

Background:

Marine and coastal ecosystems and the related benefits they provide for humans are threatened by increasing natural and anthropogenic pressures and competing usages. Marine spatial planning (MSP) is a tool to establish a more rational use of marine space to achieve ecological, economic and social objectives, to balance demands for development with the need to protect the environment. As a first step to implement cross-border Maritime Spatial Planning (MSP) in the Adriatic – Ionian Seas, the ADRIPLAN research project (December 2013 – June 2015, www.adriplan.eu), co-financed by DG-MARE, carried out a review of the main maritime activities taking place in the Adriatic – Ionian Region (AIR) as well as of the most relevant environmental components. This analysis of the existing conditions will constitute the knowledge base for the development of maritime spatial plans required to guarantee environmental preservation and sustainable blue growth in the Adriatic – Ionian region.

Specific objective:

The main objective of the analysis is to map the spatial distribution of human uses of the sea and of the key environmental components of the Adriatic and northern Ionian Seas (Fig. 1) and to assess the cumulative impacts of pressures of human activities on ecosystem components.

Steps of the analysis:

- Initial Assessment of:
 - Policy and socio-economic framework
 - Maritime activities
 - Key environmental components
- Setting up of a data infrastructure (data.adriplan.eu) to collect, manage and make accessible data related to MSP and development of tools to combine and process data
- Analysis of overlapping of uses and assessment of cumulative impacts

Main threats to marine ecosystem components due to human activities:

Maritime transport (Fig. 2) – Port infrastructures – Oil and gas exploration and exploitation (Fig. 3) – Sand extraction – Dredging disposal – Fishing activities (Fig. 4) – Coastal and maritime tourism (Fig. 5) – Underwater Cables and pipelines

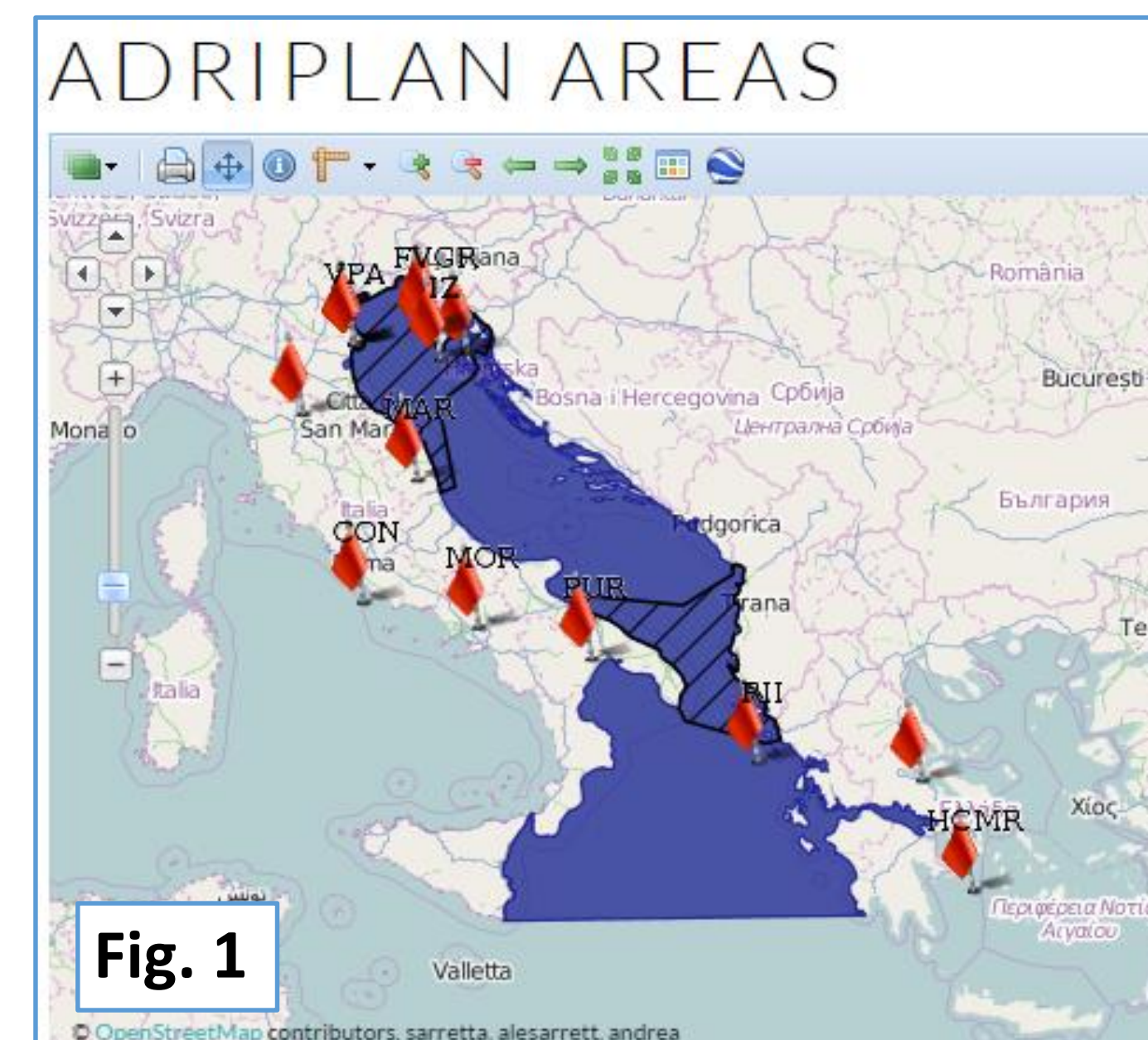


Fig. 1

Key environmental components:

The most sensitive ecosystem components have been identified according to the descriptors and criteria of Good Environmental Status indicated by the Marine Strategy Framework Directive.

Biodiversity - Seabed habitats (Fig. 6) - Key species and communities (marine mammals, birds, reptiles) (Fig. 7) - Nursery areas – Pelagic features (high primary production areas, Fig. 8, areas influenced by eutrophication, Fig. 9)

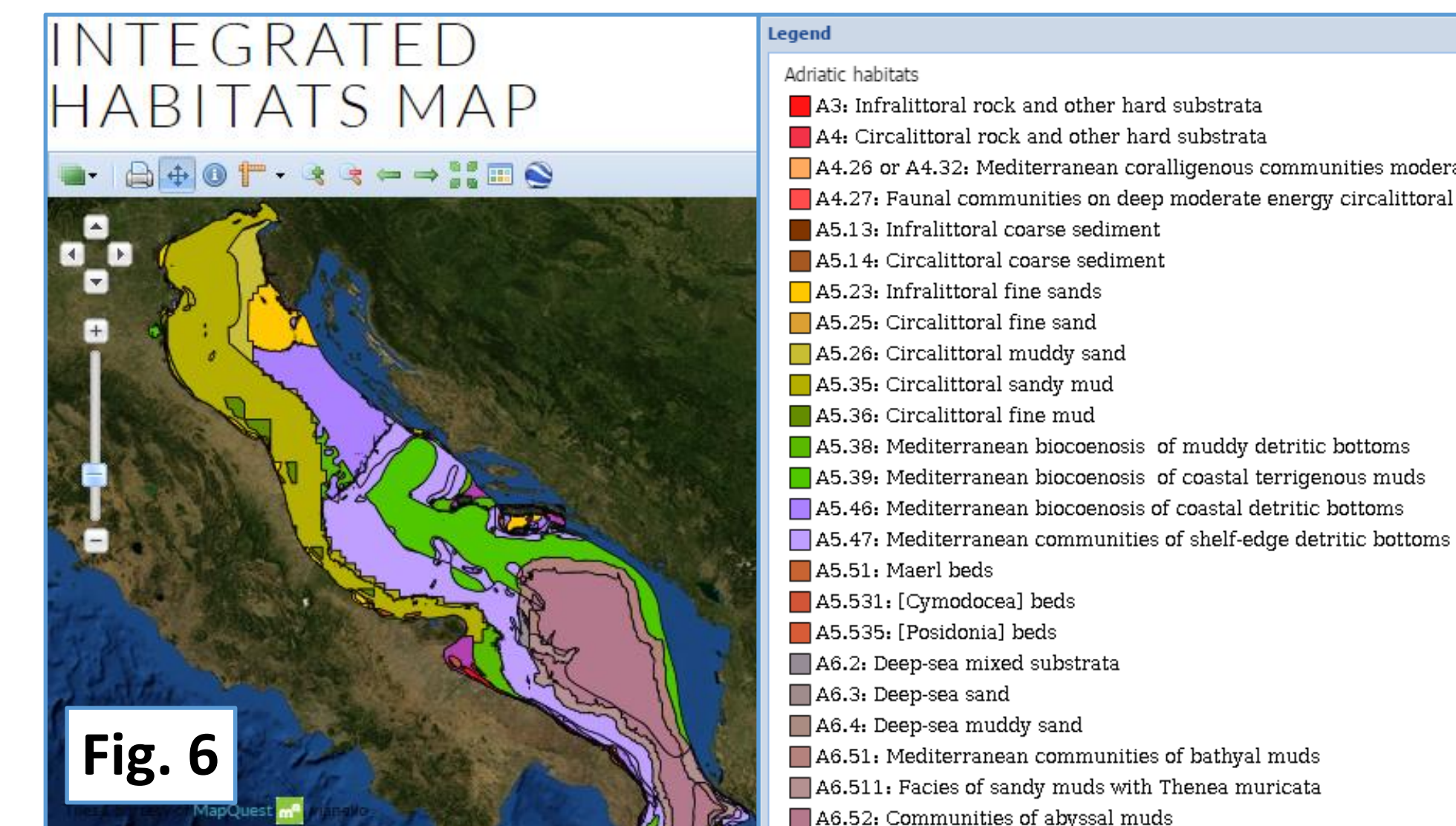


Fig. 6

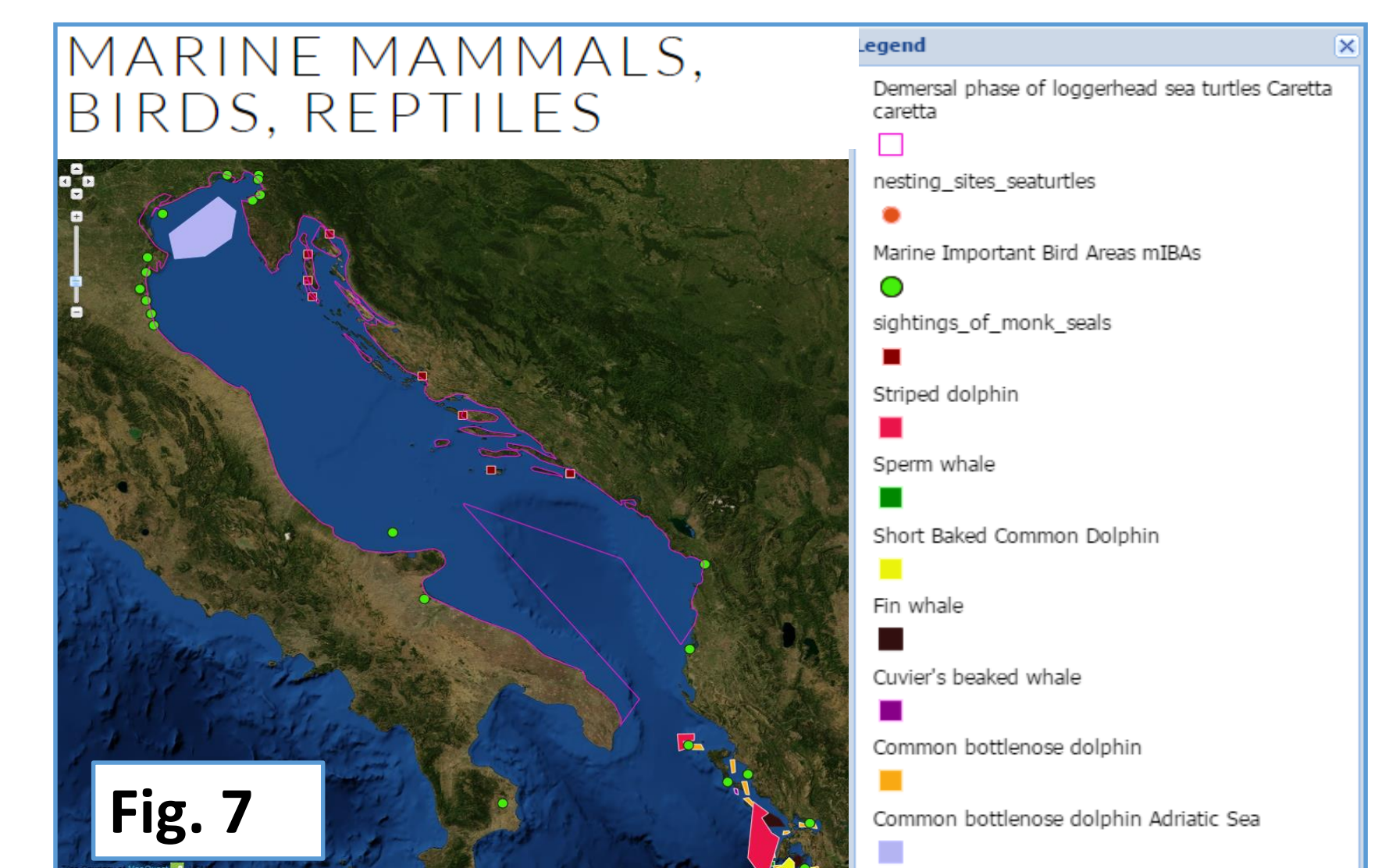


Fig. 7

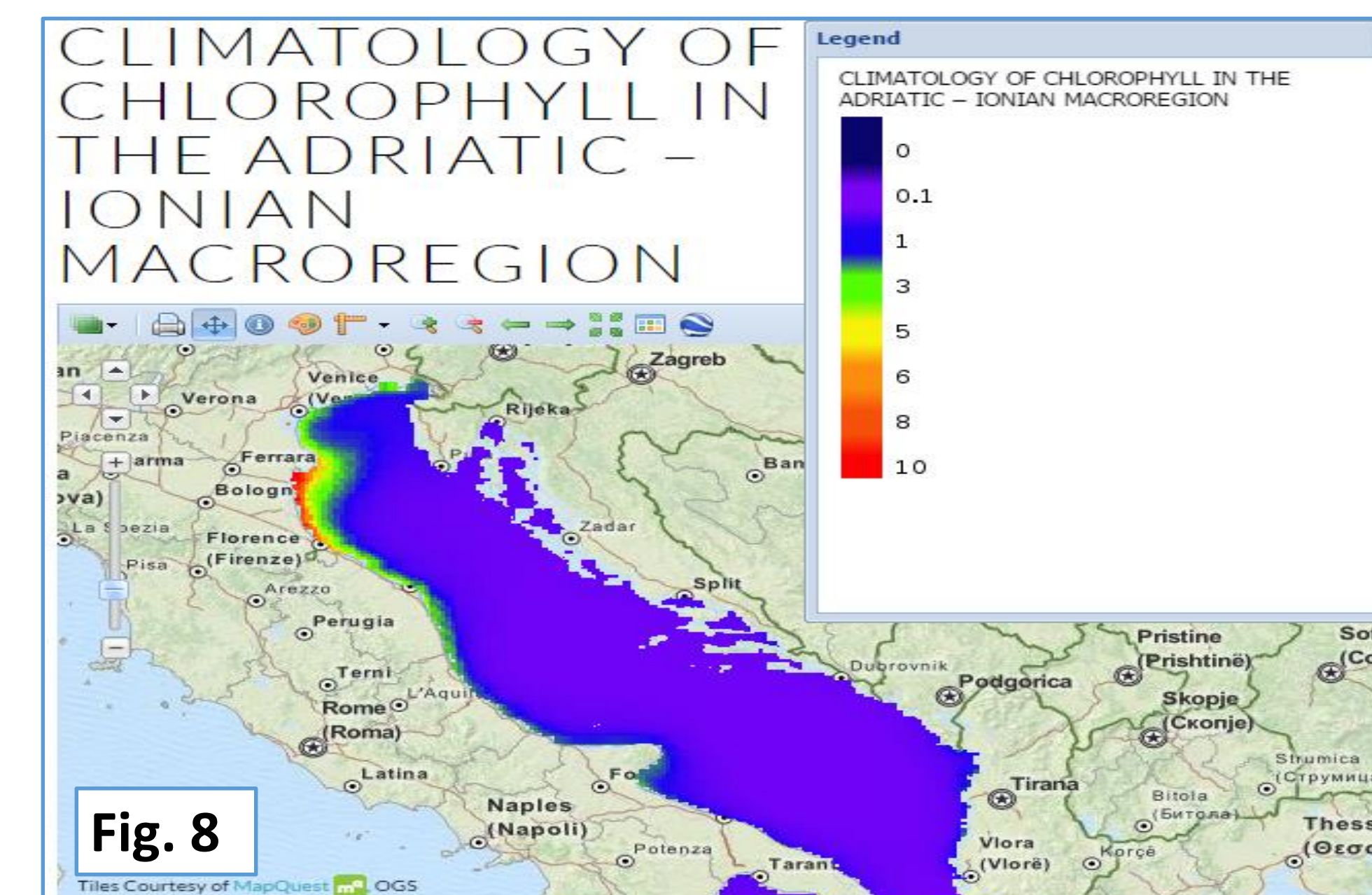


Fig. 8

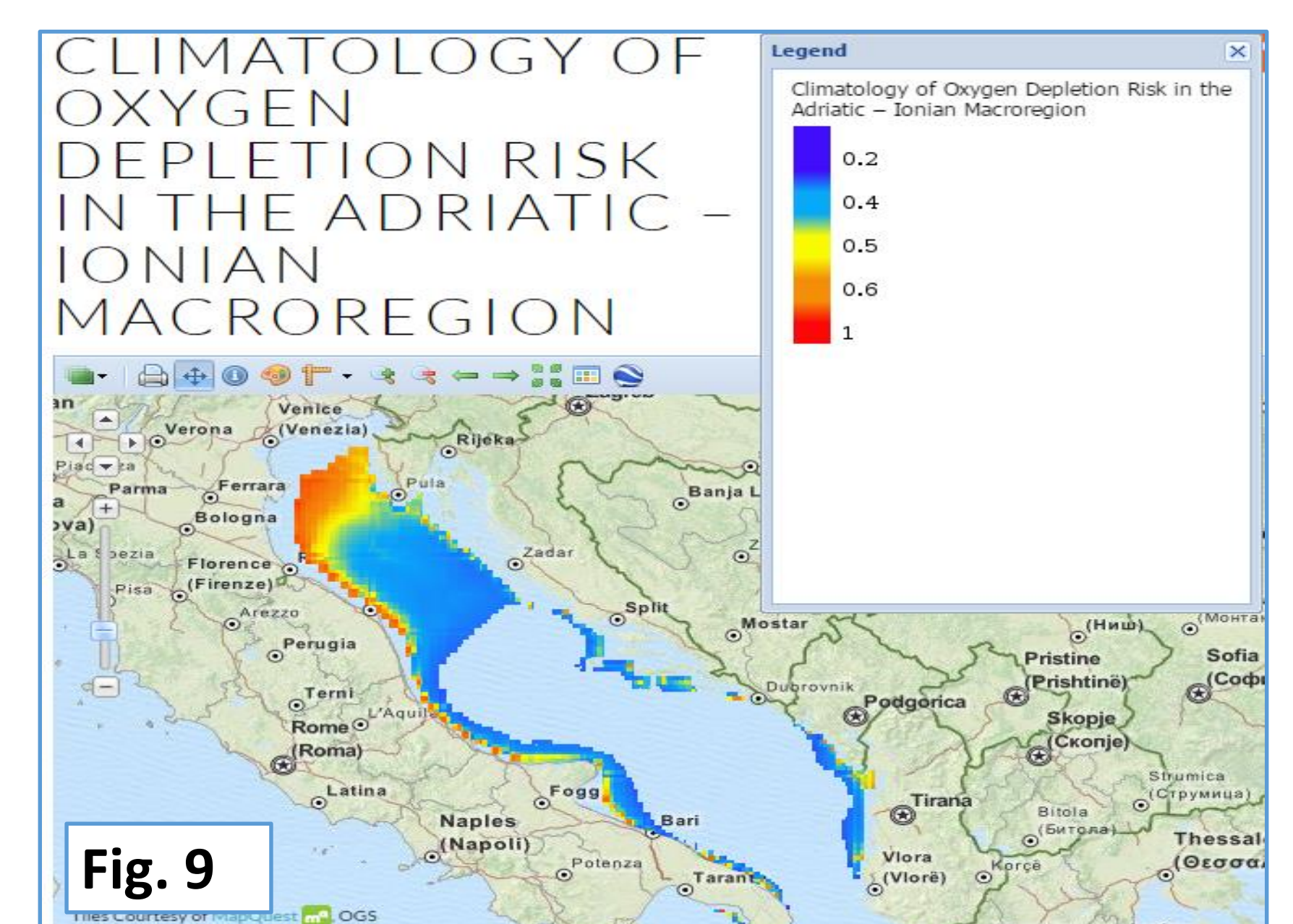


Fig. 9

Next steps:

Analysis of overlapping of uses (from: COEXIST Project, Schulze et al., 2013)

- identification of areas where the overlapping occurs
- characterization of typologies of overlapping (space/time, conflict/synergy)

Assessment of cumulative impacts (from: Halpern et al. 2007 for world seas, Micheli et al. 2013 for the Mediterranean):

- Identification of pressures for each maritime use
- Analysis of vulnerability of environmental components to pressures
- Evaluation of cumulative impact.

References:

- Halpern, B. S., Selkoe, K. A., Micheli, F., & Kappel, C. V. (2007). Evaluating and ranking the vulnerability of global marine ecosystems to anthropogenic threats. *Conservation Biology*, 21(5), 1301-1315.
- Micheli F., B. S. Halpern, S. Walbridge, S. Ciriaco, F. Ferretti, S. Frascchetti, R. Lewison, L. Nykjaer, A. A. Rosenberg (2013) - Cumulative Human Impacts on Mediterranean and Black Sea Marine Ecosystems: Assessing Current Pressures and Opportunities.
- Schulze T., Saurel C., Vazquez F., Grati F., Gramolini R., Sell A., Stelzenmüller V., Kloppmann M. (2013) Tool 3: Analysis of Conflict Scores, COEXIST (Interaction in coastal waters) Project - FP7/2007-2013

Acknowledgments:

All projects and data providers contributing to the information base of ADRIPLAN, in particular: EMODnet, SeaDatanet, CoCoNeT, MEDISEH, SHAPE, EMIS The European Marine Information System, EEA. Project funded by DG – MARE, Grant Agreement MARE/2012/25

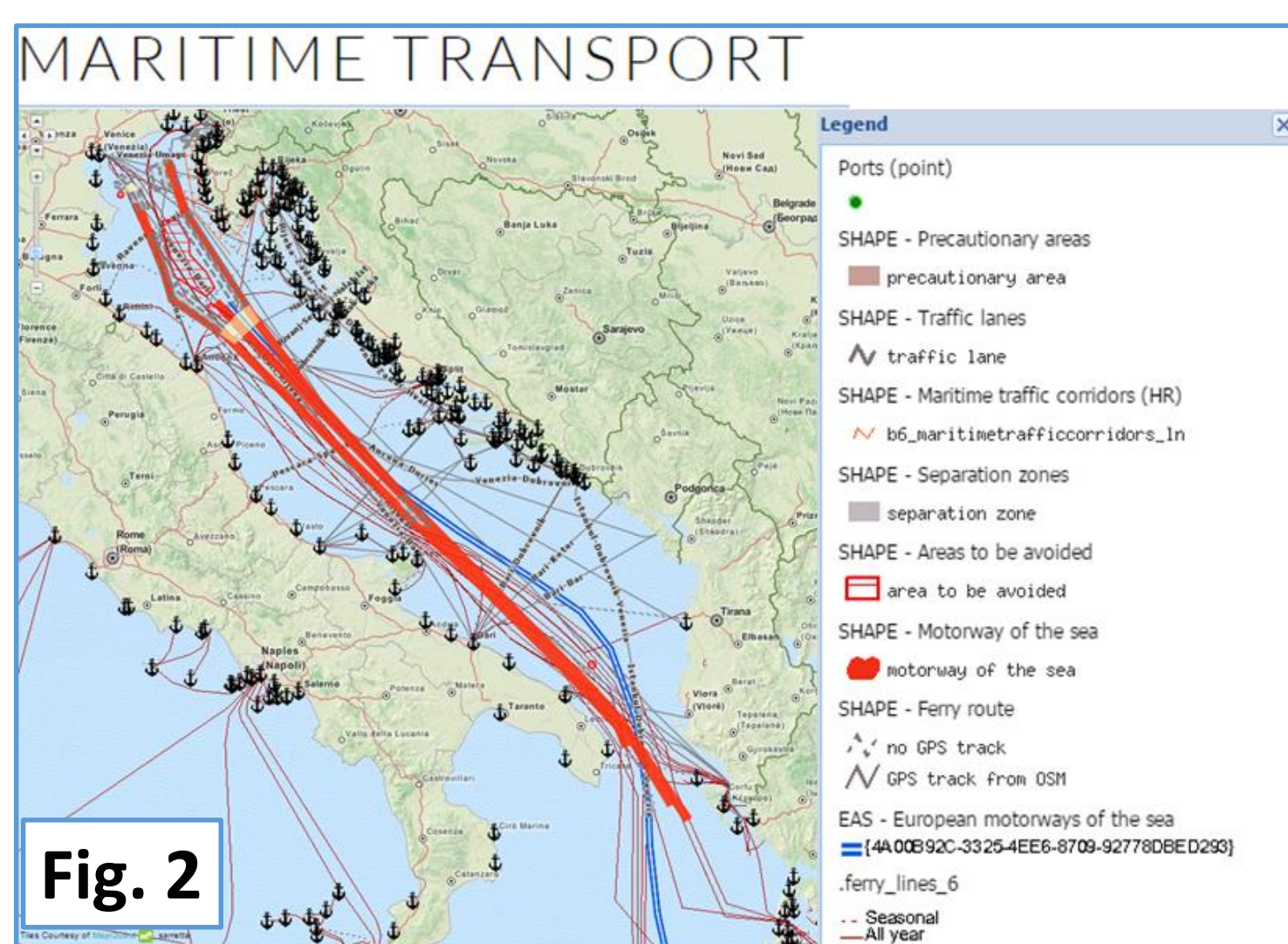


Fig. 2

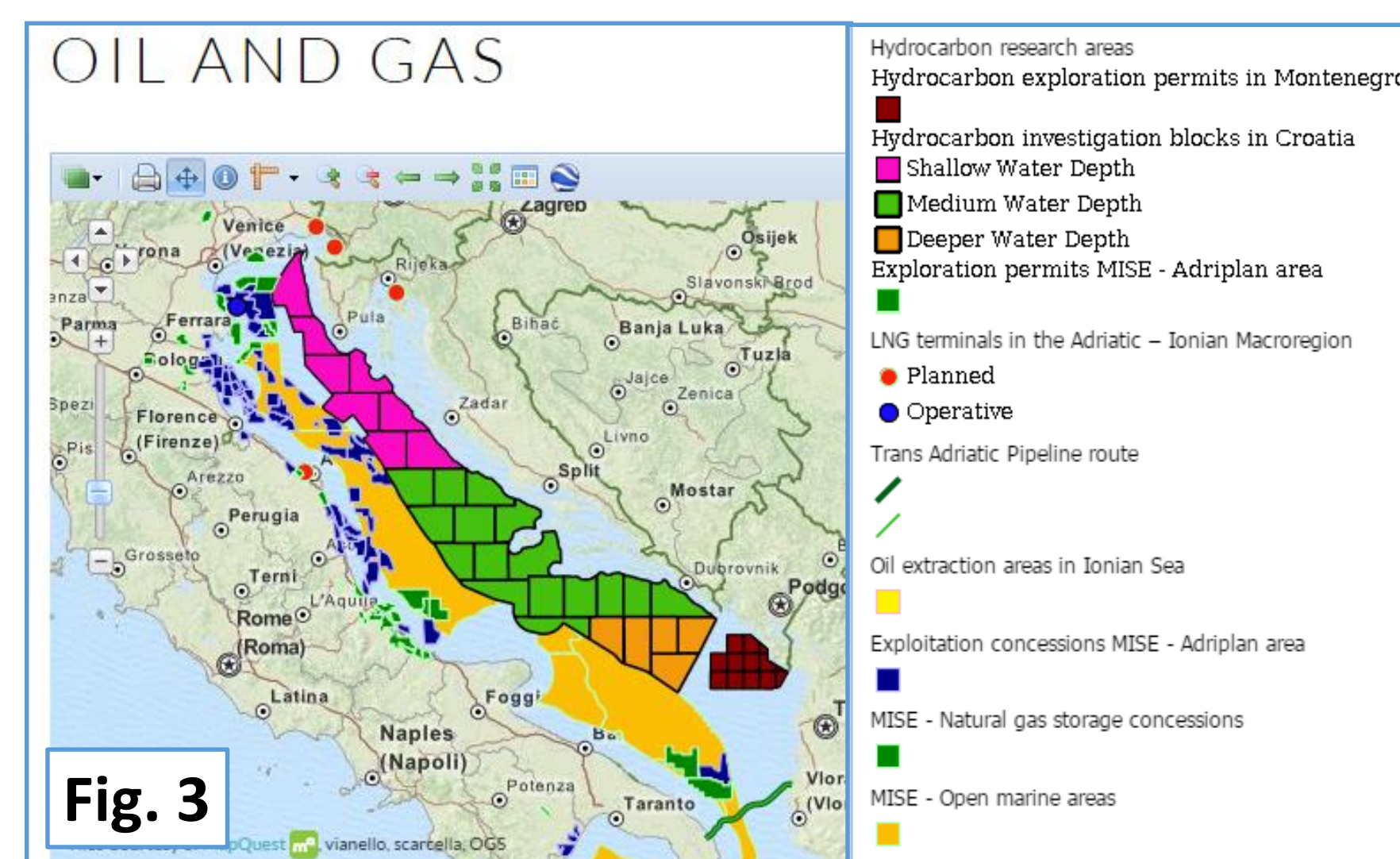


Fig. 3

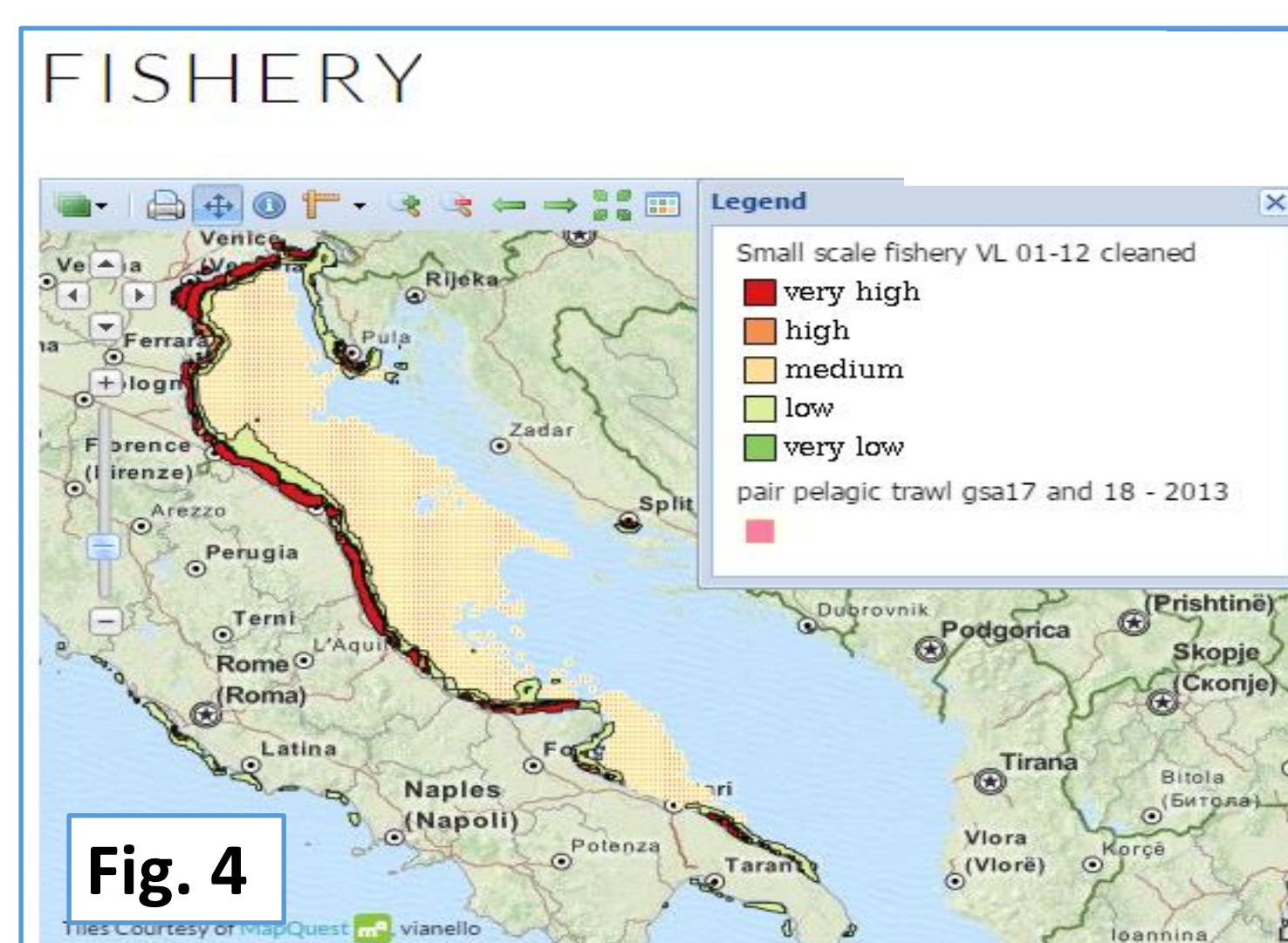


Fig. 4



Fig. 5