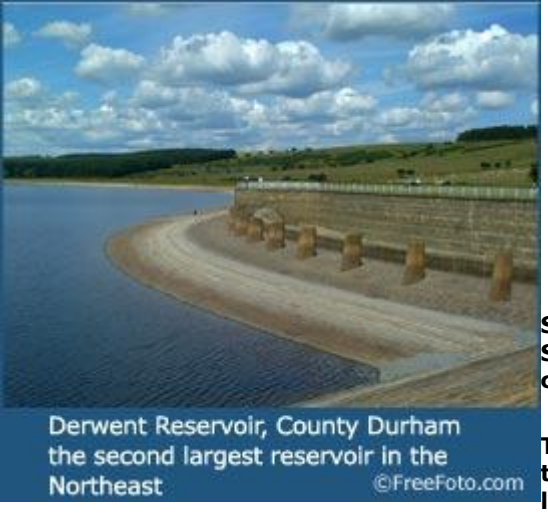

Derwent Reservoir, County Durham the second largest reservoir in the Northeast

Reservoir dogs future water supply

26 Oct 2003

Shelter, food and water are three basic human needs. Securing water supply in the UK rests with 27 private water companies.

The largest, Thames Water is planning for a supply problem in the future. Even if it saves the 864.91 Ml (mega litres) a day leaking out of its 19th Century pipes, it still needs a larger supply. It estimates that a London population of over 12 million will face water shortages within 20 years. Their solution will cost £800 million.

What is the problem?

Supply and demand is at the root. Natural population growth in London is expected to grow by 700,000 by 2016. John Prescott has announced plans for 200,000 new homes in the London region. This summer and autumn are proving to be one of the driest ever; suggesting climate change is already having an impact on the UK. Already the Thames region has less rain per capita than Istanbul or Madrid. This combines to produce a pattern of increasing demand, and reduced supply.

What is the plan?

Thames Water is looking at the possibility of building a reservoir on 3,500 acres of farmland between Abingdon and Wantage in Oxfordshire. This will allow water currently flowing into the Thames to be harnessed for human use. However to build and fill the £600 million reservoir could take 20 years; a more immediate solution is needed to cope with the problem of water shortages owing to a drier climate. Thames Water is proposing a desalinisation plant at Beckton, East London, to allow water from the Thames Estuary to be used.

What is the broader picture?

There are multiple causes and multiple impacts of these proposals. Building the reservoir will mean less pressure on ground water stores that currently used to supplement water supplies. Use of these groundwater stores, however, creates the risk of lowering the water table and causing soils to dry out leading to, among other things, subsidence of buildings, and shrinking of soil (causing cracking of water mains and road surfaces).

Wildlife habitats such as those that have been disappearing over the past 60 years with the mechanisation of, and the chemicals used in, farming, can be created by reservoirs. Slow moving shallow water at the entry point can become a breeding ground for birds and vegetation around the banks can provide animal habitats. The water body itself has potential for water sports as well as for providing drinking water.

Conversely, flooding of farmland means the loss of agricultural production, thus reducing the capacity of the local area to produce food, should we ever return to a localised production system through future changes to the C.A.P. The harvesting of water before it reaches the Thames means there will be a reduction in sediment input not so crucial for the heavily modified river in London - but more important for the tributaries in Oxfordshire. The reservoir itself will require dredging and servicing, necessitating infrastructure improvements the locality. The reservoir could also change fish movements in the Thames.

What are the alternatives?

Another approach to meeting demand could be to reduce it. Instead of investing in infrastructure to provide water, investments could be made to reduce consumption. An example of how water demand from Thames Water was reduced was seen at the Millennium Dome where rainwater runoff from its huge roof was used to flush toilets. Compulsory metering of all water use could increase water consciousness and raise revenue for future investment in sustainable water management. Dishwashers, power showers and other

household appliances are all growing in number and using more water maybe manufacturers need be forced to increase efficiency of their products through legislation. Maybe London has or will soon exceed its carrying capacity; maybe we just cant provide enough water sustainable to serve the population.

Whatever is done, the taps cannot run dry in the short or long term, nor must we jeopardise opportunities for future generations.

Landscape Evaluation

In creating National Parks, the government decided that certain areas are so valuable that they must be protected and conserved for the Nation. This 'value' is relative to the quality of the landscape and the usefulness of a resource to the consumer.

This worksheet will enable **you** to give a numerical score in order to help you to depict whether the site at Troutbeck should be dammed to create a reservoir or not.

Use the scale of numbers below:

Impact on the landscape (I)		Contribution to the landscape (C)	
Stands out very strongly	+2	Excellent	+2
Stands out	+1	Good	+1
Makes little impression	0	Neutral	0
Does not feature	0	Negative	-1
		Very negative	-2

At Troutbeck, begin by looking around to see whether any of the features listed below are present in the landscape. Give an 'impact' score (I), and then a 'contribution' score (C) to each feature.

Multiply I x C, and then add up the column to work out your index of landscape quality.

The higher the score the higher the perceived quality of landscape and the less likely it is that the site should become a reservoir.

Remember that there are **no** right or wrong answers; this is **your own opinion** on the landscape.

	Troutbeck (at present)			Troutbeck (if a reservoir was made)		
Natural Features	I	C	IxC	I	C	IxC
Topography						
Trees/Woodland						
Other habitats						
Flowing water						
Still water						
Bare rock						
Natural colours						
Wildlife						
Natural sounds						
Natural smells						
Human features						
Farm buildings						
Industrial buildings						
Residential buildings						
Recreational facilities						
Walls/hedges						
Tips/quarries/mines						
Pylons/poles/wires						
Tracks/pathways						
Roads						
Car Parks						
Motor vehicles						
Human sounds						
Human smells						
Total for I x C						

Now think carefully about what your scores suggest.

Should the valley at Troutbeck be transformed into a reservoir to increase the availability of water in the UK? Or, should it remain as it is?

Write a sentence to explain your decision in the space below.

_____

_____

_____

Cost – benefit analysis

Having completed your landscape evaluation at Troutbeck, you should now consider the costs and benefits that building a reservoir here would have in both physical and human terms. Complete the following activities:

1. As you walk around the site at Troutbeck make a list of the different types of land use that you see.

2. Use this information to help you to consider the costs and benefits that building a reservoir here would have in both physical and human terms. Fill in the table overleaf to record your thoughts.

Be prepared to discuss your thoughts with the rest of the group.

Costs	Benefits

Name:_____
Date: _____

A reservoir in Troutbeck: Conflict Matrix

1 = Local residents
2 = Local retailers
3 = Limefit Caravan Park
4 = Tourists in the Lake District
5 = Historic buildings
6 = Local framers
7 = United Utilities
8 = UK cities needing water
9 = Lake District National Park Association

	1	2	3	4	5	6	7	8	9
1									
2									
3									
4									
5									
6									
7									
8									
9									

√ = Compatible
x = Conflict
? = Possible conflict

- List the possible issues arising between groups:

Loss…

Conserving beauty and tradition…

Demand for water…

Enjoyment of landscape…

Economic viability …

Gain…