FIVE ESTUARIES OFFSHORE WIND FARM

10.15 REVISED INTERNATIONAL HERRING LARVAL SURVEY (IHLS) HEATMAP FIGURES (TRACKED)

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate, up to date and complete for purpose.

Revision	Date	Status/Reason for Issue	Originator	Checked	Approved
A	OCT-24	Deadline 1	GoBe	VE OWFL	VE OWFL
B	DEC-24	Deadline 4	GoBe	VE OWFL	VE OWFL

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FIGURES

1 REVISED INTERNATIONAL HERRING LARVAL SURVEY (IHLS) HEATMAP FIGURES

1.1.1 For the purposes of informing the assessment of potential impacts on spawning herring, data from the International Herring Larval Surveys (IHLS) were interrogated. Figures showing the herring eggs and larvae densities as heatmaps were submitted as part of the DCO Application in the following documents:

- Volume 6, Part 2, Chapter 6, Fish and Shellfish Ecology [APP-075]; and
- Volume 6, Part 5, Annex 6.3, Spawning Herring Heatmaps - International Herring Larval Survey Data [APP-124].

1.1.2 At the time of submission, much of the 2020-2022 IHLS data, were missing data relating to the distances travelled by the survey vessels. Following the submission of the DCO Application, the Applicant was ~~has since been~~ made aware of a suitable way to extrapolate and interpret these data without this information. This calculation of larval densities was determined by using the following calculation:

$$\text{Larvae density/m2} = \frac{number\ of\ larvae}{volume\ of\ water\ sampled} \text{ x } depth\ of\ sampling\ equipment$$

1.1.3 The figures submitted as part of the DCO Application ~~have now~~were subsequently ~~been~~ revised and submitted to the Planning Inspectorate at Deadline 1 (10.15 Revised International Herring Larval Survey Heat Map Figures [REP1-058].~~and are presented below.~~

1.1.4 Following feedback from the MMO at Deadline 3, Figure 5 and Figure 6, which show behavioural effect contours relative to herring larvae densities, have been revised, to remove the 5dB increment contours, so just the 135dB SELss contours are shown. These have subsequently been submitted to the Planning Inspectorate at Deadline 4.

1.2 REVISED FIGURES FOR VOLUME 6, PART 2, CHAPTER 6, FISH AND SHELLFISH ECOLOGY [APP-075]

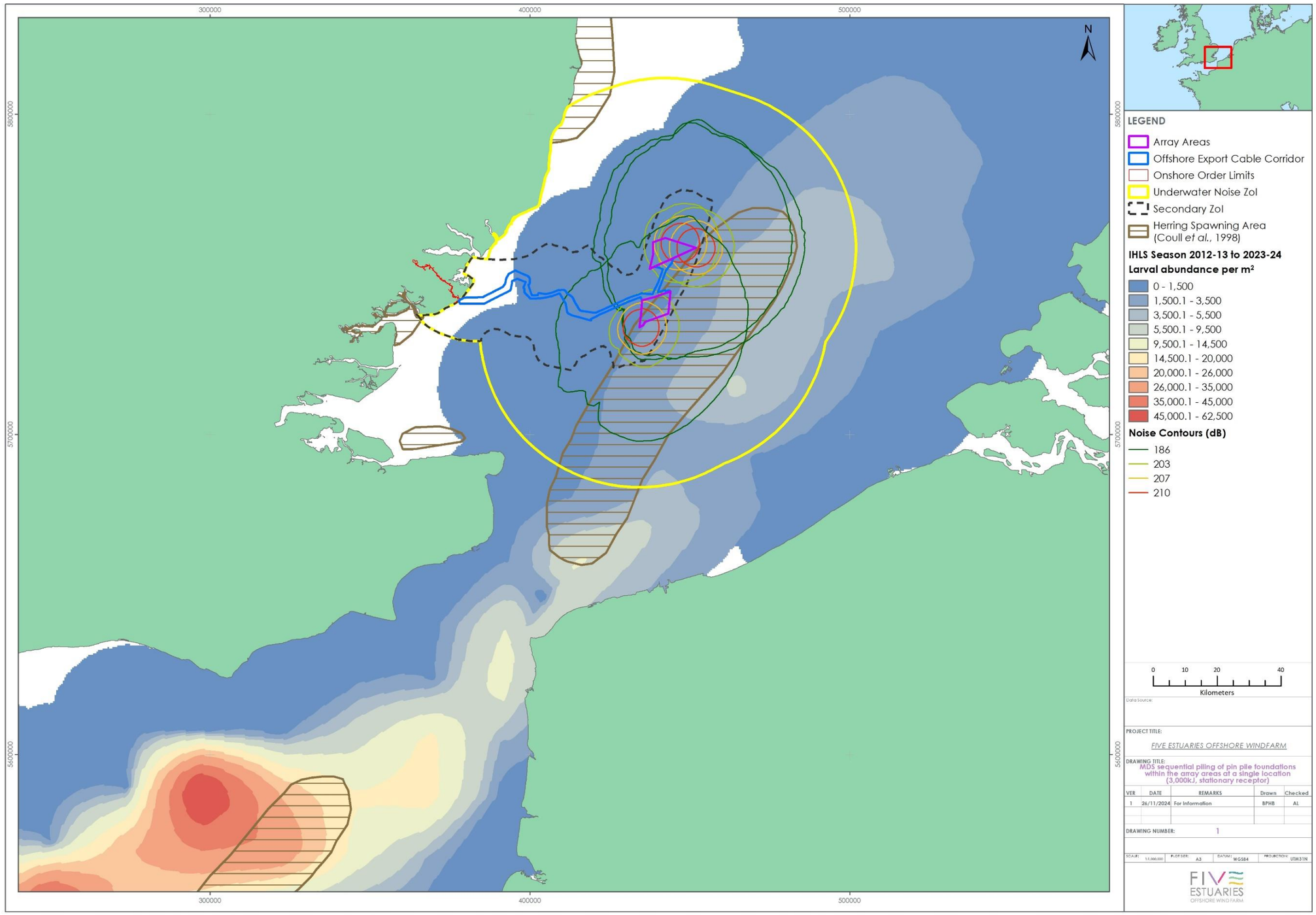

Figure 1: MDS sequential piling of pin pile foundations within the array areas at a single location (stationary receptor)

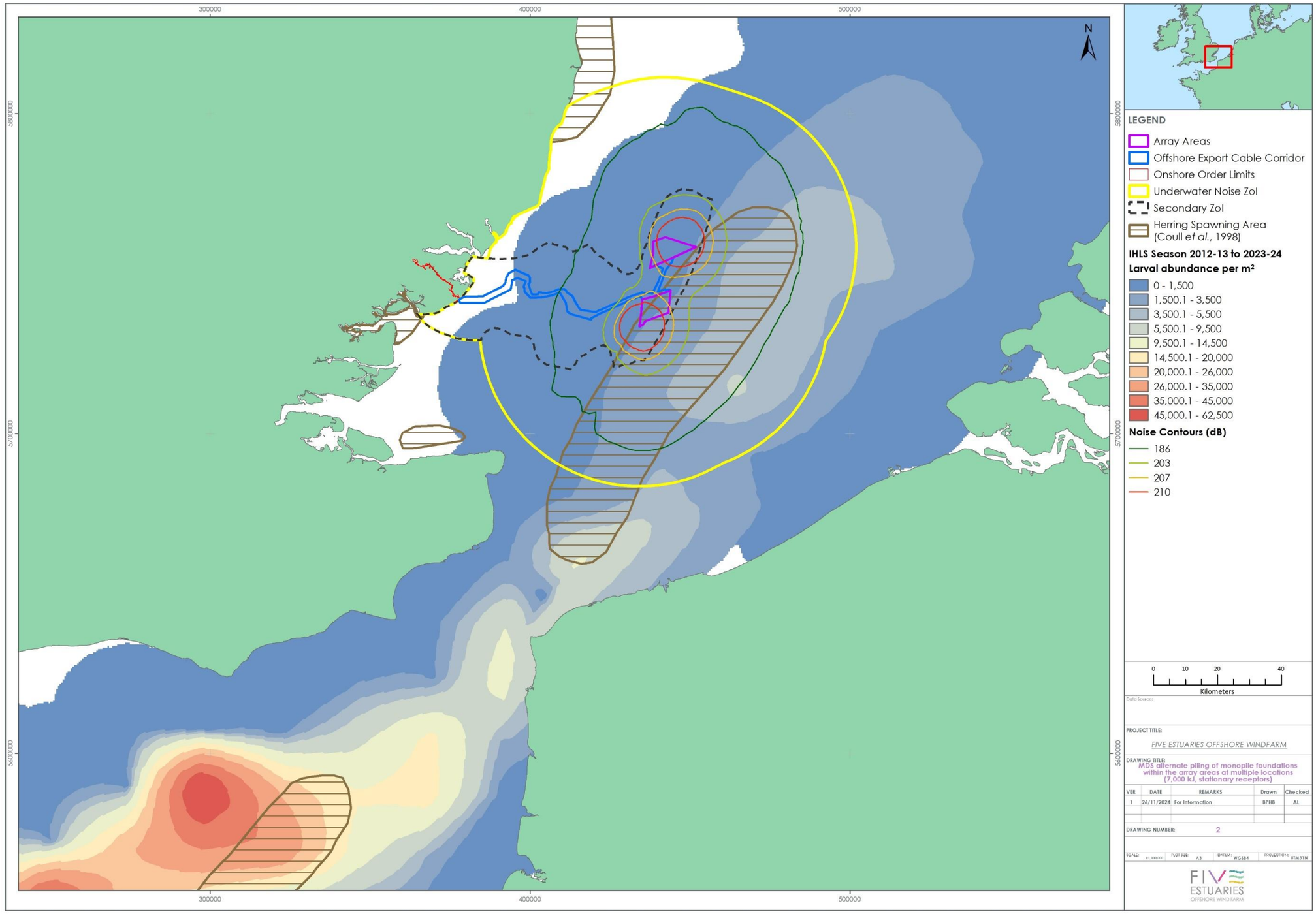

Figure 2: MDS alternate piling of monopile foundations within the array areas at multiple locations (7,000 kJ, stationary receptor)

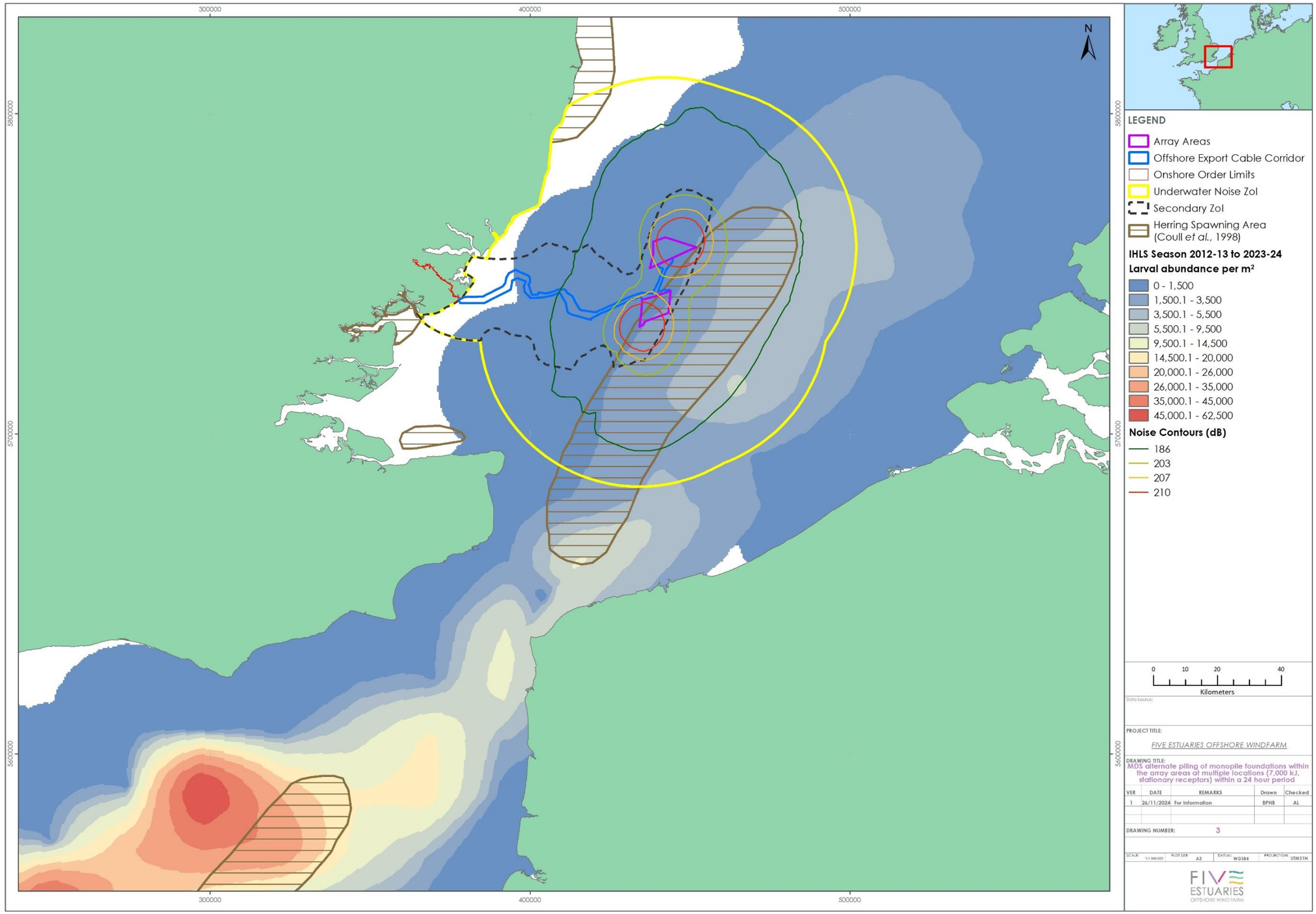

Figure 3: MDS alternate piling of monopile foundations within the array areas at multiple locations (7,000 kJ, stationary receptors) within a 24-hour period

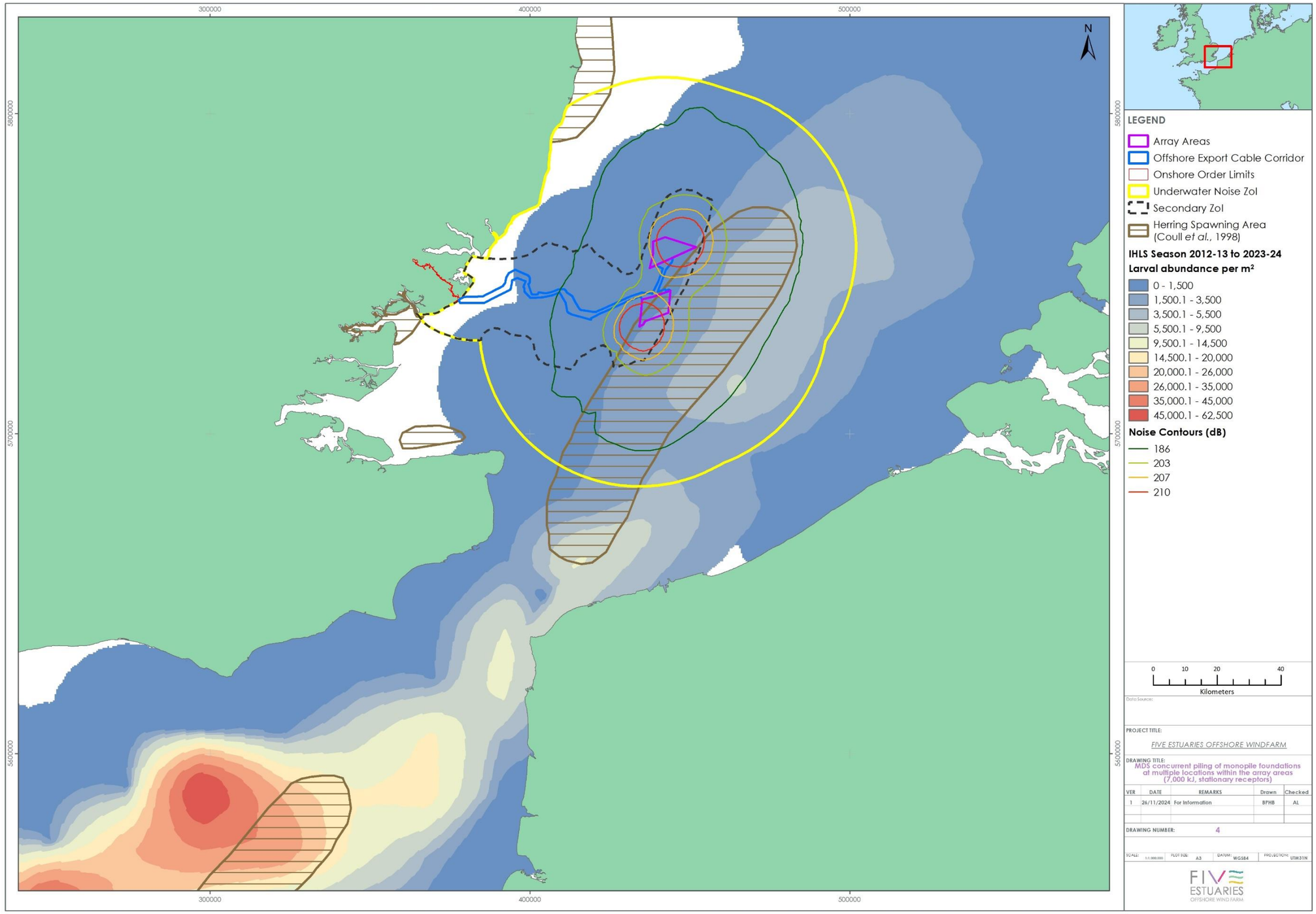

Figure 4: MDS concurrent piling of monopile foundations at multiple locations within the array areas (7,000 kJ, stationary receptors)

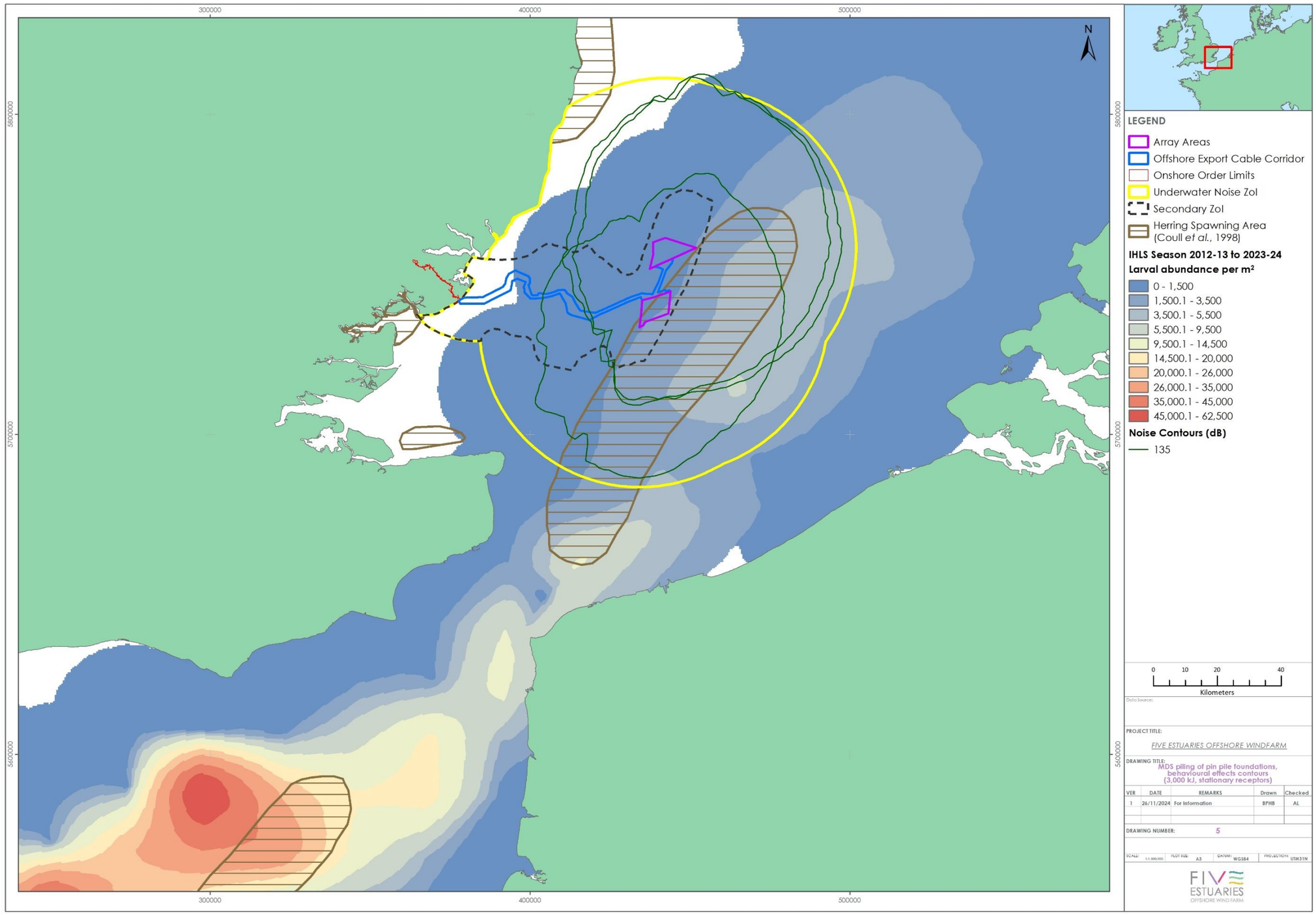

Figure 5: MDS piling of pin pile foundations, behavioural effects contours ~~5 dB increments~~ (3,000 kJ, stationary receptors)

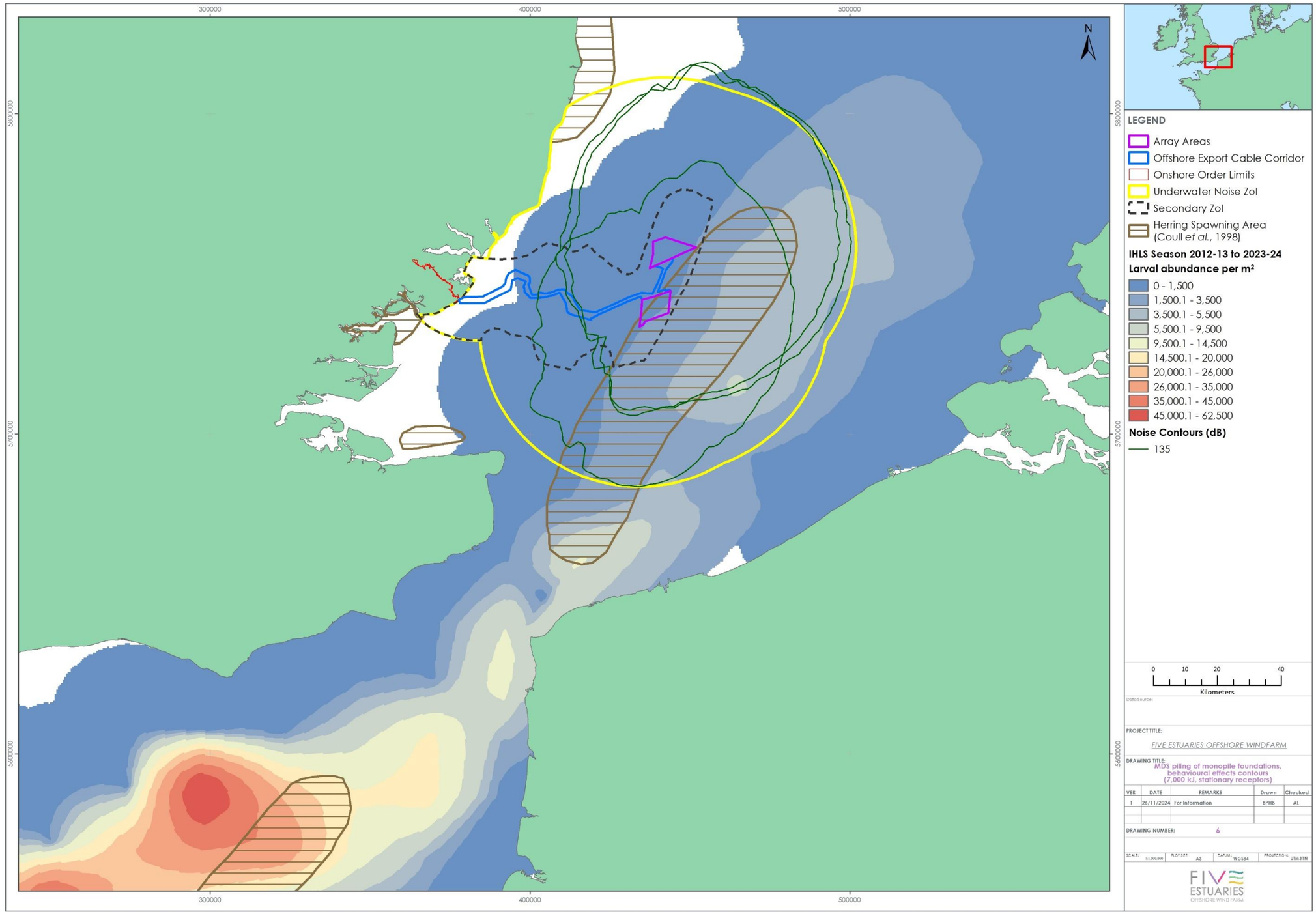

Figure 6: MDS piling of monopile foundations, behavioural effects contours~~5 dB increments~~ (7,000 kJ, stationary receptors)

1.3 REVISED FIGURES FOR VOLUME 6, PART 5, ANNEX 6.3, SPAWNING HERRING HEATMAPS - INTERNATIONAL HERRING LARVAL SURVEY DATA [APP-124].

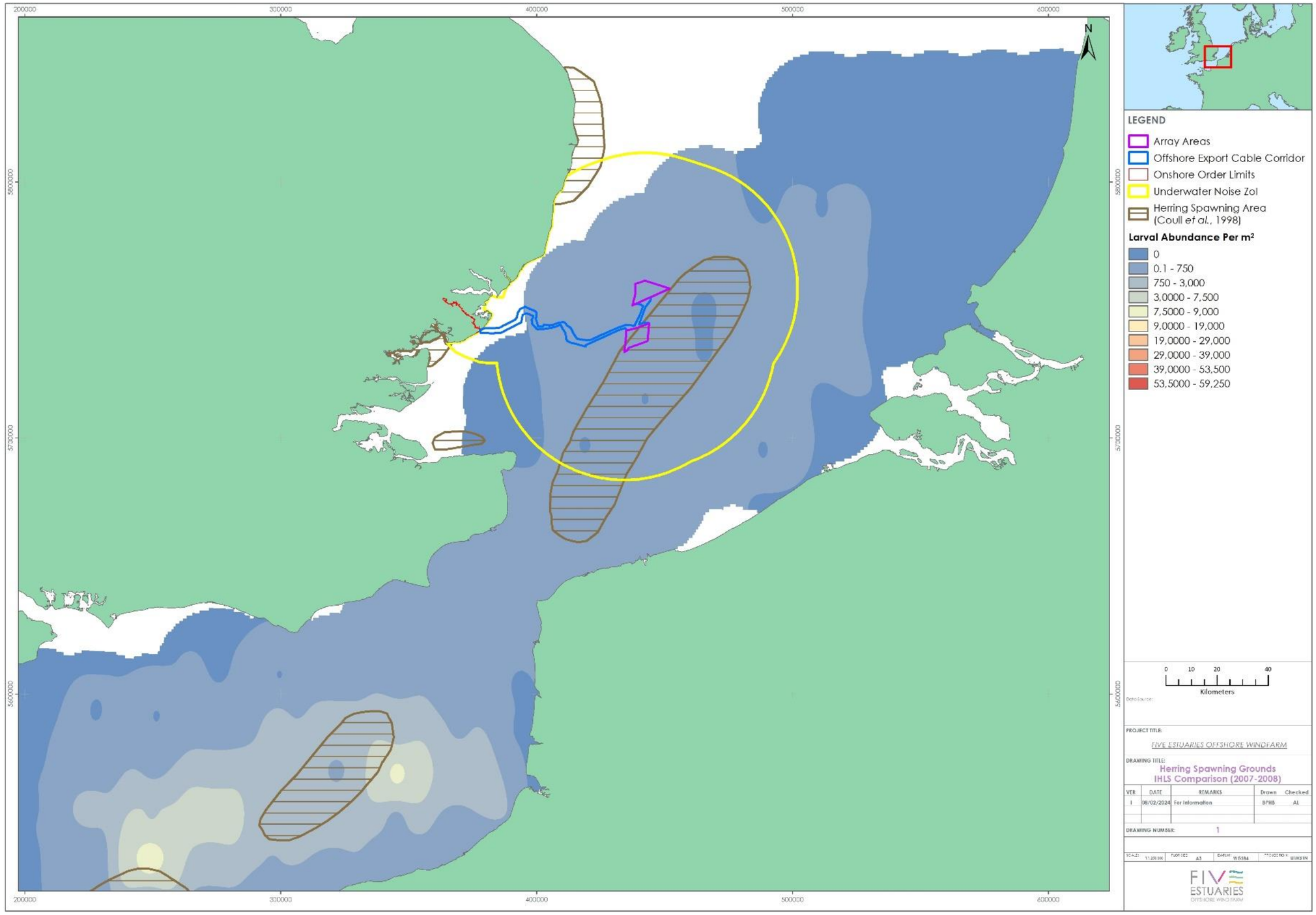

Figure 7: Herring Spawning Grounds IHLS Comparison (2007-2008)

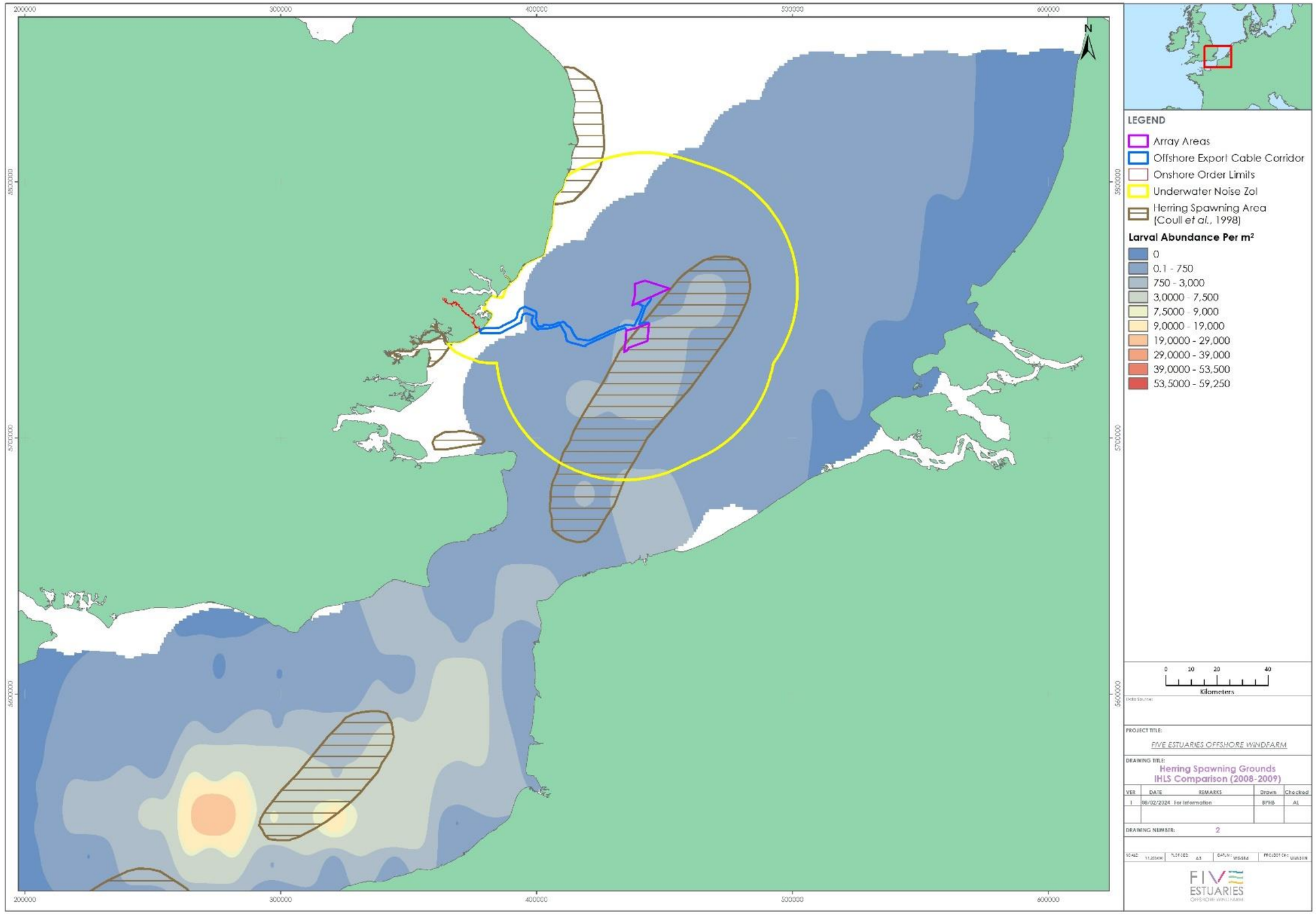

Figure 8: Herring Spawning Grounds IHLS Comparison (2008-2009)

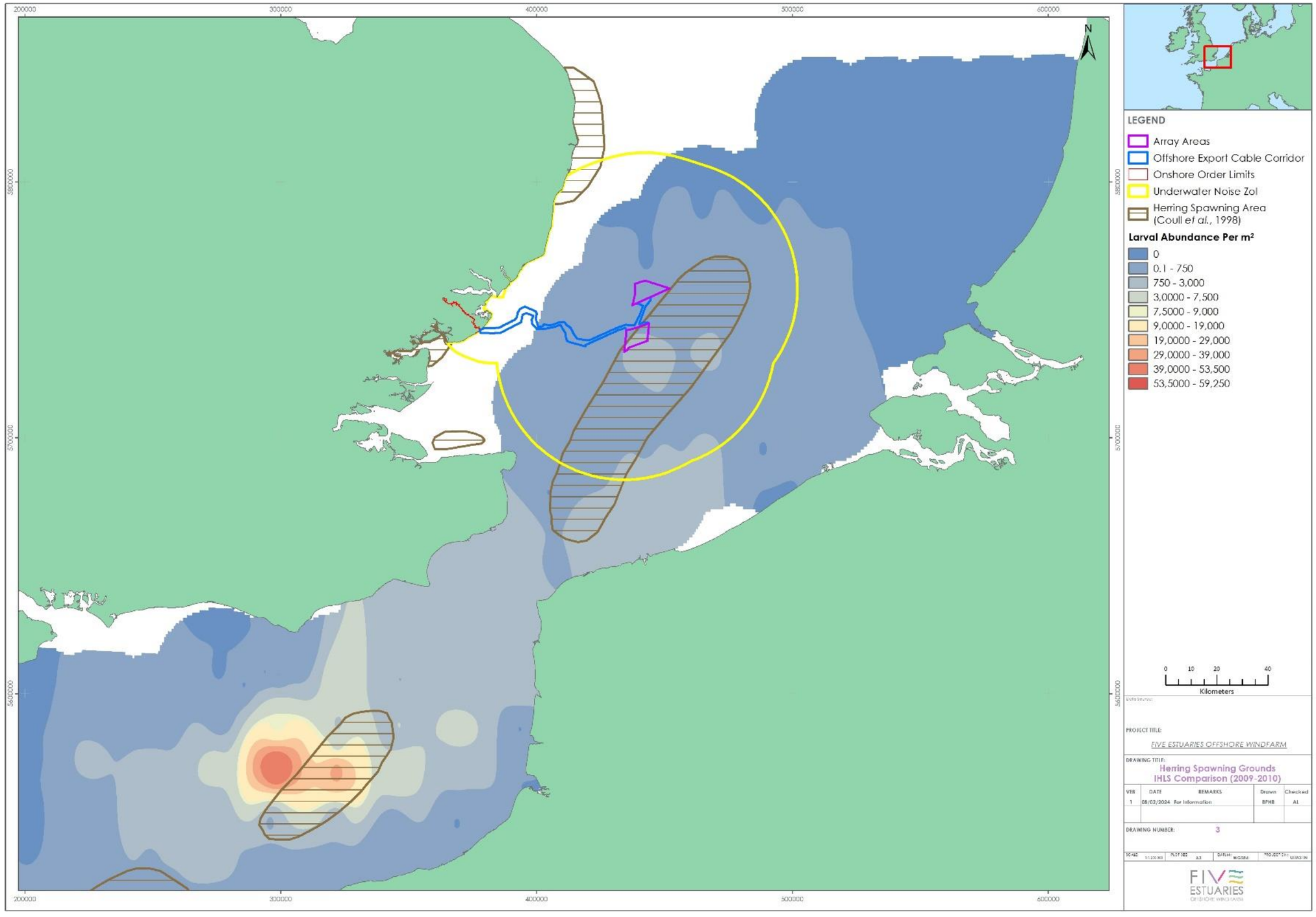

Figure 9: Herring Spawning Grounds IHLS Comparison (2009-2010)

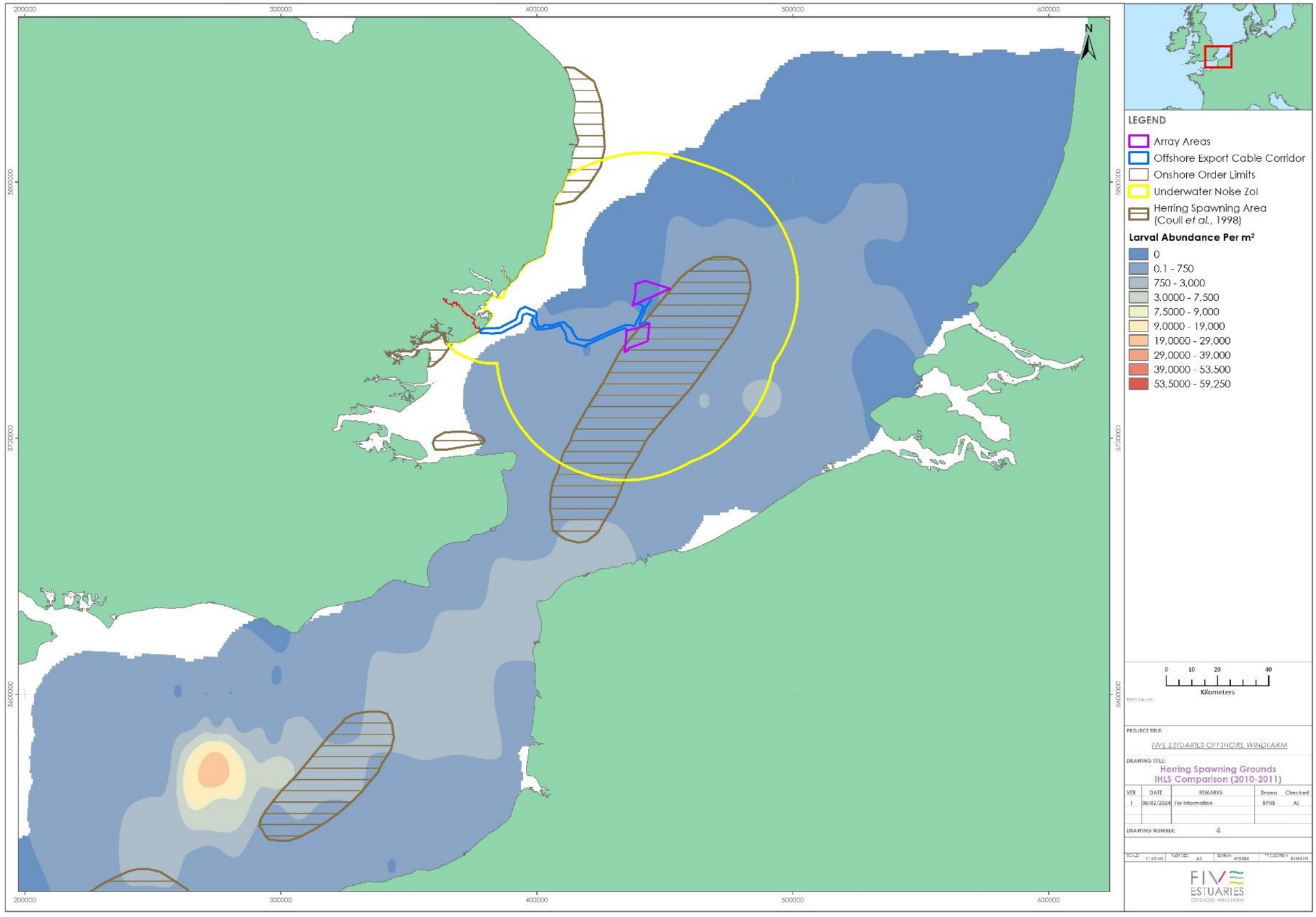

Figure 10: Herring Spawning Grounds IHLS Comparison (2010-2011)

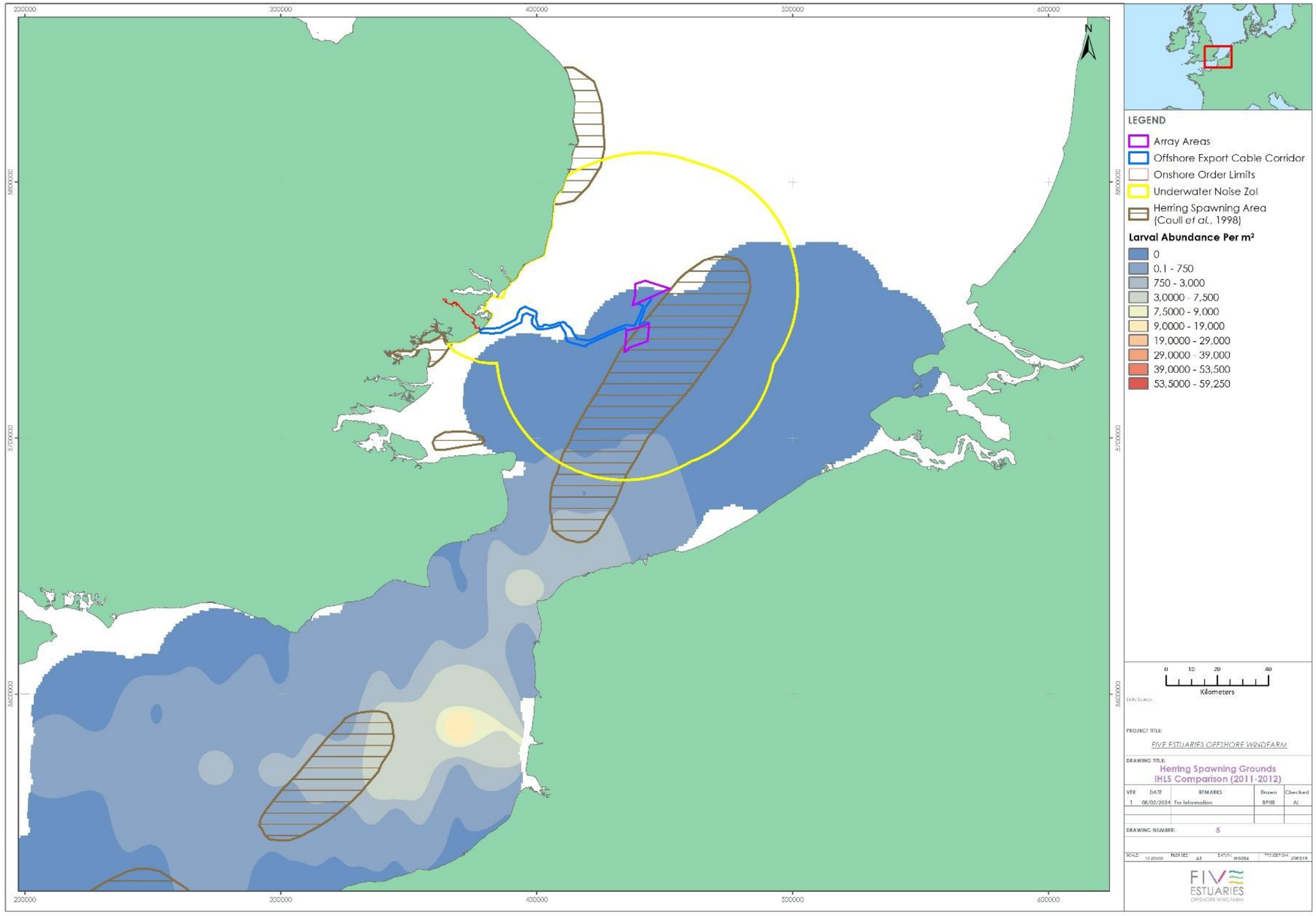

Figure 11: Herring Spawning Grounds IHLS Comparison (2011-2012)

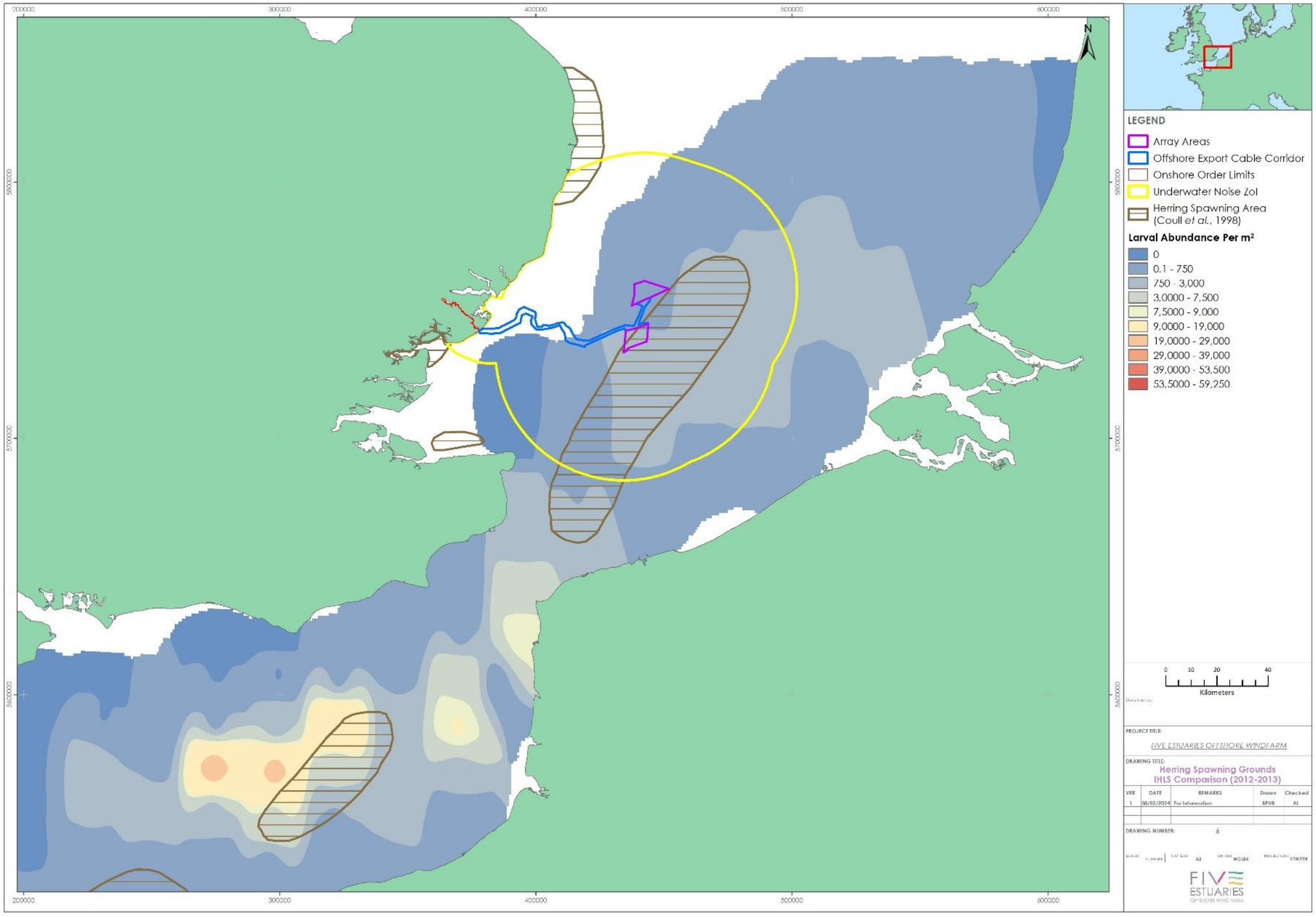

Figure 12: Herring Spawning Grounds IHLS Comparison (2012-2013)

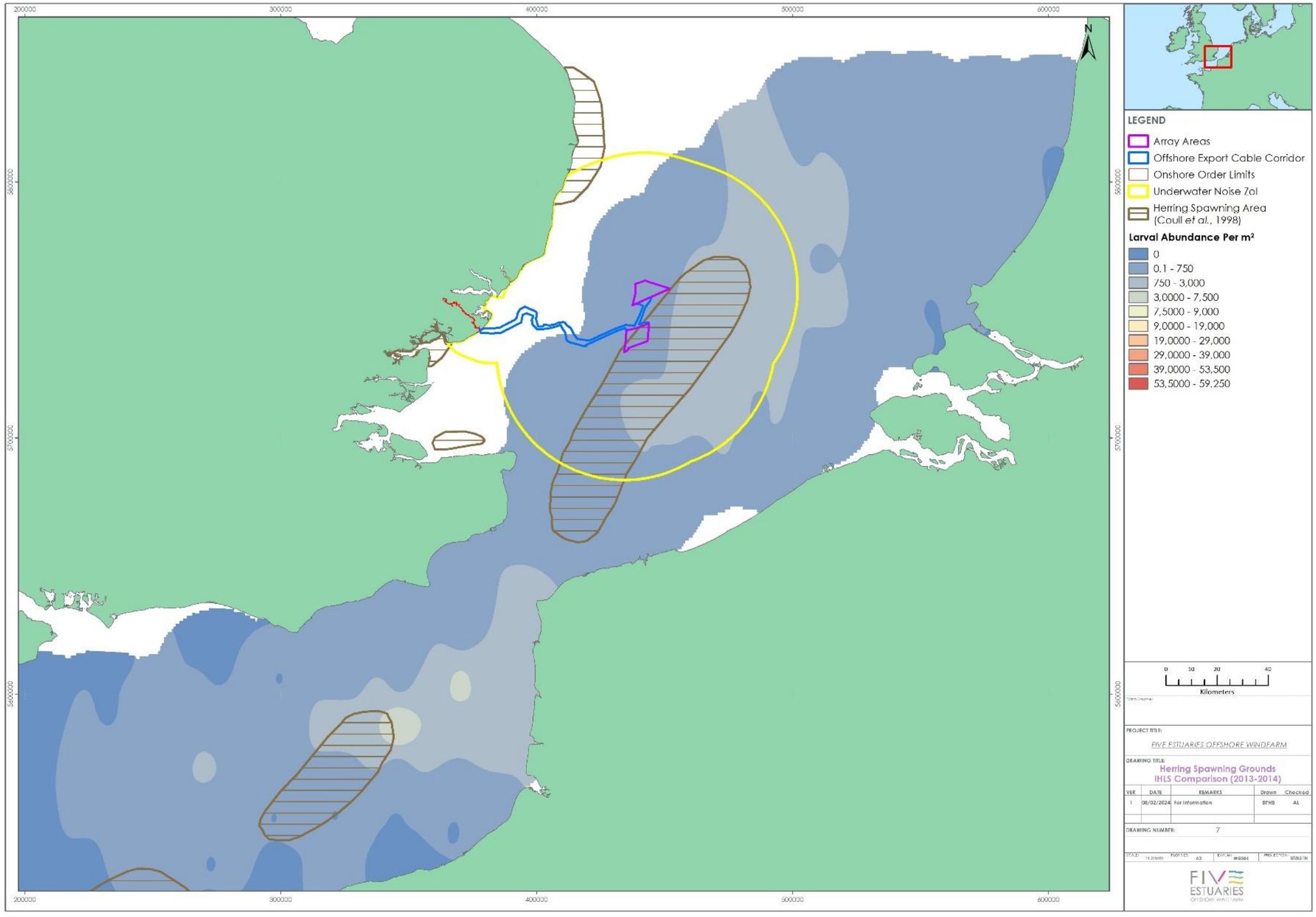

Figure 13: Herring Spawning Grounds IHLS Comparison (2013-2014)

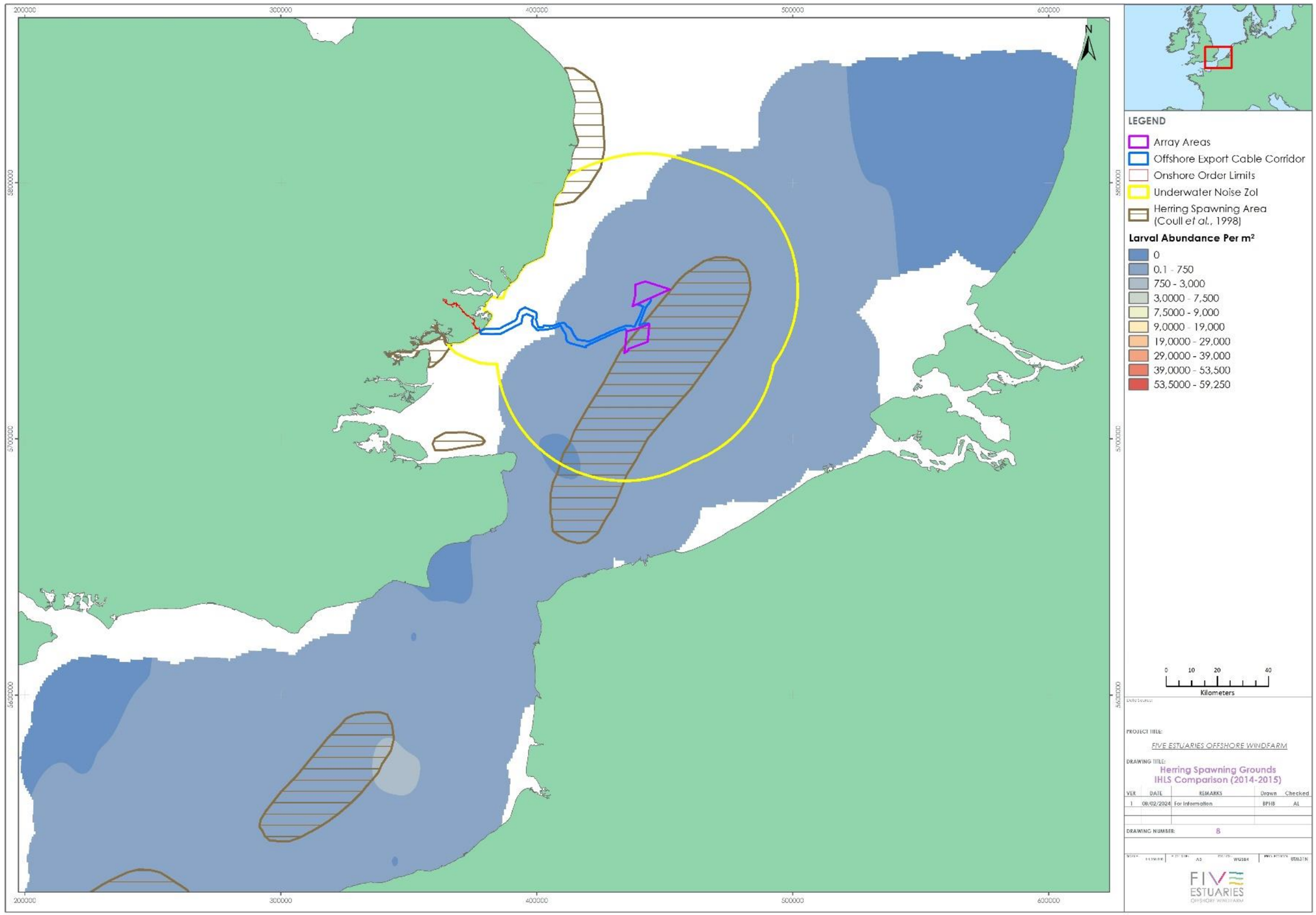

Figure 14: Herring Spawning Grounds IHLS Comparison (2014-2015)

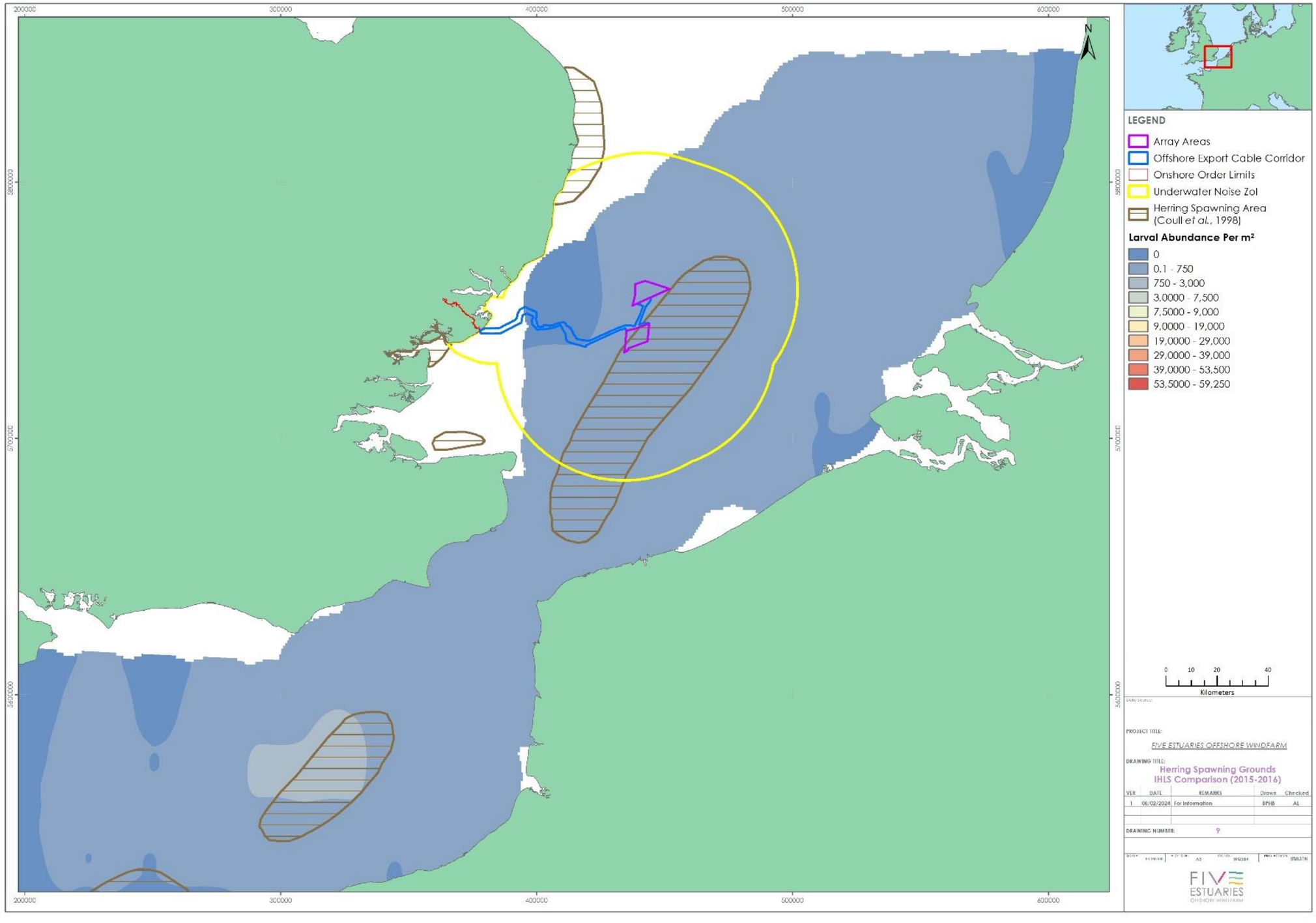

Figure 15: Herring Spawning Grounds IHLS Comparison (2015-2016)

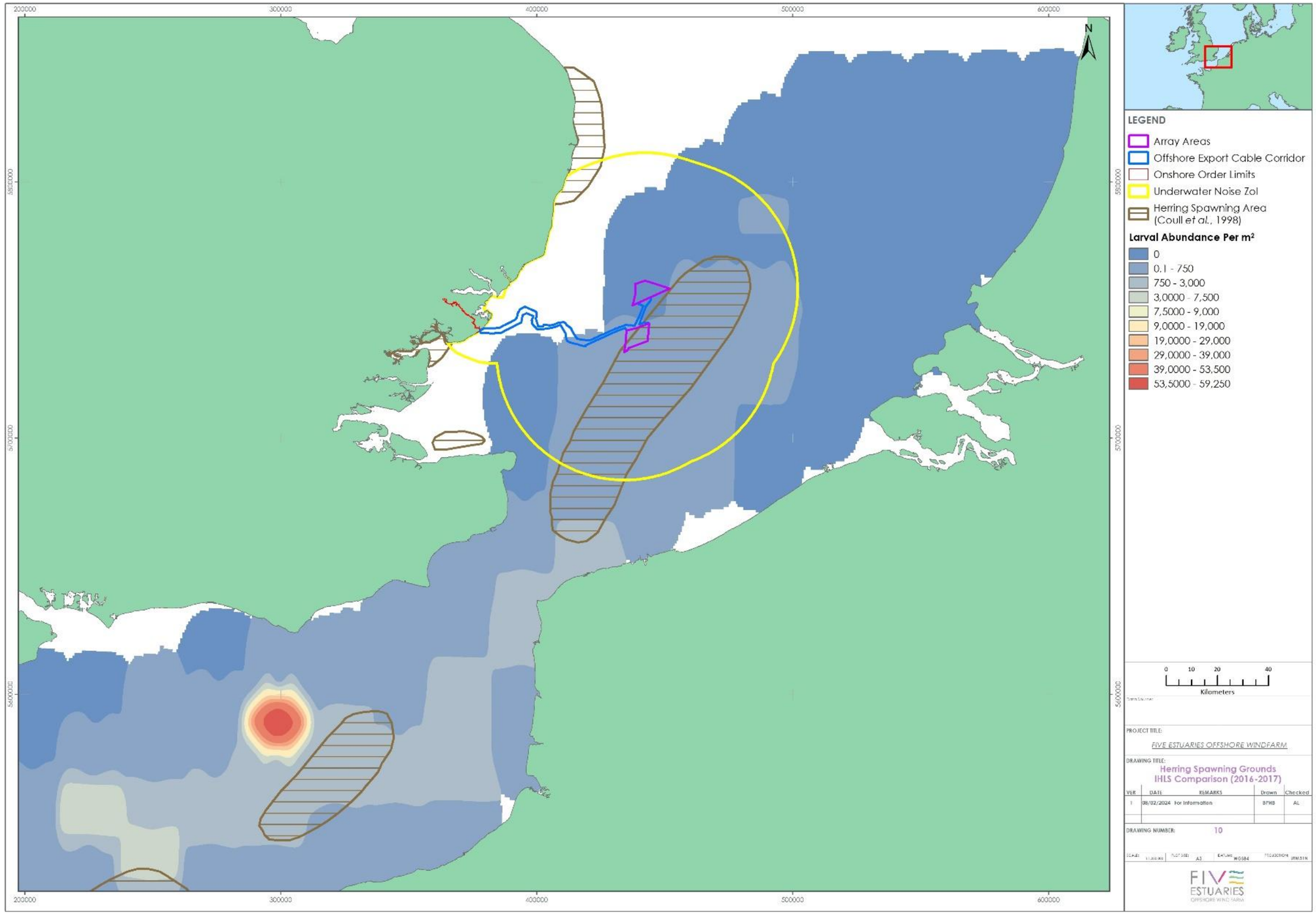

Figure 16: Herring Spawning Grounds IHLS Comparison (2016-2017)

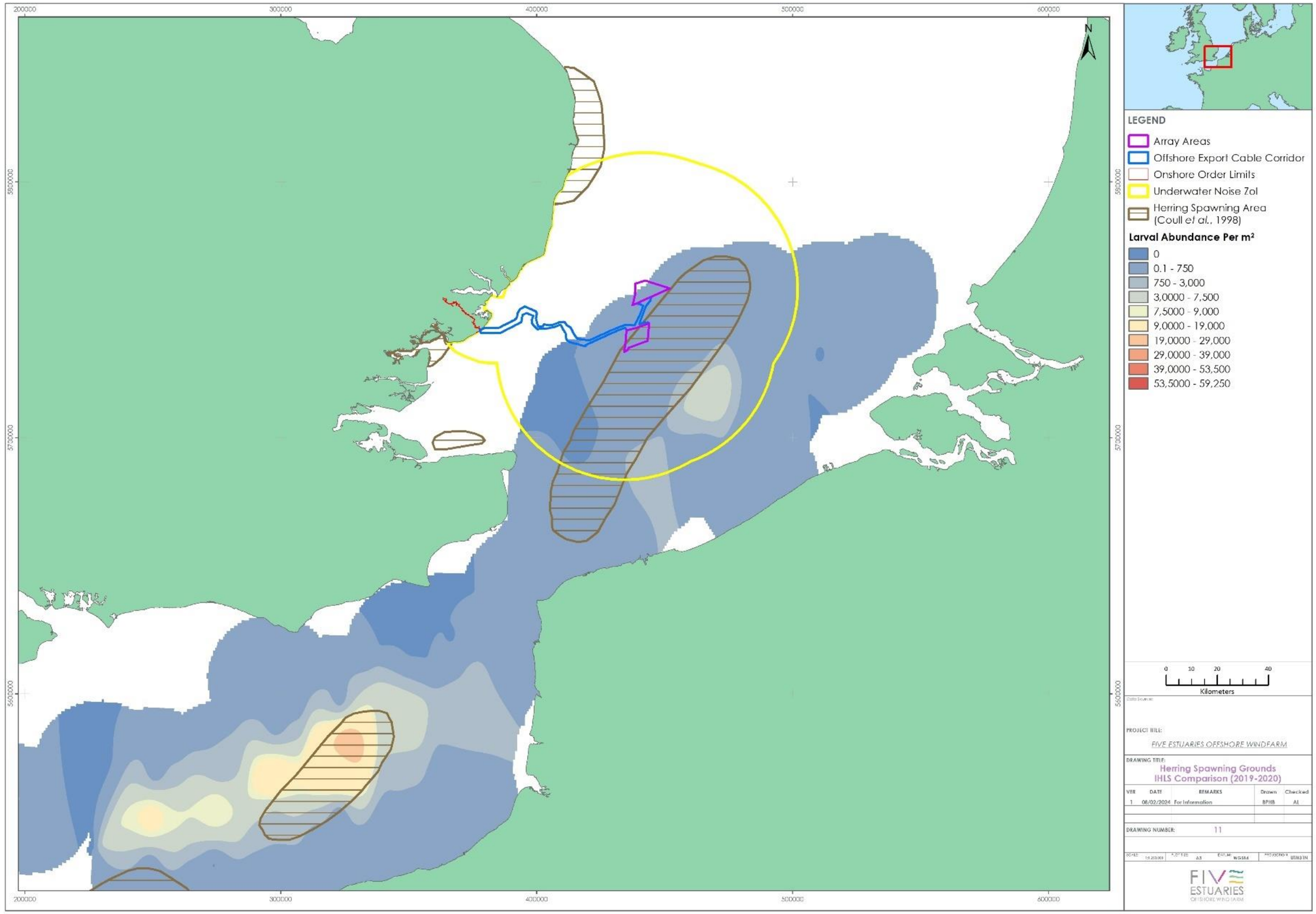

Figure 17: Herring Spawning Grounds IHLS Comparison (2019-2020)

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