StrathE2E2 Publications

Updated: July 2022

StrathE2E2 version 3.x

Thorpe, R.B., Arroyo, N.L., Safi, G., Niquil, N., Heath, M., Pace, M.C. & Lynam, C.P. (2022). The response of North Sea ecosystem functional groups to warming and changes in fishing. Frontiers in Marine Science 9:841909. doi: 10.3389/fmars.2022.841909

Pace, M. (2021). The ecosystem consequences of trawling on soft sediments in the Firth of Clyde. PhD thesis, Unversity of Glasgow. Thesis id: glathesis:2021-82283

Heath, M.R., Speirs, D.C., Thurlbeck, I, & Wilson, R.J. (2021). StrathE2E: an R package for modelling the dynamics of marine food webs and fisheries. Methods in Ecology and Evolution, **12**, 280-287. https://doi.org/10.1111/2041-210X.13510. (Describes StrathE2E2 version 3.2.0)

StrathE2E2 version 2.x

Heath, M.R. & Cook, R.M. (2020). Risks to North Sea fish stocks and wildlife if post-Brexit fishery negotiations fail to reach agreement on quotas and access to UK waters: EXTENDED TECHNICAL REPORT. University of Strathclyde, March 2020. 136pp. https://doi.org/10.17868/71708.

Depestele, J., Feekings,J., Reid, D.G., Cook, R., Gascuel, D., Girardin, R., Heath, M., Hernvann, P.-Y., Morato, T., Soszynski,A. & Savina-Rolland, A.M. (2019). The Impact of Fisheries Discards on Scavengers in the Sea. In: Uhlmann S., Ulrich C., Kennelly S. (eds) The European Landing Obligation. Springer, Cham. pp 129-162. https://doi.org/10.1007/978-3-030-03308-8_7.

Intermediate version of the model, between StrathE2E1 and StrathE2E2:

ICES. 2017. Report of the Workshop to evaluate trade-offs between the impact on sea-floor habitats and provisions of catch/value (WKTRADE), 28–31 March 2017, Copen-hagen, Denmark. ICES CM 2017/ACOM:42. 109 pp.

Heath, M., Wilson, R. & Speirs, D. (2015). Modelling the whole-ecosystem impacts of trawling. A study commissioned by Fisheries Innovation Scotland (FIS) http://www.fiscot.org/ 86pp. https://fiscot.org/wp-content/uploads/2019/06/FIS003.pdf

StrathE2E1

Flynn, J.K., Speirs, D.C., Heath, M.R. & Mitra, A. (2021). Subtle differences in the representation of consumer dynamics have large effects in marine food web models. Frontiers in Marine Science, 8:638892. doi: 10.3389/fmars.2021.638892

Agenda for the European Parliament Fisheries Committee public hearing on 'How to Improve Selectivity in the Context of the Discard Ban', 13 April 2015: http://www.europarl.europa.eu/cmsdata/78898/Programme_180315.pdf. Presentation on

modelling the ecosystem effects of discarding scenarios: http://www.europarl.europa.eu/cmsdata/78905/7.HEATH.PDF

Spence, M.A., Blanchard, J.L., Rossberg, A.G., Heath, M.R. *et al*. (2018). A general framework for combining ecosystem models. *Fish and Fisheries*, **19**, 1031-1042. https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12310

Hyder, K., Rossberg, A.G., Allen, J.I. *et al*. (2015). Making modelling count - increasing the contribution of shelf-seas community and ecosystem models to policy development and management. *Marine Policy*, **61**, 291-302. https://www.sciencedirect.com/science/article/pii/S0308597X1500216X?via%3Dihub

Morris, D., Cameron, A., Heath, M. & Speirs, D. (2014). Global sensitivity analysis of an end-to-end marine ecosystem model of the North Sea: factors affecting the biomass of fish and benthos. *Ecological Modelling*, **273**, 251-263. https://www.sciencedirect.com/science/article/pii/S030438001300567X. Open access author version: https://pure.strath.ac.uk/ws/portalfiles/portal/30013190/Morris_et_al_2014.pdf

Heath, M.R., Speirs, D.C. & Steele, J.H. (2014). Understanding patterns and processes in models of trophic cascades. *Ecology Letters*, **17**, 101-114. https://onlinelibrary.wiley.com/doi/full/10.1111/ele.12200

Heath, M.R., Cook, R.M., Cameron, A.I., Morris, D.J. & Speirs, D.C. (2014). Cascading ecological effects of eliminating fishery discards. *Nature Communications*, **5:3893**. https://www.nature.com/articles/ncomms4893. (doi:10.1038/ncomms4893)

Heath, M.R. (2012). Ecosystem limits to food web fluxes and fishery yields in the North Sea simulated with an end-to-end food web model. *Progress in Oceanography*, **102,** 42-66. https://www.sciencedirect.com/science/article/abs/pii/S0079661112000213. Open access author version: https://pure.strath.ac.uk/ws/portalfiles/portal/12081105/Heath_REVISED_CAMEO_PIO_paper_24_02_2012_SINGLE_SPACED_with_diagrams.pdf

Heath, M.R. & Steele, J.H. (2009). The relative roles of fishing and climate-driven changes in productivity and predator prey overlap in observed changes in the structure of upper trophic levels. Deliverable 3.5 Report to the EU-RECLAIM project (REsolving CLimAtic IMpacts on fish stocks, 044133 (SSP8)): 89pp. https://pureportal.strath.ac.uk/en/publications/the-relative-roles-of-fishing-top-down-and-climate-driven-changes