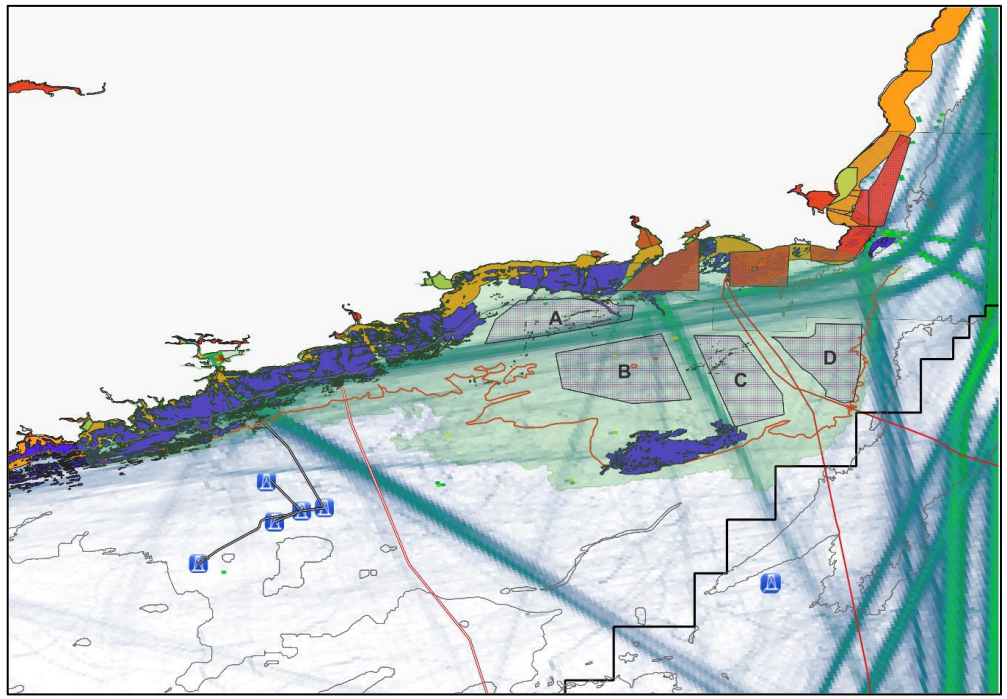
Celtic Sea Ecological sensitivity Analysis

- 3rd May 2024 – Public Consultation on South Coast DMAP

- NWWAC submission highlighted issues with the analysis
  - Technically and economically attractive areas for developers
  - No account of impact on biodiversity or fisheries

- Marine Protected Areas Bill – process ongoing

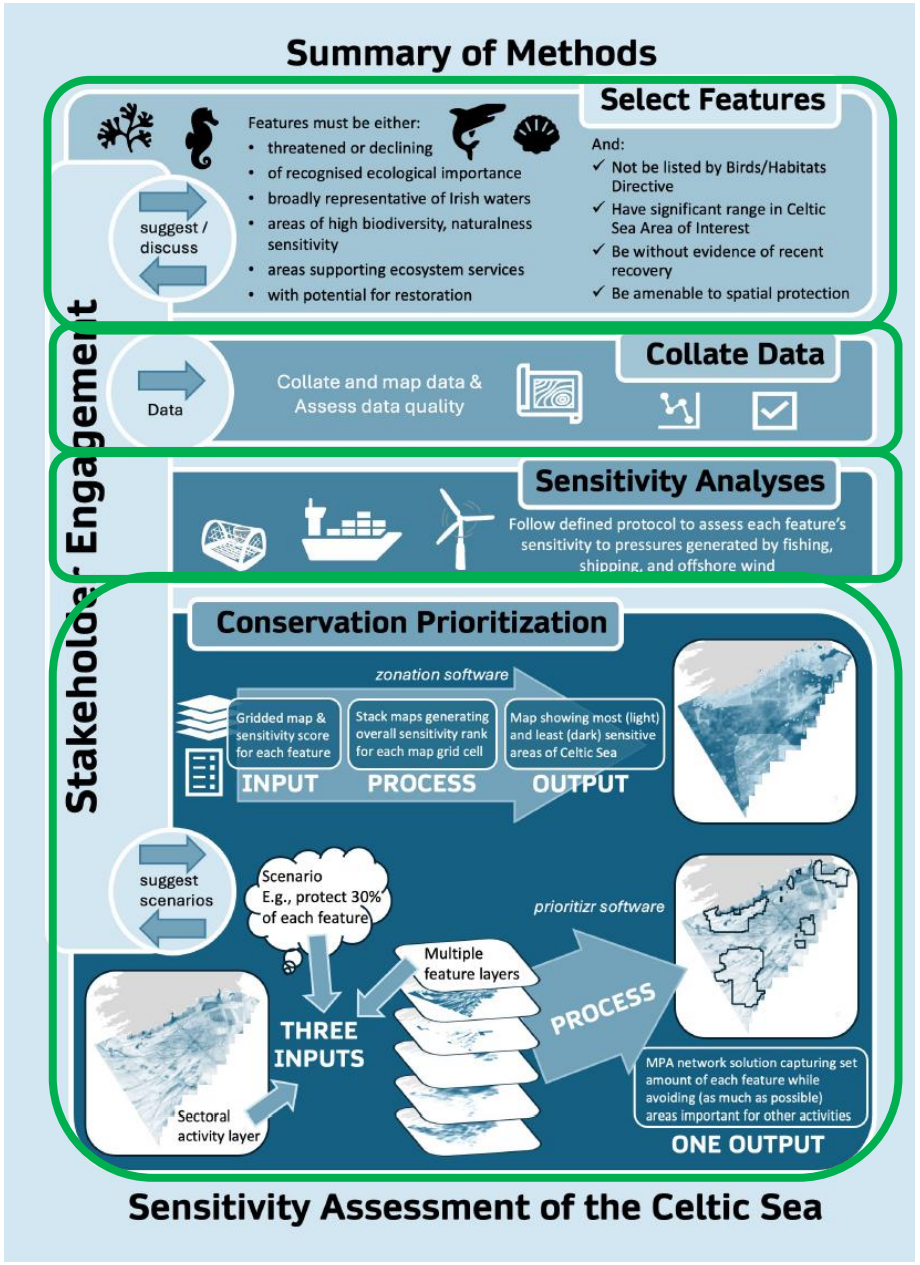
- 27th June **Ecological Sensitivity Analysis** of Celtic Sea
  - Exec summary - "***in order to safeguard areas environmentally sensitive to the potential effects of ORE development in the near term, a detailed scientific analysis and report on the ecological sensitivity of the Irish part of the Celtic Sea was undertaken between November 2023 and May 2024***".

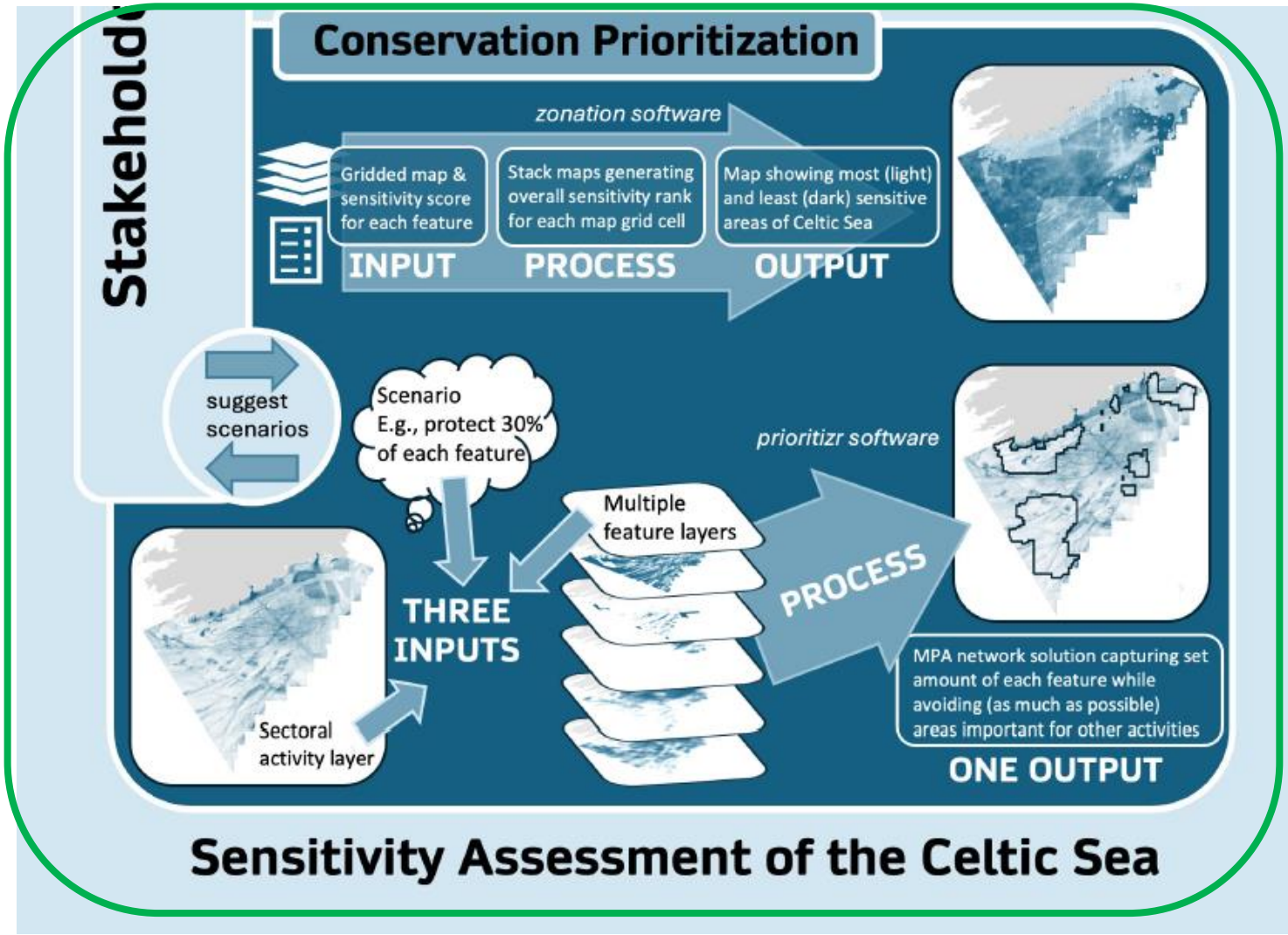


- Stated aims of the ESA

1. provide rationales and recommendations for the identification of areas for potential designation as MPAs in the Celtic Sea, through processes that align with provisions set out in the forthcoming MPA legislation.
2. **provide data and analyses that can inform planning decisions on the potential siting of ORE infrastructure**, taking account of stakeholder views, ecological features, conservation requirements and sectoral activity.

Celtic Sea ESA





Celtic Sea ESA – *Zonation* output

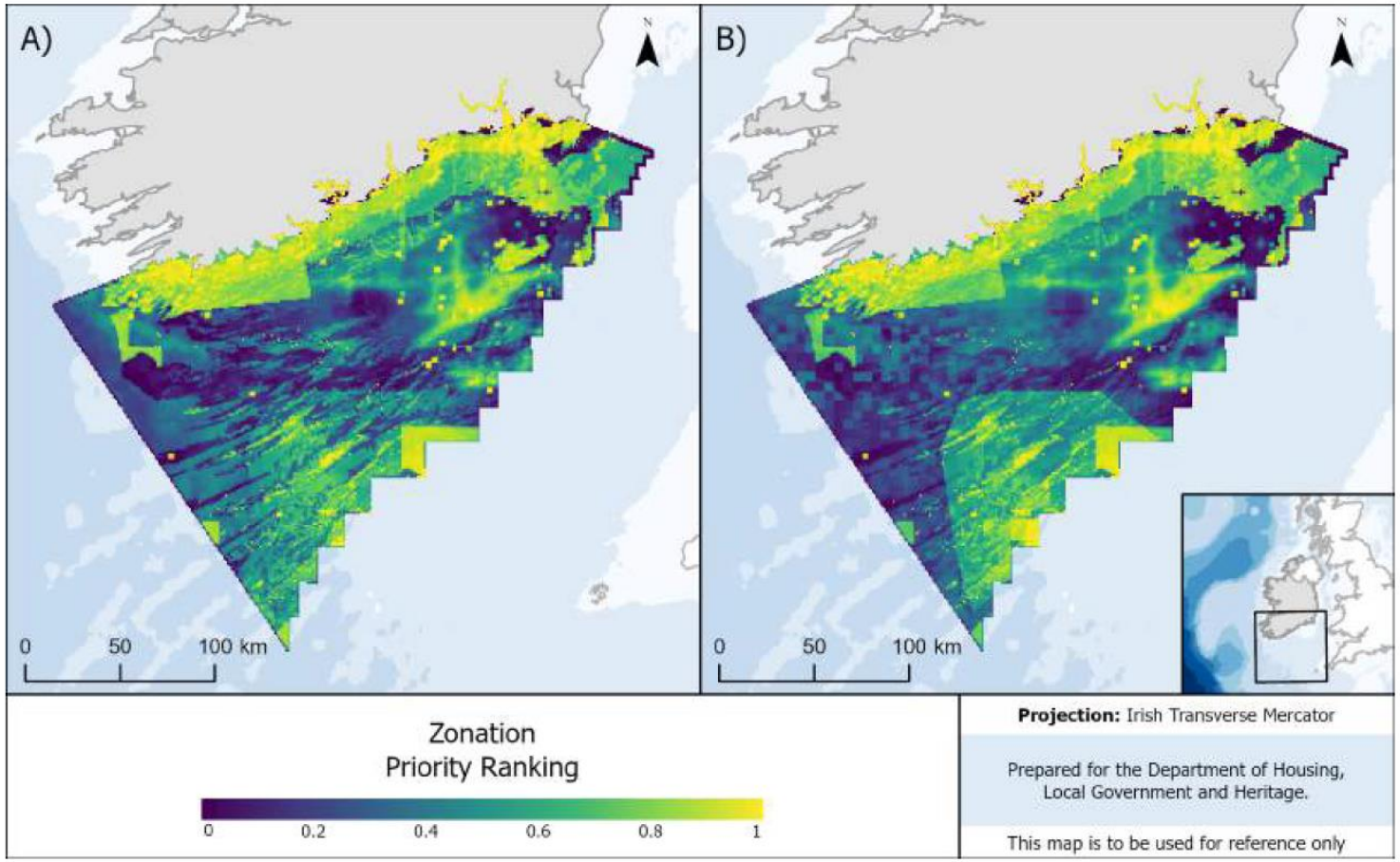


Figure 3.5.2. Zonation maps with features weighted by the level of sensitivity to A) ORE operations (turbines) and B) bottom otter trawls. The maps do not include the spatial distribution of the sectoral activity (see the section using *prioritizr* for incorporation of this information).

- Output of the prioritisation exercise without any sectoral cost layers added.
- Yellow indicates level of sensitivity to (A) ORE operations (B) bottom trawling i.e. conservation priorities.

Celtic Sea ESA – Sectoral Activity Cost layers

- Existing Activities
  - Fishing
  - Shipping

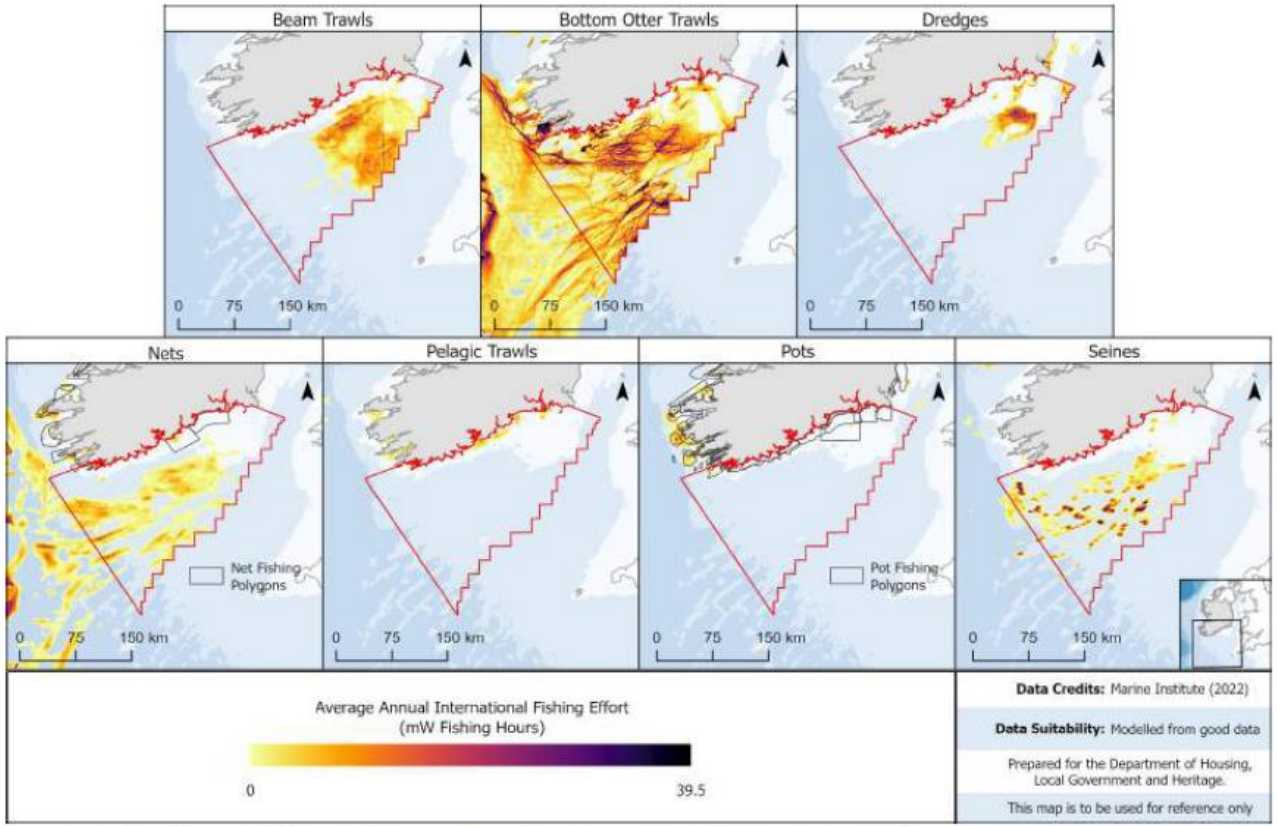


Figure 2.7.1. Average (2018-2022) annual total fishing effort (mW fishing hours estimated from international VMS data vessels >12 m) for the main commercial fishing gear types used in the Celtic Sea AOI. Nets include gill nets and trammel nets. Known net and pot fishing grounds for <12 m vessels are demarcated with polygons.

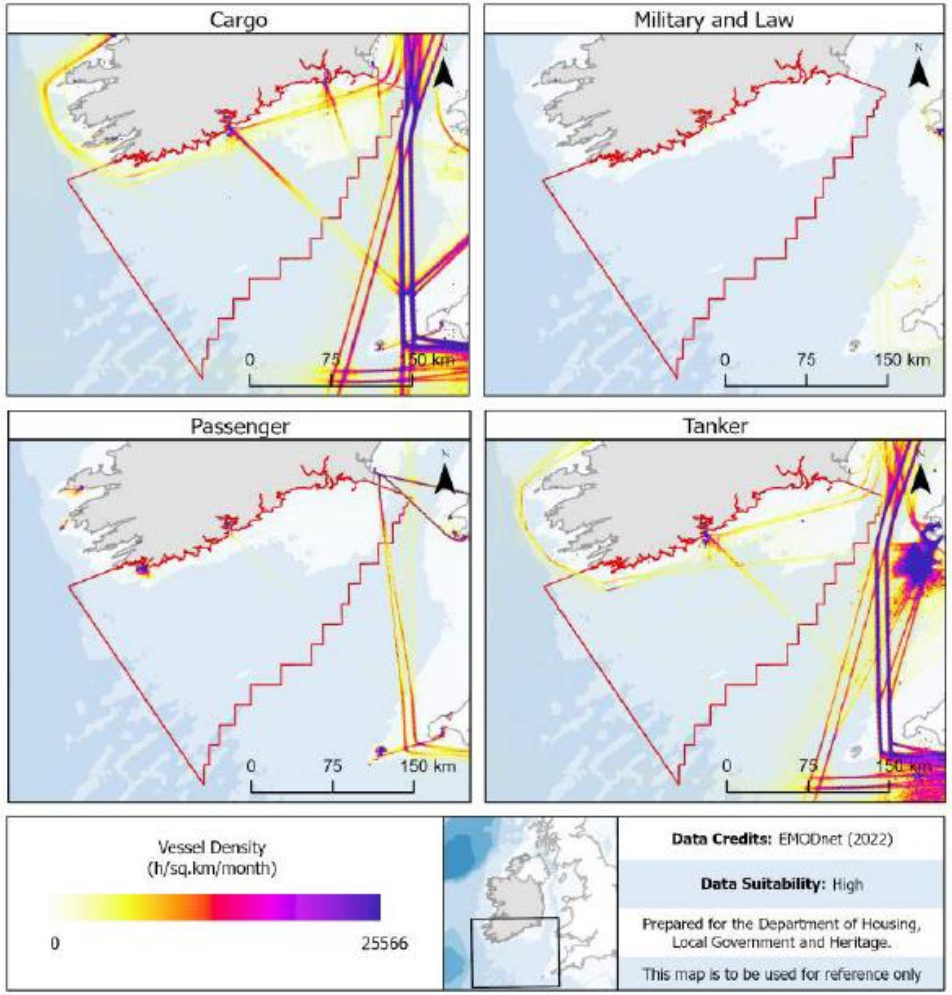


Figure 2.7.3. Density of shipping vessel transits in the Celtic Sea AOI from interpolated AIS pings.

Celtic Sea ESA – Sectoral Activity Cost layers

- Potential future activities
  - ORE – SC-DMAP
  - At February stakeholder meeting –analysis based on larger draft DMAP area
  - Final report the 4 refined SC-DMAP areas included
  - 4 areas are smaller than the larger draft area – likely differences in how those would be weighted in the analysis

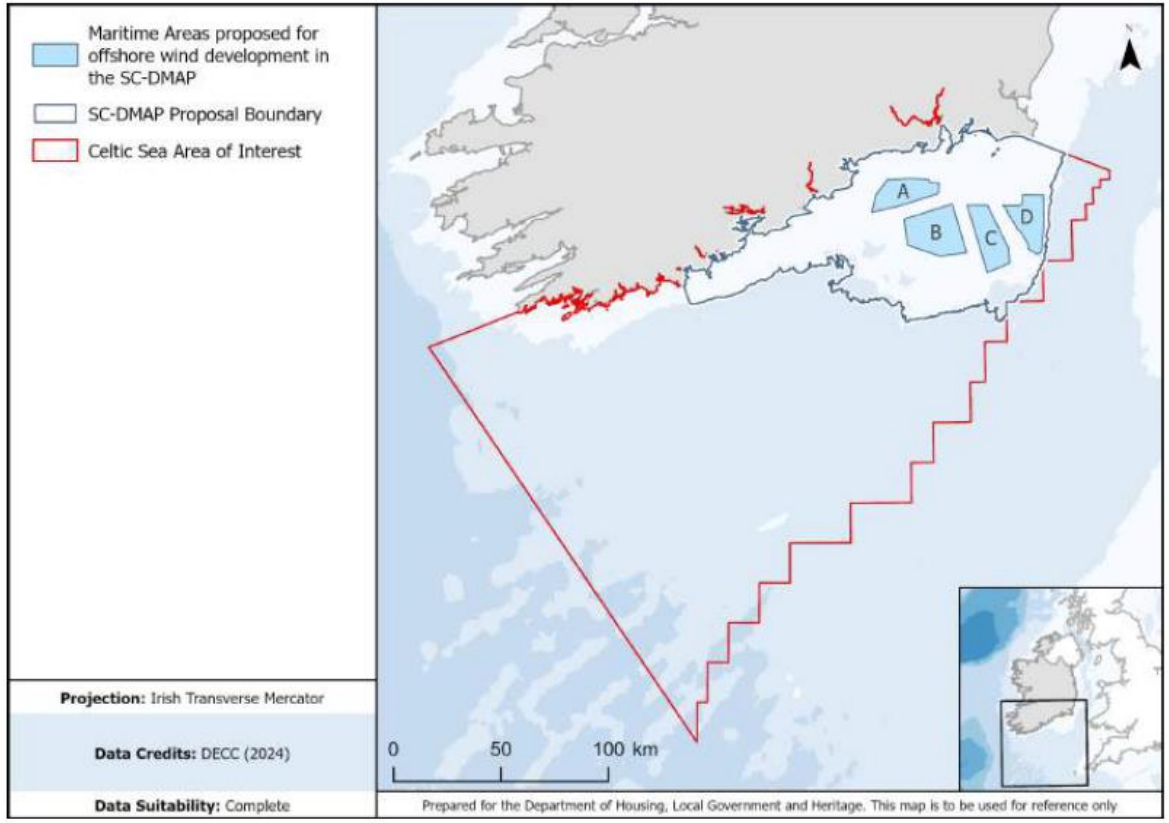
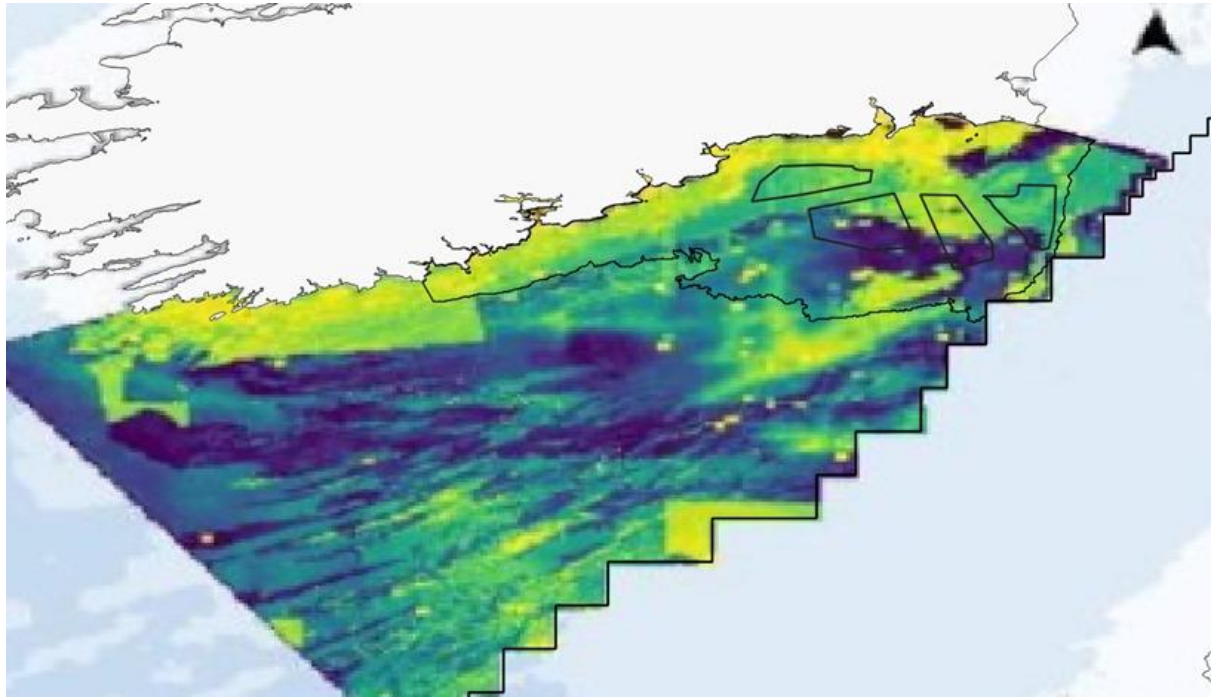
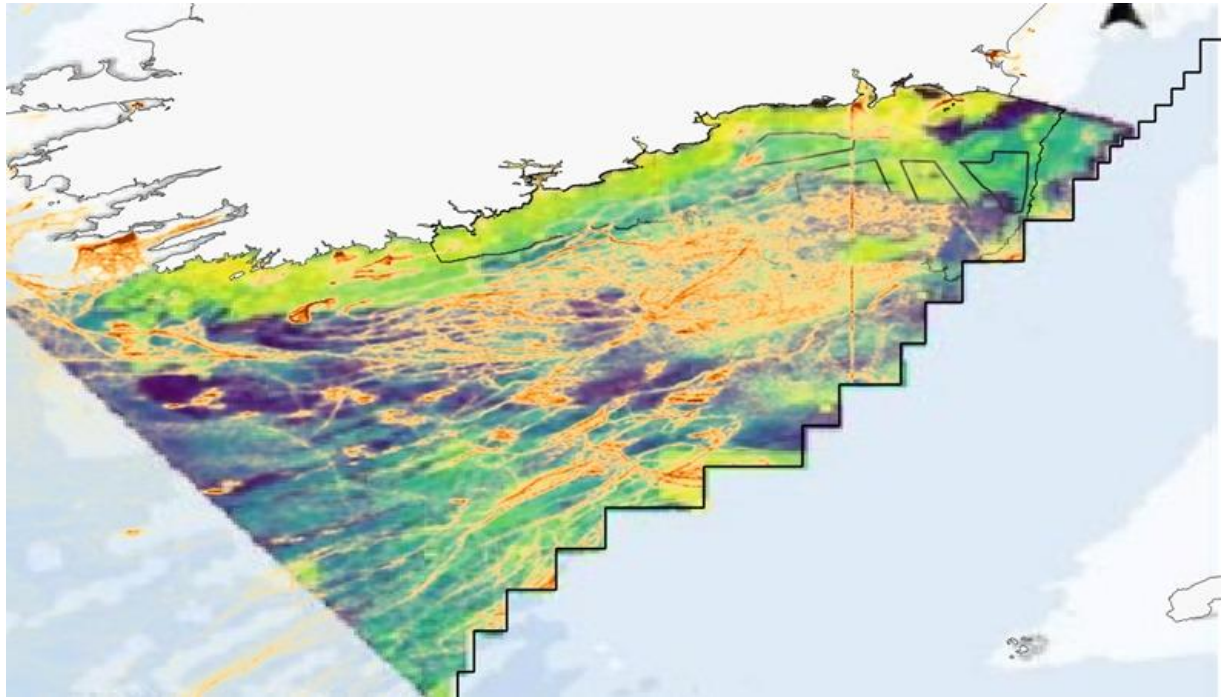


Figure 2.7.2. Maritime Areas A to D proposed for offshore wind development in the draft South Coast DMAP.

Celtic Sea ESA

- *Zonation* output with sectoral activity layers





Celtic Sea ESA – *Prioritizer* analysis

- Generates a network of MPAs containing set proportions of features of conservation interest.
- Aims to minimise overlap with sectoral activities
- Different scenarios tested – 27 runs in Appendix 12

Run 17. Scenario: Initial; No Costs, Planning unit size: 3 km

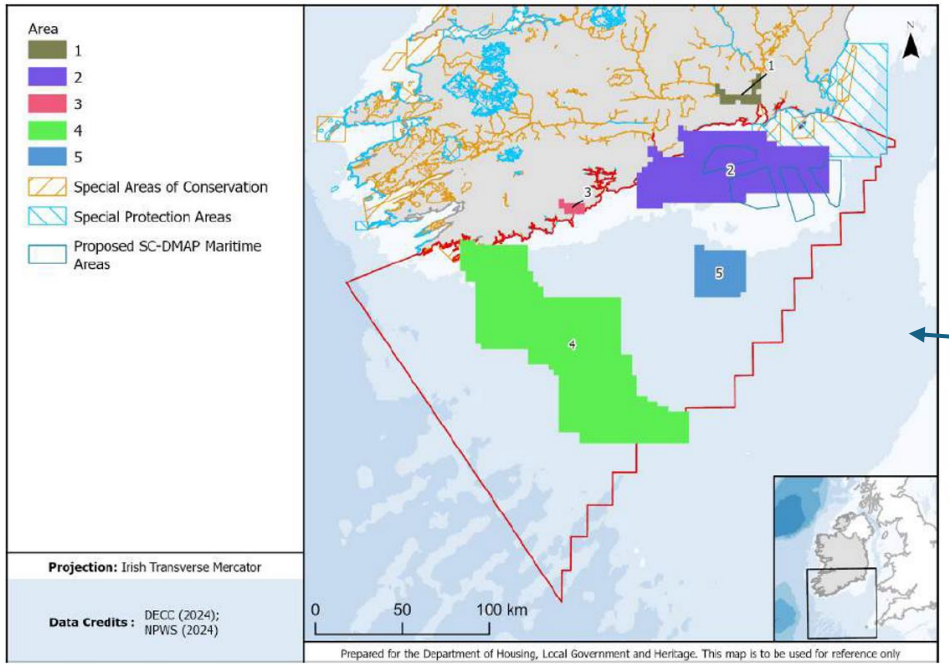


Figure A12.17 Solution for Run 17 (Scenario: Initial; No Cost; Planning unit size: 3 km, (for full details see Tables A5e.1 and A5e.2) with individual areas numbered for cross referencing with Table A12.17.

Table A5e.2. *prioritizr* runs showing conservation scenarios and the combined sectoral activity layer used. For details of scenarios and their feature targets see text and Table A5e.3

Run	Scenario Name	Combined sectoral activity layer	Scale
1	Initial	Fishing effort, no ORE	1 km
2	Initial	Standardised fishing effort, no ORE	1 km
3	Initial	Fishing effort, binary ORE	1 km
4	Initial	Standardised fishing effort, binary ORE	1 km
5	Initial	Fishing effort, weighted ORE (unstandardised)	1 km
6	Initial	Standardised fishing effort, weighted ORE (standardised)	1 km
7	Initial	Landings values, weighted ORE	1 km
8	Initial	No of fishing vessels, weighted ORE	1 km
9	Threatened	Fishing effort, weighted ORE (unstandardised)	1 km
10	Threatened	Standardised fishing effort, weighted ORE (standardised)	1 km
11	Ecological	Fishing effort, weighted ORE (unstandardised)	1 km
12	Ecological	Standardised fishing effort, weighted ORE (standardised)	1 km
13	Pragmatic	Fishing effort, weighted ORE (unstandardised)	1 km
14	Pragmatic	Standardised fishing effort, weighted ORE (standardised)	1 km
15	With Existing Protection	Fishing effort, weighted ORE (unstandardised)	1 km
16	With Existing Protection	Standardised fishing effort, weighted ORE (standardised)	1 km
17	Initial	No cost layer	3 km
18	Initial	Fishing effort, weighted ORE (unstandardised)	3 km
19	Initial	Standardised fishing effort, weighted ORE (standardised)	3 km
20	Threatened	Fishing effort, weighted ORE (unstandardised)	3 km
21	Threatened	Standardised fishing effort, weighted ORE (standardised)	3 km
22	Ecological	Fishing effort, weighted ORE (unstandardised)	3 km
23	Ecological	Standardised fishing effort, weighted ORE (standardised)	3 km
24	Pragmatic	Fishing effort, weighted ORE (unstandardised)	3 km
25	Pragmatic	Standardised fishing effort, weighted ORE (standardised)	3 km
26	With Existing Protection	Fishing effort, weighted ORE (unstandardised)	3 km
27	With Existing Protection	Standardised fishing effort, weighted ORE (standardised)	3 km

Celtic Sea ESA – *Prioritizer* analysis

- Generates a network of MPAs containing set proportions of features of conservation interest.
- Aims to minimise overlap with sectoral activities
- Different scenarios tested – 27 runs in Appendix 12

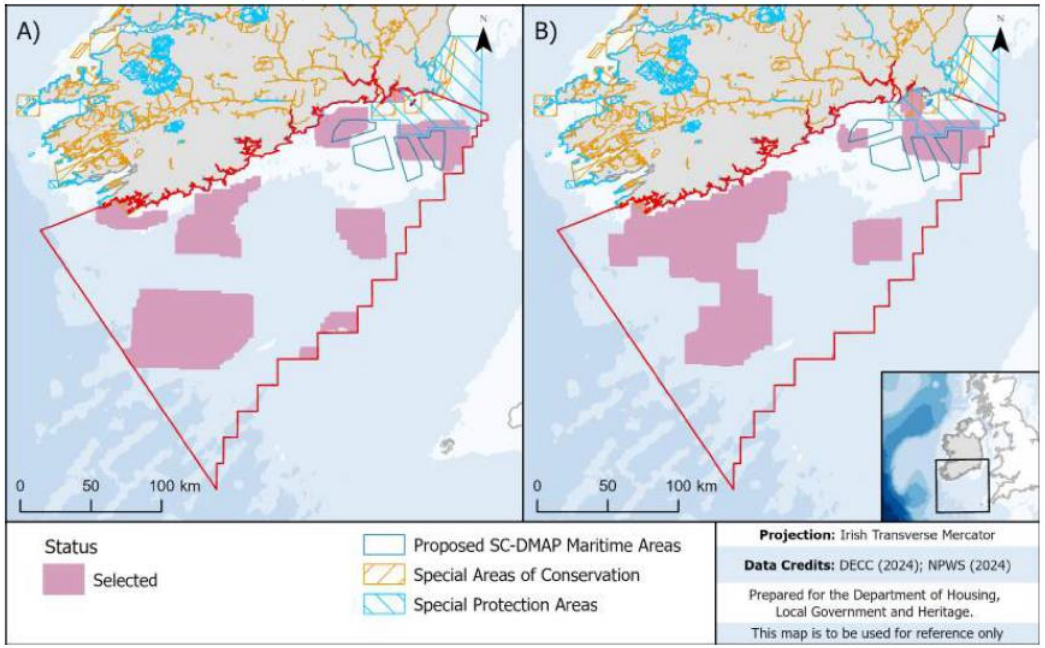


Figure 3.5.3. Reserve solutions using a sectoral activity layer without ORE activity, and with (A) fishing weighted for effort and (B) standardised per metier. For details of *prioritizr* settings see Appendix 5 Tables A5e.1 and A5e2 (Run 1 & 2).

Table A5e.2. *prioritizr* runs showing conservation scenarios and the combined sectoral activity layer used. For details of scenarios and their feature targets see text and Table A5e.3

Run	Scenario Name	Combined sectoral activity layer	Scale
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25	Pragmatic	Standardised fishing effort, weighted ORE (standardised)	3 km
26	With Existing Protection	Fishing effort, weighted ORE (unstandardised)	3 km
27	With Existing Protection	Standardised fishing effort, weighted ORE (standardised)	3 km

Celtic Sea ESA – *Summed Solution*

- Only 10 scenarios included in the summed solution
- Presented at start of the report
- Only included runs with SC-DMAP areas
- The analyses are directed to avoid those areas
- Also doing this for fisheries – minimal overlap for most fisheries

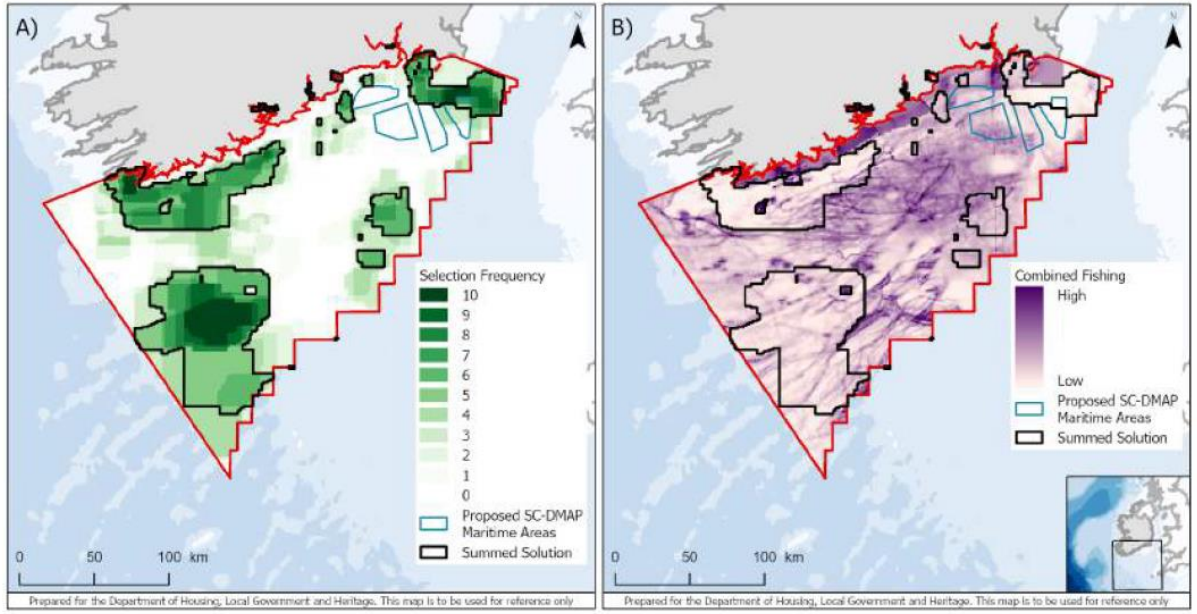

Figure 1. Key outcomes from conservation prioritization analyses of the Celtic Sea, completed by the MPA Advisory Group in May 2024.

Panel (A) shows identified areas of comparatively higher priority for potential protection for the selected ecological features (shades of green). Suitable areas for potential MPAs in the Celtic Sea could be selected from within these identified areas. Areas of lower priority for potential protection for the selected features are shown in white. Maritime areas currently proposed for ORE development in the Draft South Coast DMAP are outlined in blue.

Table A5e.2. *prioritizr* runs showing conservation scenarios and the combined sectoral activity layer used. For details of scenarios and their feature targets see text and Table A5e.3

Run	Scenario Name	Combined sectoral activity layer	Scale
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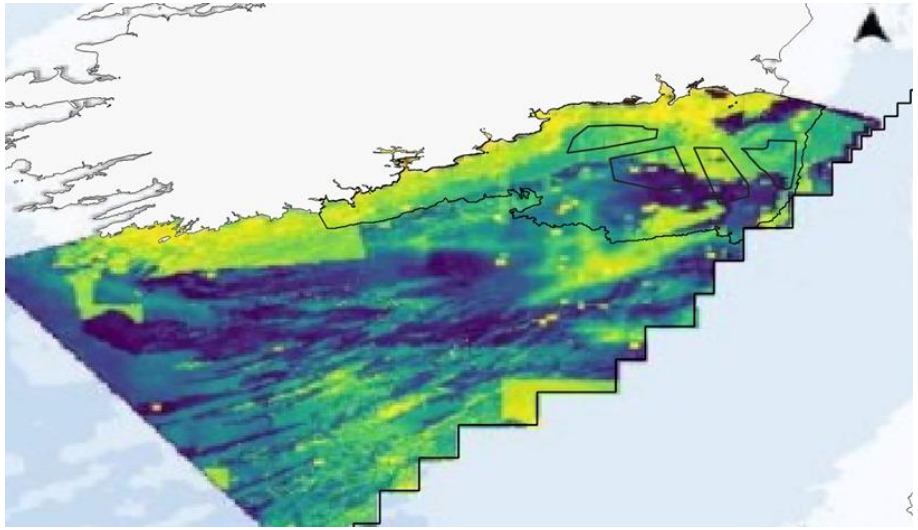
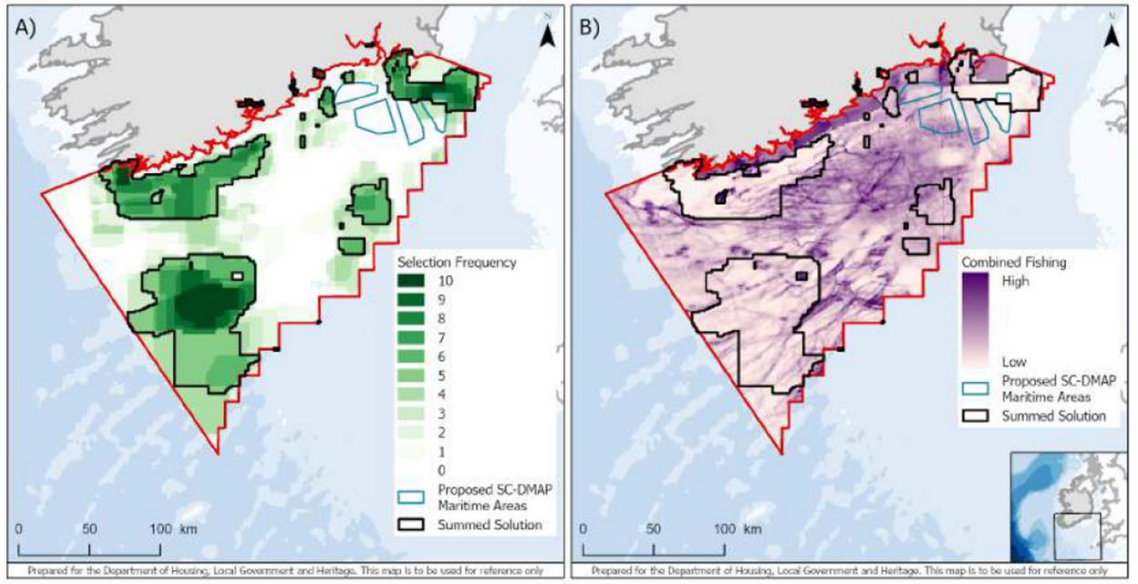
Questions





- Does the ESA output "***safeguard areas environmentally sensitive to the potential effects of ORE development in the near term***".
  - No, the analyses were forced to limit overlap with the four SC-DMAP areas

- Does the ESA output "***provide data and analyses that can inform planning decisions on the potential siting of ORE infrastructure***"
  - Not in its current form as the output is biased by the inclusion of the SC-DMAP

Celtic Sea ESA – Issue #1

- Summed Solution presented at the start of the report
- Implication is that the SC-DMAP does not overlap with priority conservation areas – not true
- ESA will be used as further justification to support the SC-DMAP areas despite the analysis preventing overlap with these areas as far as possible
- The ESA should have been done in advance of the SC-DMAP and used to inform that process
- When were the MPA Advisory group given the 4 refined SC-DMAP areas?
- Who told them to use them in the analysis? DECC, DHLGH?
- How would the larger draft SC-DMAP been costed in the analysis?

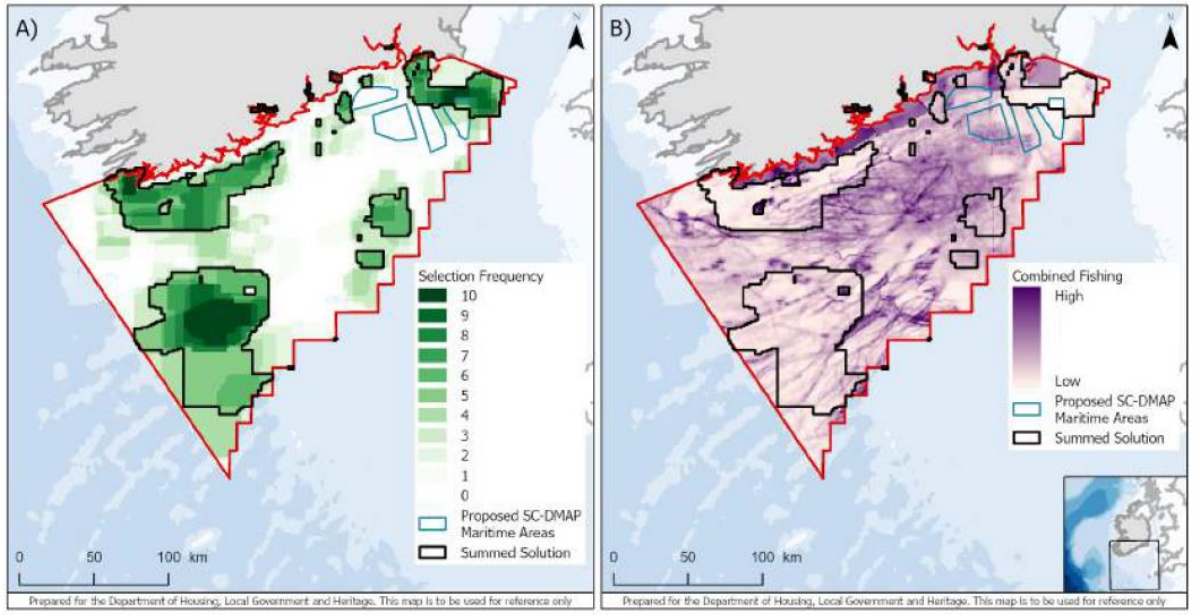
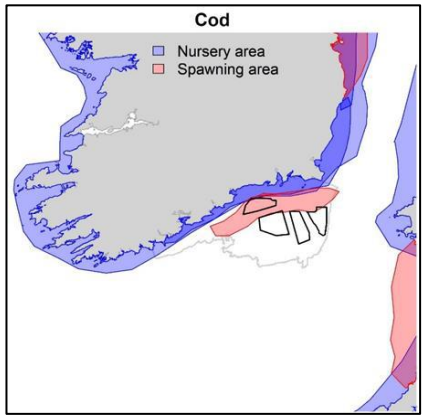


Figure 1. Key outcomes from conservation prioritization analyses of the Celtic Sea, completed by the MPA Advisory Group in May 2024.

Celtic Sea ESA – Issue #2



- Features List – 41 features
- Output of the ESA is only as good or as relevant as the features and data included
- General lack of data on essential fish habitats e.g. spawning and nursery grounds

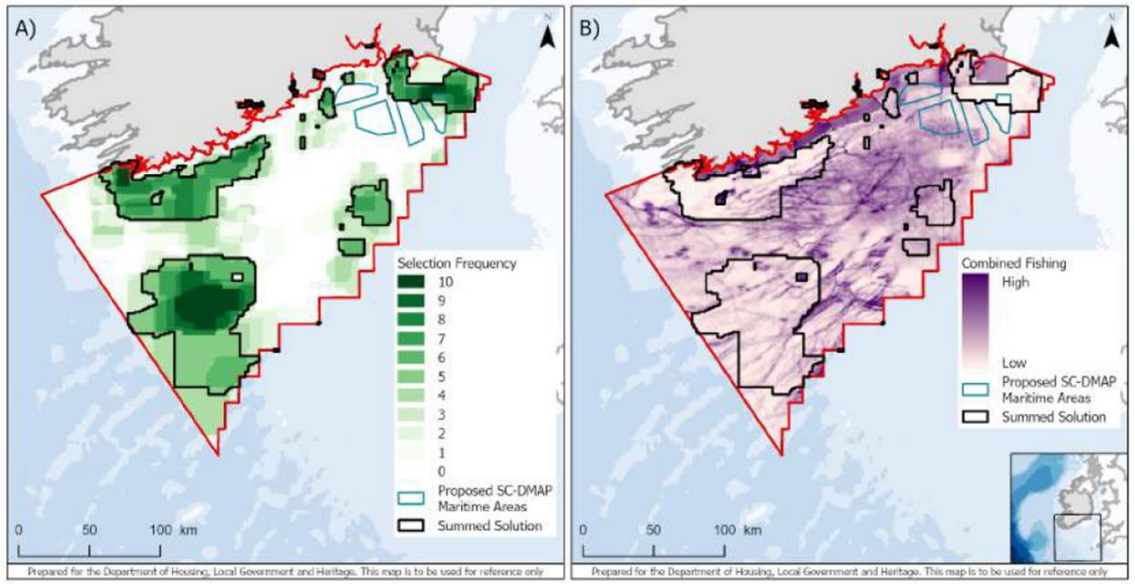
- Stakeholders not shown any features data at the February meetings – feature list only
- Opportunity after the meeting to bring forward data but difficult when not told what data was already being used
- Inclusion of different features would give a different outcome

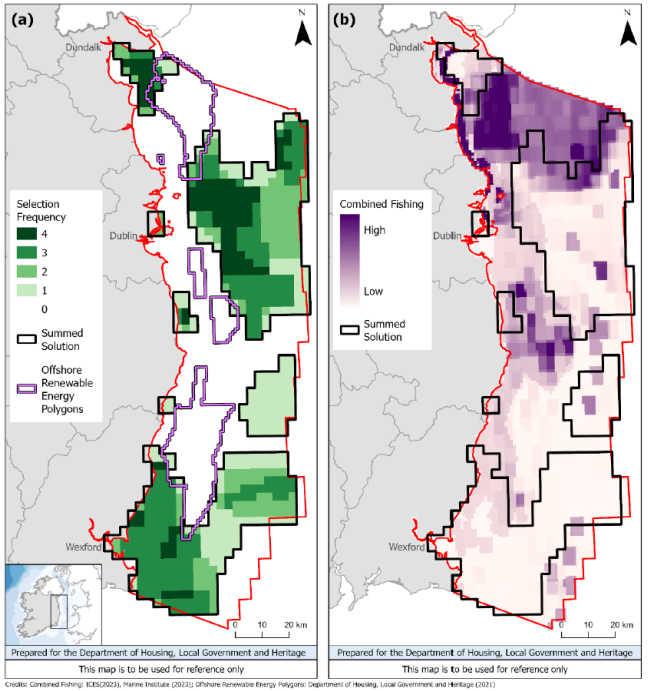
#	Common name	Latin name	Qual.	OSPAR / IUCN	Analysis
1	Basking shark	*Cetorhinus maximus*	I.	OSP, I-EN, E-EN, G-EN	CP
2	Blonde ray	*Raja brachyura*	I.	I-NT, E-NT, G-NT	CP
3	Blue skate	*Dipturus batis*	I.	OSP, I-CR, G-CR	CP
4	Bull huss	*Scyliorhinus stellaris*	I.	E-NT	CP
5	Flapper skate	*Dipturus intermedius*	I.	OSP, I-CR, G-CR	CP
6	Shagreen ray	*Leucoraja fullonica*	I.	I-VU, E-VU, G-VU	CP
7	Small-Eyed ray	*Raja microocellata*	I.	E-NT, G-NT	ID
8	Starry smooth-hound	*Mustelus asterias*	I.	E-NT, G-NT	ID
9	Tope	*Galeorhinus galeus*	I.	I-VU, E-VU, G-CR	ID
10	Common spiny lobster	*Palinurus elephas*	I.	G-VU	ID
11	Fan mussel	*Atrina fragilis*	II.		ID
12	Ocean quahog (Icelandic cyprine)	*Arctica Islandica*	I.	OSP	ID
13	European eel	*Anguilla anguilla*	I.	OSP, E-CR, G-CR	CP
14	Ocean sunfish	*Mola mola*	I.	G-VU	CP
15	Salmon	*Salmo salar*	I.	OSP, E-VU, G-NT	CP
16	Short-snouted seahorse	*Hippocampus hippocampus*	I.	OSP	ID
17	Spiny seahorse	*Hippocampus guttulatus*	I.	OSP, G-NT	ID
18	Turbot	*Scophthalmus maximus*	I.	E-VU	CP
19	Circalittoral coarse sediment		III.		CP
20	Circalittoral mud		III.		CP
21	Circalittoral rock & biogenic reef		III.		CP
22	Circalittoral sand		III.		CP
23	Infralittoral coarse sediment		III.		CP

#	Common name	Latin name	Qual.	OSPAR / IUCN	Analysis
24	Infralittoral mud		III.		CP
25	Infralittoral rock & biogenic reef		III.		CP
26	Infralittoral sand		III.		CP
27	Offshore circalittoral coarse sediment		III.		CP
28	Offshore circalittoral mud		III.		CP
29	Offshore circalittoral rock & biogenic reef		III.		CP
30	Offshore circalittoral sand		III.		CP
31	Offshore circalittoral mixed sediment		III.		CP
32	Celtic Sea frontal systems (two non-overlapping layers: Celtic Sea Front, and coastal system)		IV.		CP
33	Intertidal *Mytilus edulis* beds		I.	OSP	ID
34	Kelp forest		I.	OSP	CP
35	*Sabellaria spinulosa* reefs		I.	OSP	CP
36	Sea pen & burrowing megafauna		I.	OSP	CP
37	*Zostera* beds		I.	OSP	CP
38	Carbon Sequestration (two layers: organic carbon stock, organic carbon content).		V.		CP
39	Elasmobranch critical egg-laying habitat		II.		ID
40a	Forage fish 1 (sprat, anchovy, pilchard)		II.		CP
40b	Forage fish 2 (sandeel)		II.		CP
41	Herring spawning areas		II.		CP

Celtic Sea ESA – Issue #3

- Celtic Sea ESA was conducted only on part of the Celtic Sea – Area of Interest
- Celtic Sea ESA was conducted in isolation from the Irish Sea and from UK and French waters
- No connectivity of features was considered
- Differences in the approaches used in the Irish Sea and Celtic Sea
- How can a coherent network of MPAs be developed from isolated analyses?





Summary

1. ESA outputs will likely be used to inform the future MPA designation process
2. ESA outputs exclude the most sensitive areas identified for potential protection
3. Analysis compensates by identifying more and larger areas to reach % targets
4. Validity of the results – are the identified areas the most appropriate?
5. Question the objectivity of including sectoral activities that do not currently exist
6. The included features exist in the presence of fishing and shipping
7. The impact of ORE on these features is unknown – precautionary approach?
8. ESA should have been done prior to identification of the 4 SC-DMAP areas