FAO Reference Centre for Bivalve Sanitation workshop on the development of bivalve production in Africa

8th – 10th July 2025, Nairobi, Kenya

Responsible Authority (RA) requirements

Andy Younger

Food and Agriculture Organization of the United Nations

RA responsible for implementation and ongoing management of sanitation programmes

- Growing area risk profiles, Growing Area Assessments
- Sampling and analysis
- Data management and interpretation
- Decisions based on data
- Communication with all stakeholders
- Enforcement of classifications and temporary controls
- Illness investigations

RA should be competent and well resourced

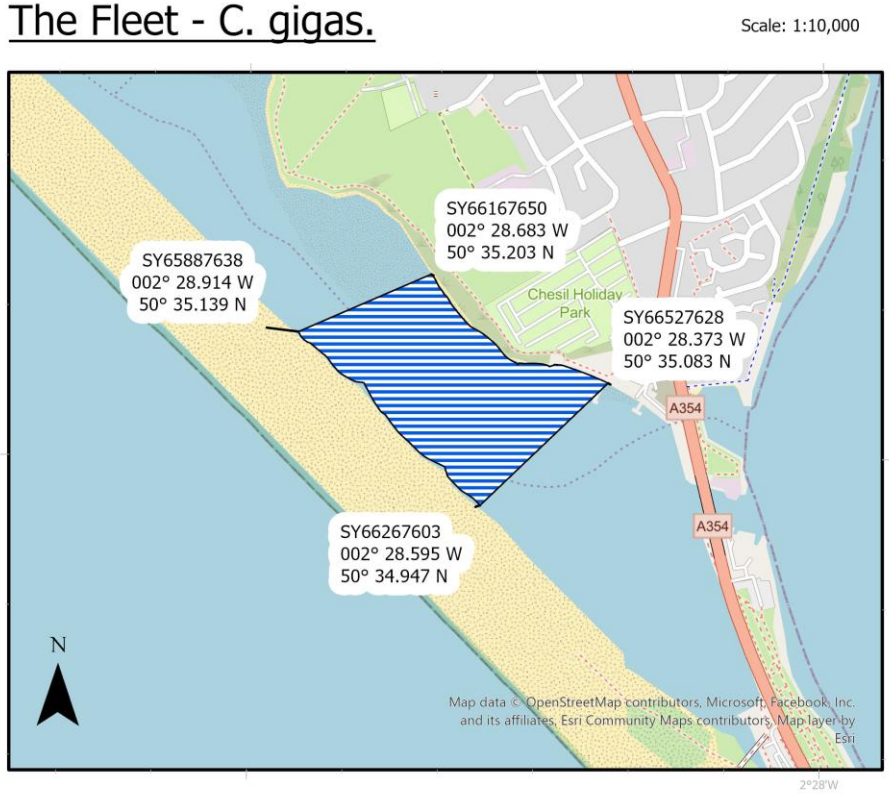
- Staff need to be well trained and motivated in working to approved protocols
- Appropriate equipment needed
- Duties can be formally shared with other regulatory bodies
- Health and safety requirements are important (e.g. for sampling)

RA should publish boundaries and classification status of growing areas

Also: details of conditional classifications, additional processing if reclassified for period or harvesting area closures

Should be communicated to harvesters and other stakeholders:

- fisheries authorities
- environmental regulators
- industry bodies
- bivalve mollusc wholesalers
- direct customers (e.g. local restaurants)



Classification of Bivalve Mollusc Production Areas: Effective From 2 December 2024.

The areas delineated above are those classified as bivalve mollusc areas under Regulation (EU) 2019/627.

Further details on the classified species and the areas may be obtained from the responsible Food Authority.

For details of adjacent classified zones and zones classified for the harvesting of other species, please see relevant maps.

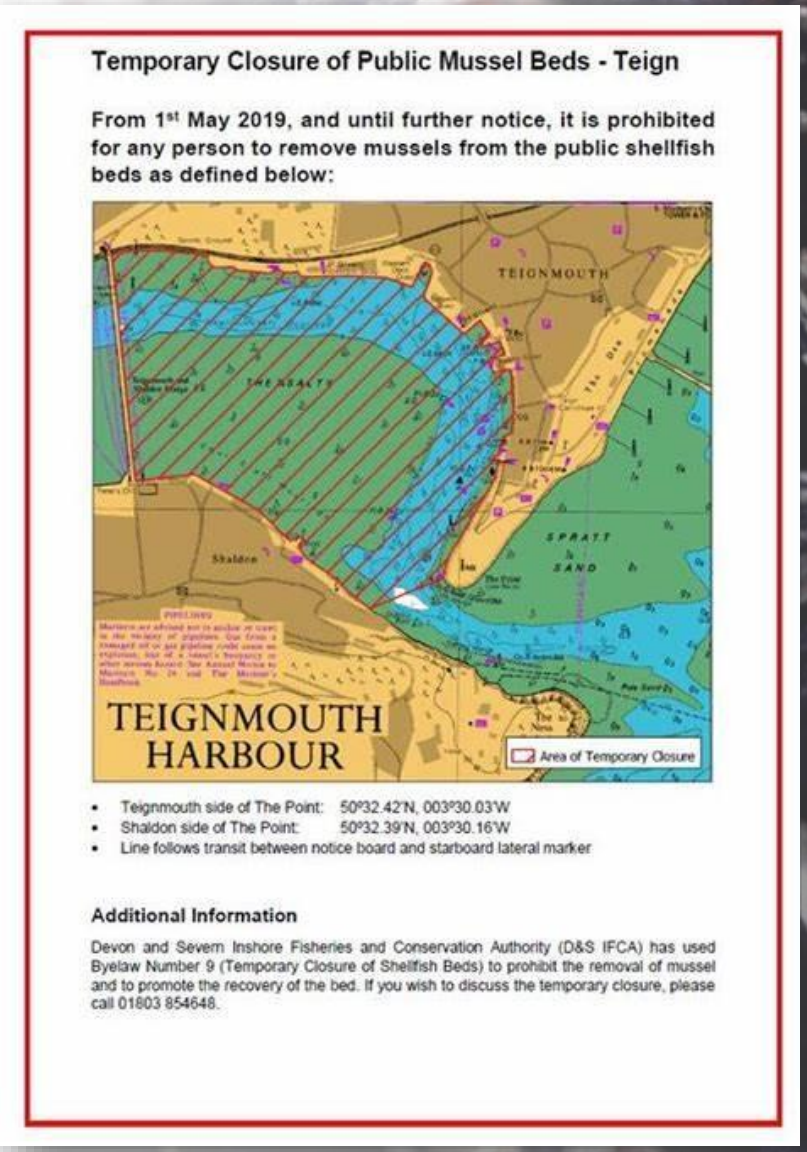
Enquires regarding the maps should be directed to:
Shellfish Microbiology, CEFAS Weymouth Laboratory, Barrack Road, The Nothe, Weymouth, Dorset DT4 8UB
Email: Classification@cefas.gov.uk

N.B Lat/Longs quoted are WGS84
Unless otherwise stated, non-straight line boundaries between coordinates follow the OS 1:25,000 mean high water line.

Food Authority: Dorset Council

Effective decision making, communication and enforcement needed

- Closures/temporary downgrades/increased processing may be needed to protect consumer when the hazard(s) risk reaches unacceptable levels



Growing area management plans needed

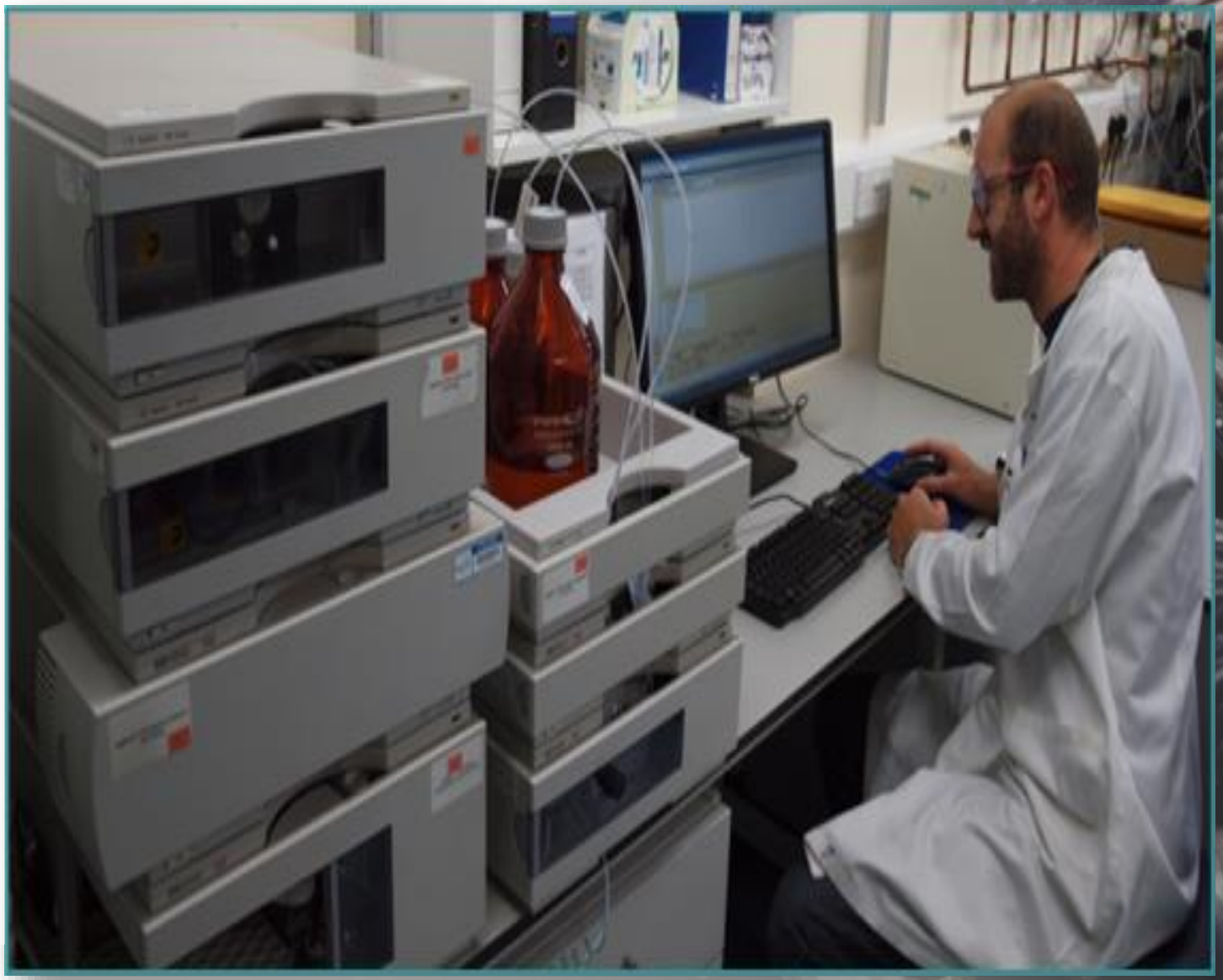
- Content depends on complexity of area e.g. whether conditional classification criteria are applied, the number of fisheries and harvesters, contamination sources etc.
- ‘Expected’ or ‘Unexpected’ event plans
- Expected event – predictable e.g. conditions for ‘conditional classifications’ such as normal/typical rainfall event - define conditions under which they apply and management action necessary
- Unexpected event – less predictable e.g. extreme rainfall event, boat pollution, animal waste spills, illness or intoxication outbreak

Targeted monitoring in response to indications of increased risk

Laboratory analysis can be expensive (e.g. biotoxins, dioxins, some pesticides, Norovirus etc.) so not always possible

Management plans should use a precautionary approach if specific hazard monitoring not possible

Management plans ensure speedy response as actions already defined



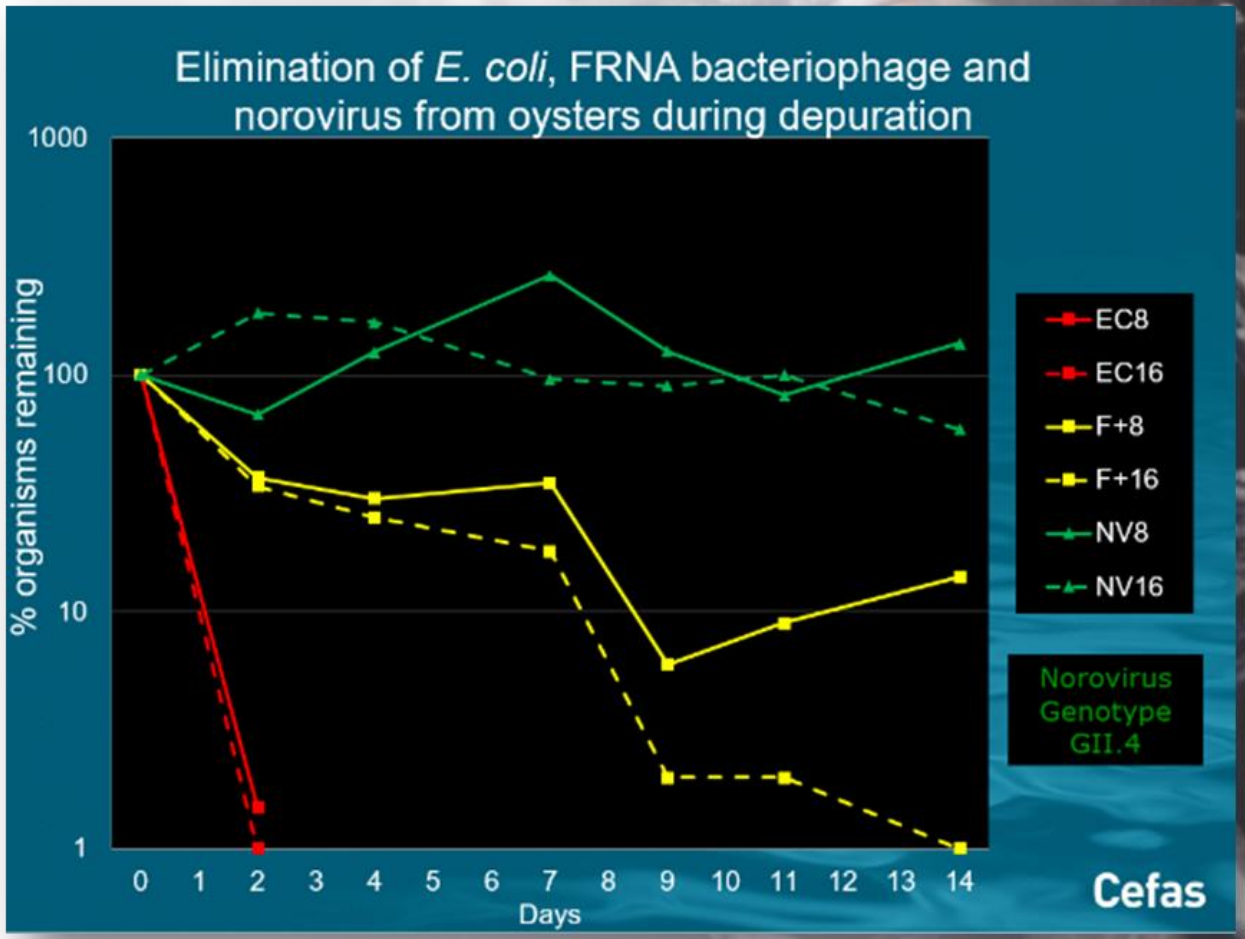
Closure periods should consider depuration rates of hazard(s)

Could be species/location/season-specific

E. coli removed quickly (hours/days), viruses and biotoxins may take weeks/months

Depends on binding (viruses), lipid solubility (biotoxins/chemicals) etc.

Verify by monitoring of appropriate hazard monitoring



Possible management actions:

- Category I (class A): closure; postharvest processing (without reclassification) or reclassification.
- Category II and III (class B and C): closure; greater level of post-harvest processing (e.g. heat treatment rather than depuration) without reclassification or reclassification.
- Classification system controls may not cover all risks e.g. biotoxins (heat treatment/depuration ineffective); naturally occurring marine vibrios (faecal indicators not representative) – other measures necessary
- Marine vibrios: time or temperature controls may be necessary between harvest and processing/packing and/or transport.

Illness/intoxication outbreak investigation

1. What was the event?
2. Data collection: Sequence of occurrences
3. Identification of possible causal factors
4. Root cause identification: Why did it occur?
5. Recommendations: Preventing recurrence

Various agencies may be involved, depending on expertise

Actions to consider: Product recall, increased processing, harvesting area closures, review of monitoring data, specific testing (of product and consumers) for suspected agent(s) etc.

Communicating actions

Prompt notification of interested parties (recreational harvesters when necessary) needed when:

- a growing area is closed
- higher level of post-harvest treatment required
- growing area is re-opened or other additional controls are withdrawn

Include reasons/explanation (improves understanding and compliance)

Means of notification include: e-mail, telephone, Short Message Service (SMS; text message), web-page information displays, posters (at the growing area and at landing points), newspaper advertisements, television or radio advertisements, mailed letters - **method(s) should be relevant to the receiving party**

Written surveillance plan (patrol and enforcement) needed - covers open and closed periods

Type of surveillance should be specified e.g. observation of fishing activity, species harvested, records, landing location(s), destination of product

Frequency of surveillance should be risk assessed according to:

- nature of the bivalve mollusc resource
- status of the area (open, closed and classification category)
- history of site e.g. illegal activity.

Nature of surveillance can vary : e.g. land-based patrol may be relevant to intertidal fisheries and boat-based to subtidal

Surveillance activities can be coordinated with other agencies

e.g. those enforcing fisheries regulations and those responsible for inspecting processing and packing plants.

Traceability better with tamper-proof bag/container seals, fixed containers/bags of harvested product, durable labels etc.

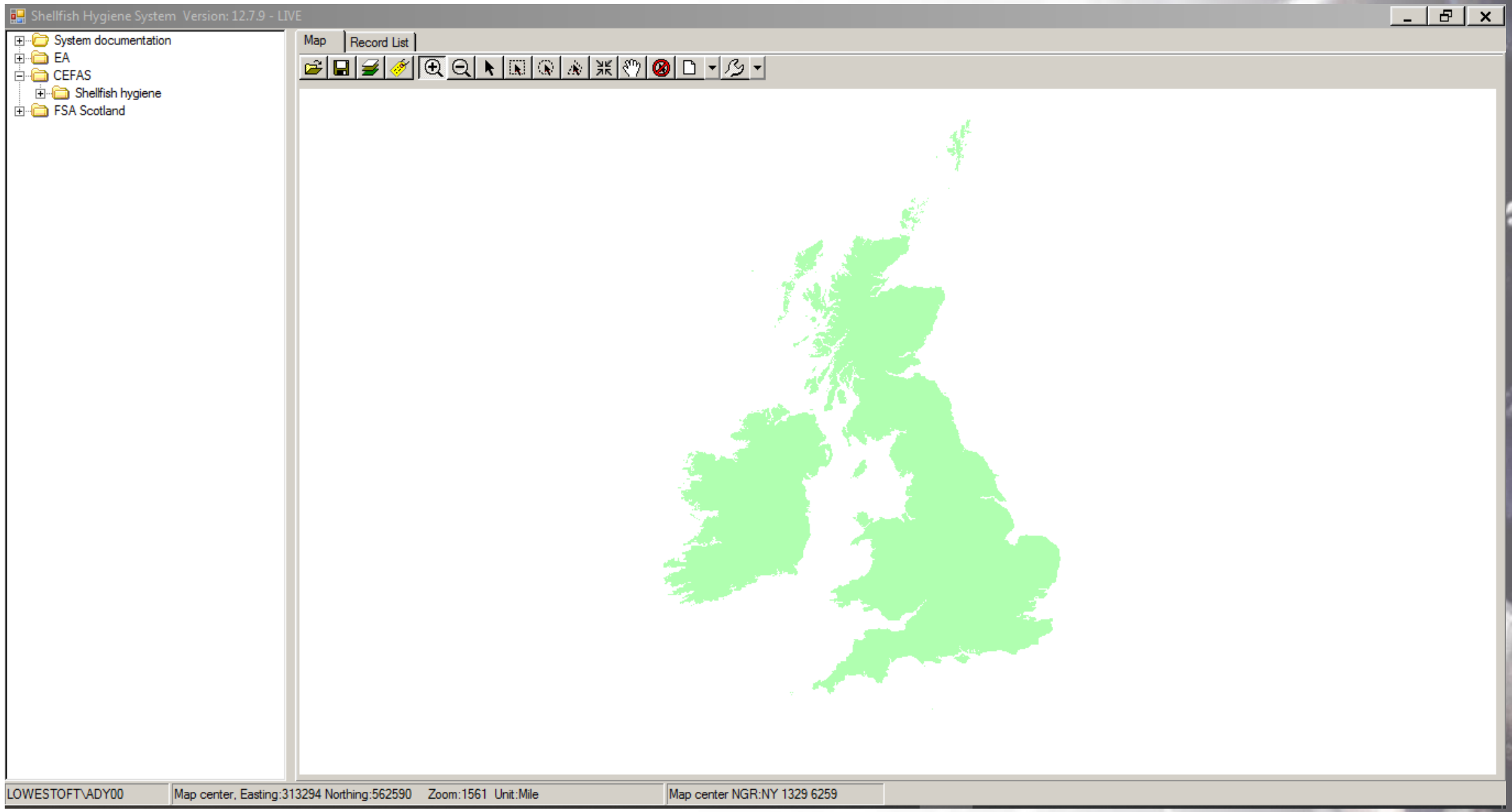
Label in indelible ink: name of the harvester, growing area identifier, growing area classification category and status, and the intended destination.

Effective surveillance and enforcement aids confidence in the sanitation programme

Data storage management needs

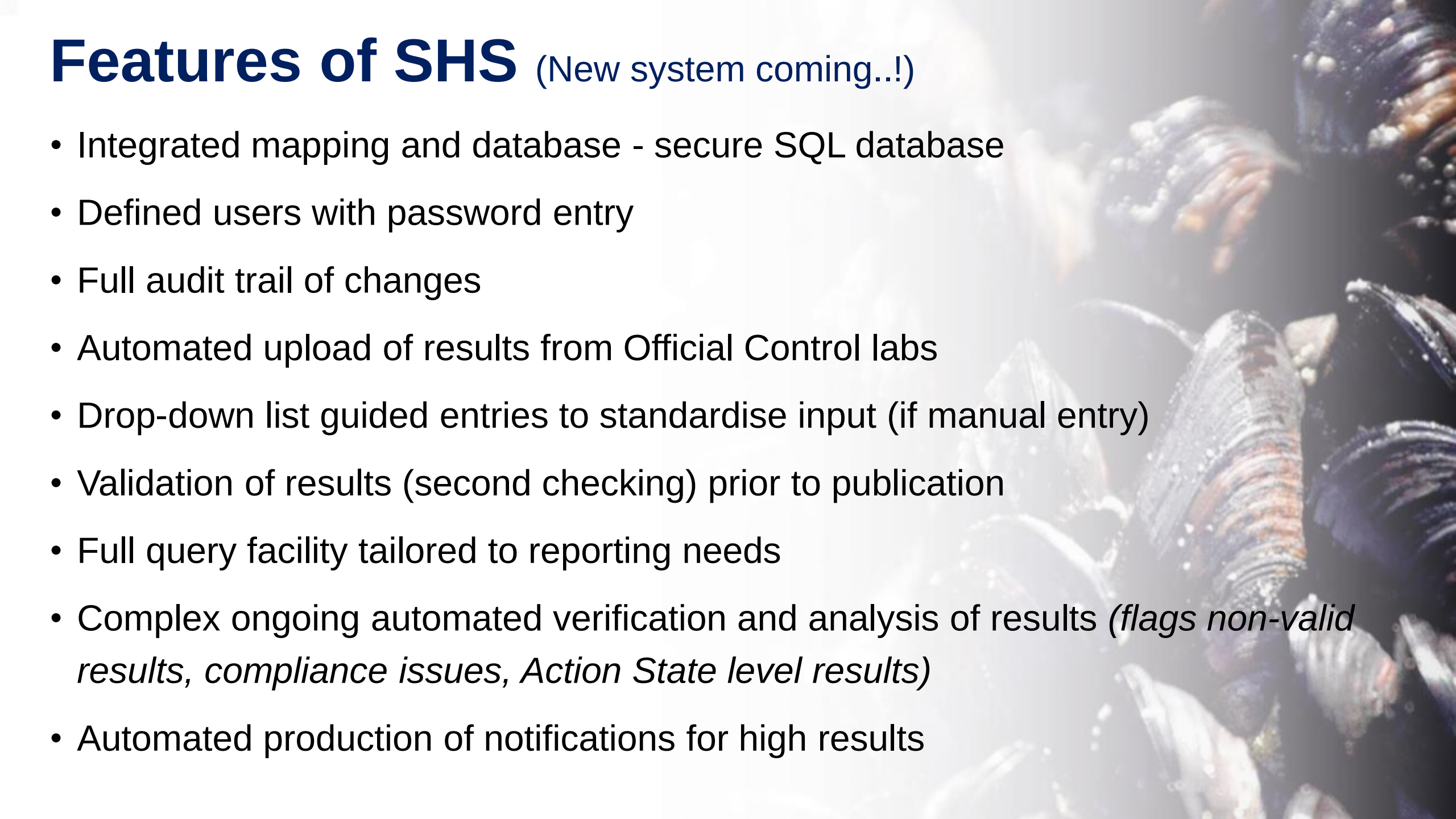
- Monitoring programmes generate a lot of data
- Need to store this safely and securely e.g. on a database
- Mapping aids interpretation and understanding of monitoring programme data

Example - Cefas Shellfish Hygiene System (SHS)

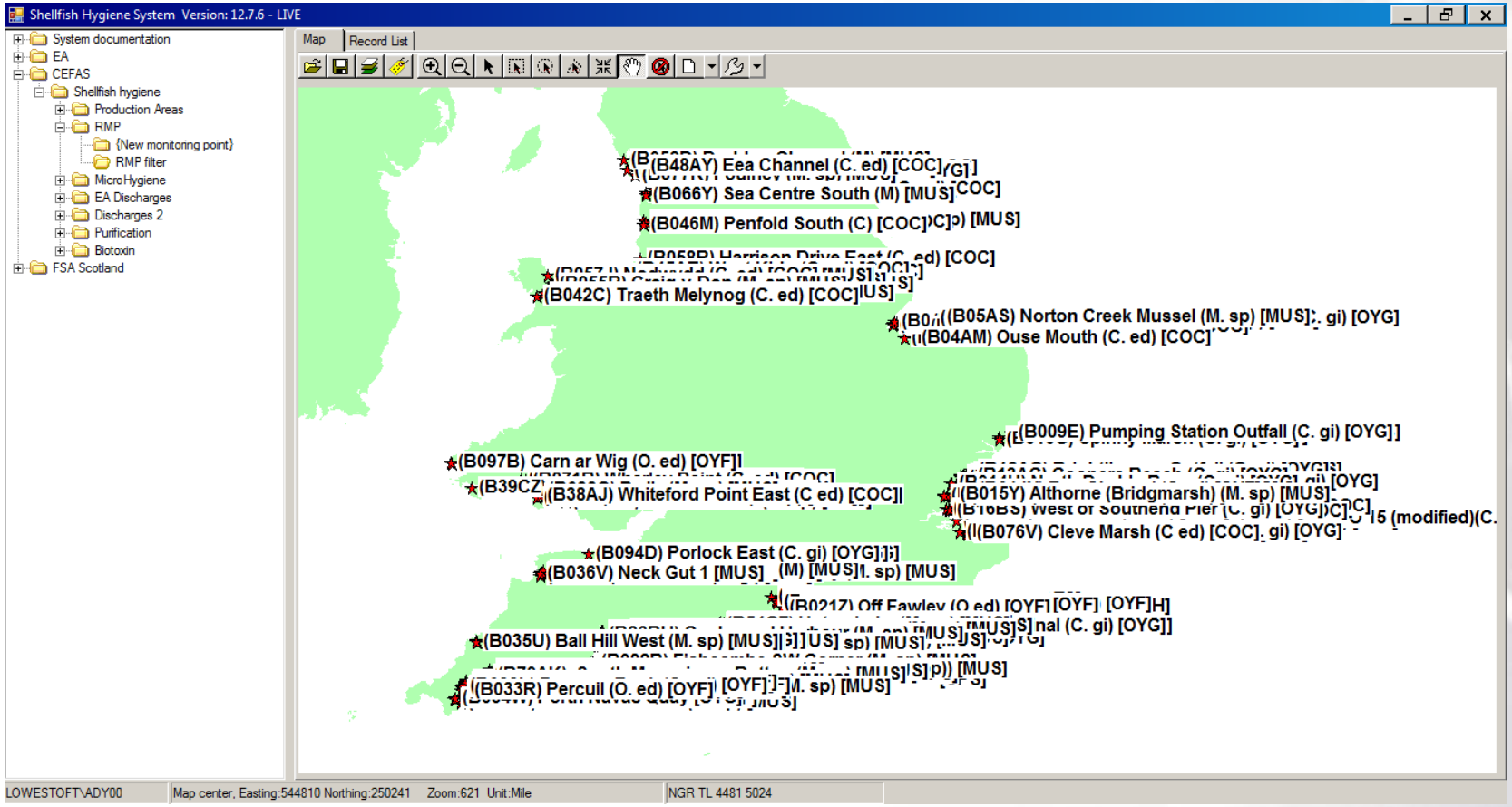


Features of SHS (New system coming..!)

- Integrated mapping and database - secure SQL database
- Defined users with password entry
- Full audit trail of changes
- Automated upload of results from Official Control labs
- Drop-down list guided entries to standardise input (if manual entry)
- Validation of results (second checking) prior to publication
- Full query facility tailored to reporting needs
- Complex ongoing automated verification and analysis of results *(flags non-valid results, compliance issues, Action State level results)*
- Automated production of notifications for high results

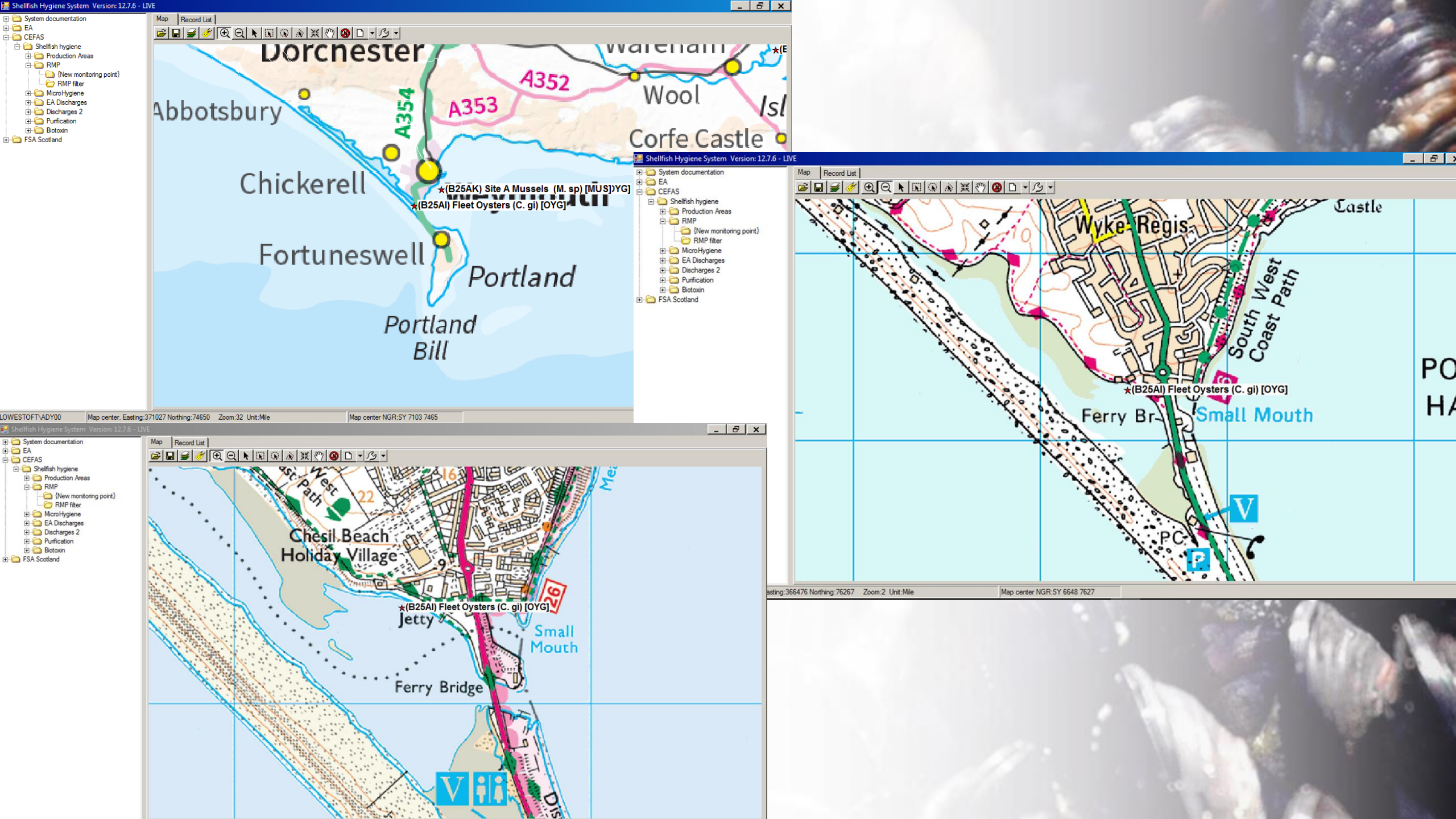


SHS – mapping

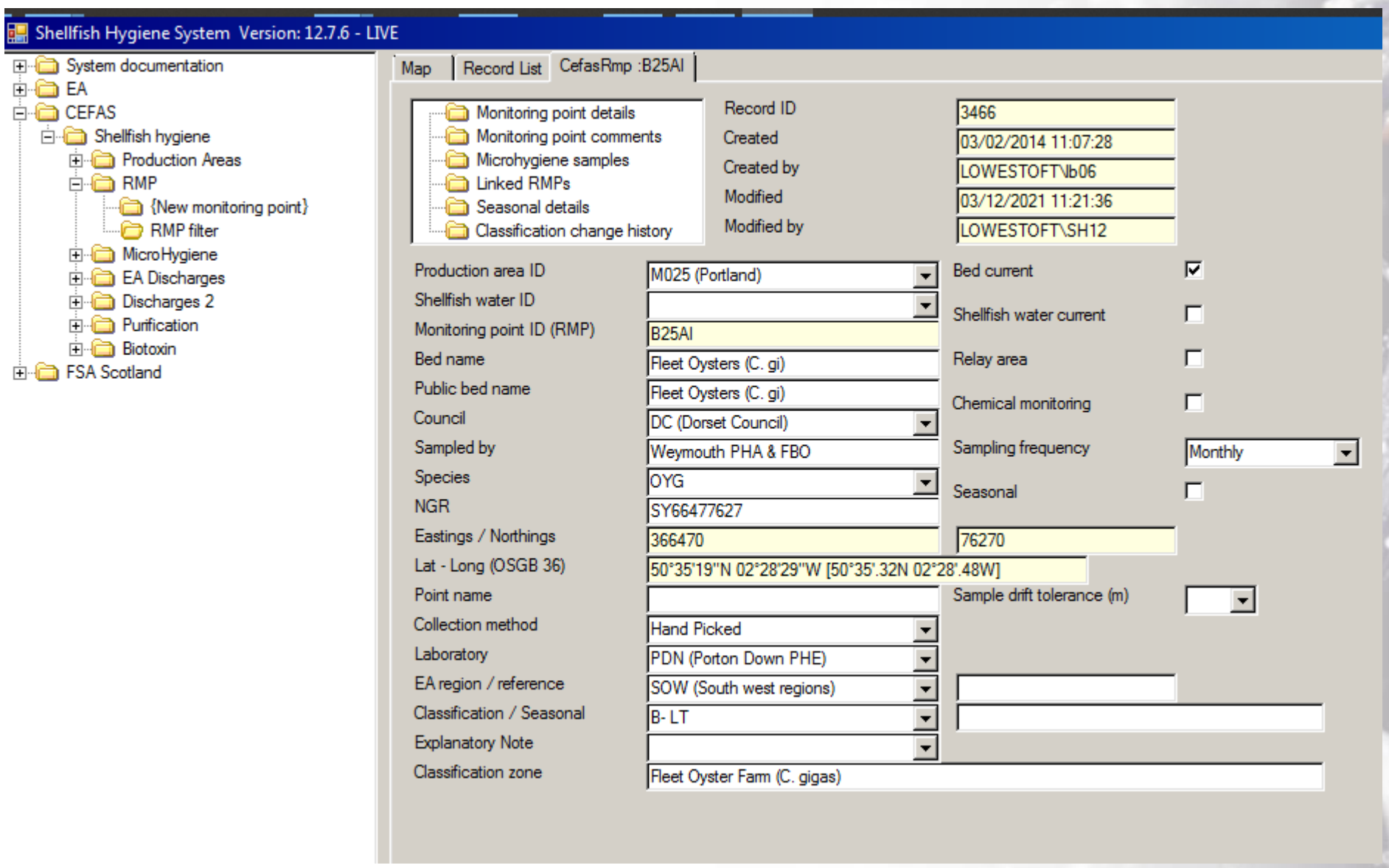


Standalone GIS* software (ArcGIS Pro and QGIS) used for more complex mapping tasks

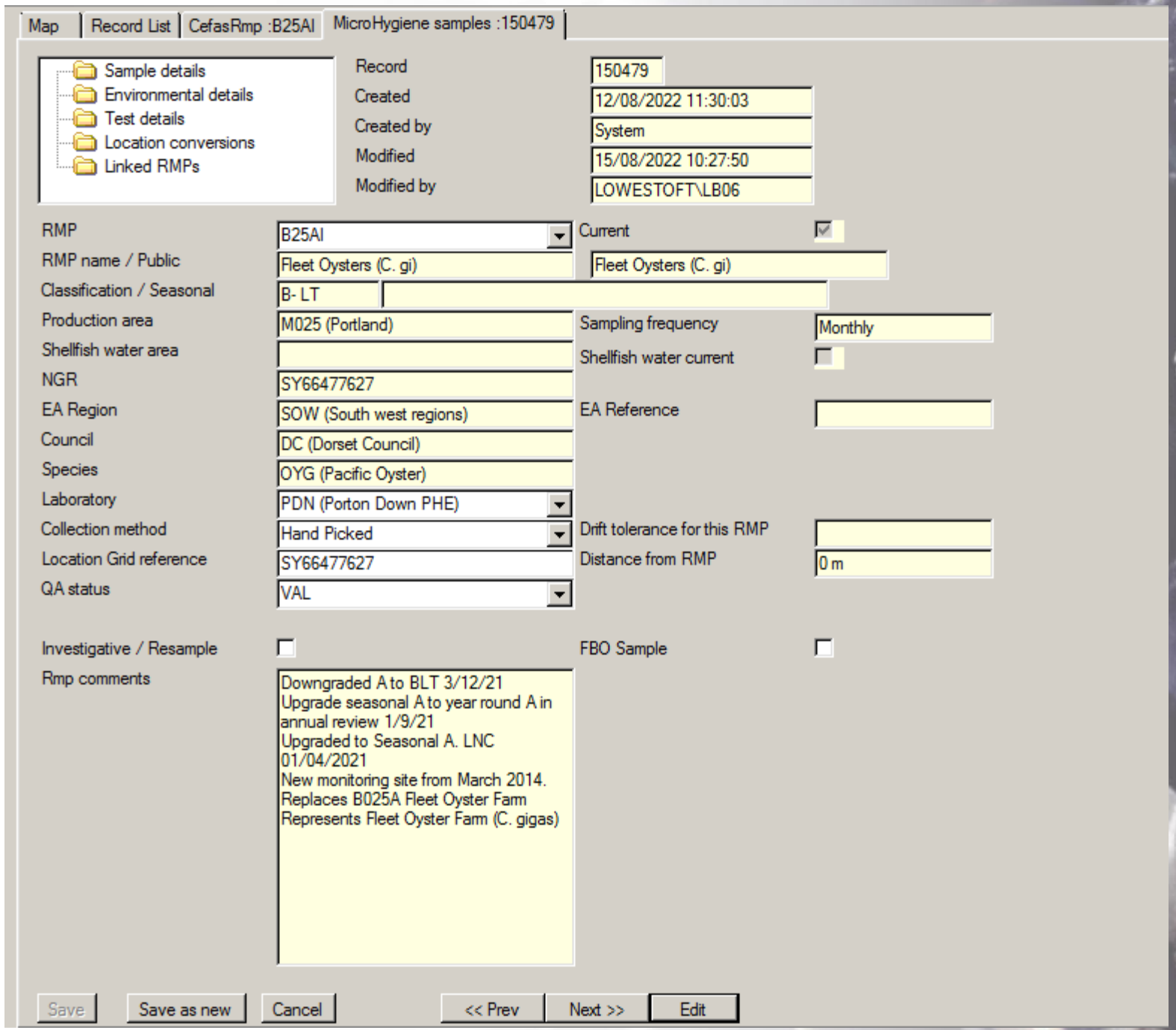
*GIS – Geographic Information System


Shellfish Hygiene System Version: 12.7.6 - LIVE
System documentation
EA
CEFAS
Shellfish hygiene
Production Areas
RMP
{New monitoring point}
RMP filter
MicroHygiene
EA Discharges
Discharges 2
Purification
Biotoxin
FSA Scotland
Map
Record List
Dorchester
Wareham
A352
A353
A354
Wool
Abbotsbury
Corfe Castle
Chickerell
★(B25AK) Site A Mussels (M. sp) [MUS]YG]
★(B25AI) Fleet Oysters (C. gi) [OYG]
Fortuneswell
Portland
Portland Bill
LOWESTOFT\ADY00
Map center, Easting:371027 Northing:74650 Zoom:32 Unit:Mile
Map center NGR:SY 7103 7465
Wyke Regis
South West Coast Path
Ferry Br
Small Mouth
PC
Map center NGR:SY 6648 7627
Chesil Beach Holiday Village
Jetty
Ferry Bridge

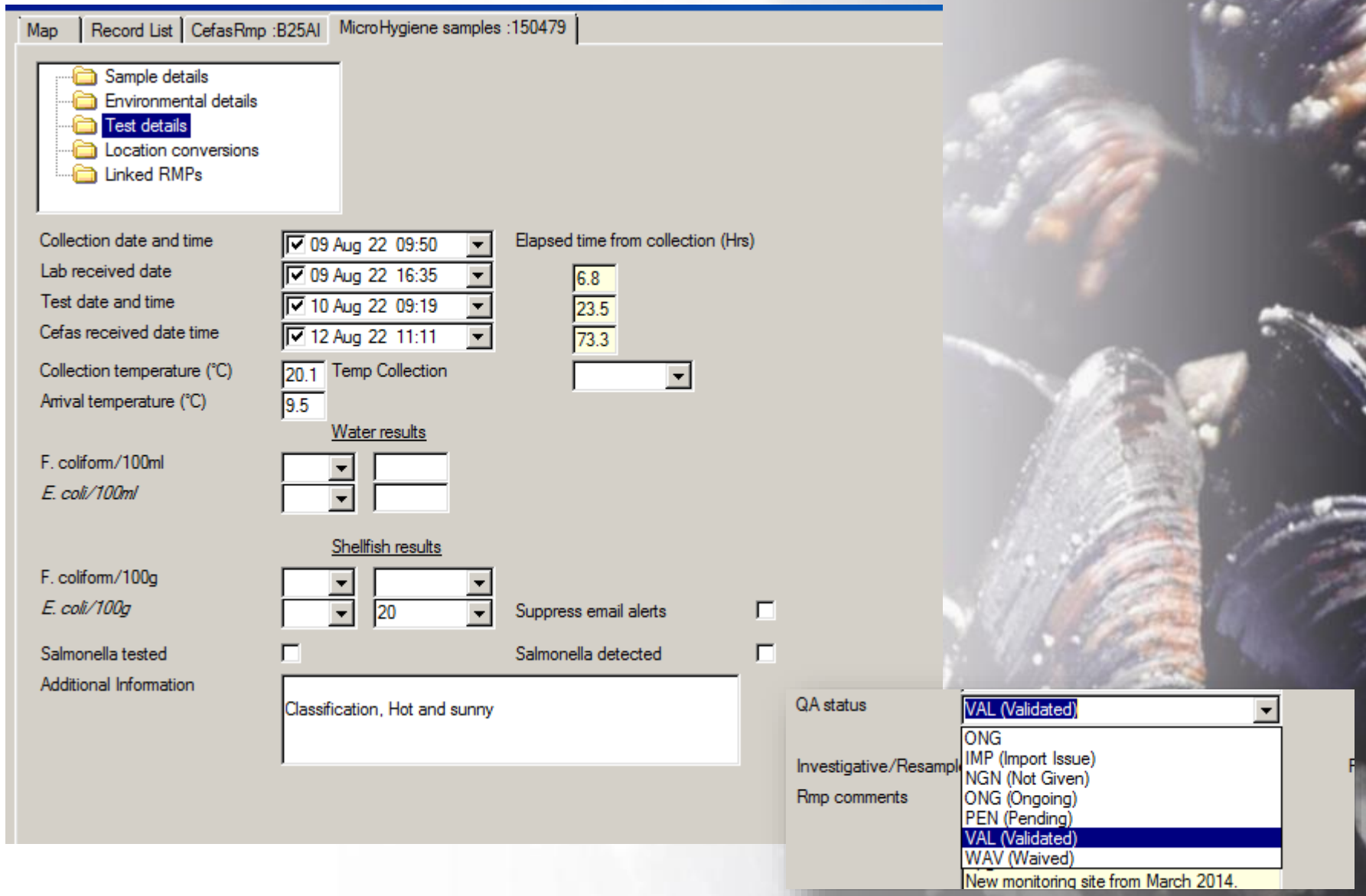
Recording of monitoring point details



Recording of sample details



Recording of result details and validation



Automatic high result notifications

Categories:

- *Action State*
- *Cause for concern (investigation only)*
- *Cause for concern (marginal compliance)*
- *Possible Downgrade*

- Sent to interested stakeholders

Live: West Mersea: SHS Microhygiene E.coli ACTION STATE TRIGGERED for Bed B13AH

SC Shell Class

To martin.nelson@colchester.gov.uk; gary.weaver@colchester.gov.uk; stuart.clack@colchester.gov.uk; Enquiries_EastAnglia@enviro
Shellfish@food.gov.uk; foodincidents@food.gov.uk

Cc Shell Class; Andrew Younger (Cefas); Sally Hart (Cefas); Lewis Coates (Cefas); Anna Neish (Cefas); Classification; Joshua

filed HPE CM

Dear All,

This is to notify all concerned that a result exceeding the Action State threshold (700) has been returned for the following monitoring point:

Production area	West Mersea
RMP(s)	B13AH,B013X
Species sampled	*Crassostrea gigas*
RMP Name	Little Ditch (C. gi)
NGR	TL98631319
Result	1100
Sample date and time	22 Aug 2022 08:25
Classification zone/species	Little Ditch (C. gigas & O. edulis)
Classification	A
Current 1 year compliance with 230	72.7% (11 samples)
Current 3 year compliance with 230	84.8% (33 samples)

- **ACTION REQUEST FOR LOCAL AUTHORITY**
- **Inform all relevant industry members of the result(s) and advise that a downgrade is possible.**
- **Please refer to Local Action Plans (LAPs) for site-specific short-term health protection actions.**
- **Encourage increased level of end product testing where appropriate.**

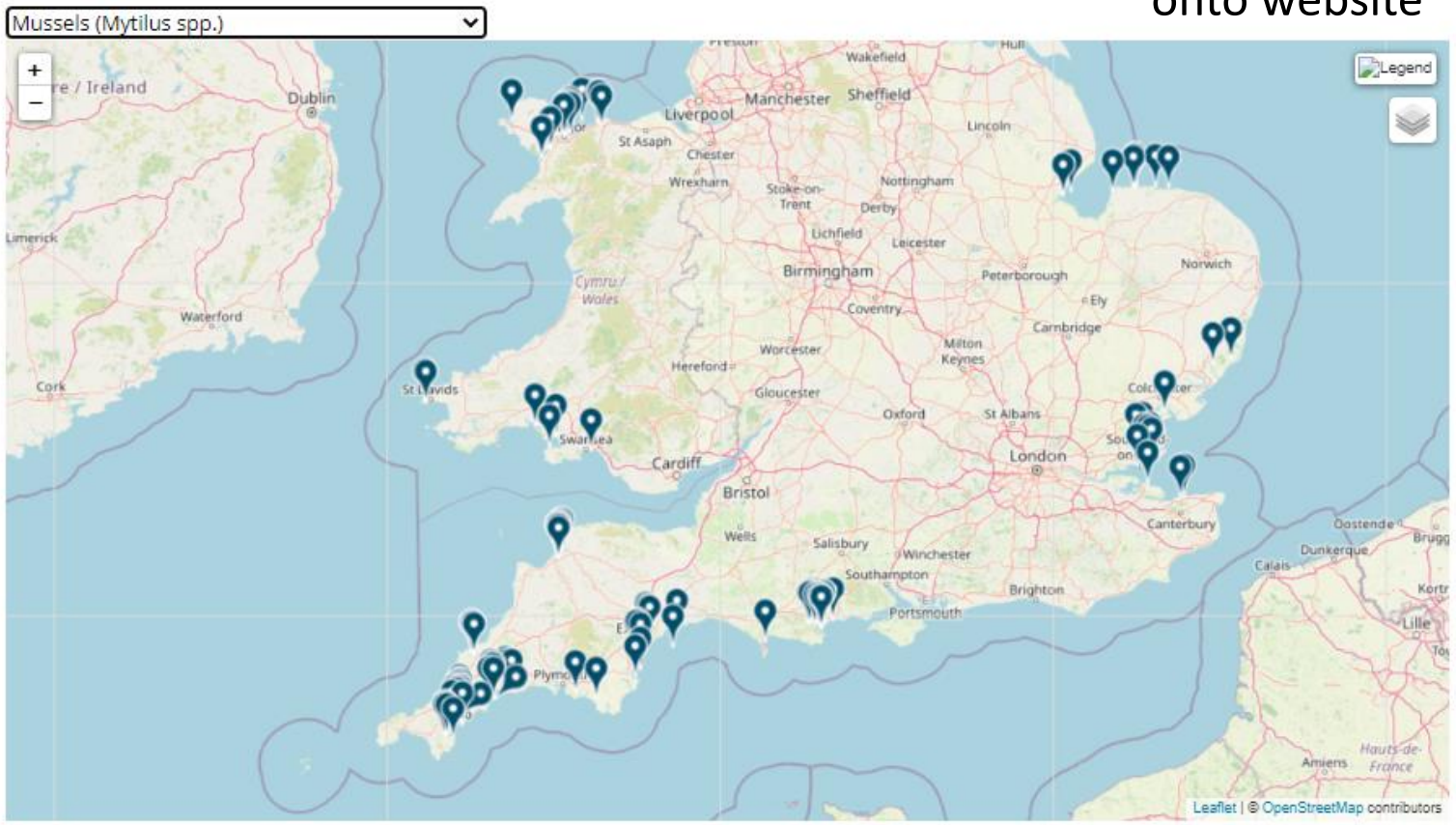
INFORMATION REQUEST - Please could the organisations below, answer the questions listed to assist with the investigation and respond within 10 working days i.e. by 09/09/2022.

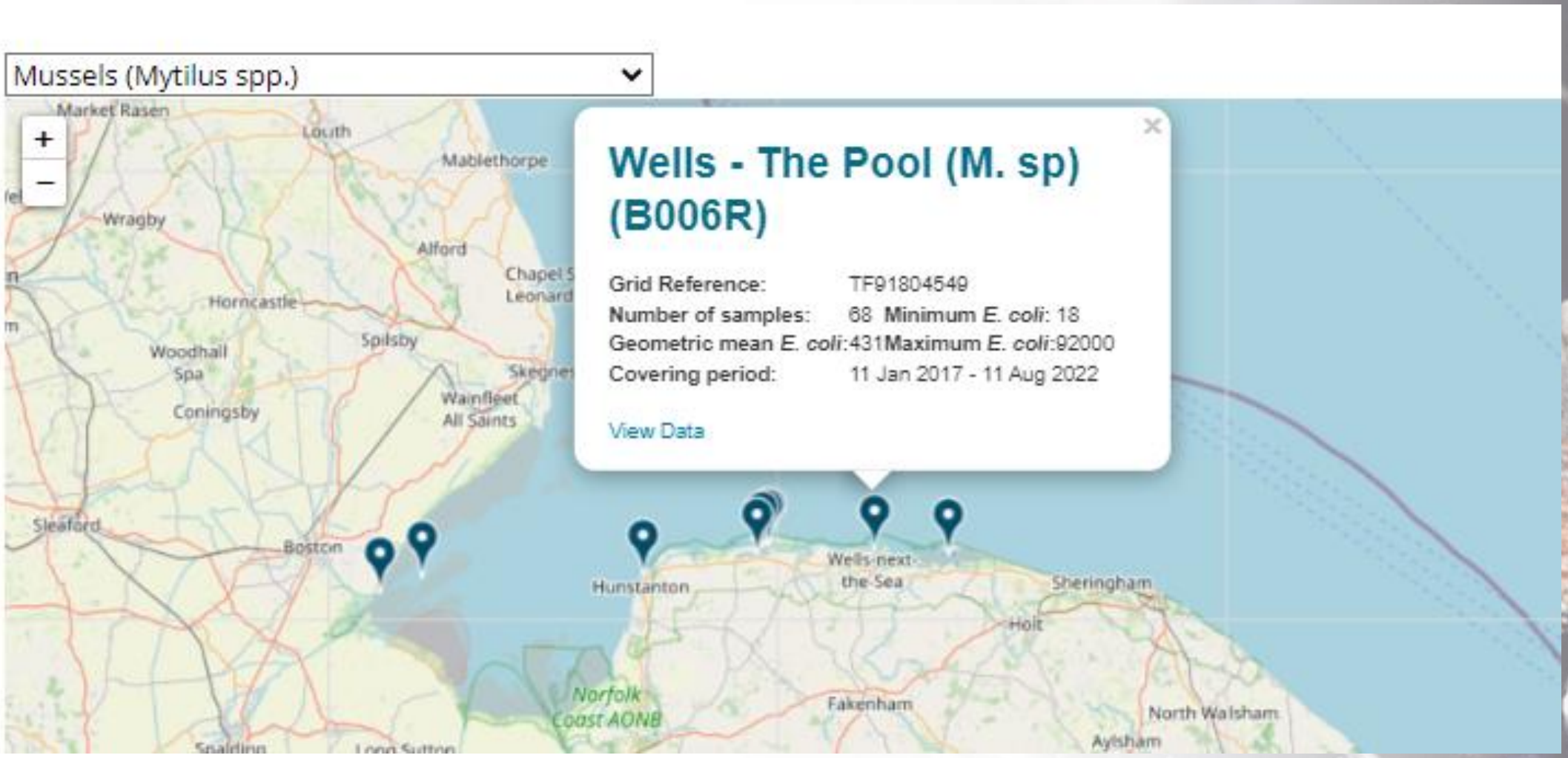
Local Authority	• Are you aware of any local pollution events that occurred at the time of this high result? • Has industry reported any concerns to you? If not, please check with them. • Are there are any wider issues you would like to highlight (e.g. slurry spreading practice, farm and rainfall catchment area issues)?
Environment Agency	• What was the rainfall situation at the time of the result? • Was there a 1 in 5 rainfall event up to 120 hours before sampling? • Were there any other exceptional environmental conditions? • Are you aware of any other spills/pollution events nearby?
Water company	• Were all nearby intermittent and continuous discharges operating according to their permitted conditions? • Please provide details of any sewage spills from intermittent discharges in the area (permitted and non-permitted). • Was work taking place on any relevant local assets?

SHELLFISH MONITORING RESULTS

E. coli results uploaded every 24 hours direct from SHS onto website

Website for protocols, results and maps

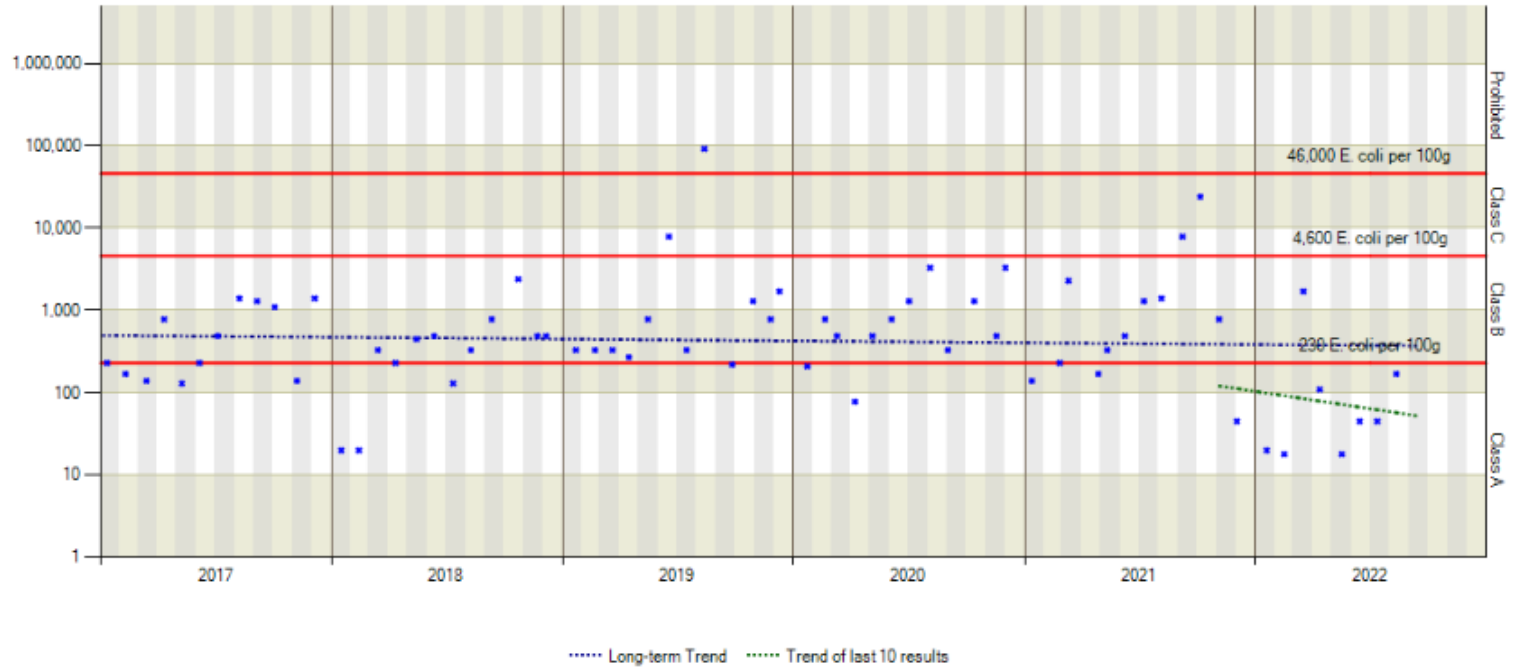



Mussels (Mytilus spp.)
Wells - The Pool (M. sp) (B006R)
Grid Reference: TF91804549
Number of samples: 68 Minimum E. coli: 18
Geometric mean E. coli:431Maximum E. coli:92000
Covering period: 11 Jan 2017 - 11 Aug 2022
View Data
Market Rasen
Louth
Mablethorpe
Wragby
Alford
Horncastle
Spilsby
Woodhall Spa
Coningsby
Wainfleet All Saints
Skegness
Sleaford
Boston
Hunstanton
Wells-next-the-Sea
Sheringham
Holt
Norfolk Coast AONB
Fakenham
North Walsham
Aylsham

WELLS - THE POOL (M. SP) (B006R)

Species:	Mussels (*Mytilus spp.*)
National Grid Reference:	TF91804549
Minimum *E. coli*:	18
Maximum *E. coli*:	92000
Geometric mean *E. coli*:	431
Number of samples:	68

N.B. Result lists can occasionally include results that may be waived for classification purposes. Results may be waived if they can be shown to be directly caused by exceptional pollution events, the criteria for which are detailed in the FSA protocol for the classification of harvesting areas (see shellfish classification page of their website for details). If any discrepancies are noted in the displayed data, please inform Cefas by e-mail at classification@cefas.co.uk.



Summary

- RA must have adequate funding with well-trained staff
- Publishing of classification boundaries necessary
- Communication with all stakeholders vital – method should suit recipient
- Enforcement of programme outputs key to success
- Closure periods and re-opening should take account of possible differences in clearance between indicators and actual hazards
- Secure means of storing the data and visualising results needed e.g. database and GIS


Any questions?