Case Commentary

Marine licensing in marine conservation zones

Thomson v Marine Management Organisation [2019] EWHC 2368 (Admin)
Queen’s Bench, Sir Duncan Ouseley (6 September 2019)

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Introduction

The offshore environment has been the focus of significant legal and policy interest over the past decade, as seen in the passing into law of the Marine and Coastal Access Act 2009 (MACAA) and the various regulatory bodies and mechanisms that were created pursuant to it. The instant case provides insight into the interaction between two of these mechanisms: marine licensing and the relationship with marine conservation zones. The case provides a thorough explanation of both the statutory frameworks at issue and the process of decision-making for the grant of a marine licence.

An application to the Marine Management Organisation (MMO) to extract aggregate from the Goodwin Sands, an area noted for its unique benthic habitat, richness of species and extensive underwater cultural heritage, located seaward from the eastern coast of Kent, was made by one of the interested parties, the Dover Harbour Board. The grant of a licence to extract seabed aggregate in an area which was proposed as a marine conservation zone – with the absolute certainty that some of what would become the protected features of the marine conservation zone would be compromised – was the principal point of contention. The decision is interesting in that it appears to establish some parameters of what is acceptable such as, for example, the principle that damage to protected features of a marine conservation zone is permissible, and that the question, then, seemingly becomes one of degree.

Facts

The Dover Harbour Board had applied for a marine licence for dredging subtidal sand in an area of the Goodwin Sands, which was granted in July 2019. Sir Duncan Ouseley noted at the outset that: ‘[the Goodwin Sands] are important as habitats for seabed flora and fauna, for protection against coastal erosion, as a safe anchorage, and as the location of shipwrecks and latterly, wrecks of aircraft’. The basis of the board’s application was to use the dredged material as aggregate for use in land reclamation and berth construction as part of a nationally significant infrastructure project, which had received development consent, to improve and increase port capacity. The licence permitted the dredging of up to 2 million square metres of subtidal sand from an area known as the South Calliper Sandbank, although this was subsequently reduced to 1.2 million tonnes, representing a dredge area of 2.36 square kilometres (km²) out of a subtidal sand coverage of 160 km² within the overall 177 km² area of the Goodwin Sands. The claimant lives locally and is a member of the Goodwin Sands SOS Group, which has consistently opposed the dredging.²

Basis of challenge

The claimant’s challenge was limited to one specific point, which related to the environmental impact assessment consent decision undertaken as required in July 2018 under the Marine Works (Environmental Impact Assessment) Regulations (the EIA Regulations).³ Counsel for the claimant based her contention on the fact that the MMO either had ignored or had not correctly applied the law in respect of an attribute of the Goodwin Sands that it was mandatory for it to consider. That consideration should have been made, it was submitted, by reference to 2004 guidance produced by the Joint Nature Conservation Committee (JNCC Guidance). In the alternative, it was submitted that the MMO had not explained why the JNCC Guidance had not been followed. The attribute in question, topography, related to depth and distribution of the sand. The issue was the extent to which the MMO had considered the impact of the changes to the topography, rather than the changes to the topography in itself (emphasis added). The MMO had, it claimed, considered all of the impacts at length, and if it should have applied the JNCC Guidance, and had not, it had explained its reason for not so doing.

It was noted that, at the time the licensing decisions were being made, the Goodwin Sands were a proposed/recommended marine conservation zone. In fact, in May 2019 the Goodwin Sands marine conservation zone was created by order of the Secretary of State for Defra.⁴ Despite the fact that the site was not actually designated as a marine conservation zone at the time of the licensing decision, the fact that it was likely to be meant that the MMO treated the licensing application as if it had been – despite having no statutory obligation to do so.

² https://goodwinsandsos.org/.
³ SI 2007/1517.
Law

At issue were a number of measures of the MACAA; specifically those to do with Part 4, which is concerned with marine licensing; and Part 5, which creates a scheme of regulation around marine conservation zones. A person may not carry out a licensable marine activity, according to section 65 of the MACAA, without obtaining a marine licence. A marine licensable activity, defined in section 66, includes dredging, itself broadly expressed as ‘… any form of dredging within the UK marine licensing area (whether or not involving the removal of any material from the sea or sea bed)’. Prior to the grant of a licence under section 71 of the MACAA, the MMO must have regard to a number of mandatory considerations, including the environment, human health and non-interference with legitimate uses of the sea are central considerations, along with the catch-all ‘… and other such matters as the authority thinks relevant’.7

The environmental impact assessment was completed in accordance with the EIA Regulations. Regulation 22 sets out the basic framework for decision-making and Schedule 3 prescribes the content of the environmental statement. In essence, this is a description of environmental attributes likely to be impacted, both directly and indirectly and at a variety of timescales — including temporary effects.

Part 5 of the MACAA sets out the provisions for the creation of marine conservation zones. The Goodwin Sands marine conservation zone is located within the seaward limit of the 12 nm territorial sea.8 Section 117 sets out a variety of criteria for the designation of a marine conservation zone including: ‘for the purpose of conserving (a) marine flora or fauna; (b) marine habitats or types of marine habitat; (c) features of geological or geomorphological interest’.9 As with analogous protective designations, an order establishing a marine conservation zone must state the protected features and its conservation objectives.10

The MMO and other public authorities are placed under general duties by section 125 of the MACAA. Insofar as this relates to MMO licensing decisions, section 126 provides the basis, and section 126(1)(b) applies when ‘… the act is capable of affecting any ecological or geomorphological process on which the conservation of any protected feature or features; (b) the matters which are capable of affecting any ecological or geomorphological process on which the conservation of any protected feature or features is (wholly or in part) dependent’. Were the MMO to believe that there is or may be a significant risk to the marine conservation zone’s conservation objectives by the authorisation of the act, it is required to consult the relevant statutory conservation body — which here was Natural England.11 At this point the authorisation is essentially put on hold unless the licence applicant is able to satisfy the MMO that ‘that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the marine conservation zone’.12 If that is not possible, then what was termed in the judgment as a Stage 2 assessment would be required under section 126(7), which in essence is a fall-back provision, whereby there is no way of undertaking the act without undermining the conservation objectives; that there is a public interest in doing the act which overrides the risk of environmental harm; and, finally, that the applicant undertakes equivalent proposed compensatory measures.

As above, although the site at this stage was undesignated, the MMO applied the procedure as if it had been. The Dover Harbour Board had convinced the MMO that, according to section 126(6), there was no significant risk of the dredging, controlled by conditions, harming the conservation objectives of the site. It was submitted on behalf of the claimant that had the MMO considered the environmental attribute of topography — which it was contended that it should have — then it should have applied the section 126(7) process instead. The MMO is also required to ‘… have regard to any advice or guidance given by the appropriate statutory conservation body under section 127’.13 That advice or guidance, here to be given by Natural England, would relate to ‘… (a) the matters which are capable of damaging or otherwise affecting any protected feature or features; (b) the matters which are capable of affecting any ecological or geomorphological process on which the conservation of any protected feature or features is (wholly or in part) dependent’.14 The section also contemplates that Natural England may provide advice in respect of mitigation.15 That advice may apply to a specific marine conservation zone or in respect of marine conservation zones generally by virtue of section 127(2).

One final aspect of the law in respect of the claimant’s case related to the position of the Joint Nature Conservation Committee (JNCC), now constituted under section 31 and Schedule 4 of the Natural Environment and Rural Communities Act 2006 (NERC). It draws upon the four UK statutory nature conservation bodies as its principal members: Natural England was the relevant body in this case. Section 34 of the NERC provides that UK nature conservation functions can only be discharged by the JNCC. The claimant’s submission was premised on section 34(2), which includes ‘establishing common standards throughout the United Kingdom for the monitoring of nature conservation …’ amongst the range of features of national or international significance entrusted to the JNCC.16 Section 3(4) of the NERC sets out a requirement for Natural England to have regard to common standards established under that provision in discharging its functions in relation to monitoring nature

5 Neither — according to s 65(1)(b) may a person ‘cause or permit another person to carry out such an activity’ without a licence.
6 MACAA s 66(1), definition 9.
7 ibid s 69(1).
8 ibid s 116(2).
9 ibid s 117(1).
10 ibid s 177(2).
11 ibid s 126(2).
12 ibid s 126(6), noted in the judgment as a Stage 1 assessment.
13 ibid s 126(10).
14 ibid s 127(1).
15 ibid s 127(1)(d).
16 ibid s 34(2)(c), cited at para 12.
conservation. Finally, it was set out that section 35 of the NERC requires the UK statutory conservation bodies to have regard to any advice given to them by the JNCC, empowered as it is through that section to give advice on issues relating to UK matters.

**Judgment**

Virtually the entirety of Sir Duncan Ouseley’s judgment (paras 13–111) involved a detailed, forensic examination of the MMO’s decisions and the processes undertaken to make them. They are summarised briefly in this section. Scoping within the environmental statement had identified effects on changes to topography: [t]he direct effect was the removal of sand affecting the physical form of the seabed, and potentially indirectly affecting the texture of the sediment depending on what sands were targeted, and on the hydrodynamic and sedimentary process regime. Modelling was undertaken and a range of considerations including those relating to hydrodynamics, benthic ecology and flood risk were all considered in response to the MMO’s request to do so. Conclusions from the studies undertaken was that the work was in a ‘state of dynamic equilibrium, with morphological changes that are not manifest in dramatic volume changes’.

**Environmental statement**

It was conceded that the removal of the amount of sand proposed would represent a greater volume than that recorded as a natural change over an 11-year period of study. However, the conclusion on this point was that sedimentary processes would not be unduly affected and would thus not have a significant effect on the morphology of the bank taken as a whole. The sedimentary processes would not have an effect on the recolonisations of benthic communities and would not affect coastal dynamics. In addition, while it was recognised that there would be impacts on benthic/epibenthic ecology in the dredged material, this was mitigated by the fact that the species existed elsewhere in the study area and were not of particular importance or rarity and would colonise quickly as they were not sensitive to either the dredging or smothering by sediment plumes. The instability of the sandbanks was a key defining characteristic of the habitat in respect of the type and abundance of species that were present, including their negligible sensitivity to change.

Consultation responses were considered in some detail. Natural England had first agreed with the board’s consultants that lowering the seabed between 2 and 4 metres would be unlikely to lead to significant change to the ecological or physical functioning of the site. A later response posed the question as to whether removal of the amount of sand ‘could result in any measurable significant topographic change to the sandbank’. The subtidal sands were a feature of the proposed/recommended marine conservation zone and, according to Natural England, the only feature which could be significantly affected by the dredging. There was no conservation advice package for the site. Instead, more generic advice was provided on maintaining the condition of the feature. In terms of the extent of the feature, some removal of subtidal sand would not result in a loss of the extent of the feature given spatial extent within the marine conservation zone. Further information provided to the MMO by the board’s consultants indicated that there would be no measurable impacts upon the morphology of the sandbanks – given that it would occur naturally owing to the dynamic nature of the environment. Later input from the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) suggested a reduction in depth to reduce the depth of the dredge to less than two metres position supported by Natural England and agreed by MMO. The feeling was that there may be very localised changes but none that would be of significance to the sandbank system as a whole.

As stated above, the MMO had treated the application as if the area was already designated as a marine conservation zone. In that connection, it adopted the Conservation Advice Package for the nearby Thanet Coast marine conservation zone. Ultimately, the Goodwin Sands site was designated as a marine conservation zone, which included subtidal sand as an element of the protected features. The conservation objective for the subtidal sands was to be kept or brought into favourable condition: determining that did not take account of the effects of natural processes and topography was not included as an attribute of the protected feature. A series of attributes was determined, which if maintained would help to achieve the conservation objectives. These attributes included the extent and spatial distribution of subtidal sand and the species composition of component communities, as well as hydrodynamic and physical conditions. If those attributes were attained, the integrity of the site, by reference to its conservation objectives, would be secured.

A screening process considered a variety of pressures and determined a number to be of low risk. These included abrasion of the substrate beneath the seabed, itself a feature based on the extent and distribution of the

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17 Ibid para 14.
18 Dover Harbour Board Environmental Statement s 6.5, quoted at para 16 of the judgment.
19 The term attributed was ‘direct losses’, cited at para 18 of the judgment.
20 Cited at para 21 of the judgment.
21 See https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ00178&SiteNameDisplay=Thanet%20Coast+MCZ&HasCA=1&NumMarineSeasonality=0&SiteNameDisplay=Thanet%20Coast%20MCZ.
23 See Thomson v Marine Management Organisation (n 1) para 29.
subtidal sand and its species abundance, distribution and sediment character. Mitigation included the exclusion of dredging from areas where the sand was too thin for recolonisation. It was felt that there would be no hindrance of the conservation objective and ‘full recovery of the fauna was likely within five years of the cessation of the dredging…’.

This prediction was based on research that the relatively few species present were resilient to physical disturbance. It was noted that the proposed dredging would have an effect on the protected features of the proposed/recommended marine conservation zone – removal of the sand guaranteed that – but that it would affect the spatial extent of where subtidal sand was present in the site. Essentially, this was a matter of depth of dredge – and it was the presence of the sand itself, not the topography or volume. It was noted that this assertion that spatial extent did not include topography was central to the claimant’s contention that the topography issue had not been considered lawfully.

Essentially, the conservation issues were framed by reference to the fact that the area was one of high natural disturbance, to which the dredging would not significantly add.

The licence decision

The MMO’s letter to confirm the decision to grant the licence was issued in July 2018. It set out the material considered and restricted the dredging depth as well as applying other conditions. It also referred to a more comprehensive document, the ECDR, which considered in greater detail all of the information which had been the focus of the many investigations into the site. Again, the conclusions on measures ranging from hydrodynamics and flood risk to local and general morphological effects were considered to be localised and not significant in the context of the overall proposed/recommended marine conservation zone. There was no likelihood of significant damage to any European designated site and the fact that the dredge site was a proposed/recommended marine conservation zone was a material consideration.

Particular attention was paid to the JNCC’s 2004 Common Standards Monitoring Guidance. The monitoring methodology could be applied to any site via specific features of conservation interest. It draws a distinction between the protected feature and its attributes – the latter being characteristics which indicate the feature’s quality or condition. In respect of coastal sites, it was accepted that dynamic change was a natural and necessary process. Central to the claimant’s case was a more specific common standard applied to inshore sublittoral sediment habitats.

It was observed by the judge that, at the time of the publication of this guidance, marine conservation zones did not exist as a conservation mechanism. This was linked to the fact that condition assessments of marine features were, at the time, an emergent practice and that it was difficult therefore to adopt unambiguous guidance. For each feature of interest, the guidance then identified ‘a core set of attributes which must be used to define favourable conditions on every site, plus a set of additional attributes in which some or all can be used to highlight any local distinctiveness …’.

Sublittoral sandbanks, subject to different designations, had a number of attributes, one of which was topography. There was a basic principle there would be no loss of habitat area measured in hectares, and that human incursions would be looked upon unfavourably.

As topography is a mandatory attribute for inshore sublittoral sediments, it is worth noting the definition in the guidance: ‘[T]opography is defined as the depth and distribution of the sediment, which is fundamental to the structure of the feature and there is a direct influence on the associated fauna. The topography generally reflects the prevailing energy conditions and overall stability of the feature …’.

Target setting for it has generally involved no change other than through natural cycles. It was not unusual especially at times of strong currents or storms for the tops of sandbanks to be removed and later replaced. Topography, reflected Ouseley J, ‘therefore mattered because of its effect on the structure and function of the system of inshore sublittoral sand’.

Later guidance was produced by the JNCC, which stated that the Common Standards Monitoring guidance was essentially to be used as a quick and easy means for feature assessment of sites, although it did not include marine conservation zones on the list of protected sites. However, a marine conservation zone guidance had been produced in 2011 by the JNCC and Natural England, and was intended to provide guidance on how to select and define sites to become part of the marine conservation zone network.

Annex 1 identifies a range of guidance measures necessary for delivery of marine conservation zones and the wider MPA network. It does not include the 2004 guidance. Later in 2011, conservation objective guidance for marine conservation zones was published. It established processes for drafting conservation objectives – essentially a statement of the desired state of quality – for the features identified within a proposed marine conservation zone. These objectives have relevance in the context of licensing decisions such as in the instant case. Again, reference was made to the concept of attributes, which were being developed by the JNCC and Natural England for marine conservation zone features, so as to have a basis to determine favourable conditions. Consequently, this demonstrated that they were not adoption attributes from the JNCC’s 2004 Guidance.

24 ibid para 32.
25 ibid para 34.
26 The guidance (https://jncc.gov.uk/our-work/common-standards-monitoring/) was updated in 2019 and the later version supersedes the guidance at issue in this case.
28 Thomson v Marine Management Organisation (n 1) para 56.
29 ibid para 58.
30 ibid para 62.
31 ibid para 31.
32 http://data.jncc.gov.uk/data/94f961af-0bfc-4787-92d7-0c3be0083/MCZ-Ecological-Network-Guidance-2010.pdf.
Site-specific advice would be developed so as to mitigate the impact of human activities against the conservation objectives for the particular site.

A proxy, the Thanet Coast marine conservation zone, was adopted as a means to apply attributes which would fit with the Goodwin Sands proposed/recommended marine conservation zone, including one for subtidal sands. This did not include topography. Natural England was of the view that it was a suitable match in the absence of a designation and of a supplementary advice document on the conservation objectives for the site.

Assessment of the evidence

At the heart of claimant’s challenge was the approach to the consideration of topography. It was submitted that it had not been considered as required by the JNCC’s 2004 Guidance by Natural England or the MMO. Evidence from the MMO’s aggregates lead contradicted that view. As well as noting that both direct and indirect impacts on topography had been considered, it was also stated that the JNCC’s 2004 guidance was not applicable in the MCZ process. The basis of the advice from the statutory consultees – specifically CEFAS and Natural England – informed the MMO’s decision. Having considered topography it was discounted as an attribute. A clear consideration of the fact that depth as well as two-dimensional metrics of the extent and spatial distribution was provided. Topography had not been considered as an attribute, although it had been considered in terms of how changes to it might affect the draft conservation objectives for the proposed/recommended marine conservation zone.

Natural England’s expert outlined the matters that it would consider in determining advice in respect of aggregates removal. Beyond impacts such as direct removal of and changes to the benthic organisms, effects of sediment plumes and other matters, the impacts of increasing the depth would be a factor. He agreed with the MMO’s expert, however, that those implications had been ‘fully reviewed’ within the board’s environmental statement. It was noted that the primary consideration … for the subtidal sand from a biodiversity perspective was its potential recovery rate from disturbance … there would be a complete and rapid re-colonisation. To ensure that that would happen, the monitoring programme would specifically measure changes in seabed morphology and sediment type. A capping layer of 1m was to remain across the entire dredge area.33

Further evidence once more reiterated the point that, while the dredging would lower the depth of the seabed and alter the shape of the sandbank, it would not result in any loss to the spatial extent of the feature. Further; marine conservation zones were designated by reference to a European habitat classification, which applied a broad scope definition to subtidal sands. This meant ecological components and their continued maintenance were the basis for the definition, rather than larger scale issues such as topography. It was the area rather than the topography of the feature that was of primary importance. In contrast, the situations where topography would become germane would be in terms of Habitats Directive Annex I sand bank features. These tended to relate to specific sandbanks because of their shape, at which point topography became an attribute as contemplated in the JNCC’s 2004 Guidance. It was also noted that the JNCC’s 2004 Guidance preceded the MACAA, the 2010 guidance on marine conservation zones and there was recognition that condition assessments in the marine environment were an evolving discipline. In essence, everything boiled down to which was the correct interpretation of the materials and the required processes.

Conclusion

The application was refused. Ouseley J stated that ‘the claimant’s arguments involve a fundamental misreading and misunderstanding of the role of the 2004 Guidance in relation to the decision to grant this licence, subject to conditions …’ [and] makes far more of the JNCC 2004 Guidance than is warranted.34 The guidance did not support the contention as to the importance of topography as an assessment criteria. He continued that the claim ‘in substance and at heart is a challenge to expert scientific advice and conclusions’.35 It was observed that the asserted error was in Natural England failing to understand natural conservation advice to which it had contributed. This was ‘… not a promising start for the claimant’.36

The claimant’s case was premised on a misapplication of the JNCC’s 2004 Guidance. In the view of the judge, no material consideration was overlooked and there was extensive consideration of a range of issues, including supplementary guidance for a proxy site. Nothing in it suggested that what it included in respect of topography was applicable to this case. Both direct and indirect impacts of the dredging had been considered, and counsel for the claimant had not challenged the assessment of the indirect effects, nor the fact that the expert evidence had been unanimous in identifying those indirect effects as being the most important. The point was concluded, noting that ‘physical processes, which brought about the dynamically changing shape of the sandbanks, were assessed …’ [and] it was concluded that these … would not measurably be altered in the future.37 At paragraph 121, Ouseley J stated that he was satisfied that the ‘notion of topography in its own right’ was a concept ‘devoid of practical meaning or application in relation to … the Thanet and Goodwin Sands marine conservation zones’. Once more relating back to the JNCC’s 2004 guidance, it was held that marine conservation zones were not included in the list of sites to which it applied. The MACAA

33 Thomsen v Marine Management Organisation (n 1) para 78.
34 ibid para 112.
35 ibid.
36 ibid para 113.
37 ibid para 115.
did not exist and updated versions of the guidance following its passing into law similarly did not include marine conservation zones. The generic guidance could not have contemplated a mandatory consideration of topography for all sites to which it could be, ‘in principle’, applied. It would mean in the judge’s view that ‘that the application of the 2004 Guidance to other sites would require bespoke consideration of the attributes appropriate to that other site. It also made the point that there was, as yet, no example of a site-specific target for topography’.38 In addition, the 2010 and 2011 Guidance on marine conservation zones could not have been made in that form if topography was a mandatory attribute for all subtidal sands. Drawing on the Thanet marine conservation zone experience, subtidal sand was a feature, but topography not an attribute. Natural England had suggested the proxy, and it would have been expected to have used the more recent guidance for practical application.

Consideration had been given to questions pertaining to extent, spatial distribution, depth, volume and shape of the sandbank in the context of the ecological recolonalisation of the area and its functioning. Apart from the fact that these were actually all considerations of aspects of topography, Ouseley J concluded the point by stating that what mattered, however, was spatial extent and depth of sand taken and left, not shape at all. The effects on wave, tidal currents, sediment transport, deposition, composition and character of the communities and rapidity of recolonalisation were specifically considered.39 In addition, there was an additional reason why topography was not suitable for monitoring subtidal sand in these sandbanks. As an attribute it had to be a useful means by which, over suitable monitoring periods, it could be judged whether the condition of the feature had changed. Given the morpho-dynamic attributes of the sites, it was not considered to be useful in that respect. Instead, other attributes were prioritised such as spatial extent and distribution, in terms of what they would provide by way of appreciating the extent to which the sandbanks achieve their conservation objectives.

Commentary

As judicial reviews go, this was innocuous: an allegation of a decision made without reference to the appropriate material, or at minimum a misapplication of it, was unfounded. The correct material was considered. On that basis, it is impossible to disagree with the decision, given the limited ground of challenge. The judge’s reference to the fact that he viewed it as an argument about interpretation of the science by specialist bodies is illustrative of the fact that such challenges are about the process of the decision-making and not its substance. It further underscores the understandable reluctance of the judiciary to accept an invitation to be drawn into adjudicating challenges to expert scientific advice and the conclusions reached by those that have sought and acted on it.

As an aside, and certainly straying into that territory of scientific uncertainty, is the issue of the five-year recovery prediction in respect of indirect impacts on the feature. The judgment gives no clues. However, it is open to question as to whether this is a feature or attribute-specific recovery period, or is something that starts to look like an indicative benchmark, or possibly a starting point.

Given the importance of the area, obviously reflected in its marine conservation zone designation, it is interesting that there is no mention within the judgment (or in the parties’ submissions) of the precautionary principle. The judgment referred to the emergent science involved in condition assessments of marine features, and while the high level marine objectives, which have informed considerable policy and practice to date, recognise that there is evolution in understanding, they contemplate the ‘consistent’ application of the precautionary principle.40 A decade on from the publication of the objectives, the lack of specific reference to them is notable.

Obviously, there are tensions inherent in balancing the socio-economic and environmental straddles of sustainability with such impactful development. The co-location of a marine conservation zone and a site licensed to permit the removal of the very aggregate for which it is designated is unfortunate, prompting legitimate questions in respect of the strength of the marine conservation zone measure as a tool of marine environmental protection. The Goodwin Sands are, however, a much-contested marine space. Designated for its benthic features and understood to be heritage by the dredging project. See http://www.3hconsulting.com/sites/Sites/Goodwins.html.


41 The following gives an overview of the site and the challenges posed for heritage by the dredging project. See http://www.3hconsulting.com/sites/Sites/Goodwins.html.

42 See eg Historic England https://historicengland.org.uk/listing/the-list/list-entry/1000085.