Drought and the Environment
- Impacts & Analyses

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Outline

- Environmental impacts of drought
- What doesn’t help
- What has helped

Drought is part of the natural hydrological cycle. A healthy natural environment is resilient to drought.
Impacts of drought on the environment

• Hydrological impacts
  – River flows
  – Water levels in wetlands
  – Lack of rainfall – soil moisture

• Groundwater versus surface water
Impacts of drought on the environment

- Water quality
  - Reduced dilution
  - But lack of storm overflows & ‘surface’ runoff?
  - Increased retention times especially lakes
  - Salinity issues nearer coast
Impacts of drought on the environment

- Dryness & warm weather
  - Increased fire risk
  - Increased visitor pressure

- Access restrictions?
  - Fire Severity Index
Impacts of drought on the environment

- Species versus habitats
- What kind of drought?
- Timing critical!
  - Fish migration
  - Breeding waders
  - Amphibians
  - Invertebrates
  - Cumulative impacts
Impacts of drought on the environment

• Short term impacts
  – River flows, water levels
  – Quick recovery?

• Long term
  – Groundwater fed systems
  – Water quality – nutrients in particular
  – Breeding success
  – Eg 1976 drought impacts

• Type of drought?
1976 drought
What doesn’t help?

- Abstraction (& drainage)
- Pollution
- Habitat fragmentation
Abstraction

- Impacts on
  - Length of stress period (effective drought)
  - Water levels overall, particularly summer
  - Groundwater inputs
  - River flows – both low flows and overall flow regime
What does help? - abstraction

- Drought planning
- Water Resource Management planning
- Restoring Sustainable Abstraction programme
- Irrigation reservoirs & irrigation management
- Reform of abstraction licensing system (Water White Paper)?
Pollution

- Increased sensitivity
- Dry & wet habitats
What does help? - pollution

• Cleaning up our act!
Habitat fragmentation

- Remaining areas more critical
- Lack of space to move into
- Metapopulations
What does help? – habitat fragmentation

- Catchment approach
- Natural Environment White Paper
- England Biodiversity Strategy
- Ecosystem Services
Conclusions

- Impacts of this drought not really known yet, likely to be limited
- Working towards improving resilience of natural environment
- Working towards providing security of supply balanced with needs of environment
- Emphasising importance of water – for us and for the environment