Project Title

MSY proxies for key stone species and species sensitive to fishing

Project Description

Many stocks, which are caught by the Irish commercial fishing fleets, are considered data-limited or are not assessed at all. This includes a number of key stone species and species sensitive to the impacts of fishing. For these stocks, the fishing mortality is unknown and reference points of Maximum Sustainable Yield are not established. This lack of quantifiable targets is an impediment to monitoring the implementation of the Common Fisheries Policy (CFP) and the Marine Strategy Framework Directive (MSFD).

Below are the stocks that were selected as case studies, covering a broad spectrum of characteristics:

Functional Group	Species	Commercial Catch	Data	Comments
Mollusc	Razor clam	Targeted fishery	Survey, landings, effort, inshore VMS.	Key-stone species in mixed sedimentary habitats
Crustacean	Lobster	Overlap with crab fishery	Landings, discards, effort, size distributions, biological data	Key-stone species of Annex I habitat
Demersal roundfish	Pollack	Mixed fishery	Some port sampling, observer and survey data. Very limited age data.	Key-stone predator
Flatfish	Turbot and brill	Mixed fishery but can be targeted to an extent.	Some port sampling, observer and survey data. Very limited age data.	Sensitive species – valuable non-TAC species (not protected by fisheries management)
Elasmobranch	Skates and rays	Targeted and mixed fishery	Some port sampling, observer and survey data. No age data.	Sensitive species – slow reproduction
Pelagic	Sprat	Targeted species for small fleet	Poor; mainly landings weights.	Key-stone prey fish

The project will evaluate which additional sources of data improve our understanding of the state of the stock and develop assessment methods that make optimal use of available data. Each data source will be assessed for bias and precision and the contribution it makes to the assessment model.

Stocks for which reliable analytical assessments exist and for which the state of the stock is well known will be used to simulate data-limited situations and evaluate the performance of data-limited assessment models. These simulations will also be used in a cost-benefit analysis to evaluate the cost of collecting additional data in relation to conservation benefits.

The overall aim of the project is to develop and test a range of assessment models and methods to establish MSY reference points (or proxy MSY reference points) across the spectrum of data-limited stocks of ecological significance.

Partners

Galway Mayo Institute of Technology

Duration

The project has a 2 year duration and runs between 2017 and 2018. The project will continue as Phase 2 until 2020 based on satisfactory output in the initial two years.

Project Outputs

- Collection of existing and new assessment models for data-limited stocks, all implemented in the FLR framework (in the R statistical language) with a set of diagnostic tools that can be applied to all models.
- Methods for estimating reference points for a range of stocks with associated management strategy evaluations to contribute to sustainable management of these stocks.
- Working documents describing the methods and findings to relevant ICES groups (e.g WGCSE; WKLIFE).
- Publication(s) in peer-reviewed journals on new methods/tools/evaluations.

Expected Benefit

- Provision of MSY proxy reference points for data-limited stocks and stocks currently without reference points.
- Improved knowledge on the state of data-poor fish stocks including stocks of ecological significance and those sensitive to fishing.
- Improved understanding of the impact of fishing on non-target fish species and the wider ecosystem including marine foodwebs.
- Improved metrics to support implementation of the Common Fisheries Policy (CFP) and the Marine Strategy Framework Directive (MSFD).

Further details available on www.emff.marine.ie

Project Wiki: https://github.com/laurieKell/mydas/wiki

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