

## Mark Dickey-Collas PhD

---

Email: [mark.dickey-collas@ices.dk](mailto:mark.dickey-collas@ices.dk)  [@DickeyCollas](https://twitter.com/DickeyCollas)

Researcher ID: [www.researcherid.com/rid/A-8036-2008](http://www.researcherid.com/rid/A-8036-2008)



### Nationality

British

### Education

- Hatch End High School, Harrow, NW London, UK
- Harrow Weald Sixth Form College, Harrow, UK
- University College Swansea, Wales, UK; BSc (Joint Hons) Oceanography and Zoology, 2i
- University of Liverpool, Port Erin Marine Laboratory, Isle of Man; PhD in Marine Biology. Thesis “Studies on the effect of enriched live food on the growth and pigmentation of flatfish larvae”
- Open University, UK, module of Post-graduate Diploma in Environmental Decision Making, distinction

Working language English with operational ability in Dutch and basic German.

### Current Employment

Ecosystem Approach Coordinator, Professional Officer (PO3) at ICES

Associate Professor at Danish Technical University, National Institute of Aquatic Resources (DTU Aqua)

### Job description – Knowledge for sustainable and successful management of our seas and oceans.

ICES has a unique role in the application of science for the management of the marine system, we mostly do this from a fisheries perspective, however many more industries benefit from, and impact the oceans. So my job is to use this experience and explore alternative ways to utilise the vast amount of available knowledge for the sustainable and successful management of our seas and oceans.

---

### Previous Employment.

Senior fisheries scientist and science manager (scales 11 to 13) - national advisor on science relating to pelagic fisheries  
“The 2000s”

Institute for Marine Resources & Ecosystem Studies (IMARES), previously known as RIVO  
P.O. Box 68, 1970 AB IJmuiden, The Netherlands

IMARES is a constituent part of WUR, the research arm of Wageningen University

Fisheries scientist (scales HSO to SSO) - specialising in pelagic fish/fisheries and ichthyoplankton  
“The 1990s”

Department of Agriculture and Rural Development (DARD), now called AFBI

Agricultural and Environmental Sciences Division, Newforge Lane, Belfast BT9 5PX

### Previous Honorary Positions

- Lecturer at the University of Liverpool, School of Biological Sciences
- Lecturer at the Queen's University Belfast, School of Agriculture and Food Science
- Senior associated member of the Wageningen Institute of Animal Sciences Graduate School
- Guest researcher at Wageningen IMARES

### Personal Skills Base and Approach:

I am considered frank, honest and process oriented; effectively utilising my management experience and planning abilities. My leadership and interpersonal skills are widely recognised by others and I am known to enjoy looking for alternative solutions to challenges. I have skills in utilising team-dynamics to maintain progress towards operational goals. I appreciate that each individual has their own unique qualities and strengths. Empowering these skills and engaging in teams can lead to greater success than operating in isolation. I enjoy building dialogue across networks. I see publication and clear communication as a core part of the science/policy dialogue. Science must be robust and must be regularly challenged. Building scientific knowledge is a participatory process. I was raised in an Anglo/Germanic environment and recognise the strengths, influence and limitations of that upbringing. ICES is an international organisation; I acknowledge that decision making processes are complex when operating across many cultural norms.

## **General Experience**

- I have a broad range of experience and expertise in the field of applied marine science, population dynamics, ecosystem modelling and the policy/science interface built up through over 20 years post PhD work in fisheries and applied ecosystem research.
- Proven track record and leadership roles in the quantitative assessment of both marine ecosystems and population dynamics as illustrated by published research history, activities to develop and review science and stock assessments, activity in the ecosystem and multispecies modelling community, contributions to ICES, STECF, FAO, NOAA work.
- The challenges faced when converting and building scientific knowledge into the evidence to guide policy development. I have shown an ability to successfully work with stakeholders including government departments, industry representatives, skippers, NGOs and intergovernmental organisations from across Europe, North America, the North Atlantic and the Arctic.
- I have a good knowledge of the scientific infrastructure in Europe and North America regularly working across various science funding approaches including the EU framework programmes, FAO, national programmes and the Nordic Council of Ministers.

## **Portfolio of Experience in the Provision of Scientific Advice:**

Fisheries management and advice: data poor methods (FAO, Conservation international), species at risk (IUCN), trade (FAO, CITES), management strategy evaluation, participatory and iterative processes (MYFISH), for 10 years senior advisor to the Dutch Government on pelagic fish and fisheries, ACFM, STECF.

Environmental advice and ecosystem health: ecosystem overviews, Integrated Ecosystem Assessments (IEAs), status reports, Good Environmental Status (GES) drafting group for DGENV, MSFD CIS Core team, Data Collection Framework (DCF) for ecosystem advice.

Stock assessments: convened the world conference on stock assessment methods (WCSAM), working at the centre of the process for developing multispecies assessments and advice (WKMTRADE, Nordic Council WK), chairing stock assessment working groups and benchmarks, explorations of model performance and data provision (including utility of survey information), 20 years operational experience assessing ground fish, pelagics, shellfish and flatfish.

Data and services: developed data call VMS information for the HELCOM & OSPAR, active in the community as a representative of the users of data, chaired the group working on the provision of oceanographic data for the ICES community (WGOOFE), successful dialogue with MyOceans community, developed the ICES call for oceanographic products, port sampling, research survey leadership (trawl, acoustic, ichthyoplankton).

## **Contribution to Increased Scientific Understanding.**

My over 80 publications show that I am an effective research scientist. Over time I have moved from ecology and fish biology towards applied fisheries and marine management challenges. Core to my work is the theme that our understanding must be based on evidence based hypothesis testing set within robust conceptual frameworks. I demonstrated the importance of the Irish Sea gyre in the life cycle of fish, and with a PhD student demonstrated the flexible seasonal reproductive strategies in herring. I have been central to the exploration of ichthyoplankton abundance as a tool for assessing stocks (cod, plaice, herring, *Nephrops*, horse mackerel). My expertise in forage fish and their fisheries is well known and I was instrumental in showing the outbursts of anchovy in the North Sea were driven by increased temperature allowing a local small stock to become more productive. My combined work on larval herring productivity show that recruitment strength is determined in the first few weeks after hatch and highlighting the role of prey/feeding in this process. I have helped develop a strategy for assessing GES in pelagic fish. I have enjoyed my recent move into IEA and have publically engaged in the debate about what IEAs mean in practice and how to provide the science to explore management objectives. Almost all of this work was only successful as result of the enthusiasm of the teams of researchers. I am lucky to have been a conveyer of four major international symposia and edited two special volumes.

## **Selected Grants**

3 EU projects using eggs and larvae to estimate stock biomass in the Irish Sea (1994- 2001)

FP5 WESTHER Stock structure of herring,

FP6 UNCOVER Understanding stock recovery; RECLAIM Climate impacts on fish stocks,

FP7 FACTS Forage fish interactions; MYFISH Beyond MSY, MAREFRAME

H2020 AORAC-SA Atlantic Ocean Research Alliance Coordination, AtlantOS- Ocean Observing

Cost Action FRESH on fish reproduction and management.

BALSAM Baltic Sea Pilot Project: Testing new concepts for integrated environmental monitoring of the Baltic Sea

Various smaller Dutch national projects including industry funded surveys and ecosystem modelling.

Collaborations with Norwegian and German national projects e.g. RECNOB & ECODRIVE on recruitment dynamics.

## PARTICIPATION

### ICES

Assessment, Benchmark & Management Strategy Evaluation - ACFM, **HAWG**, **SISAM (WCSAM)**, **WKHMP**, **WKHERMP**, **WKPEL2012**, **WKM-trade**, **Nordic Council Multispecies WK**, SGHABISAW, WGNDS, WGMHSA, review & advice drafting

Ecosystem Approach and Oceanography - **SGRECVAP**, **WKANSARNS**, **WKPELECO**, **WKECOVER**, **WKDECOVER**, **WKOOP**, **WGOOFE**, **WGINOSE**, RPWG, WKEFA, SGPRISM, **DCF review for DGENV**, **WKfooWI**, **WKRISCO**

Surveys - PGNAPES, PGHERS

Guiding - **PUBCOM**, Consultative, **RMC**, Training, SCICOM, **SSGSUE**, Bureau sub-group on strategy

EU - STECF, **SGRN**, EEA Baseline Assessment, DGENV CIS MSFD Core team, DGENV GES group for MSFD, WG GES, EEA ETC ICMarine Team

FAO - CITES listing panel, Fisheries Exploitation Status

Assessment and project review – Netherlands, Canada, Germany, Portugal, USA, UK

Observer at various OSPAR, HELCOM and IUCN meetings.

**Bold** denotes leadership role as chair, facilitator or coordinator

### Supervision of Research Students:

William Rowlands PhD 2004. Is prey selection in young gadoids limited by gape size or by spectrum of prey available? Liverpool University, NERC funded.

Francisca Segers MSc 2005. Prey selection by North Sea herring, with special reference to fish eggs. Groningen University.

Liesbeth van Wensen MSc 2010. Does the fishing behaviour of a pelagic fishing vessel vary dependent on its potential prey? Wageningen University

Melvin Samson MSc 2012. Variability in spawning habitat in north east Atlantic mackerel. Wageningen University

Momo Kochen MSc 2012. Density effects in the growth of Downs herring. Wageningen University

Cindy van Damme PhD 2013. Comparative reproductive strategies of temperate fish. Wageningen University

Kristina Raab PhD 2013. Feeding ecology and population productivity of North Sea anchovy. Wageningen University

Lotte Worsøe Clausen PhD 2014. Herring Mixing DTU (note: guest supervisor)

External PhD/MSc examiner for students in Spain, Ireland and Denmark

## INVITED SPEAKER

International Larval Fish Conference 1995 & 2002, PICES ASM 2009, Nordic Council WK on Baltic Herring 2010, Marie Curie WK Understanding Science in Policy 2010, EU/USA Marine Governance conference (CALAMAR) 2011, FRESH Conference Fish Reproduction and Fisheries 2011, EFARO General Assembly 2013, Assises de la Filière Pêche et des Produits de la Mer 2013, American Fisheries Society (AFS) annual meeting 2014. ICES Symposium Marine Ecosystem Acoustics 2015, Pelagic AC 2015.

## SYMPOSIUM CONVENER

2007 NAFO/PICES/ICES “Reproductive and Recruitment Processes of Exploited Marine Fish Stocks”

2008 ICES/GLOBEC/PICES “Linking Herring”

2012 AFS Early Life History Section – Annual Larval Fish Conference

2013 ICES/FAO/ICCAT/NOAA World Symposium of Stock Assessment Methods

2013 HELCOM/ICES Fishing for Space

2009 to date Theme Sessions at ICES ASC, World Fisheries Congress, FRESH, AFS

## SCIENCE ADVISORY BOARDS/PANELS

NordForsk Centre of Excellence on Effect Studies and Adaptation to Climate Change (ADAPT) Chair of board. Lenfest Fishery Ecosystem Task Force- member of advisory panel. UK Marine ecosystem research programme stakeholders advisory group. Advisory science panel member for Bonus INSPIRE, FP7 MYFISH, H2020 DISCARDLESS.

Refereed publications

- Dickey-Collas, M, Geffen, AJ 1992. Importance of the fatty acids 20:5  $\omega$ 3 and 22:6  $\omega$ 3 in the diet of plaice (*Pleuronectes platessa*) larvae. Mar Biol 113: 463-468.
- Dickey-Collas, M 1993. The occurrence of juvenile pigmentation abnormalities in plaice (*Pleuronectes platessa*) larvae fed on enriched and unenriched *Artemia salina* nauplii. J Fish Biol 42: 787-795.
- Dickey-Collas, M, Gowen, RJ, Fox, CJ 1996. Distribution of larval and juvenile fish in the western Irish Sea: relationship to phytoplankton, zooplankton biomass and recurrent physical features. Mar Freshwater Res 47: 169-181.
- Dickey-Collas, M, Stewart, BM, Gowen, RJ 1996. The role of thermal stratification on the population dynamics of *Sagitta elegans* Verrill in the western Irish Sea. J Plankton Res 18: 1659-1674.
- Dickey-Collas, M, Brown, J, Hill, AE, Fernand, L, Horsburgh, KJ, Garvine, R 1997. Does the western Irish Sea gyre influence the distribution of pelagic juvenile fish? J Fish Biol 51A: 206-229.
- Fox, CJ, Dickey-Collas, M, Winpenny, A 1997. Spring plankton surveys of the Irish Sea in 1995: the distribution of fish eggs and larvae. Sci Ser, Tech Rep, CEFAS Lowestoft, 104. 98pp.
- Armstrong, MJ, Dickey-Collas, M 1997. Fish: exploited sea fish. In Coasts and seas of the United Kingdom, region 17, Northern Ireland. In: Barne, et al (eds.) Joint Nature Conservation Committee, Peterborough. pp:102-106.
- Gowen, RJ, Dickey-Collas, M, McCullough, G 1997. The occurrence of *Calanus finmarchicus* (Gunnerus) and *Calanus helgolandicus* (Claus) in the western Irish Sea. J Plankton Res 19:1175-1182.
- Gowen, RJ, McCullough, G, Dickey-Collas, M, Kleppel, GS 1998. Copepod abundance in the western Irish Sea: relationship to physical regime, phytoplankton production and standing stock. J Plankton Res 20: 315-330.
- Nash, RDM, Dickey-Collas, M, Milligan, SP 1998. Descriptions of the Gulf VII/Pro-Net and MAFF/Guildline unencased highspeed plankton samplers. J Plankton Res 20: 1915-1926.
- Gowen, RJ, Raine, R, Dickey-Collas, M, White, M 1998. Plankton distributions in relation to physical oceanographic features on the southern Malin Shelf, August 1996. ICES J Mar Sci 55: 1095-1111.
- Armstrong, MJ, Dickey-Collas, M, McAliskey, M, McCurdy, WJ, Burns, CA, Peel, JAD 1999. The distribution of anchovy *Engraulis encrasicolus* in the northern Irish Sea from 1991 to 1998. J Mar Biol Ass UK 79: 955-956.
- Armstrong, MJ, Dickey-Collas, M 1999. Catches of Pearlside *Maurolicus muelleri* (Gmelin, 1788) (Sternoptychidae) during surveys of the Irish Sea: 1991-1998. Irish Nat J 26: 185-190.
- Fox, CJ, O'Brien, C, Dickey-Collas, M, Nash, RDM 2000. Patterns in the spawning of cod, sole and plaice in the Irish Sea, determined by generalised additive modelling. Fish Oceanogr 9: 33-49.
- Dickey-Collas, M, McQuaid, N, Armstrong, MJ, Briggs, RP, Allen, M 2000. Temperature-dependent stage durations of Irish Sea *Nephrops* larvae. J Plankton Res 22: 749-760.
- Dickey-Collas, M, Briggs, RP, Armstrong, MJ, Milligan, SP 2000. Production of *Nephrops norvegicus* larvae in the Irish Sea. Mar Biol 137: 973-981.
- Armstrong, MJ, Connolly, P, Nash, RDM, Pawson, M, Alesworth, E, Coulahan, PJ, Dickey-Collas, M, Milligan, SP, O'Neill, M, Withames, PR, Woolner, L 2001. An application of the annual egg production method to estimate the spawning biomass of cod (*Gadus morhua* L.), plaice (*Pleuronectes platessa* L.) and sole (*Solea solea* L.) in the Irish Sea. ICES J Mar Sc, 58: 183-203.
- Dickey-Collas, M, Nash, RDM, Brown, J 2001. The location of spawning of Irish Sea Herring (*Clupea harengus*). J Mar Biol Ass UK., 81: 713-714.
- Briggs, RP, Armstrong, MJ, Dickey-Collas, M, Allen, M, Whitmore, J, McQuaid, N 2002. The application of fecundity estimates to determine the spawning stock biomass of Irish Sea *Nephrops norvegicus* (L.) using the annual larval production method. ICES J Mar Sci, 59:109-119.
- Dickey-Collas, M, Armstrong, MJ, Officer, RA, Wright, PJ, Brown, J, Dunn, MR, Young EF, 2003. Growth and expansion of haddock (*Melanogrammus aeglefinus* L.) stocks to the west of the British Isles in the 1990s. ICES Mar Sci Sym 219: 271-282
- Dickey-Collas, M, Fox CJ, Nash, RDM, O'Brien CM 2003. Plaice egg mortality: can we determine survivorship? J Sea Res 50: 211-225.
- Rowlands W LL, Dickey-Collas M, Geffen AJ, Nash RDM 2004. Abundances of *Metridia lucens* (Boeck) in the western Irish Sea. J Mar Biol Ass UK. 84: 617-618.
- Nash, RDM, Dickey-Collas M 2005. The influence of life history dynamics and environment on the determination of year class strength in North Sea herring (*Clupea harengus* L.). Fish Oceanogr 14: 279-291.
- De Oliveira, JAA, Roel BA, Dickey-Collas, M 2006. Investigating the use of proxies for fecundity to improve management advice for western horse mackerel *Trachurus trachurus*. ICES J Mar Sci 63: 25-35.
- Hofstede, R ter, Dickey-Collas, M 2006. An investigation of seasonal and annual catches and discards of the Dutch pelagic freezer-trawlers in Mauritania, Northwest Africa. Fish Res 77: 184-191.
- Lee, O, Danilowicz, BS, Dickey-Collas M 2006. Temporal and spatial variability in growth and condition of dab (*Limanda limanda*), sprat (*Sprattus sprattus*) larvae in the Irish Sea. Fish Oceanography 15: 490-507.
- Rowlands, W LL, Dickey-Collas, M, Geffen AJ, Nash RDM 2006. Gape morphology of cod (*Gadus morhua* L.), haddock (*Melanogrammus aeglefinus* L.) and whiting (*Merlangius merlangus* L.) through metamorphosis from larvae to juveniles in the western Irish Sea. J Fish Biol 39: 1379-1395.
- Segers, FHID, Dickey-Collas, M, Rijnsdorp, AD 2007). Prey selection by North Sea herring (*Clupea harengus* L.), with special regard to fish eggs. ICES J Mar Sci 64: 60-68.
- Hofstede, R ter, Dickey-Collas, M, Mantingh, I, Wague, A 2007. The link between migration, the reproductive cycle and condition of *Sardinella aurita* off Mauritania, Northwest Africa. J Fish Biol. 71: 1293-1302.
- Dickey-Collas M, Pastoors, MA, van Keeken, OA 2007. Precisely wrong or vaguely right: simulations of the inclusion of noisy discard data and trends in fishing effort on the stock assessment of North Sea plaice. ICES J Mar Sci. 64: 1641-1649.
- Taylor, N, Fox, CJ, Bolle, LJ, Dickey-Collas, M, Fossum, P, Krause, G, Munk, P, Rolf, N, Damme, van CJG, Vorbach, M 2007. Results of the spring 2004 North Sea ichthyoplankton surveys. The distribution of fish eggs and larvae from the international ichthyoplankton survey. ICES Cooperative Research Report 285. ICES Copenhagen 64pp.

- Rowlands, W LL, **Dickey-Collas**, M, Geffen AJ, Nash RDM 2008. Diet overlap and prey selection through metamorphosis in Irish Sea cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), and whiting (*Merlangius merlangus*) Can J Fish Aquat Sci. 65: 1297-1306.
- Borges L, Keeken van OA, Helmond van ATM, Couperus B, **Dickey-Collas** M 2008. What do pelagic freezer-trawlers discard? ICES J Mar Sci. 65: 605–611.
- Kraak SBM, Buisman FC, **Dickey-Collas** M, Poos JJ, Pastoors MA, Smit JGP, Daan N 2008. The effect of management choices on the sustainability and economic performance of a mixed fishery: a simulation study. ICES J Mar Sci. 65: 697–712.
- Fox, CJ, Taylor, M, **Dickey-Collas**, M, Fossum, P, Kraus, G, Rohlf, N, Munk, P, Damme, van CJG, Bolle, LJ, Maxwell, DL, Wright, PJ 2008. Mapping North Sea cod (*Gadus morhua*) spawning grounds using direct and indirect methods. Proceeding of the Royal Society B 275: 1543–1548.
- Nash, RDM, **Dickey-Collas**, M, Kell, LT 2009. Stock and recruitment in North Sea herring (*Clupea harengus*); compensation and depensation in the population dynamics. Fish Res 95: 88-97.
- Payne MR, Hatfield EMC, **Dickey-Collas**, M, Falkenhaus, T, Gallego, A, Gröger, J, Licandro, P, Llope, M, Munk, P, Röckmann, C, Schmidt, JO, Nash, RDM 2009. Recruitment in a changing environment: the 2000s North Sea herring recruitment failure. ICES J Mar Sci. 66: 272-277.
- Payne MR, **Dickey-Collas**, M, Nash, RDM 2009. Comment on “Does the fall phytoplankton bloom control recruitment of Georges Bank haddock, *Melanogrammus aeglefinus*, through parental condition?”. Can J Fish Aquat Sci. 66: 869–872.
- Barange, M, Bernal, M, Cercole, MC, Cubillos, L, De Moor, CL, Daskalov, GM, de Oliveira, JAA, **Dickey-Collas**, M, Hill, K, Jacobson, L, Køster, FW, Masse, J, Nishida, H, Niquen, M, Oozeki, Y, Palomera, I, Saccardo, SA, Santojanni, A, Serra, R, Somarakis, S, Stratoudakis, Y, van der Lingen, CD, Uriarte, A, Yatsu, A 2009. Current trends in the Assessment and Management of Small Pelagic Fish Stocks. In: Checkley et al eds Climate Change and Small Pelagic Fish Stocks. Cambridge University Press.
- Dickey-Collas**, M, Clarke, M, Slotte, A 2009. ‘Linking Herring’: do we really understand plasticity? ICES J Mar Sci. 66: 1649-1651.
- Kell LT, Nash, RDM, **Dickey-Collas**, M, Pilling, GM, Hintzen, NH, Roel BA 2009. Lumpers or splitters? Evaluating recovery and management plans for metapopulations of herring. ICES J Mar Sci. 66: 1776-1783.
- Oeberst, R, Klenz, B, Gröhsler, T, **Dickey-Collas**, M, Nash, RDM, Zimmermann, C 2009. When is year-class strength determined in western Baltic herring? ICES J Mar Sci. 66: 1667-1672.
- Oeberst, R, **Dickey-Collas**, M, Nash, RDM 2009. Mean daily growth of herring larvae in relation to temperature over a range of 5-20°C based on weekly repeated cruises in the Greifswalder Bodden. ICES J Mar Sci. 66: 1696-1701.
- Damme van CJG, Bolle LJ, Fox, CJ, Fossum, P, Kraus, G, Munk, P, Rohlf, N, Withames P, **Dickey-Collas**, M 2009. A reanalysis of North Sea plaice spawning-stock biomass using the annual egg production method. ICES J Mar Sci. 66: 1999–2011.
- Schmidt JO, Damme van CJG, Röckmann C, **Dickey-Collas** M 2009. Recolonisation of spawning grounds in a recovering fish stock: recent changes in North Sea herring. Scientia Marina 73S1: 1253-157
- Reiss H, Hoarau G, **Dickey-Collas**, M, Wolff WG 2009. Genetic population structure of marine fish: mismatch between biological and fisheries management units. Fish and Fisheries 10: 361–395.
- Erfteimeijer PL, Beek van JKL, Bolle LJ, **Dickey-Collas** M, Los HJ 2009. Variability in transport of fish eggs and larvae. I. Modelling the effects of coastal reclamation. Marine Ecology Progress Series 390: 167-181.
- Dickey-Collas** M, Bolle, LJ, Beek, van JKL, Erfteimeijer, PLA 2009. Variability in transport of fish eggs and larvae. II. The effects of hydrodynamics on the transport of Downs herring larvae. Marine Ecology Progress Series 390: 183-194
- Bolle LJ, **Dickey-Collas**, M, Beek, van JKL, Erfteimeijer, PLA, Witte JIJ, Veer, van der HW, Rijnsdorp AD 2009. Variability in transport of fish eggs and larvae. III. The effects of hydrodynamics and larval behaviour on recruitment in plaice. Marine Ecology Progress Series 390: 195-211.
- Damme, van CJG, **Dickey-Collas**, M, Rijnsdorp AD, Kjesbu, OS 2009. Fecundity, atresia and spawning strategies of Atlantic herring (*Clupea harengus*). Can J Fish Aquat Sci. 66: 2130-2141.
- Brunel, T., **Dickey-Collas**, M. 2010. Effects of temperature and population density on Atlantic herring von Bertalanffy growth parameters: a macro-ecological analysis. Marine Ecology Progress Series 405: 15-28.
- Bierman, SM, **Dickey-Collas**, M, Damme, van CJC, Overzee, van HJ, Pennock-Vos, MG, Tribuhl, SV, Clausen, LAW 2010. Between-year variability in the mixing of North Sea herring spawning components leads to pronounced variation in the composition of the catch. ICES J Mar Sci. 67: 885-896.
- Dickey-Collas** M, Engelhard G.H., Möllmann C 2010. Herring. In: Rijnsdorp et al (eds). Resolving climate impacts on fish stocks. ICES Cooperative Research Report 301. pp 121-134.
- Dickey-Collas**, M, Nash, RDM., Brunel, T, Damme, CJG van, Marshall, CT, Payne, MR, Corten, A, Geffen, AJ, Peck, MA, Hatfield, EMC, Hintzen, NT, Enberg, K, Kell, LT., Simmonds EJ 2010. Lessons learned from stock collapse and recovery of North Sea herring: a review. ICES Journal of Marine Science, 67: 1875–1886.
- Dickey-Collas**, M 2010. North Sea Herring. In: Petitgas (ed.). Life cycle spatial patterns of small pelagic fish in the Northeast Atlantic. ICES Cooperative Research Report 306: 7-18.
- Raab, K Nagelkerke LAJ, Boerée, C; Rijnsdorp AD, Temming A, **Dickey-Collas** M 2011. Anchovy *Engraulis encrasicolus* diet in the North and Baltic Seas. J Sea Res 65 131–140.
- Röckmann C., **Dickey-Collas** M., Payne M. R., van Hal R. 2011. Realized habitats of early stage North Sea herring – looking for signals of environmental change. ICES Journal of Marine Science 68: 537–546.
- Berx, B., **Dickey-Collas**, M., Skogen, M.D., De Roeck, Y.-H., Klein, H., Barciela, R., Forster, R.M., Dombrowsky, E., Huret, M., Payne, M., Sagarminaga, Y., Schrum, C. 2011. Does operational oceanography address the needs of fisheries and applied environmental scientists? Oceanography 24: 166-171.
- Geffen, AJ, Nash RDM, **Dickey-Collas**, M. 2011. Characterisation of herring populations to the west of the British Isles: an investigation of mixing between populations based on otolith microchemistry. ICES J Mar Sci. 68: 1447–1458.
- Hinrichsen, HH, **Dickey-Collas**, M, Huret, M, Peck, MA, Vikebø, F 2011. Evaluating the suitability of coupled bio-physical models for fishery management. ICES J Mar Sci 68: 1478–1487.
- Fässler, SMM, Payne, MR, Brunel, T, **Dickey-Collas**, M 2011. Does larval mortality really influence population productivity? An analysis of North Sea herring time series. Fisheries Oceanography 20: 530-543.

## Mark Dickey-Collas Curriculum Vitae

- Petitgas P, Alheit J, Peck MA, Raab K, Irigoien X, Huret M, van der Kooij J, Pohlmann T, Wagner C, Zarraonaindia I, **Dickey-Collas**, M 2012. Anchovy population expansion in the North Sea. *Marine Ecology Progress Series* 444: 1–13.
- Bernal, M., Somarakis, S., Witthames, P.R., Damme, C.J.G. van, Uriarte, A., Lo, N.C.H, **Dickey-Collas**, M. 2012. Egg production methods in Marine Fisheries; an Introduction. *Fisheries Research* 117–118: 1–5.
- Dickey-Collas**, M., Somarakis, S., Witthames, P.R., van Damme, C.J.G, Uriarte, A, Lo, N.C.H., Bernal, M. 2012. Where do egg production methods for estimating fish biomass go from here? *Fisheries Research* 117–118: 6–11.
- Raab K, Nagelkerke LAJ, Boerée C, Rijnsdorp AD, Temming A, **Dickey-Collas** M 2012. Dietary overlap between the potential competitors herring, sprat and anchovy in the North Sea. *Marine Ecology Progress Series* 470: 101–111.
- Petitgas, P. Rijnsdorp, AD, **Dickey-Collas**, M, Engelhard GH, Peck, MA, Pinnegar JK, Drinkwater K, Huret M, Nash RDM, 2013. Impacts of climate change on the complex life cycles of fish. *Fisheries Oceanography* 22: 121–139.
- Raab, K, Llope, M, Nagelkerke, LAJ, Rijnsdorp, AD, Teal, LR, Licandro, P, Ruardij, P, **Dickey-Collas**, M 2013. Influence of temperature and food availability on juvenile European anchovy *Engraulis encrasicolus* at its northern boundary. *Marine Ecology Progress Series* 488: 233–245.
- Dickey-Collas**, M., Engelhard, G., Rindorf, A., Raab, K., Smout, S., Aarts, G., van Deurs, M., Brunel, T., Hoff, A., Lauerburg R., Garthe, S., Haste Andersen, K., Scott, F., van Kooten, T., Beare, D., Peck, M.A. 2014. Ecosystem-based management objectives for the North Sea: Riding the Forage Fish Rollercoaster. *ICES Journal of Marine Science* 71: 128–142.
- Engelhard, G.H., Peck M.A, Rindorf A, Smout S., van Deurs, M., Raab K., Andersen, K.H. Garthe S., Lauerburg R.A.M., Scott, F., Brunel, T., Aarts G., van Kooten T., **Dickey-Collas** M. 2014. Forage fish, their fisheries, and their predators: who drives whom? *ICES Journal of Marine Science* 71: 90–104.
- Peck MA, Neuenfeldt S, Essington TE, Trenkel VM, Takasuka A, Gislason H, **Dickey-Collas** M, Andersen KH, Ravn-Jensen L, Vestergaard N, Kvamsdal S, Gårdmark A, Link J, Rice JC 2014. Forage fish interactions: A symposium on creating the tools for ecosystem-based management of marine resources. *ICES Journal of Marine Science* 71: 1–4.
- Damme CJG van, Thorsen A, Fonn M, Alvarez P, Garabana D, O’Hea B, Perez JR, **Dickey-Collas** M 2014. Fecundity regulation in horse mackerel. *ICES J Mar Sci* 71: 546–558 doi:10.1093/icesjms/fst156.
- Dickey-Collas**, M. 2014. Why the complex nature of integrated ecosystem assessments requires a flexible and adaptive approach. *ICES Journal of Marine Science* 71: 1174–1182. doi:10.1093/icesjms/fsu027.
- Dickey-Collas** M, Payne MR, Trenkel VM, Nash RDM 2014. Hazard Warning: model misuse ahead. *ICES J Mar Sci* 71: 2300–2306 doi:10.1093/icesjms/fst215.
- Shephard, S, Rindorf, A, **Dickey-Collas**, M, Hintzen, NT, Farnsworth, K, Reid, DG 2014. Assessing the state of pelagic fish communities within an ecosystem approach and the European Marine Strategy Framework Directive. *ICES J Mar Sci* 71: 1572–1585. doi:10.1093/icesjms/fsu005.
- Deroba JJ, Butterworth DS, Methot RD Jr., De Oliveira JAA, Fernandez C, Nielsen A, Cadrin SX, **Dickey-Collas** M, Legault CM, Ianelli J, et al. 2015. Simulation testing the robustness of stock assessment models to error: some results from the ICES Strategic Initiative on Stock Assessment Methods. *ICES Journal of Marine Science* 72: 19–30 doi:10.1093/icesjms/fst237.
- Dickey-Collas**, M, Hintzen NT, Nash RDM, Schön P-J, Payne MR. 2015. Quirky patterns in time series of annual estimates of recruitment could be artefacts. *ICES J Mar Sci* 72: 111–116 doi:10.1093/icesjms/fsu022.
- Cadrin, SX, **Dickey-Collas**, M 2015. Stock assessment methods for sustainable fisheries. *ICES Journal of Marine Science*, 72: 1–6. doi: 10.1093/icesjms/fsu228.
- Trenkel, V, Hintzen, N, Farnsworth, K, Olesen, C, Reid, D, Rindorf, A, Shephard S, **Dickey-Collas**, M 2015. Identifying marine pelagic ecosystem management objectives and indicators. *Marine Policy* 55: 23–32
- Hufnagl, M., Peck, M.A., Nash, R. D.M., **Dickey-Collas**, M in press. Unravelling the Gordian knot! Key processes impacting overwintering larval survival and growth: A North Sea herring case study. *Progress in Oceanography*. <http://dx.doi.org/10.1016/j.pocean.2014.04.029>
- Dickey-Collas**, M, in press. Longer term perspective on management science behind the boom, collapse and recovery of the North Sea herring fishery. In Edwards & Dankel (Eds) *Management Science in Fisheries*. Routledge, Oxford, UK
- Shephard, S., Greenstreet, S. P. R., Piet, G. J., Rindorf, A. and **Dickey-Collas**, M. in press. Surveillance indicators and their use in implementation of the MSFD. *ICES Journal of Marine Science* doi: 10.1093/icesjms/fsv131
- Kell, LT, Nash, RDM, **Dickey-Collas**, M, Mosqueira, I, Szuwalski, C in press. Is Spawning Stock Biomass A Robust Proxy for Reproductive Potential? *Fish and Fisheries* DOI: 10.1111/faf.12131. 21pp
- Uusitalo, L, Korpinen, S, Andersen, JH, Niiranen, S, Valanko, S, Heiskanen, AS, **Dickey-Collas**, M. in press. Exploring methods for predicting multiple pressures on ecosystem recovery: a case study on marine eutrophication and fisheries. *Continental Shelf Research* doi:10.1016/j.csr.2015.11.002
- Greenstreet SPR, Rombouts, I, Raicevich, S, Lynam, CP, Bos, OG, Probst, WN, Schratzberger, M, Nilsson, HC, Ojaveer, H, McQuatters-Gollop, A, **Dickey-Collas**, M, Hagebro C, Reid DG, in review. Implementing ecosystem based marine management at a regional seas scale: identifying optimum “state” indicators. *Marine Policy*.
- Anderson SC, Cooper AB, Jensen OP, Minto C, Thorson JT, Walsh JC, Afflerbach J, **Dickey-Collas** M, Kleisner KM, Longo C, Osio GC, Ovando D, Rosenberg AA, Selig ER in review. Improving estimates of population status and trajectory with superensemble models. *Conservation Biology*.

### Edited special volumes

- Trippel, E.A., Brodeur, R.D., **Dickey-Collas** M. 2009. Reproductive and Recruitment Processes of Exploited Marine Fish Stocks. *J. Northw. Atl. Fish. Sci.*, Vol. 41
- Bernal, M., Somarakis, S., Witthames, P.R., Damme, C.J.G. van, Uriarte, A., Lo, N.C.H, **Dickey-Collas**, M 2012. Egg production methods in Marine Fisheries. *Fisheries Research*, Vol. 117–118.