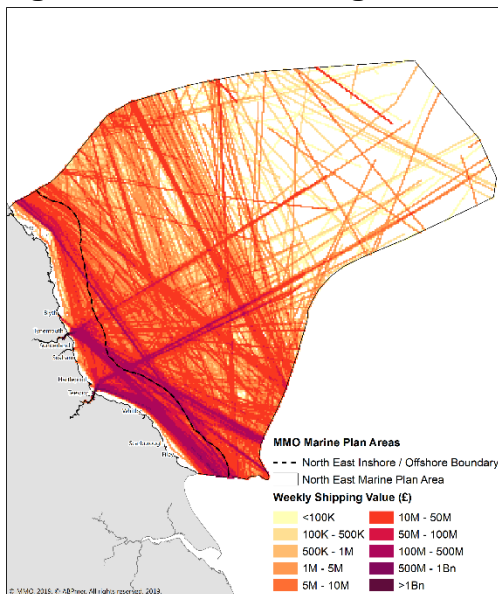




Aim

The aim of this project was to review, develop and apply approaches to assign value to shipping cargo flows. A preferred approach was then applied to a case study marine plan area in this case the north east inshore and offshore marine plan areas.

Figure 1: Maximum cargo value across the north east marine plan areas.



Introduction and methodology

The UK maritime sector plays a critical role in the growth and development of the country, enabling the import and export of goods and providing additional value through maritime and business services. Marine planning aims to ensure a sustainable future for our coastal and offshore waters, through managing and balancing the many activities, resources, and assets in our marine environment. Information obtained from this project will improve the evidence base for the development and implementation of marine plan policies thereby improving understanding of shipping cargo value associated with marine space use.

The objectives of this work were to:

- compile a temporally referenced spatial dataset of shipping activity covering one year of data across selected marine plan area(s)
- identify, evaluate and source relevant data to determine shipping trade value
- combine the spatial data layer with the results of the value exercise to produce maps showing the value of shipping to specific geographical areas with as great a resolution as possible to support marine planning and decision making
- use stakeholder engagement to validate the approach for robustness.



Results

Using vessel tracking data (Automatic Information System (AIS)) and shipping cargo values from a number of sources, maps such as Figure 1 were created. Within the case study north east marine plan areas there were over 100,000 AIS transits, though 63% were scoped out of the study as non-cargo vessels. The transits showed clear patterns of vessel use into ports and through the area. The estimated sum of the cargo value (i.e. maximum value) arriving or departing the ports ranges from approximately £60 million and up to £17 billion. As vessels are unlikely to have their cargo capacity 100% full the maximum capacity was scaled down using port tonnage, passenger and unit statistics making the scaled cargo value ranges between £31 million to just over £4 billion. A review of the spatial variability of the mapped shipping cargo value indicates ten clear shipping routes, based on the calculated value of cargo carried by shipping.

Conclusions and recommendations

This project has shown it is possible to create a method of assigning value to marine space. The pilot methodology created had considerable buy-in and agreement from stakeholders and should be useful in implementing marine planning.

The following recommendations are made in relation to the study and its outputs:

- it is recommended that Service Craft are considered, and a value layer provided to represent this category of vessels. This will require specific research to determine values applicable to Service Craft
- it is recommended that all marine plan area and the DfT statistics for all the Major Ports within the areas are considered to determine a scaling value that is applicable to ports around the country
- this study presents the shipping cargo value. As a subsequent research study, it would be useful to consider the value-added contribution of cargo types at specific ports. Some cargoes are finished goods that are in their intended end form (for example, a vehicle) and have a high value but less contribution to the value of the supply chain, whereas raw products may have lower tonnage values but much greater potential for onward value. It is recommended that this aspect of the study is further investigated to allow the assignment of value based on the cargoes' potential economic contribution.

MMO comments

The datalayers, methodology and report are valuable in the development of an evidence base for marine planning purposes. The outputs can be used to aid stakeholders to gain a greater understanding of the areas that are important for trade flow.

Further information

Please direct any correspondence to the Evidence Team (evidence@marinemanagement.org.uk)