

Cholderton & District Water Company Ltd

Draft Drought Plan 2011

Issued for Consultation

Cholderton & District Water Company Ltd
Estate Office
Cholderton
Salisbury
Wiltshire SP4 0DR
Telephone: 01980 629203
E-Mail: admin@cholderton-estate.co.uk
Website: www.choldertonwater.co.uk

CONTENTS

<u>Headings</u>	<u>Paragraphs</u>	<u>Pages</u>
Executive Summary	1 – 13	1, 2
Background to Draft Drought Plan	1 – 5	3
Overview of Process	6 – 7	3
Water use: Temporary bans	8 – 9	3, 4
Supply Area – General Detail	10 – 12	4
River Bourne	13 – 15	4
Baseline Water Resources	16 – 17	4
Groundwater Sources	18 – 22	4, 5
Drought Scenarios	23 – 25	5
Drought Action Plan	26 – 27	5
Triggers & Actions	28 – 30	6, 7
Action by Water Company And Associated Businesses	31 – 35	7
Implementation Timescales	36	7
Regular Demand Management Action	37	7, 8
Temporary Water use Restrictions	38 – 39	8
Implementing restrictions on water use	40 – 42	8
Supply Side Measures	43 – 46	8, 9
Drought Orders and Permits	47 – 52	9
Consultations with External Agencies	53 – 54	9, 10
Environmental Assessments	55 – 58	10
Management and Communications Strategy	59 – 61	10, 11
Post Drought Operations	62 – 65	11
Learning the Lessons	66	11
Conclusion	67 – 69	11, 12

ANNEXES

Annex A	Flood & Water Management Act Chapter 29 Part 2	A - 1
Annex B	Cholderton Supply Area & Water Resource Zone	B - 1
Annex C	Drought & Climate Change – UK Meteorological Office	C - 1

CHOLDERTON & DISTRICT WATER COMPANY

DRAFT DROUGHT PLAN 2011

EXECUTIVE SUMMARY

Introduction

1. Sections 39B and 39C of the Water Industry Act 1991 make it a requirement for water companies to update their Drought Plans at least every three years or sooner if there are changes in relevant circumstances. This document is Cholderton's draft Drought Plan which, when approved for publication by the Secretary of State, will replace the existing 2007 Plan.

2. This updated plan takes into account new legislation which came into force on 1 October 2010 in the form of the Water Use (Temporary Bans) Order. This gives water companies additional powers in times of drought to restrict demand for water. The company will only resort to employing these latest powers if all attempts to persuade consumers to curb their demand for water by voluntary means fail.

3. The company has a duty to consult customers, the regulatory agencies and other interested parties, on how it proposes to manage the provision of an adequate and wholesome water supply service under drought conditions.

4. The Draft Plan has been scrutinised by Defra and may now be released for consultation. All responses are welcome and the company will in turn respond, where appropriate, and may make changes between the draft and final versions of the plan prior to publication. Details of the postal and email addresses to which responses may be sent are given on page 12.

5. As drought has many definitions, a summary document of explanation taken from the website of the UK Meteorological Office is attached at **Annex C** together with a diagram from the National Drought Mitigation Centre at Nebraska- Lincoln University.

Water resources

6. The company obtains all its water from two boreholes. Recent tests have shown that Compton Corner the deeper of the two is extremely resilient. Even after the prolonged period of below average rainfall experienced since the autumn of 2010 water level in the Compton Corner borehole is only 12 metres below the surface. At the completion of pumping to replenish the company's main service reservoir the water level recovers to its previous level within 2 hours.

7. It is extremely unlikely that the company will be in a position where there is insufficient water to meet demand. The company's Water Resources Management Plan, which was reviewed in 2011, explains how the company deploys its water resources to meet demand under both normal and dry conditions.

Demand management

8. The limiting factor on the company's ability to meet demand in drought conditions is not the availability of water but the company's abstraction licence which is set at 280,000M³ per annum. When dealing in such low volumes even relatively small fluctuations in demand can have a disproportionate effect on headroom. A prolonged period of unusually high demand, such as may occur in times of drought, could remove it altogether. For this reason the Company's plan seeks to employ all reasonable means by which demand may be suppressed voluntarily by consumers.

Drought management

9. If monitoring during a sustained period of low rainfall coupled with warm weather shows that demand is increasing, we may need to supplement our permanent demand management policies with additional, non-routine measures that can be introduced fairly swiftly to gain control over demand. These comprise, in order of escalating severity:

- An awareness and appeals campaign, using letters and notices, asking for voluntary restraint in water use
- Enhanced activity in the distribution system, particularly by taking all opportunities to repair leaks as quickly as possible
- Further letters, posters and notices backed up by personal visits to businesses and large users with appeals on local radio
- A temporary ban on water use (formerly known as a hosepipe ban) if all voluntary methods are failing to yield the desired results.

10. This Drought Plan sets out the triggers which will initiate the 3 phases of demand restraint that the company will employ as abstraction levels rise closer to the maximum allowed under its licence.

Drought Orders and Permits

11. Although there are more than adequate water resources available to the company from its boreholes, there is always the fear that measures of voluntary restraint will prove insufficient to prevent demand exceeding the level of abstraction permitted under the existing licence. The plan contains a provision for the application of a Drought Permit from the Environment Agency together with the associated environmental impact assessment.

12. Ordinary drought orders and emergency drought orders do not feature in the plan. The company regards the prospect of extreme drought management measures such as rota cuts and standpipes as being completely unacceptable, particularly in view of the significant risks to public health that they would entail.

Communications and management

13. This draft Drought Plan sets out how the essential tasks of communicating with consumers and stakeholders will be undertaken in the event of a drought. The company recognises that all the actions and measures that are carried out should be conveyed clearly and unambiguously to consumers, the regulatory agencies and other interested parties.

CHOLDERTON & DISTRICT WATER COMPANY

Draft drought plan 2011

Background to Draft Drought Plan

1. The Water Industry Act 1991, as amended by The Water Act 2003 requires all water companies, as part of the statutory process, to produce a Drought Plan.
2. The Water Industry Act 1991 defines a drought plan as, "a plan for how the water undertaker will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water, with as little recourse as reasonably possible to drought orders or drought permits. A drought plan should set out the short-term operational steps a company will take before, during and after a drought."
3. This document is the Cholderton and District Water Company's draft Drought Plan which, having been submitted to the Secretary of State, is now released for consultation to the regulatory bodies and made available to Cholderton's consumers and the public generally.
4. Copies of the draft plan will be sent to the parish councils in the company supply area and will be available for viewing or downloading from the company's website. Notices about the availability of the draft will be posted at the locations used by the company in the villages of Shipton Bellinger and Cholderton. Hard copies will also be available from the Cholderton Estate Office.
5. There will be an 8-week period for interested parties to make representations about the draft plan to the Secretary of State. The company will be required to respond and, where appropriate, make amendments to include in the final plan. The Final Drought Plan will be published following approval for its release by the Secretary of State. Details of the postal and email addresses to which responses may be sent are contained on page 12 in the section immediately following paragraph 69 of this document.

Overview of Process

6. Water companies are required to prepare and maintain a Drought Plan under Section 39B and 39C of the Water Industry Act 1991, as introduced by Section 63 of the Water Act 2003. The main features are that a Drought Plan should address in particular:
 - The measures that the company should take to restrain demand
 - the measures that the company might take to obtain extra water from other sources
 - how the company will monitor the effects of the drought and of the measures taken
7. The Environment Agency's **Water Company Drought Plan Guideline 2011** was published and updated in June 2011. It has been produced to help companies demonstrate how they intend to manage a drought. This includes:
 - How a company will supply water to its customers during periods of low rainfall when water supply becomes depleted, whilst minimising any negative impacts of its actions during a drought.
 - The short-term operational steps a company will take before, during and after a drought.

Water use: Temporary bans

8. The previous legislation covering hosepipe bans and restrictions on non-essential use has been updated by the following:
 - Section 36 of the Floods and Water Management Act 2010, which amends section 76 of the Water Industry Act 1991
 - The Water Use (Temporary Bans) Order 2010, which is the statutory instrument providing the definitions and exceptions to the categories of water use described in the Floods and Water Management Act 2010

9. The new legislation has widened the scope of the previous hosepipe ban and increased the range of water uses that can be controlled by water companies. This can now be done without referring the decision to the Secretary of State. An extract from Chapter 29 of the Flood and Water Management Act 2010 giving details of the measures covered by the 'Temporary bans on use' is attached at **Annex A**.

Supply Area – General Detail

10. The company has a supply area of 21 Km² which forms a single Resource Zone. For the purposes of this plan the Resource Zone and the Drought Management Area cover the same area. The main feature which runs through the company's area is the North/South valley of the river Bourne. A map of the supply area is attached at **Annex B**

11. Water is abstracted from 2 boreholes approximately 2Km apart and pumped into 2 service reservoirs, designated high and low levels, with capacities of 1,135M³ and 453M³ respectively. The high level delivers water to 78% of the company's consumers. Water is delivered by gravity through a 42Km network of mains pipes.

12. There are currently a total of 734 connections of which 24 are business or commercial properties. In addition, there is the 1000 hectare Cholderton Estate which is totally integrated within the distribution network. An estimated population of 2,100 receive their water supplies from Cholderton. The two main centres of population are the villages of Shipton Bellinger and Cholderton which together account for 85% of the connected customers. Both villages sit astride the river Bourne.

River Bourne

13. The river Bourne is a winter bourne, only flowing down its entire length after ground water recharge has been completed. This has nearly always occurred in the early part of the year. The only recent exceptions have been when the late summer and autumn rains were so heavy and continuous that recharge and hence flow occurred in the early winter before Christmas.

14. In recent decades it has been normal for the river not to flow down its entire length although the springs higher up the valley nearly always run. Initial flow is uneven; the flow creeps upstream from Porton and Idmiston where it is normally permanent, as ground water level rises. Concurrently the springs near Collingbourne Ducis rise and fill the river above Tidworth. This flow, though it may fill the river to the brim, will peter out in a few metres as the water rapidly soaks away into the dry stream bed below. Gradually the river gains ground and eventually flows through Tidworth and Shipton Bellinger meeting the flow that has been working upstream through Allington and Newton Toney, at Cholderton. When this happens continuous flow is achieved down the whole length of the river.

15. Failure of the springs to rise at Collingbourne Ducis in the autumn indicates low ground water levels and lack of recharge. This serves as an early warning that low winter rainfall may affect the ability of the Thruxton well to achieve its normal post winter levels. The recent period of low rainfall commencing in 2010 has meant that there was no flow in the Bourne at Cholderton during the winter of 2010 and that there has been none at all in 2011.

Baseline Water Resources

16. The company relies entirely on groundwater as its source of water. An abstraction licence covers the use of a well at Thruxton and borehole at Compton Corner. Both sources are regularly in use.

17. In the company's Water Resource Management Plan, which was reviewed in April 2011, the Water Available for Use in a dry year was 760M³ per day. This volume is determined by licence and not by water availability. This is explained in the following paragraphs.

Ground water sources

18. The well at Thruxton Hill is some 73 metres deep and currently has a rest level of 55 metres. The water level is not necessarily an indicator of water paucity as the more important factor is the rate of recharge. The level of water at Tilshead gives an indication of

the recharge rate that will occur at Thrupton, e.g. an 'abnormally low' water level reading at Tilshhead means a slow recharge at Thrupton resulting in longer pumping hours and the potential for the water to be momentarily milky in appearance because of the absorbed air.

19. When this condition occurs the Company transfers abstraction to the Compton Corner borehole for replenishing the low level service reservoir which provides water to approximately 78% of the company's consumers. Thrupton abstraction is used solely to supply the high level service reservoir which delivers less than 8% of the total annual demand. This has been done on several occasions during the summer months or at other times when there has been a prolonged period of low or minimal rainfall.

20. The Compton Corner borehole was sunk in 1978 and has an effective working depth in excess of 122 metres. It passes through several layers of rich water-bearing strata giving it a very effective recharge rate even when extensive pumping takes place. Even during the periods of very low rainfall in the first 6 months of 2011 the depth of water below the surface has not exceeded 12 metres. Immediately after 18 hours pumping the level has not dropped below 13 metres, recovering to its pre-pumping level within 2 hours.

21. It is almost inconceivable that the water supply will fail in circumstances other than one brought about by a mechanical failure and even then Thrupton could maintain supplies for the period required for repairs.

22. The volume of water for use by consumers is not determined by availability from the 2 groundwater sources but constrained by the company's licence to abstract. In the context of the company's Drought Plan an important factor that has to be taken into account is that the Bourne is already over-abstracted and the prospect of obtaining an increase in the licenced volume is very unlikely. **It is demand that has to be managed.**

Drought scenarios

23. Cholderton's customers have been supplied without inconvenience or interruption in periods of drought, as demonstrated in the early to mid-1990s and more recently in the prolonged period of low rainfall in the latter half of 2010 and the first 6 months of 2011.

24. Nevertheless, there is every indication that uneven weather patterns, which include periods of prolonged low rainfall, will become more frequent and possibly more severe. Such conditions will lead to increased demand for water and place strains on the company's ability to maintain supplies within the limits of its abstraction licence.

25. This Drought Plan focuses on the management of very high demands. It deals with periods when demand for water puts excessive pressure on the available resources. This is particularly relevant to the summer months when demand for water can increase significantly in the following areas:

- General household use
- Increased garden watering
- Process water for industrial & commercial purposes
- Drinking water for large farm animals and other agricultural use.

Drought Action Plan

26. As there are many definitions of drought, a short explanation produced by the UK meteorological Office is attached at **Annex C**. In Cholderton's case there is no likelihood of there being a shortage of water from the company's groundwater sources. However, the company has to recognise the threat from the secondary consequence of drought, which is a noticeable increase in demand.

27. The company's action plan is based on the level and duration of rises in demand. As the level of abstraction from the boreholes correlates closely with demand, this measure will be used as the indicator to initiate a series of triggers to keep demand within sustainable limits.

Triggers and Actions

28. Using historical records the company has separated abstraction levels into 3 bands which can be used as triggers to determine the action the company needs to take to prevent demand escalating out of control as the severity of drought conditions increases.

Because the volumes of water involved cover a small range, i.e. 690 – 767M³ per day, it is necessary to iron out minor fluctuations to avoid providing a distorted picture of demand. Abstraction readings will be plotted as a 7-day moving average over a period of 4 weeks.

Details for each can be summarised as follows:

- Normal Conditions: <690M³
- Trigger #1 690 – 800M³ for more than 2 weeks
- Trigger #2 >800M³ for more than 4 consecutive weeks.
- Trigger #3 >800M³ for more than 4 consecutive weeks following the actions initiated by trigger #2

29. Normal operating conditions apply where the 4-weekly 7-day moving average calculation of abstractions remains below 690M³. Standard Operating Procedures will apply to the monitoring of usage and night time flows.

30. The activation of the 2 trigger points involves the following:

- **Phase 1:** This follows as soon as Trigger #1 is activated which is likely to occur following a particularly dry spell combined with higher than normal temperatures. The company will take the following actions to make all customers aware of the need to conserve water:
 - Notices will be posted in:
 - The village shop at Shipton Bellinger
 - Public houses in both villages
 - Hillside garage
 - Village notice boards
 - Letters will be sent to:
 - All commercial premises
 - The 20 metered household premises consuming the most water
 - Chairmen and Secretaries of the 3 parish councils
- **Phase 2:** This follows the activation of Trigger #2 which represents a situation that the company has not encountered since regular abstraction records were first introduced. Abstraction above 800M³ per day for a prolonged period would mean that the annual abstraction licence volume might be exceeded. The company will respond by:
 - Posting further notices in the premises listed in paragraph 21.
 - Writing to every customer explaining the seriousness of the position, with practical suggestions as to how they could save water and play a part in alleviating the situation.
 - Making personal visits to all commercial premises and the larger metered users to explain the seriousness of the situation and to notify them that, if voluntary measures prove ineffective, the next step may be to restrict water usage.
 - Arranging a broadcast to be made on Spire FM, the local radio station:
 - Asking customers to conserve water and telling them what positive actions they can take.
 - Telling anyone who thinks they have a water leak or needs advice on water conservation how to contact the company.
 - Approaching the chairmen of the three parish councils to obtain their agreement to hold extraordinary parish meetings at which the company's

representative can explain the position directly to individual consumers and advise them of likely future measures should the drought intensify or consumers fail to respond to the appeal to conserve water.

- Formally notify the Environment Agency, CCW and Natural England of the seriousness of the situation and seek their advice in the event that the implementation of further measures as outlined in trigger #3 is necessary.
- **Phase 3:** This is implemented when trigger #3, has been activated. This will occur when the average daily abstraction calculation continues to exceed 800 M³ for 4 weeks after the measures taken to appeal to consumers under phase 2 appear to be having no appreciable effect. This phase involves the imposition of temporary bans on the use of water as outlined at **Annex A**.

Activity by Water Company & Associated Businesses

31. From the outset of trigger #1 the company will take extra steps to ensure that avoidable water losses through leakage are minimised. A programme of leak detection using the 15-minute web-based data-logging system has proved successful. This system will be used as the basis for a daily management review of minimum night time usage throughout the network. An immediate investigation will follow if any unusual demand is detected.

32. Approximately 60% of the company's mains network is over 100 years old and it is probable that leakage in these pipes is higher than it is in the newer sections. The company has regulatory funding from 2013 to identify the potential areas of leakage. It is intended to start work in this area sooner if possible.

33. Cholderton Estate, the largest individual water user, will instigate a programme whereby relevant employees, particularly those in the dairies, are made aware of the need to conserve water. A strict rota will be enforced for the inspection of all cattle troughs and stop taps for leaks.

34. Work orders for the repair of leaks will be strictly prioritised and actioned. If more urgent work has to be done than the company's own staff can manage within a reasonable time, Wessex Water will be approached for assistance.

35. The company's current procedure of measuring abstraction rates weekly will be changed to daily readings. These will indicate whether the appeal to consumers to reduce demand for water is having an effect. In addition the water level in the boreholes before and after pumping will be measured to make sure that the increased demand is not affecting the availability of water.

Implementation Timescales

36. The implementation of Phase 1 which, from the consumer viewpoint, is primarily an awareness campaign should take no more than 2 to 3 days from the time that the conditions occur to initiate trigger #1. Although the company's internal measures can be put in place within 72 hours, Phase 2 will take longer to implement because of the time needed to arrange appointments and book radio time. Even so, with intelligent anticipation, no more than 2 weeks will be needed to complete the consumer-related measures. The implementation of Phase 3 will take 4 weeks in order to allow sufficient time to arrange the parish meetings, consult with the regulatory authorities and make arrangements with the commercial businesses.

Regular Demand Management Action

37. The regular measures which the company uses to control and manage demand include the following:

- Metering: the company has increased the number of properties with meters from 123 in April 2007 to 179 in September 2011. Meters are fitted to:
 - All new properties; on change of ownership or occupancy; on request

- Supply pipe leakage: Vulnerable consumers have any leakages repaired free of charge. The free service is also available to householders who agree to have a meter fitted.
- Water efficiency: The company's website includes advice to householders on how to maintain their gardens with minimal use of water. Links are given to the Wessex Water website where there is extensive advice to householders.

Temporary Water use Restrictions

38. The imposition of restrictions on discretionary water use, primarily by banning hosepipes and sprinklers is potentially one of the most effective and significant demand-side measures that can be deployed. Since October 2010 the scope of a hosepipe ban (now called a temporary ban on water use) has been increased by new legislation, allowing more flexibility in implementation and making the process easier to initiate. The details are contained in **Annex A**.

39. A decision to implement these measures will only be taken in circumstances where the prolonged, long-term consequences of continuing high demand appear to be significant enough to warrant it. This issue has been discussed in paragraph 30 dealing with the implementation of Phase 3 of the plan.

Implementing restrictions on water use

40. To implement a temporary ban on water use, legislation now requires that a company has to adopt the following procedure:

"Before the period for which a prohibition is to apply the water undertaker must give notice of the prohibition and its terms—

- a. in at least two newspapers circulating in the area to which it applies, and*
- b. on the water undertaker's internet website."*

41. Whilst certain businesses may be affected where they provide services to domestic customers, it is primarily domestic customers who will experience loss of amenities or inconvenience. Restricting non-household properties will not yield a large reduction in demand as these comprise only a small proportion of the customer base, viz. 24 out of a total of 734. These operate mostly in the business services, leisure and hotels sectors.

42. Every effort will be made to consult with consumers before the company uses its powers to impose a temporary ban. With 734 connections it should be possible to make personal visits to almost all of them during the phase 2 period in a final attempt to explain what will happen if they fail to reduce their use of water.

Supply Side Measures

43. Since it was established over a hundred years ago the company has always managed to maintain water supplies to customers in periods of drought. The most notable of these have been:

- 1933 - 1934, a two-season intense drought
- 1975 - 1976, a two-season drought
- Mid 1990s, periods of drought
- 2010 - 2011, 2 periods of unusually low rainfall in the Wessex region

44. The company's assessment that it is extremely unlikely there would be a shortage of water from the Compton Corner borehole in even the most prolonged and severe conditions is summarised in Paragraphs 20 - 22. Nevertheless, it is prudent to plan for a scenario where drought conditions have become so severe that the water resources available to the company are insufficient to cope with demand, viz. the Compton Corner borehole will not recharge quickly enough to allow the pumps to maintain the levels in the service reservoirs high enough to provide a constant supply of water over a 24-hour period.

45. If, during a period of very prolonged lack of rainfall, it became apparent at any stage during the implementation of the 3 phases of the plan that the volume of water available to

supply consumer demand was at risk, the company would immediately enter discussions with the Environment Agency to review the appropriate measures to maintain supplies.

46. In the unlikely event that there was an unforeseen immediate problem, the company has an agreement with Wessex Water for the provision of water using static water tanks and a supply of bottled water on pallets for distribution to domestic consumers. A successful deployment exercise was held in November 2011 to test the efficacy of this arrangement. This plan, which is only a short-term measure, would be activated if there were a serious mechanical or electrical failure that affected the operation of the pumping of water from the Compton Corner borehole to the service reservoirs.

Drought Orders and Permits

47. As can be seen in the preceding paragraphs, the company will be doing all it can to:

- Promote water efficiency measures
- Publicise the need for consumers to act responsibly and limit as far as possible their use of water
- Detect any leakage very quickly and effect repairs without delay

There is no guarantee, however, that water efficiency measures will fully counteract the extra demand for water by households which is a frequent consequence of drought conditions.

48. The company's total abstraction in the year ended March 2011 was 249,800M³ litres against a licence to abstract a total of 280,000M³. This gave the company a 'margin' of 11% equivalent to 39 days at maximum usage or 44 days at the average usage for the year. The close monitoring procedures described in paragraphs 22 - 25 will quickly give an indication as to whether the company is able to operate within its licence.

49. Paragraphs 30 and 60 describe the circumstances when the company will enter into consultation with the Environment Agency if the voluntary measures placed on consumers to reduce consumption fail to reduce demand and a temporary ban on use has to be put in place. Those officers who are allocated to Cholderton will be informed at every stage of the company's mitigation efforts to make sure that they have the additional information to that already provided by the company to enable the agency to process an application for a drought permit, if required, with the minimum of delay.

50. In the unlikely event that demand for water remains stubbornly high to the extent that abstraction on an annual basis is likely to exceed the maximum licenced volume, the company will have to apply to the Agency for a Drought Permit to increase its daily or overall level of abstraction.

51. The company recognises that any application for a drought permit to allow increased abstraction will have to be preceded by an assessment to determine the environmental impact. The Cholderton Estate which owns the land on which the water company is situated is best placed to handle this requirement with Natural England. Paragraphs 55 - 59 give more details on this responsibility.

52. The company does not envisage the need for either a Drought Order or Emergency Drought Order restricting the use of water. In the company's supply area the number of large animals exceeds that of the human population. Although most of these are on the Cholderton Estate, there are several other establishments with animals as well as households with paddocks and horses. Given the integrated nature of the network, it would be virtually impossible to separate ordinary households from the Estate's connections and those houses with horses.

Consultation with External Agencies and Companies

53. The effective implementation of any section or phase of this drought plan is dependent on the company through its designated staff maintaining close contact with the regulatory authorities, Natural England, local government and the local community. Paragraph 59 gives

details of the responsibilities within the company for initiating and maintaining these contacts.

54. Wessex Water carry out the testing of the company's water under contract and provide a full range of analytical services. In an extended period of drought there is liable to be pressure on water quality and Wessex will be requested to increase the frequency of testing and provide the appropriate advice should adverse trends become apparent.

Environmental Assessments

55. The Company was involved with Wessex Water and the Environment Agency in the Bourne and Nine Mile River Project. This study has delivered a unique understanding of the behaviour of ground water movement within this catchment. It has also explored the ecology and general environmental features of the area. The Environmental Report – Final Report was completed and published by the Environmental Agency in May 2005. In its conclusions referring to the river Bourne upstream of Newton Tony, viz. Cholderton's Resource Zone and points of abstraction, the report stated; "Due to the complex hydrogeology in this part of the catchment there is limited ecological impact due to groundwater abstraction."

56. In normal conditions the company abstracts approximately 770M³ per day. No water is taken from the catchment and exported elsewhere. The company's leakage control programme over the past two years has reduced abstraction rates by 20% from their highest point. At the highest level there was no appreciable negative environmental impact. It remains to be seen, however, whether the potential for increased demand in a severe drought scenario will change this position.

57. The complexities in calculating the environmental impact posed by increased abstraction in an extended period of severe drought are beyond the company's resources. The senior management of the company will work with the Environment Agency and English Nature to produce an environmental assessment and monitoring programme that meets the Drought Plan Guidelines. Initial contacts will be made with these agencies during the next 6 months to establish guidelines and an outline timescale.

58. As well as being the company's largest consumer of water, the Cholderton Estate occupies 22% of the company's supply area. The estate is a fully organic agricultural enterprise and has a Higher Level Stewardship Scheme agreement. The Estate which owns the land on which the water company is located has a well-publicised reputation for the protection of natural habitats and the promotion of biodiversity. The Estate will liaise with Natural England to understand the effects of increased abstraction from the company's boreholes and to agree a programme of mitigation, where possible.

Management and Communications Strategy

59. In the event of the company declaring that it will initiate Phase 2 and implement the measures set out in paragraph 24 the managing director will activate the Drought Action Team comprising the following personnel who will assume specific roles and responsibilities:

Name	Title	Drought Role
Mr H Edmunds	Managing Director	Drought Manager
Miss V Brett	Company Secretary	Customer Liaison
Mr A Fry	Resources Engineer	Regulatory Liaison
Mr B Young	Water Engineer	Leakage & Level Monitoring

The Managing Director will take on 3 specific responsibilities:

- Ensuring that the measures required of the Cholderton Estate are implemented and enforced.
- Liaison with Natural England to assess the potential impact of drought measures including an assessment of the risk to water-dependent sites affected indirectly by Cholderton's water abstraction.

Miss Brett will:

- Liaise with CCW Wessex, Parish councils, and Salisbury Age UK

Mr Fry will undertake liaison with:

- Wessex Water should a scenario develop which involves a requirement for emergency assistance. See paragraphs 31 & 34.

It is fortunate that all households and business premises are no more than a 15 minute drive from the Estate Office. This makes direct face to face communication a feasible option.

60. The way in which the company plans to communicate with its customers as the drought plan unfolds up to Phase 3 is set out in paragraph 30. Additionally, the company will maintain close contact with its most vulnerable customers. The two villages have a network of volunteers who will keep this group informed and notify the company of cases of severe hardship.

61. Mr Fry has been delegated to act as the liaison between the company and the regulatory authorities as the drought scenarios develop. Before Phase 3 is implemented he will liaise with the Environment Agency to make sure that the company has provided sufficient data to enable that body to initiate any plans for granting permits or approvals without undue delay.

Post Drought Operations

62. The company is determined that a return to the situation whereby all customers enjoy a reliable and regular supply of water without restriction is achieved as soon as circumstances allow. The close monitoring of abstraction from the Compton Corner borehole will show when the level of abstraction has started to drop and remains within the company's abstraction licence. At this point the company will notify the Environment Agency. If a Drought Permit allowing increased abstraction is in place it will be revoked at this point.

63. Assuming that the immediate meteorological conditions improve and the forecast for rainfall is near the long-term average, Phase 3 measures will be relaxed either partially or in total provided:

- The rate of abstraction from the borehole shows that the average daily level of water supply consistently falls within the abstraction licence and below the trigger #1 level.
- The Environment Agency's Wessex Area Monthly Hydrometric Report demonstrates an improving trend of groundwater levels at Tilshead.

64. Throughout this period of improvement, and in the immediate aftermath, pressure will be kept on consumers to keep their usage of water to a minimum. It is important that even after the Temporary ban on use has been lifted, consumers do not revert to their previous pattern of water usage.

65. When lifting the ban, fully or partially, customers will be notified in the same manner as they were when the original Temporary ban on use was implemented. The lifting of restrictions may take effect as soon as one of the notices is given.

Learning the Lessons

66. As soon as practicable after the end of restrictions, the company will enter into consultation with interested parties, including consumers, the Regulatory agencies and Wessex Water to review what happened, how it was handled, where things went wrong and what improvements are necessary to make the process more efficient and effective next time. Following this review the Drought Plan will be modified to include the recommendations of the review.

Conclusion

67. The threat faced by Cholderton during a period of prolonged minimal rainfall spanning the warmer summer months is not so much a shortage of water from the company's boreholes as over-abstraction to meet excessive demand. This plan shows the extent of the measures that the company will take in order to persuade consumers to take voluntary measures to reduce their consumption of water.

68, If, despite all entreaties to use water responsibly, demand continues to rise, the company will initiate Phase 3 of the plan which involves the imposition of a temporary ban on water use. It is hoped this will be the final measure that will be necessary to enable the company to keep abstraction within the limits of its licence.

69. However, it would be irresponsible to assume that a temporary ban would be successful if drought conditions became ever more severe and lasted over a protracted period. The company has to explore the possibility of a Drought Permit to allow a temporary increase in abstraction. Preliminary discussions will be instigated with the Environment Agency. It is appreciated that this is a draconian measure but it is infinitely preferable to the imposition of extreme measures such as rota cuts and standpipes which, with an animal population of 3,000 head, would be almost impossible to control because of the integrated nature of the network.

AAF
15 Dec 2011

Access and responses to the draft Drought Plan

This draft Drought Plan has been released by Defra for consultation. No information has been excluded from the plan on the grounds of national security or withheld for reasons of commercial confidentiality.

Copies may be viewed by:

- Visiting our website <http://www.choldertonwater.co.uk/>
- Requesting a copy from the Estate Office:
Email: admin@cholderton-estate.co.uk
Telephone: 01980 629203
- Looking at a copy in:
 - The Crown Inn, Cholderton
 - Boot Inn, Shipton Bellinger
 - Parkhouse Stores, Shipton Bellinger
 - Cholderton Farm shop

Representations about the plan should be made in writing either by email or by post to arrive no later than **Friday 2nd March 2012**.

Representations by email should be sent to: water.resources@defra.gsi.gov.uk

Representations by post should be sent to:

Secretary of State, Department for Environment Food and Rural Affairs (Defra)
Drought Plan Consultation
Water Availability and Quality Programme
Department for Environment, Food and Rural Affairs
Area 2C, Ergon House
Horseferry Road
London
SW1P 2AL

Flood and Water Management Act 2010

2010 CHAPTER 29

PART 2

MISCELLANEOUS

PROSPECTIVE

36 Water use: temporary bans

For section 76 of the Water Industry Act 1991 (temporary hosepipe bans) substitute

—

“76 Temporary bans on use

- (1) A water undertaker may prohibit one or more specified uses of water supplied by it if it thinks that it is experiencing, or may experience, a serious shortage of water for distribution.
- (2) Only the following uses of water may be prohibited—
 - (a) watering a garden using a hosepipe;
 - (b) cleaning a private motor-vehicle using a hosepipe;
 - (c) watering plants on domestic or other non-commercial premises using a hosepipe
 - (d) cleaning a private leisure boat using a hosepipe;
 - (e) filling or maintaining a domestic swimming or paddling pool;
 - (f) drawing water, using a hosepipe, for domestic recreational use;
 - (g) filling or maintaining a domestic pond using a hosepipe;
 - (h) filling or maintaining an ornamental fountain;
 - (i) cleaning walls, or windows, of domestic premises using a hosepipe;
 - (j) cleaning paths or patios using a hosepipe;
 - (k) cleaning other artificial outdoor surfaces using a hosepipe.
- (3) The Minister may by order—
 - (a) add a non-domestic purpose to the list in subsection (2);
 - (b) remove a purpose from the list in subsection (2).
- (4) A prohibition must specify—
 - (a) the date from which it applies, and
 - (b) the area to which it applies (which may be all or part of the undertaker's area).
- (5) A person who contravenes a prohibition—
 - (a) is guilty of an offence, and
 - (b) is liable on summary conviction to a fine not exceeding level 3 on the standard scale.
- (6) A water undertaker which issues a prohibition must make arrangements for a reasonable reduction of charges which are made in respect of prohibited uses (including arrangements for repayment or credit where charges are paid in advance).
- (7) A water undertaker may vary or revoke a prohibition.

76A Temporary bans: supplemental

- (1) A prohibition may—
 - (a) apply to one or more specified uses of water generally or only in specified cases or circumstances (which may be specified by reference to classes of user, timing or in any other way);
 - (b) be subject to exceptions (which may be absolute or conditional, and may be specified by reference to classes of user, timing or in any other way).
- (2) The Minister may by order—
 - (a) provide for exceptions to a category of use in section 76(2) (whether or not added under section 76(3));
 - (b) provide that a specified activity, or an activity undertaken in specified circumstances, is to be or not to be treated as falling within a category of use in section 76(2) (whether or not added under section 76(3));
 - (c) define a word or phrase used in section 76(2) (whether or not added under section 76(3)).
- (3) In particular, an order may—
 - (a) restrict a category of use by reference to how water is drawn;
 - (b) frame an exception by reference to ownership of land by a specified person or class of person;
 - (c) provide for a process that involves the use of a hosepipe at any point to be included in the meaning of “using a hosepipe”;
 - (d) provide for a reference to a thing to include a reference to something that is or may be used in connection with it (such as, for example, for a reference to a vehicle to include a reference to a trailer).
- (4) In this section and section 76 “the Minister” means—
 - (a) the Secretary of State in relation to prohibitions which may be issued by water undertakers whose areas are wholly or mainly in England, and
 - (b) the Welsh Ministers in relation to prohibitions which may be issued by water undertakers whose areas are wholly or mainly in Wales.
- (5) Subject to provision under subsection (2), a reference to a hosepipe in section 76 includes a reference to anything designed, adapted or used to serve the same purpose as a hosepipe.

76B Temporary bans: procedure

- (1) A prohibition takes effect only if this section is complied with.
- (2) Before the period for which a prohibition is to apply the water undertaker must give notice of the prohibition and its terms—
 - (a) in at least two newspapers circulating in the area to which it is to apply, and
 - (b) on the water undertaker's internet website.
- (3) The notice must give details of how to make representations about the proposed prohibition.
- (4) The variation of a prohibition is to be treated as a prohibition for the purposes of this section.
- (5) A water undertaker must give notice of a revocation of a prohibition—
 - (a) in at least two newspapers circulating in the area to which it is to apply, and
 - (b) on the water undertaker's internet website.
- (6) The revocation may not take effect until at least one notice under

subsection (5) has been given.

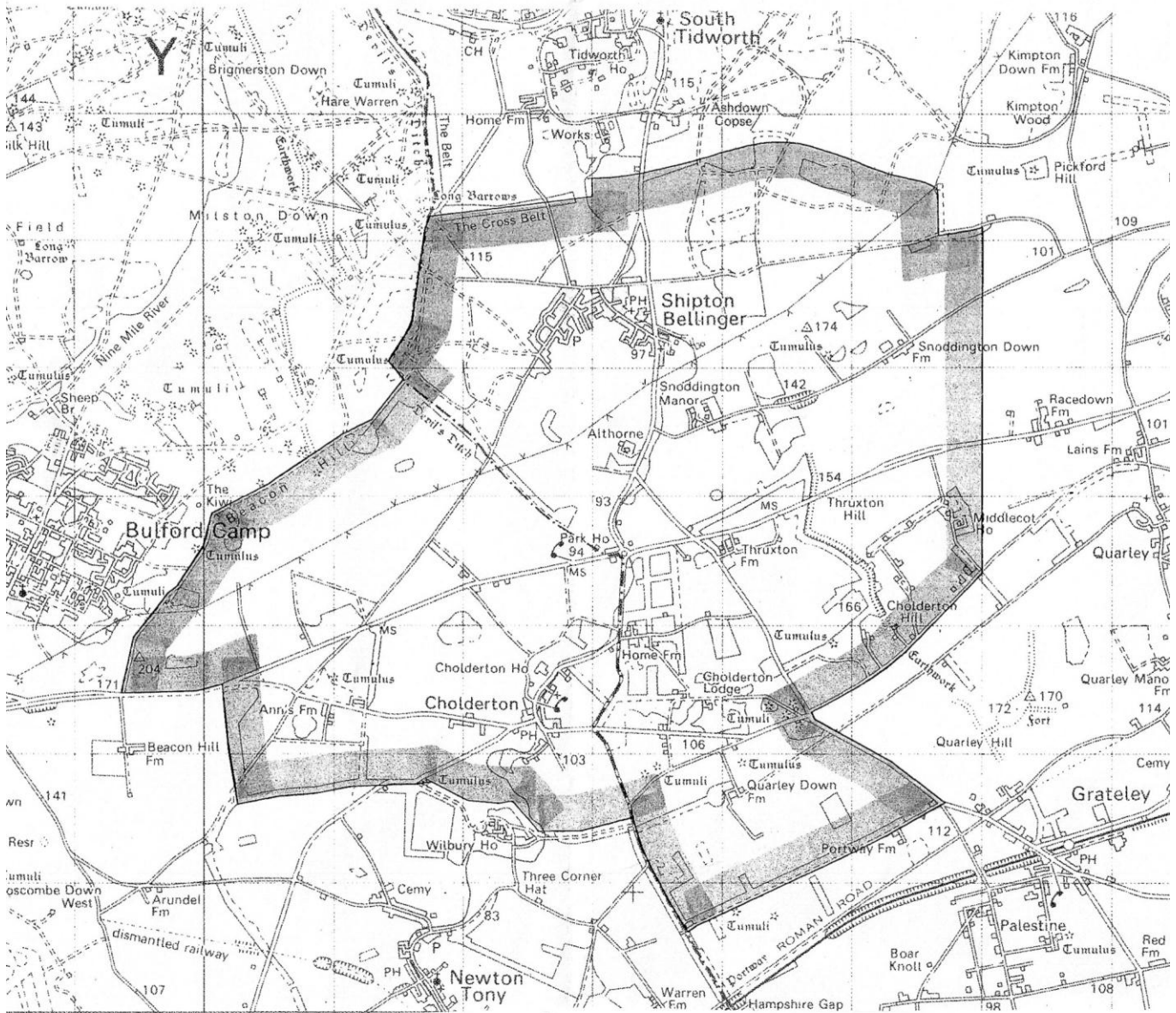
76C Orders under sections 76 and 76A

(1) Section 213 applies to orders under section 76(3) or 76A(2) as it applies to regulations.

(2) But—

- (a) an order made by the Secretary of State under section 76(3) may not be made unless a draft has been laid before and approved by resolution of each House of Parliament,
- (b) an order made by the Welsh Ministers under section 76(3) may not be made unless a draft has been laid before and approved by resolution of the National Assembly for Wales, and
- (c) an order made by the Welsh Ministers under section 76A(2) shall be subject to annulment in pursuance of a resolution of the National Assembly for Wales.”

SUPPLY AREA AND WATER RESOURCE ZONE





Drought and climate change

Dr Richard Betts, Head of Climate Impacts

There is no single definition of drought, it very much depends on who is being affected as to how they view drought.

There is meteorological drought which is essentially time without rainfall. There is agricultural drought which is a reduction in the amount of water available for crop growth. There is hydrological drought which is a reduction on the amount of water in rivers and in the ground. There is economic drought which concerns access to water. This has socio-economic implications as well.

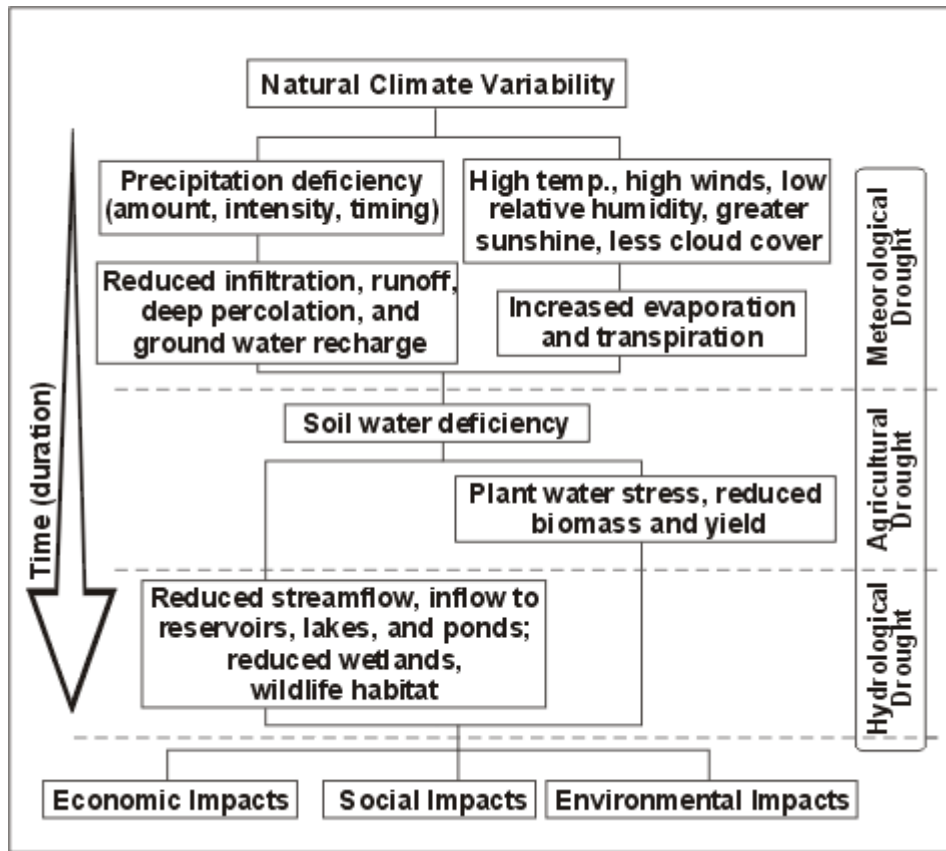
Bearing in mind the different definitions of drought we can still assess how climate change may affect drought, and the amount of time spent in drought, by interpreting the output of computer climate models.

Examples might be to look at a drought metric based on rainfall and evaporation, or we might look at changes in projections of soil moisture. One key factor though is that drought is very much defined locally so the driest 10% or time in sub-Saharan Africa may be much drier than the 10% of time in the UK. But either way it the relative dryness compared to background conditions which essentially defines drought.

Different computers would, of course, give different indications of changes in drought in any given location, especially as it is so dependent on precipitation, rainfall in particular, which is also dependent on exact projections from different computer models — which disagree quite significantly in many areas about whether some areas will even get wetter or drier in terms of rainfall.

Of course, high temperatures tend to promote evaporation so that would tend to move to a more drought status, on the other hand CO₂ in the atmosphere may increase the efficiency of water use by plants, plants tend to extract less water from the soil under high CO₂ concentrations and that to some extent may offset some of the effects of drought.

(Source: National Drought Mitigation Center)



When precipitation returns to normal and meteorological drought conditions have abated, the sequence is repeated for the recovery of surface and subsurface water supplies. Soil water reserves are replenished first, followed by streamflow, reservoirs and lakes, and ground water. Drought impacts may diminish rapidly in the agricultural sector because of its reliance on soil water, but linger for months or even years in other sectors dependent on stored surface or subsurface supplies. Ground water users, often the last to be affected by drought during its onset, may be last to experience a return to normal water levels. The length of the recovery period is a function of the intensity of the drought, its duration, and the quantity of precipitation received as the episode terminates.