

Consultation on Sites Proposed for Designation in the Second Tranche of Marine Conservation Zones: Response from Boat Owners' Response Group by Dr Michael Simons, April 2015

1. Introductory comments:

The Boat Owners' Response Group (BORG) supports the vision stated in the Defra consultation document of a "programme to protect and enhance the marine environment, while supporting sustainable use of its resources, to achieve the government's vision of clean, healthy, safe, productive and biologically diverse oceans and seas". We also regard recreational boating as one of the uses of the marine environment to be supported where carried out in a sustainable way.

1.1 Social consequences (not just economic)

We also note that the Marine and Coastal Access Act 2009 makes provision that when "considering whether it is desirable to designate an area as an MCZ, the appropriate authority may have regard to any economic **or** social consequences of doing so". We would point out that while due regard is indeed being given to the economic consequences of possible designation, the control or banning of particular boating activities could also result in social consequences to the public, such as loss of leisure amenity and lessening of opportunities to enjoy and appreciate the marine and coastal environment from the water. The social consequences should not be overlooked, for boating is not a small niche minority interest: the BMIF estimate that 3.5 million UK adults participated in boating and watersport activities in 2013, (<http://britishmarine.co.uk/What-We-Do/Statistics-and-Market-Research/Key-Facts-and-Figures>).

1.2 "Favourable Condition"

Our comments following this preamble will be made in the light of the definition of Favourable Condition which is given in the Designation Orders of the Tranche 1 (2013) MCZ's, that is

"(a) with respect to a broadscale marine habitat within the Zone, means that—
(i) its extent is stable or increasing; and
(ii) its structures and functions, its quality, and the composition of its characteristic biological communities are such as to ensure that it remains in a condition which is healthy and not deteriorating;
(b) with respect to a species of marine fauna within the Zone, means that the quality and quantity of its habitat and the composition of its population in terms of number, age and sex ratio are such as to ensure that the population is maintained in numbers which enable it to thrive"

This functional definition does not then require the feature to be in totally pristine condition, a "Garden of Eden" – like state of perfection, but is fully consistent with the objective of clean, healthy, safe, productive and biologically diverse oceans and seas.

We also note that the Designation Orders also state that any temporary deterioration in condition is to be disregarded if a feature is sufficiently healthy and resilient to enable its recovery, and that any alteration to that feature brought about entirely by natural processes is to be disregarded.

1.3 Resilience of features

We draw attention to the above provision in the Designation Orders: *“any temporary deterioration in condition is to be disregarded if a feature is sufficiently healthy and resilient to enable its recovery”*.

There has been a tendency for conservationists and Natural England (NE) entirely to ignore resilience, but resilience of the individual components of a biosystem, and especially a marine biosystem, is key to their survival. Most marine fauna are food to other marine fauna, and in turn themselves prey on other marine fauna or, less commonly, flora. All are vulnerable to fungal, bacterial and virus attack, and they often live in a turbulent and at times violent medium which can inflict physical damage through wave action. Resilience to the various pressures is essential: this point will be mentioned further in section 2.2.3. No risk or vulnerability assessment for a feature can be considered valid unless due account is taken of its resilience relative to the extent and type of pressure applied, in accordance with the above provision. To date, consideration of resilience in the MCZ process has been conspicuously absent. This is not acceptable.

1.4 Standards of evidence

We fully support the guidance on p.4 of the Defra Consultation Document:

“ Evidence provided as part of consultation responses should meet Defra’s definition of evidence as defined by Defra’s Evidence Investment Strategy and be reliable and accurate information that we can use to support decisions in developing, implementing and evaluating policy. It is important that all evidence has a clear audit trail and can be able (sic) to be independently scrutinised and verified.”

BORG expects the same standards to apply to evidence and advice provided by Natural England and other agencies concerning features, condition of feature, and vulnerability assessments for consideration in the MCZ process. In sections 2 and 3 we will point out cases where such standards do not seem to have been applied.

1.5 Sites not put forward for this consultation

In view of the potentially large and adverse impacts on leisure boating, and of the many uncertainties and shortfalls in the evidence surrounding the impact of leisure boating on the proposed features for designation, BORG welcomes the non-inclusion in the consultation of Bembridge, Norris to Ryde, Yarmouth to Cowes and Studland Bay at this stage. It is hoped that this will give time for a proper consideration of evidence, including replacement of the highly dubious Vulnerability Assessment of the Studland Bay seagrass beds by actual evidence: by now, these eelgrass beds must be amongst the most intensively studied features of the whole MCZ process, and to continue to ignore actual evidence in favour of an “opinion” would be perverse as well as deeply unscientific.

2. Response to the proposed designation of The Needles r-MCZ

2.1 Significance of site to recreational boating

The site includes much of the Needles Channel, the route between the Isle of Wight and the Shingles Bank, taken by the majority of vessels, both leisure and small to medium

commercial, leaving the West Solent for destinations across and along the English Channel to the south and west. It is part of the route for many major boating and yachting races, including the Round the Island Race, one of the largest yacht races in the world in terms of participants.

While most vessels will pass along the Needles Channel without stopping, some might anchor in Totland Bay in suitable conditions to wait for the Hurst tidal gate to open, while others might anchor for a while in Alum Bay under the spectacular coloured sandstone cliffs. Alum Bay and the Needles provide a scenic destination for a short cruise out from the Solent which is enjoyed by many. While the number of vessels anchoring is never large, both bays add valued amenity for yachtsmen and motor boaters, and form a much valued part of the broader Solent experience.

Smaller craft may be launched and recovered at Colwell and Totland bays, via the slipway or beach.

2.2 Designation?

We do not agree that this site should be designated at this time because of the strong possibility of unwarranted, unnecessary and pointless restrictions on leisure boating interests arising from management measures informed by poorly formulated, inadequate and unsafe Risk/Vulnerability Assessments currently provided by Natural England for this site. The deficiencies include:

- Unsubstantiated “risks” to designated features being apparently automatically attributed to ill-defined leisure boating activities
- Lack of any understanding or quantification of the small proportion of seabed which would actually be impacted by anchoring events, and
- Inaccurate and non-objective Statutory Body (Natural England) “Advice” in respect of the seagrass *Zostera marina* which would be used to inform management objectives and measures in the event of designation.

We will address these points individually.

2.2.1 Unsubstantiated and ill-defined risk assessments

The NE recreational boating Risk Assessment* to several features is not clearly phrased, and does not actually make sense: "risk from mooring, launching, recovery and participation". There are few if any moorings for recreational craft on the site. Launching and recovery would only affect intertidal, not subtidal features, because boats or their trailers would only contact the seabed in shallow intertidal water - yet eight subtidal features are subject to the same mantra:

“Current risk from recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling causing abrasion and disturbance to the feature.”

The meaning of "participation" is unclear. We presume it does not include the mere passage of a boat through the site, but while uncertainty remains, BORG is unable to agree with designation.

The above four-part catch-all phrase is used for multiple features, and it is obvious that no consideration has been given to precisely how or why mooring or launching or recovery or participation (whatever that may mean) would impact the various features: for instance they are assessed to pose a high risk not only to subtidal chalk, but also to oysters, as well as to peacocks tail seaweed. What evidence is there of these posing not just a risk, but apparently a quantified High Risk, to each of these features? We suggest it is pure guesswork.

The Assessment is all the more unbelievable for the reason that activities which cannot even impact the designated feature, such as the effect of launching and recovery on subtidal features, are assigned the same (High) risk as activities which clearly can, such as trawling and dredging.

It is beyond dispute that certain activities, such as scallop dredging, in which gangs of seabed-penetrating heavy dredges are methodically dragged across wide areas of seabed, have a far greater impact than the deployment of a few small leisure boat anchors, yet the assessments make no distinction whatsoever between such activities. All are tarred with the same “high risk” brush, and no evidence or reasons are offered.

BORG strongly believes that if people’s liberties are to be restricted by law in the interests of nature conservation, then any restrictions should be justified by clear evidence, and that, in Defra’s words, the evidence has a clear audit trail and is able to be independently scrutinised and verified. At present, that is just not the case.

Clear evidence is also important from the perspectives of conservation and of taxpayers’ interest. Funding for marine conservation is, like all public spending, constrained by limits. Money wasted on pursuing pointless interventions is not only a waste of taxpayers’ money, it is money not available for other projects which might show real conservation gain.

These “assessments” are, frankly, arbitrary and incoherent, and can have no justifiable place in informing GMA’s or management measures.

(* Source: *Natural England’s advice to Defra on recommended Marine Conservation Zones to be considered for consultation in 2015 Annex 9. Site-specific advice, section A9.6.5 Feature risk*. Excerpts are reproduced in Appendix B, and it is downloadable from <http://publications.naturalengland.org.uk/file/5756440734072832>)

2.2.2 Lack of assessment of proportion of seabed which is impacted by anchoring

While the Risk Assessments for the site do not mention anchoring, it is possible that the term “mooring” was mistakenly used in place of anchoring. It is also BORG’s experience that anchoring is frequently cited as a risk factor for designated features, so we wish to introduce evidence relating to the area of seabed which might be impacted by recreational boat anchors. We are not aware of any existing published procedure for making this assessment, and as it should be a crucial part of the process of making a vulnerability or risk assessment (i.e. how much of the area is actually affected?) we offer our evidence on the matter.

The principle is simple: it is possible to estimate the area of seabed, **a**, which might be disturbed by a single anchoring event from the width of the anchor blade and the length of the area affected. If the number of boats, **N**, anchoring in an anchorage of area, **A**, during a season can be estimated, then it is straightforward to estimate the proportion of the seabed

disturbed: % disturbed = 100 x **A/(aN)**. In the case of Studland Bay, we estimate this to be less than 0.7%, even allowing a twofold margin of error.

It is possible to estimate a general case for high density anchoring, for boats are always anchored so that their swinging circles do not overlap (so they do not collide when swinging to wind and tide). This gives a “closest packed” anchoring condition, and sensible estimates for the various values give a maximum of 1.6% of the seabed disturbed during a season.

So the area of seabed disturbed by anchoring is calculated to be surprisingly low. The method is described at <http://boatownersresponse.org.uk/anchoring-density.pdf> and we suggest that NE and Defra examine the method and use it, or their own version of it, to arrive at an objective figure in each case. We would like to formally submit this item as new evidence. It has already been circulated by email informally.

In the case of the Needles r-MCZ, we suggest that in view of the relatively low incidence of anchoring there, the proportion of seabed affected would be negligible, and given a modest degree of resilience of the feature concerned, there would be effectively zero impact on the area of any habitat feature.

2.2.3 NE “Advice” on seagrass *Zostera marina*

One of the features proposed for designation in the Needles r-MCZ is eelgrass.

The current NE “Advice” which would inform management measures in respect of eelgrass (seagrass *Zostera marina*) in the Needles r-MCZ is dependent on the MB0102 Matrix for that advice (*“In your email you quote from a letter from Kevan Cook dated 8 May in which he, correctly, confirmed that the MB0102 Sensitivity matrix will form part of the information used to determine our advice on the management measures for all MCZ sites and features.”* – letter Dr Tim Hill, NE, to Dr Simons, 18 July 2014).

The author contends that the particular assessment for eelgrass is wrong: it is based on anonymous “expert opinion” rather than evidence, and is contradicted by direct observational evidence from Studland Bay. Further, the “expert opinion” that eelgrass shows zero resistance and low resilience to abrasion pressures is contradicted by at least a dozen published scientific papers, which were presumably not known to the “experts”. This is spelled out in fully referenced detail at <http://boatownersresponse.org.uk/Commentary-on-MB0102.pdf> .

Dr Hill went on to say *“Natural England is currently working with MarLIN and the other country agencies to ensure the updated evidence base of the assessments meets our evidence standards. The literature you cite along with all the evidence surrounding this feature-pressure interaction will be re-visited as part of the Natural England conservation advice refresh.*

JNCC are also undertaking further work on the sensitivity of seagrass beds. We understand that this report will be published shortly and will again consider this and the evidence that you have submitted as part of refresh mentioned above.”

It is BORG’s view that the current NE “Advice” on the seagrass *Zostera marina* is not fit to inform any decisions about designation, nor about the GMA or management measures for

any site, and that such matters should be held back until the advice refresh has taken place.

We would identify the following evidence as relevant to the refresh and relevant to the consideration of eelgrass features in general:

Commentary on the MB0102 Sensitivity Matrix Assessment of Sensitivity of Seagrass Beds to Physical Damage, by M.J.Simons, for Boat Owners' Response Group, July 2014
<http://boatownersresponse.org.uk/Commentary-on-MB0102.pdf>

The Resilience and Resistance of Eelgrass to Short Term Mechanical Pressures: a Review by Michael Simons, July 2014, for the Boat Owners' Response Group
<http://boatownersresponse.org.uk/Eelgrass-Resilience-and-Resistance.pdf>
(this is the evidence part of the first paper, without the MB0102 critique part)

The effect of raking eelgrass as described by Boese (2002): a commentary by Michael Simons, August 2014, for the Boat Owners' Response Group
<http://boatownersresponse.org.uk/Eelgrass-Raking-Study.pdf>
(this outlines a study in which eelgrass was raked away more extensively than in any anchoring event, the treatment was done 3 times at monthly intervals, yet two weeks after the last treatment all eelgrass parameters were indistinguishable from untreated areas, i.e. very high resistance and resilience).

AERIAL IMAGERY OF STUDLAND BAY, 1972 – 2011 Compiled by Michael Simons, May 2014
<http://boatownersresponse.org.uk/Aerial-1972-2011.pdf>
(this uses the original imagery as used in the currently withdrawn NECR111 part 2 plus a 2011 image from Bing Maps and shows the increase of the eelgrass beds over the years)

<http://boatownersresponse.org.uk/aerial2008grid.jpg>
(a high resolution image from the NECR111 part 2 dataset showing the main anchoring area at Studland Bay in 2008)

Eelgrass and Anchoring: an Overview of the Evidence by Michael Simons, September 2014, for the Boat Owners' Response Group
<http://boatownersresponse.org.uk/Evidence-overview-Sept14.pdf>
(an overview of evidence, pointing out the absence of scientific papers in the worldwide literature which report anchor damage to *Zostera marina*; reviewing evidence of flourishing eelgrass beds in Studland Bay despite many decades of leisure boat anchoring there; mentioning papers from around the world demonstrating the resistance and resilience of eelgrass to mechanical and other damage; explaining the relatively small area actually impacted by anchors; and reviewing the false analogies and other spurious arguments advanced in the cause of "proving", despite all the evidence, the false premise that eelgrass is highly sensitive to anchoring pressures).

Earlier papers by the author include
Potential for rapid recovery of eelgrass *Zostera marina* from short-term damage: a review
<http://boatownersresponse.org.uk/Eelgrass-recolonisation.pdf> and
slides from the Nov. 2012 presentation Eelgrass and anchoring: evidence and resilience
http://boatownersresponse.org.uk/Workshop_presentation7.pdf

We also note that survey D_00070 EA Studland seagrass survey by Echosounder and drop-down camera, which was not available before the recent NE data cutoff, will be relevant. This was referenced in the NE Advice document, p 172, listed in para 2.2.1 of this report. We have not been able to trace this document as yet.

3. Comments on individual features in the context of recreational boating

3.1 Features subject to “high energy” influences

Subtidal mixed sediments
Subtidal coarse sediment
Subtidal sand
Subtidal mud

We note that impacts from boating pressures are assessed as low due to the high energy nature of the site (waves etc having a greater impact than any boating activity), and presume that no management measures involving recreational boating would be envisaged.

3.2 Seagrass beds

See 2.2.3 above

3.3 Peacock’s tail

This is an intertidal deciduous alga species, found on stony or rocky substrates often with overlying silt.

Site Report - rMCZ 20: The Needles (includes rRA 20: Stalked Jellyfish (within Alum Bay)) Hampshire & Isle of Wight Wildlife Trust Report prepared by Amy Dale. March 2013
http://www.hiwwt.org.uk/sites/default/files/files/Marine/mcz/rMCZ%2020%20_The%20Needles_Final.pdf

This report states “HIWWT surveys within the rMCZ 20 The Needles area did not record Peacock’s tail seaweed (Padina pavonica) or the stalked jellyfish Lucernariopsis campanulata. This should not be regarded as an indication that these species are not present at the site. Peacock’s tail seaweed is an intertidal species and HIWWT only conducted subtidal surveys in this area...”

The report “Status and sensitivity of the BAP priority marine alga *Padina pavonica*, SITA TRUST, Final Report (Extract) January 2012 Roger J.H. Herbert, W. Farnham, T. Farnham & Rachel Luxton” ukbars.defra.gov.uk/file/get?fileid=1126

states:

“Isle of Wight

Site 14. Colwell Bay (Wardens Ledge)

Plentiful pools with rich flora amongst boulders on a limestone ledge that extends in to the western Solent. No Padina found, despite extensive searches.

Site 15. Colwell Bay (How Ledge)

A small limestone reef separated by groynes to the east of the main slipway at Colwell Bay where there are large shallow pools with sandy substrate. In separate 5 minute searches, undertaken by four different field workers, 50-100 clumps of Padina were found on the Ledge in each search, often attached to the sides of pools. Cover often 25%; the brown alga Fucus serratus was frequent in the pools.”

It appears to be found specifically on this limestone reef. Nobody would try to launch or recover a boat over a limestone reef when there is a slipway nearby, or sandy beach adjacent. We conclude that there is very little risk to the peacock's tail seaweed from boating activity on this site. There are no reports of it being found in subtidal areas, and even if it were on subtidal parts of the reef, people would avoid anchoring there because of poor holding or risk of snagging the anchor.

3.4 Subtidal macrophyte dominated sediment

Curiously, the only risk narrative given by NE is the boating mantra: *Risk from recreational sailing and powerboating (mooring and launching, recovery and participation)*. Dredging and trawling are not mentioned. Since the latter have far greater potential to damage seabed features than the (incomprehensible) quartet of *mooring and launching, recovery and participation*, it would seem the risk assessment has just not been thought through.

This feature covers a range of macrophytes (seaweeds, seagrasses) and sediment types. We would expect some evidence to show that boating activities at the intensity prevailing in the area could cause a decrease in extent, or non-temporary damage to its “structures and functions, quality and composition, etc. etc.”, for the particular features present in the site to justify any GMA in respect of boating, but we are not aware of any such evidence.

3.5 Sheltered muddy gravels, Subtidal chalk

It is not conceivable that leisure boating activities could cause a decrease in extent of these features, nor is it likely that boating activities at the intensity prevailing in the area could cause significant damage to their “structures and functions, quality and composition, etc. etc.”.

We would also question the conservation significance of these various aspects of the seabed listed in sections 3.1, 3.4 and 3.5. Are they rare or threatened? Is leisure boating causing a threat to their existence of any significance whatsoever? It may be that scallop dredges and heavy beam trawls, and navigational dredging, can cause significant damage to seabed features, but the puny anchors of recreational boats impacting less than 1% of the seabed in a year? Really?

3.6 Native oyster

The identified feature is native oyster, not native oyster beds. This is consistent with the following survey:

Site Report - rMCZ 20: The Needles (includes rRA 20: Stalked Jellyfish (within Alum Bay))
Hampshire & Isle of Wight Wildlife Trust Report prepared by Amy Dale. March 2013
http://www.hiwwt.org.uk/sites/default/files/files/Marine/mcz/rMCZ%2020%20_The%20Needles_Final.pdf

The report includes scuba dived surveys and says for the Long Rock, Alum Bay, survey: “Native oysters (*Ostrea edulis*) were found individually but not as a bed for which *O. edulis* is a Habitat FOCI”.

In the report, oyster beds were not reported for any of the sites, and abundance of individual oysters was never higher than “occasional”. Reported abundancies of *Ostrea edulis* were:

Colwell Bay: none recorded

Warren Ledges (seaward of Colwell Bay): rare

Totland Bay: occasional, rare

Hatherwood Bay (between Totland and Alum Bays): rare

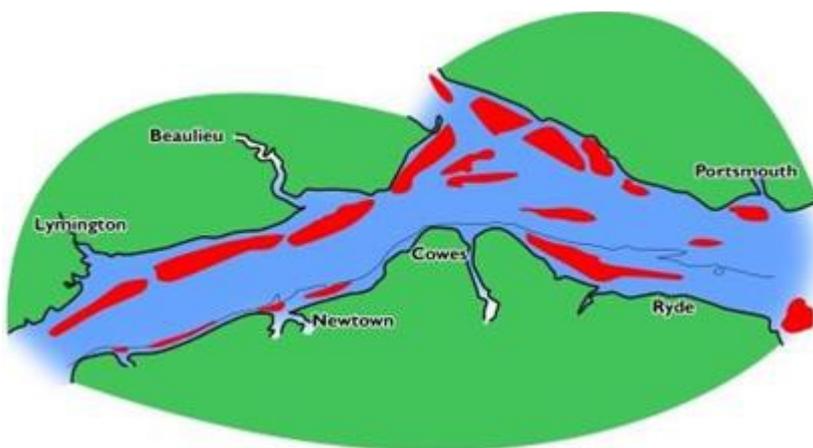
Long Rock, Alum Bay: occasional

Small Pinnacles, Alum Bay: occasional, rare

Yachtsmen understand and respect the need to avoid disrupting oyster beds by anchoring over them, but sparsely distributed individual oysters are another matter. The chances of an anchor actually contacting an individual oyster are very low, oysters are heavily armoured, and in the remote chance of contact, the worst that could happen would be to dislodge the oyster and the stone to which it is fastened. If anchoring restrictions were ever to be contemplated in respect of individual oysters, we would expect a proper assessment of the actual risk to be made.

We note that oyster stocks in the Solent region have declined sharply, for unknown reasons, and that the controlled fishery is currently closed to allow stocks to regenerate. Nevertheless, oyster beds in the Solent are extensive, as shown in the map, and raise the question of the need to designate the sparsely distributed individual oysters in the Needles rMCZ when the nearby extensive Solent oyster beds are part of a managed fishery.

Illustration: Oyster beds (red) in the Solent, reproduced from the Isle of Wight County Press Online



3.7 Alum Bay rocks

No skipper would want to anchor over (nor hit) rocks. The long rock in the middle of Alum Bay is currently unmarked by buoys, although it is shown on charts. Appropriate buoyage would no doubt be welcomed by boaters, and also prevent inadvertent anchoring over the rock features

4. Comment: The preoccupation with recreational boating

The above examination of the proposed features for designation and corresponding risk assessments for the Needles r-MCZ has not identified a single sound case in which there is any evidence that management of leisure boating activities would result in conservation gain in the sense explained in paragraph 1.2.

If those features are in less than Favourable Condition then it is likely the causes would be the known high-impact ones: fishing in various forms, including towed bottom gear. We note that ten out of fifteen features of the Needles site are assessed as in less than Favourable Condition, although it is unclear whether these are the result of objective observation or guesswork.

This leads to a more general observation, relevant to other sites still under consideration: there seems to be a disproportionate emphasis on “pressures” attributed to recreational boating – for instance in the risk assessments given for the Needles site, the minor (or even insignificant) player, recreational boating, is listed above the known major causes of seabed damage, fisheries, dredging and trawling, and assigned the same level of risk.

The reality is that the major risks to the marine environment are well known and well documented, including overfishing, including industrial sandeel fishing; by-catch and collateral damage from fishing (eg dead dolphins); trawling and dredging; and pollution including agricultural run-off. In contrast there are few recorded cases of environmental damage in the UK from recreational boating since the use of tributyltin in antifouling paints was banned in the 1980's.

However NE assessments for sites listed for further consideration list numerous seabed features claimed to be “at risk” from recreational boating, and NE seems to be spending time and money on devising ever more fanciful “risks” caused by boating. These include for short-snouted seahorses at Bembridge “*There is a risk of death by collision with recreational vessels*” (!!) and for peacock's tail and other features at Bembridge “*Feature is vulnerable to the spread of non-native invasive species through recreational vessel use in the area*”.

These would appear to be attempts to use the MCZ process to secure total bans of leisure vessels in a Marine Conservation Zone, and as such not compatible with the stated aim of “a programme to protect and enhance the marine environment, while supporting sustainable use of its resources, to achieve the government's vision of clean, healthy, safe, productive and biologically diverse oceans and seas”.

5. “Mission Creep” and loss of scrutiny in the MCZ Process

The MCZ process started with Regional Stakeholder Groups (for instance Balanced Seas and Finding Sanctuary) who identified r-MCZ sites and features recommended for protection or designation. Evidence was produced and debated, and proceedings were reasonably transparent. Under this process, the Needles r-MCZ had just four features recommended for protection: Subtidal mixed sediments, Seagrass beds, Stalked jellyfish, and Peacock's tail. Stakeholders were aware of what was going on, and reasonably satisfied with the process.

Now, however, we find the list of features in the Needles site has grown nearly fourfold, to fifteen. Similar explosive growth has occurred in other sites. There appears to be no

evidence trail to justify the inclusion or status (Maintain / Restore) of the features, or to justify the Risk (Vulnerability) assessments of various features. The assessments from the NE “Advice” document for the Needles site are, as explained in this report, arbitrary, incoherent, and devoid of explanation. And they have nothing to do with science as real scientists know it. It appears that any conservationist’s passing fancy can be included in NE’s “Advice”, such as the notion of sparsely distributed seahorses being killed by collision with boats, or recreational boats as hotbeds of invasive species when boats which are kept on trailers will harbour nothing because they are dry most of the time, and boats kept afloat are routinely kept free of growths with antifouling paint.

In BORG’s opinion this uncontrolled and unscrutinised growth of features and assessments does not meet normal standards of evidence, and current documents supporting the process, in particular the NE “Advice”, utterly fail to provide “**reliable and accurate information**” and “**evidence (that) has a clear audit trail and (is) able to be independently scrutinised and verified.**”

Michael Simons
Science Specialist, Boat Owners’ Response Group

April 2015

Appendix A: documents submitted as evidence

This appendix lists relevant documents mentioned in the text above. They are all available on the BORG website. They are relevant to the Needles rMCZ because of the presence of eelgrass in the site, and the possibility of recreational boat anchoring pressures being considered as a risk at the site, and BORG wishes to submit them as evidence.

A.1 Anchoring density: estimating % of seabed impacted

Estimating the Degree of Exposure to Leisure Vessel Anchoring, by M.J.Simons.
<http://boatownersresponse.org.uk/anchoring-density.pdf>

A.2 Documents relating to vulnerability, resistance and resilience of the seagrass *Zostera marina* (eelgrass), also relevant to the NE Advice Refresh:

Commentary on the MB0102 Sensitivity Matrix Assessment of Sensitivity of Seagrass Beds to Physical Damage, by M.J.Simons, for Boat Owners’ Response Group, July 2014
<http://boatownersresponse.org.uk/Commentary-on-MB0102.pdf>

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this uses the original imagery as used in the currently withdrawn NECR111 part 2, plus a 2011 image from Bing Maps and shows the increase of the eelgrass beds over the years 1972, 1985, 1990, 1997, 2008 and 2011

<http://boatownersresponse.org.uk/aerial2008grid.jpg>

(a high resolution image from the NECR111 part 2 dataset showing the main anchoring area at Studland Bay in 2008)

Eelgrass and Anchoring: an Overview of the Evidence by Michael Simons, September 2014, for the Boat Owners' Response Group

<http://boatownersresponse.org.uk/Evidence-overview-Sept14.pdf>

(an overview of evidence, pointing out the absence of scientific papers in the worldwide literature which report anchor damage to *Zostera marina*; reviewing evidence of flourishing eelgrass beds in Studland Bay despite many decades of leisure boat anchoring there; mentioning papers from around the world demonstrating the resistance and resilience of eelgrass to mechanical and other damage; explaining the relatively small area actually impacted by anchors; and reviewing the false analogies and other spurious arguments advanced in the cause of “proving”, despite all the evidence, the false premise that eelgrass is highly sensitive to anchoring pressures).

Earlier papers by the author include

Potential for rapid recovery of eelgrass *Zostera marina* from short-term damage: a review

<http://boatownersresponse.org.uk/Eelgrass-recolonisation.pdf> and

slides from the Nov. 2012 presentation Eelgrass and anchoring: evidence and resilience

http://boatownersresponse.org.uk/Workshop_presentation7.pdf

We also note that survey D_00070 EA Studland seagrass survey by Echosounder and drop-down camera, which was not available before the recent NE data cutoff, will be relevant. This was referenced in the NE Advice document, p 172, listed in para 2.2.1 of this report. We have not been able to trace this document as yet, but believe it should also be published and recognised as relevant evidence of the resilience and sustainability of eelgrass in the presence of anchoring.

Most of the papers by the author are reviews of papers published in the worldwide scientific literature: while the author's articles themselves are not peer-reviewed, the papers reviewed within them are, and the reviews are fully referenced and verifiable.

Appendix B: Natural England's risk assessments for the Needles site

The following are imaged extracts from pages in the reference given at the end of section 2.2.1. This is, as far as we are aware, the only information published by NE which describes the risks they attribute to the activities, and it is on these that we base our comments in section 3 above. As can be seen, the information is hardly comprehensive.

A9.6.5 Feature risk

Table 5 Feature risk assessments

Feature name	Feature status	Current risk assessment	Current risk narrative	Future risk assessment	Future risk narrative
A5.4 Subtidal mixed sediments	Tranche 2 advice	High	Current risk from recreational sailing and powerboating and fisheries dredging/trawling. The Needles is a westerly facing site of high mobility and high energy. Exposure to dredging and trawling and anchoring events are likely low impact due to high energy nature of site.	Moderate	
Seagrass beds	Tranche 2 advice	High	Current risk from coastal infrastructure (outfalls), shipping, fishing – dredging/trawling (not all of the seagrass records in the geodatabase are covered by the Southern IFCA red byelaw area), ports and harbours and recreational sailing and powerboating.	High	
Stalked jellyfish (<i>Lucernariopsis campanulata</i>)	Tranche 2 advice	Low		High	
Peacock's tail (<i>Padina pavonica</i>)	Tranche 2 advice	High	Current risk from recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling causing abrasion and disturbance to the feature.	High	
A1.2 Moderate energy intertidal rock	T2 new features	Low		Moderate	
A3.1 High energy infralittoral rock	T2 new features	Low		Moderate	
A3.2 Moderate energy infralittoral rock	T2 new features	Low		Moderate	
A4.2 Moderate energy circalittoral rock	T2 new features	Low		High	Current understanding indicates that this feature, although highly sensitive, would not be exposed to activities in the future that would trigger a high risk.

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Feature name	Feature status	Current risk assessment	Current risk narrative	Future risk assessment	Future risk narrative
A5.1 Subtidal coarse sediment	T2 new features	High	Current risk from recreational sailing and powerboating and fisheries dredging/trawling. The Needles is a westerly facing site of high mobility and high energy. Exposure to dredging and trawling and anchoring events are likely low impact due to high energy nature of site.	Moderate	
A5.2 Subtidal sand	T2 new features	High	Current risk from recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling causing abrasion and disturbance to the feature.	High	The Needles is a westerly facing site of high mobility and high energy. Ongoing exposure to dredging and trawling and anchoring events are likely low impact due to high energy nature of site. Future moorings would be regulated by appropriate authorities.
A5.3 Subtidal mud	T2 new features	High	Recover GMA triggered due to moderate/high VA for recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling. The Needles is a westerly facing site with high mobility and high energy. Exposure to dredging and trawling and anchoring events are likely low impact due to high energy nature of site.	Moderate	
A5.5 Subtidal macrophyte-dominated sediment	T2 new features	High	Risk from recreational sailing and powerboating (mooring and launching, recovery and participation).	High	
Sheltered muddy gravels	T2 new features	High	Current risk from recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling causing abrasion and disturbance to the feature.	High	

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Feature name	Feature status	Current risk assessment	Current risk narrative	Future risk assessment	Future risk narrative
Subtidal chalk	T2 new features	High	Current risk from recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries dredging/trawling causing abrasion and disturbance to the feature.	High	
Native oyster (<i>Ostrea edulis</i>)	T2 new features	High	Recover GMA triggered due to moderate/high VA for recreational sailing and powerboating (mooring and launching, recovery and participation) and fisheries trawling and dredging. Although it is suggested that other features in this site are less affected by dredging or benthic trawling this is not the case for <i>Ostrea edulis</i> and advice remains as recover due to high sensitivity and commercial value. There is potential for this feature to be exploited and detrimentally affected if not given a recover objective.	High	