

Menai Strait Fishery Order Management Association

Agenda & Papers- 18th April 2024

Microsoft Teams

Association Meeting

1. Chair's announcements
2. Apologies
3. Declarations of interest
4. Minutes of last meeting ([attached](#))
5. Matters Arising
6. Register & declarations of interests (verbal)
7. Financial update ([report](#))
8. Shellfish Hygiene Classifications in the Menai Strait ([report](#))
9. Public Profile of the Association (verbal)
10. Welsh Government Activity ([report](#))
11. North West IFCA Activity ([report](#))
12. All Party Parliamentary Group: Shellfish Aquaculture (verbal)
13. Menai Strait East (verbal)
14. Menai Strait West Fishery Order (verbal)
15. Menai Strait Partnership Forum (verbal)
16. Fishery management issues (verbal)
17. Any Other Business (verbal)
 - a. Correspondence
18. Proposed dates for next meetings:-
 - a. 19th September 2024 - Teams / Zoom
 - b. 12th December 2024 [AGM followed by business meeting] - Marine Centre Wales

Menai Strait Fishery Order Management Association

Meeting, 14th December 2023
Zoom Video Conference Call

Minutes

Attendance

Members

Alan Winstone*
James Wilson*
Kim Mould*
Lewis le Vay

Chair
Bangor Mussel Producers Ltd
Myti Mussels Ltd
Bangor University

Observers

David Salisbury
Howard Mattocks
Rowland Sharp
Trevor Jones
Emily Payne

Ynys Môn County Council
Beumaris Town Council
Natural Resources Wales
Menai Strait (West) Applicants
Dŵr Cymru / Welsh Water

Advisors

Jim Andrews*

MSFOMA Secretariat

Notes

* *These individuals are also Directors of the Association*

1. Chair's announcements

The Chair welcomed everyone to the meeting.

2. Apologies

Alex Scorey
Euryrn Roberts
Ioan Thomas
José Constantino†
Julian Bray
Michelle Billing
Nia Jones
Rob Floyd
Ruth Iliffe

Natural Resources Wales
Natural Resources Wales
Cyngor Gwynedd
Welsh Government
Welsh Government
Welsh Government
North Wales Wildlife Trust
Welsh Government
Royal Yachting Association Cymru

It was noted that Cllr Gareth Roberts from Bangor City Council had neither attended a meeting or submitted apologies for some time. It was agreed that Bangor City Council should be asked to confirm their representation.

Action: Secretariat

3. Declarations of Interest

The Chair asked participants in the meeting to declare any interest in each agenda item before speaking.

4. Minutes of last meeting

The minutes of the meeting that took place on the 20th of September 2023 were accepted.

5. Matters Arising

It was considered that most of the matters arising from the last meeting were addressed on the agenda for the current meeting.

Some items raised at the September meeting that were not formally addressed on the agenda were discussed:-

Sand in Penrhyn Dock

James Wilson reported that there had been no further progress with removal of the sand that had accumulated in the dock and was restricting access.

It was agreed that this issue should be kept under review.

Action: JW, Secretariat

Public Profile of the Association

The Chair reported that following agreement at the last meeting that this was no longer necessary, the rolling contract with Dr Andy Olivier to raise the public profile of the Association had been terminated.

Species ID training / Invasive Alien Species

Rowland Sharp gave a brief update on the species ID workshop that had been run by North Wales Wildlife Trust. Training had been provided to existing shore searchers, with a focus on Pacific oyster and slipper limpets (*Crepidula fornicata*). Searches were being conducted twice per month and sightings would be reported to NRW¹.

There was no news of any *Crepidula fornicata* sightings.

6. Register of Interests

The Chair reminded all participants to check their Statement of Interests on the MSFOMA website (https://www.msfoma.org/?page_id=478) to confirm whether it is accurate.

7. Financial Update

The meeting accepted the report that had been submitted about the Association's finances. Performance against the current financial plan was noted.

¹ These can be submitted to iRecord here: <https://irecord.org.uk/enter-casual-record>. Information (pictures and information of the area searched) can also be sent to the NRW participants in MSFOMA, rowland.sharp@cyfoethnaturiolcymru.gov.uk and alexander.scorey@cyfoethnaturiolcymru.gov.uk.

Shellfish farmers confirmed that economic conditions were very difficult and that MSFOMA's efforts to keep costs down were very welcome.

8. Shellfish hygiene

The Chair introduced the report on shellfish hygiene classifications in the Menai Strait, which are critical to the financial viability of mussel farming here.

The recent decision by the FSA to downgrade the results of the classification zone for the Cegin Channel RMP from a "Seasonal A/B" to a "Long Term B" was discussed. The shellfish farmers had written to the FSA to request a different, shorter, seasonal classification.

It was agreed that it would be appropriate for MSFOMA to support this request to re-establish a seasonal "A" classification for one or more classification zones in the Strait.

Action: Chair, Secretariat

The revised "Sanitary Survey" was discussed. Following a request from the Chair, the Local Action Group was due to be meeting to consider responses to the Sanitary Survey on the 16th January 2024.

It was agreed that the Chair and Secretariat should work with mussel farmers to prepare a response to the FSA consultation by the deadline of the 19th January 2024.

Action: Chair, Secretariat

9. Dŵr Cymru / Welsh Water Update

The Chair welcomed Emily Payne, the River Quality Liaison Manager from Dŵr Cymru to the meeting.

Emily gave a presentation to the meeting about the work that Dŵr Cymru are carrying out to improve the waste water treatment facilities around the Menai Strait. Key points in this presentation were:-

- The Menai Shellfish Scheme, funded under the current AMP7 programme, has identified the two assets that have the greatest impact on water quality: Bangor Beach Road, and Treborth.
- Work on upgrading Bangor Beach Road is due to start in early 2024. It is anticipated that this will reduce overflow discharges from the current average of 84 per year to less than 10.
- Treborth is due to be upgraded in 2025 under AMP8. The objective is again to reduce discharges to 10 or fewer per year.
- Dŵr Cymru are working to implement the Stormwater Overflow Assessment Framework (SOAF) across all assets. The Dŵr Cymru focus is on actual outcomes and not just reductions of the number of spill per year.
- Dŵr Cymru were due to be launching a storm overflow map to provide up-to-date information on where overflows were happening, and the recent history for each overflow. There are over 2,300 outfalls in Wales. This map was due to be launching for 415 outfalls (those affecting shellfish waters, bathing waters, and high amenity value swimming areas) in early 2024 .

The progress that Dŵr Cymru has made and the proposed investment was welcomed. The interactive map in particular was welcomed. Emily agreed to circulate the URL once this was published in January.

Action Emily Payne²

There was some discussion about the presentation. Key points raised included:

- Is it possible to present information about volume of effluent discharged as well as the frequency of overflows? Emily noted that this could result in comparison of non-equivalent effluents: the input of UV treated waste water could not be compared to effluent that had not been UV treated.
- How the asset assessment approach under SOAF was affected by nature conservation designations in different locations, and whether these designations could be obstacles to improving water quality.
- That separating clean surface water runoff from sewage effluent would reduce overall effluent volume and reduce the number of overflow events.

There was some discussion about other aspects of catchment management and effluent inputs. Rowland Sharp (NRW) asked if the location of fields where biosolids from WWTW were spread was known. Emily agreed to provide this information.

Action: Emily Payne

James Wilson asked if Dŵr Cymru had received any Environmental Information Requests from Carcinus Ltd in relation to the Sanitary Survey review on behalf of the FSA. Emily agreed to ask the EIR team in Dŵr Cymru about this.

Action: Emily Payne

10. Public Profile of the Association

The Chair confirmed that the action agreed at the last meeting to terminate the contract with Dr Andy Olivier to raise the profile of the Association using X, formerly known as Twitter, had been actioned.

It was confirmed that the Association's account with X would remain active, so that any news items could still be circulated by that medium if necessary.

11. Welsh Government Activity

The Secretariat's report was noted and received.

The Chair reported that he had been encouraging WG to clarify its policy on Pacific Oysters through his participation in the Ministerial Advisory Group for Welsh Fisheries (MAGWF).

He had presented a paper to the meeting about the challenges facing Pacific oyster cultivation in Wales in April. WG officials had made a commitment "*consider a policy on Pacific Oysters*" at that meeting. There had been no progress by the November meeting. In response to this, and to concerns raised at the last MSFOMA meeting, the Chair had prompted MAGWF to write to the Minister to query whether this group was adequately resourced to deliver progress on this and other issues.

² The URL is: <https://corporate.dwrcymru.com/en/community/environment/storm-overflow-map>

It was noted that Impact Assessments for Pacific Oyster cultivation are being considered on a case-by-case basis. This seemed to be resulting in an inconsistent and overly cautious approach. NRW are trying to ensure consistency in their responses by reviewing all available information so that appropriate assessments are well informed.

The Chair also confirmed that no further progress appeared to have been made with the draft Ministerial Statement on a strategic approach to fisheries and aquaculture that he had been consulted about prior to the last meeting. The Chair will circulate it to all when it is published for consultation.

Action: Chair

The Chair agreed to provide an update on progress at MAGWF for the next MSFOMA meeting.

Action: Chair

It was reported that the cross-party Working Group on shellfish aquaculture are due to visit the Menai Strait during 2024.

12.NW IFCA Activity

The report on recent activities of the NW IFCA was received and accepted by the meeting.

It was noted that there had been a good seed mussel settlement in the NWIFCA District this year. The IFCA had opened some areas of seed mussels for dredging in the mouth of the Wyre estuary. They had not opened the larger and more easily dredge seed mussel beds known as "South America skear" and the "Falklands" in the northern part of Morecambe Bay. This was because NWIFCA concluded that dredging might adversely impact seabed habitats, specifically cobbles.

Concerns were raised that the NWIFCA perception of dredge impacts was based on scallop dredging impacts, rather than mussel dredges. It was agreed that the evidence used in the HRA should be sought, and any misconceptions corrected.

Action: Secretariat

The new CEO of NWIFCA had been invited to Port Penrhyn to meet the mussel farmers and see operations at first hand. This meeting was due to take place in early 2024 and a verbal update will be provided to the next meeting.

13.All Party Parliamentary Group: Shellfish Aquaculture

James Wilson reported that there had been no recent meetings of this group. He understood that its Chair had changed, and that there would be further meetings.

Updates will be provided at future MSFOMA meetings.

Action: JW, Secretariat

14.Menai Strait East Fishery Order

It was noted that the only outstanding area of work for this Order was to review the "Managed Areas" around reef features. It was considered that in view of the low level of cultivation activity and the desire to minimise expenditure, this was not presently a priority and should be held in abeyance.

15. Menai Strait West

This matter had been discussed under Matters Arising. There was no further discussion.

16. Menai Strait Partnership Forum

The Chair and Secretariat provided an update on the “Menai Strait Partnership Forum” (MSPF) that had been set up in collaboration with the North Wales Rivers Trust, and using funding from the Welsh Government’s Coastal Capacity Fund.

Since the last MSFOMA meeting, more funding had been secured and a Project Officer had been recruited. Work on projects designed to improve water quality and awareness of key issues was underway, and more funding was being sought to support future work.

The Chair and Secretariat agreed to work with NWRT to progress this initiative and report back to future MSFOMA meetings.

Action: Chair, Secretariat

17. Fishery Management Issues

1. Coastal / marine developments

i. Bangor Pier

No additional update.

ii. Sand in the dock

This was discussed at the start of the meeting (see Matters Arising).

2. Environmental / health issues

i. Shellfish hygiene classification

This was discussed earlier in the meeting (see item 9).

ii. *Bonamia*

This was discussed at the start of the meeting (see Matters Arising).

iii. Invasive Alien Species (IAS) / Invasive Non-Native Species (INNS)

This was discussed at the start of the meeting (see Matters Arising).

iv. *Norovirus*

No further update.

18. Any Other Business

a) Correspondence

No additional correspondence had been received.

19. Dates for next meetings

Meeting dates were agreed for 2024:-

- a. 14th March 2024 (Teams / Zoom)
- b. 19th September 2024 (Teams / Zoom)
- c. 12th December 2024 [also AGM] (in person, not virtual)

Summary of Actions

Item	Action	Responsibility
1.	Contact Bangor City Council to confirm representation at MSFOMA meetings.	Secretariat
2.	Sand in Dock - keep under review.	James Wilson & Secretariat
3.	Update MSFOMA website to include more information about the work of participants.	All, Secretariat
4.	Shellfish hygiene - join with mussel farmers to encourage FSA to re-establish seasonal "A" classification in one or more areas in the Strait.	Chair, Secretariat
5.	Sanitary Survey - submit response on behalf of the Association by the 19 th January 2024.	Chair, Secretariat
6.	Provide URL for interactive waste water discharge map once website is launched in January 2024.	Emily Payne ³
7.	Provide information about the location of fields where biosolids are spread to NRW.	Emily Payne
8.	Circulate information about consultation on new Ministerial Statement on fisheries and aquaculture when it is released.	Chair
9.	Provide an update on progress at MAGWF at the next MSFOMA meeting.	Chair
10.	NWIFCA - encourage a more informed evaluation of mussel dredge impacts on benthic habitats.	Secretariat
11.	APPG - provide update on progress to next meeting.	JW, Secretariat
12.	Work with NWRT to progress the Menai Strait Partnership Forum and report back.	Chair & Secretariat
13.	<i>Crepidula fornicata</i> - look out for slipper limpets and report sightings of any shells / individuals.	All
14.	Date for next meeting - 14th March 2024 (subsequently postponed to 18th April 2024)	All

³ The URL is: <https://corporate.dwrcymru.com/en/community/environment/storm-overflow-map>

Financial Update

Background

As a company limited by guarantee, the Association is required to submit a record of its accounts at the end of each Financial Year. This report provides a brief financial update for the current and past Financial Year.

Recommendations

1. That the Association considers performance within the current FY against the current financial plan (Annex B).

Financial Plan 2022-2028

- 1.1 The Association agreed a new Financial Plan at its Annual General Meeting in December 2022. This is included at Annex A of this report. This Plan was a response to the difficult economic and administrative environment that shellfish farmers are currently coping with. It minimises the financial burden of the Order on the Association's tenants by limiting MSFOMA operating costs.
- 1.2 The Association is advised that the economic and administrative environment for shellfish farmers is still challenging. It remains appropriate to keep to the 2022 Financial Plan.

Budgetary performance in the 2023-24 Financial Year

- 1.3 An income and expenditure report for the Association for the last quarter of the MSFOMA 2023-24 Financial Year (starting on 1st March 2023) against the revised Financial Plan is presented in Annex B. This shows both the actual and budgeted values for each item of income and expenditure.
- 1.4 Key points to note are:-
 - a) **Expenditure** had been lower than expected prior to Q4. Legal fees of £5,000 were paid in January 2024 in connection with action taken against FSA Wales (see item 8 on the agenda). These fees are being shared between the 3 mussel farmers and MSFOMA, with each party paying 25% of the total cost.
 - b) **Income** over the year has been greater than expected. This is due to:-
 - i. A grant of £6,000 that was received in March 2023 from the Welsh Government Coastal Capacity Building Fund. This sum was not included in the budget.
 - ii. A payment of £1,250 for legal fees from one of the mussel farmers in February 2024 (payments were received in March from the other mussel farmers).
 - c) **Reserve:** the Association's bank balance at the end of February 2024 stood at £11,497.04. This is higher than the target reserve of £10,000.

2. Budget for 2024-25FY

- 2.1 The budgetary performance for the current FY shows that the Chair and Secretariat are managing expenditure and income within the limits set by the Financial Plan, and that the overall intent of the Plan are being met.
- 2.2 The Financial Plan agreed in December 2022 was designed to minimise and freeze lease fees over a 6 year period between the 2022-23FY and the 2024-28FY. This plan is shown in Annex A of this report. It was resolved at the December 2023 AGM that this plan should remain in place.

3. Funding Opportunities

- 3.1 At previous Association meetings it has been agreed that it is appropriate to pursue alternative funding opportunities for projects that are relevant to the objectives of MSFOMA and that would contribute both to achieving these objectives and bolstering the Authority's finances. An update on progress is provided here.
 - a) **Coastal Capacity Building Fund 2023/2025** - a successful bid for funding from this fund was submitted in the spring, and supported the Menai Strait Partnership Forum activities (see item 15 on the agenda). Income of £11,000 was received from this fund in March 2024. This income will be used to support work on this project.

MSFOMA Secretariat
April 2024

Annex A: Revised MSFOMA Financial Plan for the period 2022-23 to 2027-2028, adopted in December 2022.

Item	Financial Year					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
1. Revised Expenditure - inflated at 3%.						
Administration of the Order*	£12,000.00	£12,360.00	£12,730.80	£13,112.72	£13,506.11	£13,911.29
Enforcement activity*	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Corporate core*	£1,200.00	£1,236.00	£1,273.08	£1,311.27	£1,350.61	£1,391.13
Renewal of Fishery Orders						
Menai East	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Menai West	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Research & monitoring*	£500.00	£515.00	£530.45	£546.36	£562.75	£579.64
Community fund	£500.00	£515.00	£530.45	£546.36	£562.75	£579.64
Total Expenditure	£14,200.00	£14,626.00	£15,064.78	£15,516.72	£15,982.23	£16,461.69
2. Recurring Income - inflated at 0% to maintain value of a £10000 reserve with 3% inflation rate applying to expenditure.						
Leases for lays	£15,100.00	£15,100.00	£15,100.00	£15,100.00	£15,100.00	£15,100.00
Licences	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Total	£15,100.00	£15,100.00	£15,100.00	£15,100.00	£15,100.00	£15,100.00
Operating surplus / deficit	£900.00	£474.00	£35.22	-£416.72	-£882.23	-£1,361.69
3. Reserve						
Predicted Reserve	£ 10,687.17	£11,161.17	£11,196.39	£10,779.67	£9,897.44	£8,535.75
Target Reserve	£10,000.00	£10,000.00	£10,000.00	£10,000.00	£10,000.00	£10,000.00

Annex B: MSFOMA Financial performance for the 2023-24 FY against the updated (December 2022) Financial Plan: Q4 Update.

Item	Updated Year Budget	Quarter 1 (1st March - 31st May)		Quarter 2** (1st June - 31st August)		Quarter 3 (1st Sept. - 30th Nov.)		Quarter 4 (1st Dec. - 29th Feb.)		Year to Date (Cumulative)		
		2023-24	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
										Q4	Q4	Q4
1. Expenditure												
Administration of the Order*	£12,360.00	£360.00	£3,090.00	£0.00	£3,090.00	£4,229.76	£3,090.00	£5,000.00	£3,090.00	£9,589.76	£12,360.00	-£ 2,770.24
Enforcement activity	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£ -
Corporate core**										£0.00	£0.00	
Accountancy fees	£1,236.00	£0.00	£309.00	£0.00	£309.00	£0.00	£309.00	£1,440.00	£309.00	£1,440.00	£1,236.00	£ 204.00
Bank charges	£0.00	£24.00	£0.00	£24.00	£0.00	£24.00	£0.00	£24.00	£0.00	£96.00	£0.00	£ 96.00
Renewal of Fishery Orders*										£0.00	£0.00	
Menai West	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£ -
Subscriptions	£0.00	£0.00	£0.00		£0.00	£150.00	£0.00	£0.00	£0.00	£150.00	£0.00	
Research & monitoring	£515.00	£0.00	£128.75	£0.00	£128.75	£0.00	£128.75	£0.00	£128.75	£0.00	£515.00	-£ 515.00
Community fund	£515.00	£0.00	£128.75	£0.00	£128.75	£0.00	£128.75	£0.00	£128.75	£0.00	£515.00	-£ 515.00
Total Expenditure	£14,626.00	£384.00	£3,656.50	£24.00	£3,656.50	£4,403.76	£3,656.50	£6,464.00	£3,656.50	£11,275.76	£14,626.00	-£3,350.24
2. Income												
Leases for lays	£15,100.00	£7,550.00	£7,550.00	£0.00	£0.00	£7,550.00	£7,550.00	£1,250.00	£0.00	£16,350.00	£15,100.00	£1,250.00
Licences	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Grant***	£0.00	£6,000.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£6,000.00		
Total	£15,100.00	£13,550.00	£7,550.00	£0.00	£0.00	£7,550.00	£7,550.00	£1,250.00	£0.00	£22,350.00	£15,100.00	£1,250.00
Operating surplus / deficit	£0.00	£13,166.00	£3,893.50	-£24.00	-£3,656.50	£3,146.24	£3,893.50	-£5,214.00	-£3,656.50	£11,074.24		£4,600.24
Reserve	£10,000.00	£13,374.80	£10,000.00	£13,350.80	£10,000.00	£16,497.04	£10,000.00	£11,283.04	£10,000.00		£10,000.00	£1,283.04

Shellfish Hygiene Classifications in The Menai Strait

Background

Water quality, and in particular the abundance of bacteria from effluent inputs, is an important factor determining the viability of shellfish harvesting and cultivation. Shellfish beds in the UK and EU are classified according to the abundance of bacteria in shellfish samples that are collected and analysed by environmental health officers from local authorities. There are six shellfish sample sites for mussels in the eastern Menai Strait.

Much of this report reproduces information from recent Association meetings, which is provided for reference and context.

The new parts of this report comprise:-

- An update on comments submitted on behalf of the Association to the Food Standards Agency on the revised “Sanitary Survey” for the Menai Strait; and
- An update on correspondence with the Food Standards Authority which has taken place since the last Association meeting.

Recommendations

1. That the report is received, along with any verbal updates from participants at this meeting.
2. That the Association should seek to work with FSA Wales and other organisation to both expedite the implementation of the new “Sanitary Survey” for the Menai Strait, and to review prospects for addressing the recent downgrade of shellfish classification zones in the Strait.

1. Introduction

- 1.1 There are 393 shellfish “production areas” in England and Wales, which are each classified in response to the abundance of a bacterium (*Escherichia coli*) in samples of shellfish taken within or near to the production areas. These production areas are designated for cockles, mussels, oysters and clams. *E. coli* is found in animal faeces and is used as an indicator of the likely level of sewage effluent that the shellfish have been exposed to, and hence as a measure of the public health risk of consuming shellfish.
- 1.2 Shellfish production areas may be designated Class A, B or C, according to the abundance of *E.coli* in shellfish flesh. The requirements and limits for each classification are set out in Annex III of EU Regulation (EC) 853/2004 and Articles 53, 54 and 55 of Retained EU Law Regulation (EU) 2019/627. They are summarised in Table 1.

Table 1: Summary of shellfish classification requirements.⁴

	Minimum Number of samples per year	Limit	
A	10	80% of samples ≤230	700
B	8	90% of samples ≤4600	46,000
C	8	All ≤46,000	-
Unclassified	-	≥46,000	-

- 1.3 Class A shellfish can be harvested for direct human consumption without any further treatment. Class B shellfish must be either purified, relayed for a month in a Class A water, or heat treated prior to human consumption. Class C shellfish must be either relayed for 2 months in Class B waters and then purified; or relayed for 2 months in Class A waters; or heat treated prior to human consumption.
- 1.4 For most shellfish beds a single classification (A,B, C or unclassified) applies for 12 months of the year. The FSA can also grant a “seasonal” classification: a higher classification for part of the year when historic results have been good, and a lower classification for the rest of the year (for instance a Seasonal A/B or a Seasonal B/C). The criteria for allocating these seasonal classifications are set out in the current FSA “*Protocol for Classification of Shellfish Production Areas, England and Wales*”⁵ as follows:-

Seasonal Classification

4.6. May be awarded when at least 3 full years’ worth of routine monitoring data shows a clear seasonal trend of results. The area may be classified as an A or B for part of the year and B or C for the rest of the year. The season must be at least 3 months in length and of benefit to industry.

[...]

6.10. At least 3 years’ worth of data (and a minimum 24 sample results within the ‘better’ season) showing a clear seasonal trend is necessary for a seasonal classification to be awarded. Seasonal classifications should comprise at least 3 consecutive months and be of benefit to industry (at a time they would usually harvest). Routine monthly monitoring is required throughout the full calendar year to provide sufficient compliance data.

6.11. A buffer period before the start of the season is required. This is one month for Class C to B areas and for Class B to A areas (two months for C to A). During the buffer period the monthly monitoring sample must show compliance with the higher or ‘better’ classification prior to the ‘better’ season commencing. Harvested products may only be processed at the ‘better’ classification at the start of the season and not during the buffer period. This is to allow for clearance of contamination during the buffer month/s. [...]

6.12 If the sample in the buffer period is not compliant with the ‘better’ classification, the LA must sample again until a compliant sample is obtained before the month of the ‘better’ classification may commence. This may mean the start of the season is delayed. Such decisions will be made on a case-by-case basis by the FSA. If the season is delayed (following non-compliant buffer samples) for two consecutive years, then the seasonal classification period will be reviewed. Buffer period results will be included in the classification dataset (i.e. used for classification assessments).

⁴ <https://www.food.gov.uk/business-guidance/shellfish-classification>

⁵ Food Standards Agency (2023) ‘Protocol for Classification of Shellfish Production Areas, England and Wales’, p. 25. Available at: <https://www.food.gov.uk/sites/default/files/media/document/Classification%20protocol%20Aug%202023%20-%20FINAL%20for%20PUBLICATION.pdf>.

- 1.5 During 2022-23 there were 88 shellfish production areas for mussels in England and Wales. Ten of these were “Class A”; five had a “Seasonal A/B” classification; three were “Seasonal B/C”; 55 sites were “Class B”; and just one site were “Class C”. Fourteen sites were listed as “Not Applicable”.
- 1.6 There are 6 shellfish production areas and sample sites in the eastern Menai Strait. During 2022-23 five of the six production areas had a “long term B” classification. One area (Areas 2 / B, sampled at Cegin Channel) had a “Seasonal A/B” classification, which means that it was a “Class A” from 1st October to 30th April, and a “Class B” at other times.
- 1.7 The location of sample sites and the classification of their corresponding production areas during 2022-23 are shown in Figure 1.

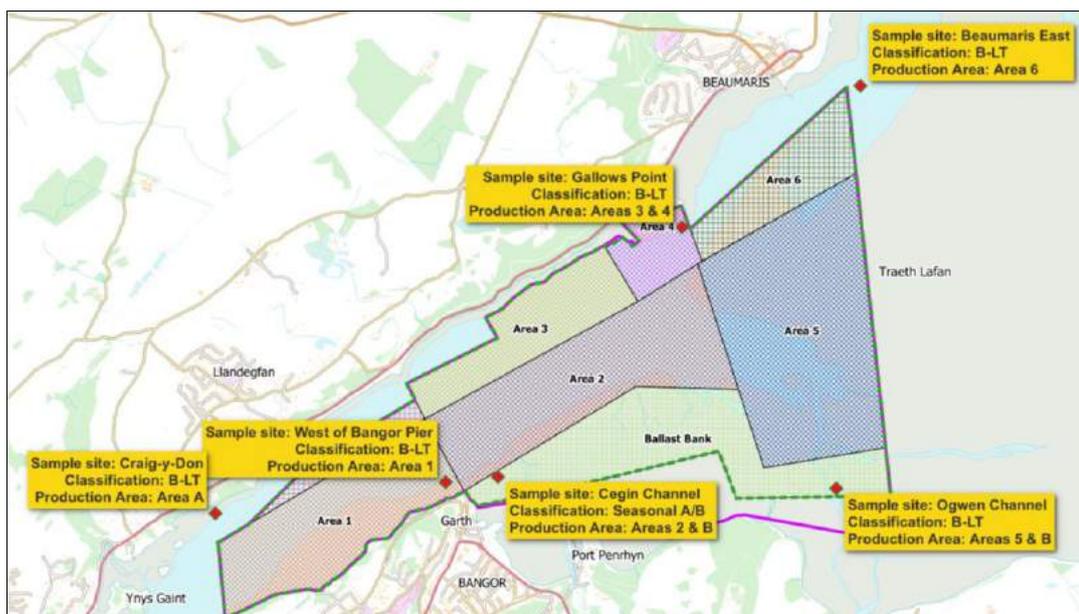


Figure 1: Map of the Eastern Menai Strait showing shellfish sampling locations, classification results, and production areas.

- 1.8 Prior to the UK’s departure from the EU the main market for shellfish from the Menai Strait was in Europe. Mussels from the Class B shellfish beds were exported directly from the Strait for relaying or purification in Europe.
- 1.9 Since the 1st January 2021 it has no longer been permissible to export Class B shellfish from the UK directly into Europe; they must be purified, relayed or heat treated prior to export. Only Class A shellfish can now be exported direct to EU markets.
- 1.10 The UK has very limited capacity for mussel purification (which also causes high in-transit mortality). Only 10 of the 88 mussel production areas in England and Wales have a “Class A” designation.
- 1.11 For the past few years the shellfish farmers in the Strait have been largely dependent on the seasonal A/B classification of production areas 2 & B, which is based on the sample results from the Cegin Channel RMP.
- 1.12 From this brief introduction it should be clear that an improvement to shellfish hygiene classifications in the eastern Menai Strait could re-open EU markets to the

local industry; and the loss of the Seasonal A/B classification) would have a devastating effect.

2. Shellfish hygiene classifications for 2023-24

2.1 Updated shellfish classifications were published on 5th December 2023 covering the period from 1st December 2023 - 30th November 2024⁶.

2.2 The new shellfish classifications, along with the classifications for the past 5 years, are shown in Table 2.

Table 2: Shellfish classifications for zones in the Eastern Menai Strait for the past 5 years. Green shading indicates a Class A classification, yellow shows Class B. Gradient shading shows when there were within-year changes. Data from FSA website.

RMP						2023-24
Beaumaris East	Area 6	A	B	B-LT	B-LT	B-LT
Cegin Channel	Areas 2 & B	B-LT	B→A→B →A/B*			B-LT
						B-LT

Notes

† In 2020/21 the FSA state that “Classification is provisional due to insufficient sample results, either in number or period of time covered, or for those returning less than 10 samples in the review year.” All zones were designated “Class B” initially, two sites were upgraded to A, then downgraded to B following a poor result, after which Cegin Channel / Areas 2 & B were designated a seasonal A/B.

* Seasonal Class A” from 1st October to 30th April, and a “Class B” at other times

2.3 The most significant change for 2023-24 is that all zones are now classed as a long term “B”. This contrasts to the situation in 2019-20 when 3 of the 6 zones were “Class A”.

2.4 The downgrading of Areas 2 & B from seasonal A/B to a long term B classification is a result of shellfish hygiene results in 2022 & 2023. The downgrade will have a significant adverse impact on shellfish farming in the Menai Strait.

⁶ These are available from the FSA website here: <https://www.food.gov.uk/business-guidance/shellfish-classification#revision-log>

3. Response to the loss of the Seasonal Classification

- 3.1 During December 2023 the mussel farmers in the Strait asked FSA Wales to reconsider its decision to classify all of the areas in the eastern Menai Strait as “Long Term B”, and proposed that a shorter “Seasonal A” classification should be granted for several of the classification zones. FSA Wales responded on 22nd December 2023, indicating that in their view none of the classification zones could be granted a “seasonal A” classification.
- 3.2 During January 2024 the Secretariat and Chair had several discussions with the mussel farmers in the Strait about this decision and the Sanitary Survey review (see section 5 of this report). After careful consideration it was agreed during January that it was appropriate to instruct a legal team to challenge the FSA’s decision not to grant a seasonal “A” classification to one or more of the classification zones in the eastern Menai Strait.
- 3.3 The decision to instruct the legal team was taken on the understanding that all costs would be met by the mussel farmers in the Strait (i.e. split three ways). At a subsequent meeting between the Chair, Lewis Le Vay, Ioan Thomas and the Secretariat (i.e. the MSFOMA Members with no pecuniary interest in this matter) it was agreed that costs should be split four ways, with MSFOMA meeting 25% of the legal costs from its reserve.
- 3.4 The response that the mussel farmers’ legal team submitted to FSA Wales is included at Annex A to this report. This was sent on the 13th of February. The legal team sought a response from FSA Wales within 14 days. On the 23rd February period FSA Wales asked for a 2-week extension (i.e. by 12th March). On 12th March they asked for a further day to respond and responded on the 13th March (see Annex B).
- 3.5 Both the submission to FSA Wales and their response are very detailed. However the FSA response was to refute the arguments presented by the MSFOMA and mussel farmers’ legal team.
- 3.6 After careful discussion with the mussel farmers, and the legal team the Chair and Secretariat considered that it would be more productive to take up the FSA offer to work constructively to address these issues rather than to pursue further legal action at this point. The legal team were instructed to advise FSA Wales accordingly (see Annex C).
- 3.7 Shortly after this final letter was sent, the Director of FSA Wales proposed a visit to Porth Penrhyn to meet and discuss the issues raised. This meeting has been scheduled for 15th April 2024. It is hoped that this will provide an opportunity for discussing both the seasonal classification of mussel beds the implementation of a revised sanitary survey. A verbal update about this meeting will be given to the Association at our meeting on the 18th April.

4. Local Action Group

- 4.1 Two meetings of the Local Action Group (LAG) for the Menai Strait took place in 2023 (in March and November), each in response to high *E. coli* results.
- 4.2 One meeting of the LAG has taken place in 2024. This meeting focussed on the consultation draft of the “Sanitary Survey” for the Menai Strait (see below).

5. Sanitary Survey Review

- 5.1 The location of shellfish sampling points, the sampling method, and the extent of the classification zones around the sampling points are set out in a document produced on behalf of the Food Standards Agency and called a “Sanitary Survey”.
- 5.2 A review of the Sanitary Survey for the Menai Strait has been commissioned by the Food Standards Agency Wales. The review is several years overdue. Vigorous representations have been made over an extended period of time by the shellfish farmers in the Strait to the FSA and FSA Wales about the delay with the sanitary survey review. The reason for this is that the location of the current sample sites and method of sampling are not representative of industry practices and there is strong evidence that both factors will have adversely affected sample results.
- 5.3 MSFOMA and industry representatives urged the FSA to expedite progress with the sanitary survey review at LAG meetings in March and November 2023. The consultation draft was eventually issued on the 11th December 2023 (Annex D). A meeting of the LAG was held on 16th January 2024 to discuss the draft sanitary survey.
- 5.4 Following the LAG meeting in January 2024, MSFOMA submitted a response to the sanitary survey consultation (attached at Annex E). The response welcomed many aspects of the review, but questioned the wisdom behind the location of sampling points; the extent of the corresponding classification zones; and the retention of a sampling method (by hand at low tide) that is different to the commercial harvesting methods (by dredge at high tide).
- 5.5 The MSFOMA comments on the sanitary survey have been acknowledged by FSA Wales, but no substantial response has been received. There is also no indication of the timescale for completing the review process and implementing the new sanitary survey.
- 5.6 A meeting is due to be held between MSFOMA and the Director of FSA Wales on the 15th April and it is hoped that a firm commitment to completing the Sanitary Survey review process can be agreed then.

MSFOMA Secretariat
April 2024

Annex A: Pre-Action Protocol letter sent to FSA Wales, February 2024.

Food Standards Agency (Wales)
4th Floor, Welsh Government Building
Cathays Park
Cardiff CF10 3NQ

01223 328933
mmcfeeley@richardbuxton.co.uk /
phigham@richardbuxton.co.uk

Our ref: (MSF1/1)-MM/PH
Your ref:

Attn: Nathan Barnhouse, Director

13 February 2024

By email and post: Nathan.Barnhouse@food.gov.uk
cc: shellfish.wales@food.gov.uk

PRE-ACTION PROTOCOL LETTER THIS LETTER REQUIRES YOUR URGENT ATTENTION

Dear Sir/Madam,

1. This is a letter before action sent in accordance with the pre-action protocol for judicial review.

Claimant

2. We are instructed by:

- (1) the Menai Strait Fishery Order Management Association ('**MSFOMA**'),
Port Penrhyn, Bangor, LL57 4HN.
- (2) Deepdock Limited¹
- (3) Myti Mussels Limited²
- (4) Extramussel Limited³

Deepdock, Myti Mussels and Extramussel ("the Tenant farmer claimants") are the companies who are tenants in the Menai Strait and have interests in farming mussels there

¹ Company Number: 02150068, registered office address: Bwthyn Y Mor, Llanfaethlu, Holyhead, Anglesey, LL65 4HD.

² Company Number: 02140617, registered office address: Port Penrhyn, Bangor, Gwynedd, LL57 4HN.

³ Company Number: 04315701, registered office address: Daggett And Company, Parkway House, Palatine Road, Manchester, M22 4DB.

and so are adversely affected by the FSA's unlawful decision of 22 December 2023. The areas that they each farm are shown for reference in Annex A of this letter. The Tenant farmer claimants all farm in the areas impacted by the decision, are adversely affected and are currently suffering significant ongoing financial losses. If the FSA fail to take the requested action (see paragraph 57 below), a claim for judicial review will be issued. This claim will include a claim for significant damages for breach of Article 1 of Protocol 1 ECHR.

Proposed Defendant

3. The proposed defendant is the Food Standards Agency Wales ('FSA'), 4th Floor, Welsh Government Building, Cathays Park, Cardiff CF10 3NQ.

Decision to be Challenged

4. The claimants seek to challenge the refusal by the FSA to introduce a Seasonal A period of three months (1 February -30 April with a buffer month of January) for the classification zones: BO55R (Craig Y Don), BO55S (West of Bangor Pier), BO55T (Cegin Channel), BO55U (Gallows Point) and BO55W (Beaumaris East) and BO55V (Ogwen Channel). This decision was conveyed to Mr James Wilson, Director of Deepdock Limited, and MSFOMA in an email dated 22 December 2023.

Factual Background

The relevant parties

5. MSFOMA was established in 2010 by the Welsh Assembly Government to promote and manage sustainable shellfish farming in the Menai Strait in North Wales. MSFOMA is responsible for managing the mussel fishery within the "Fishery Order" boundary in the eastern Menai Strait which is defined by the Menai Strait (East) Mussel and Oyster Fishery Order 2022 (SI2022 No. 213 (W.69)). Within this area, MSFOMA has the legal authority to:-
 - (1) Lease the right to cultivate shellfish in areas known as "layings"; and
 - (2) Licence operators to harvest any wild mussels that occur in the area.
6. Deepdock Ltd is a shellfish farming company who has interest in farming mussels in Areas

4, 5, 6, A & B. Historically, Deepdock used to sell between 1,500 – 2,000t of mussels to the EU market per year, with the majority from areas 4 and 6 and lesser amounts from 5 and B. However, the diminished trading capability that came with leaving the single market has meant that only “Area B” met the “Class A” requirement last year (see below) for the limited season of October – April. Around 500t of mussel were sold in 2022-23 from this area. Only 2t of mussels have been sold from this area or any of the other Deepdock cultivation areas in 2024 because of the difficulty exporting Class B shellfish to the EU.

7. Myti Mussels Ltd holds the lease for Areas 1 & 2 in the Fishery Order area and shares ownership of Area 5 with Deepdock Ltd. During 2024 they have been able to sell around 4t of mussel per week to the UK market at a price of around £800 per tonne. If they were able to sell to the larger and more buoyant EU market they would be getting a price of £1,200-£1,500 per tonne. They have in previous years been able to sell up to 100t of mussels to the EU per day in February and March, with total annual exports of 3,000t or more.
8. Extramussel Ltd hold the lease for Area 3 in the Fishery Order which lies within the “Areas 3 & 4” Classification Zone. Extramussel have not exported any mussels from this area in 2024 which has in the past produced 5,000t of mussels per year.
9. Should the Claimants be forced to bring this judicial review claim, more detailed information will be provided substantiating the significant and ongoing damages they are suffering due to the decision described at paragraph 4 above.
10. The FSA is the Central Competent Authority for food safety including shellfish hygiene in England and Wales, makes all final classification decisions and sets out overall policy. Shellfish Wales is the subsidiary department tasked with monitoring and corresponding with stakeholders in Wales.
11. The Centre for Environmental, Fisheries and Aquaculture Science (**‘Cefas’**) is responsible for:
 - (1) Co-ordinating the microbiological and biotoxin monitoring programme on behalf of the FSA
 - (2) Carrying out biotoxin and phytoplankton testing
 - (3) Providing technical advice to the FSA and local authorities.

12. The local authority ('LA'), in this case Cyngor Gwynedd and Ynys Môn County Council, is responsible for:

- (1) Carrying out official controls including undertaking microbiological, phytoplankton and biotoxin sampling.
- (2) Official Control laboratories;
- (3) Carrying out testing for the microbiological monitoring programme;
- (4) Leading Local Action Group ('LAG') meetings to coordinate responses to high samples.

Background of regulation of shellfish farming in the United Kingdom

13. There are 393 shellfish "production areas" in England and Wales, which are each classified in response to the abundance of a bacterium (*Escherichia coli*) in samples of shellfish taken within or near to the production areas. These production areas are designated for cockles, mussels, oysters and clams. There are 88 shellfish "production areas" for mussels in England and Wales. *E. coli* is found in human and animal faeces and is used as an indicator of the likely level of agricultural and sewage effluent that the shellfish have been exposed to, and hence as a measure of the public health risk of consuming shellfish. Shellfish production areas may be designated Class A, B or C, according to the abundance of *E. coli* in shellfish flesh. The requirements and limits for each classification are set out in Annex III of EU Regulation (EC) 853/2004 and Articles 53, 54 and 55 of Retained EU Law Regulation (EU) 2019/627. They are summarised in the table below:

Classification	Minimum number of Samples per year	E coli per 100 g of flesh	
		Requirement	Limit
A	10	80% of samples ≤230	700
B	8	90% of samples ≤4600	46,000
C	8	All ≤ 46,000	-
Unclassified	-	≥ 46,000	-

- (1) Class A shellfish can be harvested for direct human consumption without any further treatment.
 - (2) Class B shellfish must be either purified, relayed for a month in a Class A water, or heat treated prior to human consumption.
 - (3) Class C shellfish must be either relayed for 2 months in Class B waters and then purified; or relayed for 2 months in Class A waters; or heat treated prior to human consumption.
14. For the majority of shellfish beds a single classification (A, B, C or unclassified) applies for 12 months of the year. However, it is also possible for a “seasonal” classification to be granted. Seasonal classifications have a high classification for part of the year when historic results have been good, and a lower classification for the rest of the year (for example a Seasonal A/B).
15. Of the 88 shellfish production areas, five have a Seasonal A/B classification. One such production area (Foulney at Morecambe Bay-Barrow) has a three month Class A season (1 March-31 May) with the remaining nine months classified as Class B.
16. Prior to the UK’s departure from the EU, the main market for shellfish from the Menai Strait was in Europe. Mussels from the Class B shellfish beds were exported directly from the Strait for relaying or purification in Europe. However, since the 1 January 2021, it has no longer been permissible to export Class B shellfish from the UK directly into Europe; they must be purified, relayed or heat treated prior to export. Only Class A shellfish can now be exported direct to EU markets. The UK has very limited capacity for mussel purification (which has a significant cost and also causes high in-transit mortality). As a result of these changes, it has become uneconomic and impractical to export shellfish from Class B shellfish beds. Only Class A shellfish beds remain economically viable.

Shellfish farming in the Menai Strait

17. Shellfish samples in the Menai Strait are collected by a contractor or by environmental health officers of Cyngor Gwynedd and Ynys Môn County Council and analysed at Public Health Laboratory at Ysbyty Gwynedd, Bangor.
18. There are six shellfish production zones and corresponding sample sites in the eastern

Menai Strait, as set out in the classification table below. Green shading indicates a Class A classification, yellow shows Class B. Blue shading shows when there were within-year changes:

RMP	Zone	2019-20	2020-21†	2021-22	2022-23	2023-24
Beaumaris East	Area 6	A	B	B-LT	B-LT	B-LT
Cegin Channel	Areas 2 & B	B-LT	B→A→ B→A/B *	A/B*	A/B*	B-LT
Craig-y-Don	Area A	A	B→A→B	B-LT	B-LT	B-LT
Gallows Point	Areas 3 & 4	A	B	B-LT	B-LT	B-LT
Ogwen Channel	Areas 5 & B	B-LT	B-LT	B-LT	B-LT	B-LT
West of Bangor Pier	Area 1	B-LT	B-LT	B-LT	B-LT	B-LT

† In 2020/21 the FSA state that “Classification is provisional due to insufficient sample results, either in number or period of time covered, or for those returning less than 10 samples in the review year.” All zones were designated “Class B” initially, two sites were upgraded to A, then downgraded to B following a poor result, after which Cegin Channel / Areas 2 & B were designated a seasonal A/B.

* Seasonal Class A” from 1st October to 30th April, and a “Class B” at other times.

19. As noted in the table above, during 2022-23 five of the six production areas had a “long term B” classification. One Classification Zone (“CZ”), “Areas 2 & B”, sampled at the Cegin Channel Representative Monitoring Point, B055T, had a “Seasonal A/B” classification. This was defined as “Class A” from 1st October to 30th April, and a “Class B” at other times. However, from 1st December 2023, this CZ was reclassified as long term B (see further details of the FSA’s decision-making below). Given the restrictions on exporting Class B shellfish to the EU mentioned above, over the past 3 years the shellfish farmers in the Strait have been largely economically dependent on the seasonal A/B classification of the “Areas 2 & B” CZ, which was based on the sample results from the Cegin Channel RMP.

20. Class A mussels from the Menai Strait can be sold for £1,200 - 1,500 per tonne. However, the Tenant farmer claimants have not been able to sell any Class B mussels to the EU this year. The UK market is very small. Deepdock have sold a limited 2t so far to the UK supply chain, and Myti Mussels have been able to sell approximately 4t per week; as a comparison, if the requested areas all had Class A classification, Myti Mussels estimates it could sell 100t per day to the EU market and has done so historically. Extramussel have not sold any mussels this year.. As a result of the FSA’s unlawful decision of 22 December 2023, the Tenant Farmer claimants are suffering financial loss from 1 February 2024. This

loss is increasing by the week.

Inadequate testing

21. The LA's contractors are contracted to carry out monthly *E. coli* sampling. However, unfortunately, and through no fault of either MSFOMA or the individual shellfish farmers, the LA contractor has failed to carry out adequate *E. coli* sampling in recent years. In 2017 fewer than 10 samples were taken from all but one of the RMPs in the Menai Strait and in 2020 no more than 7 samples were taken in any RMP. In 2017, 2020 and 2023 no samples at all were taken in March at any RMP, which is one of the peak production periods for the area. Further, after the wholly anomalous results on 14 August 2023, the contractor failed to resample in five out of the six production areas. The failure to conduct regular monthly sampling (and resample when necessary) has an adverse impact on the shellfish farmers because the classifications are based, *inter alia*, on the number of such tests carried out. The inadequate level of testing is not the Claimants' fault. It is the fault of the LA, their contractors and the FSA.

The recent FSA decision-making

22. On 1 December 2023, updated classifications were published by the FSA covering the period from 1 December 2023 to 30 November 2024. On the basis of shellfish hygiene results it was announced that the "Areas 2 & B" CZ (RMP Cegin Channel) had been downgraded to long term B from seasonal A/B. As detailed above, this reclassification prevents direct export of mussels to market in Europe and has had a devastating effect on mussel farmers in the local area including the Tenant farmer claimants.

23. On 5 December 2023 Mr James Wilson e-mailed the FSA stating:

"We had notification from our Local Authority late on the afternoon of the 30th November that the single seasonal A production area (B055T) within the Menai Strait was to be downgraded to a LT B. As David may have mentioned to you, this came as some surprise to us as whilst we fully anticipated that the seasonal period was likely to be shortened – from our analysis of the Official control sample data we could identify that the B055T RMP – and indeed all the remaining RMP's within the Menai East area – comply with the requirements for a seasonal A classification – if that season be described within the 3 month period Jan-Mar, using the months of December and April as buffer months."

24. On 11 December 2023, Mr Wilson emailed the FSA again, stating:

"We have analysed and re-analysed the OC Data sets and re-read the Shellfish classification protocol. We would like to request that the FSA bring forward seasonal A

classifications for the months February, March & April (January as the buffer month) for the following RMP's:

BO55R, BO55S, BO55T, BO55U & BO55W

All the RMP's above appear to fully meet the criteria described within the protocol to be classified A for this seasonal period.

We would request that RMP BO55V also be considered, however it is acknowledged that April 2018 produced a count of 1800.

...."

(emphasis added)

25. The FSA responded on 22 December 2023 stating:

"Thank you for your email regarding the classification of various beds in the Menai. Following your email we reviewed the data for each of the RMPs that you mention and have concluded that each of the beds should remain as currently classified i.e. the classification that came into effect on 01 December 2023 following the annual review.

Namely:

B055R Craig Y Don B- LT

B055S West of Bangor Pier B- LT

B055T Cegin Chanel B -LT

B055U Gallows Point B -LT

B055W Beaumaris East B -LT

B055V Ogwen Channel B –LT

In undertaking the review we considered our published Protocol and the compliance requirements for a Class A to be awarded i.e. 80% of sample results less than or equal to 230 E. coli per 100g, no results exceeding 700 E. coli per 100g during the review period. All samples must be less than or equal to 46,000 E. coli per 100g. To achieve a seasonal classification, which must comprise of at least 3 consecutive months, the bed must achieve the required compliance within the 'good' season. We gave particular consideration to paragraphs 6.10- 6.13 of the Protocol on Seasonal Classification. For each of the RMPs we found that 3 and 5 year datasets provided an insufficient number of samples to award a seasonal classification. To use sampling data beyond 5 years is not in line with the current Protocol.

I understand that you will be disappointed by this decision and we would be happy to meet with you should you have further queries on how the decision was reached."

(emphasis added)

26. The FSA statement that the 3 and 5 year datasets provide "an insufficient number of samples" to award a seasonal classification, and their explicit reference to paragraphs 6.10-6.13 of the FSA Protocol is understood by the claimants to mean the absence of 24 samples during the "better season" over a 3 or 5 year period (see further below).

27. On 22 December 2023, Mr Wilson replied to the FSA stating:

“Very surprised at the justification in respect of adherence to current protocols. For example: The collection of OC samples should be undertaken using the method used for commercial harvesting. It should also be taken at times that represent commercial harvesting, not over the low water cycle when harvesting by vessel is impossible – both departures from protocols that you choose to ignore. Why is that?”

This situation has nothing at all to do with food safety and everything to do with the selective application of a bureaucratic system the places Welsh shellfish growers at a significant disadvantage to those in England and if course across the EU.

Who agreed the sampling frequency, who agreed the sampling methodology as applied in the Menai area. Isn't that something the CCA needs to agree to. Explain to me how it is possible to achieve a 3 month seasonal opening – with buffer month when the minimum statutory number of samples to achieve a grade A per year is 10. On your 5 year scheme this would result in a maximum of 20 samples – below the number identified. This clearly is an absurdity and Connor be the intent of the regulation

Disappointed isn't the word, outraged, angry and broken are much more accurate.”

28. On 3 January 2024, Dr Andrews, an expert consultant engaged by MSFOMA, responded stating:

“I see that James Wilson responded to you before Christmas concerning your reply to his request for a seasonal “A” classification of some of the shellfish beds in the eastern Menai Strait. You will appreciate from his response that the decision to implement a LT-B classification in the Strait has been met with grave concern locally. I have now had the opportunity to discuss your response with Alan Winstone, Chair of the Menai Strait Fishery Order Management Association. As Directors of MSFOMA, he and I both feel that the Association should make a formal response to your decision. However before doing so we want to be sure that we have a clear understanding of the situation.

Alan and I have been looking carefully at paragraphs 6.10-6.13 of the Protocol as you have indicated. Neither of us are able to locate the part of the Protocol that would prevent data more than five years old from being used to determine a seasonal classification. We would be very grateful if you could point us in the right direction before we respond.

We would also welcome your advice on what either the FSA or shellfish industry can do in instances where local authorities do not take samples with the frequency specified in the Protocol. For example, very few samples were taken in the Menai Strait during 2020 (6 samples from four of the RMPs and 7 at the other two RMPs). No samples were taken from any Menai Strait RMPs between January and July of that year. This is not a result of any action or omission on the part of any shellfish farmers. It would therefore seem inappropriate to penalise them for other parties' failings.

We hope that you are able to respond swiftly to these two requests so that the Association can make a timely response.”

...

29. Dr Andrews sent a chaser email on 9 January 2024.

30. On 12 January 2024 the FSA responded stating:

“Paragraph 9.1 of the Protocol provides information on the annual classification review and that for LT-B beds 5 year, 3 year and 1 year datasets should be considered. When reviewing the classification we applied the 5 year datasets, the maximum number of years referenced in the Protocol, to allow for the greatest number of results to be considered.

In the early part of 2020, the pandemic resulted in local authority (LA) staff and public health laboratories being diverted to working on Covid- related matters, meaning that non- Covid related work was reduced or paused. The re-prioritisation of work, and a combination of severe weather resulted in a gap in the shellfish classification dataset. The FSA subsequently worked with the relevant laboratories to reinstate essential food testing services, including for shellfish classification, and with Las to deliver an enhanced sampling plan to mitigate against the shortfall in the required number of samples. This meant that the number of samples required for annual classification to be awarded returned to within the parameters set in the FSA classification Protocol, however some gaps remained and this has resulted in difficulties in awarding seasonal classifications in some areas. We continue to monitor the gathering of samples by Las, and we have not seen similar gaps that were caused as a result of the pandemic in 2020. We continue to liaise with Las and where they anticipate that they will have difficulties in gathering suitable samples they are encouraged to work with the gatherers and industry representatives in the area. In some cases the collection of samples has been delegated to a 3rd party, which may be a local gatherer, by the LA. In September 2022 we issued advice to Las clarifying that the collection of official control samples from classified production and relay areas may be delegated and the requirements in the legislation that must be fulfilled in order to do so.

The beds in the Menai Straits are currently Classified at L-T B, this does not prohibit gathering of shellfish from these beds. LBMs gathered from Class B beds can be placed on the market for direct human consumption after purification in an approved establishment or relaying in a Class A relaying area or heat treatment in an approved establishment. In addition to the annual review that came into effect in December, we will continue to carry out in year reviews (see paragraphs 9.3-9.4 of the Protocol) of the classification sampling data.

Classifications may be revised at any point in the year as appropriate. Ultimately the classification awarded is dependent on the water quality in the area.”

Legal Background

31. Commission Implementing Regulation (EU) 2019/627 lays down the official control (OC) requirements for the FSA as Central Competent Authority concerning Live Bivalve Molluscs (LBMs), which are filter feeding shellfish such as oysters, mussels and clams. These controls include the classification and monitoring of shellfish production and relaying areas, from which the FSA authorises the harvesting of LBMs. The classification of a production area determines the treatment required before the molluscs may be marketed. In all cases

the general food safety requirements of Regulation (EC) 178/2002, Article 14 and more specific standards in Annex II of Regulation (EC) 853/2004 and the microbiological criteria adopted under Commission Regulation (EC) 2073/2005 must be met. These regulations do not impose a minimum number of sample results for seasonal classifications. In particular, these regulations do not require 24 sampling results in a three or five year period during the better season.

32. The Community Guide to the Principles of Good Practice for the Microbiological Classification and Monitoring of Bivalve Mollusc Production and Relating Areas with regard to Implementing Regulations 2019/627 (“September 2021”) (“**the Guide**”) does not support the FSA’s view that it is necessary to have 24 samples during the better period to obtain a seasonal classification. Indeed, the Guide suggests that the required number of samples for seasonal classification should be pro rata for shorter periods. For example, Annex 1 of the Guide (recommended frequencies, periods and alternative *E. coli* methods) states:

“F Minimum review dataset for maintenance of classification- at least 24 results for a 3 year period (or pro rata for shorter periods)”

(emphasis added)

33. See to similar effect, Annex 1 (g). It is clear from the Guide that the requirement to have 24 results in a 3 or 5 year period does not apply to shorter seasonal periods.

34. The FSA’s Protocol for Classification of Shellfish Production Areas, England and Wales (August 2023) (“the Protocol”) in force at the time of the decision provides, *inter alia*:

Seasonal Classification

4.6. May be awarded when at least 3 full years’ worth of routine monitoring data shows a clear seasonal trend of results. The area may be classified as an A or B for part of the year and B or C for the rest of the year. The season must be at least 3 months in length and of benefit to industry.

[...]

...

Annual (full) classifications

6.8 Following the award of the provisional classification, routine official control sampling will be carried out by Las at the frequency recommended in the sanitary survey (this is generally monthly). The E.coli test results for the samples collected from the established RMP(s) will contribute to an annual classification for the area.

6.9. Monthly monitoring is usually expected to maintain a full classification unless otherwise agreed. Within a 12-month period, a minimum of 8 monthly sample results are required to award and maintain annual B and C area classification. To award and maintain an annual class A classification, a minimum of 10 monthly sample results are required. Anything less than the minimum sample requirement may result in no classification being awarded, or the area being declassified by the FSA (see section 6.14).

(emphasis added)

Seasonal classification

6.10. At least 3 years' worth of data (and a minimum 24 sample results within the 'better' season) showing a clear seasonal trend is necessary for a seasonal classification to be awarded. Seasonal classifications should comprise at least 3 consecutive months and be of benefit to industry (at a time they would usually harvest). Routine monthly monitoring is required throughout the full calendar year to provide sufficient compliance data.

6.11. A buffer period before the start of the season is required. This is one month for Class C to B areas and for Class B to A areas (two months for C to A). During the buffer period the monthly monitoring sample must show compliance with the higher or 'better' classification prior to the 'better' season commencing. Harvested products may only be processed at the 'better' classification at the start of the season and **not** during the buffer period. This is to allow for clearance of contamination during the buffer month/s. The example in the following table demonstrates a seasonal classification. Once stage 3 is complete, stage 1 is repeated:

...

Stage	Date	Classification status	Required monitoring results	Processing requirements for commercially fished shellfish
1	1 April – 30 September	Class C season	Monthly samples contribute to rolling assessment of class C season	Class C
2	1 October – 31 October	Class B Buffer (area still Class C)	Monthly sample compliant with Class B	Class C
3	1 November – 31 March	Class B Season	Monthly samples contribute to rolling assessment of class B season. Any non-compliant results will trigger a review of the eligibility of the season.	Class B

6.12. If the sample in the buffer period is not compliant with the 'better' classification, the LA must sample again until a compliant sample is obtained before the month of the 'better'

classification may commence. This may mean the start of the season is delayed. Such decisions will be made on a case-by-case basis by the FSA. If the season is delayed (following non-compliant buffer samples) for two consecutive years, then the seasonal classification period will be reviewed. Buffer period results will be included in the classification dataset (i.e. used for classification assessments).

6.13. The minimum sample numbers stated in 6.9 apply to seasonal classifications.

(emphasis added)

35. The Protocol goes on to state:

9 Classification Review

9.1. Each year, the FSA carries out an annual review of all shellfish classifications utilising the previous five year and three year dataset for long term B classifications (B-LT) and one year and three year dataset for all other classifications (or all data if less than 3 years).

9.2. Consideration will also be given to the most recent complete year’s results, if there is evidence to show that water quality has improved or deteriorated over the past 12 months and if there is no monitoring for 3 years.

In-year reviews

9.3. OC microbiological results and shellfish classifications are also examined on an on-going basis during the year considering the rolling dataset. Any exceptional or high results will be acted upon according to Las local action plans (sample results above the threshold of the classification awarded to the area – see below) and the cause of the high result investigated. The outcome of these investigations may reveal evidence to disregard the result from the dataset in exceptional circumstances (see sections 10.5 and 10.6). Shellfish classifications may be revised at any point in the year as appropriate. Interim updates are sent to Las who should ensure all interested parties including FBOs within their area of responsibility are aware of the changes.

....

(emphasis added)

Details of the Proposed Grounds of Challenge

Ground 1: The FSA has unlawfully misinterpreted the Protocol

36. The reason the FSA gave, in their 22 December 2023 email, for the various areas not being entitled to a seasonal Class A/B classification (Class A 1 February-30 April) was that “we found that 3 and 5 year datasets provided an insufficient number of samples to award a seasonal classification. To use sampling data beyond 5 years is not in line with the current Protocol”. It is not clear from the 22 December 2023 decision (or the subsequent correspondence) as to what is meant by the phrase “insufficient numbers of samples” in this context. It may relate to the requirement that for a Class A classification there must be

at least 10 samples per year or it may relate to a (purported) requirement for 24 samples from the better season (ie February-April over a particular period of time (for example, five years) or at all. However, whatever the FSA were referring to on this point, they have misinterpreted their Protocol and have therefore acted unlawfully.

37. Firstly, Paragraph 6.10 of the Protocol provides that for a seasonal classification, there must be “at least three years’ worth of data”. There is no requirement for five years of data to be considered when deciding whether to grant a seasonal classification. Paragraph 9.1 of the Protocol does not suggest otherwise. The reference to a five year dataset expressly relates to awarding long term classifications. For all other classifications (including seasonal classifications) paragraph 9.1 provides that all that is necessary is one year and three year datasets. All of the areas that were the subject of the 22 December 2023 decision with the exception of Area A (sampling point: Craig-y-Don) have at least 10 samples for each of the previous three years. The fact that in 2020, because of the Covid-19 pandemic, there were fewer samples taken in that year is not a basis for refusing the requested seasonal classifications. Indeed, if the FSA is relying upon the lack of samples in the various areas in 2020 to refuse the requested seasonal Class A/B classifications that would disclose a further error of law; the FSA has disregarded the lack of samples in other areas, notably in England where, for example, the seasonal A/B classification of the Maplin East and west cockle beds in 2021 (and subsequently) were unaffected by the shortfall in the number of samples taken in 2020. A failure to treat the Menai Strait mussel areas in the same way would be irrational and unlawful.
38. If the reference in the 22 December 2023 email to insufficient samples relates to the absence of 24 samples during the better period (i.e. February-April) over a particular period (e.g. three or five years) this also discloses a misunderstanding of the Protocol and an error of law. Firstly, paragraph 6.10 does not state that the 24 samples from the better season must be taken over a three (or five) year period. There is no temporal restriction on the 24 sample requirement in this paragraph or elsewhere in the Protocol. Indeed, it would be nonsensical (and irrational) to require 24 samples from the better season during either a three or five year period. The Protocol makes clear that seasonal classifications can be for a period of three months (see para 6.10: “seasonal classifications should comprise at least 3 consecutive months”) and that testing for *E. coli* is done on a monthly basis (see e.g. the FSA’s 5 December 2023 spreadsheet, the Protocol and the contracts for such

testing). If the 24 samples requirement during the better season had to be met within three or five years, this would necessarily exclude both three month and four month seasons which are expressly permitted by the Protocol. Such an interpretation of the Protocol would thus be perverse.

39. The FSA also rely upon Paragraphs 6.9 and 6.13 of the Protocol to support their decision to refuse the requested seasonal classification. Paragraph 6.13 states that “the minimum sample numbers stated in 6.9 apply to seasonal classifications”. Paragraph 6.9 states that for “an annual class A classification, a minimum of 10 monthly samples is required.” If the FSA has interpreted this to mean that for a seasonal Class A classification, there must be 10 monthly samples during the better period, such an interpretation is wrong (and irrational). All that para 6.13, read with para 6.9, requires is 10 samples during the calendar year and, as detailed above, all the areas with the exception of Area A that were the subject of the 22 December 2023 decision have at least 10 samples over the relevant three year period (ie 2021-2023). All the areas with the exception of West of Bangor Pier also meet the Class A requirements for the samples taken during the three month better season and the additional buffer month for the three year period overall. (In respect of Beaumaris East and Ogwen Channel, 100% of the samples taken in the three-year period meet Class A criteria. All of the others⁴ exceed the 80% requirement.) In such circumstances, the FSA is required to award the requested seasonal classifications. The FSA’s continuing refusal to do so is unlawful.

Ground 2: reasons

40. The FSA are under a common law duty to give reasons for their decision. Such reasons should enable the reader to know what conclusion the decision-maker has reached on the principal controversial issues, and not leave room for genuine doubt as to what has been decided and why, see *South Bucks DC v Porter (No 2)* [2004] 1 WLR 1953, para 36 *per* Lord Brown. The reasons set out in the 22 December 2023 email (and subsequent correspondence) do not meet this requirement because the Claimants are not clear why the requested classification was refused. In particular, the reasons do not explain why there are an “insufficient number of samples to award a seasonal classification”. It is completely unclear what requirement for a particular number of samples, it is said the areas fail to

⁴ Again, excepting West of Bangor Pier.

meet (see above on ground 1 which explains this lack of clarity). The FSA's failure to give adequate reasons further renders their decision unlawful.

Ground 3: The FSA's asserted requirement of 24 sample results within the better season in the previous five years is inconsistent with the applicable EU law and based on a misunderstanding of what such law requires

41. Further and in the alternative, as detailed above, there is nothing in the applicable EU law that requires 24 samples during the (three month) better period at all let alone over a particular period of time. Indeed, the relevant EU Guide makes clear that where a seasonal classification is sought, the number of samples required is calculated on a pro rata basis.⁵ Where, as here, the relevant better period is three months long, a minimum of six samples during the better period,⁶ rather than 24 samples is all that is required. All of the mussel fields in the Menai Strait that were the subject of the 22 December 2023 decision have the requisite 6 samples over the previous three year period. Further, all of these mussel fields meet the criteria for Class A over this period (ie 80% of the samples below 230 *E. coli* per 100g of flesh and no samples over 700 *E. coli* per 100g of flesh). In such circumstances, the FSA should have granted the requested seasonal licences. Their refusal to do so is unlawful.

Ground 4: Inconsistent and irrational treatment

42. Further and in the alternative, the FSA have acted in an inconsistent and irrational way by refusing a three month seasonal classification to the various areas in the Menai Strait whilst granting a three month seasonal classification to the mussel bed at Foulney Island in Morecambe Bay (Foulney Island appears to be the most obvious example, however, multiple other shellfish production areas violate criteria the FSA appears to indicate are requirements; depending on the FSA's response our clients reserve their rights to raise other examples where inconsistent and irrational treatment arises). It is a well-established principle of administrative law that for a public body to act rationally it must treat like cases alike. The Court of Appeal in *R v Hertfordshire County Council, ex p Chung* The Times, 4 April 1998 that:

It is a cardinal principle of public administration that all persons in a similar position

⁵ There is no evidence that the UK Government intended to "gold plate" regulation in this area and go beyond what was required by the relevant EU law

⁶ If 24 samples are required for a year long license, 6 samples are required for a three month seasonal licence (ie 24 divided by 4 (as the period is a quarter of a year long)).

should be treated similarly”.

43. If a public body were to treat persons in a similar position differently it would be acting in an arbitrary and capricious manner.
44. In the present case, the FSA has granted a seasonal classification of A/B to Foulney with a three month Class A period from the 1st of March to the 31st of May. It is clear from the FSA’s recent December 2023 classification decision that there is monthly monitoring of *E. coli* at this location (like every other mussel field location). Foulney cannot have 24 samples during the better period (ie 1 March-31 May) in the preceding 3 or 5 years. At most it will have had 15 such samples (ie 3 samples per year for five years). A review of the data published on the FSA website shows that to attain the threshold of 24 samples for this seasonal classification the FSA would have had to take account of data from 2016-2023. Notwithstanding this, the FSA has seen fit to grant Foulney a seasonal classification whilst refusing similar three month classification to various mussel beds in the Menai Strait who have a similar number of samples. Such an arbitrary and discriminatory approach is irrational and therefore unlawful.

Ground 5: Breach of Article 1 of Protocol 1 ECHR

45. The European Court of Human Rights has interpreted “possessions” in Article 1 of Protocol 1 broadly to include leases, licenses and other intangible property, see eg *Tre Traktoer AB v Sweden* (1989) 13 EHRR 309. A lease to farm and harvest mussels is clearly a “possession” for the purposes of Article 1 of Protocol 1 ECHR. Similarly a right to sell mussels without the need for them to undergo treatment of any sort (i.e. a license to sell Class A mussels) is a possession for the purposes of Article 1 of Protocol 1. The FSA’s decision of 22 December 2023 deprives the Second, Third and Fourth claimants of a seasonal classification (with a three month Class A period) to which they were entitled.
46. Such a deprivation was not “subject to the conditions provided for by law” as the Protocol is not sufficiently foreseeable or coherent given its fundamental inconsistencies and ambiguities (see in particular ground 1). Further, the applicable “law” (i.e. the Protocol) has been applied arbitrarily and selectively resulting in a three month seasonal licence being granted to Foulney (without 24 samples within the last five years) during the better period whilst refusing a similar license to the various areas in the Menai Strait considered in the 22 December 2023 decision.

47. Further, the refusal of the request for seasonal classification does not achieve a “fair balance” between the demands of the general interest of the community and the protection of the fundamental rights of the mussel farmers. In particular, the existence of samples demonstrating that the various mussel beds in the Menai Strait that are the subject of the 22 December 2023 decision meet the criteria for Class A during the relevant three month period establishes that such a seasonal classification would not pose any risk to human health.
48. The Second, Third and Fourth Claimants have suffered financial loss (and continue to suffer ongoing financial loss) as a result of the FSA’s unlawful decision of 22 December 2023. As detailed above, Class A mussels currently have a value of £1,200 – 1,500 per tonne whilst Class B mussels have no commercial value. The Tenant farmer claimants are currently calculating the extent of their loss arising from the FSA’s decision but such loss is likely to be very significant and in the £100,000s for the full three month season.

Ground 6: Breach of Article 14 ECHR read with Article 1 of Protocol 1.

49. The FSA has granted a three month Class A seasonal license to English mussel farmers at Foulney but has refused a similar license to Welsh Mussel farmers in the various areas of the Menai Strait addressed in the decision under challenge. The only basis for this differential treatment is the nationality of the mussel farmers. The challenged decision is clearly within the ambit of Article 1 of Protocol 1 (see above). As with the previous ground, the FSA’s decision is not in accordance with law/prescribed by law. Further, there is no objective or reasonable justification for such differential treatment on the basis of nationality. In such circumstances, the challenged decision is in breach Article 14 ECHR read with Article 1 of Protocol 1. The FSA’s decision is thus in breach of Article 14 ECHR read with Article 1 of Protocol 1. The Second, Third and Fourth Claimants are entitled to damages under the Human Rights Act 1998 arising from this breach of Article 14 ECHR.

Orders Sought

50. The following orders will be sought from the Court:
- (i) A quashing order in respect of the FSA’s decision of 22 December 2023;

- (ii) A declaration that the various areas in the Menai Strait subject to the 22 December 2023 decision meet the criteria for a three month seasonal Class A/B classification (better season, 1 February-31 April);
- (iii) damages for breach of Article 1 of Protocol 1 ECHR and/or Article 14 ECHR read with Article 1 of Protocol 1 ECHR;
- (iv) An Aarhus Costs Order or alternatively a Costs Capping Order;
- (v) Costs.

Details of Legal Advisors Dealing with this Claim

51. Richard Buxton Solicitors
Office A, Dale's Brewery
Gwydir Street
Cambridge
CB1 2LJ

Attn: Matthew McFeeley & Peter Higham

Tel: 01223 328933

Fax: 01223 301308

Email: mmcfeeley@richardbuxton.co.uk, phigham@richardbuxton.co.uk

52. Claimant's Counsel:
Andrew Sharland KC
Ben Mitchell
11 King's Bench Walk

Details of Interested Party

53. N/A; please advise if you consider any parties have been omitted.

Details of Information Sought

54. As a public body you are subject to the duty of candour from the outset. You are thus

required to comply with it at the pre-action stage, see *R (HM and others) v SSHD* [2022] EWHC 2729 (Admin), para 16, *R (Terra Services Ltd) v National Crime Agency* [2019] EWHC 1933 (Admin), paras 9 and 14. The duty of candour imposes onerous burdens on the FSA to explain clearly, at the pre-action stage, why it took the decision that it took and disclose all relevant documents, see *R (Police Superintendents' Association) v Police Remuneration Review Body* [2023] EWHC 1838 (Admin).

55. Pursuant to the duty of candour please provide full and candid responses to the following questions:

- i) does the FSA assert that there is a requirement under EU law to have 24 samples from the better period either at all or within a three or five year period? If the FSA does assert that there is such a requirement, please identify the relevant provision in the regulations (or elsewhere) which imposes such an obligation;
- ii) does the FSA accept that the UK Government did not intend to “gold plate” the regulation of shellfish farming in England and Wales and that the domestic law (including but not limited to the Protocol) should be interpreted to reflect the requirements set out in the relevant EU law? If it does not accept this, please provide evidence that supports any assertion of such an intention to “gold plate”.
- iii) When in its email of 22 December 2023 the FSA asserts that there was “an insufficient number of samples to award a seasonal classification” in relation to the various areas, what requirement was the FSA asserting the various areas failed to meet? In particular,
 - a) was the FSA asserting that the various areas had failed to meet a requirement that there are 24 samples during the “better season” at all or during a particular period (e.g. three or five years)?
 - b) was the FSA asserting that the various areas had failed to meet the 10 samples a year requirement for three or five years?
- iv) Please detail which, if any, of the mussel beds regulated by the FSA currently classified as class A (whether annual or seasonal) had 10 monthly *E. Coli* samples during 2020.
- v) Please confirm whether the FSA asserts that the mussel field at Foulney had 24 samples during its three month better season at all or within a three or five year period.

- vi) Please confirm whether the FSA asserts that the mussel field at Foulney had 10 samples a year for the years 2019, 2020, 2021, 2022 and 2023. If it does so assert, please detail the number of monthly *E. Coli* samples taken during each of these years.
56. The above questions are reasonable and proportionate given the issues involved in the present case and, inter alia, the very significant financial losses suffered (and continuing to be suffered) by the Menai Strait mussel farmers. If the FSA fails to answer any of these questions, the Claimants will ask the court to draw the appropriate adverse inference. A failure to provide a full and candid responses to the above six questions is very likely to lead to the Claimants issuing proceedings for judicial review. Any such failure is very likely to lead to an application for costs on an indemnity basis as a failure to answer such reasonable and proportionate questions would be unreasonable and inconsistent with, inter alia, the requirements of the Pre-action Protocol for Judicial Review, the overriding objective set out in CPR Part 1 and the duty of candour.

What the FSA is requested to do

57. Please confirm as a matter of urgency that the FSA will withdraw its decision of 22 December 2023 and grant the requested seasonal Class A/B classifications in relation to the various areas in the Menai Strait.

Other applications

58. If the claim proceeds the Claimant will apply for a Aarhus Convention costs protection pursuant to CPR 46.26 on the basis that the claim is “An Aarhus Convention claim”, see CPR 46.24(2)(a). In the alternative, if it the claimants are not entitled to Aarhus Convention Costs protection pursuant to CPR 46, a costs capping order pursuant to sections 88-90 of the Criminal Justice and Courts Act 2015.
59. Please confirm that you accept that the proposed claim would be an “Aarhus Convention claim”. If you disagree, please detail the precise basis for such a disagreement. Further, if you disagree that it is an Aarhus Convention claim, please confirm that you would agree to a Costs Capping Order (with the same costs limits as apply to Aarhus Convention claims).

Again, if you disagree, please set out the basis for such a disagreement and what costs caps you propose.

Address for Reply and Service of Court Documents

60. Richard Buxton Solicitors
Office A, Dale's Brewery
Gwydir Street
Cambridge
CB1 2LJ

Attn: Matthew McFeeley & Peter Higham

Proposed reply date

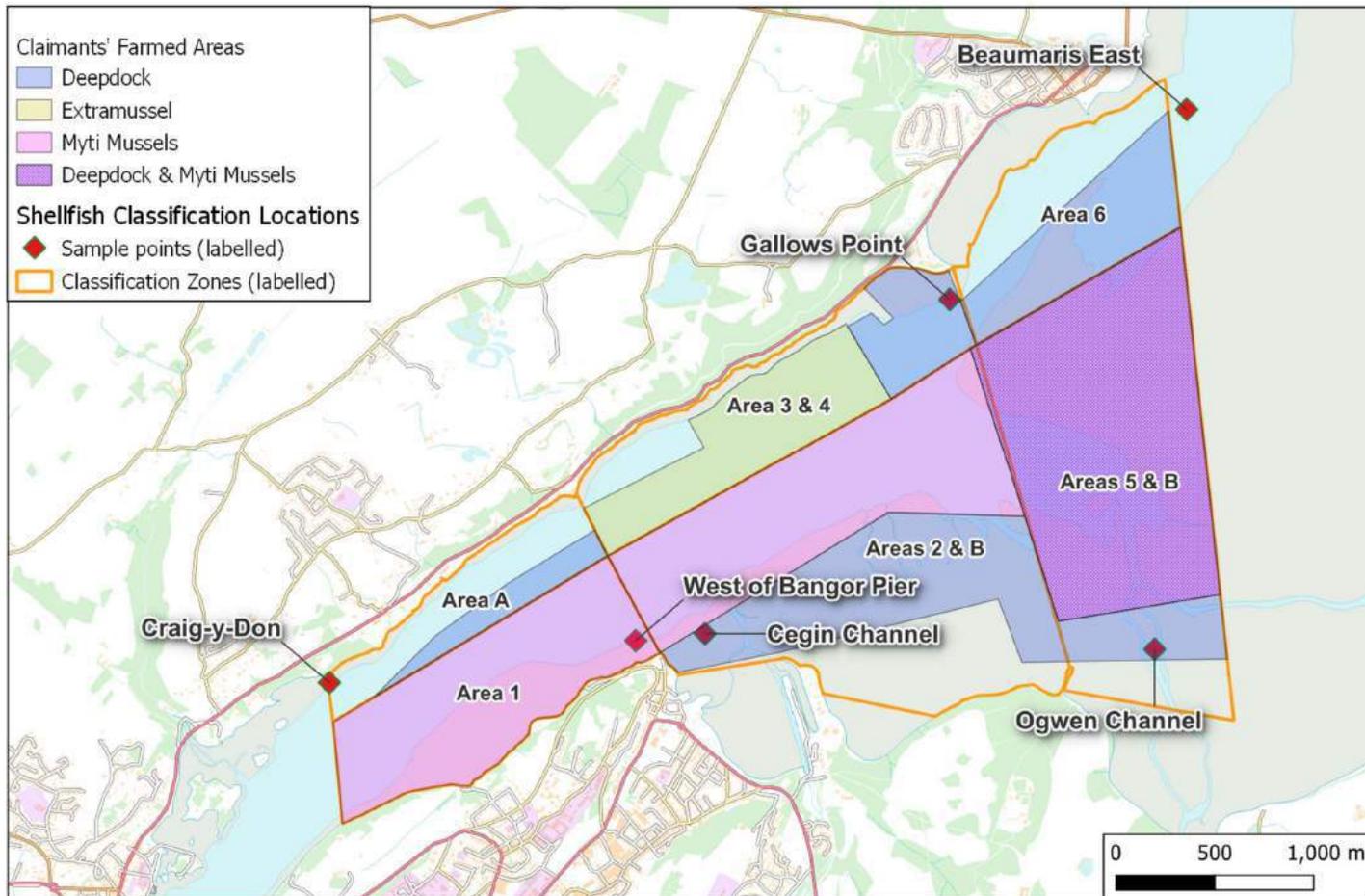
61. A response is requested within 14 days, i.e. by 27 February 2024. However, given the ongoing significant financial loss currently being suffered by the Second, Third and Fourth Claimants (and the other Menai Strait mussel farmers), we would ask that, if at all possible, you respond within 7 days. If, **within 14 days**, the FSA confirms that it accepts that its 22 December 2023 decision was erroneous and that it agrees to issue the seasonal licences requested in relation to the various mussel fields, the Claimants (and the other Menai Strait mussel farmers) undertake not to issue claims for damages for breach of Article 1 of Protocol 1 ECHR or Article 14 ECHR read with Article 1 of Protocol 1 ECHR.

Yours faithfully



RICHARD BUXTON SOLICITORS

Annex A: Map showing location and ownership of mussel farming areas in the eastern Menai Strait relative to Representative Monitoring Points and Classification Zones used by the FSA for shellfish hygiene classifications.



Annex B: FSA Wales response to Pre-Action Protocol letter, March 2024

Attention: Matthew McFeeley and Peter Higham

Richard Buxton Solicitors
Office A, Dale's Brewery
Gwydir Street
Cambridge
CB1 2LJ

**By email at: mmcfeeley@richardbuxton.co.uk and
phigham@richardbuxton.co.uk**

13 March 2024

Our Reference: CC/HS

Your reference: (MSF1/1)MRM/PJH

Re: Menai Straits – Shellfish Bed Classification – Pre-Action Protocol

Dear Sirs,

Introduction

1. Before turning in more detail to your pre-action letter in accordance with the Pre-Action Protocol, our clients ask that we first emphasise to your clients that they are welcome to come and talk to the FSA about the individual data points which apply to these sites and the related public health risks which this monitoring is targeting.
2. Our clients have sought to set out reasoning below in greater detail, and to attach the relevant excel spreadsheets, so that your clients can understand, and clearly see, how/which/where data points (or the absence of data points) are driving classification decisions; and why it is that the time points of data over time are important to these decisions. It is this which is lacking in your case.

3. Our clients hope your clients will see demonstrated that the FSA is willing to engage with your clients and the underlying data. This is not about an inflexible approach; it is about scientific evidence and what the data shows. The FSA makes various suggestions as to a more constructive approach by your clients, for example whether looking at meeting with local authorities for them to be collecting data more regularly (e.g. weekly or fortnightly monitoring over the proposed Class A season this year to help provide assurance of food safety and continued Class A compliance for re-classification in the near future if the data supports this). We are willing to work with local authorities and your clients to make sure the necessary data is robustly collected in the forthcoming seasons, and to hear any points your clients wish to make in relation to the data which has been collected. The real challenge in this case for your clients is the inadequacy of the data series together with what may be a worsening quality of water, whether from use of storm overflows (increasing sewage), agricultural run-off or other causes. We have also, to assist your clients, summarised briefly some of the public health risks.

4. We understand your clients will be disappointed, but we consider a judicial review challenge will clearly fail, for the reasons we set out below. It will be defended robustly. The far better course is for your clients to engage with the FSA and relevant local authorities and Cefas to ensure adequate monitoring data is collected.

Response to the Letter Before Claim

5. This is a response to your Pre-Action Protocol letter dated 13 February 2024 (the '**PAP Letter**'). We find it difficult to understand all the formulation and the development of your arguments in your PAP letter. We regret that you were not willing to extend further the time for our response, but we have sought to work as quickly as possible.

6. In accordance with the Pre-Action Protocol, we confirm the following details:

(a) Proposed Claimants:

- (i) Menai Strait Fishery Order Management Association ('MSFOMA'), Port Penrhyn, Bangor, LL57 4HN;

- (ii) Deepdock Limited Bwthyn Y Mor, Llandaethlu, Holyhead, Anglesey LL65 4HD;
 - (iii) Myti Mussels Limited, Port Penrhyn, Bangor, Gwynedd LL57 4HN;
 - (iv) Extramussel Limited, Daggett and Company, Parway House, Palatine Road, Manchester M22 4DB;
 - (v) Reference: Attention of Matthew McFeeley and Peter Higham of Richard Buxton Solicitors, Office A, Dale's Brewery, Gwydir Street, Cambridge, CB1 2LJ. Your reference is (MSF1/1)MRM/PJH.
- (b) **Proposed Defendant:** Food Standards Agency ('FSA'), Foss House, Kings Pool, 1-2 Peasholme Green, York YO1 7PR. Reference/solicitor details: Corinne Cortes (Hakim Sutton in copy). For the purposes of service, any correspondence sent to the FSA by post, we request that documents are also posted to the London office at 7th Floor, Clive House, 70 Petty France, London SW1H 9EX. Our reference is CC/HS.

Details of the matter being challenged.

7. You purport to be challenging a determination by the FSA on 22 December 2023 contained in an email of that date sent by the Head of Hygiene Policy for Wales ('**the December email**').
8. The decision was published on 1 December 2023 ('**the December 2023 decision**'), as you refer to at paragraph 22 of your PAP letter. This should be the date of the Decision you challenge.

Response to the proposed claim

Delay

9. It is convenient to address the issue of delay from the outset.

10. We note that you purport to challenge the FSA's decision of 22 December 2023, which we propose to refer to as the December email. In the PAP letter, great emphasis is placed on the significant losses that the proposed claimants claim they have suffered and continue to suffer because of that decision. However, it is surprising despite knowing that any delay exposes the individual proposed claimants to increasing financial losses, you waited over seven weeks (from 22 December) or 2.5 months (after 1 December) after that decision to serve the PAP letter and no explanation was provided in the PAP letter to support or explain the reasons behind the delay.

11. The Civil Procedure Rules 54.5(1) provides:

The claim form must be filed –

 - (a) *promptly; and*

 - (b) *in any event not later than 3 months after the grounds to make the claim first arose.*

12. These two requirements under the Rules are distinct from one another and the Rule 54.5(1) is primarily focused on promptness. We cannot see and there is no objectively good reason shown for explaining the delay. The FSA's position will be to defend its position and any proposed claim for judicial review will be contested in full.

13. We also note that in our view, as you refer to at paragraph 22 of your PAP letter, the actual decision published by the FSA took place on the 1 December 2023. We consider your claim to be out of time for this reason also.

Review of the classification in the Menai Strait

Shellfish Classification and the Law

14. For this response, all references to relevant EU legislation mentioned below are to read as 'assimilated law'.
15. Shellfish classification is governed by the legal requirement that the shellfish harvesting areas must meet the health standards for live bivalve molluscs.
16. Commission Implementing Regulation (EU) 2019/627 lays down the official control requirements. The FSA is the Competent Authority for food safety, including Live Bivalve Molluscs (LBMs), which are filter feeding shellfish such as oysters, mussels and clams. These controls include the classification and monitoring of shellfish production and relaying areas. The classification of a production area determines the treatment required before the molluscs may be marketed. In all cases, the general food safety requirements in Article 14 Regulation (EC) 178/2002 and more specific requirements in Annex II of Regulation (EC) 853/2004 and the microbiological criteria adopted under Regulation (EC) 2073/2005 must be met.
17. Whereas the FSA makes the final decision on classification or changing classification, those decisions are made based on available information provided by the relevant local authorities who, amongst other things, act as the Competent Authority responsible for sampling.
18. The Centre for Environmental, Fisheries and Aquaculture Science ('Cefas') coordinates the microbiological and biotoxin monitoring programme on behalf of the FSA. Cefas assesses the sampling data available for shellfish harvesting areas in England and Wales and provides the FSA with recommendations for new and amended classifications. The FSA relies on this information to inform decisions when reviewing the shellfish classifications. In this case, after receipt of the PAP letter, upon being requested to do so, Cefas undertook a further analysis of the sampling data beyond the 3 and 5 year period and provided further recommendations.

19. Each year, the FSA carries out an annual review of all shellfish classifications utilising the previous five-year and three-year dataset for long-term B classifications (B-LT) and one-year and three-year dataset for all other classifications (or all data if less than 3 years). When undertaking the review, the FSA relied on the faecal indicator bacterium, *E. coli*, to establish the degree of faecal contamination in areas where shellfish are to be harvested. The FSA awards classifications according to the contamination levels analysed in shellfish flesh samples.

The Protocol

20. The Protocol for Classification of Shellfish Production Areas, England and Wales – August 2023 is annexed to this response letter.
21. When considering the seasonal classification for each of the six beds mentioned above, the shellfish team in Wales considered the Protocol. For your assistance, relevant sections of the Protocol are set out below.

4.5 Annual/full Classification

May be awarded to an area after a full 12 months of routine monthly monitoring and where historical and current results allow for annual A, B or C classification to be awarded for a 12-month period. The FSA reviews all classifications annually. It also analyses monitoring data throughout the year, which can result in changes to classification being notified via interim updates as necessary.

4.6 Seasonal Classification

May be awarded when at least 3 full years' worth of routine monitoring data shows a clear seasonal trend of results. The area may be classified as an A or B for part of the year and B or C for the rest of the year. The season must be at least 3 months in length and of benefit to industry.

4.7 Long-term Classification (B-LT) (class B only)

When a Class B production area has stable compliance over a 5-year period, a long-term classification can be awarded, indicated as B-LT. This demonstrates that water quality is more stable in these production areas and shellfish harvested from these areas are more likely to reflect this. Harvesters benefit from a more consistent classification, which is less vulnerable to single testing results.

Further Information of classification awards

6.2. Information contained in the most recent sanitary survey undertaken in the production area will be used in the assessment process. Monitoring data will also be considered.

Seasonal classifications

6.9. Monthly monitoring is usually expected to maintain a full classification unless otherwise agreed. Within a 12-month period, a minimum of 8 monthly sample results are required to award and maintain annual B and C area classification. To award and maintain an annual class A classification, a minimum of 10 monthly sample results are required. Anything less than the minimum sample requirement may result in no classification being awarded, or the area being declassified by the FSA (see section 6.14).

6.10. At least 3 years' worth of data (and a minimum 24 sample results within the 'better' season) showing a clear seasonal trend is necessary for a seasonal classification to be awarded. Seasonal classifications should comprise at least 3 consecutive months and be of benefit to industry (at a time they would usually harvest). Routine monthly monitoring is required throughout the full calendar year to provide sufficient compliance data.

6.11. A buffer period before the start of the season is required. This is one month for Class C to B areas and for Class B to A areas (two months for C to A).

6.12. During the buffer period the monthly monitoring sample must show compliance with the higher or 'better' classification prior to the 'better' season commencing. Harvested products may only be processed at the 'better' classification at the start of the season and not during the buffer period. This is to allow for clearance of contamination during the buffer month/s. The example in the following table demonstrates a seasonal classification. Once stage 3 is complete, stage 1 is repeated:

Stage	Date	Classification status	Required monitoring results	Processing requirements for commercially fished shellfish
1	1 April – 30 September	Class C season	Monthly samples contribute to rolling assessment of class C season	Class C
2	1 October – 31 October	Class B Buffer (area still Class C)	Monthly sample compliant with Class B	Class C
3	1 November – 31 March	Class B Season	Monthly samples contribute to rolling assessment of class B	Class B

			<p>season.</p> <p>Any non-compliant results will trigger a review of the eligibility of the season.</p>	
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6.13. If the sample in the buffer period is not compliant with the ‘better’ classification, the LA must sample again until a compliant sample is obtained before the month of the ‘better’ classification may commence. This may mean the start of the season is delayed. Such decisions will be made on a case-by-case basis by the FSA. If the season is delayed (following non-compliant buffer samples) for two consecutive years, then the seasonal classification period will be reviewed. Buffer period results will be included in the classification dataset (i.e. used for classification assessments).

6.14. The minimum sample numbers stated in 6.9 apply to seasonal classifications.

7. Additional notes

7.4 The minimum sample numbers in 6.11 may be reviewed by FSA if areas are for instance, formally closed/have low stocks for an extended period of time.

7.5 If there are other circumstances which do not fit with these scenarios, local authorities should contact the FSA/Cefas to discuss what sampling arrangements are necessary and this will be considered on a case by case basis for a decision by the FSA. Some examples may be where the harvesting season is restricted, sometimes for less than 3 months, for reasons other than hygiene compliance, and are beyond industry control (i.e. Inshore Fishery Conservation Authority byelaws).

Classification Review

9.1. Each year, the FSA carries out an annual review of all shellfish classifications utilising the previous five year and three year dataset for long term B classifications (B-LT) and one year and three year dataset for all other classifications (or all data if less than 3 years).

9.2. Consideration will also be given to the most recent complete year's results, if there is evidence to show that water quality has improved or deteriorated over the past 12 months and if there is less than 3 years' monitoring data.

In-year reviews

9.3. OC microbiological results and shellfish classifications are also examined on an on-going basis during the year considering the appropriate rolling dataset. Any exceptional or high results will be acted upon according to LAs local action plans (sample results above the threshold of the classification awarded to the area – see below) and the cause of the high result investigated. The outcome of these investigations may reveal evidence to disregard the result from the dataset in exceptional circumstances (see sections 10.5 and 10.6). Shellfish classifications may be revised at any point in the year as appropriate. Interim updates are sent to LAs who should ensure all interested parties including FBOs within their area of responsibility are aware of the changes.

Actions following outcome of investigations

10.9. Examples of events that may lead to results being removed from the dataset are:

- Sewage treatment works failure* or other pollution events
- 1 in 5 year (or longer) return period storm event
- Failure to comply with the standard sampling protocol**

** Where it is deemed that the resulting discharges will have markedly impacted on the shellfish bed(s) – information obtained from the EA/NRW and LA is used to assist in this determination.*

*** In practice this has meant the exclusion of results for samples that have exceeded the 120-hour limit between sampling and testing and/or samples arriving above the permitted temperature*

22. In summary of the Protocol, see above, within a 12-month period, a minimum of 8 monthly sample results are required to award and maintain annual B and C area classification. To award and maintain an annual class A classification, a minimum of 10 monthly sample results are required. Anything less than the minimum sample requirement may result in no classification being awarded, or the area being declassified by the FSA. Moreover, the minimum sample numbers equally apply to seasonal classifications. Minimum sample numbers may be reviewed on a case-by-case basis.
23. As you will appreciate from the extracts from the Protocol above, data is required to meet the requirements in assimilated law. The Protocol reflects the FSA's policy as Competent Authority and is applied to indicate the FSA's approach, which aids clarity and transparency to all stakeholders. This includes not only clients such as yourselves, but also the confidence in the public health and food standards system and for local authorities who act as the Competent Authority responding for sampling and enforcement in their areas. Routine monthly monitoring is required throughout the full calendar year to provide a sufficient and reliable dataset that shows a clear seasonal trend. If the data is insufficient, the FSA may not award a seasonal classification.
24. When considering seasonal classifications, the FSA considered the availability of at least 3 years of data and a minimum of 24 sample results within the better season. The 'better' season is the period, made up of at least three consecutive months, where the monthly monitoring data shows compliance with the higher or 'better' season than during the remaining months of the year. In addition, data for the buffer month was also analysed making it a total of 4 months of results were reviewed. Namely, the area may be classified as an A or B for part of the year and B or C for the rest of the year.

25. There is nothing unusual about more than 3 years data being considered. Previously the FSA has considered up to 6 years data. However longer datasets are applied with caution relevant to the longer dataset; for example, seasonal trends going back many years may change, or no longer apply, if there have been water quality improvements or deteriorations over that time. In the analysis we describe below, the FSA went beyond 6 years to consider data up to and including 2015. The FSA considers that this can be done. Over time, however, the ability to identify seasonal trends from such data reduces.

Decision under challenge

26. On 1 December 2023, the FSA published its revised classification list following the annual review. As part of the review in 2023 all beds in the Menai Straits were considered for full upgrade or seasonal classification, however, the monitoring results did not meet the requirements as recommended in the Protocol. Following the 2023 annual review of classification, all beds in the Menai Straits were classified as B-LT. Whereas the Cegin Chanel bed was the only one in the Menai Straits whose classification changed as it was downgraded from a seasonal A/B to a B-LT. That change came into effect on 01 December 2023.
27. On 11 December 2023, James Wilson, Director of the proposed second claimant contacted the shellfish team in Wales requesting that the FSA 'bring forward seasonal classifications for the three months: February, March and April (January as the buffer month) for the following beds located in Menai straits in North Wales:

B055R Craig Y Don

B055S West of Bangor Pier

B055T Cegin Chanel

B055U Gallows Point

B055W Beaumaris East

28. The FSA considered this email and as requested, considered it was appropriate to also include the following when considering whether to amend the classification of the 1 December to include seasonal classifications:

B055V Ogwen Channel

2023 Review classification in the Menai Strait

29. The datasets analysed in 2023 are annexed to this response letter. We trust the colour-coding is self-explanatory. It is important to emphasise that the FSA carried out this further review as a matter of its discretion (see Protocol 9.3 '*Shellfish classifications may be revised at any point in the year as appropriate*').
30. In summary of discussions:

B055R – Craig Y Don

31. Classification at 2022 review was B-LT and remained unchanged following the annual review conducted in 2023. In reaching that decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets.
32. The 3-year dataset within the requested seasonal review contained 11 samples of which 2 samples were above the 230 threshold which provides 82% compliance in the proposed season.
33. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, of which 2 samples were above 230 threshold which provides 85% compliance in the proposed season.
34. From the analysis of the samples, a clear seasonal trend (to support Class A classification in the proposed "better" season) could not be established and the number of samples was limited. The FSA protocol seeks 24 sample results within the 'better' season for a seasonal classification to be awarded. The threshold of 3-year and 5-year datasets did not provide a sufficient number of

samples in the 'better season'. To achieve 24 samples, the analysis would have had to go back eight years (see datasets analysed in 2023, attached to this letter). There was still not a clear trend to support seasonal Class A classification.

35. Further, when considering other relevant factors in drafting this PAP letter and again reviewing all data, the FSA noted that in January 2024, a sampling result of 1,300 was returned that demonstrates the instability in the level of contamination in the water. The Protocol provides for circumstances in which higher figures can be disregarded (see e.g. 10.9). However, as the bed is classed as B (L-T) so no investigation would have been completed as it would not have triggered an action/investigation state in line with the local action group guidance. Further, no such information has currently been provided by your clients or to the FSA by others (see further paragraph 69 below).

B055S – West of Bangor Pier

36. Classification at 2022 review was B-LT and remained unchanged following the annual review conducted in 2023. In reaching that decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets
37. The 3-year dataset in the period between January and April contained 11 samples of which 3 samples were above the 230 threshold which provides 73% compliance in the proposed season.
38. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, of which 3 samples were above 230 threshold which provides 77% compliance in the proposed season.
39. Of note, the compliance is below the 80% compliance statutory requirement under Article 53 Retained Regulation (EC) No 2019/627. Further, from the analysis of the samples, a clear seasonal trend could not be established due to the limited number of samples. The FSA protocol seeks 24 sample results within the 'better' season for a seasonal classification to be awarded. The 3-year and 5-year datasets do not provide a sufficient number of samples in the 'better season', to achieve 24 samples in the 'better season'. To achieve this, the FSA would need to go back to 2016 which would then achieve 25 samples

available within the better season. Within that dataset, 6 samples were above the 230 threshold and provided 76% compliance. The analysis would have to go back eight years and the results of that analysis do not support seasonal classification as there is not a clear trend supporting a Class A seasonal classification identified within the dataset.

B055T – Cegin Channel

40. Classification at 2022 review was seasonal Class A/B (Class A season 1 October to 30 April). Following the annual review conducted in 2023, the classification changed to B (L-T). In reaching that decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets
41. The 3-year dataset in period between the January and April period contained 11 samples of which 1 sample was above the 230 threshold which provides 91% compliance in the proposed season.
42. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, of which 1 sample was above the 230 threshold which provides 92% compliance in the proposed season.
43. From the analysis of the samples, a clear seasonal trend could not be established. The FSA protocol requires a minimum of 24 sample results within the 'better' season for a seasonal classification to be awarded. The 3-year and 5-year datasets do not provide a sufficient number of samples in the 'better season', to achieve the required 24 samples in the 'better season'. To achieve this, the FSA would need to go back to 2016 when 25 samples would be available within the better season. Within this dataset 3 samples are above the 230 threshold which provides 88% compliance. The analysis would have had to go back eight years and the results of that analysis do not provide seasonal classification as there is not a clear trend within the dataset.

B055U – Gallows Point

44. Classification at 2022 review was B (L-T) and following the annual review conducted in 2023, the classification remained unchanged. In reaching that

decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets.

45. The 3-year dataset in period between the January and April period contained 11 samples of which 2 samples were above the 230 threshold, as there is a result of 780 in April 2023, the compliance is not achieved.
46. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, of which 2 samples were above the 230 threshold, compliance is not achieved when considering the result of 780 in April 2023.
47. From the analysis of the samples, a clear seasonal trend could not be established. The FSA protocol requires a minimum of 24 sample results within the 'better' season for a seasonal classification to be awarded. The 3-year and 5-year datasets do not provide a sufficient number of samples in the 'better season'. To achieve the required 24 samples in the 'better season', the FSA would need to go back to 2016 when 25 samples would be available within the better season. The analysis would have had to go back eight years and the results of that analysis do not provide seasonal classification as there are high results and there is not a clear trend supporting the seasonal classification within the dataset.
48. To note one sample result in April 2023 is above the 700-threshold for class A, as the bed is classed as B (L-T) so no investigation would have been completed as it would not have triggered an action/investigation state in line with the local action group guidance. As such seasonal classification could not be provided for April and meant that a season of February and March falls outside the Protocol which recommends 3 consecutive months as a minimum. In occasional cases if justified by the evidence a single anomalous result of 780 may be treated as a result of 700 but on the evidence currently available this is not considered appropriate (and see further the comments at paragraphs 53 and 57).

B055W – Beaumaris East

49. Classification at 2022 review was B (L-T) and following the annual review conducted in 2023, the classification remained unchanged. In reaching that

decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets

50. The 3-year dataset in the period between January and April contained 11 samples and none of the samples was above the 230 threshold which provides 100% compliance in the proposed season.
51. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, and none of the samples was above the 230 threshold which provides 100% compliance in the proposed season.
52. From the analysis of the samples, a clear seasonal trend could not be established. The FSA protocol requires a minimum of 24 sample results within the 'better' season for a seasonal classification to be awarded. The 3-year and 5-year datasets do not provide a sufficient number of samples in the 'better season', to achieve the required 24 samples in the 'better season'. To achieve this, the FSA would need to go back to 2016 when 25 samples would be available within the better season. The analysis would have had to go back eight years and the results of that analysis do not provide seasonal classification. There is one high result and there are no clear trends within the dataset. Within this dataset, two samples are above the 230 threshold providing a 92% compliance.
53. In addition, it is a cause of concern to the FSA that a result of 780 was recorded in January 2016 within the proposed buffer period. It is noted that this is a single data point which is approximately 8 years ago, at the start of the collection of data. It is also noted that the FSA's approach today is to carefully scrutinise anomalous data points. A single data point of 780 may occasionally be appropriate to treat as 700 in particular circumstances. However, it is also noted a clear seasonal trend is not clearly apparent, that there are gaps in the monitoring data, and that this bed was B-LT in 2022. On the current evidence, the FSA does not consider it is appropriate to disregard this January 2016 data point. This would result in a delay with the start of the season with February becoming the buffer and would then provide a seasonal A classification for March and April, creating a two-month season. As such seasonal classification could not include February which meant that a season of March and April falls outside the Protocol which recommends 3 consecutive months as a minimum. Whilst the FSA recognises the Protocol may be appropriate to depart from on

a case-by-case basis, the Protocol will ordinarily guide the FSA and scientific evidence is insufficient in this case.

B055V – Ogwen Channel

54. Classification at 2022 review was B (L-T) and following the annual review conducted in 2023, the classification remained unchanged. In reaching that decision the shellfish team in Wales followed the Protocol and reviewed the 3-year and 5-year datasets.
55. The 3-year dataset in period between the January and April period contained 11 samples and none of the samples was above the 230 threshold which provides 100% compliance in the proposed season.
56. Whereas the 5-year dataset within the requested seasonal review contained 13 samples, and one of the samples was above the 230 threshold which provides 92% compliance in the proposed season.
57. From the analysis of the samples, a clear seasonal trend could not be established. The FSA protocol requires a minimum of 24 sample results within the 'better' season for a seasonal classification to be awarded. The 3-year and 5-year datasets do not provide a sufficient number of samples in the 'better season', to achieve the required 24 samples in the 'better season'. To achieve this, the FSA would need to go back to 2016 when 25 samples would be available within the better season. The analysis would have had to go back eight years and the results of that analysis do not provide seasonal classification. There are high results and no clear seasonal trends within the dataset. Within this, a result of 1400 was recorded in April 2018 so it does not meet compliance. Again, we repeat the comments above (at paragraph 48). In occasional cases if justified by the evidence a single anomalous result of 780 may be treated as a result of 700 but on the evidence currently available this is not considered appropriate because of the high result and no clear seasonal trends within the dataset.
58. Following the request from James Wilson, the FSA undertook a further and extended review of the dataset as demonstrated above and that included looking at 3-year and 5-year datasets **and also** looked at going beyond the 5-

year dataset to achieve the minimum 24 samples in the better season requirement. The outcome of that further review did not change the recommendation published in December 2023 because the requirements for class A classification that 80% of sample results less than or equal to 230 *E. coli* per 100g and no results exceeding 700 *E. coli* per 100g during the review period were not met. Further, clear seasonal trends of results were not present. The FSA therefore concluded there should be no change to the classification in place from 1 December 2023.

59. From the available dataset and the extent of the review undertaken, for the reasons set out above, the FSA determined a seasonal A classification requested should not be awarded.

Further review and reconsideration

60. The FSA offered the opportunity to James Wilson on 22 December 2023 to meet and discuss the classification. This was not taken up. The FSA is always willing to meet with stakeholders and engage over its reasoning. The Protocol is clear that microbiological results and shellfish classifications are also examined on an on-going basis during the year considering the appropriate rolling dataset and that they may be revised at any point in the year as appropriate. On 3 January 2024, the FSA received an email from one of the directors of the first proposed claimant, Jim Andrews who queried the limitations to 3 and 5 years for the dataset and further what actions could be taken when local authorities do not take samples with the frequency specified in the Protocol through no fault or omission on the part of any shellfish farmers.
61. On 12 January 2024, the Head of Hygiene Policy for Wales, responded to Jim Andrews, drawing attention to paragraph 9 of the Protocol.
62. The FSA received further information with receipt of the PAP letter.
63. Following that, the FSA undertook a further review of the dataset considering the Protocol and extended the period to 6, 7, 8, 9 and 10 years. The FSA also took advice from Cefas. The review also included considering the pro-rata element for the 3-year dataset, as you seek in paragraph 41 of your pre-action

protocol letter. The review of the six classified beds dataset is set summarised in the **Excel sheet annexed** to this response letter.

64. From the calculations of the FSA's officials and when applying the pro-rata approach as you see in your pre-action protocol letter at paragraph 41, there is in principle, in isolation, scope for 4 out of the 6 beds to have a seasonal A classification if data is considered in isolation on a strict pro rata approach only (however this not considered to be appropriate). We refer you to the details in the attached Excel spreadsheet. The FSA considered whether to apply a level of discretion on a case-by-case basis to each bed. The FSA having considered it, the FSA determined not to exercise it for the following broad reasons.
65. The FSA does not consider that simply applying a pro-rata approach without careful case-by-case analysis is appropriate; at essence the issue is about protecting public health and it is important to carefully understand the public health risks and what the data is indicating. The Protocol sets out what will be the usual approach. There are good scientific reasons why at least 3 years' worth of data, and a minimum 24 sample results within the 'better' season, is required. A key point here is a need for a clear seasonal trend. Another point is the need for adequate data to make that judgment upon. The following were noted:
- (a) The minimum 24 samples required for seasonal classification were not achieved during the 3 and 5-year periods considered during the annual review. A longer dataset could be expressly looked at. The FSA looked at sampling data going back up to 2015 to review for a trend, and to look at an extent of data which would achieve 24 samples.
 - (b) The pro-rata approach was considered on the data against a 3-year period. On a case-by-case basis, the FSA decided against it. It was considered the pro-rata approach failed to show a clear seasonal trend. The FSA also considered that the limited data did not provide the confidence for a classification decision. By reducing the data available to determine trends, risks increase to public health and potentially compromise public trust in the food safety system.

- (c) The FSA also considered a period of less than 3 years would not give confidence for a seasonal classification decision in each of the beds under consideration in this case.
66. As well as individual data points and the evidence they provide, the FSA also carefully considered gaps in the dataset. These included that the FSA is aware that some gaps were likely to be caused by deficiencies in data collection during covid including in lab processing abilities from mid-March 2020. The FSA took steps to remedy this at the time; see correspondence attached in the appendices. The FSA is also aware that from January 2020 till April 2020, there was reported heavy rainfall in North Wales. Flexibility does not ordinarily mean simply ignoring the absence of data or making assumptions without suitable evidence. It can, for example, be appropriate to exclude storm events (see for example 10.9 of the Protocol, set out above) but heavy rainfall can also be seasonal. During heavy rainfall the amount of faecal contamination entering water courses is likely to increase. The assertion in your letter that *“The fact that in 2020, because of the Covid-19 pandemic, there were fewer samples taken in that year is not a basis for refusing the requested seasonal classifications”* is overly simplistic. The FSA seeks to understand whether or not there is sufficient data to reach a view on a clear seasonal trend and the reasons for the absence of the data and what can be concluded from other data. The FSA has insufficient information to conclude that a clear trend supporting a seasonal A classification can be seen.
67. We note your references to specific beds in England – these are discussed further below. The FSA is content to look at datasets of 6 years.
68. The FSA when reaching the recommendations detailed below, did so after considering Cefas’s independent analysis of the dataset and their recommendations.
69. It is worth noting that the FSA’s analysis showed that the bed at Craig y Don met the required 80% compliance required for classification as Seasonal A for the period February to April, but a clear trend within that season could not be demonstrated. When considering other relevant factors, and in particular when this review was being conducted after receipt of your PAP letter in February 2024, the FSA noted that in January 2024, a sampling result of 1300 was returned. This indicates that trends within the period January to April was not

stable. The FSA has not been informed of any unusual or 'one off' events that can be attributed quite clearly to remove this event from the dataset; we refer you to the Protocol at 10.7-10.9 and your clients may make representations about a particular data point (or others that are identified) if they so wish (see further paragraph 35 above).

70. When looking at risks to public health. The following is of note. The FSA classifies production and relaying from which they authorise the harvesting of live bivalve molluscs as Class A, Class B and Class C areas according to the level of faecal contamination.
71. Faecal contamination is measured as the amount of *E. coli* coliforms per 100g of flesh of the, in this case, mussels sampled from representative points in the harvesting bed (as prescribed in the sanitary survey). *E. coli* is used as a hygiene indicator organism in this process. It is a group of bacteria that is found in the intestines and faeces of humans and animals and contains several different species some of which can be pathogenic such as *Escherichia coli* O157. The bacterium found can survive in the environment. The presence of *E. coli* may indicate that other bacteria and viruses of faecal origin may also be present (see Protocol 1.6), and in simple terms, the testing required around *E. coli* is in effect acting as a proxy for a range of toxins (for example, norovirus or hepatitis A, etc). There is no requirement to test for other virus such as norovirus (see Protocol 1.7).
72. Whereas *E. coli* bacteria can cause a range of infections including urinary tract infection, cystitis (infection of the bladder) and intestinal infection; *E. coli* bacteraemia (blood stream infection) may be caused by primary infections spreading to the blood. The FSA further notes that *E. coli* O157 is very infectious, and evidence suggests that small numbers of organisms can cause illness. The illness can range from mild diarrhoea to bloody diarrhoea (haemorrhagic colitis) and may be accompanied by severe stomach cramps. A severe complication of *E. coli* O157 infection is haemolytic-uraemic syndrome (HUS) which occurs in up to 10% of patients infected with VTEC O157. It particularly affects young children and the elderly and in a small number of cases, it can be fatal.
73. Oysters are ordinarily a greater risk than mussels, as mussels are not generally eaten raw. But mussels are a health-risk, and the relevant toxins can

be highly infectious and passed through a food-chain from individual household contaminating many other households. An example of this which was reported in an academic journal, a food-borne cluster of hepatitis A was linked through an outbreak investigation and HAV genotype IA sequencing first to mussels produced in the Menai straits (through domestic sewage from a primary case who had returned from Central America). The genotype was linked to a cluster of nine primary cases in the Netherlands although the precise transmission route was not identified.¹

74. In essence, having considered the pro rata approach on the individual beds, in the absence of data showing a clear seasonal trend, the FSA considers the Protocol's requirements at paragraphs 6.9- 6.14 should be applied because the FSA's approach carries lesser risk to public health.
75. Finally, as you would expect having regard to Annex III of EU Regulation 853/2004 and Regulation 53-55 of Regulation EU 2019/627, regard was also had to whether or not there had been compliance for the Class A classification of 80% of sample results less than or equal to 230 *E. coli* per 100g and whether or not there were no results exceeding 700 *E. coli* per 100g during the review period, and whether there was a clear seasonal trend (or an absence of a trend) from the dataset analysed. This is as set out in the table below:

	Outcome	Summary Reason
B055R Craig Y Don	Classification should remain at that determined at annual review B (L-T)	The 80% compliance requirement for classification as Seasonal A (Feb- April) is met. There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, 2017 and 2016 this mean that a clear trend is not

¹ Boxman IL, Verhoef L, Vennema H, et al. International linkage of two food-borne hepatitis A clusters through traceback of mussels, the Netherlands, 2012. Euro Surveill. 2016;21(3):30113. doi:10.2807/1560-7917.ES.2016.21.3.30113.

		demonstrated (i.e. there is not a clear Class A trend in the proposed better season).
B055T West of Bangor Pier	Classification should remain at that determined at annual review B (L-T)	<p>The 80% compliance requirements for classification as Seasonal A (Feb- April) is not met, compliance is at 76%.</p> <p>There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, and 2017, this also means that in addition to compliance not being met, clear trends within the season are not demonstrated.</p>
B055T Cegin Channel	Classification should remain at that determined at annual review B (L-T)	<p>The requirements for classification as Seasonal A (Feb- April) are not met as the dataset contains a sample result above 700.</p> <p>There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, and 2017 this mean that clear trends within the season are not demonstrated.</p>
B055U Gallows Point	Classification should remain at that determined at annual review B (L-T)	The requirements for classification as Seasonal A (Feb- April) are not met as the

		<p>dataset contains two sample results above 700.</p> <p>There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, and 2017 this mean that clear trends within the season are not demonstrated.</p>
<p>B055W Beaumaris East</p>	<p>Classification should remain at that determined at annual review B (L-T)</p>	<p>The requirements for classification as Seasonal A (Feb- April) are not met as the dataset contains a sample result above 700.</p> <p>There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, and 2017 this mean that clear trends within the season are not demonstrated.</p>
<p>B0055V Ogwen Channel</p>	<p>Classification should remain at that determined at annual review B (L-T)</p>	<p>The requirements for classification as Seasonal A (Feb- April) are not met as the dataset contains two sample results above 700.</p> <p>There are gaps within the dataset over the period Jan-April in 2023, 2021, 2020, 2019, and 2017 this mean that clear trends within the season are not demonstrated.</p>

76. Samples over 700 are a particular cause for concern in beds seeking Class A. See Section 10 of the Protocol. Thus, for example a single result in a Class A bed which is only marginally over 700 (i.e. 780 or below) in the context of either a longer-term trend or with events which explain the result is more likely to be either treated as a 700 for the purpose of data analysis or removed from the dataset if for example the criteria in 10.9 are considered met.
77. Turning to your grounds of challenge, which we have re-ordered for clarity:

Ground 2: Reasons/the 22 December decision lacked clarity

78. You state the FSA is under a “common law duty to give reasons”. You cite no authority for this statement. There is no common law duty to give reasons. You further argue the decision is unlawful because the claimants are not clear why the requested classification was refused based on the 22 December email because you say the reasons do not explain *‘why there are an ‘insufficient number of samples to award a seasonal classification’*.
79. In that email, the FSA further summarised its rationale and explained how it reached its conclusion. The FSA noted that its decision would likely cause disappointment and, pertinently, offered to have a meeting to discuss the matter further should there be additional queries on how the decision was reached.
80. The purpose of that offer provided an opportunity for any misunderstanding or confusion to be explored, but that offer was not taken up.
81. Your argument is, in effect, that because you say that the claimants are not clear why their application was refused, it is a justification to mount an argument that the decision lacked clarity. This is wholly wrong and misconceived. In any event, and given the circumstances, that argument is hopeless.
82. The basic principle is that judicial review is a remedy of last resort such that where an alternative remedy exists, it should be exhausted before any application to apply for judicial review is made. In this case, if the claimants

required more information to improve their understanding, your letter fails to outline why the claimants chose not to take up the FSA's offer and instead chose to embark on a costly judicial review challenge. The FSA may further review its shellfish classifications at any point in the year as appropriate.

83. In any event, we also do not accept there is a freestanding obligation to provide reasons, or that the explanation that your clients were provided with lacked clarity. It seems to us that you are requiring reasons for reasons, which there is no obligation to do.

Ground 3: The FSA's asserted reliance of 24 sample results within the better season in the previous five years is inconsistent with the applicable EU law and based on a misunderstanding of what such law requires.

84. This paragraph is misconceived and hopeless. It is an assertion that '*the relevant EU Guide makes clear that where a seasonal classification is sought, the number of samples required is calculated on a pro rata basis*' (emphasis in your original) and '*where, as here, the relevant better period is three months long, a minimum of six samples during the better period, rather than 24 samples, is all that is required*', and the refusal of the FSA to apply this is '*unlawful*'.
85. The legal requirement is that the beds must meet the health standards for live bivalve molluscs, meeting the relevant requirements in Chapter V of Section VII of Annex III Regulation (EC) No 853/2004 and Commission Regulation (EC) No 2073/2005 and Regulation (EC) 2019/627.
86. The Protocol reflects the FSA's policy on the application of the applicable assimilated legislation. When formulating the policy, the FSA considered the relevant legislation, namely Regulation (EC) No 853/2004, Commission Regulation (EC) No 2073/2005 and Commission Implementing Regulation (EU) 2019/627, the relevant and applicable version of the predecessor to the Guide, namely, the European Union Reference Laboratory (EURL) Microbiological Monitoring of Bivalve Mollusc Harvesting Areas Guide to Good Practice (Issue 3), dated January 2017.

87. We note in your letter you refer to the Community Guide, and that is an updated version, which was issued in September 2021. You argue that the FSA was acting unlawfully because you argue it is required to apply the September 2021 Community Guide which recommends that for seasonal classification, the number of samples required is calculated on pro-rata basis. By failing to do so, you argue it renders the December 2023 decision unlawful.
88. That argument is bound to fail. From the outset and to avoid wasting time with unnecessary arguments, we would invite you to note that the FSA is not under a legal obligation to apply the Guide, given that the decision to adopt the Guide was made post-exit from the European Union. With the effect of the withdrawal from the European Union, seeking to enforce post-exit community guidance on the decision maker when dealing with post-exit matters would risk undermining the intention of Parliament.
89. Further, in the alternative, even if the FSA could be constrained in some way to be required to follow the Guide as a matter of law (which we do not accept it can), we would question the status and effect of non-statutory guidance issued by EU bodies. There is no basis for your argument that the UK is *obliged* to apply non-binding EU guidance into mandatory rules. Doing so would undermine the sovereignty of our laws and policy.
90. Finally, as you will see above, the FSA do have a discretion to consider evidence and data more generally under the Protocol, which can include whether or not a pro-rata approach should be applied having regard to the legislative framework and the UK's published guidance. The FSA consider it should not be applied in that way considering the individual scientific evidence before the FSA in these cases.
91. More generally, it is not clear to us that your clients are not interpreting the Community Guide over-simplistically. We note section 3 of the Community Guide – Establishment and Recording of Sampling Plans. Paragraph 3.3.1 in relation to seasonality of sampling requires that seasonality of sampling, *'monitoring may be considered for a reduced period of the year where there are clear seasonal patterns to commercial activity'*. *'Monitoring should start prior to the harvesting season to confirm the microbiological status of the area before harvesting commences'*. We further note that at paragraph 7.3.1, classifications reflecting consistent seasonal variations ('seasonal') should, if

used: (1) 'be based on an extended data set showing clear and consistent differences in the extent of contamination between different periods of the year'; (2) 'incorporate an in-built equilibration period prior to the period classified as the least contaminated in order to allow for the natural depuration of pathogens to reflect the new classification'. As indicated in the local action group guidance, we note that in North Wales commercial activity is conducted between September and April.

Ground 1: The FSA has unlawfully misinterpreted the Protocol

92. For the reasons given above, it follows we do not accept the FSA has unlawfully misinterpreted the Protocol. The reference to an '*insufficient number of samples*' was that the number of samples was not sufficient having regard to the Protocol to show a clear seasonal trend. For the avoidance of doubt, the FSA carries out an annual review of all shellfish classifications utilising the previous 5-year and 3-year dataset for long-term B classifications and looking at 1-year and 3-year datasets for other classifications (or all data if less than 3 years old). The FSA will also look at the most recent complete year's results if there is evidence to show that water quality has improved or deteriorated. That does not prevent the FSA considering other datasets if appropriate. The FSA will not uncommonly consider 6 years, for example. In your clients' case, the FSA has further considered datasets – see Excel spreadsheet.

Ground 4: Inconsistent treatment between England and Wales / Breach of Article 14 read with A1P1

93. We note the reference to the cardinal principle of public administration and your alleged reference to discrimination; however, the claimants have failed to identify how the December 2023 decision created an unfairness between the harvesters of the identified shellfish harvesting areas in England and Wales. We refer in more detail to A1P1 below.

94. This ground is wholly misconceived. We have reviewed the three English sites you mention in the PAP for the first time. The datasets for all three English sites mentioned have good sampling compliance in terms of sample numbers (at least 9 samples submitted in all relevant years) and evidence of *E. coli* results within prescribed limits in those months. As such, the FSA was right in

awarding them the seasonal 'A' classification. Whereas the FSA's refusal to award the claimants the same classification is plainly based on insufficient sample numbers and sample testing results, which failed to meet the relevant criteria and the data did not show a clear trend.

95. For your further information, the shellfish harvesting areas at:
- (a) Foulney has held a seasonal classification for a number of years. The seasonal assessment undertaken during the most recent annual classification review indicated the original seasonal award used 6 years of data to meet the minimum 24 samples in the 'better' season and buffer month.
 - (b) Maplin West was upgraded to a year-round A classification on 1 September 2021 as part of the annual classification review. The site has maintained its A classification since then. It also held a seasonal A classification for the period 1 June-31 October before the upgrade in 2021.
 - (c) Maplin East has held a seasonal A classification for the period 1 June-31 October for a number of years and prior to 2021. The seasonal assessment undertaken during the most recent annual review used a 5-year dataset. The minimum requirement of 24 samples in the 'better' season and buffer month was achieved using a 4-year dataset.
96. The FSA does not accept that there have been inconsistent approaches taken between Welsh and English shellfish harvesting areas. Further, even if there was a difference in approach on a case-by-case analysis to a particular bed because of particular material factors drawn to the FSA's attention in that particular case that is not of itself irrational, unreasonable, or unlawful, nor is it discriminatory, and even if there was some wholly unparticularised indirect discrimination caused, the FSA's approach is centred around consideration of risk having regard to the public safety considerations and would be justifiable having regard to A1P1. We also note that your clients were invited to meet with the FSA and did not. This argument is hopeless.

Ground 5: Breach of Articles 1 Protocol 1 ECHR

97. Those A1P1 ground can be addressed very shortly (and read with the above, to the extent you plead Article 14 on the basis of A1P1). They are parasitic on the other grounds being founded and that the FSA acted unlawfully or irrationally in December 2023. For the reasons mentioned above, the FSA stands by the December 2023 decision, which considered the relevant factors and was reached following and applying the relevant legal criteria and which the FSA has further reviewed and has not adjusted.
98. Fundamentally, your client still has whatever rights it has to the mussel beds to harvest mussels.
99. The main objective of the FSA in carrying out its functions is to protect public health from risks which may arise in connection with the consumption of food (including risks caused by the way in which it is produced or supplied) and otherwise to protect the interests of consumers in relation to food. In reaching its decision in December 2023, the FSA gave effect to its important duties in protecting public health. Not only are such decisions within the FSA's expertise, but the Court affords decision-makers an enhanced margin of appreciation in cases involving scientific, technical and predictive assessment: *R (Mott) v Environment Agency* [2016] 1 WLR, at [69]-[75]. A court must be “careful not to substitute its own inexpert view of the science for a tenable expert opinion”: *R (British Union for the Abolition of Vivisection) v Secretary of State for the Home Department* [2008] EWCA Civ 417. Thus, “a challenge to the rationality of a judgment on the application of planning or environmental controls faces a high hurdle”, per Holgate J, the Lead Judge of the Planning Court, in the recent decision of *R(Keir) v Natural England* [2021] EWHC 1059 (Admin) (and where other relevant authorities are also set out, including *R (Plan B Earth) v Secretary of State for Transport* [2020] PTSR 1446 at [177]; *R (BACI Bedfordshire Limited) v Environment Agency* [2020] Env LR 16 at [98]-[99]).
100. Even assuming A1P1 was engaged, your client would need to establish that such an interference in the circumstances of the FSA's lawful decision-making and the nature of scientific evidence and risk within the food safety and specifically marine environment was a violation of *their* rights in all the relevant circumstances. The European Courts have consistently explained (see e.g.

Sporrong and Lonroth v Sweden (1983) 5 EHRR 35, at [69] that ‘The court must determine whether a fair balance was struck between the demands of the general interest of the community and the requirements of the protection of the individual’s fundamental rights. The search for this balance is inherent in the whole of the Convention and is also reflected in the structure of article 1.’ This is wholly unarguable in the context of shellfish contamination where risks are known, and regular monitoring exists precisely because of the nature of such risks and the approach on the site-specific data in your clients’ case is plainly a fair balance. That is further reinforced by the fact that the FSA is able and willing to review its decisions, see above.

101. Finally, the second, third, and fourth claimants’ claim that December 2023 decision caused them financial losses is plainly wrong. The fact that a decision applying the UK’s published Protocol to the evidence has resulted in particular outcomes is not a cause of a breach of A1P1. The fact that those claimants cannot export class ‘B’ live bivalve molluscs to Europe is because of the restrictions on third-country requirements imposed by the European Union. It is EU law which determines that those products cannot as B class be placed on the retail market. Notwithstanding this, there is nothing prohibiting those claimants from selling their products for further processing or sending their products to purification plants domestically. Alternatively, invest in purification equipment.

Interested Parties

102. You have not identified any interested parties in your letter. We agree that nobody else is directly affected by the claim. Whilst the relevant local authority was involved in the sample collection, their actions do not appear to be impugned. If you are seeking to impugn other mussel fields, it may be that those impacted in those other mussel fields may be Interested Parties.

ADR proposals

103. You have not set out any proposals for ADR and given the lack of merit in the arguments relied on to challenge the decision no basis for ADR is identified. Nevertheless, the offer in the email of 22 December 2023 remains open to your clients, and the FSA is willing to meet with stakeholders and continues to

extend its original offer to the harvesters to meet with FSA officials to understand the FSA's reasoning in more detail.

104. Should your clients have further information that could support any reviews that the FSA undertakes of the classification areas in the Menai, the FSA would be willing to consider this. If your clients wish to discuss how it can work with local authorities and the FSA to discuss what data would help give greater assurance for classification decisions in the future, and/or other modelling work around the data, this can also be discussed. The FSA may consider inviting representatives from the local authorities, the Water Quality Partnership Group, and Cefas to attend the meeting. For example, the FSA consider that if local authorities were to collect weekly or fortnightly data during the proposed "better" A season, this may assist future classification decisions. The FSA are also going to arrange a meeting with Cefas to consider if additional advanced statistical modelling could be developed to provide an additional scientific approach to identify seasonal trends. Maintaining confidence in the data and safeguarding public health risks are core to decision-making process (see paragraph 16 above for further details).
105. More generally, the FSA is aware of industry-reported concerns over the shellfish control system and the needs of public health control. It remains the FSA's position that a meeting between the officials and the harvesters has the potential to be beneficial and that the harvesters may benefit from meeting with Cefas and others to fully understand the public health considerations, the factors in water quality, and the frameworks for regular collection of data. However, if a claim is issued, the same officials who would be involved in attending the meeting with the harvesters will be the same officials who will be working on defending any potential judicial review claim and so such meetings are likely to be delayed.

Response to requests for information and documents

106. Answers to the questions posed at paragraph 55 of the PAP are as follows:
- (a) In reaching its decision, the FSA considered and applied the legal requirement that the beds must meet the health standards for live bivalve molluscs, meeting the relevant requirements in Chapter V of Section VII of Annex III Regulation (EC) No 853/2004 and

Commission Regulation (EC) No 2073/2005. In addition, the FSA considered and applied the Protocol. This is expanded in full in the body of the response to the PAP letter.

- (b) We do not recognise your reference to “gold plate”. Please provide a specific citation for us to review. The FSA is not obliged to apply the Community Guide. Instead, the FSA applied its Protocol when making the decision. The key factor in the decisions in this case was the lack of sufficient data to establish a clear trend and have confidence in the data to support a classification decision. We refer you to the PAP letter above. It is of note that before exit from the European Union, each member state was allowed to set its minimum criteria which was based on each member state’s own assessment of the level of risks.
- (c) The answers are expanded in full in the body of the response to the PAP letter. But in summary:
- (i) For each of the six beds the sampling data for the months January - April (with January being the proposed buffer month) the FSA initially used the 3 and 5-year datasets which were assessed to determine whether they met with the minimum 24 samples requirement. The 3 and 5-year datasets provided insufficient number of samples (less than 24) and there was no clear trend. Datasets have now been reviewed across a wider period – see excel spreadsheet attached.
- (ii) This was not the assertion. The conclusion of the review and annual classification was reached based on actual evidence.
- (iii) These are the Class A mussel beds with 10 monthly *E. coli* samples in 2020:

Production Area	Classification Zone
Brixham	Brixham
Fal (Lower)	St. Just

Lyme Bay	Site 1
Lyme Bay	Site 2
Mevagissey By	South Mevagissey
Morecambe Bay – Barrow	Foulney
Poole Harbour	South Deep
Poole Harbour	SW Brownsea Island
Porthallow	Porthallow Cove North
St Austell Bay	Ropehaven Outer
St Austell Bay	Ropehaven

(iv) Foulney has held a seasonal classification for a number of years. The seasonal assessment undertaken for Foulney at the last annual review also used a 6-year dataset to achieve 24 samples in the 'better' season and buffer month.

(v) Foulney did indeed submit 10 samples a year in the years mentioned, breakdown as follows:

	2023	2022	2021	2020	2019	2018
Number of samples	11	11	12	12	12	12

Other applications

107. The FSA's position remains that this matter concerns a food safety matter and deals with specific hygiene requirements set out in law. However, the FSA notes that the quality of the water holds relevant weight in the decision-making

process. The FSA is willing to agree the application of the Aarhus Convention cost protection basis, however the current information is insufficient to determine whether the cap should be raised, taking into account the means of your clients. It seems to the FSA likely that the appropriate cap in this case would be a mutual £35,000 cap. Your agreement is sought to this proposal.

Conclusion

108. The FSA is confident that the appropriate process has been followed and applied to the relevant legal framework. On that basis and given the vigorous assessment and extensive review undertaken before and after the service of the PAP letter, the FSA continues to be confident in the rationality of its decision. In those circumstances, the December 2023 decision is maintained.
109. The FSA refers to its original offer to meet with the harvesters and discuss the results of the dataset and encourages them to take on that offer.

Address for further correspondence and service of court documents

110. Please direct any further correspondence to the named individuals below citing the reference provided above via email.

Corinne Cortes at corinne.cortes@food.gov.uk

Hakim Sutton at hakim.sutton@food.gov.uk

111. The FSA will accept electronic service of court documents only if they are sent to all three of the addresses listed below:

Corinne Cortes at corinne.cortes@food.gov.uk

Hakim Sutton at hakim.sutton@food.gov.uk

Litigation.team@food.gov.uk

Documents

112. Attached to this response letter are:

- (a) The Protocol for Classification of Shellfish Production Areas, England and Wales August 2023.
- (b) Excel spreadsheet schedule of samples for the 6 shellfish harvesting areas in the Menai strait in North Wales.
- (c) Excel spreadsheet with details of further review of dataset following receipt of PAP letter.
- (d) Correspondence with local authorities.
- (e) Correspondence with laboratory.

Yours faithfully,

Corinne Cortes (*she/her*)

Litigation and Prosecution Lawyer

Strategy and Regulatory Compliance Directorate

Annex C: Reply to FSA Wales response, March 2024

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Our ref: (MSF1/1)-MM/PH
Your ref: CC/HS

Attn: Nathan Barnhouse, Director

22 March 2024

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Dear Food Standards Authority,

We write further to your Pre-Action Protocol Response of 13 March 2024. We have now had a brief period of time to consider your very detailed response and to discuss it with our clients.

Although we are still of the view that the proposed claim has merit, our clients have noted the constructive tone of your letter, and the offer to engage with them on the issues raised. They note in particular your offer to support our clients in working with local authorities to address some of the issues that they have raised, such as the sampling frequency and the reliability of the monitoring regime in the Menai Strait. They have also noted that one of the adverse effects of sending their Pre-Action Protocol letter to the FSA has been for the FSA to cease participating in discussions at the All-Party Parliamentary Group which are currently looking at the challenges facing shellfish cultivation in England & Wales.

Taking all of these points into consideration, our clients have decided not to proceed further with their legal action over the decision taken on 22 December 2023 to refuse to introduce a seasonal A period of 3 months from 1 February to 30 April for classification zones BO55R, BO55S, BO55T, BO55U, BO55W and BO55V. This is because they would rather nurture a constructive partnership with the FSA locally and nationally than pursue a legal challenge that might put the shellfish industry's relationship with the FSA under strain.

We trust that our client's decision on this matter will be welcome and hope that the FSA will act in good faith to deliver on the offers of support set out in your letter. Our clients will be in touch over the next few days to arrange a meeting.

Yours faithfully

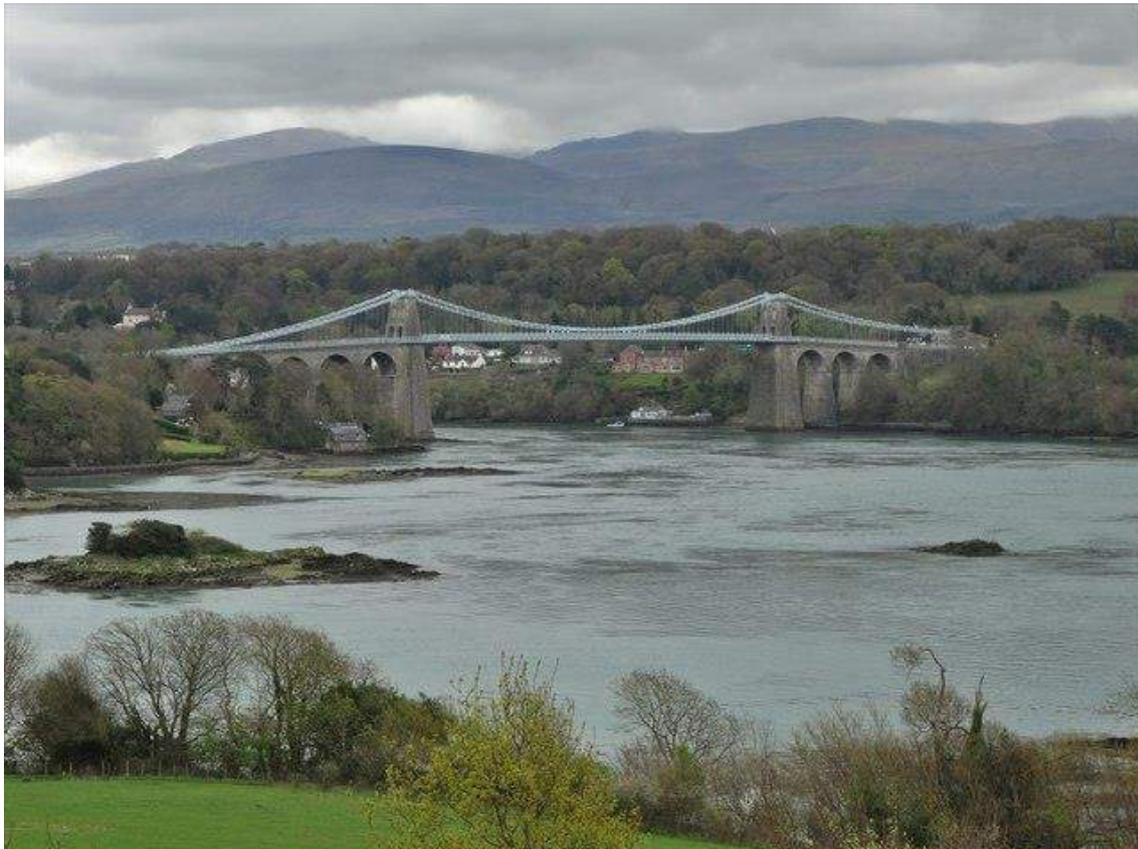


RICHARD BUXTON SOLICITORS

Annex D: Draft “Sanitary Survey” for the Menai Strait, December 2023.

Sanitary Survey- Review

Menai Strait East & West – 2023



Document No. – *J0591/23/02/07*

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Carcinus Ltd – Document Control Sheet

Client	Food Standards Agency (FSA)
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Document Title	Sanitary Survey Review of the Menai Strait East & West
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Revision No.	Date	Comment
1.0	06 April 2023	Draft for client review
2.0	05 December 2023	Draft for secondary consultation
3.0		Final

Document QA and Approval

	Name	Role	Date
Author	Joshua Baker	Senior Consultant	05 December 2023
Checked	Antonia Davis	Marine and Freshwater Ecologist	05 December 2023
Approved	Matthew Crabb	Director	05 December 2023

Initial Consultation

Consultee	Date of consultation
Ynys Mon Council	June 2022 (updated in March 2023)
Conwy Council	June 2022 (updated in March 2023)
Gwynedd Council	July 2022 (updated in March 2023)
Natural Resources Wales	June 2022

Consultation on draft report

Consultee	Date of consultation	Date of response

A sanitary survey relevant to the bivalve mollusc beds in the Menai Strait East & West was undertaken in 2013 in accordance with Regulation (EC) 854/2004 (which was replaced by retained EU Law Regulation (EU) 2017/625, with sanitary survey requirements now specified in retained EU Law Regulation (EU) 2019/627). These reports provided appropriate hygiene classification zoning and monitoring plan based on the best available information with detailed supporting evidence. In line with regulatory and EU guidance the Food Standards Agency undertake targeted sanitary survey reviews to ensure public health protection measures continue to be appropriate. This report provides a review of information and recommendations for a revised sampling plan if required. Carcinus Ltd. (Carcinus) undertook

this work on behalf of the FSA. Carcinus Ltd accepts no liability for any costs, losses or liabilities arising from the reliance upon or use of the contents of this report other than by its client.

Dissemination

Food Standards Agency, Conwy Council, Gwynedd Council, Ynys Mon Council. The report is publicly available via the Carcinus Ltd. website.

Recommended Bibliographic Citation:

Carcinus Ltd., 2023. Review of the Menai Strait East & West 2013 Sanitary Surveys. Carcinus report on behalf of the Food Standards Agency, to demonstrate compliance with the requirements for classification of bivalve mollusc production areas in England and Wales under retained EU Law Regulation (EU) 2019/627.

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1 Introduction

1.1 Background

The Food Standards Agency (FSA) is responsible for carrying out sanitary surveys in classified production and relay areas in accordance with Article 58 of retained (EU) Regulation 2019/627 and the EU Good Practice Guide (European Commission, 2021). In line with these requirements, sanitary surveys must be reviewed to ensure public health protection measures continue to be appropriate. Carcinus is contracted to undertake reviews on behalf of the FSA.

The report considers changes to bacterial contamination sources (primarily from faecal origin) and the associated loads of the faecal indicator organism *Escherichia coli* (*E. coli*) that may have taken place since the original sanitary survey was undertaken. It does not assess chemical contamination, or the risks associated with biotoxins. The assessment also determines the necessity and extent of a shoreline survey based on the outcome of the desktop report and identified risks. The desktop assessment is completed through analysis and interpretation of publicly available information, in addition to consultation with stakeholders.

1.2 Menai Strait East & West Review

The Menai Strait is a 30 km tidal channel that separates the Island of Anglesey from North Wales. The previous sanitary surveys assessed both parts of the strait, the western part from Fort Belan to the Britannia Bridge, and the eastern part from the Britannia Bridge to the Conwy separately, in line with the designated Bivalve Mollusc Production Areas (BMPAs). This review considers the pollution sources collectively, given the connectivity between the two areas. It reviews information and makes recommendations for a revised sampling plan for existing mussel (*Mytilus* spp.), cockle (*Cerastoderma edule*) and Pacific oyster (*Crassostrea gigas*) classification zones in both parts of the Menai Strait (Figure 1.1). Data for this review was gathered through a desk-based study and consultation with stakeholders.

An **initial consultation** with Local Authorities (LAs) and Natural Resources Wales (NRW) responsible for the production area was undertaken in Summer 2022. This supporting local intelligence is valuable to assist with the review and was incorporated in the assessment process. This desktop assessment was produced in January and February 2023, and additional requests for consultation were made to the consultees listed above to check for additional information.

Following production of a draft report, a wider **external second round of consultation** with responsible Local Enforcement Authorities (LEAs), Industry and other Local Action Group (LAG) members was undertaken in [DATE]. It is recognised that dissemination and inclusion of a wider stakeholder group, including local industry, is essential to sense-check findings and strengthen available evidence. The draft report is reviewed taking into account the feedback received.

The review updates the assessments originally conducted in 2013 and sampling plans as necessary and the report should be read in conjunction with the previous survey.

Specifically, this review considers:

- (a) Changes to the shellfishery (if any);
- (b) Changes in microbiological monitoring results;
- (c) Changes in sources of pollution impacting the production area or new evidence relating to the actual or potential impact of sources;
- (d) Changes in land use of the area; and
- (e) Change in environmental conditions.

Sections 2 - 6 detail the changes that have occurred to the shellfishery, environmental conditions and pollution sources within the catchment since the publication of the original sanitary survey. A summary of the changes is presented in section 7 and recommendations for an updated sampling plan are described in section 8.

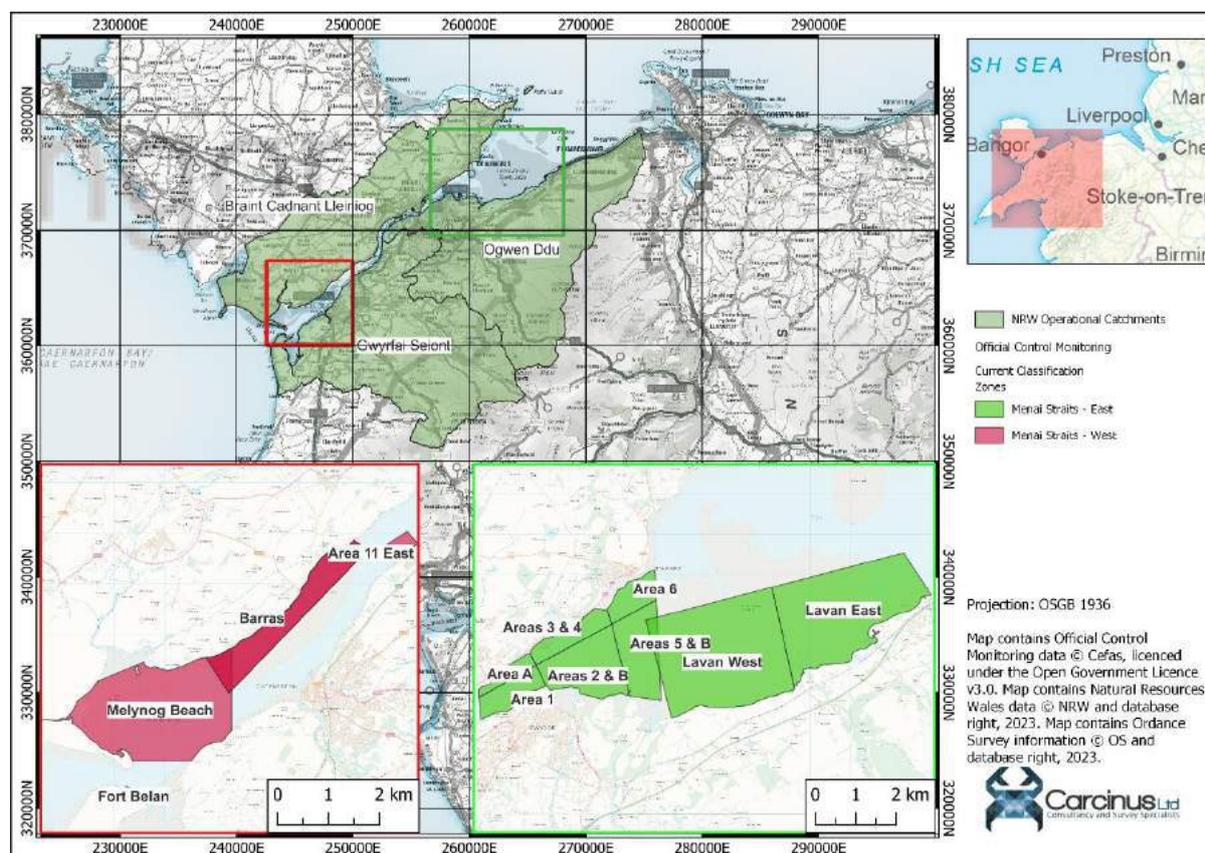


Figure 1.1 Location of the Menai Strait in north-west Wales. The locations of the Menai Strait - West and Menai Strait – East BMPAs are indicated by the red and green boxes, respectively.

1.3 Assumptions and limitations

This desktop assessment is subject to certain limitations and has been made based on several assumptions, namely:

- Accuracy of local intelligence provided by the Local Authorities and Natural Resources Wales
- The findings of this report are based on information and data sources up to and including February 2023;
- Only information that may impact on the microbial contamination was considered for this review; and
- Official Control monitoring data have been provided directly by Cefas, with no additional verification of the data undertaken. These data are also available on the data hub¹. Results up to and including February 2023 have been used within this study. Any subsequent samples have not been included.

2 Shellfisheries

2.1 Description of Shellfishery

2.1.1 Menai Strait (East)

The boundaries of the Menai Strait (East) BMPA are defined as being the body of water stretching from the Britannia Bridge to the west, to a line drawn between the Trwyn Du Light House at NGR SH641815 and the Penmaenmawr Railway Station at NGR SH715764. The closest BMPAs to this are the Menai Strait (West) and Anglesey Mussels, situated on the other side of the Britannia Bridge and of the northern part of Conwy Bay respectively.

The shellfish beds within the Menai Strait (East) BMPA are under the jurisdiction of several different Local Enforcement Authorities (LEAs) for food hygiene purposes. These are Ynys Mon County Council (CZs on the northern side of the Strait), Gwynedd County Council (CZs on the southern side of the strait) and Conwy Council (CZs on the Lavan Sands).

The Menai Strait (East) BMPA sees the harvest of cultured and wild mussels, and wild cockles. A description of the shellfishery for each of the harvested species is summarised in the following paragraphs.

Mussels

The harvest of mussels from within the Menai Strait East has been regulated under a several order since 1962. On 02 April 2022, the 'new' Menai Strait (East) Mussel and Oyster Fishery Order 2022² (the 2022 order) came into force, replacing the old order that expired at midnight on 01 April 2022. This Order grants a right of several fishery, and a right of regulating said fishery, to the Menai Strait Fishery Order Management Organisation (MSFOMA) for a period of 35 years. Under this Order, MSFOMA have designated an area within the Order boundaries as the several fishery area (Figure 2.1). All mussel farming in the Menai Strait (East) BMPA takes place from within this several fishery area.

¹ Cefas shellfish bacteriological monitoring data hub. Available at: <https://www.cefas.co.uk/data-and-publications/shellfish-classification-and-microbiological-monitoring/england-and-wales/>.

² The Menai Strait (East) Mussel and Oyster Fishery Order 2022. Available at: https://www.legislation.gov.uk/wsi/2022/213/pdfs/wsi_20220213_mi.pdf.

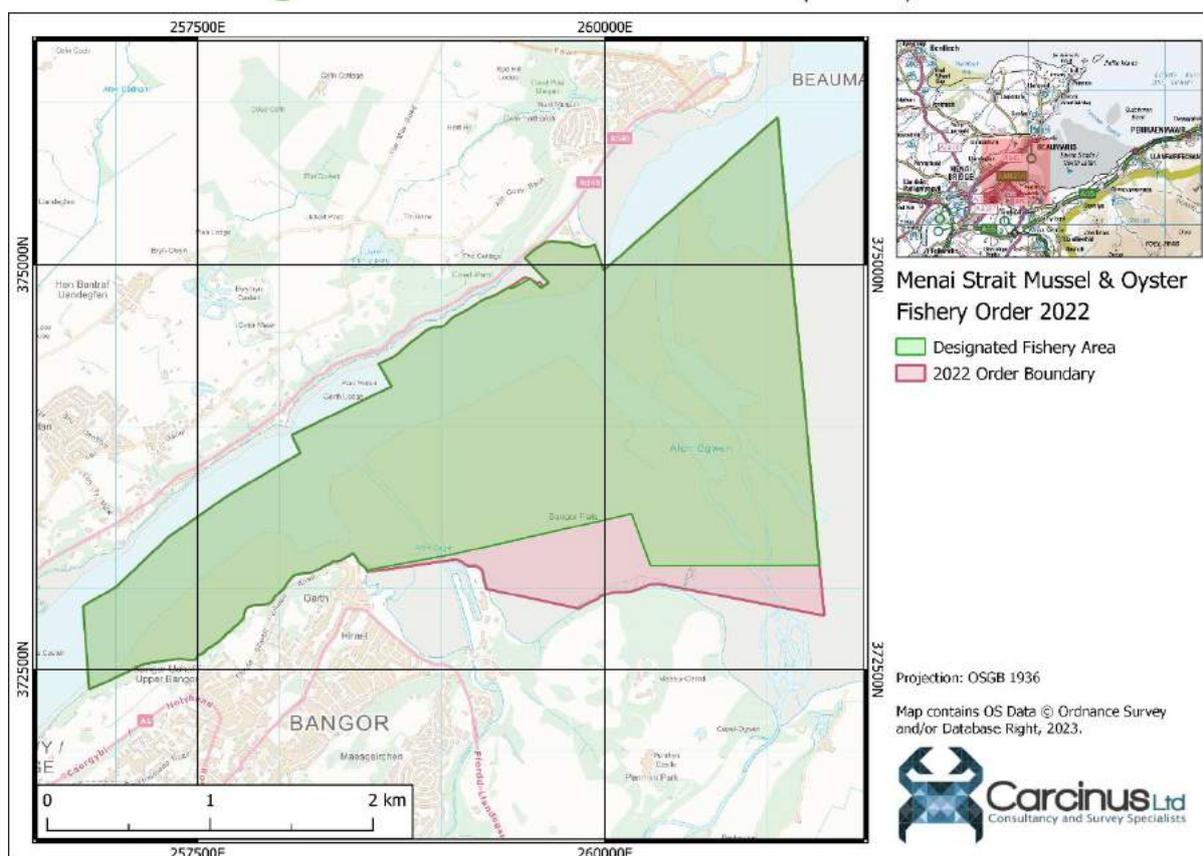


Figure 2.1 Boundaries of the Menai Strait (East) Mussel & Oyster Fishery Order 2022, and the designated fishery area within them.

Within the designated area, the MSFOMA grant licences to fishermen to take wild mussels (by hand or rake), subject to one or more of the following controls (MSFOMA, 2020):

- Total Allowable Catch (TAC);
- Spatial controls to limit the area where fishing is possible; and
- Temporal controls to limit the area when fishing is possible.

Furthermore, MSFOMA may specify quotas for individual licensees, require licensees to submit fishery returns and close the fishery if necessary to maintain sustainable management.

In addition to the wild fishery, MSFOMA issue leases for mussel cultivation layings along defined boundaries (MSFOMA, 2021). The boundaries of these leases broadly align with the mussel Classification Zones presented in Figure 2.3. During initial consultations, the authors of this review were advised that in recent years the output of the mussel fishery has been virtually nil due to a combination of the Covid-19 pandemic and Brexit-related export issues. In recent months two fishing vessels have been approved as Dispatch Centres and recommenced exporting, but the current output is unknown.

Cockles

The cockle fishery within the Menai Strait (East) BMPA is not managed and regulated to the same degree as the mussel fishery. The harvest of cockles is regulated under The Cockles and Mussels (Specified Area) (Wales) Order 2011³. Under this legislation, no person may remove (by hand) more than five kilograms of cockles in any one day without a permit. No other harvest controls apply to this species. The cockle fishery operates in a separate area to the mussel harvest, focusing on the Lavan Sands area at the mouth of the Menai Strait.

Figures provided to the authors of this review indicate that approximately 170 tonnes of cockles were removed from the Lavan Sands area between September 2021 and February 2022, with the largest harvest in September 2021. For the 2022/2023 year, the TAC was 1,384 tonnes and fishing only permitted on Wednesday – Sunday.

2.1.2 Menai Strait (West)

The boundaries of the Menai Strait (West) BMPA are defined as being the body of water stretching from the Britannia Bridge in the east to the eastern end of Caernarfon Bay (around NGR: SH442612). The closest BMPA to this is the Menai Strait (East) on the other side of the Britannia Bridge.

The shellfish beds within the Menai Strait (West) BMPA are under the jurisdiction of two different Local Enforcement Authorities (LEAs) for food hygiene purposes. These are Ynys Mon County Council (CZs on the northern side of the Strait) and Gwynedd County Council (CZs on the southern side of the strait).

The Menai Strait (West) BMPA sees the harvest of cultured and wild mussels, cultured Pacific oysters and wild cockles. A description of the shellfishery for each of the harvested species is summarised in the following paragraphs.

Mussels

The harvest of mussels in the Menai Strait (West) BMPA is regulated under the Menai Strait (West) Oyster and Mussel Fishery Order 2015⁴, which confers a right of several fishery on the MSFOMA for a period of 28 years. This order replaced the previous Menai Strait (West) Fishery Order 1978, which lapsed in 2008. The 2015 Order sets out the coordinates of four plots within the Menai (West) BMPA; mussel harvest is permitted in three of these (Plot A, B & C; Figure 2.2). Under the Order, the MSFOMA grant leases to fishermen who operate the fishery.

³ The Cockles and Mussels (Specified Area) (Wales) Order 2011. Available at: <https://www.legislation.gov.uk/wsi/2011/1988/made>.

⁴ Menai Strait (West) Oyster and Mussel Fishery Order 2015. Available at: <http://www.msfoma.org/wp-content/uploads/2015/10/DRAFT-Menai-Strait-West-Oyster-and-Mussel-Fishery-Order-2015.pdf>

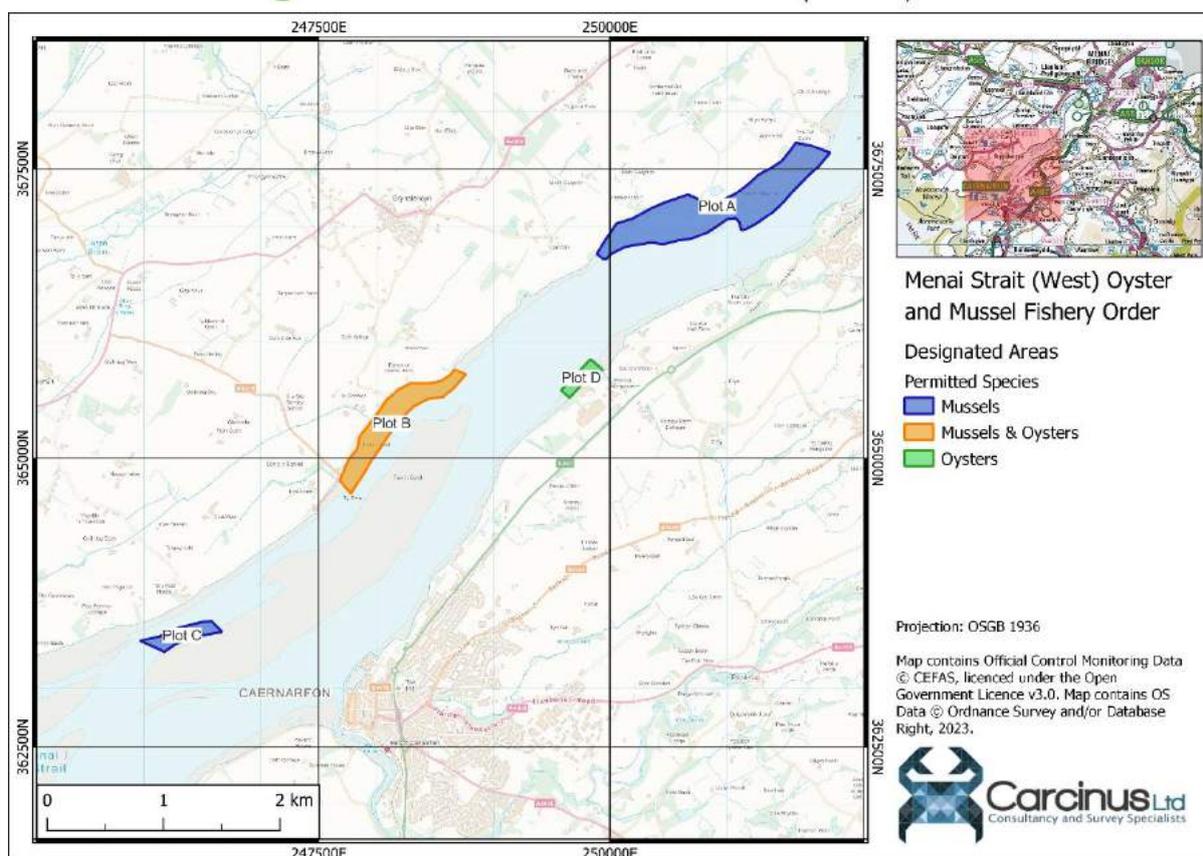


Figure 2.2 Designated shellfish plots as specified in the Menai Strait (West) Oyster and Mussel Fishery Order 2015.

Outside of the Menai Strait West Order, the harvest of mussels is regulated under The Cockles and Mussels (Specified Area) (Wales) Order 2011⁵. Under this legislation, no person may remove (by hand) more than five kilograms of mussels in any one day without a permit. No other harvest controls apply to this species.

No landing statistics are available to the authors of this review, as the output from this fishery is currently nil. We understand that there remains industry interest in maintaining the classification of the CZs described in Section 2.2.2 and so they are retained for consideration within this review.

Pacific oysters

Two of the Plots specified in the Menai West Fishery Order 2015 confer a right of fishery for oysters (Plots C & D; Figure 2.2). No harvest controls apply to the fishing of this species within the Menai Strait (West) BMPA, inside or outside the plots. In recent years the output of this fishery has been essentially nil, but continued classification is required due to industry interest.

⁵ The Cockles and Mussels (Specified Area) (Wales) Order 2011. Available at: <https://www.legislation.gov.uk/wsi/2011/1988/made>.

Cockles

The harvest of mussels is regulated under The Cockles and Mussels (Specified Area) (Wales) Order 2011⁶. Under this legislation, no person may remove (by hand) more than five kilograms of cockles in any one day without a permit. No other harvest controls apply to this species. In 2021, approximately 62 tonnes of cockles were harvested from the Cockle CZ of this BMPA, suggesting that it is the dominant fishery by weight.

2.2 Classification History

2.2.1 Menai Strait (East)

The 2013 Sanitary Survey of the Menai Strait – East recommended the creation of six Classification Zones for mussels, two for cockles and one for razor clams. The mussel CZs formed one contiguous zone in the mouth of the Menai Strait, the cockle zones were located on Lavan Sands, and the razor clam zone off Llanfairfechan. All mussel and cockle CZs recommended in the 2013 Survey of the Menai Strait (East) are currently active. The razor clam zone was never awarded a full classification. A summary of the currently active classification zones within the Menai Strait (East) is presented in Table 2.1 and the location of all active CZs and associated Representative Monitoring Points (RMP)s is presented in Figure 2.3.

Table 2.1 Currently active Classification Zones in the Menai Strait (East) BMPA.

Classification Zone	Species	Current Classification	Current RMP
Area 1	Mussels	B – LT	West of Bangor Pier (B055R)
Area 6	Mussels	B – LT	Beaumaris East (B055W)
Area A	Mussels	B – LT	Craig-y-Don (B055R)
Areas 2 & B	Mussels	Class A Season 1 st October – 30 th April, reverting to Class B at all other times	Cegin Channel (B055T)
Areas 3 & 4	Mussels	B – LT	Gallows Point (B055U)
Areas 5 & B	Mussels	B – LT	Ogwen Channel (B055V)
Lavan East	Cockles	B – LT	Lavan Sands East (B055X)
Lavan West	Cockles	B – LT	Lavan Sands West (B055X)

⁶ The Cockles and Mussels (Specified Area) (Wales) Order 2011. Available at: <https://www.legislation.gov.uk/wsi/2011/1988/made>.

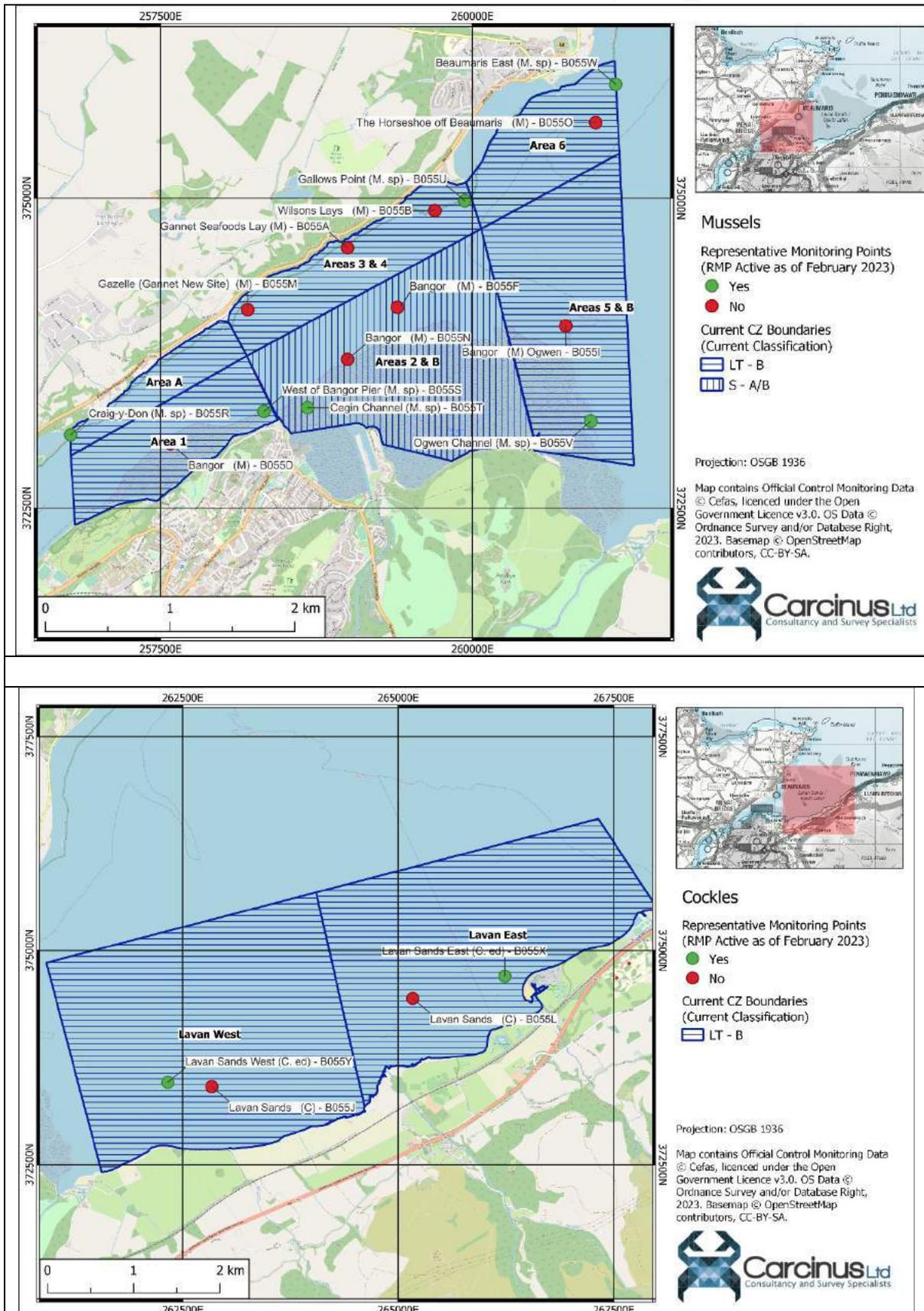


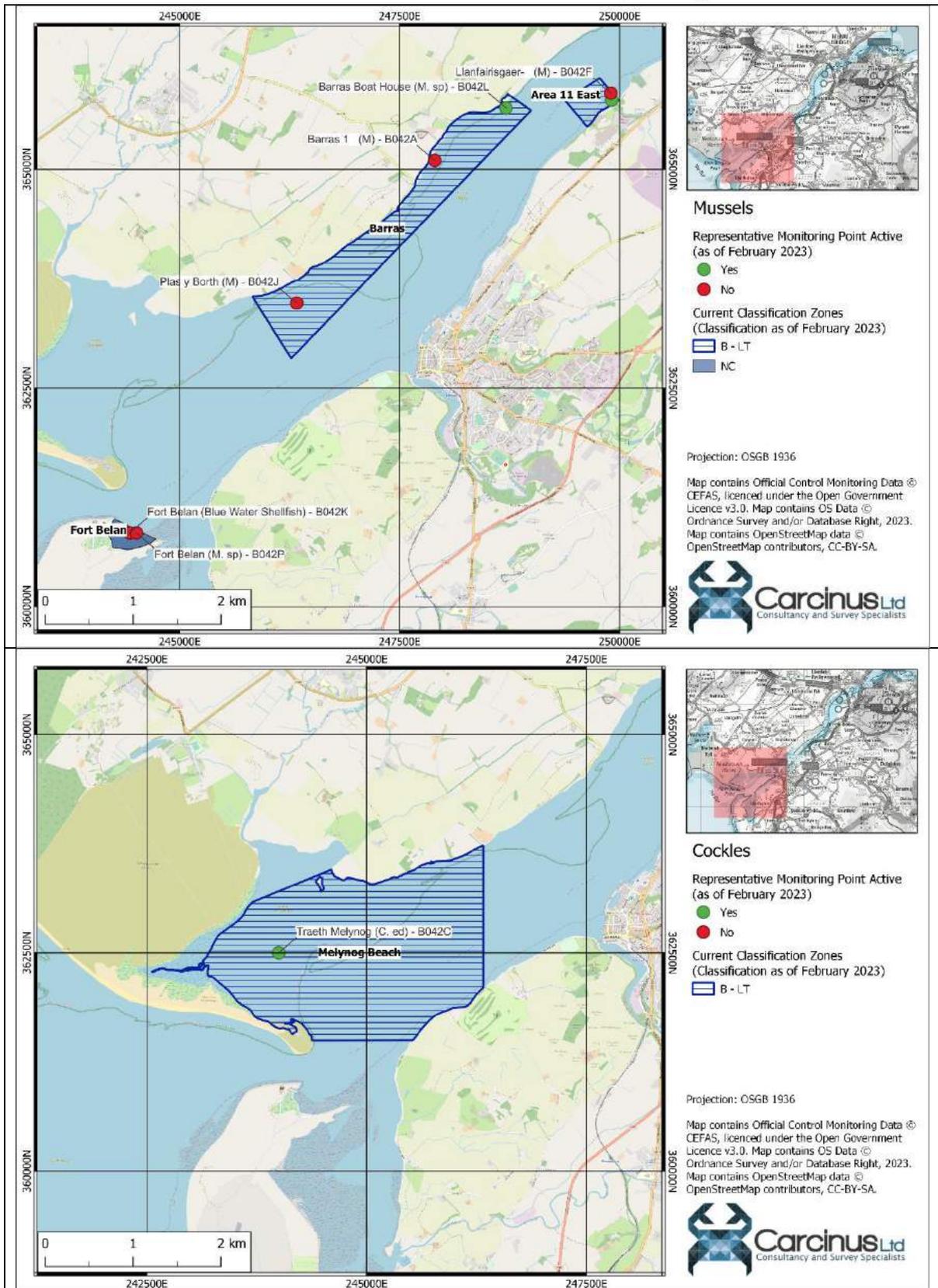
Figure 2.3 Current Classification Zones and associated Representative Monitoring Points in the Menai Strait (East) BMPA.

2.2.2 Menai Strait (West)

The 2013 Sanitary Survey of the Menai Strait (West) recommended the creation of five CZs for mussels (of which only two were active at the time of that report), three for Pacific oyster (of which two were active) and one for cockles. As of March 2023, two of the mussel zones (*Areas 1 – 3* and *Llanfair*) are active, as is one of the Pacific oyster zones (*Areas 1 – 3*) and the cockle zone. An additional mussel CZ, *Fort Belan*, is not currently classified but during initial consultations the LEAs indicated that there was industry desire for reclassification. As such, it has been included for consideration throughout this report. A summary of the currently active classification zones within the Menai Strait (West) is presented in Table 2.2 and the location of all currently active (and candidate) CZs and associated Representative Monitoring Points is shown in Figure 2.4. During initial consultations, it became clear that there were some discrepancies between the names used to refer to various CZs by different groups. Where possible, the CZ names used throughout this report are those used provided by the Local Authority.

Table 2.2 Currently active Classification Zones in the Menai Strait (West) BMPA.

Classification Zone	Species	Current Classification	Current RMP
Barras (aka Areas 1-3)	Mussels	B – LT	Barras Boat House (B042L)
Area 11 East (aka Llanfair; Llanfairisgaer)	Mussels	B – LT	Area 11 East (B042O)
Fort Belan	Mussels	Not currently classified	N/A
Barras (aka Areas 1-3)	Pacific oyster	B – LT	Barras Boat House (B042L)
Traeth Melynog (aka Melynog Beach)	Cockles	B – LT	Traeth Melynog (B042C)



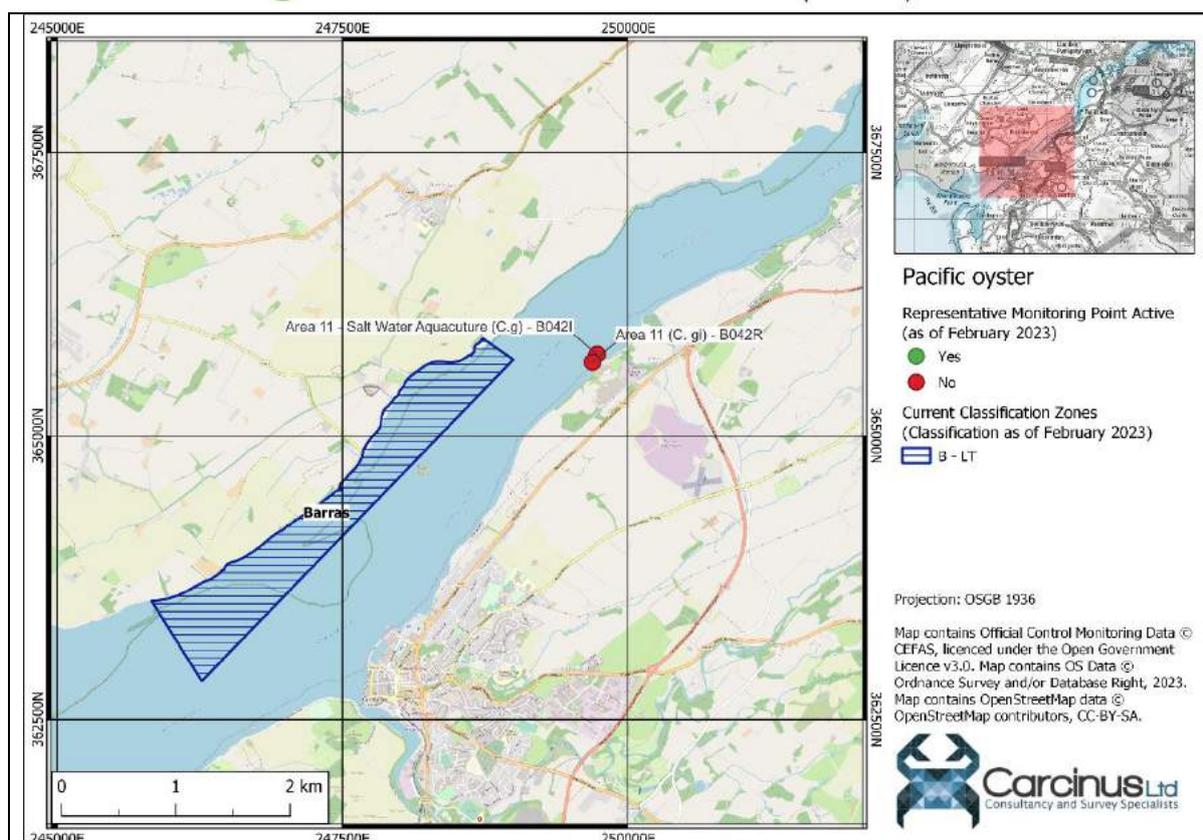


Figure 2.4 Current Classification Zones and associated Representative Monitoring Points in the Menai Straits (West) BMPA.

3 Pollution sources

3.1 Human Population

The 2013 Sanitary Surveys of the Menai (East) and Menai (West) cite population statistics for the study area based on the 2011 Census of the United Kingdom. Preliminary results from the subsequent Census (conducted in March 2021) have since been published and so a comparison of these two surveys has been used to give an indication of changes in human population within the study area. Human population density within Census Super Output Areas (Lower Layer) in the vicinity of the Menai Strait at the 2011 and 2021 Censuses are presented in Figure 3.1.

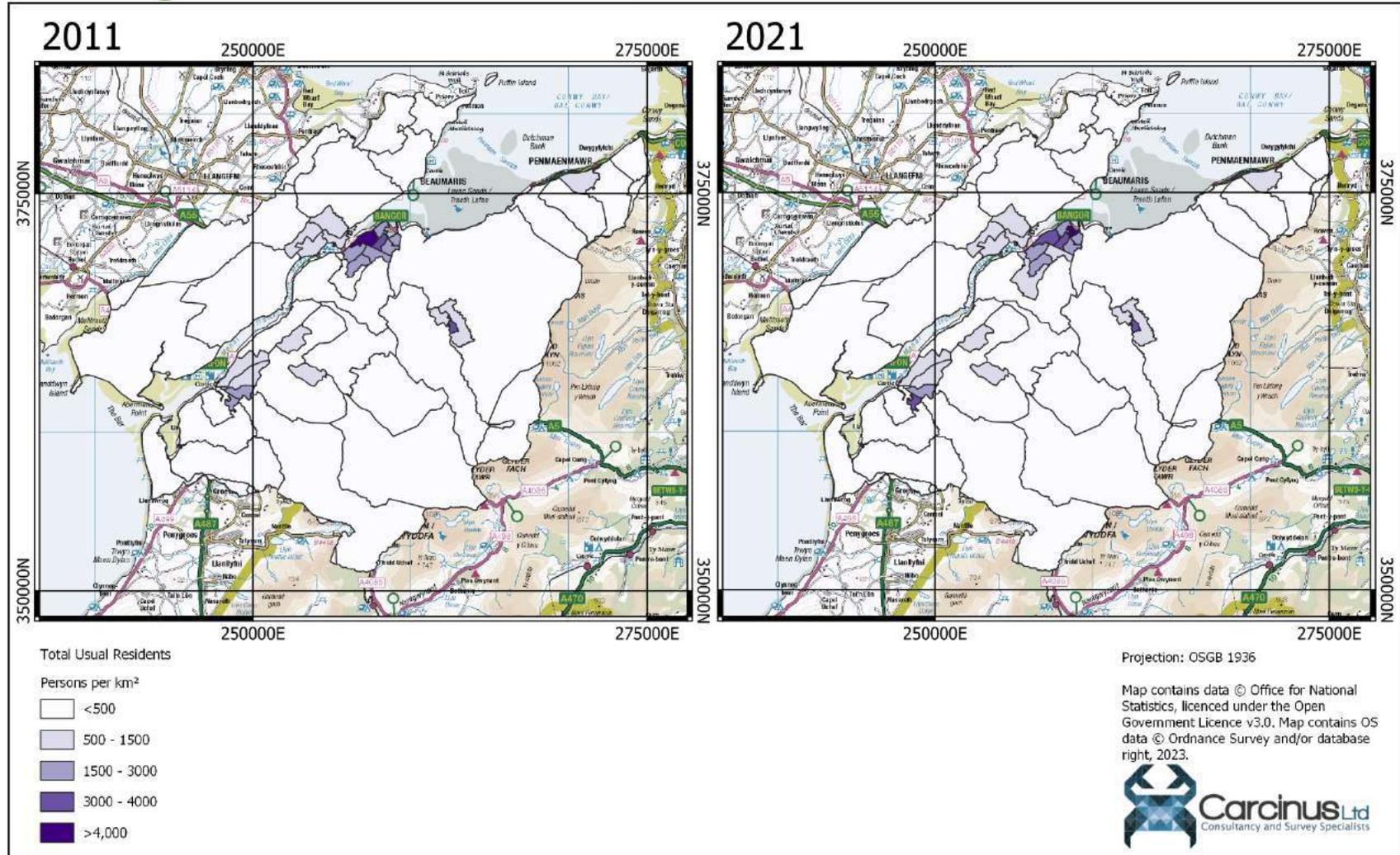


Figure 3.1 Human population density in Census Super Output Areas (lower layer) in the vicinity of the Menai Strait.

At the 2011 Census, the total usual resident population of the study area presented in Figure 3.1 was 93,845. By the 2021 Census, this had increased to 98,144, an increase of approximately 4.5%. Figure 3.1 also suggests that the main population centres of the catchment did not change between 2011 and 2021. The main population centre in the vicinity of the Menai (West) BMPA is Caernarfon, on the south side of the strait and Bangor, in the centre of the strait on the southern bank. Urban related runoff from this conurbation will impact both sides of the strait but is more likely to impact the Menai (East) BMPA because of its proximity. Both Caernarfon and Bangor are situated immediately adjacent to the coast, and so there is some potential for direct impacts from urban runoff. Beyond these locations, the potential for urban runoff is slightly higher on the southern side of the strait than the northern side, as population densities are slightly higher on the southern side. However, the risk of contamination is considered to be low in comparison to other sources (which are described in the subsequent parts of Section 3 of this report), as the population densities along the coasts are generally low (less than 500 persons per km²), so the associated risks associated with urban diffuse pollution sources such as surface water misconnections is also likely to be low.

During initial consultations, the LEA did not advise of any significant housing developments in the vicinity of the Menai Strait that have occurred since the original sanitary surveys were published. A search of the planning portals for the councils that border the Strait do not indicate that there have been any major developments since the original sanitary surveys were published. During initial consultations, Natural Resources Wales stated that there was a proposed planning submission for a large caravan park outside Caernarfon, and there were concerns over where the sewage from this park would have been treated. However, the planning portals indicate that at the time of writing (March 2023), no application had been submitted.

The previous surveys describe that the area has a slightly seasonal population, with an influx of tourists in summer months to the area due to a) the seaside location and b) the proximity of Snowdonia National Park in the upper reaches of the catchment. Those reports do not provide any specific population statistics, but estimates from 2019 (Rowlands, 2019) indicate that over 2 million people visit the island of Anglesey each year. Tourism statistics for Gwynedd (on the southern side of the strait), suggest that the number of visitors to the council increased from 6.63 million/year in 2013 to 7.80 million/year in 2019, an increase of 11.6% (Visit Snowdonia, 2020). A seasonal increase in population would increase the volumes of sewage received by sewage works serving the area. However, we received no information during initial consultations to suggest that the existing capacity is insufficient to handle this increase.

Comparison of the two most recent censuses suggest that the population within the study area has increased by 4.5%, but that the location of the main population centres within the catchment have not changed. There is a slightly higher risk of urban-associated runoff on the southern side of the Menai Strait as population densities are higher. Recent statistics

suggest that the number of tourists the area receives has increased since the original sanitary surveys were published in 2013, but we have received no information to suggest that the existing capacity is insufficient to handle this increase. Overall, the recommendations made in the original sanitary surveys to account for the impact of human populations remain valid.

3.2 Sewage

Details of all consented discharges within the study area have been taken from the most recent update to NRW's national permit database (Natural Resources Wales, 2022). The locations of these discharges are shown in Figure 3.2.

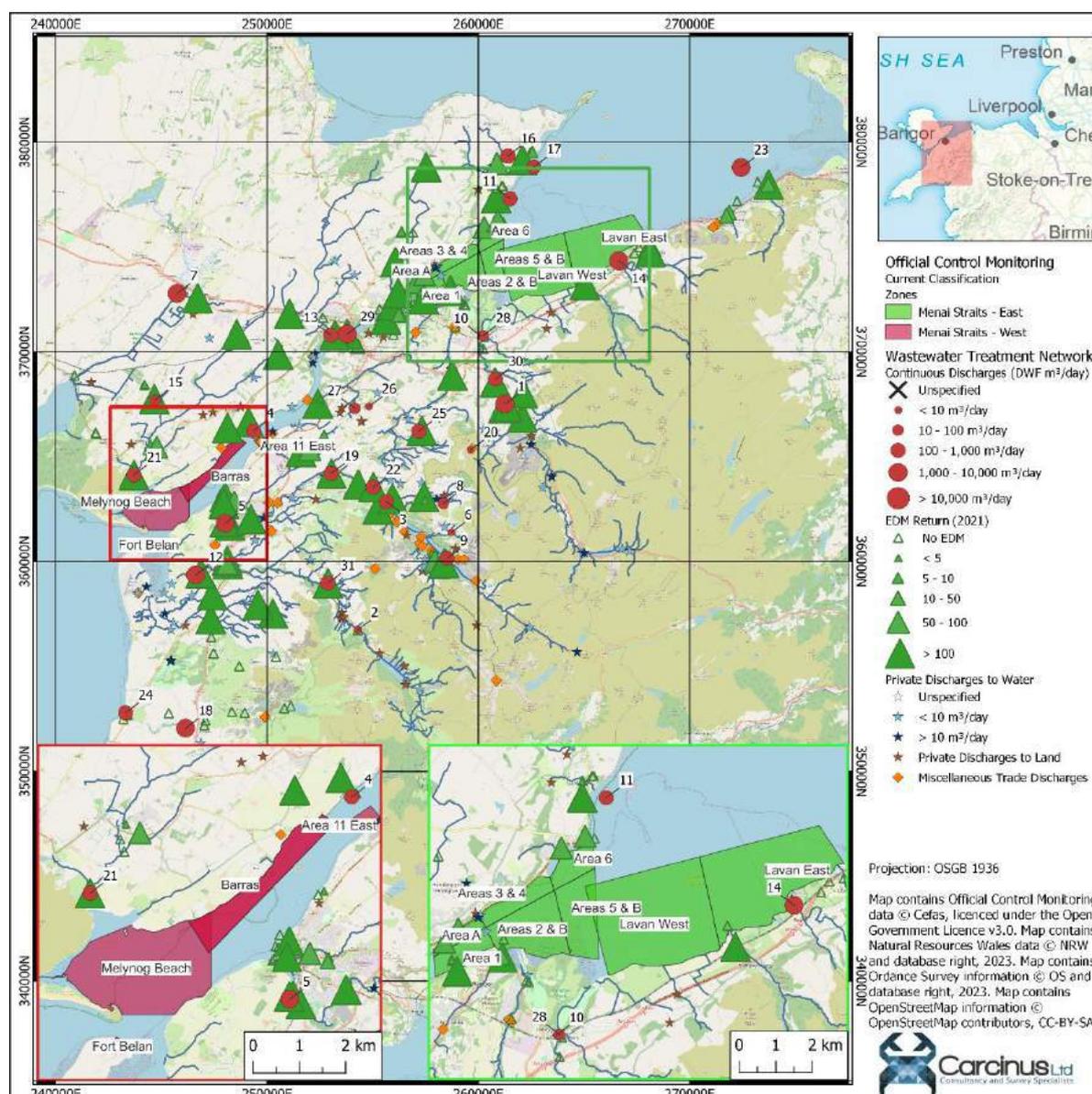


Figure 3.2 Locations of all consented discharges in the vicinity of the Menai Strait. Labels refer to continuous discharges, details of which are provided in Table 3.1. Detailed maps of the consented discharge network in the vicinity of the two BMPAs are shown in Figure 3.3 and Figure 3.4.

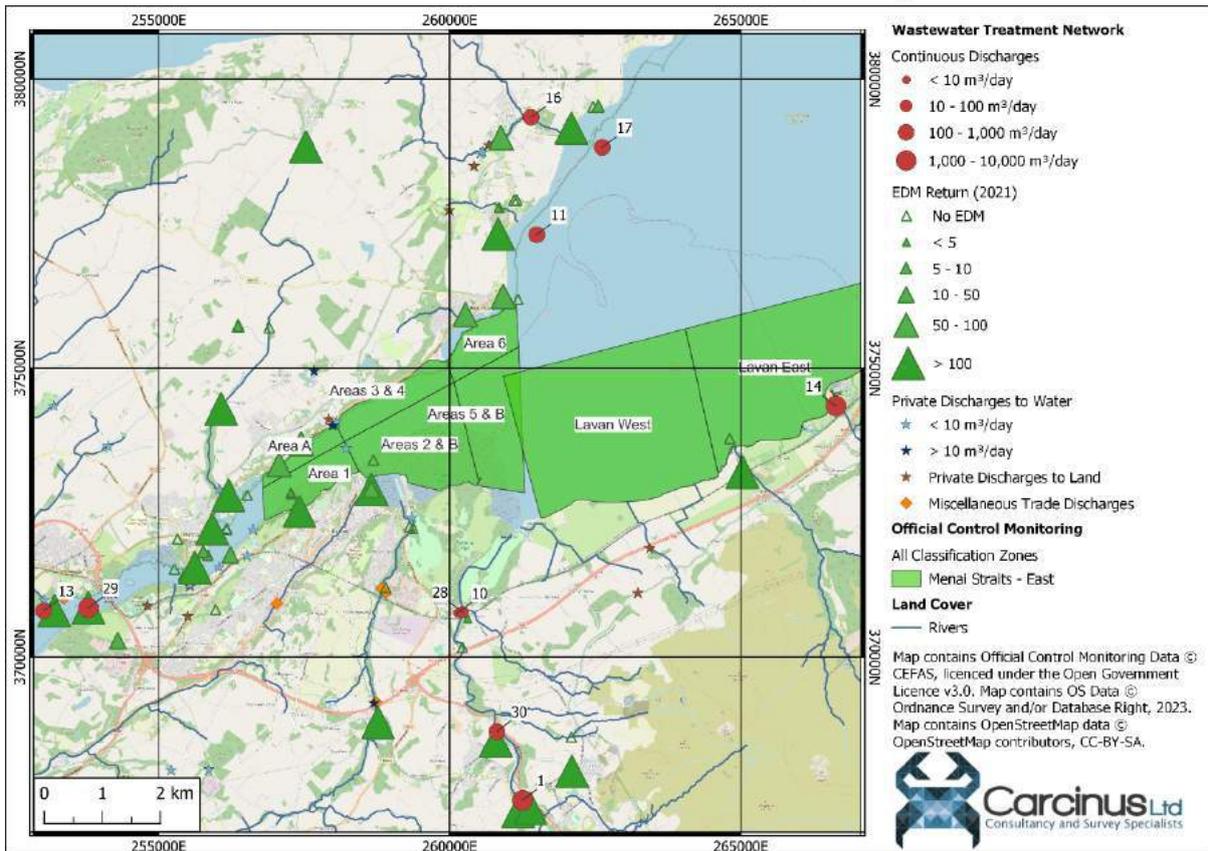


Figure 3.3 Consented discharges in the vicinity of the Menai Strait – East BMTA.

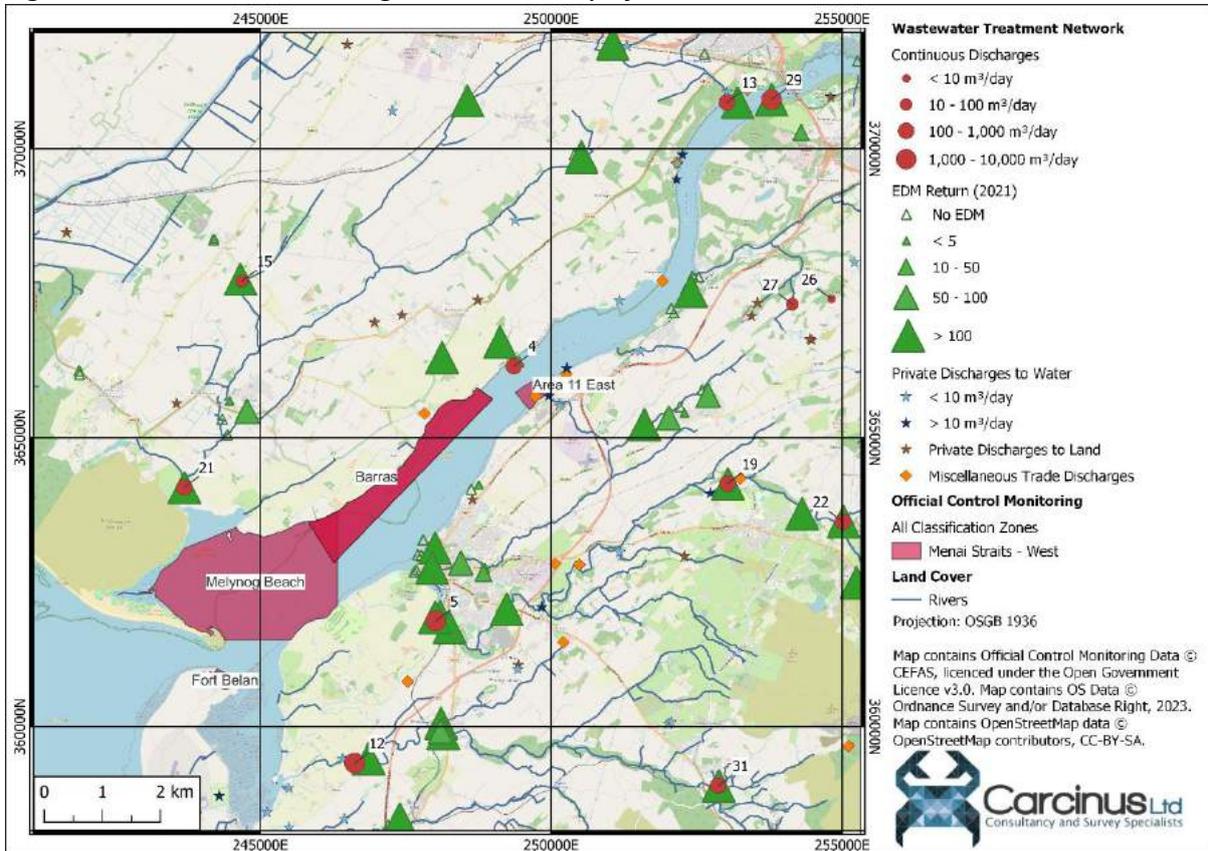


Figure 3.4 Consented Discharges in the vicinity of the Menai Strait - West BMTA.

Table 3.1 Details of all continuous discharges in the vicinity of the Menai Strait. Discharges that have seen decreases in consented discharge volume are highlighted in green and those that have seen increases are highlighted in yellow.

ID	Permit Number	Site Name	Outlet NGR	Receiving Environment	Treatment	Dry Weather Flow (m ³ /day)	Distance to nearest CZ
1	CG0069901	BETHESDA STW (FINAL) BETHESDA	SH 61250 67520	RIVER OGWEN	01: BIOLOGICAL FILTRATION	1678.6	4.9
2	CG0325001	BETWS GARMON WTW	SH 54290 56740	AFON GWYRFAI	01: BIOLOGICAL FILTRATION	8.4	9.6
3	CG0134401	BRYNREFAIL STW	SH 55650 62860	CALEDFFRWD	01: BIOLOGICAL FILTRATION	418	6.374
4	CG0340901	BRYNSCIENCYN STW	SH 49360 66240	MENAI STRAIT	01: BIOLOGICAL FILTRATION	665	0.394
5	CG0078501	CAERNARFON STW	SH 48020 61830	AFON SEIONT	01: BIOLOGICAL FILTRATION	3352	1.715
6	AB3692FG	Capel Dinorwig WwTW	SH 58727 61397	Unnamed tributary of the Afon Fachwen	29: PACKAGE TREATMENT PLANT	6.6	9.78
7	CG0114101	GAERWEN WWTW FINAL EFFLUENT	SH 45743 72790	AFON CEFNI	01: BIOLOGICAL FILTRATION	1188.78	7.545
8	CG0110101	GALLT-Y-FOEL STW	SH 58340 62780	CALEDFFRWD	01: BIOLOGICAL FILTRATION	15	8.877
9	CG0089101	LLANBERIS WwTW	SH 58520 60160	AFON SEIONT	01: BIOLOGICAL FILTRATION	740	10.22
10	CG0108601	LLANDEGAI STW	SH 60130 70760	TRIB OF AFON OGWEN	01: BIOLOGICAL FILTRATION	8.2	2.14
11	CG0342901	LLANFAES WWTW	SH 61494 77308	MENAI STRAIT	01: BIOLOGICAL FILTRATION	702.5	1.252

ID	Permit Number	Site Name	Outlet NGR	Receiving Environment	Treatment	Dry Weather Flow (m ³ /day)	Distance to nearest CZ
12	CG0078101	LLANFAGLAN WWTW FINAL EFFLUENT	SH 46626 59370	GWYRFAI	01: BIOLOGICAL FILTRATION	1305.5	2.397
13	CG0081101	LLANFAIR PG WWTW	SH 53024 70802	MENAI STRAIT	01: BIOLOGICAL FILTRATION	957.8	4.102
14	CG0077001	LLANFAIRFECHAN WWTW	SH 66639 74343	MENAI STRAIT	01: BIOLOGICAL FILTRATION	1468	0
15	CG0019201	LLANGAFFO STW	SH 44690 67710	TRIB OF RIVER BRAINT	01: BIOLOGICAL FILTRATION	64	4.029
16	CG0428701	LLANGOED STW ACCESS OFF B1509	SH 61397 79340	AFON BRENNIN	01: BIOLOGICAL FILTRATION	475.3	3.244
17	CG0084901	LLANGOED WWTW	SH 62620 78820	MENAI STRAIT	01: BIOLOGICAL FILTRATION	457.3	3.09
18	CG0087501	LLANLLYFNI CAERNARFON STW	SH 46140 52060	AFON LLYFNI	01: BIOLOGICAL FILTRATION	1353.6	9.46
19	CG0073901	LLANRUG WWTW FINAL	SH 53033 64206	AFON RHYTHALLT	01: BIOLOGICAL FILTRATION	897.6	3.431
20	CG0364703	MYNYDD LLANDEGAI WTW	SH 59630 65330	UNNAMED WATERCOURSE	06: SEPTIC TANK	0.1	7.339
21	CG0094101	NEWBOROUGH STW	SH 43700 64140	ESTUARY OF AFON BRAINT	01: BIOLOGICAL FILTRATION	570	0.979
22	CG0134101	PENISARWAUN WWTW FE	SH 55018 63548	AFON SEIONT	01: BIOLOGICAL FILTRATION	111	5.506
23	CG0141401	PENMAENMAWR WWTW PENMAENMAWR	SH 72430 78800	COASTAL WATERS OF CONWY BAY	01: BIOLOGICAL FILTRATION	2329.7	2.131

ID	Permit Number	Site Name	Outlet NGR	Receiving Environment	Treatment	Dry Weather Flow (m ³ /day)	Distance to nearest CZ
24	CG0074601	PONTLLYFNI STW	SH 43300 52800	AFON LLYFNI	01: BIOLOGICAL FILTRATION	111.9	8.764
25	CG0086001	RHIWLAS STW	SH 57190 66230	CEGIN	01: BIOLOGICAL FILTRATION	315	6.147
26	CG0082201	SEION NO. 1 NEW STW	SH 54820 67400	TRIB. OF NANT Y GARTH	01: BIOLOGICAL FILTRATION	4.1	5.096
27	BB3199CT	Seion No2 STW	SH 54146 67311	Nant Cefn	06: SEPTIC TANK	13.1	4.431
28	CG0314701	TALYBONT STW	SH 60220 70780	AFON OGWEN	01: BIOLOGICAL FILTRATION	95	2.112
29	CG0366001	TREBORTH STW (FINAL) BANGOR	SH 53790 70850	MENAI STRAIT	22: UV DISINFECTION	9106.7	3.385
30	CG0133701	TREGARTH	SH 60810 68710	OGWEN	01: BIOLOGICAL FILTRATION	615.5	3.776
31	CG0134001	WAUNFAWR STW (FINAL EFFLUENT)	SH 52872 58980	AFON GWYRFAI	01: BIOLOGICAL FILTRATION	387	7.251

3.2.1 Continuous Discharges

The 2013 Sanitary Surveys discuss several continuous water company discharges that were made directly to the Strait. The Sanitary Survey of the Menai Strait – East only considers those discharges in the vicinity of that BMPA, whereas the Sanitary Survey of the Menai Strait – West considers the entire hydrological catchment. This survey has considered discharges across the entire catchment, although discharges from the upper reaches of the catchment will not have any direct impact on the bacteriological health of the BMPA due to the bacterial die off/dilution that will occur, but they will contribute to the overall level of background contamination in the coastal waters of the Menai Strait BMPA via the watercourses of the catchment. Both surveys identify the Treborth STW (ID 29 in Table 3.1), as the largest continuous water company discharge in the area. This discharge continues to be located just to the west of the Britannia Bridge, approximately 3.5 km from the CZs of Menai Strait – East and 6 km from the Menai Strait – West CZs (Figure 3.3 & Figure 3.4). The consented discharge volume and treatment methodology (UV disinfection) at this discharge has not changed and so the overall risk it causes to the bacteriological health of the shellfishery continues to be small.

In the Menai Strait – East area, Llanfair PG WWTW (ID 13), Llanfairfechan WWTW (ID 14) and Llanfaes WWTW (ID 11) were all also identified to be potentially significant discharges (Figure 3.3). These are located 4.25 km west, within, and 1 km of the CZs respectively. No changes to either the treatment methodologies or consented discharge volumes have occurred, with all three discharges continuing to employ biological filtration. Contamination from discharges to the west of the CZs will be carried on an ebbing tide, and a flooding tide will carry contamination from discharges to the east of the CZs. The location of these discharges should be taken into consideration in the recommendations of any updated sampling plan for the Menai Strait – East area.

In the Menai Strait – West area, Llanfair PG WWTW (ID 13) also continues to be a potentially significant discharge as it is located 4 km east of the BMPA and continues to have a large (950 m³/day) secondary treated discharge (Figure 3.4). Brynsciencyn STW (ID 4) is located 450 m from the *Area 11* CZ and 700 m from the *Barras* CZ. The consented discharge volume and treatment have not changed since the 2013 Sanitary Survey, and so the overall risk of contamination from this discharge remains similar. Newborough (ID 21) and Caernarfon (ID 5) STWs are also potentially significant sources of contamination. The discharge at Newborough is unchanged, but the consented discharge volume at Caernarfon has increased to 3352 m³/day from 2840 m³/day. The location of these discharges should be taken into consideration in the recommendations of any updated sampling plan for the Menai Strait – West area.

Continuous water company discharges from the upper reaches of the catchment will not have any direct impact on the bacteriological health of the BMPA due to the bacterial die off/dilution that will occur. However, they will contribute to the overall level of background contamination in the coastal waters of the Menai Strait BMPA via the watercourses of the

catchment. They do not require any specific consideration within any updated sampling plan.

3.2.2 Intermittent Discharges

The 2013 Sanitary Surveys also discuss the potential impact of intermittent discharges in the Menai Strait catchment. Intermittent discharges comprise Combined Storm Overflows (CSOs), Storm Tank Overflows (STOs) and Pumping Station Emergency Overflows (PSs). During Asset Management Period (AMP) 6 (2015 – 2020) and AMP7 (2020 – 2025), Event Duration Monitoring (EDM) was installed at several of the discharges within the catchment. Summary data for 2020 and 2021 was published by the Environment Agency in March 2021 and in March 2022 respectively (Environment Agency, 2022). Details of the EDM data from 2021 for those discharges in the Menai Strait catchment are presented in Appendix I. EDM data allows some interpretation of the frequency at which intermittent discharges in the catchment spilled.

The Menai Strait – East Sanitary Survey describes that the main cluster of intermittent discharges in the vicinity of that BMPA are around the Bangor and Menai Bridge area. Only one discharge in this area, Llanfaes PS (near ID 11 in Figure 3.3), had spill event monitoring. In the second half of 2012, the 2013 sanitary survey reported that this discharge spilled on 17 locations. EDM data from 2020 and 2021 shows that this discharge spilled 76 times for more than 670 hrs in 2021 and 36 times for 400+ hrs in 2020. EDM data from the discharges in, within or near to the Menai Strait – East BMPA (east of the Menai Bridge) suggest that discharges are spilling relatively frequently, with only 4 of 22 not spilling at all, and 9 of 22 spilling for more than 1,000 hrs. The presence of an intermittent discharge near to or within the CZs of this BMPA should be given additional consideration in any updated sampling plan, as the spills from intermittent discharges are generally untreated. There is likely to be a general gradient of increasing contamination from this source as you move closer to the Menai Bridge/Bangor but point sources within CZs in the outer strait should also be taken into consideration.

As discussed above, the Menai Strait – West Sanitary Survey considers discharges over a wider area, and consequently a greater number of discharges were fitted with EDM capability. These were Crossville CSO, Llanfaes PS, Llanfaglan WWTW Storm Tank & Storm Overflow and Waterloo Port Sewage Pumping Station. The Crossville CSO, Llanfaglan SO and Waterloo Port PS spilled less frequently 60, 63 and 1 times in 2021 compared to 60, 101 and 4 in 2012, but as described above the Llanfaes PS spilled more frequently in 2021 than 2012. The intermittent discharges likely to be of greatest concern for the CZs of the Menai Strait – West BMPA are the Newborough STW (34 spills in 2021) and the Brynsciencyn Settled Storm Overflow (99 spills in 2021), as well as those intermittent discharges in Caernarfon. The presence of an intermittent discharge near to or within the CZs of this BMPA should be given additional consideration in any updated sampling plan, as the spills from intermittent discharges are generally untreated.

As with the continuous water company discharges, intermittent discharges to the upper reaches of the catchments in the study area will not have any direct impact on the bacteriological health of the BMPA due to the bacterial die off/dilution that will occur. However, they will contribute to the overall level of background contamination in the coastal waters of the Menai Strait BMPA via the watercourses of the catchment. They do not require any specific consideration within any updated sampling plan.

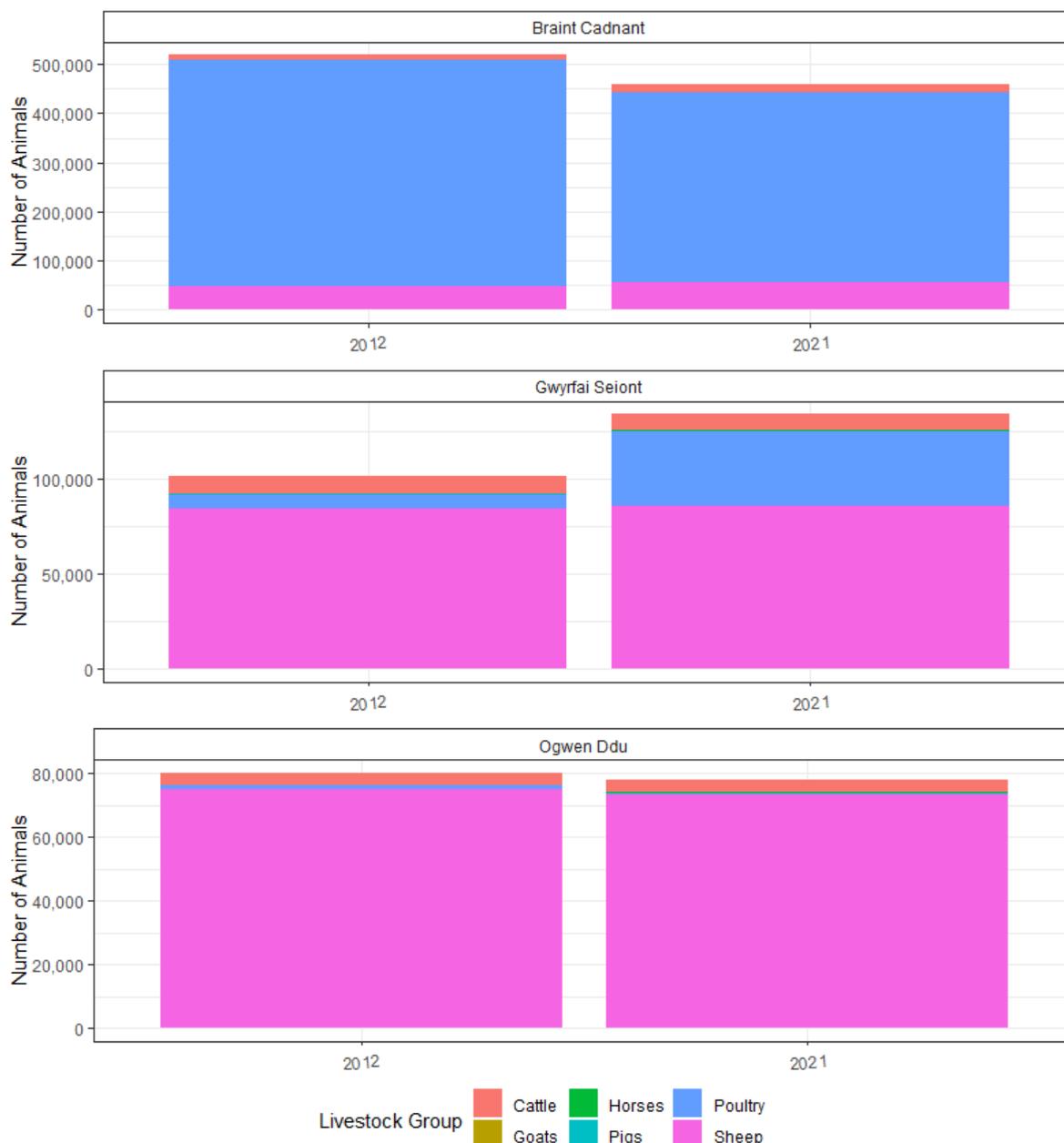
3.2.3 Private Discharges

In addition to the water company owned discharges, privately owned discharges require consideration in any assessment of contamination sources affecting a shellfishery. The 2013 sanitary surveys describe that there are a large number of private discharges in the vicinity of the Menai Strait, and where specified, usually treated by package plants. Many such discharges remain, limited information about these can be provided due to data protection requirements, but their locations are mapped in Figure 3.2. Most of the discharges within the Menai Strait are small (<10 m³/day) and as a consequence do not require additional consideration, as the impact from water company owned discharges is far larger.

No significant upgrades to the wastewater treatment network within either the Menai Strait East or West have occurred since the original sanitary surveys were published in 2013. Far more discharges in the area are now fitted with EDM capability compared with that described in the original sanitary survey, allowing a greater appreciation for which intermittent discharges pose a greater risk to the bacteriological health of each BMPAs. The data show that spills are happening relatively frequently to those discharges in the near vicinity of the BMPAs, and so presence of an intermittent discharge near to or within the CZs of this BMPA should be given additional consideration in any updated sampling plan, as the spills from intermittent discharges are generally untreated.

3.4 Agricultural Sources

A request was made to the Farming Statistics Office of the Welsh Government for livestock populations within the study area presented in Figure 1.1. These data were made available under the Open Government Licence v3.0. Figure 3.5 presents the changes in livestock populations within the study area, broken down into the sub-catchments contained within this area. Table 3.2 shows the changes in total livestock populations within these sub-catchments.



Livestock population data based on estimates from the Welsh Agricultural Survey, 2012 and 2021.
Data © Stats Wales, made available under the Open Government Licence v3.0

Figure 3.5 Changes in livestock population data for sub-catchments of the Menai Strait study area between 2012 and 2021. Data based on estimates from the Welsh Agricultural Survey.

Table 3.2 Summary of changes to total livestock populations in catchments near the Menai Strait between 2012 and 2021.

Catchment	2012 Population	2021 Population	% Change
Braint/Cadnant	519,121	458,579	-11.66%
Gwyrfai Seiont	101,435	134,576	32.67%
Ogwen Ddu	80,244	77877	-2.95%
TOTAL	700,800	671,032	-4.25%

The original sanitary surveys describe that the highest overall density of livestock was on Anglesey, and the data presented in Figure 3.5 support this, with the Braint / Cadnant catchment having more animals than the other two catchments combined. Poultry is the dominant livestock group in this catchment, whereas sheep are the most numerous in the other two. Only the Gwyrfai / Seiont catchment showed an increase in livestock populations, driven by a 400% increase in poultry populations within this area (although sheep are still more numerous). Overall, livestock populations within the study area have fallen by 11%. Across all groups of animals, the population size will vary throughout the year, with the highest numbers during spring and the lowest numbers when animals are sent to market in Autumn and Winter.

The principal route of contamination of coastal waters by livestock is surface runoff carrying faecal matter from areas of pasture immediately adjacent to coasts and estuaries. The change in land cover of the catchments near to the Menai Strait is shown in Figure 3.6. This figure shows that most of the land adjacent to the coastline on both the eastern and western halves of the Strait continues to be reserved for pasture. Pasture areas adjacent to shorelines represent the greatest contamination risk to the Classification Zones. This is because run-off from the land travels less distance before reaching the CZs, resulting in less dilution and *E. coli* die off. Run-off into rivers in the upper areas of the catchments will carry a lower risk of contamination. There continues to be very little land reserved for arable farming. Arable land can pose a risk to the bacteriological health of a BMPA through the application of slurry as fertiliser, but the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021⁷, which specifies that silage cannot be stored within 10 m of a coastal or inland water. During initial consultations, Natural Resources Wales stated that there were no known pollution concerns resulting from livestock runoff in the vicinity of the Menai Strait – East area. In the Menai – West area, NRW advised of farms on the mainland near Caernarfon that have received allegations regarding slurry pollution, although these allegations have not been proven.

⁷ Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021. Available at: <https://www.legislation.gov.uk/wsi/2021/77/contents/made>

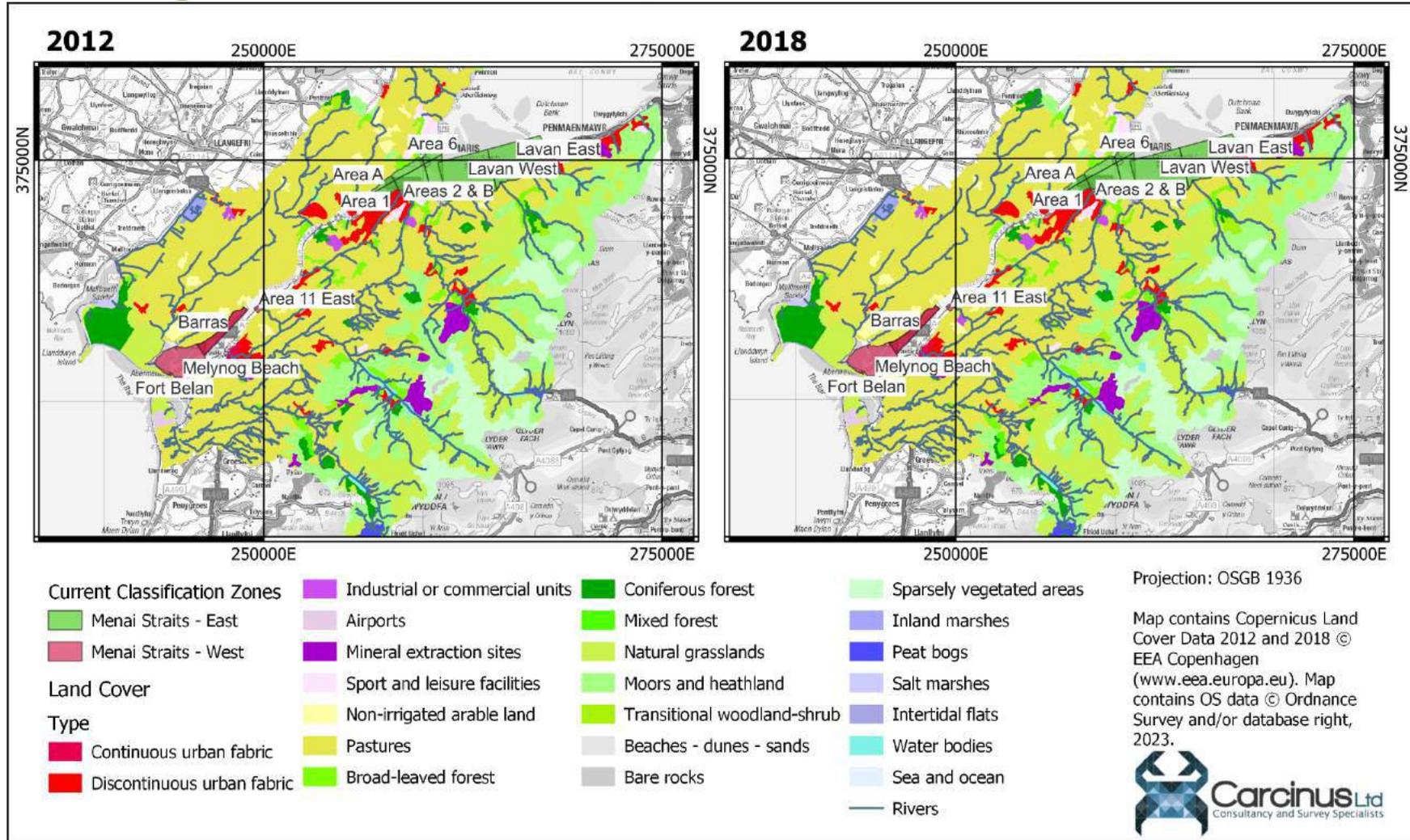


Figure 3.6 Change in land cover in the vicinity of the Menai Strait between 2012 and 2018.

The original sanitary surveys describe that there is a relatively high risk of agricultural pollution from surface runoff contaminating the shellfish beds in the Menai Strait all throughout the year. The pollution was considered to be higher following significant rainfall events, particularly following a prolonged dry period. Overall, the risk of this source of contamination is not considered to have changed significantly, as the livestock population in the area continues to be high and a significant proportion of the catchments are still reserved for pasture. The recommendations in the original reports, namely positioning RMPs near to the mouth of any freshwater inputs (as these can be considered essentially point sources), should be retained.

3.5 Wildlife

The Menai Strait contains a variety of habitats that support a significant diversity of wildlife. The area is afforded protection under a variety of internationally and nationally designated sites, including the Menai Strait and Conwy Bay Special Area of Conservation (SAC), three Special Protection Areas (SPAs), several Sites of Special Scientific Interest (SSSI), National and Local Nature Reserves (NNR & LNR respectively).

The 2013 sanitary surveys describe that one of the wildlife groups most likely to contribute significant levels of faecal contamination to shellfish beds are wading and waterbirds (particularly overwintering species), this is because they typically forage (and defecate) directly on intertidal shellfish beds. The Wetland Bird Survey (coordinated by the British Trust for Ornithology) conduct regular bird counts in estuaries and embayments throughout the British Isles. Two of their monitoring locations are relevant to the shellfisheries in the Menai Strait. The Lavan Sands site is located within the waters of the Menai Strait – East BMPA and there are currently two cockle CZs in this area. The Traeth Melynog site is located within the Menai Strait – West BMPA and similarly is located in an area currently classified for cockle harvesting. Figure 3.7 and Figure 3.8 show the temporal trend in total overwintering waterbird counts from the winter of 2002/2003 to 2019/2020 (the most recent for which data are available) at these two locations.

3.5.1 Menai Strait - East

At Lavan Sands (Figure 3.7), waders are the dominant species group, with several thousand oyster catchers, curlew, dunlin and redshank observed each year. The average count of overwintering waterbirds (including gulls and terns) in the five winters to 2012/2013 was 19,022 (Austin *et al.*, 2014). In the five winters to 2019/2020, the average count was 20,964 (an increase of 10.21%). There are also nationally significant populations of the wading birds mentioned above, as well as Brent Goose, Green Shank and Little Egret.

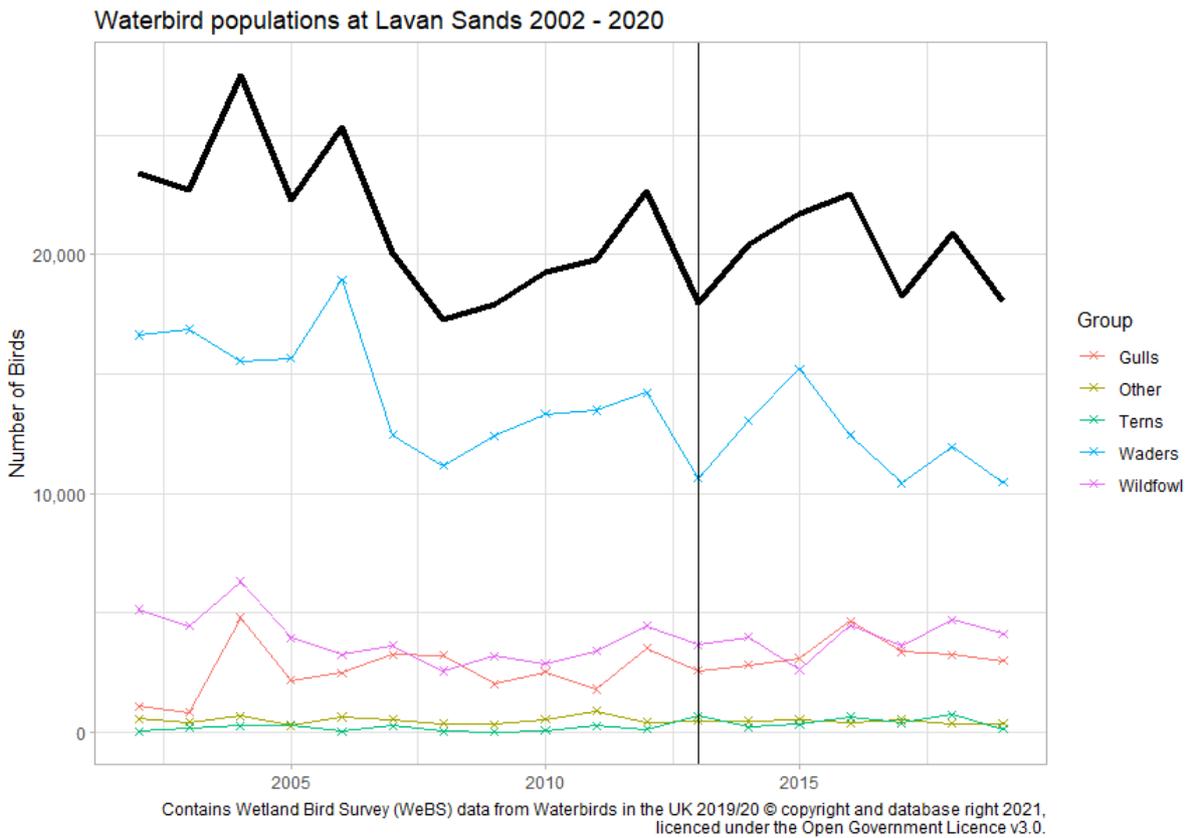


Figure 3.7 Temporal trend in waterbird counts on Lavan Sands. Data from the Wetland Bird Survey (Frost et al., 2021). Black line shows total waterbird population.

3.5.2 Menai Strait - West

Waterbird populations at Traeth Melynog are much lower than at Lavan Sands (Figure 3.8), with annual counts varying between approximately 4,000 and 7,000 (compared to 15,000 to >25,000 at Lavan Sands). In addition, waders and wildfowl species are similarly populous, with nationally significant populations of Brent Goose and Pintail. In the five winters to 2012/2013, the average total count was 5,437. In the five winters to 2019/2020, the average total count was 6,354 (an increase of 16.87%).

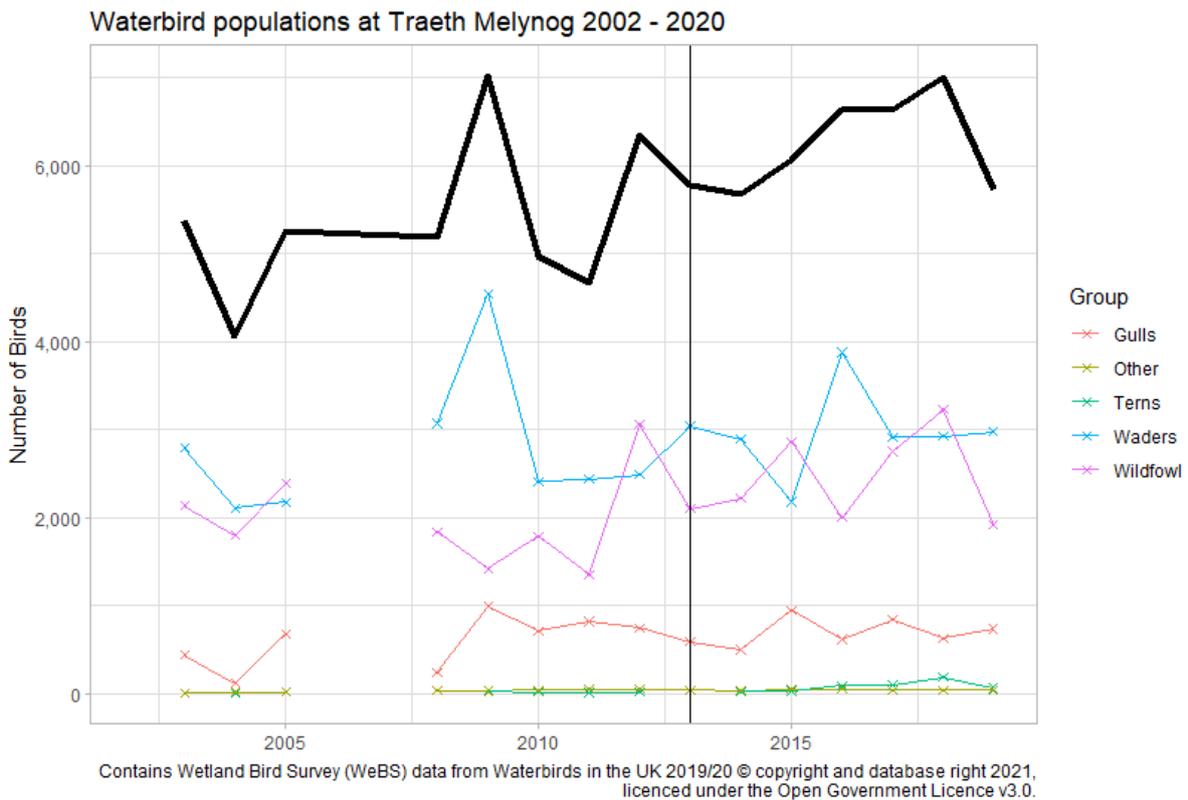


Figure 3.8 Temporal trend in waterbird counts on Traeth Melynog. Data from the Wetland Bird Survey (Frost et al., 2021). Black line shows total waterbird population.

The largest aggregations of waterbirds, and therefore the highest risk of contamination, will occur in winter months. The distribution of waterbirds in the strait will shift from year to year, driven by aggregations of their foraging resource. It is likely that the risk of contamination will be greater in the cockle CZs of the two BMPAs as this is where waterbirds have historically aggregated. It is also likely that contamination levels will be slightly higher in the Menai Strait – East BMPA than the Menai Strait – West, as the bird population is markedly higher. However, given the shifting distributions of waterbirds (and the contamination they cause) it is difficult to define RMPs that reliably capture this source of pollution. This situation has not changed since the original sanitary survey was published.

Another wildlife group that has the potential to contribute bacteriological contamination of a shellfishery is marine mammals. Large numbers of grey seals are known to forage in the waters around the Menai Strait (Langley et al., 2020), with highest numbers in winter months (Westcott and Stringell, 2004). These animals generally have wide foraging ranges and so contamination from them is spatially and temporally variable. They can create hotspots of contamination near to their haul-out sites, but as none are known to be in the vicinity of the shellfish beds in either the eastern or western part of the strait, no additional consideration is required in any updated sampling plan.

3.6 Boats and Marinas

The discharge of sewage from boats is a potentially significant source of contamination to the shellfish beds of the Menai Strait. Boating activities in the area have been derived from satellite imagery and compared to that described in the 2013 sanitary surveys. Their geographical positions in the eastern part of the Menai Strait are shown in Figure 3.9 and in the western part of the Menai Strait in Figure 3.10.

3.6.1 Menai Strait - East

The 2013 Sanitary Survey of the Menai Strait East describes that the Port of Penrhyn (within Bangor) handled a variety of cargo including slate, sand aggregates and scrap metal. The same activities are ongoing (Dickes Maritime Services, 2023), and the port currently handles approximately 20 shipments per year. This port can handle vessels up to 100 m LOA (length overall) but can only operate 2-3 hours either side of high water. The legislation⁸ governing the overboard discharge from merchant vessels has not changed since the original sanitary survey was published. As merchant vessels are prohibited from making overboard discharges within 3 nautical miles of land, no impact from this source is expected.

There continues to be a small fishing fleet in the area. One fishing vessel over 10 m and three vessels under 10 m list either Penrhyn or Bangor as their home port (gov.uk, 2023). A further four vessels over 10 m and 13 under 10 m list Conwy (10 km east of the Menai Strait – East BMPA) as their home port. These statistics are the same as those described in the 2013 Sanitary Survey of this BMPA.

There continues to be extensive recreational boating activity within the eastern Menai Strait. Port Penrhyn has berths for over 100 vessels (and off-water storage for up to 300) (Dickes Maritime Services, 2023), and there are a large number of moorings within the strait itself as well as marinas in the mouth of the River Conwy. Vessels of a sufficient size to contain on board toilets may make overboard discharges from time to time, particularly when moving through the main navigational channels or moored overnight away from the main marinas. Overall, the level of recreational boating activity in the Strait is considered to have remained similar to that described in the original sanitary survey.

The greatest risk of contamination will occur during summer months when the number of boats using the Strait is at its highest. Comparison of the current situation with that described in the original survey suggests that the number of vessels hasn't increased. The recommendations made in that report to account for this source of pollution remain valid.

⁸ The Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008.

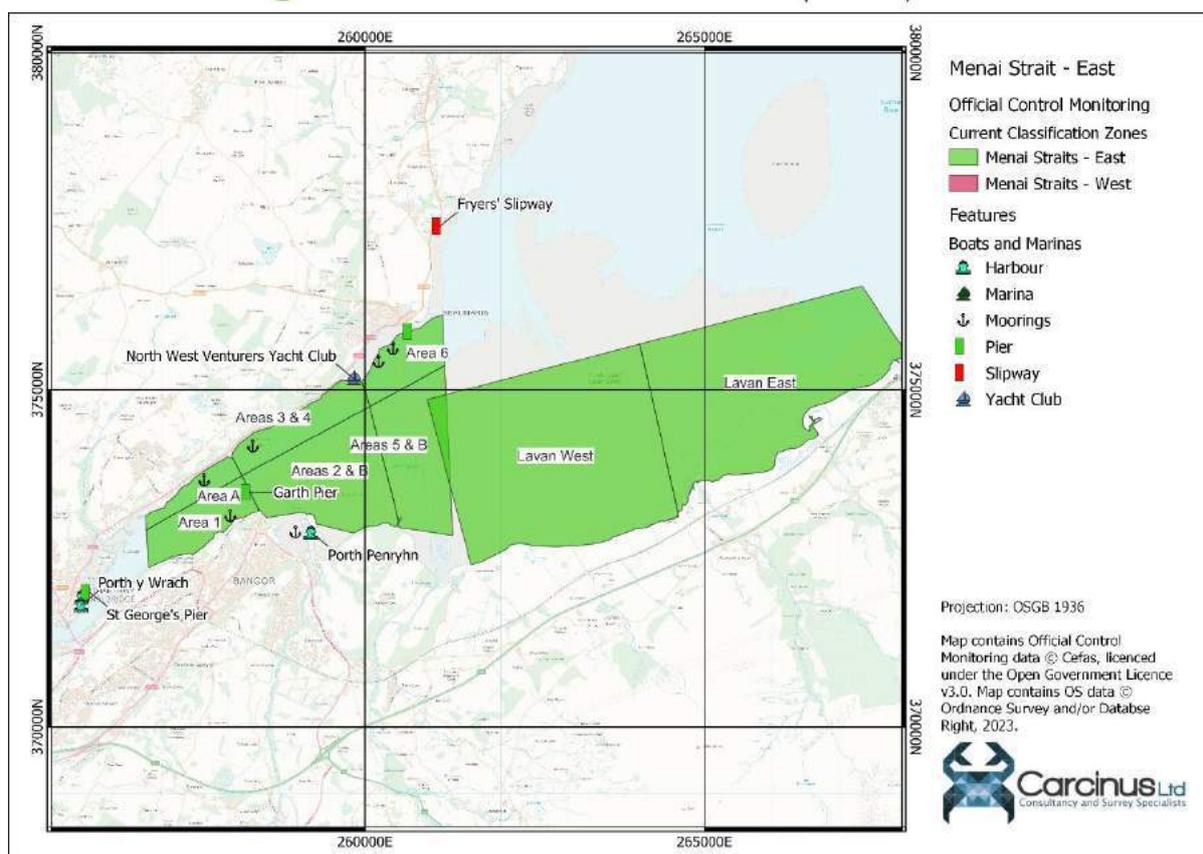


Figure 3.9 Locations of boats, marinas and other boating activities in the vicinity of the Menai Strait - East BMPA.

3.6.2 Menai Strait – West

The 2013 Sanitary Survey of the Menai Strait – West describes that most of the boating activity in the western part of the strait is recreational or fishing-related, as there are no commercial ports in the area and passage through the Swellies (the tidal rapids in the middle of the Strait) can be challenging for larger vessels. This, combined with the fact that merchant vessels are prohibited from making overboard discharges within 3 nautical miles of land, means that no impacts from merchant shipping are expected.

The marinas described in the original sanitary survey, Port Dinorwic (Dinorwic marina in Figure 3.10) and Victoria Dock (Caernarfon marina) are still in use, and the number of berths offered is similar (approximately 280) (Practical Boat Owner, 2023; The Marine Group, 2023). There are also a number of moorings within the Strait. Similar to the eastern part of the Strait, vessels of a sufficient size to contain on board toilets may make overboard discharges from time to time, particularly when moving through the main navigational channels or moored overnight away from the main marinas. Overall, the level of recreational boating activity in the Strait is considered to have remained similar to that described in the original sanitary survey.

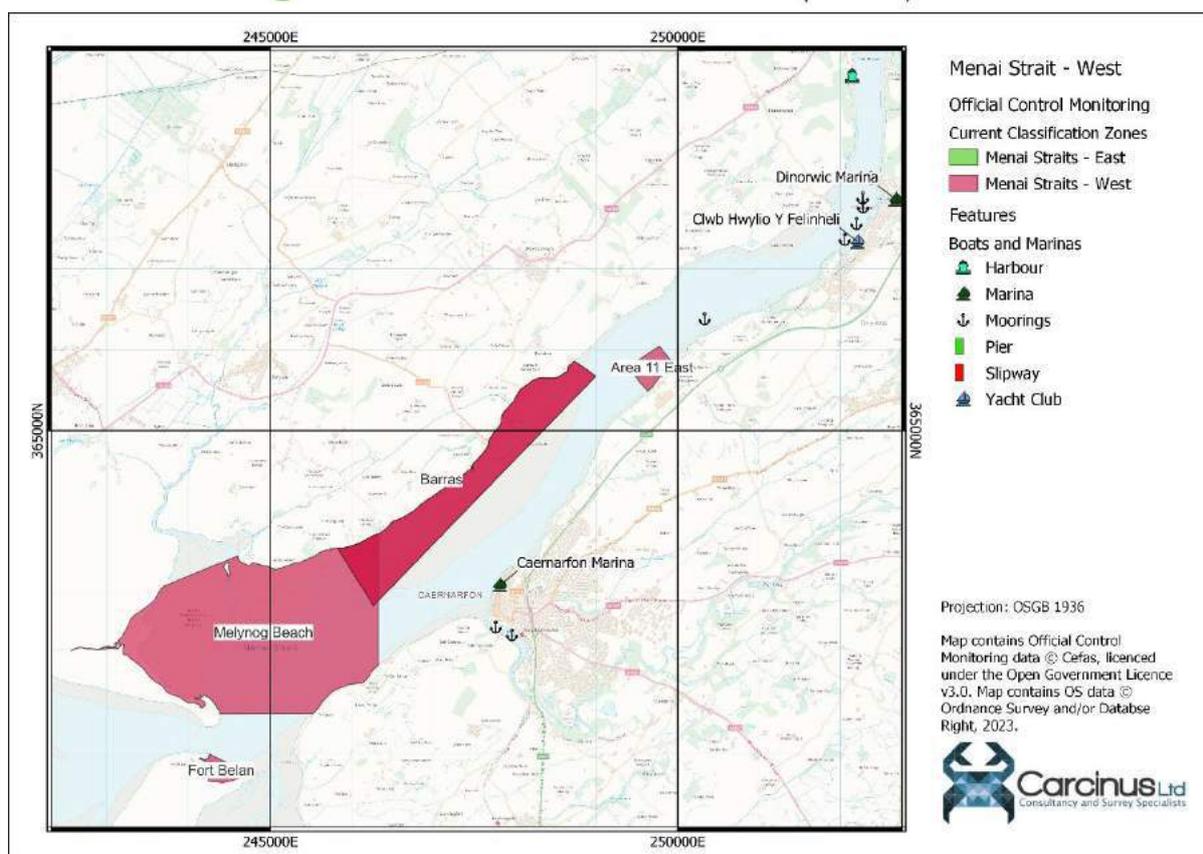


Figure 3.10 Locations of boats, marinas and other boating activities in the vicinity of the Menai Strait - West BMPA.

The greatest risk of contamination will occur during summer months when the number of boats using the Strait is at its highest. Comparison of the current situation with that described in the original survey suggests that the number of vessels hasn't increased. The recommendations made in that report to account for this source of pollution remain valid.

3.7 Other Sources of Contamination

Utility misconnections are when foul water pipes are wrongly connected and enter surface waters without treatment, potentially putting raw sewage directly into watercourses via surface water drains. Areas which pose the greatest risk of this source of contamination are residential properties in very near vicinity to coastal waters. In the Menai Strait – East BMPA this is likely to be the Garth region of Bangor and within the Menai Strait – West BMPA this would be the town of Caernarfon, both of which are on the southern side of the respective BMPA. However, we have received no information to date that misconnections have a significant impact on this shellfish water.

Some impacts from dog fouling are expected, as dog walking along the coastline is likely to be relatively common. This is not expected to be a significant impact and does not require additional consideration in any updated sampling plan.

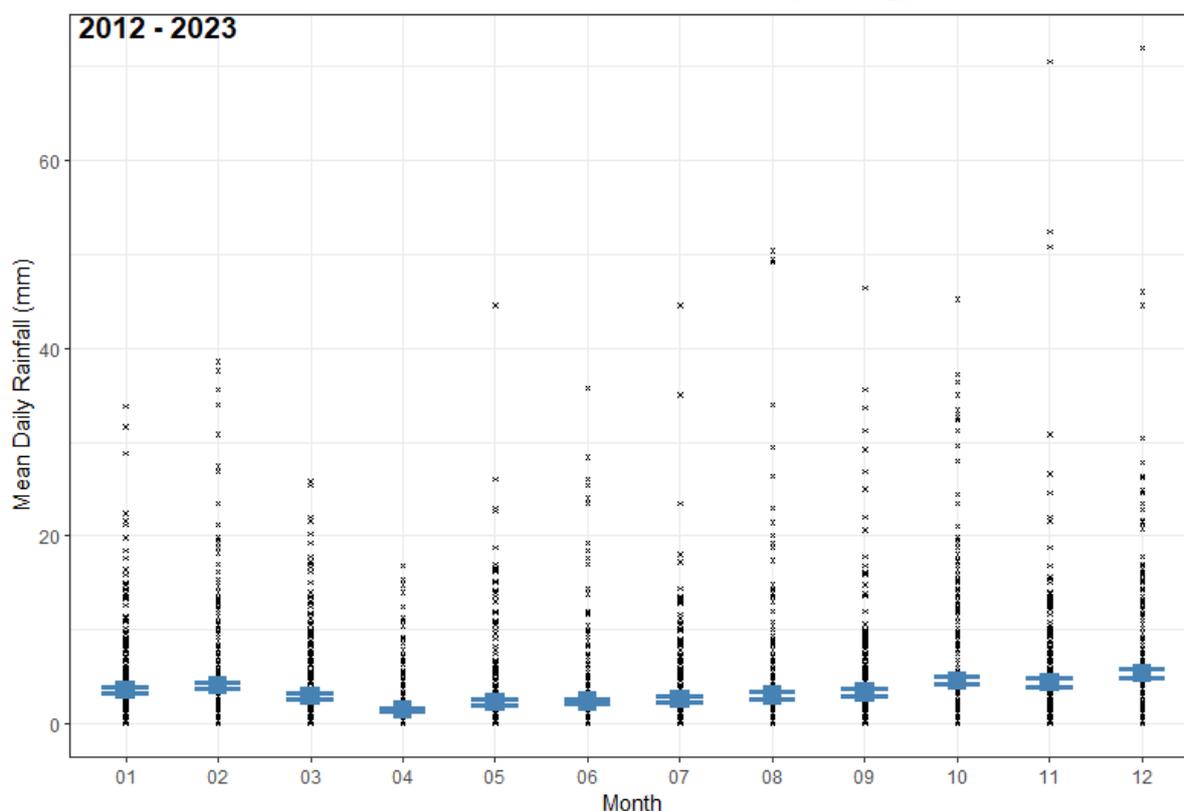
4 Hydrodynamics/Water Circulation

The Menai Strait is a 30 km long tidal channel separating the Isle of Anglesey from mainland Wales. The narrowest and shallowest point is the Swellies in the centre, where subtidal depths are <1 m. In the outer parts of the Strait intertidal areas become much wider, particularly on the southern (mainland) side in the eastern strait and the northern (Anglesey) side in the western strait. The bathymetric profile of the strait is not considered to have changed significantly since the original sanitary survey was published.

Tidal ranges in this area are large (> 4 m), and ranges are higher in the eastern strait than the western. Tidal circulation is likely to be the dominant force of water circulation in both BMPAs under most conditions. The fluvial/ebb plume from the water courses will create some hotspots of contamination, and can be considered point sources of contamination carrying pollution from farther up the catchment. The incoming tide enters the Menai Strait at its western end, but before it can reach the eastern end the tidal wave has passed around Anglesey and started to move up the strait from the eastern end. These two tidal flows will meet each other at a point dependent on local climactic conditions. The higher tidal range in the eastern strait results in a net western flow, but contamination from shoreline sources in both parts of the Strait will be spread in both directions along the shore (but won't reach the opposite bank). There is no evidence that the patterns of water circulation in the Menai Strait have changed since the original sanitary surveys were published in 2013, and as such no update to the sampling plan is required on this basis.

5 Rainfall

Rainfall data for the Afon Abba Tipping Bucket Raingauge (TBR) monitoring station at NGR SH 57036 70481 (ID: 990124) was requested from Natural Resources Wales. Data was only available from 2012 – Present but this station was chosen as it was considered to be the most representative of rainfall patterns in the vicinity of the Menai Strait (as it is located in Bangor). No statistical comparison of rainfall data for the period preceding and following the original sanitary survey is therefore possible, as there would only be one year of data prior to and approximately 10 post the publication of the 2013 Sanitary Surveys. The average daily rainfall totals per month at this monitoring station are presented in Figure 5.1.



Archive Daily Rainfall from the Adda Upstream TBR Main (#990124) at NGR SH 57036 70481
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Figure 5.1 Mean daily rainfall per month at the Afon Abba monitoring station for the period 2012 – 2023. Scatter shows individual days' rainfall totals within a given month and boxplots show the mean rainfall per month +/- Standard Error.

The 2013 Sanitary survey of the Menai Strait – East reported rainfall statistics from the Parc Menai rainfall station, citing an average rainfall of 993 mm per year. The average annual rainfall recorded at the Afon Abba Tipping Bucket monitoring station since 2012 is more than 1,000 mm per year, with 20% of days having more than 20 mm of rainfall. Across the whole of the UK, the decade 2011 to 2020 was on average 4% wetter than 1981 – 2010 and 9% wetter than 1961 – 1990 (Kendon *et al.*, 2021), suggesting that rainfall levels are increasing. Figure 5.1 suggests that the wettest months are October – February, and levels of surface runoff are likely to be highest during these times. Whilst no statistical comparison is possible, the data suggest that rainfall levels are slightly higher in the vicinity of the Menai Strait and so runoff levels may also be slightly higher.

6 Microbial Monitoring Results

6.1 Summary Statistics and geographical variation

Mean Official Control Monitoring Results for *E. coli* concentrations at RMPs sampled in the Menai Strait are shown in Figure 6.1 and Figure 6.4. Figure 6.1 presents RMPs in the Menai

Strait – East BMPA and Figure 6.4 presents RMPs in the Menai Strait – West BMPA. Summary statistics for both BMPAs are shown in Table 6.1.

Table 6.1 Summary statistics from Official Control monitoring at bivalve RMPs in the Menai Strait - East and West BMPAs. RMPs that are not currently sampled (as of February 2023) are **shaded in red**. RMPs that are currently sampled **are shaded in green**.

Representative Monitoring Point	NGR	No. Samples Collected	First Sample	Last Sample	Mean	Min Value	Max Value	% > 230	% > 4,600	% > 46,000
Menai Strait - East										
Bangor (M) - B055D	SH57587302	52	18/02/2010	25/01/2015	259.38	20	2400	23.08	0.00	0.00
Bangor (M) - B055F	SH59407412	52	18/02/2010	25/01/2015	280.96	20	1300	32.69	0.00	0.00
Bangor (M) - B055N	SH59007370	52	18/02/2010	25/01/2015	267.12	20	3500	21.15	0.00	0.00
Bangor (M) Ogwen - B055I	SH60757397	51	18/02/2010	25/01/2015	237.94	20	2200	23.53	0.00	0.00
Beaumaris										
East (M. sp) - B055W	SH61157592	88	10/02/2015	07/02/2023	212.94	18	1700	19.32	0.00	0.00
Cegin Channel (M. sp) - B055T	SH58687331	89	10/02/2015	07/02/2023	219.19	18	2200	20.22	0.00	0.00
Craig-y-Don (M. sp) - B055R	SH56787309	86	10/02/2015	07/02/2023	194.15	18	3300	18.60	0.00	0.00
Gallows Point (M. sp) - B055U	SH59947498	88	10/02/2015	07/02/2023	206.67	18	2300	22.73	0.00	0.00

Representative Monitoring Point	NGR	No. Samples Collected	First Sample	Last Sample	Mean	Min Value	Max Value	% > 230	% > 4,600	% > 46,000
Gannet Seafoods Lay (M) - B055A	SH59007460	53	18/02/2010	25/01/2015	272.04	20	2200	33.96	0.00	0.00
Gazelle (Gannet New Site) (M) - B055M	SH58207410	52	18/02/2010	25/01/2015	309.04	20	1700	32.69	0.00	0.00
Lavan Sands (C) - B055J	SH62847341	54	25/01/2010	16/02/2015	551.76	20	3500	53.70	0.00	0.00
Lavan Sands (C) - B055L	SH65177444	50	25/01/2010	20/10/2014	668.00	20	5400	48.00	6.00	0.00
Lavan Sands East (C. ed) - B055X	SH66247470	78	04/11/2014	06/02/2023	332.23	18	4900	34.62	1.28	0.00
Lavan Sands West (C. ed) - B055Y	SH62337346	72	05/05/2015	06/02/2023	464.65	18	7900	30.56	2.78	0.00
Ogwen Channel (M. sp) - B055V	SH60957320	88	10/03/2015	07/02/2023	345.25	18	7900	26.14	1.14	0.00
The Horseshoe off Beaumaris (M) - B055O	SH60997561	52	18/02/2010	25/01/2015	326.54	20	2800	34.62	0.00	0.00
West of Bangor Pier (M. sp) - B055S	SH58337328	90	10/02/2015	07/02/2023	273.01	18	3300	26.67	0.00	0.00

Representative Monitoring Point	NGR	No. Samples Collected	First Sample	Last Sample	Mean	Min Value	Max Value	% > 230	% > 4,600	% > 46,000
Wilsons Lays (M) - B055B	SH59707490	53	18/02/2010	25/01/2015	169.58	18	790	16.98	0.00	0.00
Menai Strait - West										
Area 11 - Salt Water Aquaculture (C.g) - B042I	SH49736572	48	05/01/2010	26/01/2015	736.21	18	9200	60.42	2.08	0.00
Area 11 (C. gi) - B042R	SH49696565	68	24/02/2015	31/10/2022	235.10	18	1100	32.35	0.00	0.00
Area 11 East (M. sp) - B042O	SH49916579	88	09/02/2015	07/02/2023	368.43	18	2300	38.64	0.00	0.00
Barras 1 (M) - B042A	SH47906510	72	26/01/2010	26/10/2015	663.31	20	16000	41.67	2.78	0.00
Barras Boat House (M. sp) - B042L	SH48716570	80	07/01/2016	06/02/2023	457.50	18	3100	51.25	0.00	0.00
Fort Belan (Blue Water Shellfish) - B042K	SH44436084	55	07/01/2010	20/01/2015	721.24	20	9200	50.91	1.82	0.00
Fort Belan (M. sp) - B042P	SH44516084	34	16/02/2015	26/02/2019	168.53	20	490	23.53	0.00	0.00
Llanfairisgaer- (M) - B042F	SH49906587	54	09/02/2010	26/01/2015	397.93	18	2400	37.04	0.00	0.00

Representative Monitoring Point	NGR	No. Samples Collected	First Sample	Last Sample	Mean	Min Value	Max Value	% > 230	% > 4,600	% > 46,000
Plas y Borth (M) - B042J	SH46336347	12	26/01/2010	13/04/2011	1503.33	20	5400	66.67	8.33	0.00
Traeth Melynog (C.ed) - B042C	SH44006250	146	10/02/2010	16/02/2023	1054.36	18	18000	50.00	4.79	0.00

6.1.1 Menai Strait – East

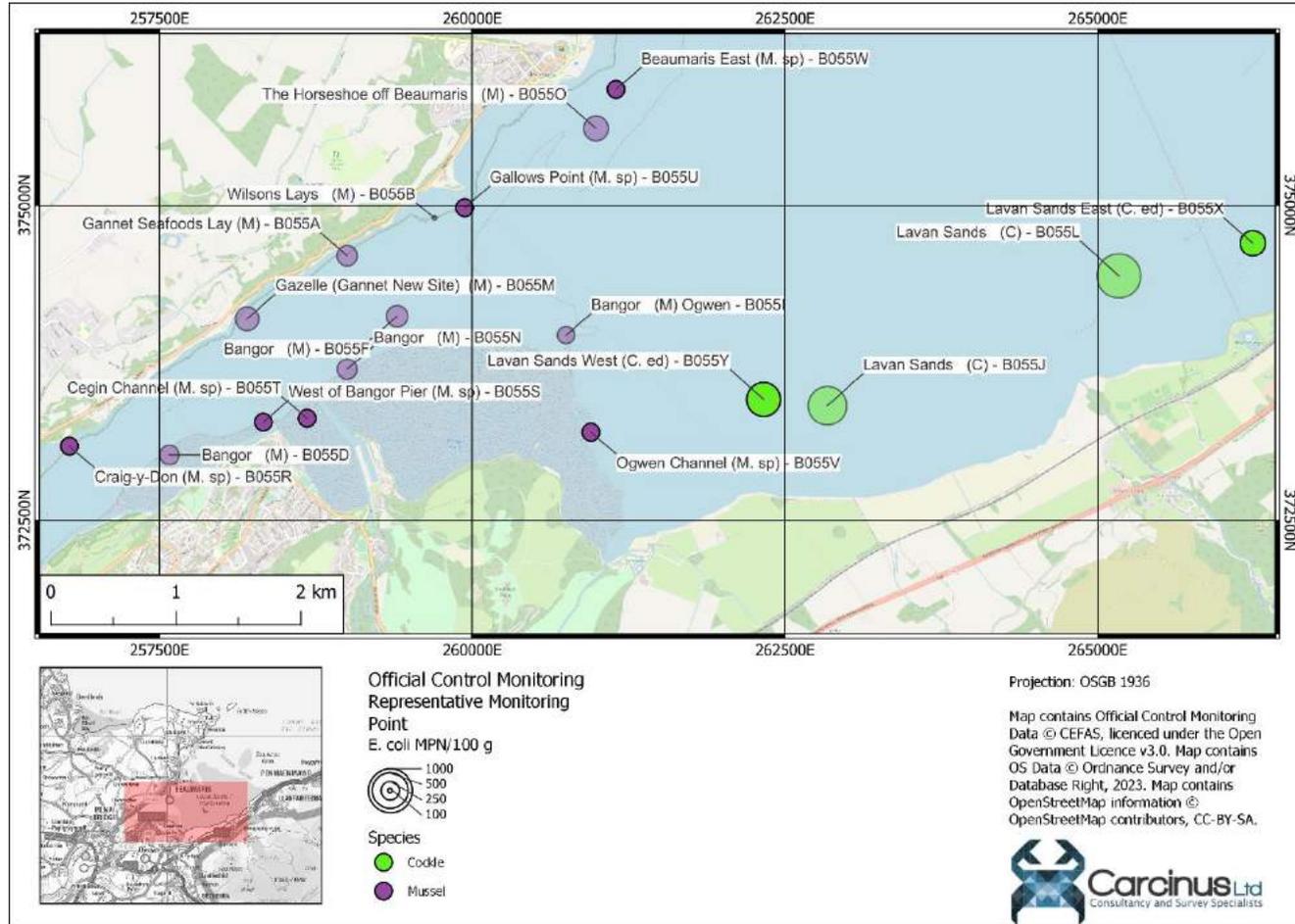


Figure 6.1 Mean *E. coli* results from Official Control Monitoring at bivalve RMPs in the Menai Strait – East BTPA. RMPs no longer active are shown with transparency in symbology.

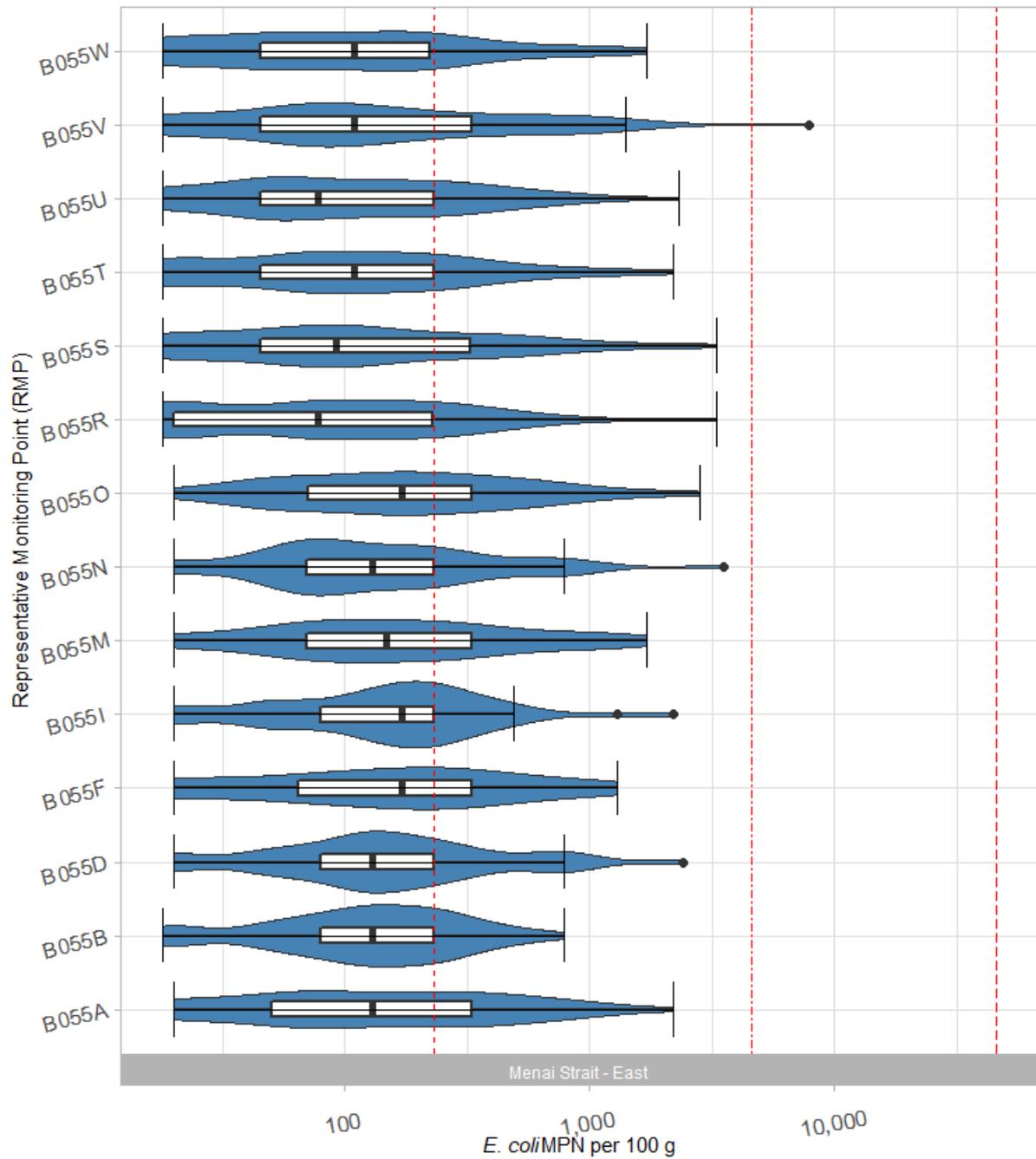
A total of 18 RMPs have been sampled within the Menai Strait – East BMPA since 2010 (Figure 6.1 and Table 6.1). Monitoring at 10 of these took place between 2010 and 2015, stopping following the recommendations contained within the 2013 Sanitary Survey of the Menai Strait – East. All 8 of the RMPs recommended in the 2013 Sanitary Survey are currently sampled.

Of the RMPs that are currently sampled, only three have ever returned a result above 4,600 MPN/100 g. These are the Lavan Sands East and West (B055X & B055Y) cockle RMPs, as well as the Ogwen Channel (B055V) mussel RMP. At Ogwen Channel (B055V) this result was received in November 2019. No results above 4,600 MPN/100 g have been returned at Lavan Sands West (B055X) since 2017 and at Lavan Sands East (B055Y) since 2021. No RMPs have ever returned a result above 46,000 MPN/100 g. Comparison of results between current RMPs and those previously monitored suggests that shellfish flesh hygiene has remained relatively stable. When considered spatially, there does not appear to be any distinct geographical pattern in the monitoring data. The RMPs in the outer strait have returned slightly higher monitoring results, but this is more likely to be due to differences in the rates of *E. coli* uptake between cockles and mussels. A 2014 report by Cefas into the use of indicator species in UK BMPAs (Cefas, 2014) found that cockles generally accumulate *E. coli* to a similar or higher extent than mussels, so this is more likely to explain the observed pattern. With no general geographic trend, greater attention should be paid to the presence of any point sources of contamination in CZs when defining any updated sampling plan.

Figure 6.2 and Figure 6.3 present box and violin plots of *E. coli* monitoring at bivalve RMPs within the Menai Strait – East BMPA. One-way analyses of variance (ANOVA) tests were performed on the data to investigate the statistical significance of any differences between the monitoring results from the two RMPs. Significance was taken at the 0.05 level. All statistical analysis described in Section 6 was undertaken in R (R Core Team, 2021).

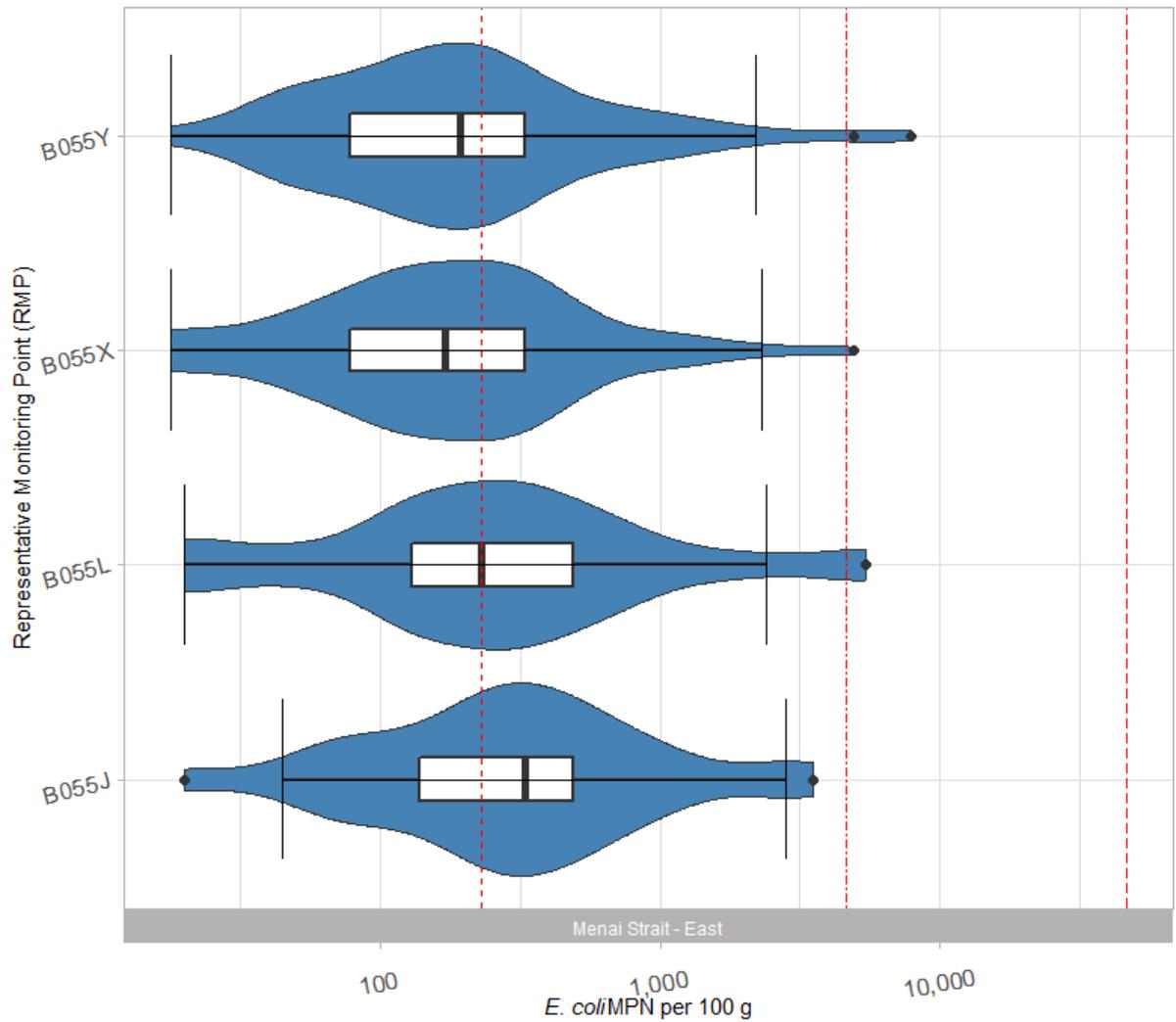
The highest median result at mussel RMPs in the Menai Strait East (Figure 6.2) was found at The Horseshoe off Beaumaris (B055O) (which is no longer monitored), and the lowest at Craig-y-Don B055R and Gallows Point B055U. All the median results are well below the threshold of 230 MPN/100 g. No significant differences were found in the data ($p > 0.05$). The distribution of monitoring results around this median is consistent across all RMPs.

The highest median result at cockle RMPs in the Menai Strait East (Figure 6.3) was found at Lavan Sands B055J (which is no longer monitored), and the lowest at Lavan Sands East B055X. Three of the four RMPs have a median result below the 230 MPN/100 g threshold. No significant differences were found in the data ($p > 0.05$). The distribution of monitoring results around this median is consistent across all RMPs.



Official Control Monitoring results at Mussel RMPs the BMPAs of the Menai Strait - East
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Figure 6.2 Box and violin plots of *E. coli* concentrations at mussel RMPs sampled in the Menai Strait – East BMA since 2010. Central line indicates median value, box indicates lower-upper quartile range and whisker indicates minimum/maximum values excluding outliers (points $>1.5 \times$ the interquartile range). Boxplots are overlaid on the distribution of the monitoring data. Dashed lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.



Official Control Monitoring results at Cockle RMPs the BMPAs of the Menai Strait - East
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Figure 6.3 Box and violin plots of E. coli concentrations at cockle RMPs sampled in the Menai Strait – East BMPA since 2010. Central line indicates median value, box indicates lower-upper quartile range and whisker indicates minimum/maximum values excluding outliers (points >1.5 x the interquartile range). Boxplots are overlaid on the distribution of the monitoring data. Dashed lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

6.1.2 Menai Strait – West

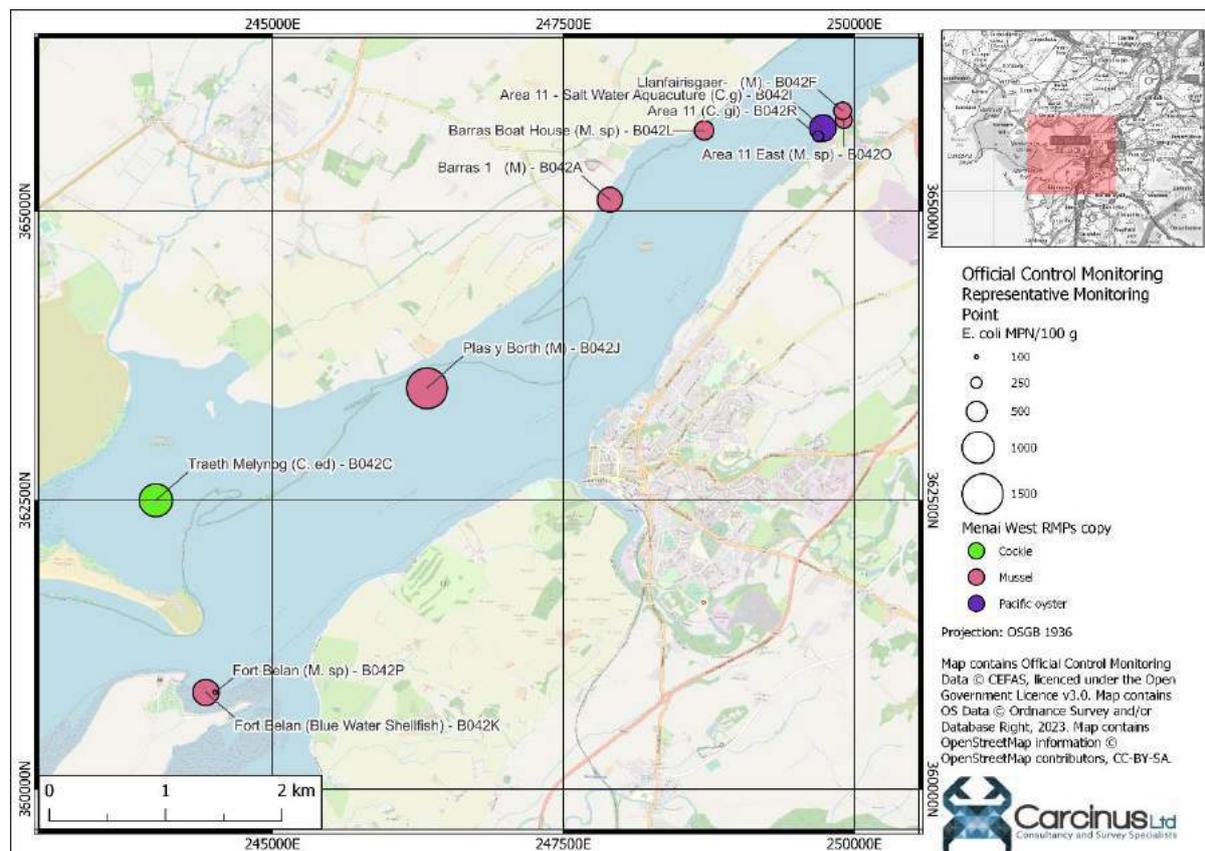


Figure 6.4 Mean E. coli monitoring results from Official Control monitoring at bivalve RMPs in the Menai Strait - West BMPA. RMPs no longer active are shown with transparency in symbology

A total of 10 RMPs have been sampled within the Menai Strait – West BMPA since 2010 (Table 6.1 and Figure 6.4). Of the RMPs sampled since 2010, only one (Traeth Melynog B042C) is currently active. Monitoring at the Plas y Borth (B042J) RMP stopped in April 2011, and monitoring at the other RMPs stopped following the recommendations of the 2013 Sanitary Survey of the Menai Strait – West. Monitoring at the four RMPs recommended in the 2013 Survey began in 2015 or 2016, and two of these (Fort Belan B042P and Area 11 B042R) are not currently sampled as the CZs they were used to represent are not currently classified. An application to reclassify the Fort Belan CZ is however considered in this review. In total, three RMPs (Barras Boat House – B042L, Area 11 East – B042O and Traeth Melynog – B042C) are currently sampled in the Menai Strait – West BMPA.

Of the RMPs currently sampled, only the Traeth Melynog (B042C) RMP has ever returned a result above 4,600 MPN/100 g and 50% of the results from this RMP have exceeded 230 MPN/100 g, but no result has ever exceeded 46,000 MPN/100 g. The most recent result above 4,600 MPN/100 g was recorded in October 2021. Comparison of results between current RMPs and those previously monitored suggests that shellfish flesh hygiene in this BMPA has improved, as the proportion of results above 230 MPN/100 g recorded at all RMPs has fallen. When considered spatially, there does not appear to be any distinct

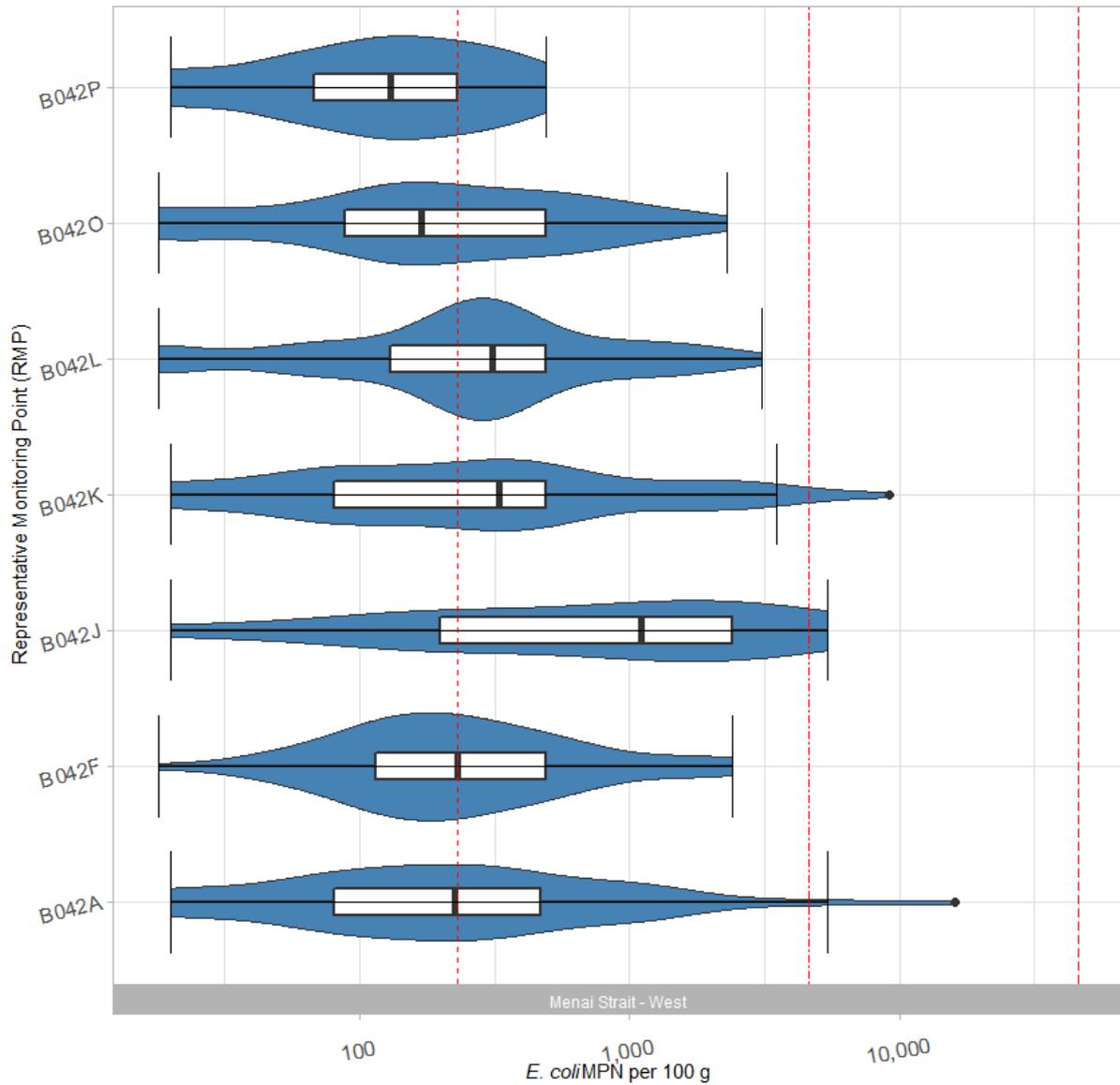
geographical pattern in the monitoring data. The RMPs in the outer strait have returned slightly higher monitoring results, but this is more likely to be due to differences in the rates of *E. coli* uptake between cockles and mussels. A 2014 report by Cefas into the use of indicator species in UK BMPAs (Cefas, 2014) found that cockles generally accumulate *E. coli* to a similar or higher extent than mussels, so this is more likely to be explaining the observed pattern. With no general geographic trend, greater attention should be paid to the presence of any point sources of contamination in CZs when defining any updated sampling plan.

Figure 6.5 - Figure 6.7 present box and violin plots of *E. coli* monitoring at RMPs in the Menai Strait – West BMPA since 2010. One-way analyses of variance (ANOVA) tests were performed on the data to investigate the statistical significance of any differences between the monitoring results from the two RMPs. Significance was taken at the 0.05 level. All statistical analysis described in Section 6 was undertaken in R (R Core Team, 2021).

The highest median result at mussel RMPs in the Menai Strait – West was recorded at the Plas y Borth (M) - B042J RMP (Figure 6.5) (though no samples have been collected at this RMP since 2011), and the lowest at Fort Belan B042P. The *E. coli* levels recorded at the Plas y Borth (M) - B042J RMP were significantly higher than those recorded at Area 11 East – B042O ($p = 0.017$), Barras Boat House – B042L ($p = 0.041$) and Fort Belan – B042J ($p = 0.0073$). The Plas y Borth (M) - B042J RMP is located on the northern side of the strait, there are no obvious point sources of contamination affecting this area to explain the significantly higher results at this RMP. This RMP has not been sampled since 2011, and only 12 samples were ever recorded. This reduces the inference that can be drawn from the statistical tests as there is only limited temporal overlap, and so the significantly higher results at this RMP do not need to be taken into account in the development of any updated sampling plan.

No statistical comparison of the cockle RMP data (Figure 6.6) is possible as there is only one RMP for this species. It is not appropriate to compare between different species due to the differences in the rates of *E. coli* uptake.

The Area 11 East – Salt Water Aquaculture B042I RMP has returned significantly higher monitoring results than the Area 11 B042R RMP ($p = 0.0077$) (Figure 6.7). These RMPs are located within 100 m of one another, but there is no temporal overlap between these two RMPs, but the fact that the more-recently sampled point has returned significantly lower results suggests that contamination levels in the vicinity of the RMPs is reducing.



Official Control Monitoring results at Mussel RMPs the BMPAs of the Menai Strait - West
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Figure 6.5 Box and violin plots of E. coli concentrations at mussel RMPs sampled in the Menai Strait – West BMPA since 2010. Central line indicates median value, box indicates lower-upper quartile range and whisker indicates minimum/maximum values excluding outliers (points >1.5 x the interquartile range). Boxplots are overlaid on the distribution of the monitoring data. Dashed lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

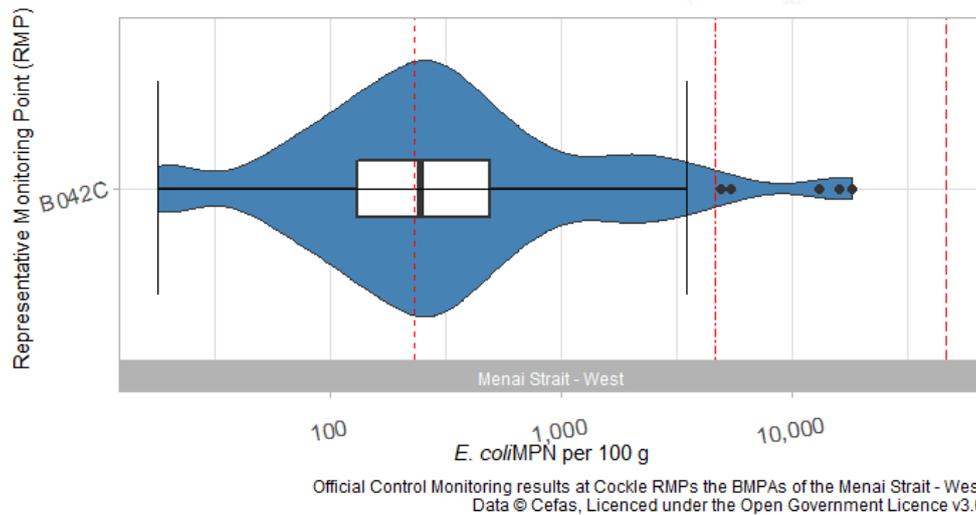


Figure 6.6 Box and violin plots of *E. coli* concentrations at cockle RMPs sampled in the Menai Strait – West BMPA since 2010. Central line indicates median value, box indicates lower-upper quartile range and whisker indicates minimum/maximum values excluding outliers (points >1.5 x the interquartile range). Boxplots are overlaid on the distribution of the monitoring data. Dashed lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

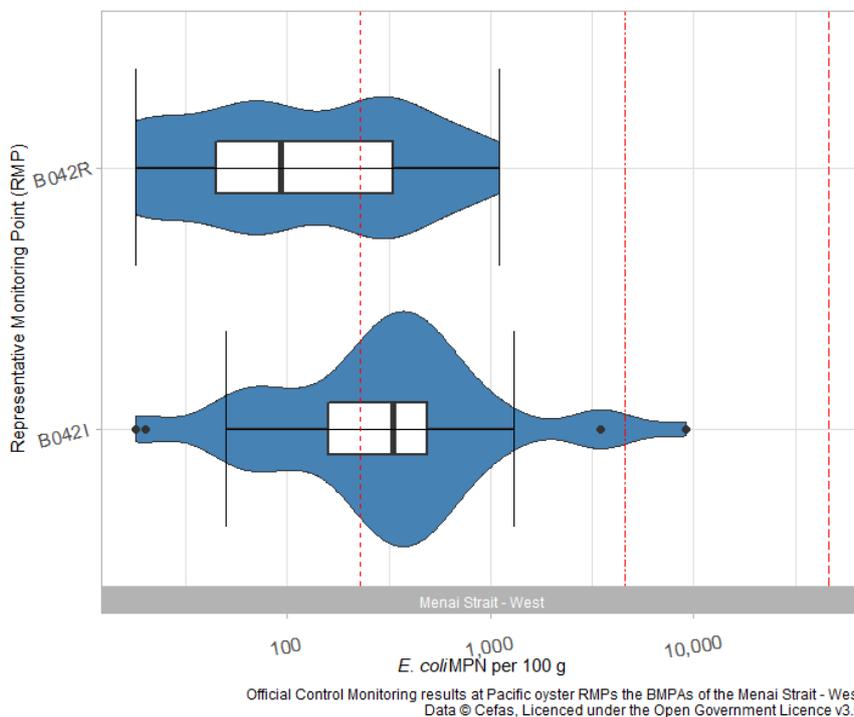


Figure 6.7 Box and violin plots of *E. coli* concentrations at Pacific oyster RMPs sampled in the Menai Strait – West BMPA since 2010. Central line indicates median value, box indicates lower-upper quartile range and whisker indicates minimum/maximum values excluding outliers (points >1.5 x the interquartile range). Boxplots are overlaid on the distribution of the monitoring data. Dashed lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

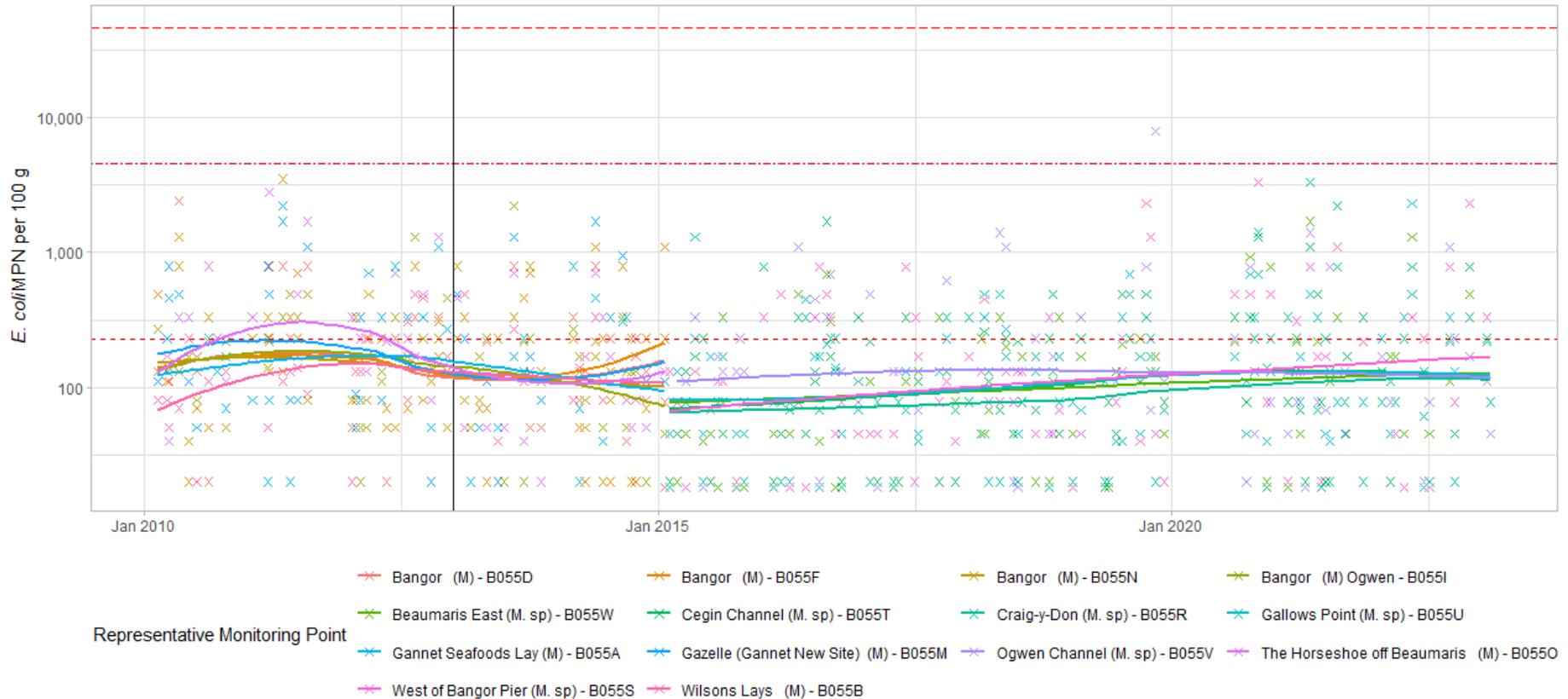
6.2 Overall temporal pattern in results

6.2.1 Menai Strait – East

The overall temporal pattern in shellfish flesh monitoring results at mussel and cockle RMPs in the Menai Strait – East are shown in Figure 6.8 and Figure 6.9 respectively.

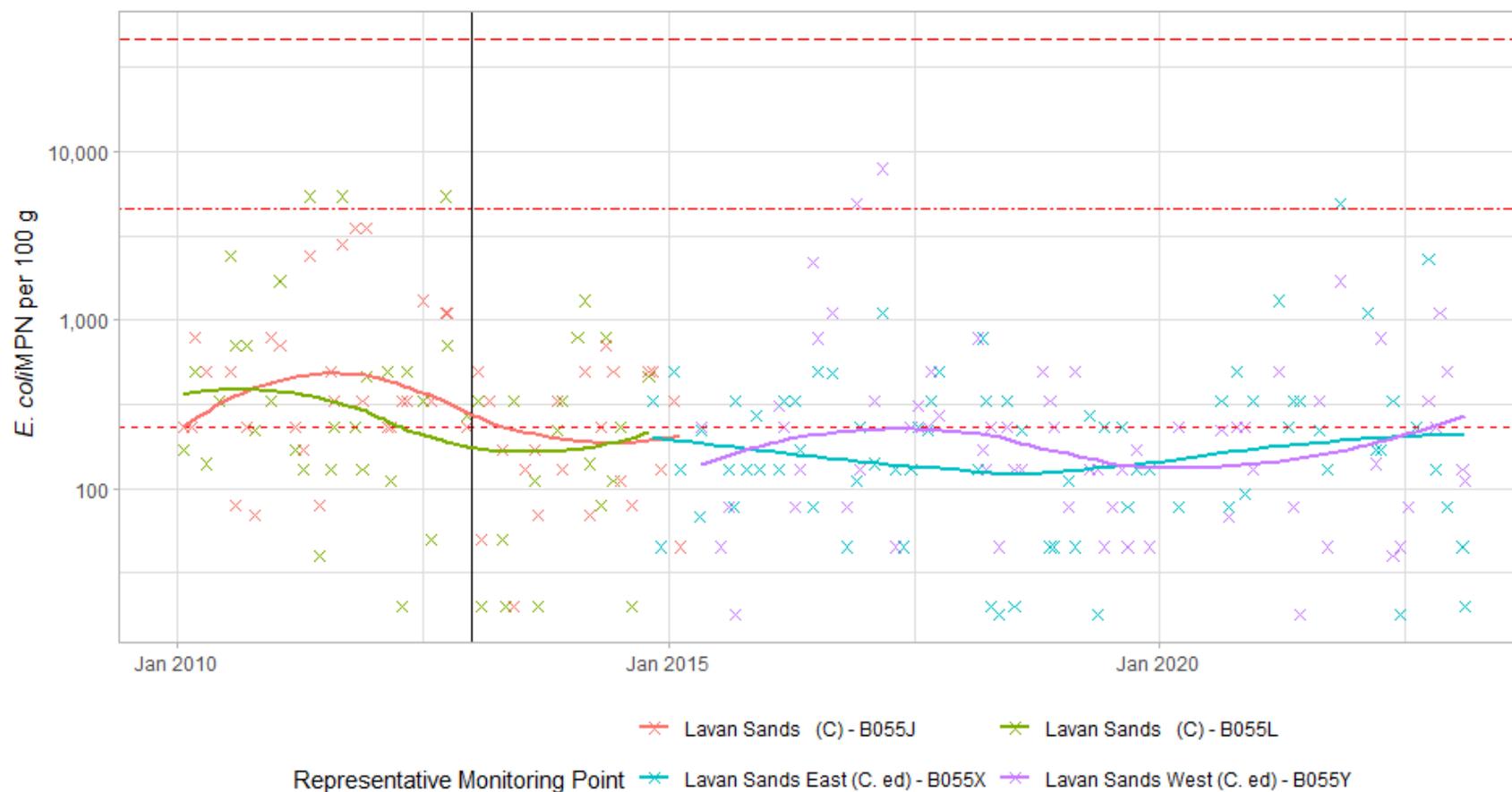
The mussel data clearly show the change in RMPs as recommended in the 2013 Sanitary Survey (Figure 6.8), with monitoring at 10 RMPs stopping in late 2014 and early 2015. Monitoring results at the 8 RMPs sampled since then have been broadly consistent, with the Ogwen Channel B055V RMP generally returning the highest *E. coli* concentrations based on the loess model. All the loess models fall well below the 230 MPN/100 g threshold, but the trend lines indicate a very gradual increase in *E. coli* monitoring results.

Monitoring results at cockle RMPs sampled since 2015 have been more variable than the mussel RMPs (Figure 6.9), with the loess trend lines for both RMPs falling close to the 230 MPN/100 g threshold. Neither RMP has returned consistently higher results than the other.



Official Control Monitoring results at Mussel RMPs in the Menai Strait East BMPA
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Figure 6.8 Timeseries of *E. coli* levels at mussel RMPs sampled in the Menai Strait – East BMPA since 2010. Scatter plots are overlaid with a loess model fitted to the data. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.



Official Control Monitoring results at Cockle RMPs in the Menai Strait East BMTA
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Figure 6.9 Timeseries of *E. coli* levels at cockle RMPs sampled in the Menai Strait – East BMTA since 2010. Scatter plots are overlaid with a loess model fitted to the data. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

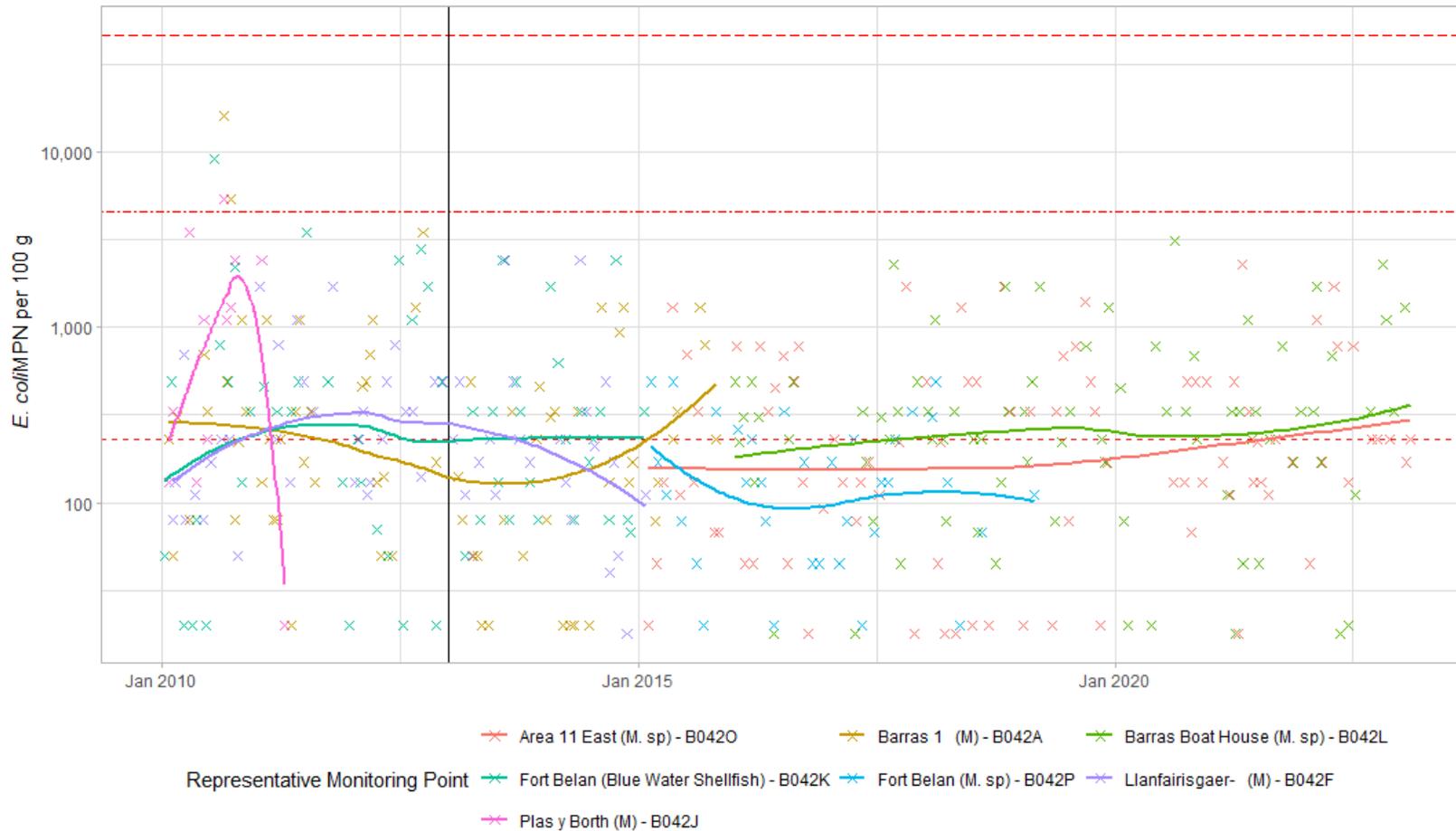
6.2.2 Menai Strait – West

The overall temporal pattern in shellfish flesh monitoring results at mussel, cockle and Pacific oyster RMPs in the Menai Strait – West are shown in Figure 6.10, Figure 6.11 and Figure 6.12 respectively.

The loess models fitted to monitoring results at mussel RMPs in the Menai Strait – West BMPA have generally fallen around the 230 MPN/100 g threshold (Figure 6.11). Prior to sampling stopping in 2015, shellfish hygiene was declining at the Barras 1 B042A RMP and improving at the Llanfairisgaer B042F RMP. The Fort Belan B042P RMP was sampled between 2015 and 2019, and during this time shellfish hygiene was improving. The trend lines fitted to the two mussel RMPs currently active, Area 11 B042O and Barras Boat House B042L indicate that shellfish hygiene is gradually declining, and that results at Barras Boat House are slightly higher than at Area 11. No result above 4,600 has been recorded at either RMP however, and so there is no significant concern about shellfish hygiene at these RMPs.

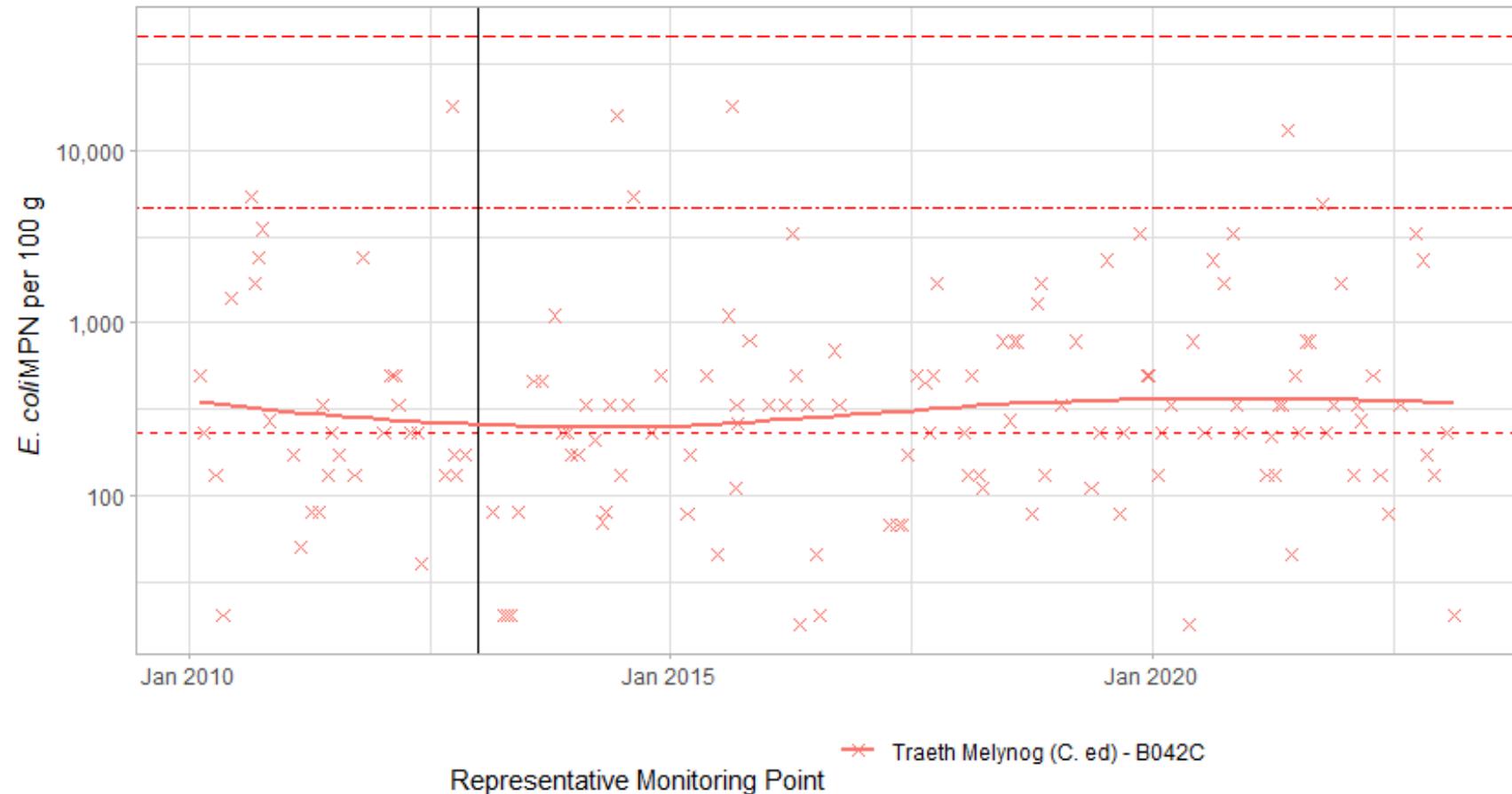
Monitoring results at the Traeth Melynog RMP (Figure 6.11) have been generally consistent since 2010, with the loess model continually falling at or slightly above the 230 MPN/100 g threshold. This suggests that contamination levels in the area have been stable over time.

The monitoring data from Pacific oyster RMPs (Figure 6.12) demonstrate that shellfish hygiene at The Area 11 East – Salt Water Aquaculture B042I RMP was improving between 2010 and 2015, prior to sampling at this RMP stopping. The loess model fitted to the monitoring data from the Area 11 B042R RMP suggests that shellfish hygiene is very gradually declining, but the model fitted to the data still sits below the 230 MPN/100 g threshold, and no result above 4,600 MPN/100 g has ever been recorded. There is no clear cause for the decline in monitoring results at this RMP, no result above 1,000 *E. coli* MPN/100 g has been recorded since 2016. Comparison of results between current RMPs and those previously monitored suggests that shellfish flesh hygiene in this BMPA has improved across the entire BMPA.



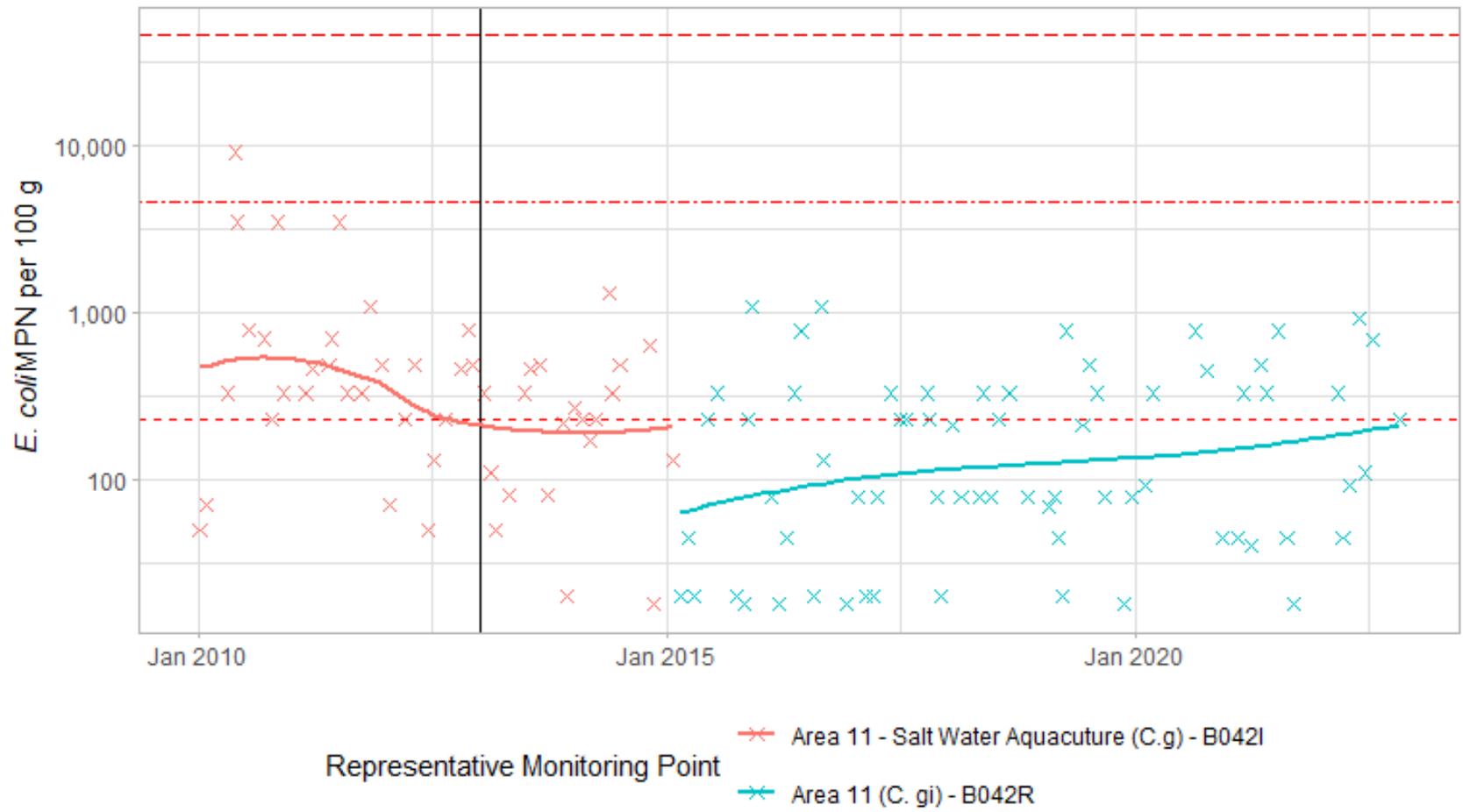
Official Control Monitoring results at Mussel RMPs in the Menai Strait - West BMPA
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Figure 6.10 Timeseries of *E. coli* levels at mussel RMPs sampled in the Menai Strait – West BMPA since 2010. Scatter plots are overlaid with a loess model fitted to the data. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.



Official Control Monitoring results at Cockle RMPs in the Menai Strait - West BMPA
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Figure 6.11 Timeseries of E. coli levels at cockle RMPs sampled in the Menai Strait – West BMPA since 2010. Scatter plots are overlaid with a loess model fitted to the data. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.



Official Control Monitoring results at Pacific oyster RMPs in the Menai Strait - West BMPA
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Figure 6.12 Timeseries of *E. coli* levels at Pacific oyster RMPs sampled in the Menai Strait – West BMPA since 2010. Scatter plots are overlaid with a loess model fitted to the data. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 MPN/100 g respectively.

6.3 Seasonal patterns of results

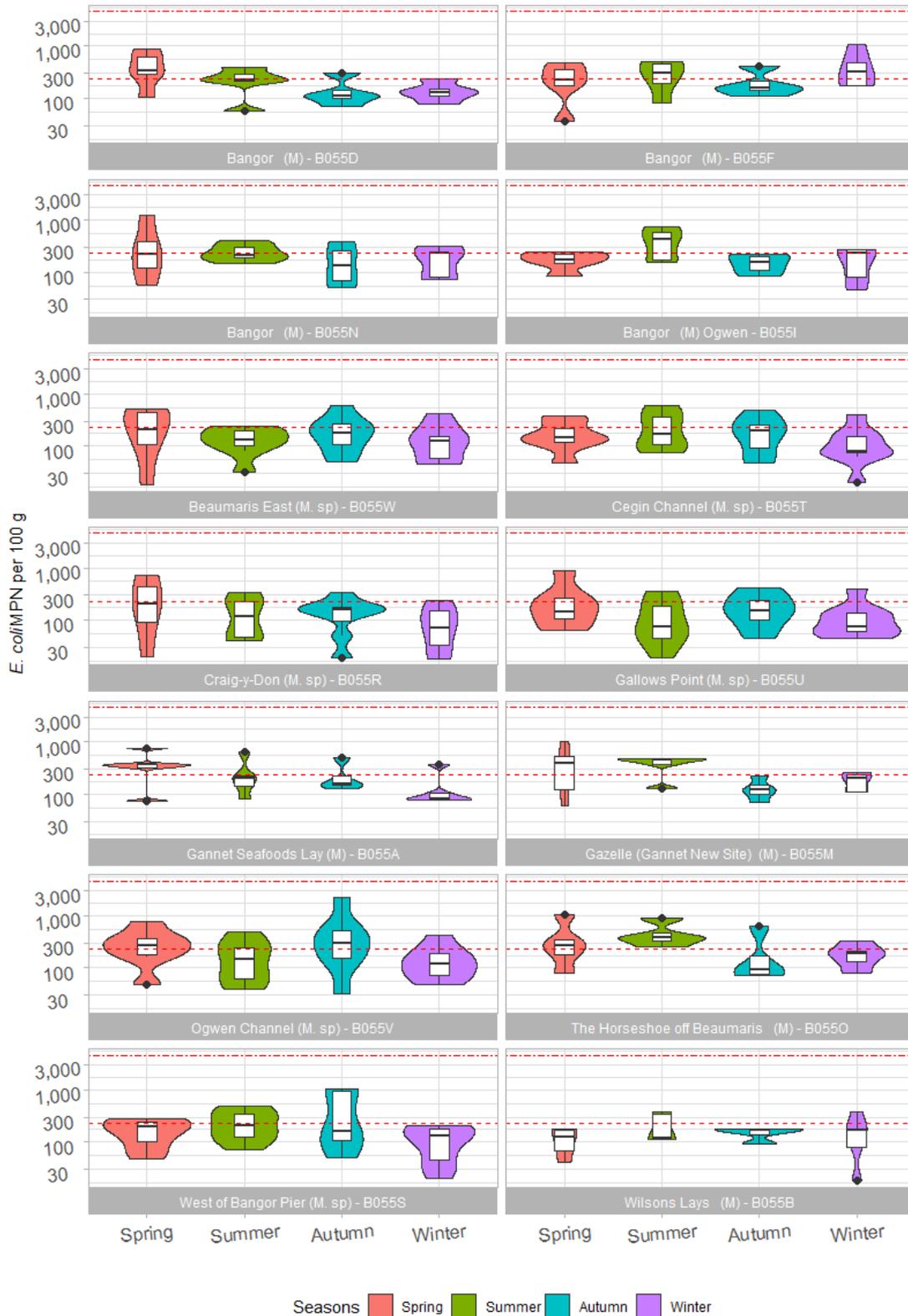
The seasonal patterns of *E. coli* levels at RMPs in the Menai Strait East and West BMPA were investigated and are shown for the Menai Strait – East area in Figure 6.13 - Figure 6.14 and the Menai Strait – West BMPA in Figure 6.15 - Figure 6.17.

The data for each year were averaged into the four seasons, with, spring from March – May, summer from June – August, autumn from September – November and winter comprising data from December – February the following year. Two-way ANOVA testing was used to look for significant differences in the data, using both season and RMP (if there is more than one RMP for a given species) as independent factors (i.e., pooling the data across season and RMP respectively), as well as the interaction between them (i.e., exploring seasonal differences within the results for a given RMP). Significance was taken at the 0.05 level.

6.3.1 Menai Strait – East

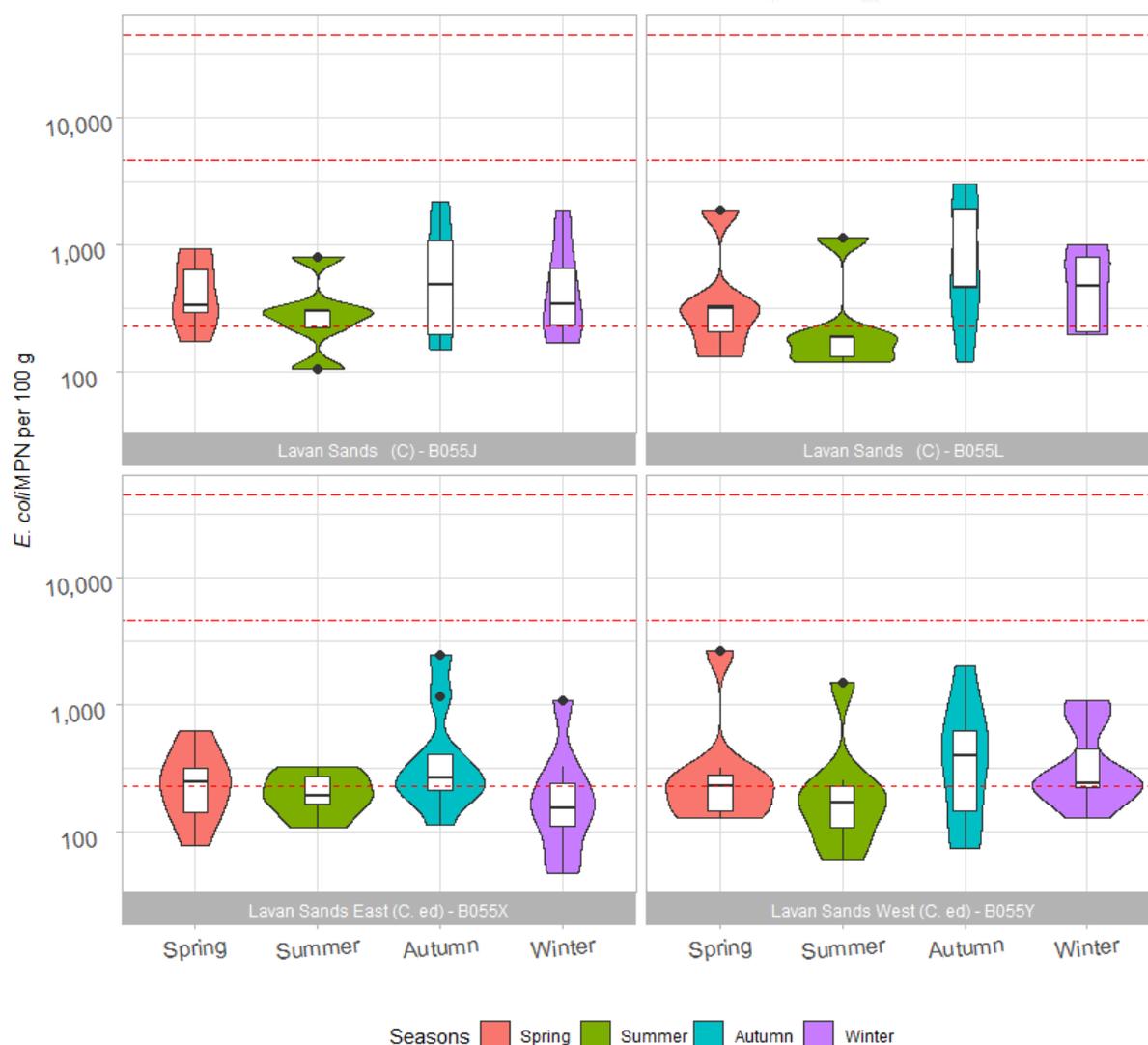
Within the mussel data, monitoring results from spring were the highest, being significantly higher than results collected in winter ($p = 0.001$), but not significantly higher than results from other seasons. Results from summer were also higher than those collected in winter, but not significantly so. No other significant differences between monitoring results collected at different times of year were observed. No significant differences were found within the data for a single RMP (Figure 6.13). Higher results in spring and summer could be driven by a number of factors, including additional loading to the wastewater treatment network due to increased population, or an increased number of recreational boats using the waters of the Menai Strait – East.

Within the cockle data, results from Autumn were significantly higher than those from summer ($p = 0.03$). No significant differences were found within the data for a single RMP (Figure 6.14). Elevated results in autumn months could be due to increased levels of land runoff, as rainfall levels at this time of year increase, potentially washing increased pollution levels into coastal waters.



Official Control Monitoring results at Mussel RMPs in the Menai Strait - East BMPA
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Figure 6.13 Box and violin plots of *E. coli* levels per season at mussel RMPs sampled within the Menai Strait - East BMPA since 2010. Horizontal lines indicate classification thresholds at 230 and 4,600 46,000 *E. coli* MPN/100 g.



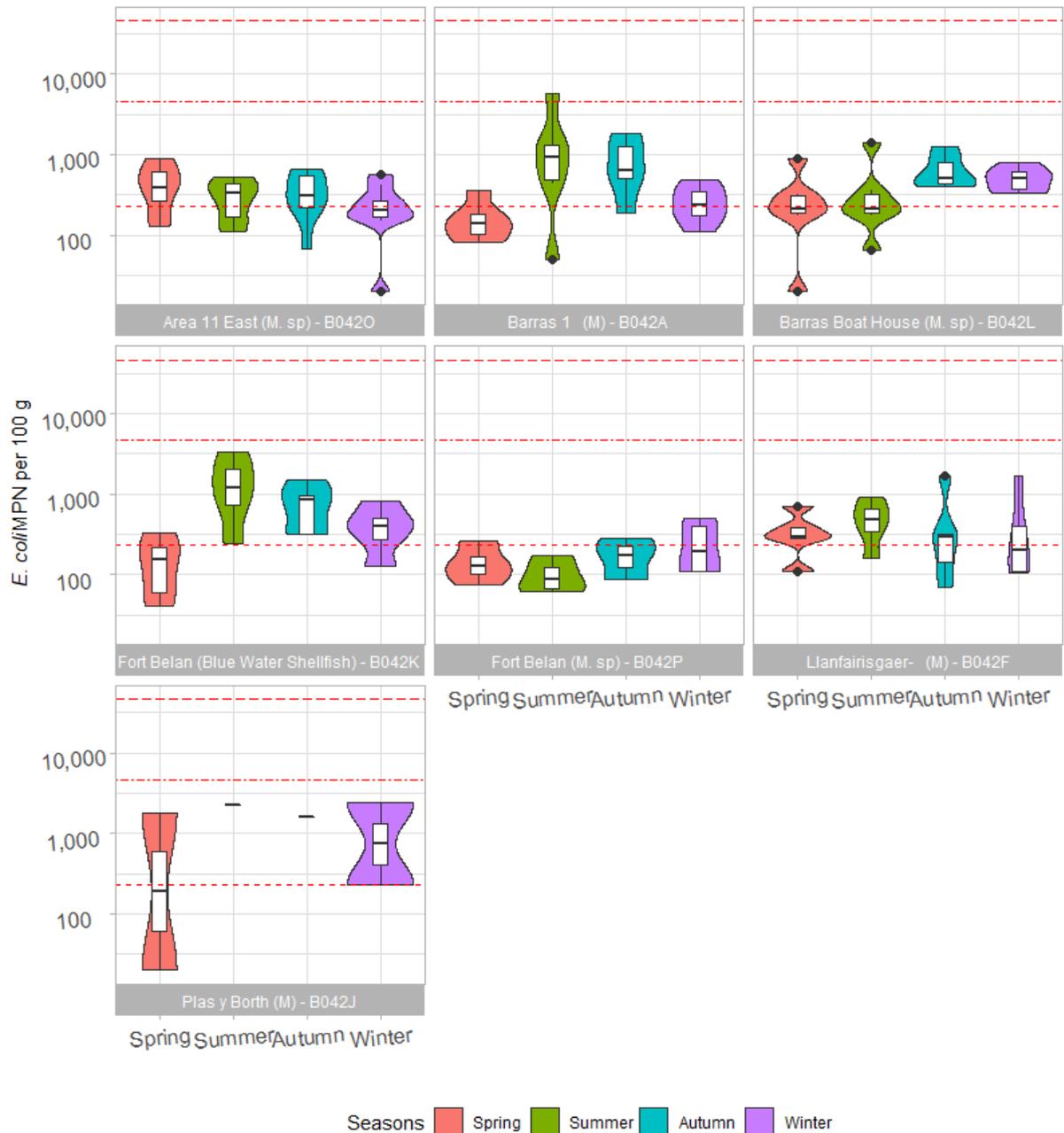
Official Control Monitoring results at Cockle RMPs in the Menai Strait - East BMPA
Data © Cefas, Licenced under the Open Government Licence v3.0

Figure 6.14 Box and violin plots of *E. coli* levels per season at cockle RMPs sampled within the Menai Strait - East BMPA since 2010. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 *E. coli* MPN/100 g.

6.3.2 Menai Strait – West

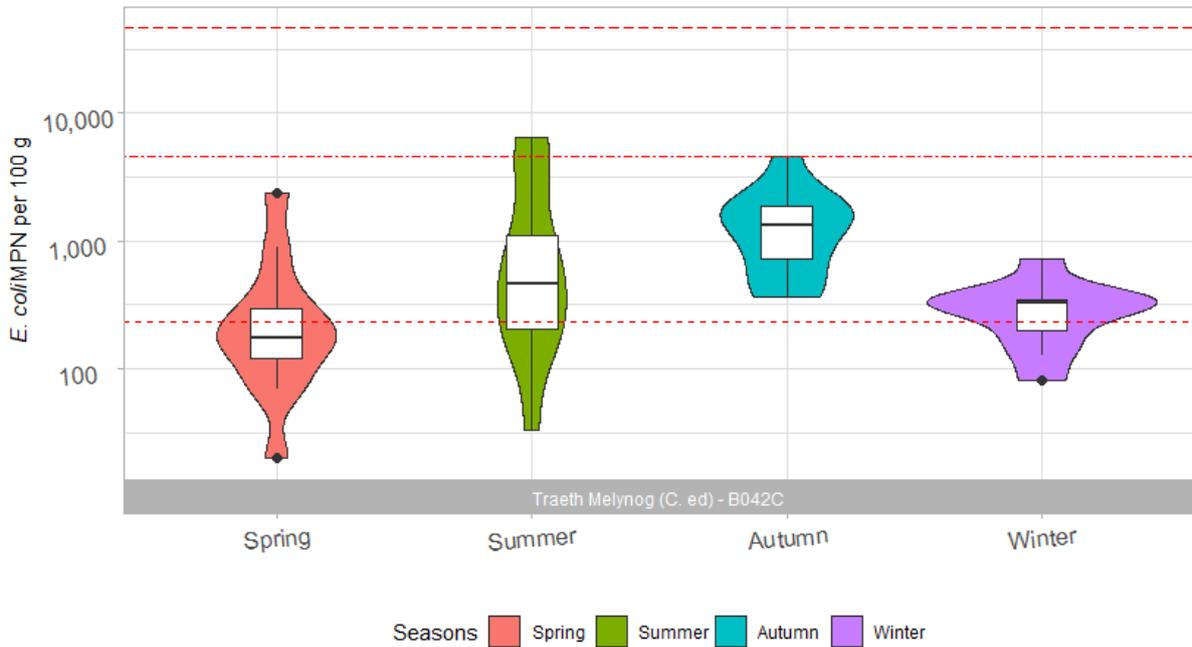
When pooled across all RMPs, there were no significant differences ($p > 0.05$) in the monitoring data. However, when just the mussel data were considered, results collected in summer at mussel RMPs were found to be significantly greater than in spring ($p = 0.0070$). This pattern is driven by data from Barras 1 (B042A), where results collected in summer were significantly higher ($p = 0.028$) than those collected in spring. No other significant differences in the mussel data were found. Data from the cockle RMP Traeth Melynog (B042C) suggests that results collected in Autumn were higher than at other times of year (Figure 6.16), but no significant differences were found ($p > 0.05$). Higher results in summer could be driven by a number of factors, including additional loading to the wastewater

treatment network due to increased population, or an increased number of recreational boats using the waters of the Menai Strait – West.



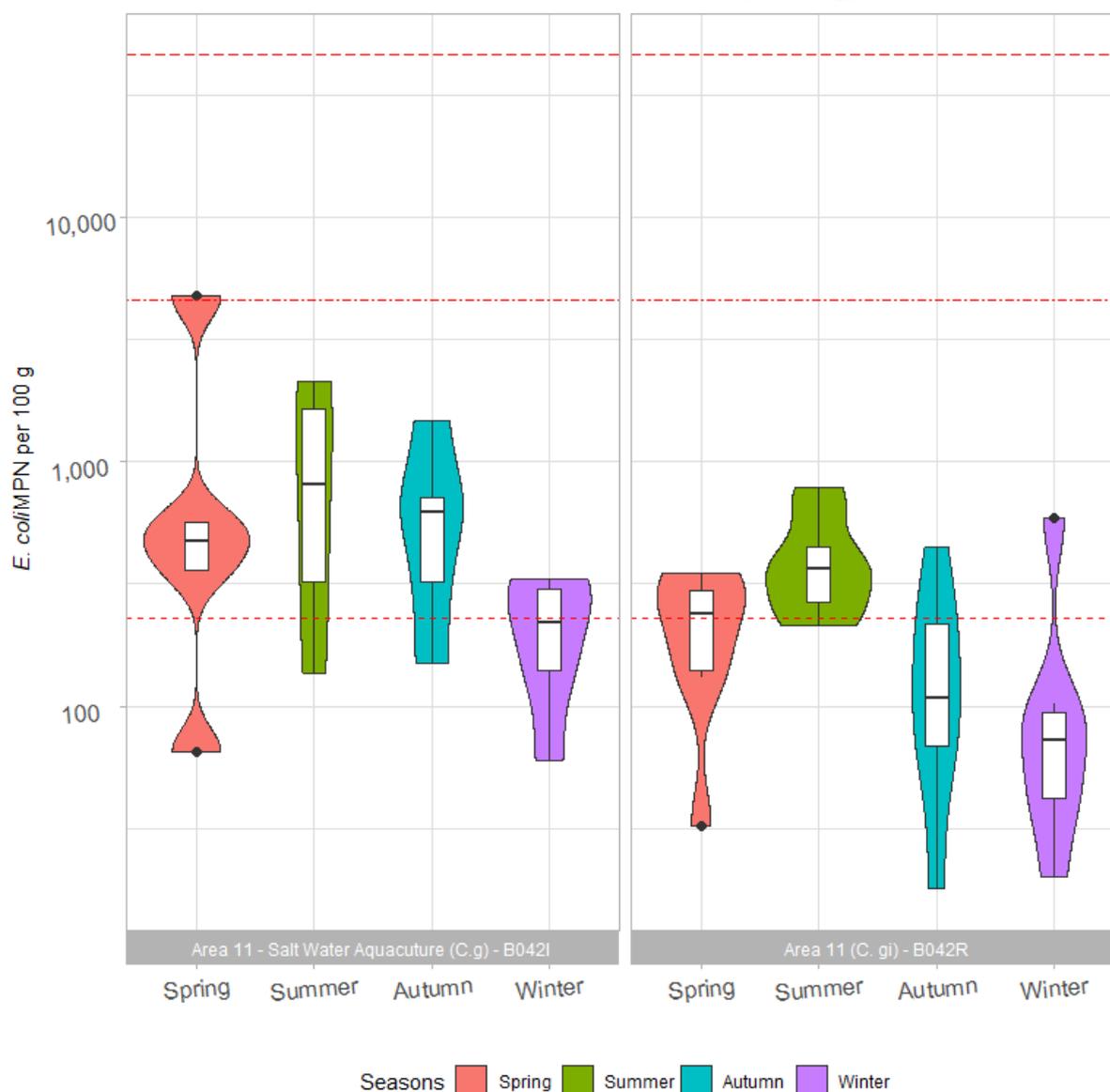
Official Control Monitoring results at Mussel RMPs in the Menai Strait - West BMPA
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Figure 6.15 Box and violin plots of *E. coli* levels per season at mussel RMPs sampled within the Menai Strait - West BMPA since 2010. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 *E. coli* MPN/100 g.



Official Control Monitoring results at Cockle RMPs in the Menai Strait - West BMPA
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Figure 6.16 Box and violin plots of *E. coli* levels per season at cockle RMPs sampled within the Menai Strait - West BMPA since 2010. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 *E. coli* MPN/100 g.



Official Control Monitoring results at Pacific oyster RMPs in the Menai Strait - West BMPA
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Figure 6.17 Box and violin plots of *E. coli* levels per season at Pacific oyster RMPs sampled within the Menai Strait - West BMPA since 2010. Horizontal lines indicate classification thresholds at 230, 4,600 and 46,000 *E. coli* MPN/100 g.

7 Conclusion and overall assessment

The Menai Strait is the tidal channel that separates the Isle of Anglesey from mainland Wales. It contains two separate BMPAs, the Menai Strait – East and the Menai Strait West, both of which were last subject to a sanitary survey in 2013.

The shellfishery within the Menai Strait – East is under the jurisdiction of Gwynedd Council, Ynys Mon Council and Conwy Council for food hygiene purposes. Harvesting of mussels within the Menai Strait – East BMPA is controlled under the new Menai Strait (East) Mussel and Oyster Fishery Order 2022, which came into force in April 2022 and replaced the old

order. The mussel fishery is managed by the Menai Strait Fishery Order Management Organisation (MSFOMA), who have designated an area within the Order Boundaries as a several fishery area, and all harvesting takes place from within it. The current output from the mussel fishery is unknown. The cockle fishery in the Menai Strait East is regulated under Welsh National legislation, which catch limits and other controls. Between September 2021 and February 2022, 170 tonnes of cockles were removed from the Lavan Sands area.

The shellfishery within the Menai Strait – West is under the jurisdiction of Gwynedd Council and Ynys Mon Council for food hygiene purposes. The Menai Strait (West) Oyster and Mussel Fishery Order 2015 sets out the legal nature of the fishery in the Menai Strait West, and specifies four areas for either mussel, oyster, or both, may be cultured. The current output of the mussel and oyster fishery is unknown. Cockles are also harvested in the area, subject to Welsh National Legislation. In 2021, approximately 62 tonnes of cockles were harvested.

The results of the 2021 Census were compared to that of the 2011 Census to give an indication of population changes in the catchment since the 2013 Sanitary Surveys were published. These data suggest that the population of the catchment has increased by approximately 4.5%, but that the main population centres (Caernarfon, Bangor & Menai Bridge) have not changed. Most of the land in the catchment has a very sparse population, of less than 500 persons per km², and so the risk of urban-associated runoff is considered to be low. There is likely to be a seasonal influx of tourists during summer months, but we have received no evidence to suggest that the existing wastewater treatment network is insufficient to handle this increase.

No changes to either the treatment methodology or consented discharge volume at continuous water company discharges discharging to the eastern Menai Strait have occurred since the original sanitary survey was published, and so the risk that these pose remains similar. In the western Menai Strait, the consented discharge volume at Caernarfon has increased to 3352 m³/day from 2840 m³/day, meaning that the faecal loading is likely to have increased also. The availability of spill data from intermittent discharges means that greater appreciation of the potential impacts of these assets can be gained. This spill data suggests that intermittent discharges in both the eastern and western Menai Strait spilled relatively frequently (> 50 times) in 2021 and 2022. The presence of an intermittent discharge near to or within the CZs of this BMPA should be given additional consideration in any updated sampling plan, as the spills from intermittent discharges are generally untreated.

Livestock populations in the Menai Strait catchment fell by 4.25% between 2013 and 2021, although most of this fall was driven by a large decrease in poultry populations in the Braint/Cadnant sub-catchment. Land cover maps show that the land immediately adjacent to the shoreline of the Menai Strait is very often reserved for pasture, meaning that the risk of agricultural runoff, particularly during wet weather periods, is relatively high. The risk is not considered to have changed significantly since the original sanitary survey was

published, however. During initial consultations, Natural Resources Wales stated that they were not aware of any significant pollution events arising from slurry application in the catchments draining to the Menai Strait.

The Menai Strait supports a variety of wildlife populations due to the diversity of intertidal and subtidal habitats present. The group that are most likely to contribute significant levels of contamination to the shellfishery are wading birds, as they forage and defecate directly on intertidal shellfish beds. Count data suggest that the risk of this pollution source is greater in the eastern strait than the western, as average counts are about three times higher in the Lavan Sands area than the Traeth Melynog area. It is hard to reliably account for this source of pollution however as the aggregations of birds will shift from year to year based on the distributions of their prey, but it is likely that the large intertidal cockle CZs will be at greater risk than the smaller mussel CZs.

The main risk of contamination from boats comes from recreational craft of a sufficient size to contain on-board toilets, as commercial vessels are prohibited from making overboard discharges within 3 nm of land. This is unchanged from the situation described in the original sanitary survey. The areas at risk will continue to be the main navigational areas and any clusters of moorings outside of the marinas, and contamination levels are likely to be highest in summer months. Overall, the risk is not considered to have changed significantly since the original sanitary surveys were published.

Official Control monitoring at RMPs in the eastern strait suggests that shellfish hygiene has remained relatively stable since 2010. The highest contamination levels were found in cockle RMPs in the outer strait, but this is more likely due to differences in rates of *E. coli* uptake and clearance rather than a geographically driven pattern. No significant differences between the monitoring data from different RMPs were found, although results collected in winter tended to be lower than at other times of year. Elevated results in autumn are likely due to increased levels of runoff, whereas elevated results in spring and summer are more likely due to increased loading to the sewerage network caused by increased populations.

Official Control monitoring at RMPs in the western strait suggests that shellfish hygiene at mussel and Pacific oyster RMPs has been deteriorating in recent years, but it is likely that this has been caused by an overall increase in background contamination levels rather than any specific point source. Results from summer months tended to be higher than those recorded at other times of year. This is likely due to increased loading to the sewerage network caused by increased populations.

Initial consultations indicated that there are a number of issues with current RMPs within both BMPAs, including safe access and availability of suitable stock for sampling. This desktop assessment has not identified any significant knowledge gaps in terms of sources and timing of contamination that would justify a shoreline survey, unless additional information comes to light during secondary consultation.

Having reviewed and compared the desk-based study with the findings of the original sanitary surveys in 2013, the FSA are also content that a shoreline assessment is not required unless further information following secondary consultation suggests there may be an increase in the level of public health risk.

8 Recommendations

Recommendations for the various classification zones within the Menai Strait – East BMPA are described in Section 8.1 and summarised in Table 8.1. Recommendations for the Menai Strait – West BMPA are described in Section 8.2 and summarised in Table 8.2.

8.1 Menai Strait – East

8.1.1 Mussels

Under the Menai Strait (East) Mussel and Oyster Fishery Order 2022, MSFOMA have designated a several fishery area within the eastern Menai Strait, and we understand that all fishing activity must take place from within this area. As such, a general recommendation of ensuring that all RMPs are placed within this area is given, so that RMPs can be considered representative of both the worst-case contamination and the shellfish being harvested. It is also recommended that the CZs be re-sized if necessary, so that their boundaries align with that of the several fishery area. Figure 8.1 presents the changes to CZ boundaries summarised in the paragraphs below.

Area A

This CZ covers an area of 0.42 km² and is the farthest innermost CZ on the northern side of the strait. It is currently classified based on samples from the Craig-y-Don B055R RMP, which is located at the innermost shoreline corner of the CZ. This position was recommended in the original sanitary survey to capture contamination from large sewage treatment works to the west. Only a small proportion of the current zone boundaries are within the Several Fishery Area. For simplicity it is recommended that the *Area A* zone be removed a new zone, called *Area 1 & A*, be created. This new zone should include all of the current *Area 1* CZ and the part of the old *Area A* zone that falls within the Several Fishery Area. The recommendations for this RMP are given in the next paragraph.

Area 1

As described above, the northern boundary of this CZ should be moved farther toward the northern shore of the strait, to include the section of the *Area A* CZ that falls within the Several Fishery Area. The new zone should be referred to as *Areas 1 & A* and this change has been reflected in the sampling plan provided in Table 8.1. The 2013 Sanitary Survey recommended placing the RMP for this zone to the west of Bangor Pier, to capture contamination from the rivers Cegin and Ogwen, identified to be the main contaminating influences on this zone. As the intermittent discharges within the zone are not very active (spilling for less than 3 hrs in 2021), it is considered that the current position continues to be representative of the main contaminant sources affecting this zone. The current CZ

boundaries closely match those of the Several Fishery Area, and the RMP is placed within them, so it should be retained.

Areas 3 & 4

This CZ covers an area of approximately 1 km² and sits between the *Area A* and *Area 6* CZs on the northern side of the strait. The current boundary of the CZ extends to the shoreline, but it is recommended that it be moved farther out into the main channel so that it matches that of the Several Fishery Area. The current RMP position is within the Fishery Area so does not need to be moved on this basis. The 2013 Sanitary Survey did not identify any major sources of contamination direct to the zone, and this continues to be the case. There continue to be some active intermittent discharges to the east of this CZ, off Beaumaris, as well as the Llanfaes WWTW (ID 11). It is recommended that the current RMP, at Gallows Point at the eastern end of the zone, be retained as it continues to be representative of the main sources of contamination to this zone.

Areas 2 & B

This CZ covers an area of 2.5 km² and sits between the *Area 1* and *Areas 5 & B* CZs on the southern side of the strait. The current southern boundary aligns with the Fishery Area west of Port Penrhyn, but not east of it. It is recommended that the boundary be changed so that it aligns the Fishery Area. The current RMP position is within the Fishery Area so does not need to be moved on this basis. The 2013 sanitary survey identified that the main source of contamination to this zone was the river Cegin, and recommended placing an RMP as close to the Cegin drainage channel as possible. The RMP should be moved to a position as close to the mouth of the Cegin as stock allows, and we seek confirmation from the LEA as to what this position is. As there are few direct sources of contamination to this zone, and the zone is large, the sampling tolerance is increased to 100 m to allow for stock shifts. A sampling tolerance of 100 m is generally considered to be the maximum tolerance that allows temporal consideration of the sampling results and should only be permitted where there are concerns over reliable stock availability in the identified location. The sample should always be taken as close to the mouth of the Cegin as stock allows.

Area 6

This CZ is the outermost CZ on the northern side of the strait and covers an area of 0.86 km². The northern boundary the CZ should be moved farther out into the strait to align with the Fishery Area boundary. The 2013 Sanitary Survey identified that there were no major contaminating influences within the boundaries of the CZ itself, and that contamination occurred on a gradient with maximum concentrations at the eastern end of the zone. No changes to the contamination sources affecting this zone have been identified, and so it is recommended that the RMP be moved to the north-eastern corner of the new boundaries, around NGR: SH 61067 75861.

Area 5 & B

This CZ is the outermost CZ on the southern side of the strait, covering an area of 2.1 km². The eastern and southern boundaries of the CZ should be brought slightly westwards and

northwards respectively so as to match the boundaries of the Fishery Area. The current RMP position is within the Fishery Area so does not need to be moved on this basis. The 2013 Sanitary Survey identified that the river Ogwen was likely to be the main source of contamination to the zone and recommended placing an RMP as close to the Ogwen drainage channel as possible. During initial consultation, Gwynedd Council identified that stock levels in the current RMP area are low. The RMP should be moved to a position as close to the mouth of the Ogwen as stock allows, and we seek confirmation from the LEA as to what this position is. As there are few direct sources of contamination to this zone, and the zone is large, the sampling tolerance is increased to 100 m to allow for stock shifts.

8.1.2 Cockles

Lavan Sands East

This zone represents the eastern half of the Lavan Sands cockle bed and covers an area of 6.90 km². The 2013 sanitary survey identified that the Llainfairfechan STW (ID 14) was likely to be the most significant source of contamination affecting the zone and recommended placing an RMP adjacent to the drainage channel carrying this contamination over the zone. This discharge continues to be the main source of contamination affecting the bed and so the RMP should be retained.

Lavan Sands West

This zone represents the western half of the Lavan Sands cockle bed and covers an area of 8.2 km². The 2013 Sanitary Survey did not identify any point sources of contamination affecting the zone but did identify that diffuse contamination from the river Ogwen was likely to be dispersed over a relatively wide area due to the tidal circulation patterns in the area. It is recommended that this RMP be retained as its position continues to be representative of the contamination affecting this zone.

8.2 Menai Strait – West

8.2.1 Mussels

Barras

This zone is situated on the northern side of the strait and covers an area of 1.78 km² from Tal-y-Foel house to Barras. Within the CZ are Plot B and Plot C of the designated areas specified in The Menai Strait (West) Oyster and Mussel Fishery Order 2015. In the 2013 Survey, this zone is referred to as Areas 1 – 3, but consultation with the LEA indicated that the preferred name is Barras. The 2013 Sanitary Survey recommended that the RMP be placed at the eastern end of the CZ in order to capture contamination from the Brynsiencyn STW. No change to the main contamination sources affecting this CZ have been identified, and so it is recommended that the RMP be retained.

Area 11 East

This is a small zone, covering an area of only 0.16 km² on the southern side of the strait. Within the CZ is the Plot D as designated under the Menai Strait (West) Oyster and Mussel Fishery Order 2015. In the 2013 Survey, this zone is referred to as Llanfairisgaer, but consultation with the LEA indicated that the preferred name moving forward is Llanfair. The

2013 Sanitary Survey identified that the small stream draining to this zone would likely carry the most significant contamination into this zone and recommended placing the RMP at the eastern end of the zone to capture this. This RMP should be retained moving forward as the main sources of contamination have not changed.

Fort Belan

This CZ is not currently classified, but during initial consultations the LEAs indicated that there was industry desire for reclassification, and so a recommendation is provided. This zone was discussed in the 2013 Sanitary Survey, and that report identified that there were no direct sources of contamination, but that some contamination may originate from the ebb plume of Foryd Bay, reaching the eastern end of the CZ first. It is recommended that the RMP proposed in the 2013 Sanitary Survey, at NGR SH 4451 6084, be reinstated should reclassification be required. This RMP is well placed to capture the main contamination source of this CZ which continues to be the ebb plume of Foryd Bay.

8.2.2 Cockles

Traeth Melynog

This CZ is situated at the mouth of the western Menai Strait and covers an area of 4.98 km². The 2013 Survey identified that the main contaminating influence would be the discharge from Newborough STW (ID 21) which is positioned near the mouth of the Afon Braint. It recommended placing an RMP as close to the Braint drainage channel as possible, and as far upstream as stocks extend, to capture this contamination. The current RMP position is 1200 m south of the recommended position, and it is presumed that no stock exists at the location proposed in the 2013 Survey. The Newborough STW continues to be the main contaminating influence on this zone, and so we seek clarification from the LEA that the current RMP position represents the closest location to the Newborough STW outfall that stock exists. Should stock exist closer, the RMP should be moved to that location.

8.2.3 Pacific Oysters

Barras

This zone is currently classified based on samples from the Barras Boat House RMP B042L RMP. Mussels are considered to be appropriate indicator species for Pacific oysters (Cefas, 2014), and so this practice can continue.

8.3 General Information

8.3.1 Location Reference

Production Area	Menai Strait - East
Cefas Main Site Reference	M055
Ordnance survey 1:25,000	Explorer 263
Admiralty Chart	1464
Production Area	Menai Strait – West
Cefas Main Site Reference	M055
Ordnance survey 1:25,000	Explorer 263
Admiralty Chart	1464

8.3.2 Shellfishery (Menai Strait – East)

Species	Culture Method	Seasonality of Harvest
Mussels (<i>Mytilus</i> sp.)	Wild/Cultured	Year Round
Cockles (<i>Cerastoderma edule</i>)	Wild	Year Round

8.3.3 Shellfishery (Menai Strait – West)

Species	Culture Method	Seasonality of Harvest
Mussels (<i>Mytilus</i> sp.)	Cultured	Year Round
Cockles (<i>Cerastoderma edule</i>)	Wild	Year Round
Pacific oyster (<i>Crassostrea gigas</i>)	Cultured	Year Round

8.3.4 Local Enforcement Authority(s)

Name	Cyngor Gwynedd Council Swyddfa Ardal Meirionnydd Cae Penarlag, Dolgellau Gwynedd LL40 2YB
Website	n/a
Telephone number	01766 771000
E-mail address	Bwyd@gwynedd.llwy.cymru
Name	Ynys Mon Council County Offices Anglesey LL77 7TW
Website	www.ynysmon.gov.uk

Telephone	01248 750057
E-mail address	Ehealth@ynysmon.llyw.cymru
Name	Conwy County Borough Council PO Box 1 Conwy LL30 9GN
Website	n/a
Telephone number	n/a
E-mail address	Foodsafety-healthandsafety@conwy.gov.uk

Table 8.1 Proposed sampling plan for the Menai Strait – East BMPA. Suggested changes are given in **bold red** type.

Classification Zone	RMP	RMP Name	NGR (OSGB 1936)	Lat / Lon (WGS 1984)	Species Represented	Harvesting Technique	Sampling Method	Sampling Species	Tolerance	Frequency
Area A		TO BE MERGED WITH AREA 1								
Areas 1 & A	B055S	West of Bangor Pier	SH 58334 73287	53°14.260'N 04°07.449'W	Mussels	Bed Culture	Hand/Dredge	<i>Mytilus</i> sp.	50 m	Monthly
Areas 3 & 4	B055U	Gallows Point	SH 59943 74984	53°15.200'N 04°06.048'W	Mussels	Bed Culture	Hand/Dredge	<i>Mytilus</i> sp.	50 m	Monthly
Areas 2 & B	TBC	TBC	TBC	TBC	Mussels	Bed Culture	Hand/Dredge	<i>Mytilus</i> sp.	100 m	Monthly
Area 6	TBC	Beaumaris	SH 61067 75861	53°15.683'N 04°05.066'W	Mussels	Bed Culture	Hand/Dredge	<i>Mytilus</i> sp.	50 m	Monthly
Areas 5 & B	TBC	TBC	TBC	TBC	Mussels	Bed Culture	Hand/Dredge	<i>Mytilus</i> sp.	100 m	Monthly
Lavan Sands East	B055X	Lavan Sands East	SH 66242 74697	53°15.143'N 04°00.380'W	Cockles	Hand (rake)	Hand (rake)	<i>C. edule</i>	50 m	Monthly
Lavan Sands West	B055Y	Lavan Sands West	SH 62330 73458	53°14.415'N 04°03.863'W	Cockles	Hand (rake)	Hand (rake)	<i>C. edule</i>	50 m	Monthly

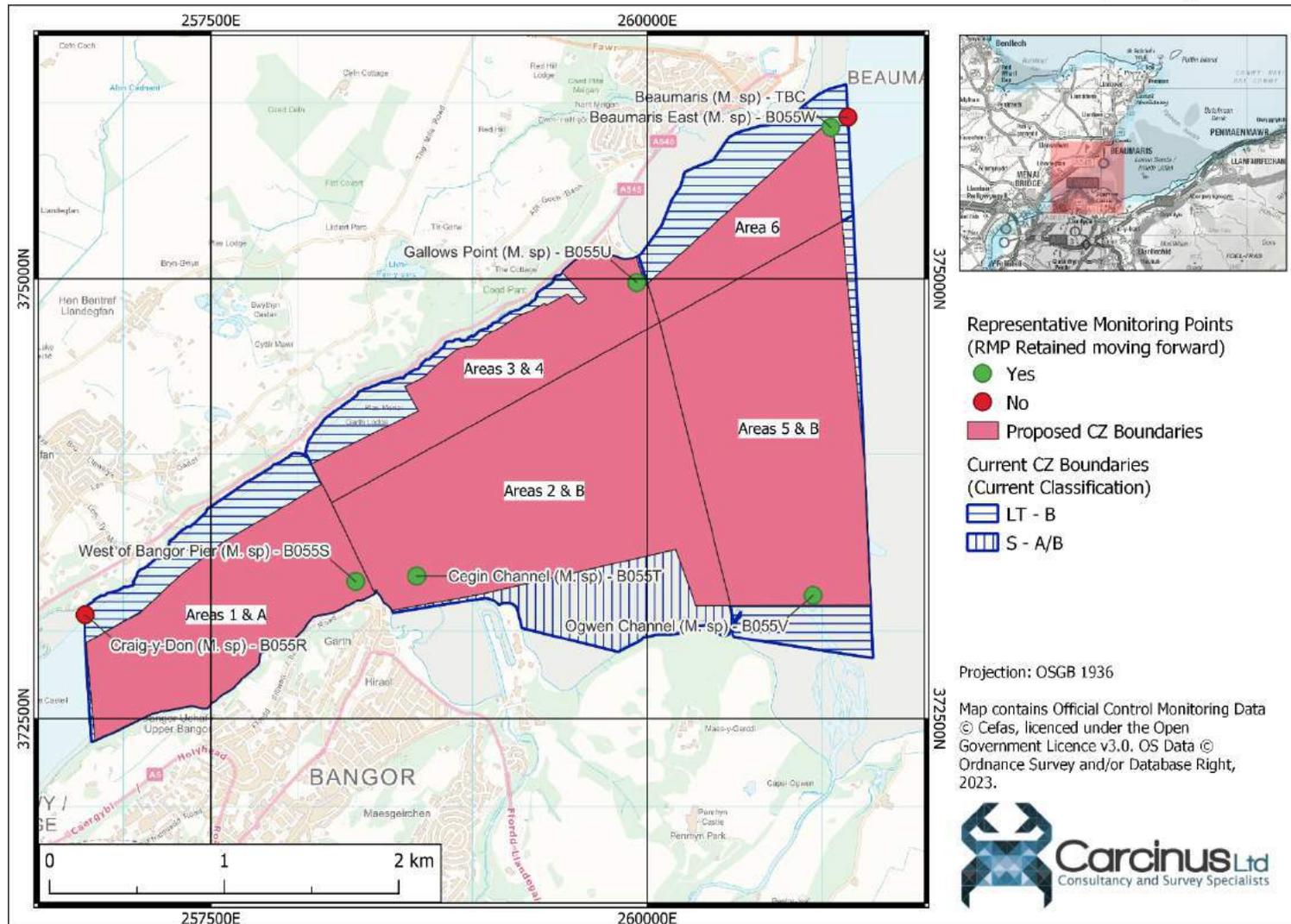


Figure 8.1 Proposed changes to CZ boundaries in the Menai Strait - East BMPA.

Table 8.2 Proposed sampling plan for the Menai Strait – West BMPA. Suggested changes are given in **bold red** type.

Classification Zone	RMP	RMP Name	NGR (OSGB 1936)	Lat / Lon (WGS 1984)	Species Represented	Harvesting Technique	Sampling Method	Sampling Species	Tolerance	Frequency
Barras	B042L	Barras Boat House	SH 4871 6570	53°10.011 'N 04°15.878'W	Mussels, P. oysters	Bed culture	Hand / Dredge	<i>Mytilus</i> sp.	10 m	Monthly
Llanfair	B042O	Area 11 East	SH 4991 6579	53°10.080'N 04°14.804'W	Mussels	Bed culture	Hand / Dredge	<i>Mytilus</i> sp.	10 m	Monthly
Fort Belan	B042P	Fort Belan	SH 4451 6084	53°07.320'N 04°19.503'W	Mussels	Bed culture	Hand / Dredge	<i>Mytilus</i> sp.	10 m	Monthly
Traeth Melynog	TBC	TBC	TBC	TBC	Cockles	Hand	Hand	<i>C. edule</i>	50 m	Monthly

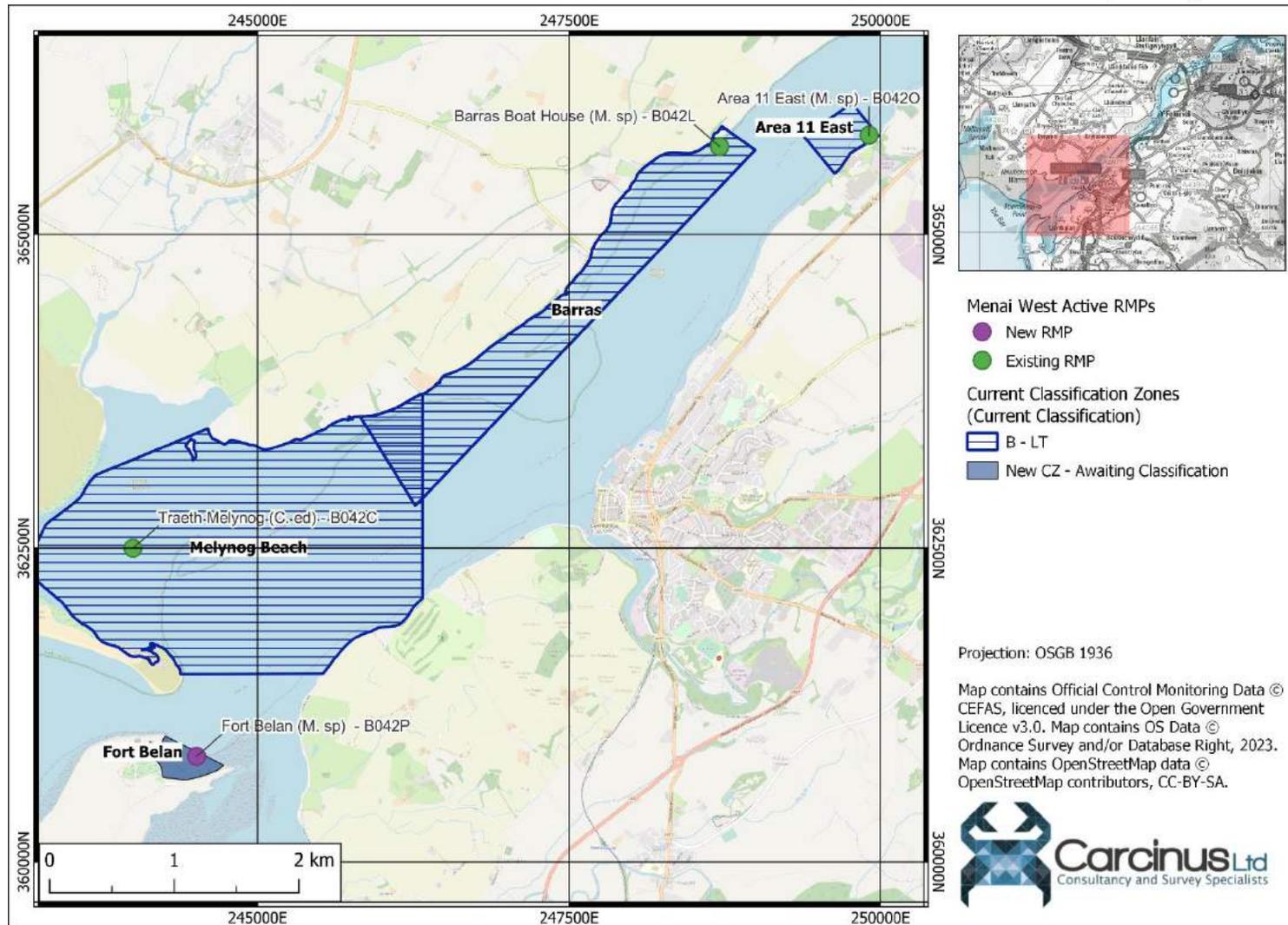


Figure 8.2 Proposed RMP changes for the Menai - West BMPA.

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Appendices

Appendix I. EDM Return for intermittent discharges in the vicinity of the Menai Strait in 2021

Site Name	Permit No.	Outlet NGR	Number of Spills in 2021	Duration of spills (hrs) in 2021	Distance to nearest CZ (km)
ABERGWYNGREGYN PUMPING STATION	CG0113902	SH6503373196	48	943	0.304
ANGLESEY ARMS PUMPING STATION	CG0139701	SH4768662716	0	0	1.106
BALACLAVA ROAD SEWAGE PUMPING ST	CG0163901	SH4797063120	0	0	1.031
BEACH ROAD PS BANGOR , Long Sea	CG0351702	SH5865572904	64	250.75	0.213
BEACH ROAD PS BANGOR , Short Sea Outfall	CG0351701	SH5865672904	17	35.25	0.213
BETHEL CSO BETHEL NEAR CAERRFON	CG0367101	SH5202465344	24	61	2.084
BETHEL SEWAGE TRANSFER PS	CG0085702	SH5160465229	185	3415.5	1.71
BETHEL SSO NO. 2	CG0085703	SH5229565430	1	0.25	2.335
BETHEL SSO NO. 3	CG0085704	SH5269865734	19	60.75	2.712
BETHESDA WWTW STORM	CG0437401	SH6138667381	130	1306.5	5.032
BONTNEWYDD SSO YSGOL GYNRADD BONTNE	CG0332501	SH4810359919	16	97.5	2.779
BRYNREFAIL MAIN SPS	CG0185101	SH5593763009	63	437	6.566
BRYNSIENCYN SEWAGE PUMPING STATION	CG0340903	SH4812866388	16	164.25	0.758
BRYNSIENCYN SEWAGE PUMPING STATION	CG0340904	SH4812866388	17	161.75	0.758
BRYNSIENCYN STW SETTLED STORM , ,	CG0340902	SH4912566660	99	1441	0.873
CAERRFON - BONTNEWYDD SSO NO	CG0076907	SH4814859884	111	704	2.836
CAERRFON - BONTNEWYDD SSO NO	CG0076908	SH4811060064	58	118	2.682
CAERRFON - GLANRHYD SSO NO.	CG0076906	SH4740358405	102	274.25	3.62
CAERRFON - RHOSTRYFAN SSO NO	CG0076903	SH5027357532	71	188	6.004
CAERRFON - RHOSTRYFAN SSO NO	CG0076904	SH4957157944	71	314.25	5.229
CAERRFON BANK QUAY PS	CG0078603	SH4776962960	0	0	0.997
CAERRFON MARGARET STREET - S	CG0163601	SH4845062831	82	83.75	1.577

Site Name	Permit No.	Outlet NGR	Number of Spills in 2021	Duration of spills (hrs) in 2021	Distance to nearest CZ (km)
CAERRFON PONT SEIONT PS	CG0163801	SH4825661720	18	157.25	1.967
CAERRFON WWTW INLET PUMP ST 6MM	CG0078601	SH4809461909	85	306	1.778
CAERRFON WWTW INLET PUMP ST 6MM	CG0415001	SH4800961890	34	404	1.695
CAERRFON WWTW STORM TANKS	CG0078502	SH4808761910	42	30.75	1.771
COLEG NORMAL SEWAGE PUMPING STATION	CG0415701	SH5623271770	6	25.75	0.834
CROSSVILLE CSO	CG0163701	SH4800863090	60	102.5	1.079
Crown St CSO, Caerrfon	Unpermitted-74868	SH4790462953	0	0	1.099
CWMYGLO SSO	CG0074101	SH5524962495	21	154.25	6.206
CYNLAI PS LLANGOED ANGLESEY	CG0147901	SH6255179538	5	9.25	3.71
DEINIOLEN - CLWT Y BONT - SSO	CG0134201	SH5746962936	1	1.75	8.006
DEINIOLEN - SSO	CG0134501	SH5742563094	130	820.75	7.91
DWYRAN BY SCHOOL - SSO	CG0180401	SH4447565643	5	1.75	2.194
DWYRAN RHYDWYN - SSO	CG0180501	SH4477765459	24	59	2.014
FELINHELI PS (ADJ TO QUAY TOILETS)	CG0349701	SH5253767785	0	0	3.241
FELINHELI PS (OPP SEA CADET CORPS)	CG0349401	SH5211467158	0	0	2.532
FELINHELI PS (QUAY COTTAGE) , ,	CG0349501	SH5240867534	26	288	2.987
FRON OGWEN PS	CG0083901	SH6117867324	110	1856.25	5.101
FRYARS BAY P.S- SCREENED EMERG	CG0312601	SH6110477905	0	0	1.799
GAERWEN STATION SPS	CG0168101	SH4856670831	62	724.25	4.938
GAERWEN WWTW STORM	CG0114102	SH4671372565	11	116.25	7
GLAENTRAETH ESTATE PS BANGOR ,	CG0365101	SH5931072257	0	0	0.729
GLASINFRYN SPS	CG0185201	SH5876868867	78	639	3.912
GLYN GARTH PS LLANDEGFAN	CG0146501	SH5744673690	17	85.75	0.031

Site Name	Permit No.	Outlet NGR	Number of Spills in 2021	Duration of spills (hrs) in 2021	Distance to nearest CZ (km)
GORAD ROAD PS (STORM/EMERG) ,,	CG0353701	SH5741872523	0	0	0.043
GORAD ROAD PS (STORM/EMERG) ,,	CG0353702	SH5741872523	71	122.75	0.043
GORSLLWYD SEWAGE PUMPING STATION	CG0187201	SH5752978828	106	837.5	2
HEN GASTELL NO.5 - SSO	CG0076905	SH4733657262	83	481.25	4.609
LLANBERIS PS	CG0352001	SH5778860398	3	1	9.48
LLANBERIS SSO NO. 2	CG0072703	SH5815259724	36	86.5	10.169
LLANBERIS STW (STORM) LLANBERIS	CG0089101	SH5837859938	132	1135.75	10.227
LLANDDANIEL PONT Y CRUG SPS	CG0187101	SH5052469859	42	263.25	3.889
LLANDEGFAN (MEI) PUMPING STATION	CG0363801	SH5620072801	115	2114	0.587
LLANFAES PS (EMERGENCY) ,,	CG0342903	SH6083577765	3	4.25	1.687
LLANFAES WWTW STORM TANK	CG0342902	SH6083577320	76	676.25	1.252
LLANFAGLAN WWTW STORM OVERFLOW	CG0078102	SH4686459447	63	582	2.451
LLANFAIR PG SPS	CG0188401	SH5105971817	41	237.75	5.783
LLANFAIR PG WWTW	CG0081201	SH5320470802	111	698.75	3.936
LLANFAIRFECHAN - SSO	CG0162201	SH6811075050	24	65	0.428
LLANFAIRFECHAN HOSPITAL SPS	CG0184301	SH6737474706	0	0	0.342
LLANFAIRFECHAN SSO NO. 1	CG0077101	SH6813474762	43	147.25	0.659
LLANFAIRPWLL SSO NO. 2	CG0081202	SH5263971643	0	0	4.239
LLANGAFFO CAE BERLLAN SPS	CG0186901	SH4421968442	1	0.25	4.846
LLANGAFFO STW SSO	CG0019202	SH4466467744	138	480	4.071
LLANRUG WWTW STORM	CG0073902	SH5304264202	120	1631.75	3.441
LLANSADWRN PS	CG0187301	SH5636475728	3	7.75	2.311
LLANSADWRN PS	CG0082401	SH5636575729	0	0	2.311
LLEINIOW PS	CG0091801	SH6209079155	50	278	3.193

Site Name	Permit No.	Outlet NGR	Number of Spills in 2021	Duration of spills (hrs) in 2021	Distance to nearest CZ (km)
LLYN Y FELIN PS	CG0363401	SH5532272041	0	0	1.529
LLYN Y FELIN PS (EMERGENCY OVERFLOW)	CG0363402	SH5532272041	0	0	1.529
MALLTRAETH VILLAGE PUMPING STATION and CSO	CG0147801	SH4089568882	-1	-1	6.443
MALLTRAETH VILLAGE PUMPING STATION and CSO	CG0183801	SH4089568882	-1	-1	6.443
MEIRION ROAD PS (STORM/EMERG)	CG0353801	SH5727072840	4	2.75	0
MIN-Y-NT CSO	CG0163501	SH4883962657	19	11.75	1.978
MOUNT FIELD P.S. BEAUMARIS ,	CG0342904	SH6091976242	0	0	0.2
MOUNT FIELD P.S. BEAUMARIS ,	CG0342905	SH6091976242	31	93	0.2
NEAR CASTLE GIFT SHOP LLANBERIS ,	CG0355801	SH5793760036	34	94.5	9.811
NEWBOROUGH MILLBANK SPS	CG0188301	SH4189066160	0	0	3.571
NEWBOROUGH STW	CG0326101	SH4370064140	34	111.25	0.979
Peblig Ind Est CSO, Peblig Mill, Ffordd Llanbeblig, Caethro, Caerrfon, Gwynedd, LL55 2SE Caethro	DB3393HK	SH4923962034	28	129	2.698
PENISARWAUN WWTW	CG0134102	SH5502663552	126	827.75	5.512
PENMAENMAWR PROMEDE PS	CG0148301	SH7186076648	18	34.5	3.475
PENMAENMAWR WWTW PENMAENMAWR	CG0099501	SH7354277819	6	15.25	1.426
PENMAENMAWR WWTW PENMAENMAWR	CG0393801	SH7373277980	175	2574	1.179
PENMAENMAWR WWTW PENMAENMAWR	CG0393901	SH7371977989	23	34.25	1.186
PONT LLANDEGFAN SEWAGE PUMPING STAT	CG0055401	SH5607374294	90	1312.25	1.35
PONT RHYTHALLT PUMPING STATION	CG0074001	SH5431663685	132	1333.75	4.812
PONT Y BRENIN PS	CG0091701	SH6088078987	12	64.75	2.892
PS NO 2 (PORTH WRACH)	CG0363601	SH5576471824	15	7.25	1.183
PS NO 2 (PORTH WRACH) (EMERGENCY OVERFLOW)	CG0363602	SH5576471824	15	7.25	1.183
PS NO 3 (SUSPENSION BRIDGE)	CG0363701	SH5562271551	108	1365.5	1.446

Site Name	Permit No.	Outlet NGR	Number of Spills in 2021	Duration of spills (hrs) in 2021	Distance to nearest CZ (km)
PS NO 3 (SUSPENSION BRIDGE) (EMERGENCY OVERFLOW)	CG0363702	SH5562271551	108	1365.5	1.446
PUMPING STATION NO.1 (FAELOG CAUSEWAY)	CG0363501	SH5591772219	96	1065.5	0.911
PUMPING STATION NO.1 (FAELOG CAUSEWAY) (EMERGENCY OVERFLOW)	CG0363502	SH5591772219	96	1065.5	0.911
Rachub Maes Bleddyn CSO, Rachub, Gwynedd	MP3328XV	SH6210168029	68	431.5	4.414
RHIANFA PS LLANDEGFAN	CG0146401	SH5706973325	23	87.5	0.009
RHIWLAS STW	CG0086002	SH5731966244	114	463	6.142
ROCK TERRACE CSO BETHESDA	CG0164901	SH6207966871	64	548.75	5.563
SSO AT MILL LANE CAERRFON	CG0078606	SH4796062753	93	254.25	1.278
STATION ROAD CSO	CG0412401	SH7173276502	14	14.5	3.663
TALYBONT STW	CG0314702	SH6030870665	11	4.25	2.149
TREBORTH STW (FIL) BANGOR	CG0366201	SH5429770284	14	33.5	3.268
TREBORTH STW (FIL) BANGOR	CG0366101	SH5379070850	69	823.25	3.385
TREGARTH WWTW STORM TANKS	CG0083802	SH6079468550	140	2750	3.936
WATERLOO PORT SEWAGE PUMPING ST	CG0147101	SH4876064185	1	0.25	0.862
WAUNFAWR STW (STORM)	CG0134002	SH5288358976	102	1459.5	7.263
WEST END PS BEAUMARIS ANGLESEY	CG0146301	SH6027175928	24	73.25	0.232



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**CLASSIFICATION OF BIVALVE MOLLUSC
PRODUCTION AREAS IN ENGLAND AND WALES**

SANITARY SURVEY REPORT

Menai Strait East



December 2013



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EC Regulation 854/2004

CLASSIFICATION OF BIVALVE MOLLUSC PRODUCTION AREAS IN ENGLAND AND WALES

SANITARY SURVEY REPORT

Menai Strait West



December 2013

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Our aim is to offer professional, high quality and robust solutions to our clients, using the latest techniques, innovation and recognised best practice.

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Annex E: MSFOMA response to Sanitary Survey consultation, January 2024.

Menai Strait Fishery Order Management Association

Port Penrhyn, Bangor, LL57 4HN

Ann Rodway
Food Standards Agency
Local Authority Partnership Manager
4th Floor
Welsh Government Building
Cathays Park
Cardiff CF10 3NQ

19th January 2024

By e-mail

Dear Ann

MENAI STRAITS EAST AND WEST SANITARY SURVEY REVIEW CONSULTATION

I am writing on behalf of the Association and the shellfish farmers who are our tenants in the eastern Menai Strait to respond to this welcome consultation opportunity.

We attach our comments, which focus on mussel production in the eastern Menai Strait. The key points we have raised can be very briefly summarised as:-

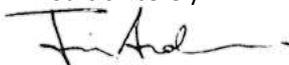
1. **Shellfishery management and activity is not accurately portrayed in the report.** There is no Fishery Order in the western Menai Strait, contrary to what is stated in the report. There has also been no hand gathering of mussels from the eastern Menai Strait for well over 10 years.
2. **The extent of Classification Zones is not appropriate for the RMP locations.** Each CZ extends at least 1km from the corresponding RMP (and in some instances further than 2km). The most distant parts of each CZ are closer to the adjacent RMP than to the RMP that determines their status. This discrepancy cannot be explained by any of the information presented in the report, and it would seem appropriate to revise each CZ so that all points within them are closer to their RMP than to the neighbouring RMP.
3. **All but one of the RMPs are outside the areas where shellfish are actually harvested.** The average distance between RMPs and the corresponding areas where mussels are harvested is presently over 800m, with the more distant parts of some harvesting areas 1.5km or more from the corresponding RMP. For six of the eight harvesting areas, these most distant areas are closer to the adjacent RMP than they are to the one that determines their classification.
4. **RMP sampling methods are different from commercial methods.** All of the shellfish harvesting in the eastern Menai Strait is carried out at high water using dredges. All of the RMP samples are taken at low water by hand.

The comments about the spatial extent of CZs, the location of RMPs relative to harvesting areas, and sampling methods apply in equal measure to the current regime and to the proposals set out in the review.

It is our view that maintaining a network of CZs within which large areas are more distant from the RMP location than from adjacent RMPs is unlikely to provide a robust system for protecting public health. It is also our view that an array of RMP locations that are on average around 800m from the harvesting areas they are meant to "represent" and sampling them by hand rather than dredge does not meet either the intent or the requirements of the underlying legislation.

For these reasons we hope that the FSA will take its time to revise this review and to implement a network of CZs and an array of RMPs in the eastern Menai Strait that will better protect public health and conform more closely to the FSA's legal responsibilities. MSFOMA would be very willing to participate further in this process.

Yours sincerely



Dr JIM ANDREWS
MSFOMA Secretariat
Enc.

1 Response to Consultation Questions

The Sanitary Survey consultation document was accompanied by an e-mail that raised six questions. The MSFOMA responses to these questions are given below.

Question	MSFOMA Response
<p>1. Are you aware of any additional ongoing projects, data gathering exercises and/or research and development relating to the production area? (please include supporting evidence)</p>	<p>Yes.</p> <p>Probably the most relevant project is “<i>Microbial Source Tracking in Menai Strait, North Wales</i>” (https://www.shellfish.wales/downloads/071122-sc-12b-microbial-source-tracking%20in-menai-strait.pdf). The field work for this study has been completed and the report has been written but not yet published.</p> <p>Please contact Professor Lewis LeVay at Bangor University (l.levay@bangor.ac.uk) for more information on this and other projects that he and his colleagues are involved with.</p>
<p>2. Has the report identified all main sources of bacterial contamination? (if not, please submit evidence of the additional/no longer existing sources)?</p>	<p>MSFOMA does not hold information about the sources of bacterial contamination. Other organisations (particularly Natural Resources Wales and Dŵr Cymru) would be in a better position to comment on sewage and other terrestrial inputs.</p> <p>In our comments we have queried whether sufficient emphasis is given to bacterial contamination associated with waterfowl. From a public health perspective it would seem appropriate to give this more detailed consideration though we do not hold any data about this issue.</p>
<p>3. Is there any active commercial hand gathering of wild mussels within the Menai Strait – East BMPA</p>	<p>No.</p> <p>MSFOMA has not issued any licences for hand gathering for over 10 years.</p> <p>All of the commercial mussel harvesting in the eastern Menai Strait is carried out on cultivated shellfish beds using dredges.</p>
<p>4. What is the current status of the Abermenai CZ – it is listed as being active in the Current Classification List, however we have received no information about this bed during the initial consultation.</p>	<p>MSFOMA does not hold any information about the Abermenai CZ. We would advise asking NRW and Welsh Government about fishing activity here.</p>
<p>5. Are there any recent (post 2020) tourism statistics you can provide for your Local Authority Area?</p>	<p>MSFOMA does not hold any information about tourism.</p>
<p>6. Note – information has been requested regarding the oysters and mussels gathered from the Barras site.</p>	<p>We would advise contacting Shaun Krijnen at Menai Oysters (https://www.menaiysters.co.uk/) for more accurate and up to date information about this site.</p>

Please contact us if you require further information or clarification on these points.

2 Comments on Draft Sanitary Survey Review Report

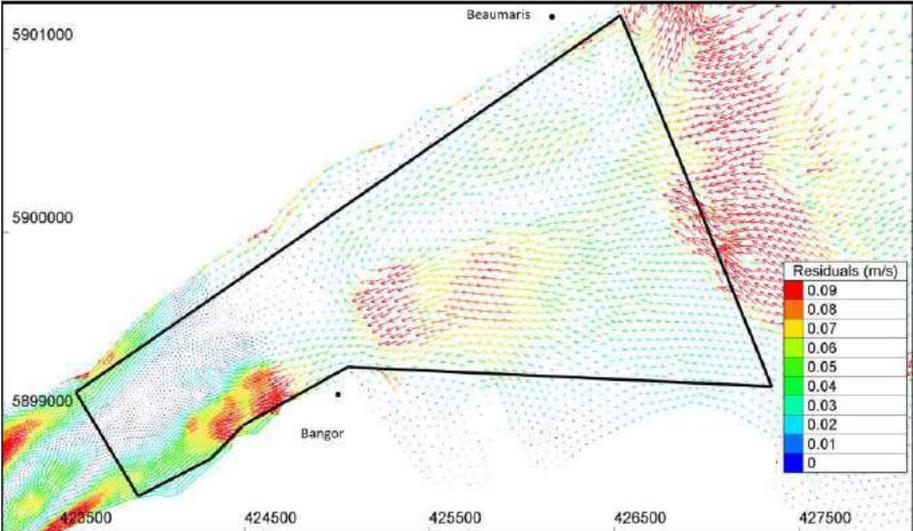
We have carefully considered the consultation report. Our key comments on each section are summarised in the table below.

We have tried to response as succinctly as possible. If additional information or clarification of any points raised here is required please contact us.

Report Section	Comments
1. Introduction	
1.2 Menai Strait East & West Review	<p>We note that an initial consultation was carried out with Local Authorities and Natural Resources Wales in Summer 2022.</p> <p>The authors will be aware that MSFOMA is the Grantee of the Fishery Order that forms the statutory basis of the shellfish farming industry in the Menai Strait. It is regrettable that MSFOMA were not consulted in Summer 2022. This would have helped to avoid the errors and omissions in the report.</p> <p>We welcome the opportunity to take part in this second round of consultation and hope that our comments will help to shape a new regime that is better suited to the character of the Strait and the shellfish farming activities within it.</p>
2. Shellfisheries	
2.1.1 – Menai Strait East	<p>Mussels</p> <p>The initial description of the Menai Strait (East) Mussel and Oyster Fishery Order 2022 (first paragraph) is correct. The subsequent text is inaccurate and needs to be revised as follows (deleted text shown in striketrough font, new text is <u>underlined</u>).</p> <p><i>Within the designated Fishery Order area, the MSFOMA grant licences to fishermen to take wild mussels (by hand or rake), subject to one or more of the following controls (MSFOMA, 2020):</i></p> <p><i>[...]</i></p> <p><i><u>MSFOMA have not granted any licences for hand gathering from the wild fishery for over 10 years.</u></i></p> <p><i><u>Within the designated several fishery area shown in Figure 2.1</u>In addition to the wild fishery, MSFOMA issue <u>eight</u> leases for mussel cultivation layings along defined boundaries (MSFOMA, 2021). The boundaries of the <u>mussel Classification Zones presented in Figure 2.3 broadly align with the extent of these layings.</u> leases broadly align with the mussel Classification Zones presented in Figure 2.3. During initial consultations, the authors of this review were advised that in recent years the output of the mussel fishery has been virtually nil due to a combination of the Covid-19 pandemic and Brexit-related export issues. In recent months two fishing vessels have been approved as Dispatch Centres and recommenced exporting, but the current output is unknown.</i></p> <p>All of the mussel production from the eastern Menai Strait comes from the cultivation activities from harvesting areas within parts of these eight layings. All of the cultivated mussels are gathered by dredging.</p> <p>The rationales for these proposed changes are:-</p>

Report Section	Comments
	<p>a) The designated area is required to be the area where gathering wild mussels is <u>not</u> taking place (see §5(2) of the 2022 Order).</p> <p>b) The classification zones are aligned with the layings, and not vice-versa.</p> <p>c) The output of mussels from the several areas is not material to this description.</p> <p>d) MSFOMA have not issued any licences for hand gathering for over 10 years, and no wild mussels gathered by hand are produced for any commercial purposes in this area. All of the commercial mussel cultivation takes place on the layings using vessels, and all of the harvesting is carried out using dredges.</p> <p>Cockles</p> <p>The management of cockle fishing activity is not within MSFOMA's remit. We have no comments on this part of the report.</p>
2.1.2 – Menai Strait West	<p>Mussels</p> <p>The text describing the current management regime for mussel fishery in the Western Menai Strait is incorrect in every significant detail.</p> <p>It is correct that the 1978 Fishery Order expired in 2008. However it is not the case that a new Order was made in 2015. What actually happened is that MSFOMA consulted on a new Order in 2015 and there were objections to the proposal. Despite considerable effort on our part that resolved these objections, Welsh Government have not subsequently “made” this Order.</p> <p>Pacific Oysters</p> <p>It is incorrect to state that the output of Pacific Oysters from the western Menai Strait is “<i>essentially nil</i>”. The authors are advised to contact Shaun Krijnen at Menai Oysters (https://www.menaiysters.co.uk/) for more accurate and up to date information.</p> <p>Cockles</p> <p>The management of cockle fishing activity is not within MSFOMA's remit. We have no comments on this part of the report.</p>
2.2 – Classification History	<p>The historic information presented here provides useful context for the report.</p> <p>It would be helpful to include either in this section or elsewhere in the report some information showing where shellfish harvesting / cultivation activities take place within each Classification Zone and relative to the corresponding RMP (see Figure 6).</p>
3. Pollution Sources	<p>We note that the authors of the report have consulted with local authorities and Natural Resources Wales in drafting this section. MSFOMA does not hold any data about discharge locations or effluent quality, and it would be inappropriate for us to make any specific comments here.</p> <p>We would, however make some general observations: -</p>

Report Section	Comments
	<ul style="list-style-type: none"> • Waterbirds – we agree with the comments on page 36 of the report that it would be hard to define RMPs that reliably capture waterbirds as a source of pollution. However if the purpose of the sanitary survey is to protect public health it is necessary to take some account of this input. It has been known for over 20 years that in some locations at least 50% of the <i>E.coli</i> in mussels comes from oystercatchers and not from sewage (Jones and Smith, 2004). To fail to take account of this input in more detail is akin to ignoring half of the WWTW or CSO inputs to the Strait, and should be addressed. • Boats and marinas – again, the information presented here is cursory. The points that could be relevant to water quality (such as the number of recreational craft that discharge raw sewage directly to the sea in the eastern Menai Strait) are not addressed, but irrelevant data (such as the off-water storage capacity fo Dickies boatyard and the number of fishing vessels of various lengths that use the Port of Conwy, 10km away) are included. This section would benefit from revision to remove irrelevant information and to include information about mooring occupancy that may be relevant to both water quality and to determining the location of RMPs in the eastern Menai Strait. • Diffuse pollution – again the information presented here is cursory. We don't dispute the figures presented about the numbers of livestock in the catchments considered, but this is only part of the story. Husbandry practices changes over time, and can affect how animal effluent enters the environment. These issues have not been considered. <p>If the sanitary survey is to reflect the most up-to-date understanding of sources of microbial pollution in the Menai Strait it would be advisable to consider the findings of the recent study entitled "<i>Microbial Source Tracking in Menai Strait, North Wales</i>" (https://www.shellfish.wales/downloads/071122-sc-12b-microbial-source-tracking%20in-menai-strait.pdf). This study will provide information that is vital to ensure that the sanitary survey both protects public health and meets all legislative requirements.</p> <p>Please contact Professor Lewis LeVay at Bangor University (l.levay@bangor.ac.uk) for more information on this and other projects that he and his colleagues are involved with.</p>
4. Hydrodynamics / water circulation	<p>We agree with the overall description of the water movement around Anglesey and the tidal range. We note that the text goes on to say this:-</p> <p><i><u>"The higher tidal range in the eastern strait results in a net western flow, but contamination from shoreline sources in both parts of the Strait will be spread in both directions along the shore (but won't reach the opposite bank). There is no evidence that the patterns of water circulation in the Menai Strait have changed since the original sanitary surveys were published in 2013, and as such no update to the sampling plan is required on this basis."</u></i> [Our emphasis added].</p> <p>There are several assumptions set out in this statement that affect and compromise all of the subsequent recommendations about the location of RMPs and their corresponding CZs.</p> <p>If the water circulation is as stated (i.e. that water moves in a generally westward direction but won't reach the opposite bank), then what is the rationale for locating the Cegin Channel RMP in the south-west corner of the "Areas 2 & B" CZ? This RMP lies over 2km from the northeastern corner of the RMP, which is actually far closer to the Gallows Point RMP on the opposite bank (just 265m away). The same is true for the Ogwen RMP (2.1km SSE of the north-eastern corner of the "Areas 5 & B" CZ it is</p>

Report Section	Comments
	<p>said to represent); and also for the Craig-y-Don RMP (located 1.5km west of the eastern edge of the “Area A” CZ). The Ogwen Channel RMP is located 1.8km south of the northern edge of the “Areas 5 & B” CZ, which is roughly 800m from the Anglesey shore, and is much closer to the Beaumaris East and Gallows Point RMPs than it is to the Ogwen RMP.</p> <p>In each of these cases, the location of the RMP is not consistent with the pattern of water movement described in the report. Unless fecal coliforms have the capacity to swim against the tide and across to the opposite bank, the extent of the CZs and / or the location of their RMPs needs to be reconsidered.</p> <p>However, if the rationale is that water moves east-west, the relationship between RMPs and their corresponding CZs becomes even more difficult to comprehend. Five of the current 6 RMPs are at the very eastern or western edge of the CZ that they are said to represent. It is therefore not possible for these RMPs to be “representative” of their CZ.</p> <p>The report would be better if it took account of the far better understanding of the detailed pattern of water movement that exists today than back in 2013. The figure below shows residual currents at a very localised scale in the eastern Menai Strait.</p>  <p>Figure 1: Map of the residual currents of the northeastern entrance of the Menai Strait. The black area approximates the limit of the 1962 Fishery Order. (Demmer, 2020)</p> <p>This information further calls into question the relationship between RMP location and their corresponding CZs. Net water movement along the Gwynedd coastline is to the west, which means that both the Ogwen RMP and Cegin Channel RMP are unlikely to be representative of their CZs for the reasons already given.</p> <p>Along the Ynys Môn coastline the net water movement is eastwards, which means that Craig-y-Don RMP may actually be a good indicator of “Area A”; but it means that Gallows Point RMP is more likely to be an indicator of “Area 6” than of “Areas 3 & 4”. The speed and direction of water movement in the vicinity of the Beaumaris East RMP suggest that it is unlikely to be representative of any of the mussels in the Menai Strait CZs.</p>

Report Section	Comments
	<p>In either of these scenarios (the simple linear east-west water movement described in the sanitary survey and the more complex pattern of water movement shown in Figure 1), it is very difficult indeed to understand or justify the relationship between RMPs and their corresponding CZs.</p> <p>These observations link to other parts of the report. We note that the CZ boundaries have been aligned with the boundaries of the layings leased by the Grantee of the Fishery Order. The RMPs have been selected on the basis of their proximity to sources of sewage pollution and their accessibility. This is a disjointed approach. If CZs are to be based on cultivation areas, then their RMPs should be located at a point that reflects the prevailing water movement. Locating an RMP downstream of most of its CZ makes it very unlikely to be “representative” of the CZ, and also creates a significant risk that any upstream pollution events that affect the CZ will not be detected.</p> <p>In summary, our view is that if the RMPs and CZs are to better protect public health and to meet legal requirements, then the sanitary survey needs to make better use of the most current sources of information about water movement.</p>
5. Rainfall	<p>We note that the authors of the report have consulted with local authorities and Natural Resources Wales in drafting this section. MSFOMA does not hold any data about discharge locations or effluent quality, and it would be inappropriate for us to make any specific comments here.</p>
6. Microbial Monitoring Results	<p>The authors of the report have done an excellent job of collating and summarising the available information for all of the existing and old RMPs. We have some relatively minor comments on this section, listed below.</p> <ul style="list-style-type: none"> a) In Figure 6.2 it would be helpful if the sequence of RMPs was organised by site proximity rather than an alphabetical sequence. For instance, the B055O and B055W are very close to one another spatially but are not adjacent to another in this figure. It would also be appropriate to indicate which RMPs were sampled prior to 2015 and which are still being monitored, perhaps with colour coding. b) Figure 6.8 is very informative. We suspect that for the RMPs that were sampled between 2010-2015 the divergence of the LOESS trend lines towards the end of the time series may be an artefact of the algorithm that has been used, and we ask that this is checked. However, it is clear that by and large, the overall microbial loading trend is below the 230MPN/100g threshold. c) Figure 6.13 shows the “seasonal” <i>E.coli</i> levels. We feel that it would be useful to include equivalent plots showing monthly data. The reason for this is twofold:- <ul style="list-style-type: none"> i. The “May Spike” - we have seen ourselves that there is a consistent pattern across most of the Menai East RMPs of a spike in <i>E.coli</i> levels in May of each year. We have no explanation for this, but it is a consistent feature of the data. There is also a less distinct spike in August. The review should consider the implications of these data. ii. Arbitrary seasons - the amalgamation of data for several months to form arbitrary “seasons” may either mask actual trends or create illusory results. We don’t dispute, for instance, that “spring” is between March and May, but this “spring” data category has no connection with the variable being examined. If microbial loading

Report Section	Comments
	<p>is governed by sewage volumes, it is not clear why March (RMP samples consistently taken before Easter, cold weather, no tourists) should be grouped with April and May when the weather is warmer, there are more tourists and boats in the area and hence more sewage effluent. The choice of seasons used is essentially arbitrary with respect to the variable being measured and is consequently unlikely to show any meaningful trends. To be rigorous it could be better to remove these graphs or to employ a data categorisation that is actually meaningful with respect to the variable being examined.</p>
7. Conclusion	<p>Our comments on this section reflect those that we have already made:-</p> <ul style="list-style-type: none"> a) Second paragraph – it would be appropriate to revise the text to state that <i>“...all harvesting takes place from within # <u>this designated area on cultivated mussel beds using dredges to harvest the mussels. No hand gathering of mussels from wild beds has taken place for over 10 years. The current output from the mussel fishery is unknown.”</u></i> [New text underlined, deletions in strikethrough font]. b) Third paragraph – as already noted, there is no Menai (West) Oyster and Mussel Fishery Order 2015. c) Fifth paragraph – the statement that there have been no changes to the treatment methodology or consented discharge volume should be checked with NRW and Dŵr Cymru. The volumes may not have changed but we are aware of Dŵr Cymru’s ongoing investment in wastewater treatment, and it would be inappropriate to overlook this. d) Seventh paragraph – see our earlier comments about birds. There is evidence that shorebirds can make a significant contribution to microbial loadings. We have not seen any evidence either in the published literature or in this report to support the conclusion that the Traeth Lafan cockle beds are likely to be at greater risk of microbial contamination from birds than the mussel beds in the eastern Menai Strait. These issues require attention. e) Eighth paragraph – no data are presented in the report to show that the risk from recreational craft is the same today as it was back in 2013. It would be appropriate to gather data from the relevant harbour authorities in Beaumaris and Caernarfon to determine the actual intensity of recreational boating activity rather than to make this unsubstantiated assumption. f) Ninth paragraph – note our earlier comments about “seasonal” distinctions. The text here shows that the authors are aware of a range of independent influences that could affect microbial loading (rainfall, number of tourists etc), which are relevant in this regard. g) Tenth paragraph <ul style="list-style-type: none"> i. The text states that <i>“Initial consultations indicated that there are a number of issues with current RMPs within both BMPAs, including safe access and availability of suitable stock for sampling.”</i> <p>We agree that safe access is important. The shellfish farmers in the Strait are happy to help the local authorities and the contractor working for them to access their shellfish beds safely.</p>

Report Section	Comments
	<p>We are not altogether surprised that there are issues with obtaining suitable stock for sampling. All but one of the RMPs are located outside the areas where mussels are harvested. For the other 5 RMPs the closest location where mussels are actually harvested is at least 240m away (see Figure 6 below). The mean distance between the RMPs and harvesting areas is presently over 800m (see Table 1 of this report).</p> <p>ii. With regard to the need for a shoreline survey, we agree that there have been no significant changes in the sources and timings of contamination that would trigger this. We do, however, feel that the authors of the report need to carry out a survey of the area to properly appreciate how the RMPs are not appropriately located with respect to actual mussel harvesting areas in the eastern Menai Strait.</p>
8. Recommendations	
8.1.1 – Mussels (Menai East)	<p>Mussels</p> <p>We note that the recommendations propose changes to two of the RMPs in response to changes that MSFOMA has made to the management regime in the Strait. This change is being made:-</p> <p style="padding-left: 40px;"><i>“...so that RMPs can be considered representative of both the worst-case contamination and the shellfish being harvested.”</i></p> <p>We query this statement on several grounds.</p> <p>a) The legal requirement for RMPs is that they are “...representative of the area in question.” or “...representative of the area considered.” (Articles 57 & 58 respectively of EU Regulation 2019/627 (EU, 2019). There is no requirement to take samples that reflect the “...worst case contamination..” in an area.</p> <p>b) All of the Classification Zones (CZs) extend at least 1.5km (and in several instances more than 2km) from the RMP that determines their classification (see Figure 2 in our proposals below). For every single CZ there are substantial areas that are closer to the adjacent RMP than to the RMP that determines their classification (see Figure 3 in our proposals below). Which RMP is more “representative” of the mussels nearby?</p> <p>c) We note from Table 8.1 in the report that samples must be taken within 50m of three of the proposed new RMPs, and exceptionally up to 100m from the RMP for the other two RMPs. The implication is that mussels further than 50m or 100m from the RMP do not have an equivalent microbial load. An explanation is therefore needed to justify using the RMP samples to determine shellfish classifications 1-2km distant from that point that are in fact closer to another RMP.</p> <p>d) The relationship between CZ extent and RMP location does not take account of information relating to water movement in this area (see our comments above). The laminar east-west flow portrayed in the review does not reflect the actual pattern of water movement and should be taken into account (indeed, this is a formal statutory requirement set out in Article 56(1)(c) of Regulation 2019/627.</p>

Report Section	Comments
	<p>e) We have to re-iterate our earlier comment that the boundaries of the layings that are leased to shellfish farmers are not appropriate boundaries to use as Classification Zones. The boundaries of the layings have been determined by administrative and enforcement considerations. They take no account of water movement or pollution sources and do not reflect the actual extent of shellfish harvesting areas. By continuing to follow the boundaries of these layings the FSA is failing to meet both its legal requirements and its duty to protect public health.</p> <p>The disparity between the RMPs and CZs is a legacy issue that should have been addressed long ago. There are a number of aspects to this issue that should be considered in the review.</p> <p>If it is the case that the sole intent of the sanitary survey was to protect public health then it would be appropriate to take account of these facts and re-define the CZs so that all points within each CZ are closer to the corresponding RMP than to any adjacent RMPs. It is surely better to classify shellfish at a location based on the sample taken closest to them.</p> <p>This would ensure, for instance, that the western end of “Areas 3 & 4” was classified on the basis of the West of Bangor Pier RMP rather than the more distant Gallows Point RMP. This would be precautionary (West of Bangor Pier RMP has a time series of data with a higher microbial load than Gallows Point RMP). We have produced maps to show a series of CZ polygons in the eastern Menai Strait within which each points is closer to “their” RMP than any adjacent RMPs to illustrate this.</p> <p>Please note, however, that these proposals are not weighted to take account of tidal currents, and that a more thorough analysis would be required to produce CZs that addressed this was well.</p> <p>The reality is that the current CZs are based on the layings that are leased for cultivation rather than any public health or microbiological consideration. Whilst a reasonable starting point, an assumption appears to have been made that mussels are harvested throughout the extent of each of the layings in the several fishery. Under this scenario it does indeed seems reasonable to locate RMPs on a precautionary basis near the worst location within an area that is carpeted uniformly with mussels that will be harvested.</p> <p>Unfortunately it has never been the case that mussels are harvested throughout each laying. The mussel farmers in the Strait use just part of each laying for cultivation, and only part of that area to harvest fully grown mussels for market. As part of our response to this consultation we have mapped out the extent of each harvested area (see Figure 6). This shows that the RMPs are definitely not located in areas that are representative of the shellfish being harvested. In fact the average distance between the RMPs and the areas where mussels are harvested within the corresponding CZ is currently over 800m. Bearing in mind the requirement that monthly samples must be taken within 100m of an RMP in order to reflect conditions at that location, it is unreasonable to conclude that the RMP sample reflects condition that are, on average, 8 times more distant.</p>

Report Section	Comments
	<p>Rather than continue with the flawed “legacy” RMPs and CZs, it would be appropriate for the review to identify new RMP locations that are located within harvesting areas and to designate these as new CZs.</p> <p>MSFOMA has included maps of these harvesting areas and have calculated their central points (“centroids”) to assist with the process of establishing RMPs that are more representative of where shellfish are actually harvested (see Figure 6 below). These “centroid” RMP locations are proposed in order to start a discussion. We acknowledge that they could be moved within the harvesting area to place them closer to known risks (for instance a new “Area 2” CZ that covers the harvesting area should probably have an RMP that is at its eastern end closer to the Cegin Channel rather than its centroid; and the “Ballast Bank” CZ should probably have an RMP closer to the Ogwen Channel than to its centroid).</p> <p>MSFOMA would be keen to work with the FSA to provide a formal management underpinning to changes in the CZ boundaries. We could, for instance, impose conditions on operators requiring them to only harvest mussels for human consumption from within new CZ boundaries. This would help to link fishery management with public health requirements, with mutual benefit.</p> <p>These considerations lead to a final point, which relates to both sample timing and methodology.</p> <p>At present all of the RMPs are sampled by hand at low tide. All of the commercial mussel harvesting takes place using dredges when the tide is high. This gives rise to a two key issues:-</p> <ul style="list-style-type: none"> a) Samples taken at low water will contain intervalvular fluid that was retained on the ebbing tide, and hence microbial levels will be largely determined by any discharges upstream of the RMP location on the ebb tide flow. b) Mussels that are harvested around high tide will have been actively filtering water brought to them on the flood tide, and hence their microbial quality will be largely determined by discharges that are upstream of that location on the flood tide flow. <p>The consequence of this is that mussel samples taken at high and low water may reflect the risk associated with different sources of pollution. This is not conjecture – a recent study by scientists from Menai Bridge (https://www.shellfish.wales/downloads/071122-sc-12b-microbial-source-tracking%20in-menai-strait.pdf) has confirmed that samples taken at the same point on the same day at highwater and low water will have different microbial levels.</p> <p>We would therefore advocate that samples from the RMPs are taken at the same tidal state and using the same methodology as commercial harvesting. This would ensure that these samples are representative of the shellfish harvested from the fishery.</p>

3 MSFOMA Proposals

We have raised concerns in several parts of our comments on the sanitary survey that the current regime is not likely to accurately reflect the microbial loading of mussels harvested from the Menai Strait. The key reasons for this are:-

- a) **The boundaries of the Classification Zones** have been drawn to match the extent of areas leased for shellfish cultivation rather than any features of the eastern Menai Strait (such as water currents or the location of effluent discharges) that are likely to affect microbial loading, and without considering where shellfish are actually harvested.
- b) **The location of the RMPs** within the existing CZs may reflect the location of effluent discharges but does not take account of how “representative” samples taken from these points are likely to be of the remainder of the CZ, taking account of its extent, the location of shellfish harvesting areas, and tidal currents. Given that the sanitary survey requires samples to be taken from the RMPs or in exceptional cases up to 100m away, it is difficult to see how “representative” these points are likely to be of mussels harvested from locations 1-2k upstream of the prevailing tidal flow.
- c) **The sampling methodology is unrepresentative** of commercial operations in the Strait. There is no hand gathering of wild mussels in the eastern Menai Strait. This was always a low-level activity and has not taken place for well over 10 years. For over 60 years nearly all of the mussels gathered from the eastern Menai Strait have been harvested using dredges from areas located well down the shore that are difficult to access on foot. The current sampling regime is unrepresentative in every key respect:
 - RMP samples are taken at low water when mussels are exposed, but commercial harvesting only takes place at high water when mussels are covered by seawater;
 - RMP samples are taken by hand, but all commercial harvesting is conducted using dredges;
 - RMP samples are generally taken from the upper shore, but commercial mussel harvesting takes place on the mid to lower shore; and
 - The average distance between harvesting areas and RMP locations is currently over 800m.

It is our view that unless significant changes are made to classification zones, RMP locations and sampling methodology, the shellfish hygiene sampling regime for the eastern Menai Strait will not accurately reflect the microbial status of the mussels harvested from the Strait.

MSFOMA recognise that the FSA are under a statutory duty to ensure that the sanitary survey and sampling regime protect public health and meet legal requirements. In order to assist with this we have provided some information below that may expedite progress.

All of the information presented here, including maps, can be provided to FSA and Carcinus as shapefiles or in other GIS formats on request.

3.1 Revising Classification Zones to suit existing RMP locations

The boundaries of the current Classification Zones (CZs) in the eastern Menai Strait are aligned to match the boundaries of shellfish layings in the Fishery Order. As the Review document makes clear, neither the layings nor the CZs reflect the location of pollution sources or tidal currents.

The distances between RMPs and the limits of each CZ are shown in Figure 2. Each CZ extends more than 1km from its RMP, and that the most distant parts of each CZ are closer to the adjacent RMP than to the RMP that determines the classification of the CZ.

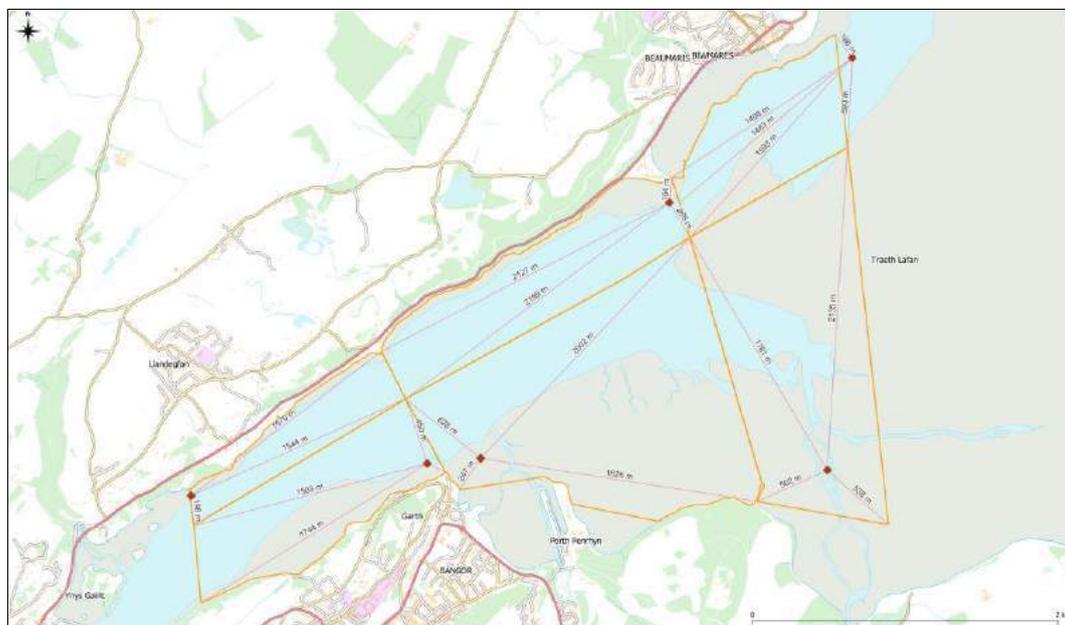


Figure 2: Map showing distances between RMPs and CZ boundaries in the eastern Menai Strait.

Using GIS software it is very easy to calculate polygons (known as “Voronoi” or “Thiessen” polygons) within which every point is closer to their sampling point than to adjacent sampling points. An example of revised CZs in the eastern Menai Strait that meet the simple criterion of being closer to the corresponding RMP than to adjacent RMPs is provided in Figure 3 for the existing RMPs and in Figure 4 for the proposed new RMPs.

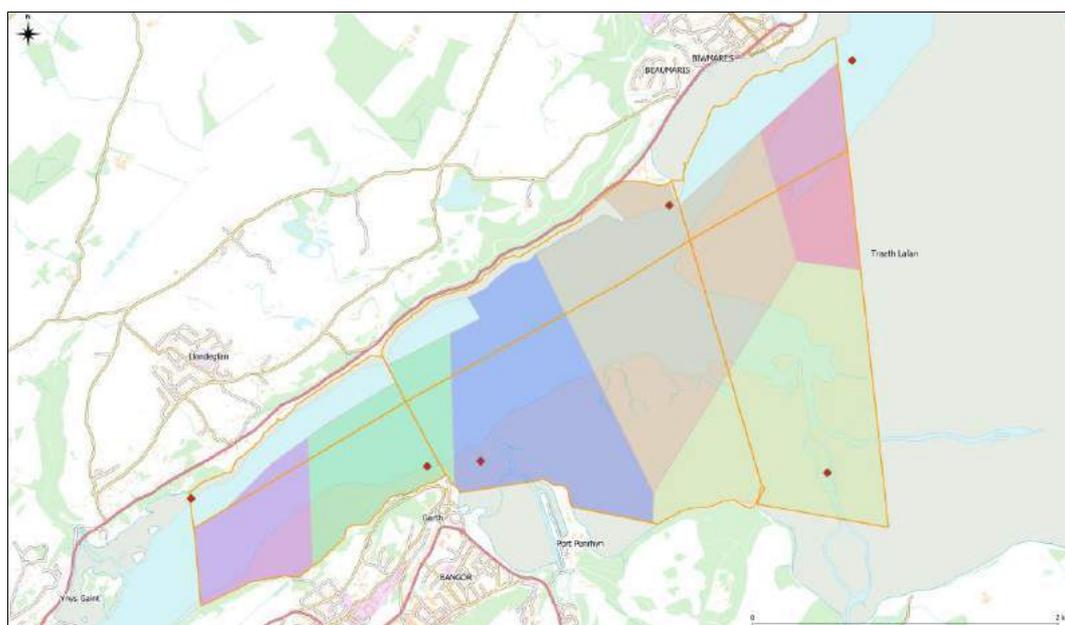


Figure 3: Existing RMPs: map showing CZ boundaries within which all points are closer to the corresponding RMP than to adjacent RMPs (shaded polygons, existing CZs shown with orange lines). (Voronoi polygons calculated using QGIS v3.22.12).

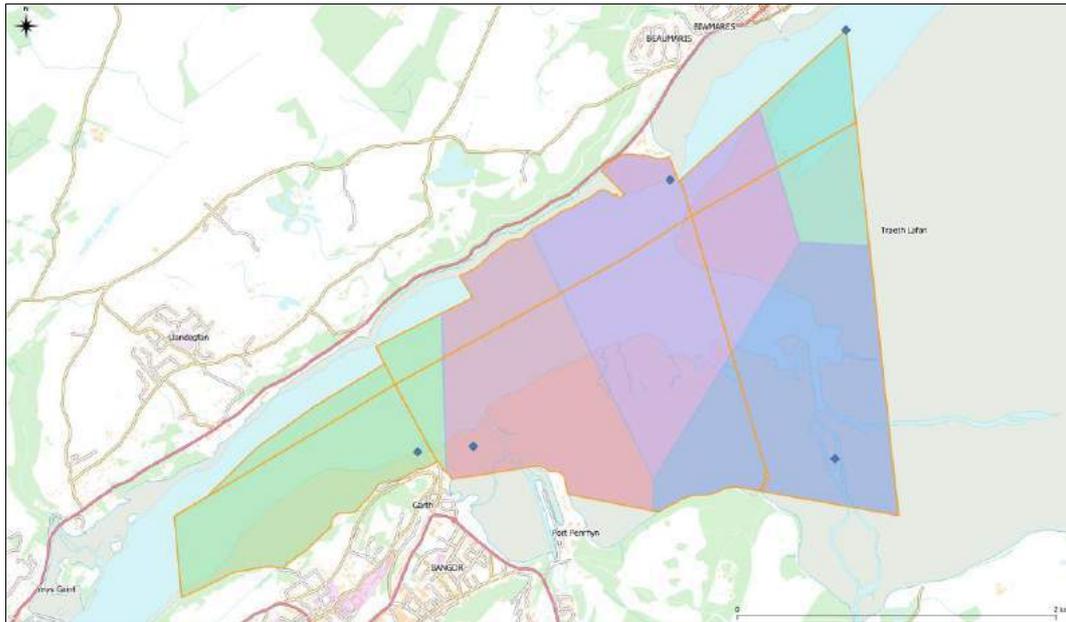


Figure 4: Proposed RMPs: map showing CZ boundaries within which all points are closer to the corresponding RMP than to adjacent RMPs (shaded polygons, existing CZs shown with orange lines). (Voronoi polygons calculated using QGIS v3.22.12).

We note, and accept, that this is an unsupervised analysis that only takes account of proximity to the RMP and does not take account of other important factors such as water movement and pollutant inputs. We would contend, however, that this is a more robust approach than to follow the boundaries of layings that were determined with no regard to water movement, pollutant inputs, public health, or the requirements of shellfish hygiene legislation that was introduced decades after these boundaries were determined.

3.2 Revised RMP locations

An alternative to revising Classification Zone boundaries to better reflect RMP locations would be to move the RMPs so that they are either more representative of the CZ boundaries or more representative of where shellfish harvesting takes place. Both options are considered here.

3.2.1 Moving RMPs to reflect CZ boundaries

Leaving aside issues of pollution sources and water movement, RMPs are most likely to represent the conditions within a CZ if they are located in its centre. It is easy to calculate the “centroid” of a polygon using GIS software, and the results are shown in Figure 5. The average distance between the current RMPs and the centroids of current CZs is 864m.

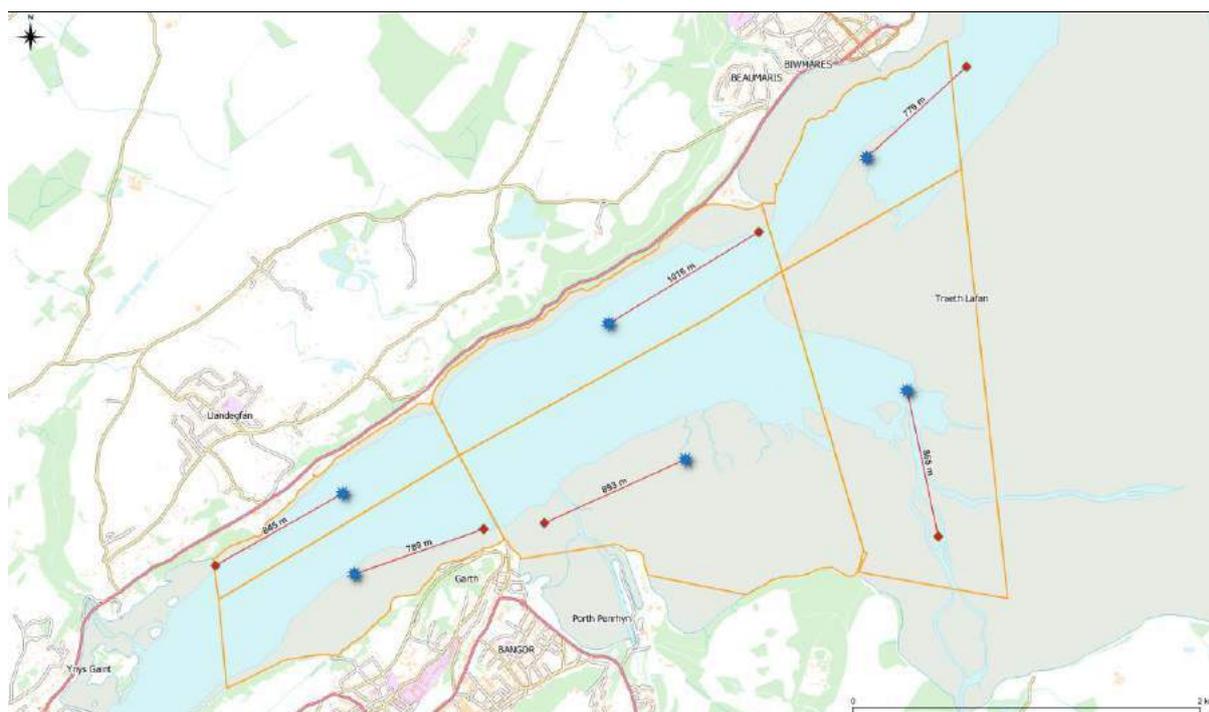


Figure 5: Map showing centroid locations of existing Classification Zones relative to existing RMP locations. (Centroids and distances calculated using QGIS v3.22.12).

Although this option would place the RMP locations at a spatially more representative location than the current RMPs, it does not take account of the location of shellfish harvesting activity, the accessibility of the RMP, or its location relative to sources of microbial contamination.

3.2.2 Moving RMPs to reflect harvesting activity

Shellfish are not cultivated or harvested throughout each laying in the Fishery Order. The areas that are suitable for growing mussels to harvestable size have been determined over the past 60 years by a process of trial and error. The harvesting areas, and the distance between their centroids and the corresponding RMP are shown in Figure 6.

Apart from the Gallows Point RMP, which lies within the “Area 4” harvesting area, all of the RMPs are located outside mussel harvesting areas. The distance between the furthest point of the most productive harvesting areas and the corresponding RMP is over 1.5km.

The average distance between the current RMPs and the centroids of harvesting areas within the corresponding CZ is just over 800m.

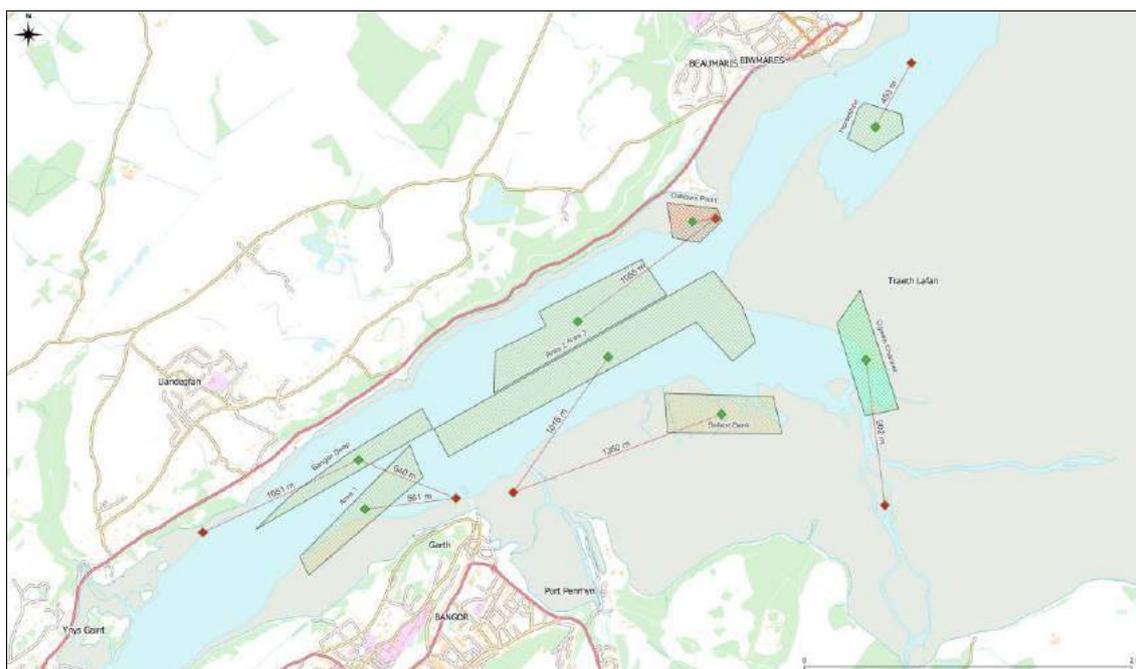


Figure 6: Map showing locations of actual mussel harvesting areas relative to existing RMP locations and distances to central points (“centroids”) of each. (Centroids and distances calculated using QGIS v3.22.12).

We note that the changes proposed for the RMPs that are set out in the Sanitary Survey Review (relocating Beaumaris East so that it is within the Fishery Order area and ceasing use of the Craig-y-Don RMP) will slightly reduce the average distance between RMPs and actual harvesting areas from 818m to 761m. However these distances are all much further than those from the pre-2015 array of RMPs (280m). Again, this raises concerns about both public health protection and compliance with the requirements and intent of shellfish hygiene legislation.

Table 1: Distances between actual harvesting areas and existing (post 2015) RMPs, proposed RMPs and also the Redundant RMPs that were used prior to 2015.

Harvesting Area (see Figure 6)	Distance (m) from Harvesting Area to....		
	Existing RMP	Proposed RMP	Redundant RMP
Area 1	561	561	276
Area 2	1016	1016	128
Area 3	1055	1055	261
Ballast Bank	1360	1360	672
Bangor Deep	1051	640	525
Gallows Point	143	143	115
Horseshoe	453	408	106
Ogwen Channel	902	902	157
Average	818	761	280

The harvesting area centroids offer many advantages over the current and proposed RMPs. They represent the actual locations of the activity being monitored. As a result there should always be mussels close to these RMP locations, and they can be accessed reliably using dredgers (either to transport a local authority officer or for industry samples).

The only disadvantage of using the harvesting area centroids is that they do not take account of sources of pollution. It would probably be appropriate to adjust the RMP locations to bring them closer to the existing RMPs (selected as “worst case” locations), whilst remaining within the harvesting areas.

Finally, noting that the FSA have recognised that it is appropriate to move RMPs in response to management changes, MSFOMA would be willing to enter into discussions with the FSA to establish an enforceable legal requirement so that mussels can only be harvested for human consumption from the areas shown in Figure 6.

3.2.3 Sample timing and methodology

The timing and method of mussel sampling can have a significant effect on sample results.

To take just one example, an official sample of mussels from the B055T Cegin Channel RMP taken on the 22nd November 2022 had an *E.coli* count of 780/100g. By chance, a sample was taken by dredge from the same location just 5 hours later when the area was underwater. The *E.coli* count was 490/100g.

The sample taken at high water in November 2022 was part of a study being conducted by the University of Bangor entitled “*Microbial Source Tracking in Menai Strait, North Wales*”

(<https://www.shellfish.wales/downloads/071122-sc-12b-microbial-source-tracking%20in-menai-strait.pdf>).

The field work for this study has been completed and the report has been written and is due to be published shortly.

The evidence available to us is that mussel samples taken by dredge at high water (which is representative of harvesting practices) generally have a lower *E.coli* load than samples taken using rakes at low water.

MSFOMA would very strongly urge that the FSA and their consultants give detailed consideration in this sanitary survey to evidence about the timing and sampling method used to determine shellfish hygiene classifications. This current draft does not adequately consider this and therefore does not, in our view, reflect the legal requirements that underpin this regime.

MSFOMA
Bangor
19th January 2024

References

Demmer, J. (2020) *Simulating the temporal and spatial variability of North Wales mussel populations*. PhD. University of Bangor. Available at: <https://research.bangor.ac.uk/portal/files/29087776/2020DemmerJphd.pdf>.

EU (2019) *COMMISSION IMPLEMENTING REGULATION (EU) 2019/ 627 - of 15 March 2019 - laying down uniform practical arrangements for the performance of official controls on products of animal origin intended for human consumption in accordance with Regulation (EU) 2017/ 625 of the European Parliament and of the Council and amending Commission Regulation (EC) No 2074 / 2005 as regards official controls, OJ L 131/51*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0627&from=EN>.

Jones, K. and Smith, R.J. (2004) 'The use of *E. coli* as a tool in applied and environmental investigations', *Microbiology Today*, 31, pp. 120–122.

Welsh Government Activity

Background

The Welsh Government is responsible for managing inshore fisheries in Wales. This report provides a brief update on some Welsh Government Activities that may be relevant to the work of MSFOMA.

Recommendations

1. That the report is received, along with any verbal updates from the Welsh Government officials invited to the meeting.

1. Background

- 1.1 The Welsh Government website provides information about consultations and meetings of various stakeholder groups that are relevant to the Welsh Fishing industry. A brief summary of recent activity is provided below.

2. Meetings of Fisheries Groups

- 2.1 Welsh Government has established several groups to assist with the administration and management of Welsh fisheries. The key groups are:-
 - a) **Inshore Fisheries Groups** - these groups were established to provide stakeholders with a forum for communicating and engaging with Welsh Government. They were disbanded several years ago, and at the same time the membership of the Welsh Marine Fisheries Advisory Group (WMFAG) was broadened and supported by ad-hoc "Task and Finish" groups. The most recent WMFAG meeting resolved to maintain this arrangement and to review its effectiveness in December 2020.
 - b) **Welsh Marine Fisheries Advisory Group (WMFAG)** - this group was established to assist with the formulation of appropriate policies, plans, strategies and laws relating to marine fisheries in Wales. Information about this group is now available from <https://beta.gov.wales/wales-marine-fisheries-advisory-group>. The most recent published WMFAG minutes were for the meeting on 15th September 2020 (published on 10th December 2020 [here](#)), which were reported and discussed previous MSFOMA meetings.
 - c) **Aquaculture Advisory Group** - this Group was established to help Welsh Government meet the targets that it set in the 2013 Wales Marine and Fisheries Strategic Action Plan for aquaculture production of 2,000t of finfish and 16,000t of shellfish by 2020. No meetings of this group have taken place recently. The most recent WMFAG meeting confirmed that the AAG has been "...suspended following poor attendance and dissatisfaction." WMFAG further resolved to remove a reference to the AAG from its own Terms of Reference "...as that sub-group was disbanded."
 - d) **Ministerial Group for Welsh Fisheries (MAGWF)** - this group was created by Welsh Government in 2022. Information about this group is available from

<https://www.gov.wales/ministerial-advisory-group-welsh-fisheries>. An update on recent meetings is provided below.

3. Ministerial Group for Welsh Fisheries (MAGWF)

- 3.1 MAGWF has not met since the last Association meeting.
- 3.2 Association Members and Observers meeting will be asked for a verbal update on any recent meetings of these and related groups that are not reported on the Welsh Government website.

4. Consultations

- 4.1 There is only one open consultation for “Marine and Fisheries” that may be relevant to MSFOMA on the Welsh Government website ([here](#)). This is a consultation on Strategy Resource Areas for Tidal Stream Energy.
- 4.2 It appears that the purpose of this consultation is to safeguard some areas that may be suitable for future tidal energy production. The areas are all located outside the Menai Strait (see Figure 2). There does not seem to be any need for MSFOMA to respond to this consultation.

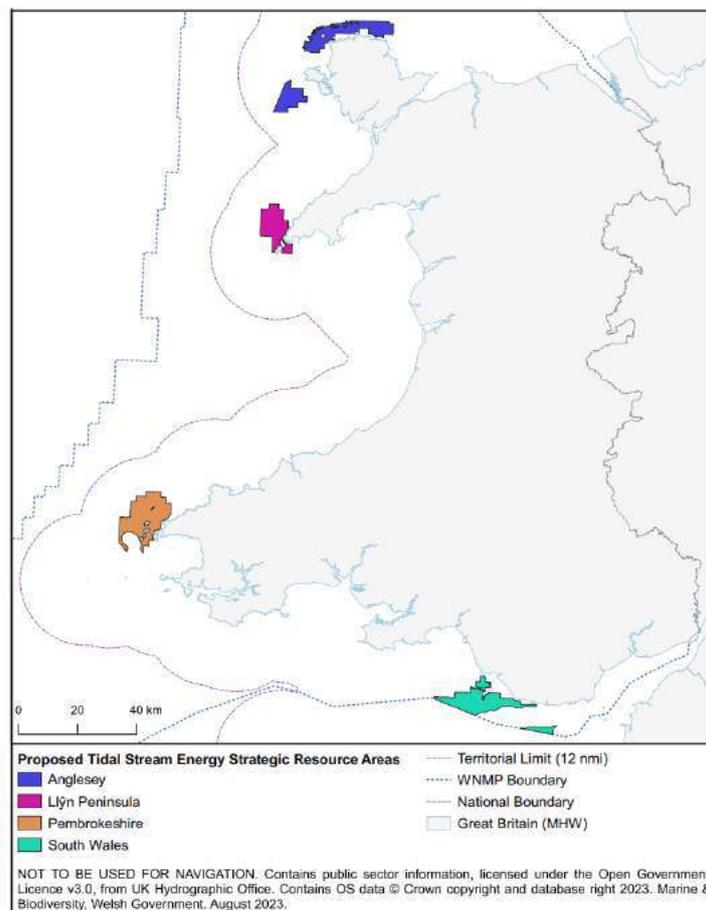


Figure 2: Map showing location of proposed Tidal Stream Energy Strategic Resource Areas in Wales (from <https://www.gov.wales/sites/default/files/consultations/2024-02/tidal-stream-energy-draft-marine-planning-notice-2.pdf>).

5. Welsh Government Officials

- 5.1 There have been some informal discussions over the phone and in telephone conference calls with WG officials since the last meeting, but none of significance.

MSFOMA Secretariat
April 2024

North West Inshore Fisheries and Conservation Authority Activity

Background

The North West Inshore Fisheries and Conservation Authority (NWIFCA) are responsible for managing sea fisheries including mussel fisheries in the coastal waters lying between the Dee and the Solway Firth. This area includes the UK's largest seed mussel resource, which is vital to the ongoing success of the Menai Strait mussel fishery. This report provides a brief update on NWIFCA activities that could have an impact on the Menai Strait mussel fishery.

Recommendations

1. That the report is received.
2. That the Association should keep the need for a Morecambe Bay Mussel Management Plan on the future agenda for NWIFCA.
3. That the Association should consider and comment on the revised definition of seed mussel bed ephemerality.

1. IFCA Meetings

- 1.1 Since the last meeting of the Association the NW-IFCA has held one quarterly meetings, on the 21st March. A meeting of the Technical, Science and Byelaws (TSB) Sub-Committee took place on the 6th February 2024.

2. Changes to Byelaws

- 2.1 There are no proposals to alter any NWIFCA byelaws that may impact the mussel industry at its next meeting.

3. Morecambe Bay Mussel Management Plan

- 3.1 The opening of seed mussel beds to dredging once again proved to be controversial in 2023, restricting access to the available resources.
- 3.2 Part of the difficulty is caused by the absence of a clear policy framework that would guide IFCA officers and also frame the expectations of interested parties.
- 3.3 It has been reported on several occasions that MSFOMA participants in NWIFCA business had asked the Authority to proceed with the development of the Morecambe Bay Mussel Management Plan. It has not yet been possible for NWIFCA staff to resume work on this.
- 3.4 At the meeting of the Technical, Scientific and Byelaws Sub-Committee in February 2024 a new definition of ephemeral seed mussel beds was proposed (see Annex A). This will address one of the key issues that hinders opening seed mussel beds. Comments are invited on this revised text.

- 3.5 Following discussions at the last MSFOMA meeting, the NWIFCA's new Chief Executive Officer, Mark Taylor, was invited to meet mussel farmers in Port Penrhyn. This meeting took place in February 2024, and a verbal update will be provided to the meeting.

MSFOMA Secretariat
April 2024

Annex A: NWIFCA Proposed definition of seed mussel ephemerality, February 2024
[Note that the date in the title of NWIFCA paper is incorrect].

**NWIFCA Technical Science and Byelaw
Meeting**

6th of February 2023: 10:00 a.m.

**Agenda
Item**

10

DEFINITION OF EPHEMERALITY FOR SEED MUSSEL

Purpose: To provide information on the NWIFCA's current definition of ephemerality regarding seed mussel.

Recommendation:

- 1) Receive the report
- 2) To approve the definition of seed mussel ephemerality.
- 3) To approve the process by which officers assess seed mussel ephemerality.

1. Background

**This item is a re-visit of Agenda Item 13 from the TSB meeting on the 7th of November 2023 where this topic was discussed and determined to be brought back for consideration.*

At the previous meeting, members discussed the definition of 'ephemerality' as it pertains to seed mussel beds. The Authority has a long-standing method for assessing ephemerality and HRA suitability of seed mussel fisheries. An agreed definition with regards to ephemerality of seed mussel, and the process of determining ephemerality (as applied during inspections), is necessary to streamline the process of agreement with the Authority.

The definition of ephemerality developed and agreed at the Bivalve Mollusc Working Group (BMWG) in 2017 was presented and discussed at the 7th of November meeting alongside the criteria used during inspection.

Feedback from members raised the following points:

With regards to the definition:

- The point referring to *'the mussel mud becoming very soft and loose and at risk of being washed out, taking the mussel with it'* should be split into two separate points.
- Make it clear whether it is necessary that every criterion mentioned in the definition be met in order for the resource to be defined as ephemeral or only some.
- There needs to be distinction between the definition of ephemerality, and the conditions required for a fishery to be opened. This is an important distinction as even if a mussel bed is determined as ephemeral, a fishery may not be HRA compliant.
- Removal of the word 'thousands' in relation to *'or dense settlement being heavily predated by thousands of starfish'* to reduce the likelihood of 'technicality' queries.

With regards to the inspection criteria:

- Make clear the distinction between inspection criteria used to define ephemerality, and that used to identify whether the fishery is HRA compliant.
- Include historical and geographical considerations when considering whether a stock is ephemeral.

2. Proposed definition of seed mussel ephemerality

Following these comments, the definition proposed for approval is as follows:

'A seed mussel is defined as mussel that is less than 45mm in length AND less than 1 years of age.

Ephemerality (as it relates to seed mussel) is defined by NWIFCA as a high proportion of the seed mussel stock being lost to the fishery due to natural causes before it can reach a year post settlement.

All conditions listed below must be met for the NWIFCA to consider an area of seed mussel as ephemeral, these being:

- 1) A settlement of high abundance and density of seed mussel, that is*
- 2) depositing high amounts of pseudofaeces (mussel mud), and*
- 3) the settlement is at risk of being washed away before it can reach size.*

In addition, there are occasions where settlements are lost due to the presence of large numbers of star fish heavily predated the stock. In this scenario, the above conditions do not need to be met in order for the stock to be defined as ephemeral.'

3. Process for determining ephemerality.

The fishery is highly variable depending on the vagaries of the stock and the changes in the dynamic environment of the northwest coast and have to be assessed on a year-by-year basis. The first stage of assessment is to determine if the stock is ephemeral.

'During inspections, officers will assess the following criteria to determine whether stocks are 'imminently likely' to wash away and therefore likely to be considered ephemeral.

1. Ephemerality Inspection Criteria

Inspection criteria	Reason
<i>The presence, thickness and extent of mussel mud</i>	<i>The build-up of mussel mud can mean mussel is vulnerable to being washed away or 'scoured' as they do not typically have secure attachment to the mud.</i>
<i>Evidence of scouring and looseness of mussel</i>	<i>Areas where there is evidence mussel has already washed away (scoured), or where it has become loose and gathered in heaps is indicative of imminent wash off.</i>
<i>High densities of seed mussel from that year</i>	<i>High densities of a single current year class, means the previous year has washed out enabling the new spat settlement, and the possibility it will undergo wash out again (dependent on the presence of the other factors)</i>
<i>Low levels of size mussel or mix of sizes – indicative of surviving the winter to grow on</i>	<i>If there are low densities of seed, and mussel is patchy, or dispersed among size or a mix of sizes that have survived the</i>

winter and grown on, it is not considered ephemeral.

Consideration of historical and geographic factors

Some beds are subject to local environmental conditions, which make them susceptible to loss. Often these beds have shown historical loss.

The second stage of assessment, once ephemerality is determined, is to assess whether a fishery (either hand gathered or dredge) is HRA compliant. During inspection, officers will assess the following criteria to determine whether a proposed fishery would be HRA compliant, along side consultation with Natural England.'

2. HRA Compliance Inspection Criteria

Inspection criteria	Reason
<i>The presence, thickness and extent of mussel mud</i>	<i>The presence of mud means fishers are less likely to contact the substrate when fishing for seed mussel and therefore not interact with the protected cobble and boulder feature beneath.</i>
<i>The extent of exposed cobble substrate</i>	<i>If large amounts of cobble is exposed or covered only by thin mud, it could mean fishing activity will interact with the protected feature.</i>
<i>Presence of Sabellaria</i>	<i>Sabellaria is a protected feature and fishing activity must not interact with this.</i>
<i>Presence of large volumes of star fish.</i>	<i>Star fish can quickly remove large quantities of mussel if present.</i>

Officers go regularly to these areas for inspection (once a month on low spring tides) due to the highly variable nature of the environment and unpredictability of stock and ensure that authorisation / permitting of seed mussel removal only occurs when the mussel is in a vulnerable condition. Detailed reports are subsequently made available to stakeholders via the website and presented to Members of the TSB committee for approval.