

RICHARD DAVID MARRIOTT NASH

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Date of Birth: 21st March 1955

Further/Higher education:

1974-1977 University College Swansea, UK: 1977 BSc Marine Biology
1977-1980 University Marine Biological Station (University of Glasgow) and Dunstaffnage Marine Laboratory (CASE institution), UK: 1980 PhD (Fish ecology)
Thesis: *The behavioural ecology of small demersal fish associated with soft sediments.*

Positions held:

1981-82 Post-doctoral researcher. Royal Society of London, European Science Exchange Programme, to University of Oslo, Norway. Research: *The effects of eutrophication on demersal fish communities in the Oslofjord.*
1982-84 Post-doctoral researcher. Wisconsin Sea Grant, University of Wisconsin-Madison, USA. Research: *Species interactions and early life history dynamics of forage fish in Lake Michigan.*
1983-86 Post-doctoral researcher. Office of Naval Research, University of Wisconsin-Madison, USA. Research: *Acoustical techniques for the study of nekton and zooplankton at water type boundaries and ocean fronts.*
1986-87 Faculty Associate - University of Maine, Orono, USA.
1986-90 Partner - Mainly Fish, Research, Searsport, Maine, USA.
1987 Adjunct Faculty - Unity College, Unity, Maine, USA.
1988-00 Lecturer - Port Erin Marine Laboratory, University of Liverpool, UK.
2000-04 Senior Lecturer - Port Erin Marine Laboratory, University of Liverpool, UK.
2003-04 Sabbatical year at the Institute for Fisheries and Marine Biology, University of Bergen, Norway.
2004-06 Visiting Researcher - Institute of Marine Research, Bergen, Norway
2006- Senior Research Scientist - Institute of Marine Research, Bergen, Norway

Societies:

1975- Marine Biological Association, UK (Member)
1977- Fisheries Society of the British Isle (Member)
1983- American Fisheries Society (Life Member)

Teaching experience (1988-):

Honours Teaching responsibilities (PEML+ Main campus):

1988- 2004 Marine and Freshwater Fisheries

Unit course Teaching responsibilities (PEML):

1988-94 Pelagic ecosystems and general fish biology

1996- 2003 Fisheries (marine)

Special courses:

1991 (July, 1 week) Fisheries *Greenpeace* assisted by A.R. Brand

1996 Marine flatfish *Universidad Católica del Norte*
(Departamento Biología Marina), Chile

2009 (August, 10 days) Nursery Ground Ecology. *Nordic Marine Council*. Course run at
Espengren Field Station, Bergen, Norway.

2015 (September, 5 days) Nursery Ground Ecology. *CIIMAR*. Course run at CIIMAR, Porto,
Portugal.

Adjunct University responsibilities:

2009 Institute of Marine Research, Bergen. Course Administrator and organiser,
Nursery Ground Ecology

Professional Membership:

1989- 2004 ICES Herring Assessment Working Group
- Co-ordinator for herring assessments for area VIIa(N) (Irish Sea).

1989- 2003 ICES FAST Working Group

1993- 2003 ICES Northern Shelf Demersal Working Group

1998-2009 ICES Recruitment Processes Working Group
- 1999-2009 Co-chair.

1998- 2002 CFRD Working Group on the Application of Recruitment Models in Stock
Assessment.

1999- 2000 Sustainable Fisheries. How can the scientific basis for fish stock assessments
and predictions be improved? (SAP) - EU Concerted action.

2001-2002 ICES Study Group on incorporation of Process Information in to Stock-
Recruitment Models (SGPRISM).

2004- 2009 NAFO Working Group on Reproductive Potential

2006-2007 ICES Study Group on Recruitment Variability in North Sea Planktivorous fish
(SGRECVAP).

2007-2011 COST Action: Fish Reproduction and Fisheries (FRESH). WG1 leader.

2008 - ICES Planning Group on North Sea cod and plaice egg surveys in the North
Sea (PGEGGS) now a Working Group (WGEGGS) and now (WGEGGS2)

2008-2009 ICES Study Group on the evaluation of assessment and management strategies
of western herring stocks (SGHERWAY)

2010 ICES Workshop on Herring Maturity ogives (WKHERMAT)

2010-2012 ICES Study Group on standards in ichthyoplankton surveys (SGIPS)

2011-2012 ICES Workshop on the Implications of Stock structure (WKISS)

2011-2013 ICES Study Group on Recruitment Forecasting (SGRF)

2012-2013 ICES Benchmark for sprat (WKSPRAT) – ICES chair

2012- ICES Herring Assessment Working Group (HAWG).

2012- ICES International Bottom Trawl Working Group (IBTSWG)

2012-2013 ICES Workshop on Maturity for Chairs (WKMATCH)

2012- ICES Working Group on Atlantic Fish Larvae and Egg Surveys (WGALES)
2016- Co-Chair

- 2014- ICES Working Group on Recruitment Forecasting in a Variable Environment (WGRFE).
- 2014-2015 ICES Benchmark for northwestern herring stocks (WKWEST) – ICES chair
- 2016- Working Group on Improving use of survey data for assessment and advice (WGISDAA).
- 2016 Workshop on North Sea herring larvae surveys, data needs and execution (WKHERLARS2). Co-chair.
- 2017 Workshop on stock identification and allocation of catches of herring to stocks (WKSIDAC). Co-chair.
- 2018 Benchmark Workshop on Sprat (WKSPRAT2018).
- 2018-2019 Inter-Benchmark for Herring in 6a,7bc (IBHer6a7bc). Chair.

Editorial Boards:

- 1992- Advisory for *Arquipélago*
- 2002- 2004 Guest editor for 5th International Flatfish Symposium, *Journal of Sea Research*.
With H.W. van der Veer and A.J. Geffen
- 2005- 2007 Guest editor for 6th International Flatfish Symposium, *Journal of Sea Research*.
With H.W. van der Veer and Y. Yamashita.
- 2007- 2009 Review Editor for *Marine Ecology Progress Series*
- 2008- 2010 Guest editor for 7th International Flatfish Symposium, *Journal of Sea Research*.
With H.W. van der Veer and H. Cabral.
- 2012-2013 Editorial Board (with R.N. Gibson, A.J. Geffen & H.W. van der Veer).
Flatfishes: Biology and Exploitation. 2nd Edition.
- 2014-2015 Guest Editor for Johan Hjort Symposium on Recruitment Dynamics and Stock Variability. *Canadian Journal of Fisheries and Aquatic Sciences*. With O.S. Kjesbu, S. Sundby & C.T. Marshall.
- 2016- Associate Editor for *Aquatic Living Resources*.

Research interests

My general research interests include

- Factors controlling recruitment in fish populations
- Juvenile fish ecology and nursery ground dynamics
- Population dynamics of fish
- Community dynamics of fish
- Ecology of planktonic systems

My current research is focused on the processes that govern survival of fish in the early part of their lives (starting with the adult stock and egg and sperm production to juveniles). The current research is collaboration with both Norwegian scientists (IMR and UiB, Bergen) and international colleagues from a wide range of institutions:

Details of my research activities (past and present) are available on request.

Research Funding

UK grants transferred to IMR:

- 55 Cefas Development of models of plaice (*Pleuronectes platessa* L.) population dynamics incorporating biological processes for use in risk assessment of management options.
2000/05 £1,550,358.

- R.D.M. Nash & A.J. Geffen portion 2000/05 £229,080
- 56 EU Framework 5. WESTHER - A multidisciplinary approach to the identification of herring (*Clupea harengus* L.) stock components west of the British Isles using biological tags and genetic markers. 2002/06 €1,800,000
- R.D.M. Nash co-ordinator for Liverpool University (3 research groups)
€625,699 2002/06 £403,099

Funding Support (Norway only):

1. EU - RASER - **R**eproduction **A**nd **S**tock **E**valuation for **R**ecovery. (*completed 2007*)
2. IMR – Long-term yield in the Barents Sea. (*completed in 2009*)
3. NFR – ECOBE - **E**ffects of North Atlantic **C**limate **V**ariability **O**n the **B**arents Sea **E**cosystem. (*completed 2007*)
4. EU – UNCOVER - **U**nderstanding the Mechanisms of Stock **R**e**C**OVERy. RDMN – IMR co-ordinator and WP1 leader. (*2006-2010*)
5. NFR – SIP – EcoFish - Ecosystem dynamics and fish stocks. (*2006-2009*)
6. NFR - Timing and determination of fecundity and skipped spawning: implications for stock-recruitment theory of determinate spawners. Principal Scientist: Olav S. Kjesbu. (*2006-2009*)
7. EU – RECLAIM - **R**Esolving **C**limatic **I**mpacts on fish stocks. (*2007-2009*)
8. NFR - RECNOR - Recruitment Study on North Sea fish stocks. (*2007-2009*)
9. NFR – Skipped spawning in NE Arctic gadoid stocks. RDMN – coordinator (*2009-2012*)
10. EU – MariFish – DefineIt – **D**eveloping **F**isheries ma**N**agement **I**ndicators and **T**argets. RDMN – IMR coordinator (*2009-2012*).
11. EU – FACTS – Forage Fish Interactions. RDMN – IMR coordinator (*2010-2012*).
12. EU – MYFISH - Maximising yield of fisheries while balancing ecosystem, economic and social concerns. RDMN – IMR coordinator (*2011-2015*).
13. EU – ASSEMBLE. Support for research visit to SAMS, Dunstaffnage Marine Laboratory, Scotland (*August 2011*).
14. NFR – ADMAR - Adaptive management of living marine resources by integrating different data sources and key ecological processes. (*2012-2015*).
15. Statoil – KINO. High-Resolution and Dynamic Mapping of North Sea Spawning and Larvae Areas. (*2014-2017*).
16. NFR - EcoNorSe. **E**COsystem dynamics in the **N**ORwegian **S**Ea - new methods for understanding recent changes. K. Enberg (IMR). (*2015-2018*).
17. EU – CERES - Climate change and European aquatic **R**ESources. (*2016-2019*).

Research Students (UK)

Completed, PhD: 20

Completed, MSc/MPhil: 3

Internal examiner (University of Liverpool) for PhD:

1988-2004 More than 15 in Marine Biological subjects

Research Students (Norway, USA)

Completed PhD: 2

Completed, Masters: 2

External examiner for PhD:

1996 University College Swansea, UK

2001 Universidade dos Açores, Angra do Heroísmo, Portugal.

2001 University College Cork, Ireland.

2004, 2014 University of Aberdeen, Scotland, UK.
 2007, 2009 University of Bergen, Norway
 2011 University of Amsterdam, The Netherlands
 2011 Galway-Mayo Institute of Technology, Ireland
 2014 United Arab Emirates University, UAE.

Invitations (selected) to speak at conferences and workshops:

1991 March. Invited speaker. 'Research vessels - their practical use in research'. 11e Seminar dos Pescas. Horta, Faial, Azores.
 1993 January. Invited delegate/speaker. 'Herring assessments in Europe and ICES'. USA and Canadian assessments of herring stocks. Boothbay Harbor, Maine, USA.
 1993 September. Invited speaker. 'The Irish Sea fishery resource'. Irish Sea Forum, Liverpool.
 1993 October. Invited speaker. 'Individual growth of juvenile plaice (*Pleuronectes platessa* L.) on a small Irish Sea nursery ground (Port Erin Bay, Isle of Man, UK)'. Second International Flatfish Symposium, Texel, Netherlands.
 1996 July. Invited speaker. 'Priorities in fisheries research' Scientific priorities in Irish Sea research. Irish Sea Forum/Challenger Society for Marine Science, Liverpool
 1996 November. Invited speaker. 'Exploring pelagic stage survival in Irish Sea plaice, *Pleuronectes platessa* L. through the use of Paulik diagrams'. Invited session chairman. Third International Flatfish Symposium, Texel, Netherlands.
 1997 November. Invited speaker. Public Meeting on Fisheries as a sustainable resource. Manx Energy and Natural Resources Society, Peel, Isle of Man.
 1998 January. Invited speaker. 'Computer simulations in teaching'. The Association for Science Education. Liverpool.
 1998 April. Invited speaker. 'Soft sediment littoral fish assemblages'. Behaviour and Conservation of Littoral Fishes. Lisboa, Portugal.
 1999 July. Invited participant. Meeting to discuss Irish Sea Fisheries matters. Isle of Man Department of Agriculture, Fisheries and Forestry. Douglas, Isle of Man.
 1999 October. Invited speaker. 'The determination of year class strength in juvenile plaice *Pleuronectes platessa* L. in Port Erin Bay, Irish Sea.' Invited chairman of the Recruitment section of the Fourth International Flatfish Symposium. North Carolina, USA.
 1999 November Invited speaker, Ups and downs in the Irish Sea over the last 70 years. Meeting 'Irish Sea Science', Challenger Society for Marine Science, University of Liverpool and CCMS Proudman Oceanographic Society.
 2001 March. Invited speaker. 'Climate change and European Fisheries'. XX Seminar dos Pescas. Horta, Faial, Azores.
 2002 November. Invited speaker. 'The applicability of the 'self-thinning rule' to juvenile plaice populations on nursery grounds.' Fifth International Flatfish Symposium, Isle of Man, British Isles.
 2005 September. Invited speaker. 'The potential importance of the paternal contribution to the 'Stock Reproductive Potential' of North-East Arctic cod (*Gadus morhua*)'. ICES Annual Science Conference, Aberdeen, UK.
 2005 October. Invited speaker. (Geffen, A.J., van der Veer, H.W. & Nash, R.D.M.) 'Pelagic habitats for eggs and larvae, do flatfish larvae have special requirements?' 6th International Symposium on Flatfish Ecology, Maizuru, Japan.
 2006 July. Invited speaker. 'From place to plaice, via herring: over 100 years of fish research at the Port Erin Marine Laboratory'. A mini-symposium at the Port Erin Marine

- Laboratory: 'The Port Erin Marine Laboratory, 1892-2006: contributions spanning three Centuries of Marine Biology'.
- 2008 November. Invited speaker (Nash, R.D.M., van der Veer, H.W. & Rijnsdorp, A.D.) 'The Member-Vagrant hypothesis: Applicability to plaice (*Pleuronectes platessa*) populations'. Sesimbra, Portugal.
- 2010 March. Invited speaker. (Nash, R.D.M. & Geffen, A.J.) 'Surviving the transition from larva to juvenile and then on to the end of the first year of life; What can we learn from European plaice (*Pleuronectes platessa* L.)?' ICES Workshop (WKMOR) on Understanding and quantifying mortality in fish early-life stages: experiments, observations, and models.
- 2011 November. Invited speaker. (Nash, R.D.M. & Geffen, A.J.) 'Nursery to adults – joining the big boys'. 8th International Flatfish Symposium, IJmuiden, The Netherlands.
- 2012 December. Invited speaker. (Nash, R.D.M. & Geffen, A.J.) 'The influence of tidal cycle on the feeding of juvenile European plaice, *Pleuronectes platessa* L., on a small nursery ground (Port Erin Bay, Isle of Man) in the Irish Sea'. 13th Flatfish Biology Conference, Westbrook, CT, USA.
- 2013 September. Invited speaker. (Nash, R.D.M., Stenevik, E.K., Huse, G. & Slotte A.) Productivity of the Norwegian Spring Spawning herring stock: disentangling stock and environmentally related variations as a means to understanding climate change effects. ICES Annual Science Conference. Reykjavik, Iceland
- 2014 November. Invited speaker, (Nash, R.D.M., Campos, J., Geffen, A.J., Ribas, F., Freitas, V, Witte, J.IJ. & van der Veer, H.W.) Overwintering dynamics of O-group flatfishes: does size matter? 9th International Flatfish Symposium. Cle Elum, Washington, USA.
- 2015 May. Keynote speaker. (Nash R.D.M.) The ability to predict or understand recruitment processes: are they still unachievable goals after all these years? XXXV Congreso de Ciencias del Mar, Sociedad Chilena de Ciencias del Mar, Coquimbo, Chile.
- 2015 July Keynote speaker. (Nash, R.D.M.) One fish, two fish, red fish, dead fish. 39th Annual Larval Fish Conference, Vienna, Austria.

Other relevant activities:

- 1988- 2004 Advisor to the Isle of Man Government, Fisheries Department on matters concerning finfish fisheries in Isle of Man territorial waters. The issues at present concern legislation, population size and catch levels for the Manx stock of herring and mesh size regulations for other finfish fisheries.
- 1997 - Scientific Advisory Committee for the International Flatfish Symposia (held every three years).
- 1999 - 2002 Organising committee for the 5th International Flatfish Symposium. Held on the Isle of Man, November 2002.
- 2002 - 2005 Steering committee for the Sixth International Flatfish Symposium held in Maizuru (University of Kyoto), Japan, October 2005.
- 2005 - 2008 Steering Committee for the Seventh International Flatfish Symposium , Sesimbra, Portugal, November 2008.
- 2006 Institute for Baltic Sea Fisheries, (IOF), Federal Research Centre for Fisheries Rostock. Review of Rügen herring larvae surveys. 13-17th November. With M. Dickey-Collas (IMARES, Holland).
- 2007 - 2008 Review Committee for 2006/08 Portuguese Marine Science (FTC) research grant funding.
- 2008 – 2011 Steering Committee for the Eighth International Flatfish Symposium held in Wageningen, The Netherlands in November 2011.

- 2009 Review Committee for 2008/09 Portuguese Marine Science (FTC) research grant funding.
- 2010 Review Committee for 2009/10 Portuguese Marine Science (FTC) research grant funding.
- 2011 Institute for Baltic Sea Fisheries, (IOF), Federal Research Centre for Fisheries Rostock. Review of Rügen herring larvae surveys. 24-26th January. With M. Dickey-Collas (IMARES, Holland).
- 2011 Review Committee for 2010/11 Portuguese Marine Science (FTC) research grant funding
- 2011 Co-chair (with Ed Houde and Ric Brodeur) ICES ASC Gdansk. Theme session H: Recruitment processes: Early life history dynamics – from eggs to juveniles (Joint ICES/PICES theme session).
- 2011 – 2014 Steering Committee for the Ninth International Flatfish Symposium held in Seattle, Washington, USA in November 2014.
- 2014 Chair Scientific Steering Committee for the Johan Hjort Symposium, Bergen, Norway, October 2014.
- 2014 – 2017 Steering Committee for the Tenth International Flatfish Symposium held in St Malo, France in November 2017.
- 2017- Member of Council, Fisheries Society of the British Isles. Travel Grants Committee.
- 2017-2020 Steering Committee for the Eleventh International Flatfish Symposium to be held in New England, USA in November 2020.
- 2018- Review Committee for AFBI, Belfast, Northern Ireland

Recent Research cruises

- 2008 *RV Håkon Mosby* (Bergen). Norwegian Spring Spawning (NSS) herring larvae herring survey (2008609). 3-19th April 2008.
- 2009 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and PGEGBS (2009103). 5th February-1st March 2009.
- 2010 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and North Sea process studies (2010102). 4-14th February 2010.
RV G.O. Sars (Bergen). Norwegian Sea NSS herring larvae abundance and process studies PROMUS (2010105). 6th-10th April 2010.
RV G.O. Sars (Bergen). North Sea Ecosystem studies and standard sections (2010106). 24th April-5th May 2010. Cruise leader.
RV Håkon Mosby (Bergen). Norwegian Sea herring larvae process studies (2010610). 17th-25th May 2010.
RV Johan Hjort (Bergen). North Sea 3rd Quarter IBTS, NSAS herring and saithe acoustic surveys and North Sea process studies (2010207). 21st July-2nd August 2010.
- 2011 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and North Sea process studies (2011102). 14th February-1st March 2011.
RV Johan Hjort (Bergen). Norwegian Sea herring larvae process studies (2011207). 31st May-6th June 2011.
RV Johan Hjort (Bergen). North Sea 3rd Quarter IBTS, NSAS herring and saithe acoustic surveys and North Sea process studies (2011210). 2nd -14th July 2011.
- 2012 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and MIK additional nets trials (2012102). 25-28th February 2012.
RV Håkon Mosby (Bergen). Fish egg distribution and spawning ground locations (KILO project) (2012607). 12th-20th April 2012.

- RV Håkon Mosby* (Bergen). North Sea Ecosystem studies (eggs and larvae). (2012608). 24th April-5th May 2012. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea 3rd Quarter IBTS, NSAS herring and saithe acoustic surveys and North Sea process studies (2012207). 25-28th June 2012.
- 2013 *RV Johan Hjort* (Bergen). North Sea Ecosystem studies (eggs and larvae) (2013203). 8th – 23rd April 2013.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2013206). 18-22nd July 2013.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2013211). 29th October-1st November 2013.
- 2014 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and MIK M sampling for fish eggs (2014101). 29th January – 19th February 2014.
- RV Håkon Mosby* (Bergen). North Sea Ecosystem studies (eggs and larvae). (2014610). 28th April-15th May 2014. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2014210). 25-28th July 2014.
- 2015 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and MIK M sampling for fish eggs (2015101). 12th–28th January 2015.
- RV Johan Hjort* (Bergen). North Sea Ecosystem studies (eggs and larvae) (2015204). 9th – 24th April 2015. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2015208). 27th – 31st July 2015. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2015212). 9th-13th November 2015.
- 2016 *RV G.O. Sars* (Bergen). North Sea 1st Quarter IBTS and MIK M sampling for fish eggs (2016101). 11th January – 2nd February 2016.
- RV G.O. Sars* (Bergen). North Sea Ecosystem studies (eggs and larvae) (2016106). 19th April – 9th May 2016. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea plankton transect (Utsira mot W) (2016208). 8th-13th August 2016. Cruise leader.
- RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2016623). 25th November – 4th December 2016. Cruise leader.
- 2017 *RV Cefas Endeavour* (Lowestoft). North Sea 1st Quarter IBTS and MIK M sampling for fish eggs (2017850). 21st January – 3rd February 2017.
- RV Johan Hjort* (Bergen). North Sea Ecosystem studies (eggs and larvae) (2017204). 29th April – 12th May 2017. Cruise leader.
- RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2017614). 5th - 15th July 2017. Cruise leader.
- 2018 *RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2018603). 10th-19th February 2018. Cruise leader.
- RV Kristine Bonnevie* (Bergen). North east Arctic saithe spawning. (2018608). 24th-28th March 2018.
- RV Kristine Bonnevie* (Bergen). Norwegian Spring Spawning herring early larvae. (2018609). 5th-10th April 2018. Cruise leader.
- RV Johan Hjort* (Bergen). North Sea Ecosystem studies (eggs and larvae) (2017204). 25th April – 10th May 2018. Cruise leader.
- RV Johan Hjort* (Bergen). NSSH postlarvae (2017206). 5th – 20th June 2018. Cruise leader.

- RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2018617). 16th-24th July 2018. Cruise leader.
- RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2018624). 10th - 20th November 2018. Cruise leader.
- 2019 *RV Kristine Bonnevie* (Bergen). North Sea plankton transect (Utsira mot W and Hanstholm - Aberdeen) (2019603). 7th-16th February 2019. Cruise leader.

Publications and Submitted Papers.

Peer reviewed publications

1. **Nash, R.D.M.** & Hiscock, K. 1978. Mapping sublittoral habitats around Lundy. *Progress in Underwater Science* **4**: 131-145.
2. **Nash, R.D.M.** 1980. Laboratory observations on the burrowing of the snake blenny, (*Lumpenus lampretaeformis* (Walbaum)), in soft sediment. *Journal of Fish Biology* **16**: 639-648.
3. **Nash, R.D.M.** 1982. The biology of Fries' goby, *Lesueurigobius friesii* (Malm 1874) in the Firth of Clyde (Scotland) and a comparison with other stocks. *Journal of Fish Biology* **21**: 69-85.
4. **Nash, R.D.M.** 1982. The diel behaviour of small demersal fish on soft sediments on the west coast of Scotland using a variety of techniques: with special reference to *Lesueurigobius friesii* (Pisces: Gobiidae). *P.S.Z.N.I.: Marine Ecology* **3**: 161-178.
5. **Nash, R.D.M.** & Gibson, R.N. 1982. Seasonal fluctuations and composition of two populations of small demersal fishes on the west coast of Scotland. *Estuarine, Coastal and Shelf Science* **15**: 485-495.
6. **Nash, R.D.M.**, Chapman, C.J., Atkinson, R.J.A. & Morgan, P.J. 1984. Observations on the burrows and burrowing behaviour of *Calocaris macandreae* Bell (Crustacea: Thalassinidea). *Journal of Zoology, London* **202**: 425-439.
7. **Nash, R.D.M.** 1984. Aspects of the biology of the black goby (*Gobius niger* L.) in Oslofjorden, Norway. *Sarsia*, **69**: 23-29.
8. Sun, Y., **Nash, R.D.M.** & Clay, C.S. 1985. Acoustic measurements of the anatomy of fish at 220 kHz. *Journal of the Acoustical Society of America* **78**: 1772-1776.
9. **Nash, R.D.M.** 1985. The distribution of fish in the Oslofjord and its possible relationship to pollution. Pp 389-400. In: J.S. Gray & M.E. Christiansen (eds). Eighteenth Marine Biology Symposium. "Marine Biology of Polar Regions and Effects of Stress on Marine Organisms." England: J. Wiley.
10. Atkinson, R.J.A. & **Nash, R.D.M.** 1985. Burrows and their inhabitants. *Progress in Underwater Science* **10**: 109-115.
11. **Nash, R.D.M.** 1986. Aspects of the general biology of Vahl's eelpout, *Lycodes vahlii gracilis* M. Sars, 1867 (Pisces, Zoarcidae), in Oslofjorden, Norway. *Sarsia*, **71**: 289-296.
12. **Nash, R.D.M.** 1986. Diel fluctuations of a shallow water fish community in the inner Oslofjord, Norway. *P.S.Z.N.I.: Marine Ecology* **7**: 219-232.
13. **Nash, R.D.M.**, Sun, Y. & Clay, C.S. 1987. High resolution acoustic structure of fish. *Journal Conseil international pour l'Exploration de la Mer* **44**: 23-31.
14. Stanton, T.K., **Nash, R.D.M.**, Nero, R. & Eastwood, R. 1987. A field examination of acoustical scattering from 70 kHz biological sound scatterers. *IEEE Journal of Ocean Engineering* **OE-12**: 339-348.
15. **Nash, R.D.M.**, Magnuson, J.J., Stanton, T.K. & Clay, C.S. 1987. A synoptic view of the Gulf Stream front with sonar: Taking advantage of a closer look. *Canadian Journal of Fisheries and Aquatic Sciences* **44**: 2022-2024.

16. **Nash, R.D.M.** 1988. The effects of disturbance and severe seasonal fluctuations in environmental conditions on northern temperate shallow-water fish assemblages. *Estuarine, Coastal and Shelf Science* **26**: 123-135.
17. **Nash, R.D.M.**, Magnuson, J.J., Stanton, T.K. & Clay, C.S. 1989. Depth and temperature distribution of peaks of 70 kHz acoustic scattering during day and night at the edge of the Gulf Stream - EchoFront 83. *Deep-Sea Research* **36A**: 587-596.
18. Atkinson, R.J.A. & **Nash, R.D.M.** 1990. Some preliminary observations on the burrows of *Callianassa subterranea* (Montagu) (Decapoda: Thalassinidea) from the west coast of Scotland. *Journal of Natural History* **24**: 403-413.
19. **Nash, R.D.M.** & Geffen, A.J. 1991. Spatial and temporal changes in the offshore larval fish community in southeastern Lake Michigan. *Journal of Great Lakes Research* **17**: 25-32.
20. **Nash, R.D.M.**, Geffen, A.J. & Santos, R.S. 1991. The wide-eyed flounder *Bothus podas* Delaroche a singular flatfish in varied shallow-water habitats of the Azores. *Netherlands Journal of Sea Research* **27**: 367-373.
21. **Nash, R.D.M.**, Geffen, A.J. & Hughes, G. 1992. Winter growth of juvenile plaice in Port Erin Bay. *Journal of Fish Biology* **41**: 209-215.
22. Martins, H.R., Santos, R.S., Hawkins, S.J. & **Nash, R.D.M.** 1992. Expedition Azores 1989: Ecology and taxonomy of the fauna and flora of the marine littoral. An introduction. *Arquipélago* **10**: 39-44.
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- ii. **Nash, R.D.M.**, Stenevik, E.K., Huse, G., Devine, J.A. & Slotte, A. Productivity of the Norwegian Spring Spawning herring stock: disentangling stock and environmentally related variations as a means to understanding climate change effects. To be submitted to *ICES Journal of Marine Science*.
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