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of the world's
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Integrating Water Footprint Assessment into regulations to meet policy goals

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Pollution problem in North Thames

- 3,500 km^2
- Over 6 Million population
- Chalk Aquifer and Chalk Rivers
- Large urban areas

The Hertfordshire and North London (HNL):

- proper effluent permits, treatment and good compliance
- **BUT** still local and seasonal water pollution problems
- reasons?
- limitations of existing regulations, discharge permits?
- what is missing? new approach needed

Water Footprint Assessment

grey water footprint: pollution indicator

- Based on pollutant load, not concentration
- Ambient water quality standards; thus environmental perspective
- Connecting water use and pollution: link between scarcity and pollution
- Caps for different pollutants at basin level

"Grey water footprint is the amount of fresh water required to assimilate pollutants to meet specific water quality standards. "

Water Footprint Assessment:

water consumption and pollution in the region

- Water consumption, scarcity and pollution levels at catchment level
- Groundwater and surface water
- Point and non-point sources
- Monthly analysis
- Current and future conditions
- A new discharge permit scheme

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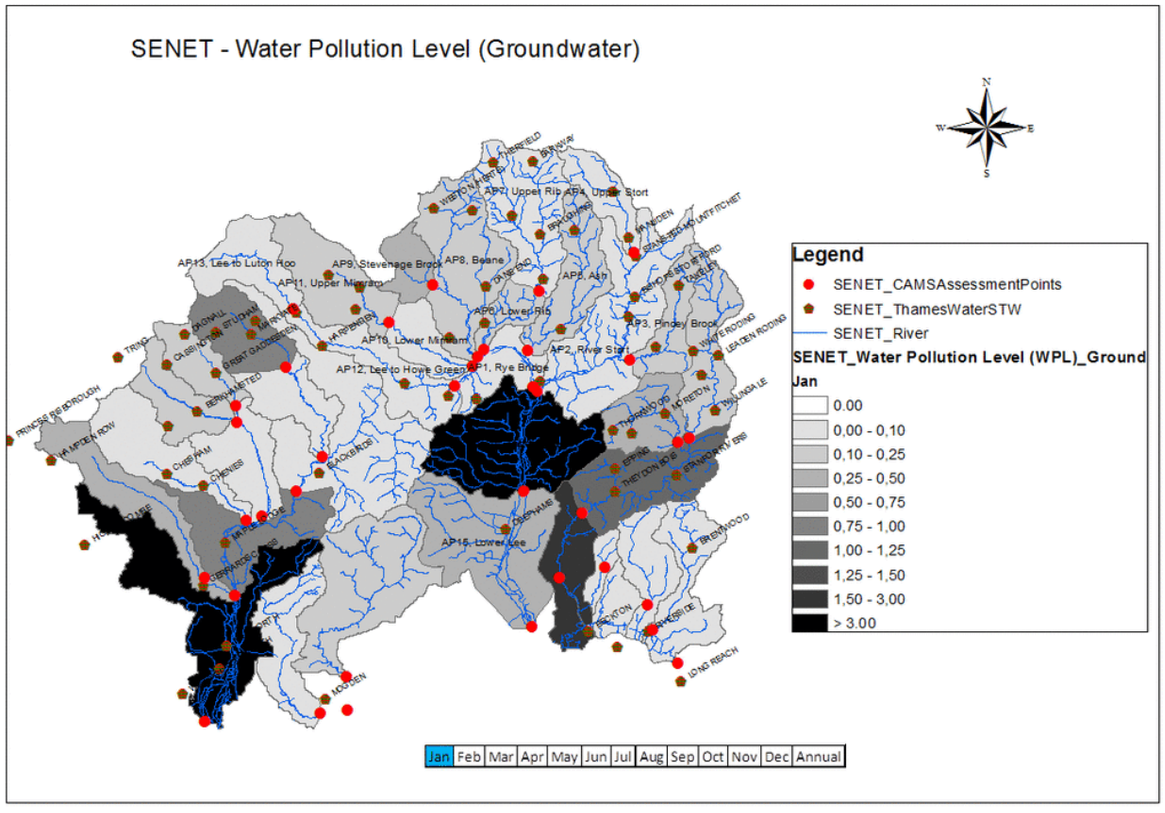
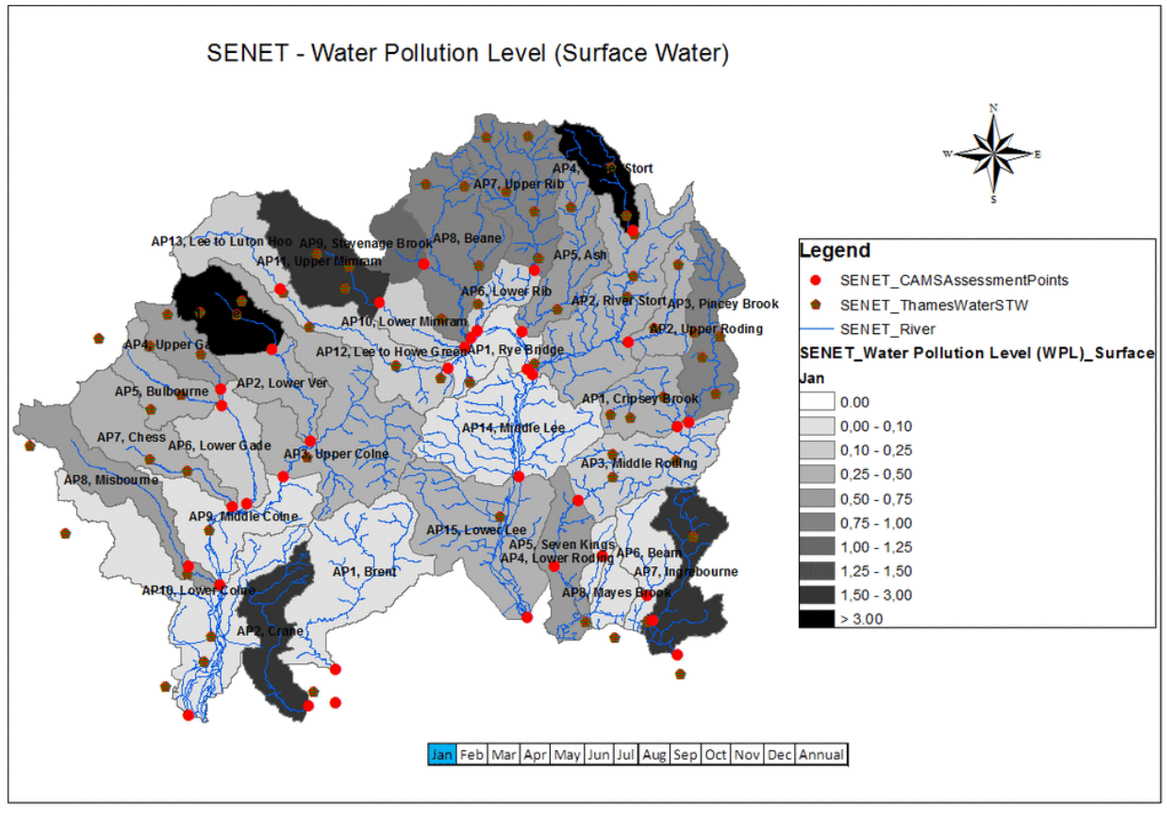
Surface and groundwater pollution levels



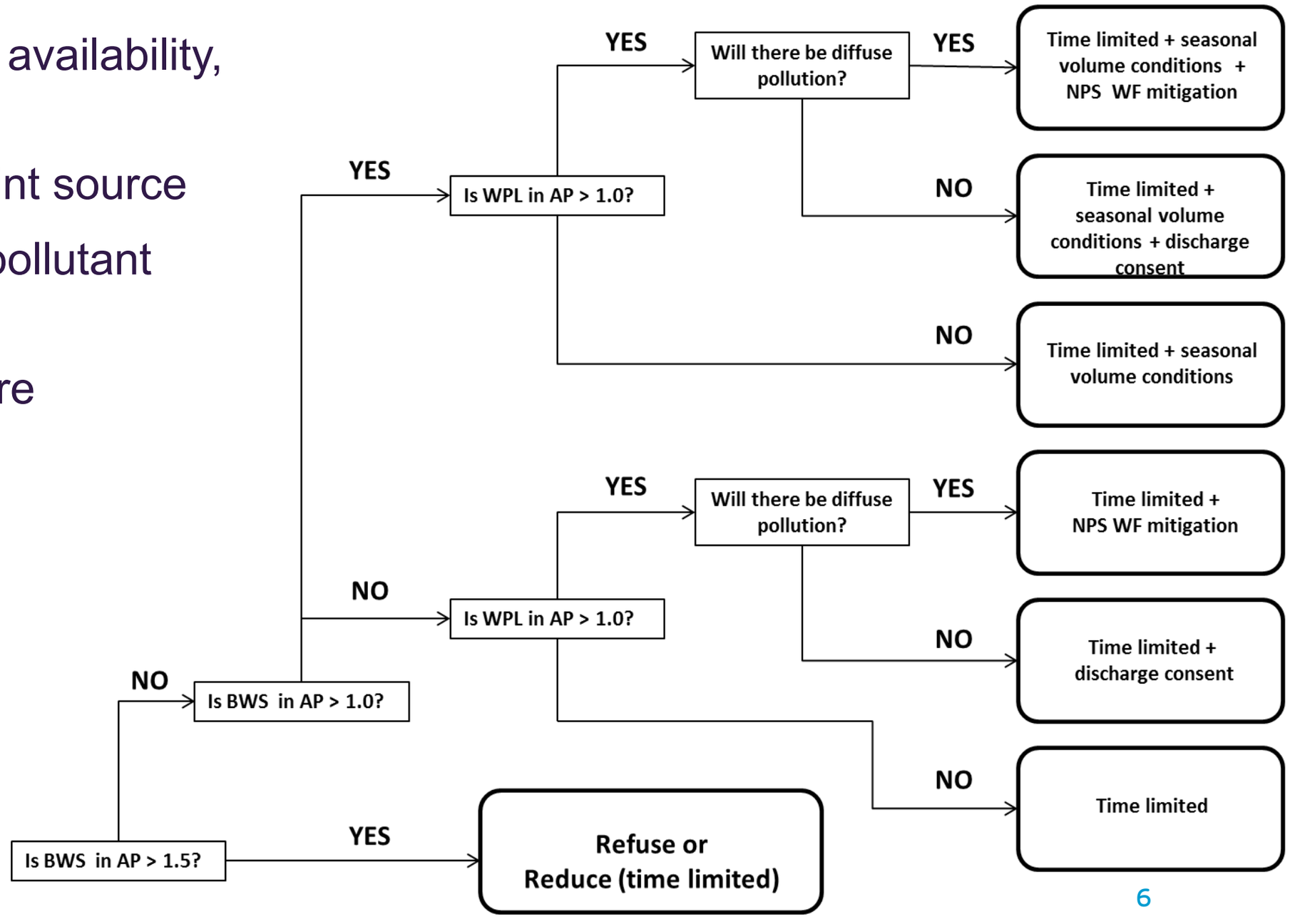


Reasons for pollution

- Decrease in river discharge locally:
  - seasonal over abstraction
  - sub-catchment water transfers (sewerage treatment)
- Injecting treated effluent: groundwater
- Overuse of groundwater: leakage of pollutants from surface water
- Densely populated areas: high pollutant load, locally
- Upstream catchments agricultural pesticide and fertilizer use

New discharge permit based on:

- Seasonal water availability, water scarcity
- Point or non-point source
- Max allowable pollutant load
- Exiting and future conditions



Conclusions

- Current discharge permits may not be sufficient to prevent at sub-catchment and seasonal pollution problems
- Current and future water consumption: link to pollution levels
- Shifting to ambient water quality standards
- Pollutant load, not concentration
- Water availability can change pollution levels: droughts and climate change
- Pollutant based caps at sub-catchment level
- Water Footprint Assessment: linking water use, availability and pollution at catchments

Thank you

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