

INDIVIDUAL RISK ASSESSMENT

Hazard/threat category	Sub-category
Severe weather	Drought
Hazard and threat description, plus scale	Risk reference number
A period of low rainfall leading to a shortage of water for people, agriculture, industry or the environment.	L50
Version	2
Author	Environment Agency
Date of revision	Next review
December 2007	December 2008

1. Overview of hazard or threat

A drought happens when a period of low rainfall leads to a shortage of water for

- people
- agriculture
- industry or
- the environment

Each drought can be different in terms of its

- severity
- location and
- duration

2. Key historical evidence

Parts of England and Wales had notable droughts in 2004-06, 1995-96, 1975-76, 1943-44, 1921 and throughout the 1880s.

Short droughts of 3 to 6 months mainly affect abstractors and the environment. Public water supply problems should only occur during droughts of a prolonged period.

The last severe drought in England was in 2004-2006 following 2 years of very low rainfall, particularly during the winter/spring periods when groundwater is recharged. This drought was one of the worst in the last 100 years. Eight water companies in the southeast imposed hosepipe bans affecting nearly 16 million people. This drought had a moderate/significant impact on the environment due to low river flows, increase of algal blooms and reduced effluent dilution.

Drought order powers were granted to Sutton and East Surrey Water, Mid-Kent Water and Southern Water during 2006 to limit or prohibit non-essential uses of water. All drought order powers granted expired in November 2006.

Non-essential use drought orders empowered the water companies to restrict the uses of water listed in the Drought Direction 1991. The Drought Direction, made by the Secretary of State, lists uses of water which can be banned under a drought order and goes further than a hosepipe ban.

3. Likelihood

Hazard	Outcome description	Likelihood
Drought	A period of low rainfall leading to a shortage of water for people, agriculture, industry or the environment.	Rare (2)

4. Impact

Summary

Hazard	Outcome description	Impact				
		Health	Social	Env	Econ	Overall
Drought	A period of low rainfall leading to a shortage of water for people, agriculture, industry or the environment.	2	4	3	3	3

Details

Impacts
Primary
Total rainfall is well below average for several months
Unusually low river flows
Reduced levels of dissolved oxygen in rivers etc
Lower dilution of effluent discharges in rivers etc
Rise of water temperature in rivers etc
Low groundwater levels
Low reservoir levels
Very dry soils
Reduced crop yields
Algal blooms in reservoirs and lakes

Requirement for water company drought plan to be put into operation
Requirement for Environment Agency drought plans to be put into operation
Aesthetic impacts of low flows in rivers/reservoirs
Secondary
Potential threats to essential public water supply services; increased reliance upon individual sources; possible failure of individual reservoirs and removal from supply system; possible reopening of standby sources
Increased public awareness and concern
Possible non-essential water use restrictions for the public
Reduced reliability of supply for all other abstractors
Reduction in fish spawning areas
Reduction in fish migration
Potential fish kills
Changes to the ecology of sensitive areas
Drying of wetlands
Possible disease e.g. in livestock and bathers via algal blooms
Crop failure
Impacts of drought contingency action e.g. as a result of drought permits and orders, section 57 spray irrigation restrictions.
Impacts of drought contingency action e.g. as a result of Drought Orders, Permits, Section 57 spray irrigation restrictions.

5. Vulnerability and resilience

Some water supply sources are impacted upon more quickly/severely than others; water companies have the ability to switch and redirect water from different sources within resource zone

Drought permit and order sites monitoring in place.

6. Overall assessment

Category	Sub-category		
Severe weather	Drought		
Outcome description	Impact	Likelihood	Risk
A period of low rainfall leading to a shortage of water for people, agriculture, industry or the environment.	Moderate (3)	Rare (2)	Medium

Controls in place

Environment Agency

- Water companies have drought plans that set out the actions they will take to supply demand and protect the environment during a drought. These are being updated to statutory drought plans at the moment.
- Environment Agency regional and area drought plans that set out our actions and decision points.
- In a drought the EA will meet regularly both internally and with water companies.
- In a drought the EA will assess and may grant drought permits
- Potential section 57 spray irrigation restrictions
- Potential publicity campaigns
- Environment Agency Incident Management Plans
- Environment Agency 24/7 incident response
- Environment Agency Memorandum of Understanding with Fire Brigades, Police, Local Authorities, Highways Agency, Health Protection Agency and Health Authority.

Other Organisations

- Mobilisation of LA resources through: (list LA plans) Oxfordshire County Council Emergency Plan
- Oxfordshire County Council Emergency Plan
- Milton Keynes Council Major Incident Guide
- Buckinghamshire County Council Emergency Plan
- Aylesbury Vale District Council Emergency Plan
- Chiltern District Council Emergency Plan
- South Bucks District Council Emergency Plan
- Wycombe District Council Emergency Plan
- Oxfordshire, Royal Berkshire and Two Shires Ambulance NHS Trusts Major Incident Plan
- West Berkshire Council – Major Incident Plan
- Royal Berkshire Hospital NHS Trust Major Incident Plan
- Heatherwood and Wexham Park Hospitals NHS Trust Major Incident Plan
- Berkshire Primary Care Organisations Major Incident Plan and Operational Response Manuals
- Berkshire Healthcare Trust Major Incident Plan
- Buckinghamshire Hospitals NHS Trust Major Incident Plan
- Milton Keynes Hospital NHS Trust Major Incident Plan
- Buckinghamshire Mental Health Trust Major Incident Plan
- Buckinghamshire Primary Care Organisations Major Incident Plan
- Oxford Radcliffe Hospitals NHS Trust Major Incident Plan
- Oxford Mental Health Trust Major Incident Plan
- Nuffield Orthopaedic Clinic Major Incident Plan
- Oxfordshire Primary Care Organisations Major Incident Plan
- Thames Valley Strategic Health Authority Major Incident Plan
- Berkshire Integrated Emergency Planning Structure

- Slough Borough Council Emergency Plan
- Royal Borough Council of Windsor and Maidenhead Emergency Plan
Bracknell Forest Borough Council Emergency Plan
- West Berkshire Council Emergency Plan
- Wokingham District Council Emergency Plan
- Reading Borough Council Emergency Plan

Additional risk treatment required

- Contribute to water companies statutory drought plan process – led by EA
Supra-Regional water resources planning
- Review of regional and area drought plans in line with EA guidance.