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Is groundwater research providing the answers to meet the environmental management challenges?

David Lerner
Catchment Science Centre



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The big challenges

- Climate change
- Collapse of global capitalism
- Population growth
- Separateness

There is a bigger picture!



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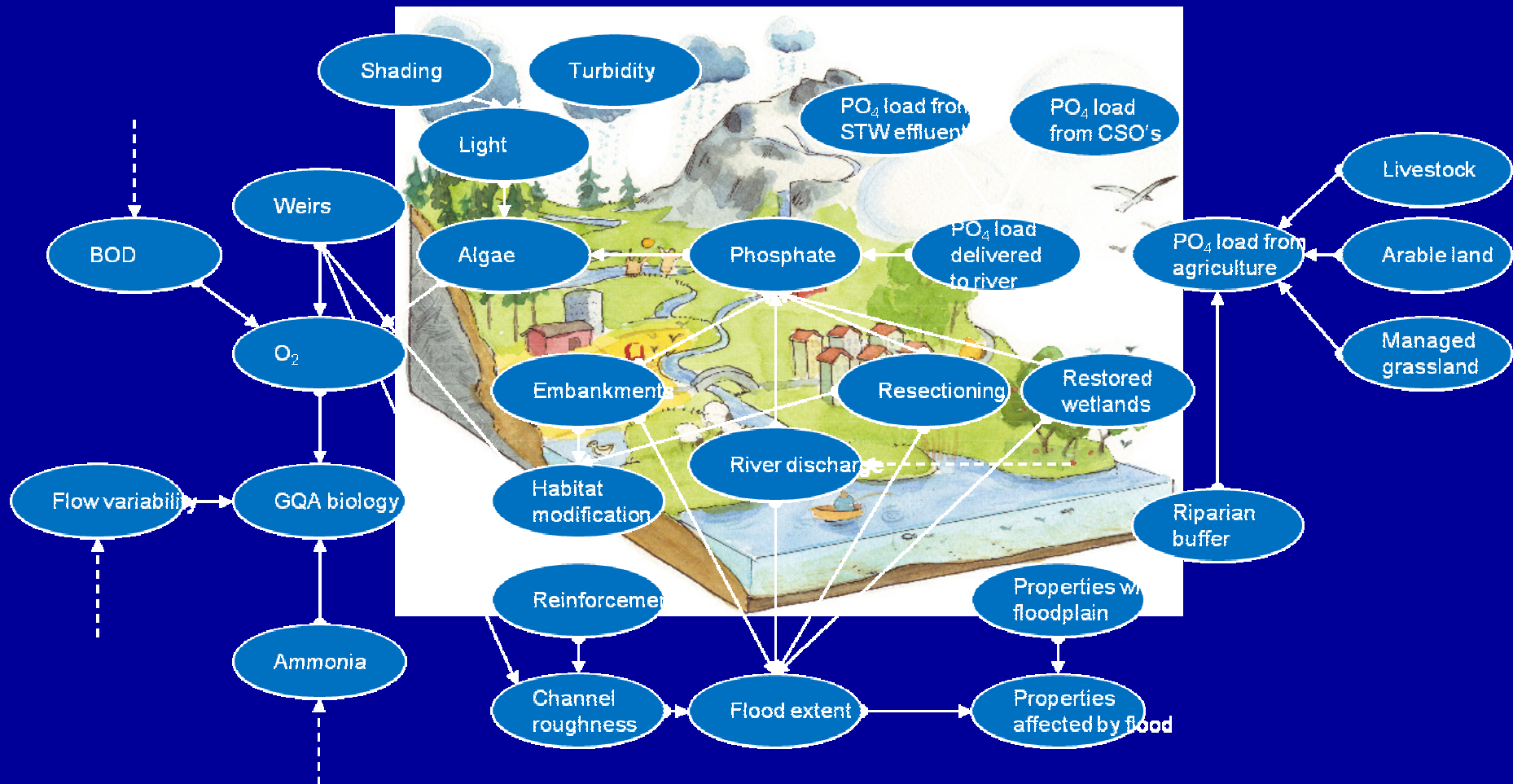
The bigger picture of catchment management





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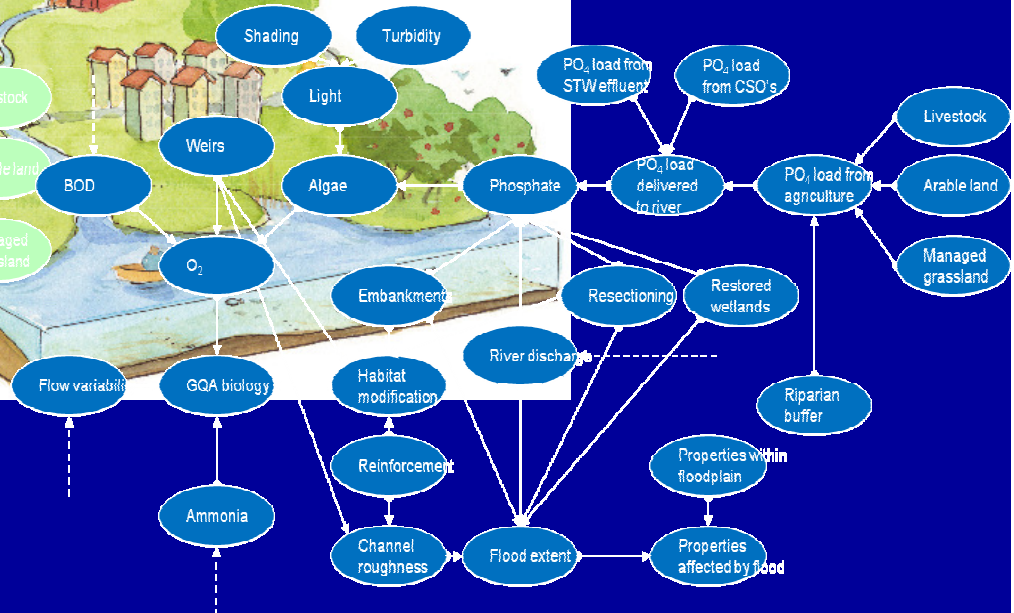
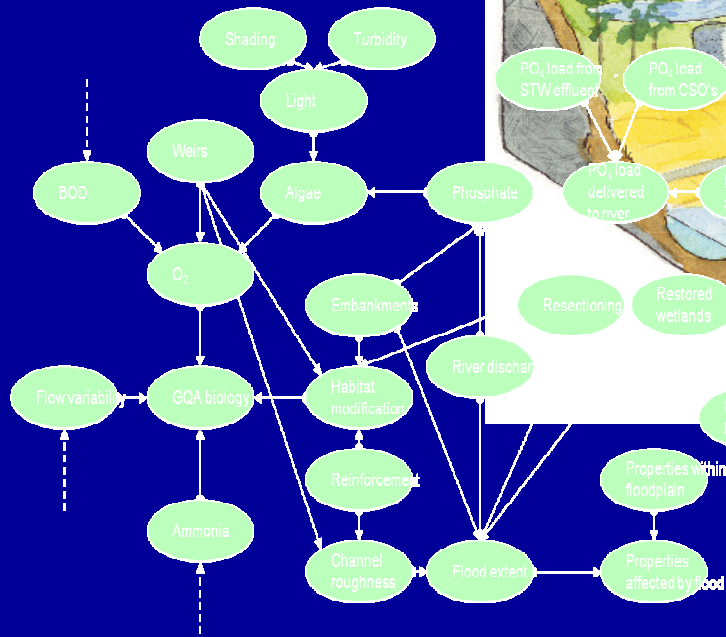
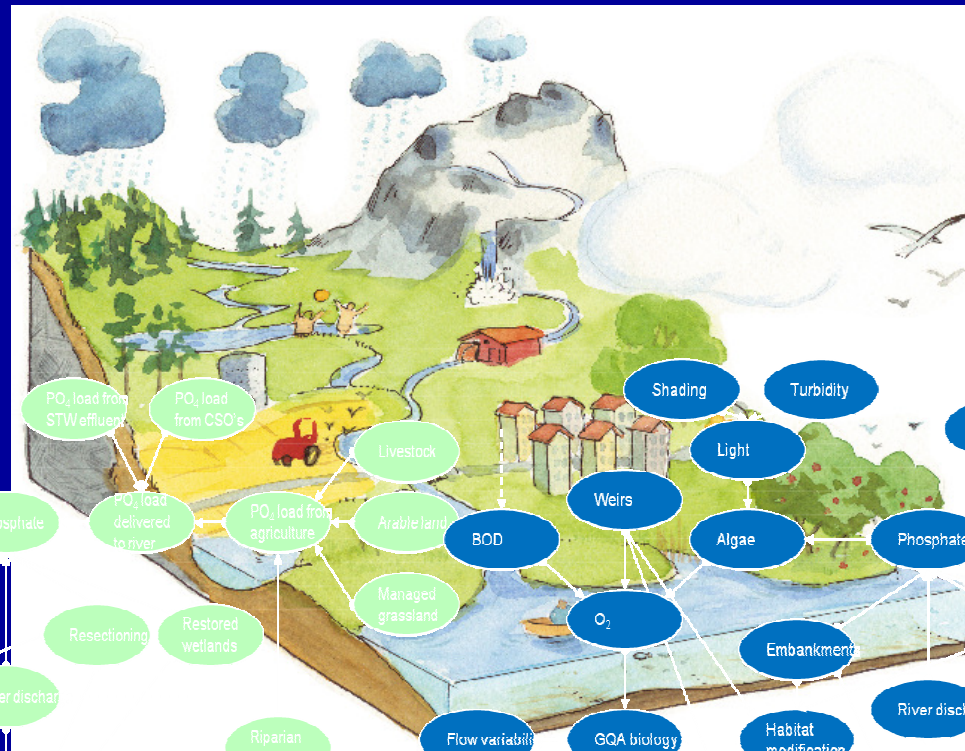
The bigger picture of catchment management





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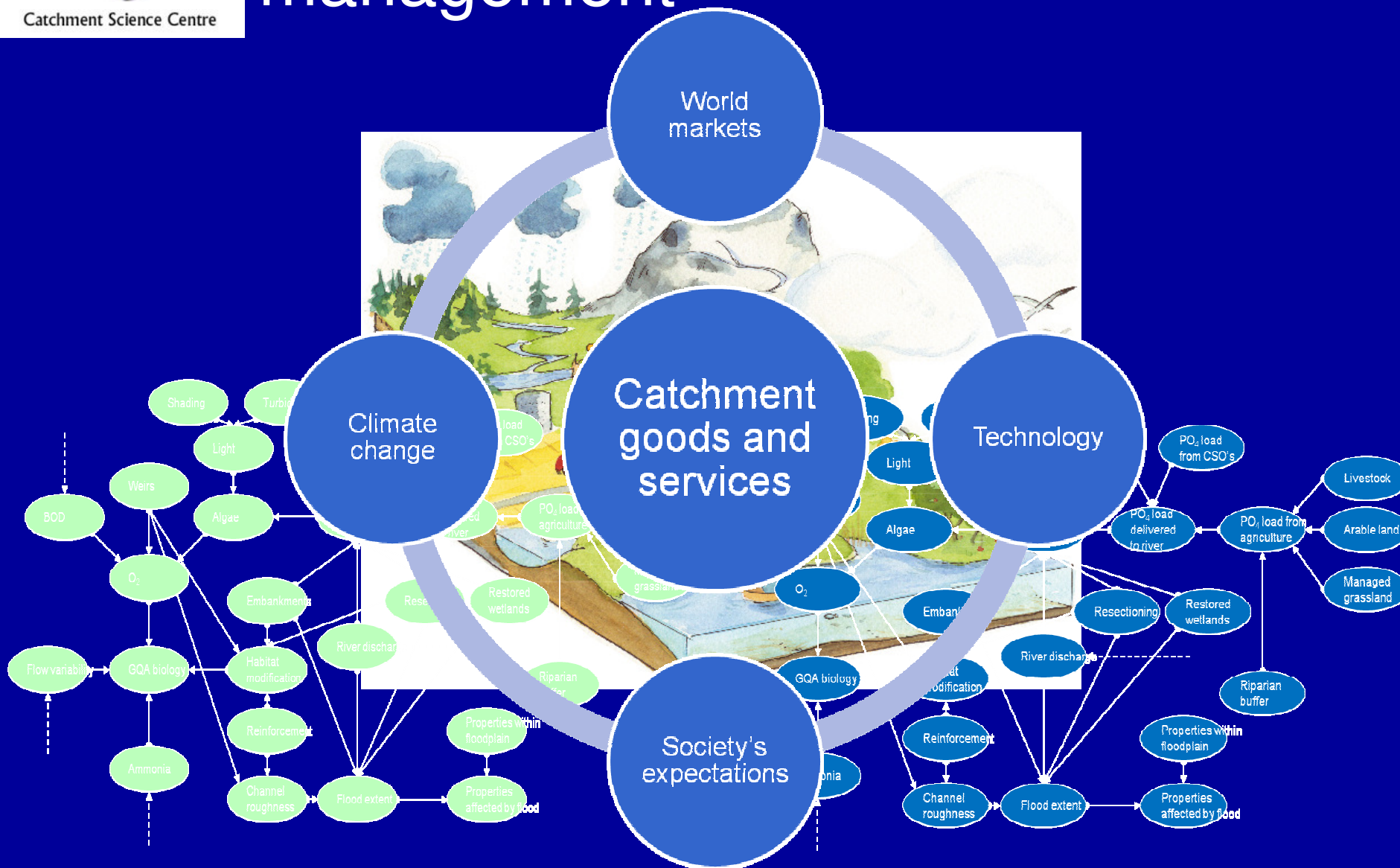
The bigger picture of catchment management





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The bigger picture of catchment management





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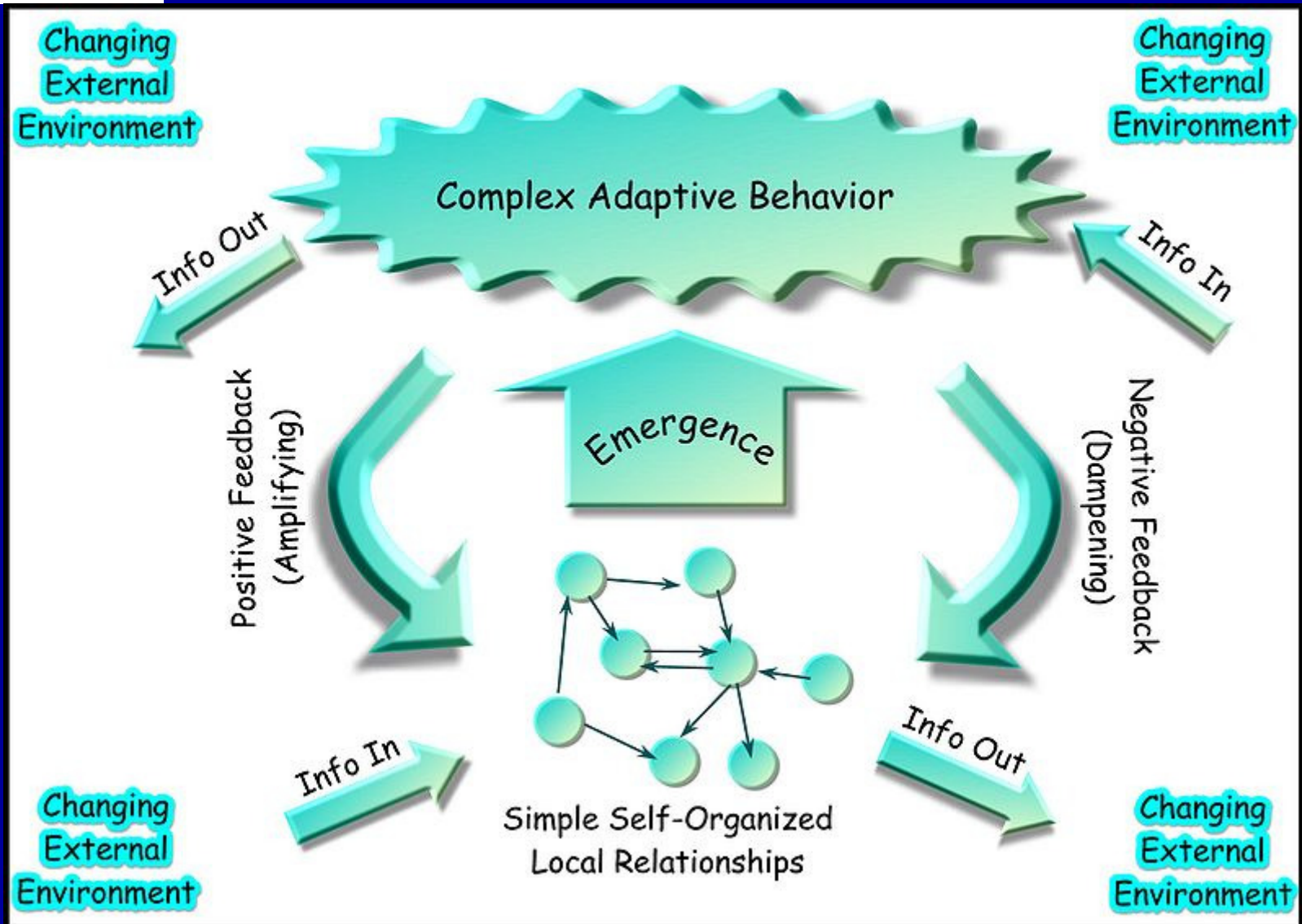
The bigger picture of catchment management





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Complex and integrated at all scales





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Environment Agency

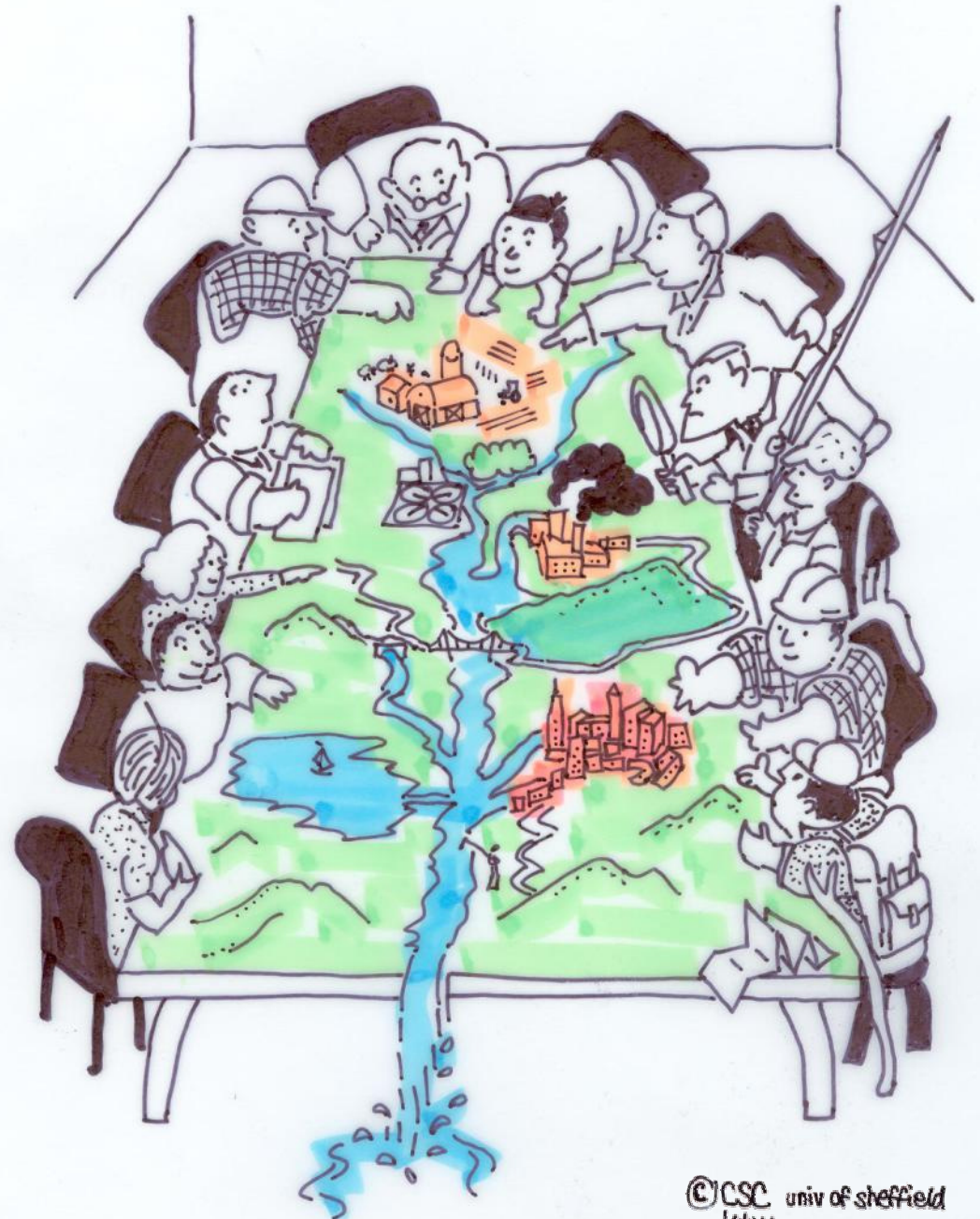
water for life and livelihoods



Draft River Basin Management Plan
Humber River Basin District

December 2008

Environment Agency: dR.BMP main document (Version aug 08-1) Humber



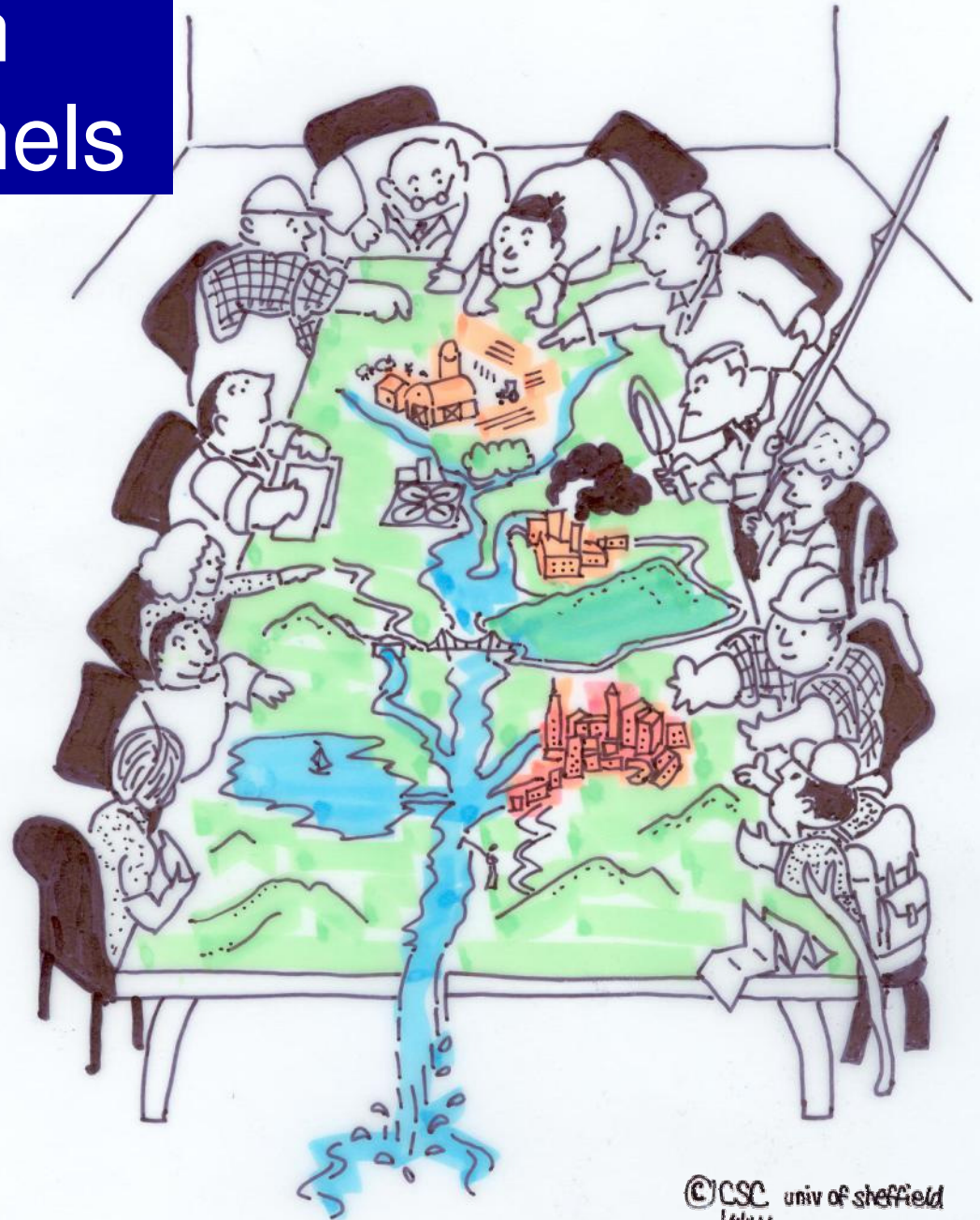
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River Basin Liaison panels

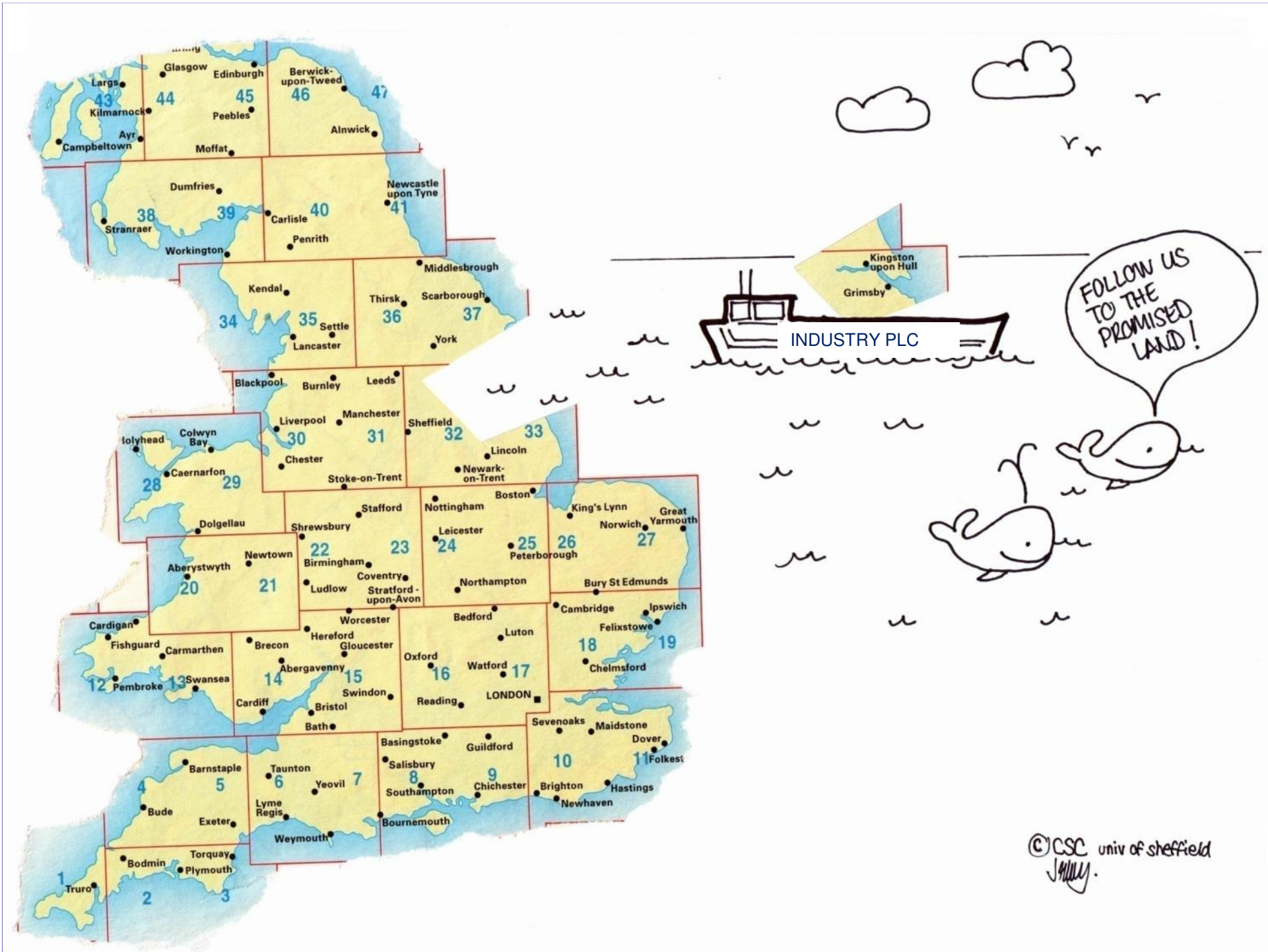
- Business & Industry
- Consumers
- Environment Agency
- Environmental NGOs
- Farming
- Forestry
- Local Authorities
- Natural England
- Ports
- Regional Assembly
- Regional Development Agency
- Rural business
- Water Companies
- Waterways
- **Users, regulators and spenders**



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- agenda
1. LITTER
 2. GRAFFITI
 3. CARPARKS
 4. Expenses

COUNCIL MEETING TODAY



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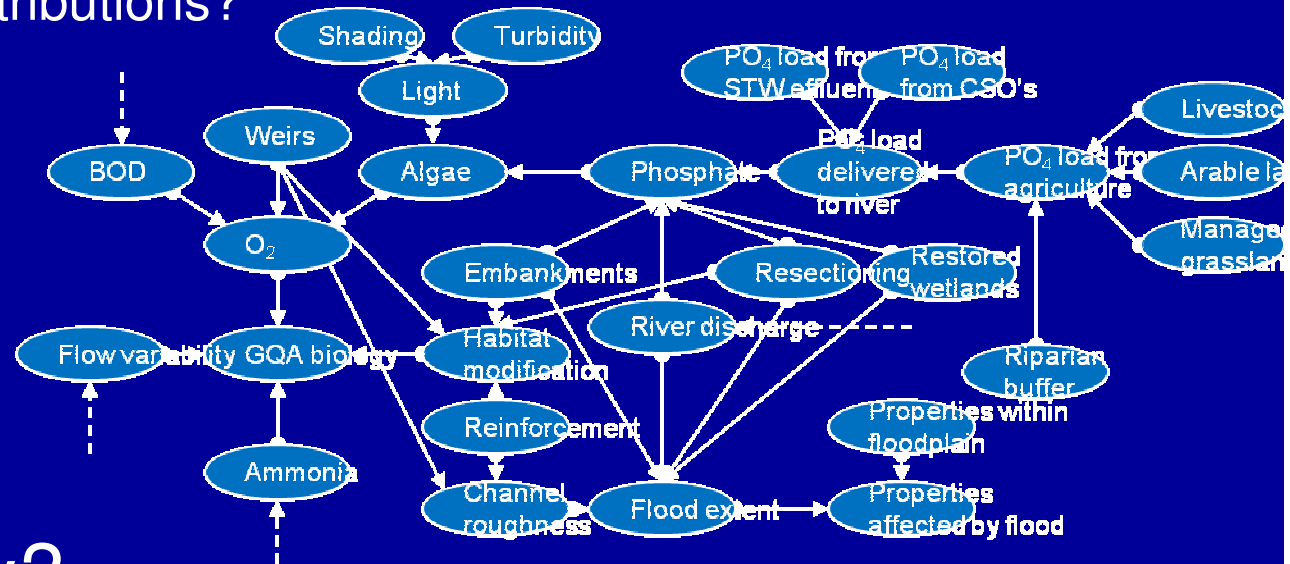


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Groundwater research

- Reductionist?
 - Numbers of hydrogeologists
 - Fundamental contributions?
 - Management

- Integrated?



- High intensity?



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Groundwater research

- Reductionist?
- **Integrated?**
- High intensity?

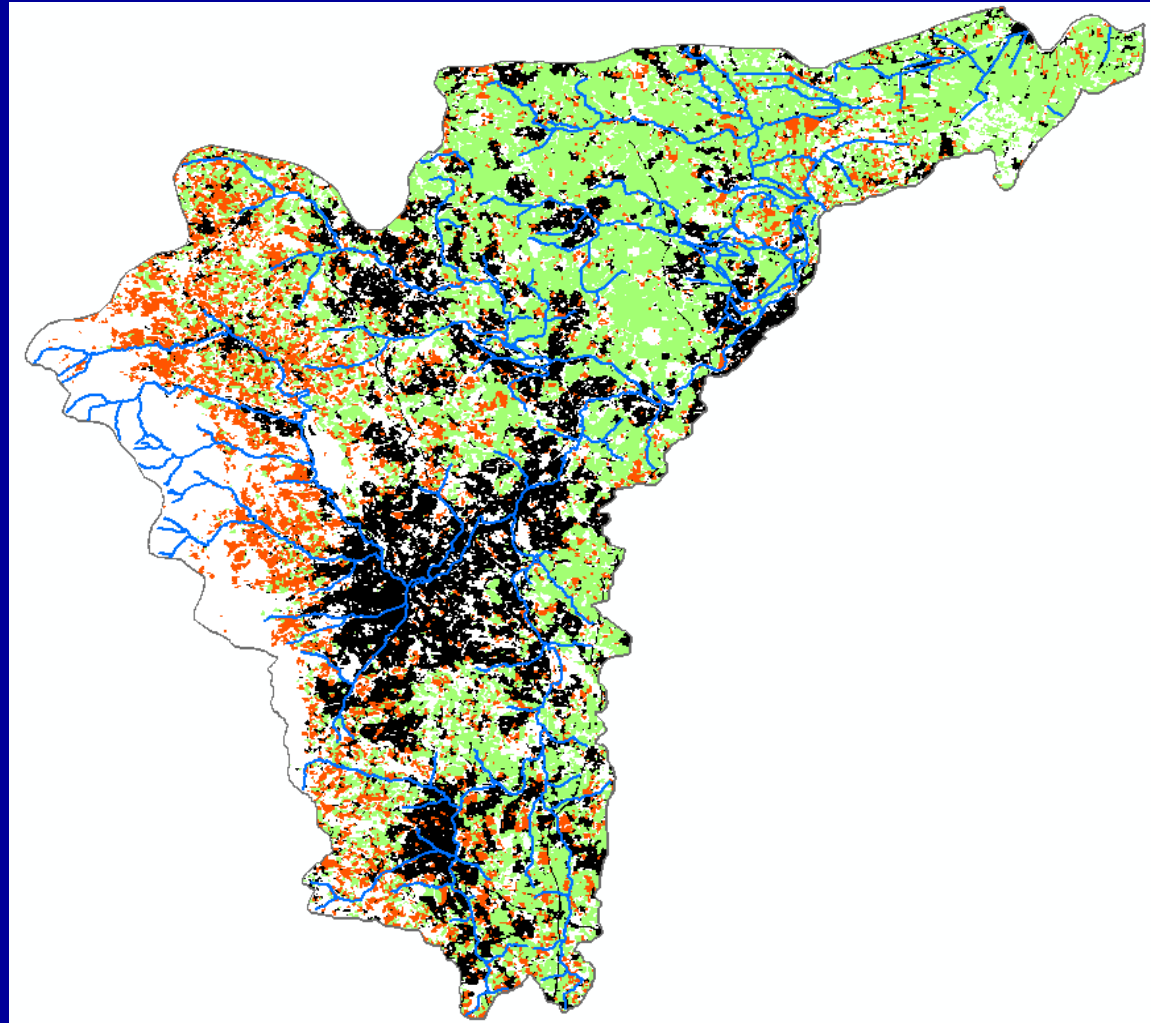




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Groundwater research

- Reductionist?
- Integrated?
- High intensity?





Some suggestions

- Role of groundwater in catchments
- Groundwater ecosystems
- Aquifer storage and recovery
- Integrated urban groundwater
- Visibility

- The dataset