BIVALVE MOLLUSC GROWING AREA MONITORING AND CLASSIFICATION
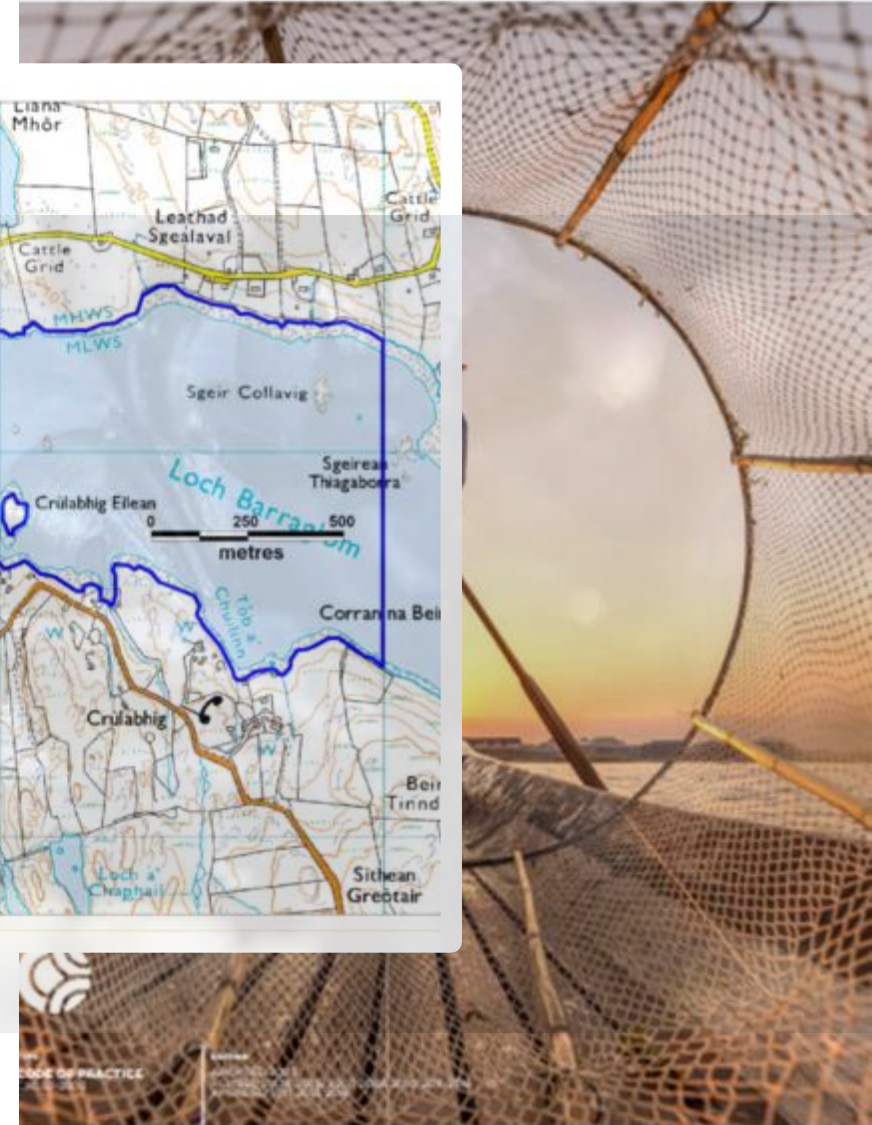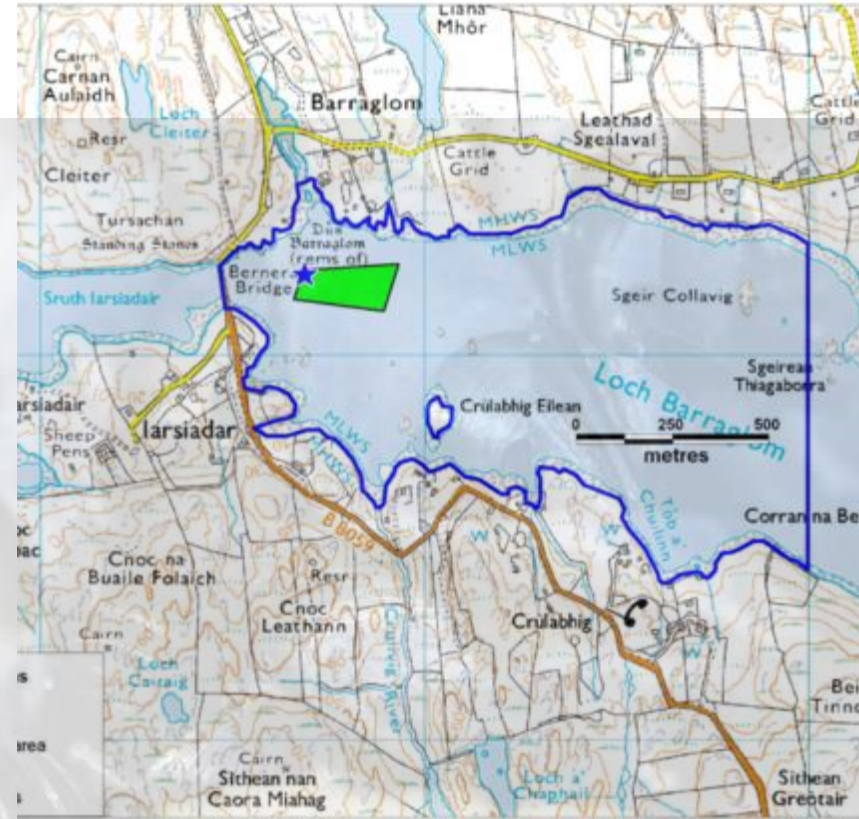
Bangladesh bivalve mollusc familiarisation and training, September 2022

Rachel Hartnell

Cefas, FAO Reference Centre for Bivalve Mollusc Sanitation

WHAT DO WE MEAN BY MONITORING?

- The **Codex code of practice** refers to monitoring water/bivalves or sediments

- **Monitoring** is the **routine way** that we can collect **evidence** for the **presence/absence** of **hazards** in a production area – in primary production

- It **cannot replace** risk profiling or the growing area assessment because:

  - *The hazard may not always be there*
  - *Even if there, concentration may vary with season, weather or time of day*
  - *The hazard may only be present in high amounts after unexpected events*
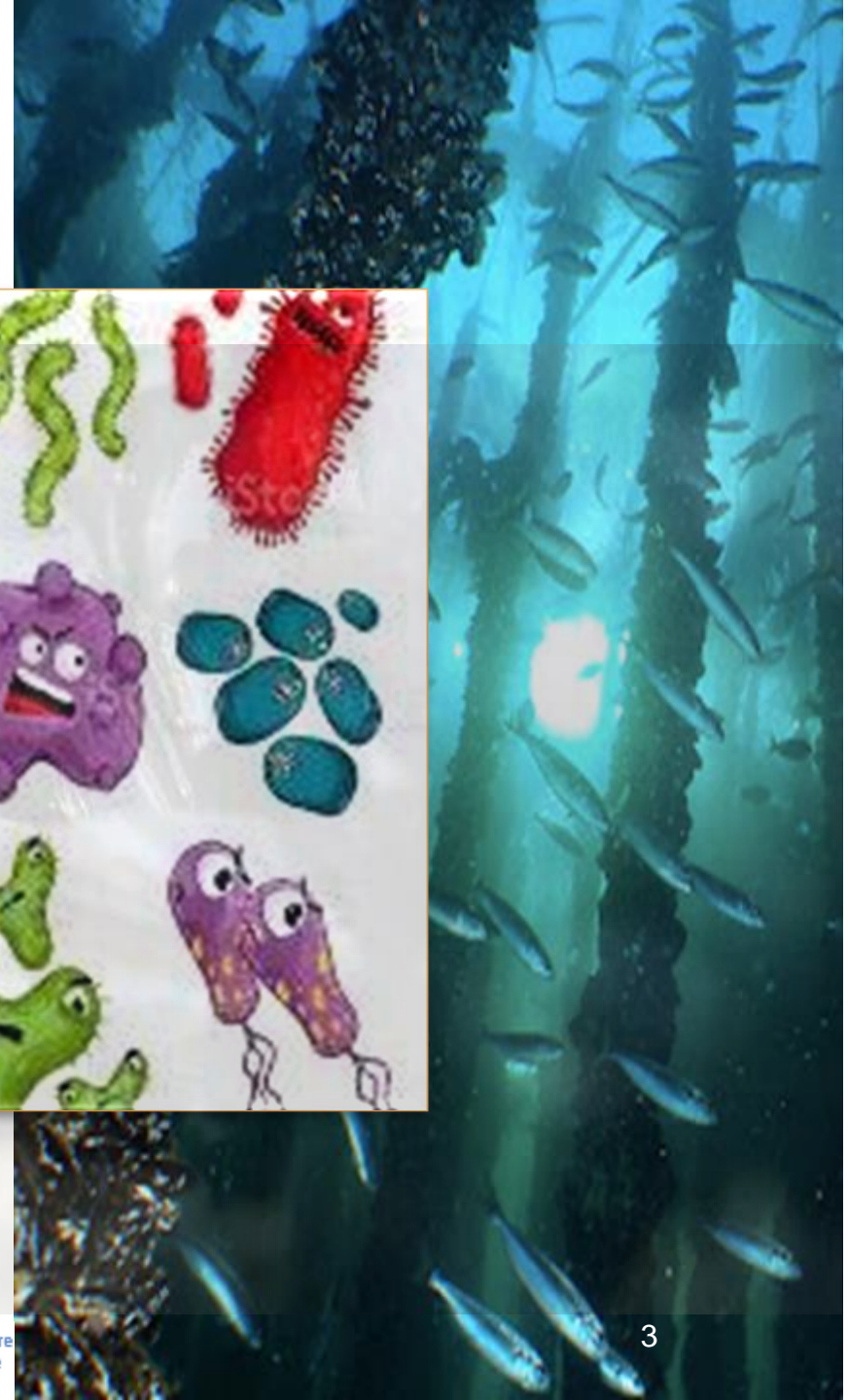
PRIMARY AND ONGOING MONITORING, HOW SHOULD WE DO THIS….?

From **the growing area risk profile** and **growing assessment** we understand the **hazards**

We have a sampling plan……

- Growing area identified
- Sampling site identified
- Matrix and species
- Location of sampling points, tolerances
- Frequency and depth
- Determinands
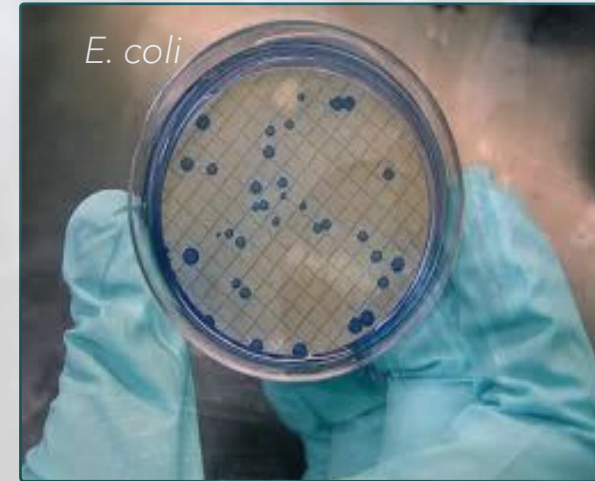- Sampling body and authorization

MONITOR INDICATORS OR PATHOGENS FOR CLASSIFICATION….?
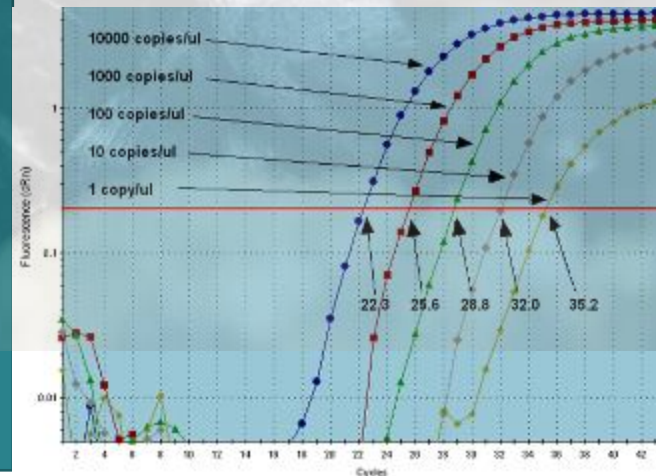
Decision depends on:

1. Risk profile, including intended use

2. Existing Regulations, intended market

3. Sampling and/or laboratory capability

4. Costs

- **Faecal indicators** Provide an indication of risk from a range of pathogens
- More indicator = more risk
- Rely on time series and lots of data

E. coli

If a wide range of animal or human sewage-derived pathogens are expected

- **Pathogen monitoring** measures direct risk
- Multiple pathogens may require multiple tests
- Tests generally more expensive/difficult

If only enteric viruses are expected and may not be controlled by faecal bacteria e.g. intermittent sewage spills

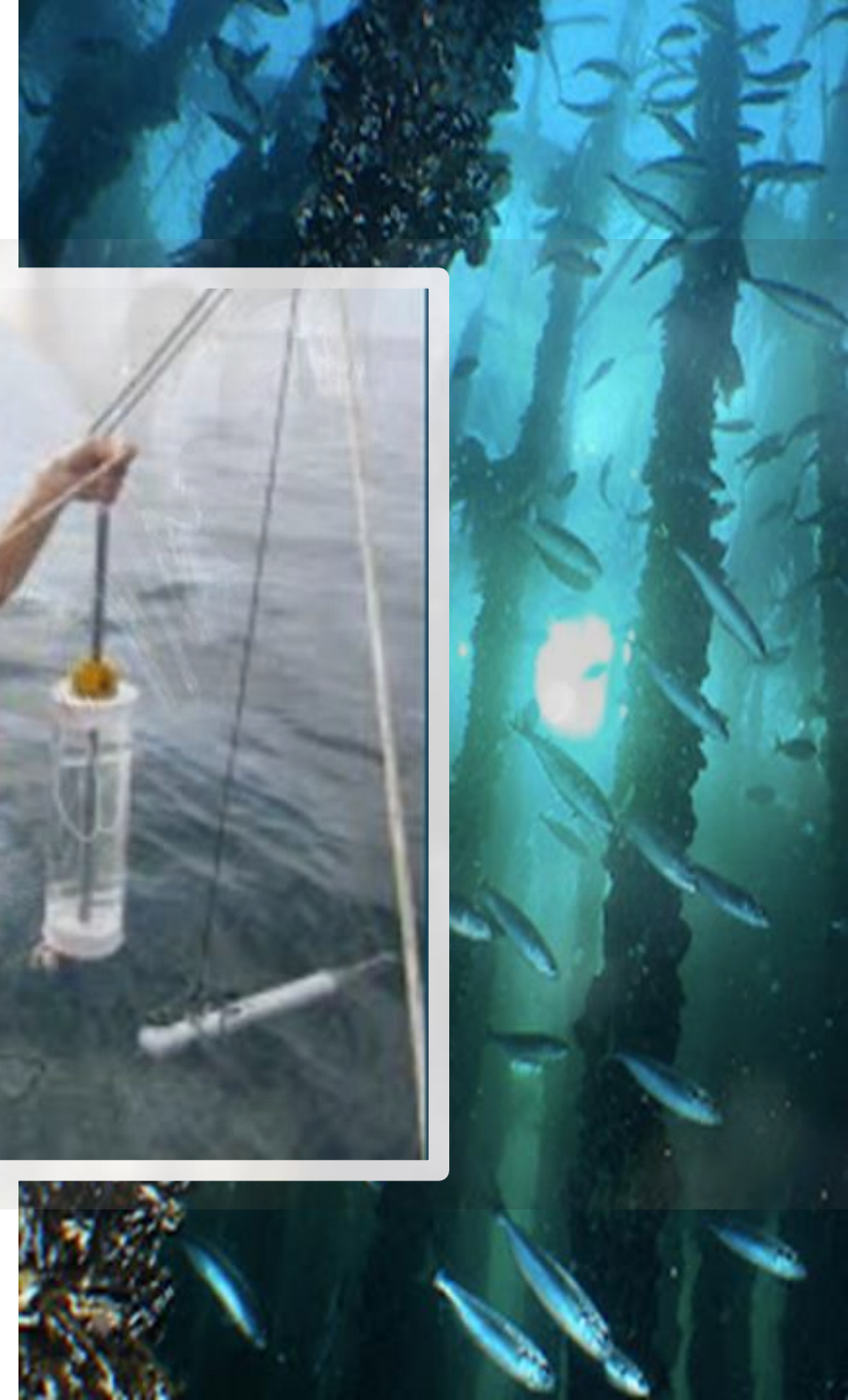# MONITOR WATER OR SHELLFISH FOR CLASSIFICATION….?

Decision depends on:

1. Risk profile, including intended use

2. Existing Regulations, intended market

3. Sampling and/or laboratory capability

4. Costs

But also logistics, health and safety considerations, indicators vs pathogens, variability …..boat!?

Irrespective of the target or the matrix, controlled sampling plans will be required

![Cefas]

CLASSIFICATION - COMPONENTS

Profile

Classification is a way of **categorising risk**

- It allows for **common risk management** procedures
- And, **common processing requirements**

It enables an **estimate** of **near** to **mid-term risk** based upon **past** performance

Steps to classification

Growing area risk profile → Profile

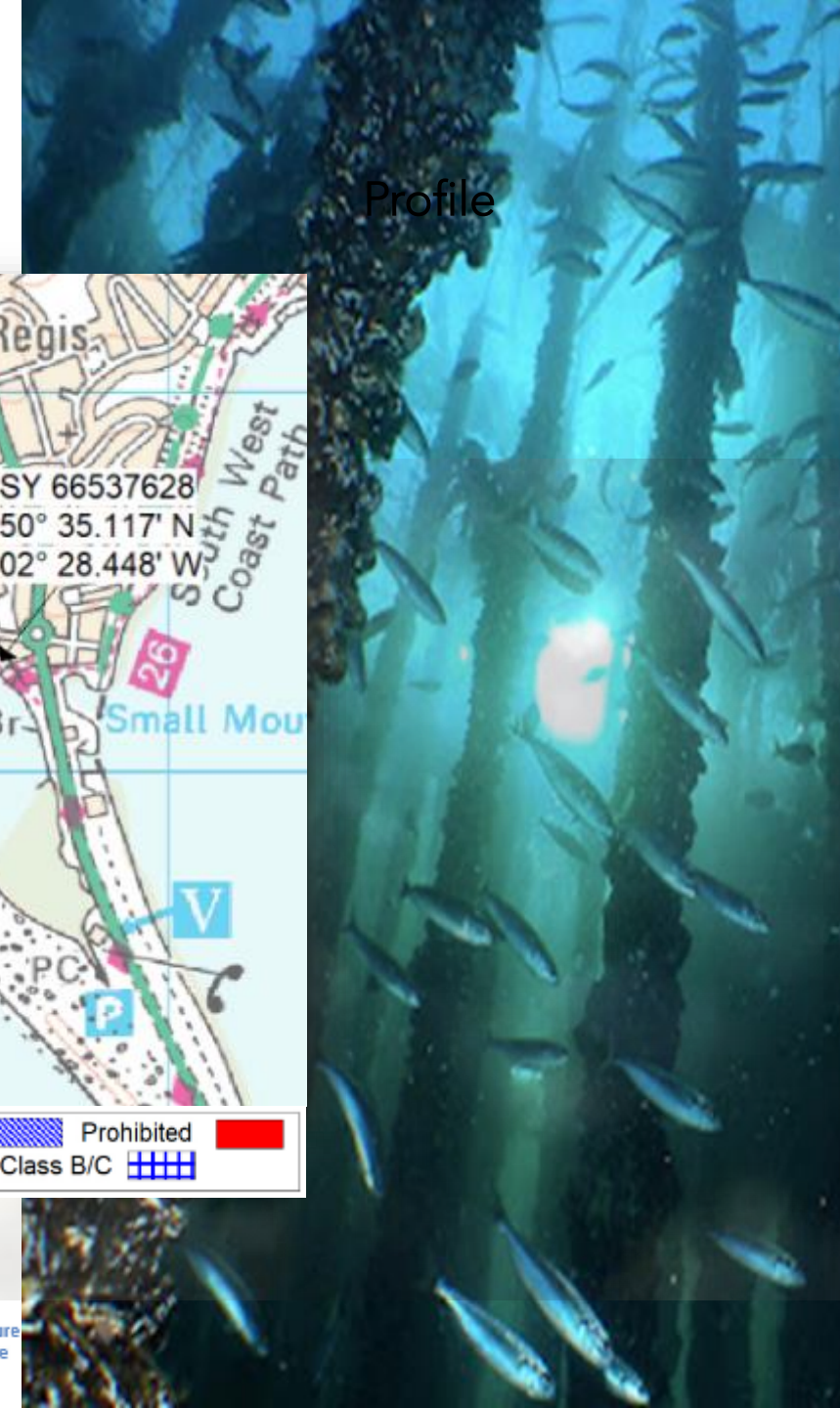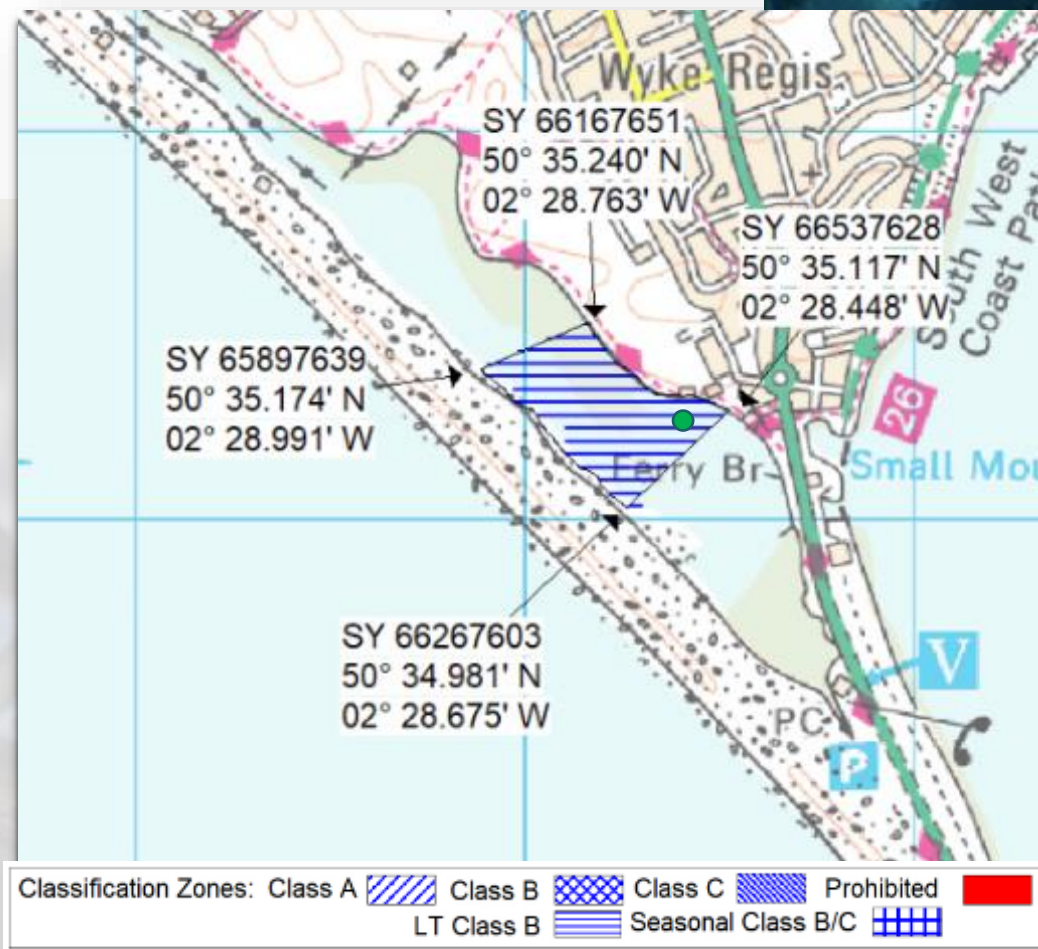Growing area assessment → Assess

Results from primary monitoring → Review

Results from ongoing monitoring → Classify

Food and Agriculture Organization of the United Nations

CLASSIFICATION – DEFINITION OF THE AREA

- The **classification boundaries** of the area should be **defined using geographical coordinates** (ideally 10m accuracy)

- The area should be **homogeneous in** terms of **contamination**

- It should have at **least one Representative Monitoring Point**

SY 66167651
50° 35.240' N
02° 28.763' W

SY 66537628
50° 35.117' N
02° 28.448' W

SY 65897639
50° 35.174' N
02° 28.991' W

SY 66267603
50° 34.981' N
02° 28.675' W

Classification Zones: Class A | Class B | Class C | Prohibited
LT Class B | Seasonal Class B/C

CLASSIFICATION – TYPES EXAMPLES FROM US AND EU

Profile

Requirement may be stipulated by trading partners

If no such requirements exist – define the **public health objective** then decide if criteria need to be **developed** or if existing international criteria can be applied

Treatment needed	US classification	Microbiological standard in water	EU classification	Microbiological standard in shellfish flesh
None	Approved	GM <14 FC cfu/100ml and 90%ile <43 FC cfu/100ml	Class A	80% ≤230, all results ≤700 *E.coli*/100g flesh
Purification or relaying	Restricted	GM <88 FC cfu/100ml and 90%ile <260 FC cfu/100ml	Class B	90% ≤4600, all results ≤46,000 *E.coli*/100g flesh
Protected relaying (> 2 months)			Class C	All samples ≤46,000 *E.coli*/100g flesh

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Cefas

SUMMARY

❖ **Codex** requires **monitoring**
❖ Monitoring provides **evidence** for the presence of **hazards**
❖ Monitoring **data** establishes **classifications**
❖ Classification standardises **risk management** and **processing**
❖ **Protects consumers from risk**
❖ Enables shellfish industry to **plan**
❖ **Facilitates trade**

🇬🇧 UK Government

Food and Agriculture Organization of the United Nations