

SUBMISSION OF INFORMATION FOR RECOGNITION OF DISEASE-FREE STATUS FOR BONAMIA EXITIOSA IN CORK HARBOUR, IRELAND IN ACCORDANCE WITH CHAPTER 4 OF PART II OF REGULATION (EU) 2020/689 AND ARTICLE 11 OF COMMISSION IMPLEMENTING REGULATION (EU) 2020/2002

1. Date of submission	14 May, 2025	Member State	Ireland
2. Contact point			
Name	Deborah Cheslett	Address	Marine Institute Rinville Oranmore Co. Galway H91 R673 Ireland
Email	deborah.cheslett@marine.ie	Telephone	00353 91 387200
Disease Information			
3. Name of Category C disease	Infection with <i>Bonamia exitiosa</i>	4. Grounds for recognition of disease-free status	Historical and surveillance data in accordance with paragraphs (1)(a) and (2) of Article 70 of Commission Delegated Regulation (EU) 2020/689 and point 1(b)(i) of Section 5 of Annex VI to Commission Implementing Regulation (EU) 2020/2002.
5. Territorial scope	Zone (i.e. a contiguous hydrological system with a distinct health status with respect to a specific disease that forms part of a coastal area with a precise geographical delimitation)	Location	Cork Harbour (see map in Appendix I)
7. Compliance with paragraphs (1)(a) and (2) of Article 70 of Delegated Regulation (EU) 2020/689 and with point 1(b)(i) of Section 5, Annex VI to Implementing Regulation (EU) 2020/2002 concerning infection with <i>Bonamia exitiosa</i>			
10. Background			

Cork Harbour is a natural harbour located at the mouth of the River Lee in County Cork, on the south coast of Ireland. This provisional declaration of freedom from infection with *B. exitiosa* concerns managed native oyster (*Ostrea edulis*) beds within the harbour (see Appendix I). The oyster beds are within a Fishery order which is a type of license issued under the **Fisheries (Consolidation) Act, 1959**. The beds were restored by Atlantic Shellfish Ltd. in the 1980s and have been actively stocked managed and by the company since that time.

Spat are produced in spatting ponds during the summer months using broodstock selected from the fishery. The resultant larvae are settled on cultch in the ponds and once the spat has grown to approximately 5mm the cultch is scattered into the sea into marked beds. The oysters are then on grown for approximately for 4 years, before they are harvested and sold.

Atlantic Shellfish Ltd also manage the only aquaculture sites in the bay where *M. gigas* are reared using both bags and trestles and bottom culture. The *M. gigas* are imported as spat from hatcheries in Ireland and France and ongrown to adults. The map in appendix I shows the location of the native oyster beds and Pacific oyster culture sites.

According to the list of aquatic species which is set out in the Annex to Commission Implementing Regulation (EU) 2018/1882, *Ostrea edulis* is the only species found in Ireland, which is susceptible to *Bonamia exitiosa*.

This provisional declaration of freedom concerns a zone where native oyster beds are actively managed and owned by Atlantic Shellfish Ltd., and which remain their property throughout the rearing and culture stages, up to and including harvesting. For that reason, the operation has been approved as an aquaculture establishment by the competent authorities.

Details of disease surveillance

Surveillance has been carried out in Cork Harbour in accordance with the aquatic animal health legislation that has been applied within the EU since the early 1990s i.e. Council Directives 91/67/EEC and 2006/88/EC, Commission Regulation (EC) No 1251/2008, Regulation (EU) 2016/429 and Commission Delegated Regulation (EU) 2020/689. Details of the samples collected and tested in accordance with that legislation during the period 1993 to November 2025, are included in Appendix II.

During the period from 1993 to 2008, all samples were tested using tissue imprints, a test which allows for the detection of both *B. ostreae* and *B. exitiosa*. *B. ostreae* was first detected in 1987 but *Bonamia exitiosa* has not been found to date. Prior to the detection of *Bonamia exitiosa* in Europe in 2007 testing relied on examination of heart impression prints as in line with the fish and shellfish legislation in place at the time (91/67/EC and 2006/88/EC and associated acts) however since that time speciation of parasites has been performed using initially PCR-RFLP, based on the method described by Cochennec et al (2000) and more recently using a taqman duplex PCR (IFREMER) which allows for the simultaneous detection of both species *B. ostreae* and *B. exitiosa*. From 2023 onwards the preliminary diagnostic tool used was the duplex PCR as described above with additional screening using cytology and histology as required.

Details of the sampling which has been carried out in Cork harbour since 1993, are set out in Appendix II. In total **3,175** *O. edulis* were sampled and tested negative for *B. exitiosa*, over a thirty-year period. All parts of Cork Harbour where *O. edulis* are found, have been included in the active surveillance programme.

Prevention to control the introduction of the disease agent

Infection with *B. exitiosa* is a notifiable disease in Ireland. It has never been notified to the competent authority, nor has surveillance for *Bonamia spp.* ever raised suspicion of the presence of *B. exitiosa* in Ireland

This provisional declaration of freedom from infection with *B. exitiosa* concerns a managed native oyster (*Ostrea edulis*) fishery in Cork Harbour. *Magallana gigas* aquaculture also takes place in Cork Harbour and that site is also managed by Atlantic Shellfish Ltd. The Marine Institute as the Competent authority for the Animal Health Law (EU) 2016/429 (EU) as it applies to aquatic animals is responsible for the control of movements of shellfish in Ireland. The institute holds records of all imports, exports and internal movements of shellfish.

All movements within/to/from Ireland are notified to the competent authority in advance and are therefore, readily controlled and fully traceable. In addition, aquaculture operators are obliged to keep records of all movements to and from their establishments, as well as mortality records. These records are checked during regular risk-based inspections. Increased unexplained mortality in the establishment must be reported to the competent authority, for investigation. The records show that there have been 6 introductions of *O. edulis* into the bay, since 2008 when the MI was designated as the competent authority. This includes one introduction into a research facility in Cork Harbour (2013) and five internal movements from Tralee Bay (2013-2021).

Concerning natural dispersion of potentially infected native oysters from outside of Cork Harbour, native oysters have a larval stage which lasts between 11 and 30 days (depending on environmental conditions). During this pelagic stage, larvae can travel distances greater than 10 kilometres on the ocean currents (Perry & Jackson, 2017) DNA from both *Bonamia ostreae* and *Bonamia exitiosa* has been detected by PCR in larvae (Arzul et al 2011) suggesting that larvae could play a role in transmission of the parasites, however, the closest native oyster fisheries to Cork Harbour is Tralee Bay, which is over 280 kms away, by sea. Tralee Bay is declared free from both *B. exitiosa* and *B. ostreae*. Following the larval stage, oysters settle and become sedentary, thus movement of any other stage of native oysters besides larvae into the proposed disease-free zone can only be achieved by physical transfer of oysters.

Importantly, all aquaculture establishments in Ireland are approved by the competent authority, in compliance with Regulation (EU) 2016/429 and Commission Delegated Regulation (EU) 2020/691.

As a consequence, all approved establishments, including Atlantic Shellfish Ltd, have a biosecurity plan which identifies routes through which a disease agent can enter the aquaculture establishment, spread within it and transfer from it, as well as identifying risk-mitigation measures for each biosecurity risk which was identified. The operators of Atlantic Shellfish Ltd. have devised such a biosecurity plan and implement it on an ongoing basis.

In addition, the competent authority implements a risk-based health surveillance scheme which includes health visits and sampling at an appropriate frequency depending on the nature of production at the aquaculture establishment. The programme is aimed at the timely detection of increased mortality, relevant listed diseases, and emerging diseases. The frequency of risk-based surveillance visits depends upon the type of aquaculture establishment and subsequently the risk ranking assigned to that establishment. Risk ranking criteria are applied in accordance with Part 1 of Annex VI of Regulation (EU) 2020/689. Cork Harbour (Atlantic Shellfish) is currently ranked as 'Medium risk' and is therefore subject to a surveillance visit at least once every two years.

Control Measures

Infection with *B. exitiosa* is a notifiable disease. It has never been detected in Ireland, but if it were, disease control measures in accordance with Chapter IV, Part III of Commission Delegated Regulation (EU) 2020/687 would be applied.

Ban on vaccination

O. edulis in Cork Harbour are not subject to vaccination against *B. exitiosa*, or any other disease.

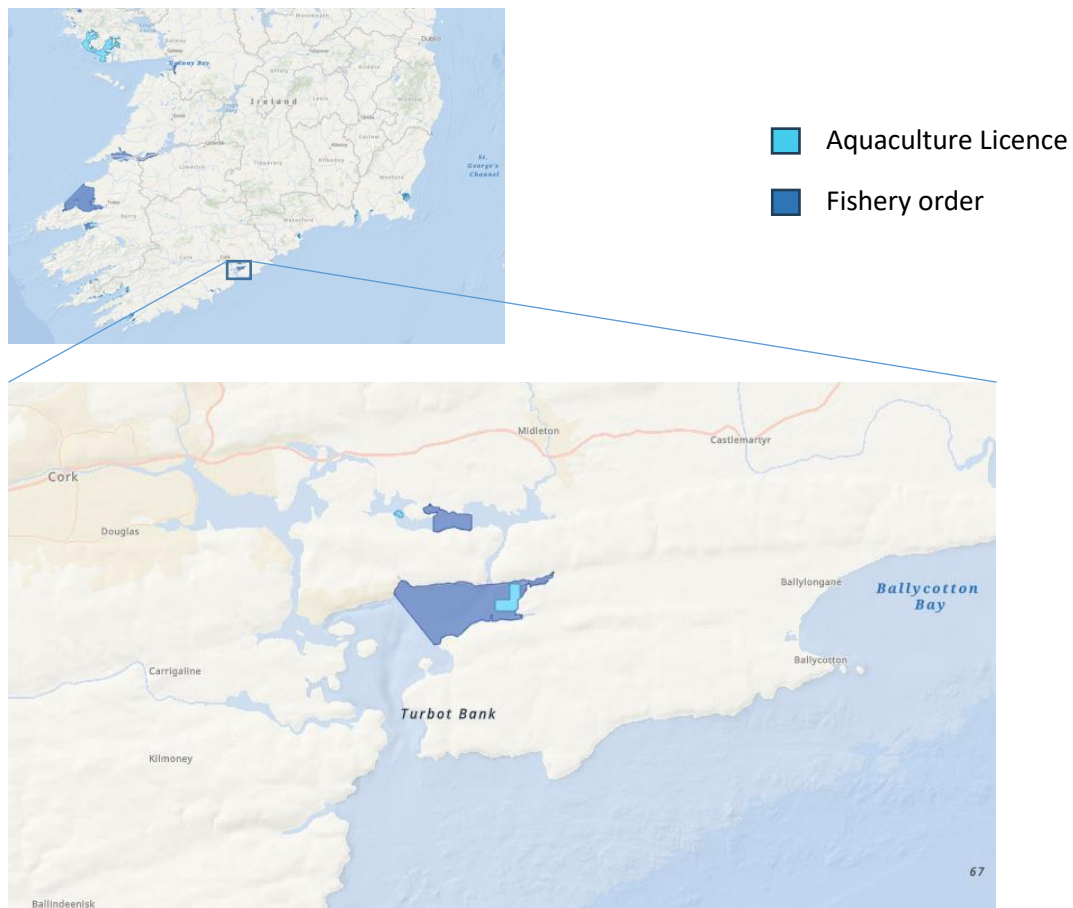
References

Perry, F. & Jackson, A. 2017. *Ostrea edulis* Native oyster. In Tyler-Walters H. and Hiscock K. (eds) Marine Life Information Network: Biology and Sensitivity Key Information Reviews, [on-line]. Plymouth: Marine Biological Association of the United Kingdom.

Arzul et al 2011 - Can the protozoan parasite *Bonamia ostreae* infect larvae of flat oysters *Ostrea edulis*? Isabelle Arzul, Aimé Langlad, Bruno Chollet, Maeva Robert, Sylvie Ferrand, Emmanuelle Omnes, Sophie Lerond, Yann Couraleau, Jean-Pierre Joly, Cyrille Francois, Céline Garcia *Veterinary Parasitology* 179 (2011) 69–76

Date: 14 May, 2025

Appendix I: Map of the oyster fishery orders and aquaculture sites in Cork Harbour



Appendix II: Testing of *O.edulis* in Cork harbour for *Bonamia* sp. 1993-2025

YEAR	SEASON	NO OF OYSTERS	TEST	BONAMIA sp.	Speciation*
1993	Spring	150	Cytology	Negative	n/a
	Autumn	435	Cytology	13/435 positive	n/a
1994	Spring	293	Cytology	36/293 positive	n/a
	Autumn	140	Cytology	5/140 positive	n/a
1995	Spring	146	Cytology	5/146 positive	n/a
	Autumn	50	Cytology	8/50 positive	n/a
1996	Spring	280	Cytology	56/280 positive	n/a
	Autumn	80	Cytology	23/80 positive	n/a
1997	Spring	30	Cytology	3/30 positive	n/a
	Autumn	30	Cytology	4/30 positive	n/a
1998	Spring	30	Cytology	5/30 positive	n/a
	Autumn	10	Cytology	1/10 positive	n/a
1999	Spring	60	Cytology	Negative	n/a
	Autumn	50	Cytology	7/50 positive	n/a
2000	Spring	30	Cytology	2/30 positive	n/a
	Autumn	67	Cytology	Negative	n/a
2001	Spring	60	Cytology	9/60 positive	n/a
	Autumn	60	Cytology	3/60 positive	n/a
2002	Spring	60	Cytology	10/60 positive	n/a
	Autumn	60	Cytology	9/60 positive	n/a
2003	Spring	30	Cytology	2/30 positive	n/a
	Autumn	29	Cytology	3/29 positive	n/a
2004	Spring	59	Cytology	1/59 positive	n/a
	Autumn	60	Cytology	14/60 positive	n/a
2005	Spring	60	Cytology	20/60 positive	n/a
	Autumn	30	Cytology	3/30 positive	n/a
2006	Spring	30	Cytology	8/30 positive	n/a
	Autumn	Not available	Cytology	n/a	n/a

2007	Spring	Not available	Cytology	n/a	n/a
	Autumn	Not available	Cytology	n/a	n/a
2008	Spring	62	Cytology	17 / 62 Positive	PCR-RFLP – all <i>B. ostreae</i>
2009-2022	Passive surveillance only in Cork harbour				
2023	Summer	200	Duplex qPCR	Negative for <i>B. ostreae</i> & <i>B. exitiosa</i>	
2024	Spring	147	Duplex qPCR	7/147 +ve for <i>B. ostreae</i> 147/147 -ve for <i>B. exitiosa</i>	
2024	Autumn	200	Duplex qPCR	Negative for <i>B. ostreae</i> & <i>B. exitiosa</i>	
2025	Spring	147	Duplex qPCR	5/150 +ve for <i>B. ostreae</i> 150/150 -ve for <i>B. exitiosa</i>	