



SHARING KNOWLEDGE FOR SUSTAINABLE FISHERIES

Addressing Mixed Fisheries Conundrum

GEPETO (Gestion de las PEsqueras y Transnational Objetivos)

Dr Colm Lordan



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OBJECTIVES TODAY

- Refresh on GEPETO Project
- Update on progress so far
- Evolution of thinking
- Review of relevant scientific projects
- Get RAC input to work plan & direction



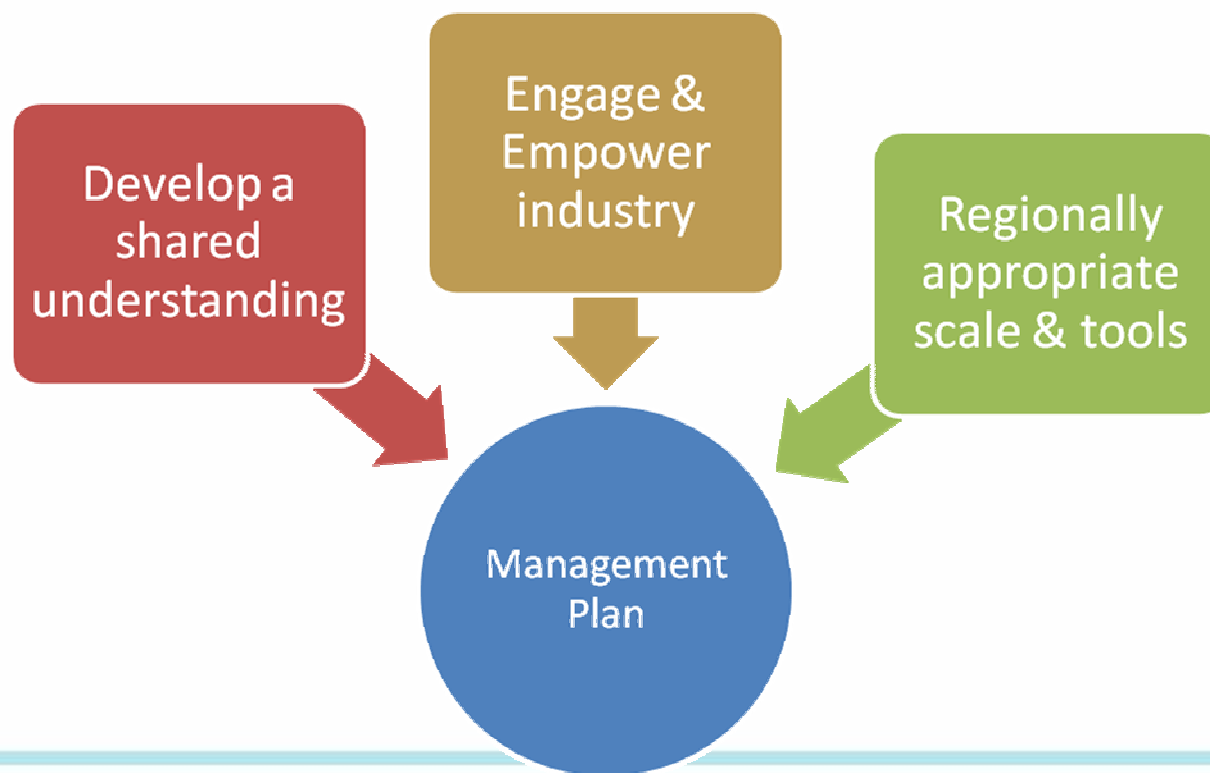
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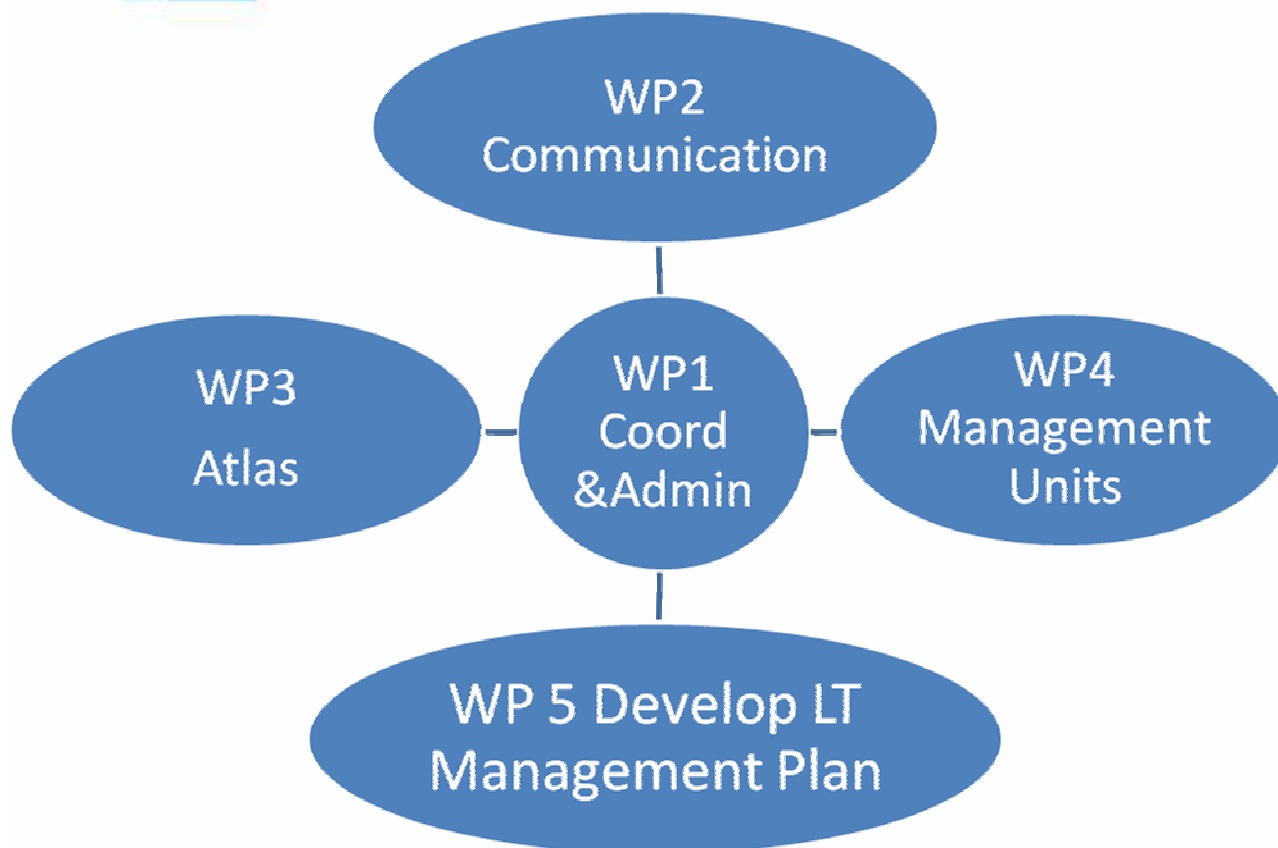


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To develop long-term fishery Management Plans in collaboration with industry and other stakeholder





7 Case Studies

Celtic Sea Mixed Fisheries

Bay of Biscay Mixed Fisheries

Iberian Mixed Fisheries

Averio – Small scale fishery

Octopus Fishery NW Spain

Cap Breton

Artisanal Fisheries in Canary Islands



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GEPETO - Main Tasks

- Expand background information required for CS-MP
- Organise Stakeholder focus groups
- Data extractions & Visualisation for WPs
- Review of Bio-economic Model Options
- Development of Bio-economic modelling framework
- Develop mixed fisheries advice for the Celtic Sea

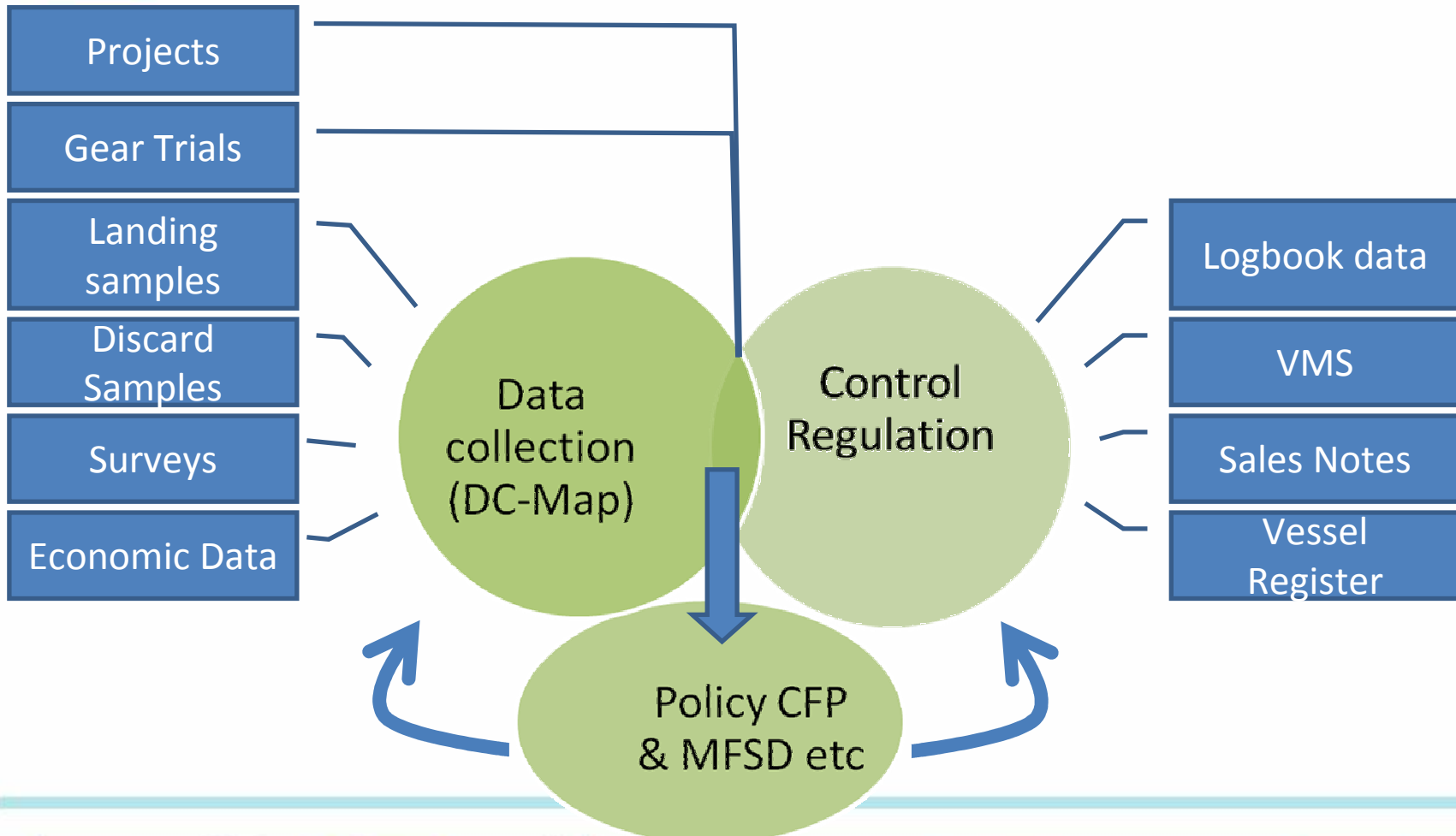


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| Data Type | Sub-Type | Spatial resolution | Temporal Resolution | Coverage |
|-----------------|--------------|--------------------|---------------------|-------------------|
| Logbook Data | Operations | ICES Rectangle | Daily | >10m |
| | Declarations | ICES Division | Trip | >10m |
| VMS | | Instant Lat Lon | 2hrs | >15m |
| Sales Notes | | Port | Trip | All |
| Register | | na | Continuous | All |
| Landing samples | Length | ICES Division | Trip | ~3% of trips |
| | Age | ICES Division | Quarter | |
| Discard samples | Length | Haul Lat long | Haul ~5hrs | ~1% of operations |
| Surveys | Length | Haul Lat long | ~30mins | <.01 of area |
| | Age | Stratum | na | |
| Gear Trails | Length | Haul Lat long | Haul ~5hrs | <0.05% operations |
| Projects | Variable | High | High | Very Low |

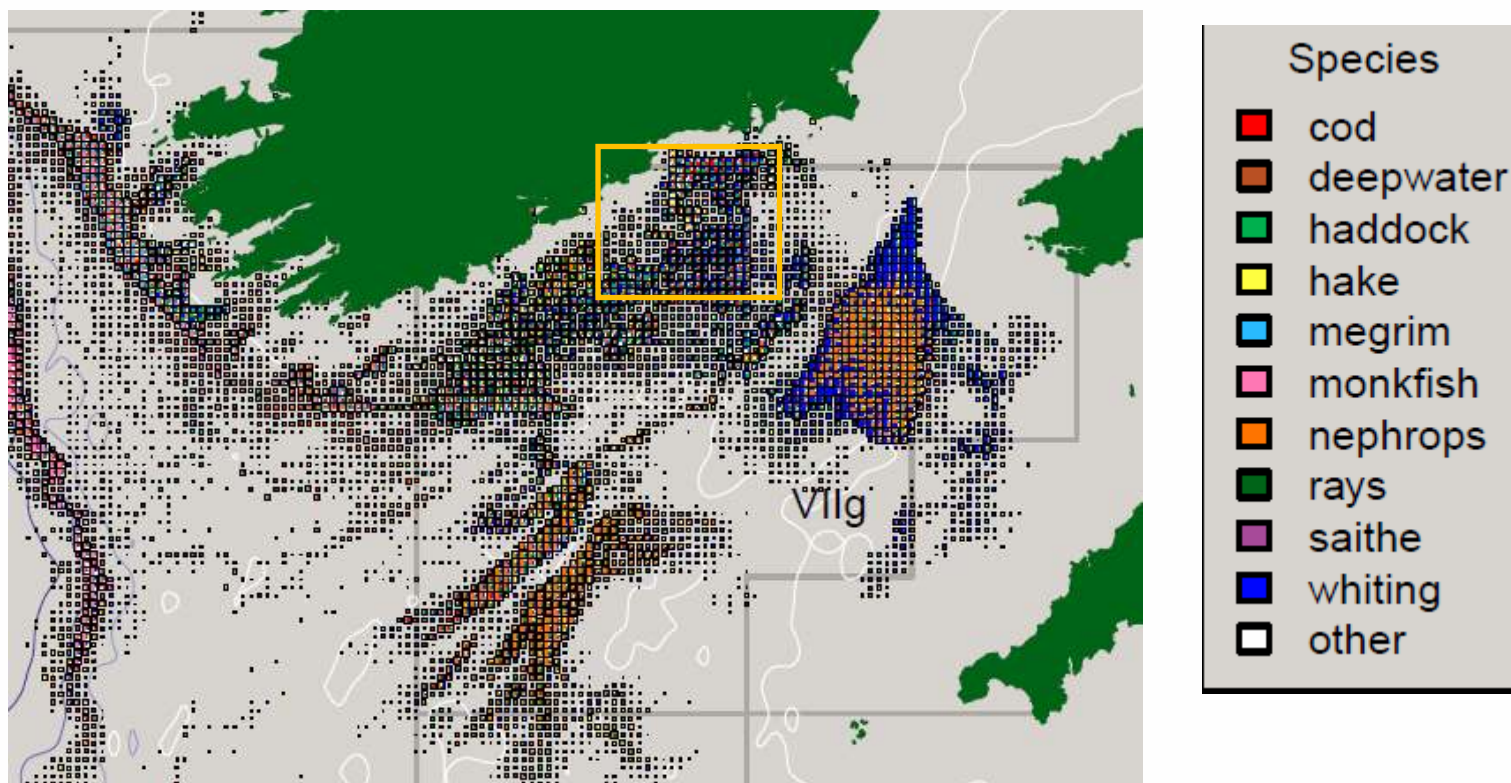


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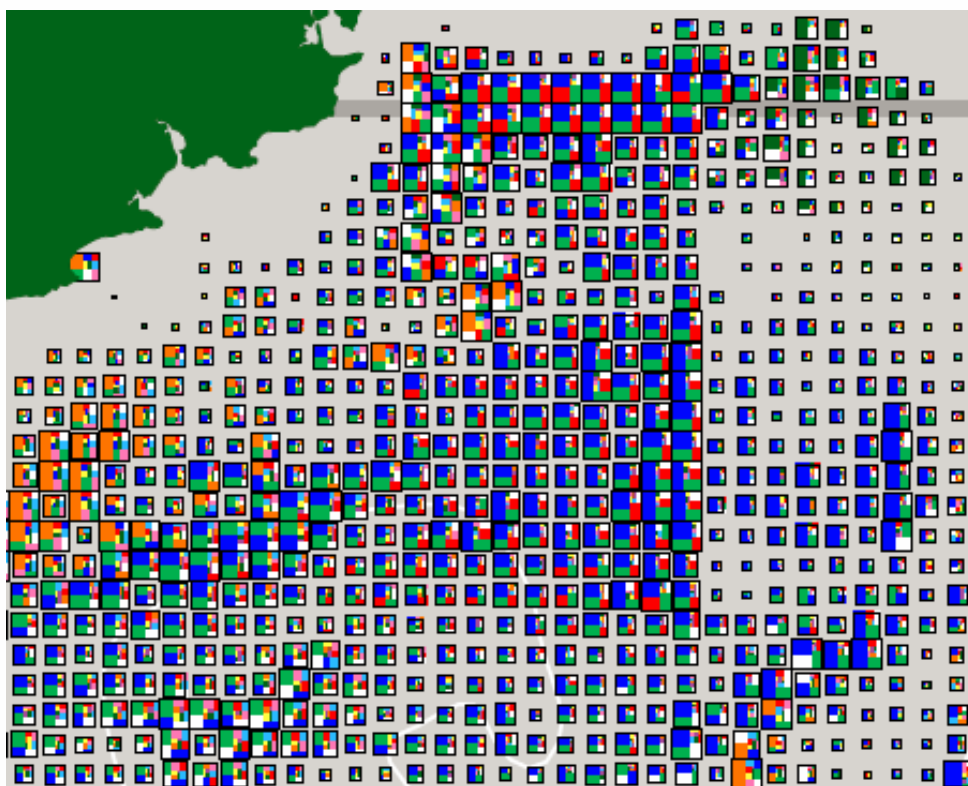


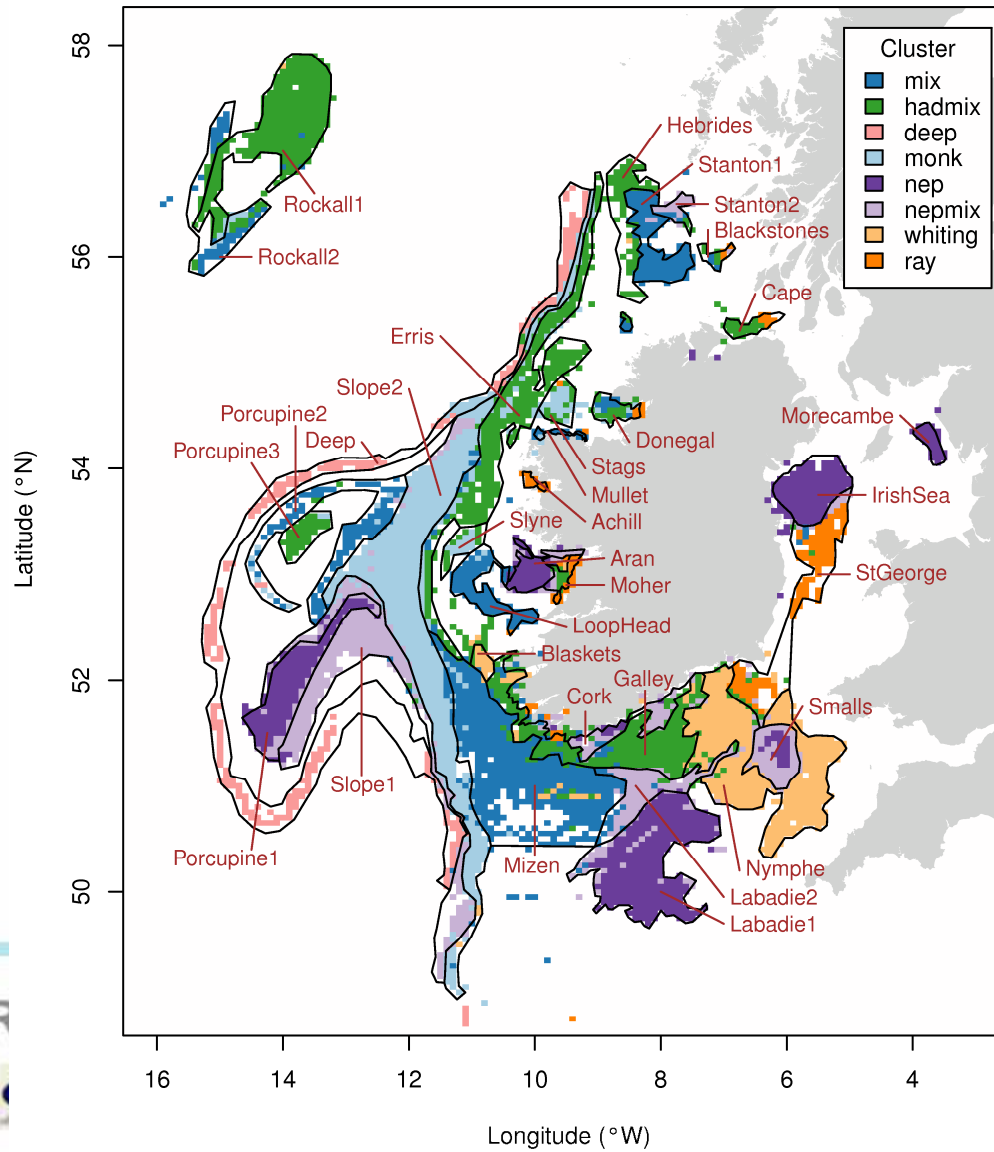
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Celtic Sea Mixed Demersal Fisheries



Celtic Sea Mixed Demersal Fisheries







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Management Units

- Different approaches for different case studies
- Multi-dimensional problem at varying scales
- Need to separate allocation and access issues
- Focus on management tools
 - 3D temporal, spatial, gear
 - Assess efficacy, costs and trade-offs

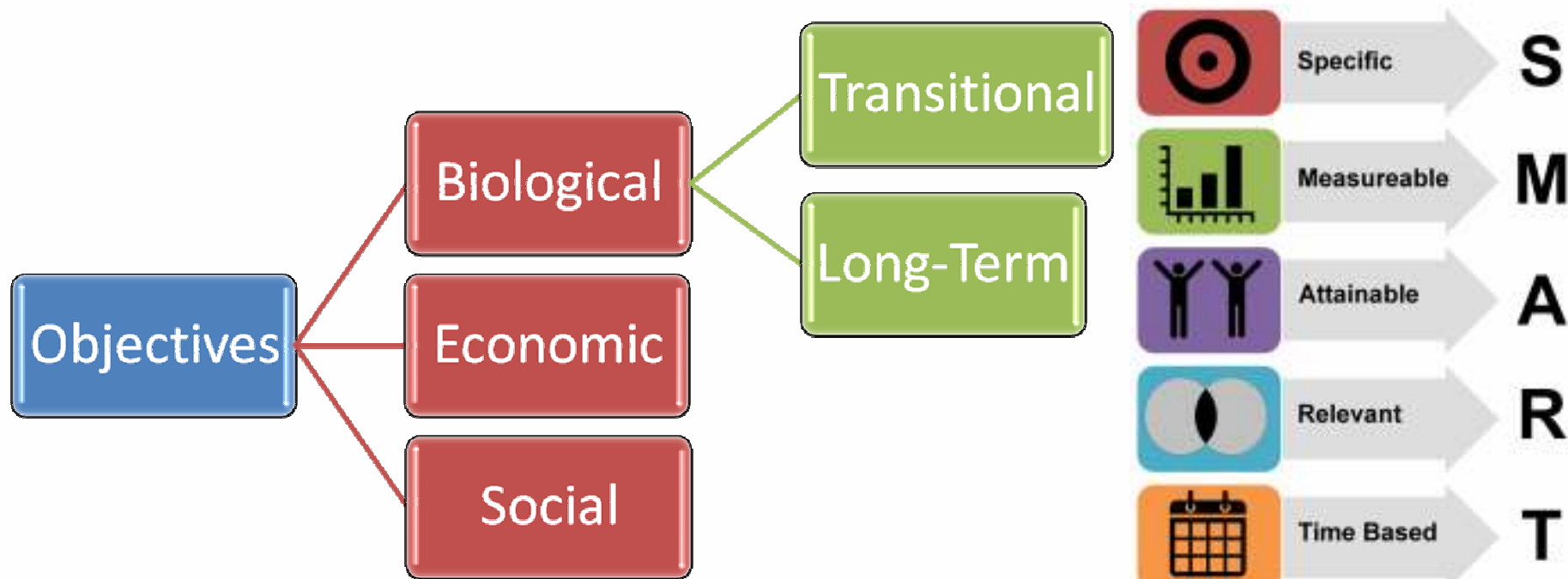


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2011 - NWWRAC Celtic Sea MP



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http://www.nwwrac.org/admin/publication/upload/REVISED_NWWRAC_DRAFT_Celtic_Sea_Mixed_Fisheries_MP_Nov2011.pdf



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2.1. Where are we now?

STECF-EWG Database

STEFCAER Annual economic reports

ICES reports

[Harvest knowledge from scientific projects](#)



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Contents lists available at ScienceDirect

Fisheries Research

journal homepage: www.elsevier.com/locate/fishres




Spatial patterns in the retained catch composition of Irish demersal otter trawlers; High-resolution fisheries data as a management tool

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^b Marine and Freshwater Research Centre, Galway-Mayo Institute of Technology, Dublin Road, Galway, Ireland

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ICES Journal of Marine Science Advance Access published February 26, 2012

ICES Journal of Marine Science



ICES Journal of Marine Science; doi:10.1093/icesjms/fbs033

Food for Thought

21st century fisheries management: a spatio-temporally explicit tariff-based approach combining multiple drivers and incentivising responsible fishing

Sarah B. M. Kraak^{1,2*}, Dave G. Reid², Hans D. Gerritsen³, Ciarán J. Kelly³, Mike Fitzpatrick³, Edward A. Codling^{4,5}, and Emer Rogan¹

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RESEARCH ARTICLE

Spatial Heterogeneity in Fishing Creates *de facto* Refugia for Endangered Celtic Sea Elasmobranchs

Samuel Shephard 

Hans Gerritsen,
Michel J. Kaiser,
David G. Reid

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Definition, dynamics and stability of métiers in the Irish otter trawl fleet

Sarah Davie, Colm Lordan^{*}

Marine Institute, Renvyle, Oramore, Co Galway, Ireland



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Co-ordinating & Synergising



GAP

Connecting Science
Stakeholders and Policy

myfish



Maximising yield of fisheries while balancing
ecosystem, economic and social concerns

<http://www.myfishproject.eu/index.php>



Call for tenders MARE/2012/22

Maritime Affairs and Fisheries Studies for carrying out the Common Fisheries Policy

LOT 1 - Scientific support for the development of a management plan in the Celtic Sea



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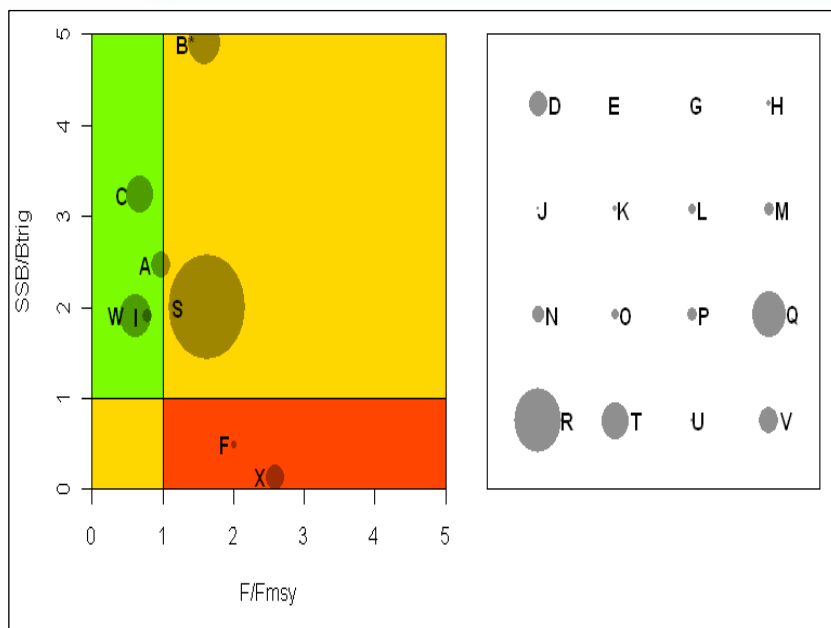
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4.1 To have an agreed common understanding of all stakeholders on the state of stocks in the mixed demersal fisheries in the Celtic Sea including the geographical area covered (i.e. ICES sub areas VIIIfg).

| Actions | Who? | Timeframe |
|---|-----------|--------------------|
| 1.1 Conduct a consultation with industry on general and specific aspects of the developing plan. | Ip and If | Ongoing |
| 1.2 Carry out annual assessments of the status of the stock and management advice | ICES | Annual June |
| 1.3 Present the advice for the stocks in a fishing industry friendly way – “Industry Stockbook” | ICES | Due in 2013 |
| 1.4 Develop a dialog with industry and environmental stakeholders at a local and regional level through industry meetings | S, Ip, If | Nationally ongoing |
| 1.5 Develop a CS-MP information repository Atlas (web site and discussion forum) | GEPETO | 2013 |
| | | |

Celtic Sea Stocks

| Species | Stock area | International Landings | International Discards | ICES Stock Status 2011 | | ICES Advice for 2013 (Tonnes) | EU Proposal (COM(2012) 608 final) |
|------------------------------------|----------------------------|------------------------|------------------------|------------------------|-------------|-------------------------------|--|
| | | | | F ~MSY | SSB ~ Btrig | | Basis Of EC proposal |
| Cod | VIIe-k | 4,745 | 2,555 | ✓ | ✓ | <10,200 | Follow ICES Advice |
| Haddock | VIIb-k | 12,524 | 14,275 | ✗ | ✓ | <9,500 | Straight to FMSY |
| Whiting | VIIe-k | 9,077 | 5,700 | ✓ | ✓ | <17,500 + 7,000 for VIId | Follow ICES Advice |
| Pollock | VII | 4,072 | ? | ? | ? | <4,150t | Status Quo TAC |
| Saithe | VII, VIII, IX, X | | | | | No ICES advice | -25% on 2012 TAC |
| Plaice | VIIfg | 421 | 1,107 | ✗ | ✗ | <360 | -25% on 2012 TAC |
| Plaice | VIIbc | 18 | ? | ? | ? | <30 | -25% on 2012 TAC |
| Plaice | VIIhjk | 176 | 200 | ✗ | ? | <100 | Unknown |
| Sole | VIIfg | 1,029 | 31 | ✓ | ✓ | <1,100 | Follow ICES Advice |
| Sole | VIIbc | 27 | ? | ? | ? | <30 | -25% on 2012 TAC |
| Sole | VIIhjk | 217 | ? | ✓ | ? | <200 | -25% on 2012 TAC |
| Nephrops (FU19) | VIIlg | 608 | 137 | ✓ | ↔ | <820 | Sum of June advice for all stocks except FU16 where the 1,386? is used |
| Nephrops (FU20-21) | VIIgh | 1,237 | ? | ↔ | ? | <2,500 | |
| Nephrops (FU22) | VIIg | 1,617 | 153 | ✓ | ↔ | <3,100 | |
| Nephrops (FU17) | VIIb | 600 | 83 | ✓ | ? | <590 | |
| Nephrops (FU16) | VIIck | 1,186 | ? | ↔ | ↔ | <1800 | Unknown |
| Megrim | VIIb-k & VIIIabe | 13,200* | 4,400* | ? | ↔ | <12000 | -25% on 2012 TAC |
| Anglerfish | VII & VIII | 28,880* | ? | ? | ↔ | <24800 | -25% on 2012 TAC |
| Hake | II, III, IV, VI, VII, VIII | 73,000* | 6,700* | ? | ✓ | <45400 | Straight to FMSY |
| Skates & Rays | VI & VII (excl. VIId) | 8,590 | ? | ? | ? | TAC not app. Sps sp. Meas. | |



| | | | | | | | |
|----|--------------------------|---|--------------------------|---|-------------------------------------|---|--|
| A | Cod VIIe-k | H | Plaice VIIhjk | O | Nephrops (FU17) VIIb | V | Sprat VI and VII (excl. VIId and VIle) |
| B* | Haddock VIIb-k | I | Sole VIIfg | P | Nephrops (FU16) VIick | W | Herring VIIaS VIIg,j |
| C | Whiting VIIe-k | J | Sole VIIbc | Q | Megrim VIIb-k & VIIIabe | X | Herring VIaS VIIbc |
| D | Pollock VII | K | Sole VIIhjk | R | Anglerfish VII & VIII | | |
| E | Saithe VII, VIII, IX, X, | L | Nephrops (FU19) VIIjg | S | Hake II, III, IV, VI, VII, VIII | | |
| F | Plaice VIIfg | M | Nephrops (FU20-21) VIIgh | T | Skates & Rays VI & VII (excl. VIId) | | |
| G | Plaice VIIbc | N | Nephrops (FU22) VIIg | U | Grey gurnard VI & VII (excl. VIId) | | |

Developing the Advice

New ICES approach

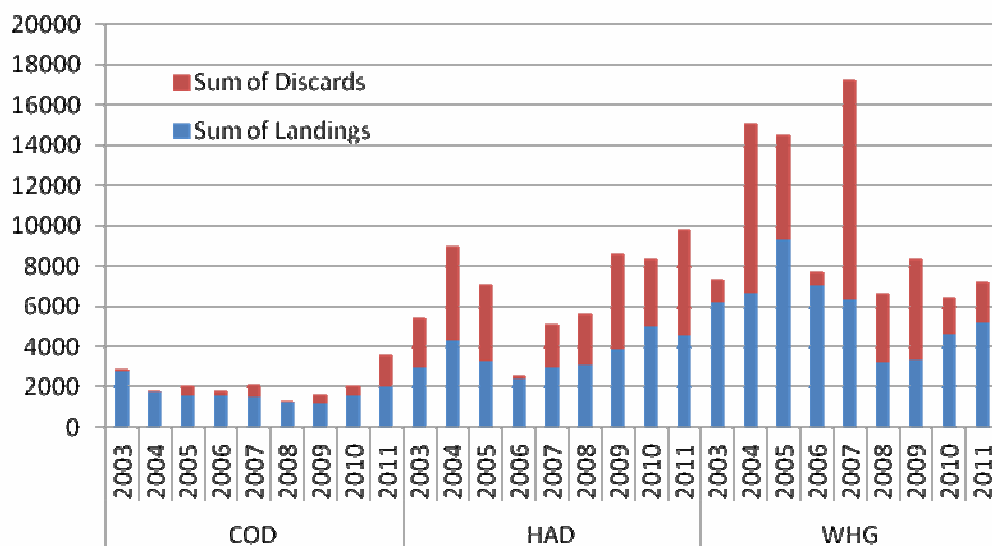
- Mixed Fisheries – Technical
- Multi-species - Biological



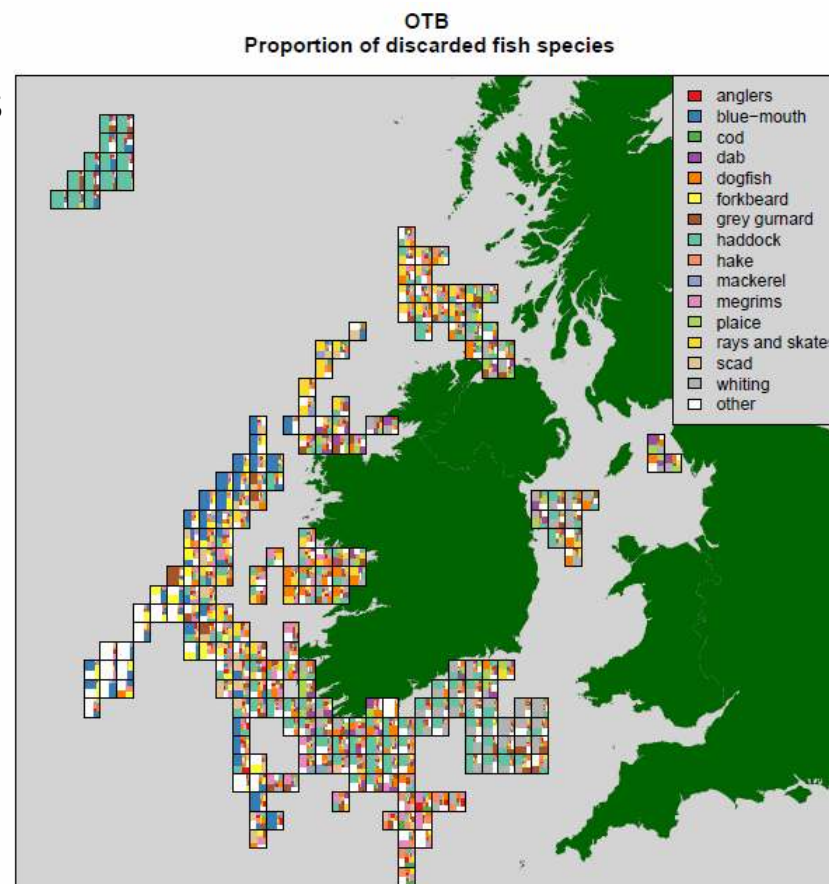
- Reduce discard rates by 20% from current levels by 2015 for Cod, Haddock and Whiting

| Actions | Who? | Timeframe |
|--|--------------------|-----------|
| 2.1 Develop and international review of discard information for the CS | S | Dec 2011 |
| 2.2 Identify and agree discard reduction priorities and actions | Ip, If,S,D E, | 2012 |
| 2.3 Develop discard reduction action plan including; Experiments, monitoring programme, reporting cycle. | | 2012 |
| 2.4 Review progress on annual cycle | S, D, Ip, If, E | Annual |

STECF - Database

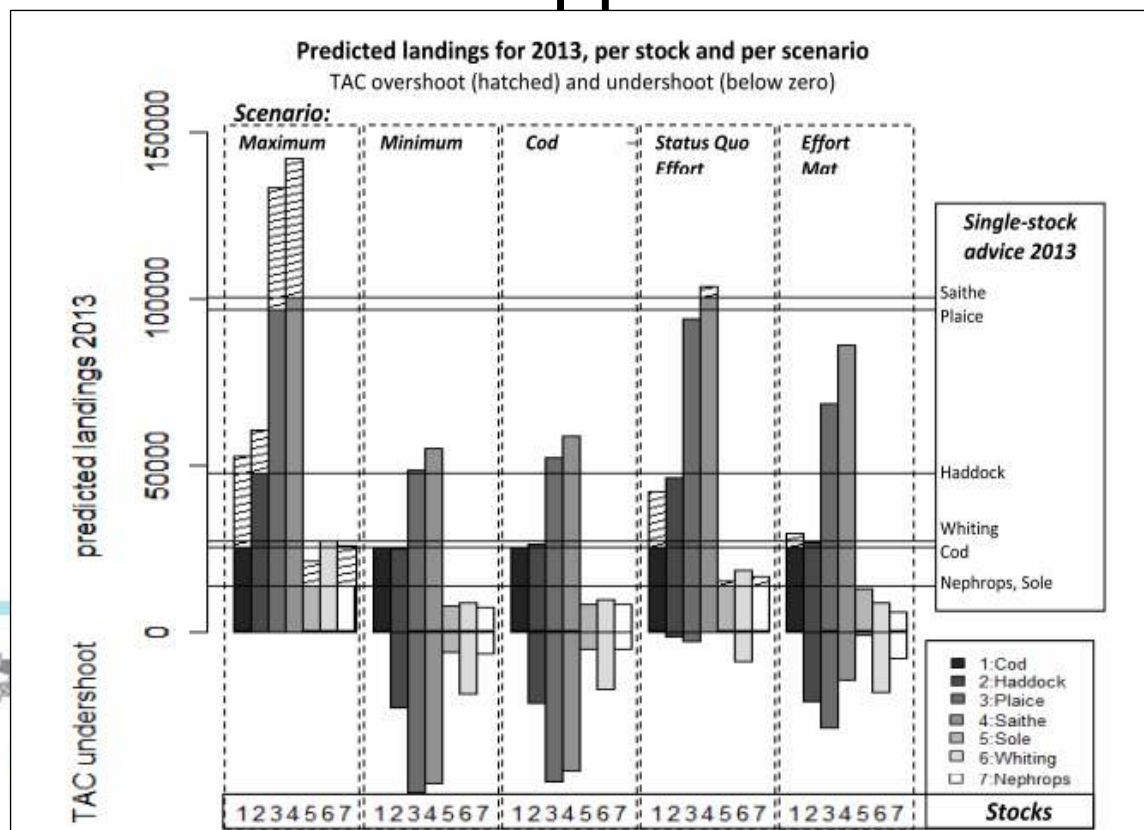


MI – Discard Atlas



Multi-species MSY

- Clear conflicts in single species advice
- MIXMAN & F-cube approach





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Multi-species MSY

- Clear conflicts in single species advice
- MIXMAN & F-cube approach
- Decision Support Tool
- MSE Approach – Harvest control rules for several species simultaneously

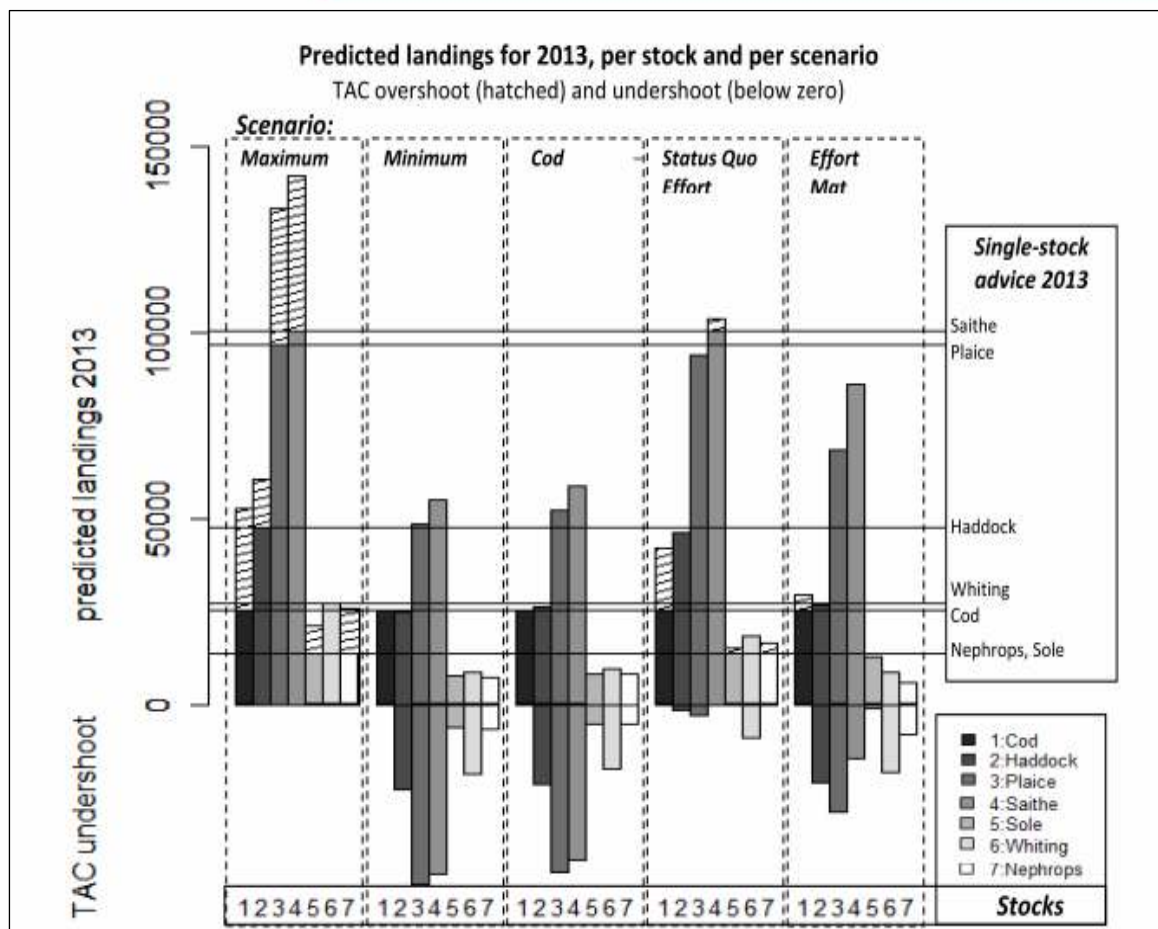


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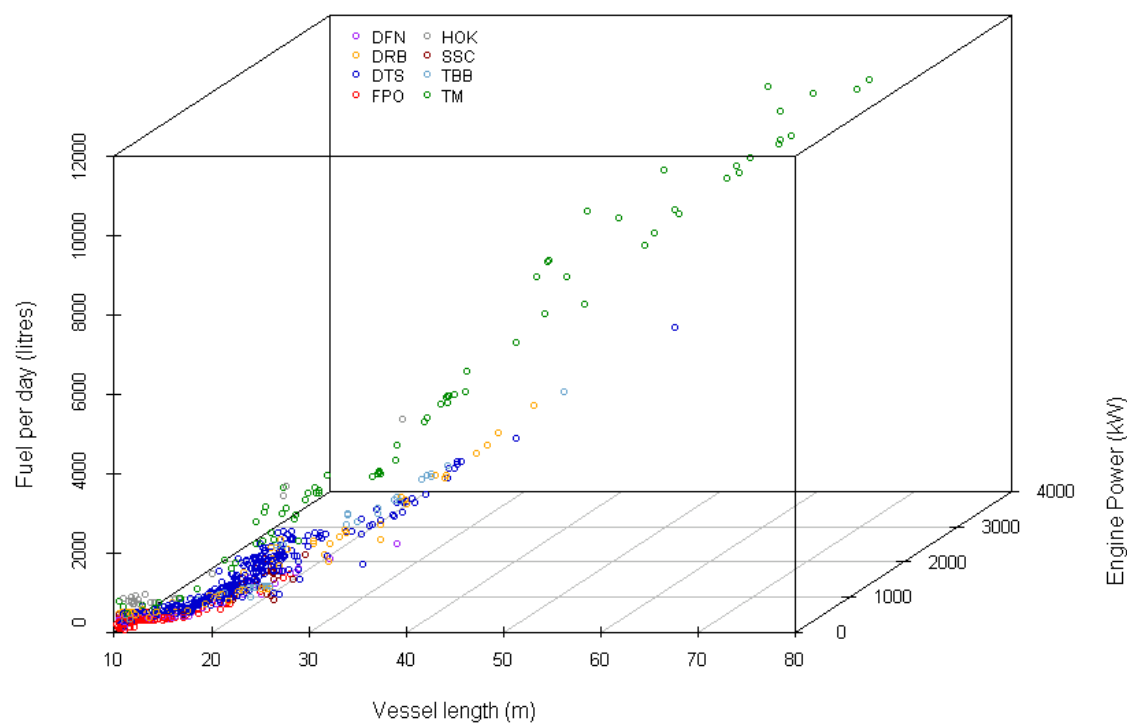
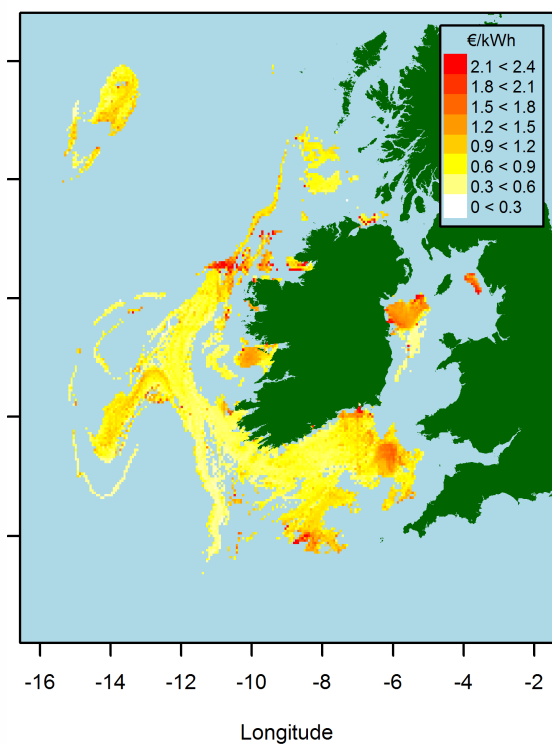
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Socio-economic objectives

VPUE (€/kWh)





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Thank you for your attention



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