

Supplementary materials

Marine Biology

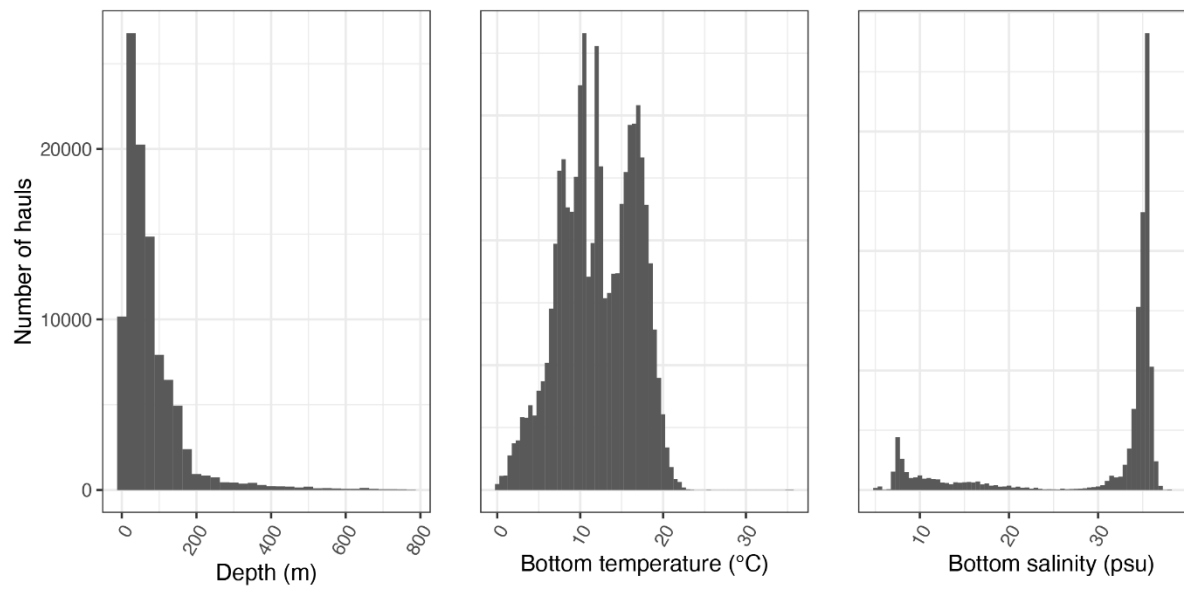
Daniel Oesterwind*, Anne Marie Power, Esther Abad, Gregoire Certain, Nikolaos Fotiadis, Alexey Golikov, Ángel F. González, Vladimir Laptikhovsky, Silvia S. Monteiro, Carlos Montero-Castaño, Ana Moreno, Hassan Moustahfid, Graham J. Pierce, Jean-Paul Robin, Sonia Seixas, Ignacio Sobrino, Julio Valeiras, Roger Villanueva, Fábio L. Matos

Oceanographic parameters associated with spatial occurrence of cephalopods in standardized demersal fishing trawls in the NE Atlantic

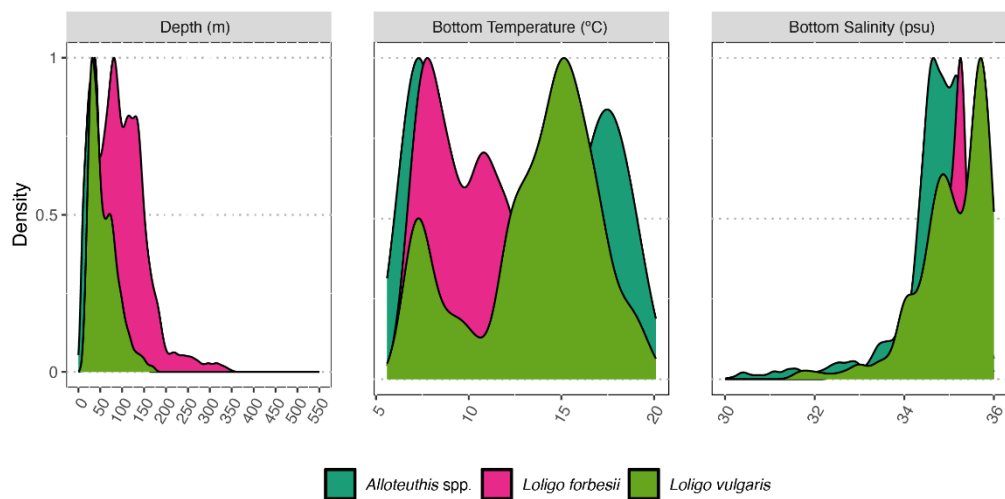
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Supplementary Table S1. Summary of sampled years, gear types, and total number of hauls from trawl surveys used in this study, grouped by ICES ecoregion. The data includes only valid hauls after excluding erroneous environmental values.

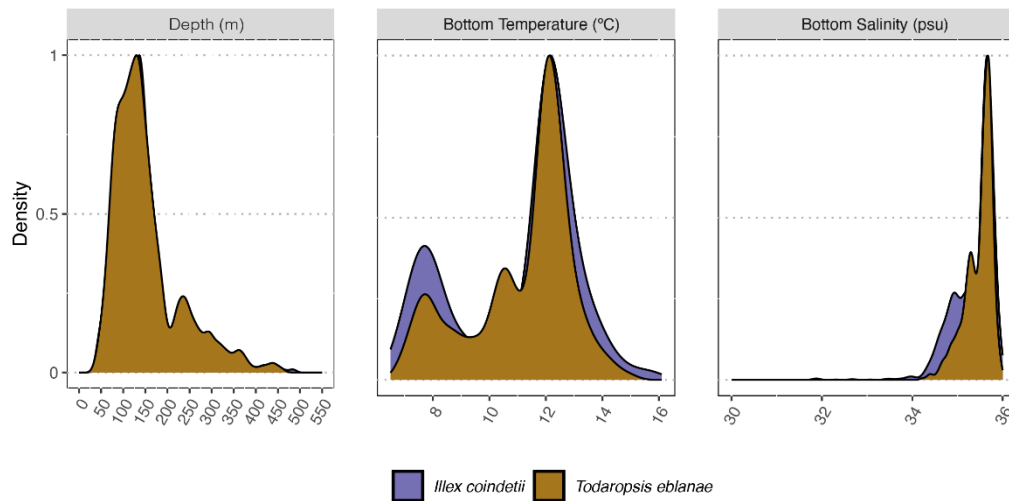
Survey	ICES Ecoregion	Year(s)	Quarter(s)	Gear(s)	n
BITS	Baltic Sea, Greater North Sea	2021	1	TVS	5
BTS	Celtic Seas, Greater North Sea	1990, 1992-2000, 2002-2022	1, 3, 4	BT4A, BT4AI, BT4P, BT4S, BT7, BT8	15709
BTS-VIII	Bay of Biscay and the Iberian Coast	2011-2022	4	BT4A	958
DYFS	Greater North Sea	1990-2022	3, 4	BT3, BT6	1854
EVHOE	Bay of Biscay and the Iberian Coast, Celtic Seas	1997-2022	4	GOV	6488
FR-CGFS	Greater North Sea	2014-2022	4	GOV	902
FR-WCGFS	Celtic Sea, Greater North Sea	2021	4	GOV	113
IE-IAMS	Celtic Seas	2016-2018	1	JDT	22
IE-IGFS	Celtic Seas	2003-2022	4	GOV	6454
NIGFS	Celtic Seas	2008-2022	1, 4	ROT	1770
NS-IBTS	Celtic Seas, Baltic Sea, Greater North Sea	1991-1992, 1995-2022	1, 2, 3	GOV	24604
PT-IBTS	Bay of Biscay and the Iberian Coast	2002-2011, 2013-2018, 2021-2022	4	CAR, NCT	3752
ROCKALL	Celtic Seas, Oceanic Northeast Atlantic	2001, 2003, 2005-2009	3	GOV	107
SCOROC	Celtic Seas, Oceanic Northeast Atlantic	2011-2022	3	GOV	621
SCOWCGFS	Celtic Seas	2011-2022	1, 4	GOV	4382
SNS	Greater North Sea	1990, 1995-2002, 2004-2017, 2021-2022	3, 4	BT6	358
SP-ARSA	Bay of Biscay and the Iberian Coast	1996, 2000-2022	1, 4	BAK	3890
SP-NORTH	Bay of Biscay and the Iberian Coast	2000-2001, 2007-2019, 2021	4	BAK	14181
SP-PORC	Celtic Seas	2008-2013, 2015-2019, 2021	3	PORB	2484
SWC-IBTS	Celtic Seas, Greater North Sea	1997-2010	1, 4	GOV	1299



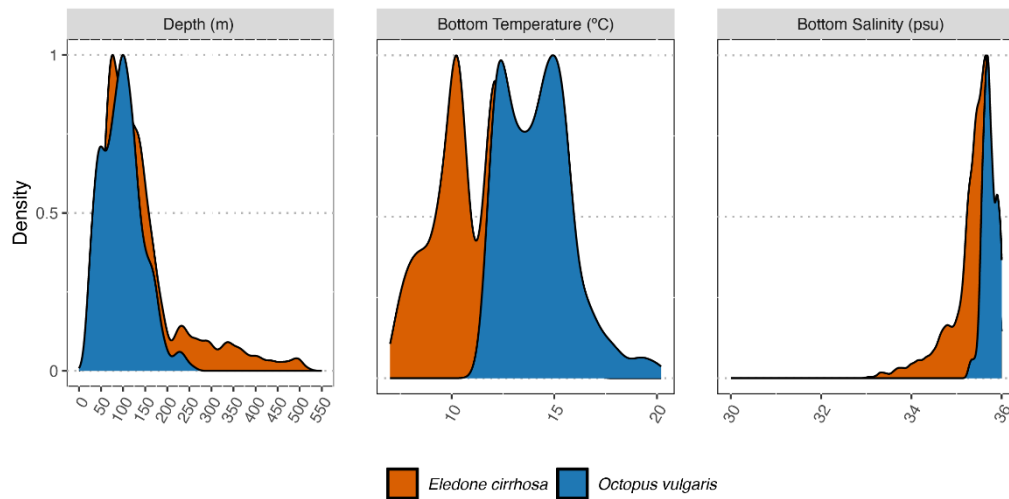
Supplementary Figure S1. Number of available hauls per depth, bottom temperature and bottom salinity values.



Supplementary Figure S2 - Kernel density estimate (scaled to maximum of 1, y-axis) according to the number of sampling stations (n) where loliginidae species *Alloteuthis* spp. (darker green), *Loligo forbesii* (pink) and *L. vulgaris* (lighter green) were captured. Environmental gradients of depth, bottom temperature and salinity are shown in the x-axis.

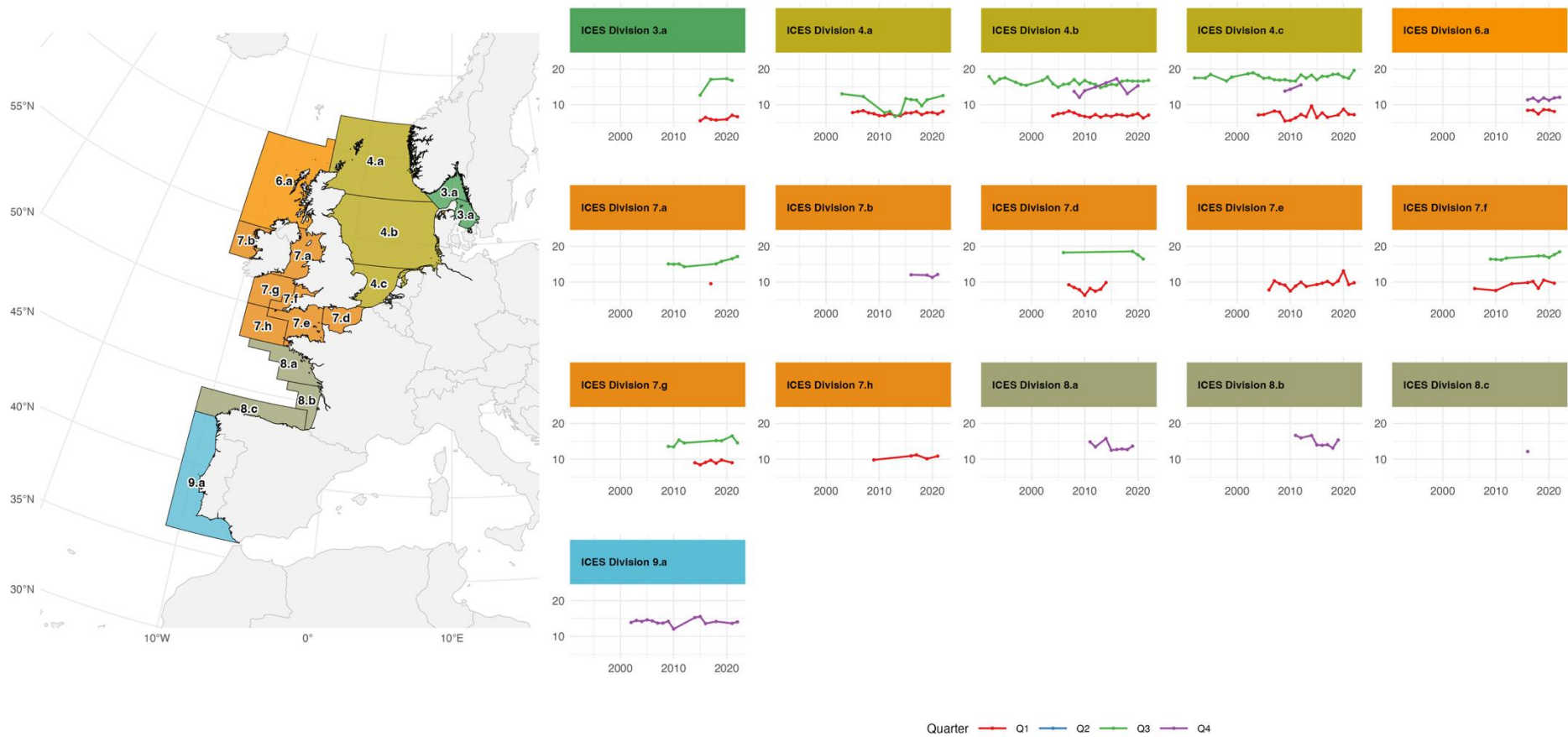


Supplementary Figure S3 - Kernel density estimate (scaled to maximum of 1, y-axis) according to the number of sampling stations (n) where ommastrephids *Illex coindetii* in purple and *Todaropsis eblanae* in brown were captured. Environmental gradients of depth and bottom temperature and salinity are shown in the x-axis



Supplementary Figure S4 - Kernel density estimate (scaled to maximum of 1, y-axis) according to the number of sampling stations (n) where the species *Eledone cirrhosa* in orange and *Octopus vulgaris* in yellow was captured. Environmental gradients of depth and bottom temperature and salinity are shown in the x-axis

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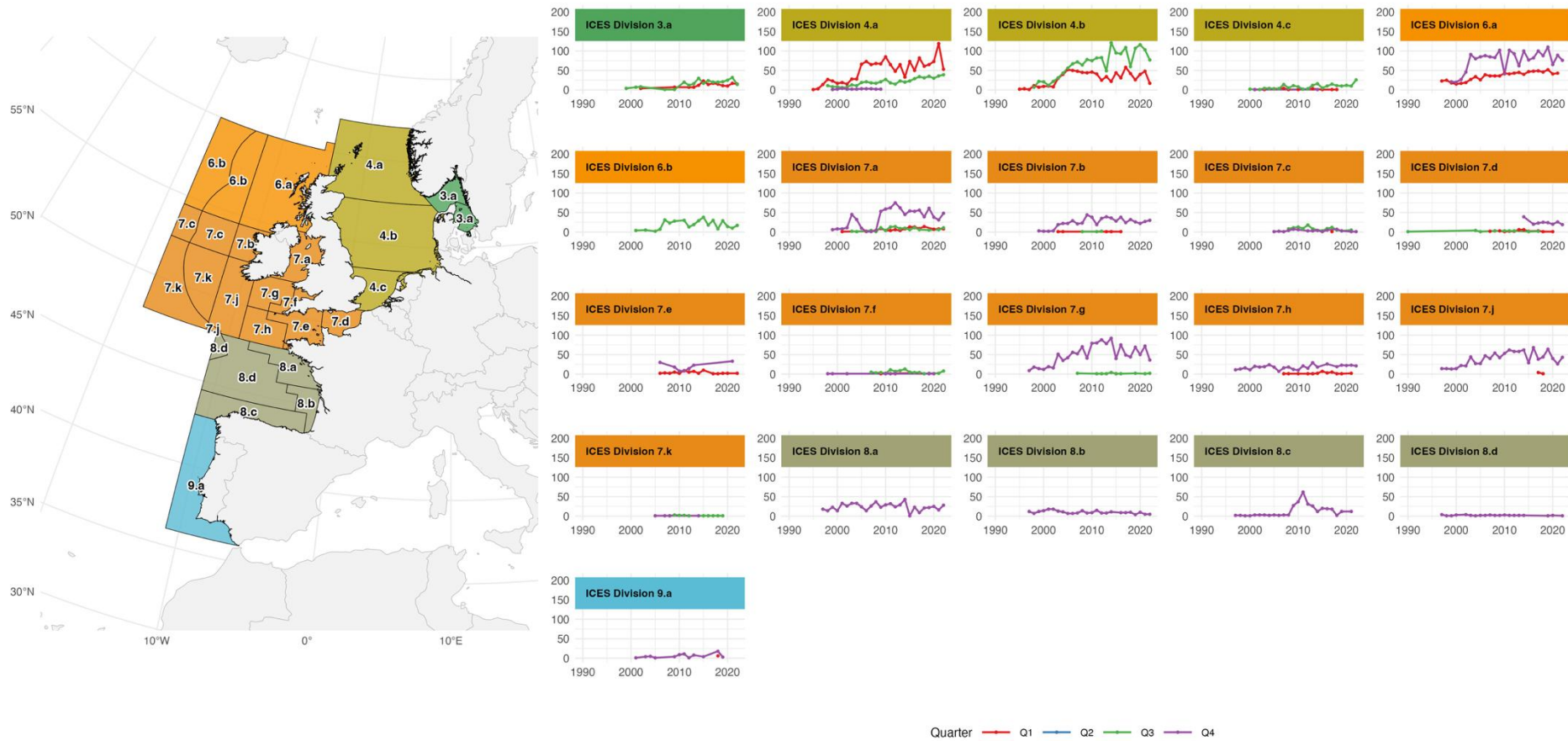
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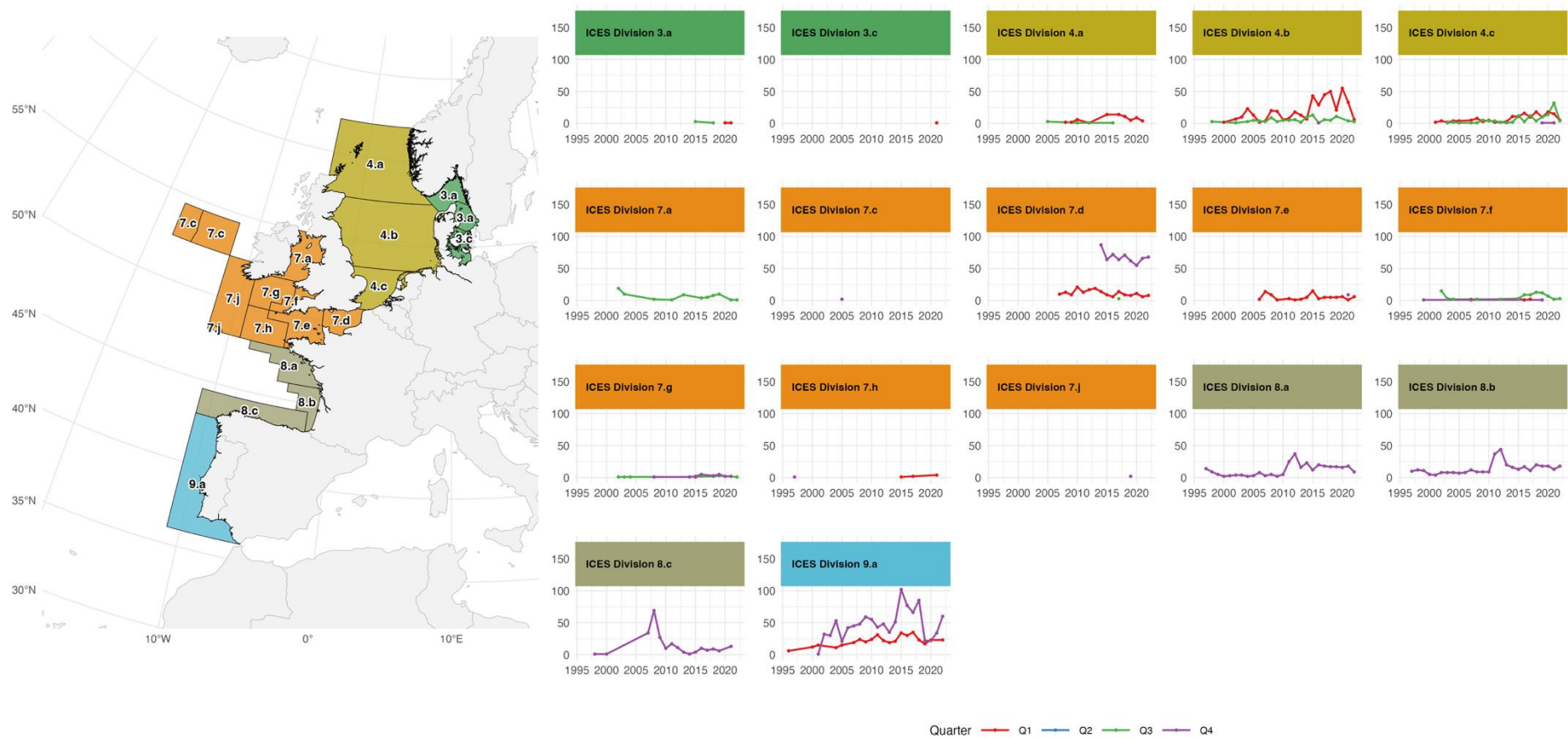
4 *Supplementary Figure S5 - Annual mean sea bottom temperature (°C) at locations where Alloteuthis spp. were recorded, according to ICES division.*

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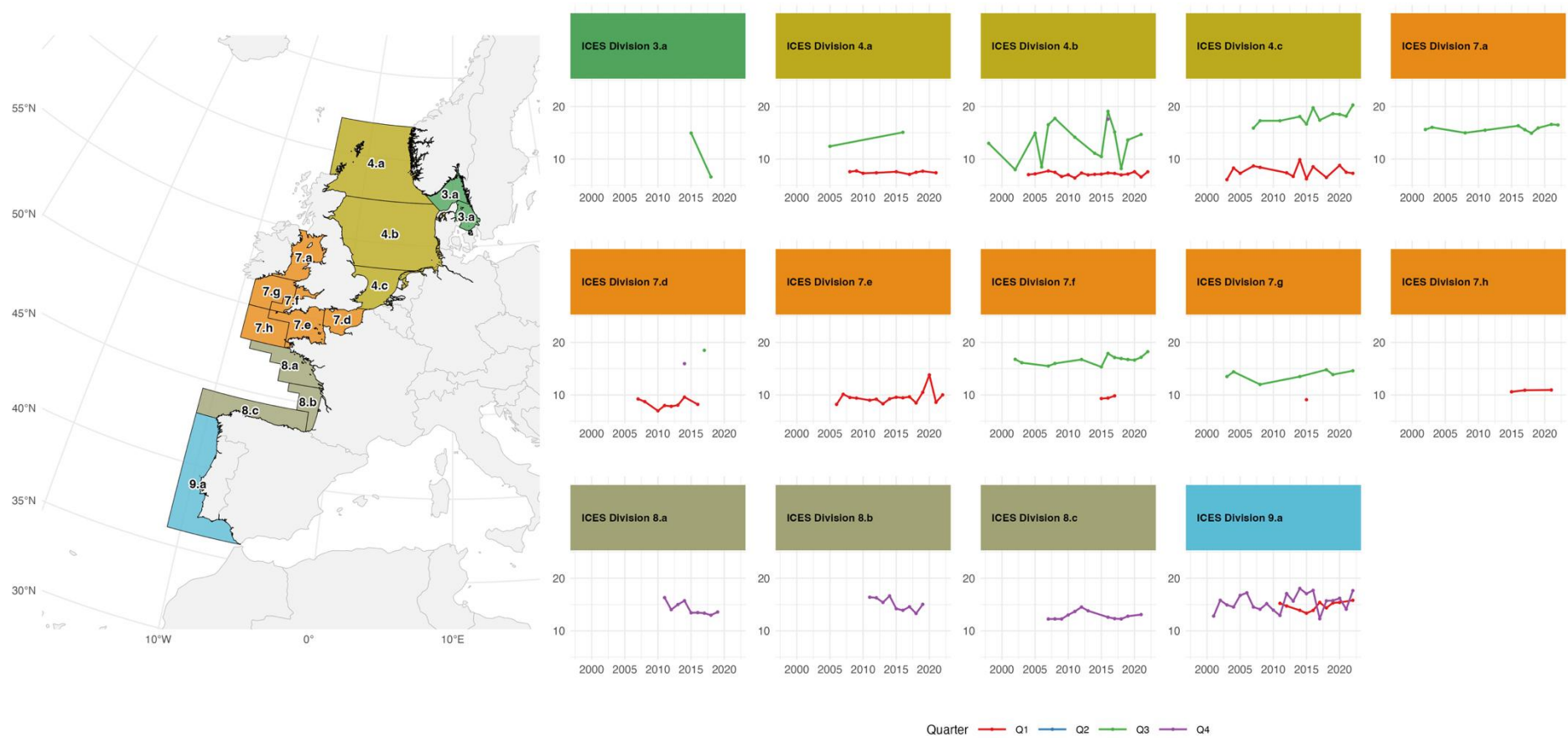


Supplementary Figure S6 - Number of *Loligo forbesii* occurrences over time, by ICES division.



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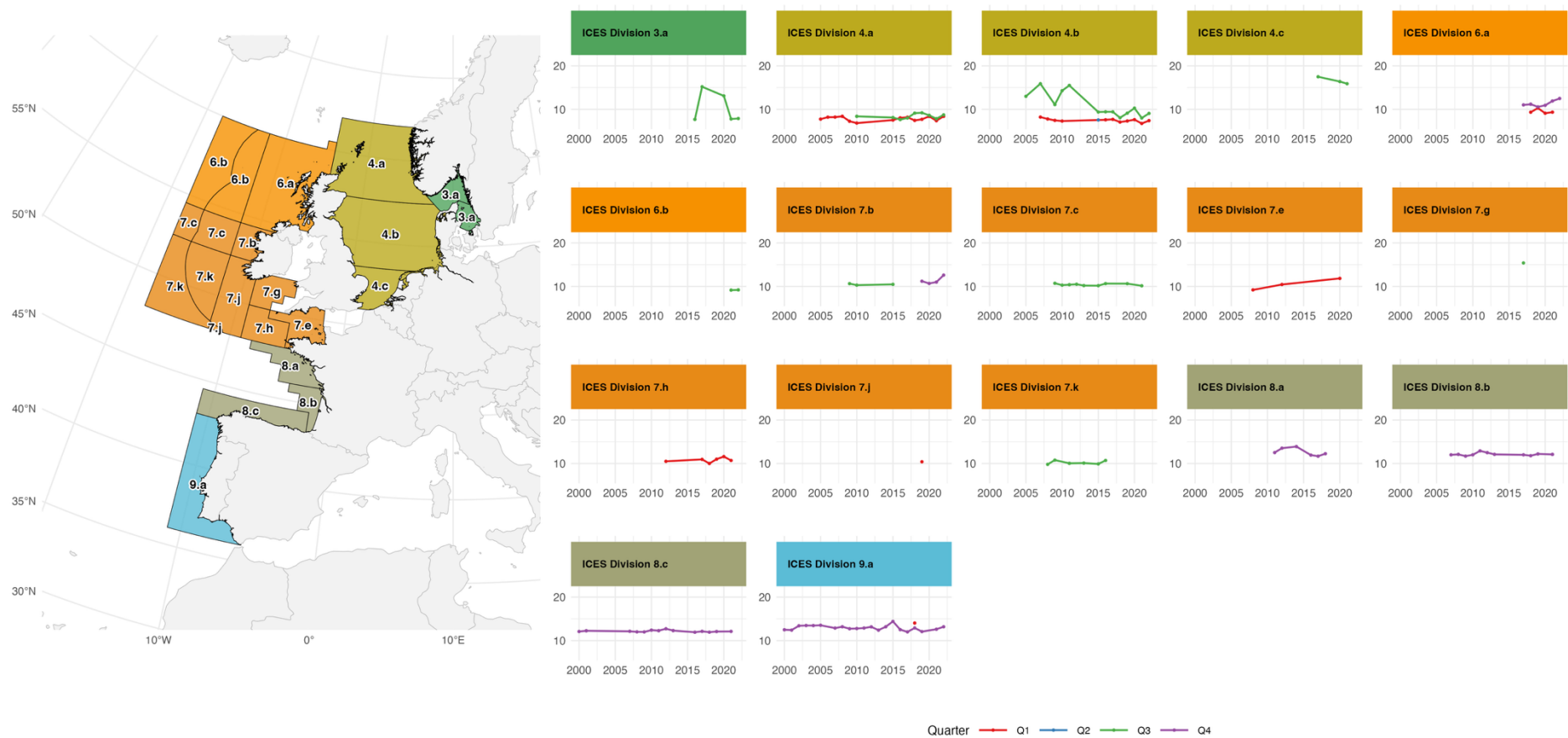
12 *Supplementary Figure S7 - Number of Loligo vulgaris occurrences over time, by ICES division.*



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14 *Supplementary Figure S8 - Annual mean sea bottom temperature (°C) at locations where Loligo vulgaris were recorded, according to ICES division.*

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Supplementary Figure S9 - Annual mean sea bottom temperature (°C) at locations where *Illex coindetii* were recorded, according to ICES division.