RIVERS ENVIRONMENTAL DATABASE SYSTEM

NRA

National Rivers Authority
Anglian Region

Rivers are important features of our landscapes. They drain water from the land and are an important habitat for wildlife. The term "river corridor" is used to describe areas influenced by a watercourse linking sectors of wildlife interest. It typically covers the river, its banks and the land close by, sustaining corridors of wildlife in an otherwise agricultural or urban landscape.

1. What is REDS and why is it Needed?

In 1982 the House of Lords stated it was important that all river corridors were surveyed, as without this information features of scientific interest could be destroyed before they were discovered. When the National Rivers Authority was formed in 1989, Anglian Region commissioned a massive 3 year wildlife survey covering 6000km, called the Rivers Environmental Database System (REDS). Previously surveys were only undertaken prior to river works. REDS will ensure that the NRA has wildlife data for every stretch of river, to enable long term planning of work schemes. It is the first and largest scheme of its kind in Britain.

2. How work was done: Method

Each stretch of river was visited five times during the Spring and Summer. Experienced botanists made two visits, one early and one later, to cover the full growing season for plants. Over the two visits the botanist recorded and described the river corridor habitats and the adjacent land use, drew a cross-section through the corridor to illustrate the height and slope of banks, position of drains, widths of channel, floodbank, took photographs and

Counter Drain, Bedfordshire

RIVER CORRIDOR SURVEY OF THE RIVER WISSEY

PLANT COMMUNITIES **WISE 071**

A sharply meandering river with low banks and moderate flow over firstly sand, then gravel. On the left is sheep-grazed semi-improved pasture, with a wooded meander bend, and downstream is an unmanaged area. On the right is a mature poplar plantation. The river flows through an MOD training area.

The low left bank is initially wooded by alder, oak, willow, ash and hawthorn with nettle, cleavers, hemp agrimony and reed canary grass. Downstream is lightly grazed nettle, false oat grass, cock's-foot, Yorkshire fog, angelica and great willowherb with two alders and a buckthorn. The fringe comprises patches of common clubrush, branched bur-reed, reed, great pond sedge and reed canary grass, with some scattered lesser pond sedge, great yellow-cress, water forget-me-not, water mint, gipsywort, bittersweet and brooklime. There are two gravel banks, similarly vegetated.

The right bank top has planted poplars with a mown strip of Yorkshire fog, creeping buttercup, cow parsley, reed canary grass, angelica and great plantain. The low, steep bankside is dominated by tall great willowherb, nettle, reed canary grass, meadowsweet and hemp agrimony, with one large alder. The fringe is as the left, but is sparser with no reed, but some reed sweet grass.

Channel flora is dominated by water crowfoot, with some water starwort, and patches of common clubrush and arrowhead, giving 1 - 20% cover.

76 species.

BIRDS

20 species were recorded. Of these, 17 species (moorhen, woodpigeon, green woodpecker, wren, dunnock, robin, song thrush, blackcap, chiffchaff, willow warbler, spotted flycatcher, long-tailed tit, marsh tit, coat tit, blue tit, great tit and chaffinch)

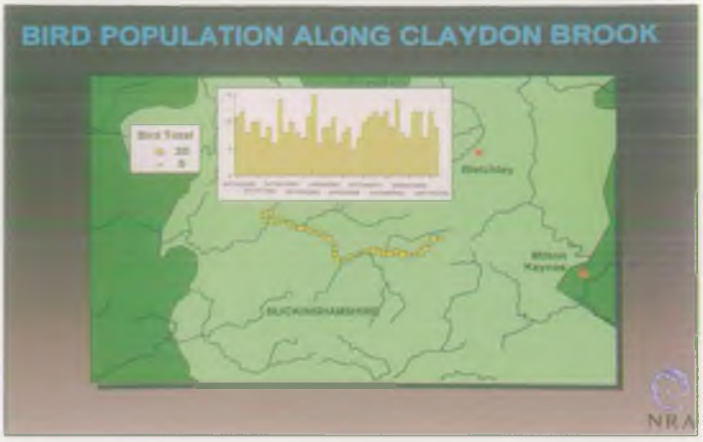
produced a list of all plants identified within the corridor, with an estimate of their abundance.

A further three visits, in April, May and June were made by an experienced ornithologist. On each visit the ornithologist identified and mapped all birds seen and heard within the river corridor and recorded their activity. Using these maps, with a knowledge of the habitats, activity and timing of observations, it was possible to produce a list of birds recorded, with an assessment of which were breeding in the corridor, and which were using it for other purposes.

3. What the Survey Produced: Examples

The surveying produced standardised outputs for every 500 metre section of river within Anglian Region. For each section the survey produced:

- A habitat map showing features of the river such as cliffs, riffles, gravel shoals and pools as well as the main wildlife habitat features in the corridor. The extent and plant composition of the fringes and channel are shown, and areas with rare or interesting plants are indicated.
- A cross-section through the corridor, showing a general view and any special features
- One or more photos of the corridor, showing a general view and any special features
- A written description of habitats in the corridor and the dominant plants in each area



Linking REDS with a mapping tool

- A list of the birds recorded, with an assessment of their use of the corridor and the important habitats for birds
- A list of plants recorded, with an assessment of their abundance.

The list of birds and plants for each section were also input on to a computer database, along with each sections grid references, and a unique code for every 500 metre section of river.

4. How is REDS being used

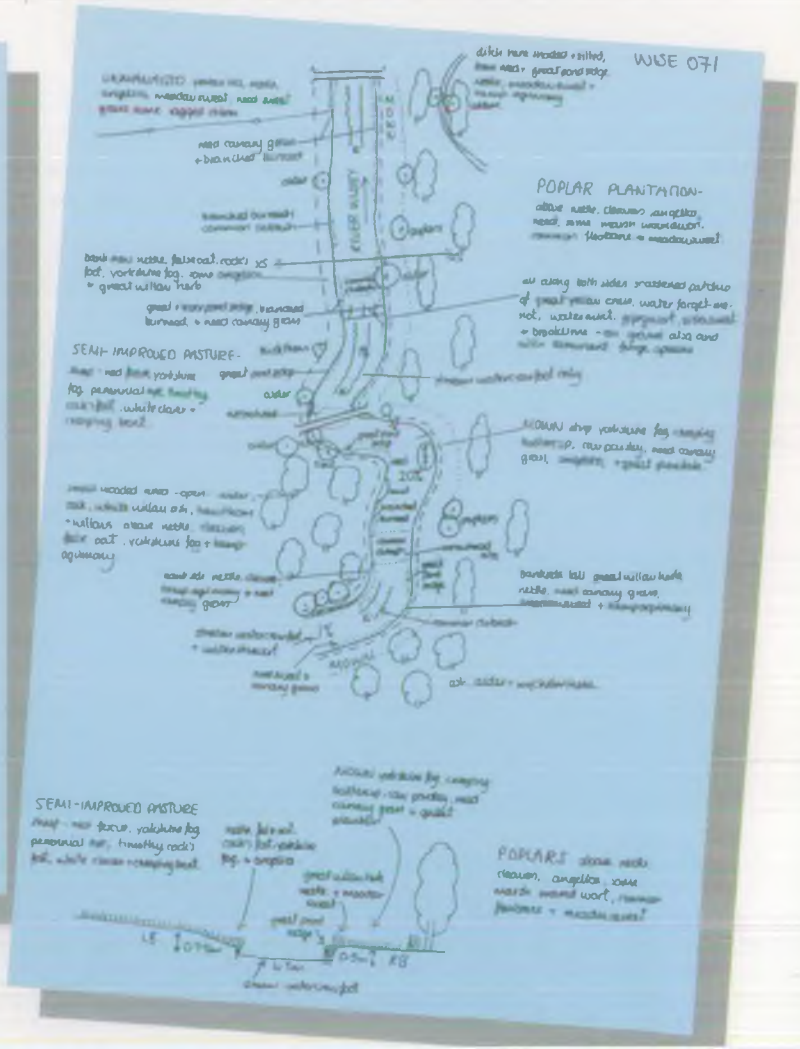
RIVER MAINTENANCE PROGRAMME

Initially REDS was developed to help conservation staff with input to the flood defence maintenance programme. REDS enables conservation staff to quickly assess the

River Wissey

probably held breeding territories which included the river corridor and 3 species (mute swan, treecreeper and jay) fed in the corridor but bred elsewhere.

The main habitats for birds include the mixed woodlands/plantation along the right side including the patches of reeds and the mixed woodland on the left side.



Creative conservation: reinstating a meander on the River Little Ouse, Norfolk

nature of a riverbank before work commences. In the light of this, they are able to discuss the work with engineers and consult interested parties, before making recommendations to minimise any adverse effect that the maintenance work may have.

Bedford Ouse Catchment Management Plan Conservation Objectives.

CATCHMENT MANAGEMENT PLANS

River Catchment Management Plans are multi-disciplinary plans that co-ordinate all of the separate NRA interests into one document, giving an overview of the catchment. By using such an extensive data set as REDS, conservation staff within NRA Anglian Region are able to assess the environmental resource within each catchment and then set targets for conserving, enhancing and restoring rivers.

ENVIRONMENTAL ASSESSMENT

Data from the survey, all of it collected under standard methods at the optimum time of year, will form a baseline data set for carrying out the environmental assessment of developments within or affecting the river corridor, both by the NRA and other developers. Survey results are available to riparian owners for the stretches of river they own.

MONITORING

Although the initial survey is completed, REDS database will continue to be up-dated regularly and used to monitor the effects of work once it has been carried out. This is essential to assess whether changes occurring in a river system are as a result of natural processes or are caused by works carried out on the river.

RESEARCH AND CONSERVATION

The survey results have many additional uses, both within the NRA and more widely in research and conservation. Mapping the distribution of rare and local species in a river catchment will allow them to be protected, and with careful habitat management, perhaps to spread. Knowing the distribution of plant communities will make it possible to examine their relationships to other features of the river and/or of the catchment.

Alconbury Brook, Cambridgeshire

COMPUTING FACILITIES

The effectiveness of REDS very much depends upon the extension of its computer analysis facilities. The long term aim of these facilities is to produce an effective and efficient user-friendly system, that enables conservation staff to have the best information, produced in a well presented format. These facilities aren't meant to produce a theoretical modelling package that is used for research purposes, but to provide a working operational tool that will enable valuable and poorer areas to be identified, and where necessary, protected and/or enhanced.

THE FUTURE

REDS' uses are continuing to be developed, but its value as a tool for providing and analysing wildlife data along river corridors is all ready proving indispensable. In the future, REDS will give the NRA a greater understanding of Anglian Region's wildlife in and around our rivers, enabling a rivers' conservation value to be assessed, and ensuring that where works are undertaken, they are sympathetic to the needs of wildlife.

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