

The area involved – **19th** annual report



MARINE AGGREGATE EXTRACTION **2016**



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An industry committed to responsible management through continual development

In March 1999, The Crown Estate and the British Marine Aggregate Producers Association (BMAPA) issued a statement of intent committing to reviewing all dredging licences over a rolling five-year period. Included was a commitment to surrender areas no longer containing useful resources of sand and gravel and to publish an annual report detailing the extent of dredging within the licensed areas.

This year’s report is the 19th in an ongoing series. Its content reflects the continued commitment to this initiative by both The Crown Estate and the members of BMAPA.

This report contains summary information relating to The Crown Estate area of seabed licensed, dredged and surrendered during 2016 based on GIS data and from analysis of dredger Electronic Monitoring System records. Information on dredged area and intensity has been derived from variable grid analysis.

A set of regional charts has been prepared to show the extent and intensity of dredging operations. Additional facts and figures on marine aggregate extraction activity by region are also presented.

The figures for the active dredge area – the area actually available to be dredged at any one time – have been updated for 2016. While the limits of these areas are not presented on the charts associated with this report, detailed regional zoning plans (updated on a bi-annual basis) are available from either The Crown Estate or BMAPA websites, or by contacting the addresses on the reverse of this report.

During the second half of 2012, dredging operators were required to be fully compliant with the new Marine Licensing regime. For those areas which were licensed prior to the mid 1990s this required the delivery of Short Term Marine Licence Applications supported by Environmental Impact Assessments to ensure the continuation of dredging operations. Among the conditions of these licences was the limitation of operations to no greater than the maximum historic dredge footprint (since 1993), resulting in a temporary reduction of the permitted extent. The artificially small area of seabed licensed described in this report between 2012 and 2014 was largely the result of this condition being imposed on older dredging areas, and was mostly reversed following successful applications for 15 year full term renewals by 2015.

Summary information

- A total of 17.94 million tonnes of sand and gravel were dredged from Crown Estate licences in England and Wales during 2015 (18.82 million tonnes in 2015)
- The total area of seabed licensed in 2016 increased to 934km² (932km² in 2015)
- Dredging took place within 87.53km², 9.37 per cent of the licensed area, compared with 82.67km² (8.87 per cent) in 2015
- The area of seabed dredged for more than 1 hour 15 minutes per year (high intensity – red on charts) increased to 7.52km² (7.37km² in 2015)
- 90 per cent of dredging from Crown Estate licences took place from an area of 33.92km² (31.58km² in 2015).





Summary statistics for 2016

Region	Total area licensed during 2016 (km²)	Total active dredge area for 2016 (km²) ^{*1}	Total area dredged during 2016 (km²)
Humber	230.28	133.95	18.27
East Coast	212.87	127.27	22.99
Thames	78.13	53.01	10.34
East English Channel	113.50	33.78	14.15
South Coast	111.32	53.19	14.23
South West	101.50	19.36	6.03
North West	86.65	31.81	1.52
Total (km²)	934.25	452.37	87.53

Area of seabed licensed increased by 2km² during 2016

Area of seabed licensed (km²) 2012-2016

Year ^{*3}	2012	2013	2014	2015	2016
0-6nm ^{*4}	192	203	202	295	298
6-12nm ^{*4}	191	233	225	354	336
>12nm ^{*4}	328	303	299	283	300
Total area licensed (km²)	711 ^{*2}	739 ^{*2}	726 ^{*2}	932	934
Total active dredge area (km²)	391	332	332	337	452

Area of seabed dredged increased by 5km² during 2016

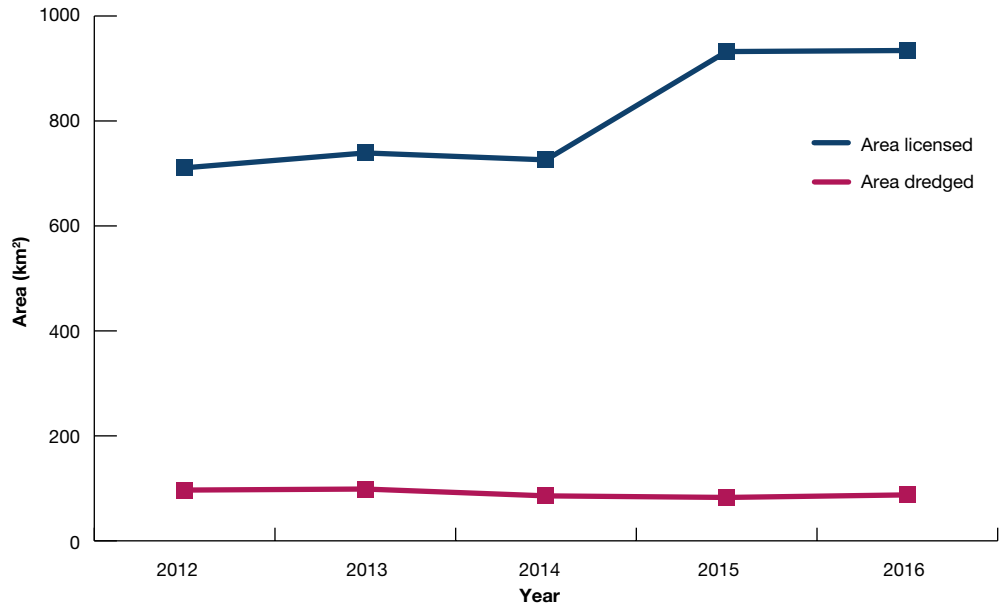
Area of seabed dredged (km²) 2012-2016

Year	2012	2013	2014	2015	2016
0-6nm ^{*4}	42	42	39	39	45
6-12nm ^{*4}	32	31	21	18	22
>12nm ^{*4}	23	26	26	26	21
Total (km²)	97	99	86	83	88
Area dredged >1 hr 15 mins (km²)	8.41	6.75	6.39	7.37	7.52
90 per cent of dredging effort (area in km²)	36.42	39.2	37.3	31.6	33.92

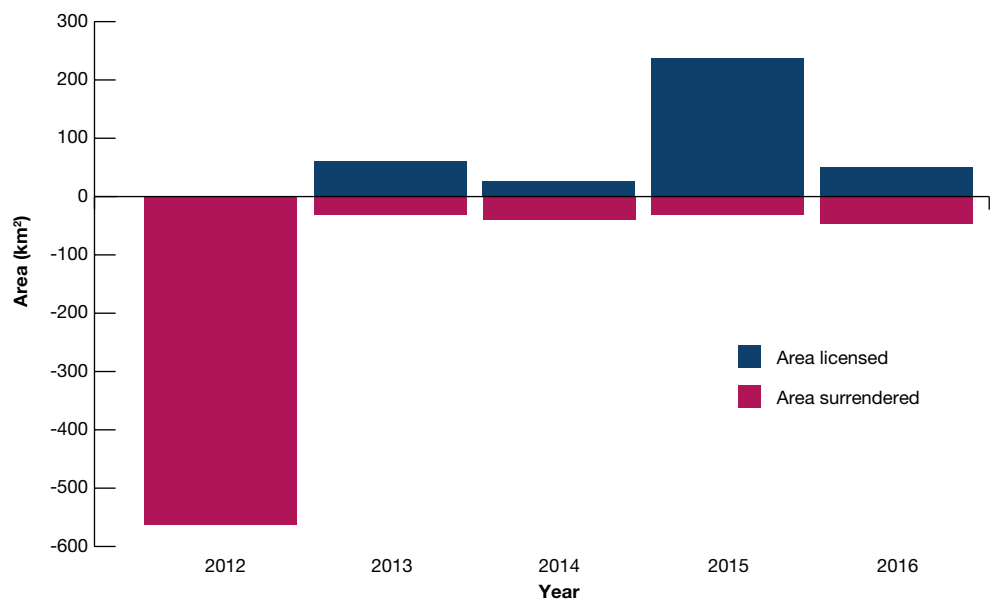
^{*1} Total area actually available to be dredged due to zoning during 2016, calculated on a cumulative basis
^{*2} The areas shown for 2012 - 2014 are artificially low primarily as a result of the Short Term Marine Licensing process during 2012, the effects of which were largely reversed during 2015
^{*3} Annual figures are calculated as of end of the 31st December, and therefore incorporate any changes that may have occurred through the year
^{*4} Based on a standardised 6 and 12 nm (UKHO 01/01/05) to allow for accurate comparison between years



Area of seabed licensed and dredged 2012-2016



New area licensed versus existing area surrendered 2012-2016



Humber region

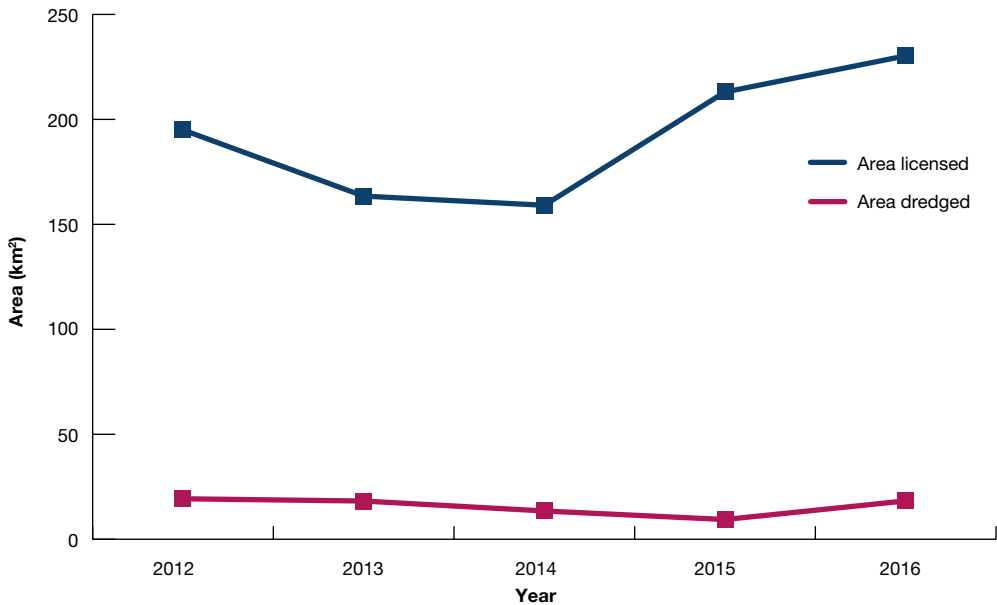
Background

- The region has eight production licences, operated by CEMEX UK Marine Ltd, DEME Building Materials Ltd, Hanson Aggregates Marine Ltd, Tarmac Marine Ltd, Van Oord UK Ltd and Westminster Gravels Ltd for both sand and gravel, principally for use in the construction industry
- During 2016, 1.35 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 4.8 million. In addition, 0.45 million tonnes were dredged for beach nourishment and 0.01 million tonnes were dredged for a pipeline project
- Of the total marine aggregate dredged for construction from the region:
 - 68.9 per cent of the tonnage dredged was delivered to mainland Europe (0.93m)
 - 28.5 per cent of the tonnage dredged was delivered to the Humber and Northeast (0.38m)
 - 2.6 per cent of the tonnage dredged was delivered to the Thames Estuary (0.04m)

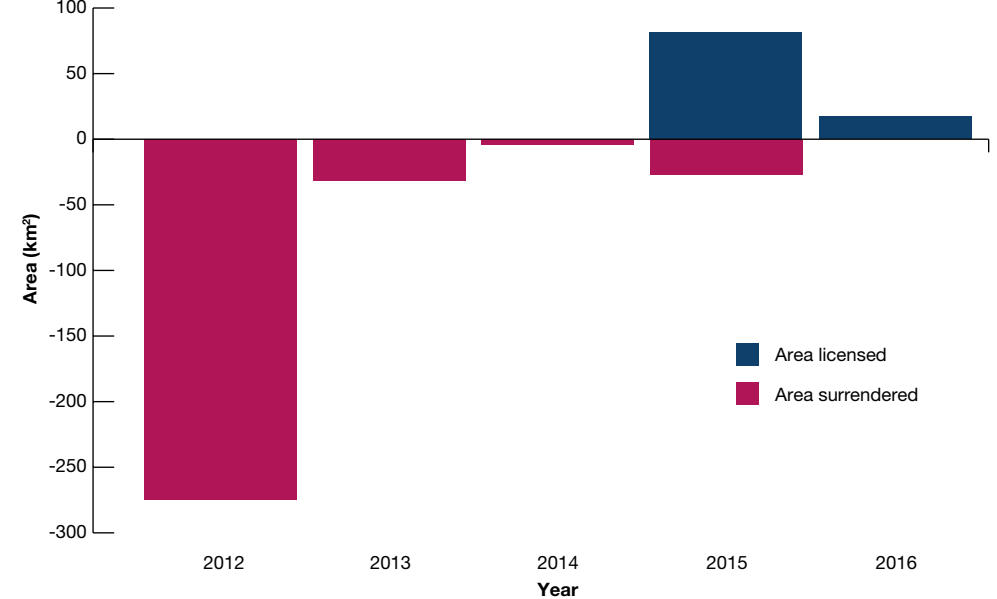
Regional statistics

- The licensed area in the region was 230.28km²
- The total area actually available to be dredged within the region (due to zoning) was 133.95km²
- Dredging took place within 18.27km², 7.93 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 0.14km², 7.56 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 8.49km²
- During 2016, the area licensed for marine aggregate extraction increased by 17km²

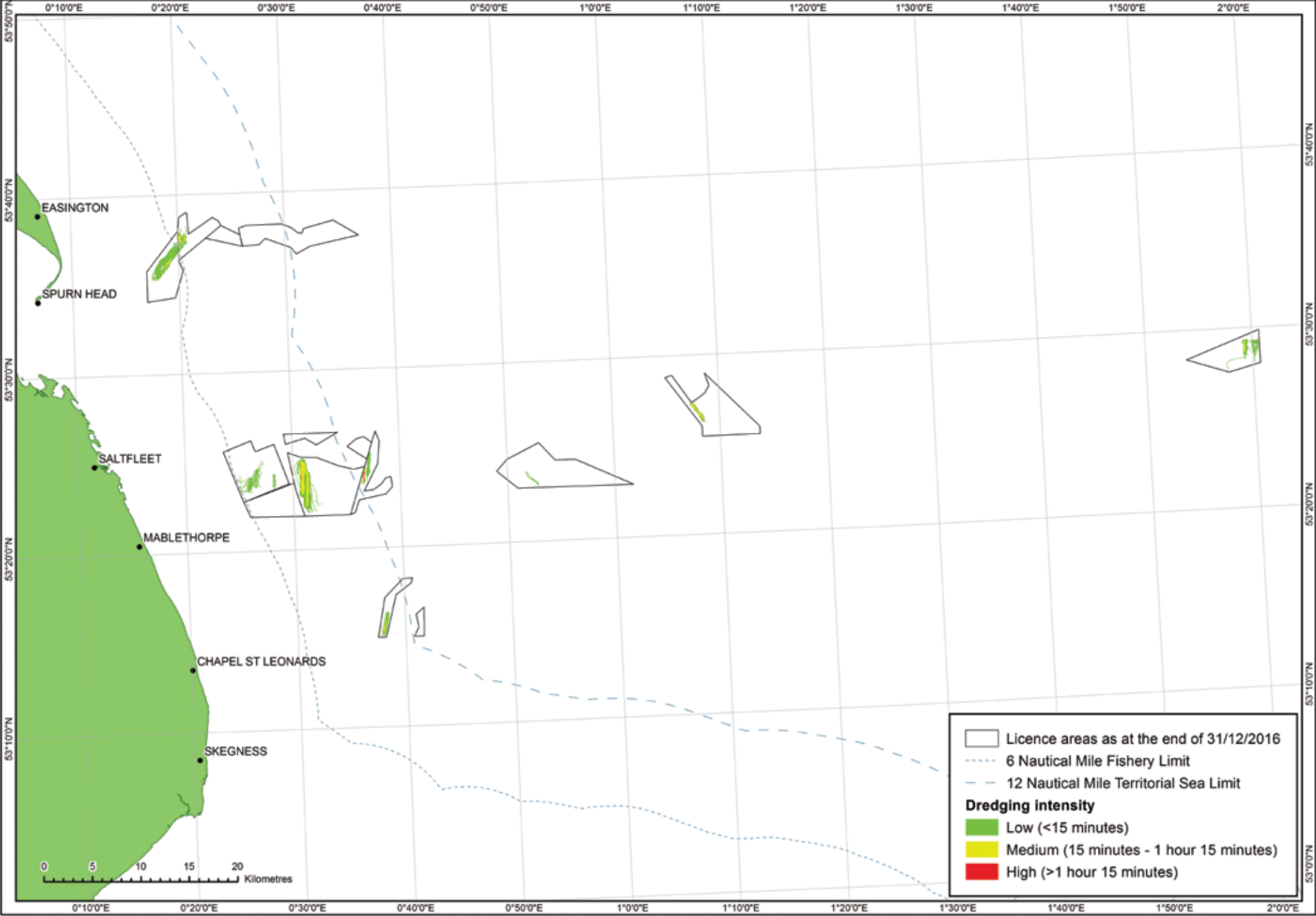
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



East Coast region

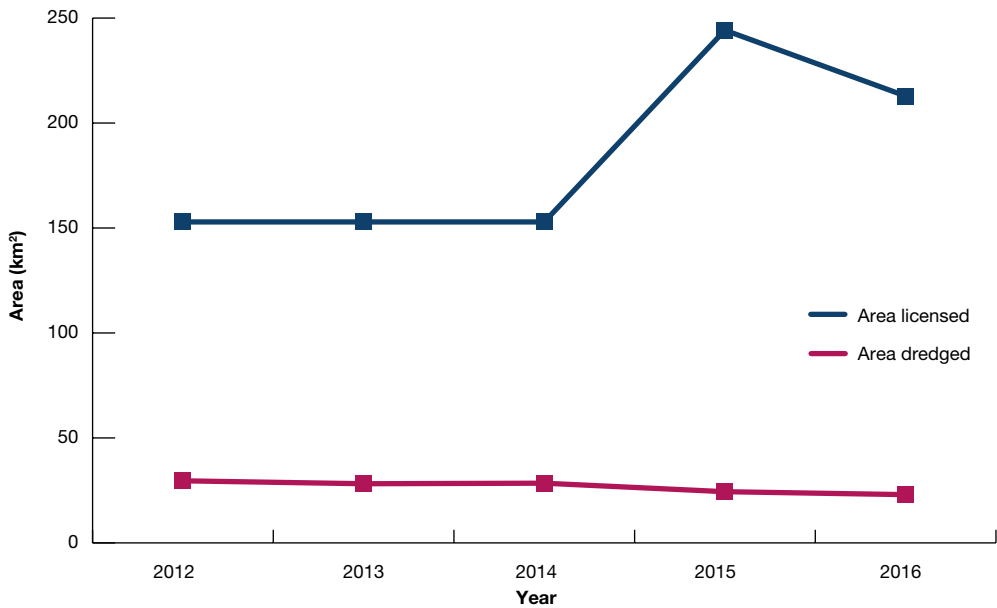
Background

- The East Coast region has 11 production licences, operated by CEMEX UK Marine Ltd, Hanson Aggregates Marine Ltd, Tarmac Marine Ltd and Volker Dredging Ltd for both sand and gravel, principally for use in the construction industry
- During 2016, 4.31 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 9.31 million
- Of the total marine aggregate dredged for construction from the region:
 - 86.5 per cent of the tonnage dredged was delivered to the Thames Estuary (3.73m)
 - 7.4 per cent of the tonnage dredged was delivered to mainland Europe (0.32m)
 - 6.0 per cent of the tonnage dredged was delivered to the Humber and Northeast (0.26m)
 - 0.1 per cent of the tonnage dredged was delivered to the East Coast (<0.1m)

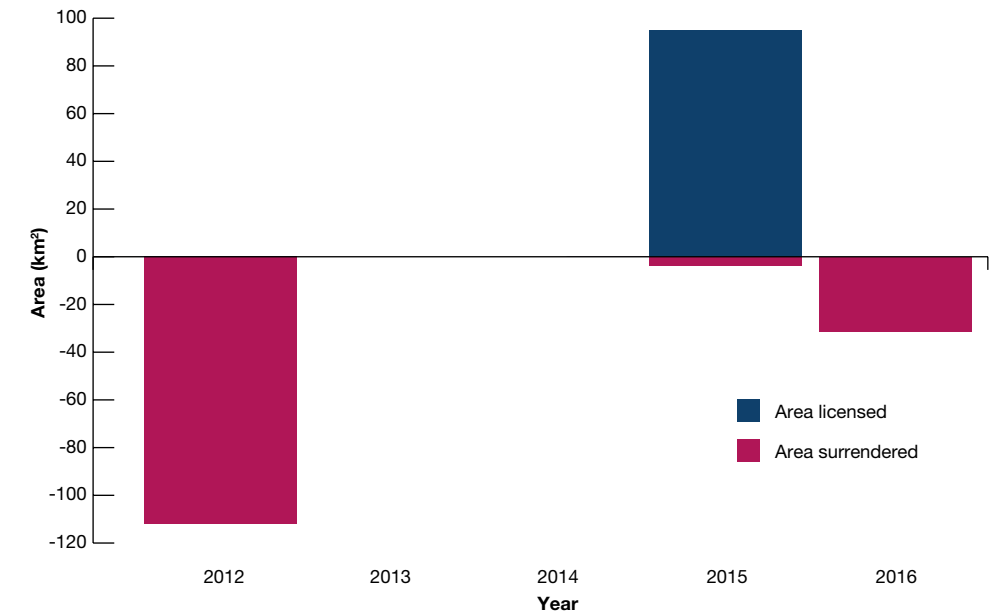
Regional statistics

- The licensed area in the region was 212.87km²
- The total area actually available to be dredged within the region (due to zoning) was 127.27km²
- Dredging took place within 22.99km², 10.80 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 1.58km², 35.58 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 9.24km²
- During 2016, the area licensed for marine aggregate extraction decreased by 31km²

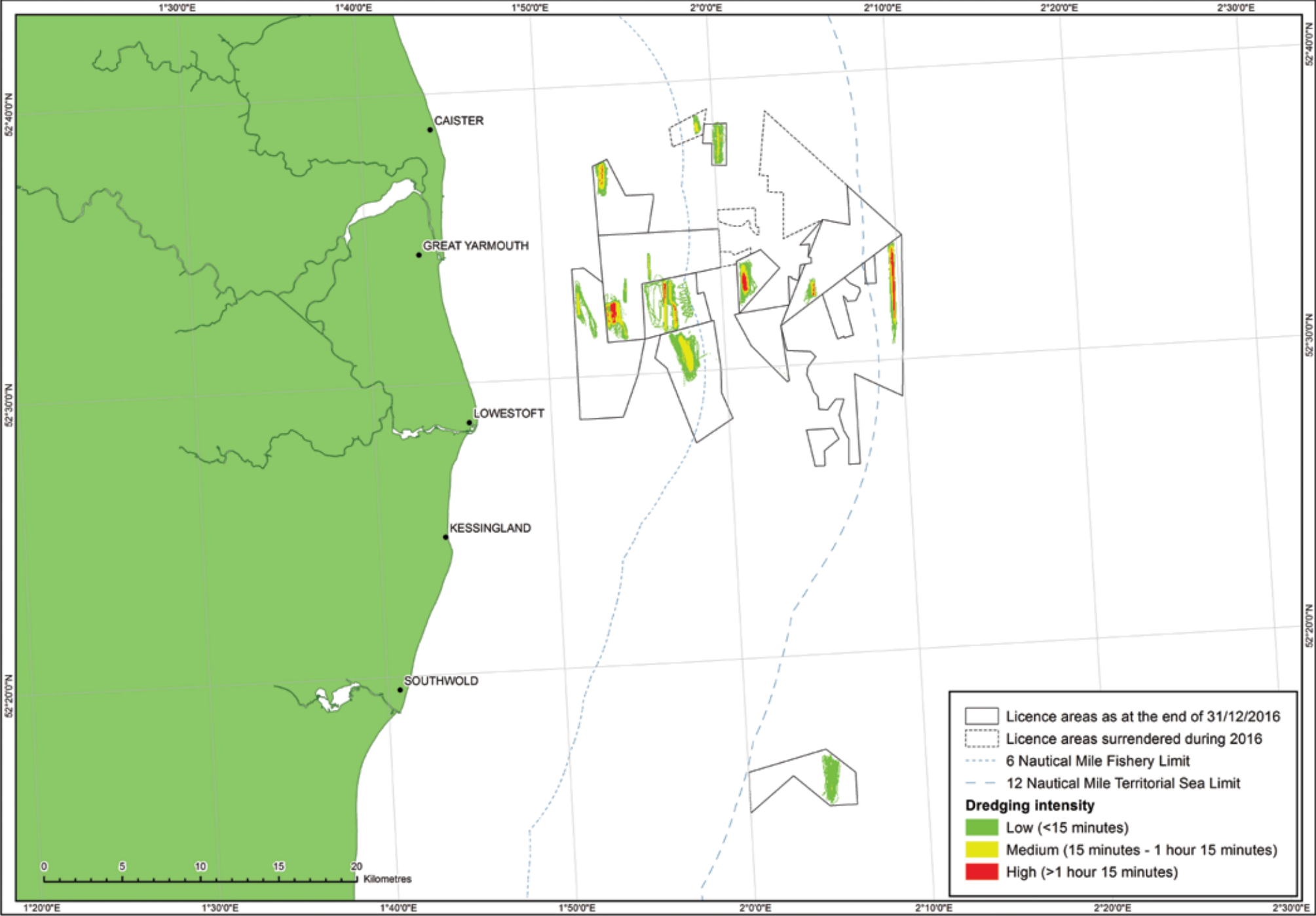
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



Thames Estuary region

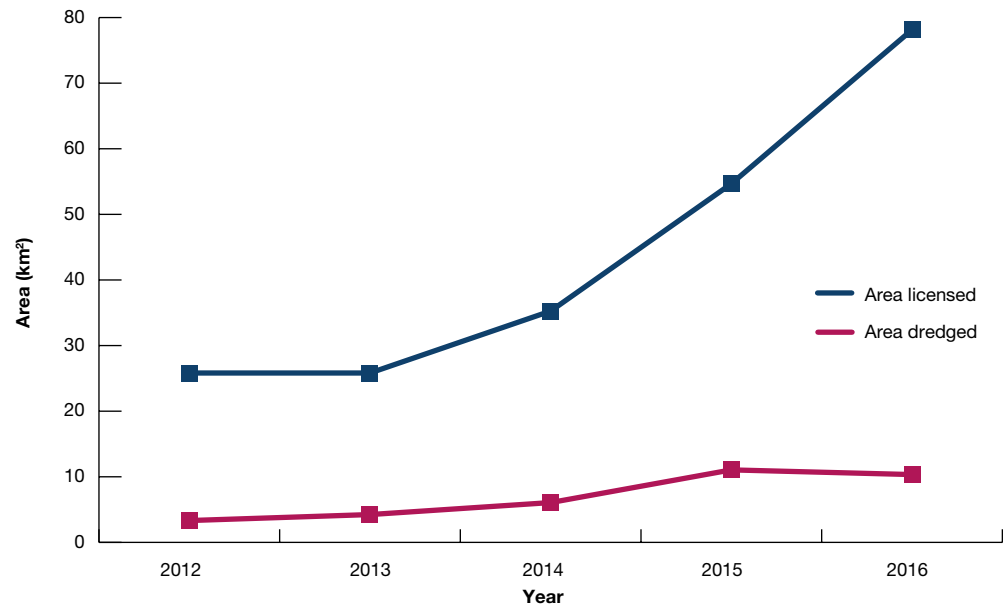
Background

- The Thames region has six production licences, operated by Britannia Aggregates Ltd, CEMEX UK Marine Ltd, Tarmac Marine Ltd and Volker Dredging Ltd for both sand and gravel, principally for use in the construction industry
- During 2016, 1.94 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 3.35 million
- Of the total marine aggregate dredged for construction from the region:
 - 92.0 per cent of the tonnage dredged was delivered to the Thames Estuary (1.78m)
 - 3.0 per cent of the tonnage dredged was delivered to the East Coast (0.06m)
 - 2.5 per cent of the tonnage dredged was delivered to mainland Europe (0.05m)
 - 1.5 per cent of the tonnage dredged was delivered to the Northeast (0.03m)
 - 1.0 per cent of the tonnage dredged was delivered to the South Coast (0.02m)

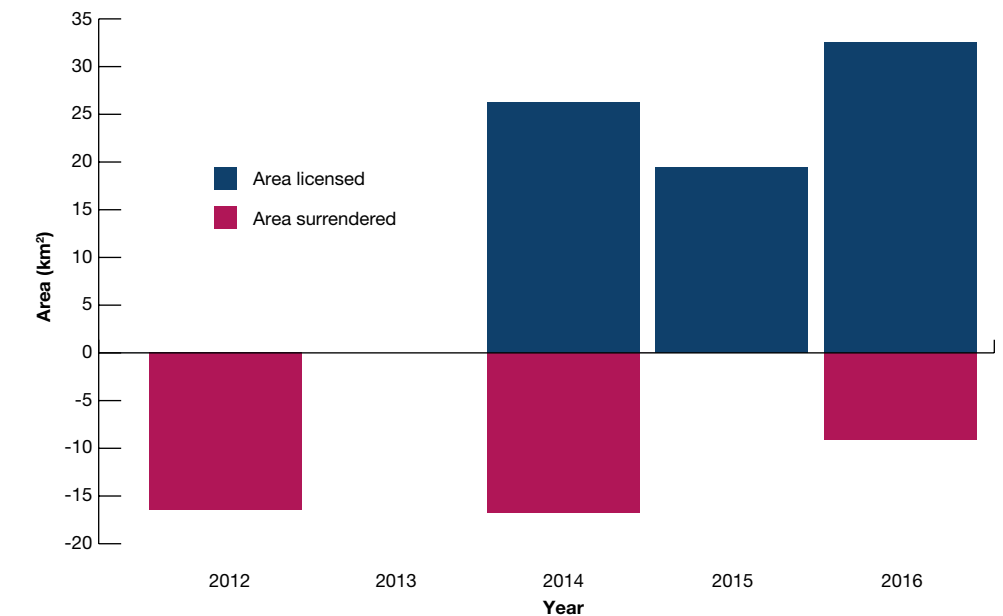
Regional statistics

- The licensed area in the region was 78.13km²
- The total area actually available to be dredged within the region (due to zoning) was 53.01km²
- Dredging took place within 10.34km², 13.23 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 0.50km², 29.81 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 4.42km²
- During 2016, the area licensed for marine aggregate extraction increased by 23km²

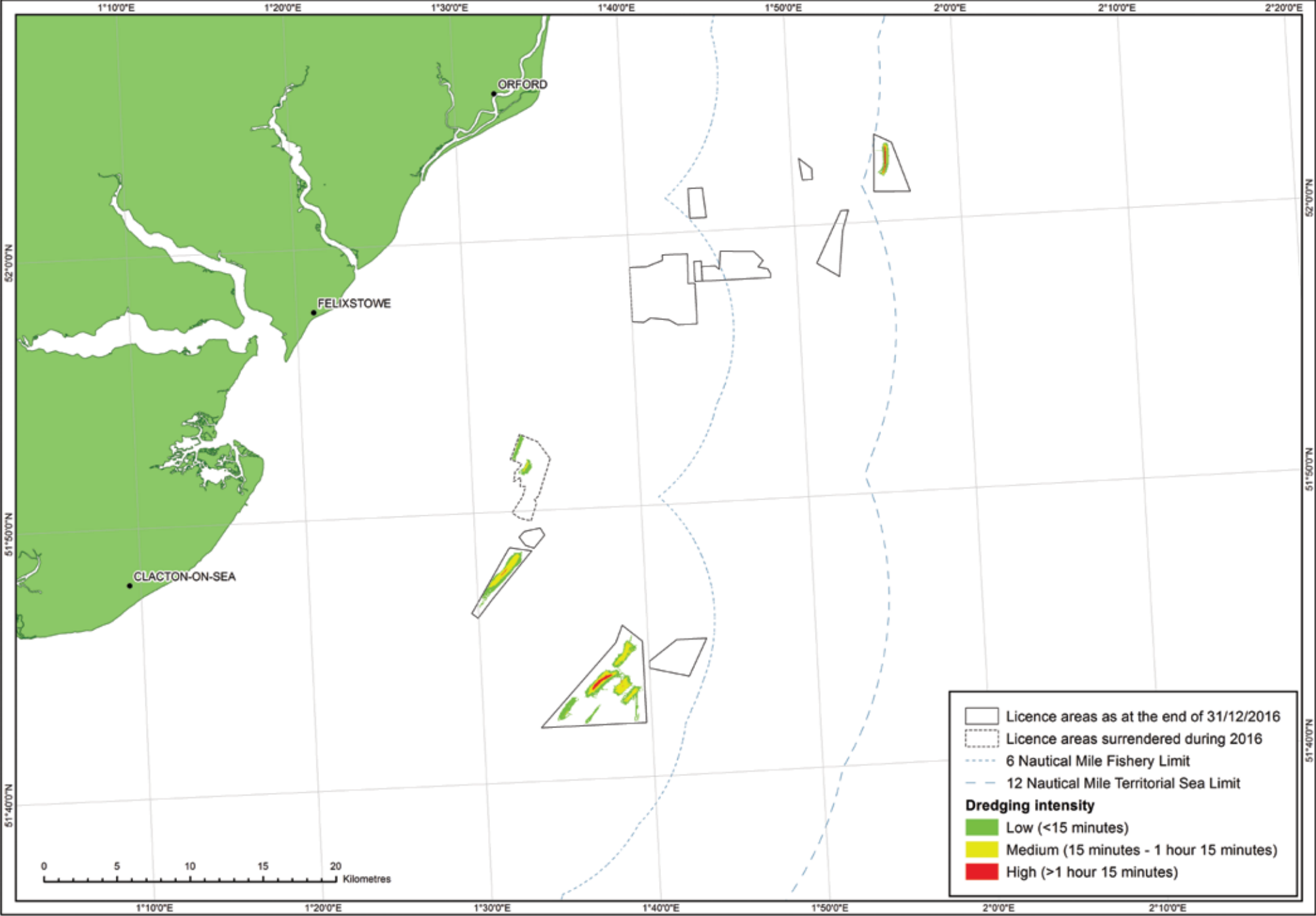
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



East English Channel region

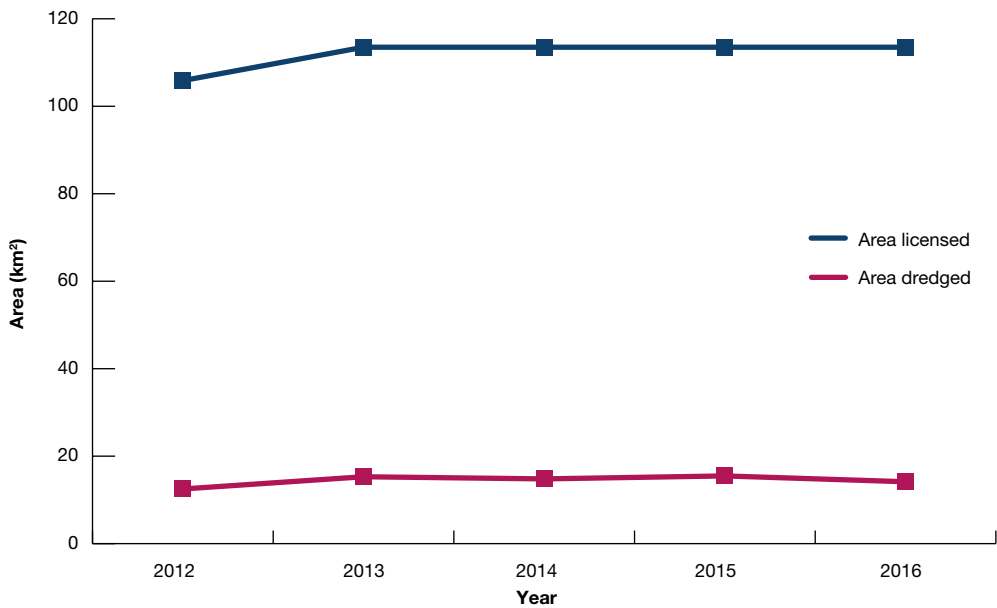
Background

- The East English Channel region has 11 production licences, operated by CEMEX UK Marine Ltd, DEME Building Materials Ltd, Hanson Aggregates Marine Ltd, Tarmac Marine Ltd and Volker Dredging Ltd for sand and gravel, principally for use in the construction industry
- During 2016, 4.65 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 10 million
- Of the total marine aggregate dredged for construction from the region:
 - 65.8 per cent of the tonnage dredged was delivered to the Thames Estuary (3.05m)
 - 31.4 per cent of the tonnage dredged was delivered to mainland Europe (1.46m)
 - 2.3 per cent of the tonnage dredged was delivered to the East Coast (0.11m)
 - 0.5 per cent of the tonnage dredged was delivered to South Coast (0.03m)

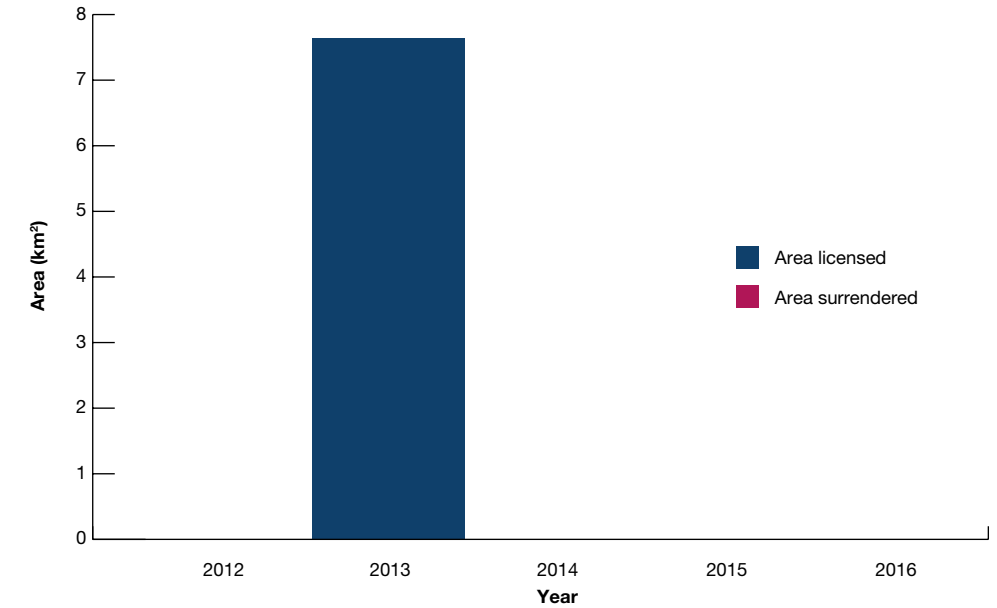
Regional statistics

- The licensed area in the region was 113.50km²
- The total area actually available to be dredged within the region (due to zoning) was 33.78km²
- Dredging took place within 14.15km², 12.47 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 1.96km², 56.46 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 5.46km²
- During 2016, the area licensed for marine aggregate extraction remained unchanged

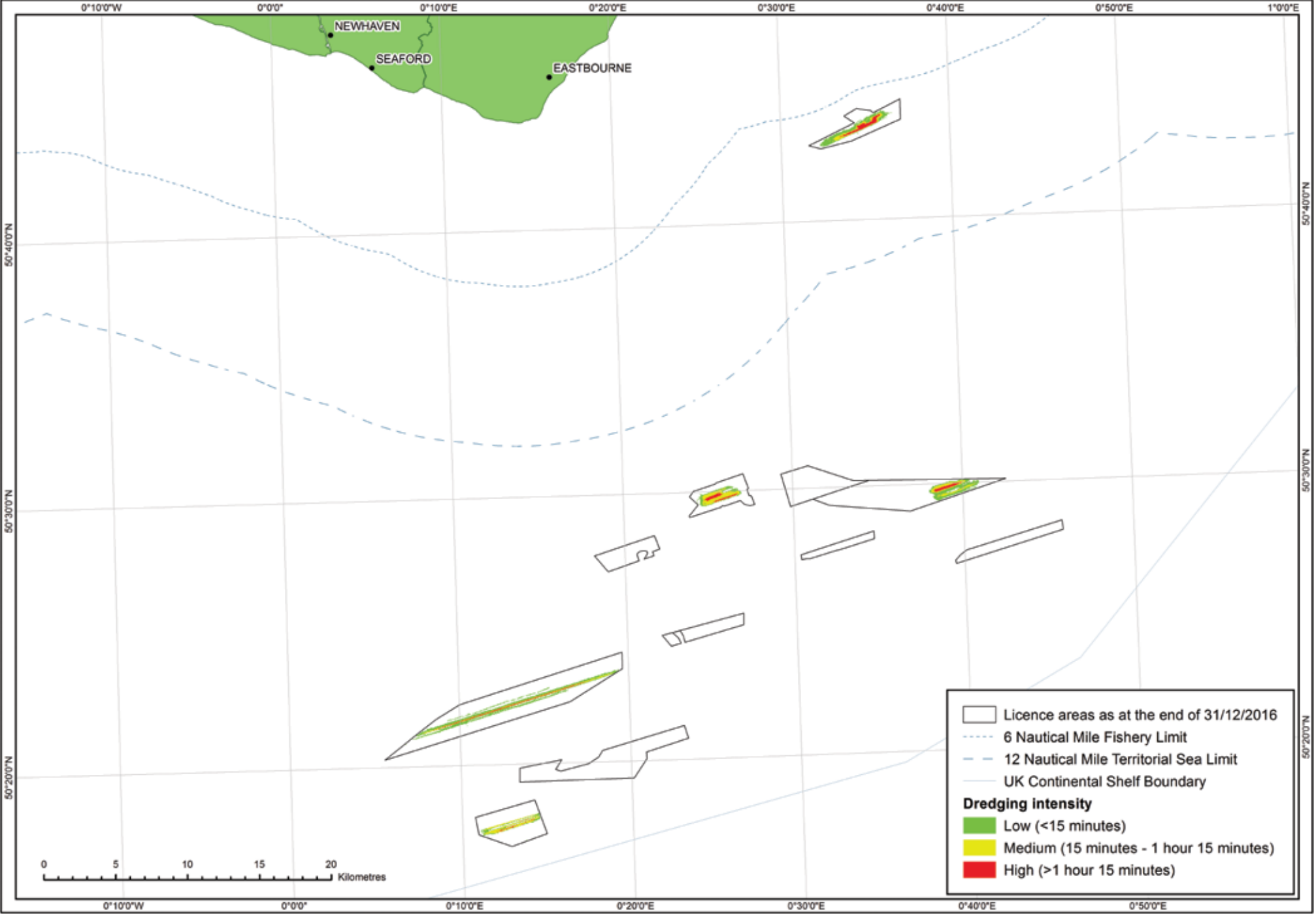
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



South Coast region

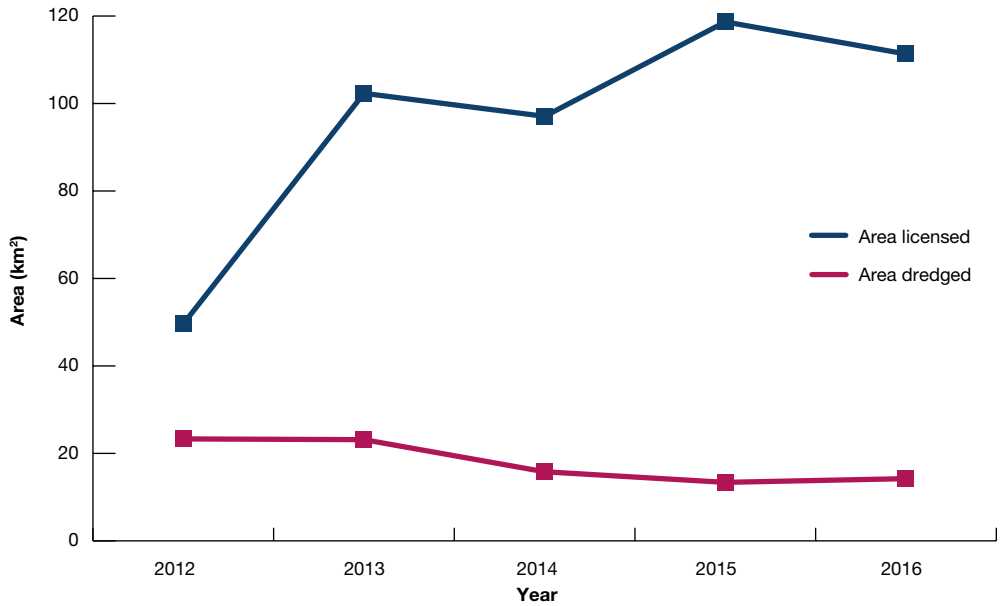
Background

- The South Coast region has 13 production licences, operated by CEMEX UK Marine Ltd, Hanson Aggregates Marine Ltd, Kendall Bros (Portsmouth) Ltd, Tarmac Marine Ltd, Volker Dredging Ltd and Westminster Gravels Ltd for sand and gravel, principally for use in the construction industry
- During 2016, 3.10 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 7.38 million. In addition 0.64 million tonnes were specifically dredged for beach nourishment and 0.01 million tonnes were dredged for a wind farm project
- Of the total marine aggregate dredged for construction from the region:
 - 96.0 per cent of the tonnage dredged was delivered to South Coast (2.98m)
 - 3.6 per cent of the tonnage dredged was delivered to the Thames Estuary (0.11m)
 - 0.3 per cent of the tonnage dredged was delivered to mainland Europe (0.01m)
 - 0.1 per cent of the tonnage dredged was delivered to the East Coast (<0.1m)

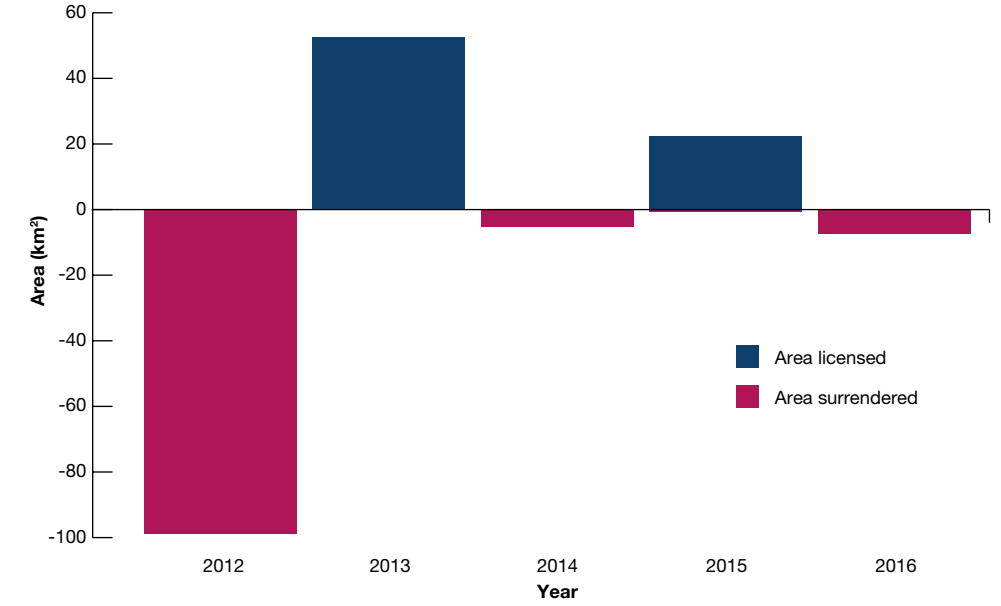
Regional statistics

- The licensed area in the region was 111.32km²
- The total area actually available to be dredged within the region (due to zoning) was 53.19km²
- Dredging took place within 14.23km², 12.78 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 2.16km², 57.87 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 6.06km²
- During 2016, the area licensed for marine aggregate extraction decreased by 7km²

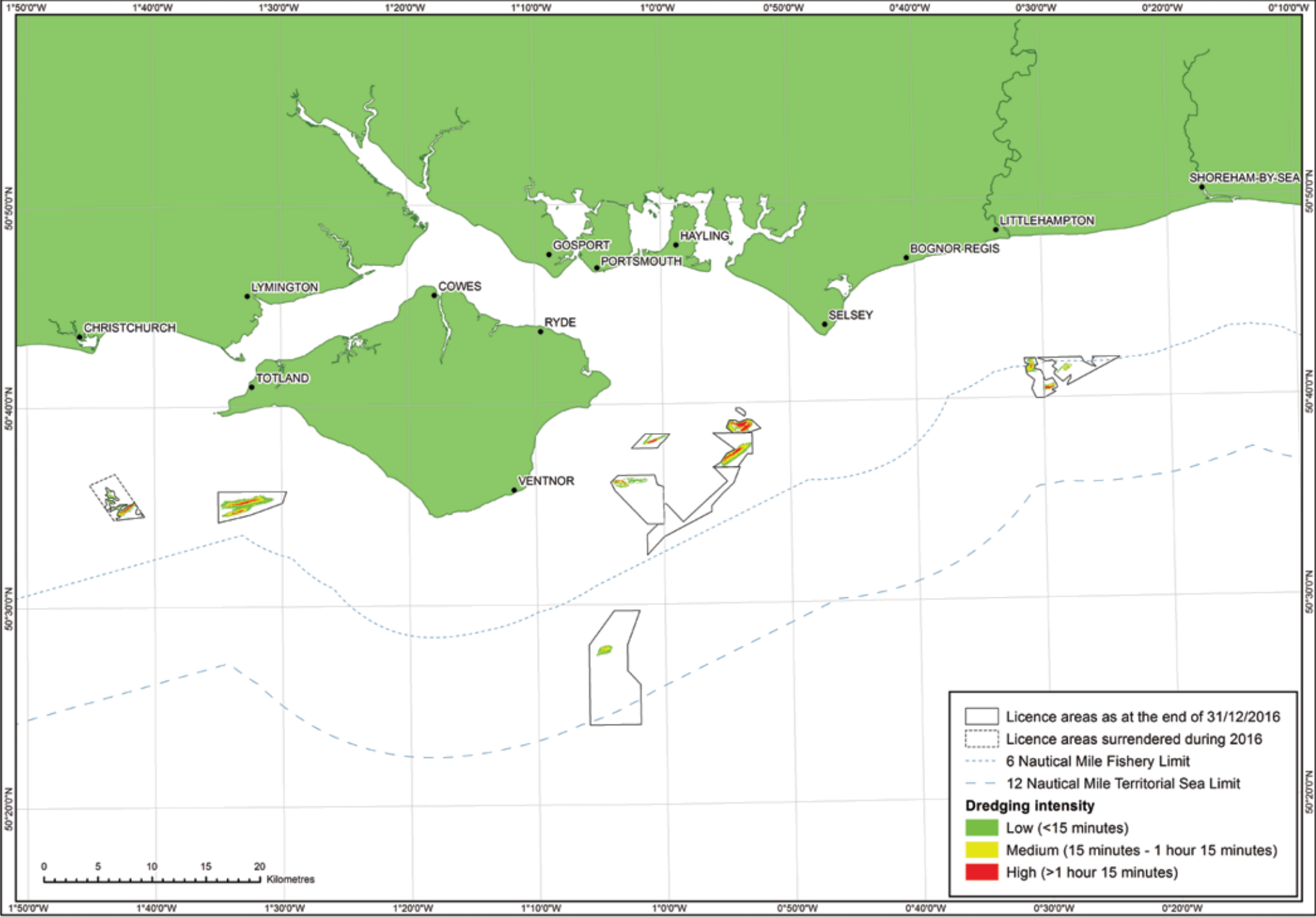
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



South West region

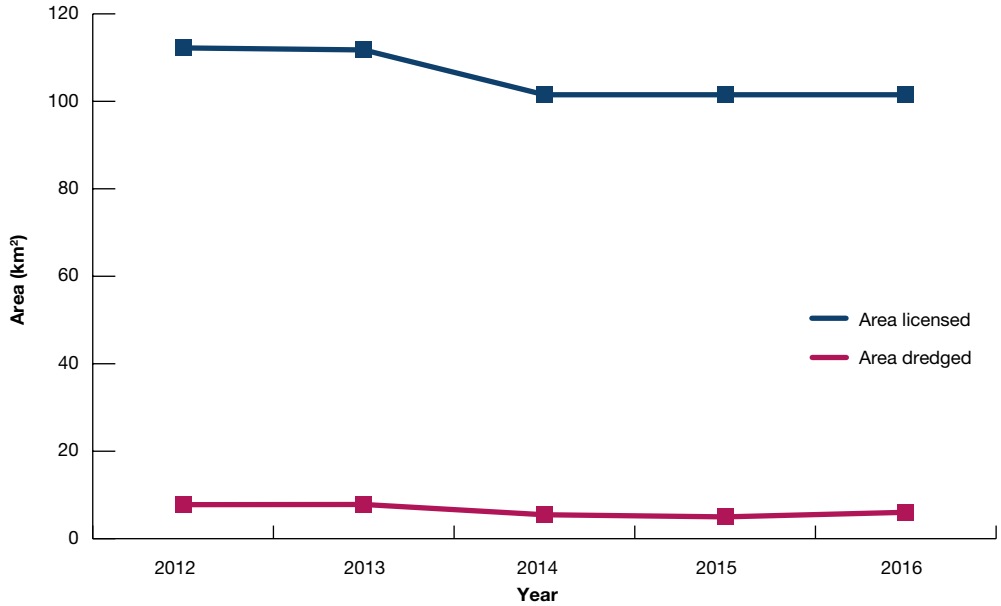
Background

- The South West region has seven production licences, operated by CEMEX UK Marine Ltd, Hanson Aggregates Marine Ltd, Llanelli Sand Dredging Ltd, Severn Sands Ltd and Tarmac Marine Ltd for sand, principally for use in the construction industry
- During 2016, 1.18 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 1.7 million
- Of the total marine aggregate dredged for construction from the region:
 - 99.6 per cent of the tonnage dredged was delivered to the South West (1.18m)
 - 54.8 per cent of this went to Welsh wharves (0.65m)
 - 45.2 per cent of this went to English wharves (0.53m)
 - 0.1 per cent of the tonnage dredged was delivered to the Northwest (<0.01m)
 - 100 per cent of this went to Welsh wharves (<0.01m)
 - 0.3 per cent of the tonnage dredged was delivered to the South Coast (<0.01m)

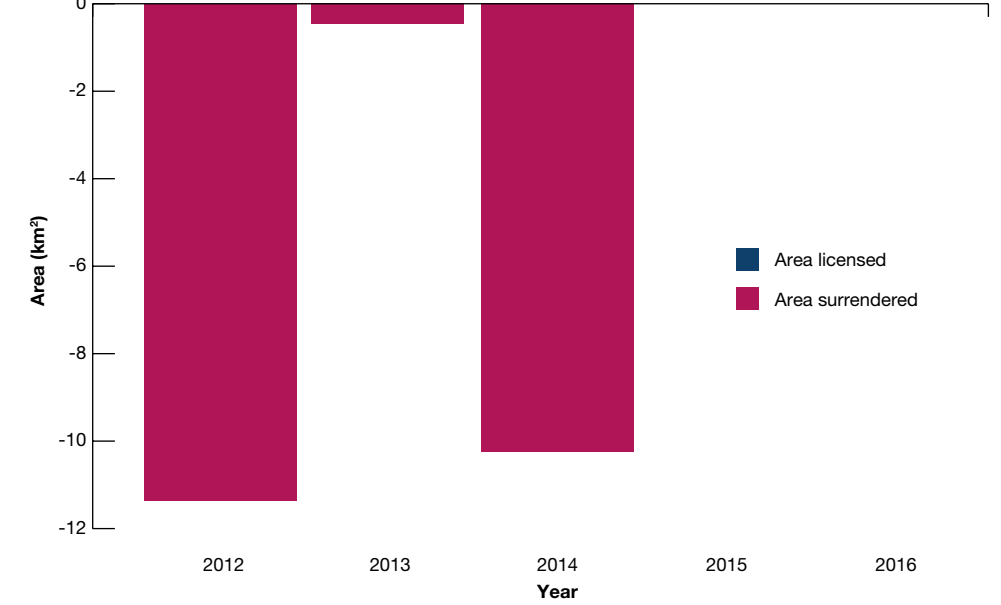
Regional statistics

- The licensed area in the region was 101.50km²
- The total area actually available to be dredged within the region (due to zoning) was 19.36km²
- Dredging took place within 6.03km², 5.94 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 1.04km², 64.43 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 2.44km²
- During 2016, the area licensed for marine aggregate extraction remained unchanged

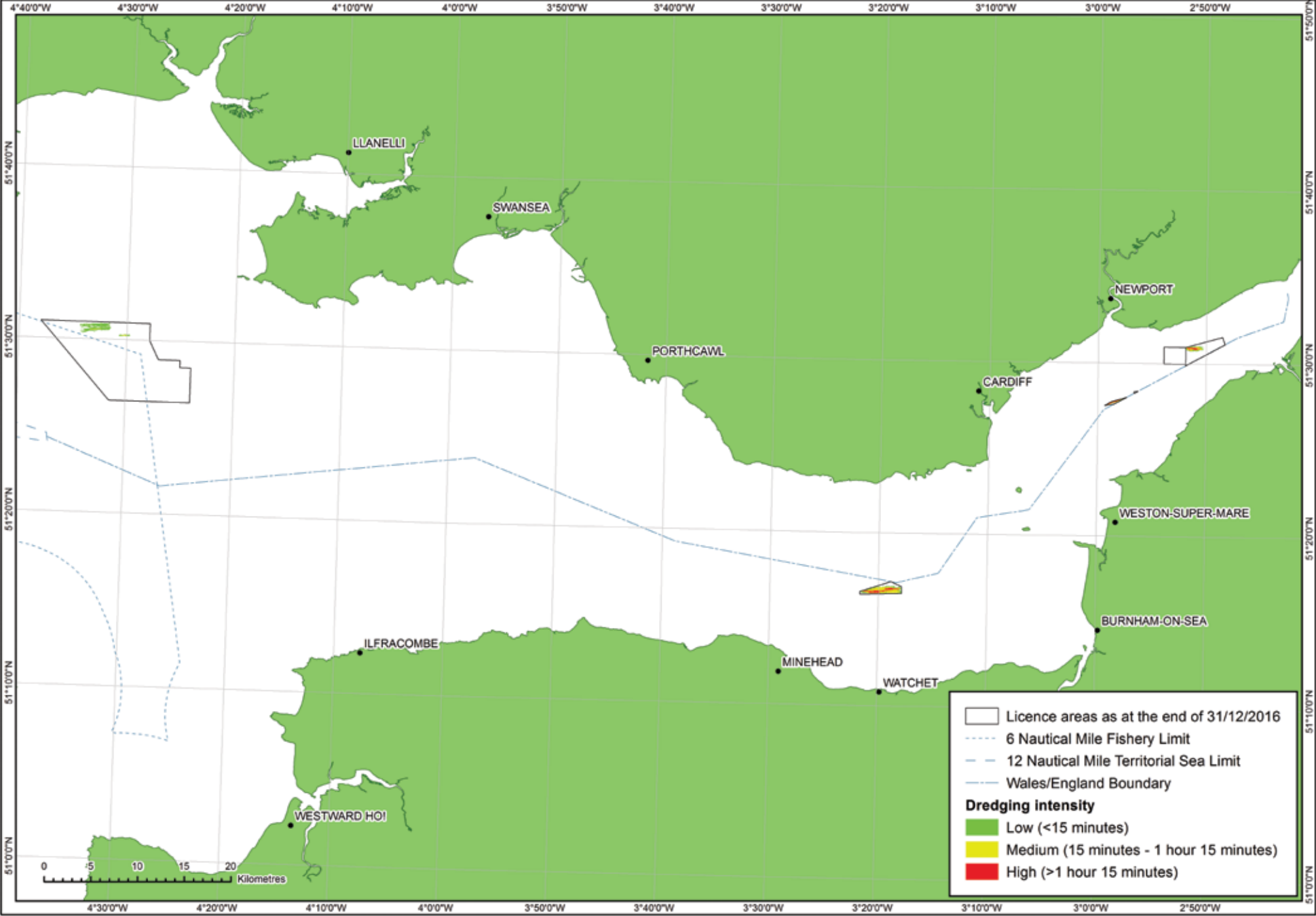
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



North West region

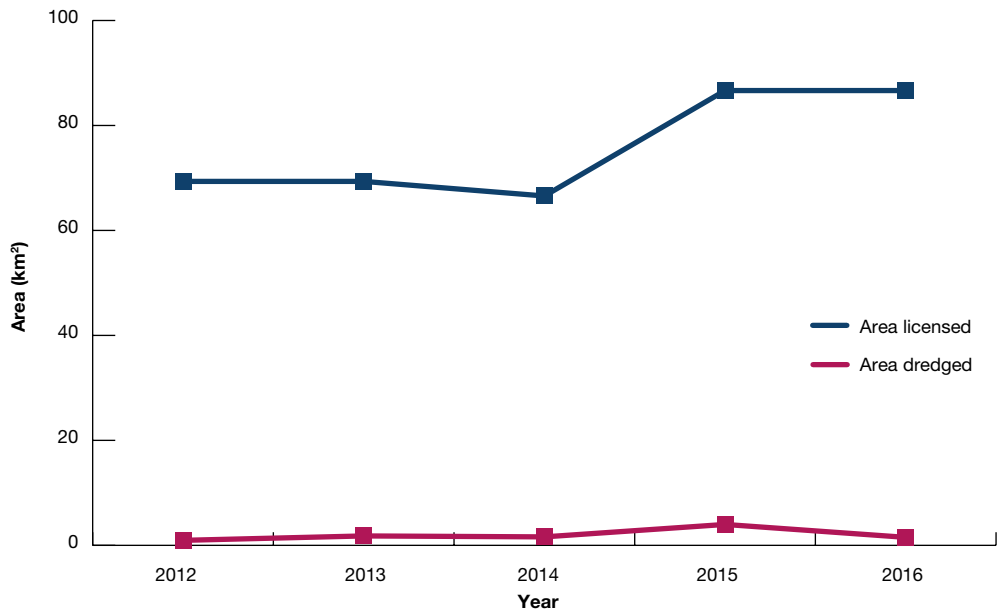
Background

- The North West region has three production licences, operated by Norwest Sand and Ballast Co, Tarmac Marine Ltd and Westminster Gravels Ltd for sand, principally for use in the construction industry
- During 2016, 0.31 million tonnes of construction aggregate were dredged from a permitted licensed tonnage of 1.3 million
- Of the total marine aggregate dredged for construction from the region:
 - 98.0 per cent of the tonnage dredged was delivered to the North West (0.30m)
 - 89.9 per cent of this went to English wharves (0.27m)
 - 10.1 per cent of this went to Welsh wharves (0.03m)
 - 2.0 per cent of the tonnage dredged was delivered to the South West (<0.01m)
 - 89.6 per cent of this went to Welsh wharves (<0.01m)
 - 10.4 per cent of this went to English wharves (<0.01m)

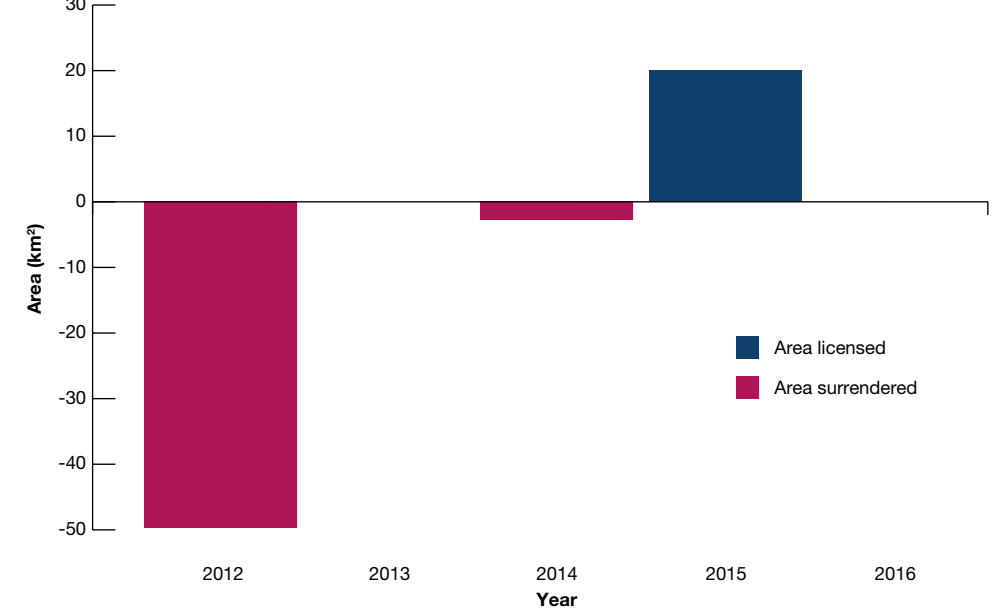
Regional statistics

- The licensed area in the region was 86.65km²
- The total area actually available to be dredged within the region (due to zoning) was 31.81km²
- Dredging took place within 1.52km², 1.75 per cent of the licensed area
- High intensity dredging (greater than 1 hour 15 minutes) is equal to 0.16km², 53.63 per cent of regional dredging activity
- 90 per cent of regional dredging effort took place within 0.59km²
- During 2016, the area licensed for marine aggregate extraction remained unchanged

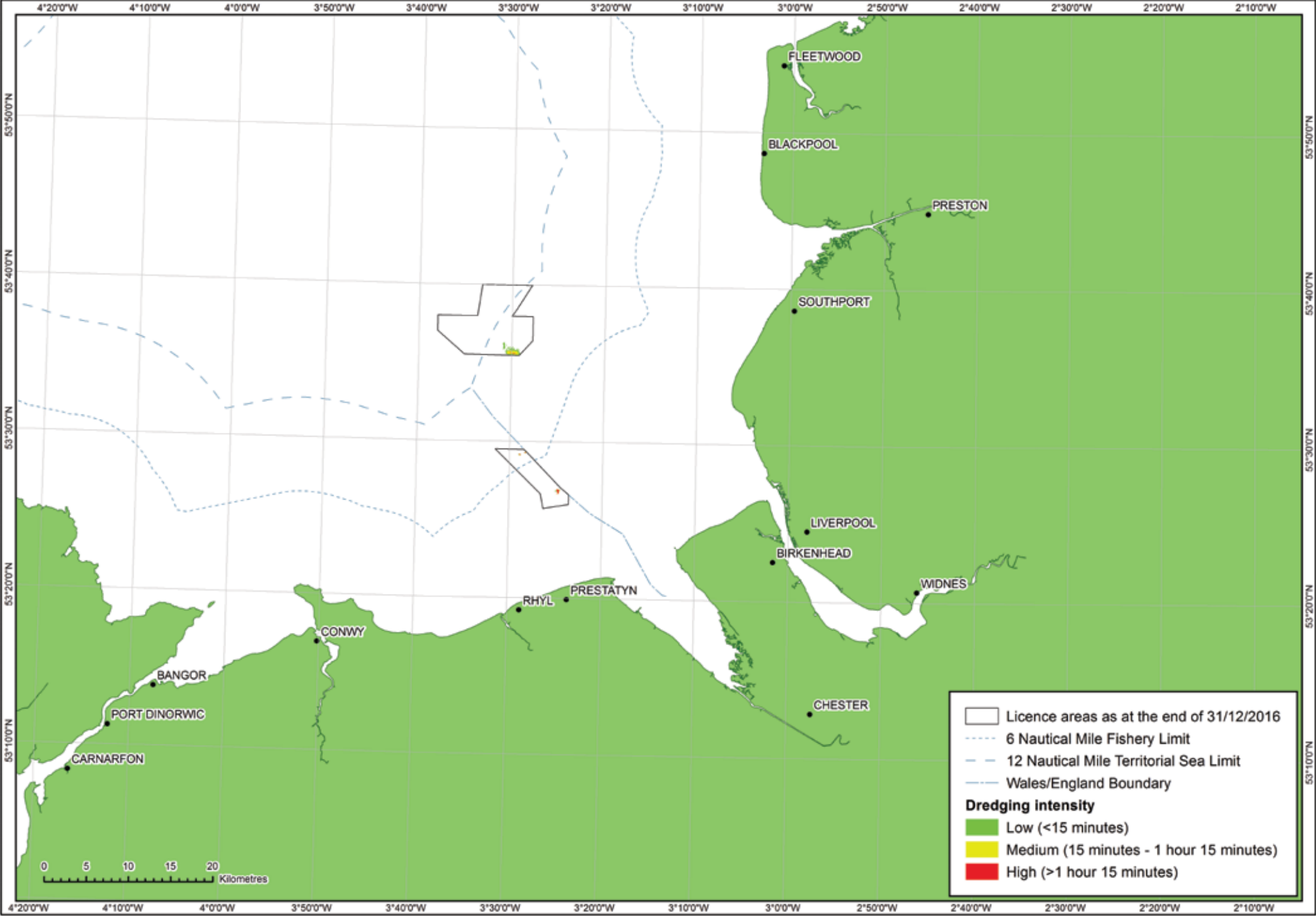
Area of seabed licensed* and dredged 2012-2016



Area of seabed licensed and surrendered 2012-2016*



* includes areas temporarily reduced as part of the Short Term Marine Licence process and subsequently relicensed



England and Wales have one of the largest and most efficient dredging industries in the world, extracting 15 to 20 million tonnes of sand and gravel from the seabed each year for a range of uses, from building homes, to major projects such as construction of the 'Shard' and the London Aquatics centre, port developments and coastal adaptation.

The Crown Estate owns almost all of the sand and gravel resources lying off the coast of England and Wales. We take an active approach to managing this natural asset effectively and sustainably to deliver value over the long term, including awarding and managing commercial agreements for extraction. We also award and manage leases for the extraction of other minerals such as potash from undersea deposits that extend several kilometres offshore.

Marine aggregates have been playing an increasingly important role in the building industry since the 1960s and today meet about 20 per cent of sand and gravel demand in England and Wales.

The British Marine Aggregate Producers Association (BMAPA) was formed in 1992 and comprises members of the Mineral Products Association with a marine interest. Marine sand and gravel is supplied to home markets, as well as contributing to the balance of payments through exports to Continental Europe. In addition, marine aggregates are fulfilling an increasingly important role by supporting beach replenishment schemes. The marine aggregate industry operates an average of 24 vessels on 65 production licences around the UK as of September 2017.

BMAPA membership (as of September 2017) is comprised of: Britannia Aggregates, Brett Group, CEMEX UK Marine, DEME Building Materials, Hanson Aggregates Marine, Norwest Sand & Ballast Co, Sea Aggregates, Tarmac Marine and Volker Dredging.



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