

“VALFEZ”

The value of exclusion zones as a fisheries management tool

Exclusion zones have a long history in Europe and their use is increasing, but knowledge as to their effects remains limited, especially with respect to fisheries.

In particular, more information is needed on the potential and value of these exclusion zones for fisheries management. The assessment of this potential will allow the development of management advice and priorities for future action.

The VALFEZ project aimed to **evaluate the ecological and socio-economic value of exclusion zones as tools for fisheries management and to develop robust multi-disciplinary analytical framework(s) for use in the evaluation and development of exclusion zones.**

The project included within its remit, inter alia, marine protected areas, marine reserves, marine parks, gear exclusion zones and fishing boxes and it focused in on 6 case studies for detailed modelling and analysis. The case studies covered a variety of exclusion zones and were selected to provide a representative spread of forms of exclusion zones, functions served and aspects of value. The final choice also reflected the extent and nature of data available. Given the general paucity of data on fisheries exclusion zones in Europe, the choice was limited. Ultimately the following 6 case studies proved to have sufficient data upon which to model the key aspects of the value of fisheries exclusion zones:

- Gulf of Castellammare, NW Sicily
- Western English Channel (Sea bass)
- Firth-of-Forth, Scotland (Nephrops)
- Iroise Sea, NW France
- Bay of Brest, NW France
- Normand-Breton Gulf, NW France

Within the case studies, various dimensions of fisheries exclusion zones were explored, inter alia:

1. the form and function of exclusion zones and their key attributes
2. the stock protection function and associated ecological effects
3. consequences for stock recruitment and changes in fishing yield
4. changes in fishing opportunities, fishing behaviour and fishing effort (including exit from the fishery and displacement effects)
5. consequences of changes in fishing effort for stocks directly and indirectly affected
6. down stream consequences: markets, fish processing, and associated coastal communities
7. management alternatives, costs and consequences (both associated with the adoption of exclusion zones and as alternatives to exclusion zones)

A broad array of observations were drawn, many unique to each case study in hand, but with others of more generic significance. The benefits of exclusion zones were found to be diverse, justifying their consideration as a fisheries management tool. However, one of the clearest outcomes was that

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VALFEZ

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value cannot be assumed nor taken for granted. The benefits and the balance of outcomes was shown to be application specific, with situational specific factors contributing to and undermining that value. Prior evaluation of any proposed exclusion zone is highly recommended, given that it may or may not be the most appropriate management option and in design requires careful planning to ensure that it is both appropriate and effective.

It has become evident throughout the progress of the study that the level of research to-date on almost all aspects of exclusion zones deployed for fisheries management purposes is lacking. Only in very few marine areas in Europe is there existing data sufficient to even build the simplest of models. The multi-species, spatial nature of exclusion zones places high demands on data availability.

One of the key recommendations of this study for the future deployment and assessment of fisheries exclusion zones is that the tendency for research and evaluation to be an afterthought in their deployment is a serious constraint on the effectiveness of fisheries management. Fisheries exclusion zones may not be the most effective management tool in a particular situation, nor is a particular design of exclusion zone implicitly any better than another.

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