

## **Scientific papers (peer reviewed) where Ecosystem survey (BESS) data are heavily used**

1. Agnalt, A.L., Jørstad, K.E., Pavlov V., Olsen E. 2010. Recent Trends in Distribution and Abundance of the Snow Crab (*Chionoecetes opilio*) Population in the Barents Sea. In: Kruse GH, Eckert GL, Foy RJ, Lipcius RN, Sainte-Marie B, Stram DL, Woodby D (eds) Biology and Management of Exploited Crab Populations under Climate Change University of Alaska, Fairbanks, p 317-327.
2. Anisimova NA, Jørgensen LL., Lubin P., Manushin I. 2011. Benthos. In: T. Jakobsen, V. Ozhigin (Edt.) THE BARENTS SEA ECOSYSTEM: RUSSIAN-NORWEGIAN COOPERATION IN RESEARCH AND MANAGEMENT, Chapter 4.1.2.
3. Aschan, M. and Ingvaldsen, R., 2009. Recruitment of shrimp (*Pandalus borealis*) in the Barents Sea related to spawning stock and environment. Deep-Sea Research II 56 (2009), 2012-2022.
4. Carscadden, J.E., H. Gjøsæter and H. Vilhjálmsdóttir In press. A comparison of recent changes in distribution of capelin (*Mallotus villosus*) in the Barents Sea, around Iceland and in the Northwest Atlantic. Progress in Oceanography.
5. Carscadden, J.E., H. Gjøsæter and H. Vilhjálmsdóttir In press. Recruitment in the Barents Sea, Icelandic, and Eastern Newfoundland/Labrador Capelin (*Mallotus villosus*) Stocks. Progress in Oceanography.
6. Ciannelli, L., G.E. Dingsør, B. Bogstad, G. Ottersen, K.-S. Chan, H. Gjøsæter, J.E. Stiansen and N.C. Stenseth. 2007. Spatial anatomy of species survival rates: effects of predation and climate-driven environmental variability. Ecology, 88 (3): 635-646.

7. Ciannelli, L., P. Fauchald, K. S. Chan, V. N. Agostini, and G. E. Dingsør. 2008. Spatial fisheries ecology: Recent progress and future prospects. *Journal of Marine Systems* 71(3-4): 223-236.
8. Dalpadado, P., B. Bogstad, H. Gjøsæter, S. Mehl and H.R. Skjoldal 2002. Zooplankton-Fish Interactions in the Barents Sea. In Large Marine Ecosystems of the North Atlantic. Changing States and Sustainability, pp. 269-291. Ed. by K. Sherman and H. R. Skjoldal. Elsevier Science B.V., Amsterdam.
9. Dalpadado, P., Bogstad, B., Eriksen, E., and Rey, L. 2009. Distribution and diet of 0-group cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*) in the Barents Sea in relation to food availability. *Polar Biology* 32:1583-1596.
10. Dalpadado, P., Ingvaldsen, R. B., Stige, L. C., Bogstad, B., Knutsen, T., Ottersen, G., and Ellertsen, B. 2012. Climate effects on the Barents Sea ecosystem dynamics. *ICES Journal of Marine Science* 69 (7):1303-1316. doi:10.1093/icesjms/fss063.
11. Dalpadado, P., Ingvaldsen, R., and Hassel, A., 2003. Zooplankton biomass variation in relation to climatic conditions in the Barents Sea. *Polar Biology*, 26, 233-241.
12. Dingsør, G. E. 2005. Estimating abundance indices from the international 0-group fish survey in the Barents Sea. *Fisheries Research* 72:205-218
13. Dingsør, G. E. 2006. Influence of spawning stock size and environment on abundance of juveniles in commercially important fish stocks in the Barents Sea. Dr. Scient. dissertation, University of Bergen, 2006. <http://hdl.handle.net/1956/1515>.
14. Dingsør, G. E., L. Ciannelli, K. S. Chan, G. Ottersen, and N. C. Stenseth. 2007. Density dependence and density independence during the early life stages of four marine fish stocks. *Ecology* 88:625-634.

15. Dolgov A.V., Johannessen E., Heino M., Olsen E., 2010. Trophic ecology of blue whiting in the Barents Sea. ICES Journal of Marine Science. 67:483-493 doi:10.1093/icesjms/fsp254.
16. Eriksen E, Ingvaldsen RB, Stiansen JE, Johansen GE. 2012. Thermal habitat for 0-group fishes in the Barents Sea; how climate variability impacts their density, length and geographical distribution. ICES Journal of Marine Science, 69(5), 870–879. doi: 10.1093/icesjms/fsr210.
17. Eriksen, E., Bogstad, B., and Nakken, O. 2011. Fluctuations of 0-group fish biomass and role of 0-group fish in the Barents Sea ecosystem. Polar Biology 34:647-657.
18. Eriksen, E., D. Prozorkevich, and G. E. Dingsør. 2009. An Evaluation of 0-Group Abundance Indices of Barents Sea Fish Stocks. The Open Fish Science Journal 2:6-14.
19. Eriksen, E., Prozorkevich, D., Trofimov, A., and Howell, D. 2012. Biomass of scyphozoan jellyfish, and its spatial association with 0-group fish in the Barents Sea. PLoS ONE. doi:10.1371/journal.pone.0033050.
20. Fauchald, P., M. Mauritzen and H. Gjøsæter 2006. Density-dependent migratory waves in the marine pelagic ecosystem. Ecology, 87: 2915-2924.
21. Gjøsæter, H. 1995. Pelagic Fish and the Ecological Impact of the Modern Fishing Industry in the Barents Sea. Arctic, 48: 267-278.
22. Gjøsæter, H. 1998. The population biology and exploitation of capelin (*Mallotus villosus*) in the Barents Sea. Sarsia, 83: 453-496.
23. Gjøsæter, H. and A.M. Ajiad 1994. Growth of polar cod, *Boreogadus saida* (Lepechin), in the Barents Sea. ICES Journal of Marine Science, 51: 115-120.

24. Gjøsæter, H. and B. Bogstad 1998. Effects of the presence of herring (*Clupea harengus*) on the stock-recruitment relationship of Barents Sea capelin (*Mallotus villosus*). *Fisheries Research*, 38: 57-71.
25. Gjøsæter, H. and H. Loeng 1987. Growth of the Barents Sea capelin, *Mallotus villosus*, in the relation to climate. *Environmental Biology of Fishes*, 20 (4): 293-300.
26. Gjøsæter, H., A. Dommåsnes and B. Røttingen 1998. The Barents Sea capelin stock 1972-1997. A synthesis of results from acoustic surveys. *Sarsia*, 83: 497-510.
27. Gjøsæter, H., B. Bogstad and S. Tjelmeland 2002. Assessment methodology for Barents Sea capelin, *Mallotus villosus* (Müller). *ICES Journal of Marine Science*, 59: 1086-1095.
28. Gjøsæter, H., Bogstad, B., and Tjelmeland, S. 2009. Ecosystem effects of three capelin stock collapses in the Barents Sea. In Haug, T., Røttingen, I., Gjøsæter, H., and Misund, O. A. (Guest Editors). 2009. Fifty Years of Norwegian-Russian Collaboration in Marine Research. Thematic issue No. 2, *Marine Biology Research* 5(1):40-53.
29. Gjøsæter, H., P. Dalpadado and A. Hassel 2002. Growth of Barents Sea capelin (*Mallotus villosus*) in relation to zooplankton abundance. *ICES Journal of Marine Science*, 59: 959-967.
30. Gjøsæter, H., P. Dalpadado, A. Hassel and H.R. Skjoldal 2000. A comparison of performance of MOCNESS and WPII. *Journal of Plankton Research*, 22: 1901-1908.
31. Gjøsæter, H., S. Tjelmeland and B. Bogstad 2012. Ecosystem-Based Management of Fish Species in the Barents Sea. In Global Progress in Ecosystem-Based Fisheries Management., pp. 333-352. Ed. by G. H. Kruse, H. I. Browman, K. L. Cochrane, D. Evans, G. S. Jamieson, P. A. Livingston, D. Woodby and C. I. Zhang. Alaska Sea Grant, University of Alaska Fairbanks.

32. Gundersen, A.C. and H. Gjøsæter 1998. A comparison between abundance estimates of the Barents Sea capelin (*Mallotus villosus* Müller) at the larval, 0-group and 1-group stage, for the year classes 1981-1994. ICES Journal of Marine Science, 55: 95-101.
33. Haug, T., I. Røttingen, H. Gjøsæter, O.A. Misund, T. Fenchel and F. Uiblein 2009. Fifty years of Norwegian-Russian collaboration in marine research. Marine Biology Research, 5: 1 - 3.
34. Helle, K. 1994. Distribution of early juvenile Arcto-Norwegian cod (*Gadus morhua* L.) in relation to food abundance and watermass properties. ICES Marine Science Symposia, 198: 440-448.
35. Helle, K. 2000. Distribution of the copepodite stages of *Calanus finmarchicus* from Lofoten to the Barents Sea in July 1989. ICES Journal of Marine Science, 57 (6): 1636-1644.
36. Helle, K. 2000. Does the midnight sun increase the feeding rate and hence the growth rate of early juvenile Arcto-Norwegian cod *Gadus morhua* in the Barents Sea? Marine Ecology Progress Series, 197: 293-297.
37. Helle, K., and Pennington, M. 1999. The relation of the spatial distribution of early juvenile cod (*Gadus morhua* L.) in the Barents Sea to zooplankton density and water flux during the period 1978 - 1984. ICES Journal of Marine Science, 56: 15-27.
38. Helle, K., Bogstad, B., Marshall, C. T., Michalsen, K., Ottersen, G., and Pennington, M. 2000. An evaluation of recruitment indices for Arcto-Norwegian cod (*Gadus morhua* L.). Fisheries Research, 48(1): 55-67.
39. Helle, K., Pennington, M., Bogstad, B., and Ottersen, G. 2002. Early environmental influences on growth of Arcto-Norwegian cod (*Gadus morhua* L.) from 0-group interval to adults. Environmental Biology of Fishes, 65: 341-348.

40. Hjermann D, Bogstad B, Dingsør G, Gjøsæter H, Ottersen G, Eikeset AM, Stenseth NC (2010) Trophic interactions affecting a key ecosystem component: a multistage analysis of the recruitment of the Barents Sea capelin (*Mallotus villosus*). Canadian Journal of Fisheries and Aquatic Sciences 67(9): 1363–1375.
41. Hjermann, D. Ø., A. Melsom, G. E. Dingsør, J. M. Durant, A. M. Eikeset, L. P. Røed, G. Ottersen, G. Storvik, and N. C. Stenseth. 2007. Fish and oil in the Lofoten-Barents Sea system: synoptic review of the effect of oil spills on fish populations. Marine Ecology-Progress Series 339:283-299.
42. Hjermann, D.Ø., B. Bogstad, A.M. Eikeset, G. Ottersen, K.S. Chan, H. Gjøsæter and N.C. Stenseth 2007. Food web dynamics affect Northeast Arctic cod recruitment. Proceedings of the Royal Society B: Biological Sciences, 274: 661-669.
43. Hjermann, DØ, Stenseth, NC, Ottersen, G. 2004. Indirect climatic forcing of the Barents Sea capelin: a cohort-effect. Mar. Ecol. Prog. Ser. 273:229-238.
44. Hop, H. and H. Gjøsæter in press. Polar cod (*Boreogadus saida*) and capelin (*Mallotus villosus*) as key species in marine food webs of the Arctic and the Barents Sea. Marine Biology Research.
45. Howell, D., and Bogstad, B. 2010. A combined Gadget/FLR model for management strategy evaluations of the Barents Sea fisheries. ICES Journal of Marine Science 67:1998-2004.
46. Huse, G. and H. Gjøsæter 1999. A neural network approach for predicting stock abundance of the Barents Sea capelin. Sarsia, 84: 457-464.
47. Ingvaldsen, R. and H. Gjøsæter in press. Impact of marine climate variability on the spatial distribution of Barents Sea capelin. Marine Biology Research.

48. Ingvaldsen, R., Loeng, H., Ådlandsvik, B., and Ottersen, G., 2003. Climate variability in the Barents Sea during the 20th century with focus on the 1990s. ICES Marine Science Symposium, 219, 160-168.
49. Johannessen E, Høines ÅS, Dolgov AV, Fossheim M 2012. Demersal Fish Assemblages and Spatial Diversity Patterns in the Arctic-Atlantic Transition Zone in the Barents Sea. PLoS ONE 7(4): e34924. doi:10.1371/journal.pone.0034924.
50. Johannessen, E., Ingvaldsen, R. B., Bogstad, B., Dalpadado, P., Eriksen, E., Gjøsæter, H., Knutsen, T., Skern-Mauritsen, M., and Stiansen, J. E. 2012. Changes in Barents Sea ecosystem state 1970-2009: climate fluctuations, human impact and trophic interactions. ICES Journal of Marine Science 69(5):880-889. doi:10.1093/icesjms/fss046.
51. Johannessen, E., Ingvaldsen, R.B., Dalpadado, P., Skern-Mauritzen, M., Stiansen, J.E., Eriksen, E., Gjøsæter, H., Bogstad, B., and Knutsen, T., 2012. The Barents Sea ecosystem state 1970-2009: climate fluctuations, human impact and trophic interactions. ICES Journal of Marine Science, 69(5), 880–889. doi:10.1093/icesjms/fss046.
52. Johannessen, E., Lindstrøm, U., Michalsen, K., Skern-Mauritzen, M., Fauchald, P., Bogstad, B., and Dolgov, A. V. 2012. Feeding in a heterogeneous environment: spatial dynamics in summer foraging Barents Sea cod. Marine Ecology Progress Series 458:181-197.
53. Johansen, G.O, Johannessen, E., Michalsen, K. Aglen, A. and Fotland, Å. 2011. Seasonal variation in geographic distribution of NEA cod - survey coverage in a warmer Barents Sea, Submitted Marine Biology Research (accepted).
54. Jørgensen LL, Ljubin P, Anisimova N, Manushin I, Ingvaldsen R, Ramasco, V (submitted and accepted with changes) Community Structure and Distribution of Megabenthos in the Barents Sea: a baseline for monitoring. Polar Biology.

55. Jørgensen, R., N.O. Handegard, H. Gjøsæter and A. Slotte 2004. Possible vessel avoidance behaviour of capelin in a feeding area and on a spawning ground. *Fisheries Research*, 69: 251-261.
56. Kristiansen, T., Drinkwater, K. F., Lough, R. G. & Sundby, S. Recruitment Variability in North Atlantic Cod and Match-Mismatch Dynamics. *Plos One* 6, e17456 (2011). <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0017456>.
57. Lind, S. and Ingvaldsen, R.B., 2012. Variability and impacts of Atlantic Water entering the Barents Sea from the north. *Deep-Sea Research, Part I* 62 (2012), 70-88. doi:10.1016/j.dsr.2011.12.007.
58. Lindstrøm, U., Smout, S., Howell, D., and Bogstad, B. 2009. Modelling multispecies interactions in the Barents Sea ecosystem with special emphasis on minke whales, cod, herring and capelin. *Deep Sea Research Part II: Topological Studies in Oceanography* 56: 2068-2079.
59. Link, J. S., Bogstad, B., Sparholt, H., and Lilly, G. R. 2009. Role of Cod in the Ecosystem. *Fish and Fisheries* 10(1):58-87.
60. Loeng H, Bjørke H, Ottersen G (1995) Larval fish growth in the Barents Sea. *Can Spec Publ Fish Aquat Sci*:691-698.
61. Michalsen, K, Johannessen, E. and Bogstad, B. 2008. Feeding of mature cod (*Gadus morhua*) on the spawning grounds in Lofoten. *ICES Journal of Marine Science* 65. 571-580.
62. Michalsen, K., Dalpadado, P., Eriksen, E., Gjøsæter, H., Ingvaldsen, R.B., Johannessen, E., Jørgensen, L.L., Knutsen, T., Prozorkevich. D., and Skern-Mauritzen, M. 2012. Eight years of ecosystem surveys in the Barents Sea – Review and recommendations. *Invited Review in Marine Biology Research*. Accepted with minor revision.

63. Olsen, E., Aanes, S., Mehl, S., Holst, J.C., Aglen, A., and Gjøsæter, H., 2010. Cod, haddock, saithe, herring, and capelin in the Barents Sea and adjacent waters: a review of the biological value of the area. *ICES Journal of Marine Science* 67(1): 87-101. doi:10.1093/icesjms/fsp229.
64. Olsen, E., Michalsen, K., Ushakov, N.G., Zabavnikov, V.B. 2011. The ecosystem survey. In *The Barents Sea. Ecosystem, resources, management. Half a century of Russian-Norwegian cooperation*, Ed. by T. Jakobsen. and V.K. Ozhigin, V.K. Tapir Academic Press, Trondheim.
65. Ottersen G, Loeng H (2000) Covariability in early growth and year-class strength of Barents Sea cod, haddock and herring: The environmental link. *ICES J Mar sci* 57:339-348.
66. Ottersen G, Sundby S (1995) Effects of temperature, wind and spawning stock biomass on recruitment of Arcto-Norwegian cod. *Fish Oceanogr* 4:278-292.
67. Ottersen, G., Helle, K., Bogstad, B. 2002. Do abiotic mechanisms determine interannual variability in length-at-age of juvenile Arcto-Norwegian cod? *Canadian Journal of Fisheries and Aquatic Sciences*, 59: 57-65.
68. Planque B, Certain G, Michalsen K, Wiedmann M, Kortsch S, Jørgensen LL, Primicerio R, Aschan M, Dalpadado P, Mauritzen MS, Johannessen E (Submitted). Ecological resilience research in practice: the experience of the Barents Sea Ecosystem Resilience project (BarEcoRe). *ICES*.
69. Planque, B., Bellier, E., and Loots, C. 2011. Uncertainties in projecting spatial distributions of marine populations. *ICES Journal of Marine Science*, 68: 1045-1050.

70. Planque, B., Johannessen, E., Drevetnyak, K. V., and Nedreaas, K. H. 2012. Historical variations in the year-class strength of beaked redfish (*Sebastes mentella*) in the Barents Sea. – ICES Journal of Marine Science, doi:10.1093/icesjms/fss014.
71. Planque, B., Loots, C., Petitgas, P., Lindstrøm, U., and Vaz, S. 2011. Understanding what controls the spatial distribution of fish populations using a multi-model approach. *Fisheries Oceanography*, 20: 1-17.
72. Saher M, Kristensen DK, Hald M, Pavlova O, Jørgensen LL 2012. Changes in distribution of calcareous benthic foraminifera in the central Barents Sea between the periods 1965-1992 and 2005-2006. *Global and Planetary Change* (in press accepted manuscript) <http://www.sciencedirect.com/science/article/pii/S0921818112001634>.
73. Skern-Mauritzen, M, Johannessen, E., Bjørge, A. and Øien, N. 2011. Baleen whale distributions and prey associations in the Barents Sea. *Marine ecology Progress Series* 426:289-301.
74. Skjoldal, H.R., H. Gjøsæter and H. Loeng 1992. The Barents Sea ecosystem in the 1980s: ocean climate, plankton and capelin growth. *ICES marine science symposia*, 195: 278-290.
75. Smedsrød, L. H., R. Ingvaldsen, J.E.Ø. Nilsen, and Ø Skagseth., 2010. Heat in the Barents Sea: Transport, storage, and surface fluxes. *Ocean Science*, 6, 219-234.
76. Toresen, R., H. Gjøsæter and P. De Barros 1998. The acoustic method as used in the abundance estimation of capelin (*Mallotus villosus* Muller) and herring (*Clupea harengus* Linne) in the Barents Sea. *Fisheries Research*, 34: 27-37.
77. Westgård T., Johansen G.O., Kvamme C., Ådlandsvik B., and Stiansen J.E. 2010. A framework for storing, retrieving and analysing marine ecosystem data of different origin with variable scale and distribution in time and space. Pp. 417-432 in Nishida, T., and

- Caton, A.E. (Editors), GIS/Spatial Analyses in Fishery and Aquatic Sciences (Volume 4). International Fishery GIS Society, Saitama, Japan. 579 pp. (ISBN: 4-9902377-2-2).
78. Yaragina, N. A., Bogstad, B., and Kovalev, Yu. A. 2009. Reconstructing the time series of abundance of Northeast Arctic cod (*Gadus morhua*), taking cannibalism into account. In Haug, T., Røttingen, I., Gjøsaeter, H., and Misund, O. A. (Guest Editors). 2009. Fifty Years of Norwegian-Russian Collaboration in Marine Research. Thematic issue No. 2, *Marine Biology Research* 5(1):75-85.
79. Årthun, M., Ingvaldsen, R.B., Smedsrød, L.H., Schrum C., 2011. Dense water formation and circulation in the Barents Sea. *Deep-Sea Research I* 58, 801-817.