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

8th – 10th July 2025, Nairobi, Kenya

Data interpretation – EU Classification system

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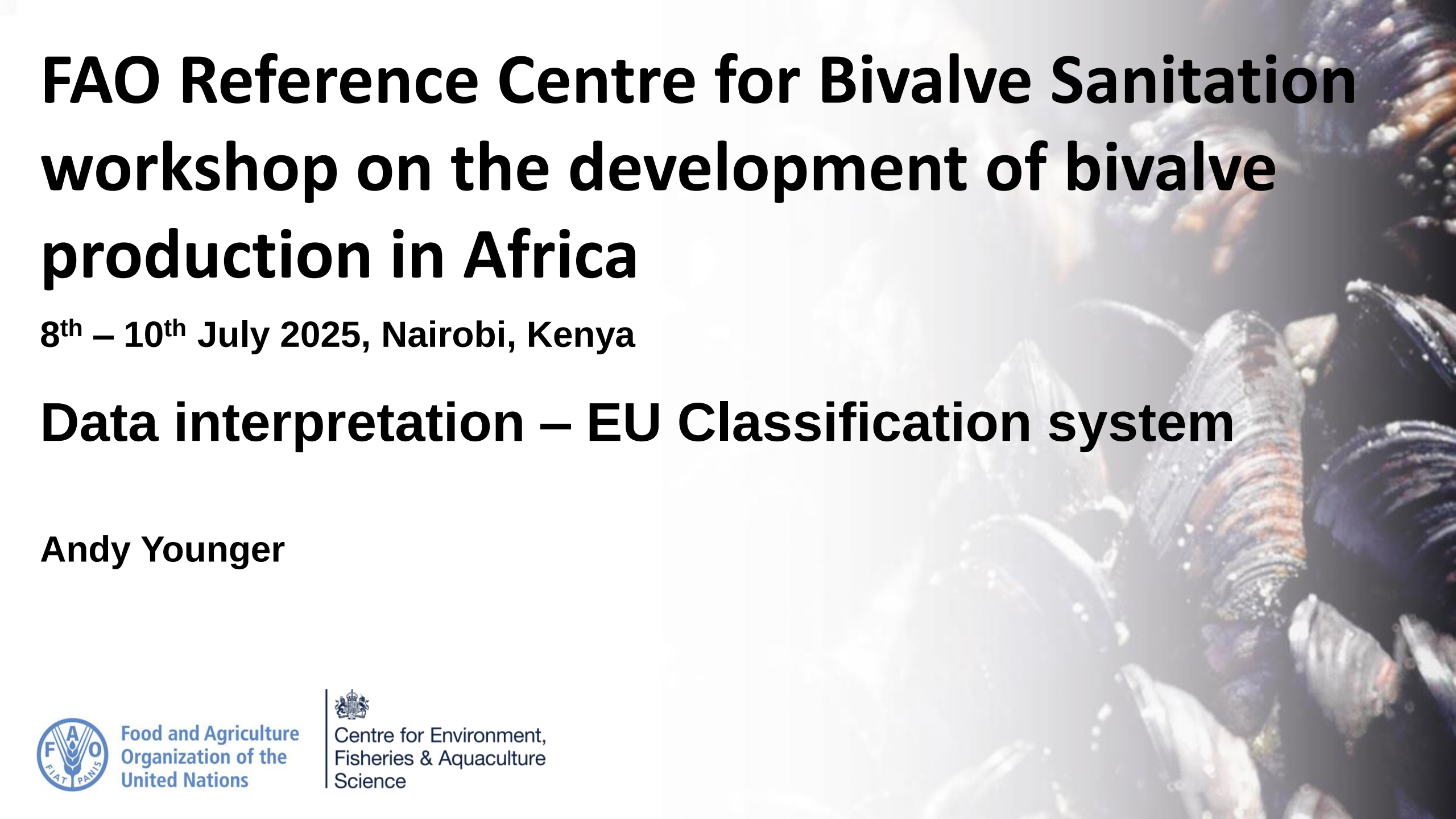


Food and Agriculture Organization of the United Nations

Centre for Environment, Fisheries & Aquaculture Science

European Regulations: 2019/627
Classification categories

Classification status	Criteria	Treatment required before market
Class A (Cat I)	80% of samples must be equal to or less than 230 *E. coli*/100g (All results must be equal to or less than 700 *E. coli*/100g)	Molluscs can be harvested for direct human consumption
Class B (Cat II)	90% of samples must be equal to or less than 4,600 *E. coli*/100g (All results must be equal to or less than 46,000 *E. coli*/100g)	Molluscs require purification in an approved plant **OR** after relaying in an approved relaying area **OR** after and EC approved heat treatment process
Class C (Cat III)	All results must be equal to or less than 46,000 *E. coli*/100g	Molluscs require relaying for at least 2 months in an approved relaying area followed, where necessary, by treatment in a purification centre **OR** after and EC approved heat treatment process

Exercise

Example datasets from 2 different sites

For each site decide on an appropriate classification level at the 3 stages of classification identified in the EU guidance i.e.:

- **Preliminary classification** (12 results/6 months)
- **Initial full classification** (1 year's data)
- Review ongoing **established classification** (3 years' data)

Write a short summary of reasons for choice of classification and comment on any notable features of the data

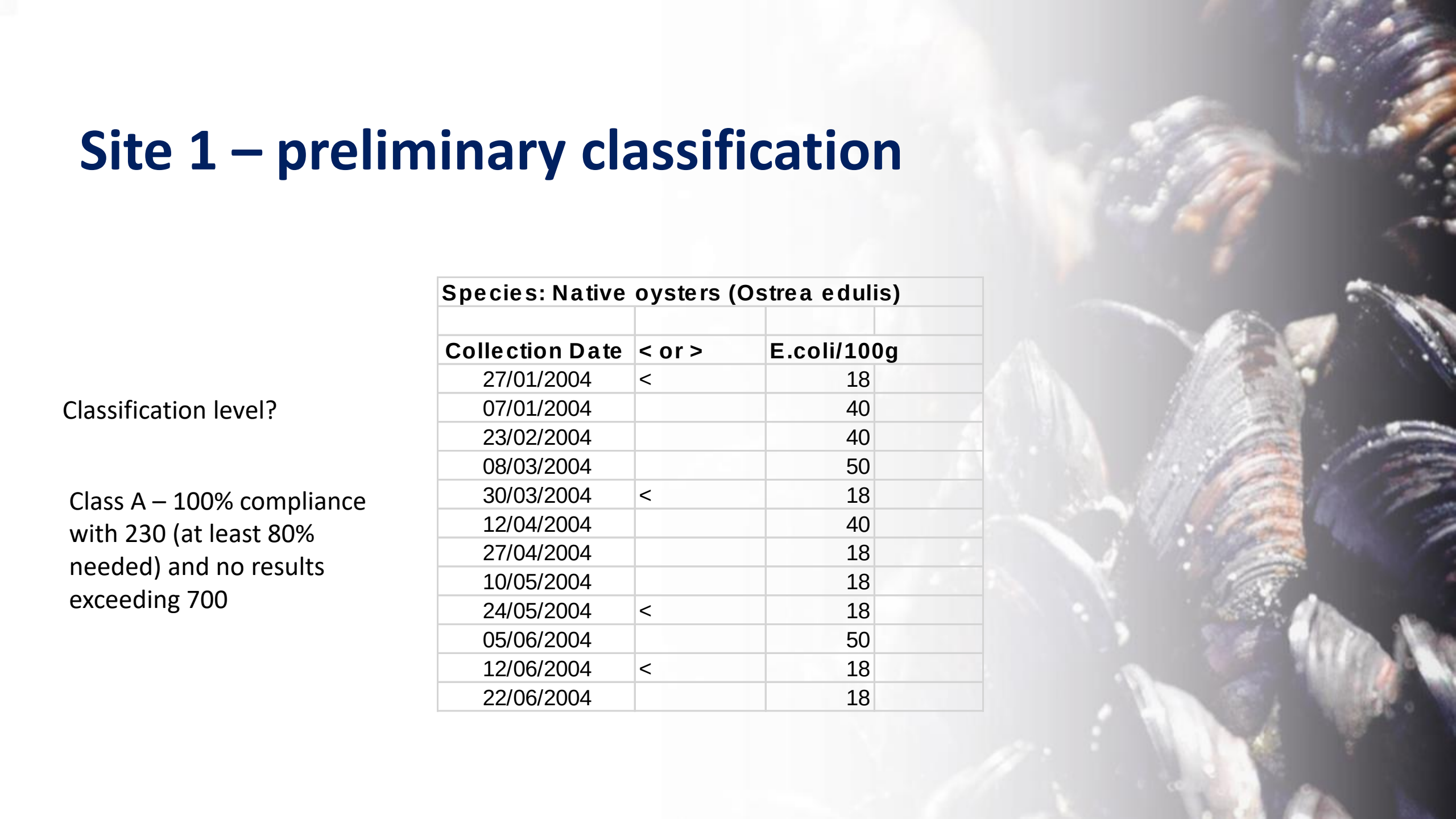
Groups to report back after analysis (30 mins)

Site 1 – preliminary classification

Classification level?

Class A – 100% compliance with 230 (at least 80% needed) and no results exceeding 700

Species: Native oysters (Ostrea edulis)			
Collection Date	< or >	E.coli/100g	
27/01/2004	<	18	
07/01/2004		40	
23/02/2004		40	
08/03/2004		50	
30/03/2004	<	18	
12/04/2004		40	
27/04/2004		18	
10/05/2004		18	
24/05/2004	<	18	
05/06/2004		50	
12/06/2004	<	18	
22/06/2004		18	



Site 1 – Initial full classification

Classification level?

Cluster of high results in July, August and October

Too early to assess for seasonality (3 years' data needed)

84% compliance with 230
But
1 result greater than 700

Class B

Species: Native oysters (Ostrea edulis)		
Collection Date	< or >	E.coli/100g
27/01/2004	<	18
07/01/2004		40
23/02/2004		40
08/03/2004		50
30/03/2004	<	18
12/04/2004		40
27/04/2004		18
10/05/2004		18
24/05/2004	<	18
05/06/2004		50
12/06/2004	<	18
22/06/2004		18
20/07/2004		750
31/08/2004		310
05/10/2004		500
25/10/2004		70
09/11/2004		18
10/01/2005		18
18/01/2005		40

Site 1 – Review after 3 years

Classification level?

Seasonal class A possible: December ‘buffer’ month; class A season from 1 December to 30 June

High results – general deterioration?

Seasonal trend appearing

27/01/2004	<	18
07/01/2004		40
23/02/2004		40
08/03/2004		50
30/03/2004	<	18
12/04/2004		40
27/04/2004		18
10/05/2004		18
24/05/2004	<	18
05/06/2004		50
12/06/2004	<	18
22/06/2004		18
20/07/2004		750
31/08/2004		310
05/10/2004		500
25/10/2004		70
09/11/2004		18
10/12/2004		18
18/01/2005		40
22/02/2005		40
19/04/2005		220
24/05/2005	<	18
14/06/2005		18
12/07/2005	<	18
23/08/2005		220
19/09/2005		160
11/10/2005		3500
01/11/2005		2400
21/11/2005	<	18
12/12/2005	<	18
24/01/2006		40
20/02/2006		18
20/03/2006	<	18
18/04/2006		50
23/05/2006		70
27/06/2006		18
24/07/2006	<	18
15/08/2006		500
12/09/2006		2200
02/10/2006		3500
14/11/2006		140
22/12/2006		18
16/01/2007		90

Site 2 – Preliminary classification

Classification level?

Clearly not class A (results >700) or class B (only 75% compliance with 4600 – needs to be at least 90%)

Possibly class C?

Species: Native oysters (Ostrea edulis)			
CollectionDate	**< or >**	**Ecoli**	
12/12/2002		750	
29/12/2002		1300	
14/01/2002		1500	
17/02/2002		2400	
18/03/2002		14000	
28/03/2002		1300	
15/04/2002		2400	
30/04/2002		3500	
13/05/2002		17000	
28/05/2002		2400	
10/06/2002		16000	
08/07/2002		5400	

Site 2 – Initial full classification

Classification level?

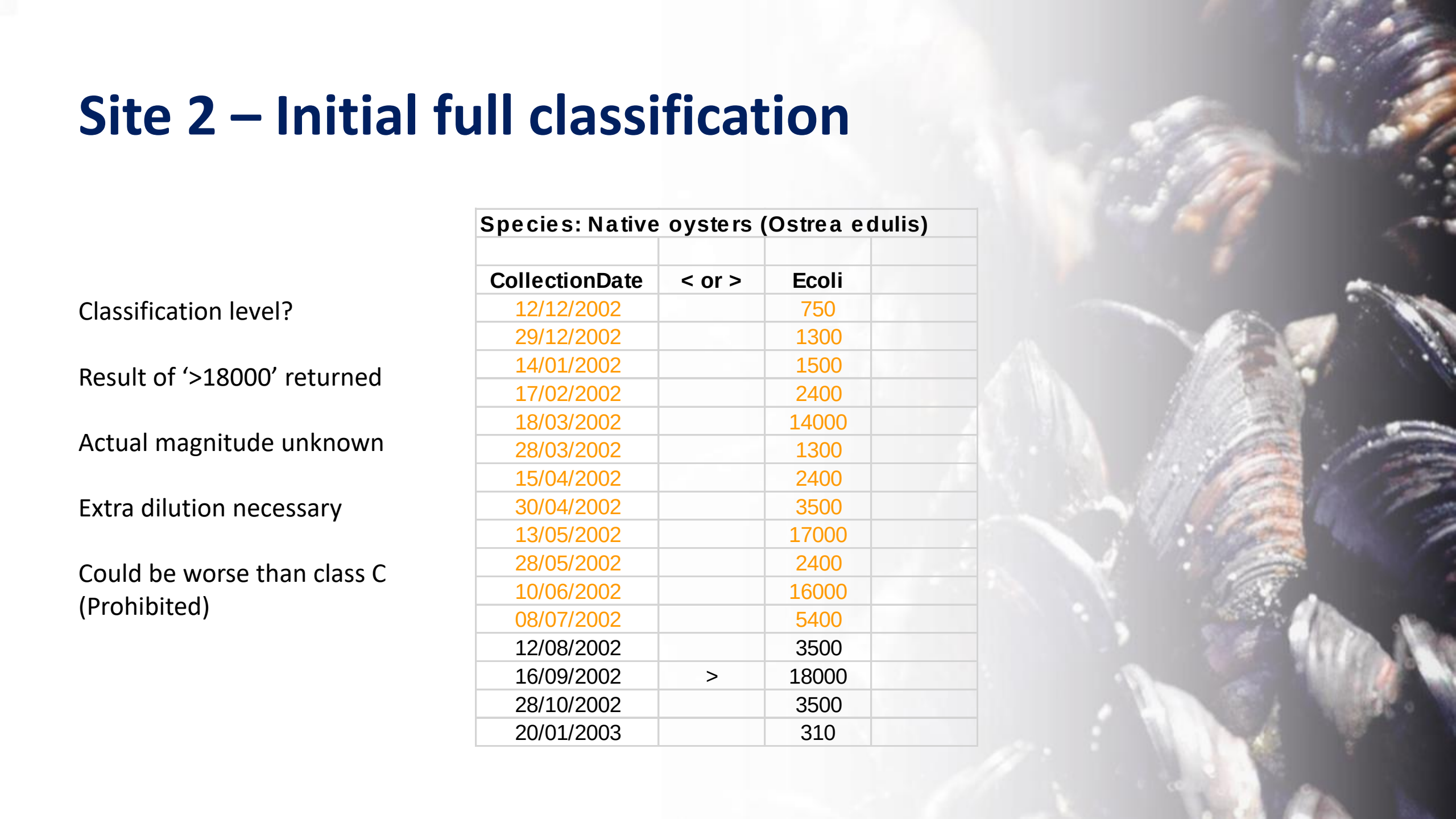
Result of ‘>18000’ returned

Actual magnitude unknown

Extra dilution necessary

Could be worse than class C (Prohibited)

Species: Native oysters (Ostrea edulis)			
CollectionDate	< or >	Ecoli	
12/12/2002		750	
29/12/2002		1300	
14/01/2002		1500	
17/02/2002		2400	
18/03/2002		14000	
28/03/2002		1300	
15/04/2002		2400	
30/04/2002		3500	
13/05/2002		17000	
28/05/2002		2400	
10/06/2002		16000	
08/07/2002		5400	
12/08/2002		3500	
16/09/2002	>	18000	
28/10/2002		3500	
20/01/2003		310	



EU Reference method: 5 tube x 3 dilution MPN (1g, 0.1g, 0.01g)

- **Maximum result for this dilution range is >18,000 *E.coli*/100g**

1st stage of test – Mineral Modified Glutamate Broth – 5 tubes each at 3 dilutions (standard range)

2nd stage of test – chromogenic agar

- Need for 4th dilution series if >18,000 results likely - allows resolution to >180,000 *E. coli*/100g

Site 2 – review after 3 years

Classification level?

Now that extra dilution is being carried out it is clear that this site is very contaminated

Exceeds class C standard (upper limit 46000)

Site should be designated as ‘Prohibited’ i.e. no harvesting allowed

Need for extra dilution to reach end point – how high would it have been?

Prohibited level results

Species: Native oysters (Ostrea edulis)		
CollectionDate	< or >	Ecoli
12/12/2002		750
29/12/2002		1300
14/01/2002		1500
17/02/2002		2400
18/03/2002		14000
28/03/2002		1300
15/04/2002		2400
30/04/2002		3500
13/05/2002		17000
28/05/2002		2400
10/06/2002		16000
08/07/2002		5400
12/08/2002		3500
16/09/2002		>18000
28/10/2002		3500
20/01/2003		310
10/02/2003		3500
07/04/2003		2400
19/05/2003		35000
02/06/2003		54000
07/07/2003		70
18/08/2003		1300
15/09/2003		1700
18/09/2003		1300
13/10/2003		2400
02/02/2004		16000
01/03/2004		11000
15/03/2004		2400
19/07/2004		5400
23/08/2004		5400
13/09/2004		92000
29/11/2004		17000
13/12/2004		7000
10/01/2005		3500
21/02/2005		1100
07/03/2005		3500
23/05/2005		220
13/06/2005		2400
04/07/2005		750
05/09/2005		54000
24/10/2005		160,000
28/11/2005		28000
12/12/2005		24000
23/01/2006		220

Thank you

Any questions?

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