

# United Utilities

## **S**ustainable **C**atchment **M**anagement **P**rogramme

**Innovative**

**Landscape Scale**

**Multiple Benefits**



# Background

- **Agricultural pressure on large areas of United Utilities 57,500 ha of water catchment land**
- **Large areas of upland peat moors had been drained to improve farming output. Impact of industrial pollution and climate**
- **Common Agricultural Policy payments based on headage which encouraged farmers to have maximum numbers of stock**
- **Many areas of SSSI were in unfavourable declining condition**
- **Raw water quality was deteriorating**





# Background

- **Introduction of Single Farm Payment began phasing of payments based on environmental conditions**
- **Environmental Stewardship Scheme provides an additional opportunity for farmers to gain additional income for managing land for environmental benefits**
- **Government PSA targets were set to improve SSSI condition**
- **UK, Lancashire and UU Biodiversity Action Plan targets**
- **The political climate was right for United Utilities to begin focussing on catchment management**

# SCaMP 1

- **Political support from RSPB, Natural England, Environment Agency, Drinking Water Inspectorate etc**
- **Agreement by financial regulator Ofwat to allow capital funding for catchment management in AMP4 programme**
- **Between 2005 and 2010 the SCaMP 1 programme focussed a spend of £10.7m on our land holdings including SSSIs in the Peak District and Bowland areas**
- **Work included:-**
  - **Grip (moorland drain) blocking**
  - **Bare peat restoration**
  - **New farm facilities**
  - **Fencing, walling, water troughs**
  - **New woodland, hedgerows**
  - **Species rich grassland, scrapes, rushy pasture**



**Quiet Shepherd 2007**

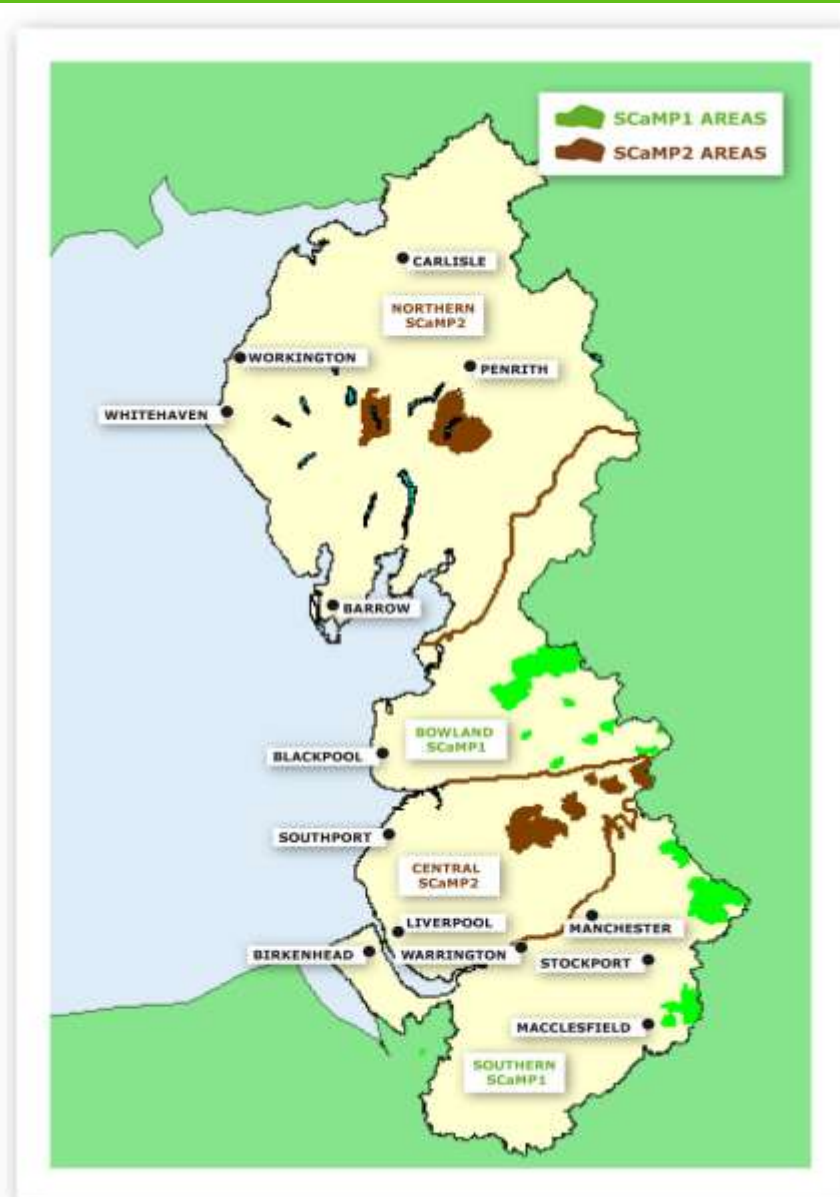
**Quiet Shepherd 2009**



## SCaMP1 Biodiversity Benefits

- 12,322 ha (98.6%) of blanket bog within SSSIs into management toward favourable condition
- 516 ha of new native woodland
- 22.7 ha of degraded Upland Hay Meadow brought into favourable management by SCaMP
- 9.9 ha of Upland Heath has been restored
- Establishment of 9.3 km of new native species hedgerows

# United Utilities SCaMP Areas



- ▶ **SCaMP 2 is an extension of the SCaMP1 approach to the remaining ~30,000 hectares of UU owned land not funded in AMP4.**
- ▶ **Only 4,000 Ha SSSI**
- ▶ **Primary purpose – to protect raw water quality (colour, turbidity, pathogens)**

# SCaMP 2 Objectives

## Overall aim:

***To develop an integrated approach to catchment management incorporating sustainable upland farming which delivers a range of water quality, environmental and public goods***

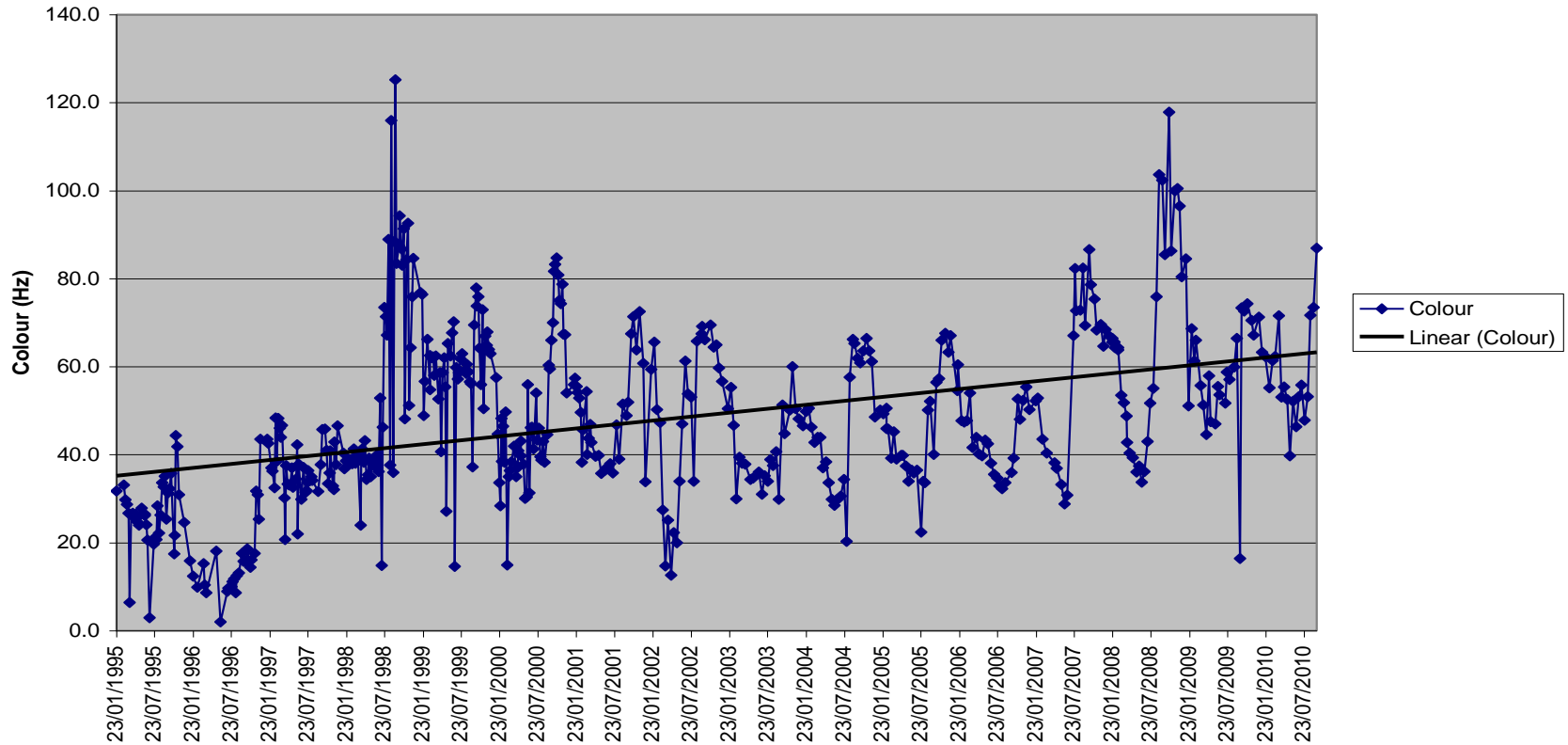
- **Improve raw water quality and reduce risk**
- **Biodiversity plans for priority habitats and species**
- **Securing and improving the carbon flux management of our land**
- **Viable living for our tenant farmers**

**This will be achieved by entering into long term agreements with our tenant farmers and maximising agri-environment income**



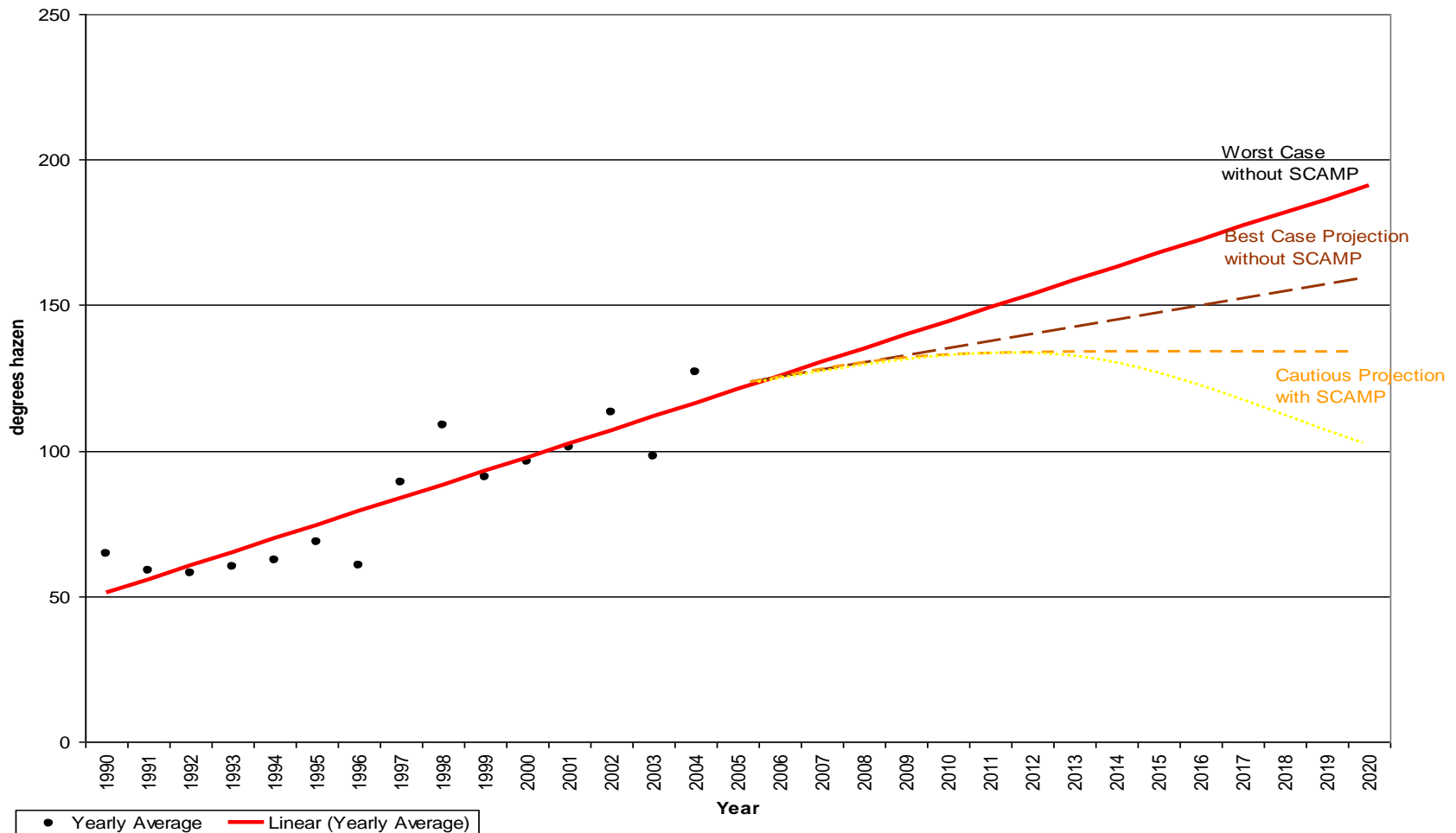
# Typical upland colour graph

Worsthorne Combined inlet



# Avoided future costs – revenue and capital

Yearly Average Colour Including Predictions of Future Colour Trends With and Without the Sustainable Catchments Project



- The scope of work is similar to that in SCaMP 1
  - Creation of woodland – provides a valuable habitat, reduces erosion, reduces overland flow, creates buffer strip to exclude stock. (848,000 trees across 1,426 Ha)
  - Fencing off water courses – creates buffer strips excluding stock having direct access to water courses, reduced pathogen transfer risk
  - Stock reductions – protect and enhance vulnerable habitats, reduces diffuse pollution and pathogen transfer risk
  - Farm facilities improvements – allow for improved stock management, changes to stock calendar.
  - Re-wetting upland areas and re-vegetation of bare peat - protect and enhances habitat, reduces suspended sediments and dissolved organic carbon. Improve the carbon take up of the land.

## Example - Bampton and Helton Common

- 60 registered Commoners, 28 exercise their rights of which 7 are UU tenants
- Overgrazing leading to increased colour and turbidity entering the reservoir
- SCaMP plan will provide :-
  - 205 Ha of juniper scrub planting in high erosion risk areas
  - 59 Ha of new native woodland
- Benefits
  - Commoners gain access to agri-environment funding of 150 k / annum for 10 years
  - Reduction of grazing by 70%
  - Improvement of trends for turbidity, colour and pathogen loading
  - Improvement in BAP habitat and species
  - Improvement in land to absorb carbon

# Example - Leys End Farm

- **Open access of farm stock to watercourses resulting in a risk to raw water quality.**
- **SCaMP plan includes :-**
  - Crossing points, fences, gates and stiles to allow control of stock
  - 1 hectare of woodland
  - 369 m of new hedgerow
  - 50 m<sup>2</sup> scrapes
  - Resurfacing of a section of the Rossendale Way footpath
- **Benefits**
  - Improvement of trends for turbidity and pathogen loading
  - Improvement in BAP habitat for upland oak woodland, hedgerows and rush pasture
  - Farm tractor access to allow manure spreading off the moorland
  - Access to grant income for the tenant farmer

# Non-owned Catchment

## **United Utilities Strategic Direction Statement 2010-2035**

We want to extend SCaMP type approaches to other catchment land we own and promote its use on other catchments which we do not own but on which we nevertheless rely for water supplies

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During AMP5 we are extending the SCaMP catchment management approach to non-owned land in conjunction with the National Trust and Moors for the Future.

# Carbon

- The UK peatlands hold the country's largest terrestrial carbon store
- More carbon is stored than in the forests of Britain and France combined
- Peat soils can act as a net carbon sink (healthy) or a carbon source (damaged)
- Studies indicate the United Utilities peat moors currently represent a carbon sink of 66 Ktonnes per year
- This is equivalent to 78 megawatts of power
- Through SCaMP further targeted intervention could increase this by another 18 MW.

# SCaMP Multiple Benefits

- Raw water quality
  - reduced risk of incidents
  - reduction in colour trend line impacting treatment costs
  - decreased or delayed capital costs for additional processes
- Enhancing and supporting special habitats
- Carbon flux management improvements
- Enhancing and supporting heritage
- Supporting rural communities
- Social Wellbeing of access to green open space.
- Enhancing and supporting recreational opportunities
- Downstream hydraulic flooding improvements

# Quantifying Benefits for Customers

- Project outputs can be measured e.g. km fencing, ha woodland
- Ofwat allow funding in 5 year AMP cycles
- Improvements to peatland condition will take place over ecological timescales
- Slight but statistically significant improvements in raw water quality can be seen at a sub-catchment level after a few years
- The challenge is to demonstrate a benefit between catchment improvements and raw water quality at the water treatment works particularly for colour
- Contributions to Natural Englands Ecosystem Services Pilots
- UKWIR Quantifying the Benefits of Catchment Management project. Toolkit to include Ecosystem Services approach

# Defra Ecosystem Services

**Regulating services:** The benefits obtained from the regulation of ecosystem processes, including :-

Air quality regulation, climate regulation, water regulation, erosion regulation, water purification, flood alleviation, carbon sequestration, disease regulation, pest regulation, pollination, natural hazard regulation

**Cultural services:** The non-material benefits people obtain from ecosystems through:-

Spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences – thereby taking account of landscape values

**Supporting services:** The services that are necessary for the production of all other ecosystem services including :-

Soil formation, photosynthesis, primary production, nutrient cycling and water cycling.

**Provisioning services:** The products obtained from ecosystems, including :-

Food, fibre, fuel, genetic resources, biochemicals, natural medicines, pharmaceuticals, ornamental resources and fresh water

# Thank you



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