



# Mineral Products Association BMAPA Sustainable Development 2020/2021 Data & developments

*Extracting Minerals . . . Manufacturing Products . . . Supplying Markets*

## INTRODUCTION

The Mineral Products Association (MPA) is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar, silica sand and other industrial mineral industries. With the merger of British Precast to become MPA Precast, and affiliation with the British Association of Reinforcement (BAR), Eurobitume, MPA Northern Ireland, MPA Scotland and the British Calcium Carbonate Federation, it has a growing membership of over 520 companies and is the sectoral voice for mineral products. MPA membership is made up of the vast majority of independent SME companies throughout the UK, as well as the 9 major international and global companies. It covers 100% of cement and lime production, 90% of aggregates production, 95% of asphalt and over 70% of ready-mixed and precast concrete production.

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 plays an essential role supporting home construction markets, as well as contributing to the balance of payments through exports to Continental Europe. Marine aggregates also perform a strategic role in supporting large scale coast defence and beach replenishment projects – over 30 million tonnes being used for this purpose since the mid 1990's. The growing threat posed by sea level rise and increased storminess means marine sand and gravel will have an increasingly important role in helping to adapt the coastline to meet the challenges of climate change. The report for 2020/2021 draws on data provided by six BMAPA member companies who operate 14 of the 17 vessels working in UK waters.

## MPA STRATEGIC PRIORITIES

Following the launch of the MPA Charter in 2017, the 2021 Sustainable Development Report for the British Marine Aggregate Producers Association (BMAPA) has been produced to align with the 7 MPA strategic priorities to enable the Vision for 2025 to be achieved whereby mineral products are 'valued as an essential and economically, socially and environmentally sustainable industry of significance to the economy and our way of life'.



## SUMMARY

The influence of the pandemic resulted in profound and unexpected impacts on society and the wider economy. The marine aggregate sector was not immune from these impacts, with the initial lockdown arrangements in the first half of 2020 resulting in a significant downturn in construction activity, with attendant impacts on the demand and supply of construction materials. This resulted in a number of vessels temporarily stopped between March and May until the construction activity picked up. However, when it did resume, aided by government recognising construction and the

supply chain that supported it, as an 'essential activity', the pent-up demand meant that production levels in many parts of the country - particularly London and the South East - rapidly returned. This level of recovery in market demand is reflected in the overall landing figures of marine aggregates used for construction in UK, with 12.1Mt during 2020, compared to 13.4Mt in 2019. The introduction of robust covid-secure working practices, with each ships' crew being protected as a 'bubble' during their three-week trips on-board, helped to ensure that covid-related disruption was minimised.

KEY AREAS 2018	2020	% Change	2019	2018	2017	2016
Area of UK seabed	867,000 km <sup>2</sup>		867,000 km <sup>2</sup>	867,000 km <sup>2</sup>	867,000 km <sup>2</sup>	867,000 km <sup>2</sup>
Area of seabed licensed for dredging	1055 km <sup>2</sup>	-2.2%	1079 km <sup>2</sup>	1102 km <sup>2</sup>	1057 km <sup>2</sup>	934 km <sup>2</sup>
Area available to be worked	578 km <sup>2</sup>	-0.2%	579 km <sup>2</sup>	571 km <sup>2</sup>	552 km <sup>2</sup>	452 km <sup>2</sup>
Area dredged	101 km <sup>2</sup>	-3.8%	105 km <sup>2</sup>	97.87 km <sup>2</sup>	90.94 km <sup>2</sup>	87.53 km <sup>2</sup>

MARKET SUMMARY 2020	2020	% Change	2019	2018	2017	2016
Total GB aggregates market	220.7 Mt	-11.5%	249.5 Mt	251.0 Mt	251.8 Mt	247.3 Mt
Land-based aggregates	146.5 Mt	-10.6%	163.8 Mt	166.2 Mt	162.0 Mt	162.7 Mt
Recycled & secondary aggregates	62.3 Mt	-13.8%	72.3 Mt	71.0 Mt	75.5 Mt	70.4 Mt
Total marine aggregates production	18.0 Mt	-18.2%	22.0 Mt	19.6 Mt	19.0 Mt	18.8 Mt
Marine landings to GB aggregates market	12.1 Mt	-9.7%	13.4 Mt	13.7 Mt	14.3 Mt	14.1 Mt
Marine landings to European aggregates market	4.3 Mt	-8.5%	4.7 Mt	4.1 Mt	3.1 Mt	2.8 Mt
Beach replenishment/contract fill	1.6 Mt	-59.0%	3.9 Mt	1.9 Mt	1.6 Mt	2.0 Mt

MARKET CONTRIBUTION TO GB SAND AND GRAVEL MARKET – 2020	2020	% Change	2019	2018	2017	2016
Total GB Market	50.7 Mt	-12.4%	57.9 Mt	62.9 Mt	61.8 Mt	63.0 Mt
Total England & Wales Market	46.0 Mt	-12.1%	52.3 Mt	57.0 Mt	56.0 Mt	56.8 Mt
Marine Landings to England & Wales	12.1 Mt	-9.7%	13.4 Mt	13.7 Mt	14.3 Mt	14.1 Mt
Marine Landings to South East England	9.7 Mt	-11.0%	10.9 Mt	11.3 Mt	11.6 Mt	11.7 Mt
Marine Landings to London & Thames Estuary	7.1 Mt	-12.3%	8.1 Mt	8.3 Mt	8.6 Mt	8.7 Mt
Marine Landings to Wales	0.7 Mt	0%	0.7 Mt	0.6 Mt	0.7 Mt	0.7 Mt



## Health and Safety



### OBJECTIVE 1: IMPROVE THE OCCUPATIONAL HEALTH AND SAFETY OF THE MARINE SECTOR'S EMPLOYEES

#### Key performance indicator: Working days lost through work-related injury

	2020	2019	2018	2017	2016
Number of Lost Time Injuries	3	3	0	4	2
Days lost through work-related injury	100 (sea staff) 0 (office staff)	31 (sea staff) 0 (office staff)	0	12 (sea staff) 0 (office staff)	94 (sea staff) 0 (office staff)

- Health and safety remains the marine aggregate sectors top priority. Working under the recently launched 'Vision Zero', our ultimate aim will always be "zero harm" to our workforce;
- The industry continues to collate and report Lost Time Injury (LTI) and wider accident incidents on a monthly basis;
- Sharing practical experiences, whether of accidents or 'near-hits', via BMAPA Safety Alerts remains a continuing commitment, with 12 alerts during 2020 and 16 during 2021 contributing towards a total of 181 issued since the initiative commenced in 2007;
- Covid working restrictions have curtailed the ability to deliver the marine 'Safer by Competence' and 'Safer by Leadership' commitments during 2020 and 2021, however it is expected that these will recommence during 2022.

## People



### OBJECTIVE 2: IMPROVING EMPLOYEE DEVELOPMENT THROUGH VOCATIONAL TRAINING

#### Key performance indicator: Employment direct / indirect (office/ship crew)

	2020	% Change	2019	2018	2017	2016
Office staff	56.5	-5.0%	59.5	60.5	59	53.5
Sea staff	280	-0.7%	289	304	306	334

#### Key performance indicator: Training days per employee (total no of training days)

	2020	% Change	2019	2018	2017	2016
Training days/employee	3.6	+2.9%	3.5	4.1	6.1	5.9

### OBJECTIVE 3: INCREASING THE TRANSPARENCY OF ACTIVITIES, AND MAINTAINING AND DEVELOPING FURTHER LIAISON WITH OTHER MARINE STAKEHOLDERS

#### Marine Aggregate Extraction & the Fishing Industry

A code of practice developed by BMAPA, the Marine Management Organisation (MMO) and The Crown Estate for the marine aggregate industry, is in place to minimise operational conflicts between aggregate dredging vessels and fishing vessels/activity – particularly the loss or damage of fishing gear. The code defines best practice for communication between marine aggregate operators and fisheries interests, both in advance of dredging operations commencing and while dredging operations are taking place. It also includes the liaison required in advance of undertaking survey operations associated with marine aggregate interests, particularly where these may extend outside the

boundaries of licensed areas or where the surveys are associated with a prospecting or application area that has yet to be licensed.

[http://www.bmapa.org/issues/other\\_sea\\_users.php](http://www.bmapa.org/issues/other_sea_users.php)

During 2021, BMAPA established a regional approach to fisheries liaison to support more effective engagement and information exchange. A network of regional fisheries liaison contacts are in place to help cascade relevant information, such as planned survey works, changes to dredge areas or new marine licence applications, to local fishing interests in a more coordinated and consistent manner.

#### Kingfisher Fortnightly Bulletin service

Working in partnership with The Crown Estate, BMAPA continue to fund an electronic reporting arrangement for marine aggregate

specific issues through the Kingfisher Fortnightly Bulletin service, administered by Seafish. The service mirrors the equivalent arrangements already in place for the offshore oil & gas, renewable energy and offshore cable sectors, and allows information on changes to active dredging zones, commencement of works on new licence areas, notification of survey works and navigation obstructions to be electronically circulated to fisheries interests.



### Current Working Area charts

Since 2003, BMAPA has worked in partnership with The Crown Estate to produce twice-yearly current working area charts. These define the extent of the licence area within which dredging is permitted to take place – either through licence condition requirements or through voluntary measures introduced by operators - which are then enforced through analysis of the 'black box' Electronic Monitoring System data recorded by every marine aggregate dredger operating in UK waters.

Laminated versions of these charts are also widely circulated to local fisheries interests through the new regional liaison arrangements that are in place. This ensures other marine users are provided with the most up to date information on the extent of marine aggregate operations.

[http://www.bmapa.org/issues/other\\_sea\\_users.php](http://www.bmapa.org/issues/other_sea_users.php)

### Area involved initiative

BMAPA and The Crown Estate continue to report summary information on the extent of licensed and dredged area under their area involved initiative which commenced in 1999. The annual 'area involved' report for activity in 2020 represents the 23rd produced, and the spatial data generated by this ongoing initiative continues to be a valuable reference for the extent and intensity of marine aggregate operations and how these have changed over time.



### Upgraded Electronic Monitoring System (EMS)

The original EMS, introduced in 1993, was a PC based solution that operated alongside a variety of sensors attached to dredging equipment. Since 2018, a bespoke EMS system has been required for all marine aggregate dredgers operating in UK waters, comprising a secure black box that utilises a simple, stable operating system. An independent differential GPS is used to track vessel position, while an independent acoustic sensor indicates vessel dredging status with data recorded every 10 seconds – three times more frequently than the original system.

The EMS automatically records the date, time and location of all dredging activities, and the data logs generated are encoded for security purposes and analysed by The Crown Estate to ensure compliance with both marine licence conditions and the terms of their commercial agreements.

## Resource Use

### OBJECTIVE 1 – MAINTAIN AND IMPROVE PROFITABILITY IN ORDER TO PROVIDE FOR CONTINUING INVESTMENT AND EMPLOYMENT

#### Key performance indicator: Annual marine production

	2020	% Change	2019	2018	2017	2016
Total (Crown Estate Figures)	18.0 Mt	-18.2%	22.0 Mt	19.6 Mt	19.0 Mt	18.8 Mt
BMAPA reported production	10.6 Mt	-17.2%	12.8 Mt	12.6 Mt	13.6 Mt	13.5 Mt

#### Key performance indicator: National/regional contribution to supply

	2020	% Change	2019	2018	2017	2016
Landings to England & Wales	12.1 Mt	-9.7%	13.4 Mt	13.7 Mt	14.3 Mt	14.1 Mt
Landings to South East England	9.7 Mt	-11.0%	10.9 Mt	11.3 Mt	11.6 Mt	11.7 Mt
Landings to Wales	0.7 Mt	0%	0.7 Mt	0.6 Mt	0.7 Mt	0.7 Mt
Beach replenishment/ Fill	1.6 Mt	-59.0%	3.9 Mt	1.9 Mt	1.6 Mt	2.0 Mt
Exports	4.3 Mt	-8.5%	4.7 Mt	4.1 Mt	3.1 Mt	2.8 Mt

- Total marine aggregate production reduced by 18.2% in 2020. This reflected a combination of factors, including reductions in the demand for construction materials as a consequence of Covid restrictions in Q2 and a significant reduction in the volume of material supplied for beach replenishment/fill compared to 2019.
- The impact of Covid on construction material demand can

be seen in the reduction in landings in both England and Wales (-9.7%) and also exports to the near-continent (-8.5%).

- Reported production from BMAPA members (-17.2%) very much reflects the impact of lockdown restrictions during Q2 2020, when a number of vessels were either temporarily laid up or working intermittently due to a significant reduction in construction activity.



## OBJECTIVE 2 – MAINTAIN AND INCREASE INVESTMENT IN DREDGERS AND DREDGING TECHNOLOGY IN ORDER TO IMPROVE EFFICIENCY AND ENVIRONMENTAL PERFORMANCE

### Key performance indicator: Profile of age/capability of dredging fleet

	2020	% Change	2019	2018	2017	2016
Average age of dredging fleet (years)	24.6	+4.5%	23.8	23.1	22.1	21.1

- 17 vessels were operated by BMAPA members at the end of 2020, with an average age of 24.6 years.
- Over the period 2019-2020, two vessels were permanently laid up, representing a loss of 6,250t production capacity.

### Key performance indicator: Investment in vessels/technology over previous five years

	2020	% Change	2019	2018	2017	2016
Capital expenditure in existing vessels (not including maintenance)	£0.4M	-55.6%	£0.9M	£0.7M	£6.0M	£1.5M

	2020	% Change	2019	2018	2017	2016
Five-year rolling investment	£9.5M	-14.4%	£11.1M	£11.1M	£13.7M	£8.7M

- Although the rolling five-year investment total decreased in 2020, two new-build vessels have been commissioned, with one entering service in 2021 and the other expected to enter into service in 2022.
- The capital cost for the new-build vessels is not included in the rolling totals, but represents a combined investment of >£70M.

## OBJECTIVE 3 – MINIMISE THE SCREENING ACTIVITY IN THE PRODUCTION PROCESS

### Key performance indicator: Tonnes landed per hour dredged

	2020	% Change	2019	2018	2017	2016
Marine aggregate production	10.6 Mt	-17.2%	12.8 Mt	12.6 Mt	13.6 Mt	13.5 Mt
Hours dredged	9,623 hrs	-10.3%	10,731 hrs	11,797 hrs	13,070 hrs	13,318 hrs
Tonnes landed/hour dredged	1,106t/hr	-7.4%	1,195t/hr	1,069t/hr	1041t/hr	1014t/hr

- The reduction in tonnes landed and hours dredged reflects the reduced level of demand for construction materials during 2020 as a whole.

## OBJECTIVE 4 – DEVELOP AND PROMOTE BEST PRACTICE FOR RESOURCE MANAGEMENT

The marine aggregate sector continues to employ best practice guidance and methodologies to support resource management. This ensures that the sand and gravel resources being extracted meet the requirements of the markets and end-uses they support, and operations are undertaken in compliance with their regulatory licences.

These principles are applied to all marine licences, through a set of standard conditions that relate to marine aggregate extraction.

This includes a requirement for the marine licence area to correspond to the extent of the commercially viable resource that is being targeted, and for resource areas of veneer thickness

(less than 0.5m) to be identified, and for suitable exclusion zones to be introduced to prevent them being dredged in order to support the ecological recovery of the dredged area.

Collectively, these steps ensure that the area of seabed that is licensed for marine aggregate extraction continues to be minimised, in line with industry best practice and the 'Area Involved' commitment, and that dredging operations only take place where the commercially viable sand and gravel resources are sufficiently thick so as not to expose underlying bedrock sediments.

## Climate Change and Energy



### OBJECTIVE 1 – REDUCE THE IMPACT OF ATMOSPHERIC EMISSIONS RELEASED THROUGH THE PRODUCTION AND TRANSPORT PROCESSES

#### Key performance indicator: Marine Gas Oil (MGO) consumed per tonne landed

	2020	% Change	2019	2018	2017	2016
Total MGO	25,503t	-9.5%	28,179t	28,251t	29,659t	29,901t
Marine aggregate production	10.6 Mt	-17.2%	12.8 Mt	12.6 Mt	13.6 Mt	13.5 Mt
MGO/tonne landed	2.40kg/t	+9.1%	2.20kg/t	2.24kg/t	2.18kg/t	2.21kg/t

#### Key performance indicator: CO<sub>2</sub> emissions

	2020	% Change	2019	2018	2017	2016
Total CO <sub>2</sub> emissions	81,355t	-9.5%	89,890t	90,120t	94,614t	95,384t
Marine aggregate production	10.6 Mt	-17.2%	12.8 Mt	12.6 Mt	13.6 Mt	13.5 Mt
CO <sub>2</sub> /tonne landed	7.65kg/t	+9.1%	7.01kg/t	7.15kg/t	6.96kg/t	7.06kg/t

(The calculation from MGO tonnes to CO<sub>2</sub> tonnes has been made using a conversion factor taken from DEFRA (2008) Guidelines to DEFRA's Greenhouse Gas Conversion Factors for Company Reporting. Department for Environment, Food and Rural Affairs, London. Accessed from: <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>)

- While reported marine aggregate production reduced by 17.2% during 2020, the corresponding reductions in total fuel oil consumption and CO<sub>2</sub> emissions reported by BMAPA operators were only around 9%. This can be explained because although several vessels were laid up during Q2, they remained under power. Meanwhile the vessels that remained operational were having to supply a wider range of markets, necessitating longer steaming times.

### OBJECTIVE 2 – MAXIMISE THE EFFICIENT USE OF THE DREDGING FLEET

#### Key performance indicator: tonnes landed per kilometre travelled

	2020	% Change	2019	2018	2017	2016
Total km steamed	755,904 km	-20.8%	954,372 km	902,403 km	970,211 km	1.0 M km
Marine aggregate production	10.6 Mt	-17.2%	12.8 Mt	12.6 Mt	13.6 Mt	13.5 Mt
Tonnes landed/km steamed	14.08t/km	+4.7%	13.44t/km	13.97t/km	14.0t/km	13.48t/km

- The reduction in total distance steamed broadly corresponds to the reduction in reported production during 2020. The fact the two are not more closely aligned suggests that vessels were having to steam further to supply markets – which is thought to reflect the more limited production capacity available during Q2 2020.



# Natural Environment



## OBJECTIVE 1 – MINIMISE THE SPATIAL FOOTPRINT OF DREDGING OPERATIONS THROUGH RESPONSIBLE AND EFFECTIVE MANAGEMENT

	2020	% Change	2019	2018	2017	2016
Area of seabed licensed for dredging	1055 km <sup>2</sup>	-2.2%	1079 km <sup>2</sup>	1102 km <sup>2</sup>	1057 km <sup>2</sup>	934 km <sup>2</sup>
Active Dredge Area	578 km <sup>2</sup>	-0.2%	579 km <sup>2</sup>	571 km <sup>2</sup>	522 km <sup>2</sup>	452 km <sup>2</sup>
Area dredged	101 km <sup>2</sup>	-3.8%	105 km <sup>2</sup>	97.9 km <sup>2</sup>	90.9 km <sup>2</sup>	87.5 km <sup>2</sup>
Area of seabed where 90% dredging occurs	42.0 km <sup>2</sup>	-0.5%	42.2 km <sup>2</sup>	39.5 km <sup>2</sup>	38.3 km <sup>2</sup>	33.9 km <sup>2</sup>
Area of seabed dredged for more than 1.25 hours	5.1 km <sup>2</sup>	-19.0%	6.3 km <sup>2</sup>	6.3 km <sup>2</sup>	7.4 km <sup>2</sup>	7.5 km <sup>2</sup>

## OBJECTIVE 2 – MAINTAIN AND DEVELOP THE INDUSTRY CONTRIBUTION TOWARDS THE UNDERSTANDING OF MARINE SAND AND GRAVEL HABITATS

### Regional Monitoring & Management

The marine aggregate industry continues to deliver the Regional Seabed Monitoring Plan (RSMP) approach, developed in partnership with Defra, the Marine Management Organisation, Welsh Government and The Crown Estate. This methodology focusses compliance effort on the status of seabed sediments in order to determine their ability to biologically recover once extraction activities have ended.

The RSMP approach now forms part of the standard compliance conditions that apply to all marine licences for marine mineral extraction. The timing of these requirements have been aligned across the dredging regions, and regional associations have been established by the industry to manage the regional-scale monitoring surveys that are now being delivered.

As well as seabed sampling surveys, the regional monitoring approach incorporates the standard multi-beam echo sounder and side scan sonar surveys that are routinely required across licence areas as part of the compliance regime.

Regional surveys deliver a more consistent and scientifically robust approach to compliance monitoring, and the RSMP process has also demonstrated opportunities for significant savings in time, effort and cost through the adoption of a more coordinated approach.

During 2021, regional monitoring surveys were undertaken across the Anglian and Outer Thames while in 2020, regional monitoring surveys were completed across the East English Channel and South coast.

### Marine Protected Area Network

BMAPA and its member companies have continued to play a full and constructive role in the development of a network of Marine Protected Areas in UK seas, including the Marine Conservation Zone process that has been taking place in English waters and the process to identify Highly Protected Marine Areas.





**OBJECTIVE 3 – MAINTAIN AND DEVELOP INDUSTRY CONTRIBUTION TOWARDS THE UNDERSTANDING OF BRITAIN’S MARINE HISTORIC ENVIRONMENT**

The archaeological reporting protocol that was originally developed by BMAPA and Historic England’s predecessor organisation to enable archaeological finds encountered during marine aggregate operations (either on board dredgers or at the wharves) continues to be delivered through an implementation service provided by Wessex Archaeology, co-funded by BMAPA and The Crown Estate. The service allows finds recovered by industry staff to be identified and assessed for their significance by heritage experts, and where necessary for appropriate mitigation to be introduced on production licence areas to protect previously unknown sites of importance, for example aircraft crash sites. Where appropriate, finds are reported to the Receiver of Wreck (items of wreck) or the Ministry of Defence (aircraft wreckage) and all finds are reported to the National Record of the Historic Environment and the appropriate local Historic Environment Record.

Since the protocol was introduced in 2005, over 2,200 individual finds have been reported by marine aggregate industry staff. During the reporting period 2020/21, 37 reports were submitted covering 123 individual items ranging from medieval cannonballs and more modern ordnance to aircraft wreckage and faunal

remains. The implementation service includes an annual report which details every find reported during the reporting year, and comments on trends emerging over time.

To support the practical delivery of the protocol, an awareness programme to encourage its use amongst industry staff working on both wharves and on the dredgers themselves has been in place since 2005. The current programme, which has been in place since 2017, is co-funded by BMAPA and The Crown Estate and involves site visits by maritime archaeologists to provide industry staff with the knowledge and confidence to identify and report items of potential archaeological interest that may be found amongst dredged cargoes, as well as the production of twice-yearly ‘Dredged Up’ newsletters.



<https://www.wessexarch.co.uk/our-work/marine-aggregate-industry-protocol-reporting-finds-archaeological-interest>

**OBJECTIVE 4 – MAINTAIN EFFECTIVE CONTROLS TO MINIMISE THE POTENTIAL FOR POLLUTION TO THE MARINE ENVIRONMENT**

**Key performance indicator: number of recorded pollution incidents**

	2020	2019	2018	2017	2016
Number of pollution incidents	0	0	0	0	0

**Communicating Industry Value**



By delivering large volumes of a low cost, bulk material close to the point of demand, economies of scale represent one of the marine aggregate sectors greatest advantages.

The 14 vessels operated by BMAPA members for which data has been reported in 2020 range in size from 1,250 tonnes to 10,000 tonnes capacity, with associated variations in vessel dimensions and engine power. All the vessels are highly specialised and fulfil particular roles in supplying essential marine sand and gravel supplies to the marketplace.

To assist analysis of key performance indicator data, the dredging fleet covered by data reported during 2020 can be separated into two distinct categories.

- i. Vessels with cargo capacities below 3,000 tonnes, which typically supply local wharves from nearshore licence areas, such as along the south coast, in the Bristol Channel and in

the Irish Sea. Vessels will typically supply a cargo every 12-24 hours. (4 vessels/7,217t total hopper capacity: 89.4% of total reported fleet capacity)

- ii. Vessels with cargo capacities greater than 3,000 tonnes which typically operate in more offshore licence areas supplying more distant wharves, such as those along the River Thames and on the Continent. Vessels will typically supply a cargo every 24-48 hours. (10 vessels/62,370t total hopper capacity: 88.8% of total reported fleet capacity)

The two classes of vessel generally supply very different markets, therefore by separating their operational data it is possible to better understand and present the differences between the two. Over time, this should also allow the identification of trends in each class that would perhaps otherwise be masked in the summed dataset.



**RESOURCE USE: OBJECTIVE 1 – MAINTAIN AND IMPROVE PROFITABILITY IN ORDER TO PROVIDE FOR CONTINUING INVESTMENT AND EMPLOYMENT**
**Key performance indicator: Annual marine production**

	2020	% Change	2019	2018	2017	2016
Production <3,000t	1,888,424 t (17% total)	-10.0%	2,097,059 t	2,261,403 t	2,408,129 t	2,859,832 t
Production >3,000t	8,751,625 t (83% total)	-18.5%	10,731,392 t	10,346,369 t	11,192,675 t	10,644,857 t

**RESOURCE USE: OBJECTIVE 3 – MAKE THE MOST EFFICIENT USE OF AVAILABLE LICENSED RESOURCES**
**Key performance indicator: Area dredged and hours dredged**

	2020	% Change	2019	2018	2017	2016
Hours dredged <3,000t	2,563 hrs	+8.3%	2,367 hrs	3,055 hrs	3,359 hrs	3,887 hrs
Hours dredged >3,000t	7,060 hrs	-15.6%	8,364 hrs	8,742 hrs	9,711 hrs	9,431 hrs

**RESOURCE USE: OBJECTIVE 4 – MINIMISE THE SCREENING ACTIVITY IN THE PRODUCTION PROCESS**
**Key performance indicator: Tonnes landed per hour dredged**

	2020	% Change	2019	2018	2017	2016
Tonnes landed/hour dredged <3,000t	737 t/hour	-16.8%	886 t/hour	740 t/hour	717 t/hour	736 t/hour
Tonnes landed/hour dredged >3,000t	1,240 t/hour	-3.4%	1,283 t/hour	1,184 t/hour	1,153 t/hour	1,129 t/hour

**CLIMATE CHANGE AND ENERGY: OBJECTIVE 1 – REDUCE THE IMPACT OF ATMOSPHERIC EMISSIONS RELEASED THROUGH THE PRODUCTION AND TRANSPORT PROCESSES**
**Key performance indicator: Marine Gas Oil (MGO) consumed per tonne landed**

		2020	% Change	2019	2018	2017	2016
<3000t	MGO	2,898 t	-10.7%	3,245 t	3,311 t	3,555 t	4,093 t
	MGO/tonne	1.55 kg/t	0%	1.55 kg/t	1.46 kg/t	1.48 kg/t	1.43 kg/t
>3000t	MGO	22,605 t	-9.3%	24,934 t	24,939 t	26,104 t	25,807 t
	MGO/tonne	2.58 kg/t	+11.2%	2.32 kg/t	2.41 kg/t	2.33 kg/t	2.42 kg/t

**Key performance indicator: CO<sub>2</sub> emissions**

		2020	% Change	2019	2018	2017	2016
<3000t	CO <sub>2</sub> emissions	9,244 t	-10.7%	10,351 t	10,564 t	11,341 t	13,057 t
	Kg CO <sub>2</sub> /t landed	4.90 kg/t	-0.8%	4.94 kg/t	4.67 kg/t	4.71 kg/t	4.57 kg/t
>3000t	CO <sub>2</sub> emissions	72,111 t	-4.5%	79,539 t	79,556 t	83,273 t	82,327 t
	Kg CO <sub>2</sub> /t landed	8.24 kg/t	+11.2%	7.41 kg/t	7.69 kg/t	7.44 kg/t	7.73 kg/t

(The calculation from MGO tonnes to CO<sub>2</sub> tonnes has been made using a conversion factor taken from DEFRA (2008) Guidelines to DEFRA's Greenhouse Gas Conversion Factors for Company Reporting. Department for Environment, Food and Rural Affairs, London. Accessed from: <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>)

## CLIMATE CHANGE AND ENERGY: OBJECTIVE 2 – MAXIMISE THE EFFICIENT USE OF THE DREDGING FLEET

### Key performance indicator: tonnes landed per kilometre travelled

		2020	% Change	2019	2018	2017	2016
<3000t	Km steamed	149,953 km	-28.5%	209,614 km	200,767 km	228,417 km	243,194 km
	Tonnes landed/km	12.59 t/km	+25.9%	10 t/km	11.26 t/km	10.54 t/km	11.76 t/km
>3000t	Km steamed	605,951 km	-5.4%	744,757 km	701,636 km	741,794 km	758,610 km
	Tonnes landed/km	14.44 t/km	+0.2%	14.41 t/km	14.75 t/km	15.09 t/km	14.03 t/km

## BMAPA MEMBERS AND DREDGING FLEET

BMAPA Member	Vessel	Built	Capacity (cubic metres)	Capacity (tonnes)	Age (end of 2020)
Aggregate Industries	AI Avocet	1988	1,019	1,732	31
Britannia Aggregates	Britannia Beaver	1991	2,775	4,800	28
CEMEX UK Marine	Reimerswaal	2012	6,000	10,000	8
	Sand Falcon	1998	4,832	8,359	21
	Sand Fulmar	1998	4,000	6,290	21
	Sand Heron	1990	2,700	4,671	29
DEME Building Materials	Welsh Piper	1987	790	1,367	32
	Charlemagne	2002	5,000	8,650	17
DEME Building Materials	Victor Horta	2011	5,000	8,650	10
Hanson Aggregates Marine	Arco Avon	1986	2,890	5,000	33
	Arco Beck	1989	2,600	4,500	30
	Arco Dart	1990	700	1,250	29
	Arco Dijk	1992	5,100	8,800	27
Tarmac Marine	City of Cardiff	1997	1,418	2,300	22
	City of Chichester	1997	1,418	2,300	22
	City of London	1990	2,652	4,750	29
	City of Westminster	1990	3,000	5,200	29
			Total fleet capacity	Total fleet capacity	Average vessel age
			51,894 m <sup>3</sup>	88,619t	24.6 years

Other BMAPA members (as of 31.12.20) who do not operate vessels: Brett Group, Norwest Sand & Ballast Co., Sea Aggregates, Volker Dredging



© Mineral Products Association 2022

This report contains data collected from year 2020 which is collated by MPA in 2021 for publication end of 2021/ early 2022.

The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

**Mineral Products Association**  
 Gillingham House  
 38 - 44 Gillingham Street  
 London SW1V 1HU  
 Tel +44 (0)20 7963 8000  
 Fax +44 (0)20 7963 8001  
 info@mineralproducts.org  
 www.mineralproducts.org

