



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



- 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



