Portsmouth CITY COUNCIL

Title of meeting:	Community Safety Portfolio Decision Meeting
Date of meeting:	28th January 2020
Subject:	The Importance of Shellfish Production Areas & Sampling
Report by:	Director of Culture, Leisure and Regulatory Services
Wards affected:	ALL
Key decision:	No

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1. Purpose of report

1.1 The purpose of this report is to advise the Cabinet Member for Community Safety of the responsibilities placed upon Regulatory Services (RS) in respect to live bivalve molluscs (shellfish) and of the importance of shellfish more generally.

2 **RECOMMENDATION** that the Cabinet Member for Community Safety:

- **acknowledges the responsibilities of RS in respect to shellfish**
- **recognises the importance of shellfish to the local fishing industry and to the 'health' of our harbours**
- **approves the manner in which shellfish sampling is to be undertaken for the next 12 months**

3. An introduction to RS responsibilities for shellfish

3.1 RS is also the Portsmouth Port Health Authority (PPHA or *'competent authority for official controls'*). Part of the varied responsibilities of the PPHA is to carry out monthly bacteriological sampling of approved shellfish production areas in both Portsmouth and Langstone harbours.

3.2 The results obtained by the PPHA are used by the Food Standards Agency (FSA) to classify the production areas according to the *E.coli* levels in the shellfish flesh to ensure they meet the health standards laid down in EC Regulation 853/2004.

3.3 The classification protocol laid out in EC Regulation 854/2004 determines the areas where shellfish can be collected from and how the shellfish have to be treated after harvesting to ensure that they are safe to eat.

3.4 This assessment results in the classification of shellfish ('A', 'B', 'Long Term B' and 'C') which determines the level of treatment (e.g. purification, relaying, cooking) required before safe human consumption of the fish. Harvesters of live shellfish are required to complete Movement Documents, issued by PPHA, when shellfish are

taken from the production areas to ensure that purchasers can determine the quality of the shellfish.

3.5 EC Regulation 854/2004 also requires a monitoring programme of classified shellfish production areas to be established, as part of PPHA official controls, to check for the possible presence of marine biotoxins in the shellfish flesh.

3.6 Marine biotoxins which are produced by certain types of phytoplankton (marine algae) can accumulate in the tissues of filter feeding shellfish. The consumption of shellfish which are contaminated with these biotoxins can lead to illness, ranging from sickness and diarrhoea to more serious conditions which could require hospital treatment. Certain concentrations of toxins (depending on the specific biotoxin) can be lethal. Relaying and cooking shellfish does not reduce the toxin levels and so consumption of toxic shellfish during an algal bloom has to be avoided.

3.7 The PPHA is additionally responsible for implementing procedures in the event that contamination levels in shellfish beds exceed certain levels. The actions taken vary from further investigation of potential causes to the closure of the shellfish production areas depending on contamination levels.

3.8 As a result of the increased number of beds and species classified in recent years and as a consequence of the complexity of the results and reporting procedures, in 2014 the PPHA set up a Local Action Group (LAG). The LAG was supported by a Shellfish Local Action Plan (SLAP) which set out how sampling results, intelligence, pollution incidents and closures should be communicated to the wider fishing community. The SLAP was not proposed to be prescriptive, allowing flexibility and for the experience of RS officers in relation to fluctuating results and the reasons for such to be taken into account. In the last 5 years the SLAP has therefore evolved however it remains the template for communicating shellfish related information.

3.9 Whilst the economic value of the current classified areas is difficult to calculate the local shellfish industry was last reported (2014) to be worth in excess of £500,000 annually, with approximately 50 locally registered vessels operating within the PPHA area. Shellfish stocks levels are recorded by various agencies including the PPHA and whilst some of the classified areas have declined in respect to suitable stock numbers others remain of commercial value.

4. The impact of pollution upon shellfish

4.1 Sanitary Surveys[1] are required under EC Regulation 854/2004 relating to official controls on shellfish intended for human consumption. The surveys are intended to provide a thorough assessment of microbiological pollution sources in the harbours. Once the sources are located they enable the development of the most representative sampling plan, identify appropriate production area boundaries and the most representative monitoring points[2] (RMP) [i.e. where the PPHA are required to sample] for all shellfish production areas.

4.2 Sanitary Surveys undertaken by Centre for the Environment, Fisheries and Aquaculture Science (CEFAS) in 2013 reported the potential sources of pollution

impacting upon our harbours. These sources include the potential for releases from the sewage management and treatment processes controlled by Southern Water. Whilst the impact of any one pollution source upon the health and microbiological quality of shellfish is impossible to quantify, the quality of the shellfish in terms of *E.coli* contamination has deteriorated in 2019 resulting in a downgrading of the classification grading in 3 production areas.

4.3 The current classifications have been made by the FSA under Part III of Schedule 3 of the Food Standards Act 1999 from their review of the compliance data provided by the PPHA monthly sampling of the beds during this period. Compliance data for all production areas is assessed on a rolling basis throughout the review period as official control sample results become available. Further classification changes therefore, including upgrades and downgrades, may be made as appropriate as we continue with our sampling and will be notified to us via in-year interim updates.

4.4 The end product microbiological criteria specified in EU Regulation 2073/2005 must be met. The production area will be classified as A, B or C, with A as the least and C as the most contaminated. The level of treatment required to remove contamination from the shellfish after harvesting depends on this classification. If contamination levels are consistently so high that a class C cannot be achieved then harvesting from the area may be prohibited. The standards that must be achieved and the level of treatment required for each classification are:

- **Class A -** Shellfish can be harvested for direct human consumption if the end product standard requirements are met.

- **Class B -** Shellfish can be supplied for human consumption after one of three processes. The options are:

    - purification in an approved establishment
    - relaying for at least one month in a classified Class A relaying area
    - an EC approved heat treatment process.

- **Class C -** Shellfish can only be sold for human consumption after completing one of three possible processes. These processes are:

    - relaying for at least two months in an approved class B relaying area followed by treatment in an approved purification centre
    - relaying for at least two months in an approved class A relaying area
    - after an EC approved heat treatment process.

- **Prohibited areas -** Shellfish from areas with consistently prohibited level results must not be subject to production or be harvested.

4.5 Whilst there has been a marked improvement in classifications generally across the county this past year compared to the previous year, which is great news for the shellfish industry [31% less prohibited beds, considerably more Class A beds, 42% more and an increase in the number of Long Term B classifications], the results for

our production beds is however not so positive. The downgraded beds are identified in red in Table 1.

Table 1 - Classification of PPHA Shellfish Production Zones

Production Area	Classification Zone	Species	Classification 2018 / 2019	Classification 2019 / 2020
Langstone Harbour	South East Langstone Harbour	Hard Clam	B	B-LT
	Langstone Channel	Native or Flat Oyster	B	C
		Pacific Oyster	B	C
Portsmouth Harbour	East Harbour	Hard Clam	B-LT	B-LT
		Native or Flat Oyster	B-LT	B-LT
		Pacific Oyster	B-LT	B-LT
	Fareham Lake	Hard Clam	B	C
	Fareham Lake Middle	Native or Flat Oyster	C	C
		Pacific Oyster	C	C
	Paulsgrove & Portchester	Common Edible Cockle	C	C
		Manila Clam	C	C
	West Harbour	Hard Clam	B-LT	B-LT
		Native or Flat Oyster	B-LT	B-LT
		Pacific Oyster	B-LT	B-LT

4.6 The classification lists of production areas, classification maps and zones can be found within the additional information provided at the end of this report[3].

4.7 It should be noted that Southern Inshore Fishery Conservation Authority (SIFCA) has byelaws created under the IFCA in exercise of its powers under sections 155 and 156 of the Marine and Coastal Access Act 2009 restricting the harvesting of the PPHA classified beds[4].

5. The impact of shellfish upon nitrate pollution

5.1 Research[5] suggests that shellfish can help reduce nitrate levels in coastal waters following bed restoration. Some theories demonstrate that that the presence of nitrates increases the growth of oysters. If accurate, the correlation of high nitrogen to faster growth is important because it shows that it may be possible to use shellfish to reverse the impacts of nitrates causing algae growth.

5.2 Bespoke studies demonstrate how shellfish filter-feed on the harmful algae and remove the nitrogen from the water by storing it in their shells and tissues, and also

through their faeces which gets broken down by microbes. Therefore it is possible to demonstrate a probable correlation between the benefits of shellfish farming in particular in our harbours and the reduction of nitrogen from wastewater treatment plants, farm fertilizers and other human sources can be decreased.

5.3 Successful bed restoration is however dependent on a range of environmental conditions. Research carried out by the Marine Management Organisation (MMO)[6] into sites which might be *"suitable for marine habit restoration or creation"*. In summary their review, which included our harbours, has shown that with the exception of a few habitats, notably saltmarsh, the development of an effective range of measures to ameliorate the negative environmental impacts of development, or achieve biodiversity net gain, in the marine environment, is still in its infancy. They state that for many habitats, considerable uncertainties remain about the likely efficacy of possible marine habitat creation / restoration measures. They state that further trials, research and consistent monitoring are required to improve the evidence base and improve confidence in restoration / creation feasibility.

5.4 In respect to importance of saltmarsh sites in shellfish restoration the Langstone Harbour Board published *'that between 1956 and 2001 72% of saltmarsh is reported to have been lost from Langstone Harbour'*. Other documents such as the North Solent Shoreline Management Plan[7] report that in the inter-tidal areas *'saltmarshes have reduced in extent by 84% in Portsmouth Harbour and 83% in Langstone Harbour since 1946.'* Saltmarsh areas currently mapped via Natural England's 'Magic Map'[8]. The extent of current saltmarsh is not considered to be high.

5.5 With the above statements in mind, increasing the numbers of shellfish within our harbours and maintaining viable commercial harvesting whilst assisting with nitrate reduction is considered, at this point in time, to be by no means certain.

6. Future shellfish sampling plans

6.1 The PPHA will continue to secure the necessary means to sample species of shellfish from both Langstone and Portsmouth harbours to maintain the classification of the production areas.

6.2 Sampling will, where possible, be undertaken on as random a basis as possible with respect to likely influencing environmental factors so as to avoid introducing any bias to the results. In practical terms, planning sampling dates weeks in advance and sticking to those dates regardless of the weather conditions (where safety permits) should be adequate for ‘randomising’ most factors.

6.3 Our production areas are limited to particular tidal states due to access or safety reasons, however, we will endeavour to maintain sampling on a monthly basis. Where particular problems occur, such as unexplained increases in the extent of contamination, then the sampling frequency may need to be increased for a period of time, as identified by FSA. In any event PPHA will aim to maintain an absolute minimum of 10 individual shellfish arriving live at the laboratory and containing at

least 50g of flesh for testing so to meet the prescriptive classification purposes.

6.4 PPHA will continue to monitor and appraise shellfish levels and consider these in respect to production areas and their long-term commercial viability.

7. Integrated impact assessment

7.1 An Integrated Impact Assessment is attached. The proposal has an association with the assessment categories of 'Natural environment' and 'Economy'.

8. Head of Legal Services' comments

8.1 The FSA is required to verify that official controls of the harvesting of shellfish are organised and carried out in accordance with the relevant provisions of EC Regulation 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and welfare rules.

8.2 PPHA is required to develop a documented procedure relating to their shellfish sampling responsibilities. As part of these responsibilities, it is appropriate to create a SLAP on the sampling and harvesting of shellfish for the purpose of official control monitoring of classified shellfish production areas under EC Regulation 854/2004.

8.3 Much mention has been made within this paper to EU shellfish regulations and standards. These were introduced to establish a common regulatory framework and to develop common standards either through mutual recognition or harmonisation.

8.4 EU regulations with an important bearing on the seafood industry include the common organisation of the markets in fishery and aquaculture products, consumer information, food traceability and food safety. The EU has a direct bearing on UK seafood operators as all UK businesses must comply with all applicable EU Regulation and guidance whether trading inside or outside the EU single market. It is unlikely therefore that our relationship with the EU will have any material bearing upon the regulations mentioned within this report.

9. Head of Finance comments

9.1 The activities proposed within this report, will be funded from existing service budgets, as approved by Full Council.

10. Directors comments

10.1 Undoubtedly, the sensitive marine environments of the two harbours under the control of the PPHA are subject to a variety of interlinked impacts including national, commercial and non-commercial activities, water pollution, invasive species, disease, habitat loss and fishing.

10.2 In 2018 / 2019 the activities of the PPHA has enabled a scientific analysis of the shellfish which has demonstrated that the quality of the production areas has reduced in three locations. The resultant downgrading in classification is however expected to result in the numbers harvested being reduced.

10.3 Shellfish are known to contribute to improved water quality issues through the filtration capacity and their ability to filter and clean large volumes of water and therefore the downgraded classification may be beneficial. However, the restoration of shellfish beds is complicated and the availability of their preferred habitats is likely to further impact upon the space available for resettlement.

10.4 Our harbours are considered to be eutrophic or at risk of eutrophication which we know can cause algal blooms in the water which disrupt normal ecosystem function and promote the growth of benthic algae which can smother seabed habitats. The recovery of the beds is dependent on improved larval recruitment, yet recruitment tends to be sporadic and dependent on local environmental conditions including summer sea water temperature, predation intensity and hydrographic conditions.

10.5 What is evident from this report is that shellfish are important both on an ecological and economic level but are difficult to encourage / manage / retain. The PPHA plays a significant role in monitoring the numbers and quality of shellfish in our harbours and in protecting public health from polluted species reaching the commercial market. It is therefore imperative that the resources and finances provided to RS continue to ensure this essential work endures.

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Signed by: Stephen Baily, Director of Culture, Leisure and Regulatory Services

Appendix A: Background list of documents: The following list of documents discloses facts or matters, which have been relied upon to a material extent by the author in preparing this report:

	Location and Title
2	https://www.cefas.co.uk/cefas-data-hub/food-safety/sanitary-surveys/
3	https://www.cefas.co.uk/cefas-data-hub/food-safety/classification-and-microbiological-monitoring/england-and-wales-classification-and-monitoring/
3	https://www.cefas.co.uk/cefas-data-hub/food-safety/classification-and-microbiological-monitoring/england-and-wales-classification-and-monitoring/classification-zone-maps/
4	https://www.cefas.co.uk/cefas-data-hub/food-safety/classification-and-microbiological-monitoring/england-and-wales-classification-and-monitoring/shellfish-monitoring-results/
5	http://www.southern-ifca.gov.uk/byelaws
6	http://shellfish.ifas.ufl.edu/environmental-benefits/
7	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/798829/20190430_MMO1135_Identifying_sites_for_habitat_creation_datalayers_Report_a.pdf
8	http://www.northsolentsmp.co.uk/CHttpHandler.ashx?id=15858&p=0
	https://magic.defra.gov.uk/MagicMap.aspx?srs=WGS84&chosenLayers=bapcfgmarshIndex,spaIndex,marinespa,spamudPIndex,spamudIndex,spasandPIndex,spasandIndex,spareefPIndex,spareefIndex,spasaltmPIndex,spasaltmIndex,backdropDIndex,backdropIndex,europeIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex&box=-1.21508020899995:50.761143056:-1.03871916899995:50.875143973&useDefaultbackgroundMapping=false

The recommendations set out in 2 above were approved by the Cabinet Member for Environment & Community Safety on the 28th January 2020.

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Signed by: Councillor Lee Hunt, Cabinet Member for Community Safety