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A risk-based approach for investigating denitrification in urban stormwater treatment wetlands



Predicting and managing the risks



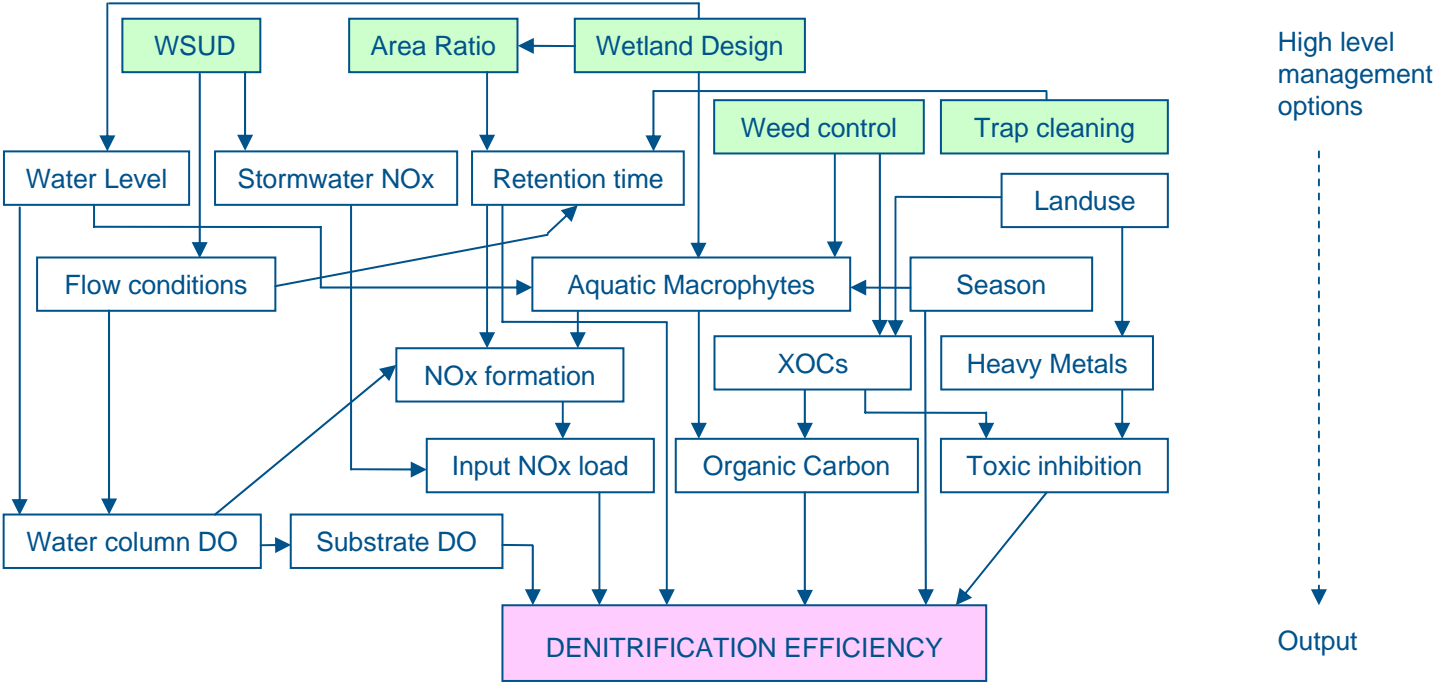
Protecting our downstream aquatic ecosystems

Urban treatment wetlands

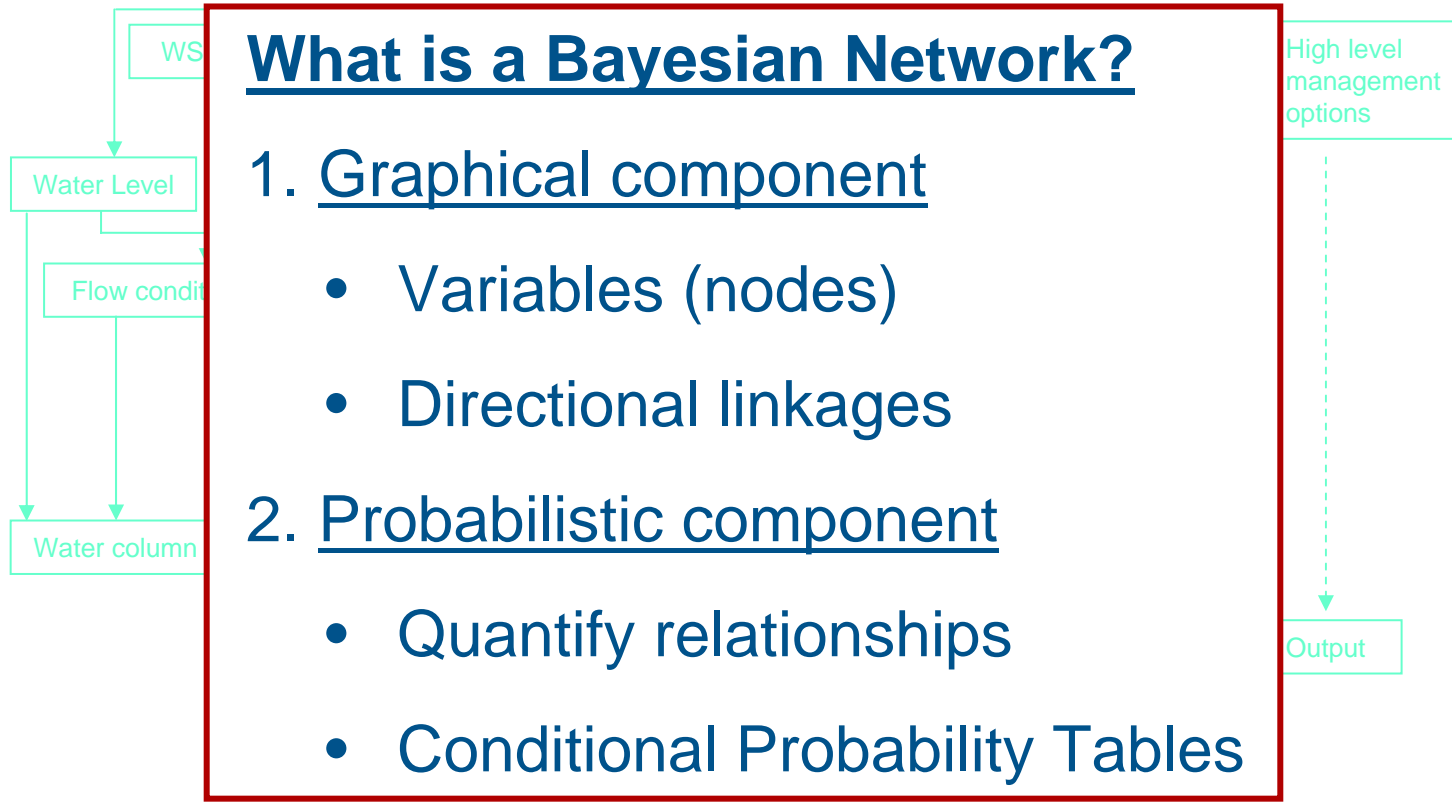


Used to control pollution and hydrology in urban runoff

Conceptual model



Conceptual model



What is a Bayesian Network?

1. Graphical component

- Variables (nodes)
- Directional linkages

2. Probabilistic component

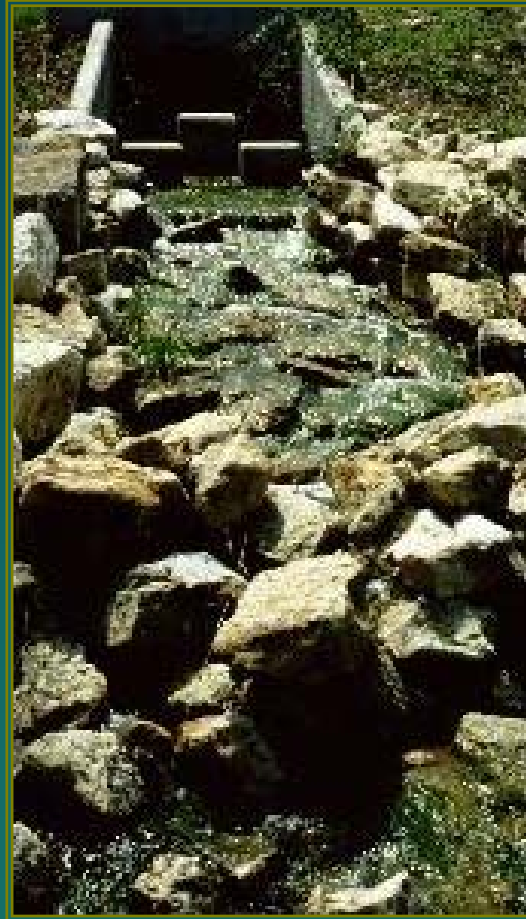
- Quantify relationships
- Conditional Probability Tables

Toxic inhibition

1. Heavy metals
2. Non-metal (organic) bacteriocides
eg Herbicides, Disinfectants, Antibiotics, Petrogenic compounds

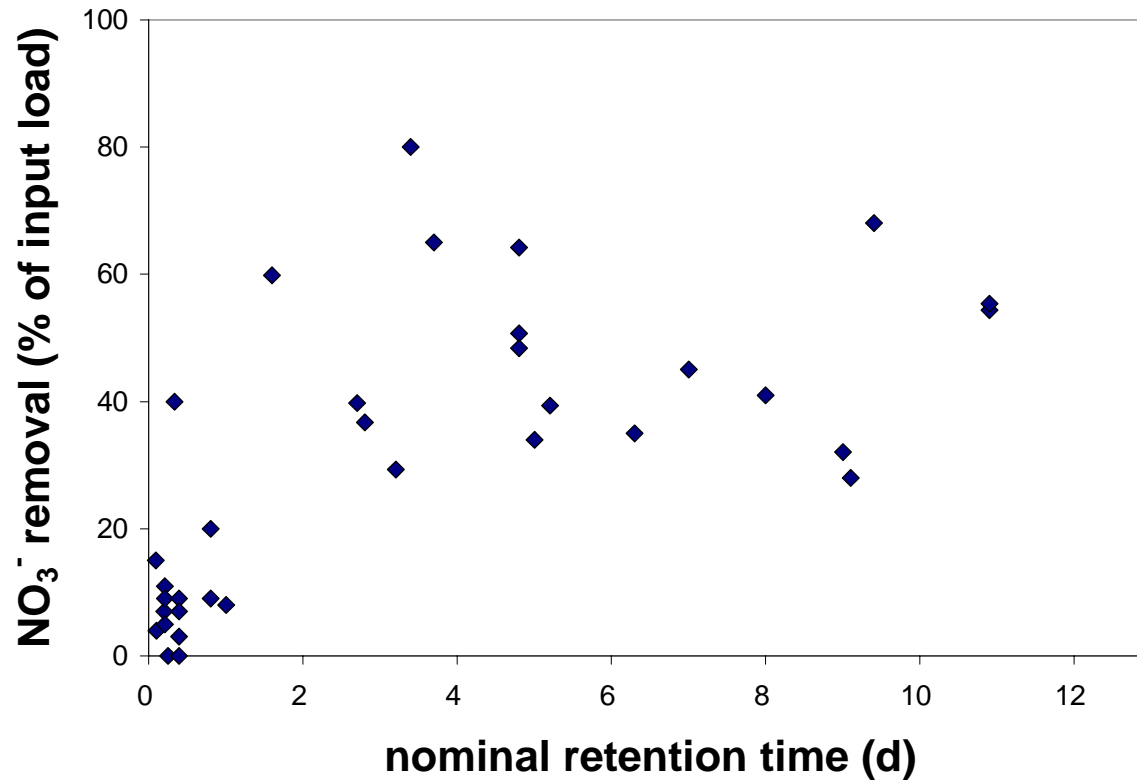


Example 2 - Retention Time

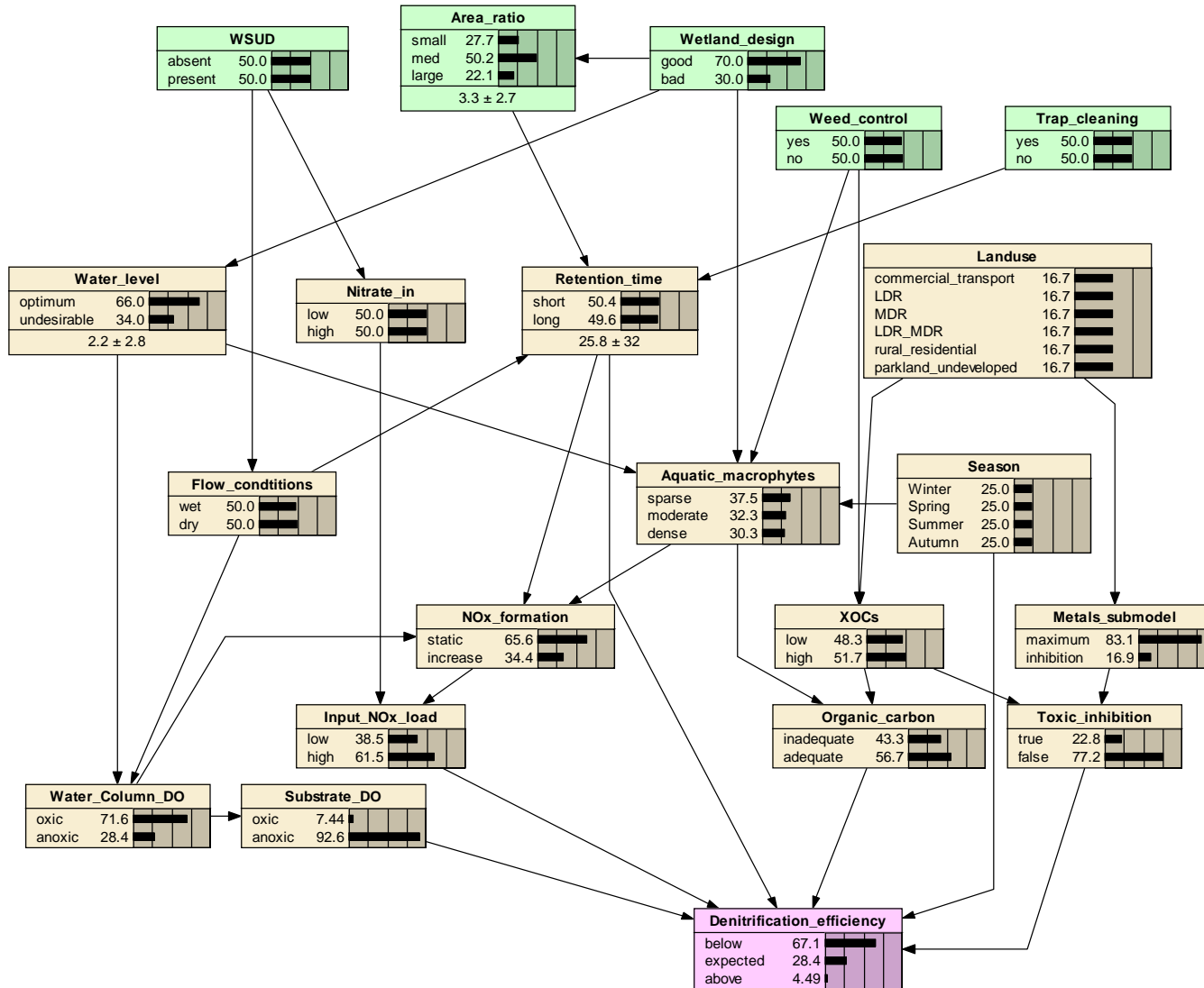


Rip-rap inlet
increases turbulence

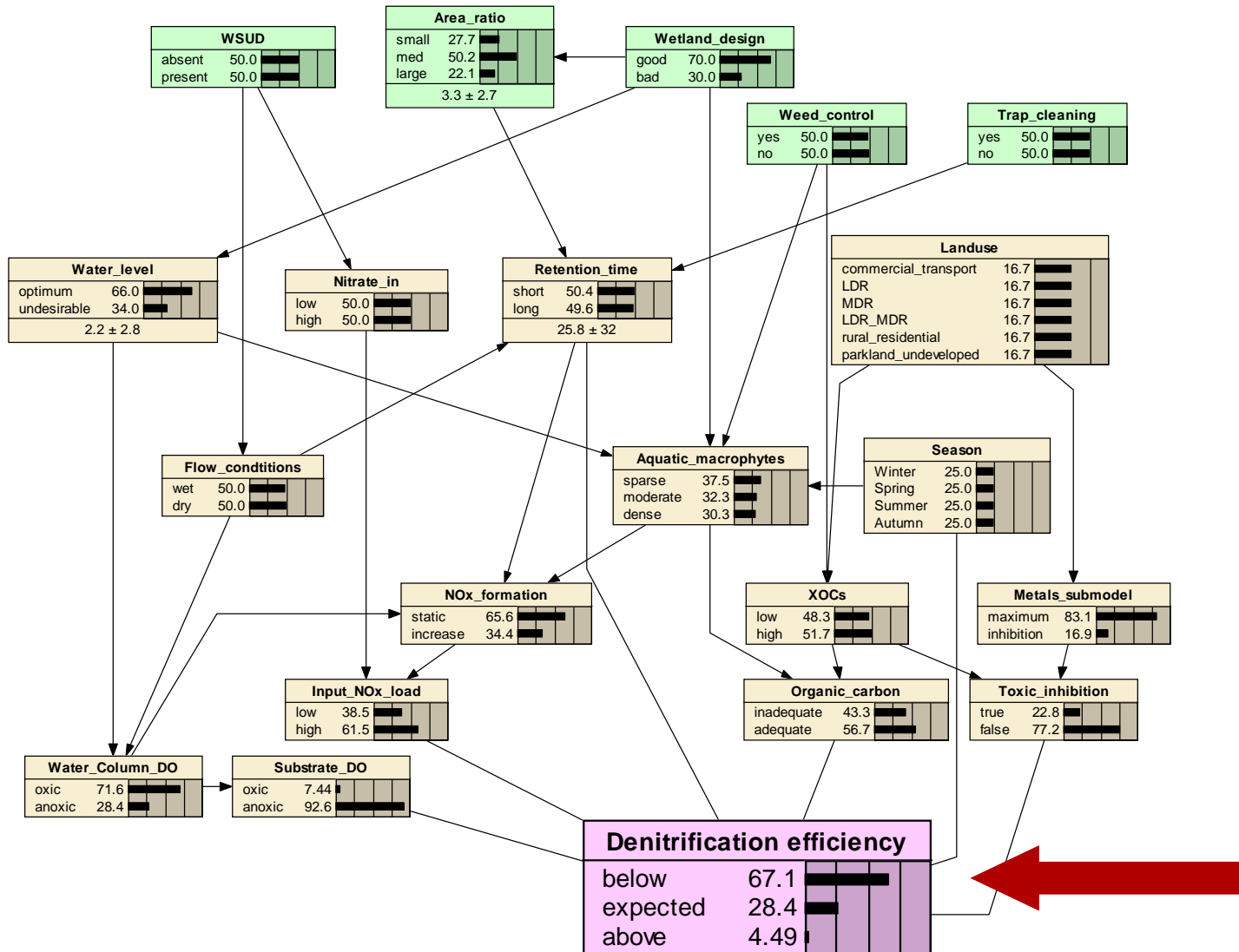
Retention Time



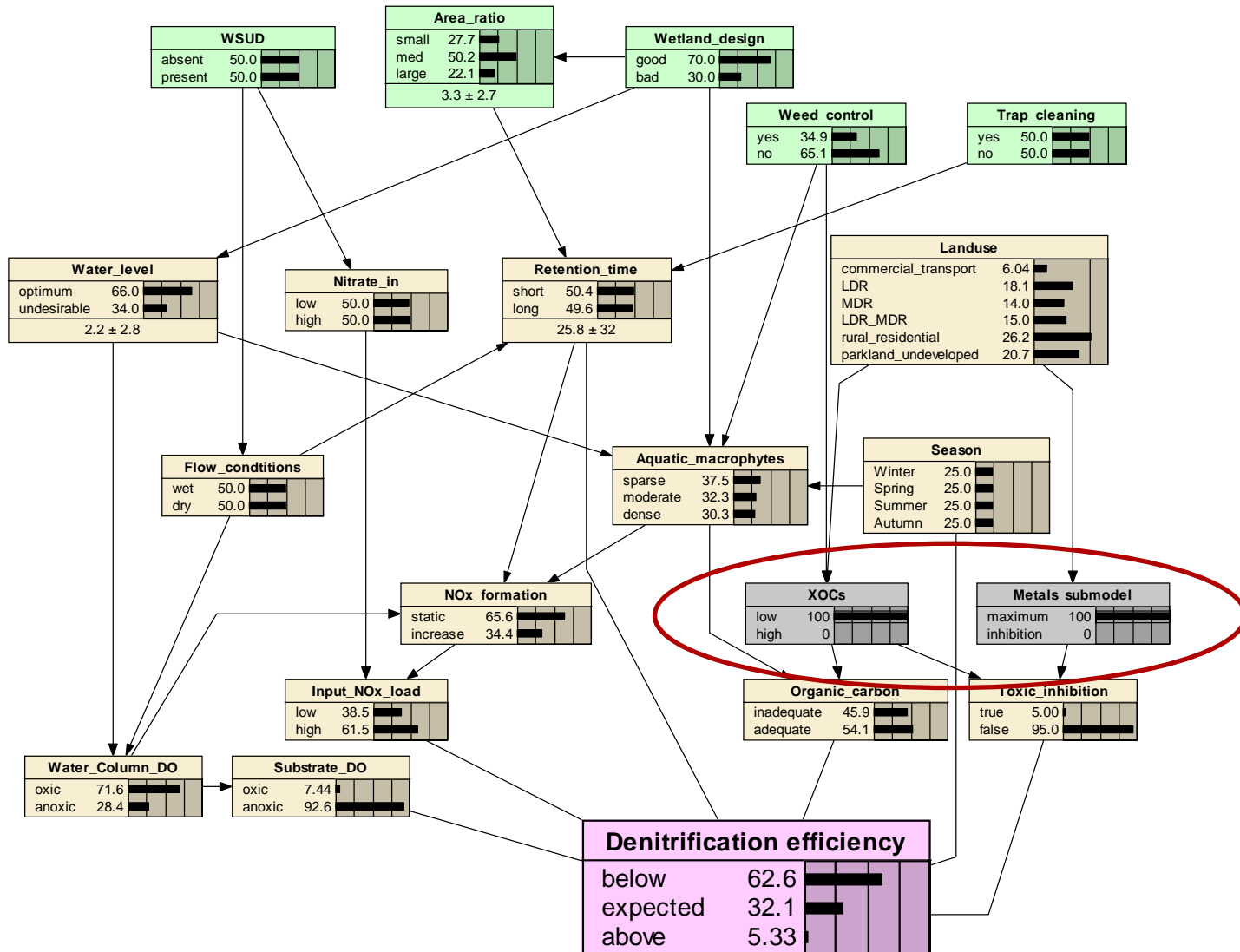
The Decision Support Tool



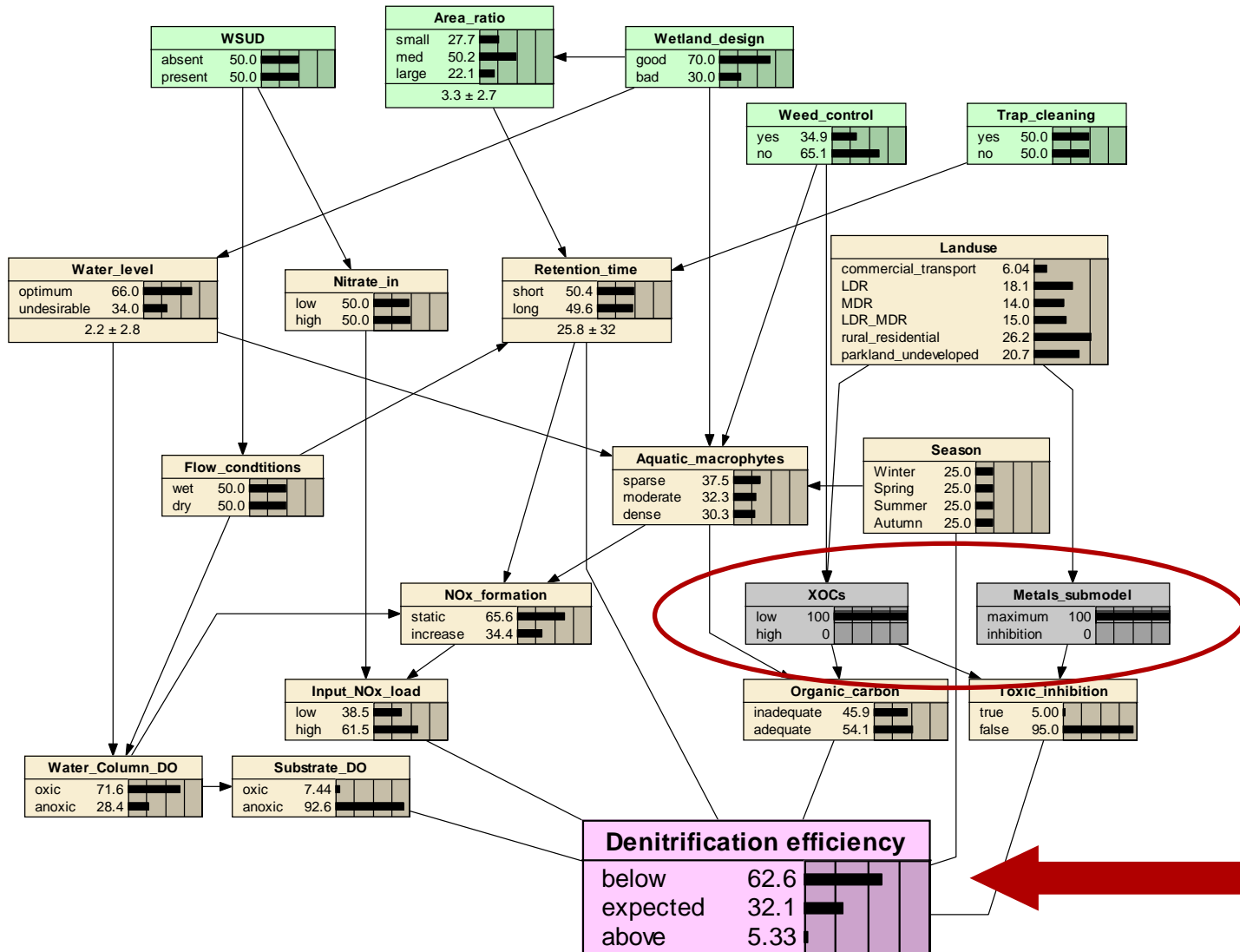
The Decision Support Tool: Output



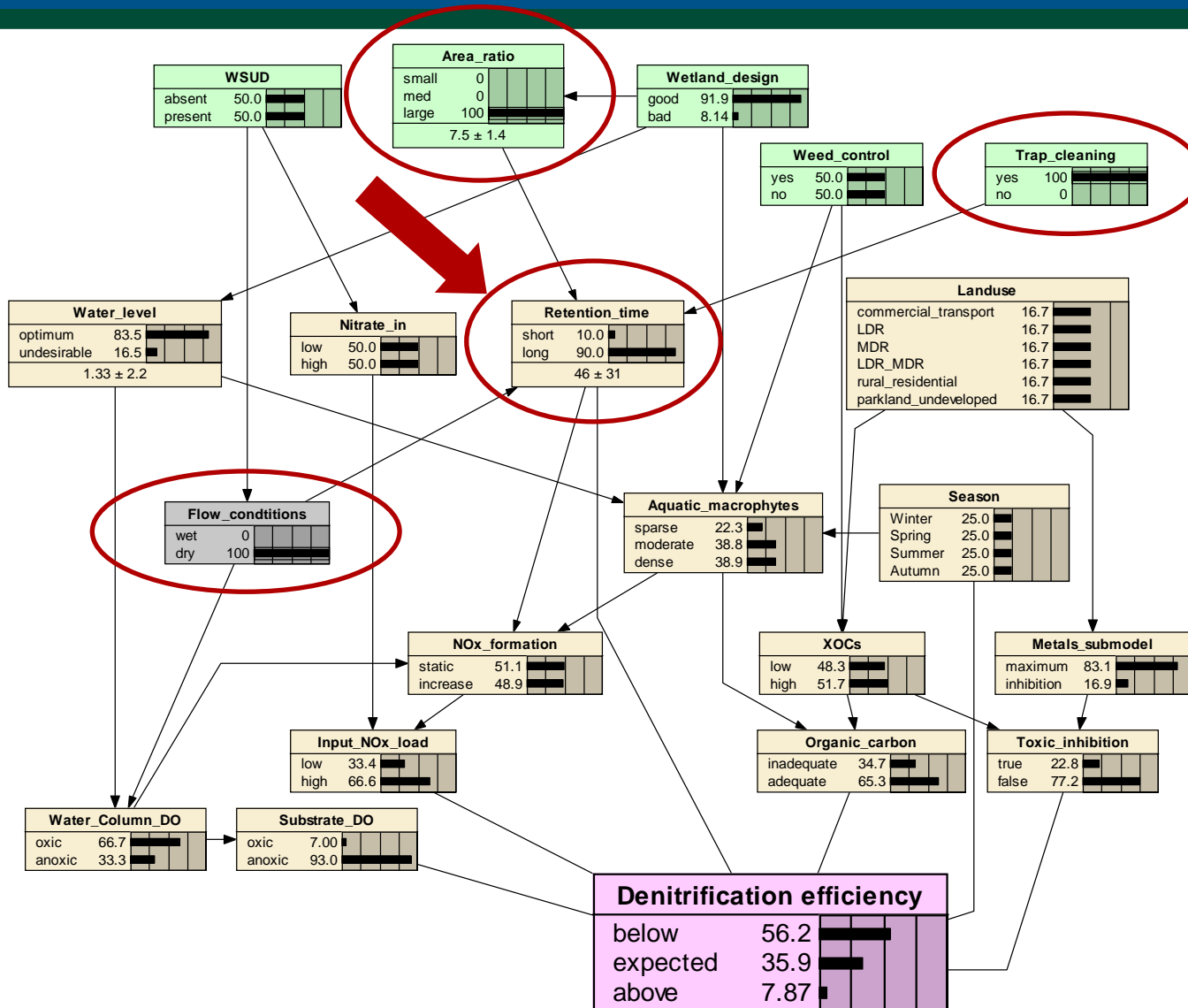
Example 1 – Toxic inhibition



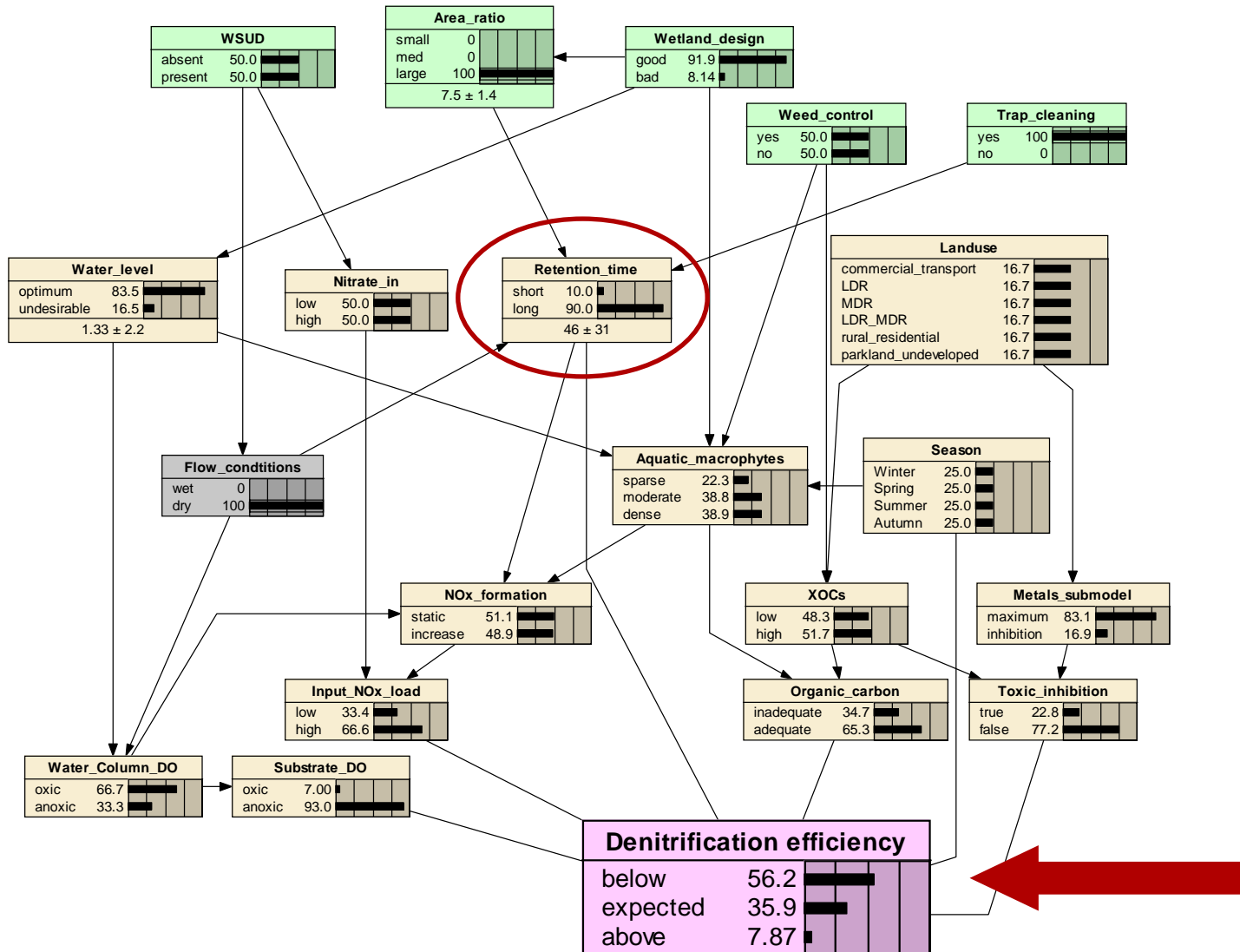
Example 1 – Toxic inhibition



Example 2 – Retention time



Example 2 – Retention time



Protecting our water resources

