Eastern IFCA
Inshore Fisheries and Conservation Authority

The Wash Fishery Order and The Wash Restricted Area Biosecurity Plan

2020 - 2025

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1. Introduction

1.1. Biosecurity

Biosecurity is a term that describes the measures and procedures taken to reduce the risk of introducing invasive, non-native species and diseases into a given area, and the measures taken to prevent the spread of these once they are established within an area.

The introduction of non-native species into marine ecosystems is an increasing problem across the globe. Naturally, the distribution of marine fauna and flora are limited by barriers to dispersal (Elton, 1958; Shucksmith and Shelmerdine, 2015). These barriers include geographical disturbance, temperature gradients and current regimes (Shucksmith and Shelmerdine, 2015). Increasing anthropogenic interference with the marine environment and globalization have altered and removed these barriers, both intentionally and accidentally. This has led to an increase in the introduction of non-native species and emerging diseases at new locales. Shifts in species ranges and environmental controls projected in line with climate change are likely to further exacerbate the issue of non-native species recruitment and increase their success in new marine environments (Mainka and Howard, 2010).

Non-native species become invasive when they become established and thrive in an unfamiliar environment. The establishment and spread of non-native species can have a dramatic impact on the marine environment, threatening native species and natural features, and interfering with man-made structures and vital industries (including fisheries). It is common for non-native species to compete with native species for essential resources, including food, space and light.

Once non-native species become established in marine habitats, it can be near impossible to eradicate them (Thresher and Kuris, 2004; Molnar *et al*., 2008). It is fundamental that Eastern IFCA assesses the risk posed by non-native species and diseases to the fishery and conservation interests of the Authority. Due to the excessive costs associated with the control and elimination of established species and diseases, this plan will emphasise the need for prevention/rapid response to identified risks and aims to identify measures that can be taken to reduce these.

1.2. Biosecurity legislation

The United Kingdom has obligations under national and international law to address issues associated with INNS and the spread of disease. Internationally these requirements are set out in numerous legislative documents, including:

- Marine Strategy Framework Directive (2008/56/EC),
- Water Framework Directive (2000/60/EC),
- European Union animal health legislation (2006/88/EC),
- European Union Habitats and Birds Directives (1992/43/EC; 2009/147/EC),
- Convention of Biological Diversity and
- Bern Convention on the Conservation of European Wildlife and Habitats.

In addition to these requirements, Eastern IFCA has obligations to maintain biological diversity and further the conservation objectives of marine protected areas under national law, as set out in:

- Marine and Coastal Access Act 2009,
- Countryside and Rights of Way Act 2010,
- Conservation of Species and Habitats Regulations 2017
- The Aquatic Animal Health (England and Wales) Regulations 2009 and
- The Wildlife and Countryside Act 1981.

The Aquatic Animal Health (England and Wales) Regulations 2009 recognise the importance of effective biosecurity measures to restricting the spread of diseases in the marine environment. Under this legislation Cefas has recognised Eastern IFCA as the operator responsible for ensuring that the requirements of the Regulations are met within the Wash Fishery Order 1992 area (The Wash Production Area). Furthermore, under the Regulations the Authority is responsible for recording the movement of aquaculture species into and out of the mollusc farming area, the results of any biosecurity surveillance carried out by Eastern IFCA and the results of any biosecurity surveillance carried out by Cefas.

1.3. The Wash Fishery Order and The Wash Restricted Area

The Wash Fishery Order is a hybrid (regulating/several) order under Section 1 of the 1967 Sea Fisheries (Shellfish) Act. The Wash Fishery Order enables Eastern IFCA to grant exclusive fishing rights to individuals for the purpose of aquaculture, as well as enabling Eastern IFCA to develop and enforce management measures and regulations to ensure that stocks of the prescribed species are fished in an appropriate and sustainable manner (oysters, mussels, cockles, clams, scallops and queens).

For more on the Wash Fishery Order 1992, see: https://www.eastern-ifca.gov.uk/regulations/wash-fishery-order-1992/

A High Court judgement in July 2018 had the effect of changing the boundary of the Le Strange Estate, a private fishery in The Wash not included within the limits of the Wash Fishery Order. This judgement had the effect of creating an ‘unmanaged’ area in The Wash. In response to this Eastern IFCA introduced the ‘Wash Emergency Byelaw 2018’, an emergency byelaw introduced for the unmanaged area, now known as The Wash Restricted Area, that introduced a permit scheme that reflects the provisions of the Wash Fishery Order.

For more on The Wash Emergency Byelaw 2018, see: http://www.eastern-ifca.gov.uk/wash-emergency-byelaw-2018/.

This biosecurity plan will apply to areas and activities operating under the Wash Fishery Order and the Wash Emergency Byelaw 2018 (Figure 1).

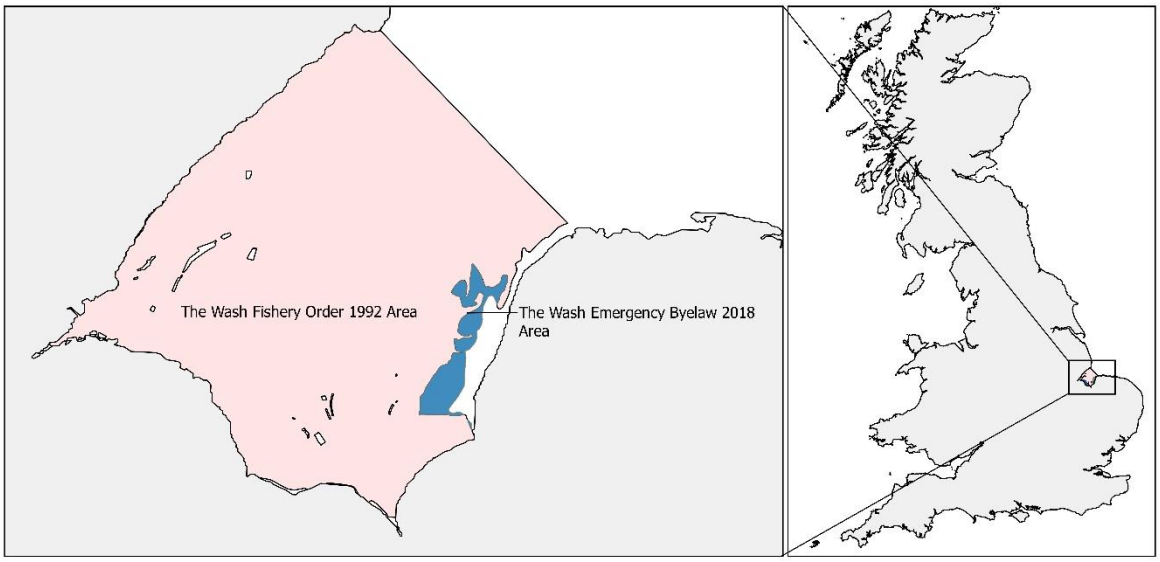


Figure 1. Left: Boundaries of The Wash Fishery Order (White boxes: Lays of The Wash Several Fishery) and Wash Emergency Byelaw. Right: Position of The Wash on the British coastline.

1.3.1. The importance of aquaculture

Aquaculture is a growing industry that has been identified in the East Marine Plan as a “key area for development” due to its “potential to contribute to the sustainability and security of the United Kingdom food supply which, in turn, may encourage growth in small and medium enterprises supporting the industry” (HM Government, 2014). The East Marine Plan area accounts for approximately 40% of English shellfish production via aquaculture, including over half of English mussel production via aquaculture. The Plan specifically refers to the private lays in The Wash and along the North Norfolk Coast as nationally significant aquaculture.

Figure 2. Spreading of seed mussels from The Wash in lays in Brancaster Bay by a local fisherman in June 2019. Photograph courtesy of The Mussel Pod (https://twitter.com/brancasterbay).

2. Identified vectors for the spread of invasive non-native species and disease

2.1. Introduction of live shellfish into The Wash Production Area

Article 3(1) of The Wash Fishery Order 1992 outlines the right of several fishery for the prescribed species of the Order. This enables Eastern IFCA to grant exclusive fishing rights to individuals for the purpose of aquaculture. Aquaculture areas in The Wash are referred to as shellfish lays. There is significant risk of introducing disease and locally absent species into The Wash from the movement of live shellfish associated with these lays.

2.1.1. Risk limitation and mitigation measures

Eastern IFCA manages aquaculture activity on lays through the implementation of lease conditions. This includes a prohibition on the relaying of shellfish onto lays from outside The Wash without prior consent from Eastern IFCA.

Applications to move shellfish into The Wash are made on a standard form (Appendix 3) and are considered on a case-by-case basis. This process is outlined in Appendix 5. Eastern IFCA consider the following as part of this process:

- The disease status and history of the area the shellfish originate from;
- Monitoring mortality and what to do if shellfish disease is suspected;
- Known invasive non-native species in the area the shellfish originate from;
- Whether the supplier of the shellfish operates a biosecurity plan.

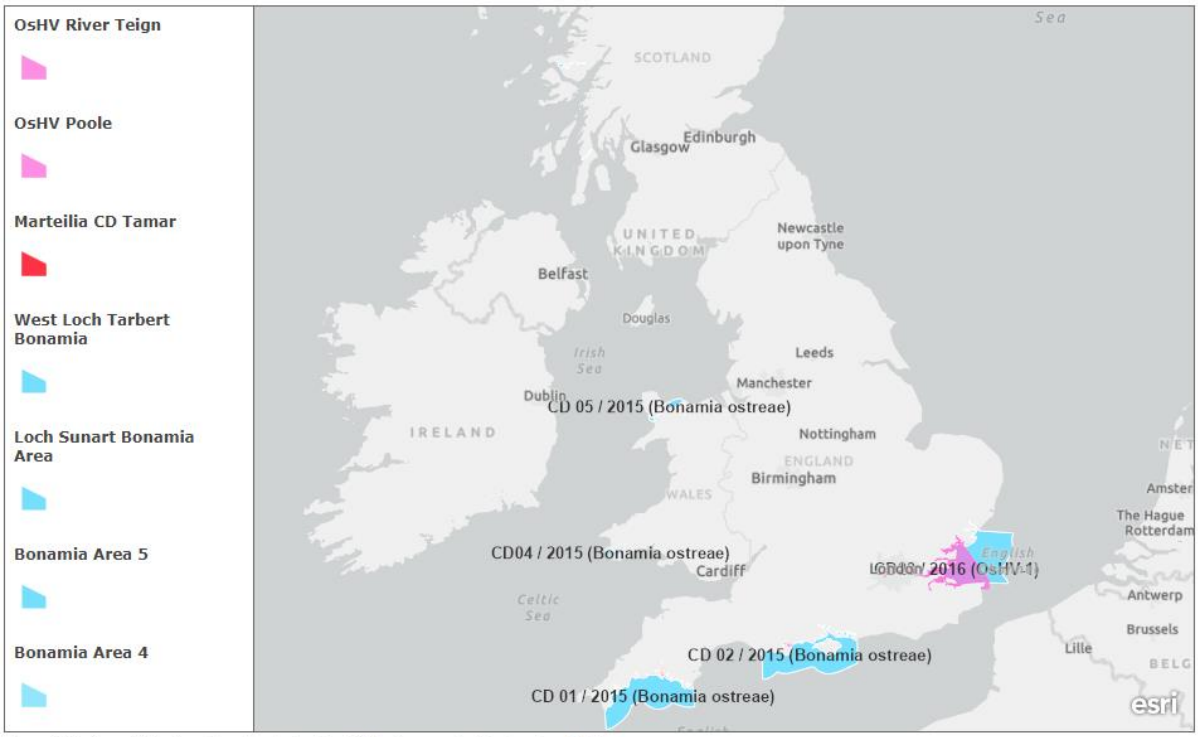
Furthermore, the most effective mitigation for the introduction of non-native species and diseases would be to promote the use of locally sourced shellfish for local aquaculture. Eastern IFCA seeks to enable annual seed mussel fisheries in The Wash[1], and would support the use of other local sources of shellfish for The Wash lays.

2.1.1.1. Disease status and history

Great Britain has a high (good) health status with regards to fish, mollusc and crustacean diseases. Eastern IFCA can help reduce the risk of spreading disease and introducing disease into the Eastern IFCA district by being aware of the disease status in the area any shellfish originates from. Notifiable diseases for molluscs include; *Bonamia exitiosa, Bonamia ostreae, Perkinsus marinus, Marteilia refringens, Microcytos mackini,* and Oyster herpes virus.

Up-to-date information on outbreaks of fish and shellfish diseases can be found on the GOV.UK website, which provides a number of resources including an interactive online chart detailing control areas (e.g. Figure 3). Prior to consenting any shellfish imports, Eastern IFCA officers should check all available information on the origin of the shellfish to ensure it has not come from a designated disease control area.

[1]Mussel seed fisheries in The Wash were underexploited in 2018 and 2019



Map of Confirmed Designations for listed shellfish diseases in England and Wales.

Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS | Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS

Figure 3. Shellfish disease control areas in England and Wales on 27th June 2019 (GOV.UK, 2019).

2.1.1.2. Suspicion of shellfish disease

In line with Fish Health Inspectorate (FHI) guidance, creating a requirement for mortality monitoring of shellfish on private lays following imports will be a key component of Eastern IFCA's review of The Wash Fishery Order lease agreements, a piece of work due for completion during 2020.

This will require all lay holders to monitor mortality using a standard form on at least one occasion per year (if the lay is not actively being used) or within six weeks of having relayed new mussel onto a lay. Eastern IFCA records all notifications of mortality.

Any suspicion of mortality or shellfish disease within lays will be reported to the Fish Health Inspectorate (FHI). This includes reports of any sign of infection in shellfish, if shellfish are dying in larger numbers or more than normal and/or if shellfish are affected by unusual deaths.

More details on when to report suspicions and what happens if the FHI suspects a notifiable disease can be found on the GOV.UK website: https://www.gov.uk/guidance/report-serious-fish-or-shellfish-diseases

To ensure that any suspicions are reported, all Wash Fishery Order fishers (including but not limited to lay holders) should be reminded of the importance of reporting any suspicions and reminded that knowing about or suspecting notifiable disease but not reporting it could result in fines of up to £5,000 (GOV.UK, 2019)[1].

To encourage reporting of suspicions, Eastern IFCA have produced a standard form to monitor and report mortality incidents and provide some advice of signs and symptoms for lay holders to be aware of.

In the event that diseased shellfish are positively identified by the FHI within the Wash Production Area, Eastern IFCA officers should follow the steps set out in Appendix 1.

2.1.1.3. Invasive non-native species at the origin and track record of seller

Prevention is key to the battle against marine non-native species, as once a species becomes established in the marine environment it is extremely difficult, if not impossible, to remove it. The EC Habitats Directive and the Convention on Biological Diversity both require control of non-native populations. The Convention on Biological Diversity adopts a three-stage hierarchical approach to tackling non-native species that threaten ecosystems, habitats or species; 1. Prevention, 2. Detection/Surveillance, and 3. Rapid Response, Control and Eradication[2], (GB Non-Native Species Secretariat, 2008).

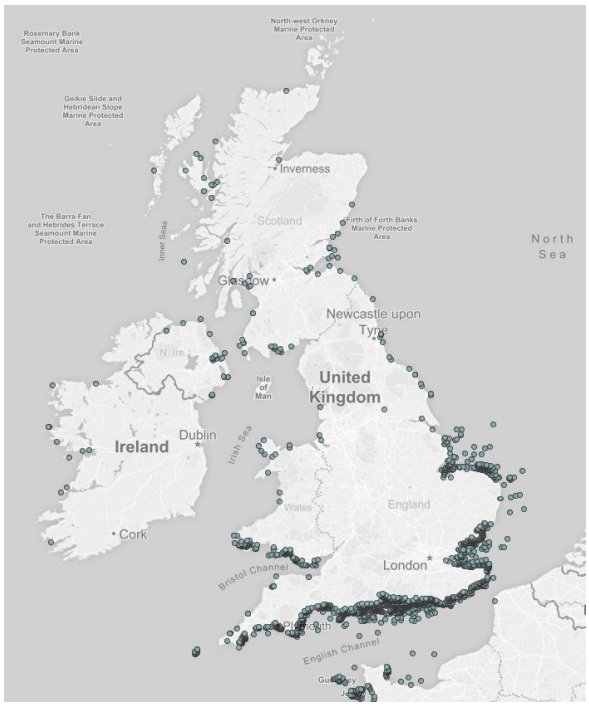


Figure 4. NBN Atlas species records for the American Slipper Limpet, *Crepidula fornicata* (Linnaeus, 1758)[4]

The National Biodiversity Network (NBN) Atlas in an online tool containing over 223 million species occurrence records for marine and terrestrial species around the UK. Among these are records on non-native species (e.g. Figure 4). This tool should be used to investigate the positions of high-risk species (Appendix 1) at the origin of any shellfish due to be imported into The Wash. Records can also be downloaded and analysed from the NBN Atlas and alerts set up for when new records are added.

If non-native species are known at the origin, officers should research and contact the sellers and local fisheries managers to find out about local biosecurity procedures, whether the seller operates under a biosecurity plan or has a good track record of awareness of biosecurity issues. Non-native species are ubiquitous throughout UK waters and records of a non-native species in an area should not necessarily preclude allowing imports from that area. Instead, the species present, legal requirements and risk of it being found in shellfish catch at the given time of year should be taken into careful consideration prior to consenting or prohibiting the imports.

[2]Guiding Principles annexed to decision COPVI/23 of the Conference of the Parties

2.2. Shellfish movement procedures

In addition to the risk of introduction via the movement of live shellfish, there are other vectors for the introduction of disease and invasive non-native species. These vectors include:

- Operation of commercial fishing vessels inside The Wash that have operated outside of The Wash
- Bags used for the transportation of shellfish are exchanged between vessels in The Wash Production Area and around other fisheries and shellfish processing plants in the UK

2.2.1. Risk limitation and mitigation measures

In order to reduce the risk of spreading non-native species involved with the movement of vessels, Eastern IFCA should target biosecurity engagement at boat owners and skippers when officers are made aware of vessel or shellfish movements into the district. For example, when fishing boats from The Wash return from participating in the annual Thames cockle fishery, Eastern IFCA may target engagement at these fishers and request that certain voluntary measures are undertaken to reduce the risk of spreading species from the Thames into The Wash. Engagement will follow advice form the GB Non-Native Species Secretariat and will include using promotional material from the “Check-Clean-Dry” campaign (e.g. Figure 5).

2.3. Cockle and mussel fishery procedures

The operation of commercial fishing vessels that have operated in other areas of the UK, fishing gear and other kit used for the transportation of shellfish are the potential vectors for the spread of non-native species associated with cockle and mussel fishery procedures.

2.3.1. Risk limitation and mitigation measures

Targeted engagement is used to raise awareness about risks associated with the movement of vessels, fishing gear and shellfish, including the use of “Check-Clean-Dry” campaign material (e.g. Figure 5). This should include reminders about high-risk species and emerging disease threats, as well as reminders of the duties of fishermen under the Wildlife and Countryside Act 1981.

Figure 5. Marine boaters check-clean-dry poster, an example of promotion material that could be provided to fishers to encourage good biosecurity practices.

Appendix 1: Contingency plan for the discovery of shellfish disease within The Wash Production Area

In the event that diseased shellfish are positively identified by the FHI within the Wash Production Area, each or a number of the following actions will be taken by Eastern IFCA officers as deemed appropriate. Eastern IFCA officers should keep a clear record of the steps taken and provide an explanation where the outlined actions are not taken.

Step	**Description**	**Completed (Y/N)** *If no, please provide an explanation why not*
1	All Eastern IFCA officers should be briefed on the presence of the disease, its effects, and methods of reducing its spread	
2	Fishery stakeholders should be informed in writing and verbally where possible by officers of the presence of the disease. Information provided should include details of the steps that can be taken by all fisheries stakeholders to minimise the risk of spreading disease	
3	Defra, the MMO, Food Standards Agency, the Shellfish Association of Great Britain, the Welsh Government, Department of Agriculture, Environment and Rural Affairs (Northern Ireland), Marine Scotland and all other IFCAs should be notified of the presence of the disease in The Wash	
4	An information notice should be placed on the Eastern IFCA website detailing the disease and actions to take to minimise the spread	
5	Attempts should be made to identify the source of the diseased shellfish through surveys or shellfish stock sampling	
6	Temporary closures or emergency byelaws should be considered if appropriate to prevent the spread of disease	
7	Any outstanding authorisations to move shellfish out of lays should be reviewed and revoked as necessary to prevent the movement of contaminated shellfish and contain the spread of disease	

Appendix 2: Notifiable non-native species

Please note identification guides for the listed species can be found on the GB Non-Native Species Secretariat and Marine Life Information Network websites. Table updated 23rd July 2019 using information from the NBN Gateway.

Common Name	Scientific Name	Closest records	Legal obligations
Species recorded in The Wash			
Slipper limpet	*Crepidula fornicata*	Established in The Wash	WCA 1981 Schedule 9
Chinese mitten crabs	*Eriocheir sinensis*	Recorded in The Wash and rivers that feed it	WCA 1981 Schedule 9
Pacific oysters	*Magallana gigas*	Established in The Wash	
Acorn barnacles	*Elimnius modestus / Austrominius modestus*	Established in The Wash	
Australian Tubeworm	*Ficopomatus enigmaticus*	One record in King's Lynn, none others in Eastern IFCA district (Humber and Thames estuaries otherwise)	
American Lobster	*Homarus americanus*	According to the NBN Gateway there has been one isolated record in The Wash and one isolated record near Felixstowe (85 miles from The Wash). A 2019 Cefas briefing identified 149 records from around the UK between 2012-2018. 136 of these were on the south coast (predominantly recorded in the re-capture effort coordinated by the MMO following an illegal mass-release of the species).	
Species locally absent from The Wash, but found elsewhere in the district			
American oyster drill	*Urosalpinx cinerea*	Harwich, one record on North Norfolk Coast	WCA 1981 Schedule 9
Wireweed	*Sargassum muticum*	Felixstowe	WCA 1981 Schedule 9
Wakame	*Undaria pinnatifida*	Humber Estuary and Lowestoft	
Leathery sea squirt	*Styela clava*	East Norfolk Coast	
Orange-tipped sea squirt	*Corella eumyota*	North and East Norfolk Coast	
Species absent from the Eastern IFCA district but found elsewhere in the UK			
Japanese skeleton shrimp	*Caprella mutica*	South of Harwich	
Green sea fingers	*Codium fragile*	West coast of England and Wales	
Harpoon Weed	*Asparagopsis armata*	West coast of England and Wales	WCA 1981 Schedule 9
Carpet sea squirt	*Didemnum vexillum*	West coast of Wales	

Appendix 3: Shellfish Movement Form

Wash Fishery Order 1992 – Shellfish Lays

Shellfish Movement Form

Under condition 9(e) and (f) of the WFO lease agreement, holders of a WFO Shellfish lay are required to:

- Request consent to relay shellfish onto a lay which originated from outside of The Wash; and
- Declare to Eastern IFCA any shellfish moved off a lay.

Failure to complete the following form as required is a breach of a lease condition.

Full name (lay holder):	
Relevant lays:	
Vessels / PLN:	
Contact details (address / telephone number)	

Please tick one of the following:

I am **requesting consent** to move shellfish onto my lay from outside of The Wash	
I am **declaring movement** of shellfish which is being removed from my lay	

1. Details of shellfish movement

Shellfish species:	
Shellfish type (*please circle*):	Adult / Seed
Origin:	
Destination:	
Weight (kg):	
Planned/anticipated date of movement:	

2. Other consents

Please note that the movement of shellfish may require consent from other organisations or additional paperwork (for example if moved over land). Please list any other organisations you have dealt with regarding this movement and the consent you obtained. For more information on other consents, please contact the Eastern IFCA office (01553 775321).

3. Authorisations

Please provide details of any persons or vessels (other than yours) that you have authorised to undertake the above activity.

Full name(s) of person(s):	
Vessel name(s) and PLN:	

4. Declaration

I and any person authorised on my behalf, are aware of the requirements of the Animal Aquatic Health (England and Wales) Regulations 2009 and the Wildlife and Countryside Act 1981 and have taken all reasonable steps to ensure that the proposed movement of shellfish will be conducted in accordance with such. The above is a true and accurate record of the proposed shellfish movement.

Signed _____ **Date** _____

Appendix 4: Mortality Monitoring and Reporting Form

Wash Fishery Order 1992 – Shellfish Lays

Mortality Monitoring and Reporting Form

Serious fish or shellfish diseases are called 'notifiable' because you must immediately report that you suspect or know about them to the Fish Health Inspectorate (FHI) and Eastern IFCA.

You must tell the FHI and Eastern IFCA immediately if your fish or shellfish:

- could be infected with a notifiable disease (you must report it even if you only suspect an infection);
- are dying in larger numbers or more than normal;
- are affected by unusual deaths.

Under Regulation 23 of the Aquatic Animal Health (England and Wales) Regulations 2009 it is an offence to fail to report **suspicion of increased mortality** or **presence of a listed disease**.

Further information on notifiable diseases can be found at:
https://www.gov.uk/guidance/report-serious-fish-or-shellfish-diseases

This form is intended to capture the relevant information to make a report.

Section 1: Personal Details	
Full Name:	
Are you the lay holder or authorised to use the lay on behalf of the lay holder?	
Relevant lays:	
Contact details (address / telephone number)	

Section 2: Mortality Report	
Species monitored:	
Date of inspection:	
Do you suspect that the shellfish are infected by a notifiable disease or are suffering from heightened or unusual mortality? (*please circle*)	Yes / No
If Yes, please provide details of: • Symptoms (moribund / gaping shellfish) • Percentage affected • Percentage of mortality • Any other relevant details	
Photographs: Please provide a photograph of shellfish on the lay being monitored or reported. Photographs can be sent directly to Eastern IFCA at mail@eastern-ifca.gov.uk	

Appendix 5: Process chart guide to assessing and granting permission for requests for shellfish imports into The Wash Fishery Order Several Fishery

The Wash Fishery Order Several Fishery
Guide to assessing and granting requests for shellfish imports

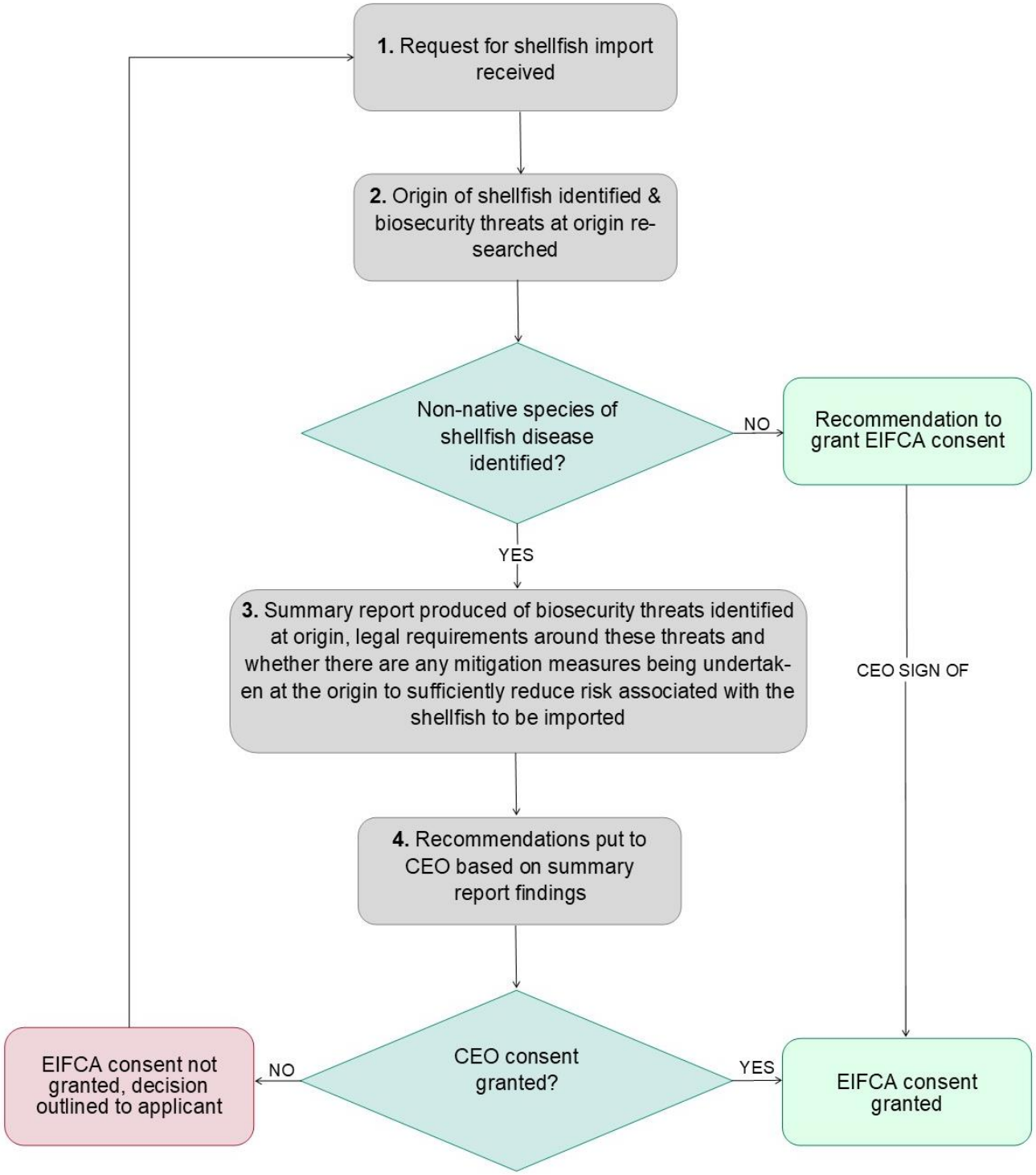


Table 1. Additional form for recording the process chart guiding assessment and permission granting for requests to import shellfish into The Wash Fishery Order Several Fishery (Appendix 5)

Step	Information Guide	Outline of steps taken
1	• Requests for shellfish imports need to be submitted using a Shellfish Movement Form, required under Condition 9(e) and (f) of the WFO Lease Agreement. It may be that requests first come in informally, via telephone or during routine engagement. Applicants should be directed to the Shellfish Movement Forms. • If Eastern IFCA consider that the Applicant may not be able to complete the form for any reason, in certain cases Eastern IFCA Officers may be able to complete these forms based on input from the Applicant. The Applicant will still need to review and sign off on the form before it is submitted.	
2	• Once the forms have been reviewed, the NBN gateway should be used to check for invasive non-native species at the origin • Risk of introducing disease to the Eastern IFCA area should be assessed using up-to-date information on fish and shellfish diseases, as found on the GOV.UK website.	
3	If non-native species are known at the origin, officers should research and contact the sellers and local fisheries managers to find out about local biosecurity procedures, whether the seller operates under a biosecurity plan or has a good track record of awareness of biosecurity issues. Non-native species are ubiquitous throughout UK waters and records of a non-native species in an area should not necessarily preclude allowing imports from that area. Instead, the species present, legal requirements and risk of it being found in shellfish catch at the given time of year should be taken into careful consideration prior to consenting or prohibiting the imports.	
4	A summary report of all findings and a recommendation should be presented to the CEO for review and sign off. For proposed imports to be consented, there should be a: • Low risk of importing invasive non-native species, • Low risk of introduction of shellfish disease, and, • An adequate audit trail presented for the identification of risks	

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