Maine Shellfish Sanitation Program – Cleansing Studies

Kohl Kanwit – Director, Bureau of Public Health

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Details of the cleansing studies used to establish reopening criteria for growing areas conditionally managed on rainfall triggers were reviewed.

It was determined that cleansing studies with shellfish meats were not conducted for all conditionally managed areas [2015 NSSP MO Chapter IV@.03 C.(2)(c)(iii)] and that the ME DMR is using a modeling method developed for several watersheds in ME by the University of Maine.

This issue is not being documented as a program deficiency at this time since the topic of cleansing studies in general is under discussion and pending a policy decision at the FDA's CFSAN. During the current evaluation the ME DMR indicated that data may be available from prior research projects in many of the conditional areas managed on rainfall that may be used to further support the automatic reopenings of growing areas and the DMR is encouraged to review and compile this data in a written document as it has already done for some conditionally managed areas.

Watershed modeling

Photo of clam harvesting in a coastal mudflat taken by Bridie McGreavy, University of Maine

Component	Management Question
Source	What conditions generate pollution sources that cause bacteria pollution problems?
Delivery	How do patterns of pollutant delivery affect the timing and magnitude of bacteria pollution events?
Residence Time	How long do bacteria pollution events last after a watershed delivery event?

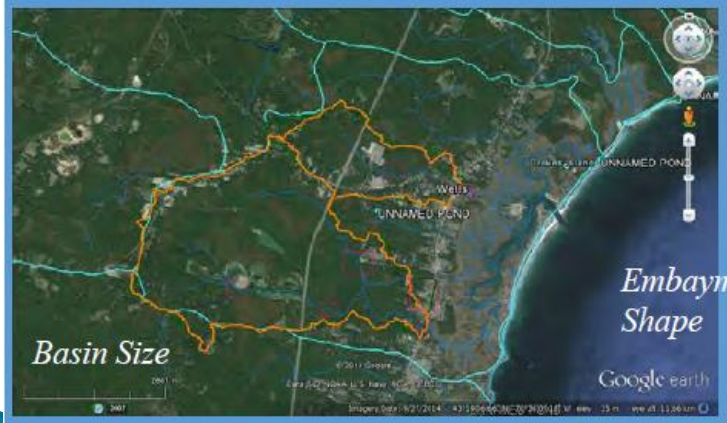
Gulf of Maine Scale

Landscape Pollution Response Units:

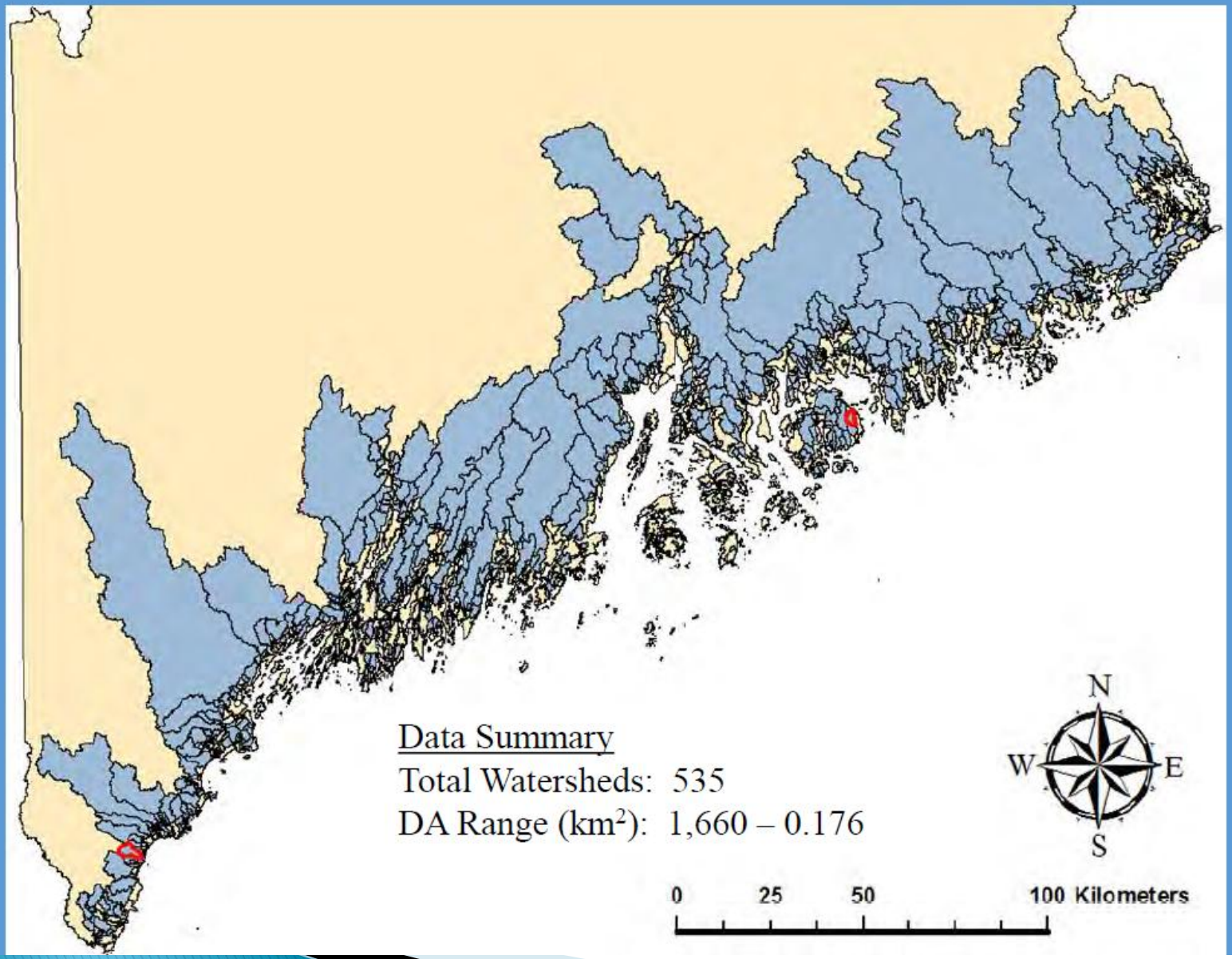
Sources
- Basin Size
- Soil Drainage
- Human Population
- Land cover

Delivery
- Basin Size
- Relief
- Drainage Density

Residence Time
- Tidal Embayment Hydraulics



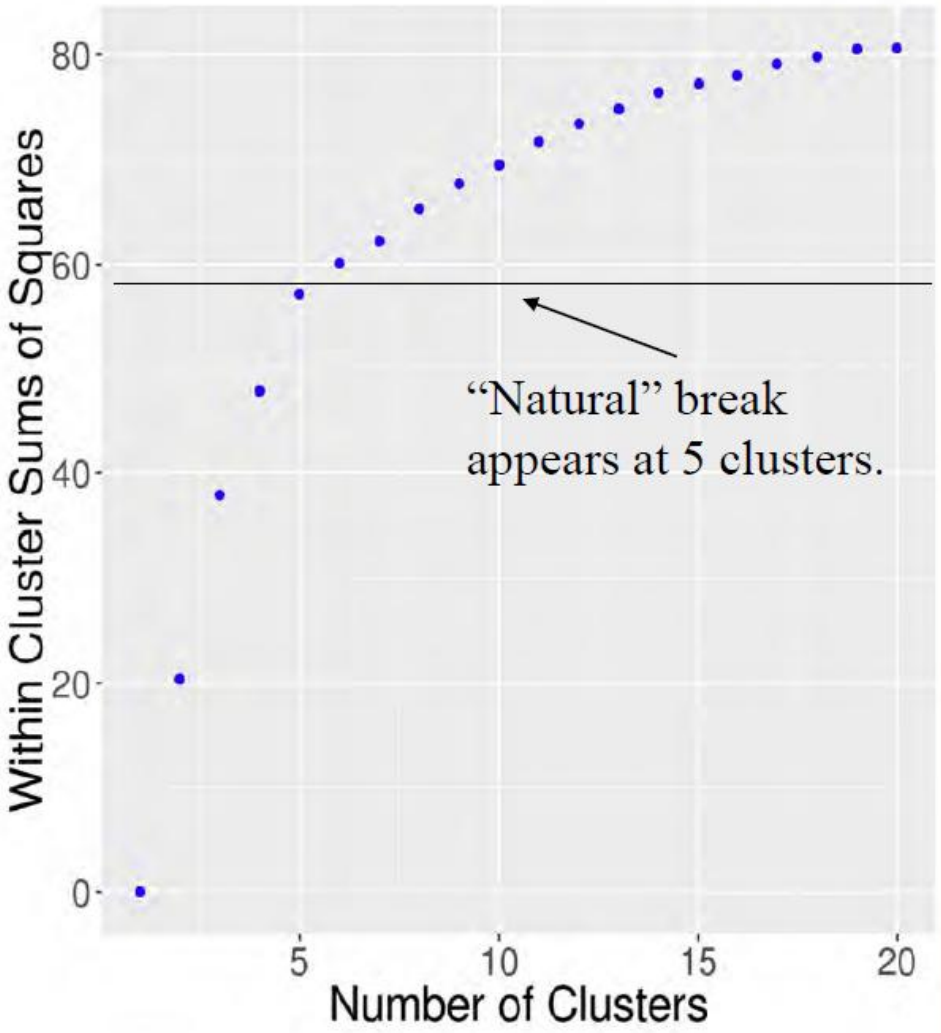
First Step: Identify and delineate small coastal watersheds



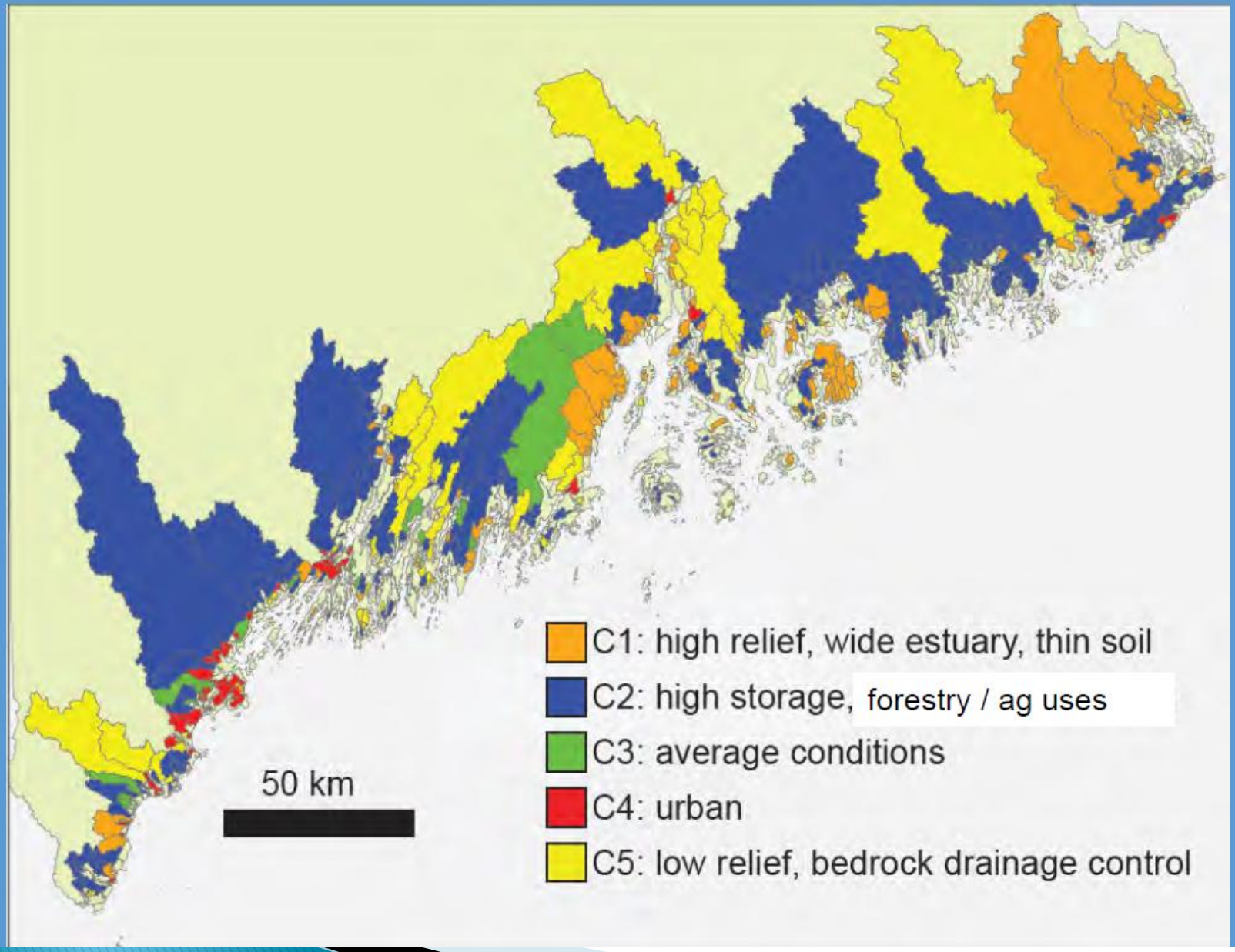
Watershed Process Metrics (*Proxies*):

Source of runoff, TSS & bacteria
Delivery by overland flow
Residence time of runoff in estuaries

Drainage Density
% Developed
% Worked
% Rural
% Storage
Soil Runoff
Population Density
Relief Ratio
Fraction Igneous Bedrock
Tectonic Fault Density
Geolocic Contact Density
Fault Orientation
Mean Bedrock Orientation
Estuary Circularity
Estuary/Watershed Ratio



Coastal Watershed Clusters



Sample watersheds

- Meat and water testing for some areas led to reopenings less then 14 days
- Use these studies to support management in other watersheds in the same bin
- Work toward a representative cleansing study for each bin
- Water only testing
  - No meat standard
  - Established precedent for relay and depuration