



Public acceptance of short term pollution warning and beach closure in UK: the results of opinion surveys in Scotland and England.

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Responsibilities for bathing waters in the UK

Scotland

- SEPA – Scottish Environment Protection Agency
- SE – Scottish Executive (Scottish Government)

England and Wales

- EA – Environment Agency for England and Wales
- DEFRA – Department of Environment, Food and Rural Affairs



Responsibilities for beach management in the UK

Beach ownership – public and private

General management – facilities, litter

Health and safety, pollution

Local authority – environmental health department

County Council, EA, police and fire services, Marine
and Coastguard Agency



Beach closures

- **Uncommon**
Main causes: hazard on beach or in sea
- oil, chemical, wreckage, dead animal.
- **Bathing water quality:**
- not usually cause of closure
- advisory notice

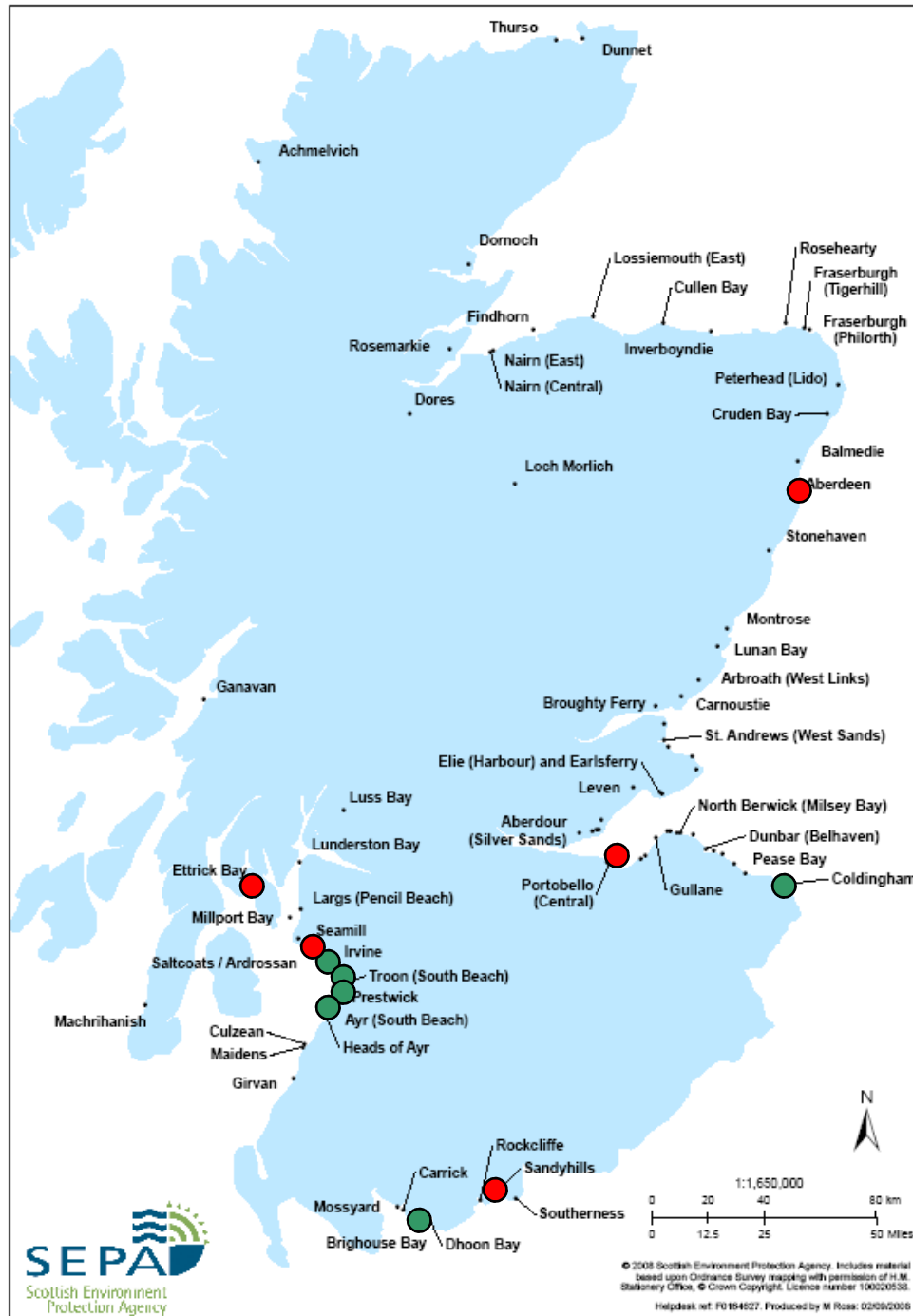


SEPA Signage Trial Locations

Bathing Water Compliance Results 2008

Directive 76/160/EEC

- Excellent
- Good
- Poor



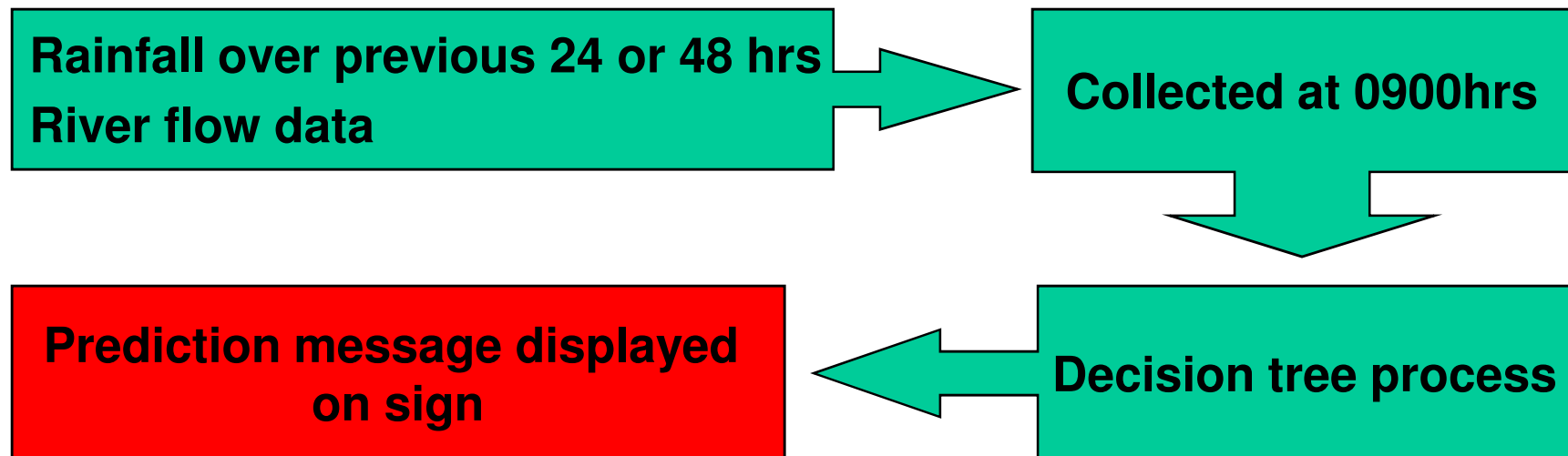


Bathing water quality prediction

SEPA 2001 study:

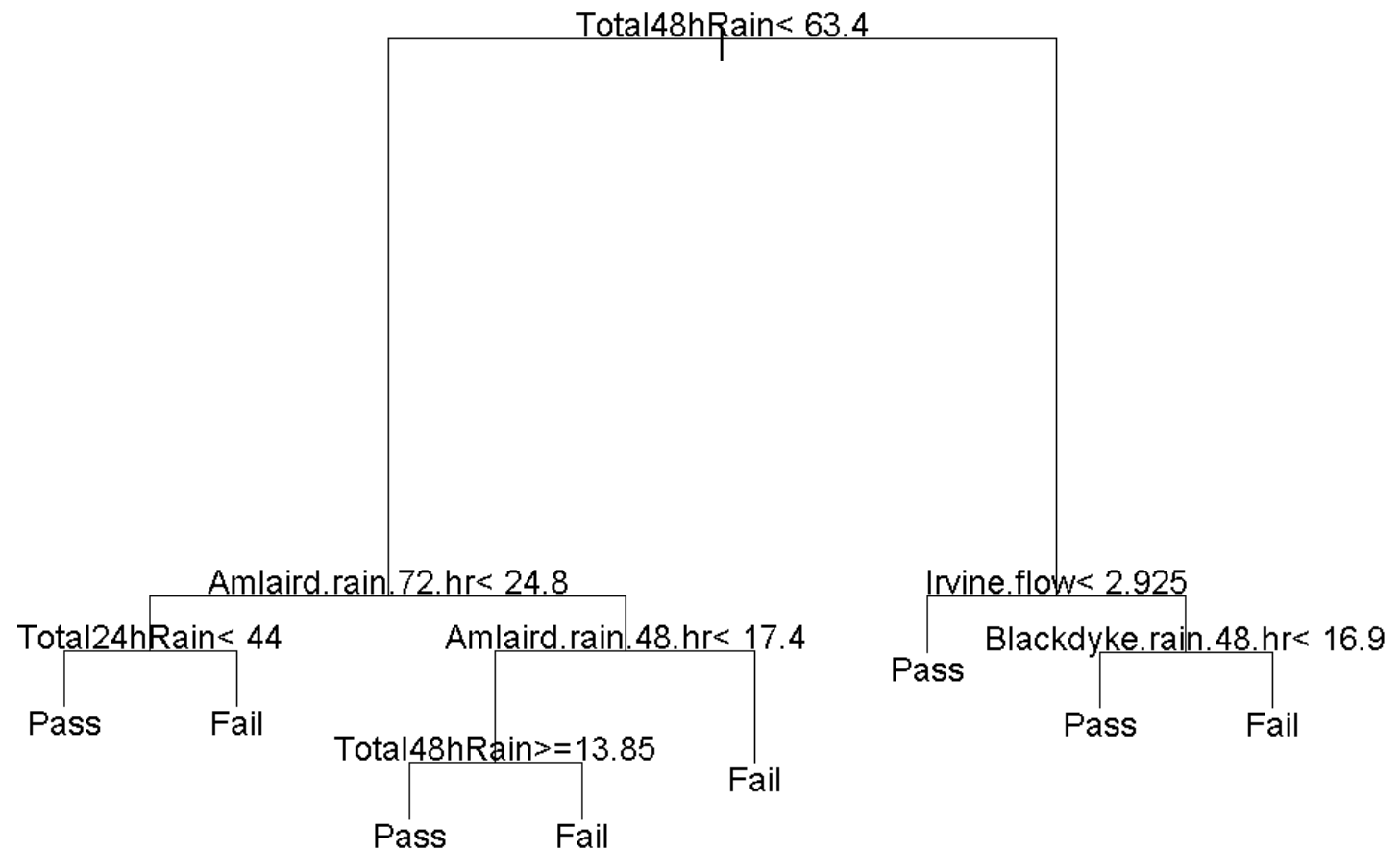
Relationship between exceedence of standards and antecedent rainfall.

Methodology:



Decision Trees

- Irvine, current EU Directive





Prediction sign messages

- **Good Water Quality is Predicted Today**
Used when water quality is predicted to meet mandatory (good) or guideline (excellent) standards.
- **Bathing Not Advised Today – Risk of Poor Quality Water**
Used when water quality is predicted to fall below mandatory standards.
- **Excellent quality**
Used when water quality is predicted to meet guideline standards (trialled at one site only at present)
- **Poor – rainfall**
Recent rainfall may have affected water quality today (trialled at two sites only at present).



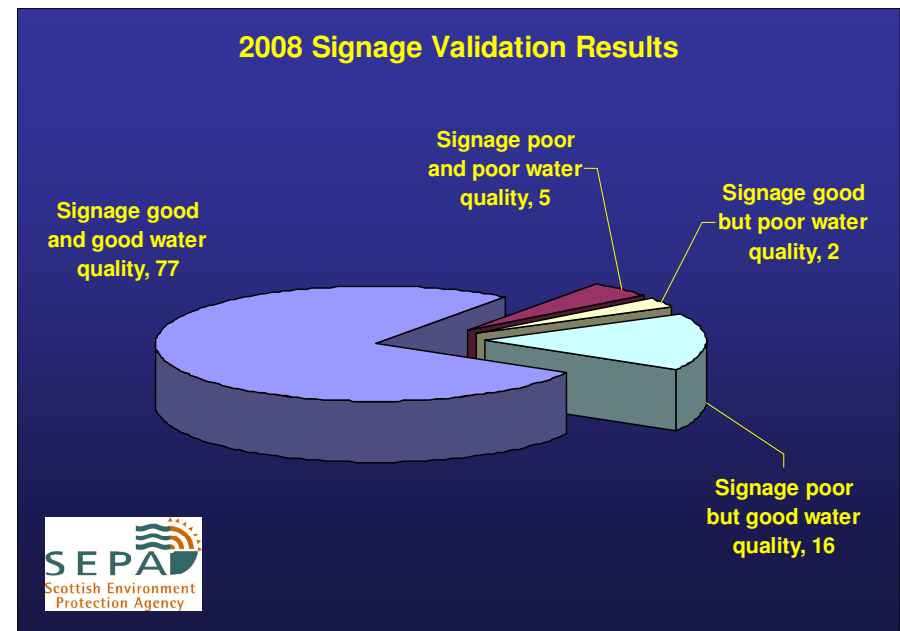
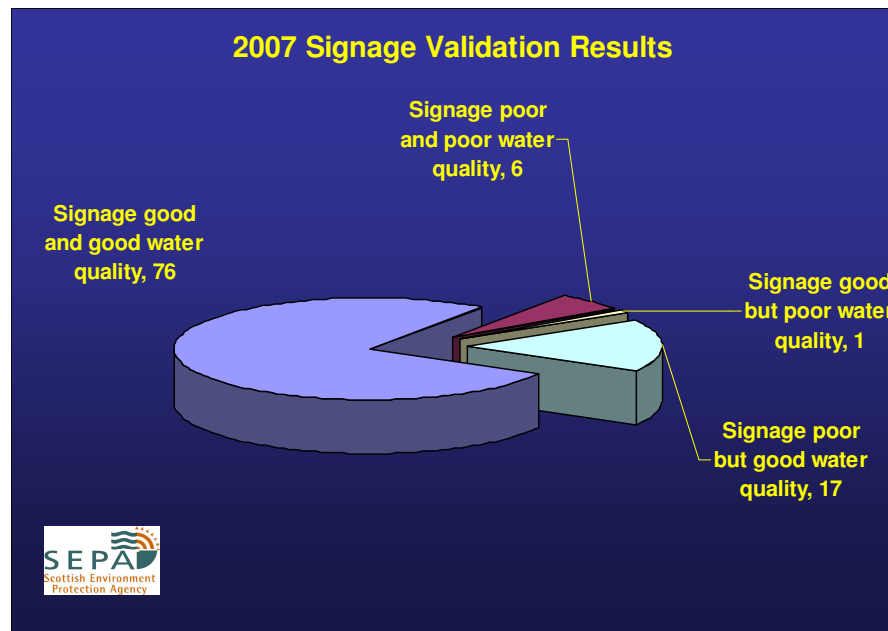
Bathing water signage





Current modelling performance

- Currently SEPA are making predictions in real time against Directive 76/160/EEC
- 98 – 99% of results are correct or precautionary in real time





Incorrect predictions

- Trigger levels were not set low enough at certain locations.
- Heavy rainfall occurred after the sign message had been decided.
- Rainfall occurred in the catchment but not at the rain gauge location.
- A small number of poor water quality events (<10%) are not predictable.



Public opinion survey

Scottish Executive – commissioned market research to assess public attitudes towards the provision of real time bathing water quality information.

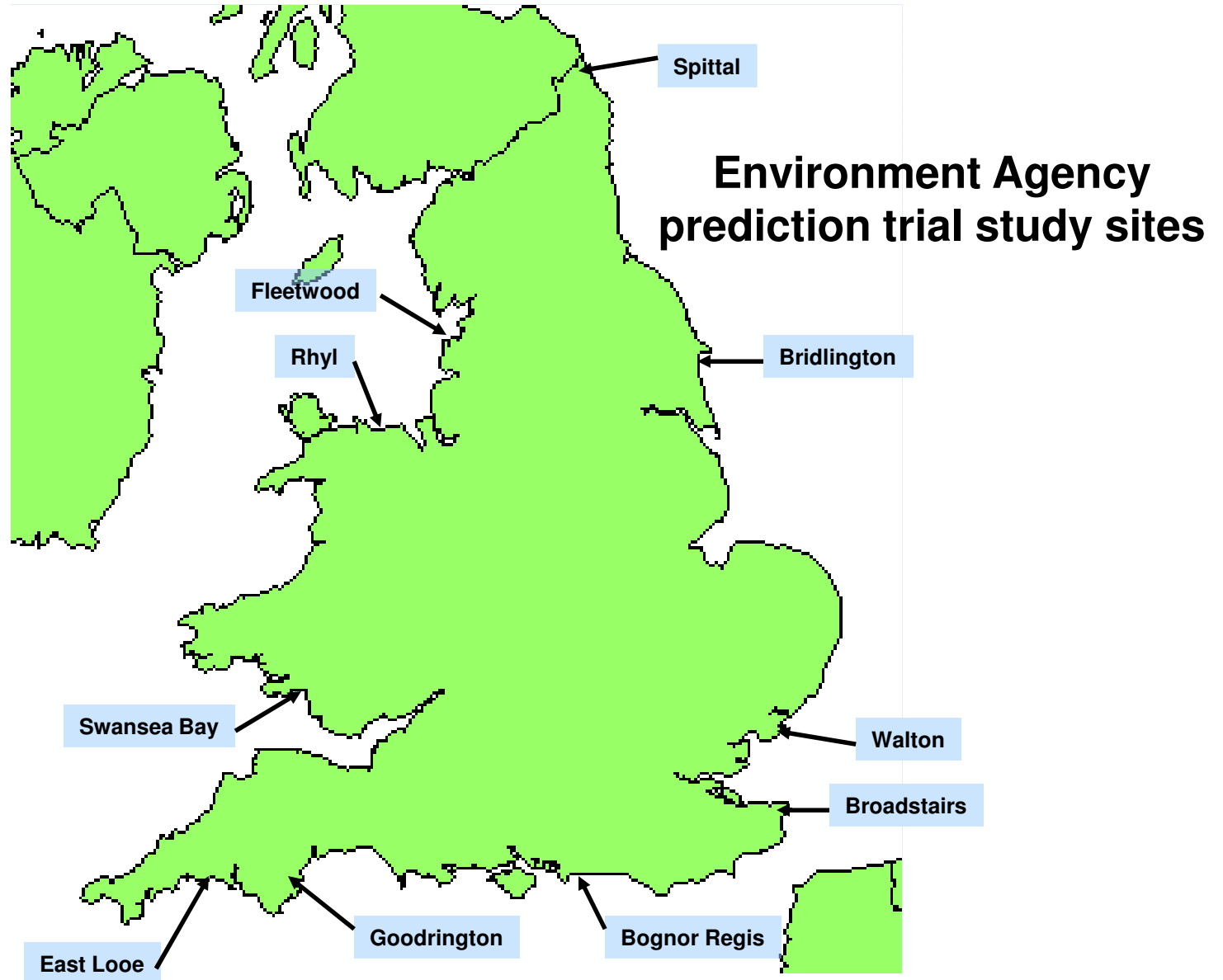
Report:

“Bathing Water Use in Scotland” – (Scottish Executive Social Research 2004)



Public opinion survey – key findings

- 1) The two most important factors for those who had visited beaches during the last 12 months were the cleanliness of the beach and the cleanliness of the water.
- 2) Over half of the respondents (56%) stating they saw this type of information as 'very useful'.
- 3) The system was mainly seen as useful because it would provide information which would be helpful in deciding whether or not to go into the water or indeed visit a particular beach.
- 4) Information about the quality of the water and safety for children were also mentioned as reasons for considering the real time system useful.
- 5) Respondents with children were more interested in the information than others, with safety being of concern.

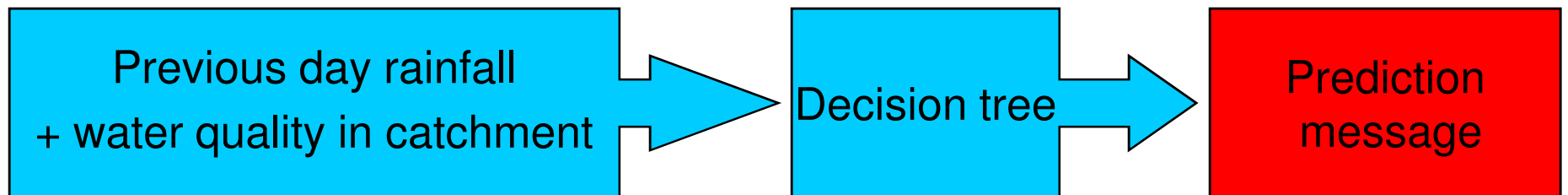




EA prediction study

Phase 1

Evaluation of prediction process



Phase 2

Display predictions poster on beach



EA prediction messages

Good prediction: good water quality is predicted today.

Poor prediction: bathing not advised today – risk of poor water quality.

No prediction available: prediction not available for this site today.



Project progress

Phase 1:

Accuracy of predictions -

Good water quality – 70% accurate

Poor water quality – 50% accurate

Phase 2:

Deferred until 2010 because of poor prediction accuracy



Public opinion survey

Opinion survey:

- Attitudes to water quality, beach usage, information and signage.
- Targeting local residents, beach users on the beach and local tourism dependent businesses
- Survey ends 30th September 2009
- Initial results published possibly in October 2009.



Public opinion survey – provisional results

- The majority of the public are happy for the EA to make decisions on water quality.
- The majority are not interested in technical information
- A small majority are not aware of the Blue Flag scheme
- Only a small majority are fairly or very interested in in the EC Bathing Water Quality classifications
- A significant majority will use the internet to get bathing water quality information
- Few people had seen any signs on the beach giving bathing water quality information and in some locations no one interviewed had read a sign, even though a sign was present



Public opinion survey – provisional results

Regarding bathing water quality prediction:

- A good majority were fairly or very interested in seeing the predicted bathing water quality
- If poor bathing water quality was predicted
 - About the same proportion, one quarter, said that they would still visit the beach but would not go into the sea
 - About one quarter said that it would not make any difference to their plans to visit the beach and the sea
 - A slightly larger proportion would visit a different beach
- Local businesses were very concerned at the prospect of poor bathing water quality information being published and were almost unanimous in saying that they would rather it was not published at all.



I would like to thank Calum McPhail and Ruth Stidson, SEPA, and Ian Dunhill, EA for their assistance and permission to use their information and data in this presentation.

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