

Classification and Monitoring

Workshop of the FAO Reference Centre for Bivalve Mollusc Sanitation
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Rachel Hartnell (Cefas)



Centre for Environment
Fisheries & Aquaculture
Science



Food and Agriculture
Organization of the
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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

It **cannot replace** risk profiling or the growing area assessment because.....?



The hazard may not always be there.....



Even if it is there, the concentration of it 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 risk profile** and **growing area assessment** we understand the **hazards**

We have a sampling plan

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

Primary monitoring helps us to **establish a classification** and understand necessary controls

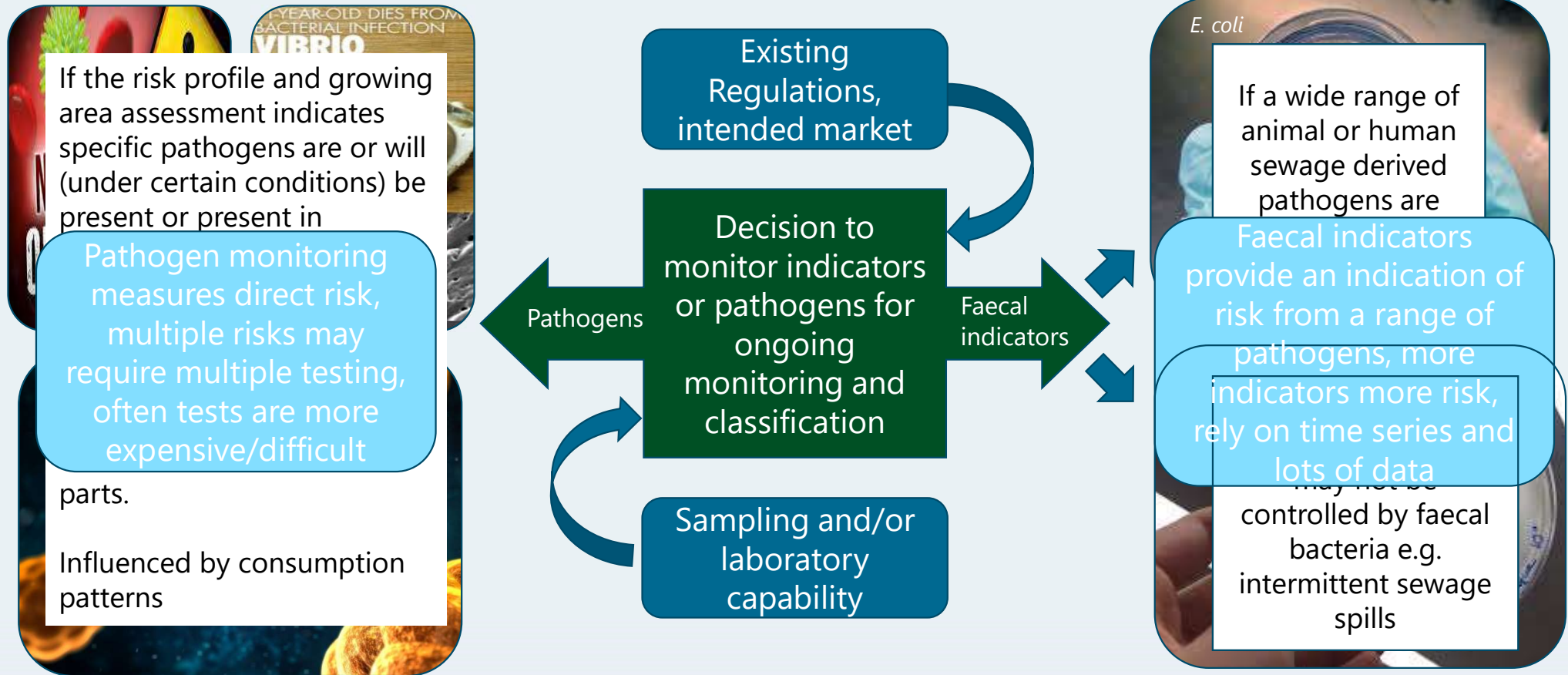
May enable us to **modify the sampling plans** for ongoing monitoring

Ongoing monitoring gathers data to **establish and confirm classifications**

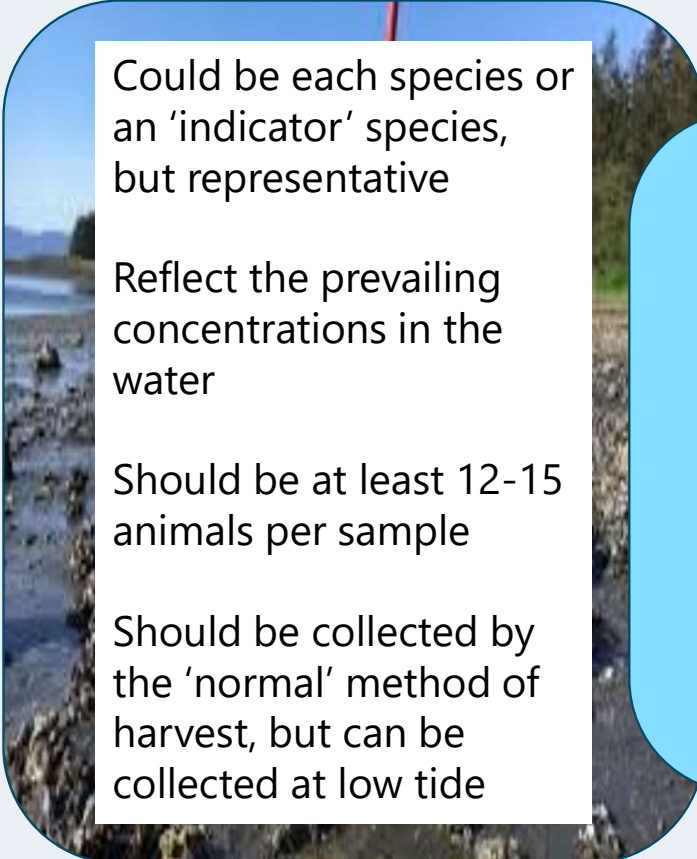
looking for



Indicators or pathogens for classification....?



Water or bivalve shellfish for classification....?



Could be each species or an 'indicator' species, but representative

Reflect the prevailing concentrations in the water

Should be at least 12-15 animals per sample

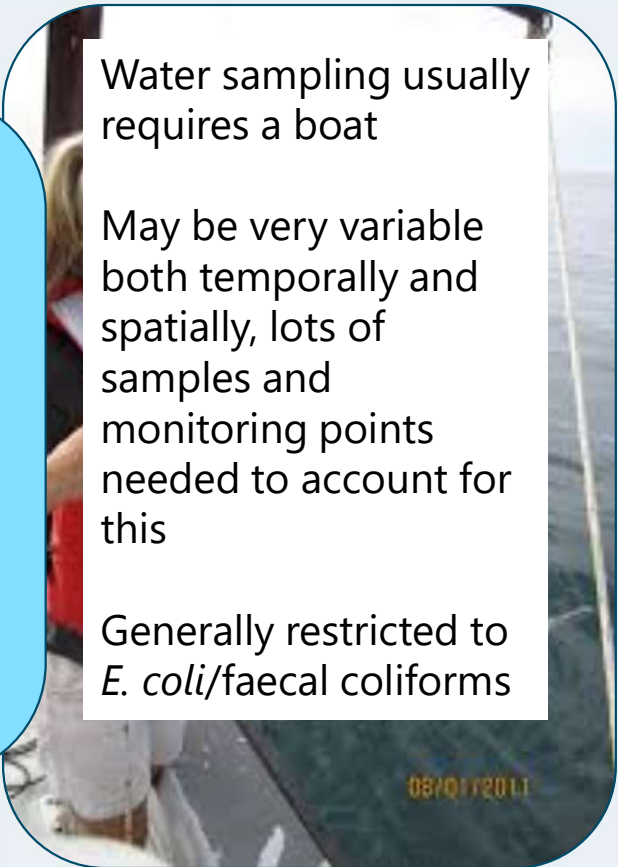
Should be collected by the 'normal' method of harvest, but can be collected at low tide

Existing

Whether water or bivalves, sampling should be:

- at fixed and identified points
- representative of the area
- either random or worse case
- frequent enough to reflect changing conditions
- consider health and safety of samplers

sampling



Water sampling usually requires a boat

May be very variable both temporally and spatially, lots of samples and monitoring points needed to account for this

Generally restricted to *E. coli*/faecal coliforms

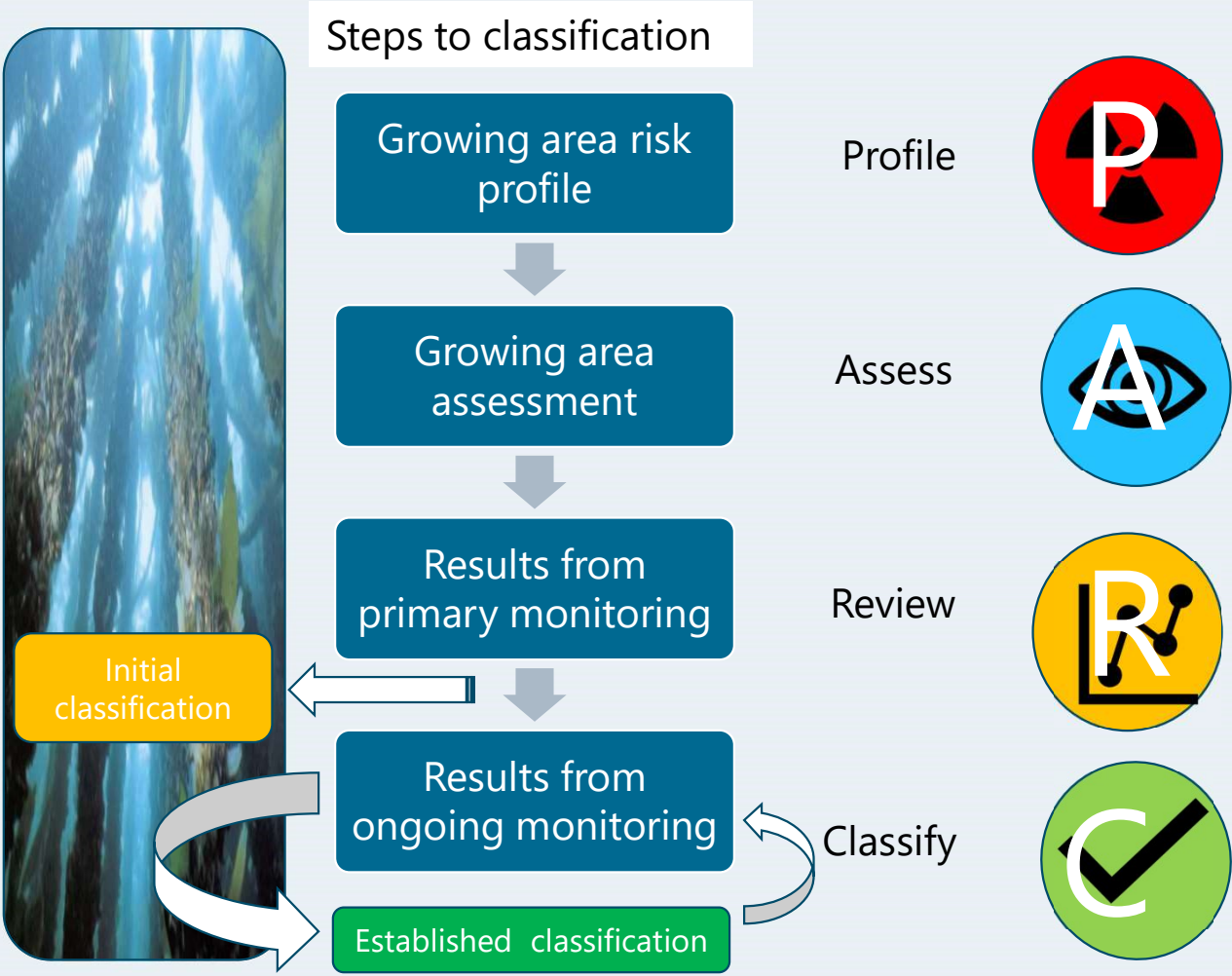


Classification - components

Classification is a way of **categorising risk**

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

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



Classification – definition of the area

Portland Harbour and Fleet - C. gigas

Scale - 1:60000



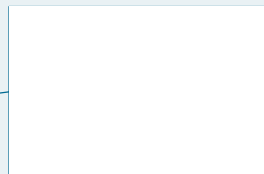
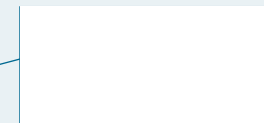
Classification of Bivalve Mollusc Production Areas, Effective from 1 September 2015

The areas delineated above are those classified as bivalve mollusc production areas under EU Regulation 853/2004

Further details on the classified species and the areas may be obtained from the responsible Food Authority. Enquiries regarding the maps should be directed to: Shellfish Microbiology, CEFAS, Weymouth Laboratory, Bannock Road, The Nothe, Weymouth, Dorset DT98 3UB (Tel: 01305 306600 Fax: 01305 306601)

N.B. Lat/Long quoted as WGS84

Separate map available for Mytilus spp. and T. decussatus at Portland Harbour and Fleet



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Classification - types

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

Typically classifications split into categories that require,

No treatment before live, raw consumption e.g.. Codex standard $n=5, c=1, m=230, M=700$ *E. coli* MPN/100g

Conditional classifications, those where additional criteria must be met in order to meet the classification type (e.g. season, rainfall, salinity, river flow)

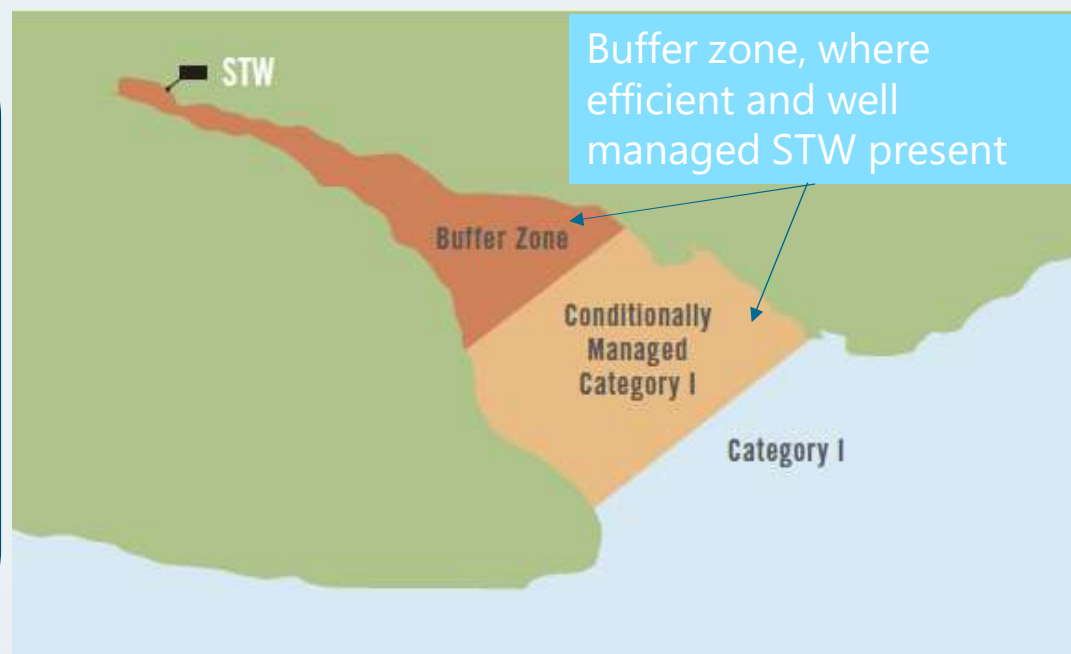
Classification – Buffer zones

Buffer zones around sources of contamination are **recommended**
Buffer zones are **stipulated by some national legislation**/programmes e.g. US
National State Sanitation Program (NSSP)

Buffer zones = prohibited areas around
a point source or hazard (marinas or
other boating activities)

Size of the area can be established by:

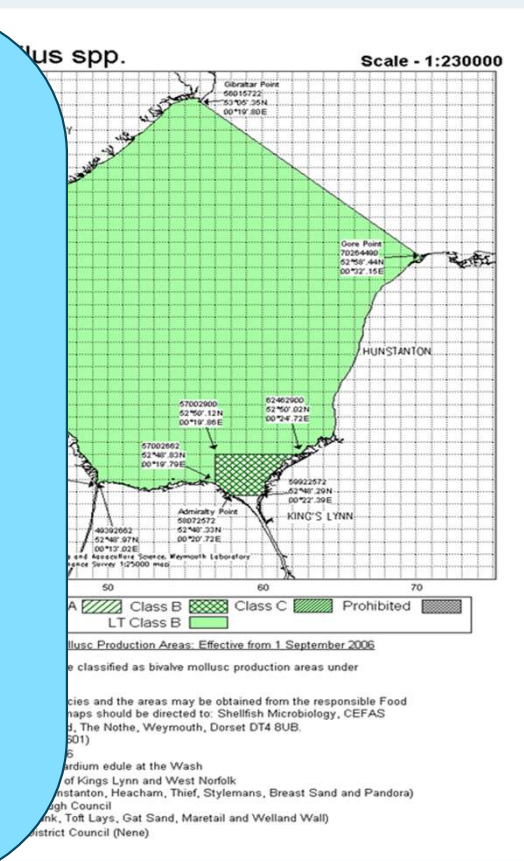
- Dilution calculations
- Salinity studies
- Drogue studies
- Dye tracing studies
- Using tracers
- Hydrodynamic modelling



Summary - Classification and Monitoring

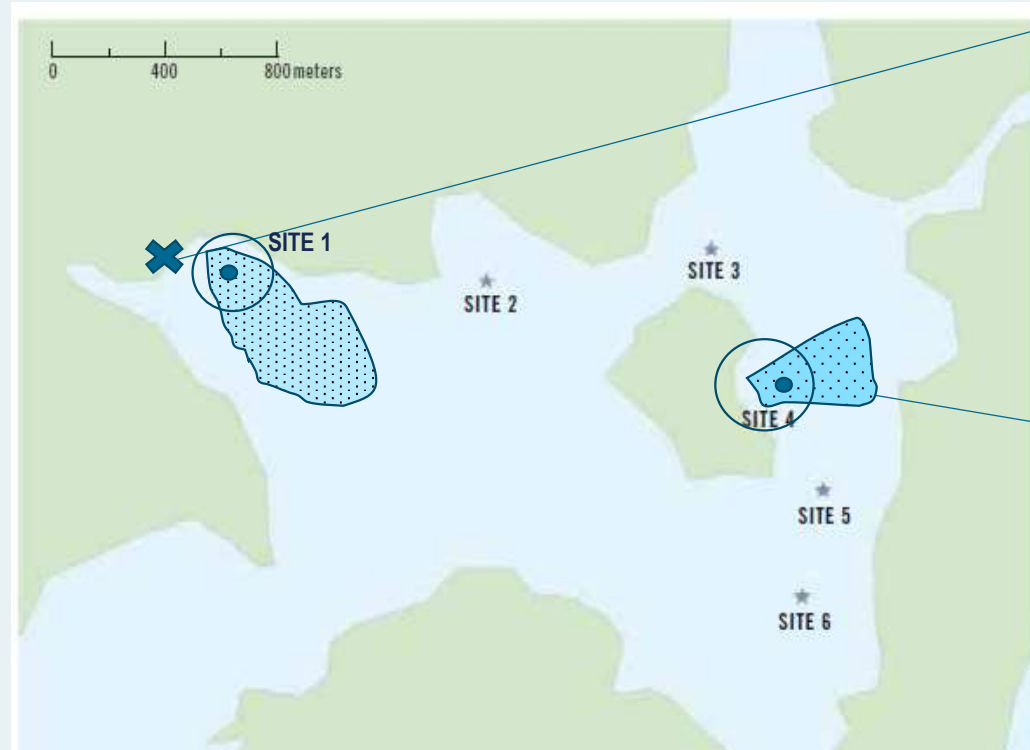


Codex requires **monitoring**
Monitoring provides **evidence** for the presence of **hazards**
Monitoring **data** establishes **classifications**
Classification allows for **common risk management** and **processing** – enabling industry to plan, whilst **protecting consumers from risk** and **facilitating trade**



A classification exercise.....

Date	E. coliMPN /100g	
	Site 1	Site 4
01/01/2017	460	18
01/02/2017	230	18
01/03/2017	20	120
01/04/2017	180	18
01/05/2017	260	90
01/06/2017	230	70
01/07/2017	230	230
01/08/2017	230	230
01/09/2017	90	120
01/10/2017	110	230
01/11/2017	110	400
01/12/2017	120	18
01/01/2018	130	18
01/02/2018	18	18
01/03/2018	160	230
01/04/2018	230	230
01/05/2018	230	190
01/06/2018	18	120
01/07/2018	230	120
01/08/2018	18	230
01/09/2018	18	18
01/10/2018	180	230



If we applied an EU classification criteria – both sites conform to class A, 80% samples <230 *E. coli* MPN/100g 20% up to 700 *E. coli* MPN/100g